

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

WASTE LICENCE

<b>Licence Register Number:</b>	<b>W0063-02</b>
<b>Licensee:</b>	<b>Donegal County Council</b>
<b>Location of Facility:</b>	<b>Drumaboden Landfill Site, Drumaboden, Kilmacrenan, County Donegal.</b>



HEADQUARTERS  
JOHNSTOWN CASTLE ESTATE  
COUNTY WEXFORD, IRELAND  
PHONE: +353-53-9160600  
FAX: +353-53-9160699

## WASTE MANAGEMENT ACTS, 1996 TO 2012

### WASTE LICENCE

Decision of the Agency, under Section 46(8)(a) of the Waste Management Acts, 1996 to 2012

*Waste Licence Register No:* **W0063-02**

Further to notice dated 25<sup>th</sup> day of July 2012, the Agency in exercise of the powers conferred on it by the Waste Management Acts, 1996 to 2012, for the reasons hereinafter set out in the attached Decision, grants this revised waste licence to Donegal County Council, County House, Lifford, County Donegal, to carry on the waste activities set out below at Drumabodan Landfill Site, Kilmacrenan, County Donegal, subject to twelve Conditions, as set out in the schedules attached thereto.

A copy of the Decision is attached.

#### Licensed Waste Activities

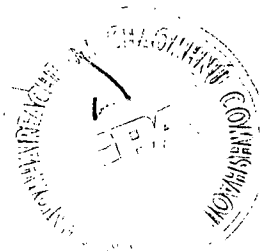
*Waste Disposal Activities, in accordance with the Third Schedule  
of the Waste Management Acts, 1996 to 2012:*

- |  |
|--|
| Class D 1. Deposit into or on to land (e.g. landfill, etc.).   |
| Class D 15. Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced). |

**Sealed by the seal of the Agency on this 18th day of April, 2013**

**PRESENT when the seal of the Agency  
was affixed hereto:**

  
Mary Turner, Authorised Person



## **INTRODUCTION**

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

This licence is for the continued collection, storage and treatment of leachate generated at the facility. This licence also provides for the continued operation of the landfill gas management infrastructure at the facility.

Donegal County Council has operated Drumaboden Landfill since 1980. The facility was fully restored during 2007-2008. There is no waste accepted at the facility and it is now a closed landfill site.

Leachate from the landfill is captured in a toe drain around the perimeter of the site and pumped into a Bord na Mona Puraflo treatment system. Following this treatment the effluent is discharged into a pipeline and effluent quality is sampled at location L-1; effluent is then discharged into the River Leannan via S5 emission point.

The treated leachate discharge point S5 is located within a designated Freshwater Pearl Mussel (*Margaritifera margaritifera*) site. The River Leannan is required under the *European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations S.I No. 296 of 2009* to support the Pearl Mussel and the proposed emission limit values (ELVs) are based on the high status standards required to achieve this objective, as laid down in the *European Communities Environmental Objectives (Surface Waters) Regulations 2009, S.I. No. 272 of 2009*.

The conditions of this licence set out in detail the legal constraints under which Donegal County Council is allowed to operate and manage this facility.

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

**Table of Contents**

	<b>Page No</b>
Glossary of Terms .....	1
Decision & Reasons for the Decision.....	6
Part I Schedule of Activities Licensed .....	7
Part II Schedule of Activities Refused .....	7
Part III Conditions.....	8
Condition 1.    Scope.....	8
Condition 2.    Management of the Facility .....	8
Condition 3.    Infrastructure and Operation .....	9
Condition 4.    Interpretation.....	13
Condition 5.    Emissions .....	13
Condition 6.    Control and Monitoring .....	14
Condition 7.    Resource Use and Energy Efficiency.....	15
Condition 8.    Materials Handling.....	16
Condition 9.    Accident Prevention and Emergency Response.....	16
Condition 10.   Closure, Restoration and Aftercare Management .....	17
Condition 11.   Notification, Records and Reports .....	17
Condition 12.   Financial Charges and Provisions .....	19
SCHEDULE A:   Limitations .....	21
SCHEDULE B:   Emission Limits.....	21
SCHEDULE C:   Control & Monitoring.....	23
SCHEDULE D:   Specified Engineering Works.....	26
SCHEDULE E:   Annual Environmental Report.....	27

***Glossary of Terms***

All terms in this licence should be interpreted in accordance with the definitions in the Environmental Protection Agency Acts 1992 to 2012 / Waste Management Acts 1996 to 2012, unless otherwise defined in the section.

<b>Adequate lighting</b>	20 lux measured at ground level.
<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>	At approximately six – monthly intervals.
<b>Biennially</b>	Once every two years.
<b>BOD</b>	5 day Biochemical Oxygen Demand (without nitrification suppression).
<b>COD</b>	Chemical Oxygen Demand.
<b>Compliance Point</b>	The point (location, depth) at which a compliance value should be met. Generally it is represented by a borehole or monitoring well from which representative groundwater samples can be obtained.
<b>Compliance Value</b>	The concentration of a substance and associated compliance regime that, when not exceeded at the compliance point, will prevent pollution and/or achieve water quality objectives at the receptor.

<b>Containment boom</b>	A boom which can contain spillages and prevent these from entering drains or watercourses.
<b>Cover Material</b>	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials, or other cover material the use of which has been agreed with the Agency.
<b>Daily cover</b>	Is the term used to describe material spread (to a depth of 150 mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible.
<b>Daytime</b>	8.00am. to 10.00pm.
<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>Emergency</b>	Those occurrences defined in Condition 9.
<b>EMP</b>	Environmental Management Programme.
<b>Emission limits</b>	Those limits, including concentration limits and deposition rates, established in <i>Schedule B: Emission Limits</i> , of this licence.
<b>Environmental damage</b>	As defined in Directive 2004/35/EC.
<b>EPA</b>	Environmental Protection Agency.
<b>European Waste Catalogue (EWC)</b>	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European Community.
<b>Facility</b>	Any site or premises used for the purpose of the recovery of 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>Incident</b>	The following shall constitute as incident for the purposes of this licence: (i) an emergency; (ii) any emission which does not comply with the requirements of this licence; (iii) any trigger level specified in this licence which is attained or exceeded; and, (iv) any indication that environmental pollution has, or may have, taken place.
<b>Industrial waste</b>	As defined in Section 5(1) of the Waste Management Acts 1996 to 2012.
<b>Inert Waste</b>	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.
<b>IPPC</b>	Integrated Pollution Prevention & Control.
<b>K</b>	Kelvin.
<b>kPa</b>	Kilopascals.
<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>Leachate</b>	Any liquid percolating through the deposited waste and emitted from or contained within a landfill as defined in Section 5 (1) of the Acts.
<b>LEL (Lower Explosive Limit)</b>	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
<b>Licence</b>	A Waste Licence issued in accordance with the Acts.

0

<b>Licensee</b>	Donegal County Council, County House, Lifford, County Donegal.
<b>Liquid waste</b>	Any waste in liquid form and containing less than 2% dry matter.
<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>	Donegal 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>Mass flow limit</b>	An emission limit value expressed as the maximum mass of a substance that can be emitted per unit time.
<b>Mass flow threshold</b>	A mass flow rate above which a concentration limit applies.
<b>Monthly</b>	A minimum of 12 times per year, at intervals of approximately one month.
<b>Municipal solid waste (MSW)</b>	Household waste as well as commercial and other waste which, because of its nature or composition, is similar to household waste. Excluding municipal sludges and effluents.
<b>Night-time</b>	10.00pm to 8.00am.
<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>Operational Day of Facility</b>	9.00 a.m. to 6.00 p.m. Monday to Friday and 9.00 a.m. to 2.00 p.m. on Saturdays.
<b>PRTR</b>	Pollutant Release and Transfer Register.
<b>Quarterly</b>	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
<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>Source segregated waste</b>	Waste which is separated at source; meaning that the waste is sorted at the point of generation into a recyclable fraction(s) for separate collection (e.g., paper, metal, glass, plastic, bulk dry recyclables, biodegradables, etc.) and a residual fraction. The expression 'separate at source' shall be construed accordingly.
<b>Specified emissions</b>	Those emissions listed in <i>Schedule B: Emission Limits</i> , of this licence.
<b>Specified Engineering Works</b>	Those engineering works listed in <i>Schedule D: Specified Engineering Works</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>Treatment/pre-treatment</b>	In relation to waste, any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.
<b>Trigger Level</b>	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>The Agency</b>	Environmental Protection Agency.
<b>TOC</b>	Total organic carbon.
<b>Trade effluent</b>	Trade effluent has the meaning given in the Water Services Act, 2007.
<b>Waste</b>	As defined in Section 4(1) of the Acts.
<b>Water Services Authority</b>	Donegal County Council.
<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>Working face</b>	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

## ***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 2012.

In reaching this decision the Environmental Protection Agency has considered the supporting documentation and an objection received from the applicant, one submission received from a third party and the reports of its inspectors.

W

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

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2012, the Environmental Protection Agency (the Agency), under Section 46(8) of the said Acts hereby grants this Waste Licence to Donegal County Council, County Hall, Lifford, County Donegal to carry on the waste activities listed below at Drumaboden Landfill Site, Drumaboden, Kilmacrenan, County Donegal 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 Operations, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2012***

- Class D 1.     Deposit into or on to land (e.g. landfill, etc.).
- Class D 15.    Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

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

None of the proposed activities as set out in the licence review 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.
- 1.3 For the purposes of this licence, the facility authorised by this licence is the area of land outlined in red and referred to "Site Plan" on Drawing No. 3026.25/A02 of the application licence register W0063-01. Any reference in this licence to "facility" shall mean the area thus outlined in red. The licensed activities 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 2012 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 29<sup>th</sup> June 2001 (Register No: W0063-01). The previous waste licence (Register No: W0063-01) is superseded by this licence.

**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 suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced deputy shall be available to the Agency and any member of the public or as otherwise required by the Agency.
- 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.

2.2 Environmental Management System (EMS)

2.2.1 The licensee shall maintain an Environmental Management System (EMS). 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 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.

2.2.2.3 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.

2.2.2.4 Communications Programme

The licensee shall establish and maintain a Public Awareness and Communications Programme to ensure that members of the public can obtain information at all reasonable times, concerning the environmental performance of the facility.

2.2.2.5 Maintenance Programme

The licensee shall establish and 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).

**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 unless otherwise agreed by the Agency.

3.2 Facility Notice Board

3.2.1 The licensee shall, maintain 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 and telephone number of the facility;
- (ii) the normal hours of opening;

- (iii) the name of the licence holder;
  - (iv) an emergency out of hours contact telephone number;
  - (v) the licence reference number;
  - (vi) where environmental information relating to the facility can be obtained; and
  - (vii) that the landfill is closed.
- 3.3 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.
- 3.4 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.
- 3.5 Tank, Container and Drum Storage Areas
- 3.5.1 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).
- 3.5.2 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.
- 3.5.3 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.
- 3.5.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.5.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.
- 3.6 All pumps sumps, storage tanks, lagoons 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.
- 3.7 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.
- 3.8 All wellheads shall be adequately protected to prevent contamination or physical damage.
- 3.9 Groundwater
- 3.9.1 Effective groundwater management infrastructure shall be provided and maintained at the facility during aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:
- a) The protection of the groundwater resources from pollution by the waste activities; and
  - b) The protection of surface waters from any adverse effects caused by the groundwater.
- 3.9.2 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).
- 3.9.3 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual 'Landfill Monitoring'.

## 3.10 Site Security

3.10.1 Security and stockproof fencing and gates shall be maintained as described in Attachment D1.a of the waste licence application licence register number W0063-01. 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.

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

- a) a temporary repair shall be made by the end of the operational day; and,
- b) a repair to the standard of the original gates and/or fencing shall be undertaken within three operational days or as otherwise agreed by the Agency.

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

## 3.11 Site Roads and Hardstanding

3.11.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.

3.12 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

## 3.13 Specified Engineering Works

3.13.1 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 one month prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

3.13.2 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.

3.13.3 Following the completion of all 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 include the following information;

- a) a description of the works;
- b) as-built drawings of the works;
- c) records and results of all tests carried out (including failures);
- d) where relevant a drawing and sections showing the location of all samples and tests carried out;
- e) where relevant daily records sheets/diary;
- f) name(s) of contractor(s)/individual(s) responsible for undertaking the engineering works;
- g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
- h) records of any problems and the remedial works carried out; and
- i) any other information requested in writing by the Agency.

## 3.14 Leachate Management

3.14.1 The licensee shall maintain a leachate management programme. This shall consist *inter alia* of the following:

- (i) Installation of three leachate abstraction wells. Leachate shall be pumped from these wells to the leachate treatment system.
- (ii) Provision of an appropriately sized leachate treatment system.
- (iii) A lined lagoon for the storage of raw leachate prior to treatment.
- (iv) Installation of mains power to operate leachate extraction pumps.

- (v) Separation of clean and contaminated surface water, and discharge of contaminated surface water to the leachate treatment system.
- (vi) All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.
- 3.14.2 Leachate management infrastructure shall be provided and maintained at the facility, updated as appropriate or as may be varied by a licence condition or by agreement with the Agency.
- 3.14.3 The licensee shall provide annually a report examining the effectiveness of the leachate collection and control measures in operation on-site. At least two sets of monitoring results for groundwater, leachate, treated leachate and surface water, taken subsequent to implementation of the leachate management programme, should be used in the initial assessment (in accordance with *Schedule C.5.2*). This report should also provide recommendations to improve the effectiveness of the leachate capture and control measures, if necessary.
- 3.15 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 operation and aftercare management of the facility.
- 3.16 Surface Water Management
- 3.16.1 Effective surface water management infrastructure shall be maintained at the facility.
- 3.16.2 The licensee shall establish and maintain a drawing indicating all drainage arrangements at the facility.
- 3.17 Landfill Gas Management:
- 3.17.1 Unless otherwise agreed with the Agency, landfill gas management at the facility shall be carried out as described in Attachment D5 of the application for Licence Register W0063-01.
- 3.17.2 The licensee shall maintain any gas wells, pipework, valves, pumps, and other infrastructure that form part of the landfill gas management scheme in a safe and fully operational manner.
- 3.17.3 Landfill Gas management and infrastructure shall meet the recommendations given in the Agency Manual on "Landfill Operational Practices".
- 3.18 Capping
- 3.18.1 Final capping shall consist of the following, unless otherwise agreed by the Agency:
- top soil (150 –300 mm);
  - subsoils, such that total thickness of top soil and subsoils is at least 1m;
  - drainage layer of 0.5m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  m/s;
  - compacted mineral layer of a minimum 0.6m thickness with a permeability of less than  $1 \times 10^{-9}$  m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and
  - gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 3.18.2 All landfill areas shall be permanently capped and the cap maintained to the specifications in Condition 3.19.1.

**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 Non- Continuous monitoring
- (i) Eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling shall exceed 1.2 times the emission limit value.
- (ii) No grab sample shall exceed 1.2 times the emission limit value.
- 4.1.2 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
- Noise from the facility shall not give rise to sound pressure levels (Leq, T) measured at noise sensitive locations of the facility which exceed the limit value(s).
- 4.4 Dust and Particulate Matter
- 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 Emissions to Surface Water
- a) The exceedence of emission limit values in treated leachate discharged to surface water shall be treated as an incident and the discharge of treated leachate shall cease immediately.
- b) No untreated leachate shall be discharged to the River Leannan.
- 5.5 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.

**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:
- (i) sampling and analysis for all parameters listed in the Schedules to this licence; and
- (ii) 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 Ground Water
- Within eighteen months of the date of this licence, the licensee shall carry out a risk screening and where necessary a technical assessment in accordance with the *Guidance on the Authorisation of Discharges to Groundwater*, published by the Environmental Protection Agency. A report on the outcome of the screening and where relevant the recommendations of the technical assessment in relation to the setting of groundwater compliance points and values, shall be included in the next AER. Any actions required to demonstrate compliance with the European Communities Environmental Objectives (Groundwater) Regulations 2010, shall be agreed by the Agency and implemented before 22<sup>nd</sup> December 2015. Groundwater monitoring results shall be submitted annually or as required in the Schedules to this licence.
- 6.9 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. 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.

- 6.10 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.
- 6.11 The Licensee shall review the *Freshwater Pearl Mussel Leannan Sub Basin Management Plan* for the Leannan Catchment annually, implement applicable measures and submit a measures report as part of the Annual Environmental Report (AER).
- 6.12 Landfill Gas
  - 6.12.1 In relation to landfill derived gases the following shall constitute a trigger level:
    - a) Methane, greater than or equal to 1.0% v/v; and
    - b) Carbon dioxide, greater than or equal to 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.
- 6.13 Arrangements shall be made for storage or tankering of the leachate off-site to a location agreed with the Agency, while exceedences of the leachate emission limits to surface water are occurring.
- 6.14 All landfill gas monitoring equipment used for monitoring landfill gas under the requirements of this licence shall be certified as being intrinsically safe.
- 6.15 The licensee shall review the Pollution Reduction Plan for their river basin district for the reduction of pollution from priority substances or the ceasing or phasing out of emissions, discharges and losses of priority hazardous substances, established in accordance with Part V of the European Communities Environmental Objectives (Surface Waters) Regulations S.I No. 272 of 2009 and implement applicable measures or controls and submit a measures report as part of the Annual Environmental Report (AER).

**Reason:** *To provide for the protection of the environment by way of treatment and monitoring of emissions.*

## **Condition 7. Resource Use and Energy Efficiency**

- 7.1 The licensee shall ensure that energy is used efficiently in the carrying on of the activity.

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

## Condition 8. Materials Handling

- 8.1 There shall be no waste accepted and no disposal or recovery of waste at this facility.
- 8.2 Wastes deposited in the landfill shall not be excavated, disturbed or otherwise exposed, with the exception of works associated with maintenance of the leachate collection system or other essential infrastructure and only where agreed by 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, ensure that a documented Accident Prevention Procedure / Emergency Response Procedure (ERP) 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 maintain a documented Emergency Response Procedure that addresses any emergency situation that 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.
- 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.
- 9.4 Emergency
  - 9.4.1 No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.
  - 9.4.2 All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.
  - 9.4.3 In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected.

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

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

- 10.1 The licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.
- 10.2 Closure, Restoration and Aftercare Management Plan (CRAMP)
- 10.2.1 The closure, restoration and aftercare plan for the facility shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.
- 10.2.2 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Condition 10.2.1 above.
- 10.3 The CRAMP shall include, as a minimum, the following:
- (i) A scope statement for the plan;
  - (ii) The criteria that define the successful decommissioning of the activity or part thereof, which ensures minimum impact on the environment;
  - (iii) A programme to achieve the stated criteria;
  - (iv) where relevant, a test programme to demonstrate the successful implementation of the decommissioning plan;
  - (v) Details of long term supervision, monitoring, control, maintenance and reporting requirements for the restored facility; and
  - (vi) Details of the costing are for the plan and the financial provisions to underwrite those costs.
- 10.4 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.
- 10.5 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate.

**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 including bypasses;
  - (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;

- (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; and
- (v) any trigger level specified in this licence which is attained or exceeded.

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 event of any incident which relates to discharges to water having taken place, the licensee shall notify the Local Authority and Water Services Authority, National Parks and Wildlife Service and 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 The licensee shall as a minimum keep the following documents at the site:
- (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 referenced in this licence.
- This documentation shall be available to the Agency for inspection at all reasonable times.
- 11.7 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.
- 11.8 The licensee shall submit report(s) as required by the conditions of this licence to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency.
- 11.9 All reports shall be certified accurate and representative by the facility manager or a nominated, suitably qualified and experienced deputy.
- 11.10 Unless otherwise agreed by the Agency, all documentation submitted to the Agency shall:
- (a) comprise one original and two copies;
  - (b) be formatted in accordance with any written instruction or guidance issued by the Agency;
  - (c) include whatever information as is specified in writing by the Agency;

- (d) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
  - (e) be submitted in accordance with the relevant reporting frequencies specified by this licence; and
  - (f) in the case of results of any environmental monitoring, be accompanied by a written interpretation setting out their significance.
- 11.11 Copies of all environmental monitoring data obtained by the licensee which relates to the facility shall be forwarded to the Agency at the frequencies set out in *Schedule C: Control & Monitoring*, of this licence.
- 11.12 The licensee shall provide additional copies of any documentation and records referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.
- 11.13 Provision shall be made for the transfer of environmental information specified by the Agency, in relation to the activities carried on under this licence, to the Agency's computer system within a timescale specified in writing by the Agency.

**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 €4,559, 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 2012. 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 2012, 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 or decreased, 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 (including closure) 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 or competent person as agreed by the Agency, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) which addresses 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. Review results are to 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 associated with the operation (including closure, restoration and aftercare). The amount of indemnity held shall be reviewed and revised as necessary, but at least annually unless otherwise agreed by the Agency. 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 unless otherwise agreed by the Agency.
- 12.2.4 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.*



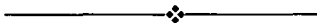
**SCHEDULE A: Limitations**

There is no waste to be accepted at this facility

The following waste related processes are authorised:

- a) Aftercare management of the landfill and associated activities
- b) Collection, storage and treatment of leachate generated at the landfill.

No addition to these processes are permitted unless agreed in advance by the Agency.



**SCHEDULE B: Emission Limits**

**B.1 Emissions to Air**

**B.1.1 Landfill Gas Concentration Limits (measured in any building on or adjacent to the facility):**

Methane	Carbon Dioxide
20% LEL (1% V/V)	1.5% V/V



**B.1.2 Dust Deposition Limits:**

**Location of dust monitoring:** DG1, DG2, DG3 or alternative locations as may be agreed by the Agency.

<b>Level (mg/m<sup>2</sup> /day)<sup>Note 1</sup></b>
350

**Note 1:** 30 day composite sample with the results expressed as mg/m<sup>2</sup> /day.



2

**B.2 Emission limits for Treated Leachate discharged to Surface Water**

**Emission Point Reference No:** L1  
**Name of Receiving Waters:** River Leannan  
**Location:** 216783E 421990N  
**Volume to be emitted:** Maximum in any one day: 48 m<sup>3</sup>  
 Maximum in any one hour: 2 m<sup>3</sup>

Parameter	Emission Limit Value
Temperature	25°C
pH	6-9
Toxicity	10 TU
	mg/l
BOD	20
Suspended Solids	30
Ammonia (as N)	25
Ortho P (as P)	2



**B.3 Noise Emissions**

Daytime dB(A) L <sub>Aeq</sub> (30 minutes)	Night-time dB(A) L <sub>Aeq</sub> (30 minutes)
55 <small>Note 1</small>	45 <small>Note 1</small>

**Note 1:** There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity of any noise-sensitive location.



**SCHEDULE C: Control & Monitoring****C.1.1. Monitoring of Emissions to Air****Monitoring of Landfill Gas**

**Locations:** LG1, LG2, LG3, LG4, LG5 (or any other locations that may be requested by the Agency)

Control Parameter	Monitoring	Key Equipment <sup>Note 1</sup>
Methane (CH <sub>4</sub> ) % v/v	Biannually	Infrared analyser/flame ionisation detector
Carbon dioxide (CO <sub>2</sub> )%v/v	Biannually	Infrared analyser/ flame ionisation detector
Oxygen(O <sub>2</sub> ) %v/v	Biannually	Electrochemical cell
Atmospheric Pressure	Biannually	Standard
Temperature	Biannually	Standard

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

**C.2.1. Control of Treated Leachate Emissions to Surface Water**

**Emission Point Reference No:**

L1

**Description of Treatment:**

Bord na Mona Puraflo system

Control Parameter	Monitoring	Key Equipment <sup>Note 1</sup>
High level liquid alarm	Leachate levels	Storage chamber, level monitor
Peat fibre media	Ammonia levels	Puraflo system
Effluent transfer	Flow rate	Duty and stand by pumps

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



**C.2.3. Monitoring of Storm Water Emissions**

There shall be no Storm Water Emissions of environmental significance.



**C.3 Noise Monitoring**

**Noise Monitoring Frequency and Technique**

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) <sub>EQ</sub> [30 minutes]	As may be required by the Agency	Standard <sup>Note 1</sup>
L(A) <sub>10</sub> [30 minutes]	As may be required by the Agency	Standard <sup>Note 1</sup>
L(A) <sub>90</sub> [30 minutes]	As may be required by the Agency	Standard <sup>Note 1</sup>
Frequency Analysis(1/3 Octave band analysis)	As may be required by the Agency	Standard <sup>Note 1</sup>

**Note 1:** "International Standards Organisation. ISO 1996. Acoustics - description and Measurement of Environmental noise. Parts 1, 2 and 3."



**C.4 Ambient Monitoring**

**C.4.1 Monitoring Locations**

Monitoring locations shall be those as set out below (unless otherwise agreed by the Agency)

<b>Noise Monitoring Locations (as per Attachment C8, Figure 2: Measurement locations licence register number W0063-01)</b>
N1
N2
N3
<b>Groundwater Monitoring Locations</b>
GW1
GW5
GW6
GW7
<b>Treated Leachate Monitoring Location</b>
L1
<b>Surface Water Monitoring Locations</b>
SW1
SW2
SW4
SW5

**C.4.2 Surface Water, Groundwater and Treated Leachate Monitoring parameters**

Surface water, groundwater &amp; treated leachate monitoring shall be as below:

<b>Parameter</b> <sup>Note 1</sup>	<b>SURFACE WATER Monitoring Frequency</b>	<b>GROUNDWATER Monitoring Frequency</b>	<b>TREATED LEACHATE Monitoring Frequency</b>
Flow	-	-	Quarterly
Visual Inspection/Odour <sup>Note 2</sup>	Biannually	Biannually	Quarterly
Groundwater Level	Not Applicable	Biannually	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly
Ammoniacal Nitrogen	Biannually	Biannually	Quarterly
BOD	Biannually	Not Applicable	Quarterly
COD	Biannually	Not Applicable	Quarterly
Chloride	Biannually	Biannually	Quarterly
Dissolved Oxygen	Biannually	Biannually	Not Applicable
Electrical Conductivity	Biannually	Biannually	Quarterly
pH	Biannually	Biannually	Quarterly
Total Suspended Solids	Biannually	Not Applicable	Not Applicable
Temperature	Biannually	Biannually	Quarterly
Toxicity	-	-	Note 6
Boron	Not Applicable	Annually	Annually
Cadmium	Note 4	Note 4	Note 4
Calcium	Annually	Annually	Annually
Chromium (Total)	Note 4	Note 4	Note 4
Copper	Note 4	Note 4	Note 4
Cyanide (Total)	Not Applicable	Note 4	Note 4
Fluoride	Not Applicable	Annually	Annually
Iron	Annually	Biannually	Annually
Lead	Note 4	Note 4	Note 4
Hazardous Compounds <sup>Note 5</sup>	-	Note 5	-
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Note 4	Note 4	Note 4
Potassium	Annually	Biannually	Annually
Sulphate	Annually	Annually	Annually
Sodium	Annually	Biannually	Annually
Total Alkalinity	Annually	Annually	Annually
Total Phosphorus / orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Biannually	Quarterly
Total Organic Carbon	Not Applicable	Biannually	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Zinc	Note 4	Note 4	Note 4
Phenols	Not Applicable	Biannually	Not Applicable
Faecal Coliforms <sup>Note 6</sup>	Not Applicable	Biannually	Annually
Total Coliforms <sup>Note 6</sup>	Not Applicable	Biannually	Annually

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

procedures. The testing laboratory and the testing procedures shall be agreed by the Agency in advance.

- Note 2:** Where there is evident gross contamination of leachate, additional samples should be analysed.
- Note 3:** Toxicity testing at L-1 as required by the Agency.
- Note 4:** Once off for specific pollutants, priority substances and priority hazardous substances as per the *Surface Waters Regulations 2009* for L-1 and SW4 and as per the *Groundwater Regulations 2010* for GW6 and GW7 within three months from date of grant of licence and thereafter as required by the Agency.
- Note 5:** The relevant hazardous substances for monitoring in groundwater shall be identified by the licensee by undertaking a risk based assessment. The Licensee shall have regard to the 'Classification of Hazardous and Non-hazardous Substances in Groundwater' issued by the Agency. Monitoring for the identified hazardous substances shall be carried out at least annually, unless a case for less frequent monitoring is agreed by the Agency.
- Note 6:** In the case where groundwater is extracted for drinking water, if there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C.



**C.4.3: Dust Monitoring Frequency and Technique**

**Location:** DG1, DG2, DG3 or alternative locations as may be agreed by the Agency.

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust deposition (mg/m <sup>2</sup> /day)	As may be required by the Agency	Standard Method



**SCHEDULE D: Specified Engineering Works**

<b>Specified Engineering Works</b>
Any works notified in writing by the Agency.



Δ

**SCHEDULE E: Annual Environmental Report**

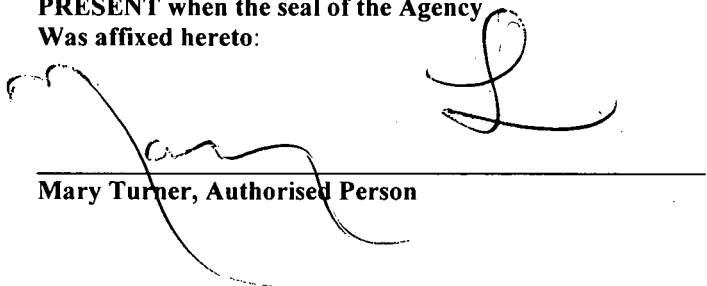
<b>Annual Environmental Report Content</b> <small>Note 1</small>
Emissions from the facility.
Waste management record.
Resource consumption summary.
Complaints summary.
Schedule of Environmental Objectives and Targets.
Environmental management programme – report for previous year.
Environmental management programme – proposal for current year.
Pollutant Release and Transfer Register – report for previous year.
Pollutant Release and transfer Register – proposal for current year.
Noise monitoring report summary.
Ambient monitoring summary.
Measures report as part of the Freshwater Pearl Mussel Sub Basin Management Plan.
Measures report as part of the Pollution Reduction Plan for the River Basin District.
Tank and pipeline testing and inspection report.
Reported incidents summary.
Energy efficiency audit report summary.
Report on the assessment of the efficiency of use of raw materials in processes and the reduction in waste generated.
Report on progress made and proposals being developed to minimise water demand and the volume of trade effluent discharges.
Development/Infrastructural works summary (completed in previous year or prepared for current year).
Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.
Review of decommissioning management plan/Closure, restoration & aftercare management Plan.
Statement of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities).
Environmental Liabilities Risk Assessment Review (every three years or more frequently as dictated by relevant on-site change including financial provisions).
Any other items specified by the Agency.

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



**Sealed by the seal of the Agency on this the 18<sup>th</sup> day of April 2013.**

**PRESENT when the seal of the Agency  
Was affixed hereto:**

  
\_\_\_\_\_  
**Mary Turner, Authorised Person**

