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WASTE LICENCE
RECOMMENDED DECISION

Licence Register No:	W0081-04
Licensee:	KTK Landfill Limited
Location of Facility:	Brownstown and Carnalway, Kilcullen, County Kildare.

INTRODUCTION

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

This waste licence relates to an existing privately owned and operated, specially engineered landfill accepting commercial and non-hazardous industrial wastes at KTK Landfill Limited, Brownstown and Carnalway, Kilcullen, County Kildare. The landfill closed in 2008 and reopened in 2009 to exploit available void space. This review of the licence is primarily concerned with ensuring that the landfill, in this current and final phase, is operating in compliance with all relevant requirements of the Landfill Directive (1999/31/EC) including the need to divert biodegradable municipal waste from landfill. Waste must be treated before disposal in the landfill and treatment must now reflect pre-treatment technical guidelines published in 2009 by the Agency - *Municipal Solid Waste - Pre-treatment and Residuals Management: An EPA Technical Guidance Document*. Limits on the acceptance of biodegradable municipal waste are introduced. There is a consequential need, set out in the licence, to update and revise waste acceptance procedures, maintain records to demonstrate compliance with new requirements and provide periodic reports on waste disposal and recovery at the facility.

The licence sets out in detail the conditions under which KTK Landfill Limited will operate and manage this facility.

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Glossary of Terms

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts 1996 to 2005, (the Acts), unless otherwise defined in this section.

Regional Fisheries Board	Eastern Regional Fisheries Board.
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	At approximately twelve monthly intervals.
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.
Bi-annually	All or part of a period of six consecutive months.
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.
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.
Construction and Demolition 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 which can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
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.
Day	Any 24 hour period.
Daytime	0800 hrs to 2200 hrs.
dB(A)	Decibels (A weighted).
DO	Dissolved Oxygen.
Documentation	Any report, record, result, 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	Has the meaning given it 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 and any subsequent amendment published in the Official Journal of the European Community.
Facility	Any site or premises used for the purposes of the recovery or disposal of waste.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
GC/MS	Gas Chromatography/Mass Spectroscopy.
Green waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
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.

Hours of Operation	The hours during which the facility is authorised to be operational.
Hours of Waste Acceptance	The hours during which the facility is authorised to accept waste.
ICP	Inductively Coupled Plasma Spectroscopy.
Incident	The following shall constitute an incident for the purposes of this licence: <ul style="list-style-type: none">a) an emergency;b) any emission which does not comply with the requirements of this licence;c) any exceedence of the daily duty capacity of the waste handling equipment;d) any trigger level specified in this licence which is attained or exceeded; and,e) any indication that environmental pollution has, or may have, taken place.
Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
Initial Development Works	Means such works, actions or constructions as may be specified, which for the purposes of environmental protection and safe construction and operation of the facility, have to be carried out in the initial stages of site development, and in any case prior to the commencement of construction of the landfill cells.
Installation	A stationary technical unit or plant where the activity concerned referred to in the First Schedule of EPA Acts 1992 and 2003 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.
IPPC	Integrated Pollution Prevention & Control.
K	Kelvin.
kPa	Kilo Pascals.
Landfill Directive	Council Directive 1999/31/EC.
Leq	Equivalent continuous sound level.
Licensee	KTK Landfill Limited, Brownstown and Carnalway, Kilcullen, County Kildare.
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter.
List I	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
List II	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
Local Authority	Kildare County Council.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and

	repair as may be necessary to adequately perform its function.
Mass Flow Limit	An Emission Limit Value which is expressed as the maximum mass of a substance which 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 approximately monthly intervals.
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	2200 hrs to 0800 hrs.
Noise Sensitive Location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Oil Separator	Device installed according to the International Standard I.S.EN 858-2:2003 (Separator systems for light liquids, (e.g. oil and petrol)-Part 2: Selection of nominal size, installation, operation and maintenance.
PER	Pollution Emission 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.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
Sanitary Authority	Kildare County Council.
Sanitary Effluent	Waste water from facility toilet, washroom and canteen facilities.
SOP	Standard Operating Procedure.
Standard Method	A National, European or internationally recognised procedure (eg, I.S. EN, ISO, CEN, BS or equivalent), as 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.
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 pollution Acts 1977 and 1990.
Treatment/pre-	In relation to waste, any manual, thermal, physical, chemical or biological

treatment	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.
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 Decisions

Reasons for the Decision

The Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2005.

In reaching this decision the Environmental Protection Agency has considered the report of its inspector.

Part I Schedule of Activities Licensed

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

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2005

Class 1.	Deposit on, in or under land (including landfill).
Class 5.	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
Class 11.	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13.	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2005

Class 3.	Recycling or reclamation of metals and metal compounds.
Class 4.	Recycling or reclamation of other inorganic materials.
Class 13.	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Part III Conditions

Condition 1. Scope

- 1.1 Waste activities at this facility shall be restricted to those listed and described in *Part I Schedule of Activities Licensed* and shall be as set out in the licence application or as modified under Condition 1.6 of this licence and subject to the conditions of this licence.
- 1.2 Waste Acceptance Hours and Hours of Operation
- (a) Waste may be accepted at the facility for disposal at the landfill only between the hours of 0700 and 1730 Monday to Friday inclusive (Bank Holidays excluded) and 0800 and 1530 on Saturdays.
- (b) The hours of operation at the facility shall be between the hours of 0700 and 1800 Monday to Friday inclusive and 0700 and 1600 on Saturdays.
- 1.3 Activities at this facility shall be limited as set out in *Schedule A: Limitations*, of this licence.
- 1.4 The facility shall be controlled, operated, and maintained and emissions shall take place as set out in this licence. All programmes required to be carried out under the terms of this licence, become part of this licence.
- 1.5 For the purposes of this licence, the facility authorised by this licence, is the area of land outlined in orange on Drawing No. KTK/2000 Rev A, Nov.'04 entitled "Site location" of the application for licence register number **W0081-03**. Any reference in this licence to "facility" shall mean the area thus outlined in orange. The licensed activities shall be carried on only within the area outlined.
- 1.6 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in
- (a) 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
- (b) 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.
- 1.7 This licence is for the purposes of waste licensing under the Waste Management Acts 1996 to 2010 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.8 This licence has been granted in substitution for the waste licence granted to the licensee on **16 February 2006** and bearing Waste Licence Register No. **W0081-03**. The previous waste licence (Reg. No. **W0081-03**) is superseded by this licence.

Reason: To clarify the scope of this licence.

Condition 2. Management of the Facility

2.1 Facility Management

2.1.1 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced, deputy shall be present on the facility 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. In addition, the facility manager and his/her deputy shall successfully complete FAS waste management training programme or equivalent agreed with the Agency.

2.2 Environmental Management System (EMS)

2.2.1 The licensee shall maintain an Environmental Management System (EMS). The EMS shall be updated on an annual basis.

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

2.2.2.1 Management and Reporting Structure.

2.2.2.2 Schedule of Environmental Objectives and Targets.

The licensee shall maintain a Schedule of Environmental Objectives and Targets. The Schedule shall as a minimum provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology, 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).

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

2.2.2.3 **Landfill Environmental Management Programme (LEMP)**

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

- (a) designation of responsibility for targets;
- (b) the means by which they may be achieved;
- (c) the time within which they may be achieved.

The LEMP shall be reviewed annually and take into account operational experiences at the facility, the stage of development

of the facility (active, closure, aftercare), evolving legislative and BAT requirements, as well as any Agency instructions that may issue. Amendments shall be notified to the Agency for agreement as part of the Annual Environmental Report (AER).

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

2.2.2.4 Documentation

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

2.2.2.5 Corrective Action

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

2.2.2.6 Awareness and Training

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

2.2.2.7 Communications Programme

The licensee shall maintain a 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.

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 all infrastructure referred to in this licence, to the design set out in the Application documentation or as may be otherwise specified or varied by the conditions of this licence.
- 3.2 Facility Notice Board
 - 3.2.1 The licensee shall provide and maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.
 - 3.2.2 The board shall clearly show:-

- a) the name and telephone number of the facility;
 - b) the normal hours of opening;
 - c) the name of the licence holder;
 - d) an emergency out of hours contact telephone number;
 - e) the licence reference number; and
 - f) where environmental information relating to the facility can be obtained.
- 3.3 The landfill footprint (maximum lateral extent of landfilling) shall be as indicated in KTK/2007 Rev A of the Application **for licence register number W0081-03**.
- 3.4 Wastes shall not be deposited in any new cell without the prior written agreement of the Agency.
- 3.5 Phased Construction Plan.
- 3.5.1 Two months prior to the commencement of **any new** site development, the licensee shall submit to the Agency for its agreement a construction schedule, sequence and timescale (Construction Plan) incorporating the requirements of this licence and to give effect to the commitments in application documentation. This Plan shall have regard to the agreed Specified Engineering Works under Licence Reg. No **W0081-02 and W0081-03**. The Construction Plan for cell development shall have regard to the sequencing necessary to provide short, medium and long term screening of the operational areas.
- 3.6 Specified Engineering Works
- 3.6.1 The licensee shall submit proposals for any Specified Engineering Works, as defined in *Schedule D: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months 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.
- 3.6.2 All specified engineering works shall be supervised by an appropriately qualified person, and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 3.6.3 Following the completion of any specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall, as appropriate, include the following information:-
- (a) A description of the works;
 - (b) As-built drawings of the works;
 - (c) Records and results of all tests carried out (including failures);
 - (d) Drawings and sections showing the location of all samples and tests carried out;
 - (e) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
 - (f) Records of any problems and the remedial works carried out to resolve those problems; and
 - (g) Any other information requested in writing by the Agency.
- 3.7 Landfill Lining

3.7.1 Unless otherwise agreed in writing, the landfill lining system shall comprise:-

- (i) A composite liner consisting of a 1m layer of clay with a hydraulic conductivity of less than or equal to $1 \times 10^{-9} \text{ m}^3/\text{m}^2/\text{s}$, overlain by a 2mm thick high density polyethylene (HDPE) layer;
- (ii) A geotextile protection layer placed over the HDPE layer;
- (iii) A 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of $1 \times 10^{-3} \text{ m}^3/\text{m}^2/\text{s}$, of pre-washed, uncrushed, granular, rounded stone (16-32mm grain size) incorporating leachate collection drains;
- (iv) The lining system on the base of the facility shall be laid to a minimum slope of 1:50, and
- (v) The side walls shall be designed and constructed to achieve an equivalent protection.

3.8 Facility Security

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

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

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

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

3.9 Facility Roads and Hardstanding

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

3.9.2 The facility entrance and hardstanding areas shall be appropriately paved and maintained in a fit and clean condition.

3.10 Facility Office

3.10.1 The licensee shall provide and maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

3.10.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.

3.11 Waste Inspection and Quarantine Areas

3.11.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.

3.11.2 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.

- 3.11.3 Drainage from these areas shall be directed to the leachate management system.
- 3.12 Tank and Drum Storage Areas
 - 3.12.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.
 - 3.12.2 All tank and drum storage areas shall, as a minimum, be banded, either locally or remotely, to a volume not less than the greater of the following:
 - (a) 110% of the capacity of the largest tank or drum within the banded area; or
 - (b) 25% of the total volume of substance which could be stored within the banded area.
 - 3.12.3 All drainage from banded areas shall be diverted for collection and safe disposal.
 - 3.12.4 All inlets, outlets, vent pipes, valves and gauges must be within the banded area.
 - 3.12.5 The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency by the 31st January 2004. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.
- 3.13 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility
- 3.14 Weighbridge and Wheel Cleaner
 - 3.14.1 The licensee shall provide and maintain a weighbridge and wheel cleaners at the facility.
 - 3.14.2 The wheel cleaners shall be used by all vehicles leaving the facility as required to ensure that no process water or waste is carried off-site. All water from the wheel cleaning area shall be directed to the leachate management system.
- 3.15 Leachate Management Infrastructure
 - 3.15.1 Leachate management infrastructure shall be provided and maintained at the facility as described in Application documentation, or as may be varied by a licence condition.
 - 3.15.2 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.
- 3.16 Landfill Gas Management
 - 3.16.1 Landfill Gas management infrastructure shall be provided and maintained at the facility as described in Application documentation, or as may be varied by a licence condition.
 - 3.16.2 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environment 1994 publication "Protection of

New Buildings and Occupants from Landfill Gas” and any subsequent revisions.

- 3.17 Groundwater
- 3.17.1 All wells & boreholes shall be adequately sealed to prevent surface contamination and, as may be appropriate, decommissioned according to the UK Environment Agency guidelines ‘Decommissioning Redundant Boreholes and Wells’ (or as otherwise may be agreed by the Agency).
- 3.17.2 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency’s landfill manual “Landfill Monitoring”.
- 3.17.3 **Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC.**
- 3.18 Maintenance
- 3.18.1 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.
- 3.18.2 The licensee shall maintain and clearly label and name all sampling and monitoring locations.

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

Condition 4. Interpretation

- 4.1 Emission limit values for emissions to 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 For 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 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 In the case of landfill gas flare:
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
- 4.2.2 In the case of landfill gas combustion plant:
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 4.3 Emission limit values for emissions to sewer in this licence shall be interpreted in the following way:-
- 4.3.1 Continuous monitoring:
- (i) No flow value shall exceed the specified 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 result 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
- 4.5.1 Noise from the facility shall not give rise to sound pressure levels (Leq,T) measured at the boundary of the activity which exceed the limit value(s).
- 4.6 Dust and Particulate Matter
Dust and particulate matter from the activity shall not give rise to deposition levels which exceed the limit value(s).

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

Condition 5. Emissions

- 5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 5.2 **No emissions, including odours, from the activities carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary.**

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

5.4 The licensee shall ensure that all or any of the following:

- vermin
- birds
- flies
- mud
- dust
- litter

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

5.5 Disposal of Leachate

5.5.1 No leachate shall be discharged to surface water.

5.5.2 All leachate or contaminated water tankered from the facility shall be transported to Athy Waste Water Treatment Plant and disposed of there, unless otherwise agreed with the Agency. The quantity disposed of shall be restricted to 55m³ per day unless otherwise agreed by the Agency and with the prior agreement of the Sanitary Authority. Procedures for the disposal of leachate at the treatment plant shall be in accordance with any written requirements of the Sanitary Authority.

5.5.3 Unless otherwise agreed in advance by the Agency and the Sanitary Authority, no specified discharge or emission to sewer shall exceed the emission limit value set out in **Schedule B.3**. There shall be no other discharge or emission to sewer of environmental significance.

5.5.4 No substance shall be present in emissions to sewer in such concentrations as would constitute a danger to sewer maintenance personnel working in the sewerage system, or as would be damaging to the fabric of the sewer, or as would interfere with the biological functioning of a downstream wastewater treatment works.

5.5.5 The licensee shall permit authorised persons of the Agency and the Sanitary Authority to inspect, examine and test, at all reasonable times, any works and apparatus installed, in connection with the discharge or emission, and to take samples of the discharge or emission.

5.5.6 No discharge or emission to sewer shall take place which might give rise to any reaction within the sewer or to the liberation of by-products which may be of environmental significance.

5.5.7 The licensee shall ensure that the discharge shall not contain dissolved methane, petroleum spirits or organic solvents (including chlorinated organic solvents), at concentrations which would give rise to flammable or explosive vapours in the sewer.

5.5.8 Non-trade effluent wastewater (e.g. firewater, accidental spillage) which occurs on-site shall not be discharged to the sewer without the prior authorisation of the Sanitary Authority.

5.5.9 The licensee shall submit monitoring results in relation to emissions to sewer to the Sanitary Authority on an annual basis.

5.5.10 The licensee shall at no time discharge or permit to be discharged into the sewer any liquid matter or thing which is or may be liable to set or congeal at average sewer temperature or is capable of giving off any

inflammable or explosive gas or any acid, alkali or other substance in sufficient concentration to cause corrosion to sewer pipes, penstock and sewer fittings or the general integrity of the sewer.

- 5.5.11 In the event of any incident which relates to discharges from sewer, having taken place, the licensee shall notify the Agency, local authority and sanitary authority as soon as practicable after the incident.**
- 5.6 The licensee shall maintain for inspection by the Agency evidence to demonstrate that an agreement is in place regarding leachate acceptance (at an off-site facility or facilities) and treatment.
- 5.7 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the installation/facility. Any such debris or deposited materials shall be removed without delay.

Reason: To provide for the protection of the environment by way of control and limitation of emissions and to provide for the requirements of the Sanitary Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2005.

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 Analysis 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 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 analysis is sub-contracted it shall be to a competent laboratory.
- 6.2 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. Agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.
- 6.3 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.
- 6.4 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer.
- 6.5 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the agreement of the Agency following evaluation of test results.
- 6.6 The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.

- 6.7 The licensee shall prepare a programme, to the satisfaction of the Agency, for the identification and reduction of fugitive emissions. This programme shall be included in the Environmental Management Programme.
- 6.8 The integrity and water tightness of all underground pipes and tanks and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 6.9 Storm water
- 6.9.1 A visual examination of the storm water discharge shall be carried out daily. A log of such inspections shall be maintained.
- 6.9.2 The drainage system, bunds, silt traps and oil separators shall be inspected weekly, desludged as necessary and properly maintained at all times. All sludge and drainage from these operations shall be collected for safe disposal.
- 6.10 Groundwater
- 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
- 6.11 Noise
- 6.11.1 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 'Environmental Noise Survey Guidance Document' as published by the Agency.
- 6.12 Telemetry
- 6.12.1 A telemetry system shall be installed and maintained at the facility. All facility 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.
- 6.12.2 This system shall include for:-
- (i) Recording of leachate levels in the lined cells and lagoon;
 - (ii) Recording of levels in the surface water lagoon and flows to the perimeter streams;
 - (iii) Quality of the surface water at the inlet to the surface water lagoons and being discharged to the perimeter streams; and
 - (iv) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.
- 6.13 Leachate Management
- 6.13.1 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.
- 6.13.2 The level of leachate in the pump sumps shall be monitored as outlined in *Schedule C: Control & Monitoring*, of this licence .
- 6.13.3 The frequency of leachate removal from the leachate holding tank shall be such that a minimum freeboard of 0.5m shall be maintained in the tank at all times.

- 6.13.4 Unless treated on the facility, leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers.
- 6.13.5 Recirculation of leachate or other contaminated water shall only be undertaken within cells which have been lined to the satisfaction of the Agency.
- 6.14 Landfill Gas
- 6.14.1 The construction, location and installation phasing of landfill gas monitoring locations shall be as agreed by the Agency.
- 6.14.2 At least two rounds of landfill gas sampling (one during falling atmospheric pressure) in locations external to the disposal cells should be completed prior to commencement of filling of any new area.
- 6.14.3 Flares shall be operated to ensure a burn chamber residence time of minimum 0.3 sec and burn temperature of minimum 1000°C.
- 6.14.4 In relation to landfill derived gases the following shall constitute a trigger level:
- (i) Methane greater than 1% v/v; or,
 - (ii) Carbon Dioxide greater than 1.5% v/v,
- measured in any monitoring borehole, service duct, manhole or other point as may be specified, located external to the body of waste.
- 6.15 Litter Control
- 6.15.1 The measures and infrastructure as described in Application documentation shall be applied to control litter at the facility.
- 6.15.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting 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 netting shall be undertaken within three working days.
- 6.15.3 All loose litter or other waste, placed on or in the vicinity of the facility, 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.
- 6.15.4 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.16 Odour Control
- 6.16.1 All odorous or odour forming wastes shall be covered as soon as practicable and in any case at the end of the working day.
- 6.16.2 Where it is proposed to take biological sludges at the facility, these must be subject to pre-treatment (e.g. lime stabilisation) prior to acceptance at the facility.
- 6.16.3 When siting and operating landfill gas infrastructure regard shall be had to the potential for, and mitigation of, odour nuisance.

6.17 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.

6.18 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

6.19 Operational Controls

6.19.1 Only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials.

6.19.2 The working face of the landfill shall be no more than 3.5 metres in height after compaction, no more than 35 metres wide and have a slope no greater than 1 in 3.

6.19.3 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.

6.19.4 The working face, or faces, shall each day at the end of the day, be covered with suitable material.

6.19.5 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.

6.19.6 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 necessary infrastructure or otherwise only with the prior agreement from the Agency.

6.19.7 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.

6.19.8 Scavenging shall not be permitted at the facility.

6.19.9 Unless otherwise agreed by the Agency, all sludges shall be covered immediately with other waste.

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

6.19.11 No smoking shall be allowed at the facility.

6.19.12 **Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 8.6.4, complies with any requirements of the Department of Agriculture, Fisheries and Food relating to the management of animal by-products and has been agreed in advance with the Agency.**

6.20 Stability Assessment

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

6.21 Waste Testing

The licensee shall ensure that any waste acceptance testing and analysis required by this licence shall be carried out by competent laboratories 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.

Reason: To provide for the protection of the environment by way of treatment and monitoring of emissions and to provide for the requirements of the Sanitary Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2005.

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 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 Disposal or recovery of waste shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.
- 8.2 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported only from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.
- 8.3 Waste Acceptance and Characterisation Procedures
- 8.3.1 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 (Collection Permit) Regulations 2007.

- 8.3.2 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility. Shredded tyres shall not be disposed of at the facility from 16 July 2006.
- 8.3.3 No hazardous wastes (other than as may be permitted under Condition 8.5) or liquid wastes shall be disposed of at the facility.
- 8.3.4 The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.
- 8.3.5 **Within one month of the date of grant of this licence, the licensee shall submit to the Agency for its agreement updated written procedures for the acceptance and handling of all wastes. These procedures shall include details of the treatment of all waste to be carried out in advance of acceptance at the facility and shall also include methods for the characterisation, classification and coding of waste. The procedures shall have regard to the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC on the landfill of waste.**
- 8.3.6 **Waste acceptance procedures prepared under condition 8.3.5 shall provide:-**
- (i) for the checking of waste documentation on receipt of waste in the waste reception area;
 - (ii) for non pre-cleared customers, the visual inspection and testing of waste in the waste inspection area pending acceptance/rejection;
 - (iii) for the visual inspection of waste when deposited at the working face; and
 - (iv) for the keeping for two months of any analytical results associated with on-site verification sampling of waste accepted at the facility.
- 8.3.7 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 8.3.5 is prohibited.
- 8.3.8 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.
- 8.3.9 Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.
- 8.3.10 All waste shall be checked at the working face. Any waste deemed unsuitable for acceptance at the facility and/or in contravention of this licence shall be immediately separated and removed from the facility 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.

8.4 Waste Treatment

- 8.4.1 Only waste that has been subject to treatment shall be accepted for disposal at the landfill facility.
- (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.

8.5 Limit on acceptance of biodegradable municipal waste

8.5.1 Unless otherwise as may be specified by the Agency, the following limits shall apply:

- (i) Until 30 June 2013 inclusive, a maximum of 47% 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 2010 and 2013, part thereof,
- (ii) From 1 July 2013 to 30 June 2016 inclusive, a maximum of 30% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, measured on a calendar year basis or, in 2013 and 2016, part thereof, and
- (iii) 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.

8.5.2 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with Condition 8.5.1. Such agreement may be sought by review of the landfill licence for any facility seeking an increase in the limits set out in Condition 8.5.1, 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.

8.6 Determination of biodegradable municipal waste content of municipal waste

8.6.1 The licensee shall determine the biodegradable municipal waste content of MSW accepted for disposal to the body of the landfill. Waste that has been bio-stabilised in accordance with Condition 8.6.4 shall not be considered BMW.

8.6.2 Bio-stabilised residual wastes meeting the requirements of

- Condition 8.6.4, or
- an alternative protocol as may be agreed by the Agency based on biological treatment process parameters (e.g. validated residence time and temperature parameters at the treatment facility),

received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 8.5.1.

8.6.3 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.

8.6.4 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.
- 8.6.5 Bio-stabilised residual wastes shall be monitored in accordance with *Schedule C.4: Waste Monitoring*, of this licence.
- 8.6.6 Waste that was accepted to the body of the landfill as stabilised but subsequently is found not to meet the stabilisation standard set out in Condition 8.6.4 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 8.5.1.
- 8.6.7 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Condition 8.5.1, which shall be available for inspection by Agency personnel.
- 8.7 Inert waste accepted at the facility shall comply with the standards established in the EU Decision (2003/22/EC).
- 8.8 No **previously deposited** asbestos waste shall be present within 2.5 metres of the final surface levels.
- 8.9 With the exception of use of recovered fuels as may be approved for this site by the Agency, no waste shall be burnt at the facility.

Reason: To provide for the appropriate handling of materials 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 Policy is in place which will address 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, which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.
- 9.3 In the event of an incident the licensee shall immediately:-
- (i) isolate the source of any such emission;
 - (ii) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
 - (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) provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency to:-

- identify and put in place measures to avoid reoccurrence of the incident; and
- identify and put in place any other appropriate remedial action.

Reason: To provide for the protection of the environment.

Condition 10. Closure, Restoration and Aftercare

10.1 The licensee shall restore the facility on a phased basis. Unless otherwise agreed, filled cells shall be permanently capped within twenty-four months of the cells having been filled to the required level.

10.2 Landscaping

- 10.2.1 Landscaping of the facility shall be as described in the application documentation.
- 10.2.2 Unless otherwise agreed by the Agency, the finished (post settlement restored) levels of the landfill shall be as indicated in Drawing Reference KTK/2009 Rev A of the Application.
- 10.2.3 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.

10.3 Final Capping

- 10.3.1 Unless otherwise agreed by the Agency, the final capping shall consist of the following:-
- (i) Top soil (150 -300mm);
 - (ii) Subsoils, such that total thickness of top soil and subsoils is at least 1m;
 - (iii) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s or a geosynthetic material that provides equivalent transmissivity;
 - (iv) 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
 - (v) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

10.4 No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.

10.5 All soils shall be stored to preserve the soil structure for future use.

10.6 Closure, Restoration & Aftercare Management Plan (CRAMP):

- 10.6.1 The licensee shall, within six months of date of grant of this licence, prepare for agreement by the Agency, a fully detailed and costed plan for the closure, restoration and long-term aftercare of the site or part thereof. This plan shall have regard to the commitments given in the application documentation for Licence Register 81-1, 81-2 and 81-3 (as may be varied herein).

- 10.6.2 The plan shall be maintained and reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the prior written agreement of the Agency.
- 10.7 The CRAMP shall include as a minimum, the following:-
- 10.7.1 A scope statement for the plan.
- 10.7.2 The criteria, including those specified in this licence, which define the successful closure & restoration of the facility or part thereof, and which ensures minimum impact to the environment.
- 10.7.3 A programme to achieve the stated criteria.
- 10.7.4 Where relevant, a test programme to demonstrate the successful implementation of the plan.
- 10.7.5 Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.
- 10.7.6 Details of costings for the plan and a statement as to how these costs will be underwritten.
- 10.8 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.

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

Condition 11. Notifications, Records and Reports

- 11.1 The licensee shall notify the Agency by both telephone and either facsimile or electronic mail, if available, to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:
- 11.1.1 Any release of environmental significance to atmosphere from any potential emission point including bypasses.
- 11.1.2 Any emission which does not comply with the requirements of this licence.
- 11.1.3 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.
- 11.1.4 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by the Local Authority.
- The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions.
- 11.2 In the event of any incident which relates to discharges to sewer, having taken place, the licensee shall notify the Local and Sanitary Authority as soon as practicable, after such an incident.

- 11.3 In the case of any incident which relates to discharges to water, the licensee shall notify the Local Authority and the Eastern Regional Fisheries Board as soon as practicable after such an incident.
- 11.4 The licensee shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to; manage the incident, minimise wastes generated and the effect on the environment, and avoid recurrence. The licensee shall as soon as practicable following incident notification, submit to the Agency the incident record.
- 11.5 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 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 facility.
- 11.7 The licensee shall as a minimum keep the following documents at the site:-
- (i) the licences relating to the facility;
 - (ii) the current EMS for the facility;
 - (iii) the previous year's AER for the facility;
 - (iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility;
 - (v) relevant correspondence with the Agency;
 - (vi) an up to date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points
- and 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: Reporting*, 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 wastes consigned abroad for Recovery and classified as 'Green' in accordance with the EU Transfrontier Shipment of Waste Regulations (Council Regulation EEC No. 259/1993, as 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.
 - (ix) The tonnages and EWC Code for the waste materials recovered/disposed on-site.
- 11.10 In relation to landfilling activities, the licensee shall notify the Agency of any wastes presented at but not accepted to the facility.
- 11.11 Prior to the development of any undisturbed area, the advice of the Heritage Section of the Department of the Environment, Heritage and Local Government shall be sought.
- 11.12 Waste Recovery Reports

The licensee shall as part of the Annual Environmental Report for the site submit a report on the contribution by this facility to the achievement of the waste recovery objectives stated in Condition 2.2.2.2 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.
- 11.13 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:
- (i) the date and time;
 - (ii) the name of the carrier (including if appropriate, the waste carrier registration details);
 - (iii) the vehicle registration number;
 - (iv) the trailer, skip or other container unique identification number (where relevant);
 - (v) the name of the producer(s)/collector(s) of the waste as appropriate;
 - (vi) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
 - (vii) a description of the waste including the associated EWC/HWL codes;
 - (viii) the quantity of the waste, recorded in tonnes;
 - (ix) details of the treatment(s) to which the waste has been subjected;
 - (x) the classification and coding of the waste, including whether MSW or otherwise;
 - (xi) whether the waste is for disposal or recovery and if recovery for what purpose;
 - (xii) the name of the person checking the load; and
 - (xiii) 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.

11.14 Waste Receipts

The licensee shall provide a written acknowledgement (to carrier/waste contractor) of receipt of each delivery of waste to the facility (for disposal in the landfill).

11.15 The licensee shall, in writing, notify the Agency without delay of any waste received at the facility that does not meet the waste acceptance criteria.

11.16 Reporting to demonstrate compliance with diversion targets

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 8.5.1. The licensee shall submit quarterly summary reports to the Agency within one week of the end of each calendar 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.

11.17 The licensee shall submit reports as required by the conditions and schedules of this licence to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency.

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

Condition 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of **€22,106**, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2005. The first payment shall be a pro-rata amount for the period from the date of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2005, 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 defraying its costs in regard to items not covered by the said annual contribution.

12.2 Sanitary Authority Charges

12.2.1 The licensee shall pay to the Sanitary Authority **€0.75 per cubic metre of leachate discharged to the foul sewer** or such sum as may be determined from time to time, having regard to the variations in the cost

of providing drainage and the variation in effluent reception and treatment costs. Payment to be biannually on demand.

12.3 Environmental Liabilities

- 12.3.1 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 measures 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.
- 12.3.2 The licensee shall **maintain** 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. 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.
- 12.3.3 As part of the measures identified in Condition 12.3.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.3.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'statement of measures' report identified in Condition 12.3.1.
- 12.3.4 Unless otherwise agreed, any revision to that part of the indemnity dealing with restoration and aftercare liabilities (refer Condition 10), 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 Acts 1996 to **2010**, 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.

Reason: To provide for adequate financing for monitoring and financial provisions for measures to protect the environment and to provide for the requirements of the Sanitary Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2005.

SCHEDULE A : Limitations

A.1 WASTE ACCEPTANCE

Table A.1 Waste Categories and Quantities

WASTE TYPE ^{Note 1}	MAXIMUM (TONNES PER ANNUM) ^{Notes 2 & 3}
Commercial	228,750
Construction & Demolition	7,750
Industrial Non-Hazardous Solids	24,750
Dewatered Industrial Non-Hazardous Sludges/Filtercakes with > 25% solids	13,750
TOTAL	275,000

Note 1: Any proposals to accept other compatible waste streams must be agreed in advance with the Agency and the total amount of waste must be within the amount specified.

Note 2: The individual limitation on waste streams may be varied with the agreement of the Agency subject to the overall total limit staying the same.

Note 3: C & D or inert waste/secondary materials or compost imported to the site for use in construction are not included in these limitations. A detailed statement (with mass balance) of waste used in construction should be included as part of the AER.

Table A.2 Total Permitted Landfill Capacity

Total quantity of waste permitted to be placed at the landfill facility (under this licence)	150,000 m ³
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SCHEDULE B : Emission Limits

B.1

EMISSIONS TO AIR

Landfill Derived Gas Concentration Limits:

(Measured in any building on or adjacent to the facility and perimeter boreholes).

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



Emission Limits Values for Landfill Gas Plant:

Emission Point Reference numbers: See Drawing Ref: KTK/2008

Minimum discharge height: 5m

Parameter	Flare (enclosed) Emission Limit Value ^{Note 1}	Utilisation Plant Emission Limit Value (mg/m ³) ^{Note 1}
Nitrogen oxides (NO _x)	150 mg/m ³	500
Carbon Monoxide (CO)	-	1400
Total Volatile Organic compounds (VOCs)	-	1000
Total Non Methane Volatile Organic compounds (VOCs)	-	75

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



Dust Deposition Limits:

Measured at the monitoring points indicated D1A – D6A as outlined in the application (or as may be amended under Condition 6.3).

Level (mg/m ² /day) ^{Note 1}
350

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



B.2

EMISSIONS TO WATER

There are no Emissions to Water of environmental significance.



B.3

EMISSION TO SEWER

Leachate Tankered to the Wastewater Treatment Plant

pH	COD ^{Note 1}	BOD ^{Note 1}
6 - 8	25,000 mg/l	10,000 mg/l

Note 1: This limit may be altered subject to the prior written agreement of the Sanitary Authority.

Leachate discharged to sewer

Volume to be emitted: Maximum in any one day: 150m³
 Maximum rate per hour: 6.5m³

Parameter	Emission limit value	
	Daily mean concentration (mg/l)	Daily mean loading (kg/day)
BOD	250	20
COD	750	75
Suspended solids	300	-
Total organic carbon	300	-
Chloride (as Cl)	2000	-
Ammonia (as N)	5	-
Nitrate (as N)	1000	-
Orthophosphate (as P)	20	-
pH	6 - 9	



B.4.

NOISE EMISSIONS

Day dB(A) L _{Aeq} (30 minutes)	Night dB(A) L _{Aeq} (30 minutes)
55 ^{Note 1}	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.



SCHEDULE C : Control & Monitoring

C.1.1

CONTROL OF EMISSIONS TO AIR

Emission Point Reference No.: Flare Stacks & Generation Plant

Description of Treatment: Gas Extraction & Combustion

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Continuous burn	Continuous with alarm/call-out	Flame detector or equivalent approved Pumps/engines
Extraction	Continuous with alarm/call-out	Pressure gauge or equivalent approved Pumps/engines

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



C.1.2

MONITORING OF EMISSIONS TO AIR

Emission Point Reference No.: Flare Stacks & Generation Plant

Parameter	Flare (enclosed)	Utilisation Plant	Analysis Method ^{Note 1} /Technique
	Monitoring Frequency	Monitoring Frequency	
Inlet			
Methane (CH ₄) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Carbon dioxide (CO ₂) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Oxygen (O ₂) % v/v	Continuous	Weekly	Electrochemical or equivalent approved
Process Parameters			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger To be agreed.
Residence Time	Quarterly	Quarterly	
Outlet			
Carbon monoxide (CO)	Continuous	Continuous	Flue gas analyser/datalogger or equivalent approved
Nitrogen Oxides (Nox)	Biannually	Biannually	Flue gas analyser or equivalent approved
Sulphur dioxide (SO ₂)	Biannually	Biannually	Flue gas analyser or equivalent approved
Particulates	Not applicable	Annually	Isokinetic/Gravimetric or equivalent approved

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



C.1.3 MONITORING OF LANDFILL GAS EMISSIONS

Location: Perimeter Landfill Gas boreholes ^{Note 1}
 and
 At least one monitoring point per cell (to be agreed)
 and
 Other selected locations as may be specified

Parameter	Monitoring Frequency			Analysis Method/Technique ^{Note 2}
	Boreholes and Cells	Facility Office	Sewer Discharge	
Methane (CH ₄)	Monthly	Continuous	Continuous	Infrared analyser/FID
Carbon dioxide (CO ₂)	Monthly	Continuous		Infrared
Oxygen (O ₂)	Monthly	Continuous	Continuous	Electrochemical cell
Atmospheric pressure & trend	Monthly	Weekly		Standard method
Temperature	Monthly	Weekly		

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

Note 2: Or other method agreed.



C2.1 LEACHATE MONITORING

Location: Leachate Holding Tank (L), Side slopes risers to leachate sumps

PARAMETER ^{Note 1}	LEACHATE ^{Note 2} Monitoring Frequency
Visual Inspection/Odour	Daily
Leachate Level	Weekly
BOD	Quarterly
COD	Quarterly
Chloride	Annually
Ammoniacal Nitrogen	Annually
Electrical Conductivity	Annually
Ph	Annually
Metals / non metals ^{Note 3}	Annually
Cyanide (Total)	Annually
Fluoride	Annually
List I/II organic substances ^{Note 4}	Annually
Mercury	Annually
Sulphate	Annually
Total P/orthophosphate	Annually
Total Oxidised Nitrogen	Annually

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

Note 2: Visual Inspection and Leachate Levels to be monitored at all leachate monitoring points in the cells, Collection sumps and holding tank. Leachate composition to be monitored at the leachate holding tank.

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).

C2.2

LEACHATE DISCHARGE TO SEWER

Location: To be agreed

PARAMETER ^{Note 1}	LEACHATE ^{Note 2} Monitoring Frequency
Flow to sewer	Daily
Temperature	Daily
pH	Quarterly
BOD	Quarterly composite sample
COD	Quarterly composite sample
Suspended solids	Quarterly composite sample
Total organic carbon	Quarterly composite sample
Chloride	Quarterly composite sample
Ammonia	Quarterly composite sample
Nitrate	Quarterly composite sample
Orthophosphate	Quarterly composite sample

C.3

AMBIENT MONITORING

Air Monitoring

Location: D1A – D6A (incl.) Drawing Ref: KTK/2002

Parameter (mg/m ³ /day)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times a year ^{Note 2}	Standard Method ^{Note 1}

Note 1: 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.

Note 2: Twice during the period May to September.

Groundwater Monitoring

Location: All Groundwater Wells (Drawing Ref. KTK/2002)

PARAMETER ^{Note 1}	Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Monthly
Groundwater Level (wells)	Monthly
Dissolved Oxygen	Quarterly
Total Organic Carbon	Quarterly
Electrical Conductivity	Quarterly
Ammoniacal Nitrogen	Quarterly
Chloride	Quarterly
Fluoride	Quarterly
Sulphate (SO ₄)	Quarterly
Total alkalinity	Quarterly
Metals / non metals ^{Note 3}	Quarterly

PARAMETER ^{Note 1}	Monitoring Frequency
Mercury	Quarterly
Barium	Quarterly
Arsenic	Quarterly
Nitrate & Nitrite	Quarterly
Total P/orthophosphate	Quarterly
Phenols	Quarterly
List I/II organic substances (Screen) ^{Note 4}	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually

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

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

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

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

Storm Water/Surface Water Monitoring

Location: Surface water monitoring points (Drawing Ref. KTK/2002)

PARAMETER ^{Note 1}	SURFACE WATER Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly
Dissolved Oxygen	Quarterly
COD	Quarterly
BOD	Quarterly
Electrical Conductivity	Quarterly
Ammoniacal Nitrogen	Quarterly
Chloride	Quarterly
pH	Quarterly
Total Suspended Solids	Quarterly
Sulphate (SO ₄)	Quarterly
Metals / non metals ^{Note 3}	Quarterly
Mercury	Quarterly
Nitrate and Nitrite	Quarterly
Total P/orthophosphate	Quarterly
Total alkalinity	Quarterly
Total Organic Carbon	Quarterly
List I/II organic substances (Screen) ^{Note 4}	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually

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

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

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

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

Meteorological Monitoring

Location : At the facility at a location to be agreed, or from an agreed representative station in the region.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Direction	Daily	Standard
Wind Force ^{Note 1}	Daily	Standard
Atmospheric Pressure ^{Note 1}	Daily	Standard
Evaporation	Daily	Standard
Atmospheric humidity (14:00h CET)	Daily	Standard

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

Asbestos Fibre Monitoring

Monitoring Locations: (1) Point of tipping, (2) 10m downwind of tipping.

Parameter (fibres/ml)	Monitoring Frequency	Analysis Method/Technique
Asbestos Fibre Concentration	Annual ^{Note 1}	Standard Method ^{Note 2}

Note 1: Where applicable samples to be taken during the disposal of asbestos based construction materials, or otherwise specified in writing by the Agency.

Note 2: Method used shall be "Asbestos Fibre in Air" Health and Safety Executive MDHS 39/4, UK (1995) or another method agreed with the Agency. Monitoring shall be carried out by an independent laboratory agreed by the Agency.

C.4**WASTE MONITORING**

Waste class	Frequency	Parameter	Method
Bio-stabilised residual waste	Every 500 tonnes from each source	To be agreed by the Agency	To be agreed by the Agency

SCHEDULE D : Specified Engineering Works

Specified Engineering Works

- Development of the facility including preparatory works and lining.
- Installation of Landfill Gas Management Infrastructure.
- Installation of Leachate Management Infrastructure.
- Installation of Groundwater Control Infrastructure.
- Installation of Surface Water Management Infrastructure.
- Final capping.
- Any other works notified in writing by the Agency.

SCHEDULE E : Reporting

Completed reports shall be submitted to:

The Environmental Protection Agency
 Office of Environmental Enforcement
 PO Box 3000
 Johnstown Castle Estate
 Wexford or Any other address as may be specified by the Agency

Reports are required to be forwarded as required in the licence and as may be set out below:

Report	Reporting Frequency ^{Note 1}	Report Submission Date
Annual Environment Report (AER)	Annually	By 31 st March of each year.
Record of incidents	As they occur	Within five days of the incident.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Monitoring of landfill gas	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Surface Water Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Groundwater Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Leachate	Quarterly	Ten days after end of the quarter being reported on.
Dust Monitoring	Quarterly	Ten days after end of the quarter being reported on.

Note 1: Unless altered at the request of the Agency.

SCHEDULE F : Annual Environmental Report

Annual Environmental Report Content ^{Note 1}

Emissions from the installation/facility.
Waste management record.
Waste (sludge) analysis.
Waste Recovery Report.
Topographical survey.
Remaining void, projected completion date.
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.
Pollution emission register – report for previous year.
Pollution emission register – proposal for current year.
Noise monitoring report summary.
Meteorological data summary.
Ambient monitoring summary.
Current monitoring location reference drawing.
Tank and pipeline testing and inspection report.
Reported incidents summary.
Energy efficiency audit report summary.
Report on progress made and proposals being developed to minimise generation of leachate for disposal.
Development / Infrastructural works summary (completed in previous year or prepared for current year).
Report on management and staffing structure of the installation/facility.
Report on the programme for public information.
Reports on financial provision made under this licence.
Statement on the costs of Landfill.
Review of Environmental Liabilities.
Any amendments to the CRAMP.
Detailed Statement, with mass balance, of C&D wastes and compost used in construction.
Statement of compliance of facility with any updates of the relevant Waste Management Plan
Statement on the achievement of the waste acceptance and treatment obligations
Any other items specified by the Agency.

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