

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Land Logical Ltd

Stone Pit 1
Cotton Lane
Stone
Dartford
Kent
DA9 9ED

Permit number

EPR/BB3906MD

Stone Pit 1

Permit number EPR/BB3906MD

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

The permit authorises the importation and permanent deposit of waste to land as for the purposes of restoring the southern side of historic landfill site Stone Pit 1 as a waste recovery activity.

Associated with the recovery project is the ongoing abstraction and management, including burning and flaring, of landfill gas within the historic landfill.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

| Status log of the permit | | |
|---|-----------------------|---|
| Description | Date | Comments |
| Application EPR/BB3906MD/A001 | Duly made 31/10/14 | Application for the permanent deposit of waste to land for the restoration of a historic landfill site including ongoing landfill gas management. |
| Additional information received | 03/12/14 | Information on noise bunds. |
| Schedule 5 Notice issued | 18/12/14 | Information request on waste acceptance, noise assessment, landfill gas, gas management and site management. |
| Schedule 5 Notice issued | 18/02/15 | Information request on landfill gas management plan. |
| Schedule 5 Notice dated 18/12/14 response received | 02/03/15 | Information on waste acceptance, noise assessment, landfill gas, gas management and site management received. |
| Schedule 5 Notice dated 18/02/15 response received | 17/03/15 | Landfill gas management plan received. |
| Additional information received | 14/04/15 | Further information regarding noise management. |
| Permit determined EPR/BB3906MD | 08/05/15 | Permit issued to Land Logical Ltd (EAWML 401693). |

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/BB3906MD

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

Land Logical Ltd ("the operator"),

whose registered office is

35 Ballards Lane

London

N3 1XW

company registration number **08272647**

to operate waste operations at

Stone Pit 1

Cotton Lane

Stone

Dartford

Kent

DA9 9ED

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

| Name | Date |
|-----------------------|-------------------|
| Sarah Woodruff | 08/05/2015 |

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
 - (b) using sufficient competent persons and resources.
- 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.
- 1.1.4 The operator shall comply with the requirements of an approved competence scheme.

1.2 Avoidance, recovery and disposal of wastes produced by the activities

- 1.2.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
 - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
 - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.2.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

- 2.1.1 The operator is only 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 green on the site plan at schedule 7 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 Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.1; and
 - (b) except for household waste accepted from householders, it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.4 No waste shall be accepted for disposal at the site.
- 2.3.5 The operator shall visually inspect:
- (a) without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the site; and
 - (b) waste at the point of deposit;
- and shall satisfy itself that it conforms to the basic characterisation documentation submitted by the holder.

2.4 Improvement programme

- 2.4.1 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 Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Gas Engineering

- 2.5.1 No construction of gas infrastructure shall commence until the operator has submitted relevant construction proposals or a written request to use previous construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.
- 2.5.2 The construction of the gas 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 Environment Agency.
- 2.5.3 The operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant gas infrastructure.
- 2.5.4 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.5.1 and 2.5.2 do not apply and the relevant landfill infrastructure may be constructed, provided that the construction proposals are submitted to the Environment Agency as soon as practicable.

- 2.5.5 For the purposes of conditions 2.5.1 and 2.5.3 the Environment Agency shall be deemed to be satisfied where it has not, within the period of four 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.
- 2.5.6 Where the Environment Agency has required further information under condition 2.5.5(b), the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the further information, either:
- (a) confirmed whether or not it is satisfied; or
 - (b) informed the operator that it requires further information.

2.6 Gas management

- 2.6.1 The operator shall take appropriate measures, including, but not limited to, those specified in any approved gas management plan, to:
- (a) collect landfill gas; and
 - (b) control the migration of landfill gas.
- 2.6.2 The operator shall use the collected landfill gas to produce energy. If the collected landfill gas cannot be used to produce energy, the operator shall use appropriate measures to flare or treat the gas in accordance with an approved landfill gas management plan.
- 2.6.3 The operator shall:
- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a revised landfill gas management plan;
 - (b) implement the revised landfill gas management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 The limits in schedule 3 shall not be exceeded.
- 3.1.2 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 table S3.1.
- 3.1.3 For the following activities referenced in schedule 1, table S1.1, A2 to A3, the limits given in Table S3.1 shall not be exceeded, save that compliance with an emission limit in that table shall include incorporation of the uncertainty allowance stated in Environment Agency guidance LFTGN 05 and LFTGN 08.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan

which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

- (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
 - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
 - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring and any other actions specified in the following tables in schedule 3 to this permit:
 - (a) Point source emissions specified in tables S3.1; and
 - (b) Landfill gas specified in tables S3.2, S3.3 and S3.4.
- 3.5.2 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.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 table S3.1 unless otherwise agreed in writing by the Environment Agency.

3.6 Pests

- 3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.
- 3.6.2 The operator shall:
- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;
 - (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

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 Environment 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) sub-surface landfill gas monitoring;
 - (ii) landfill gas generation and collection;
 - (iii) off-site environmental effects; and
 - (iv) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 Within one month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.
- 4.2.3 For the following activities referenced in schedule 1, table S1.1 (A2 to A3), a report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment 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 the permit including an interpretive review of that data;
 - (b) the annual production /treatment data set out in schedule 4 table S4.2; and

- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.4 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment 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 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.3 Notifications

4.3.1 The Environment Agency shall be notified without delay following the detection of:

- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;
- (b) the breach of a limit specified in the permit; or
- (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 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment 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 Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (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.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “without delay”, in which case it may be provided by telephone.

Schedule 1 – Operations

| Table S1.1 activities | | |
|--|---|--|
| Activity reference | Description of activities for waste operations | Limits of activities |
| A1 Deposit of waste to land as a recovery operation | R3: Recycling/reclamation of organic substances which are not used as solvents R5: Recycling/reclamation of other inorganic materials R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced) | Secure storage and use of approved wastes for the purposes of reclamation, restoration or improvement of land as detailed in the approved Waste Recovery Plan. The activities shall not be carried out other than in accordance with the approved Waste Recovery Plan. The quantities given in the approved Waste Recovery Plan shall not be exceeded. |
| A2 Landfill Gas Utilisation | R1: Utilisation of landfill gas for energy recovery in an appliance with a rated thermal input < 50MW | Treatment and utilisation of landfill gas arising from the site. |
| A3 Landfill Gas Flaring | Flaring of landfill gas for disposal in an appliance | Landfill gas arising from the landfill. |

| Table S1.2 Operating techniques | | |
|--|---|---------------------------------|
| Description | Parts | Date Received |
| Application | Part B2 and Part B4 of the application forms. Documents provided in response to section 3a – technical standards, Part B4 of the application form. | 16/07/14 |
| Application | Operating Techniques for Waste Activities. | 26/02/15 |
| Waste Recovery Plan | Waste Recovery Plan – Stone Pit 1, Cotton Lane, Dartford, Kent. DA9 9ED – December 2013 and associated Drawings and Appendix 2 Additional information contained in a letter from PDE Consulting limited to the Environment Agency dated 06/02/14 including drawings numbers M11.190(h).D.002 and M11.190(h).D.003. Letter from S Walsh and Son Ltd dated 02/04/14. Email dated 18/09/14 confirming Land Logical Ltd to operate in accordance with the Waste Recovery Plan that was originally produced for S Walsh and Son Ltd and accepted waste types. | 06/02/14, 02/04/14 and 18/09/14 |
| Response to Schedule 5 Notice dated 18/12/14 | Waste acceptance criteria, noise assessment, landfill gas, gas management and site management. | 02/03/15 |

| Table S1.2 Operating techniques | | |
|---------------------------------|---|---------------|
| Description | Parts | Date Received |
| Application | Gas Management Plan, Stone Pit 1 Landfill Site, Land Logical Limited, dated March 2015. | 17/03/15 |

| Table S1.3 Improvement programme requirements | | |
|---|---|---|
| Reference | Requirement | Date |
| 1 | <p>The operator shall replace the landfill gas flare shown on plan 'Stone Pit 1, Cotton Lane, Gas Utilisation Compound, Figure 1' which was submitted with the application, to a flare that can be monitored in accordance with the requirements in Table S3.1. Upon replacement of the flare, the operator shall submit a report to the agency for approval which contains the following:</p> <ul style="list-style-type: none"> Operational details of the new flare An air quality assessment to demonstrate that the emissions from the new flare will not exceed the emissions modelled for in the permit application. | 09/08/15 or as otherwise agreed in writing with the Agency. |
| 2 | <p>The operator shall divert all landfill gas which is currently discharged via Rig 3, to the Landfill Gas Compound where the gas shall be utilised to produce electricity or, if the gas is not of sufficient quantity or quality, the gas shall be flared.</p> <p>Upon completion of the works, a report shall be provided to the Agency which confirms that the above action has been taken and details what changes have been made to the gas collection infrastructure as a consequence.</p> | 09/08/15 |
| 3 | <p>The operator shall undertake 12 monthly rounds of sampling in accordance with Table S3.2 in the following perimeter boreholes:</p> <p>1MP01 Bottom, 1MP01SPZ, 1MP02 Bottom, 1MP02SPZ, 1MP03 Bottom, 1MP04 Bottom, 1MP05 Bottom, 1MP06 Bottom, 1MP07 Bottom, 1MP08 Bottom, 1MP08 Top, 1MP09 Bottom, 1MP09 Top, 1MP10 Top, 1MP11 Bottom, 1MP11 Top, 1MP12 Bottom, 1MP12 Top, 1MP13A Bottom, 1MP13B Bottom, 1MP13 Bottom, 1MP13 Top, 1MP14A Bottom, 1MP14B Bottom, 1MP14 Bottom, 1MP15A Bottom, 1MP15B Bottom, 1MP15 Bottom, 1MP16A Bottom, 1MP16 Bottom, 1MP17 Bottom, 1MP06 Top, 1SP-2/09.</p> | 09/06/16 |
| 4 | <p>Upon completion of the gas monitoring required under improvement condition 3, the operator shall submit to the Agency a report which contains the following:</p> <ul style="list-style-type: none"> A proposal for trigger and control limits for methane and carbon dioxide in the perimeter boreholes listed in IC3 (above); An action plan which demonstrates what steps will be taken upon a breach of a control limit; and Any additional measures to be employed at the site to ensure adequate control of the landfill gas. <p>Upon agreement with the Agency, the operator shall update the Landfill Gas Management Plan to include the additional information required under this improvement condition.</p> | 09/07/16 |

Schedule 2 – Waste types, raw materials and fuels

| Table S2.1 Permitted waste types and quantities for deposit of waste to land as a recovery operation | |
|--|--|
| Maximum quantity | The total quantity of waste accepted at the site shall be 250,000 tonnes a year. The total volume of waste accepted at the site shall be 490,000 m ³ . |
| Waste code | Description |
| 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 07 | mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06 |
| 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 |

Schedule 3 – Emissions and monitoring

| Table S3.1 Point source emissions to air – emission limits and monitoring requirements | | | | | | |
|--|--------------------|-----------------------|------------------------|------------------|----------------------|---|
| Emission point Ref. & Location | Parameter | Source | Limit (including unit) | Reference Period | Monitoring Frequency | Monitoring Standard or Method |
| LFGE 1 on site plan Stone Pit 1, Cotton Lane, Gas Utilisation Compound, Figure 1 | Oxides of Nitrogen | Gas utilisation plant | 650 mg/m ³ | Hourly mean | Annually | As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency |
| | CO | | 1500 mg/m ³ | | | |
| | Total VOCs | | 1750 mg/m ³ | | | |
| Flare 1 on site plan Stone Pit 1, Cotton Lane, Gas Utilisation Compound, Figure 1 | Oxides of Nitrogen | Landfill Gas Flares | 150 mg/m ³ | Hourly mean | Annually | As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency. Monitoring is unnecessary where the flare is active for <10% of the year. |
| | CO | | 100 mg/m ³ | | | |
| | Total VOCs | | 10 mg/m ³ | | | |

| Table S3.2 Landfill gas in external monitoring boreholes – limits and monitoring requirements | | | | |
|--|-----------------------|-------------------------|----------------------|--|
| Monitoring point Ref. /description | Parameter | Limit (including units) | Monitoring frequency | Monitoring standard or method |
| 1SP-1/01 05M, 1SP-1/01 10M, 1SP-1/01 15M, 1SP-1/01 20M, 1SP-1/01 25M, 1SP-1/01 30M, 1SP-1/02 05M, 1SP-1/02 10M, 1SP-1/02 15M, 1SP-1/02 20M, 1SP-1/02 25M, 1SP-1/02 30M, 1SP-1/03 05M, 1SP-1/03 10M, 1SP-1/03 15M, 1SP-1/03 20M, 1SP-1/03 25M, 1SP-1/03 30M, 1SP-1/04 05M, 1SP-1/04 15M, 1SP-1/04 20M, 1SP- | Methane | 1 % | Monthly | As per LFTGN03 dated September 2004 or such other subsequent guidance as may be agreed in writing with the Environment Agency. |
| | Oxygen | No limit | | |
| | Atmospheric Pressure | No limit | | |
| | Differential Pressure | No limit | | |

Table S3.2 Landfill gas in external monitoring boreholes – limits and monitoring requirements

| Monitoring point Ref. /description | Parameter | Limit (including units) | Monitoring frequency | Monitoring standard or method |
|--|----------------|-------------------------|----------------------|---|
| 1/04 25M, 1SP-1/04 30M, 1SP-1/05 05M, 1SP-1/05 10M, 1SP-1/05 20M, 1SP-1/05 30M, 1SP-1/06 05M, 1SP-1/06 10M, 1SP-1/06 15M, 1SP-1/06 20M, 1SP-1/06 25M, 1SP-1/06 30M, 1SP-1/07 05M, 1SP-1/07 15M, 1SP-1/07 20M, 1SP-1/07 25M, 1SP-1/07 30M, 1SP-1/08 15M, 1SP-1/08 20M, 1SP-1/09 05M, 1SP-1/09 10M, 1SP-1/09 15M, 1SP-1/09 20M, 1SP-1/10 10M, 1SP-1/10 15M, 1SP-1/10 20M, 1SP-1/11 05M, 1SP-1/11 10M, 1SP-1/11 15M, 1SP-1/11 20M, 1SP-2/01, 1SP-2/02, 1SP-2/03, 1SP-2/04, 1SP-2/05, 1SP-2/06, 1SP-2/07, 1SP-2/08, 1SP-2/10 05M, 1SP-2/10 10M, 1SP-2/10 15M, 1SP-2/10 20M, 1SP-2/11, 1SP-2/12, 1SP-2/13, 1SP-2/14, 1SP-2/15, 1SP-2/16, 1SP-2/17, 1SP-2/19, 1MP01Top, 1MP02 Top, 1MP03 Top, 1MP04 Top, 1MP05 Top, 1MP07 Top, 1MP13A Top, 1MP13B Top, 1MP14A Top, 1MP14 Top, 1MP15A Top, 1MP15 Top, 1MP16A Top, 1MP16 Top, 1MP17 Top, 1MP18 Top, 1MP19 Top | | | | Record whether the ground is: Waterlogged; Frozen; and snow covered. |
| 1SP-1/09 05M, 1SP-1/09 10M, 1SP-1/10 15M, 1SP-1/11 15M, 1SP-1/11 20M | Carbon Dioxide | 3% | | |
| 1SP-1/03 15M, 1SP-1/05 10M, 1SP-1/05 20M, 1SP-1/09 15M, 1SP-1/09, 20M, 1SP-1/10 10M, 1SP-1/10 20M, 1SP-1/11 05M, 1SP-1/11 10M, 1MP19 Top, | Carbon Dioxide | 3.5% | | |
| 1SP-1/01 05M, 1SP-1/01 10M, 1SP-1/01 20M, 1SP-1/01 25M, 1SP-01/01 30M, 1ISP-1/02 05M, 1SP-1/02 10M, 1SP-1/02 20M, 1SP-1/02 25M, 1SP-1/02 30M, | Carbon Dioxide | 4% | | |

| Table S3.2 Landfill gas in external monitoring boreholes – limits and monitoring requirements | | | | |
|---|------------------|--------------------------------|-----------------------------|--------------------------------------|
| Monitoring point Ref. /description | Parameter | Limit (including units) | Monitoring frequency | Monitoring standard or method |
| 1SP-1/03 05M, 1SP-1/03 10M, 1SP-1/03 20M, 1SP-1/03 25M, 1SP-1/03 30M, 1SP-1/04 05M, 1SP-1/04 25M, 1SP-1/04 30M, 1SP-1/05 05M, 1SP-1/05 30M, 1SP-1/06 25M, 1SP-1/06 30M, 1SP-1/07 05M, 1SP-1/07 15M, 1SP-1/07 25M, 1SP-1/07 30M, 1SP-2/01, 1SP-2/02, 1SP-2/03, 1SP-2/04, 1SP-2/05, 1SP-2/08, 1MP02 Top, 1MP03 Top, 1MP04 Top, 1MP05 Top, 1MP07 Top, 1MP13A Top, 1MP13B Top, 1MP14 Top, 1MP14A Top, 1MP18 Top | | | | |
| 1SP-1/04 15M, 1SP-1/04 20M, 1SP-1/06 05M, 1SP-1/06 10M, 1SP-1/07 20M, 1SP-1/08 20M, 1SP-2/07, 1MP01 Top | Carbon Dioxide | 4.5% | | |
| 1SP-1/01 15M, 1SP-1/02 15M, 1SP-1/06 20M, 1SP-1/08 15M, 1SP-2/06, 1SP-2/16, 1SP-2/19, 1MP17 Top | Carbon Dioxide | 5% | | |
| 1SP-1/06 15M, 1SP-2/10 05M, 1SP-2/10 10M, 1SP-2/10 20M, 1SP-2/11, 1SP-2/17 | Carbon Dioxide | 5.5% | | |
| 1SP-2/10 15M, 1SP-2/12, 1SP-2/13, 1SP-2/14, 1SP-2/15, 1MP15 Top, 1MP16 Top | Carbon Dioxide | 6% | | |
| 1MP16A Top | Carbon Dioxide | 9.1% | | |
| 1MP15A Top | Carbon Dioxide | 9.6% | | |

| Table S3.3 Landfill gas emissions from restored surfaces – monitoring requirements | | | |
|---|------------------------|---------------------------------------|---|
| Monitoring point Ref. /description | Parameter | Monitoring frequency | Monitoring Standard or method |
| Permanently capped zone | Methane concentration | Every 12 months | As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency. |
| Temporarily capped zone | Methane concentration | Every 12 months | As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency. |
| Whole site | Total methane emission | As agreed with the Environment Agency | As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency. |
| Uncapped areas | Methane concentration | Every 12 months | As agreed with the Environment Agency based on the wording of revised LFTGN 07 or landfill sector guidance or such other subsequent guidance as may be agreed in writing with the Environment Agency. |

| Table S3.4 Landfill gas – other monitoring requirements | | | | |
|---|---|---|---|--|
| Monitoring Point Ref. /Description | Parameter | Monitoring frequency | Monitoring standard or method | Other specifications |
| Gas collection system at well control valve, manifolds (if applicable) and strategic points on gas system | Methane Carbon Dioxide Oxygen Carbon Monoxide Atmospheric pressure Gas flow rate or suction % Balance Gas (calculated as the difference between the sum of measured gases and 100%) | Monthly or at such other frequency as may be agreed in writing with the Environment Agency. | Calibrated handheld monitoring instrument | Where the oxygen concentration exceeds 5% or the % balance gas is greater than 20% an assessment of air ingress into the system shall be undertaken. Where the concentration of carbon monoxide exceeds 100ppm then further investigation shall be undertake Record the ambient air temperature and whether the ground is: Waterlogged; Frozen; and snow covered. |

| Table S3.4 Landfill gas – other monitoring requirements | | | | |
|--|-------------------|-----------------------------|--|--|
| Monitoring Point Ref. /Description | Parameter | Monitoring frequency | Monitoring standard or method | Other specifications |
| Gas collection system at well control valve | Hydrogen sulphide | Six monthly | Calibrated handheld monitoring instrument or Tedlar Bag sample in accordance with LFTGN04 v. 3, 2010 or other such subsequent guidance as may be agreed in writing with the Environment Agency or a method agreed with the Environment Agency. | Concentrations of hydrogen sulphide shall be assessed in accordance with the gas and odour management plans |
| Input to flare or LFG Utilisation Compound | Trace gas | Annually | Trace gas analysis in accordance with LFTGN04 v. 3, 2010 or such other subsequent guidance as may be agreed in writing with the Environment Agency [or a trace gas characterisation method agreed with the Environment Agency]. | The concentration of trace gas components shall be assessed against the assumptions made in the Landfill gas risk assessment and dispersion modelling. |

| Table S3.4 Landfill gas – other monitoring requirements | | | | |
|---|--|---|---|---|
| Monitoring Point Ref. /Description | Parameter | Monitoring frequency | Monitoring standard or method | Other specifications |
| Input to flare or LFG Utilisation Compound | Methane Carbon Dioxide Oxygen Gas flow rate Suction % Balance Gas (calculated as the difference between the sum of measured gases and 100%) | Weekly | | Where the oxygen concentration exceeds 5% or the % balance gas is greater than 20% an assessment of air ingress into the system shall be undertaken. |
| Flare 1 shown on Plan Stone Pit 1, Cotton Lane, Gas Utilisation Compound, Figure 1 | Temperature | As per LFTGN05 v. 2, 2010 or such other subsequent guidance as may be agreed in writing with the Environment Agency. | As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency. | |
| LFGE 1, post turbo | NOx and CO | Quarterly | In accordance with Appendix C of LFTGN08, version 2: 2010 or such other subsequent guidance as may be agreed in writing with the Environment Agency. | Where monitoring using hand-held, electrochemical equipment indicates an exceedance of the emissions standards specified in Table S3.1, these shall be used as action levels and the operator shall investigate the cause and take appropriate measures to reduce emissions. |

Schedule 4 – Reporting

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

| Table S4.1 Reporting of monitoring data | | |
|---|-------------------------|--|
| Parameter | Reporting period | Period ends |
| Point source emission to air As specified by schedule 3, table S3.1 | Every 12 months | 31 December |
| Landfill gas in external monitoring boreholes As specified by schedule 3, table S3.2 | Every 3 months | 31 March, 30 June, 30 September, 31 December |
| Emission of landfill gas from surfaces As specified by schedule 3, table S3.3 | Every 12 months | 31 December |
| Other Landfill gas monitoring As specified by schedule 3, table S3.4 | Every 3 months | 31 March, 30 June, 30 September, 31 December |
| Hydrogen sulphide | Every 6 months | 31 March, 30 September |
| Trace gas monitoring | Every 12 months | 31 December |

| Table S4.2: Annual production/treatment | |
|--|------------------------------|
| Landfill gas: combustion in flares; combustion in gas engines; and Other methods of gas utilisation. | Normalised cubic metres/year |
| Average methane content entering the landfill gas utilisation or treatment compound (based on the annual average of Table S3.4 monitoring) | % methane v/v |
| Methane generation rate (50%ile from a representative model) | m ³ /hr |

| Table S4.3 Performance parameters | | |
|--|--------------------------------|--------------|
| Parameter | Frequency of assessment | Units |
| - | - | - |

| Table S4.4 Reporting forms | | |
|-----------------------------------|---|---------------------|
| Media/parameter | Reporting format | Date of form |
| Air | Form air 1 or other form as agreed in writing by the Environment Agency | DD/MM/YY |

Schedule 5 – Notification

These pages outline 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 EP Regulations.

Part A

| | |
|--------------------------------|--|
| Permit Number | |
| Name of operator | |
| Location of Facility | |
| Time and date of the detection | |

| | |
|---|--|
| (a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit 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 |
| | |
| | |
| | |

| (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 submitted 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 facility in the preceding 24 months. | |

| | |
|------------------|--|
| Name* | |
| Post | |
| Signature | |
| Date | |

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

“Annex II” means Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“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 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment 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 Gas Infrastructure.

“CQA Validation Report” means the final “as built” construction and engineering details of the Gas 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.

“D” means a disposal operation provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“emissions to land” includes emissions to groundwater.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“exceeded” means that a value is above a permitted limit, or where a range of values or a minimum value is set as a permitted limit it means a value outside that range or below the minimum value, whichever is applicable.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Gas Infrastructure” means any specified element of the:

- landfill gas monitoring boreholes;
- landfill gas management systems;

within the site.

“LFTGN 04” means Environment Agency Guidance for monitoring trace components in landfill gas.

“LFTGN 05” means Environment Agency Guidance for monitoring enclosed landfill gas flares.

“LFTGN 07” means Environment Agency Guidance on monitoring landfill gas surface emissions.

“LFTGN 08” means Environment Agency Guidance for monitoring landfill gas engines.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“M2” means Environment Agency Guidance Monitoring of stack emissions to air.

“pests” means birds, vermin and insects.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“R” means a recovery operation provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

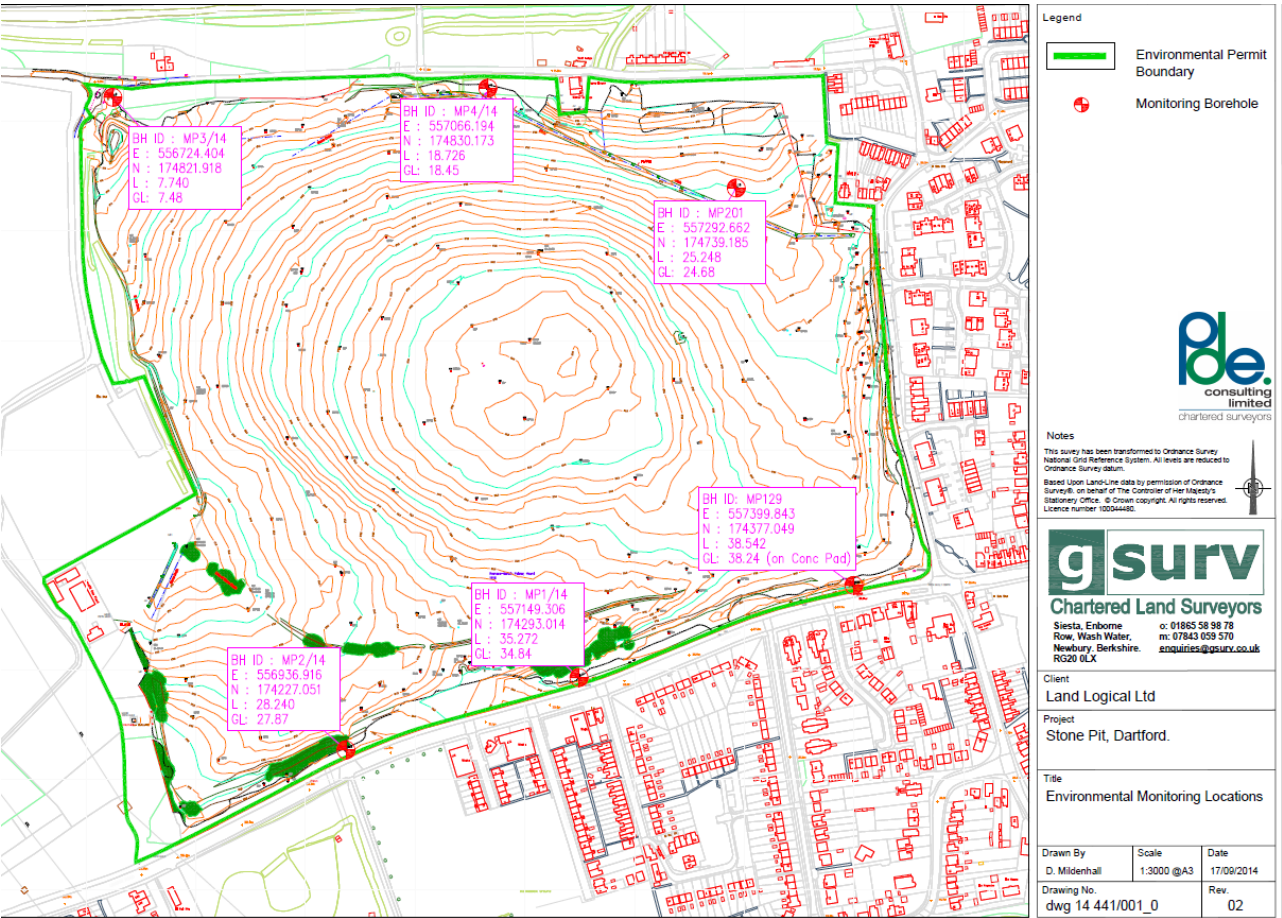
“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste.

“year” means calendar year ending 31 December.

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.

Schedule 7 – Site plan



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