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Ireland**

**INDUSTRIAL EMISSIONS LICENCE
Recommended Determination**

Licence Register Number:	W0025-04
Applicant/Licensee:	Carlow County Council
Location of Installation:	Powerstown Landfill & Recycling Centre, Kilkenny Road, County Carlow.

INTRODUCTION

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

The installation comprises a non-hazardous municipal solid waste landfill and a civic waste facility. This licence authorises an increase in annual waste intake from 40,000 tonnes to 50,000 tonnes with no increase in the landfill footprint or the need for new infrastructure or construction works. Waste accepted at the installation comprises household (residual) waste, commercial waste, industrial solid waste, construction & demolition waste and treated sewage sludge. The licence also authorises a civic waste facility and a small green waste composting facility.

For the purposes of the EU Industrial Emissions Directive (2010/75/EU), this installation falls within the scope of the following Annex I category:

Category 5.4: Landfills, as defined in Article 2(g) of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1.), receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25 000 tonnes, excluding landfills of inert waste.

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

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Glossary of Terms

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

Adequate lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Agreement	Agreement in writing.
Annually	All or part of a period of twelve consecutive months.
Application	The application by the licensee for this licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of this licence application.
BAT	Best Available Techniques.
BAT conclusions	A document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures.
BAT reference document	A document drawn up by the Commission of the European Union in accordance with Article 13 of the Industrial Emissions Directive, resulting from the exchange of information in accordance with that Article of that Directive and describing, in particular, applied techniques, present emissions and consumption levels; techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques.
Biannually	At approximately six – monthly intervals.
Biennially	Once every two years.
Biodegradable municipal waste (BMW)	The biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.
Biodegradable waste	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.
Bio-stabilised residual waste	Residual biodegradable municipal waste that has been treated to achieve an EPA-approved biodegradability stability standard (as defined in this licence) prior to landfilling or alternative use agreed.

BOD	5 day Biochemical Oxygen Demand (without nitrification suppression).
CBOD	5 day Carbonaceous Biochemical Oxygen Demand (with nitrification suppression).
CEN	Comité Européen De Normalisation — European Committee for Standardisation.
Characterisation of waste	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportions of biodegradable, recyclable and other materials in the waste.
Classification of waste	The classification of waste as inert, non-hazardous or hazardous for the purpose of article 4 of Council Directive (1999/31/EC) on the landfill of waste.
COD	Chemical Oxygen Demand.
Coding of waste	The allocation of a European Waste Catalogue/Hazardous Waste List code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition etc.
Compliance Point	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.
Compliance testing	
Compliance Value	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.
Construction and demolition (C&D) waste	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.
Containment boom	A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
Cover Material	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.
Daily	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.
Daily Cover	Is the term used to describe material spread (about 150mm 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.
Day	Any 24 hour period.
Daytime	0700 hrs to 1900 hrs.
dB(A)	Decibels (A weighted).

DO	Dissolved oxygen.
Documentation	Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emission limits	Those limits, including concentration limits and deposition rates, established in <i>Schedule B: Emission Limits</i> , of this licence.
EMP	Environmental Management Programme.
Environmental damage	As defined in Directive 2004/35/EC.
EPA	Environmental Protection Agency.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC, as amended by Commission Decision 2014/955/EU and any subsequent amendment published in the Official Journal of the European Community.
Evening Time	1900hrs to 2300hrs.
Facility	A site or premises used for the purpose of the recovery or disposal of waste or an installation.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
Gas Oil	Gas Oil as defined in Council Directive 1999/32/EC and meeting the requirements of S.I. No. 119 of 2008.
GC/MS	Gas chromatography/mass spectroscopy.
Green Waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
Groundwater	Has the meaning assigned to it by Regulation 3 of the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010).
ha	Hectare.
Heavy metals	This term is to be interpreted as set out in "Parameters of Water Quality, Interpretation and Standards" published by the Agency in 2001. ISBN 1-84095-015-3.

HFO	Heavy Fuel Oil as defined in Council Directive 1999/32/EC and meeting the requirements of S.I. No. 119 of 2008.
Hours of operation	The hours during which the installation is authorised to be operational.
Hours of waste acceptance	The hours during which the installation is authorised to accept waste.
ICP	Inductively coupled plasma spectroscopy.
IE	Industrial Emissions.
Incident	The following shall constitute as incident for the purposes of this licence: <ul style="list-style-type: none"> (i) an emergency; (ii) any emission which does not comply with the requirements of this licence; (iii) any exceedance of the daily duty capacity of the waste handling equipment; (iv) any trigger level specified in this licence which is attained or exceeded; (v) any compliance value specified in this licence which is attained or exceeded; and, (vi) any indication that environmental pollution has, or may have, taken place.
Industrial Emissions Directive	Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast).
Industrial waste	As defined in Section 5(1) of the Waste Management Act 1996 as amended.
Installation	A stationary technical unit or plant where the activity concerned referred to in the First Schedule of EPA Act 1992 as amended is or will be carried on, and shall be deemed to include any directly associated activity, which has a technical connection with the activity and is carried out on the site of the activity.
Intermediate cover	Refers to placement of suitable, adequate and stable material (minimum of 300mm if soil is used) over deposited waste for a period of time prior to temporary capping in uncapped areas other than daily cover.
Irish Water	Irish Water, Colvill House, 24/26 Talbot Street, Dublin 1.
K	Kelvin.
kPa	Kilopascals.
L_{Aeq,T}	This is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T).

Landfill	A waste disposal site as defined in Landfill Directive.
Landfill Directive	Council Directive 1999/31/EC.
Landfill gas	Gas generated by waste deposited in a landfill.
L_{Ar,T}	The Rated Noise Level, equal to the L _{Aeq} during a specified time interval (T), plus specified adjustments for tonal character and/or impulsiveness of the sound.
LEL	Lower Explosive Limit
Licensee	Carlow County Council, County Buildings, Athy Road, Carlow Town.
Liquid waste	Any waste in liquid form and containing less than 2% dry matter.
List I	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
List II	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
Local Authority	Carlow County Council.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.
Mass flow limit	An emission limit value expressed as the maximum mass of a substance that can be emitted per unit time.
Mass flow threshold	A mass flow rate above which a concentration limit applies.
Monthly	A minimum of 12 times per year, at intervals of approximately one month.
Municipal solid waste (MSW)	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.
Night-time	2300 hrs to 0700 hrs.
Noise-sensitive location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Oil separator	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).

OMP	Odour Management Plan
On-site verification of waste	Rapid check methods to confirm that a waste is the same as that which has been subjected to compliance testing and that which is described in any accompanying documents. It may merely consist of a visual inspection of a load of waste before and after unloading at the installation.
PRTR	Pollutant Release and Transfer Register.
Quarterly	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
Residual Waste	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal, including mixed municipal waste.
Sample(s)	Unless the context of this licence indicates to the contrary, the term samples shall include measurements taken by electronic instruments.
Sanitary effluent	Wastewater from installation toilet, washroom and canteen facilities.
Soil	The top layer of the Earth's crust situated between the bedrock and the surface. The soil is composed of mineral particles, organic matter, water, air and living organisms.
SOP	Standard operating procedure.
Source segregated waste	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.
Specified emissions	Those emissions listed in <i>Schedule B: Emission Limits</i> , of this licence.
Standard method	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.
Storage	Includes holding of waste.
Storm water	Rain water run-off from roof and non-process areas.
The Agency	Environmental Protection Agency.
TOC	Total organic carbon.

Trade effluent	Trade effluent has the meaning given in the Water Services Act, 2007.
Treatment/pre-treatment	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.
Trigger level	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
VOC	Volatile Organic Compounds.
Waste	Any substance or object which the holder discards or intends or is required to discard.
Water Services Authority	Carlow County Council.
Weekly	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.
WWTP	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 83(5) of the Environmental Protection Agency Act 1992 as amended.

In reaching this decision the Environmental Protection Agency has considered the documentation relating to the current licence, Register Number: W0025-03, and the review application Register Number: W0025-04. This includes supporting documentation received from the applicant, all submissions received from other parties, the report of the Licensing Inspector and the Environmental Impact Assessment (EIA) report contained therein.

It is considered that the Environmental Impact Assessment Report (as included in the Inspectors Report dated **02 September 2015**) contains a fair and reasonable assessment of the likely significant effects of the licensed activity on the environment. The assessment as reported is adopted as the assessment of the Agency. Having regard to this assessment, it is considered that the proposed activity, if managed, operated and controlled in accordance with the licence will not result in the contravention of any relevant environmental quality standards or cause environmental pollution.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects, is likely to have a significant effect on a European Site(s). In this context, particular attention was paid to the European site at River Barrow and River Nore SAC (Site Code: 002162). The Agency considered, for the reasons set out below, that the activity is not directly connected with or necessary to the management of the site as a European site and that it cannot be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects will have a significant effect on a European site, and accordingly the Agency determined that an Appropriate Assessment of the activity is required.

The following reasons contributed to the determination that the Appropriate Assessment of the proposed activity is required:

- The activity is located adjacent to River Barrow and River Nore SAC (Site Code: 002162).
- Surface water runoff from the site discharges to the Powerstown Stream which flows into the said European Site.

The Agency has completed the Appropriate Assessment and has determined based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 and 2013, pursuant to Article 6(3) of the Habitats Directive, that the activity, individually or in combination with other plans or projects, will not adversely affect the integrity of a European Site(s) in particular River Barrow and River Nore SAC (Site Code: 002162), having regard to its conservation objectives and will not affect the preservation of the site at favourable conservation status if carried out in accordance with this Licence and the conditions attached hereto for the following reasons:

- There will be no process emissions to the European Site. The only discharge to surface water will be clean storm water run-off.
- There is a collection system for the landfill leachate and leachate that might be generated at the civic waste facility.
- The licence specifies a number of measures to limit the installation's impact on environment, including the following:
 - Condition 6.31 requires an Odour Management Plan and specifies measures to control potential sources of odour nuisance.

- Condition 6.21 specifies measures for the control of dust.
- Condition 6.30 requires inspection of the installation and its immediate surrounds for various nuisances, including litter, birds and vermin.

In light of the foregoing reasons, the Agency is satisfied that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of the River Barrow and River Nore SAC (Site Code: 002162).

Part I Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Environmental Protection Agency Act 1992 as amended, the Agency proposes to grant this Industrial Emissions licence to:

Carlow County Council, County Buildings, Athy Road, Carlow Town

under Section 90(2) of the said Act to carry on the following activities:

Class 11.1: The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.

Class 11.5: Landfills, within the meaning of section 5 (amended by Regulation 11(1) of the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008 (S.I. No. 524 of 2008)) of the Act of 1996, receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25,000 tonnes, other than landfills of inert waste.

at Powerstown Landfill & Recycling Centre, Kilkenny Road, County Carlow subject to the following 12 Conditions, with the reasons therefor and associated schedules attached thereto. For the purpose of Article 48 of the Waste Management Licensing Regulations 2004 (SI 395) and Article 9 of Council Directive 1999/31/EC on the landfill of waste the landfill associated with this activity is classed as a non-hazardous waste landfill.

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 Industrial Emissions Directive activities at this installation 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 installation shall be limited as set out in *Schedule A: Limitations* of this licence.
- 1.3 For the purposes of this licence, the installation authorised by this licence is the area of land outlined in colour red on Drawing No. LW14-120-02-001 (dated 20.11.14) of the application. Any reference in this licence to "installation" shall mean the area thus outlined in colour 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 installation 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 the purpose of IE licensing under the EPA Act 1992 as amended 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 shall have effect in lieu of the licence granted on 21 December 2009 (Register No. W0025-03).
- 1.8 Waste Acceptance Hours and Hours of Operation
- 1.8.1 Landfill
- 1.8.1.1 Waste may be accepted for disposal at the landfill only between the hours of 0800 and 1730 Monday to Friday inclusive (Bank Holidays excepted) and 0800 and 1230 on Saturdays.
- 1.8.1.2 The landfill may be operated only during the hours of 0700 and 1830 Monday to Friday inclusive (Bank Holidays excepted) and 0700 and 1330 on Saturdays. Activities between 0700 and 0800 shall be limited to:
- Visual inspections;
 - Litter patrols; and
 - Equipment/plant maintenance.
- 1.8.1.3 Treated sewage sludge shall be accepted only between the hours of 0830 hrs and 1400 hrs Monday to Friday inclusive.
- 1.8.2 Civic Waste Facility

Waste shall be accepted at the Civic Waste Facility only between the hours of 0800 and 1730 Monday to Friday inclusive (Bank Holidays excepted), 0800 and 1630 on Saturdays and 0800 and 1230 on Sundays.

Reason: To clarify the scope of this licence.

Condition 2. Management of the Installation

2.1 Installation Management

2.1.1 The licensee shall employ a suitably qualified and experienced installation manager who shall be designated as the person in charge. The installation manager or a nominated, suitably qualified and experienced deputy shall be present on the installation at all times during its operation 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 and implement an Environmental Management System (EMS), which shall incorporate energy efficiency management. The EMS shall be reviewed for suitability, adequacy and effectiveness and updated on an annual basis.

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

2.2.2.1 An environmental policy defined for the installation.

2.2.2.2 Management and Reporting Structure.

2.2.2.3 Schedule of Environmental Objectives and Targets.

The licensee shall maintain and implement 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), the beneficial recovery/recycling of waste in subsequent landfill engineering operations, cleaner production and the prevention, reduction and minimisation of waste and shall include waste reduction targets. 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).

2.2.2.4 Landfill Environmental Management Programme (LEMP)

The licensee shall maintain and implement a LEMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.3. The LEMP shall have regard to the guidance set out in the EPA Manual on Landfill Operational Practices and shall include:

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

The LEMP shall be reviewed annually and take into account operational experiences at the installation, the stage of development of the installation (active, closure, aftercare), evolving legislative and BAT requirements, as well as any Agency instructions that may issue. Amendments thereto 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.

2.2.2.5 Documentation

- (i) The licensee shall maintain and implement an environmental management documentation system.
- (ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.2.2.6 Corrective and Preventative Action

- (i) The licensee shall establish maintain and implement procedures to ensure that corrective and preventative action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for persons initiating further investigation and corrective and preventative action in the event of a reported non-conformity with this licence shall be defined.
- (ii) Where a breach of one or more of the conditions of this licence occurs, the licensee shall without delay take measures to restore compliance with the conditions of this licence in the shortest possible time and initiate any feasible preventative actions to prevent recurrence of the breach.
- (iii) All corrective and preventative actions shall be documented

2.2.2.7 Internal and External Audits

The licensee shall maintain and implement a programme for independent internal audits of the EMS. Such audits shall be carried out at least once every three years. The audit programme shall determine whether or not the EMS is being implemented and maintained properly, and in accordance with the requirements of the licence. Audit reports and records of the resultant corrective and preventative actions shall be maintained as part of the EMS in accordance with Condition 2.2.2.5.

2.2.2.8 Awareness and Training

The licensee shall maintain and implement 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.

2.2.2.9 Communications Programme

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

2.2.2.10 Maintenance Programme

The licensee shall maintain and implement 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). The maintenance programme shall use appropriate techniques and measures to ensure the optimisation of energy efficiency in plant and equipment.

2.2.2.11 Efficient Process Control

The licensee shall maintain and implement 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 installation, 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 Installation Notice Board
- 3.2.1 The licensee shall maintain an Installation Notice Board on the installation so that it is legible to persons outside the main entrance to the installation. 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 installation;
 - (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; and
 - (vi) where environmental information relating to the installation can be obtained.
- 3.2.3 A plan of the installation clearly identifying the location of each storage and treatment area shall be displayed as close as is possible to the entrance to the installation. The plan shall be displayed on a durable material such that is legible at all times. The plan shall be replaced as material changes to the installation are made.
- 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 In the case of composite sampling of aqueous emissions from the operation of the installation, 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.
- 3.5 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.
- 3.6 Tank, Container and Drum Storage Areas
- 3.6.1 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).
- 3.6.2 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.
- 3.6.3 All drainage from bunded areas shall be treated as contaminated unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal, unless it can be deemed uncontaminated and does not exceed the trigger levels set for storm water emissions under Condition 6.13.2.
- 3.6.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.6.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.
- 3.7 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 installation. Once used, the absorbent material shall be disposed of at an appropriate facility.
- 3.8 Silt Traps and Oil Separators
- The licensee shall, within six months of date of grant of this licence, install and maintain silt traps and oil separators at the installation:
- (i) Silt traps to ensure that all storm water discharges, other than from roofs, from the installation pass through a silt trap in advance of discharge;
- (ii) An oil separator on the storm water discharge from yard areas. The separator shall be a Class I full retention separator.
- The silt traps and separator shall be in accordance with I.S. EN-858-2: 2003 (separator systems for light liquids).
- 3.9 Fire-water Retention
- 3.9.1 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 for a **fire-water retention facility**, 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.
- 3.9.2 In the event of a fire or a spillage to storm water, the site storm water shall be diverted for collection. The licensee shall examine, as part of the response programme in Condition 3.9.1 above, the provision of automatic diversion of storm water for collection. The licensee shall have regard to any guidelines issued by the Agency with regard to firewater retention.
- 3.9.3 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 Conditions 3.9.1 and 3.9.2 above.
- 3.10 All pump 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.
- 3.11 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.
- 3.12 All wellheads shall be adequately protected to prevent contamination or physical damage.
- 3.13 The licensee shall maintain in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.
- 3.14 The licensee shall maintain a weather monitoring station on the site, which records conditions of wind speed and wind direction.
- 3.15 The licensee shall provide and maintain a Wastewater Treatment plant at the installation for the treatment of sanitary effluent arising on-site. Any waste water treatment system and percolation area shall satisfy the criteria set out in the *Code of Practice Wastewater Treatment and Disposal Systems Serving Single Houses* ($p.e \leq 10$), published by the Environmental Protection Agency.

- 3.16 Natural gas or biodiesel meeting CEN standard EN14214 shall be used in the boilers on site. In the event of an interruption to the supply of natural gas or biodiesel, an alternative fuel such as gas oil may be used with the prior written agreement of the Agency.
- 3.17 Specified Engineering Works
- 3.17.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule E: Specified Engineering Works* of this licence, to the Agency for its agreement at least two months 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.
- 3.17.2 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.
- 3.17.3 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:
- (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) Daily record sheets/diary;
 - (vi) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
 - (vii) Name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
 - (viii) Records of any problems and the remedial works carried out to resolve those problems; and
 - (ix) Any other information requested in writing by the Agency.
- 3.18 Facility Security
- 3.18.1 Security and stockproof fencing and gates shall be 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.
- 3.18.2 The licensee shall install a CCTV system which records all truck movement into and out of the installation; the CCTV system shall be operated at all times and copies of recording kept on site and made available to the Agency on request.
- 3.18.3 Gates shall be locked shut when the facility is unsupervised.
- 3.18.4 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.
- 3.19 Installation Roads and Site Surfaces
- 3.19.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.19.2 The licensee shall maintain an impermeable concrete surface at the installation entrance area, the access road to the Civic Waste Facility, the Civic Waste Facility itself and the Recycling Area. The surfaces shall be concreted and constructed to British Standard 8110 or an alternative as agreed by the Agency. The licensee shall remedy any defect in concrete surfaces within five working days.
- 3.20 Facility Office

- 3.20.1 The licensee shall maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.
- 3.20.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.21 Operational Controls
- The licensee shall provide and use adequate lighting during the operation of the installation in hours of darkness.
- 3.22 Weighbridge and Wheel Cleaner
- 3.22.1 The licensee shall provide and maintain a weighbridge and wheel cleaners at the installation.
- 3.22.2 The wheel cleaners shall be used by vehicles leaving the installation as required to ensure that no process effluent, contaminated storm water or waste is carried off-site. All water from the wheel cleaning area shall be directed to the leachate lagoon or leachate tank.
- 3.22.3 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face or to a skip.
- 3.23 Landfill Gas Management
- 3.23.1 **The active landfill gas management infrastructure shall be maintained and shall consist of horizontal and vertical gas collection and flaring and/or utilisation system for landfill gas generated at the installation.**
- 3.23.2 **The horizontal systems shall be installed at lifts no greater than 5 metres, and shall be used during cell filling to, in as far as practicable, provide a negative pressure within the waste body. In addition this shall include provision of a horizontal gas collection system at the top of side slopes to minimise gas emanating from the leachate collection layer.**
- 3.23.3 Vertical landfill gas collection wells shall be installed at a maximum of 40m intervals throughout the various parts of the landfill (lined and unlined areas).
- 3.23.4 An enclosed landfill gas flare and/or landfill gas utilisation plant of sufficient overall capacity to flare/utilise all landfill gas generated shall be installed. As a minimum, and unless otherwise agreed with the Agency, the landfill gas flaring capacity at the facility shall provide for an overall flaring capacity of 750m³/hr along with suitable backup provisions in the event of equipment breakdown.
- 3.23.5 Flare unit efficiency shall be tested within six months of the date of grant of this licence and once every three years thereafter.
- 3.23.6 The licensee shall provide passive vent trenches along the perimeter of the unlined landfill adjacent to the facility boundary as part of the initial works for permanently capping this area.
- 3.23.7 The combustion air supply to the enclosed gas flare shall be controlled so as to achieve a minimum temperature of 1,000°C and 0.3 seconds retention time.
- 3.23.8 All buildings constructed within the installation 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.
- 3.23.9 Landfill Gas Combustion Plant
- The licensee shall provide and maintain continuous carbon monoxide monitors on the outlets of the gas engines.
- 3.23.10 Condensate Management
- The licensee shall implement a landfill gas condensate management plan at the installation 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 installation.

3.24 Landfill Lining

3.24.1 Unless otherwise agreed by the Agency, the landfill lining system shall comprise:

- a) 1.0 m thick bentonite enhanced soil (BES) layer with a maximum permeability of 1×10^{-10} m/s overlain by;
- b) 2.5 mm thick HDPE liner;
- c) A geocomposite drainage geotextile ("leak detection/collection layer");
- d) 2.5 mm thick HDPE liner;
- e) Protective geotextile (Polyfelt TS40);
- f) 500 mm thick granular layer (min. permeability $K > 1 \times 10^{-3}$ m/s) including leachate collection drains; and
- g) The side wall liner.

3.24.2 The liner detailed design and its construction shall be in accordance with the guidelines provided in the Agency's *Landfill Manual, Landfill Site Design*.

3.25 Leachate Management Infrastructure

3.25.1 Effective leachate management infrastructure shall be provided and maintained.

3.25.2 Structures for the storage of leachate shall be lined.

3.25.3 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.

3.25.4 Leachate management infrastructure shall provide for the collection and abstraction of leachate from the landfill, the collection of leachate and run-off from the Waste Civic Facility and its storage.

3.25.5 In conjunction with the final cap installation over the unlined landfill area, the licensee shall provide leachate collection toe drains or alternative agreed with the Agency to facilitate the diversion/collection of leachate from this area towards the leachate lagoon/tank.

3.25.6 The licensee shall maintain evidence to demonstrate that an agreement is in place regarding leachate removal (from the site) and treatment.

3.25.7 Unless treated at the installation or discharged to sewer, leachate removed from the facility shall be tankered off-site in fully enclosed road tankers to an authorised facility.

3.26 Groundwater Management

Effective groundwater management infrastructure shall be provided and maintained at the facility during operation, restoration and aftercare of the installation. As a minimum, the infrastructure shall protect the groundwater resources from contamination by ongoing waste activities and the storage of leachate and contaminated surface water at the installation.

3.27 Surface Water Management

3.27.1 Effective surface water management infrastructure shall be provided and maintained at the installation during operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:

- a) The prevention of contaminated water and leachate discharges into surface water drains and courses; and
- b) The collection and diversion of run off arising from capped and restored areas.

3.27.2 The surface water retention ("settling") pond and associated infrastructure shall be capable of dealing with all surface water arising on site where there is a potential for

it to become contaminated. Unless agreed otherwise with the Agency this shall provide for such surface waters arising from the existing installation.

- 3.27.3 The design and capacity of the surface water retention pond shall ensure that it is capable of fulfilling the requirements of this licence and dealing with all surface water run-off from potentially contaminated areas of the installation.
- 3.27.4 The surface water from all roads, hardstanding areas and all areas of the **installation** where surface water has the potential to become contaminated shall be directed to the surface water retention pond, unless where otherwise required to be directed to the leachate lagoon or leachate tank.
- 3.28 Waste Inspection and Quarantine Areas
- 3.28.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the installation.
- 3.28.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.
- 3.28.3 Drainage from these areas shall be directed to the leachate lagoon/tank.
- 3.29 Civic Waste Facility
- 3.29.1 The licensee shall provide and maintain appropriate receptacles at the Civic Waste Facility for the storage of various waste types.
- 3.30 Compost facility
- Appropriate infrastructure for the composting of waste shall be established and maintained to the satisfaction of the Agency prior to any waste being composted. **Drainage from the composting area shall be directed to the leachate lagoon or leachate tank.**
- 3.31 Landscaping
- Landscaping of the installation shall be in accordance with the **CRAMP** agreed by the Agency.
- 3.32 Buffer Area
- The licensee shall maintain the 50m buffer zone around the landfill footprint in which no waste activity shall be carried out.
- 3.33 Maintenance of lagoons
- All lagoon structures shall be inspected and certified fit for purpose every three years by an independent and appropriately qualified chartered engineer.
- 3.34 The landfill footprint (maximum lateral extent of landfilling) shall be as indicated in Drawing Reference **LW14-120-02-001 (dated 20.11.14)** of the application.
- 3.35 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.

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

Condition 4. Interpretation

- 4.1 Emission limit values from landfill gas flare/combustion plant to atmosphere in this licence shall be interpreted in the following way:

- 4.1.1 Continuous Monitoring
- (i) No 24 hour mean value shall exceed the emission limit value.
 - (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
 - (iii) No 30 minute mean value shall exceed twice the emission limit value.
- 4.1.2 Non-Continuous Monitoring
- (i) For any parameter where, due to sampling/analytical limitations, a 30 minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
 - (ii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.
 - (iii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.
- 4.2 The concentration and volume flow limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of:
- 4.2.1 From non-combustion sources:
Temperature 273K, Pressure 101.3 kPa (no correction for oxygen or water content).
- 4.2.2 From combustion sources:
Temperature 273K, Pressure 101.3 kPa, dry gas at 3% oxygen.
- 4.3 Emission limit values for emissions to waters in this licence shall be interpreted in the following way:
- 4.3.1 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.
- 4.3.2 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.
- 4.3.3 Discrete Sampling
- For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.
- 4.4 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.
- 4.5 Noise
- Noise from the installation shall not give rise to sound pressure levels ($L_{Aeq,T}$) measured at the NSLs of the installation which exceed the limit value(s).
- 4.6 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 installation 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 installation boundary or any other legitimate uses of the environment beyond the installation boundary.
- 5.3 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 installation or beyond the installation boundary or any other legitimate uses of the environment beyond the installation boundary. Any method used by the licensee to control or prevent any such impairment/interference shall not cause environmental pollution.

5.4 Landfill Gas

5.4.1 The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:

- a) Methane, greater than or equal to 1.0% v/v; or
- b) Carbon dioxide, greater than or equal to 1.5% v/v.

5.4.2 The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of:

- a) In the case of landfill gas flare:
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
- b) In the case of landfill gas combustion plant:
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.

5.4.3 **The licensee shall, within twelve months of the date of grant of this licence, carry out to the Agency's satisfaction a feasibility study for the utilisation of landfill gas at the installation.**

5.5 Groundwater

5.5.1 There shall be no direct emissions to ground or groundwater.

5.5.2 The licensee shall **maintain to the satisfaction of the Agency** monitoring trigger levels for groundwater in accordance with the requirements of Directive 1999/31/EC.

5.6 Emissions to Surface Water

5.6.1 No raw leachate, treated leachate or contaminated surface water shall be discharged to the Powerstown Stream.

5.6.2 No substance shall be discharged in a manner, or at a concentration, that, following initial dilution, causes tainting of fish or shellfish.

5.6.3 The licensee shall carry out monitoring of water **on a weekly basis on the inlet to and continuous monitoring on the outlet from the surface water retention pond.** Criteria/trigger levels, which will determine when the outlet from the pond shall be

closed, shall be as agreed by the Agency in accordance with Condition 6.13.2 of this licence. Such monitoring shall, as a minimum, include conductivity, pH and TOC.

- 5.7 The licensee shall submit, as part of the Annual Environmental Report, a report on compliance with recommendations of the Detailed Quantitative Risk Assessment (DQRA) submitted to the Agency on 29/5/2014.

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;
 - (ii) any reference measurements for the calibration of automated measurement systems; and,
 - (iii) waste acceptance testing and analysis
- 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. Written records of the calibrations and maintenance shall be made and kept by the licensee.
- 6.7 The frequency, locations, 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 **six 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 stormwater drainage system (i.e., gullies, manholes, any visible drainage conduits and such other aspects as may be agreed) shall be visually inspected weekly, and desludged as necessary. Bunds, silt traps and oil separators 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, silt traps and oil interceptors shall be properly maintained at all times. The licensee shall maintain a drainage map on site. The drainage map shall be reviewed annually and updated as necessary
- 6.11 Process Effluent
- 6.11.1 The acute toxicity of the undiluted final effluent to at least four aquatic species from different trophic levels shall be determined by standardised and internationally accepted procedures and carried out by a competent laboratory. The name of the laboratory and the scope of testing to be undertaken shall be submitted, in writing, to the Agency, within three months of the date of grant of this licence. Once the testing laboratory and the scope of testing have been agreed by the Agency, the Agency shall decide when this testing is to be carried out and copies of the complete reports shall be submitted by the licensee to the Agency within six weeks of completion of the testing.
- 6.11.2 Having identified the most sensitive species outlined in Condition 6.11.1, subsequent compliance toxicity monitoring on the two most sensitive species shall be carried out by the laboratory identified in Condition 6.11.1. The Agency shall decide when this testing is to be carried out and copies of the complete reports shall be submitted by the licensee to the Agency within six weeks of completion of the testing.
- 6.11.3 A representative sample of effluent shall be screened for the presence of organic compounds. Such screening shall be repeated at intervals as requested by the Agency thereafter.
- 6.12 An inspection system for the detection of leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be developed and maintained.
- 6.13 Storm Water
- 6.13.1 A visual examination of the storm water discharges shall be carried out daily. A log of such inspections shall be maintained.
- 6.13.2 A licensee shall, within **three months** of the date of grant of this licence, submit for the Agency's agreement suitable trigger levels for pH, ammonia, TOC, suspended solids and other parameters as may be agreed or directed by the Agency in storm water discharges, such that storm waters exceeding these levels will be diverted for retention and suitable disposal. The licensee shall have regard to the Environmental Protection Agency "Guidance on the setting of trigger values for storm water discharges to off-site surface waters at EPA IPPC and Waste licensed facilities" when establishing the suitable trigger levels.
- 6.14 Ground Water
- Following the Risk Screening submitted to the Agency on 29 May 2014, the licensee shall complete a technical assessment in accordance with the EPA Guidance on the Authorisation of Discharges to Groundwater. Any 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 as amended shall be agreed by the Agency and implemented before 22nd December 2015. Groundwater monitoring results shall be submitted annually or as required in the Schedules to this licence.

6.15 Noise

The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)' as published by the Agency.

6.16 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 determined 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.

6.17 The licensee shall establish and maintain a Data Management System for collation, archiving, assessing and graphically presenting the monitoring data generated as a result of this licence.

6.18 Soil Monitoring

The licensee shall carry out soil monitoring at the site of the installation, within **three** years of date of grant of licence and at least once every ten years thereafter. The sampling and monitoring shall be carried out in accordance with any guidance or procedure as may be specified by the Agency.

6.19 The road network in the vicinity of the installation shall be kept free from any debris caused by vehicles entering or leaving the installation. Any such debris or deposited materials shall be removed without delay.

6.20 Litter Control

6.20.1 Litter fencing and netting shall be installed and maintained around the perimeter of the active tipping area. The netting shall be kept tidy, with litter trapped in the netting removed as soon as practicable.

6.20.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:

- a) A temporary repair shall be made by the end of the working day; and
- b) A repair to the standard of the original netting shall be undertaken within three working days.

6.20.3 All loose litter or other waste, placed on or in the vicinity of the installation, other than in accordance with the requirements of this licence, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.

6.20.4 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.

6.21 Dust Control

In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.

6.22 Bird Control

Birds shall be prevented from gathering on and feeding at the facility by the use of birds of prey and/or other bird scaring techniques. The birds of prey and/or other techniques shall be in place on the facility from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency.

6.23 Vermin/Fly Control

The licensee shall **establish and maintain to the Agency's satisfaction a programme** for the control and eradication of vermin and fly infestations at the installation. This **programme** should include as a minimum, operator training, details on the rodenticide(s) and insecticide(s)

- to be used, mode and frequency of application and measures to contain sprays within the installation boundary.
- 6.24 Noise Control
- The licensee shall ensure the following;
- (i) Use of low sound level plant on site;
 - (ii) All heavy machinery and mechanical plant used on site are fitted with acoustic panels and acoustics mufflers (exhaust silencers);
 - (iii) Implementation of appropriate speed restrictions on site; and
 - (iv) Use of suitable noise screens/control measures.
- 6.25 All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.
- 6.26 Groundwater Monitoring
- Subject to the agreement of the well owners, all private wells within 500m of the facility shall be included in the monitoring programme set out in *Schedule C: Control & Monitoring*, of this licence.
- 6.27 Topographical Survey
- A topographical survey shall be carried out annually. The survey shall include a measurement of the remaining available void space. The survey shall be in accordance with any written instructions issued by the Agency.
- 6.28 Biological Assessment
- A biological assessment of the Powerstown Stream shall be undertaken annually. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The location of monitoring points shall be agreed by the Agency.
- 6.29 Stability Assessment
- The licensee shall carry out an annual stability assessment of the side slopes of the facility.
- 6.30 Nuisance Monitoring
- The licensee shall, on a daily basis, inspect the installation and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours. The licensee shall maintain a record of all nuisance inspections.
- 6.31 Odour Monitoring
- 6.31.1 The licensee shall inspect the installation and its environs daily for nuisances caused by odours. This inspection shall include monitoring at the relevant locations specified in *Schedule C: Control & Monitoring*, Table C.1.1 Monitoring Locations, of this licence. This shall incorporate the use of a FID or alternative agreed by the Agency.
- 6.31.2 The licensee shall maintain and implement an Odour Management Plan (OMP) for the installation.
- 6.31.3 The OMP referred to in Condition 6.31.2 shall include measures to control potential sources of odour nuisance, including *inter alia*, provisions regarding:
- a) Requirements of relevant conditions of this licence;
 - b) Adequate resources and training on-site to provide for the maintenance, monitoring and operation of the landfill gas extraction system;
 - c) Acceptance and management of odorous waste deliveries;
 - d) Arrangements for the biannual preparation of an independent assessment and report on surface VOC emissions at the facility following completion of waste acceptance in any cell/sub-cell;
 - e) Use of sacrificial gas extraction systems; phased capping of the waste body; and an interim capping system at inter-cell boundaries;

- f) Working face/active cell sizing and covering;
 - g) Landfill gas collection:- locations of infrastructure including access/haul roads, well design and density, monitoring, condensate management, field balancing, flare/combustion plant operation;
 - h) Identification of fugitive sources of landfill gas emissions (e.g. from leachate management infrastructure and/or from side slopes);
 - i) Monitoring:- VOC surface emissions from capped areas, odour checks off- and on-site, receipt and evaluation/verification of odour complaints received.
- 6.31.4 To meet the requirements of the OMP, the licensee shall carry out a monthly review of control measures in place at the installation and maintain findings in a monthly report. This shall include:
- (i) consideration of odour complaints received (including details and nature of the complaints, times and weather conditions, any unusual circumstances, problems, etc.);
 - (ii) review of any monitoring, including ambient odour monitoring in accordance with *Schedule C.10 Ambient Odour Monitoring* of this licence, carried out (including investigation of complaints and actions taken where relevant);
 - (iii) an update on 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); and
 - (iv) details of any remedial/corrective actions taken, where relevant, including actions taken on foot of recommendations from previous reports; and
 - (v) recommendations and implementation of same.
- The licensee shall maintain these reports on site and forward them to the Agency on request.
- 6.31.5 The OMP shall be reviewed annually and any updates/amendments submitted to the Agency as part of the Annual Environmental Report.
- 6.31.6 In relation to surface emissions from the waste body and identified features, the following shall constitute a trigger level:
- (i) VOC greater than or equal to 50ppmv as methane average over capped area; or
 - (ii) VOC greater than or equal to 100ppmv as methane instantaneous reading on open surfaces within the landfill footprint; or
 - (iii) VOC greater than or equal to 500ppmv as methane around all identified features.
- 6.32 Leachate holding tank **and** leachate lagoon shall be covered, and head gases vented to treatment as may be required by the Agency.
- 6.33 All odorous or odour-forming wastes shall be covered as soon as practicable and in any case at the end of the working day.
- 6.34 Where it is proposed to take biological sludges at the facility, these must be subject to appropriate pre-treatment in advance of acceptance at the facility.
- 6.35 When siting and operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.
- 6.36 Telemetry
- 6.36.1 The licensee shall maintain a telemetry system at the facility. This system shall include for:
- a) Recording of leachate levels in the lined cells, **leachate lagoon and leachate tank**;
 - b) Recording of levels in the surface water **retention pond** and flows to the perimeter streams;

- c) Quality of the surface water at the inlet to the surface water retention pond and being discharged to the perimeter streams; and,
 - d) Leakage into leak detection/collection layer.
- 6.36.2 All operations linked to the telemetry system shall also have a manual control which will be reverted to in the event of break in power supply or during maintenance.
- 6.37 Landfill Gas Monitoring Infrastructure
 - 6.37.1 The licensee shall maintain perimeter landfill gas monitoring boreholes at maximum 40m intervals around the periphery of the landfill facility, subject to the agreement of landowners, if necessary; and
 - 6.37.2 The licensee shall provide and maintain an effective permanent gas monitoring system in the site office and any other enclosed structures at the facility.
- 6.38 Working Face
 - 6.38.1 Unless the prior agreement of the Agency is given, the following shall apply at the landfill:
 - a) Only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials; and
 - b) The working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3.
 - 6.38.2 All waste deposited at the working face shall be compacted, using a steel wheeled compactor, and covered as soon as is practicable and at any rate prior to the end of the working day.
 - 6.38.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
- 6.39 Daily and Intermediate Cover
 - 6.39.1 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 8.17.4 (or meets the requirements of an alternative protocol as may be agreed under Condition 8.17.2), complies with any requirements of the Department of Agriculture, Food and the Marine relating to the management of animal by-products and has been agreed in advance with the Agency.
 - 6.39.2 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.
 - 6.39.3 The licensee shall ensure that appropriate cover material shall be placed and maintained across the whole landfill so that no waste, other than the following is exposed:
 - a) Waste suitable for specified engineering works; and
 - b) Waste on the working face during the operational hours of the landfill.
- 6.40 Operational Controls
 - 6.40.1 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
 - 6.40.2 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of leachate, surface water and gas collection systems unless with the prior agreement from the Agency.
 - 6.40.3 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.
 - 6.40.4 Scavenging shall not be permitted at the installation.
 - 6.40.5 Gates shall be locked shut when the installation is unsupervised.

- 6.40.6 Fuels shall be stored only at appropriately banded locations within the installation.
- 6.40.7 No smoking shall be allowed within the installation.
- 6.41 Off-site Disposal and Recovery
- 6.41.1 Waste sent off-site for recovery or disposal shall be conveyed only by a waste contractor agreed by the Agency.
- 6.41.2 All waste transferred from the installation shall be transferred only to an appropriate facility agreed by the Agency.
- 6.41.3 All wastes removed off-site for recovery or disposal shall be transported from the installation to the consignee in a manner, which will not adversely affect the environment.
- 6.42 Civic Waste Facility
- 6.42.1 The Civic Waste Facility shall be used only by private vehicles. The facility shall not be used as a transfer station for disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles.
- 6.42.2 All waste deposited in the Civic Waste Facility shall be either:
- Into a skip;
 - Into the hopper of a compactor for disposal;
 - Into a receptacle for recovery; and
 - In the case where inspection is required, into a designated inspection area.
- 6.42.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.
- 6.42.4 At the end of the working day the ground around the Civic Waste Facility shall be cleared of waste.
- 6.42.5 Unless where alternative arrangements for disposal are agreed in advance by the Agency, all waste accepted at the Civic Waste Facility for disposal on-site shall be removed from the Civic Waste Facility before the end of the working day and disposed of in the landfill.
- 6.42.6 Drainage from the **soiled areas of the Civic Waste Facility** shall be directed to the leachate tank.
- 6.43 Leachate Management
- 6.43.1 Leachate levels in the waste shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.
- 6.43.2 The SCADA system shall be used to monitor leachate levels in lined cells and leakage into the leak detection/collection layer.
- 6.43.3 The frequency of leachate removal from leachate lagoons/tanks shall be such that a minimum freeboard of 0.75m is maintained in the leachate lagoon and leachate tank at all times.
- 6.43.4 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and, in any case, shall be undertaken only within cells which have been lined to the satisfaction of the Agency.

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 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.
- 7.3 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into Schedule of Environmental Objectives and Targets.
- 7.4 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

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

Condition 8. Materials Handling

- 8.1 The licensee shall ensure that waste generated in the carrying on of the activity shall be prepared for re-use, recycling or recovery or, where that is not technically or economically possible, disposed of in a manner which will prevent or minimise any impact on the environment.
- 8.2 Disposal or recovery of waste on-site shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.
- 8.3 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported from the site of the activity to the site of recovery/disposal only in a manner that will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.
- 8.4 The licensee shall ensure that, in advance of transfer to another person, waste shall be classified, packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling.
- 8.5 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.
- 8.6 Waste shall be stored in designated areas, protected as may be appropriate against spillage and leachate run-off. The waste shall be clearly labelled and appropriately segregated.
- 8.7 No waste classified as green list waste in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended) shall be consigned for recovery without the agreement of the Agency.
- 8.8 Waste for disposal/recovery off-site shall be analysed in accordance with *Schedule C: Control & Monitoring*, of this licence.
- 8.9 Unless approved in writing, in advance, by the Agency the licensee is prohibited from mixing a hazardous waste of one category with a hazardous waste of another category or with any other non-hazardous waste.
- 8.10 The licensee shall neither import waste into the State nor export waste out of the State except in accordance with the relevant provisions of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14th June 2006 on shipments of waste and associated national regulations.
- 8.11 Waste Acceptance and Characterisation Procedures

- 8.11.1 Other than at the civic waste facility, waste shall only be accepted at the facility from Local Authority waste collection or transport vehicles or holders of waste permits, unless exempted or excluded, issued under the Waste Management Act 1996 as amended. Copies of these waste collection permits must be maintained at the installation.
- 8.11.2 The licensee shall maintain detailed written procedures for the acceptance and handling of wastes.
- 8.11.3 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) or shredded tyres shall not be disposed of at the installation.
- 8.11.4 No hazardous wastes, liquid wastes or asbestos wastes shall be disposed of at the installation.
- 8.11.5 No waste which in the conditions of the landfill, is explosive, corrosive, oxidising, highly flammable or flammable as defined in EU Council Directive 91/689/EEC shall be accepted at the landfill.
- 8.11.6 **The licensee may accept up to 5 tonnes per annum of:**
- (i) **household hazardous waste, and**
 - (ii) **hazardous waste from business customers and other non-household sources including farms that, because of its nature or composition, is similar to household hazardous waste,**
- at the Civic Waste Facility. The licensee shall have regard to any relevant guidance published by the Agency under the National Hazardous Waste Management Plan.**
- 8.12 **Waste Treatment**
- Only waste that has been subject to treatment shall be accepted for disposal at the landfill.
- (i) Treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009.
 - (ii) With the agreement of the Agency, this condition shall not apply to:
 - inert wastes for which treatment is not technically feasible;
 - other waste for which such treatment does not contribute to the objectives of the Landfill Directive as set out in Article 1 of the Directive by reducing the quantity of the waste or the hazards to human health or the environment.
- 8.13 Sewage sludge shall be subject to treatment and must achieve a minimum solids content of 17% prior to acceptance at the facility. All sewage sludge shall be covered immediately with other waste.
- 8.14 Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.
- 8.15 The dilution or mixture of waste is prohibited.
- 8.16 **Limit on acceptance of biodegradable municipal waste**
- 8.16.1 Unless otherwise as may be specified by the Agency, the following limits shall apply:
- (i) To 30 June 2016 inclusive, a maximum of 30% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW), measured on a calendar year basis or, in 2016, part thereof, and
 - (ii) From 1 July 2016, a maximum of 15% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, measured on a calendar year basis or, in 2016, part thereof.
- 8.16.2 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with Condition 8.16.1. Such agreement may be sought by review of the landfill licence for any facility seeking an increase in the limits set out in Condition 8.16.1, and by technical amendment of any licence for a facility seeking a decrease. Such agreement will be contingent on the net combined

- acceptance of biodegradable municipal waste at the participating facilities remaining unchanged.
- 8.17 Determination of biodegradable municipal waste content of municipal waste
- 8.17.1 The licensee shall determine the biodegradable municipal waste content of MSW accepted at the landfill. Waste that has been bio-stabilised in accordance with Condition 8.17.4 shall not be considered BMW.
- 8.17.2 Bio-stabilised residual wastes meeting the requirements of
- Condition 8.17.4, or
 - an alternative protocol as may be agreed with the Agency based on biological treatment process parameters (e.g. validated residence time and temperature parameters at the treatment facility),
- received at the landfill may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 8.16.1.
- 8.17.3 In determining BMW content, the licensee shall use approved calculation factors for BMW content of municipal waste streams published by the EPA. With the agreement of the EPA, alternative factors can be used if they have been determined following waste characterisation carried out in accordance with EPA-approved characterisation protocols including, where appropriate, the use of EPA-approved contractors.
- 8.17.4 In the case of bio-stabilised residual wastes, stabilisation means the reduction of the decomposition properties of the waste to such an extent that offensive odours are minimised and that the respiration activity after four days is <10mg O₂/g DM until 1 January 2016 and <7mg O₂/g DM thereafter.
- 8.17.5 Bio-stabilised residual wastes shall be monitored in accordance with *Schedule C.9: Waste Monitoring* of this licence.
- 8.17.6 Waste that was accepted to the body of the landfill as stabilised waste, but subsequently is found not to meet the stabilisation standard set out in Condition 8.17.4 shall be notified to the Agency and included in the calculation of BMW accepted to the body of the landfill when assessing compliance with Condition 8.16.1.
- 8.17.7 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Conditions 8.12 and 8.16.1, which shall be available for inspection by Agency personnel.
- 8.18 All waste shall be checked at the working face. Any waste deemed unsuitable for acceptance at the installation and/or in contravention of this licence shall be immediately separated and removed from the installation at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.
- 8.19 **Composting**
- 8.19.1 The composting process shall not be commenced without the agreement of the Agency.
- 8.19.2 The licensee shall maintain procedures for operation of the green waste composting facility as may be agreed with the Agency. The procedures shall include as a minimum measures for waste acceptance, nuisance control, surface water management, monitoring of composting process, monitoring of leachate generated within the compost area, monitoring of end product of composting process and proposed end uses of the compost.
- 8.19.3 Compost produced by the facility shall comply with the quality standards established in *Schedule D: Compost Quality*, of this licence. Analysis of the compost shall be in accordance with the requirements of that Schedule.

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 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 shall include a risk assessment to determine the requirements at the installation for firefighting and firewater retention facilities. This procedure shall be reviewed annually and updated as necessary. The licensee shall consult the Fire Authority during reviewing/updating this assessment.
- 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 Where an incident or accident that significantly affects the environment occurs, the licensee shall, without delay, take measures to limit the environmental consequences of the incident or accident and to prevent further incident or accident.
- 9.4 Emergencies
- 9.4.1 All significant spillages occurring at the installation shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.
- 9.4.2 No waste shall be burnt within the boundaries of the installation. A fire at the installation shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.
- 9.4.3 In the event that monitoring of local wells indicates that the installation 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.
- 9.4.4 In the event that monitoring of the side slopes of the installation indicate that there may be a risk of slope failure this will be treated as an emergency.

Reason: To provide for the protection of the environment.

Condition 10. Closure, Restoration and Aftercare Management

- 10.1 Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, 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 licensee shall **maintain**, to the satisfaction of the Agency, a fully detailed and costed plan for the decommissioning or closure of the site or part thereof.
- 10.2.2 The plan 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.
- 10.2.3 The licensee shall have regard to the Environmental Protection Agency's Guidance on Assessing and Costing Environmental Liabilities (2014) and, as appropriate, Guidance on Environmental Liability Risk Assessment, Residuals Management Plans, and Financial Provision (2006) and the Baseline Report, when implementing Condition 10.2.1 above.
- 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 The licensee shall restore the installation on a phased basis. The Restoration and Aftercare Plan shall be agreed by the Agency.
- 10.5 Unless otherwise agreed by the Agency, filled cells shall be permanently capped within 24 months of the cells having been filled to the required level.
- 10.6 The final profile/height of the facility
- 10.6.1 The final profile of the facility shall be based on that shown in Drawing No. 2003-120-01-012 - "Proposed Final Contours" subject to the maximum slopes on the extended areas being no greater than 1 in 3.
- 10.6.2 The maximum final height of the facility shall be 64.0 mOD Malin.
- 10.7 Final Capping
- Unless otherwise agreed with the Agency, the final capping shall consist of the following:
- Top soil (150 -300mm);
 - 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 1×10^{-4} m/s or an equivalent geosynthetic layer;
 - Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-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.
- In the case of the unlined landfill area, in addition to the above, the compacted mineral layer shall be augmented by a 1mm flexible membrane layer, such as LLDPE.
- 10.8 No material or object that is incompatible with the proposed restoration of the installation shall be present within one metre of the final soil surface levels.

- 10.9 Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.
- 10.10 The restoration of the landfill facility shall be completed within 12 months of completion of final capping at the landfill.
- 10.11 **Soil Storage**
All soils shall be stored to preserve the soil structure for future use.

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 licensee shall notify the Agency, in a format as may be specified by the Agency, one month in advance of the intended date of commencement of acceptance of waste for Scheduled Disposal/Recovery activities at the installation (waste used in the installation construction excepted).
- 11.2 The licensee shall notify the Agency by both telephone and either email or webform, 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) an incident or accident that significantly affects the environment;
 - (ii) any release of environmental significance to atmosphere from any potential emissions point including bypasses;
 - (iii) any breach of one or more of the conditions attached to this licence;
 - (iv) any malfunction or breakdown of key control equipment or monitoring equipment set out in *Schedule C: Control & Monitoring*, of this licence which is likely to lead to loss of control of the abatement system; and
 - (v) 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.
- 11.3 The following shall be notified, as soon as practicable after the occurrence of any incident which relates to a discharge to water:
- (i) Inland Fisheries Ireland / Department of Agriculture, Food and the Marine in the case of discharges to receiving waters.
 - (ii) Marine Institute (MI), Sea Fisheries Protection Authority (SFPA), Food Safety Authority of Ireland (FSAI) and an Bord Iascaigh Mhara (BIM) in the case of discharges to or likely to impact a shellfish water.
 - (iii) The local authority, in the case of discharges to designated bathing waters.
- 11.4 The licensee shall make a record of any notification made under Condition 11.2. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident or accident. The record shall include all corrective actions taken to manage the incident or accident, minimise wastes generated and the effect on the environment, and avoid recurrence. In the case of a breach of a condition, measures to restore compliance. The licensee shall, as soon as practicable following notification, submit to the Agency the record.
- 11.5 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.

- 11.6 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 installation.
- 11.7 The licensee shall as a minimum ensure that the following documents are accessible at the site:
- (i) the licences relating to the installation;
 - (ii) the current EMS for the installation including all associated procedures, reports, records and other documents;
 - (iii) the previous year's AER for the installation;
 - (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 installation;
 - (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 Environmental Impact Statement (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 31st 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 F: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 11.9 A full record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall be maintained on a monthly basis and shall as a minimum contain details of the following:
- (i) the tonnages and EWC Code for the waste materials imported and/or sent off-site for disposal/recovery;
 - (ii) the names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number);
 - (iii) details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required;
 - (iv) written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site;
 - (v) details of all waste consigned abroad for Recovery and classified as 'Green' in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended). The rationale for the classification must form part of the record;
 - (vi) details of any rejected consignments;
 - (vii) details of any approved waste mixing;
 - (viii) the results of any waste analyses required under *Schedule C: Control & Monitoring*, of this licence; and
 - (ix) the tonnage and EWC Code for the waste materials recovered/disposed on-site.
- 11.10 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.

11.11 All reports shall be certified accurate and representative by the installation manager or a nominated, suitably qualified and experienced deputy:

11.12 The licensee shall maintain a computer-based record for each load of waste arriving at the facility, excluding those arriving at the Civic Waste Facility. The licensee shall record the following:-

- a) the date and time;
- b) the name of the carrier (including if appropriate, the waste carrier registration details);
- c) the vehicle registration number;
- d) the trailer, skip or other container unique identification number (where relevant);
- e) the name of the producer(s)/collector(s) of the waste as appropriate;
- f) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
- g) a description of the waste including the associated EWC/HWL codes;
- h) the quantity of the waste, recorded in tonnes;
- i) details of the treatment(s) to which the waste has been subjected;
- j) the classification and coding of the waste, including whether MSW or otherwise;
- k) whether the waste is for disposal or recovery and if recovery for what purpose;
- l) the name of the person checking the load; and
- m) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

11.13 Written Records

The following written records shall be maintained by the licensee:-

- a) The types and quantities of waste recovered and disposed of at the installation each year. These records shall include the relevant EWC Codes;
- b) All training undertaken by installation staff;
- c) Results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;

11.14 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:-

- a) The name of the carrier;
- b) The date and time of removal of leachate from the facility;
- c) The volume of leachate, in cubic metres, removed from the facility on each occasion;
- d) The name and address of the Waste Water Treatment Plant to which the leachate was transported; and
- e) Any incidents or spillages of leachate during its removal or transportation.

11.15 A written record shall be kept for each load of waste departing from the Civic Waste Facility. The following shall be recorded:-

- a) the name of the carrier (including if appropriate, the waste carrier registration details);
- b) the vehicle registration number;
- c) the destination of the waste (facility name and waste licence/permit number as appropriate);
- d) a description of the waste (if recovered or rejected waste, the specific nature of the waste);
- e) the quantity of the waste, recorded in tonnes;
- f) the name of the person checking the load; and
- g) the time and date of departure:

- 11.16 A written record shall be kept at the installation of the programme for the control and eradication of vermin and fly infestations at the installation. These records shall include as a minimum the following:
- a) The date and time during which spraying of insecticide is carried out;
 - b) Contractor details;
 - c) Contractor logs and site inspection reports;
 - d) Details of the rodenticide(s) and insecticide(s) used;
 - e) Operator training details;
 - f) Details of any infestations;
 - g) Mode, frequency, location and quantity of application; and
 - h) Measures to contain sprays within the facility boundary.
- 11.17 The waste acceptance procedures shall provide for:-
- (i) the checking of waste documentation on receipt of waste in the waste reception area;
 - (ii) non pre-cleared customers, the visual inspection and testing of waste in the waste inspection area pending acceptance/rejection;
 - (iii) the visual inspection of waste when deposited at the working face;
 - (iv) the keeping for two months of any samples associated with on-site verification sampling of waste accepted at the installation.
- 11.18 The licensee shall provide a written acknowledgement (to carrier/waste contractor) of receipt of each delivery of waste to the installation (for disposal in the landfill).
- 11.19 Reports relating to Facility Operations
- 11.19.1 Leachate Handling Procedures
- The licensee shall maintain Leachate Handling Procedures for the handling of leachate at the installation and during removal from the lagoon and subsequent transport/discharge to the Waste Water Treatment Plant.
- 11.19.2 Procedures during Windy Conditions
- The licensee shall maintain written procedures for the operation of the installation during windy conditions in order to militate against the occurrence of any potential nuisance.
- 11.20 Monitoring Locations
- The licensee shall maintain updated appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include twelve figure National Grid References for the various monitoring points.
- 11.21 Waste Recovery Reports
- The licensee shall as part of the Annual Environmental Report for the site submit a report on the contribution by this installation to the achievement of the waste recovery objectives stated in Condition 2.2.2.3 and as otherwise may be stated in National and European Union waste policies and shall, as a minimum, include tonnages of the following:
- (i) the recovery of Construction and Demolition Waste;
 - (ii) the recovery of other waste in landfill operations, including restoration;
 - (iii) the recovery of energy through landfill gas combustion.
- 11.22 The Licensee shall report to the Agency such data and records, and at such frequency, as may be specified by the Agency in order to demonstrate compliance with the requirements of Condition 8.16.1. Unless otherwise advised by the Agency, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each quarter on the quantity of MSW and BMW accepted at the landfill during the preceding quarter and on a cumulative basis for the calendar year to date. The report shall detail the tonnage of MSW and BMW

accepted and the basis (including all calculation factors) on which the figures have been calculated.

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 €22,459, 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 Environmental Protection Agency Act 1992 as amended. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31st 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 Environmental Protection Agency Act 1992 as amended 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 (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 appropriately qualified consultant, 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 six 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 Within **twelve** months of date of grant of this licence, 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. 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 The licensee shall revise the cost of closure, restoration and aftercare annually and any adjustments shall be reflected in the financial provision made under Condition 12.2.3.

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

12.3 Financial Provision for Closure, Restoration and Aftercare

- 12.3.1 The licensee shall maintain a fund, or provide a written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan required by Condition 10.2. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.
- 12.3.2 Any fund established shall be maintained in an amount always sufficient to underwrite the current Restoration and Aftercare Plan.
- 12.3.3 The licensee shall revise the cost of restoration and aftercare annually and any details of the necessary adjustments to the fund or guarantee must, within two weeks of the revision, be forwarded to the Agency for its agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.
- 12.3.4 Unless otherwise agreed any revision to the fund 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.

12.4 Cost of landfill of waste

In accordance with the provisions of Section 53A of the Waste Management Act 1996 as amended, the licensee shall ensure the costs involved in the setting up and operation of the facility, as well as the costs of closure and after-care (including cost of provision of financial security) for a period of at least 30 years (post closure) shall be covered by the price to be charged for the disposal of waste at the facility. The statement required under Section 53A(5) of said Acts is to be included as part of the AER.

12.5 Community Fund

The licensee shall pay €1 (Index Linked) for every tonne of waste accepted for disposal in the landfill into a secure and dedicated community support and development fund. The licensee shall maintain a community managed charitable trust (or equivalent) to manage and discharge this fund for the benefit of the social and physical environment of the local community.

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

SCHEDULE A: Limitations

A.1

The following waste related processes are authorised:

- Landfilling of non-hazardous waste and associated processes including:
 - o development and capping of landfill cells;
 - o extraction, collection, flaring and utilisation of landfill gas;
 - o extraction, collection and dispatch for disposal of leachate;
 - o processes for the management and mitigation of environmental emissions; and
 - o processes for the restoration and aftercare management of the landfill.
- Operation of a civic waste facility.
- Composting of green waste and associated processes including:
 - o waste pre-treatment and preparation for composting;
 - o collection and dispatch for disposal of excess leachate and run-off; and
 - o processes for the management and mitigation of environmental emissions.

No additions to these processes are permitted unless agreed in advance with the Agency.

A.2 Waste Acceptance

Table A.2.1 Waste Categories and Quantities

Waste Type ^{Note 2}		Maximum ^{Note 3} (Tonnes Per Annum)
Non-Hazardous Wastes ^{Note 1}	Household (Residual) ^{Note 4}	48,500
	Commercial	
	Industrial solid waste	
	Construction & Demolition	
	Treated Sewage Sludge	
Total		50,000

Note 1: Any proposals to accept other compatible non-hazardous waste types must be agreed in advance by the Agency.

Note 2: Non-hazardous waste only authorised, with the exception of up to 5 tonnes of household hazardous waste and similar waste from other sources authorised for acceptance at the civic waste facility.

Note 3: The limitation on individual non-hazardous waste types may be varied with the agreement of the Agency subject to the total limit for non-hazardous waste staying the same.

Note 4: Including a maximum of 300 tonnes/annum of green waste from households for composting at the installation, unless agreed otherwise by the Agency.

TABLE A.2.2 Total Permitted Landfill Capacity

Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility)	383,000 m ³
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SCHEDULE B: Emission Limits

B.1 Emissions to Air

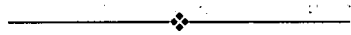
B.1.1 Landfill Gas Plant

Emission Point Reference numbers: **LFGF1**

Minimum discharge height: **5m**

Parameter	Flare (enclosed) Emission Limit Value ^{Note 1}	Utilisation Plant Emission Limit Value ^{Note 1}
Nitrogen oxides (NO _x)	150 mg/m ³	500 mg/m ³
Particulates	Not applicable	130 mg/m ³

Note 1: Dry gas referenced to 5% oxygen by volume for utilisation plants and 3% oxygen by volume for flares.



B.1.2 Landfill Gas Concentration Limits

Parameter	Level ^{Note 1}
Methane	20 % LEL (1% v/v)
Carbon Dioxide	1.5 % v/v

Note 1: Measured in any building on or adjacent to the installation.



B.2 Emissions to Water

B.2.1 Process Effluent

There shall be no emissions to water of environmental significance.



B.2.2 Storm water

Emission Point Reference No: **SWLO (the outlet from the surface water retention pond as per Drawing No. LW14-120-02-003 dated 23/02/15 of the licence application)**

Name of Receiving Waters: **Powerstown Stream**

Parameter	Emission Limit Value (mg/l)
Suspended Solids	35

B.3 Noise Emissions

Daytime dB L _{A,r,T} (30 minutes)	Evening time dB L _{A,r,T} (30 minutes)	Night-time dB L _{Aeq,T} (15-30 minutes)
55	50	45 ^{Note 1}

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

B.4 Dust Deposition Limits:

(Measured at the dust monitoring points indicated in *Table D.1.1*).

Level (mg/m ² /day) ^{Note 1}
350

Note 1: 30 day composite sample with the results expressed as mg/m²/day.

SCHEDULE C: Control & Monitoring

C.1 Monitoring

Table C.1.1 Monitoring Locations (as per Drawing No. LW14-120-02-003 dated 23/02/15 of the licence application)

Perimeter gas wells and Gas Manifolds	Landfill Gas Flare/Utilisation Plant	Dust Deposition & Odour	Noise	Surface Water	Groundwater	Leachate	Soil Note 4
Note 1	Gas Flare	Dust	Noise Sensitive Locations			Leachate Levels	
TP12, TP13, TP14, TP16, TP17 G1 G2 G3 G4 G5 G6 G7 G8 G22 G23 G24 G25 G26 G27 G28 G29 G30 G31 G32 G33 G34 G35 G36 G37 G38 G39 G41 G43 G44 G45 G46 MO1, MO2, MO3, MO5, MO6	LFGF1	D2 D4 D5 D6 D7 D8	N4 N5 N6 S1 S2	SWL1 (inlet to the retention pond) SWLO (outlet from the retention pond) ST2 (Powers-town Stream - upstream) ST1 (Powers-town Stream - downstream)	RCA1 RCA2 GW1 GW2 GW3 GW6 GW7 GW8 BH1 BH2 BH3 BH4	Leachate Lagoon & Leachate Tank Additional locations ^{Note 3} Leachate Composition Leachate Lagoon & Leachate Tank L1 L2 L3 L4 L7 L10 L11 L12 L13 L15 L16 L17 L18 LT	SS1 SS2 SS3
		Odour Note 2					

- Note 1:** Any other monitoring locations and monitoring at gas manifolds (MO) as may be required by the Agency.
- Note 2:** 3 fixed locations to be agreed by the Agency and 2 locations to be chosen on the day (upwind/downwind) from a list of locations to be agreed by the Agency.
- Note 3:** Leachate levels in cells at the lowest collection points i.e. at leachate collection sumps, or otherwise agreed by the Agency.
- Note 4:** Monitoring scope as may be required by the Agency.

C.2 Landfill Gas

Table C.2.1 Landfill Gas Monitoring Parameters, Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method ^{Note1} / Technique ^{Note2}
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH ₄) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂) % v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O ₂) % v/v	Monthly	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly	Weekly	Standard

Note 1: All monitoring equipment used should be intrinsically safe.

Note 2: Or other method/technique agreed in advance by the Agency.



C.3 Surface Water, Groundwater and Leachate**Table C.3.1 Water and Leachate Monitoring - Parameters / Frequency**

PARAMETER ^{Note 1}	SURFACE WATER ^{Note 2} Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE ^{Note 3} Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Daily	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Continuous
Ammoniacal Nitrogen	Quarterly	Quarterly	Annually
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly	Annually
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly	Annually
ph	Quarterly	Quarterly	Annually
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly	Quarterly
Metals / non-metals ^{Note 3}	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II organic substances ^{Note 4}	Once off ^{Note 5}	Annually ^{Note 5}	Once off ^{Note 5}
Mercury	Annually	Annually	Annually
Sulphate	Annually	Annually	Annually
Total Alkalinity	Annually	Annually	Not applicable
Total P/orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Annually	Annually
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Biological Assessment	Annually ^{Note 6}	Not Applicable	Not Applicable

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 of leachate, additional samples should be analysed.

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: 2 surface water locations, 3 groundwater locations and 2 leachate locations to be agreed by the Agency for these parameters.

Note 6: Appropriate biological methods (such as EPA Q-Rating System) to be used for the assessment of rivers and streams.

C.4 Dust Monitoring

Table C.4.1 Dust Monitoring Frequency and Technique

Parameter (mg/m ² /day)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times a year ^{Note 1}	Standard Method ^{Note 2}

Note 1: Twice during the period May to September.

Note 2: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

C.5 Noise Monitoring

Location:

Locations as per Table C.1.1

Period	Minimum Survey Duration
Daytime (07:00 to 19:00hrs)	A minimum of 3 sampling periods ^{Note 1} at each noise monitoring location.
Evening-time (19:00 to 23:00hrs)	A minimum of 1 sampling period at each noise monitoring location.
Night-time ^{Note 2} (23:00 to 07:00hrs)	A minimum of 2 sampling periods at each noise monitoring location.

Note 1: Sampling period T shall be in accordance with *Schedule B.3: Noise Emissions*, of this licence. This applies to day, evening and night time periods.

Note 2: Night-time measurements shall be conducted as required by the Agency and should normally be made between 23:00hrs and 04:00hrs, Sunday to Thursday, with 23:00hrs being the preferred start time.

C.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring

At the location of the on-site Met Station as per Drawing No. LW14-120-02-003 dated 23/02/15 of the licence application or from an agreed representative station in the region.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Atmospheric Pressure	Daily	Standard
Wind force and direction	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration	Daily	Standard
Humidity	Daily	Standard

C.7 Landfill Gas Combustion Plant/Enclosed Flare

Location: - Enclosed Flare as per Drawing No. LW14-120-02-003 dated 23/02/15 of the licence Application.

Any alternate location or location of Landfill Gas Combustion Plant to be agreed in advance by the Agency.

Table C.7.1 Landfill Gas Utilisation Plant/Enclosed Flare Parameters and Monitoring Frequency.

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method ^{Note1} /Technique ^{Note2}
Inlet			
Methane (CH ₄) % v/v	Continuous	Weekly	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO ₂) % v/v	Continuous	Weekly	Infrared analyser/thermal conductivity
Oxygen (O ₂) % v/v	Continuous	Weekly	Electrochemical/thermal conductivity
Total Sulphur	Annually	Annually	Ion chromatography
Total Chlorine	Annually	Annually	Ion chromatography
Total Fluorine	Annually	Annually	Ion Selective Electrode
Process Parameters			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger
Outlet			
CO	Continuous	Continuous	Flue gas analyser/datalogger
NO _x	Annually	Annually	Flue gas analyser
SO ₂	Annually	Annually	Flue gas analyser
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
TOC	Annually	Not applicable	Flame ionisation
Hydrochloric acid	Annually	Annually	Impinger /Ion Chromatography
Hydrogen fluoride	Annually	Annually	Impinger /Ion Chromatography

Note 1: All monitoring equipment used should be intrinsically safe.

Note 2: Or other methods agreed in advance by the Agency.

C.8 Monitoring of Composting Process**Table C.8.1** Monitoring of Composting Process

Parameter	Monitoring ^{Note 1} Frequency	Analysis Method/Technique
Moisture Content	Weekly	Standard
Temperature (min/max.)	Daily	Temperature probe

Note 1: Unless otherwise agreed by the Agency.

C.9 Waste Monitoring

Waste class	Frequency	Parameter	Method
Bio-stabilised residual waste	Every 500 tonnes from each source ^{Note 1}	Respiration activity after 4 days	To be agreed by the Agency

Note 1: Frequency can be reduced if an alternative protocol is agreed by the Agency under Condition 8.17.2.

C.10 Ambient Odour Monitoring

Parameter	Frequency	Analysis Method/Technique
Odour	Monthly	As agreed with the Agency

C.11 Receiving Water Monitoring

Location:

ST2 (Powerstown Stream – upstream of SWLO)

ST1 (Powerstown Stream – downstream of SWLO)

Parameter	Monitoring Frequency ^{Note 1}	Analysis Method/Techniques
Biological Quality (Q) Rating/Q Link	Annually	To be agreed by the Agency

Note 1: Monitoring period – June to September.

SCHEDULE D: Standards for Compost Quality

Compost Quality

The following criteria are deemed a quality standard for the use of compost as a soil improver if applied to land in accordance with statutory obligations and requirements under any other enactments or regulations. The following criteria should not be deemed as criteria for fertiliser. Composts for other end uses may require stricter and/or additional criteria to be achieved.

N, P, K, NH₄-N, NO₃-N, pH and dry matter content shall be measured and reported upon in compost quality reports in order to facilitate the end use of the compost.

The criteria apply to the compost just after the final composting/curing phase/treatment and prior to mixing with any other materials.

1. Stability

Table E.1- Maximum Respiration Activity

Parameter	Quality Limit
Stability	Oxygen Uptake Rate (OUR), ≤ 13 mmol O ₂ /kg organic solids/hour

2. Metals ^{Note 1, 2 & 3}

Table E.2 – Maximum Metal Concentration Limits

Parameter (mg/kg, dry mass)	Compost/Digestate Limit (mg/kg dry matter)
Cadmium (Cd)	1.5
Chromium (Cr)	150
Copper (Cu)	150
Mercury (Hg)	1
Nickel (Ni)	75
Lead (Pb)	150
Zinc (Zn)	400

Note 1: These limits should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

Note 2: Incoming sludges (other than sewage sludges) shall be monitored quarterly (on a client by client basis) for the parameters outlined in this table and also for Selenium (Se) and Molybdenum (Mo).

Note 3: Monitoring of Arsenic (As) is required if waste timber is used in the composting/anaerobic digestion process.

3. Pathogens

If this installation is regulated by the Department of Agriculture, Food and the Marine under the Animal By-products Regulation and the compost/digestate has been sanitised in accordance with that Department's requirements, there is no requirement for further testing, provided that records of the testing form part of the compost quality records maintained in accordance with this licence.

If the above does not apply the pathogenic organism content shall not exceed the limits for the following indicator species:

Table E.3 – Pathogenic Organism Content Limits

Species	Limit	Sample Number (n)
Salmonella spp.	Absent in 25g	n=5
Escherichia coli	≤ 1000 CFU per gram of fresh mass	n=5

Where n = Number of samples to be tested.

4. Impurities

Table E.4 – Impurity Content Limits

Parameter	Compost/Digestate Limit
Impurities ^{Note 1} > 2 mm	< 0.5%
Gravel and Stones > 5 mm	< 5%
Sharps	Compost shall not any sharp impurity measuring over a 2 mm dimension that could cause damage or injury to humans, animals or plant during, or resulting from, its intended use

Note 1: Impurities generally refer to macroscopic fragments of glass, metals, plastics or similar non-biodegradable materials.

5. Organic Matter

Table E.5 – Organic Matter Content Limit

Parameter	Compost/Digestate Limit
Organic Matter	≥ 20%

6. Miscellaneous

Table E.6 – Maturity Test

Parameter	Compost/Digestate Limit
Viable Weed Seeds	< 3 viable weed seed per litre
Other	As may be agreed by the Agency

SCHEDULE E: Specified Engineering Works

Specified Engineering Works
Installation of final capping. Installation of Compost Facility. Any other works notified in writing by the Agency.



SCHEDULE F: Annual Environmental Report

Annual Environmental Report Content ^{Note 1}

Plan of the permanent capping work of Phase 3 and timescale of these works.
 Quantity and composition of waste received, disposed of and recovered during the reporting period and each previous year.
 Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.
 Emissions from the installation.
 Summary of results and interpretation of environmental monitoring.
 Waste management records. Waste recovery report.
 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.
 Tank, pipeline and bund testing and inspection report.
 Reported incidents summary.
 Energy consumption summary and 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 installation, and a programme for public information.
 Review of 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).
 Volume of leachate produced and volume of leachate transported / discharged off-site.
 Report on **engineering** works undertaken during the reporting period, and a timescale for those proposed **works** during the coming year.
 Report on restoration of completed cells of **Phase 3**.
 Site survey showing existing levels of the facility at the end of the reporting period.
 Estimated annual and cumulative quantities of landfill gas emitted from the installation.
 Estimated annual and cumulative quantity of indirect emissions to groundwater.
 Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.
 Schedule of Environmental Objectives and Targets for the forthcoming year.
 Reported incidents summary.
 Review of Nuisance Controls.
 Report on the use of a portion of the waste charges for appropriate local environmental improvement projects during the year and details of plans for forthcoming year.
 Statement on the achievement of the waste acceptance and treatment obligations.
 Updates/amendments to the Odour Management Plan.
Report on implementation of the Detailed Quantitative Risk Assessment.
 Any other items specified by the Agency.

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

xxxxxxxxxxxxx

Authorised Person