



ENVIRONMENT
AGENCY

Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Cwmrhydyceirw Quarry

SI Green UK Limited

Vicarage Road
Cwmrhydyceirw
Morrison
Swansea
SA6 6DR

Permit number

TP3835LV

Cwmrhydyceirw Quarry Landfill

Permit Number TP3835LV

Introductory note

This introductory note does not form a part of the permit

A non-technical summary of the Installation is contained within attachment B0.2 of Section 6.0 of the permit application and attachments of the Cwmrhydyceirw Quarry Landfill PPC Application dated 19th January 2006. The application was made to operate a non-hazardous landfill. The main features of the installation are as follows.

Cwmrhydyceirw Quarry Landfill is a former Pennant sandstone quarry located in a residential area of Morriston, Swansea at National Grid Reference SS 665 993. The landfill is accessed from a site road off Vicarage Road which runs south east of the landfill. Land to the north, east and south east is residential with paddocks and open space between the landfill and the property to the north and an industrial area comprising a ready mix concrete plant between the landfill and the property to the east. The Cardiff to Fishguard railway line runs in a cutting and tunnel adjacent to and south of the site. There is an open space including a golf course and agricultural land to the south and west of the site. The quarry has an average depth of 30 metres and has a roughly square geometry and covers an area of approximately 5 hectares.

The main surface water drainage channel in the area is the River Tawe approximately 1km east of the landfill. A minor tributary of the Tawe is the Cwmrhydyceirw Stream which lies approximately 30 metres from the landfill at its closest point on the southern side and flows eastwards to the Tawe. There are a number of smaller tributaries and drainage channels in the vicinity of the quarry. Located within the quarry is a dewatering lagoon occupying an area of approximately 765 m². This receives surface water runoff from the surrounding quarry and higher ground and is maintained by a pump which pumps the water to a storage tank and then to the local foul sewer system.

The site lies within a minor aquifer but is not within a source protection zone (SPZ). The base of the quarry is below the normal ground water rest levels and it is necessary to continue to artificially lower the ground water levels to maintain the integrity of the proposed basal and sidewall liners. It is proposed to cease pumping ground water after a period of around thirty years, subject to the composition of the landfill leachate at this time and allow ground water levels to rebound to normal rest levels.

The site is situated 4.6 kilometres from a designated European habitats site known as Crymlyn bog. The bog is designated as a Special Area of Conservation (SAC) due it being a transition mire and quaking bog and the presence of calcareous fens (*Cladium mariscus* and species of *caricion davalliana*). It is also classified as a Ramsar site for the protection of bird species.

The site has operated previously as a disposal facility under a waste management licence from July 1985 to around December 1991 and around 90,000 tonnes of commercial, domestic and industrial waste were disposed at the quarry between these dates. The current total void capacity in the quarry at time of permit issue is approximately 810,000 cubic metres and the operator intends to fill the site with non hazardous commercial and industrial waste over a period of approximately six years at a waste input rate of 125,000 tonnes per annum. Domestic and putrescible waste are excluded which will reduce the risk of odour impacts to the surrounding community.

To comply with the Landfill Regulations and to reduce the risk of migration of pollutants the proposed installation will be based on the principle of containment with an engineered impermeable base, sidewall liner and impermeable cap. A 0.5 metre thick groundwater drainage blanket beneath the impermeable basal liner will be installed from which ground water can be extracted by means of sidewall riser pipework to ensure that groundwater levels are adequately controlled. Gas and ground water monitoring infrastructure will be installed around the site perimeter to confirm the effectiveness of the engineered containment systems. The quarry has an internal and varied complex topography with a mixture of benched areas, steep slopes and a vertical face of around 35 metres depth along the northern edge of the quarry. The stability of the steep wall liner along the northern quarry face relies on the use of waste materials of a specified stiffness to support the impermeable sidewall clay liner. The existing waste mass will be excavated and re deposited in the new landfill cells. Any unsuitable waste materials will be identified and removed.

There is one listed activity carried out at the site which is the disposal of waste by landfilling. The directly associated activities are the management of leachate and the extraction and combustion of landfill gas generated at the landfill. Leachate generated at the site is extracted and discharged to foul sewer and if necessary any excessive leachate volumes during winter months etc. would also be tankered off site to suitable treatment facilities. Provision is made for the storage of leachate within enclosed storage tanks within a containment bunded area. Landfill gas generated at the site will be burnt off through an enclosed flare if sufficient quantities are generated.

Hydrogeological, Landfill Gas, Stability and Nuisance Risk Assessments have been completed in support of the application which justify both the design of the site and the operational controls.

Status log of the permit		
Detail	Date	Response Date
Application TP3835LV	Duly made 15/02/06	
Response to requests for information	Request dated 16/08/06	Response dated 29/09/06
	Request dated 16/11/06	Response dated 14/12/06
	Request dated 18/12/06	Response dated 19/01/07 & 26/01/07
	Request dated 13/02/07	Response dated 28/03/07
	Request dated 09/03/07	Response dated 23/04/07
	Request dated 18/07/07	Response dated 24/08/07
	Request dated 17/12/07	Response dated 22/02/08
	Request dated 09/04/08 (Email)	Response dated 18/04/08
Request to extend determination	Request dated 25/05/06	Request accepted 08/06/06
	Request dated 05/12/06	Request accepted 14/12/06
	Request dated 15/11/07	Request accepted 27/11/07
	Request dated 14/03/08	Request accepted 28/03/08 (Email)
	Request dated 23/06/08	Request accepted 01/07/08
	Request dated 15/09/08	Request accepted 17/09/08 (Email)
	Request dated 02/10/08	Request accepted 06/10/08 (Email)
	Applicant request dated 10/10/08	Request accepted 13/10/08 (Email)
Applicant request dated 26/11/08	Request accepted 27/11/08 (Email)	
Permit determined	Date of Issue 09/12/08	

Superseded or partially superseded licences/authorisations/consents relating to this installation

Holder	Reference Number	Date of Issue	Fully or Partially Superseded
SI Green UK Limited	EAWML 34048	05/07/1985	Fully superseded
SI Green UK Limited	BP0034701	06/04/1987	Fully superseded

End of Introductory Note

Permit

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

Permit

Permit number

TP3835LV

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 **SI Green UK Limited** ("the operator"),

whose registered office is

**c/o Harris Bassett
5 Llys Felin Newydd
Phoenix Way
Enterprise Park
Swansea
West Glamorgan
SA7 9FG**

Company registration number **02777304**

to operate an installation at

**Cwmrhydyceirw Quarry
Vicarage Road
Cwmrhydyceirw
Morrison
Swansea
SA6 6DR**

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

Signed

Date

	9 th December 2008
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Mel Bischer

Team Leader National Permitting Service

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 financial provision for meeting the obligations under this permit set out in the agreement made between the operator and the Agency dated 09/12/08 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 Agency.
- 1.3.2 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.
- 2.3.2 Unless otherwise agreed in writing with the Agency, the excavation and redeposit of existing waste shall be completed within 3 years of the date of issue of this permit.
- 2.3.3 Subject to the results of the monitoring required under pre operational condition 2.6.1 and unless otherwise agreed in writing with the Agency when filling operations in Phase 3 reach lift 8 at a level of 24 metres above the landfill base, filling operations will be moved into Phase 4 and filling of the remaining top four lifts in Phase 3 will commence following completion of filling in Phases 4 and 5.

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 by the date specified in that table unless otherwise agreed in writing by the Agency.
- 2.5.2 Except in the case of an improvement which consists only of a submission to the Agency, the operator shall notify the Agency within 14 days of completion of each improvement.

2.6 Pre-operational conditions

- 2.6.1 The operations specified in schedule 1 table S1.4 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, and
- (k) where they are wastes with a code beginning with 07 05 and 16 03 they shall exclude waste medicinal products and pharmaceutically active waste materials arising from their manufacture

2.8.5 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.

2.8.6 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.

2.8.7 The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.

2.8.8 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on drawing ESID 4G (drawing reference SIG/CW/08-05/12364).

2.8.9 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in schedule 1 table S1.5.

2.8.10 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 schedule 4 table S4.1 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.

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 schedule 4 tables S4.2, S4.3 and S4.4.
- 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 schedule 4 Table S4.5 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 limits for landfill gas arising from the installation set out in schedule 4, table S4.6 shall not be exceeded.

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 the monitoring and any other actions specified in the following tables in schedule 4 to this permit:
- (a) Leachate specified in tables S4.1 and S4.9;
 - (b) Point source emissions specified in tables S4.2, S4.3 and S4.4;
 - (c) Groundwater specified in tables S4.5 and S4.11;
 - (d) Landfill gas specified in tables S4.6, S4.7, S4.8 and S4.12; and
 - (e) Surface water specified in table S4.10.
- 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) sub-surface landfill gas monitoring;
 - (iii) leachate levels, quality and quantities;
 - (iv) landfill gas generation and collection;
 - (v) waste types and quantities;
 - (vi) the specification and as built drawings of the basal, sidewall and capping engineering systems.

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

4.1.3 All records required to be held by this permit shall be held on site and shall be available for inspection by the Agency at any reasonable time. Records shall be available for inspection on site on the next working day following a request by Agency.

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 in relation to this installation and any agreed amendments thereto;
- (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 annual production/treatment set out in schedule 5 table S5.2;
- (e) details of any contamination or decontamination of the site which has occurred;

- (f) the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;
 - (g) 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;
 - (h) 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;
 - (i) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey.
- 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 schedule 5 Table S5.1;
 - (b) for the reporting periods specified in schedule 5 Table S5.1 and using the forms specified in schedule 5 Table S5.4; 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 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency
- 4.2.6 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 implementation of 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; and
 - (b) 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	Storage and transfer of leachate	Leachate arising from the landfill.
Discharges to foul sewers	Discharge of leachate /contaminated water from the landfill	Leachate / contaminated water arising from the landfill.
Landfill gas flaring	Flaring of landfill gas for disposal in an appliance with a capacity up to 1,000 m ³ .hr ⁻¹ .	From the collection of the gas from the waste mass through to the release of combustion products
Discharges to controlled waters	Discharges of site drainage from the landfill.	From surface water management system to point of entry to controlled waters.
Fuel storage	Storage of fuel for operation of plant and equipment	Fuel storage tank

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	The response to questions B2.1, B2.2, B2.3 and B2.11 given in the part B application form for landfill excluding sections B2.1.5, B2.1.8, B2.2.16, B2.2.17, B2.2.29 to B2.2.34, B2.2.37, B2.2.38, B2.2.41, B2.2.42, B2.2.46, B2.2.47, B2.2.48, B2.2.50, B2.2.57 B2.2.59, B2.2.60, B2.2.67, B2.2.68, B2.2.71, B2.2.73, B2.2.74, B2.2.76, B2.2.77 and B2.2.79 to B2.2.81.	20/01/06
	Section 4 .2 of the Landfill Gas Risk Assessment given in Section 3 of the Application.	20/01/06
	Appendix ESID3 of the ESID Report dated January 2006	20/01/06
	The response to questions 2, 3, 4, 7, 10, 11, 18, 20, 24, 25, 27 and 31 of the Schedule 4 notice dated 16 August 2006 presented in report entitled 'The Response To The Schedule 4 Notice By The Environment Agency On 16 th August 2006' Ref No: SIG/CW/GT/1392/01; Dated September 2006	29/09/06
	The response to questions 3 and 8 of the Schedule 4 Notice dated 16 November 2006 in the letter dated 14 December 2006 from MJCA.	22/12/06
	Annex 4 entitled 'A copy of the Noise Management Plan for Landfilling Operations at Cwmrhydyceirw Quarry' (Report no. RO6.4699/8/NMP/AG Dated 14/12/06) to the letter dated 14 December 2006 from MJCA made in response to the Schedule 4 Notice dated 16 November 2006.	22/12/06
	Paragraphs 2 & 3 of Point 3, paragraphs 1, 2 & 3 of Point 4 and Annex B of letter dated 23 April 2007 from MJCA made in response to the Schedule 4 Notice dated 9 March 2007.	24/04/07
	Paragraphs 12, 13 and 19 and Drawing SIG/CW/08-07/13667 (Figure 2) of letter dated 24 August 2007 from MJCA made in response to the Schedule 4 Notice dated 18 July 2007.	27/08/07
	Letter dated 20 November 2008 from MJCA with attached plans SIG/CW/08-05/12371revC and SIG/CW/08-05/12375/revB.	21/11/08

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1	The operator shall undertake an assessment of the impact on the water environment from current emissions of effluent to sewer. The operator shall use the methodology prescribed in the Agency's guidance 'Environmental Assessment and Appraisal of Best Available Techniques' (Ref. IPPC H1) in making this assessment. The Operator shall identify substances present in the effluent that are considered significant (as defined within H1), and submit proposed emission limit values for these substances in the form of a report. Flow rate must also be considered as part of this assessment. The report shall also include an effluent monitoring plan for any key substances identified and an action plan to reduce releases of those substances that are considered significant as part of the H1 Assessment. The operator shall implement any improvements or measures as agreed in writing with the Agency.	09/06/09
2	The Operator shall submit to the Agency in writing written procedures which demonstrate proposals for compliance with Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of wastes at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.	09/06/09
3a	<p>The operator shall submit written proposals to the Agency for approval for the monitoring of actual dust deposition rates and PM10 particulate concentrations in the vicinity of the site. The proposals shall include but not be limited to:</p> <ul style="list-style-type: none"> • The establishment of appropriate and fixed monitoring locations in the vicinity of the site; • A detailed options appraisal of applicable monitoring techniques for use in emissions assessment specifying the selected monitoring technique to be used at the installation; • Set monitoring frequencies including appropriate justification to cover a minimum twelve month period once the site is operational. <p>The proposals shall be prepared in accordance with the relevant standards contained within Agency guidance documents:</p> <ul style="list-style-type: none"> • Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC) • Monitoring of particulate matter in ambient air around waste facilities Technical Guidance Document (Monitoring) M17 	09/12/09
3b	<p>On completion of the monitoring required in 3a above, the operator shall submit a revised Dust Assessment to the Agency for approval. This shall include but not be limited to:</p> <ul style="list-style-type: none"> • Quantification of emissions from the site; • A dispersion model based on actual emissions from the site; • An assessment of the effectiveness of control measures including a detailed appraisal of alternative control measures; • Recommendations, and timetable for implementation, for the establishment of alternative control measures and on going monitoring of dust and particulates emissions at the installation where necessary. 	Within 3 months of completion of monitoring
3c	On approval in writing from the Agency on the Dust Assessment required in 3b above, the operator shall revise the Dust and Particulates Management Plan for the site to include recommendations made in the assessment together with any additional measures notified by the Agency and this shall be incorporated into the normal operating procedures for the installation	Within one week of written approval from the Agency

4	<p>The operator shall review background groundwater monitoring data and submit to the Agency for approval proposed control and trigger levels for key determinands for groundwater quality on an individual monitoring point basis.</p> <p>Derivation of control and trigger levels shall be undertaken in accordance with Agency publication "Hydrogeological Risk Assessments for Landfills and the derivation of groundwater control and trigger levels" (LFTGN01) and good statistical practice and shall include assessment for and removal of outliers in the data sets and the use of graphical time / concentration charts.</p>	Within 6 months of completion of the excavation and redeposit of waste (that existed in the landfill prior to permit issue)
5	<p>The operator shall review background landfill gas monitoring data and submit to the Agency for approval proposed emission limits for methane and carbon dioxide on an individual monitoring point basis.</p> <p>Derivation of emission limits shall be undertaken in accordance with Agency publication "Guidance on the management of Landfill Gas (LFTGN03). Any compliance levels above 1% methane and 1.5% Carbon Dioxide must be fully justified and agreed in writing by the Agency.</p>	Within 6 months of completion of the excavation and redeposit of waste (that existed in the landfill prior to permit issue)

Table S1.4 Pre-operational measures for future development

Reference	Operation	Pre-operational Measures
Section A - Site investigation with respect to the existing waste at the site		
A1	The commencement of the site investigation	<p>The operator shall submit to the Agency fully justified written proposals for the site investigation with respect to the existing waste at the site describing in detail the sampling, testing and monitoring procedures to be applied to determine the characteristics of the existing waste at the site. Procedures shall be designed to allow safe detection of sampling and disturbance of wastes, including hazardous wastes that may be present including asbestos, as per HSE requirements.</p> <p>The site investigation shall be designed to provide data on which the risk assessments and management procedures with respect to landfill gas, leachate, dirt and mud, litter and wind blown material, birds, vermin and insects and odour can be reviewed as necessary. Geotechnical testing of the existing waste at the site is the subject of pre-operational condition F1.</p> <p>The operator shall give the Agency at least ten working days notice of the intended start date of the site investigation.</p>
A2	Following the completion of the site investigation	The operator shall submit to the Agency a factual report in which the results of the site investigation are presented.
<p>Note: The site investigation with respect to the existing waste at the site shall not commence until the proposals for the site investigation have been approved by the Agency</p>		
Section B – Meteorological monitoring		
B1	The review of the risk assessments listed in Section C of this table	The operator shall obtain and provide to the Agency six months site specific meteorological data. The data shall include rainfall, temperature, atmospheric pressure, wind direction and wind strength.

Table S1.4 Pre-operational measures for future development**Section C – Review as necessary of the risk assessments**

C1	The excavation of the existing waste at the site	<p>Hydrogeological risk assessment</p> <p>The results of the site investigation carried out under pre-operational condition A1 and the meteorological data collected under pre-operational condition B1 shall be compared with the input data used in the hydrogeological risk assessment. A report shall be submitted to the Agency in which the results of the comparison are presented.</p> <p>Where the results of the site investigation are not consistent with the hydrogeological risk assessment the risk assessment shall be reviewed to determine if the waste may be deposited in newly engineered areas of the site or if the waste has to be removed from the site to a suitable facility.</p>
C2	The excavation of the existing waste at the site	<p>Landfill gas risk assessment</p> <p>The results of the site investigation carried out under pre-operational condition A1 and the meteorological data collected under pre-operational condition B1 shall be compared with the input data used in the landfill gas risk assessment. A report shall be presented to the Agency in which the results of the comparison are presented.</p> <p>Where the results of the site investigation are not consistent with the landfill gas risk assessment the risk assessment shall be reviewed to determine if the waste may be deposited in newly engineered areas of the site or if the waste has to be removed from the site to a suitable facility.</p>
C3	The excavation of the existing waste at the site	<p>Nuisance risk assessment – Dirt and mud</p> <p>The results of the site investigation carried out under pre-operational condition A1 shall be used to review the nuisance risk assessment with respect to dirt and mud. A report shall be submitted to the Agency in which the results of the review are presented.</p>
C4	The excavation of the existing waste at the site	<p>Nuisance risk assessment – Particulate matter</p> <p>The results of the site investigation carried out under pre-operational condition A1 together with the results of the meteorological monitoring data collected under pre-operational condition B1 shall be used to review the nuisance risk assessment with respect to particulate matter. A report shall be submitted to the Agency in which the results of the review are presented.</p>
C5	The excavation of the existing waste at the site	<p>Nuisance risk assessment – Litter and wind blown materials</p> <p>The results of the site investigation carried out under pre-operational condition A1 together with the results of the meteorological monitoring data collected under pre-operational condition B1 shall be used to review the nuisance risk assessment with respect to litter and wind blown materials. A report shall be submitted to the Agency in which the results of the review are presented.</p>
C6	The excavation of the existing waste at the site	<p>Nuisance risk assessment – Birds, vermin and insects</p> <p>The results of the site investigation carried out under pre-operational condition A1 shall be used to review the nuisance risk assessment with respect to birds, vermin and insects. A report shall be submitted to the Agency in which the results of the review are presented.</p>
C7	The excavation of the existing waste at the site	<p>Nuisance risk assessment – Odour</p> <p>The results of the site investigation carried out under pre-operational condition A1 together with the results of the meteorological monitoring data collected under pre-operational condition B1 shall be used to review the nuisance risk assessment with respect to odour. A report</p>

Table S1.4 Pre-operational measures for future development

shall be submitted to the Agency in which the results of the review are presented.

Note: the excavation of the existing waste at the site shall not commence until the reviews of the risk assessments the subject of the pre-operational conditions in Section C have been approved by the Agency.

Section D – Review as necessary of the management plans

D1	The excavation of the existing waste at the site	Excavation and relocation of the existing waste Based on the results of the reviews of the risk assessments carried out under Section C the preliminary procedure for the excavation and relocation of the waste deposited at the site included with the permit application shall be reviewed and an updated procedure submitted to the Agency. The updated procedure shall present information with respect to the management of landfill gas, groundwater, surface water, leachate, dirt and mud, particulate matter, litter and wind blown materials, birds, vermin and insects and odour.
D2	The excavation of the existing waste at the site	Noise management plan A review of the noise management plan shall be submitted to the Agency. The review of the shall take account of the guidance provided in: <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC); and• H3 Horizontal Guidance for Noise – Part 1 Regulation and Permitting
D3	The commencement of the construction of the new landfill	Leachate management plan A leachate management plan with respect to the operation of the landfill shall be submitted to the Agency. The leachate management plan shall include procedures for the extraction, collection, storage and transfer of leachate and shall demonstrate that the system will have sufficient capacity to handle the maximum predicted volumes of leachate generation hence minimise the risk of leachate heads at the base of the landfill exceeding those detailed within permit condition 2.9.1 and Schedule 4, Table S4.1. The results of the review of the hydrogeological risk assessment carried out under pre-operational condition C1 shall be used as necessary in the preparation of the leachate management plan. The proposals shall take account of the guidance provided in Agency documents: <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC);• Guidance on the monitoring of landfill leachate, groundwater and surface water (LFTGN02); and• Technical Guidance Note – Monitoring of discharges to water and sewer (M18).

Table S1.4 Pre-operational measures for future development

D4	The commencement of the construction of the new landfill	Landfill gas management plan <p>The landfill gas management plan with respect to the operation of the landfill shall be revised and submitted to the Agency. The revised landfill gas management plan shall include procedures for the extraction and management of landfill gas to minimise the risk of unacceptable releases of landfill gas from the landfill. The revised landfill gas management plan shall give consideration to both permanent and temporary management systems. The results of the review of the landfill gas risk assessment carried out under pre-operational condition C2 shall be used as necessary in the preparation of the landfill gas management plan.</p> <p>The proposals shall take account of the guidance provided in Agency documents:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC); and• Guidance on the management of landfill gas (LFTGN03).
D5	The commencement of the construction of the new landfill	Surface water management plan <p>A surface water management plan with respect to the operation of the landfill shall be submitted to the Agency. The surface water management plan shall include procedures for the control, storage and discharge of surface water from the landfill and shall demonstrate that the system will have sufficient capacity to handle the maximum predicted volumes of surface water and if necessary extracted ground water from the base of the quarry. The meteorological monitoring data collected under pre-operational condition B1 shall be used in the preparation of the surface water management plan.</p> <p>The proposals shall take account of the guidance provided in Agency documents:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC).
D6	The commencement of the construction of the new landfill	Dirt and mud management plan <p>A dirt and mud management plan with respect to the operation of the landfill shall be submitted to the Agency. The dirt and mud management plan shall include procedures for the minimisation of nuisance and other negative environmental effects arising from such material. The results of the review of dust and mud risk assessment carried out under pre-operational condition C3 shall be used as necessary in the preparation of the dirt and mud management plan.</p> <p>The proposals shall be prepared in accordance with the relevant standards contained within Environment Agency guidance document:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC).
D7	The commencement of the construction of the new landfill	Particulate matter management plan <p>A particulate matter management plan with respect to the operation of the landfill shall be submitted to the Agency. The particulate matter management plan shall include procedures for the minimisation of nuisance and other negative environmental effects arising from such material. The results of the review of the particulate matter risk assessment carried out under pre-operational condition C4 shall be used as necessary in the preparation of the particulate matter management plan.</p>

Table S1.4 Pre-operational measures for future development

		<p>The proposals shall be prepared in accordance with the relevant standards contained within Agency guidance document:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC).
D8	The commencement of the construction of the new landfill	<p>Litter and wind blown material management plan</p> <p>A litter and windblown material management plan with respect to the operation of the landfill shall be submitted to the Agency. The litter and windblown material management plan shall include procedures for the minimisation of nuisance and other negative environmental effects arising from such material. The results of the review of the litter and wind blown materials risk assessment carried out under pre-operational condition C5 shall be used as necessary in the preparation of the litter and windblown material mud management plan.</p> <p>The proposals shall be prepared in accordance with the relevant standards contained within Agency guidance document:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC).
D9	The commencement of the construction of the new landfill	<p>Birds, vermin and insects</p> <p>A bird, vermin and insects management plan with respect to the operation of the landfill shall be submitted to the Agency. The bird, vermin and insect management plan shall include procedures for the minimisation of nuisance and other negative environmental effects associated with birds, vermin and insects. The results of the review of the birds, vermin and insects risk assessment carried out under pre-operational condition C6 shall be used as necessary in the preparation of the birds, vermin and insects management plan.</p> <p>The proposals shall be prepared in accordance with the relevant standards contained within Agency guidance document:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC).
D10	The commencement of the construction of the new landfill	<p>Odour</p> <p>An odour management plan with respect to the operation of the landfill shall be submitted to the Agency. The odour management plan shall include procedures for the minimisation of nuisance and other negative environmental effects arising from odour. The results of the review of the odour risk assessment carried out under pre-operational condition C7 shall be used as necessary in the preparation of the odour management plan.</p> <p>The proposals shall be prepared in accordance with the relevant standards contained within Agency guidance document:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC).

Notes: The excavation of the existing waste at the site shall not commence until the management plans in respect of the excavation and relocation of the existing waste (pre-operational condition D1) and noise (pre-operational condition D2) have been approved by the Agency.

The commencement of construction of the new landfill shall not commence until the management plans the subject of pre-operational conditions D3 to D10 inclusive have been approved by the Agency.

Table S1.4 Pre-operational measures for future development

Section E – Review of the monitoring plans

E1	The excavation of the existing waste at the site	Groundwater monitoring plan A groundwater monitoring plan shall be submitted to the Agency. The plan shall set out the methods and measures put in place to ensure that the monitoring of groundwater set out in Tables S4.5 and S4.11 is carried out to provide reliable results. These methods and measures shall include: <ul style="list-style-type: none">• Construction proposals including timescales for the installation of additional groundwater monitoring boreholes shown on drawing ESID7 (ref SIG/CW/08-05/12371revC dated 11/12/2006) and setting control and trigger levels;• Details of the preparation methods for collection of the sample (e.g. purging of groundwater borehole);• Details of the collection methods for sampling;• Details of the storage and transport methods of groundwater samples;• Details of the analytical methods for each determinand, including any relevant standard;• Details of the quality control sampling and methods; and• Revision of the contingency measures to include clear responsibilities for each action. The plan shall take account of the guidance provided in Agency documents: <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC); and• Guidance on the monitoring of landfill leachate, groundwater and surface water (LFTGN02);
E2	The excavation of the existing waste at the site	Leachate monitoring plan A leachate monitoring plan shall be submitted to the Agency. The plan shall set out the methods and measures put in place to ensure that the monitoring of leachate set out in Tables S4.1 and S4.9 is carried out to provide reliable results. These methods and measure shall include: <ul style="list-style-type: none">• Details of the preparation methods for collection of the sample;• Details of the collection methods for sampling;• Details of the storage and transport methods of leachate samples;• Details of the analytical methods for each determinand, including any relevant standard;• Details of the quality control sampling and methods; and• Revision of contingency measures to include clear responsibilities for each action. The proposals shall take account of the guidance provided in Agency documents: <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC);• Guidance on the monitoring of landfill leachate, groundwater and surface water (LFTGN02); and• Technical Guidance Note – Monitoring of discharges to water and sewer (M18).
E3	The excavation of the existing waste at the site	Surface water monitoring plan A surface water monitoring plan shall be submitted to the Agency. The plan shall set out the methods and measures put in place to ensure that the monitoring of surface water set out in Tables S4.3, S4.4 and S4.10 is carried out to provide reliable results. These methods and measures shall include: <ul style="list-style-type: none">• Details of the preparation methods for collection of the sample;

Table S1.4 Pre-operational measures for future development

		<ul style="list-style-type: none">• Details of the collection methods for sampling;• Details of the storage and transport methods of surface water samples;• Details of the analytical methods for each determinand, including any relevant standard;• Details of the quality control sampling and methods; and• Revision of contingency measures to include clear responsibilities for each action. <p>The plan shall take account of the guidance provided in Agency documents:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC);• Guidance on the monitoring of landfill leachate, groundwater and surface water (LFTGN02); and• Technical Guidance Note – Monitoring of discharges to water and sewer (M18).
E4	The excavation of the existing waste at the site	<p>Landfill gas monitoring plan</p> <p>A landfill gas monitoring plan shall be submitted to the Agency. The plan shall set out the methods and measures put in place to ensure that the monitoring of landfill gas set out in Tables S4.6, S4.7, S4.8 and S4.12 is carried out to provide reliable results. These methods and measures shall include:</p> <ul style="list-style-type: none">• Construction proposals including timescales for the installation of additional landfill gas monitoring boreholes shown on drawing ESID7 (ref SIG/CW/08-05/12371revC dated 11/12/2006) and setting compliance levels;• Details of the monitoring methods;• Details of the quality control sampling and methods; and <p>Revision of contingency measures to include clear responsibilities for each action.</p> <p>The plan shall take account of the guidance provided in Agency documents:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC); and• Agency Guidance on Landfill Gas (LFTGN03 to LFTGN08).
E5	The excavation of the existing waste at the site	<p>Noise monitoring plan</p> <p>Based on the results of the review of the noise management plan in accordance with pre operational condition D2 a revised noise monitoring plan shall be submitted to the Agency. The revised monitoring programme shall take account of the different construction and operational development phases of the landfill and ensure that the following sensitive receptor monitoring locations are included:-</p> <ul style="list-style-type: none">• Vicinity of rear gardens at properties at Enfield Close, Cwmrhydyceirw Road and Camelia Drive; and• Vicinity of roadway to the front of Railway Cottages. <p>The proposals shall be prepared in accordance with the relevant standards contained within Environment Agency guidance documents:</p> <ul style="list-style-type: none">• Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC); and• H3 Horizontal Guidance for Noise – Part 1 Regulation and Permitting
E6	The installation of the flare	<p>Ambient air and flare emissions monitoring</p> <p>An ambient air and flare emissions monitoring plan shall be submitted to the Agency. The plan shall set out the methods and measures put in place to ensure that the monitoring of ambient air and flare emissions</p>

Table S1.4 Pre-operational measures for future development

set out in Tables S4.2 and S4.12 is carried out to provide reliable results.

The proposals shall take account of the guidance provided in Agency documents:

- Sector Guidance Note S5.02 Guidance for the Landfill Sector Technical requirements of the Landfill Directive and Integrated Pollution Prevention and Control (IPPC); and
- Agency Guidance on Landfill Gas (LFTGN03 to LFTGN08).

Notes: The excavation of the existing waste at the site shall not commence until the monitoring plans the subject of pre-operational conditions E1 to E5 inclusive have been approved by the Agency.

The flare shall not be instated at the site until the monitoring plan the subject of pre-operational condition E6 has been approved by the Agency.

Section F – Construction of the first lift of the northern side wall liner

F1	The construction of the first lift of the northern side slope of the landfill	<p>Support Material Testing Specification Report</p> <p>The operator shall submit fully justified written proposals to the Agency describing in detail the sampling, testing, handling and monitoring procedures to be applied to determine the geotechnical properties of the existing wastes, imported wastes or other materials intended to support the first lift of the clay/HDPE lining system on the northern side slope.</p> <p>The geotechnical testing protocols shall be designed to simulate the geotechnical conditions likely to occur in the supporting buttress/liner/subgrade systems of the first lift as constructed in accordance with the approved design and with the load generated by subsequent liner and waste lifts.</p>
F2	The construction of the first lift of the northern side slope of the landfill	<p>Support Material Assessment Report</p> <p>The operator shall submit a fully justified written report to the Agency describing the results of the sampling, testing and monitoring programme carried out to identify the geotechnical properties of the waste fill/ materials intended to support the first lift of the clay/HDPE lining system on the northern side slope prior to construction of the first lift of the liner.</p> <p>The support material assessment report shall include the provision of test results for all parameters used in the Stability Risk Assessment at the frequency agreed in the Support Material Testing Specification Report the subject of pre-operational condition F1.</p>
F3	The construction of the first lift of the northern side slope of the landfill	<p>Stability Monitoring Plan (SMP)</p> <p>The operator shall submit written proposals to the Agency of the:</p> <ul style="list-style-type: none"> • methodology, techniques, equipment and frequency to monitor for deformations occurring in each lift of the clay/geomembrane elements of the lining system throughout the construction, operational and post closure periods of the landfill; • control levels for strain and deformation within the barrier elements as well as tolerable limits. The location of monitoring points at which control levels are applied should be presented together with an action plan in the event of a control level exceedance; • method of calculating and presenting shear and tensional strains in the lining elements, setting of tolerable values and comparison of deformation monitoring results with tolerable values; • reporting methods and frequency of reporting.
F4	The construction of the first lift of the northern side	<p>Source of Clay Lining Mineral and Testing Specification Report</p> <p>The operator shall submit written proposals to the Agency of the source of clay mineral to be used in the first lift of the lining of the northern side</p>

Table S1.4 Pre-operational measures for future development

	slope of the landfill	slope, the geotechnical parameters to be derived and the methods of geotechnical testing to be carried out together with details of the proposed test conditions. The Source of Clay Lining Mineral and Testing Specification Report shall include the provision of all parameters used in the Stability Risk Assessment and shall specify the frequency of testing.
F5	The construction of the first lift of the northern side slope of the landfill	<p>Clay Mineral Liner Assessment Report</p> <p>The operator shall submit a written report to the Agency of the geotechnical properties of the clay mineral to be used in the lining of the northern side slope. The report shall include the provision of test results for all parameters used in the Stability Risk Assessment at the frequency stated in the Source of Clay Lining Mineral and Testing Specification Report the subject of pre-operational condition F4.</p>
F6	The construction of the first lift of the northern side slope of the landfill	<p>Geomembrane Placement Method Statement</p> <p>The operator shall submit a written report to the Agency of the methodology and techniques for laying and checking the geomembrane over the first lift of the clay mineral liner.</p>
F7	The construction of the first lift of the northern side slope of the landfill	<p>Phased Construction Modelling Plan</p> <p>The operator shall submit fully justified written proposals to the Agency for confirmatory modelling of the northern side slope. The Phased Construction Modelling Plan shall include for two stages of numerical modelling.</p> <p>The first stage of confirmatory numerical modelling shall:</p> <ul style="list-style-type: none"> • model the whole northern side slope lining system to represent the detailed design and construction sequence for the northern side slope lining system using the known properties of the components of the side slope lining system, the sub-grade and the engineered buttressing fill; • include in the model stiffness properties for each liner lift and waste lift calculated for all materials based on the known properties of the components of the side slope lining system, the sub-grade and the engineered buttressing fill; • provide confirmation of the width of the engineered buttressing fill necessary and deformation tolerances; • confirm the allowable safe groundwater levels to prevent basal heave occurring during the progressive filling of the landfill that could occur if groundwater pumping were to temporarily cease. <p>The second stage of confirmatory numerical modelling shall:</p> <ul style="list-style-type: none"> • be a progressive developed confirmatory model in which the parameter values are assigned on a lift by lift basis based on the test results obtained for the materials used in the construction of each lift; • take account of geotechnical behaviour with time and the model will be populated with data as the site develops; • use the parameter values that were measured for each of the previous lifts and the measured values that are to be used in the next proposed lift; • use assumed parameter values in modelling future lifts.
F8	The construction of the first lift of the northern side slope of the landfill	<p>Phased Construction Modelling Report – Stage 1</p> <p>The operator shall submit a written report of the results of the first stage confirmatory numerical modelling the subject of pre-operational condition F6 to confirm the stability and integrity of the north side slope.</p>

Note: The construction of the first lift of the northern side wall liner shall not commence until the reports

Table S1.4 Pre-operational measures for future development

the subject of the pre-operational conditions in Section F have been approved as necessary by the Agency.

Section G – Construction of subsequent lifts of the northern side wall liner

G1	The construction of the second and each subsequent lift of the northern side slope of the landfill	<p>Support Material Testing Specification Report</p> <p>The operator shall submit fully justified written proposals to the Agency describing in detail the sampling, testing, handling and monitoring procedures to be applied to determine the geotechnical properties of the materials intended to support the second and each subsequent lift of the clay/HDPE lining system on the north side-slope.</p> <p>The geotechnical testing protocols shall be designed to simulate the geotechnical conditions likely to occur in the supporting buttress/liner/subgrade systems of each lift as constructed in accordance with the approved design and with the load generated by subsequent liner and waste lifts.</p>
G2	The construction of the second and each subsequent lift of the northern side slope of the landfill	<p>Support Material Assessment Report</p> <p>The operator shall submit a fully justified written report to the Agency describing the results of the sampling, testing and monitoring programme carried out to identify the geotechnical properties of the waste fill/ materials intended to support the second and each subsequent lift of the clay/HDPE lining system on the northern side slope prior to construction of the each lift of the clay lining.</p> <p>The support material assessment report shall include the provision of test results for all parameters used in the Stability Risk Assessment at the frequency agreed in the Support Material Testing Specification Report the subject of Pre-operational Condition G1.</p>
G3	The construction of the second and each subsequent lift of the northern side slope of the landfill	<p>Source of Clay Lining Mineral and Testing Specification Report</p> <p>The operator shall submit written proposals to the Agency of the source of clay mineral to be used in the second and each subsequent lift of the lining of the northern side slope, the geotechnical parameters to be derived and the methods of geotechnical testing to be carried out together with details of the proposed test conditions. The Source of Clay Lining Mineral and Testing Specification Report shall include the provision of all parameters used in the Stability Risk Assessment and shall specify the frequency of testing.</p>
G4	The construction of the second and each subsequent lift of the northern side slope of the landfill	<p>Clay Mineral Liner Assessment Report</p> <p>The operator shall submit a written report to the Agency of the geotechnical properties of the clay mineral to be used in the second and each subsequent liner lift of the northern side slope. The report shall include the provision of test results for all parameters used in the Stability Risk Assessment at the frequency stated in the Source of Clay Lining Mineral and Testing Specification Report the subject of Pre-operational Condition G3.</p>
G5	The construction of the second and each subsequent lift of the northern side slope of the landfill	<p>Geomembrane Placement Method Statement</p> <p>The operator shall submit a written report to the Agency of the methodology and techniques for laying and checking the geomembrane over the second and each subsequent lift of the clay mineral liner.</p>
G6	The construction of the second and each subsequent lift of the northern side slope of the	<p>Phased Construction Modelling Report - Stage 2</p> <p>The operator shall submit prior to the construction of the second and each subsequent lift of the northern side wall liner a written report of the results of the second stage confirmatory numerical modelling the subject of Pre-operational Condition F7 to confirm the stability and integrity of</p>

Table S1.4 Pre-operational measures for future development

	landfill	<p>the northern side slope.</p> <p>The second stage Phased Construction Modelling Report for each lift shall include:</p> <ul style="list-style-type: none"> • full presentation and analysis of the deformation and pore pressure monitoring results of all existing lifts (as described in Pre-operational Condition F3); • confirmatory numerical modelling results of existing lifts and the next proposed lift using the actual parameters measured during the Clay Mineral Liner Assessment Report and the Support Material Assessment Report for each lift; • a review of the construction phasing, barrier performance and control and tolerance limits based on the combined results of monitoring and modelling and if necessary proposals to correct the geotechnical behaviour of the lining in the event that tolerances are exceeded.
G7	The construction of the second and each subsequent lift of the northern side slope of the landfill	<p>Pre Construction Support Filling Report</p> <p>The operator shall submit a written report including scaled drawings to the Agency specifying:</p> <ul style="list-style-type: none"> • the extent and geotechnical properties of each waste lift that has been advanced from the southern end and extended in a direction towards the northern side-slope; • the quantity of waste/material of the required minimum specification that will be needed on site for the purpose of supporting/buttressing the lift of the lining system after it has been constructed; • the proposed methodology, timing and sequence of construction of the liner lift and the quantity of waste/material that will be placed adjacent to the liner; • the installation of deformation monitoring equipment in each liner lift; • a timetable for construction of the liner lift.
<p>Note: The construction of the second and then subsequent lifts of the northern side wall liner shall not commence until the reports the subject of the pre-operational conditions in Section G have been approved as necessary by the Environment Agency.</p>		
<p>Section H – Other issues</p>		
H1	The installation of additional monitoring boreholes along the southern boundary of the installation as referred to in pre operational conditions E1 and E4	<p>The operator shall consider and demonstrate through the Construction Quality Assurance Plan required under condition 2.7.4 of this permit that the installation of the borehole is at a safe distance from the tunnel and will not compromise the integrity of the tunnel.</p>
H2	The recirculation of leachate	<p>The operator shall submit to the Agency a scheme for the recirculation of leachate. The scheme shall include but not be limited to:</p> <ul style="list-style-type: none"> • Details of the methods of recirculation and system design; • An assessment of odour and fugitive emission control including any revisions to site design and/or monitoring plans; and • An assessment of the effects of recirculation on stability of the waste and the lining system. <p>No leachate will be recirculated without the approval of the Agency.</p>
H3	The	The operator shall establish the size, direction and elevation of the mine

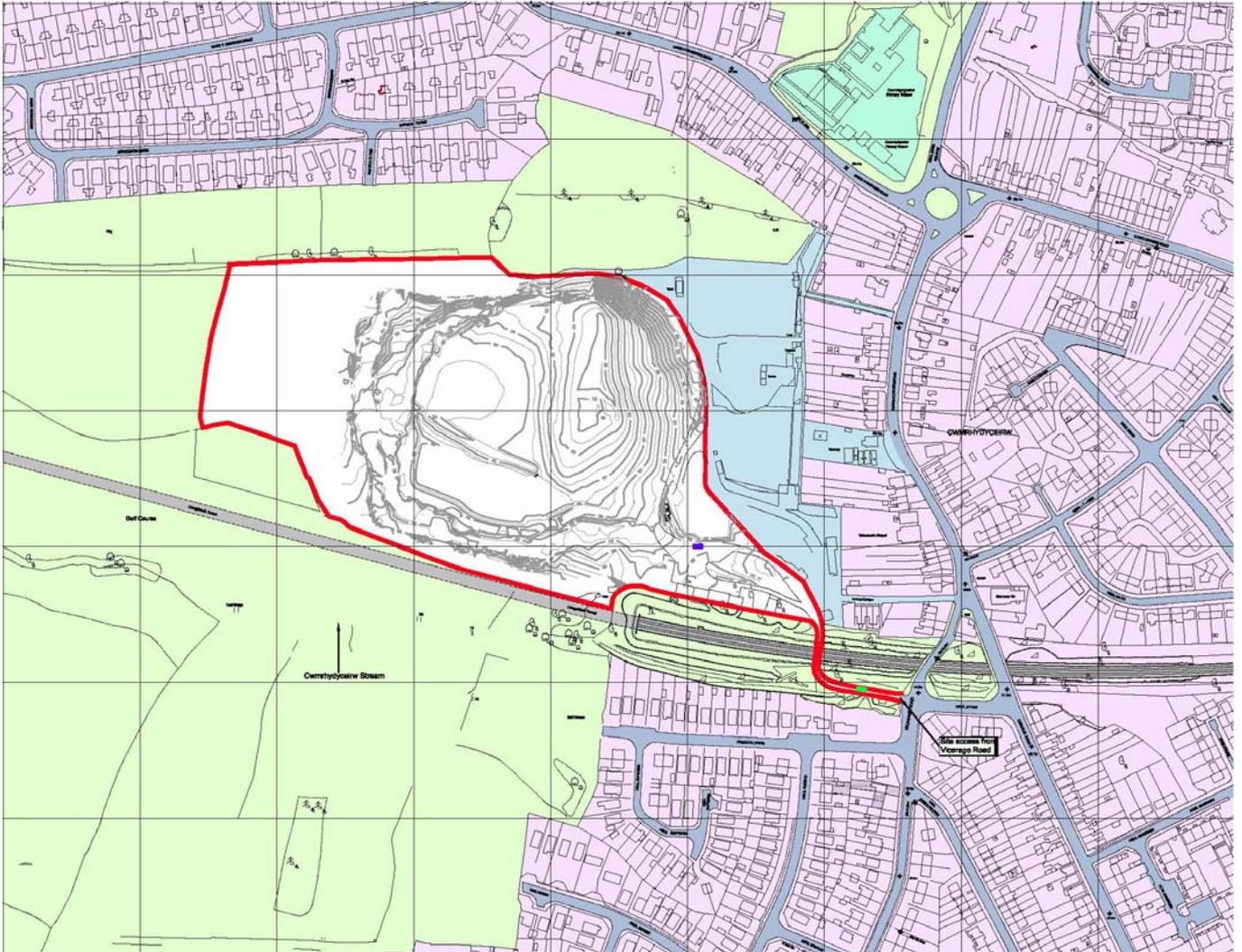
Table S1.4 Pre-operational measures for future development

commencement of the construction of the new landfill entry identified within The Coal Mining Report on Cwmrhydyceirw Quarry Reference No 00167764-04 dated 21st June 2004. In the event that it shows that the mine entry crosses the foot print of the area of waste deposit the operator shall carry out a risk assessment to identify the likelihood that the presence of the entry could affect the integrity of the lining system. In the event that it is demonstrated that there is a risk that the presence of the mine entry could affect the integrity of the lining system the operator shall discuss the results of the risk assessment with the Agency and agree a suitable course of action.

Table S1.5 Annual waste input limits

Category	Limit Tonnes/ Year
Non-hazardous waste	110,000
Inert waste	15,000
Total	125,000

Schedule 2 - Site plan



Not to scale

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Schedule 3 - List of permitted wastes

Permitted waste types: non-hazardous wastes and inert wastes	
Waste code	Description
01	WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS
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
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
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 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	WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES
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	dye-stuffs 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

Permitted waste types: non-hazardous wastes and inert wastes	
Waste code	Description
04 02 22	wastes from processed textile fibres
06	WASTES FROM INORGANIC CHEMICAL PROCESSES
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 13	wastes from inorganic chemical processes not otherwise specified
06 13 03	carbon black
08	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
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 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 03	wastes from MFSU of printing inks
08 03 15	ink sludges other than those mentioned in 08 03 14
08 03 18	waste printing 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
09	WASTES FROM THE PHOTOGRAPHIC INDUSTRY
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	WASTES FROM THERMAL PROCESSES
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 15	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14
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 24	sands from fluidised beds
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
10 03 05	waste alumina
10 03 16	skimmings other than those mentioned in 10 03 15
10 05	wastes from zinc thermal metallurgy

Permitted waste types: non-hazardous wastes and inert wastes	
Waste code	Description
10 05 04	other particulates and dust
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 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 08	wastes from other non-ferrous thermal metallurgy
10 08 04	particulates and dust
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
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)

Permitted waste types: non-hazardous wastes and inert wastes	
Waste code	Description
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 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
12	WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS
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	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
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	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
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, 16 06 and 16 08)
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

Permitted waste types: non-hazardous wastes and inert wastes	
Waste code	Description
16 01 22	components not otherwise specified
16 03	off-specification batches and unused products
16 03 04	inorganic wastes other than those mentioned in 16 03 03
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 other than those mentioned in 16 11 05
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	concrete, bricks, tiles and ceramics
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	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 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
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 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 03	stabilised/solidified wastes
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

Permitted waste types: non-hazardous wastes and inert wastes	
Waste code	Description
19 04 01	vitrified waste
19 08	wastes from waste water treatment plants not otherwise specified
19 08 01	screenings
19 08 02	waste from desanding
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
19 12 08	Textiles
19 12 09	minerals (for example sand, stones)
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	separately collected fractions (except 15 01)
20 01 01	paper and cardboard
20 01 02	Glass
20 01 10	Clothes
20 01 11	Textiles
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27
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

Permitted waste types: non-hazardous wastes and inert wastes	
Waste code	Description
20 01 40	Metals
20 01 41	wastes from chimney sweeping
20 02	garden and park wastes (including cemetery waste)
20 02 02	soil and stones

Schedule 4 – Emissions and monitoring

Table S4.1 Leachate level limits and monitoring requirements

Monitoring point reference/ Description	Limit	Monitoring frequency	Monitoring method
CWMLW1A , CWMLW1B, CWMLW2A, CWMLW2B, CWMLW3A, CWMLW3B, CWMLW3C, CWMLW3D as shown on drawing ESID 7 (drawing ref SG/CW/08-05/12371revC dated 11/12/06)	1 m above cell base	Monthly	Unless otherwise agreed in writing with the Agency monitoring methods used shall be in accordance with Agency guidance document 'Guidance on monitoring of landfill leachate, groundwater and surface water (LFTGN02)

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

Emission point Ref. & Location	Parameter	Source	Limit (including unit) ¹	Reference Period	Monitoring Frequency	Monitoring Standard or Method
A1 – Landfill Gas Flare stack (both temporary and permanent)	Oxides of nitrogen (NO _x)	Landfill Gas Flare	150 mg.m ⁻³	Hourly average	Annually from date of installation	ISO 10849 using Chemiluminescence
A1 – Landfill Gas Flare stack (both temporary and permanent)	Carbon Monoxide (CO)	Landfill Gas Flare	50 mg.m ⁻³	Hourly average	Annually from date of installation	ISO 12039:2001 using extractive non-dispersive infra-red analyser
A1 – Landfill Gas Flare stack (both temporary and permanent)	Sulphur Dioxide (SO ₂)	Landfill Gas Flare	No limit set	Hourly average	Annually from date of installation	Ultraviolet Fluorescence Detector
A1 – Landfill Gas Flare stack (both temporary and permanent)	Total VOC's	Landfill Gas Flare	10 mg.m ⁻³	Hourly average	Annually from date of installation	Flame Ionisation Detector
A1 – Landfill Gas Flare stack (both temporary and permanent)	Non-methane VOC's	Landfill Gas Flare	5 mg.m ⁻³	Hourly average	Annually from date of installation	Extractive sampling to sorbent tube, solvent extraction then GC-MS
A1 – Landfill Gas Flare stack (both temporary and permanent)	Carbon Dioxide (CO ₂)	Landfill Gas Flare	No limit set	Hourly average	Annually from date of installation	Infra-red analyser

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

Emission point Ref. & Location	Parameter	Source	Limit (including unit)¹	Reference Period	Monitoring Frequency	Monitoring Standard or Method
A1 – Landfill Gas Flare stack (both temporary and permanent)	Particulates	Landfill Gas Flare	No limit set	Hourly average	Annually from date of installation	Extractive sampling
A1 – Landfill Gas Flare stack (both temporary and permanent)	Dioxins and Furans	Landfill Gas Flare	No limit set	Hourly average	Annually from date of installation	Extractive sampling; separation by high resolution GC; analysis by high resolution mass spectrometry
A1 – Landfill Gas Flare stack (both temporary and permanent)	Operational temperature	Landfill Gas Flare	>1000°C	Hourly mean	Weekly while flare is operational	

¹Concentrations referenced to 3% O₂, 273K, 1 atmosphere dry gas.

Footnote: Annual monitoring is only required when flares operate in excess of 10% of the time, taken on an annual assessment period.'

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 attenuation pond discharge point referenced CWMS04 on Drawing number ESID7 drawing reference SIG/CW/08-05/12371rev C dated 11/12/06	Suspended Solids	Surface water	40 mg/litre	Spot Sample	Monthly	Unless otherwise agreed in writing with the Agency monitoring methods used shall be in accordance with Agency guidance document 'Guidance on monitoring of landfill leachate, groundwater and surface water (LFTGN02)
	pH	Surface water	>6 and <9 pH units	Spot Sample	Monthly	
	Ammoniacal Nitrogen	Surface water	1 mg/litre	Spot Sample	Monthly	
	Chloride	Surface water	100 mg/litre	Spot Sample	Monthly	
	Cadmium	Surface water	0.0001 mg/litre	Spot Sample	Three monthly	
	Nickel	Surface water	0.05 mg/litre	Spot Sample	Three monthly	
Surface water	Napthalene	Surface water	0.001 mg/litre	Spot Sample	Three monthly	
	Pentachloro p-henol	Surface water	0.0001 mg/litre	Spot Sample	Three monthly	

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 Discharge Point to Foul Sewer	Volume	Landfill phases	54 m ³ /day	Daily total	Continuous	To be agreed with the Agency
	Rate of discharge		5.4 m ³ /hour	Daily maximum	Continuous	

Note: The information in this table is subject to the completion of improvement condition 2.5.1, reference 1, Table S1.3, Schedule 1.

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

Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
CWMGW02*, CWMGW03 and CWMGW08 as shown on drawing ESID7 (reference SIG/CW/08-05/12371revC dated 11/12/06)	Ammonium	393 mg/l	Spot sample	Monthly	Unless otherwise agreed in writing with the Agency monitoring methods used shall be in accordance with Agency guidance document 'Guidance on monitoring of landfill leachate, groundwater and surface water (LFTGN02)
	Chloride	11900 mg/l	Spot sample	Monthly	
	Nickel	2.6 mg/l	Spot sample	Monthly	
	Cadmium	0.075 mg/l	Spot sample	Monthly	
	Napthalene	0.062 mg/l	Spot sample	Monthly	
	Pentachlorophenol	1 mg/l	Spot sample	Monthly	

Note: the information in this table is subject to the completion of improvement condition 2.5.1, reference 4, Table S1.3, Schedule 1.

* CWMGW02 to be monitored until destroyed as landfilling progresses

Table S4.6 Landfill gas in external monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (including units)	Monitoring frequency	Monitoring standard or method
CWMGW01, CWMGW03, CWMGW04, CWMGW07a, CWMGW07b, CWMGW08 as shown on drawing ESID8 (SIG/CW/08-05/12375revB dated 12/08/05)	Methane (CH ₄)	1.0 % vol.	Monthly	Portable infra-red analyser
	Carbon Dioxide (CO ₂)	1.5 % vol.		Portable infra-red analyser
	Oxygen (O ₂)	No limit set		Portable infra-red analyser with internal electrochemical cell.
	Barometric Pressure	No limit set		-
	Gas Pressure	No limit set		-
	Water Level	No limit set		-
CWMGW06 as shown on drawing ESID8 (SIG/CW/08-05/12375revB dated 12/08/2005)	Methane (CH ₄)	1.0 % vol.	Monthly	Portable infra-red analyser
	Carbon Dioxide (CO ₂)	2.5 % vol.		Portable infra-red analyser
	Oxygen (O ₂)	No limit set		Portable infra-red analyser with internal electrochemical cell.
	Barometric Pressure	No limit set		-
	Gas Pressure	No limit set		-
	Water Level	No limit set		-
CWMGP04 as shown on drawing ESID8 (SIG/CW/08-05/12375revB dated 12/08/2005)	Methane (CH ₄)	1.0 % vol.	Monthly	Portable infra-red analyser
	Carbon Dioxide (CO ₂)	3.0% vol.		Portable infra-red analyser
	Oxygen (O ₂)	No limit set		Portable infra-red analyser with internal electrochemical cell.
	Barometric Pressure	No limit set		-
	Gas Pressure	No limit set		-
	Water Level	No limit set		-

Note: The information in this table is subject to the completion of improvement condition 2.5.1, reference 5, Table S1.3, Schedule 1.

Table S4.7 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 and total methane emission	Annually*	Where the average zone emission 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 Agency.
Temporarily capped zone	Average methane flux and total methane emission	Annually*	Where the average zone emission 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 Agency.

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 and the values for average methane flux and total methane emissions measured in the previous year may be reported. A quantitative survey is not necessary. If the zone remains stable, the results of a detailed walkover survey will be acceptable for the annual report for a period of four years before a further quantitative survey is required.

Table S4.8 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
Landfill Gas Extraction wells, following connection to the active gas extraction system.	Methane	Weekly	Portable infra-red analyser	None
	Carbon Dioxide	Weekly	Portable infra-red analyser	None
	Oxygen	Weekly	Portable infra-red analyser with internal electrochemical cell.	None
	Carbon Monoxide	Fortnightly	Portable infra-red analyser with internal electrochemical cell.	50 ppm control level to trigger 'Air In Well' contingency plan
	Hydrogen	Weekly		None
	Hydrogen Sulphide	Weekly	Portable infra-red analyser with internal electrochemical cell.	None
	Atmospheric Pressure	Weekly		
	Differential Pressure	Weekly		

Table S4.8 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
	Gas Temperature	Weekly		
	Flow rate	Weekly		
In-waste landfill gas monitoring boreholes	Methane	Monthly	Portable infra-red analyser	
	Carbon Dioxide	Monthly	Portable infra-red analyser	
	Oxygen	Monthly	Portable infra-red analyser with internal electrochemical cell.	
	Carbon Monoxide	Monthly	Portable infra-red analyser with internal electrochemical cell.	50 ppm control level to trigger 'Air In Well' contingency plan
	Atmospheric Pressure	Monthly		
	Differential Pressure	Monthly		
	Gas Temperature	Monthly		
Landfill Gas Manifold at entry to landfill gas flare.	Trace gas analysis	Annually	In accordance with the methods detail within Environment Agency Guidance Note LFTGN 04	

Table S4.9 Leachate– other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
CWMLS1A, CWMLS1B, CWMLS2 and CWMLS3 as shown on drawing ESID 7 (drawing ref SIG/CW/08-05/12371revC dated 11/12/06)	pH	Quarterly	Unless otherwise agreed in writing with the Agency monitoring methods used shall be in accordance with Agency guidance document 'Guidance on monitoring of landfill leachate, groundwater and surface water (LFTGN02)	None specified
	Electrical conductivity	Quarterly		
	Chemical Oxygen Demand (COD)	Quarterly		
	Ammoniacal Nitrogen	Quarterly		
	Chloride	Quarterly		
	Sodium	Quarterly		
	Potassium	Quarterly		
	Total organic carbon (TOC)	Quarterly		
	Alkalinity as Ca CO ₃	Quarterly		
	Calcium	Quarterly		
	Sulphate	Quarterly		
	Total oxidised Nitrogen (TON)	Quarterly		
	Iron	Six Monthly		
	Manganese	Six Monthly		
	Cadmium	Six Monthly		
	Chromium	Six Monthly		
	Copper	Six Monthly		
	Lead	Six Monthly		
	Nickel	Six Monthly		
	Zinc	Six Monthly		
List I Suite	Annually			
CWMLS1A, CWMLS1B, CWMLS2, CWMLS3, CWMLW1A, CWMLW1B, CWMLW2A, CWMLW2B, CWMLW3A, CWMLW3B, CWMLW3C, CWMLW3D as shown on drawing ESID 7 (drawing ref SIG/CW/08-05/12371revC dated 11/12/06)	Depth to base of monitoring or extraction well in metres	Annually		

Table S4.10 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
CWMS01, CWMS02, CWMS03, CWMS04 as shown on drawing ESID 7 (drawing ref SIG/CW/08-05/12371revC dated 11/12/06)	Water level	Monthly	Unless otherwise agreed in writing with the Agency monitoring methods used shall be in accordance with Agency guidance document 'Guidance on monitoring of landfill leachate, groundwater and surface water (LFTGN02)	None specified
	Discharge volumes	Monthly		
	Flow rates	Monthly		
	Temperature	Monthly		
	Dissolved Oxygen	Monthly		
	pH	Monthly		
	Electrical Conductivity	Monthly		
	Suspended solids	Monthly		
	Ammoniacal Nitrogen	Monthly		
	Biological Oxygen Demand	Monthly		
	Chemical Oxygen Demand	Monthly		
	Chloride	Monthly		
	Alkalinity as CaCO ₃	Quarterly		
	Sulphate	Quarterly		
	Calcium	Quarterly		
	Sodium	Quarterly		
	Potassium	Quarterly		
	Magnesium	Quarterly		
	Iron	Quarterly		
	Manganese	Quarterly		
	Cadmium	Quarterly		
	Mercury	Quarterly		
	Chromium	Quarterly		
	Copper	Quarterly		
	Lead	Quarterly		
	Nickel	Quarterly		
	Zinc	Quarterly		
Total cyanides	Quarterly			
TPH	Quarterly			
Total phenols	Quarterly			
TOC	Quarterly			
TON	Quarterly			

Table S4.11 Groundwater – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
CWMGW01, CWMGW03, CWMGW04, CWMGW06 CWMGW07a, CWMGW07b, CWMGW08, CWMGW09, CWMGW10 and CWMGW11 as shown on drawing ESID 7 (drawing ref SIG/CW/08-05/12371rev C dated 11/12/06)	Water Level	Daily	Unless otherwise agreed in writing with the Agency monitoring methods used shall be in accordance with Agency guidance document 'Guidance on monitoring of landfill leachate, groundwater and surface water (LFTGN02)	During the operational period groundwater levels shall be maintained below the basal liner
	pH	Monthly		
	Electrical Conductivity	Monthly		
	Dissolved Oxygen	Monthly		
	Temperature	Monthly		
	Ammoniacal Nitrogen	Monthly		
	Chloride	Monthly		
	Sodium	Quarterly		
	Potassium	Quarterly		
	Total Organic Carbon	Quarterly		
	Alkalinity as CaCO ₃	Quarterly		
	Calcium	Quarterly		
	Magnesium	Quarterly		
	Manganese	Quarterly		
	Sulphate	Quarterly		
	Total Oxidised Nitrogen	Quarterly		
	Iron	Quarterly		
	Zinc	Quarterly		
	Mercury	Quarterly		
	Lead	Quarterly		
Chromium	Quarterly			
Copper	Quarterly			
Total Cyanides	Quarterly			
Total Phenols	Quarterly			
Cadmium	Quarterly			
Nickel	Quarterly			
List I Suite	Annually			

Table S4.12 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
3 Locations shown on drawing LFGRA3A	NO ₂ in ambient air	No limit set	-	Monthly	Diffusion tubes
	Particulates	No limit set	-	-	-
1 location down wind of the flare	Dioxins and Furans in ambient air	No limit set	72 hour	Annually	Continuous Monitor

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	CWMLW1A, CWMLW1B, CWMLW2A, CWMLW2B, CWMLW3A, CWMLW3B, CWMLW3C, CWMLW3D	Every 3 months	09/12/08
Emissions to air Parameters as required by condition 3.6.1	A1 – Landfill Gas Flare stack (both temporary and permanent)	Every 12 months	09/12/08
Emissions to water Parameters as required by condition 3.6.1	CWMS04	Every 3 months	09/12/08
Groundwater Parameters as required by condition 3.6.1	CWMGW02, CWMGW03, CWMGW08	Every 3 months	09/12/08
Landfill gas surface emissions Parameters as required by condition 3.6.1	Permanently capped zone Temporarily capped zone	Every 12 months	09/12/08
Landfill gas lateral migration Parameters as required by condition 3.6.1	CWMGW01, CWMGW03, CWMGW04, CWMGW06, CWMGW07a, CWMGW07b, CWMGW08, CWMGP01, CWMGP02, CWMGP03, CWMGP04	Every 3 months	09/12/08
Other landfill gas monitoring Parameters as required by condition 3.6.1	Landfill Gas Extraction wells, following connection to the active gas extraction system	Every 3 months	09/12/08
	In-waste landfill gas monitoring boreholes 3 locations shown on drawing LFGRA3A for landfill gas in ambient air monitoring		
	Landfill Gas Manifold at entry to landfill gas flare 1 location downwind of the flare for landfill gas in ambient air monitoring	Every 12 Months	
Other leachate monitoring Parameters as required by condition 3.6.1	CWMLS1A, CWMLS1B, CWMLS2 and CWMLS3	Every 3 months	09/12/08
	CWMLW1A, CWMLW1B, CWMLW2A, CWMLW2B, CWMLW3A, CWMLW3B, CWMLW3C, CWMLW3D	Every 12 months	
Other surface water monitoring Parameters as required by condition 3.6.1	CWMS01, CWMS02, CWMS03, CWMS04	Every 3 months	09/12/08
Other groundwater monitoring Parameters required by condition 3.6.1	CWMGW01, CWMGW03, CWMGW04, CWMGW06, CWMGW07a, CWMGW07b, CWMGW08, CWMGW09, CWMGW10, CWMGW11	Every 3 months	09/12/08

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
Energy used (including for leachate treatment)	Annually		MWh of electricity

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 Agency	
Air	Form Air 1 or other reporting format to be agreed in writing with the Agency	
Controlled water	Form Water 1 or other reporting format to be agreed in writing with the Agency	
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with the Agency	
Sewer	Form Sewer 1 or other reporting format to be agreed in writing with the Agency	
Landfill gas	Form LFG 1 or other reporting format to be agreed in writing with the Agency	
Waste Return	Waste Return Form RATS2E	
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	
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
Groundwater trigger levels	within 24 hours of receipt by the operator of results of analysis from the laboratory
Surface water emission limits	within 24 hours of receipt by the operator of results of analysis from the laboratory

(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 SI Green UK Limited

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.

“*Background concentration*” means such concentration of that substance as is present in:

- For emissions to surface water, the surface water quality up-gradient of the site; or
- For emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge; or
- For emissions of landfill gas, the ground or air outside the site and not attributable to the site.

“*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.

“*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;
- individual lift of northern side wall lining system

for the New Cell.

"*No impact*" means that the change made to the construction procedures will not affect the agreed design criteria, specification or performance in a way that has a negative effect.

"notify without delay" and "notified without delay" means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.

"*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, 1 April, 1 July or 1 October.

"*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.

"Waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, List of Wastes (Northern Ireland) Regulations 2005 (as amended), or The Special Waste Amendment (Scotland) Regulations 2004 as appropriate, and in relation to hazardous waste, includes the asterisk.

"*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