



**Cyfoeth
Naturiol**
Cymru
**Natural
Resources**
Wales

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

City and County of Swansea

Tir John Landfill (Closed Site)
Tir John Landfill
Fabian Way
Port Tennant
Swansea
SA1 8QP

Permit number
EPR/JB3597TN

Tir John Landfill (Closed Site)

Permit number EPR/JB3597TN

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

This is a Tier 3 bespoke permit for a closed household, commercial and industrial waste (including hazardous waste) landfill. The site has stopped accepting waste for disposal, and the permit does not allow waste acceptance for this purpose. However, the site is not yet in 'definite closure'.

Waste may be accepted for restoration of the site, as set out in the approved closure and aftercare plan incorporated in Table S1.2 and in line with the relevant conditions, set out in this permit.

Emissions from the landfill are carried out in line with any limits in Table S1.1 and the techniques described in Table S1.2, namely:

- Surface water discharges (discharge of site drainage from the closed landfilled area off site for storage): integral discharge of surface water drainage from the closed landfill area discharged to the Tir John surface water storage lagoon under EPR/TP3935LA
- Leachate management (exportation of landfill leachate offsite for treatment): leachate arising from the closed landfill is transferred to the Tir John leachate treatment facility under EPR/VP3935AT
- Landfill gas utilisation (exportation of landfill gas off site for treatment): Landfill gas arising from the closed landfill is transferred to the Infinis (Re-Gen) Limited Gas Management Facility under EPR/BP3738LS
- Landfill gas flaring (exportation of landfill gas off site for treatment): Landfill gas arising from the closed landfill is transferred to the Infinis (Re-Gen) Limited Gas Management Facility under EPR/BP3738LS

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
Licence issued Reference L1/21	30/03/85	Original Control of Pollution Act licence for a landfill activity issued to Swansea City Council.
Transfer determined EAWML 34011 (formerly L1/21)	05/11/96	Permit modified to Waste Management Licence and transferred to Swansea City Waste Disposal Company Limited
Variation determined EAWML 34011	24/07/00	Variation issued
Closure notice EAWML 34011	20/02/06	Closure notice issued for Cells 1-4b
Variation determined EPR/JP3395FD/V003	15/03/13	Varied and consolidated permit issued in modern condition format as a result of a regulator initiated variation.
Transfer determined EPR/JB3597TN (full transfer of permit EPR/JP3395FD)	12/12/13	Full transfer of permit to City and County of Swansea complete
Variation determined EPR/JB3597TN/V002	15/08/18	Regulator initiated variation to add conditions agreed through previous improvement conditions, and amend remaining improvement conditions

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number
EPR/JB3597TN

The Natural Resources Body for Wales (“Natural Resources Wales”) authorises,
under regulation 13 of the Environmental Permitting (England and Wales) Regulations
2016

to
City and County of Swansea (“the operator”),

of
Waste Management Division
Civic Centre
Oystermouth Road
Swansea
SA1 3SN

to operate waste operations at

Tir John Landfill (Closed Site)
Tir John Landfill
Fabian Way
Port Tennant
Swansea
SA1 8QP

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

Name	Date
Louise Bailey	15/08/2018

Authorised on behalf of Natural Resources Wales

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 Energy efficiency

- 1.2.1 The operator shall:
- (a) Review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (b) Implement any 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 shaded in grey on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 (a) 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 Natural Resources Wales.

- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales 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 Natural Resources Wales.

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

2.5 Landfill Engineering

- 2.5.1 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 Natural Resources Wales has confirmed that it is satisfied with the construction proposals.
- 2.5.2 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 Natural Resources Wales.
- 2.5.3 The operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant landfill 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 Natural Resources Wales as soon as practicable.
- 2.5.5 For the purpose of condition 2.5.1, Natural Resources Wales 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 Natural Resources Wales has required further information under condition 2.5.5(b), Natural Resources Wales 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 Waste acceptance

- 2.6.1 No waste shall be accepted for disposal within the facility.

- 2.6.2 Wastes shall only be accepted for recovery if:
- (a) they are listed in schedule 2,
 - (b) they are not liquid waste (including waste waters but excluding sludge)
- 2.6.3 The operator shall visually inspect:
- (a) without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the landfill; and
 - (b) waste at the point of deposit;
- and shall satisfy itself that it conforms to the basic characterisation documentation submitted by the holder.
- 2.6.4 The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.
- 2.6.5 The total quantity of waste that shall be deposited in the landfill shall be limited by the final restoration contours as determined by Improvement Condition 13.
- 2.6.6 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in schedule 1 table S1.4.
- 2.6.7 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 recovery and of the identity of the producer. Any information regarded by the operator as commercially confidential shall be clearly identified in the record.

2.7 Leachate levels

- 2.7.1 The limits for the level of leachate listed in schedule 3 table S3.1 shall not be exceeded.

2.8 Closure and aftercare

- 2.8.1 The operator shall maintain a closure and aftercare management plan.

2.9 Landfill Gas Management

- 2.9.1 The operator shall take appropriate measures, including, but not limited to, those specified in any approved landfill gas management plan, to:
- (a) collect landfill gas; and
 - (b) control the migration of landfill gas.
- 2.9.2 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 flare or otherwise treat the gas.
- 2.9.3 The operator shall:
- (a) if notified by Natural Resources Wales, submit to Natural Resources Wales 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 Natural Resources Wales.

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 3, tables: S3.2; S3.3 and S3.4
- 3.1.2 The trigger levels for emissions into groundwater for the parameter(s) and monitoring point(s) set out in schedule 3 table S3.2 shall not be exceeded.
- 3.1.3 The operator shall submit to Natural Resources Wales a review of the Hydrogeological Risk Assessment:
- (a) between nine and six months prior to the sixth anniversary of the granting of the permit, and
 - (b) between nine and six months prior to every subsequent six years after the sixth anniversary of the granting of the permit.
- 3.1.4 The limits for landfill gas arising from the facility set out in schedule 3, tables S3.3 and S3.4 shall not be exceeded.

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 Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.
- 3.2.3 All liquids in containers, 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 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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales 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 Natural Resources Wales.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) Leachate specified in tables S3.1 and S3.6;
 - (b) Groundwater specified in tables S3.2 and S3.8;
 - (c) Landfill gas specified in tables S3.3, S3.4 and S3.5; and
 - (e) Surface water specified in table S3.7
- 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 A topographical survey of the site referenced to Ordnance Datum shall be carried out
- (a) annually, unless otherwise agreed with Natural Resources Wales, and
 - (b) following closure 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;
- (d) be retained, unless otherwise agreed in writing by Natural Resources Wales, 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 location of hazardous waste deposits; and
 - (vii) the specification and as built drawings of the basal, sidewall and capping engineering systems.

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 Natural Resources Wales.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) 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 facility and any agreed amendments thereto;
- (b) the energy consumed at the site, reported in the format set out in schedule 4 table S4.3
- (c) the annual production/treatment set out in schedule 4 table S4.2;
- (d) the topographical surveys required by condition 3.5.3 other than those submitted as part of a CQA validation report;
- (e) 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;
- (f) an assessment of the settlement behaviour of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;
- (g) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, 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.
- 4.2.4 Within one month of the end of each quarter, the operator shall submit to Natural Resources Wales 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.
- 4.2.5 The operator shall, unless notice under this condition has been served within the preceding four years, submit to Natural Resources Wales, within six 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.

4.3 Notifications

- 4.3.1 Natural Resources Wales 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 Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 Natural Resources Wales 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) Natural Resources Wales 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
Closed household, commercial and industrial hazardous waste landfill	D1: Deposit into or onto land (e.g. landfill)	Management and monitoring of emissions from the Closed landfill (including leachate and landfill gas) No waste shall be accepted for disposal at the site.
	R10: Land treatment resulting in benefit to agriculture or ecological improvement R5: Recycling/ reclamation of other inorganic compounds	Management and monitoring of emissions from the Recovery of waste (specified within Table S2.1) for restoration above the landfill cap.
	Integral discharge of surface water drainage from the landfilled area	Site drainage arising from the closed landfill exported off site to an appropriately authorised facility.
		Leachate management: Leachate arising from the closed landfill exported offsite to an appropriately authorised facility There shall be no re-circulation of leachate at the facility. Landfill gas utilisation: Landfill gas arising from the closed landfill appropriately authorised facility. Landfill gas flaring: Landfill gas arising from the closed landfill exported off site to an appropriately authorised facility.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Closure Report	Jacobs document "Environmental Permit EAWML/34011 Cells 1 to 4b Closure Report" document reference: B1160000/OP015, dated February 2012, sections: 2.1.2; 2.1.3; 2.1.4; 2.2.3; 3.1; 3.3; 3.4.2; 3.4.3; 3.6; 3.7.2; 3.7.3; 3.8; 3.9; 3.10.2; 3.10.3; 3.10.4; 3.10.5; 3.10.6; 3.11.4; 3.11.5; 4.2; 4.3; 5.	14 th February 2012
Hydrogeological Risk Assessment (HRA) Review	Terraconsult Report "Tir John (closed) Landfill Site Hydrogeological Risk Assessment Review", dated May 2016, (excluding tables 14, 16 to 18)	31 st May 2016
Leachate Management Plan - addendum	Cory Document: "Leachate Management Plan 2014 – September 2014"	29 th September 2014

Table S1.2 Operating techniques

Description	Parts	Date Received
	Email (Cory) dated 1st of June 2015 from M. Silvester. Sections relating to IC 5 and drawing TJD007	1 st June 2015
Surface Water Management Plan - addendums	Cory Drawing: " Surface Water Management Plan - Final" Reference TJD006, dated 28 May 2015.	1 st June 2015
	Cory Drawing: " Surface Water Management Plan - Temporary" Reference TJD005, dated 28 May 2015.	1 st June 2015
	Section 5 - Cory Report: "Tir John Landfill Capping Outline Design and CQA Plan Phase 1(Cells 1 to 4b) Landfill Permanent Capping" dated 2016, Version 3.2	14 th April 2016
	Section 8 - Cory Document: "Tir John Landfill Site Restoration Plan V3.2" - May 2016"	12 th May 2016
Capping Design and Construction Plan	Cory Report: "Tir John Landfill Capping Outline Design and CQA Plan Phase 1(Cells 1 to 4b) Landfill Permanent Capping" dated 2016, Version 3.2 including appendices.	14 th April 2016
Stability Risk Assessment (SRA) Review	Geotechnology Report "Tir John, Phase 1 Capping Scheme Stability risk assessment Report Addendum" document reference 1524r1v1d0915, dated September 2015	19 th February 2016
Restoration Plans	Cory Drawing: "Tir John Revised Post Settlement Restoration Contours" Reference TJD009, dated 29 May 2015.	1 st June 2015
	Cory Document: "Tir John Landfill Site Restoration Plan V3.2" - May 2016"	12 th May 2016
Improvement Programme	All reports and plans submitted and agreed with Natural Resources Wales as part the Improvement Programme detailed in Table S1.3.	n/a

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC3a	<p>The capping of the phase 1 landfill (as the area shown outlined in black on drawing reference: B1160000/C1-4b/CR_02, Rev 1) shall be undertaken and completed by the deadline specified in this table.</p> <p>The final capping system shall comprise of either:</p> <ul style="list-style-type: none"> • a minimum 1 meter thick clay layer (or other low permeability material (e.g. 500mm BES layer) emplaced in layers to achieve a hydraulic conductivity not greater than 1×10^{-9} metres per second, or; • a geosynthetic capping system with a hydraulic conductivity less than 1×10^{-9} metres per second; • or a combination of both. <p>The Construction Quality Assurance for the capping and restoration of the phase 1 site shall be undertaken in accordance with the provisions of condition 2.5 of this permit.</p>	30 th September 2018

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC10	<p>The Operator shall forward to Natural Resources Wales for written approval a consolidated and updated closure report which is to include the following:</p> <ul style="list-style-type: none"> • A revised Hydrogeological Risk Assessment; • A revised Stability Risk Assessment; • A revised leachate management plan; and • A revised Landfill Gas Management Plan <p>The revised closure report is to include the information obtained from completed improvement conditions 1 – 8.</p>	31 st November 2018 (unless otherwise agreed in writing with Natural Resources Wales)
IC11	<p>The operator shall complete the final soil restoration layer on the phase 1 landfill (being the area shown outlined in black on drawing reference: B1160000/C1-4b/CR_02, Rev 1) to the deadline specified in this table.</p> <p>The restoration of the phase 1 landfill shall be undertaken in accordance with the approved construction and restoration plans (unless otherwise agreed in writing with Natural Resources Wales).</p>	31 st December 2018 (unless otherwise agreed with Natural Resources Wales).
IC12	<p>The Operator shall review all available monitoring data and propose revised Leachate Levels limits for the following locations: HWM8 (Cell4a); HWM6a (Cell 4b) and; HWM4 (Cell 4b).</p> <p>A report justifying the proposed leachate levels limits shall be submitted to Natural Resources Wales for approval by the date specified.</p> <p>Upon written approval from Natural Resources Wales the revised Leachate Level limits for these wells shall be incorporated into the permit.</p>	31 st October 2019 (unless otherwise agreed with Natural Resources Wales)
IC13	<p>The operator shall provide a drawing to Natural Resources Wales, for written approval, which shows the final restoration contours for cells 1-4b.</p> <p>Upon written approval from Natural Resources Wales, this drawing shall be incorporated into the permit, and be the drawing referenced in condition 2.6.5 of this permit.</p>	28 th September 2018

Table S1.4 Annual waste input limits

Category	Limit Tonnes/ Year
Suitable waste for engineering including cover and restoration of the Phase 1 Landfill	The maximum quantity for waste to be accepted on site shall not exceed 132,000 tonnes per year and no more than 132,000 tonnes in total for the entire restoration, unless otherwise agreed in writing with Natural Resources Wales

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Permitted waste types and quantities for waste types accepted for restoration	
Maximum quantity	The maximum quantity for waste to be accepted on site shall not exceed 132,000 tonnes per year and no more than 132,000 tonnes in total for the entire restoration
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 02	wastes from mineral non-metalliferous excavation
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
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 04	wastes from sugar processing
02 04 01	soil from cleaning and washing beet
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
03 03	wastes from pulp, paper and cardboard production and processing
03 03 05	de-inking sludges from paper recycling
03 03 09	lime mud waste
10	WASTES FROM THERMAL PROCESSES
10 12	wastes from manufacture of ceramic goods, bricks, tiles and construction products
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)
10 13	wastes from manufacture of cement, lime and plaster and articles and products made from them
10 13 14	waste concrete and concrete sludge
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 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
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 18	pyrolysis wastes other than those mentioned in 19 01 17 (consisting of Biochar from pyrolysis / gasification of wood only)
19 05	wastes from aerobic treatment of solid wastes
19 05 03	off-specification compost
19 06	wastes from anaerobic treatment of waste
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
19 08	wastes from waste water treatment plants not otherwise specified
19 08 02	waste from desanding

Table S2.1 Permitted waste types and quantities for waste types accepted for restoration	
Maximum quantity	The maximum quantity for waste to be accepted on site shall not exceed 132,000 tonnes per year and no more than 132,000 tonnes in total for the entire restoration
Waste code	Description
19 08 05	sludges from treatment of urban waste water
19 09	wastes from the preparation of water intended for human consumption or water for industrial use
19 09 02	sludges from water clarification
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 09	minerals (for example sand, stones)
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
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 02	garden and park wastes (including cemetery waste)
20 02 02	Soil and stones

Schedule 3 – Emissions and monitoring

Table S3.1 Leachate level limits and monitoring requirements			
Monitoring point ref. & location	Limit (including unit)	Monitoring frequency	Monitoring standard or method
Cell 1a: HWM10 & HWM12 Cell 1b: HWM13 Cell 2: HWM9 A & HWM 11 Cell 3: HWM7 & HWM5, as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: "Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales	1m above cell basal liner	Weekly reducing to monthly upon final capping of cell, unless otherwise agreed in writing with Natural Resources Wales	1. Accurate to + 0.01m relative to Ordnance Datum 2. Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document "Guidance on monitoring of landfill leachate, groundwater and surface water" (LFTGN 02).
Cell4a: HWM8, Cell 4b: HWM6a and HWM4 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: "Leachate Management Plan 2014 – September 2014"). or as otherwise agreed in writing with Natural Resources Wales	As specified in IC12		

Table S3.2 Trigger levels for emissions into groundwater and monitoring requirements				
Emission point ref. & location	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method
GDW24 (S)	Ammoniacal Nitrogen	75 mg/l	Quarterly	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document "Guidance on monitoring of landfill leachate, groundwater and surface water" (LFTGN02).
GDW24 (D)		85 mg/l		
GDW26		25 mg/l		
GDW21 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: "Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales		51 mg/l		

Table S3.3 Landfill gas in external monitoring boreholes				
Emission point ref. & location	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method
TIRGP03 (LFG3); TIRPG04 (LFG4); TIRPG05 (LFG5); TIRGP02 (LFG 10); TIRGP06 (LFG11); TIRGP07 (LFG12) as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales	Methane	1% v/v	Monthly	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document "Guidance on the management of landfill gas" (LFTGN03).
TIRGP08 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales	Methane	2.5% v/v		
TIRGP0 (LFG 1) as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales	Methane	20.7% v/v		
TIRGP01 (LFG 1); TIRGP03 (LFG 3); TIRPG04 (LFG4); TIRPG05 (LFG5); TIRGP02 (LFG 10); TIRGP06 (LFG11); TIRGP07 (LFG12); TIRGP08 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014").	Carbon Dioxide	No limit set		
	Oxygen			
	Differential Pressure			
	Temperature			
	Meteorological Conditions			
	Atmospheric Pressure			
Two external monitoring points to be agreed writing with Natural Resources Wales	Gas chromatographic analysis	No limit set	Annually	
Monitoring of site buildings - within 25m of the waste mass	Flammable gas	Detectable levels	Continuous	
	Carbon Dioxide	No limit set	Monthly	

Table S3.4 Landfill gas from capped surfaces – limits and monitoring requirements				
Emission point ref. & location	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method
Permanently capped zone	Average Methane flux	Where a rate of 0.001 mg/m ² /second is exceeded appropriate measures must be taken to reduce the rate	Annually	Flame ionisation detector walkover, flux box or as otherwise agreed in writing with Natural Resources Wales ¹ .
Temporarily capped zone	Average Methane flux	Where a rate of 0.1 mg/m ² /second is exceeded appropriate measures must be taken to reduce the rate.		

¹ 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 with an FID can be used to demonstrate that the surface emissions are under control. If this survey shows no change in the pattern of methane emission, it may be used as the annual survey. The values for flux and total methane emissions measured in the previous year may be reported and a fresh flux box survey is not necessary. If the zone remains stable, the results of a full walkover survey may be accepted as the site report for a period of four years before a further quantitative flux box survey is required. An alternative method of monitoring landfill gas emissions from capped areas can also be agreed in writing with Natural Resources Wales. For example, the operator can use methane surface concentrations surveys, although separate limits and monitoring parameters will need to be agreed with Natural Resources Wales (e.g. methane surface concentration in ppm).

Table S3.5 Landfill gas – other monitoring requirements				
Monitoring point ref. & location	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
All gas collection wells and any other (in-waste) gas monitoring points	Methane	Monthly unless otherwise agreed in writing with Natural Resources Wales	Unless otherwise agreed in writing with Natural Resources Wales monitoring methods used shall be in accordance with Environment Agency document “Guidance on the management of landfill gas” (LFTGN03).	On an annual basis the operator shall submit an up to date scale plan detailing the locations of all in-waste monitoring/ extraction points installed at the installation. Each borehole shall be referenced with a unique identifier.
	Carbon Dioxide			
	Oxygen			
	Balance Gas			
	Carbon Monoxide			
	Atmospheric pressure			
	Differential pressure			
	Meteorological Data			
	Hydrogen sulphide	Six Monthly		
	Water Level			

Table S3.5 Landfill gas – other monitoring requirements				
Monitoring point ref. & location	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
In-waste well location to be agreed in writing with Natural Resources Wales	Trace Gas Analysis	Annually	The selection of sample point and monitoring method shall be justified in writing with reference to Environment Agency guidance document “Guidance for monitoring trace components in landfill gas” (LFTGN04).	To be agreed in writing with Natural Resources Wales at least 14 days prior to taking the sample.
Gas inlets from Phase 1 to gas utilisation plant (TIRS1100, TIRS1200, TIRS1300).	Methane	Monthly unless otherwise agreed in writing with Natural Resources Wales	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document “Guidance on the management of landfill gas” (LFTGN03) and “Guidance for monitoring trace components in landfill gas” (LFTGN04).	Not set
	Carbon Dioxide			
	Oxygen			
	Carbon Monoxide			
	Balance Gas			
	Gas Flow			
	Atmospheric pressure			
	Differential pressure			
	Meteorological Data			
Monitoring of site buildings at points greater than 25 m from the waste mass	Hydrogen Sulphide	Six Monthly	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document “Guidance on the management of landfill gas” (LFTGN03).	
	Flammable gas	Monthly		
	Carbon dioxide			

Table S 3.6 Leachate– other monitoring requirements			
Monitoring point ref. & location	Parameter	Monitoring frequency	Monitoring standard or method
<div>Sample from one leachate well from each of the following cells: Cell 1a; Cell 1b; Cell 2; Cell 3 & Cell 4.</div> <div>Sample from one effluent chamber associated with the gravity drainage system.</div>	Electrical Conductivity	Six Monthly	In accordance with Environment Agency document “Guidance on monitoring of landfill leachate, groundwater and surface water” (LFTGN02).
	Ammoniacal Nitrogen		
	Chloride		
	Sodium		
	Temperature		
	pH		
	Potassium		
	Nitrite		
	Arsenic		
	BOD		
	COD		
	TON (oxidised- N)		
	TOC		
	Calcium		
	Magnesium		
	Alkalinity		
	SO ₄		
	Iron		
	Manganese		
	Cadmium		
	Chromium		
	Copper		
	Nickel		
	Lead		
	Zinc		
	Fluoride		
	Mercury		
	Nitrate		
	Orthophosphate		
	Total petroleum hydrocarbons (using TPHWG banding)	Annually	
	1, 2 dichloroethane		
	2,4,5 trichlorophenol		
	2,4,6 trichlorophenol		
	Benzene		
	Benzo (b) fluoranthene		
	Benzo(a)pyrene		
	Chlorobenzene		
	Ethyl Benzene		
	Indeno(1,2,3cd)pyrene		
	M,p-xylene		
	Napthalene		
	o-xylene		
	Pentachlorophenol		
	p-isopropyltoluene		
	Toluene		
	Tributyltin		

	Mecoprop		
	Boron		
	Sulphate		
	Dichlorprop		
	Tributyl Phosphate		
	Depth to base of Monitoring Well		

Table S3.7 Surface water – other monitoring requirements

Monitoring point ref. & location	Parameter	Monitoring frequency	Monitoring standard or method
<p>Surface Water discharges to attenuation lagoon. Locations as shown in following drawings:</p> <ul style="list-style-type: none">• Temporary discharge points during capping and restoration as shown on drawing reference TJD005 (“Surface Water Management Plan – Temporary” dated 28 May 2015) or as otherwise agreed in writing with Natural Resources Wales.• Post capping and restoration discharge points (shown as two discharge point labelled as “connect to sw lagoon via ug pipework & connections”) in drawing reference TJD006 “Surface Water Management Plan - Final" dated 28 May 2015 or as otherwise agreed in writing with Natural Resources Wales.	Visual inspection for evidence of contamination	Daily	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document “Guidance on monitoring of landfill leachate, groundwater and surface water” (LFTGN02).
	Temperature	Quarterly for first three years following seeding of permanent cap, reverting to six monthly thereafter (unless otherwise agreed in writing with Natural Resources Wales)	
	pH		
	Dissolved Oxygen		
	Ammoniacal Nitrogen		
	Chloride		
	Chemical Oxygen Demand		
	Biological Oxygen Demand		
	Suspended Solids		
	Any other parameters as specified in the site Restoration Plan		
<p>Ecological Monitoring Transects EMT1N and EMT5 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 (“Cory Document: Leachate Management Plan 2014 – September 2014”) or as otherwise agreed in writing with Natural Resources Wales.</p>	Ground level (mOD)	Annually	Unless otherwise agreed in writing with Natural Resources Wales, the monitoring shall be undertaken in accordance with the Jacobs document” Ecological Monitoring Plan: Consultation Draft (Rev A), dated July 2009”.
	Water Level (mOD)		
	Ammoniacal Nitrogen		
	Nitrate		
	Nitrite		
	Chloride		
	Phosphorus (Total)		
	Orthophosphate		
	pH		
	Dissolved Oxygen		
	Biological Oxygen Demand		
	Sulphate		

Table S3.8 Groundwater – other monitoring requirements

Monitoring point ref. & location	Parameter	Monitoring frequency	Monitoring standard or method
JB1, JB3 GDW1(S), GDW1(D), GDW3(S), GDW3(D), GDW2(S), GDW2(D), GDW21, GDW23, GDW24(D), GDW24(S), GDW25, GDW26 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 (“Cory Document: Leachate Management Plan 2014 – September 2014”) or as otherwise agreed in writing with Natural Resources Wales.	Groundwater Level	Quarterly	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document “Guidance on monitoring of landfill leachate, groundwater and surface water” (LFTGN02).
	Ammoniacal nitrogen		
	Arsenic		
	BOD		
	Chloride		
	COD		
	Dissolved oxygen (DO)		
	Electrical Conductivity		
	Iron		
	Manganese		
	Mercury		
	Nitrate		
	Nitrite		
	Orthophosphate, reactive as P		
	pH		
	Potassium		
	Redox potential (Eh)		
	Sodium		
	Temperature		
	TOC		
	Alkalinity	Annually	
	Cadmium (dissolved)		
	Calcium (dissolved)		
	Magnesium (dissolved)		
	Mecoprop		
	Sulphate (dissolved)		
	Tributylphosphate		
Zinc (dissolved)			
Hazardous Substance suite (To be agreed with Natural Resources Wales)			
Well base			

Schedule 4 – Reporting

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Leachate levels As required by condition 3.5.1	<p>Cell 1a: HWM10 & HWM12 Cell 1b: HWM13 Cell 2: HWM9 A & HWM 11 Cell 3: HWM7 & HWM5, as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("2014 Monitoring Plan") or as otherwise agreed in writing with Natural Resources Wales.</p> <p>Cell4a: HWM8, Cell 4b: HWM6a and HWM4 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales.</p>	Every 3 months	1 January, 1 April, 1 July, 1 October
Groundwater Parameters as required by condition 3.5.1	<p>JB1, JB3 GDW1(S), GDW1(D), GDW3(S), GDW3(D), GDW2(S), GDW2(D), GDW21, GDW23, GDW24(D), GDW24(S), GDW25, GDW26</p> <p>as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales.</p>	Every 3 months	1 January, 1 April, 1 July, 1 October
Landfill gas lateral migration Parameters as required by condition 3.5.1	<p>TIRGP01 (LFG 1) TIRGP03 (LFG 3) TIRPG04 (LFG4) TIRPG05 (LFG5) TIRGP02 (LFG 10) TIRGP06 (LFG11) TIRGP07(LFG12) TIRGP08</p> <p>as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales.</p> <p>Two external monitoring points to be agreed with the Natural Resources Wales</p> <p>Monitoring of site buildings - within 25m of the waste mass</p>	Every 3 months	1 January, 1 April, 1 July, 1 October
Landfill gas surface emissions Parameters as required by condition 3.5.1	<p>Permanently capped zone</p> <p>Temporarily capped zone</p>	Every 12 months	1 January

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Other Landfill gas monitoring Parameters as required by condition 3.5.1	<p>All gas collection wells and any other (in-waste) gas monitoring points</p> <p>In-waste well location to be agreed with the Natural Resources Wales</p> <p>Gas inlets from Phase 1 to gas utilisation plant (TIRS1100, TIRS1200, TIRS1300).</p> <p>Monitoring of site buildings at points greater than 25 m from the waste mass</p>	Every 3 months	1 January, 1 April, 1 July, 1 October
Other leachate monitoring Parameters as required by condition 3.5.1	<p>Sample from one leachate well from each of the following cells: Cell 1a; Cell 1b; Cell 2; Cell 3 & Cell 4.</p> <p>Sample from one effluent chamber associated with the gravity drainage system.</p>	Every 3 months	1 January, 1 April, 1 July, 1 October
Other leachate monitoring Parameters as required by condition 3.5.1 (Hazardous substances Screen)		Every 12 months	1 January

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Other surface water monitoring Parameters as required by condition 3.5.1	<p>Surface Water discharges to attenuation lagoon.</p> <p>Locations as shown in following drawings:</p> <ul style="list-style-type: none"> • Temporary discharge points during capping and restoration as shown on drawing reference TJD005 ("Surface Water Management Plan – Temporary" dated 28 May 2015) or as otherwise agreed in writing with Natural Resources Wales. • Post capping and restoration discharge points (shown as two discharge point labelled as "connect to sw lagoon via ug pipework & connections") on drawing reference TJD006 "Surface Water Management Plan - Final" dated 28 May 2015" or as otherwise agreed in writing with Natural Resources Wales. <p>Ecological Monitoring Transects EMT1N and EMT5 as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales.</p>	Every 3 months	1 January, 1 April, 1 July, 1 October
Other groundwater monitoring Parameters as required by condition 3.5.1	<p>JB1, JB3 GDW1(S), GDW1(D), GDW3(S), GDW3(D), GDW2(S), GDW2(D), GDW21, GDW23, GDW24(D), GDW24(S), GDW25, GDW26</p> <p>as shown on drawing reference: JB3597TN/2014APR/B Rev 0 ("Cory Document: Leachate Management Plan 2014 – September 2014") or as otherwise agreed in writing with Natural Resources Wales.</p>	Every 3 months	1 January, 1 April, 1 July, 1 October

Table S4.2: Annual production/treatment	
Leachate: Disposed of off site; Disposed of to any onsite effluent treatment plant.	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 S4.3 Performance Parameters			
Parameter	Frequency of assessment	Annual total	Unit
Energy used (including for leachate treatment)	Annually		MWh of electricity

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
Leachate	Form leachate 1 or other reporting format to be agreed in writing with Natural Resources Wales	15/08/18
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with Natural Resources Wales	15/08/18
Landfill Gas	Form LFG 1 or other reporting format to be agreed in writing with Natural Resources Wales	15/08/18
Controlled water	Form Water 1 or other reporting format to be agreed with Natural Resources Wales	15/08/18
Energy usage	Form Energy 1 or other form as agreed in writing by Natural Resources Wales	15/08/18
Waste Return	Waste Return Form from Natural Resources Wales website	n/a
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with Natural Resources Wales	n/a

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.

“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 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.

“Cell layout drawing” means:

(a) A drawing or drawings of the proposed new cell that illustrate(s) in sufficient detail:

- i. the location of the new cell on the site;
- ii. the proposed level (Above Ordnance Datum) of the base of the excavation;
- iii. the proposed finished levels of all containment and leachate drainage layers;
- iv. the positions of leachate management infrastructure; and
- v. the positions of landfill gas infrastructure (if appropriate).

(b) A detailed written explanation of any minor design changes from the most recently approved cell that result from the new cell layout. This would include, for example:

- i. changes to slope length and gradient within the cell;
- ii. new leachate or landfill gas infrastructure construction design;
- iii. slope stability issues such as new basal excavation level; and/or
- iv. depth of waste.

“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 Landfill Infrastructure.

“CQA Validation Report” means the final “as built” construction and engineering details 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 Landfill Infrastructure;
- Validation by a qualified person that all of the construction has been carried out in accordance with the Construction Proposals.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“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.

“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

“Landfill Infrastructure” means any specified element of the:

- permanent capping;
- leachate abstraction systems;
- leachate transfer, treatment and storage systems;
- surface water drainage systems and monitoring points;
- leachate monitoring wells;
- groundwater monitoring boreholes;
- landfill gas monitoring boreholes;
- landfill gas management systems;

within the site.

“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.

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

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

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

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

- groundwater under-drainage system;
- permanent geophysical leak location system;
- leak detection layer;
- sub-grade;
- barriers;
- liners;
- leachate collection system;
- leachate abstraction system;
- separation bund/layer;
- cell or area surface water drainage system;
- side wall subgrade and containment systems;

for the New Cell.

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

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

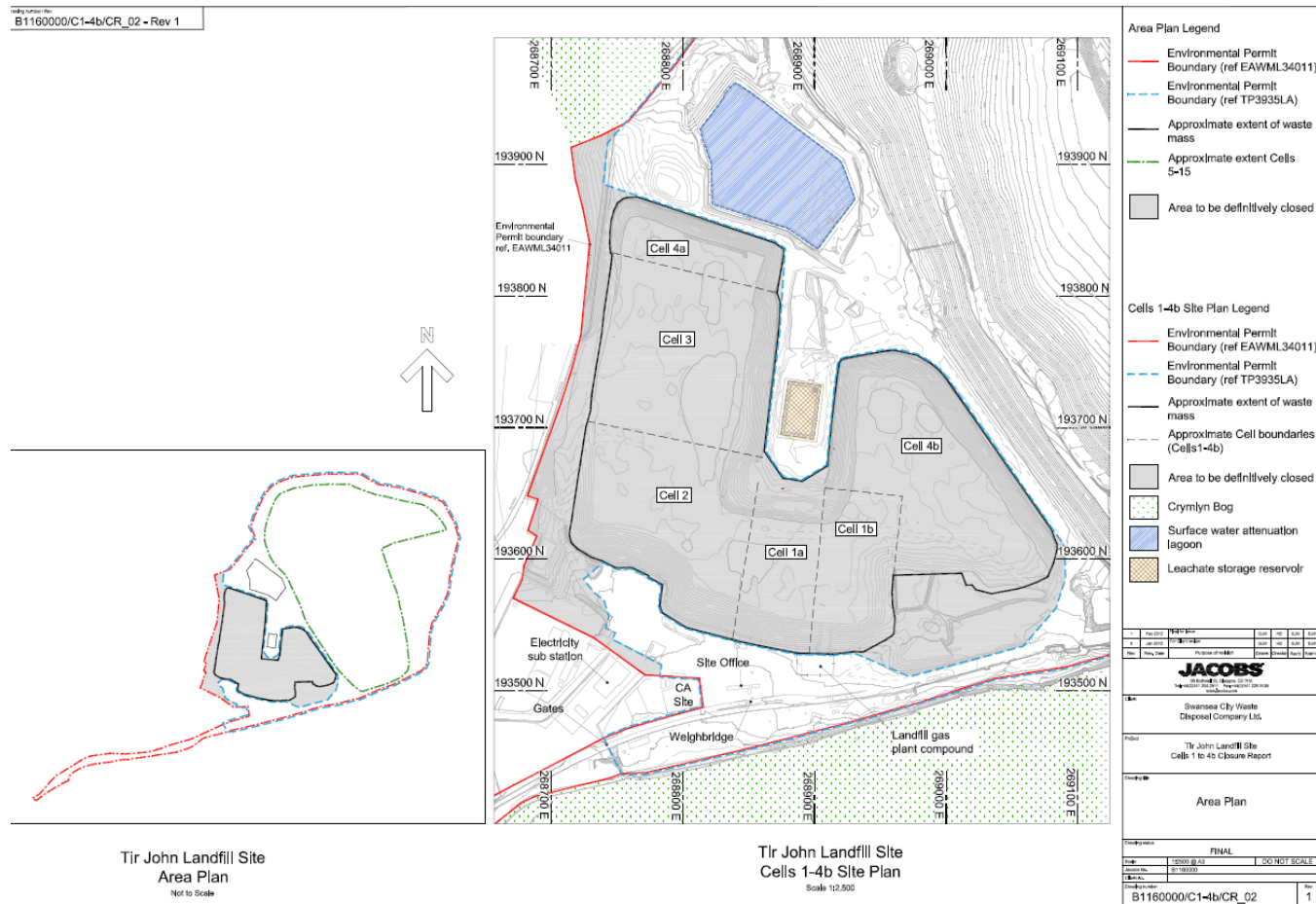
“Review of the Hydrogeological Risk Assessment” means a written review of the hydrogeological risk assessment included in the Application, together with any other parts of the Application that addressed the requirements of the EP Regulations. The review shall assess whether the activities of disposal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

“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.

Schedule 7 - Site plan



Permit Number: EPR/JB3597TN

Operator: City and County of Swansea

Facility: Tir John Landfill (Closed Site)

Form Number: Lechate1 / 15/08/18

Reporting of leachate monitoring for the period from DD/MM/YYYY to DD/MM/YYYY

Monitoring Point	Substance / Parameter	Trigger level	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date.....

Permit Number: EPR/JB3597TN

Operator: City and County of Swansea

Facility: Tir John Landfill (Closed Site)

Form Number: Groundwater1 / 15/08/18

Reporting of groundwater monitoring for the period from DD/MM/YYYY to DD/MM/YYYY

Monitoring Point	Substance / Parameter	Trigger level	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date.....

Permit Number: EPR/JB3597TN

Operator: City and County of Swansea

Facility: Tir John Landfill (Closed Site)

Form Number: Landfill gas1 / 15/08/18

Reporting of landfill gas monitoring for the period from DD/MM/YYYY to DD/MM/YYYY

Monitoring Point	Substance / Parameter	Trigger level	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]

[5] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[6] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[7] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[8] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date.....

Permit Number: EPR/JB3597TN

Operator: City and County of Swansea

Facility: Tir John Landfill (Closed Site)

Form Number: Water1 / 15/08/18

Reporting of landfill gas monitoring for the period from DD/MM/YYYY to DD/MM/YYYY

Monitoring Point	Substance / Parameter	Trigger level	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]

[9] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[10] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[11] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[12] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date.....

Permit Number: EPR/JB3597TN

Operator: City and County of Swansea

Facility: Tir John Landfill (Closed Site)

Form Number: Energy1 / 15/08/18

Reporting of energy usage indicators for the period DD/MM/YYYY to DD/MM/YYYY

Parameter	Units

Operator's comments :

Signed
(Authorised to sign as representative of Operator)

Date.....