

Highfields South Landfill Site

Permit Number NP3135SL

Introductory note

This introductory note does not form a part of the Permit

The main features of the installation are as follows.

Highfields Landfill is in a former clay quarry at Lichfield Road Walsall. Over its lifetime the landfill will accept 2,100,000 tonnes of non-hazardous waste. It is operated by Cory Environmental (Central) Ltd and will take approximately 8 years to fill.

As the landfill progresses highly polluted water, known as leachate, will be formed within the waste. A clay geological barrier and clay artificial sealing layer at the base of the site will prevent this leachate escaping and protect the underlying groundwater. The site will operate under conditions of hydraulic containment, that is that leachate heads are maintained below the surrounding groundwater to ensure that any flow of water is into rather than out of the site. Leachate may be recirculated within the site to assist biodegradation of the waste. Otherwise it is pumped out for treatment off site or at a purpose built treatment facility on site. Leachate and groundwater will be monitored to demonstrate these systems are working.

When the waste breaks down landfill gas is formed. This consists mainly of carbon dioxide and methane. Landfill gas from the site is subject to active extraction via a system of gas wells and pipes and is utilised for electricity generation, or where this is not possible burnt off in a flare. Gas is monitored regularly in and around the site to ensure there is no off site migration of gas.

Surface water from the site will pass through a lagoon to allow settlement of solids before clean water is discharged to the Vigo Brook. Groundwater pumped from the site during the operational phase will also be discharged to the Brook via this lagoon. Monitoring indicates that the groundwater is polluted, probably from an old landfill close to the site. For this reason the groundwater will be sampled and tested and will only be released into the brook if it can be shown that it will not cause pollution.

Dust, mud, vermin, pests and litter are monitored and controlled.

As filling of the site progresses temporary caps are installed in areas of the site to control emissions until that part of the site can be restored to final levels. On completion the site will be capped with a geosynthetic clay liner. This will form a highly impermeable layer over the site and will be protected by 1.5 m of soils so that the site can be restored to woodland and grassland with public access.

Status Log of the Permit		
Detail	Date	Response Date
Application EA/PPC/NP3135SL	Received 8 th December 2004	
Response to request for information	Request dated 12 th August 2005	Response dated 23 rd September 2005
	23 rd December 2005	25 th January 2006
	6 th March 2006	12 th May 2006
	31 st May 2006	5 th July 2006
Request to extend determination	Request dated: 26 th April 2005	Request accepted: 29 th April 2005
	9 th June 2005	20 th June 2005
	4 th August 2005	5 th August 2005
	4 th October 2005	7 th October 2005
	7 th December 2005	12 th December 2005
	8 th March 2005	14 th March 2005
	9 th May 2006	16 th May 2006
	30 th June 2006	3 rd July 2006
Permit determined	21 st July 2006	

End of Introductory Note

Permit

Pollution Prevention and Control (England and Wales) Regulations 2000
Landfill (England and Wales) Regulations 2002

Permit

Permit number

NP3135SL

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No 1973) and Regulation 6 of the Landfill (England and Wales) Regulations 2002 (SI 2002 No.1559) hereby authorises

Cory Environmental (Central) Limited ("the Operator"),

whose Registered Office (or principal place of business) is

2 Coldbath Square

London

EC1R 5HL

Company registration number 02773558

to operate an installation at

Highfields South Landfill Site

Lichfield Road

Walsall

West Midlands

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

Signed

Date



21-07-06

Phil Reynolds Regulatory Team Leader (PIR Permitting)

Strategic Permitting Group - Nottingham

Authorised to sign on behalf of the Agency

Conditions

1. Management

1.1 General management

- 1.1.1 The Activities shall be managed and operated:
- (a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the Operator as a result of complaints; 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.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 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 Operator shall ensure that the charges it makes for the disposal of waste in the landfill cover all of the following:
- (a) the costs of setting up and operating the landfill;
 - (b) the costs of the financial provision required by condition 1.3.1; and
 - (c) 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.

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").

2.2 The site

- 2.2.1 The Activities shall not extend beyond the Site, being the land shown edged in red on the Site Plan at 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

There are no conditions in this Permit to which Regulation 12(12) of the PPC Regulations apply.

2.5 Improvement programme

- 2.5.1 The Operator shall complete the improvements specified in Schedule 1 Table S1.3 as required by that table unless otherwise agreed in writing by the Agency.

2.6 Pre-operational conditions

- 2.6.1 The Activities shall not be brought into operation until the measures specified in Schedule 1 Table S1.4A have been completed.
- 2.6.2 The operations specified in Schedule 1 Table S1.4B shall not commence until the measures specified in that table have been completed.

2.7 Engineering

- 2.7.1 No construction of any New Cell shall commence until the Operator has submitted Construction Proposals and the Agency has confirmed that it is satisfied with the Construction Proposals.
- 2.7.2 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 Agency.
- 2.7.3 No disposal of waste shall take place in a New Cell until the Operator has submitted a CQA Validation Report and the Agency has confirmed that it is satisfied with the CQA Validation Report.
- 2.7.4 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 Agency has confirmed that it is satisfied with the Construction Proposals.
- 2.7.5 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 Agency.
- 2.7.6 The Operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant Landfill Infrastructure.
- 2.7.7 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.7.4 and 2.7.5 do not apply and the relevant Landfill Infrastructure may be constructed, provided that the Construction Proposals are submitted to the Agency as soon as practicable.
- 2.7.8 For the purposes of conditions 2.7.1, 2.7.3 and 2.7.4, the Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the relevant Construction Proposals or CQA Validation Report, either:
 - (a) confirmed whether or not it is satisfied; or
 - (b) informed the Operator that it requires further information.

2.8 Waste acceptance

- 2.8.1 Wastes shall only be accepted for disposal if:
 - (a) they are listed in Schedule 3, and
 - (b) they are non- hazardous waste and
 - (c) they are not whole used tyres (other than 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) all the relevant waste acceptance procedures set out in Schedule 1 of the Landfill Regulations have been completed, and
 - (h) they fulfil the relevant waste acceptance criteria, and

- (i) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria, and
 - (j) they are wastes which have been treated, 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.
- 2.8.2 Gypsum and other high sulphate bearing waste shall only be disposed of in cells where no biodegradable waste is accepted. Wastes disposed of in a cell with gypsum and other high sulphate bearing wastes must meet the relevant waste acceptance criteria.
- 2.8.3 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 waste at the point of deposit;and shall satisfy itself that it conforms to the basic characterisation documentation submitted by the holder.
- 2.8.4 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.
- 2.8.5 The Operator on accepting each delivery of waste shall provide a receipt to the person delivering it.
- 2.8.6 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on drawing ESID4B.
- 2.8.7 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in Schedule 1 Table S1.5.
- 2.8.8 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 Leachate levels

- 2.9.1 The limits for the level of leachate listed in Table S4.1 of Schedule 4 shall not be exceeded.

2.10 Closure, aftercare and decommissioning

- 2.10.1 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.
- 2.10.2 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.
- 2.10.3 The Operator shall carry out and record a review of the Site Closure Plan at least every 4 years.

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

2.11 Site protection and monitoring programme

- 2.11.1 The Operator shall, a minimum of 3 months prior to undertaking the relevant Activity, submit a Site Protection and Monitoring Programme.
- 2.11.2 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 received.

3. Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in Tables S4.2 and S4.3 of Schedule 4.
- 3.1.2 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 Agency guidance LFTGN 05 and LFTGN 08.

3.2 Emissions to groundwater

- 3.2.1 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.
- 3.2.2 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).
- 3.2.3 The trigger levels for emissions into groundwater for the parameter(s) and monitoring point(s) set out in Table S4.4 of Schedule 4 shall not be exceeded.
- 3.2.4 The Operator shall submit to the Agency 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.

3.3 Fugitive emissions of substances

- 3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The Operator shall not be taken to have breached this condition if appropriate measures have been taken to prevent or where that is not practicable, to minimise, those emissions.

- 3.3.2 Litter or mud arising from the Activities shall not cause pollution. The Operator shall not be taken to have breached this condition if appropriate measures, have been used to prevent or where that is not practicable to minimise, the litter and mud.
- 3.3.3 Litter or mud arising from the Activities shall be cleared from affected areas outside the Site as soon as practicable.
- 3.3.4 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.
- 3.3.5 The measured values from the monitoring specified in Tables S4.5 and S4.6 of Schedule 4 shall not exceed the limits for the parameter(s) at the monitoring point(s) listed in that schedule.

3.4 Odour

- 3.4.1 Emissions from the Activities shall be free from odour at levels likely to cause annoyance outside the Site, as perceived by an Authorised Officer of the Agency, unless the Operator has used appropriate measures, to prevent or where that is not practicable to minimise the odour.

3.5 Noise and vibration

- 3.5.1 Emissions from the Activities shall be free from noise and vibration at levels likely to cause annoyance outside the Site, as perceived by an Authorised Officer of the Agency, unless the Operator has used appropriate measures to prevent or where that is not practicable to minimise the noise and vibration.

3.6 Monitoring

- 3.6.1 The Operator shall, unless otherwise agreed in writing by the Agency, 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 S4.8;
 - (b) Point source emissions specified in Tables S4.2 and S.4.3;
 - (c) Groundwater specified in Tables S4.4 and S4.10;
 - (d) Landfill gas specified in Tables S4.5, S4.6, S4.7
 - (e) Surface water specified in Table S4.9; and
- 3.6.2 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.
- 3.6.3 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 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.

4. Information

4.1 Records

4.1.1 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 Agency, 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) sub-surface landfill gas monitoring;
 - (iv) leachate levels, quality and quantities;
 - (v) landfill gas generation and collection;
 - (vi) waste types and quantities;
 - (vii) topographical surveys;
 - (viii) the specification and as built drawings of the basal, sidewall and capping engineering systems

4.2 Reporting

4.2.1 A report or reports on the performance of the Activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) 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 system 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 3.6.3 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 behavior 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;
 - (k) the compliance testing undertaken in the period;
- 4.2.2 Within 28 days of the end of the reporting period the Operator shall, unless otherwise agreed in writing by the Agency, 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 and using the forms specified in Table S5.4 of Schedule 5; and
 - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.3 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 Agency within one month of the end of the quarter and shall be in the format required by the Agency.
- 4.2.4 The Operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, 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.
- 4.2.5 The results of reviews and any changes made to the Site Protection and Monitoring Programme shall be reported to the Agency, within 1 month of the review or change.

4.3 Notifications

- 4.3.1 The Agency 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;
 - (c) any significant adverse environmental effects.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in Schedule 6 to this Permit within the time period specified in that schedule.

- 4.3.3. Prior written notification shall be given to the Agency 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.
- 4.3.4 The Agency 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.
- 4.3.5 Where the Agency has requested in writing that it shall be notified when the Operator is to undertake monitoring and/or spot sampling, the Operator shall inform the Agency when the relevant monitoring is to take place. The Operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.6 The Agency 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.
- 4.3.7 The Agency 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 Agency), with details of the nature of the offence, the place and date of conviction, and the sentence imposed.
- 4.3.8 The Agency 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.
- 4.3.9 The Agency 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.

4.4 Interpretation

- 4.4.1 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 2.8, as an integral part of landfilling.
Directly Associated Activity		
Leachate management biological treatment of leachate.	Storage of leachate and treatment of leachate in a facility with a capacity of <50 t/day, pre disposal or recovery.	Leachate arising from the landfill.
Landfill gas management.	Utilisation of landfill gas for energy recovery in a facility <3 MW rated thermal input . Flaring of landfill gas.	Landfill gas arising from the landfill.
Water discharges to controlled waters.	Discharges of site surface water drainage and pumped groundwater from the landfill.	From surface water management lagoon to point of entry to the Vigo Brook.

Table S1.2 Operating Techniques

Description	Parts	Date Received
Application form	Answers to B2.1.8, B2.2.3, B2.2.6, B2.2.8, B2.2.9, B2.2.82, B2.2.10, B2.3.6, B2.11.4,	08/12/2004
hydrogeological risk assessment	section 3.1.1 tables HRA 11a, HRA 12	08/12/2004
Landfill Gas Risk Assessment	1.2, appendix 6, appendix 7, appendix 8,	08/12/2004
nuisance risk assessment	Table 2.6, Tables 4.1, 4.2, 4.3 and 4.4.	08/12/2004
Conceptual model Environmental Setting and Installation Design report	Sections 1.2(iii), 2.2.2, 2.2.5, 2.3.1, 2.3.2, 2.4.2, 2.4.3, 2.5 (as amended by letter of 12th May 2006), 2.6, 2.7, table ESID1: side slope lining system, capping system and landfill gas management system only.	08/12/2004
Response to Schedule 4 notice	Section 6, 7,10,11, and tables1, 2 (assessment test and contingency action) 3, 4, and 5	27/09/2005
Response to request for information dated 12th May 2006	Table HRA 12, schedule 1,	16/05/06
Procedures agreed in accordance with table S1.4A and S1.4B.	As agreed with the Agency in writing	

Table S1.3 Improvement Programme Requirements

Reference	Requirement	Date
1	Once approved the action plan required by table S1.4A 7 below shall be instigated where the assessment levels are exceeded.	from the date that approval is given by the Agency
2	Once agreed financial provision shall be maintained by the Operator through out the subsistence of this permit and the Operator shall provide evidence of such provision whenever required by the Agency.	From the date that the financial provision is agreed

Table S1.4A Pre-operational Measures

Reference	Pre-operational Measures
1	The operator shall install a geological barrier consisting of 1m of clay compacted to meet a maximum permeability of 10^{-9} m/s on the base of the landfill and against the sidewalls to a height of 3m above the base. Above this the operator shall install an artificial sealing layer consisting of 1m of clay compacted to meet a maximum permeability of 10^{-9} m/s on the base of the landfill against the side walls to a height of 3m above the base unless otherwise agreed in writing with the Agency.
2	The operator shall install a leachate drainage blanket of non-calcareous aggregate material and at least 500mm thick along the base of the site and against the side walls to a height of 3m above the top of the basal liner, unless otherwise agreed in writing with the Agency.
3a	The operator shall submit proposals updating drawing COR/HS/09-04/11789 to allow for at least two additional groundwater monitoring boreholes, one on the northern site boundary and one on the western site boundary. The location and construction details of the boreholes shall be agreed with the Agency. Upon approval of the proposals the operator shall install the boreholes.
3b	Once the boreholes required by measure 3a above, have been installed the operator shall provide details of the drillers' logs, water strikes and water levels to the Agency. The data shall be reviewed and the operator shall submit a plan or report to the Agency giving a summary of their understanding of the groundwater conditions around the site.
4	The operator shall begin to monitor list 1 substances at the site using detection limits in accordance with Appendix 7 of the Environment Agency Guidance Document "Hydrogeological Risk Assessments for Landfills, March 2003" (LFTGN01) unless otherwise agreed in writing with the Agency.
5	The operator shall submit an updated groundwater monitoring programme to the Agency for approval. This shall include a full review to agree control and trigger levels prior to landfilling, taking into account all of the pre-operational monitoring. It shall include a review of groundwater quality data for the additional boreholes identified or constructed in accordance with pre-operational condition 3a above and for boreholes BH5, BH9, BH10 and BH11. Once the Agency has confirmed it is satisfied the monitoring plan shall be implemented at the site. The Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the monitoring programme confirmed whether or not it is satisfied; or informed the Operator that it requires further information
6	The operator shall submit a revised gas monitoring plan. This shall include proposals to improve coverage of monitoring pathways within the Etruria Marl particular along the boundaries close to residential and/or commercial properties. It shall also include a revised plan ESID8 showing the boreholes clearly numbered for reference. The gas monitoring plan shall be implemented at the site once the Agency has confirmed it is satisfied. The Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the written justification confirmed whether or not it is satisfied; or informed the Operator that it requires further information
7	The operator shall submit a dust monitoring scheme in accordance with "Monitoring of Particulate Matter in Ambient Air Around Waste Facilities" (M17) or any Agency guidance replacing it. The monitoring scheme shall be implemented at the site once the Agency has confirmed it is satisfied. The Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the written justification confirmed whether or not it is satisfied; or informed the Operator that it requires further information
8	The operator shall produce an action plan to explain the action to be taken should contamination from the contaminated groundwater be detected in the discharge to the lagoon. This shall include assessment levels for the parameters listed in table S4.9 for the discharge from the groundwater drainage system or it shall identify more appropriate indicator parameters and set assessment levels for these. The objective of the action plan shall be to prevent any impact on the receiving water from contaminated groundwater. The action plan shall be submitted to the Agency for approval.
9	The operator shall submit further laboratory testing of the sub-grade material during the CQA phase. The operator shall review the cohesion values obtained during CQA and compare the values with the Stability Risk Assessment (SRA) input values. A report shall be compiled and submitted to the Agency with the CQA report. If the SRA values differ from those obtained through CQA, the SRA should be reviewed to assess the impact.
10	The operator shall agree details of the groundwater drainage system with the Agency before construction of the first cell. In particular the suitability of the Terram drainage layer shall be reviewed.
11	The financial provision for meeting the obligations under this permit shall be agreed with the Environment Agency prior to any waste deposit or activity on site, other than environmental monitoring.

Table S1.4B Pre-operational Measures for Future Development

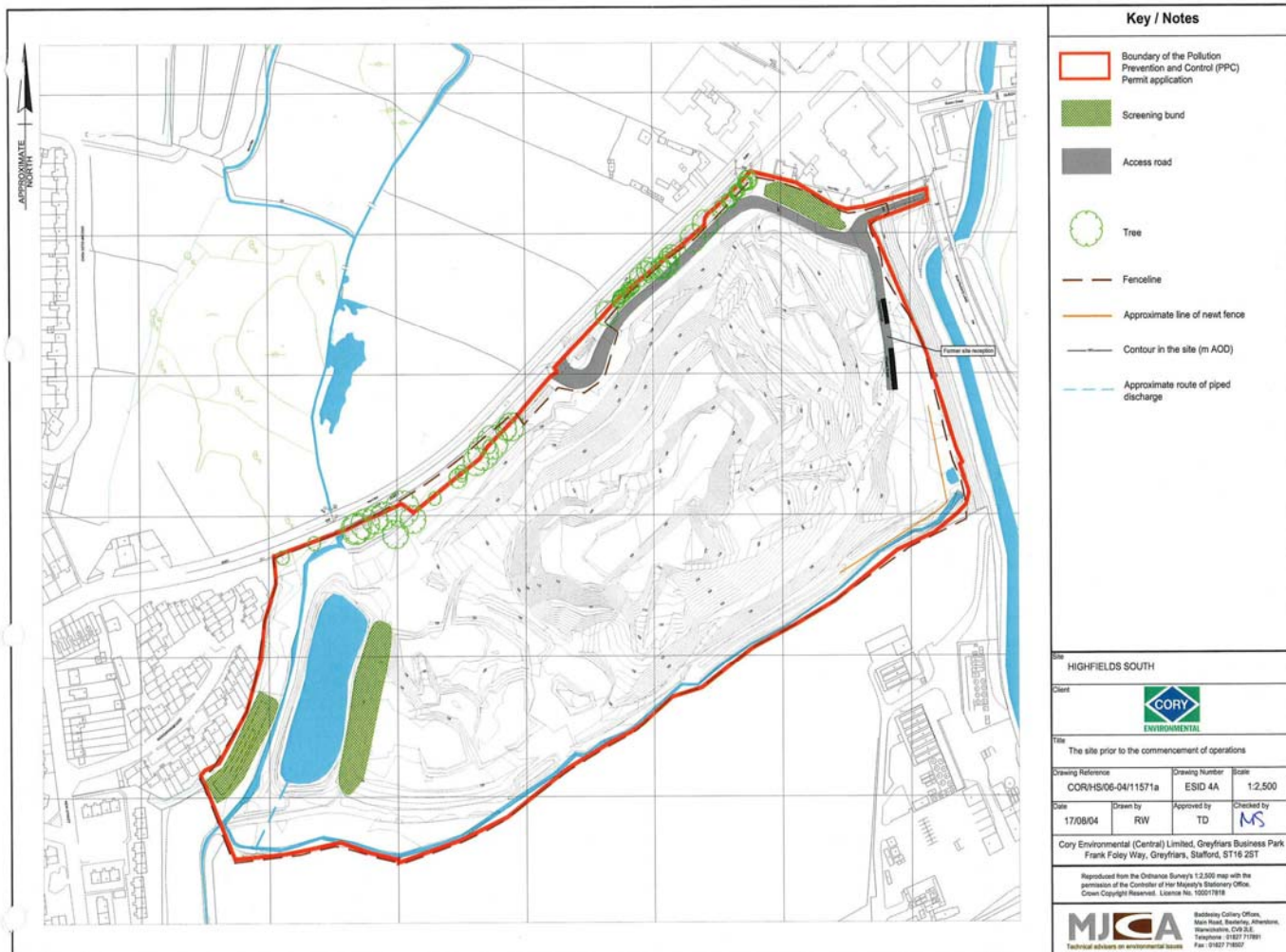
Reference	Operation	Pre-operational Measures
1	first receipt of waste	The operator shall carry out sufficient gas monitoring to establish baseline conditions and agree background levels of carbon dioxide and methane with the Agency for inclusion within Table 4.5.
2	operation of the landfill gas extraction system for more than 12 months	The modelling carried out as part of the landfill gas risk assessment will be reviewed and a report on this shall be submitted to the Agency. The operation of the landfill gas management system shall be adjusted as necessary in line with the findings of the review.
3	installation of final cap	The operator shall install a gas drainage layer as part of the surface sealing for the site unless a written justification for omitting the gas drainage layer has been submitted to the Agency and the Agency has confirmed it is satisfied. The Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the written justification confirmed whether or not it is satisfied; or informed the Operator that it requires further information.
4	Leachate recirculation	The operator shall submit a method statement for leachate recirculation to the Agency. The method statement shall be implemented at the site once the Agency has confirmed it is satisfied. The Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the written justification confirmed whether or not it is satisfied; or informed the Operator that it requires further information
5	Installation of gas engines	The operator shall review the noise risk assessment for the site to include the impact of the gas engines. A report of the findings of the risk assessment shall be submitted to the Agency. The installation of the gas engines shall take into account the findings of the report.
6	First receipt of waste	The operator shall submit a scheme for the management of birds and rats to the Agency for approval. The scheme shall take into account the need to protect nesting birds at the Jockey Fields SSSI. Once approved by the Agency the scheme shall be implemented at the site.

Table S1.5 Annual Waste Input Limits

Category	Limit Tonnes/ Year
Non-hazardous Waste	240,000
Inert Waste	60,000

Schedule 2 - Site plan

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Schedule 3 - List of permitted wastes

01	Wastes resulting from exploration, mining, quarrying and physical and chemical treatment of minerals
<i>0101</i>	<i>wastes from mineral excavation</i>
01 01 01	wastes from mineral metalliferous excavation
01 01 02	wastes from mineral non-metalliferous excavation
<i>0103</i>	<i>wastes from physical and chemical processing of metalliferous minerals</i>
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
<i>0104</i>	<i>wastes from physical and chemical processing of non-metalliferous minerals</i>
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	waste from stone cutting and sawing other than those mentioned in 01 04 07
<i>0105</i>	<i>drilling muds and other drilling wastes</i>
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	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing
<i>0201</i>	<i>wastes from agriculture horticulture, aquaculture, forestry, hunting and fishing</i>
02 01 01	sludges from washing and cleaning
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 020108
02 01 10	waste metal
<i>0202</i>	<i>wastes from the preparation and processing of meat, fish and other foods of animal origin</i>
02 02 01	sludges from washing and cleaning
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
<i>0203</i>	<i>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</i>
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 form on-site effluent treatment
<i>0204</i>	<i>wastes from sugar processing</i>
02 04 01	soil from cleaning and washing beat
02 04 02	off-specification calcium carbonate
02 04 03	sludges from on-site effluent treatment
<i>0205</i>	<i>wastes from the dairy products industry</i>
02 05 01	materials unsuitable for consumption or processing
02 05 02	sludges from on site effluent treatment
<i>0206</i>	<i>wastes from the baking and confectionery industry</i>
02 06 01	materials unsuitable for consumption and processing
02 06 02	wastes from preserving agents
02 06 03	sludges from on site effluent treatment
<i>0207</i>	<i>wastes from the production of alcoholic and non-alcoholic beverages (except tea, coffee and cocoa</i>
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
03	Wastes from wood processing and the production of panels and furniture, pulp, paper

and cardboard	
0301	<i>wastes from wood processing and the production of panels and furniture</i>
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
0303	<i>wastes from pulp, paper and cardboard production and processing</i>
03 03 01	waste bark and wood
03 03 02	green liquor sludge (from recovery of cooking liquor)
03 03 05	deinking 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 card 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
04 wastes from the leather fur and textile industries	
0402	<i>wastes from the textile industry</i>
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	
0501	<i>wastes from petroleum refining</i>
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
0506	<i>wastes from the pyrolytic treatment of coal</i>
05 06 04	wastes from cooling columns
0507	<i>wastes from natural gas purification and transportation</i>
05 07 02	wastes containing sulphur
06 Wastes from inorganic chemical processes	
0603	<i>wastes from the MFSU of salts and their solutions and metallic oxides</i>
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
0605	<i>sludges from on site effluent treatment</i>
06 05 03	sludges from on site effluent treatment other than those mentioned in 06 05 02
0606	<i>wastes from the MFSU of sulphur chemicals, sulphur chemicals processes and desulphurisation processes</i>
06 06 03	wastes containing sulphides other than those mentioned in 06 06 02
0609	<i>wastes from the MFSU of phosphorous chemicals and phosphorous chemical processes</i>
06 09 02	phosphorous slag
06 09 04	calcium-based reaction wastes other than those mentioned in 06 09 03
0611	<i>wastes from the manufacture of inorganic pigments and opacifiers</i>
06 11 01	calcium-based reaction waste from titanium dioxide production
0613	<i>wastes from inorganic processes not otherwise specified</i>
06 13 03	carbon black
07 WASTES FROM ORGANIC CHEMICAL PROCESSES	
0701	<i>Wastes from the manufacture supply and use (MFSU) of basic organic chemicals</i>
07 01 12	sludges from on site effluent treatment other than those mentioned in 07 01 11
07 02	<i>wastes from the MFSU of plastics, synthetic rubber and man-made fibres</i>
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
0703	<i>wastes from the MFSU of organic dyes and pigments (except 06 11)</i>
07 03 12	sludges from on site effluent treatment other than those mentioned in 07 02 11
0704	<i>wastes from the MFSU of organic plant protection products (except 020108 and 020109), wood preserving agents (except 03 02) and other biocides</i>

07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11
0705	<i>wastes from the MFSU of pharmaceuticals</i>
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
0706	<i>wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics</i>
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11
0707	<i>wastes from the MFSU of fine chemicals and chemical products not otherwise specified</i>
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11
08	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
0801	<i>wastes from the MFSU and removal of paint and varnish</i>
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	<i>wastes from MFSU of other coatings (including ceramic materials)</i>
08 02 01	waste coating powders
08 02 02	aqueous sludges containing ceramic materials
08 03	<i>wastes from MFSU of printing inks</i>
08 03 07	aqueous sludges containing ink
08 03 13	waste inks 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 04 13
0804	<i>wastes from MFSU of adhesives and sealants (including waterproofing products)</i>
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
09	WASTES FROM THE PHOTOGRAPHIC INDUSTRY
09 01	<i>wastes from the photographic industry</i>
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	WASTES FROM THERMAL PROCESSES
10 01	<i>wastes from power stations and other combustion plants (except 19)</i>
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	waste from cooling water treatment
10 02	<i>wastes from the iron and steel industry</i>

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	<i>wastes from aluminium thermal metallurgy</i>
10 03 02	anode scraps
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 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 29
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	<i>wastes from lead thermal metallurgy</i>
10 04 10	wastes from cooling-water treatment other than those mentioned in 10 04 09
10 05	<i>wastes from zinc thermal metallurgy</i>
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	<i>wastes from copper thermal metallurgy</i>
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	<i>wastes from silver, gold and platinum thermal metallurgy</i>
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	<i>wastes from other non-ferrous thermal metallurgy</i>
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	glue-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	<i>wastes from casting of ferrous pieces</i>
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	<i>wastes from casting of non-ferrous pieces</i>
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	<i>wastes from manufacture of glass and glass products</i>
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
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	<i>wastes from manufacture of ceramic goods, bricks, tiles and construction products</i>
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	<i>wastes from manufacture of cement, lime and plaster and articles and products made</i>
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
11	WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO METALLURGY
11 01	<i>wastes from chemical surface treatment and coating of metals and other materials</i>
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	<i>wastes from non-ferrous hydrometallurgical processes</i>
11 02 03	wastes from the production of anodes for aqueous electrolytical processes
11 02 06	wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05
11 05	<i>wastes from hot galvanising processes</i>
11 05 01	hard zinc
11 05 02	zinc ash
12	WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS

12 01	<i>wastes from shaping and physical and mechanical surface treatment of metals and</i>
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 10 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	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01	<i>packaging (including separately collected municipal packaging waste)</i>
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	<i>absorbents, filter materials, wiping cloths and protective clothing</i>
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 01	<i>end-of-life vehicles from different means of transport [including off-road machinery]</i>
16 01 03	end-of-life tyres
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
16 01 16	tanks for liquified 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	<i>wastes from electrical and electronic equipment</i>
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	<i>off-specification batches and unused products</i>
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	<i>gases in pressure containers and discarded chemicals</i>
16 05 05	gases in pressure containers other than those mentioned in 16 05 04
16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
16 06	<i>batteries and accumulators</i>
16 06 04	alkaline batteries (except 16 06 03)
16 06 05	other batteries and accumulators
16 08	<i>spent catalysts</i>
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	<i>waste linings and refractories</i>
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	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	<i>concrete, bricks, tiles and ceramics</i>
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	<i>wood, glass and plastic</i>
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 03	<i>bituminous mixtures, coal tar and tarred products</i>
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 04	<i>metals (including their alloys)</i>
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	<i>soil (including excavated soil from contaminated sites), stones and dredging spoil</i>
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	<i>insulation materials and asbestos-containing construction materials</i>
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 08	<i>gypsum-based construction material</i>
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09	<i>other construction and demolition wastes</i>
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
18	WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH
18 01	<i>wastes from natal care, diagnosis, treatment or prevention of disease in humans</i>
18 01 09	medicines other than those mentioned in 18 01 08
1802	<i>wastes from research, diagnosis, treatment or prevention of disease in animals</i>
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 PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE
19 01	<i>wastes from incineration or pyrolysis of waste</i>
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	<i>wastes from physico/chemical treatments of waste (including dechromatation,</i>
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	<i>stabilised/solidified wastes</i>
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	<i>vitrified waste and wastes from vitrification</i>
19 04 01	vitrified waste
19 05	<i>wastes from aerobic treatment of solid wastes</i>
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	<i>wastes from anaerobic treatment of waste</i>
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
19 08	<i>wastes from waste water treatment plants not otherwise specified</i>
19 08 01	screenings
19 08 02	waste from desanding
19 08 05	sludges from treatment of urban waste water
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	<i>wastes from the preparation of water intended for human consumption or water for industrial use</i>
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	<i>wastes from shredding of metal containing wastes</i>
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	<i>wastes from oil regeneration</i>
19 11 06	sludges from on site effluent treatment other than those mentioned in 19 11 05
19 12	<i>wastes from the mechanical treatment of waste (for example sorting, crushing)</i>
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
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	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01	<i>separately collected fractions (except 15 01)</i>
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	<i>garden and park wastes (including cemetery waste)</i>
20 02 01	biodegradable waste
20 02 02	soil and stones
20 02 03	other non-biodegradable wastes
20 03	<i>other municipal wastes</i>
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

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 (minimum 2 per cell)	3m above the landfill base unless otherwise agreed in writing with the Agency	monthly	In accordance with EA “Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water”.
Leachate extraction points (minimum 1 per cell)	3m above the landfill base unless otherwise agreed in writing with the Agency	monthly	In accordance with EA “Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water”.

Table S4.2 Point Source Emissions to Air- emission limits and monitoring requirements

Emission point Ref. & Location	Parameter	Source	Limit (including unit)	Monitoring Frequency	Monitoring Standard or Method
Permanent or Temporary Gas Flares*	Oxides of Nitrogen	Landfill Gas Flares	150 mg/m ³	Annually	ISO 10849
	CO	Landfill Gas Flares	50 mg/m ³	Annually	ISO 12039
	Total VOCs	Landfill Gas Flares	10 mg/m ³	Annually	BS EN 12619 or BS EN 13526
	NMVOCs	Landfill Gas Flares	5 mg/m ³	Annually	BS EN 13649
Landfill Gas Engines	Oxides of Nitrogen	Gas utilisation plant	500 mg/m ³	Annually	ISO 10849: 1996
	CO	Gas utilisation plant	1400 mg/m ³	Annually	ISO 12039: 2001
	Total VOCs	Gas utilisation plant	1000 mg/m ³	Annually	BS EN 12619: 1999 or BS EN 13526: 2002
	NMVOCs	Gas utilisation plant	75mg/m ³	Annually	BS EN 13649: 2002

* Temporary gas flares must be monitored where they will be used for 10% of the time or more over a year.

Table S4.3 Point Source Emissions to Water (Other than Sewer) – emission limits and monitoring requirements

Emission point Ref. & Location	Parameter	Limit (incl unit)	Monitoring Frequency	Monitoring Standard or Method
Discharge from lagoon: SWD	Volume	650 m ³ /day	Monthly	
	Rate	18 l/sec	Monthly	
	Suspended Solids	50 mg/l	Monthly	ISBN: AB1234
	Oil or grease	Visible	Monthly	
	pH	>6 and <9 pH units	Monthly	ISO XY5678
	Ammoniacal-N	0.39mg/l	Quarterly	
	Arsenic	0.008mg/l	Quarterly	
	Cadmium	0.005mg/l	Quarterly	
	Chloride	250mg/l	Quarterly	
	Cyanide	0.03mg/l	Quarterly	
	Mercury	0.0005mg/l	Quarterly	
	Nickel	0.005mg/l	Quarterly	
	Selenium	0.020mg/l	Quarterly	

Table S4.4 Trigger levels for emissions into groundwater and monitoring requirements

Monitoring point reference	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method
BH01, BH02, BH03, BH04, BH06, BH07, BH08, BH12 or as agreed following completion of pre- operational condition S1.4A 5	<i>Non-listed and List II substances:</i>		Quarterly	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
	Ammoniacal	1mg/l		
	Nitrogen			
	Potassium	12mg/l		
	Arsenic	0.01mg/l		
	Nickel	0.02mg/l		
	Magnesium	50mg/l		
	<i>List I substances:</i>			
	Cadmium	5µg/l		
	Mercury	0.5µg/l		

Table S4.5 Landfill gas in external monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (including units)	Monitoring frequency
All landfill gas monitoring points identified on plan ESID 8	Methane	1%v/v above agreed background concentrations	monthly, increasing to weekly for those boreholes adjacent to residential properties once waste has been placed in the cell closest to those properties
	Carbon Dioxide	1.5 %v/v above agreed background concentrations	
	Oxygen	no limit	
	Atmospheric pressure	no limit	
	Differential Pressure	no limit	
	Temperature	no limit	
	Meteorological data	no limit	

Table S4.6 Landfill gas from capped surfaces - limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (Including unit)	Monitoring frequency	Monitoring Standard or method
Surface of landfill	Methane	1000ppm	4 monthly	FID survey
Permanently capped zone	Average Methane flux	0.001 mg/m ² /second, unless otherwise agreed with the Agency in writing	Annually	Flux Box or, Flame ionisation detector (with flux trap), or as otherwise agreed in writing by the Agency
Temporarily capped zone	Average Methane flux	0.1 mg/m ² /second, unless otherwise agreed with the Agency in writing	Annually	Flux Box or, Flame ionisation detector (with flux trap), or as otherwise agreed in writing by the Agency

Table S4.7 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
In-waste gas monitoring wells	Methane	Quarterly	Units: % by volume Accuracy: 0.1% by volume	None
In-waste gas monitoring wells	Carbon dioxide	Quarterly	Units: % by volume Accuracy: 0.1% by volume	None
In-waste gas monitoring wells	Oxygen	Quarterly	Units: % by volume Accuracy: 0.1% by volume	Where the concentration exceeds 2% with a corresponding 5% on the main gas line and inlet into the flare, an assessment of air ingress into the system shall be undertaken.
In-waste gas monitoring wells	Atmospheric pressure	Quarterly	Units: mbar Accuracy: 0.5mbar	None
In-waste gas monitoring wells	Differential pressure	Quarterly	Units: mbar or Pa Accuracy: 0.5mbar or 50Pa	None
In-waste gas monitoring wells	Meteorological conditions	Quarterly	N/A	Including wind direction and strength, cloud cover, and presence or absence of precipitation.
In-waste gas monitoring wells	Temperature	Quarterly	Units: °C Accuracy: +/- 0.5°C	Where the temperature exceeds 50°C an assessment shall be undertaken to investigate the risk of fire.
In-waste gas monitoring wells	Carbon monoxide	Quarterly	Units: ppm v/v Accuracy: 20ppm v/v	Where the concentration exceeds 20ppm an assessment shall be undertaken to investigate the risk of fire.
In-waste gas monitoring wells	Trace gas analysis	Annually	Units: mg/m ³ Accuracy: 0.01mg/m ³	None

Table S4.8 Leachate - other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
All leachate monitoring and extraction wells	Leachate level	Monthly	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
All leachate extraction wells	pH Electrical Conductivity Ammoniacal Nitrogen Arsenic Cadmium Chloride Cyanide (total) Mercury Nickel Selenium	Quarterly	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
All leachate extraction wells	Total Oxidised Nitrogen Total Organic Carbon Biochemical Oxygen Demand Chemical Oxygen Demand Barium Boron Calcium Chromium Copper Fluoride Iron Lead Magnesium Manganese Sodium Phenols Potassium Sulphate Zinc	6 monthly	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
All leachate monitoring and extraction wells	Depth to base of monitoring well List 1 GCSM screen	Annually	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
All leachate extraction wells			
Total for site	Volume added Volume removed		

Table S4.9 Surface Water other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
Vigo Brook: SWA(U), SWA(M), SWA(D) as shown on drawing ESID 11 Un-named Watercourse: SWB(U), SWB(D) as shown on drawing ESID 11	pH Electrical Conductivity Total Suspended Solids Total Oxidised Nitrogen Total Organic Carbon Biochemical Oxygen Demand Chemical Oxygen Demand Temperature Ammoniacal-Nitrogen Chloride	Monthly	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
Vigo Brook: SWA(U), SWA(M), SWA(D) as shown on drawing ESID 11 Un-named Watercourse: SWB(U), SWB(D) as shown on drawing ESID 11	Arsenic Boron Cadmium Calcium Chromium Copper Cyanide (total) Iron Lead Magnesium Manganese Mercury Nickel Phenols Potassium Selenium Sodium Sulphate Total Petroleum Hydrocarbons Zinc	Quarterly	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
Vigo Brook SWA(U), SWA(M), SWA(D)	Diuron Dichloromethane Trichloroethylene	Quarterly	
Discharge from groundwater drainage system SWC	Ammoniacal Nitrogen Chloride Total Petroleum Hydrocarbons	weekly, unless otherwise agreed in writing with the Agency	
Discharge from groundwater drainage system SWC	Diuron Dichloromethane Trichloroethylene	quarterly, unless otherwise agreed in writing with the Agency.	

S4.10 Groundwater Other Monitoring Requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11, BH12 And any additional or replacement groundwater monitoring boreholes installed at the site.	Water level	Monthly	In accordance with EA "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water." (LFTGN02)
BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11, BH12 And any additional or replacement groundwater monitoring boreholes installed at the site.	pH Electrical Conductivity Total Oxidised Nitrogen Total Organic Carbon Biochemical Oxygen Demand Chemical Oxygen Demand Ammoniacal Nitrogen Arsenic Barium Boron Cadmium Calcium Chloride Chromium Copper Cyanide Fluoride Iron Lead Magnesium Manganese Mercury Nickel Sodium Phenols Potassium Selenium Sulphate Zinc	Quarterly	
BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11, BH12 And any additional or replacement groundwater monitoring boreholes installed at the site.	Any other list I substance that has been detected in the annual leachate screen	annually once detected in leachate	
BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11, BH12	base of monitoring point	annually	

S4.10 Groundwater Other Monitoring Requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
And any additional or replacement groundwater monitoring boreholes installed at the site.			

Table S4.11 Landfill gas in ambient air - limits and monitoring requirements

Monitoring point Ref. /Description	Parameter	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Installation boundary	Methane in ambient air	10 ppmv		Quarterly	Flame Ionisation Detector

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 3.6.1	monitoring points as shown on drawing ESID 7	Every 3 months	3 months from first receipt of waste
Emissions to air Parameters as required by condition 3.6.1	Landfill gas flares and engines	Every 12 months	12 months from installation of flare or engine
Emissions to water Parameters as required by condition 3.6.1	SWD and SWC	Every 3 months	21/10/2006
Groundwater Parameters as required by condition 3.6.1	BH01, BH02, BH03, BHJ04, BH06, BH07, BH08, BH12 and any others to be monitored in accordance with table S4.5 of this permit or as agreed following completion of pre-operational condition S1.4B (2)	Every 3 Months	21/10/2006
Ambient air monitoring Parameters as required by condition 3.6.1	Installation boundary	Every 12 months	12 months from first receipt of waste
Landfill gas surface emissions Parameters as required by condition 3.6.1	Capped and temporarily capped areas	Every 12 months	12 months from the installation of temporary or permanent caps
Landfill gas lateral migration Parameters as required by condition 3.6.1	Landfill gas boreholes shown on drawing ESID 8	Every 3 months	3 months from first receipt of waste
Other Landfill gas monitoring Parameters as required by condition 3.6.1 except trace gas analysis	in waste gas monitoring wells	Every 3 months	3 months from installation of wells
	in waste gas monitoring wells	Every 12 months	12 months from installation of wells
Other leachate monitoring leachate levels list 1 screen	monitoring and extraction wells	Every 3 months	3 months from first receipt of waste
	extraction wells	Every 12 months	12 months from first receipt of waste
all other parameters required by condition 3.6.1	extraction wells	every 6 months	6 months from first receipt of waste
Other surface water monitoring Parameters as required by condition 3.6.1	SWA(U), SWA(M), SWA(D), SWB(U) SWB(D), SWC	Every 3 months	21/10/2006

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
Controlled water	Reporting format to be agreed in writing with the Agency	
Surface water	Reporting format to be agreed in writing with the Agency	
Groundwater	Reporting format to be agreed in writing with the Agency	
Landfill gas	Reporting format to be agreed in writing with the Agency	
Waste summary	Reporting format to be agreed in writing with the Agency	
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Agency	

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	NP3135SL
Name of Operator	
Location of Installation	Highfields South Landfill, Lichfield Road, Walsall
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	

(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

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 Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in Section 108(4) of that Act.

"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 or background concentration limit.

"Groundwater Regulations" means the Groundwater Regulations SI 1998 No. 2746, and words and expressions used in this Permit which are also used in the Regulations shall have the same meanings as in those Regulations.

"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 (England and Wales) Regulations SI 2002 No. 1559, 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 Agency 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 (England and Wales) Regulations SI 2000 No.1973 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 Environmental Protection Act 1990

"*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.

"*Technically competent management*" and "*technical competence*" shall have the meanings given to them in the Environmental Protection Act 1990.

"*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