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P.O. Box 3000,
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County Wexford, Ireland

**WASTE LICENCE
PROPOSED DECISION**

Waste Licence	103-1
Register Number:	
Applicant:	Meath County Council
Location of Facility:	Knockharley Landfill, Townlands of Knockharley, Flemingstown and Tuiterrath, Navan, Co Meath.

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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 not contravene any of the requirements of Section 40(4) of the Waste Management Act, 1996.

In reaching this decision the 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: Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency) proposes, under Section 40(1) of the said Act to grant this Waste Licence to Meath County Council, County Hall, Navan, Co. Meath to carry on the waste activities listed below at the proposed Knockharley Landfill, Knockharley, Navan, Co. Meath subject to eleven Conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

*Licensed Waste Disposal Activities, in accordance with the Third Schedule
of the Waste Management Act, 1996*

Class 1.	Deposit on, in or under land (including landfill): This activity is limited to the landfilling of waste as specified under Class 5 of this Schedule and is the principal activity.
Class 4.	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons: This activity is limited to the storage of leachate.
Class 5.	Specially engineered landfill, including placement into lined discrete cells, which are capped and isolated from one another and the environment. This activity is limited to the disposal of the wastes permitted by the conditions of this licence into lined cells within the footprint of the landfill as shown on Drawing No. 5.1 Rev.A March 1999.
Class 6.	Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule: This activity is limited to the composting of green waste and biodegradable wastes agreed with the Agency.
Class 7.	Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule: This activity is limited to the treatment of wastewater.

*Licensed Waste Recovery Activities, in accordance with the Fourth Schedule
of the Waste Management Act, 1996.*

Class 2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes): This activity is limited to the composting of green wastes and other biodegradable waste agreed with the Agency. This activity is limited to the trial composting of wastes accepted subject to a limit of 1,000m ³ at any one time at the facility.
Class 9.	Use of any waste principally as a fuel or other means to generate energy: This activity is limited to the collection of landfill gas for conversion to electricity.
Class 10.	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system: This activity is limited to activities relating to the composting of green waste (and other biodegradable wastes agreed with the Agency).
Class 11.	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule: This activity is limited to activities relating to the composting of green waste (and other biodegradable wastes agreed with the Agency) and the use of compost for restoration / landscaping of restored cells.
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: This activity is limited to the storage of compost and other material prior to on site or off site recycling, reuse or reclamation. Any such activities will be subject to the prior agreement of the Agency.

INTERPRETATION

Act	The Waste Management Act, 1996 (No. 10 of 1996).
Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
Agreed	Agreed or specified by the Agency in advance in writing.
Agreement	Agreement in writing.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence, including any other material submitted to the Agency in writing by the licensee between the date of the application and the date of grant of this licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BATNEEC	Best Available Technology Not Entailing Excessive Cost as defined in section 5 (2) of the Act.
Biannually	Twice a year at six monthly intervals.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.
Buffer Zone	Is an area between the landfill footprint and the boundary of the facility.
Civic Waste Facility	A facility at which waste may be deposited for (1) recovery or (2) sorting, prior to disposal at the landfill.
Commercial waste	As defined in Section 5 (1) of the Act.
Compost	A solid mature product resulting from composting and meeting the quality specified in Schedule J.
Composting	An aerobic treatment method for the decomposition of biodegradable waste.
Condition	A condition of this licence. In any case where this licence refers to a numbered condition, the reference shall be taken to mean the condition and any sub-condition therein which the context of the reference requires that reference is made to
Containment boom	A boom which can contain spillages and prevent these from entering drains or watercourses.
Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the

	Agency.
Daytime	8.00 a.m. to 10.00 p.m.
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	As defined in Section 5 (1) of the Act.
Emission Limit Value	Those limits, including concentration limits and deposition levels established in Schedule F.
Environmental Pollution	As defined in Section 5 (1) of the Act.
European Waste Catalogue (EWC)	The EWC is a harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
Facility	That area or areas defined under Condition 1.2
Facility Working Day	8.00 to 18.00 Monday to Friday inclusive and 9.00 to 17.00 on Saturday, unless otherwise agreed with the Agency.
FAS Waste Management Training Programme	A competency based certification to meet the EPA Waste Management Integrated Licensing requirements.
Fire Authority	Meath County Council
Foreign matter	Any matter over a 2 mm dimension that results from human intervention and having organic or inorganic constituents such as metal, glass and synthetic polymers (e.g. plastic and rubber) that may be present in the compost but excluding mineral soils, woody material and rocks.
GCL	Geosynthetic clay liner
Green waste	Waste wood, plant matter and other vegetation.
Hazardous Waste	As defined in Section 4 (2) of the Act.
Household Waste	As defined in Section 5 (1) of the Act.
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.

Incident	Any reference to an incident in this licence means an incident as defined in Condition 3.1.
Industrial waste	As defined in Section 5 (1) of the Act.
Landfill	As defined in Section 5 (1) of the Act.
Landfill Directive	Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste.
Landfill Footprint	Area within which waste may be landfilled.
Landfill Gas	Gases generated from the landfilled waste.
Landfill Manuals	Landfill manuals published by the Agency pursuant to Section 62 of the EPA Act 1992.
Leachate	Any liquid percolating through the deposited waste and emitted from or contained within a landfill as defined in Section 5 (1) of the Act.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Meath County Council
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works
Monthly	At least 12 times per year, at approximately monthly intervals.
Municipal Waste	Municipal waste as defined in Section 5 (1) of the Act.
Night-time	10.00 p.m. to 8.00 a.m.
Non-hazardous waste	Non-Hazardous Waste is any waste which is not a hazardous waste as defined in the Act.
Putrescible waste	Biodegradable waste with the potential to give rise to an offensive odour.
Quarterly	A period of three calendar months, the first period of which commences on the date of grant of this licence (or as otherwise specified)
Recovery	As defined in Section 4 (4) of the Act.

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 chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
Soil improver	Materials sold as end user products for gardening to be added to the soil to improve at least its physical condition or its physical and biological condition without causing harmful effects.
Specified Emissions	Those emissions listed in Schedule F: Emission Limits of this licence.
Specified Engineering Works	Those engineering works listed in Schedule D: Specified Engineering Works of this licence.
Submit	Unless the context of this licence indicates otherwise, submit in writing to the Agency for its agreement
TSP	Total suspended particulates
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its odour potential, fermentability and the health hazards resulting from its use.
Trigger Level	A parameter value which when achieved or exceeded requires certain actions to be taken.
Waste	As defined in Section 4(1) of the Act.
Waste disposal activity	Includes the activities referred to in Section 4 of the Act and listed in the Third Schedule thereto.
Waste recovery activity	Includes the activities referred to in Section 4 of the Act and listed in the Fourth Schedule thereto.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
Working Day (Agency)	9.00 a.m. to 5.30 p.m. Monday to Friday.
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

Part II CONDITIONS

CONDITION 1 SCOPE

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and required by the licence.
- 1.2. Waste activities shall be restricted to the area of land outlined in red on Drawing No.5.1 Rev. A March 1999 "Site Layout Plan". Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. Every plan, programme or proposal submitted to the Agency for its agreement pursuant to any condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary. Every plan, programme or proposal shall be carried out within the timescale fixed by the Agency but shall not be undertaken without the agreement of the Agency.
- 1.4. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.5. Where the Agency considers that a non-compliance with the Conditions of this licence has occurred, it may serve a notice on the licensee specifying:
 - a) that only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;
 - b) that the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice; and,
 - c) that the licensee shall carry out any other requirement specified in the notice.

When the notice has been complied with, the licensee shall provide written confirmation that the requirements of the notice have been carried out. No waste, other than that which is stipulated in the notice, shall be accepted at the facility until written confirmation is received from the Agency that the notice is withdrawn.

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

CONDITION 2 MANAGEMENT OF THE ACTIVITY

2.1 Environmental Management System

2.1.1 The licensee shall three months prior to the commencement of waste activities, submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

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

i. Schedule of Environmental Objectives and Targets

The Schedule shall address a five year period as a minimum and shall be reviewed and submitted annually to the Agency for its agreement. The objectives should be specific and the targets measurable.

ii. Environmental Management Programme (EMP)

The EMP shall include a time-scale for achieving the Schedule of Objectives and Targets and shall comply with any other guidance issued by the Agency. The EMP shall include, as a minimum, the information specified in Schedule A: Content of the Environmental Management Programme. The EMP shall be reviewed and submitted to the Agency for its agreement annually.

iii. Corrective Action

The licensee shall establish and maintain written Corrective Action Procedures to ensure that corrective action is taken should specified requirements to this licence not be fulfilled.

iv. Awareness and Training

The licensee shall establish and maintain Awareness and Training Procedures for identifying training needs and for providing appropriate training, for personnel whose work is related to the licensed facility. Written records of training shall be maintained.

v. Communications

The licensee shall submit to the Agency for its agreement a Communications Programme to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times. A community liaison committee shall also be established which will enable communication between representatives of the local residents and the licensee.

2.2 Management Structure

The licensee shall, three months prior to the commencement of construction of the facility, submit written details of the management structure of the facility for the agreement of the Agency. Any proposed changes in the management structure shall be submitted in writing to the Agency for its agreement. Written details of the management structure shall include the following information:

- a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence;
- b) details of the responsibilities for each individual named under a) above;
- c) details of the relevant experience, competence and qualifications held by each of the persons nominated under a) above; and
- d) Contingency arrangements for the absences of the named persons from the facility.

2.3 Annual Environmental Report

2.3.1 The licensee shall submit to the Agency for its agreement, within thirteen months of the date of grant of the licence, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).

2.3.2 The AER shall include as a minimum the information specified in Schedule B: Content of Annual Environmental Report and shall be prepared in accordance with any relevant written guidance issued by the Agency.

2.4 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 suitably qualified and experienced deputy shall be present at all times during the operation of the facility. Both the facility manager and deputy shall successfully complete both the FAS waste management training programme (or equivalent agreed with the Agency) and associated on site assessment appraisal. They shall obtain certification, within 12 months of the date of being appointed, that both have successfully completed the training programme and that both are competent to manage the facility. Furthermore, any replacement site manager or deputy must have a similar qualification.

2.5 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and/or experience, as required and shall be aware of the requirements of this licence.

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 NOTIFICATION AND RECORD KEEPING

3.1 The licensee shall make written records of the following incidents:

- a) any nuisance caused by the activity
- b) any emission which does not comply with the requirements of this licence;
- c) any trigger level specified in this licence or in the EMS which is attained or exceeded;
- d) any indication that contamination or environmental pollution has, or may have, taken place; and
- e) any emergency.

3.2 The written record shall include all aspects described in Condition 10.9(a-e).

- 3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:
- a) notify the Agency as soon as practicable by telephone and facsimile and in any case not later than 10.00 am the following working day after the occurrence of any incident;
 - b) submit the written record required by this condition to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and
 - c) in the event of any incident which relates to discharges to surface water or groundwaters, notify Eastern Regional Fisheries Board as soon as practicable by telephone and in writing (by facsimile) and in any case not later than 10:00am on the following working day after such an incident.
- 3.4 Should any further actions be taken after the date of written notification, as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.
- 3.5 Unless otherwise agreed by the Agency, all documentation submitted to the Agency shall:
- (a) be sent to the Agency's headquarters;
 - (b) comprise one original and three copies;
 - (c) be formatted in accordance with any written instruction or guidance issued by the Agency;
 - (d) include whatever information as is specified in writing by the Agency;
 - (e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
 - (f) be submitted in accordance with the relevant reporting frequencies specified by this licence; and
 - (g) in the case of results of any environmental monitoring, be accompanied by a written interpretation setting out their significance.
- 3.6 Copies of all environmental monitoring data obtained by the licensee which relates to the facility shall be forwarded to the Agency at the frequencies set out in Schedule C: Recording and Reporting to the Agency of this licence.
- 3.7 Unless otherwise agreed with the Agency, all documentation and records required to be made under this licence, shall be retained by the licensee.
- 3.8 The licensee shall provide additional copies of any documentation and records referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.
- 3.9 The licensee shall keep the following documents at the facility office referred to in Condition 4.9.
- a) the current waste licence relating to the facility;
 - b) the current EMS for the facility;
 - c) the previous year's AER for the facility;
 - d) all written procedures produced by the licensee which relate to the licensed activities;

- 3.10 The licensee shall maintain a written record for each load of waste arriving at and leaving the facility. The licensee shall record the following:
- a) the date;
 - b) the name of the carrier (including, if appropriate the waste carrier registration details);
 - c) the vehicle registration number;
 - d) the name of the producer(s)/collector(s) of the waste as appropriate;
 - e) the name of the waste facility (if relevant) from which the load originated including the waste licence or waste permit register number;
 - f) a description of the waste including the associated EWC codes;
 - g) the quantity of the waste, recorded in tonnes;
 - h) the name of the person checking the load; and,
 - i) 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.
- 3.11 The licensee shall maintain a written record of the type and quantity, recorded in tonnes, of all wastes recovered or disposed of at the facility.
- 3.12 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:
- a) the name of the carrier (including, if appropriate the waste carrier registration details);
 - b) the date and time of removal of leachate from the facility;
 - c) the volume of leachate, in cubic metres, removed from the facility on each occasion;
 - d) the name and address of the Waste Water Treatment Plant to which the leachate was transported;
 - e) any incidents or spillages of leachate during its removal or transportation.
- 3.13 The licensee shall maintain a written record of all complaints relating to the operation of the activity. Each such record shall give details of the following:
- a) date and time of the complaint;
 - b) the name of the complainant;
 - c) details of the nature of the complaint;
 - d) actions taken on foot of the complaint and the results of such actions; and,
 - e) the response made to each complainant.
- 3.14 Provision shall be made for the transfer of environmental information specified by the Agency, in relation to the activities carried on under this licence, to the Agency's computer system within a timescale specified in writing by the Agency.

Reason : *To provide for the notification of incidents, to update information on the activity and to provide for the keeping of records.*

CONDITION 4 SITE INFRASTRUCTURE

- 4.1 The licensee shall establish all infrastructure referred to in this licence prior to the commencement of the licensed activities or as instructed by the Agency.
- 4.2 Specified Engineering Works
- 4.2.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in Schedule D: Specified Engineering Works, 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.
- 4.2.2 All specified engineering works shall be supervised by a competent person(s) agreed in advance by the Agency and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 4.2.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information;
- a) a description of the works;
 - b) as-built drawings of the works;
 - c) records and results of all tests carried out (including failures);
 - d) where relevant a drawing and sections showing the location of all samples and tests carried out;
 - e) where relevant daily records sheets/diary;
 - f) name(s) of contractor(s)/individual(s) responsible for undertaking the engineering works;
 - g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
 - h) records of any problems and the remedial works carried out; and
 - i) any other information requested in writing by the Agency.
- 4.3 Site Notice Board
- 4.3.1 Prior to the commencement of construction of the facility, the licensee shall provide and maintain a Site Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the identification board shall be 1200 mm by 750 mm.
- 4.3.2 The board shall clearly show:
- a) the name and telephone number of the facility;
 - b) the normal hours of opening;
 - c) the name, address and telephone number of the licence holder;
 - d) an emergency out of hours contact telephone number;
 - e) the name, address and telephone number of the operator of the facility;
 - f) the licence reference number;
 - g) where and when environmental monitoring information relating to the facility can be obtained.

4.4 Site Security

4.4.1 Security and stockproof fencing and gates shall be installed and maintained as described in Attachment D.1(a) Site Security of the application, prior to the commencement of construction of the facility. The security fence and gates shall be at the locations shown on Drawing No. 5.1 Rev. A March 1999. The base of the fencing shall be set in the ground.

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

- a) a temporary repair shall be made by the end of the working day; and,
- b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days or as otherwise agreed with the Agency.
- c) Gates shall be locked shut when the facility is unsupervised.

4.4.3 Prior to the acceptance of waste at the facility Closed Circuit Television (CCTV) shall be installed as described in Attachment D.1(a) and Section 5.4.2 of Vol.2 of the EIS.

4.5 Soil Storage

4.5.1 Soils shall be removed and stored in the manner described in the Agency's Landfill Manual "Landfill Restoration and Aftercare". The storage of soils shall be in such a manner to maximise the preservation of the soil structure for future use within the facility.

4.5.2 Soils removed during the site preparation other than those to be re-used for site construction purposes shall be stored at a location to be agreed with the Agency prior to the commencement of construction of the facility.

4.6 Facility Boundary/ Perimeter Planting and Enhancement

4.6.1 Apart from the removal of hedgerows to facilitate the facility access road, the boundary hedgerow network and those within the buffer zone shall be retained and enhanced where appropriate by the licensee to minimise the views of the facility from the surrounding countryside.

4.6.2 The perimeter planting outlined in Section 5.4.3 and Section 7.8 of Vol. 2 of the EIS and Article 13 reply 29th March 2000 shall be undertaken by the licensee.

4.6.3 The Phases 1, 2 and 3 woodland planting outlined in Figure 5.4.1 Landscape Phasing in Vol. 2 of the EIS shall all be carried out within the first planting season following issue of the licence. Trees of a mixed age should be used and established trees (min. of 2m height) should be planted on the northern boundary.

4.7 Access Road

4.7.1 The road improvements for the entrance from the N2 as described in Section 7.14 of Vol. 2 and Appendix 7 of Vol. 3 of the EIS and Article 13 reply 29 March 2000 submitted as part of the waste licence application shall be carried out prior to the construction of the facility.

4.7.2 The proposed access road shall be constructed prior to the commencement of construction of the facility. This shall be in accordance with the specification submitted as described in Section 7.14 of Vol. 2 and Appendix 7 of Vol. 3 of the EIS and Article 13 reply 29th March 2000 to the Agency.

- 4.7.3 Access to the facility by construction and waste disposal vehicles shall only be from the N2 entrance.
 - 4.7.4 The road improvements for the N2 as described in Section 7.14 of Vol. 2 and Appendix 7 of Vol. 3 of the EIS and Article 13 reply 29th March 2000 submitted as part of the waste licence application shall be carried out prior to waste acceptance at the facility.
 - 4.7.5 There shall be no public access to the facility for the disposal or recovery of waste.
 - 4.7.6 There shall be a speed restriction of 30 mph on the access road (as described in Section 7.14.3 of Vol.2 of EIS).
 - 4.7.7 No construction or waste disposal vehicles using the facility shall use the R150 road or the country road (CR 384) (north and east of the facility) en route to or from the facility (as described in Section 7.14.3 of Vol.2 of EIS).
 - 4.7.8 As described in Article 13 reply 29th March 2000 prior to the development of the landfill access road, farm access shall be provided for landowners whose land will be partitioned.
 - 4.7.9 Improvements for road signage for the Kentstown crossroads, Balrath cross roads and in the vicinity of the entrance to the facility shall be installed prior to the acceptance of waste at the facility.
- 4.8 Site Roads
- 4.8.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility. The licensee shall provide details of the road specification to the Agency within three months prior to the date of construction.
 - 4.8.2 The facility carpark area as shown in Drawing No. 5.1 Rev. A March 1999 shall be paved and maintained in accordance with a specification agreed in advance with the Agency. The surface water drainage from this area shall pass through an interceptor prior to discharge to the surface water lagoon.
 - 4.8.3 Three months prior to the construction of the facility proposals for traffic control including signage within the facility shall be submitted to the Agency.
- 4.9 Office and Garage
- 4.9.1 Prior to the commencement of waste activities at the facility the licensee shall provide and maintain an office and garage on the facility, at the locations shown in Drawing No. 5.1 Rev. A March 1999 and thereon referred to as Site administration building and garage. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation. Part of the office shall be set aside for use as a public education area as described in Section 8.2 of Vol.2 of the EIS.
 - 4.9.2 All liquid fuels and chemicals stored within the garage shall be placed on a bunded pallet or equivalent agreed by the Agency.
 - 4.9.3 The licensee shall provide and maintain a working telephone and facsimile machine in the office specified above.
- 4.10 Inspection and Quarantine Area

- 4.10.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the location shown in Drawing No. 5.1 Rev. A March 1999. The waste inspection area shall be constructed such that it includes a separate area for the quarantine of unacceptable waste.
- 4.10.2 The licensee shall ensure that 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 suitably and clearly segregated from each other.
- 4.10.3 Drainage from the Inspection and Quarantine areas shall be directed to the Leachate Treatment Compound as shown in Drawing No. 5.1 Rev. A March 1999.
- 4.11 Prior to the commencement of waste activities, the licensee shall provide and maintain a weighbridge at the facility. The location of the weighbridge shall be as shown on Drawing No. 5.1 Rev. A March 1999.
- 4.12 Wheelwash
 - 4.12.1 Prior to the commencement of construction of the facility, the licensee shall provide a wheelwash at the location shown in Drawing No. 5.1 Rev. A March 1999 and referred to thereon as wheelwash.
 - 4.12.2 Following the installation of the wheelwash the licensee shall inspect the wheelwash and the wheelwash sump on a daily basis and drain as required. Prior to construction of the leachate lagoon accumulated liquid shall be tankered off-site to an appropriate facility. Following construction of the leachate lagoon accumulated liquid in the wheelwash sump shall be pumped to that lagoon. Silt, stones and other accumulated material shall be removed as required from the wheel cleaner and disposed of at the working face or to a skip (during construction).
- 4.13 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 4.14 Waste Water
 - 4.14.1 The licensee shall provide and maintain a small scale waste water treatment plant at the facility for the treatment of sewage arising on-site. The plant shall satisfy the design criteria set out in the Agency's manual on "Small Scale Treatment Systems". The outlet from the treatment plant shall discharge to the leachate lagoon.
 - 4.14.2 During construction all sewage arising on site shall be collected and disposed of off-site at a suitable Waste Water Treatment Plant.
- 4.15 Storage Areas
 - 4.15.1 Prior to the commencement of construction of the facility the licensee shall construct bunded fuel storage and pump area(s) adjacent to the garage area. Unless contained in mobile plant at the facility fuels shall be stored at the agreed location(s).
 - 4.15.2 Prior to the construction of the bunded fuel storage area referred to in the above condition, no fuel shall be stored on the facility.
 - 4.15.3 Waste oils collected for recovery shall be stored on a bunded pallet or equivalent.

- 4.15.4 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, 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.
- 4.15.5 All drainage from banded areas shall be diverted for collection and safe disposal.
- 4.15.6 All inlets, outlets, vent pipes, valves and gauges must be within the banded area.
- 4.15.7 The integrity and water tightness of all the bunds, tanks and containers and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee and shall be reported to the Agency following its installation and prior to its use as a fuel storage area. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. The licensee shall also submit to the Agency for its agreement in each case a written report on the storage of fuels at the facility. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 4.15.8 All tanks and containers, including tankers used to transport leachate from the facility, shall be labelled to clearly indicate their contents.
- 4.16 Landfill Lining:
- 4.16.1 The area within which landfilling of waste is carried out shall be such that there is
- (i) a minimum 250m of a buffer zone between the landfill footprint and the facility boundary,
 - (ii) No occupied dwelling shall be located within the buffer zone, and
 - (iii) a minimum of 150m between the boundary of the facility and any other proposed waste activity at the facility.
- 4.16.2 The liner system for all cells within the landfill area shall comprise of the following (or equivalent):
- (i) be a composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to 1×10^{-9} m/s constructed in a series of compacted lifts no thicker than 250mm when compacted overlain by a 2mm thick high density polyethylene (HDPE) layer;
 - (ii) incorporate a protection layer consisting of a geotextile layer to be placed over the HDPE layer. The drainage layer to be placed over the geotextile layer shall comprise a 500mm layer with minimum hydraulic conductivity of 1×10^{-3} m/s and shall be prewashed, uncrushed, granular, rounded stone (16 - 32mm grain size). The licensee shall ensure that the drainage layer is compatible with and does not compromise the integrity of the HDPE liner. The side walls shall be designed and constructed to achieve an equivalent protection.
- 4.16.3 To ensure maximum protection of the groundwater and to satisfy the requirements of Condition 4.21.3 formation levels shall be agreed with the Agency prior to the construction of any cell.

- 4.16.4 The leachate lagoon lining shall be a composite liner consisting of
- (i) A 2mm HDPE or equivalent flexible membrane liner overlying
 - (ii) a lower component of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to 1×10^{-9} m/s constructed in a series of compacted lifts no thicker than 250mm when compacted.
- 4.16.5 Following the placement of the liner system in all cells, the leachate lagoon and the surface water lagoon, the licensee shall commission an independent leak detection survey of the liner system. The results of this survey and a description of any remediation measures necessary including follow up testing shall be submitted to the Agency prior to the placement of any waste, leachate or surface water/groundwater within the lined structures.

4.17 Leachate Management

- 4.17.1 Leachate management at the facility shall be carried out as described in Attachment D.4 of the application, Section 5.4.7 Vol. 2 of EIS, items 6,7& 8 of Article 13 reply 29th March 2000 and Article 16 reply 20th July 2000.
- 4.17.2 The leachate head in the waste on the top of the liner shall not exceed a level of 0.3m (as specified in Section 5.4.7 of Vol. 2 of EIS).
- 4.17.3 All leachate management structures on-site shall be inspected and certified fit for purpose on an annual basis by an independent and appropriately qualified chartered engineer. Any remedial works recommended in this report must be implemented immediately.
- 4.17.4 All structures for the storage and treatment of untreated leachate shall be fully enclosed except for inlet and outlet piping.
- 4.17.5 Unless otherwise agreed with the Agency Leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers and discharging to Navan Waste Water Treatment Plant. The frequency of removal from the lagoon by tanker shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.
- 4.17.6 The licensee shall submit to the Agency for its agreement prior to the use of the leachate lagoon Operational Procedures for the handling of leachate which include (1) procedures for the handling of leachate during removal from the lagoon and subsequent transport/discharge to the Navan Waste Water Treatment Plant and (2) monitoring infrastructure details and procedures for monitoring the level of leachate in the pump sumps, the cells and the lagoon.
- 4.17.7 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and shall only be undertaken within cells which have been lined and capped to the satisfaction of the Agency.

4.18 Landfill Gas Management:

- 4.18.1 Landfill gas management at the facility shall be carried out as described in Attachment D.5 of application and in Sections 5.4.10 and 7.10.3 of Vol. 2 of the EIS and Article 16 reply 20th July 2000.
- 4.18.2 A Gas Flare and associated infrastructure shall be installed on the facility within six months of the date on which waste is first disposed of at the facility.
- (i) The flare shall be of an enclosed type design,

- (ii) Air dispersion modelling shall be used to determine the optimum location of the landfill gas flare in relation to the nearby dwellings. The results of the modelling shall be submitted to the Agency prior to the flare being installed.

- 4.18.3 Flare unit efficiency shall be tested within six months of the date of grant of this licence and once every three years thereafter.
- 4.18.4 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that form part of the landfill gas management scheme in a safe and fully operational manner.
- 4.18.5 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environments 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions. Landfill gas alarms shall be installed in all site buildings.
- 4.18.6 Until the operation of the landfill gas flare and unless otherwise agreed with the Agency, passive landfill gas management at the facility shall be carried out. Landfill gas management and infrastructure shall meet the recommendations given in the Agency Manual "Landfill Operational Practices". All vents installed to facilitate passive gas venting shall be fitted with an effective activated carbon filter.
- 4.18.7 On an annual basis the licensee shall submit an assessment of whether the utilisation of landfill gas as an energy resource is feasible. If feasible such a system shall be installed within a timeframe agreed with the Agency. This assessment shall include proposals regarding the utilisation of heat energy from this plant at other premises / facilities at and in the vicinity of the facility.
- 4.18.8 Perimeter landfill gas monitoring boreholes shall be installed at 45m intervals around the periphery of the footprint of the landfill. The installation of the boreholes shall be phased so as to match the phased development of cells.

4.19 Capping

- 4.19.1 Unless otherwise agreed with the Agency daily cover and intermediate capping shall consist of the following: Subsoils and other excavation waste or construction industry waste such as bricks and crushed broken concrete. The material should be free draining and of low clay content. Daily cover should be 150mm in depth, while intermediate capping should be 300mm in depth.
- 4.19.2 The sequence for the temporary restoration of the facility shall be in accordance with Section 5.4.3 of Vol. 2 of the EIS.
- 4.19.3 Final capping shall consist of the following:
- top soil (150 -300mm);
 - subsoils, such that total thickness of top soil and subsoils is at least 1m;
 - drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s;
 - compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-9} m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and
 - gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

- 4.19.4 Filled cells shall be permanently capped to the specifications in accordance with the above requirements within twelve months of the cells having been filled to the required level.
- 4.19.5 The licensee shall maintain a stockpile of capping materials at the facility containing the requisite volume of capping materials for a six month period.

4.20 Surface Water Management

- 4.20.1 The licensee shall ensure effective control of surface water run off from the facility during construction, operation and restoration.
- 4.20.2 Surface water management at the facility shall be carried out as described in Attachment D.1, Section 5.4.9 of Vol.2 of the EIS, Article 13 reply 29th March 2000, and Article 16 reply 20th July 2000.
- 4.20.3 The planned diversion of surface water outlined in Article 13 replies 29th March 2000 and 19th May 2000 and Article 16 reply 29th March 2000 shall be undertaken such that it will not have a significant impact on the surrounding water courses following consultation with the Eastern Regional Fisheries Board and agreement with the Agency.
- 4.20.4 The design and capacity of the surface water lagoon shall ensure that it is capable of fulfilling the requirements of this licence. The surface water lagoon and associated control chamber and outlet penstock shall be constructed and maintained at the location shown on Drawing No.5.1 Rev. A March 1999, unless otherwise agreed.
- 4.20.5 The surface water lagoon shall be lined to the same specifications as the leachate storage lagoon as specified in Condition 4.16.4.
- 4.20.6 The outlet from the surface water lagoon shall incorporate a penstock for preventing surface water discharges in the event that monitoring should indicate contamination of the surface water.
- 4.20.7 The surface water lagoon shall be constructed such that it has a capacity to contain all de-watered groundwater and surface water runoff generated during construction phase of the landfill development.
- 4.20.8 All surface water from hardstanding areas must pass through a Class 1 Full Oil Interceptor prior to reaching the surface water lagoon.
- 4.20.9 Following construction of the surface water management infrastructure, surface water from the facility shall only be discharged to the perimeter streams from the surface water lagoon as shown in Drawing No. 5.1 Rev. A. March 1999.

4.21 Groundwater Management

- 4.21.1 Groundwater management at the facility shall be carried out as described in Attachment C.6 of the application, Appendix 1 of Vol. 3 of the EIS and Article 13 replies 29th March and 19th May 2000.
- 4.21.2 Prior to the commencement of construction of the facility, the licensee shall install 2 No. groundwater monitoring wells.
- 4.21.3 Except during periods of construction of the facility which necessitates the lowering of the groundwater in the area under construction, a hydraulic trap shall be maintained, unless otherwise agreed with the Agency, at the facility such that the piezometric level of the groundwater outside the waste is higher than the level of leachate within the waste.

4.21.4 Any de-watering undertaken during construction shall not have a significant impact on the groundwater supplies for domestic and agricultural users unless an alternative equivalent supply is provided.

4.21.5 As specified in Section 8.2 of Vol.2 of the EIS all dwellings with private wells within 500m of the facility on the C383 and those to the west and south west of the facility shall be connected to mains water supplies subject to the agreement of the well owners, unless otherwise agreed with the Agency.

4.22 No development works shall be carried out within 150m of the gas pipeline.

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

CONDITION 5 WASTE MANAGEMENT

5.1 Waste Acceptance

- 5.1.1. No hazardous waste (excluding batteries, fluorescent tubes, waste oil, paint and pesticides collected for recovery or disposal off-site), liquid waste, sludge (treated or untreated), asbestos waste, animal by-products or remains shall be accepted at the facility.
- 5.1.2. Waste loads consisting mainly of green waste, timber, white goods, glass and metals shall not be disposed of at the facility.
- 5.1.3. Construction and demolition waste shall not be disposed of at the facility but can be accepted for recovery for use as daily cover, site construction works and landfill restoration. The amount of construction and demolition waste accepted shall not exceed 13,500 tonnes per annum, unless otherwise agreed with the Agency.

5.2 Only those waste types and quantities listed in Schedule G: Waste Acceptance and those waste types outlined in Tables E.1.3 and E.1.4 of the application, other than sludge for disposal (treated and untreated), shall be recovered or disposed of at the facility unless the prior agreement of the Agency has been obtained.

5.3 The quantity of wastes to be accepted for disposal at the landfill, shall not exceed 62,500 tonnes per annum, unless otherwise agreed in advance with the Agency.

5.4 Waste shall only be accepted at the facility from local authority waste collection or transport vehicles and vehicles of a similar nature operated by private companies involved in the collection or transport of waste on a commercial basis.

5.5 Six months prior to waste acceptance at the facility, the licensee shall submit to the Agency for its agreement site specific detailed written procedures for site staff for the acceptance and handling of waste (including those for deep burial) at the facility. These procedures should be based on the information submitted on waste acceptance in the Article 16 reply 20th July 2000 and any other guidance issued by the Agency.

5.6 Each load of waste arriving at the facility shall be visually inspected prior to unloading in accordance with "Level 3: On-site verification" outlined in the Agency's Draft Manual on Waste Acceptance. In addition, all wastes shall be checked at the working face to ensure that they comply with the requirements of the licence. Any wastes deemed to be in contravention of this licence and /or unsuitable for disposal at this facility shall be removed to the Quarantine Area prior to disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area for a maximum of twenty-four hours only. A record of all inspections shall be maintained on a daily basis.

5.7 Apart from the temporary storage of waste at the Waste Inspection/ Quarantine Area waste for disposal shall not be stored at any other location within the facility.

5.8 The disposal of waste in any new cell cannot commence without the prior written agreement of the Agency.

5.9 Scavenging shall not be permitted at the facility.

5.10 Waste shall only be accepted at the facility between the hours of 8.30 and 17.30 Monday to Friday inclusive and 9.30 to 16.30 on Saturdays, unless otherwise agreed in advance with the Agency. The operational hours of the facility are 8.00 to 18.00

Monday to Friday and 9.00 to 17.00 on Saturdays, unless otherwise agreed in advance with the Agency.

- 5.11 Unless the prior agreement of the Agency is given, the following shall apply at the landfill:
- a) only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials;
 - b) the working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and 25 metres in length and have a slope no greater than 1 in 3; and,
 - c) all waste deposited at the working face shall be compacted and covered as soon as is practicable and at any rate prior to the end of the working day.
- 5.12 The working face of the operational cell shall, at the end of each day, be covered with suitable material suitable to minimise any nuisances occurring. 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.
- 5.13 The landfill shall be filled in accordance with the six phased sequence outlined in Section 5.4.3 Vol. 2. of the EIS.
- 5.14 A steel wheeled compactor or other such vehicle as agreed with the Agency shall be used for compacting all waste other than that used for restoration or construction purposes.
- 5.15 In order to prevent the formation of voids, all large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.16 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 the landfill gas collection system without prior agreement from the Agency, subject to Condition 5.5.
- 5.17 No smoking shall be allowed on the facility (other than in the site administration building as shown on Drawing No. 5.1 Rev. A March 1999).
- 5.18 Waste Recovery

Unless otherwise agreed with the Agency, within six months of the commencement of waste activities at the facility, a report examining recovery provisions shall be submitted to the Agency for its agreement. Unless otherwise agreed with Agency, this report shall address provisions for the following:

- 5.18.1. the separation of recyclable materials from the waste;
- 5.18.2. the recovery of metal waste and white goods including written procedures for the de-gassing of CFC's from refrigerators;
- 5.18.3. the recovery of commercial waste, including cardboard;
- 5.18.4. storage of recyclable materials; and
- 5.18.5. Measures to meet the targets set in the Waste Management Plan and the Waste Policy Document from the Department of the Environment and Local Government entitled "Changing our Ways".

- 5.19 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency. The ultimate recovery or disposal facility for all wastes shall be agreed in advance with the Agency. All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.
- 5.20 Composting Facility
- 5.20.1. Only green waste shall be composted at the facility unless otherwise agreed with the Agency. The quantity of compost and waste held at the composting facility shall not exceed 1000 cubic metres at any one time.
- 5.20.2. All stockpiles and windrows shall be adequately covered to minimise odour generation.
- 5.20.3. All putrescible wastes accepted to the composting unit shall be introduced into the compost process or made into a windrow within 24 hours of delivery.
- 5.20.4. No waste shall be left on the reception area from the close of operation on Saturday until Monday morning opening.
- 5.20.5. A windrow turner shall be used to ensure proper turning and aeration of the windrows.
- 5.20.6. Waste shall attain a temperature of 55 °C or greater for at least 15 days during the composting period. During the high temperature period, the windrow shall be turned at least five times.
- 5.20.7. The quality of the compost shall meet the requirements of Schedule H: Compost Quality.
- 5.20.8. The licensee shall maintain a daily written record of temperature and turning of the compost.
- 5.20.9. The entire compost area must be bunded and all drainage shall drain to the leachate lagoon.

Reason: *To provide for the acceptance and management of wastes authorised under this waste licence.*

CONDITION 6 ENVIRONMENTAL NUISANCES

- 6.1. The licensee shall ensure that vermin, birds, flies, mud, dust and odours do not give rise to nuisance at the facility or the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution or contravene any national statutory protection granted in respect of protected species.
- 6.2. The licensee shall ensure that the activities shall be carried out in a manner such that odours do not result in significant impairment of, or significant interference with amenities or the environment beyond the facility boundary.
- 6.3. The licensee shall, at a minimum of twice a week intervals, inspect the facility and its immediate surrounds for nuisances caused by vermin, birds, flies, mud, dust and odours. Written records shall be made of all inspections and any actions taken as a result of these inspections.

- 6.4. The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay. Prior to exiting the facility all waste disposal and construction related vehicles shall use the wheel cleaner at the location shown on Drawing No.5.1 Rev. A. March 1999.
- 6.5. Litter Control
- 6.5.1. The measures and infrastructure as described in Attachment F.3 of the application shall be applied to control litter at the facility.
- 6.5.2. Prior to the disposal of any waste in any cell, litter fencing shall be installed and maintained around the perimeter of the active tipping area. The netting shall meet the guidance given in the Agency's Manual on "Landfill Operational Practices". The height of the netting shall be minimised so as to not cause visual intrusion and the netting shall be kept tidy and litter trapped in the netting shall be removed as soon as practicable.
- 6.5.3. All litter control infrastructure shall be inspected on a daily basis and 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 or as otherwise agreed with the Agency.
- 6.5.4. Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement procedures for staff on the operation of the facility in adverse wind conditions.
- 6.5.5. All loose litter accumulated within the facility and its environs, excluding that which is deposited on the working face, shall be removed subject to the landowners agreement and appropriately disposed of on a daily basis.
- 6.6. Any waste placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed by the licensee immediately and in any event by 10:00am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.
- 6.7. The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.8. Dust Control
- 6.8.1. 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. A mobile water bowser and water sprayer shall be kept on site for dust control.
- 6.8.2. From the commencement of construction of the facility the Dust Control Measures outlined in Section 5.0 of Appendix 8 in Vol. 3 of the EIS shall be implemented at the facility.
- 6.8.3. All stockpiles shall be adequately contained to minimise dust generation.
- 6.9. Vermin Control
- 6.9.1. The licensee shall apply the insect and rodent control measures outlined in Attachment F.7 of the application and in the Article 13 reply 29th March 2000. Notwithstanding these measures, prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement a

programme for the control and eradication of insect and rodents infestations at the facility. The programme should include as a minimum the following:

- a) details on the insecticides(s) and rodenticides(s) to be used;
- b) operator training; and
- c) mode and frequency of application and measures to contain sprays at the facility boundary.

6.9.2. A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:

- a) the date and time during which spraying of insecticide is carried out;
- b) contractor details;
- c) contractor logs and site inspection reports;
- d) details of the rodenticide(s) and insecticide(s) used;
- e) operator training details;
- f) details of any infestations;
- g) mode, frequency, location and quantity of application; and,
- h) measures to contain sprays within the facility boundary.

6.10. Bird Control

6.10.1. Birds shall be prevented from gathering on and feeding at the facility by the use of falcons and other bird scaring techniques. The falcons and other techniques shall be in place on the facility at least one week 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. The use of gas operated bird scaring devices is prohibited at the facility. A written record of the daily bird control activities and the numbers of birds observed on the facility shall be kept.

6.10.2. Within six months from the date of commencement of waste activities, the licensee shall submit to the Agency for its agreement, an assessment of the effectiveness of the bird control measures at the facility. This assessment shall include, where required:

- a) proposals for additional bird control measures;
- b) method for assessing the effectiveness of such additional measures; and,
- c) timescales for the implementation of such measures.

6.11. Within twelve months of the commencement of waste activities the licensee shall submit a report to the Agency on the effectiveness of the environmental nuisance control measures used at the facility.

Reason: *To provide for the control of nuisance.*

CONDITION 7 EMISSIONS AND ENVIRONMENTAL IMPACTS

- 7.1. No specified emission from the facility shall exceed the emission limit values set out in Schedule F: Emission Limits of this licence. There shall be no other emissions of environmental significance.
- 7.2. 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.
- 7.3. The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 7.4. There shall be no clearly audible tonal component or impulsive component in the noise emission from the facility at the facility boundary.
- 7.5. All groundwater discharge from the facility, other than required to lower the groundwater level for the construction of the surface water lagoon, shall be via the surface water lagoon.
- 7.6. Landfill Gas
- 7.6.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:
- a) Methane, greater than or equal to 1.0% v/v; or
 - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 7.6.2. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-
- a) in the case of landfill gas flare:
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
 - b) in the case of landfill gas combustion plant:
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 7.6.3. Emission limits for emissions to atmosphere in this licence shall be interpreted in the following way:-
- 7.6.3.1. 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.

7.6.3.2. Non-Continuous Monitoring

(i) For any parameter where, due to sampling/analytical limitations, a 30 minute samples is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.

(ii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.

(iii) For flow, no hourly or daily mean value shall exceed the emission limit value.

7.7. Emissions to Surface Water

7.7.1. No raw leachate, treated leachate or contaminated surface water shall be discharged to the Kentstown stream or any part of the Nanny River catchment.

7.7.2. Any such surface water emissions at the facility shall only be made to the Kentstown stream at a location agreed in advance by the Agency. Surface water emissions shall only be made via the outlet from the surface water lagoon, unless otherwise agreed.

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

7.8. There shall be no direct emissions to groundwater.

7.9. Disposal of Leachate

7.9.1. Any leachate or other contaminated water removed from the facility shall be transported to Navan Wastewater treatment plant and disposed of there unless otherwise agreed in advance with the Agency. Permission for the disposal of leachate at the Navan Wastewater treatment plant shall be obtained from the Sanitary Authority on an annual basis. Disposal procedures for the leachate at the treatment plant shall be in accordance with any written requirements of the Sanitary Authority.

7.10. The trigger levels for TSP and PM₁₀ from the facility measured at any location on the boundary of the facility are:

- TSP concentrations greater than 150µg/m³ for a daily sample,
- PM₁₀ greater than 50µg/m³ for a daily sample.

Reason: *To control emissions from the facility and provide for the protection of the environment.*

CONDITION 8 RESTORATION AND AFTERCARE

8.1 The final profile shall be a maximum of 75 metres OD as shown in Drawing No. 9835-01 Contour Profile Layout.

- 8.2 Within eighteen months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement a detailed Restoration Plan (including Aftercare) for the facility. The Plan shall be based on the information submitted as part of Attachment G of the application. The Restoration Plan shall have regard to the guidance published in the Agency's Landfill Manual on "Landfill Restoration and Aftercare". The Plan shall include details of landfilling to achieve the contours specified in Condition 8.1.
- 8.3 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.
- 8.4 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.
- 8.5 Where tree planting is proposed to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Topsoil and subsoil depths shall be a minimum of 1m unless otherwise agreed in advance with the Agency.
- 8.6 Landscaping as described in Appendix 2 of Vol. 3 of the EIS and as otherwise specified in this licence shall be undertaken.

Reason: *To provide for the restoration and aftercare of the facility.*

CONDITION 9 ENVIRONMENTAL MONITORING

- 9.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in Schedule E: Monitoring and as specified in the Conditions of this licence.
- 9.2. Three months prior to the commencement of waste activities, the licensee shall install a permanent gas monitoring system in the site office and any other enclosed structures at the facility.
- 9.3. Subject to the agreement of the well owners within (a) all private wells 250m upgradient of the facility and (b) all private wells 500m downgradient of the facility shall be included in the monitoring programme set out in Schedule E. Copies of the results of all monitoring, along with an interpretation of the results and details of any necessary corrective actions, shall be forwarded to the well owners or users as soon as such results become available.
- 9.4. The licensee shall submit a monitoring programme on leachate levels within each cell and the leachate lagoon. The report shall include a drawing showing all leachate monitoring locations and fulfil requirements in accordance with Schedule E. The drawing shall also contain a unique reference number and a twelve figure national grid reference for each monitoring point.
- 9.5. The licensee shall install a minimum of one borehole immediately external to each peripheral cell of the landfill in order to measure the piezometric level of the groundwater in the fractured zone of the bedrock for the purpose of monitoring the hydraulic head. The groundwater levels in these boreholes shall be monitored at a minimum of monthly intervals, except when the groundwater levels are lowered when they should be monitored on a weekly basis, and the results forwarded to the Agency on a quarterly basis.
- 9.6. The licensee shall implement a continuous monitoring programme for the water in the surface water lagoon. This programme shall include the criteria/trigger levels, which will determine when the penstock in the outlet from the surface water lagoon shall be

closed. Such continuous monitoring shall, as a minimum, include conductivity, pH and TOC and shall be carried out on the inlet to the surface water lagoon and fulfil the requirements of Schedule E.5: Surface Water Monitoring.

- 9.7. Prior to the commencement of waste activities the licensee shall provide and maintain a meteorological station at the facility capable of monitoring the parameters listed in Schedule E.6: Meteorological Monitoring of this licence.
- 9.8. Within three months of the date of grant of this licence, the licensee shall establish background levels of heavy metals in the groundwater and surface waters in the vicinity of the facility and submit a report to the Agency.
- 9.9. The licensee shall within three months of the date of commencement of waste activities submit a programme to the Agency for agreement for the monitoring and assessment of odour emissions arising from the facility.
- 9.10. Archaeological Monitoring/Survey
 - 9.10.1. During the excavation of subsoil for site development/preparation works, the licensee shall ensure that the presence of archaeological remains is monitored and recorded by a qualified archaeologist. In the event that any features/artefacts of archaeological value are unearthed the licensee shall take the appropriate precautions to ensure these features/artefacts are surveyed to an appropriate level of detail. The National Museum, Dúchas and the Agency shall be informed of any such finds as soon as possible after the find.
 - 9.10.2. The scope of any archaeological investigations and /or mitigation measures shall be agreed in advance with Dúchas.
- 9.11. Telemetry
 - 9.11.1. Prior to the commencement of waste activities a telemetry system shall be installed and maintained at the facility. 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.
 - d) permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.
- 9.12. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and off-site points as required by the Agency. All ditches and drains located around the perimeter of the facility are to be kept clear such that monitoring can be carried out successfully.
- 9.13. The licensee shall maintain all sampling and monitoring points, and clearly label and name (including national grid number) all sampling and monitoring locations, so that they may be used for representative sampling and monitoring.
- 9.14. Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturer's instructions (if any) so that all monitoring results accurately reflect any emission or discharge or environmental parameter.
- 9.15. The licensee shall amend the frequency, locations, methods and scope of monitoring, sampling, analyses and investigations only upon the written instruction of the Agency

and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.

- 9.16. Within two months of date of grant of the licence the following information shall be submitted to the Agency for its agreement: the names, qualifications and a summary of relevant experience of all persons that will carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring. Any proposed changes to the above shall be submitted in writing to the Agency for its agreement.
- 9.17. A topographical survey including the void space shall be carried out within six months of the date of deposition of waste in Phase 1. It shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency.
- 9.18. An annual biological assessment of the Kentstown stream and Nanny River shall be undertaken. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The report shall include a map showing the location of monitoring points, each identified by a unique number and a twelve figure grid reference. The scope, content and details of the contractor carrying out the assessment shall be submitted to the Agency for its agreement prior to the assessment.
- 9.19. Unless otherwise agreed in advance with the Agency, monitoring infrastructure which proves to be unsuitable for its purpose shall be replaced within three months of monitoring results indicating that the monitoring infrastructure is damaged or unsuitable.
- 9.20. Within six months of the date of commencement of waste activities, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility and provide a report on that assessment to the Agency.
- 9.21. The licensee shall implement a monitoring programme of emissions from landfill gas utilisation and flaring plant to the Agency, which fulfils the requirements of Schedule E.2.
- 9.22. Prior to the commencement of waste activities, the licensee shall submit to the Agency an updated appropriately scaled drawing(s) showing the location of all the monitoring locations that are stipulated in this licence.
- 9.23. All on-site monitoring points as described in Condition 9 shall be tagged in site with their agreed sampling point codes during the installation of the monitoring points.
- 9.24. The licensee shall, within six months of the date of grant of this licence, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the environmental monitoring data generated as a result of this licence.

Reason: *To ensure compliance with the requirements of other conditions of this licence by provision of a satisfactory system of measurement and monitoring of emissions.*

CONDITION 10 CONTINGENCY ARRANGEMENTS

- 10.1. The licensee shall, within six months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency and secure its agreement. The ERP shall address any emergency situations, which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment.
- 10.2. Unless otherwise agreed with the Agency, Contingency Arrangements for the facility shall be as detailed in Attachment K.1 of application.
- 10.3. The licensee shall carry out a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities and shall, within six months of the date of grant of the licence submit a report, including recommendations on the risk assessment to the Agency for its agreement. The Fire Authority shall be consulted by the licensee during this assessment.
- 10.4. 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.
- 10.5. All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.
- 10.6. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency. Immediate action shall be taken to extinguish it and the appropriate authorities notified.
- 10.7. In the event that monitoring of local wells (identified in Condition 9) indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an incident. The licensee shall submit to the Agency for its agreement and within a time specified in writing by the Agency, written programme for the provision of an alternative supply of water to those affected.
- 10.8. In the event that monitoring should indicate contamination of the water in the surface water lagoon, the outlet penstock shall be closed and the contaminated water shall be pumped to the leachate lagoon until such time as the source of the contamination has been identified and appropriate measures introduced to prevent further contamination of surface water.
- 10.9. Unless otherwise notified in writing by the Agency, in the event that any monitoring, sampling, complaints or observations indicate that an incident has, or may have, taken place, the licensee shall immediately:
 - a) identify the date, time and place of the incident;
 - b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission;
 - c) isolate the source of the emission;
 - d) evaluate the environmental pollution, if any, caused by the incident;
 - e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - f) provide a proposal to the Agency for its agreement within one month to:

- i) Identify and put in place measures to avoid reoccurrence of the incident; and
 - ii) Identify and put in place any other appropriate remedial action.
- 10.10. In the event that monitoring of the side slopes of the facility indicate that there may be a risk of slope failure, this will be treated as an incident and a programme for remediation action submitted to the Agency for its agreement within one month of the date of the monitoring being carried out.
- 10.11. After construction of the facility, or part thereof, and prior to the disposal of any waste in the facility or part thereof, and prior to the use of any infrastructure at the facility, an independent third party shall carry out a risk assessment of the facility, or part thereof, as agreed in advance with the Agency. The risk assessment shall pay particular regard to any accidents, emergencies, or other incidences, which might occur at the facility and their effect on the environment, on the neighbours of the facility and on adjoining land-uses. The assessment and recommendations, including a timescale for implementation, shall be submitted to the Agency for agreement. The agreed recommendations shall be implemented within the agreed timescale.

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

CONDITION 11 CHARGES AND FINANCIAL PROVISIONS

11.1 Agency Charges

11.1.1 The licensee shall pay to the Agency an annual contribution of £ 19,067 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2001 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2000, the licensee shall pay a pro rata amount from the date of this licence to 31st December 2000. This amount shall be paid to the Agency within one month of the date of grant of this licence.

11.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased or decreased the licensee shall contribute such sums as determined by the Agency to defraying its costs.

11.2 Financial Provision for Closure, Restoration and Aftercare

11.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund, or other form of approved security, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan required by Condition 8. The type of fund and means of its release/recovery shall be agreed by the Agency prior to its establishment.

11.2.2 The fund shall be maintained in an amount always sufficient to underwrite the current Restoration and Aftercare Plan.

11.2.3 The licensee shall revise the cost of restoration and aftercare annually and any details of the necessary adjustments to the fund must, within two weeks of the revision, be forwarded to the Agency for its agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.

11.2.4 Unless otherwise agreed any revision to the fund shall be computed using the following formula:

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

Where:

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

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

SCHEDULE A :Content of the Environmental Management Programme

Environmental Management Programme

Items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency, or otherwise as agreed with the Agency

Timescale for achieving the objectives and targets listed in the Schedule of Objectives and Targets

Designation of Responsibility for Achieving Targets and Objectives

Other items specified by the Agency

A programme on the reduction of the fraction of biodegradable waste being disposed of at the landfill in accordance with the recommendations of the Landfill Directive and any consequential impact on landfill gas utilisation.

A programme on the implementation of the recommendation outlined in the application by the licensee on the use of a portion of the income from waste charges and gate fees to mitigate the impact of the landfill on the community through appropriate environmental improvement projects.

SCHEDULE B :Content of the Annual Environmental Report

Annual Environmental Report Content ^{NOTE 1}

Reporting Period.

Waste activities carried out at the facility.

Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.

Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.

Methods of deposition of waste.

Summary report on emissions.

Summary of results and interpretations of environmental monitoring, including plans and any updates of all monitoring locations including 12 digit grid references. This must include the following :

- summary of monitoring results for key leachate indicator parameters;
- comparison of monitoring results against baseline data and relevant standards;
- graphical presentation of the trends in the concentration of key leachate indicator parameters; and,
- an assessment and explanation of the significance of the results and trends detected.

Resource and energy consumption summary.

Proposed development of the facility and timescale of such development.

Volume of leachate produced and volume of leachate transported / discharged off-site.

Report on development works undertaken during the reporting period, and a timescale for those proposed during the coming year.

Report on restoration of completed cells/ phases.

Site survey showing existing levels of the facility at the end of the reporting period.

Estimated annual and cumulative quantities of landfill gas emitted from the facility.

Estimated annual and cumulative quantity of indirect emissions to groundwater or ingress of groundwater to the landfill.

Monthly water balance calculation and interpretation.

Schedule of Environmental Objectives and Targets for the forthcoming year.

Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.

Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.

Annual Budget and site running costs.

Report on the use of a portion of the waste charges and gate fees on appropriate environmental improvement projects.

Report on the reduction of the biodegradable waste being disposed of at landfill and any consequential impact on landfill gas utilisation.

Any other items specified by the Agency.

NOTE 1 Content to be revised subject to the agreement of the Agency after cessation of waste acceptance at the facility.

SCHEDULE C :Recording and Reporting to the Agency

Table D.1 Recurring Reports

Report	Reporting Frequency ^{Note1}	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	Thirteen months from the date of commencement of waste activities and one month after the end of each year thereafter.
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Six months from the date of installation and one month after end of the three year period being reported on.
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.
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Dust Monitoring	Three times a year	Ten days after the period being reported on
Noise Monitoring	Annually	One month after end of the year being reported on.
Slope Stability Monitoring	Within six months of the date of deposition of waste and annually thereafter	Ten days after the period being reported on
Topographical Survey	Within six months of the date of deposition of waste and annually thereafter	Ten days after the period being reported on
Biological Assessment	Annually	One month after end of the year being reported on.
Capping Materials Quantity	Six monthly	Ten days after the period being reported on.
Any other monitoring	As they occur	Within ten days of obtaining results.

Note 1: Unless altered at the request of the Agency

SCHEDULE D :Specified Engineering Works

Specified Engineering Works

Development of Phases and future Cells of the facility including preparatory works and lining.

Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).

Fencing and site security works.

Bunding of fuel and oil storage areas.

Waste Quarantine and Inspection Areas.

Recycling and recovery activities and associated infrastructure.

Telemetry system.

Installation of monitoring infrastructure

Installation of Compost Facility

Installation of landfill gas management and monitoring systems.

Installation of leachate management, detection, storage, treatment, monitoring and control systems.

Installation of alternative drinking water supplies.

Installation of groundwater control and/or monitoring systems.

Surface water management works including installation of surface water lagoon and monitoring and control systems.

Restoration and Aftercare Works.

Nuisance control measures.

Roads and Access Works.

Any other works notified in writing by the Agency.

SCHEDULE E :Monitoring

Monitoring to be carried out as specified below.

E.1 Landfill Gas

Landfill gas monitoring shall commence one month from date of placement of waste at the facility.

Landfill gas monitoring locations shall be those as set out below in Table E.1.1.

Table E.1.1.

1. Perimeter monitoring points shall be located at 45 m intervals (to be agreed in advance with the Agency).
2. Site office
3. A minimum of 2 vents per cell (to be agreed in advance with the Agency).

Table E.1.2 Landfill Gas Monitoring Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method/Technique ^{Note 1}
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH₄) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO₂)%v/v	Monthly	Weekly	Infrared analyser
Oxygen(O₂) %v/v	Monthly	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly	Weekly	Standard
Minor Landfill Gas Constituents	Annually	Annually	See Note 2

Note 1: Or other methods agreed in advance with the Agency. All monitoring equipment used should be intrinsically safe. Perimeter boreholes shall be monitored by the use of Flame Ionisation Detector.

Note 2: Sampling to be carried out for minor landfill gas constituents (e.g. H₂S, mercaptans, aliphatic acids etc.) as required by the Agency following evaluation of monthly results.

E.2 Landfill Gas Combustion Plant and Flarestack

Monitoring to be obtained at locations to be agreed with the Agency within three months prior to the commencement of waste activities at the facility for the parameters and frequencies outlined in Table E.2.1.

Table E.2.1

Parameter	Monitoring Frequency	Analysis Method ^{Note1} /Technique ^{Note2}
Inlet		
Methane (CH ₄) % v/v	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂)%v/v	Weekly	Infrared analyser
Oxygen (O ₂) %v/v	Weekly	Electrochemical Cell
Outlet		
Volumetric Flow rate	Biannually	Pitot Tube Method
SO ₂	Biannually	Flue gas analyser
Nox	Biannually	Flue gas analyser
CO	Continuous	Flue gas analyser
Particulates	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III organics	Annually	Adsorption/Desorption / GC /GCMS ^(Note 3)
Hydrochloric acid	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Impinger / Ion Chromatography
Hydrocarbons	Annually	Flame ionisation detector

Note1: All monitoring equipment used should be intrinsically safe.

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

Note 3: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

E.3 Dust

Dust monitoring locations shall be those shown on Drawing No. MLF-LA-03 Rev. A. July 1999 and as set out in Table E.3.1 for the parameters and frequencies outlined in Table E.3.2.

Dust location: Nearest dust sensitive locations (including those along the access road) to be agreed with the Agency and the grid references to be provided to the Agency within 3 months of the date of installation.

Table E.3.1 Dust Monitoring Locations

STATIONS	
D1	D4
D2	D5
D3	D6

Monitoring shall commence one month prior to the commencement of construction of the facility.

Table E.3.2 Dust Monitoring Frequency and Technique

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

Note 1: Twice during the period May to September, or as otherwise specified in writing by the Agency using the Bergerhoff Method. PM₁₀ monitoring to be carried out once per year.

Note 2: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). A modification (not included in the standard) which 2 methoxy ethanol may be employed to eliminate interference due to algae growth in the gauge.

E.4 Noise

Noise monitoring locations shall be those shown on Drawing No. MLF-LA-03 Rev. A. July 1999 and set out in Table E.4.1 for the parameters and frequencies in Table E.4.2..

Noise sensitive location: Nearest noise sensitive locations to be agreed with the Agency and the grid references to be provided to the Agency within 3 months of the date of installation.

Table E.4.1 Noise Monitoring Locations

STATION
N1
N2

Monitoring shall commence one month prior to the commencement of construction of the facility.

Table E.4.2 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) _{Eq} [30 minutes]	Biannually	Standard ^{Note 1}
L(A) ₁₀ [30 minutes]	Biannually	Standard ^{Note 1}
L(A) ₉₀ [30 minutes]	Biannually	Standard ^{Note 1}
Frequency Analysis(1/3 Octave band analysis)	Biannually	Standard ^{Note 1}

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

E.5 Surface Water, Groundwater and Leachate

Surface water monitoring locations shall be those shown on Drawing No. MLF-LA-03 Rev. A. July 1999 and set out in Table E.5.1 and for the parameters and frequencies outlined in Table E.5.5.

Table E.5.1 Surface Water Monitoring Locations

STATION
SW1
SW2
SW3

Surface water monitoring shall commence within two months from date of grant of licence.

At minimum, diverted surface water/groundwater shall be monitored monthly (unless flow in that month does not allow such monitoring) for parameters denoted by Note 6 in Table E.5.5, at a monitoring location to be agreed with the Agency.

Groundwater monitoring locations shall be those shown on Drawing No. MLF-LA-03 Rev. A. July 1999 and set out in Table E.5.2 and for the parameters and frequencies outlined in Table E.5.5.

Table E.5.2 Groundwater Monitoring Locations

STATION	
GW1	GW5
GW2	GW6
GW3	GW7
GW4	Private water supplies

Groundwater monitoring shall commence within two months from date of grant of licence.

Leachate monitoring locations shall be those as set out in Table E.5.3 and for the parameters and frequencies outlined in Table E.5.4 and Table E.5.5

TABLE E.5.3 LEACHATE MONITORING LOCATIONS

LEACHATE INSPECTION MANHOLES
Each leachate collection manhole
Leachate storage lagoon

Leachate monitoring shall commence one month from date of placement of waste at the facility.

TABLE E.5.4 LEACHATE MONITORING LOCATIONS AND FREQUENCY

Monitoring Medium	Parameters	Frequency		Monitoring Points
		Operational	Aftercare	
Leachate	Leachate levels and freeboard in leachate storage lagoon	Continuously (Telemetry)	Weekly	In each cell of the landfill and in the leachate lagoon
	Leachate composition analysis as per Table E.5.5	As per Table E.5.5	At half the frequency specified in Table E.5.5 with a minimum of once per annum	Each cell of the landfill.

Table E.5.5 Water and Leachate - Parameters /Frequency

Parameter ^{Note 1}	SURFACE WATER	GROUNDWATER	LEACHATE
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly
Ammoniacal Nitrogen	Quarterly ^{Note 6}	Monthly	Quarterly
BOD	Quarterly ^{Note 6}	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly ^{Note 6}	Monthly	Quarterly
pH	Quarterly ^{Note 7}	Monthly	Quarterly
Total Suspended Solids	Quarterly ^{Note 6}	Not Applicable	Not Applicable
Temperature	Quarterly ^{Note 6}	Monthly	Quarterly
Boron	Not Applicable	Annually	Annually
Cadmium	Annually	Annually	Annually
Calcium	Annually	Annually	Annually
Chromium (Total)	Annually	Annually	Annually
Copper	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
Iron	Annually	Annually	Quarterly
Lead	Annually	Annually	Annually
List I/II organic substances ^{Note 3}	Note 7	Note 7	Note 7
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Quarterly
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Quarterly
Total Alkalinity	Annually	Annually	Annually ^{Note 5}
Total Phosphorus / orthophosphate	Annually ^{Note 6}	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Quarterly
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Zinc	Annually	Annually	Annually
Phenols	Not Applicable	Quarterly	Not Applicable
Faecal Coliforms ^{Note 4}	Not Applicable	Annually	Annually
Total Coliforms ^{Note 4}	Not Applicable	Annually	Annually

Note 1: All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures. The testing laboratory and the testing procedures shall be agreed with the Agency in advance.

Note 2: Where there is evident gross contamination of leachate, additional samples should be analysed.

Note 3: Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and

80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US Environmental Protection Agency method 525 or equivalent), and pesticides (US Environmental Protection Agency method 608 or equivalent). In cases where large quantities of harbour dredgings have been accepted at the facility it is recommended to analyse for organotin compounds. Where there is reason to suspect organophosphorous contamination it is recommended to also scan for these compounds.

- Note 4: If there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.
- Note 5: Only to be analysed in instances of on-site treatment of leachate.
- Note 6: Discharge of diverted surface water/groundwater, at a monitoring location to be agreed in accordance with Condition 9, shall be monitored on a monthly basis for these parameters unless flow in that month does not allow such monitoring.
- Note 7: Surface Water: Annually for List I/II organic substances from representative upstream and downstream locations.
Groundwater: Annually from representative upgradient borehole and two representative downgradient boreholes.
Leachate: Annually from the leachate lagoon.

Monitoring of the Nanny catchment

Monitoring Locations: Upstream and Downstream (precise locations to be agreed with the Agency)

Table E.5.6 Nanny catchment - frequency of sampling and analysis.

Parameter	Monitoring Frequency	Analysis Method/Technique
Visual Inspection of the river	Weekly	Not applicable
Biological Assessment	Annually	Appropriate biological methods (such as EPA Q-Rating System used for the assessment of rivers and streams)
Fisheries Assessment	Annually	Fisheries assessment methods approved in advance with the Eastern Regional Fisheries Board

E.6 Meteorological Monitoring

Table E.6.1 Meteorological Monitoring: The location of this station shall be in accordance with advice from Met Eireann and agreed in advance with the Agency.

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

SCHEDULE F :Emission Limits

F.1 Noise Emissions: (Measured at the noise sensitive locations agreed with the Agency.)

Day dB(A) L _{Aeq} (30 minutes)	Night dB(A) L _{Aeq} (30 minutes)
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55	45
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F.2 Landfill Gas Concentration Limits: (Measured in any building or enclosed space on or adjacent to the facility).

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

F.3 Emission Limit Values for Landfill Gas Flares & Utilisation Plant

Emission Point: reference no's to be agreed in advance with the Agency

Location: Landfill Gas Combustion Plant and flarestacks

Volume to be emitted from each stack: to be agreed.

Minimum discharge height for each stack: to be agreed.

Parameter	Emission Limit Value ^{Note 2}
Nitrogen oxides as (NO ₂)	500 mg/m ³ (150mg/m ³) ^{Note 3}
CO	650 mg/m ³ (50mg/m ³) ^{Note 3}
Particulates	130 mg/m ³
TA Luft Organics Class I ^{Note 1}	20 mg/m ³ (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II ^{Note 1}	100 mg/m ³ (at mass flows > 2 kg/hr)
TA Luft Organics Class III ^{Note 1}	150 mg/m ³ (at mass flows > 3kg/hr)
Hydrogen Chloride	50 mg/m ³ (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m ³ (at mass flows > 0.05 kg/h)
Hydrocarbons	10mg/m ³

Note 1: In addition to the above individual limits, the sum of the concentrations of Class I, II and III shall not exceed the Class III limits.

Note 2: Dry gas referenced to 5% oxygen by volume.

Note 3: Emission limit Values in brackets represent limit values for flare units.

F.4 Dust Deposition Limits: (Measured at the dust sensitive locations agreed with the Agency.)

Level (mg/m ² /day) ^{Note 1}
350

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

F.5 Surface Water Discharge Limits: Measured at the discharge point from the surface water lagoon to the Kentstown stream (grid reference to be submitted to the Agency).

Level (Suspended Solids mg/l)
35

SCHEDULE G : Waste Acceptance

G.1 Waste Acceptance

The following waste quantities and those waste types outlined in Table E.1.3 and Table E.1.4 of the application other than sludge for disposal (treated or untreated);

Table G.1 Waste Categories and Quantities

WASTE CATEGORY	MAXIMUM TONNES PER ANNUM
Household	45,500
Commercial	17,000
Inert**	13,500
TOTAL	76,000

** for recovery .

SCHEDULE H : Compost Quality

The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH4-N, NO3-N, pH and dry matter content should also be measured.

Compost shall be deemed unsatisfactory if more than 10% of samples fail the criteria below. No sample shall exceed 1.2 times the quality limit values set.

1. Maturity

Compost shall be deemed to be mature if: it meets two of the following requirements:

- C/N ratio ≤ 25
- oxygen uptake rate ≤ 150 mg O₂/kg volatile solids per hour; and
- germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample.
- Elimination of the following test organisms (used to evaluate composting system efficiency in removing plant pathogens and weed seeds during the composting process): *Plasmodiophora brassicae*, tobacco-mosaic-virus (TMV) and tomato seeds. Guidance on test may be obtained from the German document LAGA M10 'Quality Criteria and Application Recommendations for Compost'.

2. Foreign Matter

Compost must not contain any sharp foreign matter measuring over a 2 mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.

Foreign matter content as a percentage of oven-dried mass	≤ 1.5
Foreign matter, maximum dimensions, in mm	25

3. Trace Elements

Maximum Trace Element Concentration Limits for Compost

Trace Elements	(mg/kg, dry mass)
Arsenic (As) ^{Note 1}	15
Cadmium (Cd)	1.5
Chromium (Cr)	100
Copper (Cu)	100
Mercury (Hg)	1
Molybdenum (Mo) ^{Note 1}	5
Nickel (Ni)	50
Lead (Pb)	150
Selenium (Se) ^{Note 1}	2
Zinc (Zn)	350

Note 1: Monitoring of these parameters required if waste from an industrial source.

The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

4. Pathogens

Pathogenic organism content must not exceed the following limits:

- the quantity of faecal coliforms must be < 1,000 Most Probable Number (MPN)/g of total solids calculated on a dry weight basis; and
- there can be no salmonellae present (< 3 MPN/4g total solids).

5. Monitoring

The licensee shall monitor the compost product at least monthly. The licensee shall submit to the Agency for its agreement, prior to commencement of compost operations, details of methods of analyses and sample numbers.

Part III: Activities Refused

Reasons for the Decision

The Agency is not satisfied, on the basis of the information available, that the disposal of sludge at a proposed municipal landfill represents Best Available Technology Not Entailing Excessive Cost.

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency) proposes, under Section 40(1) of the said Act to refuse the following classes of activities.

Refused waste disposal activities, in accordance with the Third Schedule of the Waste Management Act, 1996

Class 2: Land treatment, including biodegradation of liquid or sludge discards in soils.

Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.

Signed on behalf of the said Agency _____

on the 22nd day of September, 2000 Breda Sheehan **Authorised Person**