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**WASTE LICENCE  
Recommended Decision**

<b>Licence Register Number:</b>	<b>W0077-04</b>
<b>Applicant:</b>	<b>Cavan County Council</b>
<b>Location of Facility:</b>	<b>Corranure Closed Landfill, Lismagratty and Corrnaure Townlands, Coothill Road, Cavan, County Cavan</b>

## ***INTRODUCTION***

This introduction is not part of the licence and does not purport to be a legal interpretation of the licence.

**This licence is the for the ongoing aftercare management of a closed landfill at Corranure and Lismagratty Townlands, Cootehill Road, Co. Cavan. This licence is one of two licences in force at the facility and is limited to the closed cells (known as cells 0, 1 and 2). The remaining authorised cells (cells 3 and 4) are being capped and under development respectively and are, along with the existing civic amenity site and proposed materials recovery and biological treatment facilities, the subject of a separate licence (register number W0248-01) in the name of Oxigen Environmental Ltd.**

**This licence limits and controls the environmental impact of the closed landfill and requires periodic monitoring and control on the part of the Cavan County Council.**

The licence sets out in detail the conditions under which **Cavan County Council** will operate and manage this facility.

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## ***Glossary of Terms***

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts 1996 to 2010, unless otherwise defined in the section.

<b>Adequate lighting</b>	20 lux measured at ground level.
<b>Adjacent facility</b>	<b>Waste management facility, licence register number W0248-01</b>
<b>AER</b>	Annual Environmental Report.
<b>Agreement</b>	Agreement in writing.
<b>Annually</b>	At approximately twelve-monthly intervals.
<b>Application</b>	The application by the licensee for this licence.
<b>Appropriate facility</b>	A waste management facility, duly authorised under relevant law and technically suitable.
<b>Attachment</b>	Any reference to Attachments in this licence refers to attachments submitted as part of this licence application.
<b>BAT</b>	Best Available Techniques.
<b>Biannually</b>	All or part of a period of six consecutive months.
<b>Biennially</b>	Once every two years.
<b>BOD</b>	5 day Biochemical Oxygen Demand (without nitrification suppression).
<b>CBOD</b>	5 day Carbonaceous Biochemical Oxygen Demand (with nitrification suppression).
<b>CEN</b>	Comité Européen De Normalisation – European Committee for Standardisation.
<b>COD</b>	Chemical Oxygen Demand.
<b>Containment boom</b>	A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
<b>Daily</b>	During all days of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
<b>Day</b>	Any 24 hour period.

<b>Daytime</b>	0800 hrs to 2200 hrs.
<b>dB(A)</b>	Decibels (A weighted).
<b>DO</b>	Dissolved oxygen.
<b>Documentation</b>	Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
<b>Drawing</b>	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
<b>Emission limits</b>	Those limits, including concentration limits and deposition rates, established in <i>Schedule B: Emission Limits</i> , of this licence.
<b>EMP</b>	Environmental Management Programme.
<b>Environmental damage</b>	As defined in Directive 2004/35/EC.
<b>EPA</b>	Environmental Protection Agency.
<b>Facility</b>	Any site or premises used for the purpose of the recovery or disposal of waste.
<b>Fortnightly</b>	A minimum of 24 times per year, at approximately two week intervals.
<b>GC/MS</b>	Gas chromatography/mass spectroscopy.
<b>ha</b>	Hectare.
<b>Heavy metals</b>	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.
<b>Hours of operation</b>	The hours during which the facility is authorised to be operational.
<b>ICP</b>	Inductively coupled plasma spectroscopy.

<b>Incident</b>	The following shall constitute as incident for the purposes of this licence: <ul style="list-style-type: none"><li>(i) an emergency;</li><li>(ii) any emission which does not comply with the requirements of this licence;</li><li>(iii) any exceedance of the daily duty capacity of the waste handling equipment;</li><li>(iv) any trigger level specified in this licence which is attained or exceeded; and,</li><li>(v) any indication that environmental pollution has, or may have, taken place.</li></ul>
<b>Landfill Directive</b>	Council Directive 1999/31/EC.
<b>Landfill footprint</b>	The area of the facility where waste is deposited.
<b>LEMP</b>	Landfill Environmental Management Plan
<b>L<sub>eq</sub></b>	Equivalent continuous sound level.
<b>Licensee</b>	Cavan County Council, Courthouse, Cavan.
<b>List I</b>	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
<b>List II</b>	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
<b>Local Authority</b>	Cavan County Council.
<b>Maintain</b>	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.
<b>Monthly</b>	A minimum of 12 times per year, at intervals of approximately one month.
<b>Night-time</b>	2200 hrs to 0800 hrs.
<b>Noise-sensitive location (NSL)</b>	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
<b>Oil separator</b>	Device installed according to the International Standard I.S. EN 858-2:2003 (Separator system for light liquids, (e.g. oil and petrol) – Part 2: Selection of normal size, installation, operation and maintenance).

<b>OMP</b>	Odour Management Plan
<b>PRTR</b>	Pollutant Release and Transfer Register.
<b>Quarterly</b>	At approximately three – monthly intervals.
<b>Sample(s)</b>	Unless the context of this licence indicates to the contrary, the term samples shall include measurements taken by electronic instruments.
<b>Sanitary effluent</b>	Wastewater from facility toilet, washroom and canteen facilities.
<b>SOP</b>	Standard operating procedure.
<b>Specified emissions</b>	Those emissions listed in <i>Schedule B: Emission Limits</i> , of this licence.
<b>Standard method</b>	A National, European or internationally recognised procedure (e.g. I.S. EN, ISO, CEN, BS or equivalent); or an in-house documented procedure based on the above references; a procedure as detailed in the current edition of “Standard Methods for the Examination of Water and Wastewater” (prepared and published jointly by A.P.H.A., A.W.W.A. & W.E.F.), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or an alternative method as may be agreed by the Agency.
<b>Storm water</b>	Rain water run-off from roof and non-process areas.
<b>The Agency</b>	Environmental Protection Agency.
<b>TOC</b>	Total organic carbon.
<b>Trigger level</b>	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>VOC</b>	Volatile Organic Compounds
<b>Water Services Authority</b>	<b>Cavan County Council.</b>
<b>Weekly</b>	During all weeks of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement in any one week.
<b>WWTP</b>	Waste water treatment plant.

## ***Decision & Reasons for the Decision***

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2010.

### **Recommended Determination**

In reaching this decision the Environmental Protection Agency has considered the application and supporting documentation received from the applicant, submissions received from other parties and the report of its inspector.

## ***Part I Schedule of Activities Licensed***

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2010, the Environmental Protection Agency (the Agency) proposes, under **Section 46(8)** of the said Acts to grant this Waste Licence to Cavan County Council to carry on the waste activity/activities listed below at Corranure Landfill, Lismagratty and Corranure Townlands, Cootehill Road, Cavan, subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence. For the purpose of Article 48 of the Waste Management (Licensing) Regulations 2004 (S.I. No. 395) this facility is classed as a non-hazardous waste landfill.

### **Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2010**

<b>Class 1.</b>	<b>Deposit on, in or under land (including landfill)</b>
<b>Class 5.</b>	<b>Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment [Principal Activity]</b>

### **Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2010**

There are no proposed activities under the Fourth Schedule.

## ***Part II Schedule of Activities Refused***

None of the proposed activities as set out in the licence application have been refused.



## ***Part III Conditions***

### **Condition 1. Scope**

- 1.1 Waste activities at this facility shall be restricted to those listed and described in *Part I Schedule of Activities Licensed*, and shall be as set out in the licence application or as modified under Condition 1.4 of this licence and subject to the conditions of this licence.
- 1.2 Activities at this facility shall be limited as set out in *Schedule A: Limitations*, of this licence. **No waste shall be accepted at the facility.**
- 1.3 For the purposes of this licence, the facility authorised by this licence is the area of land outlined in red on **Drawing No. DG0051/01** of the application. Any reference in this licence to “facility” shall mean the area thus outlined in red. The licensed activity shall be carried on only within the area outlined.
- 1.4 No alteration to, or reconstruction in respect of, the activity, or any part thereof, that would, or is likely to, result in
- (i) a material change or increase in:
- the nature or quantity of any emission;
  - the abatement/treatment or recovery systems;
  - the range of processes to be carried out;
  - the fuels, raw materials, intermediates, products or wastes generated, or
- (ii) any changes in:
- site management, infrastructure or control with adverse environmental significance;
- shall be carried out or commenced without prior notice to, and without the agreement of, the Agency.
- 1.5 The facility shall be controlled, operated and maintained, and emissions shall take place as set out in the licence. All programmes required to be carried out under the terms of this licence become part of this licence.
- 1.6 This licence is for purposes of waste licensing under the Waste Management Acts 1996 to 2010 only and nothing in this licence shall be construed as negating the licensee’s statutory obligations, or requirements under any other enactments or regulations.
- 1.7 This licence is being granted in substitution for the waste licence granted to the licensee on 24 March 2010 (Register No: W0077-03). The previous waste licence (Register No: W0077-03) is superseded by this licence.
- 1.8 **The export of landfill gas and leachate to the adjacent facility (waste licence register number W0248-01, operated by Oxigen Environmental Ltd) shall continue until such time as the licensee confirms to Oxigen Environmental Ltd in writing that it has made alternative arrangements and the arrangement may cease.**
- 1.9 **Any liability resulting from environmental pollution attributed to interface areas between cells 2 and 3 of the landfill shall be shared between the licensee and Oxigen Environmental Ltd except as may otherwise be agreed with the Agency. Both parties shall endeavour to co-operate with any investigation commenced by either party concerning such environmental pollution.**

**Reason:** To clarify the scope of this licence.

## Condition 2. Management of the Facility

### 2.1 Facility Management

2.1.1 The licensee shall employ a suitable qualified and experienced facility manager **and deputy manager(s)** who shall be designated as the persons in charge.

2.1.2 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience as required and shall be aware of the requirements of this licence. In addition, the facility manager and his/her deputy shall successfully complete a FÁS waste management training programme or equivalent agreed by the Agency.

### 2.2 Environmental Management System (EMS)

2.2.1 The licensee shall **establish and maintain** an Environmental Management System (EMS) within six months of the date of grant of this licence. The EMS shall be updated on an annual basis.

2.2.2 The EMS shall include, as a minimum, the following elements:

2.2.2.1 Management and Reporting Structure.

2.2.2.2 Schedule of Environmental Objectives and Targets.

The licensee shall prepare and maintain a Schedule of Environmental Objectives and Targets. The schedule shall, as a minimum, provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology (including emissions prevention/reduction), and the beneficial recovery/recycling of waste in subsequent landfill engineering operations. The schedule shall include time frames for the achievement of set targets and shall address a five-year period as a minimum. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

The licensee shall ensure insofar as practicable that environmental objectives and targets are met according to the stated schedule.

2.2.2.3 Landfill Environmental Management Plan (LEMP)

The licensee shall maintain a LEMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.2. The LEMP shall have regard to the guidance set out in the EPA Manual on Landfill Operational Practices. The LEMP shall include:

- designation of responsibility for targets;
- the means by which they may be achieved; and
- the time within which they may be achieved.

The LEMP shall be reviewed annually and take into account operational experiences at the facility, the stage of development of the facility (active, closure, aftercare), evolving legislative and BAT requirements, as well as any Agency instructions that may issue. Amendments shall be notified to the Agency for agreement as part of the Annual Environmental Report (AER).

A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.2.2.4 Documentation

- (i) The licensee shall **maintain** an environmental management documentation system which shall be to the satisfaction of the Agency.

- (ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

#### 2.2.2.5 Corrective Action

The licensee shall **maintain** procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for persons initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined.

#### 2.2.2.6 Awareness and Training

The licensee shall **maintain** procedures for identifying training needs and for providing appropriate training for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

#### 2.2.2.7 Communications Programme

The licensee shall **maintain** a Public Awareness and Communications Programme to ensure that members of the public are informed, and can obtain information at the **offices of Cavan County Council or an alternative location as may be agreed** at all reasonable times concerning the environmental performance of the facility.

#### 2.2.2.8 Maintenance Programme

The licensee shall **maintain** a programme for maintenance of all plant and equipment based on the instructions issued by the manufacturer/supplier or installer of the equipment. Appropriate record keeping and diagnostic testing shall support this maintenance programme. The licensee shall clearly allocate responsibility for the planning, management and execution of all aspects of this programme to appropriate personnel (see **Condition 2.1** above).

#### 2.2.2.9 Efficient Process Control

The licensee shall **establish and maintain** a programme to ensure there is adequate control of processes under all modes of operation. The programme shall identify the key indicator parameters for process control performance, as well as identifying methods for measuring and controlling these parameters. Abnormal process operating conditions shall be documented, and analysed to identify any necessary corrective action.

**Reason:** *To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.*

## Condition 3. Infrastructure and Operation

- 3.1 The licensee shall establish and maintain, for each component of the facility, all infrastructure referred to in this licence in advance of the commencement of the licensed activities in that component, or as required by the conditions of this licence. Infrastructure specified in the application that relates to the environmental performance of the installation and is not specified in the licence, shall be installed in accordance with the schedule submitted in the application.

### 3.2 Facility Notice Board

- 3.2.1 The licensee shall, within one month of the date of grant of this licence, provide a Facility Notice Board on the facility so that it is legible to persons outside the main

entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm. The notice board shall be maintained thereafter.

3.2.2 The board shall clearly show:

- (i) the name of the facility;
- (ii) the operational status of the facility;**
- (iii) the name of the licence holder **and contact telephone number;**
- (iv) an emergency out of hours contact telephone number;
- (v) the licence reference number; and
- (vi) where environmental information relating to the facility can be obtained.

3.3 Specified Engineering Works (SEW)

3.3.1 The licensee shall submit proposals for any Specified Engineering Works, as defined in *Schedule D: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months in advance of the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

3.3.2 All specified engineering works shall be supervised by an appropriately qualified person, and that person, or persons, shall be present at all times during which relevant works are being undertaken.

3.3.3 Following the completion of any specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall, as appropriate, include the following information:

- (i) A description of the works;
- (ii) As-built drawings of the works;
- (iii) Records and results of all tests carried out (including failures);
- (iv) Drawings and sections showing the location of all samples and tests carried out;
- (v) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
- (vi) Records of any problems and the remedial works carried out to resolve those problems; and
- (vii) Any other information requested in writing by the Agency.

3.4 The licensee shall have regard to the guidance given in the Environmental Protection Agency Landfill Manuals (Site Design, Operational Practices, Monitoring, Site Investigations, and Restoration and Aftercare), as may be relevant, in the development, operation and closure of the facility.

3.5 Facility Security

3.5.1 Security and stockproof fencing and gates shall be installed and maintained. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for such site security may be removed.

3.5.2 Gates shall be locked shut when the facility is unsupervised.

3.5.3 The licensee shall remedy any defect in the gates and/or fencing as follows:

- (i) A temporary repair shall be made by the end of the working day; and
- (ii) A repair to the standard of the original gates and/or fencing shall be undertaken within three working days.

3.6 Leachate Management Infrastructure

- 3.6.1 Leachate management infrastructure shall be provided and maintained at the facility as described in the application documentation or as may be varied by a licence condition.
- 3.6.2 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.
- 3.6.3 **The licensee shall install leachate storage infrastructure at the facility with the agreement of and if so instructed by the Agency in the event that export to the adjacent landfill facility (waste licence register number W0248-01) is discontinued.**
- 3.7 Landfill Gas Management
- 3.7.1 Active landfill gas management infrastructure as appropriate, to include gas flare(s) and interconnecting pipework, shall be provided and maintained. Such infrastructure shall be as described in Attachment D.5 of the application documentation, or as may be varied by a licence condition.
- 3.7.2 The active landfill gas management infrastructure shall consist of horizontal and vertical gas collection.
- 3.7.3 All landfill gas extraction well-heads shall be designed to include a regulating valve and monitoring points either side of the said valve. The licensee shall also provide monitoring ports at regular intervals along the gas extraction system. The monitoring ports shall be suitable for the monitoring outlined in Schedule C1.2.
- 3.7.4 Condensate Management
- The licensee shall implement a landfill gas condensate management plan at the facility and this shall include, as a minimum, the following:
- (i) Identification of all areas of the landfill gas extraction system where condensate is likely to accumulate;
  - (ii) Daily maintenance schedule to provide for the inspection and removal of condensate from landfill gas extraction pipework; and
  - (iii) The rationalisation/elimination of narrow diameter pipework (i.e. 50mm I.D. or less) at the facility.
- 3.7.5 Any buildings constructed on the facility shall have regard to the guidance given in the Department of Environment 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.
- 3.7.6 **The licensee shall install gas flaring infrastructure at the facility with the agreement of and if so instructed by the Agency in the event that export to the adjacent landfill facility (waste licence register number W0248-01) is discontinued.**
- 3.8 Groundwater
- 3.8.1 All wells & 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" (or as otherwise may be agreed by the Agency).
- 3.8.2 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual "Landfill Monitoring".
- 3.9 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.
- 3.10 In the case of composite sampling of aqueous emissions from the operation of the facility, a separate composite sample or homogeneous sub-sample (of sufficient volume as advised) shall be refrigerated immediately after collection and retained as required for EPA use.

- 3.11 The licensee 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 Agency. The requirement with regard to off-site points is subject to the prior agreement of the landowner(s) concerned.
- 3.12 Tank, Container and Drum Storage Areas
- 3.12.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).
- 3.12.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:
- (i) 110% of the capacity of the largest tank or drum within the bunded area; or
  - (ii) 25% of the total volume of substance that could be stored within the bunded area.
- 3.12.3 All drainage from bunded areas shall be treated as hazardous waste unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal.
- 3.12.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.12.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.
- 3.13 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used, the absorbent material shall be disposed of at an appropriate facility.
- 3.14 Silt Traps and Oil Separators
- The licensee shall, within six months of date of grant of this licence, install and maintain silt traps at the facility:
- (i) Silt traps to ensure that all storm water discharges from the facility pass through a silt trap in advance of discharge;
- The silt traps shall be in accordance with I.S. EN-858-2: 2003 (separator systems for light liquids).
- 3.15 All pump sumps, storage tanks or other treatment plant chambers from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separators, shall be fitted with high liquid level alarms (or oil detectors as appropriate) within six months from the date of grant of this licence.
- 3.16 The provision of a catchment system to collect any leaks from flanges and valves of all over-ground pipes used to transport material other than water shall be examined. This shall be incorporated into a Schedule of Environmental Objectives and Targets set out in Condition 2 of this licence for the reduction in fugitive emissions.
- 3.17 All wellheads shall be adequately protected to prevent contamination or physical damage within six months from the date of grant of this licence.
- 3.18 **As items of critical equipment, leachate pumps in sumps LPO, LP2 and FLP3 shall be provided on the basis of 100% standby capacity.**
- 3.19 Fire-water Retention
- 3.19.1 The licensee shall carry out a risk assessment to determine if the activity should have a fire-water retention facility. The licensee shall submit the assessment and a report to the Agency on the findings and recommendations of the assessment within six months of the date of grant of this licence.
- 3.19.2 In the event that a significant risk exists for the release of contaminated fire-water, the licensee shall, based on the findings of the risk assessment, prepare and implement, with the agreement of the Agency, a suitable risk management programme. The risk management programme shall be fully implemented within three months of date of notification by the Agency.

- 3.19.3 In the event of a fire or a spillage to storm water, the site storm water shall be diverted to the containment pond. The licensee shall examine, as part of the response programme in Condition 3.19.1 above, the provision of automatic diversion of storm water to the containment pond. The licensee shall have regard to any guidelines issued by the Agency with regard to firewater retention.
- 3.19.4 The licensee shall have regard to the Environmental Protection Agency Draft Guidance Note to Industry on the Requirements for Fire-Water Retention Facilities when implementing this condition.

**Reason:** *To provide for appropriate operation of the facility to ensure protection of the environment.*

## Condition 4. Interpretation

- 4.1 Emission limit values for emissions to waters in this licence shall be interpreted in the following way:
- 4.1.1 Continuous Monitoring
- (i) No flow value shall exceed the specific limit.
  - (ii) No pH value shall deviate from the specified range.
  - (iii) No temperature value shall exceed the limit value.
- 4.1.2 Composite Sampling
- (i) No pH value shall deviate from the specified range.
  - (ii) For parameters other than pH and flow, eight out of ten consecutive composite results, based on flow proportional composite sampling, shall not exceed the emission limit value. No individual results similarly calculated shall exceed 1.2 times the emission limit value.
- 4.1.3 Discrete Sampling
- For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.
- 4.2 Where the ability to measure a parameter is affected by mixing before emission, then, with agreement from the Agency, the parameter may be assessed before mixing takes place.
- 4.3 Noise from the facility shall not give rise to sound pressure levels (Leq, T) measured at **the boundary** of the facility which exceed the limit value(s).
- 4.4 Dust and particulate matters from the activity shall not give rise to deposition levels which exceed the limit value(s).

**Reason:** *To clarify the interpretation of limit values fixed under the licence.*

## Condition 5. Emissions

- 5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits*, of this licence. There shall be no other emissions of environmental significance.
- 5.2 No emissions, including odours, from the activities 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.

- 5.3 No substance shall be discharged in a manner, or at a concentration, that, following initial dilution, causes tainting of fish or shellfish.
- 5.4 The licensee shall ensure that all or any of the following:
- Vermin
  - Birds
  - Flies
  - Mud
  - Dust
  - Litter

associated with the activity do not result in an impairment of, or an interference with, amenities or the environment at the facility or beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary. Any method used by the licensee to control or prevent any such impairment/interference shall not cause environmental pollution.

**Reason:** *To provide for the protection of the environment by way of control and limitation of emissions.*

## Condition 6. Control and Monitoring

- 6.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with *Schedule C: Control & Monitoring*, of this licence.
- 6.1.1 Analyses shall be undertaken by competent staff in accordance with documented operating procedures.
- 6.1.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics shall be determined.
- 6.1.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.
- 6.1.4 Where any analysis is sub-contracted it shall be to a competent laboratory.
- 6.2 The licensee shall ensure that:
- (ii) sampling and analysis for all parameters listed in the Schedules to this licence; and
  - (iii) any reference measurements for the calibration of automated measurement systems;
- shall be carried out in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards that will ensure the provision of data of an equivalent scientific quality shall apply.
- 6.3 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. The use of alternative equipment, other than in emergency situations, shall be as agreed by the Agency.
- 6.4 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission/discharge (or ambient conditions where that is the monitoring objective).
- 6.5 The licensee shall ensure that groundwater monitoring well sampling equipment is available/installed on-site and is fit for purpose at all times. The sampling equipment shall be to Agency specifications.



- 6.6 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer.
- 6.7 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the agreement of the Agency following evaluation of test results.
- 6.8 The licensee shall prepare a programme, to the satisfaction of the Agency, for the identification and reduction of fugitive emissions using an appropriate combination of best available techniques. This programme shall be included in the Environmental Management Programme.
- 6.9 The integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee within **twelve** months of the date of grant of this licence. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 6.10 The drainage system (i.e., gullies, manholes, any visible drainage conduits and such other aspects as may be agreed) and bunds and silt traps shall be inspected weekly and desludged as necessary. All sludge and drainage from these operations shall be collected for safe disposal. The drainage system, bunds and silt traps shall be properly maintained at all times.
- 6.11 An inspection for leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be carried out weekly. A log of such inspections shall be maintained.
- 6.12 A visual examination of the storm water discharges shall be carried out **weekly**. A log of such inspections shall be maintained.
- 6.13 Ground Water
- The licensee shall, within twelve months of date of grant of this licence, arrange for the carrying out, by an appropriately qualified consultant/professional, of a comprehensive hydrogeological investigation of the site. The scope, detail and programme, including report structure and reporting schedule, for this investigation must be agreed by the Agency prior to implementation. Any recommendations arising from a report or reports on this investigation must be implemented within such a period to be agreed by the Agency.
- 6.14 Pollutant Release and Transfer Register (PRTR)
- The licensee shall prepare and report a PRTR for the site. The substance and/or wastes to be included in the PRTR shall be as agreed by the Agency each year by reference to EC Regulations No. 166/2006 concerning the establishment of the European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC. The PRTR shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted electronically in specified format and as part of the AER.
- 6.15 The licensee shall, within six months of the date of grant of this licence, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the monitoring data generated as a result of this licence.
- 6.16 Leachate Management
- 6.16.1 Leachate levels in the waste shall not exceed a level of 1.0 m over the top of the liner at the base of the landfill.
- 6.16.2 The level of leachate in the pump sumps shall be monitored as outlined in *Schedule C.3*, of this licence.
- 6.16.3 Unless where otherwise agreed by the Agency, leachate shall be pumped to the adjacent landfill facility (waste licence register number W0248-01).**

- 6.16.4 **Unless pumped to the adjacent landfill facility**, leachate removed from the facility shall be tankered off-site in fully enclosed road tankers to a facility approved by the Agency.
- 6.16.5 Recirculation of leachate or other contaminated water shall only be undertaken within lined cells and with the written agreement of the Agency.
- 6.17 Landfill Gas
- 6.17.1 **Unless where otherwise agreed by the Agency, all landfill gas collected shall be exported to the adjacent landfill facility (waste licence register number W0248-01) and flared** in an enclosed flare or landfill gas utilisation plant.
- 6.17.2 The licensee shall ensure that measures are in place to ensure the continuous operation of the required landfill gas management infrastructure at all times.
- 6.17.3 At least one on-site staff member shall have adequate knowledge and training on the operation of the landfill gas management system and balancing of the gas fields to maximise landfill gas control. The licensee shall ensure that regular (daily/weekly routines) assessment of the operation of the landfill gas management system, e.g. field balancing and control of condensate, is carried out and that records of these assessments are maintained on site.
- 6.17.4 The licensee shall arrange for an annual, **or other period as may be agreed with the Agency**, independent assessment of the landfill gas management system. The licensee shall undertake actions, as necessary, having regard to the recommendations of this independent assessment as may be required by the Agency.
- 6.17.5 The licensee shall conduct continuous gas monitoring in any enclosed structures at the facility for methane (CH<sub>4</sub>) % v/v, carbon dioxide (CO<sub>2</sub>) % v/v and oxygen (O<sub>2</sub>) % v/v;
- 6.17.6 In relation to landfill derived gases the following shall constitute a trigger level:
- (i) methane greater than 1% v/v; or,
  - (ii) carbon dioxide greater than 1.5% v/v,
- measured in any monitoring borehole, building on or adjacent to the facility, service duct, manhole or other point as may be specified, located external to the body of waste.
- 6.17.7 The licensee shall carry out routine monitoring of the landfill gas management system in accordance with *Schedule C1.2*.
- 6.18 Odour Control & Monitoring
- 6.18.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for agreement, an Odour Management Plan (OMP) for the facility. The plan, as agreed, shall be implemented **from the time of its agreement with the Agency**.
- 6.18.2 The OMP referred to in 6.18.1 shall include measures to control potential sources of odour nuisance, including inter alia, provisions regarding:
- (i) Requirements of relevant conditions of this licence;
  - (ii) Adequate resources and training on-site to provide for the maintenance, monitoring and operation of the landfill gas extraction system;
  - (iii) Landfill gas collection:- locations of infrastructure including well design and density, monitoring, condensate management, field balancing, flare/combustion plant operation;
  - (iv) Identification of fugitive sources of landfill gas emissions (e.g. from leachate management infrastructure);
  - (v) Monitoring:- VOC surface emissions from capped areas, odour checks off- and on-site, receipt and evaluation/verification of odour complaints received.

6.18.3 To meet the requirements of the OMP, the licensee shall carry out a **biannual** review of control measures in place at the facility and maintain findings in a **biannual** report. This review shall include:

- (vi) Consideration of odour complaints received during period (including details and nature of complaints, times and weather conditions, any unusual circumstances, problems, etc.);
- (vii) Review of any monitoring carried out (including investigation of complaints and actions taken where relevant);
- (viii) An update on the existing landfill gas control infrastructure (including operational status, number of wells and vents connected and unconnected to the landfill gas collection system, quantity of gas collected and flared/utilised, estimated quantity of landfill gas being produced, details of any problems with equipment during period);
- (ix) Details of any remedial/corrective actions taken, where relevant, including actions taken on foot of recommendations from previous report; and
- (x) Recommendations.

The licensee shall maintain these reports **at the offices of Cavan County Council or an alternative location as may be agreed** and forward them to the Agency on request.

6.18.4 The OMP shall be reviewed annually and any updates/amendments submitted to the Agency as part of the Annual Environmental Report.

6.18.5 In relation to surface emissions from the waste body and identified features, the following shall constitute a trigger level:

- (xi) VOC greater than or equal to 50ppmv as methane average over capped area; or
- (xii) VOC greater than or equal to 100ppmv as methane instantaneous reading on open surfaces within the landfill footprint; or
- (xiii) VOC greater than or equal to 500ppmv as methane around all identified features.

6.18.6 When siting and operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.

#### 6.19 Stability Assessment

The licensee shall carry out a stability assessment of the side slopes of the facility annually. The results of this assessment shall be reported as part of the Annual Environmental Report (AER).

#### 6.20 Topographical Monitoring

A topographical survey shall be carried out within twelve months of the date of **grant of this licence** and shall be repeated annually thereafter **unless otherwise agreed with the Agency**. The survey shall be in accordance with any written instructions issued by the Agency.

#### 6.21 Groundwater

6.21.1 Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC.

6.21.2 The trigger levels as specified in Condition 6.21.1 for groundwater shall be measured at monitoring boreholes specified in *Schedule C.4*.

<b>Reason:</b> <i>To provide for the protection of the environment by way of treatment and monitoring of emissions.</i>
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## Condition 7. Resource Use and Energy Efficiency

- 7.1 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this licence. The audit shall be carried out in accordance with the guidance published by the Agency, "Guidance Note on Energy Efficiency Auditing". The energy efficiency audit shall be repeated at intervals as required by the Agency.
- 7.2 The audit shall identify all practicable opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.

**Reason:** *To provide for the efficient use of resources and energy in all site operations.*

## Condition 8. Materials Handling

- 8.1 **No disposal, recovery, storage or transfer of waste shall take place at the facility.**
- 8.2 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.
- 8.3 **The transfer of leachate and landfill gas to the adjacent landfill facility (waste licence register number W0248-01) shall be organised and managed in a manner agreeable to the Agency.**

**Reason:** *To provide for the appropriate handling of material and the protection of the environment.*

## Condition 9. Accident Prevention and Emergency Response

- 9.1 The licensee shall, within six months of date of grant of this licence, ensure that a documented Accident Prevention Procedure is in place that addresses the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.
- 9.2 The licensee shall, within six months of date of grant of this licence, ensure that a documented Emergency Response Procedure is in place that addresses any emergency situation which may originate on-site. This procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.

**The emergency response procedure shall address the situation whereby the export of leachate and/or landfill gas to the adjacent facility cannot be completed. The procedure shall identify the measures that the licensee shall undertake should such an event arise. The measures shall consider, amongst other things:**

- **capacity for emergency storage of leachate and landfill gas, and**
- **procedures for emergency removal of leachate and landfill gas.**

**The emergency response procedure shall consider the economic, technical and environmental impacts and feasibility of providing standby landfill gas flaring equipment at the facility.**

- 9.3 Incidents

- 9.3.1 In the event of an incident the licensee shall immediately:
- (i) carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
  - (ii) isolate the source of any such emission;
  - (iii) evaluate the environmental pollution, if any, caused by the incident;
  - (iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
  - (v) identify the date, time and place of the incident;
  - (vi) notify the Agency and other relevant authorities.
- 9.3.2 The licensee shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency, to:
- (i) identify and put in place measures to avoid recurrence of the incident; and
  - (ii) identify and put in place any other appropriate remedial actions.

**Reason:** *To provide for the protection of the environment.*

## **Condition 10. Closure, Restoration and Aftercare Management**

- 10.1 Closure, Restoration & Aftercare Management Plan (CRAMP)
- 10.1.1 The licensee shall **maintain** a fully detailed and costed plan for the closure, restoration and long-term aftercare of the site.
- 10.1.2 The plan shall be maintained and reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the prior agreement of the Agency.
- 10.2 The CRAMP shall include as a minimum, the following:
- 10.2.1 A scope statement for the plan.
  - 10.2.2 The criteria, including those specified in this licence, which define the successful closure and restoration of the facility or part thereof, and which ensure minimum impact to the environment.
  - 10.2.3 A programme to achieve the stated criteria.
  - 10.2.4 Where relevant, a test programme to demonstrate the successful implementation of the plan.
  - 10.2.5 Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.
  - 10.2.6 Details of the costings for the plan and the financial provisions to underwrite those costs.
- 10.3 A final validation report to include a certificate of completion for the CRAMP, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.
- 10.4 Finished Levels/Profile
- 10.4.1 Landscaping of the facility shall be as described in the Application documentation.

- 10.4.2 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.
- 10.4.3 Final contours and landscaping should be such that the finished slopes of the facility are structurally stable, resistant to erosion, and protective of pollution control and monitoring infrastructure.

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

## Condition 11. Notification, Records and Reports

- 11.1 The licence shall notify the Agency by both telephone and facsimile, if available, to the Agency's headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:
- (i) any release of environmental significance to atmosphere from any potential emissions point;
  - (ii) any emission that does not comply with the requirements of this licence;
  - (iii) any malfunction or breakdown of key control equipment or monitoring equipment set out in *Schedule C: Control and Monitoring* of this licence which is likely to lead to loss of control of the abatement system; and
  - (iv) any incident with the potential for environmental contamination of surface water or groundwater, or posing an environment threat to air or land, or requiring an emergency response by the Local Authority.
- The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions.
- 11.2 In the case of any incident relating to discharges to water, the licensee shall notify the Local and Water Services Authority and the Inland Fisheries Ireland as soon as practicable after such an incident.
- 11.3 The licensee shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to manage the incident, minimise wastes generated and the effect on the environment, and avoid recurrence. The licensee shall, as soon as practicable following incident notification, submit to the Agency the incident record.
- 11.4 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint.
- 11.5 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility.
- 11.6 A record of the volume of landfill gas and leachate exported to the adjacent facility shall be maintained.**
- 11.7 The licensee shall make available during normal public viewing hours **at the offices of Cavan County Council in Cavan Town, and by means of Cavan County Council's main website** the following documents:
- (i) the licences relating to the facility;
  - (ii) the current EMS for the facility;
  - (iii) the previous year's AER for the facility;
  - (iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility;

- (v) relevant correspondence with the Agency;
- (vi) up-to-date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points;
- (vii) up-to-date Standard Operational Procedures for all processes, plant and equipment necessary to give effect to this licence or otherwise to ensure that standard operation of such processes, plant or equipment does not result in unauthorised emissions to the environment;
- (viii) the current Landfill Environmental Management Plan (LEMP); and
- (ix) any elements of the licence application or EIS documentation referenced in this licence.

This documentation shall be available to the Agency for inspection at all reasonable times.

- 11.8 The licensee shall submit to the Agency, by the 31<sup>st</sup> March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule E: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 11.9 The licensee shall submit report(s) as required by the conditions of this licence to the **Agency's Regional Inspectorate in Castlebar**, or to such other Agency office as may be specified by the Agency.
- 11.10 All reports shall be certified accurate and representative by the facility manager or a nominated, suitably qualified and experienced deputy.

**Reason:** *To provide for the collection and reporting of adequate information on the activity.*

## Condition 12. Financial Charges and Provisions

### 12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of **€7,327**, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2010. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31<sup>st</sup> day of December, and shall be paid to the Agency within one month from the date of grant of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2010, and all such payments shall be made within one month of the date upon which demanded by the Agency.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased, the licensee shall contribute such sums as determined by the Agency to defray its costs in regard to items not covered by the said annual contribution.

### 12.2 Environmental Liabilities

12.2.1 The licensee shall as part of the AER, provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events or accidents/incidents, as may be associated with the carrying on of the activity.

12.2.2 The licensee shall arrange for the completion, by an independent and appropriate qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from past and present activities.

The assessment shall include those liabilities and costs identified in Condition 10 for execution of the CRAMP. A report on this assessment shall be submitted to the Agency for agreement within twelve months of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

12.2.3 As part of the measures identified in Condition 12.2.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.2.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.2.1.

12.2.4 Unless otherwise agreed, any revision to that part of the indemnity dealing with restoration and aftercare liabilities shall be computed using the following formula:

$$\text{Cost} = (\text{ECOST} \times \text{WPI}) + \text{CiCC}$$

Where:

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

WPI = Appropriate Wholesale Price Index [Capital Goods, Building & Construction (i.e. Materials & Wages) Index], as published by the Central Statistics Office, for the year since last closure calculation/revision.

CiCC = Change in compliance costs as a result of change in site conditions, changes in law, regulations, regulatory authority charges, or other significant changes

12.2.5 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Conditions 12.2.2 and 12.2.3 above.

**Reason:** *To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.*



## SCHEDULE A: Limitations

The following waste related process is authorised:

**Aftercare management of the closed landfill.**

No additions to **this process** are permitted unless agreed in advance with the Agency.



## SCHEDULE B: Emission Limits

### B.1 Emissions to Air

There shall be no emissions to air of environmental significance.



### B.2 Emissions to Surface Water

**Emission Point Reference No:** SW1

**Name of Receiving Waters:** Corranure Stream

**Location:** SW1: Southwestern corner of facility

Parameter	Emission Limit Value
Suspended solids	35
Total ammonia as N	0.14



### B.3 Noise Emissions

Daytime dB(A) $L_{Aeq}$ (30 minutes)	Night-time dB(A) $L_{Aeq}$ (30 minutes)
55 <sup>Note 1</sup>	45 <sup>Note 1</sup>

**Note 1:** There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at the site boundary.



## SCHEDULE C: Control & Monitoring

### C.1.1 Control of Emissions to Air

#### Control of Landfill Gas Management System

Location	Parameter	Frequency
All wellheads and extraction pipework	Vacuum pressure	Weekly
	Gas flow rate	Weekly
	Methane	Weekly
	Oxygen	Weekly
	Temperature	Weekly



### C.1.2 Monitoring of Landfill Gas Emissions

**Locations:** Perimeter landfill gas boreholes (GW01, G01-05, G11-15, per drawing number DG0055/01 submitted with the application, **plus one further location G18 on the southern perimeter of cell 0 at locations to be agreed with the Agency**)<sup>Note 1</sup>  
and  
At least one monitoring point per cell (to be agreed)  
and  
Other selected locations as may be specified

Parameter	Monitoring Frequency	Analysis Method/Technique <sup>Note 2</sup>
Methane (CH <sub>4</sub> ) Carbon dioxide (CO <sub>2</sub> ) Oxygen (O <sub>2</sub> ) Atmospheric pressure & trend Temperature	Boreholes and cells	
	Monthly	Infrared analyser/FID
	Monthly	Infrared
	Monthly	Electrochemical cell
	Monthly	Standard method

**Note 1:** All perimeter monitoring boreholes must be installed to the standards specified in the Agency Guidance on Landfill Monitoring.

**Note 2:** Or other method agreed.



### C.2.1. Control of Emissions to Water

**Emission Control Location:** SW1

**Description of Treatment:** Grit trap

Control Parameter	Monitoring	Key Equipment <sup>Note 1</sup>
Residence time & flow restriction	Flow rate, depth	Flow meter, overflow alarm, emergency storage

**Note 1:** The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

**C.2.2. Monitoring of Emissions to Water**

Emission Point Reference No.: SW1

PARAMETER <sup>Note 1</sup>	MONITORING FREQUENCY <sup>Note 5</sup>
Visual Inspection/Odour <sup>Note 2</sup>	Daily
Dissolved Oxygen	Daily
Electrical Conductivity	Daily
Total ammonia (as N)	Weekly
Total nitrogen	Weekly
Chloride	Weekly
pH	Weekly
Total Suspended Solids	Weekly
Temperature	Weekly
COD	Weekly
BOD	Monthly
Total P/orthophosphate	Monthly
Metals / non metals <sup>Note 3</sup>	Annually
List I/II organic substances (Screen) <sup>Note 4</sup>	Annually
Mercury	Annually
Sulphate (SO <sub>4</sub> )	Annually
Nitrate	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually

**Note 1:** All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.

**Note 2:** Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested.

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

**Note 5:** **The licensee shall install a composite sampler within three months of date of grant of this licence. All samples thereafter shall be collected on a 24-hour flow proportional composite sampling basis.**



### C.3. Leachate Monitoring

**Locations:** Leachate sumps, leachate monitoring points in the cells.

PARAMETER <sup>Note 1</sup>	LEACHATE <sup>Note 2</sup> Monitoring Frequency
Visual inspection/odour	Daily
Leachate level	Continuous
pH	Annually
COD	Quarterly
BOD	Quarterly
Chloride	Annually
Ammonia (as N)	Annually
Electrical conductivity	Annually
Metals/non-metals <sup>Note 3</sup>	Annually
Cyanide (total)	Annually
Fluoride	Annually
List I/II organic substances <sup>Note 4</sup>	Annually
Mercury	Annually
Sulphate	Annually
Total P/orthophosphate	Annually
Total oxidised nitrogen	Annually

**Note 1:** All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.

**Note 2:** Visual inspection and leachate levels to be monitored at all leachate monitoring points in the cells and collection sumps. **Leachate composition to be monitored from a composite sample of leachate collected one from each of the cells 0, 1 and 2.**

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** Samples screened for the presence of organic compounds using gas chromatography/mass spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US EPA method 525 or equivalent), and pesticides (US EPA method 608 or equivalent).



### C.4 Groundwater Monitoring

- Location:**
- Groundwater wells (GW01, GW02, GW04-09)
  - Private wells (PW02, PW05BT, PW08, PW09, PW10, PW11, PW13, PW15, PW16)

Groundwater and private wells as shown on drawing number DG0055/01 of the application **or as may be otherwise agreed or directed.**

PARAMETER <sup>Note 1</sup>	GROUNDWATER Monitoring Frequency
Visual inspection/odour <sup>Note 2</sup>	Monthly
Groundwater level (wells)	Monthly
Flow (pumped water from interceptor)	Continuous
Dissolved oxygen	Monthly
Electrical conductivity	Monthly
Ammonia (as N)	Monthly
Chloride	Monthly
pH	Monthly
Sulphate (SO <sub>4</sub> )	Monthly
TOC	Monthly
Metals/non-metals <sup>Note 3</sup>	Annually
List I/II organic substances (Screen) <sup>Note 4</sup>	Annually
Mercury	Annually
Nitrate	Annually
Total P/orthophosphate	Annually
Cyanide (total)	Annually
Fluoride	Annually
Total alkalinity	Annually
Residue on evaporation	Annually
Faecal coliforms	Annually
Total coliforms	Annually

**Note 1:** Where appropriate all the analyses shall be carried out by a competent laboratory using standard and internationally accepted procedures.

**Note 2:** Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested. **Where there is evident gross contamination in private wells, the HSE shall be notified with follow up of analytical results from the full suite of parameters. The licensee shall provide all practicable assistance and information to the HSE in addressing any contamination and investigating its source and cause.**

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** Samples screened for the presence of organic compounds using gas chromatography/mass spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US EPA method 525 or equivalent), and pesticides (US EPA method 608 or equivalent).



### C.5 Receiving Water Monitoring

**Location:** B1 and S3 on Lismagratty Stream; and  
A1, S4 and S5 on Corranure Stream,  
as illustrated on drawing no. DG0055/01 of the application  
**(or at alternative locations as may be agreed or directed)**

Parameter <sup>note 1</sup>	Monitoring frequency <sup>note 5</sup>
Visual Inspection/Odour <sup>Note 2</sup>	Daily
Dissolved Oxygen	Daily
Electrical Conductivity	Daily
Total ammonia (as N)	Quarterly
Total nitrogen	Quarterly
Chloride	Quarterly
pH	Quarterly
Total Suspended Solids	Quarterly
Temperature	Quarterly
COD	Quarterly
BOD	Quarterly
Metals / non-metals <sup>Note 3</sup>	Annually
List I/II organic substances (screen) <sup>Note 4</sup>	Annually
Mercury	Annually
Sulphate (SO <sub>4</sub> )	Annually
Nitrate	Annually
Total P/orthophosphate	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually
Biological Quality (Q) Rating/Q index <sup>Note 7</sup>	Annually <sup>Note 6</sup>
Sediment assessment <sup>Note 7,8</sup>	Annually

**Note 1:** All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.

**Note 2:** Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested.

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

**Note 5:** **The licensee shall install a composite sampler within three months of date of grant of this licence. All samples thereafter shall be collected on a 24-hour flow proportional composite sampling basis.**

**Note 6:** **Monitoring period – June to September.**

**Note 7:** At the following monitoring points referenced on drawing no. DG0055/01 submitted with the application: B1 to B5, A1 to A5, unless otherwise agreed. Method/technique to be agreed with the Agency.

**Note 8:** Sediment monitoring for the following parameters: hydrocarbons, PCBs, phenol and heavy metals – at the following monitoring points referenced on drawing no. DG0055/01 submitted with the application: B1 to B5, A1 to A5, unless otherwise agreed. Method/technique to be agreed with the Agency.



### C.6 Meteorological Monitoring

**Location:** At the facility (including the neighbouring facility).  
Evaporation, evapotranspiration and humidity data may be obtained from the Clones weather station.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation volume	Daily	Standard Method
Evaporation	Daily	Standard Method
Evapotranspiration <sup>Note 1</sup>	Daily	Standard Method
Atmospheric humidity (14.00h CET)	Daily	Standard Method
Temperature (min./max.)	Daily	Standard Method
Wind direction	Daily	Standard Method
Wind Force <sup>Note 1</sup>	Daily	Standard Method
Atmospheric Pressure <sup>Note 1</sup>	Daily	Standard Method

**Note 1:** Monitoring frequency for these parameters may be decreased with the agreement of the Agency.



## SCHEDULE D Specified Engineering Works

Specified Engineering Works
Development of the facility.
Installation of Landfill Gas Management Infrastructure.
Installation of Leachate Management Infrastructure.
Installation of Groundwater Control Infrastructure.
Installation of Surface Water Management Infrastructure.
Any other works notified in writing by the Agency.

## SCHEDULE E: Annual Environmental Report

Annual Environmental Report Content <sup>Note 1</sup>
<p>Emissions from the facility</p> <p>Resource consumption summary.</p> <p>Complaints summary.</p> <p>Schedule of Environmental Objectives and Targets.</p> <p>Environmental management programme – report for previous year.</p> <p>Environmental management programme – proposal for current year.</p> <p>Pollutant Release and Transfer Register – report for previous year.</p> <p>Pollutant Release and transfer Register – proposal for current year.</p> <p>Ambient monitoring summary.</p> <p>Tank and pipeline testing and inspection report.</p> <p>Reported incidents summary.</p> <p>Energy efficiency audit report summary.</p> <p>Meteorological data summary.</p> <p>Development or infrastructural works summary (completed in previous year or prepared for current year).</p> <p>Reports on financial provision made under this licence, management and staffing structure of the facility and a programme for public information.</p> <p>Review of closure, restoration &amp; aftercare management plan.</p> <p>Statement of measures in relation to prevention of environmental damage and remedial actions (environmental liabilities).</p> <p>Environmental Liabilities Risk Assessment Review (every three years or more frequently as dictated by relevant on-site change including financial provisions).</p> <p>Topographical Survey (including comparison with previous years survey results)</p> <p>Updates/Amendments to Odour Management Plan (OMP).</p> <p>Updates to Landfill Environmental Management Plan (LEMP).</p> <p>Current monitoring location reference drawing.</p> <p>Report on the programme for public information.</p> <p>Review of environmental liabilities.</p> <p>Any amendments to the CRAMP.</p> <p>Any other items specified by the Agency.</p>

**Note 1:** Content may be revised subject to the agreement of the Agency.

**Signed on behalf of the said Agency** \_\_\_\_\_  
 On the xx day of xxxxx, 200X      xxxxxxxxxxxx      **Authorised Person**