

Variation Notice with introductory note

Pollution Prevention and Control Regulations (Northern Ireland) 2003

Lisbane Landfill Site

29 Auglish Road

Tandragee

Co Armagh

BT62 2EE

Variation Notice number

P0145/06A/V1

Permit number

P0145/06A

Lisbane Landfill Site

Permit Number P0145/06A/V1

Introductory note

This introductory note does not form a part of the Permit

Under the Pollution Prevention and Control Regulations (Northern Ireland) 2003, the enforcing authority for Part A installations in Northern Ireland is the Chief Inspector Industrial Pollution. Under Regulation 8(4) any function of the Chief Inspector may be delegated to any other Inspector appointed by the Chief Inspector and references to the Chief Inspector in this permit should be interpreted accordingly. The Chief Inspector has assigned responsibility for specified waste management activities to the Land and Resource Management Unit.

The main features of the installation are as follows.

Lisbane Landfill occupies a former steep sided quarry within greywacke sandstones of the Gala Group, Silurian in age. This Gala group is considered to be a minor aquifer with a fracture based porosity/permeability. The site covers an area of approximately 30,000m². The site has accepted a variety of primarily non-hazardous waste types since the start of filling in 1997. The site was engineered as a contaminant landfill with a groundwater management system outside a composite lining system comprising variously of a BES and/or a GCL overlain by a HDPE liner. Leachate drainage over the base of the site is also provided either in the form of herringbone drains or as a drainage blanket. The site capping will comprise a regulating layer, a GCL and LDPE liner, a surface water drainage layer and restoration soils. The site has gas exploitation with a single gas engine and flare installed.

Status Log of the Permit

Detail	Date	Response Date
PPC Application	03/07/2006	
Permit Determined	17/07/2009	
Permit Variation P0145/06A/V1	xxxxxxx	

Other PPC Permits relating to this installation

Operator	Permit Number	Date of Issue
Not applicable		

Other existing Licences/Authorisations/Registrations relating to this site

Holder	Reference Number	Date of issue
Not applicable		

Superseded or Partially Superseded Licences/Authorisations/Consents relating to this installation

Holder	Reference Number	Date of issue
Sean Quinn Group	10920/94	18/01/2000
Quinn Concrete Limited	WML 03/05 LN/04/11/A	4/01/2005
Quinn Concrete Limited	P0145/06A	17/07/2009

End of Introductory Note

Permit

- Pollution Prevention and Control Regulations (Northern Ireland) 2003
- Landfill Regulations (Northern Ireland) 2003

Permit

Landfill Classification: Non-hazardous with single cell for non-reactive hazardous waste

Permit number

P0145/06A

Variation Number

P0145/06A/V1

The Chief Inspector in exercise of his powers under Regulation 10 of the Pollution Prevention and Control Regulations (Northern Ireland) 2003 and Regulation 6 of the Landfill Regulations (Northern Ireland) 2003 hereby authorises

Quinn Environmental Limited ("the Operator"),

whose Registered Office is

**Gortmullen
Derrylin
Fermanagh
BT92 9AU**

Company registration number NI26340

to operate an installation at

**Lisbane Landfill Site
29 Auglish Road
Tandragee
Armagh
BT62 2EE**

to the extent authorised by and subject to the conditions of this Permit.

Signed	Date

Authorised to sign on behalf of the Chief Inspector

VARIATION NOTICE

CONDITIONS TO BE DELETED

**THE PERMIT CONDITIONS IN THEIR ENTIRETY - (OF THE PERMIT ISSUED BY
THE PLANNING APPEALS COMMISSION ON THE 17TH OF JULY 2009)**

VARIATION NOTICE

CONDITIONS TO BE AMENDED

THE PERMIT CONDITIONS IN THEIR ENTIRETY - (OF THE PERMIT ISSUED BY THE PLANNING APPEALS COMMISSION ON THE 17TH OF JULY 2009)

VARIATION NOTICE

Permit Conditions

1. Management

1.1 General management

1.1.1 The Activities shall not be brought into operation until the Operator has provided to the Chief Inspector, for his agreement in writing, a site-specific Management Plan ("the Management Plan") that shall detail the operational procedures to be used to manage the Activities at the Site, including (but not limited to) the following:

- Site infrastructure
- Site management and control procedures
- Waste acceptance procedures
- Waste rejection and quarantine procedures
- Waste deposit procedures
- Emergency/incident procedures
- Environmental monitoring techniques and procedures
- Odour and odorous waste monitoring and management procedures
- Noise and vibration monitoring and management procedures
- Leachate monitoring and management procedures
- Surface water monitoring and management procedures
- Landfill gas monitoring , flaring/utilisation and management procedures
- Dusts and particulates monitoring and management procedures
- Birds, vermin and insects monitoring and management procedures
- Site closure management procedures

1.1.2 The Activities shall, subject to the conditions of this permit, be managed and operated:

- (a) using the techniques and in the manner described in the Management Plan provided and agreed in accordance with condition 1.1.1, unless otherwise agreed in writing by the Chief Inspector; and
- (b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the Activities.

1.1.3 Any proposed changes by the Operator to the Management Plan shall be submitted in writing by Recorded Delivery to the Chief Inspector. The Management Plan shall only be amended in accordance with the proposed change(s) if, and to the extent that, either;

- (a) the Chief Inspector gives written consent to the proposed change(s), or
- (c) the Chief Inspector has not indicated in writing within 28 days of the proposed change(s) that the proposed change(s) are rejected.

1.1.4 Records demonstrating compliance with condition 1.1.2 shall be maintained.

1.1.5 Any person having duties that are or may be affected by the matters set out in this Permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Accidents that may cause pollution

1.2.1 The Operator shall:

- (a) maintain and implement an accident management plan;
- (b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;
- (c) make any appropriate changes to the plan identified by a review.

1.3 Finance

1.3.1 The Activities shall not be brought into operation until adequate financial provision has been made by the Operator and agreed with the Chief Inspector. This financial provision shall be maintained by the Operator throughout the subsistence of this Permit and the Operator shall produce evidence of such provision whenever required by the Chief Inspector.

1.3.2 The operator shall ensure that the charges it makes for the disposal of waste in the landfill cover the cost of operating the landfill, as far as possible the cost of the financial provision required by condition 1.3.1 and [thus] the estimated costs for the closure and aftercare of the landfill.

1.4 Energy efficiency

1.4.1 The Operator shall:

- (a) Review and record at least every 4 years whether there are suitable opportunities to improve the energy efficiency of the Activities; and
- (b) Implement any appropriate measures identified by a review.

1.5 Site security

1.5.1 Site security measures shall prevent unauthorised access to the Site, as far as practicable.

1.6 Multiple operator installations

1.6.1 This is not a multi operator installation.

2. Operations

2.1 Permitted activities

2.1.1 The Operator is authorised to carry out the activities specified in Schedule 1 Table S1.1 (the "Activities") at the Permitted Installation to which this permit applies.

2.2 The site

2.2.1 The Activities shall not extend beyond the site of the Permitted Installation ("the Site"), being the land shown edged in red on the Site Plan in Schedule 2 to this Permit.

2.3 Operating techniques

2.3.1 The Activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in Schedule 1 table S1.2, unless otherwise agreed in writing by the Agency.

2.4 Off-site conditions

2.4.1 The following off-site conditions to which regulation 12(12) of the PPC Regulations apply:

2.4.1.1 The following monitoring points, which are outside of the installation boundary, are included in the monitoring programme as shown in Tables S4.7, S4.11 and 4.12.

- A, B, F, G, J (as shown on Drawing No. 48458/Fig. 07).
- Surface water monitoring locations as required by improvement condition 13
- Additional groundwater monitoring boreholes as required by improvement condition 4
- Additional gas monitoring boreholes as required by improvement condition 10

2.5 Commencement

2.5.1 Not Applicable

2.6 Improvement programme

2.6.1 The Operator shall complete the improvements specified in Schedule 1 Table S1.3 by the date specified in that table unless otherwise agreed in writing by the Chief Inspector.

2.6.2 Except in the case of an improvement which consists only of a submission to the Chief Inspector, the Operator shall notify the Chief Inspector within 14 days of completion of each improvement.

2.7 Pre-operational conditions

2.7.1 The Activities shall not be brought into operation until the measures specified in Schedule 1 Table S1.4 have been completed. For each pre-operational measure, the Chief Inspector must be fully satisfied with the measures and information provided.

2.8 Engineering

2.8.1 The Operator shall ensure that the geological barrier and leachate collection and sealing system for the landfill part of the Installation shall be constructed to the specification and standards detailed within the Application for the Installation.

2.8.2 No construction of any New Cell shall commence until the Operator has submitted Construction Proposals and the Chief Inspector has confirmed that he is satisfied with the Construction Proposals.

2.8.3 The construction of a New Cell shall take place only in accordance with the approved Construction Proposals unless:

- (a) any change to the approved Construction Proposals would have no impact on the performance of any element of the design; or
 - (b) a change has otherwise been agreed in writing by the Chief Inspector.
- 2.8.4 No disposal of waste shall take place in a New Cell until the Operator has submitted a CQA Validation Report and the Chief Inspector has confirmed that he is satisfied with the CQA Validation Report.
- 2.8.5 No construction of Landfill Infrastructure shall commence until the Operator has submitted relevant Construction Proposals or a written request to use previous Construction Proposals and the Chief Inspector has confirmed that he is satisfied with the Construction Proposals.
- 2.8.6 The construction of the Landfill Infrastructure shall take place only in accordance with the approved Construction Proposals unless:
- (a) any change to the approved Construction Proposals would have no impact on the performance of any element of the design; or
 - (b) a change has otherwise been agreed in writing by the Chief Inspector.
- 2.8.7 The Operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant Landfill Infrastructure.
- 2.8.8 Cells for the deposit of wastes containing asbestos must meet the requirements of RGN11. Prior to the construction of any such cell the operator must obtain the explicit approval of the Chief Inspector confirming that the cell engineering, together the arrangements for the collection and treatment of leachate and the monitoring and management of gas meet the requirements of the guidance. A detailed design with confirmatory stability risk assessment is required to be submitted as part of this submission for approval.

2.9 Waste acceptance

- 2.9.1 Wastes shall only be accepted for disposal if:
- (a) they are listed in schedule 3, and
 - (b) they are non- hazardous waste or asbestos and construction materials containing asbestos, and
 - (c) they are not whole used tyres (other than tyres used as engineering material, bicycle tyres and tyres with an outside diameter of more than 1400mm), and
 - (d) they are not shredded used tyres, and
 - (e) they are not liquid waste (including waste waters but excluding sludge), and
 - (f) they are not chemical substances from research and development or teaching activities, for example laboratory residues, which are unidentified and/or which are new and whose effects on man and/or the environment are unknown, and
 - (g) they are not hospital and other clinical waste arising from medical or veterinary establishments, which are infectious, and
 - (h) there are not wastes which in the conditions of a landfill are explosive, corrosive, oxidising, highly flammable or flammable (55 °C flash point), and

- (i) all the relevant waste acceptance procedures set out in Schedule 1 of the Landfill Regulations (NI) 2003 and the Landfill (Amendment) Regulations (NI) 2004 have been completed, and
 - (j) they fulfil the relevant waste acceptance criteria, and
 - (k) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria, and
 - (l) they are wastes which have been subject to prior treatment, except for: inert wastes for which treatment is not technically feasible; or it is waste other than inert waste and treatment would not reduce its quantity or the hazards which it poses to human health or the environment.
 - (m) they are not gypsum or gypsum bearing wastes
- 2.9.2 Asbestos waste and construction material containing asbestos shall only be disposed of in cells dedicated to those wastes. Asbestos waste and construction material containing asbestos must meet the relevant waste acceptance criteria and must be covered daily and before each compaction operation with appropriate material. No other waste shall be disposed of in the self-contained cell.
- 2.9.3 The operator shall visually inspect:
- (a) without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the landfill; and
 - (b) waste at the point of deposit;
- and shall satisfy itself that it conforms to the basic characterisation documentation submitted by the holder.
- 2.9.4 Where the Operator has taken samples to establish that the waste is in conformity with the documentation submitted by the holder then the samples taken shall be retained for at least one month and results of any analysis for at least two years.
- 2.9.5 The Operator on accepting each delivery of waste shall provide a receipt to the person delivering it.
- 2.9.6 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on drawing No. 48458 ESID4B.
- 2.9.7 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in schedule 1 table S1.5.
- 2.9.8 The Operator shall maintain and implement a system which ensures that a record is made of the quantity, characteristics, date of delivery and, where practicable, origin of any waste that is received for disposal or recovery and of the identity of the producer, or in the case of municipal waste and multiple collection vehicles, of the collector of such waste. Any information regarded by the Operator as commercially confidential shall be clearly identified in the record.
- 2.9.9 Where acceptance of waste is refused, the Operator shall notify the Chief Inspector by telephone immediately and shall notify the Chief Inspector in writing within seven days of refusing acceptance.

2.10 Leachate levels and control

2.10.1 The limits for the level of leachate listed in schedule 4 table S4.1 shall not be exceeded.

2.11 Closure, aftercare and decommissioning

2.11.1 The Operator shall maintain and operate the Activities so as to prevent or where that is not practicable, to minimise, any pollution risk on closure and decommissioning.

2.11.2 The Operator shall maintain a Site Closure Plan which demonstrates how the Activities can be decommissioned to avoid any pollution risk and return the site of operation to a satisfactory state.

2.11.3 The Operator shall carry out and record a review of the Site Closure Plan at least every 4 years.

2.11.4 The Site Closure Plan (or relevant part thereof) shall be implemented on final cessation or decommissioning of the Activities or part thereof.

2.12 Site protection and monitoring programme

2.12.1 The operator shall, within 2 months of the issue of this permit submit a Site Protection and Monitoring Programme.

2.12.2 The Operator shall implement and maintain the Site Protection and Monitoring Programme in relation to all areas which will not comprise permanent deposits of waste and shall carry out and record a review of it at least every 4 years commencing from the date the Site Protection and Monitoring Programme was submitted to the Chief Inspector in accordance with condition 2.12.1.

3. Site Infrastructure

3.1 Site access

3.1.1 All roads within the Permitted Installation shall be adequate in both width and bearing capacity for all vehicles that may be required to use that particular road. All such roads shall be free of obstacles at all times that the site is open for the reception of Waste. All such roads shall be maintained to ensure the safe passage of vehicles and in particular shall be free from mud and other debris, ruts, potholes and ponded surface water. Wheel cleaning facilities shall be installed and maintained at the site.

3.2 Noticeboards

3.2.1 A noticeboard of durable material and finish shall be displayed at the entrance to the Site. The noticeboard shall contain the following information, which shall be legible from outwith the boundary of the Site:-

- the Site name, address and PPC number;
- the Site Operator's name;
- the Site opening times;
- emergency contact telephone number for the Operator; and
- telephone number of the NIEA Land and Resource Management Unit.

3.3 Netting

- 3.3.1 All active areas of waste deposit within the site shall be enclosed by netting of a suitable mesh size to prevent the escape of waste.

4. Emissions and monitoring

4.1 Emissions to water, air or land

- 4.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in Tables S4.2, S4.3, S4.4 and S4.13 of Schedule 4.
- 4.1.2 The limits given in that Schedule shall not be exceeded, save that compliance with an emission limit shall include incorporation of the uncertainty allowance stated in Environment Agency guidance documents LFTGN 05 and LFTGN 08.
- 4.1.3 Where a substance is specified in schedule 4 table S4.3 or S4.4 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.

4.2 Emissions to groundwater

- 4.2.1 There shall be no emission from the Activities into groundwater of any substance in List I (as defined by the Groundwater Regulations) contrary to those Regulations.
- 4.2.2 There shall be no emission from the Activities into groundwater of any substance in List II (as defined in the Groundwater Regulations) so as to cause pollution (as defined in those Regulations).
- 4.2.3 Where the results of any groundwater monitoring exceed any of the trigger levels set out in Table S4.6 of Schedule 4 then the following actions shall be taken:
- (a) The Chief Inspector shall be informed forthwith;
 - (b) A repeat sample shall be taken, and submitted for analysis, within 7 days;
 - (c) Within 14 days of the repeat sample the Operator shall submit a report to the Chief Inspector, in writing, detailing the breach of the trigger level and proposed remedial actions.
- 4.2.4 The Operator shall evaluate all groundwater monitoring results against control levels following receipt of results. Where the evaluation of the monitoring data shows any parameter exceeding a control level, the Operator shall report this to the Chief Inspector, in writing, within 28 days.
- 4.2.5 The Operator shall submit to the Chief Inspector a review of the Hydrogeological Risk Assessment:
- (a) between 9 and 6 months prior to the fourth anniversary of the granting of the Permit, and
 - (b) between 9 and 6 months prior to every subsequent 4 years after the fourth anniversary of the granting of the Permit, unless otherwise agreed in writing with the Chief Inspector.

4.3 Fugitive emissions of substances

- 4.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution as perceived by the Chief Inspector.
- 4.3.2 Litter or mud arising from the activities shall not cause pollution as perceived by the Chief Inspector
- 4.3.3 Litter or mud arising from the Activities shall be cleared from affected areas outside the Site as soon as practicable.
- 4.3.4 All liquids, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.
- 4.3.4 The measured values from the monitoring specified in Tables S4.6, S4.7 and S4.13 of Schedule 4 shall not exceed the limits for the parameter(s) at the monitoring point(s) listed in that schedule.

4.4 Odour

- 4.4.1 Emissions from the Activities shall be free from odour at levels likely to cause annoyance outside the Site, as perceived by the Chief Inspector,

4.5 Noise and vibration

- 4.5.1 Emissions from the Activities shall be free from [noise and] vibration at levels likely to cause annoyance outside the Site, as perceived by the Chief Inspector.

4.6 Monitoring

- 4.6.1 The Operator shall, unless otherwise agreed in writing by the Chief Inspector, undertake monitoring for the parameters, at the locations and at not less than the frequencies specified in the following tables in Schedule 4 to this Permit:
 - (a) Leachate specified in Tables S4.1 and S4.10;
 - (b) Point source emissions specified in Tables S4.2, S4.3 and S4.4;
 - (c) Groundwater specified in Tables S4.5, S4.6 and S4.12;
 - (d) Landfill gas specified in Tables S4.7, S4.8 and S4.9;
 - (e) Surface water specified in Table S4.3 and S4.11; and
 - (f) Particulate matter specified in Table S4.13.
- 4.6.2 The Operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 4.6.3 A topographical survey of the Site referenced to Ordnance Datum shall be carried out:
 - (a) annually, and
 - (b) prior to the disposal of waste in any new Phase or Cell or new development area of the landfill, and

- (c) following closure of the landfill or part of the landfill.

The topographical survey shall be used to produce a plan of a scale adequate to show the surveyed features of the Site. A calculation of void space shall be carried out upon completion of each annual survey and the results of the survey and the calculation shall be provided to the Chief Inspector within one month of the survey being carried out.

- 4.6.4 Within 6 months of the issue of this Permit (unless otherwise agreed in writing by the Chief Inspector) the site reference data identified in the Site Protection and Monitoring Programme shall be collected and submitted to the Chief Inspector.

4.7 Transfers off-site

- 4.7.1 Records of all the wastes sent off site from the activities, for either disposal or recovery, shall be maintained.

5. Information

5.1 Records

- 5.1.1 All records required to be made by this Permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Chief Inspector, for at least 6 years from the date when the records were made, or in the case of the following records until Permit surrender:
 - (i) the results of groundwater monitoring;
 - (ii) the Site Protection and Monitoring Programme;
 - (iii) ambient air monitoring for landfill gas and particulate matter;
 - (iv) sub-surface landfill gas monitoring;
 - (v) leachate levels, quality and quantities;
 - (vi) landfill gas generation and collection;
 - (vii) waste types and quantities;
 - (viii) topographical surveys; and
 - (ix) the specification and as built drawings of the basal, sidewall and capping engineering systems.

- 5.1.2. Any records required to be made by this permit shall be supplied to the Chief Inspector within 14 days where the records have been requested in writing by the Agency.

- 5.1.3 All records required to be held by this permit shall be held on site and shall be available for inspection by the Chief Inspector at any reasonable time.

5.2 Reporting

- 5.2.1 A report or reports on the performance of the Activities over the previous year shall be submitted to the Chief Inspector by 31 January each year. The report shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with this Permit against the relevant assumptions, parameters and results in the risk assessments submitted with the Application;
 - (b) where the Operator's Management Plan encompasses annual improvement targets, a summary report of the previous year's progress against such targets;
 - (c) the energy consumed at the Site, reported in the format set out in Schedule 5 Table S5.3;
 - (d) the water consumed at the Site, reported in the format set out in Schedule 5 Table S5.3;
 - (e) the annual production/treatment set out in Schedule 5 Table S5.2;
 - (f) details of any contamination or decontamination of the Site which has occurred;
 - (g) the topographical surveys required by condition 4.6.3 other than those submitted as part of a CQA validation report;
 - (h) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;
 - (i) an assessment of the settlement behaviour of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;
 - (j) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey; and
 - (k) a summary of the WAC compliance testing undertaken in the period.
 - (l) details of compliance with the waste acceptance ratios set out in schedule 1 table S1.5.
- 5.2.2 Within 28 days of the end of the reporting period the Operator shall, unless otherwise agreed in writing by the Chief Inspector, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in Table S5.1 of Schedule 5;
 - (b) for the reporting periods specified in Table S5.1 of Schedule 5.
- 5.2.3 A summary report of the waste types and quantities accepted and removed from the site shall be made for each quarter. It shall be submitted to the Chief Inspector within one month of the end of the quarter and shall be in the format required by the Chief Inspector.
- 5.2.4 The Operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Chief Inspector, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

- 5.2.5 The results of reviews and any changes made to the Site Protection and Monitoring Programme shall be reported to the Chief Inspector, within 1 month of the review or change.
- 5.2.6 The Operator shall complete a Pollution Inventory Reporting Form in respect of the Permitted Installation during the previous year in accordance with the instructions and definitions included in the Form and submit the completed Form to the Chief Inspector by 31 January each year.

5.3 Notifications

- 5.3.1 The Chief Inspector shall be notified without delay following the detection of:
- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;
 - (b) the breach of a limit specified in the Permit; and
 - (c) any significant adverse environmental effects.
- 5.3.2 Any information provided under condition 5.3.1 shall be confirmed by sending the information listed in Schedule 6 to this Permit within the time period specified in that schedule.
- 5.3.3. Prior written notification shall be given to the Chief Inspector of the following events and in the specified timescales:
- (a) as soon as practicable prior to the permanent cessation of any of the permitted activities;
 - (b) as soon as practicable prior to the cessation of the landfill disposal activities, for a period likely to exceed 1 month; and
 - (c) at least 7 days prior to the resumption of the landfill disposal activities after a cessation notified under (b) above.
- 5.3.4 The Chief Inspector shall be given at least 14 days notice before implementing any part of the Site Closure Plan in respect of any activities other than the disposal of waste in the landfill.
- 5.3.5 Where the Chief Inspector has requested in writing that he shall be notified when the Operator is to undertake monitoring and/or spot sampling, the Operator shall inform the Chief Inspector when the relevant monitoring is to take place. The Operator shall provide this information to the Chief Inspector at least 14 days before the date the monitoring is to be undertaken.
- 5.3.6 The Chief Inspector shall be notified within 7 days of any changes in technically competent management and the name of any incoming person together with evidence that such person has the required technical competence.
- 5.3.7 The Chief Inspector shall be provided, within 14 days of the Operator or any relevant person being convicted of a relevant offence, (unless such information has already been notified to the Chief Inspector), with details of the nature of the offence, the place and date of conviction, and the sentence imposed.
- 5.3.8 The Chief Inspector shall be notified within 14 days of the Operator and/or any relevant person lodging an appeal against a conviction for any relevant offence and of the outcome when the appeal is decided.

- 5.3.9 The Chief Inspector shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- (a) any change in the Operator's trading name, registered name or registered office address;
 - (b) any change to particulars of the Operator's ultimate holding company (including details of an ultimate holding company where an Operator has become a subsidiary); and
 - (c) any steps taken with a view to the Operator going into administration, entering into a company voluntary arrangement or being wound up.

5.4 Interpretation

- 5.4.1 In this Permit the expressions listed in Schedule 7 shall have the meaning given in that schedule.

Schedule 1 – Operations

Table S1.1 Activities

Activity listed in Schedule 1 of the PPC Regulations	Description of specified activity	Limits of specified activity
Section 5.2 Part A(1) (a) , The disposal of waste in a landfill.	Landfill for non-hazardous waste (landfill classification under the Landfill Regulations 2002)	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.9, as an integral part of landfilling.
Section 5.3, Part A(1)(c)(i), Biological treatment	Storage and treatment of leachate in a facility with a capacity of >50 Tonnes/ day	Leachate arising from the landfill.
Section 1.1, Part A(1)(b)(iii), Burning of waste as a fuel	Utilisation of landfill gas for energy recovery in an appliance with a rated thermal input of ≥ 3 MW, but 50 MW.	Landfill gas arising from the landfill.
Directly Associated Activity		
Landfill gas flaring	Flaring of landfill gas for disposal in an appliance.	Landfill gas arising from the landfill.
Water discharges to controlled waters.	Discharges of drainage from the groundwater management system.	From groundwater water management system to point of entry to controlled waters.
Water discharges to controlled waters.	Discharges of site drainage from surface water management system.	From surface water management system to point of entry to controlled waters.

Table S1.2 Operating techniques

Description	Parts	Date Received
Original Application documents	ESID Report June 2006 (Faber Maunsell) dated June 2006, excluding section 2.2.3 and 2.3 Amenity Risk Assessment (Faber Maunsell) dated July 2006	8 Sept 2006
Receipt of additional information to the application as part of the appeal process	Landfill Gas Risk Assessment (Faber Maunsell) dated July 2008, excluding sections 4.3, 4.4 and 4.5. Section 3.6 of Groundwater Management Plan (Faber Maunsell) Dated April 2009 and specifically excluding sections 2.4, 2.5, 3.2, 3.4, 3.5 and 3.7. Draft Leachate Management Plan (Faber Maunsell) Dated April 2009, Excluding all of section 3. Hydrogeological Risk Assessment (Golder Associates) dated June 2009, excluding section 2.7 and Tables HRA32, HRA33, HRA34 and HRA35.	12 Jan 2009 9 April 2009 10 April 2009 5 June 2009
	Site Protection and Monitoring Plan	To be submitted
	Environmental Management Plan in accordance with condition 1.1 to be submitted under improvement condition 15.	To be submitted

Table S1.3 Improvement Programme Requirements

Reference	Requirement	Date
1	The operator shall submit proposals for improvements to the leachate abstraction infrastructure and leachate treatment facilities to allow for the management of volumes of at least 75 m ³ per day and treating it such that a viable long term disposal option is available. A BAT assessment shall be carried out to confirm that the proposed solution is appropriate and if improvements are required a timetable for implementation should be provided. The proposals shall provide timescales on the delivery of the proposed improvements. Once the Chief Inspector has agreed the proposals the operator shall commence installation within the agreed timescales	15/09/2009
2	The operator shall submit proposals detailing how leachate heads in the site will be reduced to acceptable levels (measured at locations remote from the extraction points). The leachate heads shall be improved (i.e. reduced) year-on-year towards the target leachate trigger level of 3m above the base of the landfill. These annual targets will then form leachate trigger levels as if specified in the permit. Once the Chief Inspector has agreed the proposals the operator shall manage leachate following the agreed procedures and within the agreed timescales	15/09/2009
3	The operator shall provide proposals for the installation of leachate head monitoring points in each cell of the landfill. The number of monitoring points is required to comply with guidance provided in the EA guidance document LFTGN02. The proposals shall include details on the monitoring points will be installed and how the integrity of the basal liner will be ensured complete with timescales for installation. Once the Chief Inspector has agreed the proposals the operator shall commence installation within the agreed timescales	15/09/2009

4	<p>The operator shall provide proposals for the installation of new groundwater monitoring boreholes around the perimeter of the site. The number of boreholes to be installed shall be risk based and shall comply with the requirements of LFTGN02. The integrity of the lining system and the fractured nature of the geology shall be taken into account. The proposals will include a plan for the locations of the new boreholes in relation to the current groundwater contours, and installation design for the boreholes with installation timescales.</p> <p>Once the Chief Inspector has agreed the proposals the operator shall commence installation within the agreed timescales</p>	15/09/2009
5	The operator shall provide a report summarising the hydrogeology of the site, including detailed summaries of the geology encountered and water strikes recorded during the installation of the new boreholes, the groundwater levels monitored in the old and new boreholes, the quality of groundwater in the boreholes and the quality of the discharges from the groundwater management system and groundwater lagoon. The report shall include a hydrogeological conceptual model of the site.	01/01/2010
6	The operator shall submit a report detailing the performance of the groundwater management systems at the site which shall include a detailed summary of the water quality monitoring of the discharges from the system and appraisal of the efficiency of the collection system, identifying where leaks have occurred and been repaired and of any current leakages. The detailed review of the compliance history of the discharge from the groundwater lagoon against the water discharge consent shall also be presented in this report.	01/01/2010
7	The operator shall investigate and repair any leaks identified in the lining systems and/or groundwater management systems following the performance review of the groundwater management system.	01/03/2010
8	The operator shall provide proposals for improvements to the Groundwater abstraction infrastructure and groundwater treatment facilities to ensure the management of volumes of at least 75m ³ per day.	01/01/2010
9	The operator shall submit a landfill gas utilisation report which shall include review of the rates of gas production and gas compositions from site monitoring and produce a calibrated GasSim model based on actual waste returns per year. The report will assess the predicted future gas production at the site and optimise gas exploitation measures engines and flares. The report shall be submitted for the written approval of the Chief Inspector.	Within agreed timescales
10	The operator shall provide proposals to the Chief Inspector for perimeter landfill gas monitoring boreholes at a 50m spacing around the perimeter of the site. The locations and proposed borehole installation details shall be agreed in writing by the Chief Inspector.	15/09/09
11	The operator shall install perimeter landfill gas monitoring boreholes in the agreed locations with the Chief Inspector. The operator shall submit a CQA report for the installation of these boreholes including photographic evidence.	Within agreed timescales
12	The operator shall clarify the location of in-waste gas monitoring wells and in waste gas collection wells. Reference numbers for each location should be shown clearly on a plan of the site.	15/09/2009
13	The operator shall provide proposals for surface water monitoring locations in the tributary of the Cusher River upstream and downstream of the discharge points from the site for approval by the Chief Inspector.	15/09/2009
14	The operator shall provide a definitive monitoring plan showing all current and proposed monitoring locations required under the improvement programme.	15/09/2009
15	The operator shall provide a site-specific Management Plan in accordance with condition 1.1 of the permit. The Management Plan should be comprehensive and a stand alone document including all relevant materials as opposed to reference to previous documents.	15/09/2009

16	The operator shall provide a report on particulate risk for the landfill site summarising current particulate monitoring schedules and particulate monitoring data at the site. The report shall propose monitoring and assessment criteria for the landfill in accordance with the Technical Guidance Document (Monitoring) M17 (2004). The assessment monitoring and criteria will need to show assessment of landfill emissions in relation to background particulate levels. The monitoring locations and limits/criteria are to be agreed in writing with the Chief Inspector.	15/09/2009
17	The operator shall provide a Training and Development Plan of the ongoing technical and professional development of staff.	15/09/2009
18	The operator shall provide proposals to the Chief Inspector to review the control and trigger levels for emissions into groundwater following the collection of 1 years monitoring data from the new and existing groundwater monitoring boreholes.	1 year following the installation of new groundwater monitoring boreholes

Table S1.4 Pre-operational measures for future development

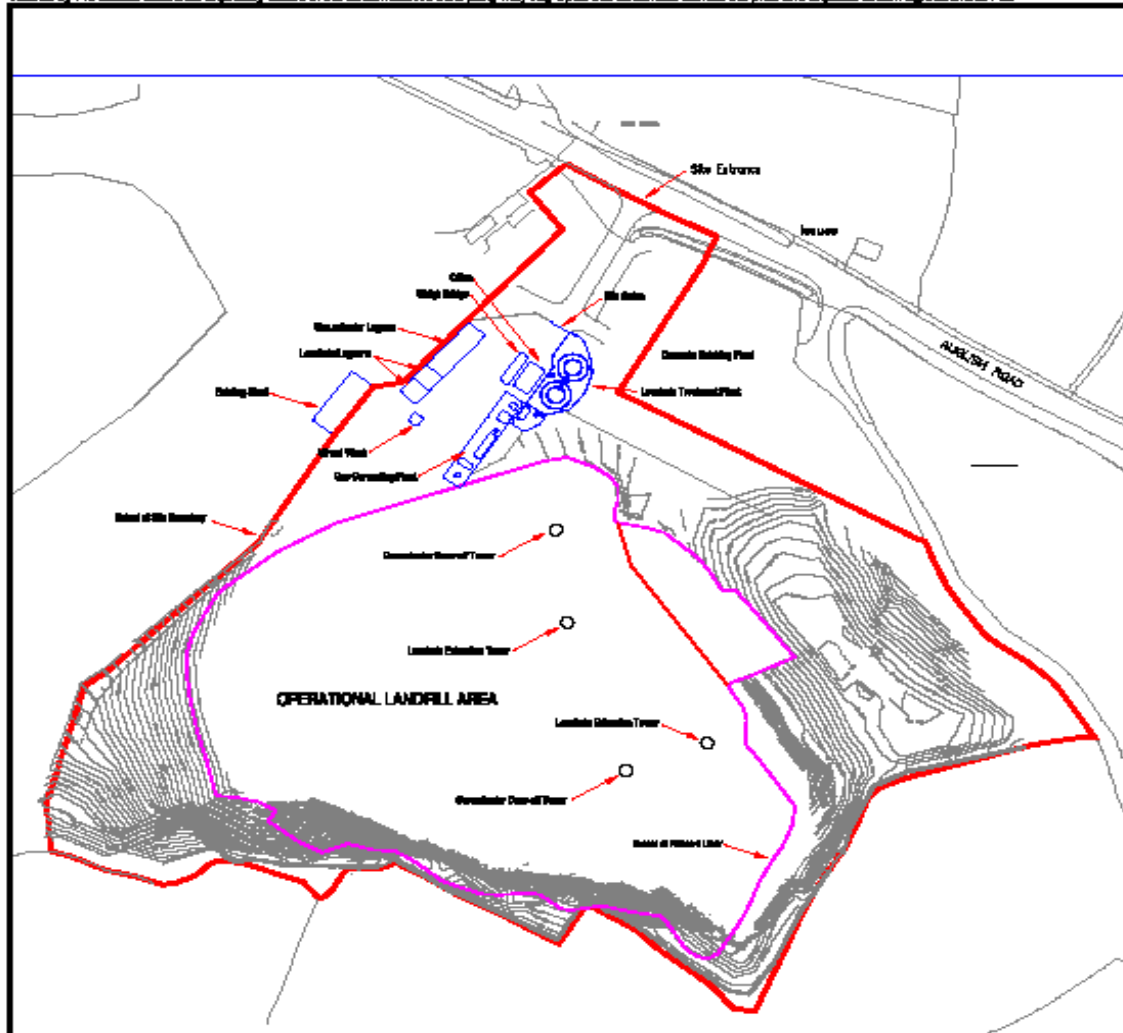
Reference	Operation			Pre-operational Measures
1	Depositing Phase 7	waste	in	The operator shall install leachate head monitoring points in each cell of the landfill. The number of monitoring points is required to comply with guidance provided in the EA guidance document LFTGN02. Prior to installation the operator shall submit a report to the Chief Inspector detailing how he intends to install the monitoring points and how the integrity of the basal liner will be ensured.
2	Depositing Phase 7	waste	in	The operator shall reduce leachate levels to below a level of 24.8m AOD (i.e. the base of Phases 2 and 3).
3	Depositing Phase 8	waste	in	The operator shall reduce leachate levels to below a level of 21.5m AOD (i.e. 5m above the base of Phase 1).
4	Depositing Phase 7	waste	in	The operator shall install new groundwater monitoring boreholes around the perimeter of the site. The number of boreholes is required to at least meet the guidance set out in LFTGN02 taking into account the fractured nature of the geology and the integrity of the liner. The operator shall submit a plan for the locations of the new boreholes in relation to the current groundwater contours, and installation design for the boreholes for the written agreement of the Chief Inspector prior installing the boreholes.
5	Depositing Phase 7	waste	in	The operator shall provide a report summarising the hydrogeology of the site, including detailed summaries of the geology encountered and water strikes recorded during the installation of the new boreholes, the groundwater levels monitored in the old and new boreholes, the quality of groundwater in the boreholes and the quality of the discharges from the groundwater management system and groundwater lagoon. The report shall include a hydrogeological conceptual model of the site.
6	Depositing Phase 7	waste	in	The operator shall submit a report detailing the performance of the groundwater management systems at the site which shall include a detailed summary of the water quality monitoring of the discharges from the system and appraisal of the efficiency of the collection system, identifying where leaks have occurred and been repaired and of any current leakages. The detailed review of the compliance history of the discharge from the groundwater lagoon against the water discharge consent shall also be presented in this report.
7	Depositing Phase 7	waste	in	The operator shall investigate and repair any leaks identified in the lining systems and/or groundwater management systems following the performance review of the groundwater management system.
8	Depositing Phase 7	waste	in	Leachate abstraction infrastructure and leachate treatment facilities must be improved to be capable of managing volumes of at least 75 m ³ per day. An assessment is required to determine that the leachate treatment facilities are the "Best Available Technique"(BAT)
9	Depositing Phase 7	waste	in	Groundwater abstraction infrastructure and groundwater treatment facilities must be improved to be capable of managing volumes of at least 75 m ³ per day. An assessment is required to determine that groundwater treatment facilities are the "Best Available Technique"(BAT)
10	Depositing Phase 7	waste	in	A revised stability risk assessment and filling plan must be provided relating to the barrier between the non-hazardous and stable non-reactive waste cells. This must demonstrate both the stability of the barrier with appropriate factors of safety and the way in which filling operations are proposed to achieve such a stable barrier.
11	Depositing Phase 7	waste	in	The operator shall provide an acceptance procedure for the acceptance of odorous wastes. The acceptance procedure will detail the procedures to be adopted to prevent and/or minimise odour.

Table S1.5 Annual Waste Input Limits (excluding wastes placed above any final cap for restoration purposes)

Category	Limit Tonnes
Non-hazardous waste	250,000 per year
Inert waste	50,000 per year
Asbestos waste	20 per day

Schedule 2 - Site plan

*This document has been prepared by Faber Maunul Limited ("FM") for the sole use of our client (the "Client") and in accordance with generally accepted engineering principles. The design for fees and the terms of reference agreed between FM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by FM unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of FM.



Client: QUINN CONCRETE	Title: PERMIT INSTALLATION BOUNDARY	Design: B.Pribe	CAD: M.Graham
Project: LISBANE LANDFILL SITE	AECOM <small>24 Lisbane Road DUBLIN 15 D15 K2H9</small>	Chkd: B.P	Apprd: B.P
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		No. 60097048 CL(0) 207	Rev.
		cm	AA

Schedule 3 - List of permitted wastes

European Waste Catalogue Code	Description including physical form.
01 01	wastes from mineral excavation
01 01 01	wastes from mineral metalliferous excavation
01 01 02	wastes from mineral non-metalliferous excavation
01 03	wastes from physical and chemical processing of metalliferous minerals
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05
01 03 08	dusty and powdery wastes other than those mentioned in 01 03 07
01 03 09	red mud from alumina production other than the wastes mentioned in 01 03 07
01 04	wastes from physical and chemical processing of non-metalliferous minerals
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	waste sand and clays
01 04 10	dusty and powdery wastes other than those mentioned in 01 04 07
01 04 11	wastes from potash and rock salt processing other than those mentioned in 01 04 07
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11
01 04 13	wastes from stone cutting and sawing other than those mentioned in 01 04 07
01 05	drilling muds and other drilling wastes
01 05 04	freshwater drilling muds and wastes
01 05 07	barite-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
01 05 08	chloride-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
02 01	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 01	sludges from washing and cleaning
02 01 02	animal-tissue waste
02 01 03	plant-tissue waste
02 01 04	waste plastics (except packaging)
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site
02 01 07	wastes from forestry
02 01 09	agrochemical waste other than those mentioned in 02 01 08
02 01 10	waste metal

European Waste Catalogue Code	Description including physical form.
02 02	wastes from the preparation and processing of meat, fish and other foods of animal origin
02 02 01	sludges from washing and cleaning
02 02 02	animal-tissue waste
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
02 03	wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation
02 03 01	sludges from washing, cleaning, peeling, centrifuging and separation
02 03 02	wastes from preserving agents
02 03 03	wastes from solvent extraction
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 04	wastes from sugar processing
02 04 01	soil from cleaning and washing beet
02 04 02	off-specification calcium carbonate
02 04 03	sludges from on-site effluent treatment
02 05	wastes from the dairy products industry
02 05 01	materials unsuitable for consumption or processing
02 05 02	sludges from on-site effluent treatment
02 06	wastes from the baking and confectionery industry
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 06 03	sludges from on-site effluent treatment
02 07	wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	wastes from spirits distillation
02 07 03	wastes from chemical treatment
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment

European Waste Catalogue Code	Description including physical form.
03 01	wastes from wood processing and the production of panels and furniture
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	wastes from pulp, paper and cardboard production and processing
03 03 01	waste bark and wood
03 03 02	green liquor sludge (from recovery of cooking liquor)
03 03 05	de-inking sludges from paper recycling
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 09	lime mud waste
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04 01	wastes from the leather and fur industry
04 01 01	fleshings and lime split wastes
04 01 02	liming waste
04 01 06	sludges, in particular from on-site effluent treatment containing chromium
04 01 07	sludges, in particular from on-site effluent treatment free of chromium
04 01 08	waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium
04 01 09	wastes from dressing and finishing
04 02	wastes from the textile industry
04 02 09	wastes from composite materials (impregnated textile, elastomer, plastomer)
04 02 10	organic matter from natural products (for example grease, wax)
04 02 15	wastes from finishing other than those mentioned in 04 02 14
04 02 17	dyestuffs and pigments other than those mentioned in 04 02 16
04 02 20	sludges from on-site effluent treatment other than those mentioned in 04 02 19
04 02 21	wastes from unprocessed textile fibres
04 02 22	wastes from processed textile fibres
05	WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTIC TREATMENT OF COAL
05 01	wastes from petroleum refining

European Waste Catalogue Code	Description including physical form.
05 01 10	sludges from on-site effluent treatment other than those mentioned in 05 01 09
05 01 13	boiler feedwater sludges
05 01 14	wastes from cooling columns
05 01 16	sulphur-containing wastes from petroleum desulphurisation
05 01 17	Bitumen
05 06	wastes from the pyrolytic treatment of coal
05 06 04	waste from cooling columns
05 07	wastes from natural gas purification and transportation
05 07 02	wastes containing sulphur
06 03	wastes from the MFSU of salts and their solutions and metallic oxides
06 03 14	solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13
06 03 16	metallic oxides other than those mentioned in 06 03 15
06 05	sludges from on-site effluent treatment
06 05 03	sludges from on-site effluent treatment other than those mentioned in 06 05 02
06 06	wastes from the MFSU of sulphur chemicals, sulphur chemical processes and desulphurisation processes
06 06 03	wastes containing sulphides other than those mentioned in 06 06 02
06 09	wastes from the MSFU of phosphorous chemicals and phosphorous chemical processes
06 09 02	phosphorous slag
06 09 04	calcium-based reaction wastes other than those mentioned in 06 09 03
06 11	wastes from the manufacture of inorganic pigments and opacifiers
06 11 01	calcium-based reaction wastes from titanium dioxide production
06 13	wastes from inorganic chemical processes not otherwise specified
06 13 03	carbon black
07 01	wastes from the manufacture, formulation, supply and use (MFSU) of basicorganic chemicals
07 01 12	sludges from on-site effluent treatment other than those mentioned in 07 01 11
07 02	wastes from the MFSU of plastics, synthetic rubber and man-made fibres
07 02 12	sludges from on-site effluent treatment other than those mentioned in 07 02 11
07 02 13	waste plastic
07 02 15	wastes from additives other than those mentioned in 07 02 14

European Waste Catalogue Code	Description including physical form.
07 02 17	waste containing silicones other than those mentioned in 07 02 16
07 03	wastes from the MFSU of organic dyes and pigments (except 06 11)
07 03 12	sludges from on-site effluent treatment other than those mentioned in 07 03 11
07 04	wastes from the MFSU of organic plant protection products (except 02 0108 and 02 01 09), wood preserving agents (except 03 02) and other biocides
07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11
07 05	wastes from the MFSU of pharmaceuticals
07 05 12	sludges from on-site effluent treatment other than those mentioned in 07 05 11
07 05 14	solid wastes other than those mentioned in 07 05 13
07 06	wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11
07 07	wastes from the MFSU of fine chemicals and chemical products not otherwise specified
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11
08 01	wastes from MFSU and removal of paint and varnish
08 01 12	waste paint and varnish other than those mentioned in 08 01 11
08 01 14	sludges from paint or varnish other than those mentioned in 08 01 13
08 01 16	aqueous sludges containing paint or varnish other than those mentioned in 08 01 15
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17
08 02	wastes from MFSU of other coatings (including ceramic materials)
08 02 01	waste coating powders
08 02 02	aqueous sludges containing ceramic materials
08 03	wastes from MFSU of printing inks
08 03 07	aqueous sludges containing ink
08 03 13	waste ink other than those mentioned in 08 03 12
08 03 15	ink sludges other than those mentioned in 08 03 14
08 03 18	waste printing toner other than those mentioned in 08 03 17
08 04	wastes from MFSU of adhesives and sealants (including waterproofing products)
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09
08 04 12	adhesive and sealant sludges other than those mentioned in 08 04 11
08 04 14	aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13

European Waste Catalogue Code	Description including physical form.
09 01	wastes from the photographic industry
09 01 07	photographic film and paper containing silver or silver compounds
09 01 08	photographic film and paper free of silver or silver compounds
09 01 10	single-use cameras without batteries
09 01 12	single-use cameras containing batteries other than those mentioned in 09 01 11
10 01	wastes from power stations and other combustion plants (except 19)
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 01 02	coal fly ash
10 01 03	fly ash from peat and untreated wood
10 01 05	calcium-based reaction wastes from flue-gas desulphurisation in solid form
10 01 07	calcium-based reaction wastes from flue-gas desulphurisation in sludge form
10 01 15	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14
10 01 17	fly ash from co-incineration other than those mentioned in 10 01 16
10 01 19	wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18
10 01 21	sludges from on-site effluent treatment other than those mentioned in 10 01 20
10 01 23	aqueous sludges from boiler cleansing other than those mentioned in 10 01 22
10 01 24	sands from fluidised beds
10 01 25	wastes from fuel storage and preparation of coal-fired power plants
10 01 26	wastes from cooling-water treatment
10 02	wastes from the iron and steel industry
10 02 01	wastes from the processing of slag
10 02 02	unprocessed slag
10 02 08	solid wastes from gas treatment other than those mentioned in 10 02 07
10 02 10	mill scales
10 02 12	wastes from cooling-water treatment other than those mentioned in 10 02 11
10 02 14	sludges and filter cakes from gas treatment other than those mentioned in 10 02 13
10 02 15	other sludges and filter cakes
10 03	wastes from aluminium thermal metallurgy
10 03 02	anode scraps

European Waste Catalogue Code	Description including physical form.
10 03 05	waste alumina
10 03 16	skimmings other than those mentioned in 10 03 15
10 03 18	carbon-containing wastes from anode manufacture other than those mentioned in 10 03 17
10 03 20	flue-gas dust other than those mentioned in 10 03 19
10 03 22	other particulates and dust (including ball-mill dust) other than those mentioned in 10 03 21
10 03 24	solid wastes from gas treatment other than those mentioned in 10 03 23
10 03 26	sludges and filter cakes from gas treatment other than those mentioned in 10 03 25
10 03 28	wastes from cooling-water treatment other than those mentioned in 10 03 27
10 03 30	wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29
10 04	wastes from lead thermal metallurgy
10 04 10	wastes from cooling-water treatment other than those mentioned in 10 04 09
10 05	wastes from zinc thermal metallurgy
10 05 01	slags from primary and secondary production
10 05 04	other particulates and dust
10 05 09	wastes from cooling-water treatment other than those mentioned in 10 05 08
10 05 11	dross and skimmings other than those mentioned in 10 05 10
10 06	wastes from copper thermal metallurgy
10 06 01	slags from primary and secondary production
10 06 02	dross and skimmings from primary and secondary production
10 06 04	other particulates and dust
10 06 10	wastes from cooling-water treatment other than those mentioned in 10 06 09
10 07	wastes from silver, gold and platinum thermal metallurgy
10 07 01	slags from primary and secondary production
10 07 02	dross and skimmings from primary and secondary production
10 07 03	solid wastes from gas treatment
10 07 04	other particulates and dust
10 07 05	sludges and filter cakes from gas treatment
10 07 08	wastes from cooling-water treatment other than those mentioned in 10 07 07
10 08	wastes from other non-ferrous thermal metallurgy

European Waste Catalogue Code	Description including physical form.
10 08 04	particulates and dust
10 08 09	other slags
10 08 11	dross and skimmings other than those mentioned in 10 08 10
10 08 13	carbon-containing wastes from anode manufacture other than those mentioned in 10 08 12
10 08 14	anode scrap
10 08 16	flue-gas dust other than those mentioned in 10 08 15
10 08 18	sludges and filter cakes from flue-gas treatment other than those mentioned in 10 08 17
10 08 20	wastes from cooling-water treatment other than those mentioned in 10 08 19
10 09	wastes from casting of ferrous pieces
10 09 03	furnace slag
10 09 06	casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05
10 09 08	casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07
10 09 10	flue-gas dust other than those mentioned in 10 09 09
10 09 12	other particulates other than those mentioned in 10 09 11
10 09 14	waste binders other than those mentioned in 10 09 13
10 09 16	waste crack-indicating agent other than those mentioned in 10 09 15
10 10	wastes from casting of non-ferrous pieces
10 10 03	furnace slag
10 10 06	casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05
10 10 08	casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07
10 10 10	flue-gas dust other than those mentioned in 10 10 09
10 10 12	other particulates other than those mentioned in 10 10 11
10 10 14	waste binders other than those mentioned in 10 10 13
10 10 16	waste crack-indicating agent other than those mentioned in 10 10 15
10 11	wastes from manufacture of glass and glass products
10 11 03	waste glass-based fibrous materials
10 11 05	particulates and dust
10 11 10	waste preparation mixture before thermal processing, other than those mentioned in 10 11 09
10 11 12	waste glass other than those mentioned in 10 11 11

European Waste Catalogue Code	Description including physical form.
10 11 14	glass-polishing and -grinding sludge other than those mentioned in 10 11 13
10 11 16	solid wastes from flue-gas treatment other than those mentioned in 10 11 15
10 11 18	sludges and filter cakes from flue-gas treatment other than those mentioned in 10 11 17
10 11 20	solid wastes from on-site effluent treatment other than those mentioned in 10 11 19
10 12	wastes from manufacture of ceramic goods, bricks, tiles and construction products
10 12 01	waste preparation mixture before thermal processing
10 12 03	particulates and dust
10 12 05	sludges and filter cakes from gas treatment
10 12 06	discarded moulds
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)
10 12 10	solid wastes from gas treatment other than those mentioned in 10 12 09
10 12 12	wastes from glazing other than those mentioned in 10 12 11
10 12 13	sludge from on-site effluent treatment
10 13	wastes from manufacture of cement, lime and plaster and articles and products made from them
10 13 01	waste preparation mixture before thermal processing
10 13 04	wastes from calcination and hydration of lime
10 13 06	particulates and dust (except 10 13 12 and 10 13 13)
10 13 07	sludges and filter cakes from gas treatment
10 13 10	wastes from asbestos-cement manufacture other than those mentioned in 10 13 09
10 13 11	wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10
10 13 13	solid wastes from gas treatment other than those mentioned in 10 13 12
10 13 14	waste concrete and concrete sludge
10 14	waste from crematoria
11 01	wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)
11 01 10	sludges and filter cakes other than those mentioned in 11 01 09
11 01 14	degreasing wastes other than those mentioned in 11 01 13
11 02	wastes from non-ferrous hydrometallurgical processes
11 02 03	wastes from the production of anodes for aqueous electrolytical processes

European Waste Catalogue Code	Description including physical form.
11 02 06	wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05
11 05	wastes from hot galvanising processes
11 05 01	hard zinc
11 05 02	zinc ash
12 01	wastes from shaping and physical and mechanical surface treatment of metals and plastics
12 01 01	ferrous metal filings and turnings
12 01 02	ferrous metal dust and particles
12 01 03	non-ferrous metal filings and turnings
12 01 04	non-ferrous metal dust and particles
12 01 05	plastics shavings and turnings
12 01 13	welding wastes
12 01 15	machining sludges other than those mentioned in 12 01 14
12 01 17	waste blasting material other than those mentioned in 12 01 16
12 01 21	spent grinding bodies and grinding materials other than those mentioned in 12 01 20
15 01	packaging (including separately collected municipal packaging waste)
15 01 01	paper and cardboard packaging
15 01 02	plastic packaging
15 01 03	wooden packaging
15 01 04	metallic packaging
15 01 05	composite packaging
15 01 06	mixed packaging
15 01 07	glass packaging
15 01 09	textile packaging
15 02	absorbents, filter materials, wiping cloths and protective clothing
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16 01	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14,6 06 and 16 08)
16 01 06	end-of-life vehicles, containing neither liquids nor other hazardous components
16 01 12	brake pads other than those mentioned in 16 01 11

European Waste Catalogue Code	Description including physical form.
16 01 16	tanks for liquefied gas
16 01 17	ferrous metal
16 01 18	non-ferrous metal
16 01 19	plastic
16 01 20	glass
16 01 22	components not otherwise specified
16 02	wastes from electrical and electronic equipment
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15
16 03	off-specification batches and unused products
16 03 04	inorganic wastes other than those mentioned in 16 03 03
16 03 06	organic wastes other than those mentioned in 16 03 05
16 05	gases in pressure containers and discarded chemicals
16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
16 06	batteries and accumulators
16 06 04	alkaline batteries (except 16 06 03)
16 06 05	other batteries and accumulators
16 08	spent catalysts
16 08 01	spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 16 08 07)
16 08 03	spent catalysts containing transition metals or transition metal compounds not otherwise specified
16 11	waste linings and refractories
16 11 02	carbon-based linings and refractories from metallurgical processes others than those mentioned in 16 11 01
16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03
16 11 06	linings and refractories from non-metallurgical processes others than those mentioned in 16 11 05
17 01	concrete, bricks, tiles and ceramics
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics

European Waste Catalogue Code	Description including physical form.
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	wood, glass and plastic
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 03	bituminous mixtures, coal tar and tarred products
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 04	metals (including their alloys)
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 04 11	cables other than those mentioned in 17 04 10
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	insulation materials and asbestos-containing construction materials
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 09	other construction and demolition wastes
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
18 01	wastes from natal care, diagnosis, treatment or prevention of disease in humans
18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)
18 01 07	chemicals other than those mentioned in 18 01 06
18 01 09	medicines other than those mentioned in 18 01 08

European Waste Catalogue Code	Description including physical form.
18 02	wastes from research, diagnosis, treatment or prevention of disease involving animals
18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection
18 02 06	chemicals other than those mentioned in 18 02 05
18 02 08	medicines other than those mentioned in 18 02 07
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 01	wastes from incineration or pyrolysis of waste
19 01 02	ferrous materials removed from bottom ash
19 01 12	bottom ash and slag other than those mentioned in 19 01 11
19 01 14	fly ash other than those mentioned in 19 01 13
19 01 16	boiler dust other than those mentioned in 19 01 15
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17
19 01 19	sands from fluidised beds
19 02	wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 03	premixed wastes composed only of non-hazardous wastes
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 03	stabilised/solidified wastes (4)
19 03 05	stabilised wastes other than those mentioned in 19 03 04
19 03 07	solidified wastes other than those mentioned in 19 03 06
19 04	vitrified waste and wastes from vitrification
19 04 01	vitrified waste
19 05	wastes from aerobic treatment of solid wastes
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 06	wastes from anaerobic treatment of waste
19 06 04	digestate from anaerobic treatment of municipal waste

European Waste Catalogue Code	Description including physical form.
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
19 08	wastes from waste water treatment plants not otherwise specified
19 08 01	screenings
19 08 02	waste from desanding
19 08 05	sludges from treatment of urban waste water
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
19 09	wastes from the preparation of water intended for human consumption or water for industrial use
19 09 01	solid waste from primary filtration and screenings
19 09 02	sludges from water clarification
19 09 03	sludges from decarbonation
19 09 04	spent activated carbon
19 09 05	saturated or spent ion exchange resins
19 09 06	solutions and sludges from regeneration of ion exchangers
19 10	wastes from shredding of metal-containing wastes
19 10 01	iron and steel waste
19 10 02	non-ferrous waste
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03
19 10 06	other fractions other than those mentioned in 19 10 05
19 11	wastes from oil regeneration
19 11 06	sludges from on-site effluent treatment other than those mentioned in 19 11 05
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 01	paper and cardboard
19 12 02	ferrous metal
19 12 03	non-ferrous metal
19 12 04	plastic and rubber
19 12 05	glass
19 12 07	wood other than that mentioned in 19 12 06

European Waste Catalogue Code	Description including physical form.
19 12 08	textiles
19 12 09	minerals (for example sand, stones)
19 12 10	combustible waste (refuse derived fuel)
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
19 13	Wastes from Soil and Groundwater Remediation
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03
19 13 06	sludges from groundwater remediation other than those mentioned in 19 13 05
20 01	separately collected fractions (except 15 01)
20 01 01	paper and cardboard
20 01 02	glass
20 01 08	biodegradable kitchen and canteen waste
20 01 10	clothes
20 01 11	textiles
20 01 25	edible oil and fat
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27
20 01 30	detergents other than those mentioned in 20 01 29
20 01 32	medicines other than those mentioned in 20 01 31
20 01 34	batteries and accumulators other than those mentioned in 20 01 33
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35
20 01 38	wood other than that mentioned in 20 01 37
20 01 39	plastics
20 01 40	metals
20 01 41	wastes from chimney sweeping
20 02	garden and park wastes (including cemetery waste)
20 02 01	biodegradable waste
20 02 02	soil and stones
20 02 03	other non-biodegradable wastes

European Waste Catalogue Code	Description including physical form.
20 03	other municipal wastes
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 04	septic tank sludge
20 03 06	waste from sewage cleaning
20 03 07	bulky waste

Table S3.2 Asbestos containing wastes to be accepted for disposal

17 06	insulation materials and asbestos-containing construction materials
17 06 01*	insulation materials containing asbestos
17 06 05*	construction materials containing asbestos (7)

Schedule 4 – Emissions and monitoring

Table S4.1 Leachate level limits and monitoring requirements

Monitoring point reference/ Description	Limit	Monitoring frequency	Monitoring method
Leachate monitoring points to be installed with respect to Improvement Condition 3 in Table S1.3 and Pre Operation Condition 1 in Table S1.4	19.5 m AOD subject to Improvement Conditions 2 and 3 in Table S1.3 and Pre Operation Conditions 2 and 3 in Table S1.4	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Leachate extraction points 1 and 2 and all additional extraction points installed with respect to Improvement Condition 1 in Table S1.3 and Pre Operation Condition 8 in Table S1.4.		Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector

Table S4.2 Point source emissions to air – emission limits and monitoring requirements

Emission point Ref. & Location	Parameter	Source	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
All Landfill gas engines at the site.	Oxides of Nitrogen	Gas utilisation plant	500 mg/m3	Hourly mean	Annually	In accordance with that described in the Agency's Technical Guidance Note M2 " Monitoring of stack emissions to air".
	CO	Gas utilisation plant	1400 mg/m3	Hourly mean	Annually	
	Total VOCs	Gas utilisation plant	1000 mg/m3	Hourly mean	Annually	
	NMVOCs	Gas utilisation plant	75 mg/m3	Hourly mean	Annually	
All flares installed at the site*.	Oxides of Nitrogen	Landfill Gas Flares	150 mg/m3	Hourly mean	Annually	In accordance with that described in the Agency's Technical Guidance Note M2 " Monitoring of stack emissions to air".
	CO	Landfill Gas Flares	50 mg/m3	Hourly mean	Annually	
	Total VOCs	Landfill Gas Flares	10 mg/m3	Hourly mean	Annually	
	NMVOCs	Landfill Gas Flares	5 mg/m3	Hourly mean	Annually	
	Operational Temperature	Landfill Gas Flares	>1000oC	Hourly mean	Weekly while flare operational	

* If the flare has operated as a standby flare to the gas engines for less than 10% of the time of the operation of the gas engines within the 12 months prior to the required monitoring date then the flare need not be monitored.

Table S4.3 Point source emissions to water (other than sewer) – emission limits and monitoring requirements

Emission point Ref. & Location	Parameter	Source	Limit (incl unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Surface water discharge point from the groundwater lagoon.	Suspended Solids	Groundwater Management System	50 mg/l	Spot Sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	pH	Groundwater Management System	>6 and <9 pH units	Spot Sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	BOD	Groundwater Management System	5mg/l	Spot sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	Ammoniacal Nitrogen	Groundwater Management System	1mg/l	Spot sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	Nitrate	Groundwater Management System	40 mg/l	Spot sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	Oil and grease	Groundwater Management System	None visible	Spot sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	Volume	Groundwater Management System		Data logger	Continuous	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the surface water system.	Suspended Solids	Surface water	50 mg/l	Spot Sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the surface water system.	pH	Surface water	>6 and <9 pH units	Spot Sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the surface water system.	BOD	Surface water	5mg/l	Spot sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the surface water system.	Ammoniacal Nitrogen	Surface water	1mg/l	Spot sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the surface water system.	Oil and grease	Surface water	None visible	Spot sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector

Table S4.4 Point source emissions to sewer, effluent treatment plant or by tankering or other transfer off-site– emission limits and monitoring requirements

Emission point Ref. & Location	Parameter	Source	Limit (incl unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Leachate holding tank prior to treatment.	Suspended Solids	Leachate Management System	100 mg/l	Spot Sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Leachate holding tank prior to treatment.	pH	Leachate Management System	>5 and <10 pH units	Spot Sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Leachate holding tank prior to treatment.	COD	Leachate Management System	1,200mg/l	Spot sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Leachate holding tank prior to treatment.	Ammoniacal Nitrogen	Leachate Management System	40mg/l	Spot sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Leachate holding tank prior to treatment.	Volume	Leachate Management System	75m ³ /d*	Tanker Load	Each Load	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	Suspended Solids	Groundwater Management System	100 mg/l	Spot Sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	pH	Groundwater Management System	>5 and <10 pH units	Spot Sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	COD	Groundwater Management System	1,200mg/l	Spot sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	Ammoniacal Nitrogen	Groundwater Management System	40mg/l	Spot sample	Daily	To be proposed by the Operator and agreed in writing by the Chief Inspector
Surface water discharge point from the groundwater lagoon.	Volume	Groundwater Management System	75m ³ /d*	Tanker Load	Each Load	To be proposed by the Operator and agreed in writing by the Chief Inspector

* combined volume from both groundwater and leachate management systems

Note: Discharge to Northern Ireland Water waste water treatment plant can be varied in terms of quality and quantity subject to a written agreement with Northern Ireland Water.

Table S4.5 Control levels for emissions into groundwater and monitoring requirements

Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
Boreholes D, E J H and G. Boreholes 1 to 11 or their replacements in accordance with respect to Improvement Condition 4 in Table S1.3 and Pre Operation Condition 4 in Table S1.4.	Chloride	150 mg/l	Spot Sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
	Ammoniacal Nitrogen	0.25 mg/l	Spot Sample	Monthly	
	Nickel	0.1 mg/l	Spot Sample	Monthly	
	Cadmium	0.1 µg/l	Spot Sample	Monthly	
	Mercury	0.01 µg/l	Spot Sample	Monthly	
	Mecoprop	20 µg/l	Spot Sample	Monthly	
	Naphthalene	10 µg/l	Spot Sample	Monthly	
	Phenol	20 µg/l	Spot Sample	Monthly	
	Zinc	6 µg/l	Spot Sample	Monthly	

Table S4.6 Trigger levels for emissions into groundwater and monitoring requirements

Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
Boreholes D, E J H and G. Boreholes 1 to 11 or their replacements in accordance with respect to Improvement Condition 4 in Table S1.3 and Pre Operation Condition 4 in Table S1.4.	Chloride	250 mg/l	Spot Sample	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
	Ammoniacal Nitrogen	1 mg/l	Spot Sample	Monthly	
	Nickel	0.02 mg/l	Spot Sample	Monthly	
	Cadmium	0.1 µg/l	Spot Sample	Monthly	
	Mercury	0.01 µg/l	Spot Sample	Monthly	
	Mecoprop	20 µg/l	Spot Sample	Monthly	
	Naphthalene	10 µg/l	Spot Sample	Monthly	
	Phenol	30 µg/l	Spot Sample	Monthly	
	Zinc	8 µg/l	Spot Sample	Monthly	

Table S4.7 Landfill gas in external monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (including units) *	Monitoring frequency	Monitoring standard or method
Perimeter boreholes BH5 – BH11	Methane	[1] %v/v	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector
	Carbon Dioxide	[1.5] %v/v		
	Oxygen	[no limit]		
	Atmospheric pressure	[no limit]		
	Differential Pressure	[no limit]		
	Temperature	[no limit]		
	Meteorological data	[no limit]		

* - The limits specified take account of the background concentrations as detailed in Appendix ESID E, Lisbane Landfill ESID Report (January 2009)

Table S4.8 Landfill gas from capped surfaces - monitoring requirements

Monitoring point Ref. /description	Parameter	Monitoring frequency	Other specifications	Monitoring Standard or method
Permanently capped zone	Average Methane flux	Annually	Where a rate of 0.001 mg/m ² /second is exceeded appropriate measures must be taken to reduce the rate.	As per LFTGN 07 or as otherwise agreed in writing by the Chief Inspector*.
Temporarily capped zone	Average Methane flux	Annually	Where a rate of 0.1 mg/m ² /second is exceeded appropriate measures must be taken to reduce the rate.	As per LFTGN 07 or as otherwise agreed in writing by the Chief Inspector*.

Footnote * If a cap has previously been shown compliant and there have been no significant physical changes in the gas management during the year, a detailed walkover survey can be used to demonstrate that the surface emissions are under control. If this survey shows no change in the pattern of methane emission, it may be used as the annual survey. The values for flux and total methane emissions measured in the previous year may be reported and a fresh flux box survey is not necessary. If the zone remains stable, the results of a full walkover survey may be accepted as the site report for a period of four years before a further quantitative flux box survey is required.

Table S4.9 Landfill Gas – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
All in-waste monitoring boreholes in accordance with Table S1.3, reference 12.	Methane Carbon Dioxide Oxygen Carbon Monoxide Atmospheric pressure Differential pressure Temperature Meteorological data	Fortnightly	To be proposed by the Operator and agreed in writing by the Chief Inspector	Limit of 5% for oxygen
All landfill gas extraction wells in accordance with Table S1.3, reference 12.	Methane Carbon Dioxide Oxygen Carbon Monoxide Atmospheric pressure Differential pressure Temperature Gas flow rate Meteorological data	Fortnightly	To be proposed by the Operator and agreed in writing by the Chief Inspector	Limit of 5% for oxygen
Gas collection system manifolds	Trace gas analysis	Annually	To be proposed by the Operator and agreed in writing by the Chief Inspector	

Table S4.10 Leachate– other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Leachate monitoring points to be installed with respect to Improvement Condition 3 in Table S1.3 and Pre Operation Condition 1 in Table S1.4. Leachate extraction points 1 and 2 and all additional extraction points installed with respect to Improvement Condition 1 in Table S1.3 and Pre Operation Condition 8 in Table S1.4.	pH, EC, alkalinity, temperature, NH4-N, TON, TOC, BOD, COD, Ca, Mg, Na, K, Mn, Fe, Ni, Cd, Cr, Hg, Zn, Pb, As, Cl, SO4, Mecoprop, Naphthalene, Phenol (total and monohydric)	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector	
Leachate monitoring points to be installed with respect to Improvement Condition 3 in Table S1.3 and Pre Operation Condition 1 in Table S1.4. Leachate extraction points 1 and 2 and all additional extraction points installed with respect to Improvement Condition 1 in Table S1.3 and Pre Operation Condition 8 in Table S1.4.	List 1 screen	Annually	To be proposed by the Operator and agreed in writing by the Chief Inspector	
Leachate monitoring points to be installed with respect to Improvement Condition 3 in Table S1.3 and Pre Operation Condition 1 in Table S1.4. Leachate extraction points 1 and 2 and all additional extraction points installed with respect to Improvement Condition 1 in Table S1.3 and Pre Operation Condition 8 in Table S1.4.	Depth to base of monitoring well	Annually	To be proposed by the Operator and agreed in writing by the Chief Inspector	

Table S4.11 Surface water – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Surface water discharge point from the groundwater lagoon.	Temperature, DO, pH, EC, TSS, NH4-N, TON, TOC, BOD, COD, Cl, visible oil and grease, Cu, Zn, Fe, Mn, Ni, Cr, Cd, SO4, Ca, K, Na, Mg, Pb, Alkalinity, Mecoprop, naphthalene and phenol	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector	
Surface water discharge point from the surface water system.	Temperature, DO, pH, EC, TSS, NH4-N, TON, TOC, BOD, COD, Cl, visible oil and grease.	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector	
Surface water monitoring locations upstream and downstream of the site in the water course (tributary of the Cusher River to the east of the landfill with respect to Improvement Condition 13 in Table S1.3 .	Temperature, DO, pH, EC, TSS, NH4-N, TON, TOC, BOD, COD, Cl, visible oil and grease, Cu, Zn, Fe, Mn, Ni, Cr, Cd, SO4, Ca, K, Na, Mg, Pb, Alkalinity, Mecoprop, naphthalene and phenol	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector	
Surface water monitoring locations upstream and downstream of the site in the water course (tributary of the Cusher River to the east of the landfill with respect to Improvement Condition 13 in Table S1.3 .	Biological assessment	Annually	To be proposed by the Operator and agreed in writing by the Chief Inspector	

Table S4.12 Groundwater – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Boreholes A to H and J. Boreholes 1 to 11 or their replacements in accordance with respect to Improvement Condition 4 in Table S1.3 and Pre Operation Condition 4 in Table S1.4.	Water level, pH, EC, alkalinity, temperature, NH4-N, TON, TOC, BOD, COD, Ca, Mg, Na, K, Mn, Fe, Ni, Cd, Cr, Hg, Zn, Pb, As, Cl, SO4, Mecoprop, Naphthalene, Phenol (total and monohydric)	Monthly	To be proposed by the Operator and agreed in writing by the Chief Inspector	
Boreholes A to H and J. Boreholes 1 to 11 or their replacements in accordance with respect to Improvement Condition 4 in Table S1.3 and Pre Operation Condition 4 in Table S1.4.	List I, monitoring point base.	Annually	To be proposed by the Operator and agreed in writing by the Chief Inspector	

Table S4.13 Particulate matter in ambient air - limits and monitoring requirements

Monitoring Point Ref. /Description	Parameter	Limit (Including Unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Particulate monitoring points to be installed in accordance with Improvement Condition 16 in Table S1.3.	Particulate matter (PM10)	Monitoring and limits to be agreed in response to Reference 16 in Table S1.3	24 hours	Monthly	In accordance with Technical Guidance Document (Monitoring) M17 (2004)
	Asbestos Fibres	0.002 fibres/ml	4 hours		EH40/93 Occupational Exposure Limits: 1993
	Deposited Dust	200mg/m ² day		Quarterly	

Schedule 5 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this Permit, are listed below.

Table S5.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Leachate levels As required by condition 4.6.1	e.g. LMP1 to LMP6	Every 3 months	01/08/09
Emissions to air Parameters as required by condition 4.6.1	e.g. A1, A2, A3, A4, A5	Every 12 months	01/08/09
Emissions to water Parameters as required by condition 4.6.1	e.g. W1	Every 6 months	01/08/09
	e.g. W9	Every 3 months	
Groundwater Parameters as required by condition 4.6.1	e.g. G1, G2, G3 to G5	Every 3 Months	01/08/09
Ambient air monitoring Parameters as required by condition 4.6.1	e.g. LFG1 Installation boundary	Every 6 months	01/08/09
Landfill gas surface emissions Parameters as required by condition 4.6.1	e.g. Phase 1a, Phase 1b, Phase 2	Every 12 months	01/08/09
Particulate matter - PM10 Deposited dust Parameters as required by condition 4.6.1	e.g. DM1, DM2, DM3	Every 12 months Every 3 months	01/08/09 01/08/09
Landfill gas lateral migration Parameters as required by condition 4.6.1	e.g. LFGMP1 to 30	Every 3 months	01/08/09
Other Landfill gas monitoring Parameters as required by condition 4.6.1	e.g. LFGQ10	Every 3 months	01/08/09
Other leachate monitoring Parameters as required by condition 4.6.1	e.g. LMP1 to 6	Every 3 months	01/08/09
List 1 Screen	e.g. Leachate extraction points 1 to 3	Every 12 months	
Other surface water monitoring Parameters as required by condition 4.6.1	e.g. SWMP 1 and SWMP2	Every 3 months	01/08/09

Table S5.2: Annual Production/Treatment	
Leachate: Disposed of off site; Disposed of to any onsite effluent treatment plant; Recirculated into the waste mass.	Cubic metres/year
Surface water and/ or groundwater: Disposed of off site; Disposed of to any onsite effluent treatment plant.	Cubic metres/year
Landfill gas: combustion in flares; combustion in gas engines; Other methods of gas utilisation.	Normalised cubic metres/year

Table S5.3 Performance Parameters

Parameter	Frequency of assessment	Annual total	Unit
Potable water use	Annually		Cubic metres
Energy used	Annually		MW of electricity
Non potable water use	Annually		Cubic metres

Table S5.4 Reporting Forms

Media/parameter	Reporting Format	Date of Form
Leachate	Form Leachate 1 or other reporting format to be agreed in writing with the Chief Inspector	
Air	Form Air 1 or other reporting format to be agreed in writing with the Chief Inspector	
Controlled water	Form Water 1 or other reporting format to be agreed in writing with the Chief Inspector	
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with the Chief Inspector	
Sewer	Form Sewer 1 or other reporting format to be agreed in writing with the Chief Inspector	
Landfill gas	Form LFG 1 or other reporting format to be agreed in writing with the Chief Inspector	
Particulate matter	Form Particulate 1 or other reporting format to be agreed in writing with the Chief Inspector	
Waste Return	Waste Return Form RATS2E	
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Chief Inspector	

Schedule 6 - Notification

This page outlines the information that the Operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the PPC Regulations.

Part A

Permit Number	
Name of Operator	
Location of Installation	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution

To be notified within 24 hours of detection	
Date and Time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit

To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period
None specified	

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B to be supplied as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of Quinn Environmental Ltd

Schedule 7 - Interpretation

“*Accident*” means an accident that may result in pollution.

“*Annually*” means once every Year.

“*Application*” means the application for this Permit, together with any additional information supplied by the Operator as part of the application and any response to a notice served under Schedule 4 to the PPC Regulations

“*Authorised Officer*” means any person authorised by the Chief Inspector under Regulation 8 of the PPC Regulations (NI) 2003

“*Construction Proposals*” means written information, at a level of detail appropriate to the complexity and pollution risk, on the design, specifications of materials selected, stability assessment (where relevant) and the construction quality assurance (CQA) programme in relation to the New Cell or Landfill Infrastructure.

“*CQA Validation Report*” means the final “as built” construction and engineering details of the New Cell or of the Landfill Infrastructure. It must provide a comprehensive record of the construction and must include, where relevant:

- The results of all testing required by the CQA programme - this must include the records of any failed tests with a written explanation, details of the remedial action taken, referenced to the appropriate secondary testing;
- Plans showing the location of all tests;
- “As-built” plans and sections of the works;
- Copies of the site engineer’s daily records;
- Records of any problems or non-compliances and the solution applied;
- Any other site specific information considered relevant to proving the integrity of the New Cell or Landfill Infrastructure;
- Validation by a qualified person that all of the construction has been carried out in accordance with the Construction Proposals.

“*Fugitive emission*” means an emission to air, water or land from the Activities which is not controlled by an emission limit.

“*Groundwater Regulations*” means the Groundwater Regulations (Northern Ireland) 1998, and words and expressions used in this Permit which are also used in the Regulations shall have the same meanings as in those Regulations.

“*Gypsum based or other high sulphate material*” means any wastes containing more than 10% sulphate in any one load.

“*Landfill Infrastructure*” means any specified element of the:

- permanent capping;
- temporary capping (i.e. engineered temporary caps not cover materials);
- leachate abstraction systems;
- leachate transfer, treatment and storage systems;
- surface water drainage systems;
- leachate monitoring wells;
- groundwater monitoring boreholes;
- landfill gas monitoring boreholes;
- landfill gas management systems;

within the Site.

“*Landfill Regulations*” means the Landfill Regulations (Northern Ireland) 2003 and words and expressions used in this Permit which are also used in the Regulations shall have the same meanings as in those Regulations.

“*Land Protection Guidance*” means Environment & Heritage Service guidance “H7 - Guidance on the protection of land under the PPC Regime: Application site report and site protection monitoring programme”.

“*Liquids*” means any liquid other than leachate within the engineered landfill containment system.

“*LFTGN 05*” means Environment Agency Guidance for monitoring enclosed landfill gas flares, September 2004.

“*LFTGN 08*” means Environment Agency Guidance for monitoring landfill gas engines, September 2004.

“*New Cell*” means any new cell, part of a cell or other similar new area of the Site where waste deposit is to commence after issue of this Permit and can comprise:

- groundwater under-drainage system;
- permanent geophysical leak location system;
- leak detection layer;
- sub-grade;
- barriers;
- liners;
- leachate collection system;

- leachate abstraction system;
- separation bund/layer;
- cell or area surface water drainage system;
- side wall subgrade and containment systems;

for the New Cell.

“*No impact*” means that the change made to the construction process will not alter the agreed design criteria, specification or performance.

“*PPC Regulations*” means the Pollution, Prevention and Control Regulations (Northern Ireland) 2003 and words and expressions used in this Permit which are also used in the Regulations have the same meanings as in those Regulations.

“*Quarter*” means a calendar year quarter commencing on 1 January.

“*Relevant person*” and “*relevant conviction*” shall have the meanings given to them in the Waste and Contaminated Land (Northern Ireland) Order 1997

“*Review of the Hydrogeological Risk Assessment*” means a written review of the hydrogeological risk assessment included in the Application, together with any other parts of the Application that addressed the requirements of the Groundwater Regulations. The review shall assess whether the activities of disposal or tipping for the purpose of disposal of waste authorised by the Permit continue to meet the requirements of the Groundwater Regulations

“*Site Protection and Monitoring Programme*” means a document which meets the requirements for Site Protection and Monitoring Programmes described in the Land Protection Guidance H7.

“*Technically competent management*” and “*technical competence*” shall have the meanings given to them in the Waste and Contaminated Land (Northern Ireland) Order 1997.

“*Year*” means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this Permit to concentrations of substances in emissions into air means the standards included in Environment Agency Guidance for Monitoring Enclosed Landfill Gas Flares LFTGN 05 or Guidance for Monitoring Landfill Gas Engine Emissions LFTGN 08.

END OF PERMIT

