



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

Closed Landfill Recommended Certificate of Authorisation

Certificate of Authorisation Number:	H0319-01
Certification of Authorisation Holder:	Mayo County Council
Location of Facility:	Claremorris Historic Landfill, Kilbeg, Claremorris, County Mayo

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.
Heavy Metals	This term is to be interpreted as set out in “Parameters of Water Quality, Interpretation and Standards” published by the Agency in 2001. ISBN 1-84095-015-3.

Incident	<p>The following shall constitute an incident for the purposes of this Certificate of Authorisation:</p> <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	<p>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.</p>
Maintain	<p>Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.</p>
Necessary Measures	<p>As defined in the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.</p>
Relevant Heavy Metals	<p>Heavy metals for analysis shall include, as a minimum, those metals identified as relevant, having regard to the risk assessment and surface water and groundwater monitoring results as required by this Certificate of Authorisation.</p>
Risk Assessment	<p>As defined in the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.</p>
Sample	<p>Unless the context of this document indicates to the contrary, the term sample or samples shall include measurements taken by electronic instruments.</p>
Status	<p>As defined in the Water Framework Directive, in relation to surface water and groundwater.</p>
The Local Authority	<p>Mayo County Council, Áras an Chontae, Castlebar, County Mayo.</p>
Trigger Level	<p>A parameter value the achievement or exceedance of which requires certain actions to be taken by the local authority.</p>

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 **Mayo County Council, Áras an Chontae, Castlebar, County Mayo**, in respect of the closed landfill at **Kilbeg, Claremorris, County Mayo**, 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 No. **P2348-0400-0002_Rev.B (drawing dated 03.03.20)** submitted with the application. Any reference in this Certificate of Authorisation to “closed landfill” shall mean the area thus outlined in red.
- 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 provided that such uses do not interfere with the integrity of the remediation measures adopted.

Reason: <i>To clarify the scope of this Certificate of Authorisation.</i>
--

Condition 2. Notifications, Records and Reports

- 2.1 The local authority shall notify the Agency, in a format as may be specified by the Agency, two months in advance of the intended date of commencement of the remediation works.
- 2.2 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.
- 2.3 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:
 - (a) Records of all sampling, analyses, measurements, examinations, calibrations and maintenance;
 - (b) Records of incidents;
 - (c) Records of all complaints of an environmental nature;
 - (d) The validation report prepared on completion of the remediation; and
 - (e) Other documentation required by this Certificate of Authorisation or as may be otherwise directed by the Agency.
- 2.4 The local authority shall assign the necessary resources, including financial, to complete the remediation measures specified in this Certificate of Authorisation and risk assessment and to respond to any incident.
- 2.5 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 resources for monitoring and measures to protect the environment.*

Condition 3. Management and Monitoring

3.1 The local authority shall implement the following measures within 18 months of the date of grant of this Certificate of Authorisation, or as otherwise **specified or** agreed by the Agency:

- (a) Minimise the disturbance of deposited waste to the extent possible;
- (b) **Remove, for disposal or recovery at an appropriate facility, the waste from the surface of the landfill within three months of the date of grant of this Certificate of Authorisation;**
- (c) **Carry out repairs to the monitoring borehole BH02;**
- (d) Install a low permeability landfill cap **over the entire waste body**, minimum 1m, with 1mm thick low permeability geomembrane having a hydraulic conductivity of less than or equal to 1×10^{-9} m/s;
- (e) Install a gas management system in **the waste body**, within six months of the date of grant of this Certificate of Authorisation.

The gas management system shall include the following elements:

- (i) Gas vent pipes with fans or cowls, as appropriate;
- (ii) The gas vent pipes shall not be perforated above the ground level;
and
- (iii) **Spacing between the gas vent pipes shall be in accordance with EPA Landfill Manuals – Landfill Site Design.**

On agreement by the Agency, the gas vent pipes and associated infrastructure may be removed or altered in accordance with any recommendations arising from the trial in accordance with Condition 3.1(i).

- (f) Install three **additional combined landfill gas/groundwater** monitoring boreholes **outside** the waste body (**boreholes BH03, BH04 and BH05**);
- (g) Install **one additional** groundwater monitoring borehole (**borehole BH06**) downgradient of the waste body;
- (h) **Install two additional leachate monitoring boreholes within the waste body (monitoring boreholes LW01 and LW02);**
- (i) The local authority shall, within twelve months of the date of grant of this Certificate of Authorisation, following gas monitoring, as required under Condition 3.9(d), seek agreement of the Agency regarding whether to carry out a gas pumping trial for the purpose of determining the quantity and quality of landfill gas;
- (j) The local authority shall implement any recommendations arising from the gas pumping trial, **subject to the agreement** by the Agency; and
- (k) Reseed grass within the site.

3.2 Site Notice Board

- (a) The local authority shall, within one month of the date of grant of this Certificate of Authorisation and for the duration of the remediation works,

provide a Site Notice Board on the closed landfill site so that it is legible to persons outside the main entrance to the closed landfill site. The minimum dimensions of the board shall be 1200 mm by 750 mm.

- (b) The board shall clearly show:
- (i) The name of the Certificate of Authorisation holder;
 - (ii) The name of the closed landfill site;
 - (iii) The Certificate of Authorisation reference number;
 - (iv) The contact telephone in relation to the closed landfill site; and
 - (v) Where information relating to the closed landfill site can be obtained.
- 3.3 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.
- 3.4 **The integrity of the landfill cap shall be maintained at all times and shall not be compromised by the installation of any future developments.**
- 3.5 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.
- 3.6 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.
- 3.7 The local authority shall submit to the Agency, by the 31st March of each year, an annual update covering the previous calendar year. This update, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in Condition 3.9 of this Certificate of Authorisation.
- 3.8 **The local authority shall, within 24 months of the date of grant of this Certificate of Authorisation, submit a drawing showing the following elements interpolated:**
- (i) **extent of the waste body and the area capped, as required under Condition 3.1(d);**
 - (ii) **the locations of the gas vents, as required under Condition 3.1(e) and any gas infrastructure as may be required following the gas pumping trial; and**
 - (iii) **all monitoring points for landfill gas, leachate, groundwater and surface water.**
- 3.9 The local authority shall annually, or as otherwise prescribed by the Agency, 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) **on a quarterly basis in the existing leachate monitoring borehole BH01 and the two additional monitoring**

boreholes required under Condition 3.1(h). The monitoring shall, as a minimum, include the following parameters: Biochemical Oxygen Demand (BOD) (mg O₂/l), Total Ammonia (mg N/l), Ammonium (µg/l N), Molybdate Reactive Phosphorus (MRP) (µg P/l), **Electrical Conductivity (µS/cm), Potassium (µg/l), Iron (µg/l), Manganese (µg/l), Zinc (µg/l)** and **other** relevant Heavy Metals.

- (c) **A screening of leachate for trace organic substances in accordance with the EPA Landfill Manuals – Landfill Monitoring and any subsequent amendments.**
- (d) Monitoring, **on a quarterly basis**, to detect the presence and concentration of landfill gas in:
 - (i) **the existing** monitoring boreholes **BH01 & BH02; and**
 - (ii) **the three monitoring boreholes required under Condition 3.1(f).**

The local authority shall have regard to the Agency’s Air Guidance (AG) Notes and Landfill Manual – Landfill Monitoring, 2nd Edition, 2003, and any subsequent amendments, when carrying out gas monitoring;

- (e) Monitoring (sample, analyse and characterise) on a **quarterly** basis **at the following locations:**
 - (i) **the adjacent drain** upstream of the closed landfill (**monitoring locations SW1, SW2 and SW3**);
 - (ii) **the Kilbeg-Malone River** upstream of the closed landfill (**monitoring location SW4**);
 - (iii) **the Kilbeg-Malone River** downstream of the closed landfill (**monitoring locations SW5 and SW6**);
 - (iv) **the Listduff River south-east of the closed landfill (monitoring location SW7).**

The monitoring shall, as a minimum, include **Biochemical Oxygen Demand (BOD) (mg O₂/l), Total Ammonia (mg N/l), Molybdate Reactive Phosphorus (MRP) (mg P/l)** and other relevant parameters listed in European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

- (f) Monitoring (sample, analyse and characterise) on a **quarterly** basis of groundwater from **the** groundwater monitoring borehole **BH02, the three additional combined boreholes required under Condition 3.1(f) and one additional borehole required under Condition 3.1(g).** The monitoring shall, as a minimum, include the following parameters: **Ammonium (µg/l N), Molybdate Reactive Phosphorus (MRP) (µg P/l), Electrical Conductivity (µS/cm), Potassium (µg/l), Iron (µg/l), Manganese (µg/l), Zinc (µg/l) and other relevant Heavy Metals** and other relevant parameters listed in European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended, and EPA Interim Guideline Values (IGV).

- (g) **The sensitivity of the monitoring methods utilised for monitoring under Condition 3.9 shall have an appropriate limit of detection to allow for comparison of pollutant concentrations against the relevant trigger levels and/or standard reference values as set out in Condition 3.9(h).**
- (h) The assessment **and reporting** 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, as amended, European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended, EPA Interim Guideline Values (IGV) **and the Agency Landfill Manuals - Landfill Monitoring, 2nd Edition, 2003, and any subsequent revisions.**
- 3.10 The location, frequency, methods and scope of **surveys**, monitoring, **visual inspections**, sampling and analyses, as set out in this Certificate of Authorisation, may be amended with the agreement of the Agency following evaluation of test results.
- 3.11 Soil and stone
- 3.11.1 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.
- 3.11.2 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.
- 3.12 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.
- 3.13 The local authority shall ensure, at all times after the grant of this Certificate of Authorisation, that all infrastructure cap and all equipment required under this Certificate of Authorisation has been and is:
- (i) installed;
 - (ii) commissioned;
 - (iii) present on site, and
 - (iv) maintained in full working order.
- 3.14 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).
- 3.15 Wells and boreholes
- 3.15.1 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual "Landfill Monitoring".

- 3.15.2 All wellheads shall be adequately protected to prevent contamination or physical damage.
- 3.15.3 All wells and boreholes shall be adequately sealed to prevent surface contamination and, as may be appropriate, decommissioned according to the UK Environment Agency guidelines “Decommissioning Redundant Boreholes and Wells”, unless otherwise agreed by the Agency.
- 3.16 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.
- 3.17 Incidents
- In the event of an incident the local authority shall immediately:
- (a) If necessary, contact the emergency services;
 - (b) Carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
 - (c) Isolate the source of any such emission;
 - (d) Evaluate the environmental pollution, if any, caused by the incident;
 - (e) Identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - (f) Identify the date, time and place of the incident; and
 - (g) Notify the Agency (in accordance with Condition 2.2) and all other relevant authorities including, where relevant, the Water Services Authority and Inland Fisheries Ireland.
- 3.18 Invasive Species Prevention and Eradication Plan
- The Certificate of Authorisation holder shall establish, maintain and implement an invasive species prevention and eradication plan, to cover at least, Japanese Knotweed, Giant Knotweed, Bohemian Knotweed and any other relevant invasive species. The plan shall as a minimum identify specific actions for:
- (a) The prevention, to the extent possible, of acceptance of invasive species in loads of soil and stone or of topsoil arriving at the facility, actions to include requesting of information on the presence and management of invasive species at source sites;
 - (b) Quarterly surveys of **the facility** for the detection of the growth of invasive species **during remediation and during the implementation of the invasive species prevention and eradication plan, moving to annual surveys following validation in accordance with Condition 3.18(f)**;
 - (c) the method for plant detection and identification;
 - (d) The remedial actions for eradication of invasive species growing at the facility;
 - (e) Staff training on plant identification and eradication; and

- (f) Validation to confirm the absence of invasive species at the restored facility.

The Certificate of Authorisation holder shall maintain evidence of having obtained the advice and implemented the recommendations of an independent and appropriately qualified consultant, in the establishment of the Plan and any amendments to it that concern the action items listed above.

3.19 Communications Programme

3.19.1 The Certificate of Authorisation holder shall establish, maintain and implement a Communications Programme to ensure that members of the public can obtain information from the local authority concerning the closed landfill.

3.19.2 The Communications Programme shall inform members of the public what they can and should do to protect their property and health.

3.19.3 The local authority shall, as part of the Communications Programme, publish landfill gas, landfill leachate, **groundwater and surface water** monitoring data biannually 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 2008/98/EC and Council Directive 2006/118/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.

The Agency also considers that the activity will not adversely affect the integrity of any European Site and has decided to impose conditions for the purposes of ensuring it does not do so. It has determined that the activity, if managed, operated and controlled in accordance with the Certificate of Authorisation, will not have any adverse effect on the integrity of any of those sites.

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 Sites at Lough Carra/Mask Complex SAC (site code: 001774), Lough Mask SPA (site code: 004062), Lough Carra SPA (site code: 004051), Carrowkeel Turlough SAC (site code: 000475), River Moy SAC (site code: 002298), Lough Corrib SAC (site code: 000297), Lough Corrib SPA (site code: 0004042), Kilglassan/Caheravoostia Turlough Complex SAC (site code: 000504), Balla Turlough SAC (site code: 000463), Greaghans Turlough SAC (site code: 000503), Towerhill House SAC (site code: 002179), Ardkill Turlough SAC (site code: 000461) and Ballinafad SAC (site code: 002081).

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 reason for this determination is as follows:

- There is a hydrological connection between the closed landfill and Carra/Mask Complex SAC (site code: 001774) and Lough Mask SPA (site code: 004062) and, despite the fact that these European Sites are located approximately 45km downstream of the site, it cannot be excluded, based on the submitted monitoring results for surface water and groundwater, that the closed landfill will have no effect on these European Sites.
- There is no hydrological connection between the closed landfill and the rest of the European Sites.

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 Lough Carra/Mask Complex SAC (site code: 001774), Lough Mask SPA (site code: 004062), Lough Carra SPA (site code: 004051), Carrowkeel Turlough SAC (site code: 000475), River Moy SAC (site code: 002298), Lough Corrib SAC (site code: 000297), Lough Corrib SPA (site code: 0004042), Kilglassan/Caheravoostia Turlough Complex SAC (site code: 000504), Balla Turlough SAC (site code: 000463), Greaghans Turlough SAC (site code: 000503), Towerhill House SAC (site code: 002179), Ardkill Turlough SAC (site code: 000461) and Ballinafad SAC (site code: 002081), 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 this Certificate of Authorisation and the conditions attached hereto for the following reasons:

- specifically, the remedial works will be undertaken to minimise the potential for water pollution in the Lough Carra/Mask Complex SAC (site code: 001774) and Lough Mask SPA (site code: 004062) and will ensure that there will be no significant impact on these European Sites;
- the project alone, which consists of the remediation of the closed landfill, or in combination with other projects, will not adversely affect the integrity and conservation status of any of the qualifying interests of the Lough Carra/Mask Complex SAC (site code: 001774) and Lough Mask SPA (site code: 004062); and
- there is no hydrological connection between the closed landfill and Lough Carra SPA (site code: 004051), Carrowkeel Turlough SAC (site code: 000475), River Moy SAC (site code: 002298), Lough Corrib SAC (site code: 000297), Lough Corrib SPA (site code: 0004042), Kilglassan/Caheravoostia Turlough Complex SAC (site code: 000504), Balla Turlough SAC (site code: 000463), Greaghans Turlough SAC (site code: 000503), Towerhill House SAC (site code: 002179), Ardkill Turlough SAC (site code: 000461) and Ballinafad SAC (site code: 002081).

The Agency is satisfied that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites: Lough Carra/Mask Complex SAC (site code: 001774), Lough Mask SPA (site code: 004062), Lough Carra SPA (site code: 004051), Carrowkeel Turlough SAC (site code: 000475), River Moy SAC (site code: 002298), Lough Corrib SAC (site code: 000297), Lough Corrib SPA (site code: 0004042), Kilglassan/Caheravoostia Turlough Complex SAC (site code: 000504), Balla Turlough SAC (site code: 000463), Greaghans Turlough SAC (site code: 000503), Towerhill House SAC (site code: 002179), Ardkill Turlough SAC (site code: 000461) and Ballinafad SAC (site code: 002081).

Part IV: SIGNATURE / SEAL

Draft Certificate of Authorisation Sign off

Signed on behalf of the said Agency

On the xx day of xxxxx, 20XX

xxxxxxxxxxxxx, **Authorised Person**