



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

WASTE LICENCE

Proposed Decision

Licence Register Number:	153-01
Applicant/Licensee:	Greenstar Holdings Limited
Location of Facility:	Annaskinnan Residual Landfill, Annaskinnan, Kinnegad, County Westmeath.

INTRODUCTION

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

This licence is for the operation of a fully contained non-hazardous waste landfill. The facility is to accept residual municipal household solid waste, commercial and non-hazardous industrial waste. The commercial and non-hazardous industrial waste will be restricted to non-organic material, and only residual municipal household solid waste (which has been treated prior to importation) will be accepted to the site. The infrastructure will include for, *inter alia*, reception area, weighbridge, site roads, monitoring and control facilities, and leachate and landfill management facilities. The total capacity of the site is 175,000 tonnes, and it is expected to have a 10 year life, operating in four Phases. Annual waste inputs will average 175,000 tonnes operating 8:00am to 6:30pm Monday to Friday and 8:00am to 2:30pm Saturday.

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

Table of Contents

Page No.

GLOSSARY OF TERMS	1
DECISION & REASONS FOR THE DECISION	4
PART I SCHEDULE OF ACTIVITIES LICENSED	4
PART II CONDITIONS	5
CONDITION 1. Scope	5
CONDITION 2. Management of the Facility	6
CONDITION 3. Infrastructure and Operation	7
CONDITION 4. Interpretation	11
CONDITION 5. Emissions	12
CONDITION 6. Control and Monitoring	13
CONDITION 7. Resource Use and Energy Efficiency	16
CONDITION 8. Materials Handling	16
CONDITION 9. Accident Prevention and Emergency Response	18
CONDITION 10. Closure, Restoration and Aftercare	18
CONDITION 11. Notifications, Records and Reports	20
CONDITION 12. Financial Charges and Provisions	22
SCHEDULE A Limitations	24
SCHEDULE B Emission Limits	25
SCHEDULE C Control &Monitoring	27
SCHEDULE D Specified Engineering Works	32
SCHEDULE E Reporting	33
SCHEDULE F Annual Environmental Report	34

Glossary of Terms

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts 1996 to 2003, (the Acts), unless otherwise defined in this section.

Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Agree/Agreement	Agreement of the Agency in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the application for this licence.
Application	The application by the licensee for this licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BAT	Best Available Technology as defined in Section 5(2) of the Waste Management Acts 1996 to 2003.
Bi-annually	All or part of a period of six consecutive months.
Biennially	Once every two years.
BOD	5 day Biochemical Oxygen Demand.
CEN	Comité Européen De Normalisation – European Committee for Standardisation
COD	Chemical Oxygen Demand.
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 2000 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 for this licence, unless otherwise specified in this licence.
EMP	Environmental Management Programme.
Emission Limits	Those limits, including concentration limits and deposition rates established in <i>Schedule B</i> of this licence.
EPA	Environmental Protection Agency.
European Waste	A harmonised, non-exhaustive list of wastes drawn up by the European

Catalogue (EWC)	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	During all periods of plant operation, and in the case of emissions, when emissions are taking place; with at least one measurement in any two week period.
GC/MS	Gas Chromatography/Mass Spectroscopy
Green waste	Waste wood (excluding treated timber), plant matter such as grass cuttings, and other vegetation.
Hours of Operation	The hours during which the installation/facility is authorised to be operational.
Hours of Waste Acceptance	The hours during which the installation/facility is authorised to accept waste.
ICP	Inductively Coupled Plasma Spectroscopy.
Incident	Unless otherwise agreed, 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 design (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	Such works, actions or constructions as may be specified in this licence or in the application documentation for this licence, which for the purposes of environmental protection and the 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.
Landfill Directive	Council Directive 1999/31/EC.
Leq	Equivalent continuous sound level.
Licensee	Greenstar Holdings Ltd
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the installation/facility.
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	Westmeath 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.

Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Night-time	2000 hrs to 0800 hrs.
Noise Sensitive Location (NSL)	Any dwelling house (including gardens connected with such premises), hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation/facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Oil Separator	A device installed to the specification of the draft European Standard prEN 858 (Installations for the separation of light liquids, e.g. oil and petrol).
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.
Regional Fisheries Board	Eastern Regional Fisheries Board.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
Sludge	The accumulation of solids resulting from biological, chemical coagulation, flocculation and/or sedimentation processes associated with water or wastewater treatment, with >2% dry matter.
SOP	Standard Operating Procedure.
Standard Method	A National, European or internationally recognised procedure (eg, I.S. EN, ISO, CEN, BS or equivalent), as 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
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 Decision

On the basis of the information before it, the Environmental Protection Agency is satisfied that the waste activity, or activities, licensed hereunder in Part I will comply with the requirements of Section 40(4) of the Waste Management Acts, 1996 to 2003.

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

Part I Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2003, the Environmental Protection Agency (the Agency) proposes, under Section 40(1) of the said Acts to grant this Waste Licence to Greenstar Holdings Limited to carry on the waste activity/activities listed below at Annaskinnan, Kinnegad, Co. Westmeath subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in this licence. For the purposes of Article 48 of the Waste Management Licensing Regulations 2004 (S.I. No. 395) this facility is classed as a landfill for non-hazardous waste.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2003

Class 4.	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
Class 5.	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2003

Class 4.	Recycling or reclamation of other inorganic materials:
-----------------	---

PART II CONDITIONS

CONDITION 1. Scope

- 1.1 Waste activities at this facility shall be restricted to those listed and described in *Part I Activities Licensed* and shall be as set out in the licence application or as modified under Condition 1.5 of this licence and subject to the conditions of this licence.
- 1.2 Activities at this facility shall be limited as set out in *Schedule A: Limitations*, of this licence.
- 1.3 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.
- 1.4 For the purposes of this licence, the facility is the area of land outlined in red on Drawing No. 0501014/01/502 of the application. Any reference in this licence to “installation/facility” shall mean the area thus outlined in red.
- 1.5 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 prior written agreement of, the Agency.
- 1.6 This licence is for the purposes of waste licensing under the Waste Management Acts 1996 to 2003 only and nothing in this licence shall be construed as negating the licensee’s statutory obligations or requirements under any other enactments or regulations.
- 1.7 Having regard to the nature of the activity and arrangements necessary to be made or already made in connection with the carrying on of the activity, the specified period for the purposes of Section 49(1) of the Waste Management Acts 1996 – 2003 is 5 years.
- 1.8 **Waste Acceptance Hours and Hours of Operation**

Waste may be accepted at the facility for disposal at the landfill only between the hours of 0800 and 1830 Monday to Friday inclusive and 0800 to 1600 on Saturday. No waste shall be accepted on Sundays and Bank Holidays. With the exception of emergency or service traffic, vehicular movement within the site should be restricted to within the hours 0800 to 2000 Monday to Friday, and 0800 to 1600 Saturday.

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 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 necessary 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 Prior to the commencement of the activity the licensee shall establish and maintain an Environmental Management System (EMS). The EMS shall be updated on an annual basis and submitted to the Agency as part of the Annual Environmental Report (AER).

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

- 2.2.2.1 Management and Reporting Structure.

- 2.2.2.2 Schedule of Environmental Objectives and Targets.

The licensee shall prepare 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).

- 2.2.2.3 Environmental Management Programme (EMP)

The licensee shall, not later than three months prior to commencement of site development, submit to the Agency for agreement an EMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.2. It 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.

Once agreed the EMP shall be established and maintained by the licensee. The EMP shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER) (Condition 11.9).

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. Unless otherwise agreed, 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

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

2.2.2.5 Corrective Action

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

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 The landfill footprint (maximum aerial extent of landfilling) shall be as indicated in Drawing Reference 0501014/01/518 of the Application.
- 3.3 Facility Notice Board
 - 3.3.1 The licensee shall provide and maintain an Installation/Facility Notice Board on the installation/facility so that it is legible to persons outside the main entrance to the installation/facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.
 - 3.3.2 The board shall clearly show:-
 - (c) the name and telephone number of the installation/facility;
 - (d) the normal hours of opening;
 - (e) the name of the licence holder;
 - (f) an emergency out of hours contact telephone number;
 - (g) the licence reference number; and
 - (h) where environmental information relating to the installation/facility can be obtained.

- 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 Three months prior to the commencement of 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 the application documentation. This Plan shall have regard to the following development phases: (i) Initial Development Works (ii) Main infrastructure development works (pre acceptance of waste for disposal), and (iii) Future/planned works (in parallel with waste disposal, e.g. future cell development/phasing). 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.
- 3.5.2 Unless otherwise agreed, and so as to permit the necessary time for establishment and maturation of landscaping measures for impact mitigation, the operation of the facility shall commence with Phase 3 (as indicated in Drawing Reference 0501014/01/520).
- 3.6 Specified Engineering Works
- 3.6.1 The licensee shall submit proposals for all 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 appropriate 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 all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall, 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 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.
- 3.8 The licensee shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 3.9 Tank and Drum Storage Areas
- 3.9.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.

- 3.9.2 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
- 3.9.3 All drainage from banded areas shall be diverted for collection and safe disposal.
- 3.9.4 All inlets, outlets, vent pipes, valves and gauges must be within the banded area.
- 3.9.5 The integrity and water tightness of all the banding structures and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee to the satisfaction of the Agency and shall be reported to the Agency prior to the commencement of use of any such structures.
- 3.10 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the installation/facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 3.11 Landfill Lining
- 3.11.1 Unless otherwise agreed in writing, the landfill lining system shall comprise:-
- (a) A composite liner consisting of a 0.5m layer of BES with a hydraulic conductivity of less than or equal to 1×10^{-11} m/s, overlain by a 2mm thick high density polyethylene (HDPE) layer;
 - (b) A geotextile protection layer placed over the HDPE layer;
 - (c) A 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of 1×10^{-3} m/s, of pre-washed, uncrushed, granular, rounded stone (16-32mm grain size) incorporating leachate collection drains;
 - (d) The lining system on the base of the facility shall be laid to a minimum slope of 1:50; and
 - (e) The side walls shall be designed and constructed to achieve an equivalent protection.
- 3.12 Facility Security
- 3.12.1 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.
- 3.12.2 Gates shall be locked shut when the facility is unsupervised.
- 3.12.3 The licensee shall remedy any defect in the gates and/or fencing as follows:-
- (a) A temporary repair shall be made by the end of the working day; and
 - (b) A repair to the standard of the original gates and/or fencing shall be undertaken within three working days.
- 3.13 Facility Roads and Hardstanding
- 3.13.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.13.2 The facility entrance and hardstanding areas, shall be appropriately paved and maintained in a fit and clean condition.
- 3.14 Facility Office
- 3.14.1 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.

- 3.14.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.15 Construction and Demolition Waste Storage Area
- 3.15.1 Prior to commencement of landfill construction activities involving approved imported recovered C & D waste streams, the licensee shall provide and maintain a construction and demolition waste storage area. This infrastructure shall at a minimum comprise the following:-
- (a) An impermeable concrete slab; and
 - (b) Collection and disposal infrastructure for all run-off.
- 3.16 Waste Inspection and Quarantine Areas
- 3.16.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.
- 3.16.2 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.
- 3.16.3 Drainage from these areas shall be directed to the leachate management system.
- 3.17 Weighbridge and Wheel Cleaner
- 3.17.1 The licensee shall provide and maintain a weighbridge and wheel cleaners at the facility.
- 3.17.2 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.
- 3.18 Leachate Management Infrastructure
- 3.18.1 Leachate management infrastructure shall be provided and maintained at the facility as described in the Application documentation, or as may be varied by a licence condition.
- 3.18.2 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.
- 3.19 Landfill Gas Management
- 3.19.1 Landfill Gas management infrastructure shall be provided and maintained at the facility as described in the Application documentation, or as may be varied by a licence condition.
- 3.19.2 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.
- 3.20 Sanitary Wastewater Treatment Plant
- The licensee shall provide and maintain a Sanitary Wastewater Treatment plant at the facility for the treatment of sanitary wastewater arisings on-site. Any percolation area shall satisfy the criteria set out in the Wastewater Treatment Manual, Treatment Systems for Single Houses, published by the Environmental Protection Agency. This system shall be included in the sites maintenance program and desludged at least annually. Sludges shall be removed for agreed disposal/recovery.

3.21 Silt Traps and Oil Separators

The licensee shall install and maintain silt traps and oil separator at the installation/facility to ensure that all storm water discharges from the installation/facility pass through a silt trap and oil separator prior to discharge (including the storm water discharge from the southern service road). The separator shall be a Class I full retention separator and the silt traps and separator shall be in accordance with I.S. EN 585-2:2003 (installations for the separation of light liquids).

3.22 All pump sumps, storage tanks, lagoons or other treatment plant chambers from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separator, shall be fitted with high liquid level alarms (or oil detectors as appropriate) prior to their operation/use.

3.23 The provision of a catchment system to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water shall be examined. This shall be incorporated into a schedule of objectives and targets for the reduction in fugitive emissions set out in Condition 2.2 of this licence.

3.24 Groundwater

3.24.1 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).

3.24.2 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual "Landfill Monitoring – 2nd Edition".

3.25 The licensee shall implement the recommendations of the ecological study submitted as part of the application documentation. This implementation plan shall be included as part of the Initial Development Works for the site.

3.26 The licensee shall ensure that the final design of the surface water treatment & polishing lagoon includes the necessary control and retention options to prevent flooding of the North Stream culvert beneath the Royal Canal. This detail including supporting calculations, is to be included with the Specified Engineering Works proposal for the surface water management system.

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:

- (a) No 24 hour mean value shall exceed the emission limit value.
- (b) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
- (c) No 30 minute mean value shall exceed twice the emission limit value.

4.1.2 For Non-Continuous Monitoring

- (a) 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.

- (b) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.
 - (c) 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 waters in this licence shall be interpreted in the following way:-
 - 4.3.1 Continuous monitoring:
 - (a) No flow value shall exceed the specified limit.
 - (b) No pH value shall deviate from the specified range.
 - (c) No temperature value shall exceed the limit value.
 - 4.3.2 Composite Sampling:
 - (a) No pH value shall deviate from the specified range.
 - (b) 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 prior written agreement from the Agency, the parameter may be assessed before mixing takes place.
- 4.5 Noise
 - Noise from the activity shall not give rise to sound pressure levels (Leq,T) measured at noise sensitive locations which exceed the limit value(s).

CONDITION 5. Emissions

- 5.1 No specified emission from the installation/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 Except as may be authorised under this licence, there shall be no discharge of polluting leachate or other polluting matter/substances to surface or groundwaters.
- 5.3 Prior to the acceptance of waste for disposal, the licensee shall submit to the Agency for approval evidence to demonstrate that an agreement is in place regarding leachate removal (from the site) and treatment.

- 5.4 The licensee shall ensure that the activities shall be carried out in a manner such that emissions, including odours, do not result in significant impairment of, and/or significant interference with amenities or the environment beyond the installation/facility boundary.
- 5.5 No substance shall be discharged in a manner, or at a concentration which, following initial dilution, causes tainting of fish or shellfish.
- 5.6 The licensee shall ensure that vermin, birds, flies, mud, dust, litter and odours do not give rise to nuisance at the installation/facility or in the immediate area of the installation/facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.
- 5.7 The road network in the vicinity of the installation/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.

CONDITION 6. Control and Monitoring

- 6.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out in *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. Prior written agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.
- 6.3 Sampling equipment shall be operated and maintained such that sufficient sample is collected to meet both internal monitoring requirements and those of the Agency. A separate composite sample or homogeneous sub-sample (of sufficient volume as advised) should be refrigerated immediately after collection and retained as required for EPA use.
- 6.4 Prior to the commencement of waste disposal activities the licensee shall provide a scaled drawing showing all monitoring locations referred to in this licence. All locations to be appropriately labelled. Any amendments to this drawing to be notified to the Agency as part of the AER.
- 6.5 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.
- 6.6 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the written agreement of the Agency following evaluation of test results.
- 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 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.
- 6.9 Prior to the commencement of their use, 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 and reported to the Agency on each occasion as part of the AER. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 6.10 A visual examination of storm water discharges shall be carried out daily. A log of such inspections shall be maintained.
- 6.11 Groundwater
- 6.11.1 Prior to the acceptance of waste for disposal the licensee shall agree the locations for a minimum of nine groundwater monitoring locations to be located around the perimeter of the facility (with at least two between the facility and houses to the east, and two between the facility and the houses to the west).
- 6.11.2 The licensee shall on a biannual basis, and where access is provided, monitor the impact of the development on local private well yields (adjacent to the facility). Where the development is found to be negatively impacting on yields, then water compensation measures should be provided if required.
- 6.12 Noise.
- The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Environmental Noise Survey Guidance Document' as published by the Agency.
- 6.13 Pollution Emission Register (PER)
- The licensee shall prepare and maintain a PER for the site. The substances to be included in the PER shall be agreed by the Agency each year by reference to the list specified in the Agency's AER Guidance Note. The PER shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted as part of the AER.
- 6.14 Telemetry
- 6.14.1 Prior to the commencement of waste activities 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.
- 6.14.2 This system shall include for:-
- (a) Recording of leachate levels in the lined cells and lagoon;
 - (b) Recording of levels in the surface water lagoon and flows to the perimeter streams;
 - (c) Quality of the surface water at the inlet to the surface water lagoons and being discharged to the perimeter streams; and
 - (d) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.
- 6.15 The licensee shall install in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.
- 6.16 Leachate Management
- 6.16.1 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.

- 6.16.2 The level of leachate in the pump sumps shall be monitored as outlined in *Schedule C2.3*.
 - 6.16.3 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.
 - 6.16.4 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.
 - 6.16.5 Recirculation of leachate or other contaminated water shall only be undertaken within cells which have been lined to the satisfaction of the Agency.
- 6.17 The licensee shall monitor meteorological conditions as specified in *Schedule C.3*.
- 6.18 Landfill Gas
- 6.18.1 The licensee shall install gas monitoring facilities as set out in the Application documentation.
 - 6.18.2 Flares shall be operated to ensure a burn chamber residence time of minimum 0.3 sec and burn temperature of minimum 1000°C.
 - 6.18.3 The following shall constitute an incident;
 - (a) Landfill derived methane greater than 1% v/v, or
 - (b) Landfill derived 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.
- 6.19 Litter Control
- 6.19.1 The measures and infrastructure as described in the Application documentation for licence register 153-01 shall be applied to control litter at the facility.
 - 6.19.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:-
 - (a) A temporary repair shall be made by the end of the working day; and
 - (b) A repair to the standard of the original netting shall be undertaken within three working days.
 - 6.19.3 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.
 - 6.19.4 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.20 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.
- 6.21 Prior to exiting the facility, all waste vehicles shall use the wheelwash.
- 6.22 Bird Control
- Birds shall be prevented from gathering on and feeding at the facility by the use of birds of prey and/or other bird scaring techniques. The birds of prey and/or other techniques shall be in place at least two weeks prior to any waste being disposed of and shall maintain their presence every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency.
- 6.23 Operational Controls
- 6.23.1 Only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials.
 - 6.23.2 The working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3.

- 6.23.3 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.
- 6.23.4 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
- 6.23.5 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 6.23.6 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.
- 6.23.7 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.
- 6.23.8 Scavenging shall not be permitted at the facility.
- 6.23.9 Unless otherwise agreed by the Agency, all sludges shall be covered immediately with other waste.
- 6.23.10 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 6.23.11 No smoking shall be allowed at the facility.

6.24 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.

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.

CONDITION 8. Materials Handling

- 8.1 Waste Acceptance and Characterisation Procedures
 - 8.1.1 Only pre-treated wastes are acceptable for disposal as set out in Article 6 (a) of the Landfill Directive.
 - 8.1.2 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 2001. Copies of these waste collection permits must be maintained at the facility.

- 8.1.3 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.
 - 8.1.4 Other than as may be permitted by Condition 8.3, no hazardous wastes shall be disposed of at the facility.
 - 8.1.5 Other than re-circulated leachate as may be agreed, no liquid wastes shall be disposed of at the facility.
 - 8.1.6 The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.
 - 8.1.7 Bulk gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.
 - 8.1.8 Prior to commencement of waste acceptance at the facility, the licensee shall submit to the Agency for its agreement written procedures for the acceptance and handling of all wastes. These procedures shall include details of the pre-treatment of all waste to be carried out prior to acceptance at the facility and shall also include methods for the characterisation of waste in order to distinguish between inert, non-hazardous and hazardous wastes. The procedures shall have regard to the EU Decision (2003/33/EC) on establishing the criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive (1999/31/EC) on the landfill of waste.
 - 8.1.9 In addition to the characterisation required under the Waste Acceptance Procedures, the licensee shall carry out analyses on a minimum of two samples per annum for all industrial sludges being accepted at the facility. The results of these analyses shall be presented in the Annual Environmental Report (AER).
 - 8.1.10 Bulk gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.
- 8.2 Inert Waste
- Inert waste accepted at the facility shall comply with the standards established in the EU Decision (2003/22/EC).
- 8.3 Asbestos Waste
- 8.3.1 Asbestos waste to be disposed of at the facility shall comply with the requirements of Article 6(c)(iii) of the Landfill Directive (1999/31/EC) and be accepted and managed in accordance with the procedures laid down in Section 2.3.3 of the Annex to Council Decision 2003/33/EC.
 - 8.3.2 Asbestos based waste must be double wrapped in heavy gauge plastic, which is clearly labelled to indicate the presence of asbestos.
 - 8.3.3 Disposal of asbestos waste shall be into prepared bays or trenches of at least 2 metres in depth.
 - 8.3.4 Deposited asbestos waste shall be covered immediately with at least 250mm of suitable material. At the end of the day, the waste shall be covered with a minimum of 500mm of suitable material.
 - 8.3.5 No asbestos waste shall be present within 2.5 metres of the final surface levels.
 - 8.3.6 The amount of asbestos waste accepted annually shall be limited to a maximum of 0.5% of annual input tonnage to the landfill.
- 8.4 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.
- 8.5 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.

- 8.6 The licensee shall ensure that waste prior to transfer to another person shall be classified packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling.
- 8.7 Waste for transfer off-site shall be stored in designated areas, protected as may be appropriate, against spillage and leachate run-off. The waste is to be clearly labelled and appropriately segregated.
- 8.8 No waste classified as green list waste in accordance with the EU Transfrontier Shipment of Waste Regulations (Council Regulation EEC No.259/1993, as amended) shall be consigned abroad for recovery without the prior agreement of the Agency.
- 8.9 Unless approved in writing by the Agency the licensee is prohibited from mixing a hazardous waste of one category with a hazardous waste of another category or with any other non-hazardous waste.

CONDITION 9. Accident Prevention and Emergency Response

- 9.1 The licensee shall, prior to the commencement of the activity 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, prior to the date of commencement of the activity, 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:-
 - (a) isolate the source of any such emission;
 - (b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
 - (c) evaluate the environmental pollution, if any, caused by the incident;
 - (d) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - (e) identify the date, time and place of the incident; and
 - (f) provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed with 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.

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 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 0501014/01/523 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 Unless otherwise agreed, filled cells shall be permanently capped within twenty four months of the cells having been filled to the required level.
- 10.4 Final Capping
- 10.4.1 Unless otherwise agreed, the final capping shall consist of the following:-
- (a) Top soil (150 -300mm);
 - (b) Subsoils, such that total thickness of top soil and subsoils is at least 1m;
 - (c) 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;
 - (d) 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
 - (e) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 10.5 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.
- 10.6 All soils shall be stored to preserve the soil structure for future use.
- 10.7 Closure, Restoration & Aftercare Management Plan (CRAMP):
- 10.7.1 The licensee shall maintain 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 153-01 (as may be varied herein).
- 10.7.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the written agreement of the Agency. A copy of the Plan is to be held on site and available for inspection.
- 10.8 The CRAMP shall include as a minimum, the following:-
- 10.8.1 A scope statement for the plan.
 - 10.8.2 The criteria, including those specified in this licence, which define the successful closure & restoration of the activity or part thereof, which ensures minimum impact to the environment.
 - 10.8.3 A programme to achieve the stated criteria.
 - 10.8.4 Where relevant, a test programme to demonstrate the successful implementation of the plan.
 - 10.8.5 Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility,

- 10.8.6 Details of costings for the plan and a statement as to how these costs will be underwritten.
- 10.9 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.

CONDITION 11. Notifications, Records and Reports

- 11.1 The licensee shall notify the Agency by both telephone and facsimile, if available, to the Agency's Regional Inspectorate, John Moore Road, Castlebar, Co Mayo, 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.
- 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 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.
- 11.3 Archaeological Assessment
- 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.
- 11.4 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.
- 11.7 The licensee shall as a minimum keep the following records at the site:-
- (a) the licences relating to the installation/facility;

- (b) the current EMS for the facility;
- (c) the previous year's AER for the installation/facility;
- (d) any plans, procedures, or documents referred to in this licence;
- (e) 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;
- (f) relevant correspondence with the Agency;
- (g) 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 Reports shall be submitted to the Agency as set out in *Schedule E: Reporting* of this licence and Condition 11.9, or as otherwise may be specified in this licence.
- 11.9 The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule F: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 11.10 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 as a minimum contain details of the following:
 - 11.10.1 The tonnages and EWC Code for the waste materials imported and/or sent off-site for disposal/recovery.
 - 11.10.2 The names of the agent and carrier of the waste, and their permit details (to include issuing authority and vehicle registration number).
 - 11.10.3 Details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit details and issuing authority.
 - 11.10.4 Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.
 - 11.10.5 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.
 - 11.10.6 Details of any rejected consignments. In relation to landfilling activities, the licensee shall notify the Agency of any wastes presented at but not accepted to the facility.
 - 11.10.7 Details of any approved waste mixing.
 - 11.10.8 The results of any waste analyses required.
 - 11.10.9 The tonnages and EWC Code for the waste materials recovered on-site.
- 11.11 Waste Recovery Reports
 - 11.11.1 The licensee shall as part of their EMP prepare a report examining waste recovery options shall be submitted to the Agency for its agreement in the AER. This report shall address methods to contribute to the achievement of the

recovery targets stated in national and European Union waste policies and shall include the following:-

- (a) proposals for the contribution of the facility to the achievement of targets for the reduction of biodegradable waste to landfill as specified in the Landfill Directive;
- (b) the separation of recyclable materials from the waste;
- (c) the recovery of Construction and Demolition Waste;
- (d) the recovery of metal waste;
- (e) inert waste to be used for cover/restoration material at the facility.

CONDITION 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €18,250, 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 2003. 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 2003, 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 Environmental Liabilities

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

12.2.2 The licensee shall arrange for the completion, by an independent and appropriately qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA), which addresses the liabilities associated with carrying on the activity. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the CRAMP. A report on this assessment shall be submitted to the Agency for agreement prior to the commencement of the activity. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement: review results are to be notified as part of the AER.

12.2.3 Prior to the commencement of the activity, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.2.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such

financial indemnity shall be included in the annual 'statement of measures' report identified in Condition 12.2.1.

- 12.2.4 Unless otherwise agreed, any revision to that part of the indemnity dealing with restoration and aftercare liabilities (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

12.3 Cost of landfill of waste

In accordance with the provisions of Section 53A of the Waste Management Acts 1996 to 2003, the licensee shall ensure the costs in the setting up, operation of, provision of financial security and closure and after-care for a period of at least 30 years shall be covered by the price to be charged for the disposal of waste at the facility. The statement required under Section 53A(5) of said Acts is to be included as part of the AER.

12.4 Community Fund

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

SCHEDULE A Limitations

A.1 AUTHORISED PROCESSES

The following waste related processes are authorised:

- i. Landfilling of non-hazardous waste (asbestos excepted, refer Condition 8.3)
- ii. Use of compost & inert waste in landfill operation
- iii. Storage of waste
- iv. Packaging of waste
- v. Beneficial landspreading of sludges in restoration activities

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

A.2 WASTE ACCEPTANCE

Table A.1 Waste Categories and Quantities

WASTE TYPES	Household & Commercial
	Non-Hazardous Industrial
	Construction & Demolition ^{Note 1}
	Inert ^{Note 1}
	Approved asbestos wastes (refer condition 8.3). Annual maximum to be 0.5% of annual intake.
	Other ^{Note 2}
MAXIMUM (TONNES PER ANNUM)	175,000

Note 1: C & D or Inert waste/secondary materials imported to the site for use in the 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.

Note 2: 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 that specified.



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: (To be agreed by Agency in advance.)

Minimum discharge height: 5m

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

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



Dust Deposition Limits:

Measured at the monitoring points indicated D1 – D4 (incl.) Drawing Ref: 0501014/01/506 (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

Emission Point Reference No.: Outlet from polishing lagoon

Name of Receiving Waters: North Stream

Parameter	Emission Limit Value (mg/l)
BOD	35
Ammonia (as NH ₄)	0.3
Sulphate	100
Chloride	100



B.3. 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.

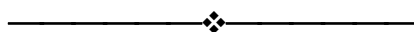


C.1.2 MONITORING OF EMISSIONS TO AIR

Emission Point Reference No.: Flare Stacks & Generation Plant

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method ^{Note 1} /Technique
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
Residence Time	Quarterly	Quarterly	To be agreed.
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 (refer condition 6.4)^{Note1}
 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}
Methane (CH ₄) Carbon Dioxide (CO ₂) Oxygen (O ₂) Atmospheric pressure & Trend	Monthly	InfraRed Analyser/FID InfraRed Electrochemical Cell Standard method

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

Note 2: Or other method agreed.

C.2.1 CONTROL OF EMISSIONS TO WATER

Emission Control Location: Surface Water Polishing Lagoon

Description of Treatment: Sedimentation

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Residence time & Flow restriction	Flow rate, depth	Flow meter, overflow alarm, emergency storage

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



C.2.2 MONITORING OF EMISSIONS TO WATER

Emission Point Reference No.:

Outlet from Polishing Lagoon

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



C2.3 LEACHATE MONITORING

Location: Leachate Holding Tank, Leachate Sumps and Leachate Monitoring Points in the Cells.

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).

C.3 AMBIENT MONITORING

Air Monitoring

Location: D1 – D4 (incl.) Drawing Ref: 0501014/01/506 (or as may be amended under Condition 6.3)

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust deposition	Monthly	Bergerhoff

Groundwater Monitoring

Location: Groundwater Wells (refer Condition 6.10)
And
 Discharge from western groundwater interceptor drain (prior to merger with surface water treatment system)

Parameter ^{Note 1}	Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Monthly
Groundwater Level (wells)	Monthly
Flow (pumped water from interceptor)	Continuous
Dissolved Oxygen	Daily (Interceptor) Monthly otherwise
Electrical Conductivity	Daily (Interceptor) Monthly otherwise
Ammoniacal Nitrogen	Monthly
Chloride	Monthly
pH	Monthly
Sulphate (SO ₄)	Monthly
Metals / non metals ^{Note 3}	Annually
List I/II organic substances (Screen) ^{Note 4}	Annually
Mercury	Annually
Nitrate	Annually
Total P/orthophosphate	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).

Receiving Water Monitoring

Location: SW2 in Drawing Ref: 0501014/01/506, and storm-water discharge from southern service road (or as may be amended under Condition 6.3)

Parameter	Monitoring Frequency	Analysis Method/Technique
Biological Quality (Q) Rating/Q Index	Annually ^{Note 1}	To be agreed with the Agency
Parameters in Table C2.2	Visual Inspection Weekly All others Quarterly unless specified as Annually in Table C2.2	Standard Methods

Note 1: Monitoring period - June to September.

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

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

SCHEDULE D Specified Engineering Works

Specified Engineering Works

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

SCHEDULE E Reporting

Completed reports shall be submitted to:

The Environmental Protection Agency
 Office of Environmental Enforcement
 Regional Inspectorate
 John Moore Road
 Castlebar
 Co Mayo **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 ^{Note1}	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.
Drawing with Monitoring locations	-	Prior to commencement of waste disposal
Schedule of Objectives & Targets	-	3 months prior to commencement of development
Phased Construction Plan	-	Prior to commencement of development
Leachate Disposal Agreement	-	Prior to commencement of waste disposal

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
Stability Assessment
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).
Detailed Statement, with mass balance, of C & D wastes and compost used in construction.
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 of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities)
Statement on the costs of Landfill.
Contributions to Community Fund
Environmental Liabilities Risk Assessment Review (every three years or more frequently as dictated by relevant on site change including financial provisions)
Any amendments to the CRAMP.

Any other items specified by the Agency.

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



Signed on behalf of the said Agency
on the 11th day of January, 2005

Authorised Person