Variation notice with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Trecatti Landfill Site

Biffa Waste Services Limited
Fochriw Road
Merthyr Tydfil
Mid Glamorgan
CF48 4AB

Variation notice number
EPR/RP3733PC/V005

Permit number
EPR/RP3733PC

Trecatti Landfill Site
Permit number EPR/RP3733PC

Introductory note

This introductory note does not form a part of the permit

The following notice gives notice of the variation of an environmental permit.

This is an admin variation to make the following changes:

1) Apply the correct emission limit values for engine T2G1
2) Gas flare A11 has been removed
3) Groundwater wells references corrected
4) New groundwater well added (GW13)
5) New leachate wells added (LW7 and LW8)
6) New monitoring drawing added to the permit

The schedules specify the changes made to the original permit.

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

Status Log of the permit		
Detail	**Date**	**Response Date**
Application EPR/RP3733PC (reference EPR/RP3733PC/A001)	Received 07/05/04	Duly made 21/05/04
Permit EPR/RP3733PC determined	09/03/05	
Application for Permit Variation YP3037UA (reference EPR/RP3733PC/V002)	Received 28/09/07	Duly made 09/10/07
Application for Permit Variation DP3037UY (reference EPR/RP3733PC/V003)	Received 17/12/07	Duly made 02/01/08
Variation notice DP3037UY (reference EPR/RP3733PC/V003) determined	18/01/08	
Variation notice YP3037UA (reference EPR/RP3733PC/V002) determined	14/04/08	
EA-initiated Variation EPR/RP3733PC/V004 determined	18/01/11	
Admin variation EPR/RP3733PC/V005	17/10/12	
Admin variation determined EPR/RP3733PC	12/02/13	Varied permit issued

Other existing licences/authorisations/registrations relating to this site		
Holder	**Reference Number**	**Date of issue**
Biffa Waste Services Limited	Trade effluent discharge consent (to sewer) reference number TE456	14/04/93

End of Introductory Note

Notice of variation

Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies

Permit number
EPR/RP3733PC

Issued to:
Biffa Waste Services Limited ("the Operator"),

whose registered office is

Coronation Road
Cressex
High Wycombe
Buckinghamshire
HP12 3TZ

company registration number 946107

to operate a regulated facility at

Trecatti Landfill Site
Fochriw Road
Merthyr Tydfil
Mid Glamorgan
CF48 4AB

the extent set out in schedules.

The notice shall take effect from 12/02/2013

Name	Date
Jacqui Murray	**12/02/2013**

Authorised on behalf of the Environment Agency

Schedule 1 – conditions to be deleted

None.

Schedule 2 – conditions to be amended

The following conditions are amended as a result of the application made by the operator

Table S3.1 of the permit EPR/RP3733PC/V004, as it relates to condition 1.4, shall be amended to:

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
1	The Operator shall review all available groundwater monitoring data relating to both the existing groundwater monitoring points, and those recently installed boreholes 81701091 (GW9), 81701101 (GW10), 81701111 (GW11), 81701121 (GW12) and submit to the Environment Agency for approval proposed control and trigger levels for key determinands based on a minimum of at least 12 months monitoring data, including ammoniacal nitrogen and chloride, for groundwater quality for individual downgradient monitoring locations. Derivation of compliance limits and assessment criteria shall be undertaken in accordance with Environment Agency publication H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010 and good statistical practice and shall include assessment for and removal of outliers in the data sets and the use of graphical time / concentration charts. On approval in writing by the Environment Agency, the compliance limits and assessment criteria for groundwater quality shall be implemented.	18 /07/12
2a	The Operator shall provide to the Agency for approval a landfill gas management and monitoring plan having regard to "Guidance on the management of landfill gas' (LFTGN03)". The plan shall include but not be limited to a review of their landfill gas risk assessment and data from the landfill gas collection system. Based on this review the Operator shall assess whether fluctuations in the flow or composition of landfill gas in the collection system presents a risk to controlling emissions to air or other environmental impact.	18/07/11
2b	If under reference 2a above it is concluded that fluctuations in the flow or composition of landfill gas in the collection system present a risk to controlling emissions to air or other environmental impact then the following requirement shall apply: The Operator shall provide written proposals for the installation of appropriate measures for continuous monitoring of the composition and flow rate of landfill gas at the input to the gas engine(s) and/ or flare(s) for approval by the Agency. The proposals shall ensure that any monitoring is possible at all times, and appropriate back-up systems are in place to control landfill gas.	18/10/11

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
3	The Operator shall undertake an assessment of the environmental significance of the authorised discharge of treated leachate (effluent) from the landfill to sewer, and shall propose revised compliance limits for effluent quality for effluent discharged to sewer from the landfill, where necessary. The assessment shall, unless otherwise agreed in writing with the Environment Agency, follow the methodology set out in Environment Agency document Horizontal Guidance Note H1 – Environmental risk assessment for permits. The Operator shall submit to the Environment Agency for approval, details of the assessment, and proposed revised compliance limits for effluent quality, in the form of a written report.	18/04/11
4	The Operator shall provide to the Agency for approval a leachate management and monitoring plan having regard to H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010. The plan shall include but not be limited to the implementation of measures to reduce leachate heads within the landfill to levels lower than the limits proposed in the original Application, as follows: Phase 1 – leachate head limit 5 metres above base; and Phase 2 – leachate head limit 33 metres above base. The plan shall include an addendum detailing: • Details of the measures taken to achieve the necessary reduction in leachate levels; and • A staged timetable for achieving as soon as possible the necessary reduction in leachate levels.	18/04/11
5	The Operator shall submit in writing to the Environment Agency for approval :- 1. A revised hydrogeological risk assessment that forms a baseline status for the landfill that describes and explains the existing observed effects of the landfill to date on groundwater beneath the landfill. All components of the revised baseline HRA shall be described and explained including the conceptual model, quantitative model, quantitative model parameterisation, quantitative model results, monitoring results for each landfill cell and groundwater, and correlation of the modelling results and the observed groundwater conditions. 2. Once the revised baseline HRA is approved by the Agency the Operator shall use the baseline HRA to derive suitable leachate compliance limits and assessment criteria for each cell, and revise the requisite surveillance programme. The revised hydrogeological risk assessments shall be prepared in accordance with relevant guidance contained within Environment Agency publication H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010.”	18/07/11

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
6	The Operator shall submit in writing to the Environment Agency for approval a revised gas risk assessment. The assessment shall include (but not be limited to): • Review and justification of the effects of leachate abstraction, the propensity of gases to go into and out of solution with depth, zones of influence (both vertical and horizontal) of leachate and landfill gas extraction wells, synergistic effects and auto-ignition temperatures; • Review of the ability and effectiveness of all existing measures to contain, collect, control and prevent the migration of landfill gas throughout the entire depth of the waste mass(es) and their potential to contribute towards adverse odour impacts at sensitive receptors beyond the installation boundary; and The revised gas risk assessment shall be prepared in accordance with the recommendations given within the relevant Environment Agency Landfill Technical Guidance Notes (LFTGN 03 to 08).	6 Months from date of compliance with reference 5.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
7	Following reviews of the hydrogeological, and gas, risk assessments undertaken as a result of Refs. 5 and 6, the Operator shall submit to the Environment Agency for approval written proposed revised leachate level assessment criteria and compliance limits demonstrated to minimise emissions to groundwater, to prevent the input of hazardous substances to groundwater, to limit the inputs of non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater, and to enable effective landfill gas management to take place. Where the proposed revised leachate level compliance limits show that a further reduction in leachate levels within the landfill are required to prevent the input of hazardous substances to groundwater, to limit the inputs of non-hazardous pollutants to groundwater, the Operator shall submit in writing to the Environment Agency for approval a revised leachate management plan. The revised leachate management plan shall include (but need not be limited to) assessment of: • Appraisal and selection of options and proposals for achieving the necessary reduction in leachate levels; • A timetable for achieving that reduction in leachate levels as soon as possible; • Appropriate monitoring techniques for monitoring leachate levels within the waste, including provision of monitoring points discrete from extraction wells; • Capacity of existing extraction infrastructure; • Well depth; • Well yield; • Provision of additional extraction infrastructure; • Methods for minimising ingress of water into the waste body; • Maintenance and replacement of extraction infrastructure during both operational and closure periods; • Capacity of treatment infrastructure, and provision of additional capacity where necessary; • Capacity of treated effluent disposal infrastructure, and provision of additional capacity where necessary, including by alternative means and application of best available techniques; • Contingency measures to be undertaken if assessment criteria for leachate level exceeded. The revised leachate management plan shall be prepared in accordance with relevant guidance contained with Environment Agency guidance publications “How to comply with your environmental permit Additional guidance for: Landfill (EPR 5.02)”, and “Guidance for the Treatment of Landfill Leachate (IPPC S5.03)”. On approval in writing by the Environment Agency, the timetable for achieving reduction in leachate levels proposed in 8a above shall be implemented by the Operator.	31/07/11
8	The Operator shall provide to the Agency a report for approval containing the results of a review of the perimeter borehole trace gas monitoring data which identifies the source of gases in monitoring points 81701016, 81701021, 81701025, 81701026 and shall propose where appropriate assessment criteria and compliance limits for appropriate parameters in those monitoring points to identify the escape of landfill gas from the landfill. On approval in writing by the Environment Agency assessment criteria and compliance limits for methane and carbon dioxide shall be implemented by the Operator.	18/07/11

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
9	The Operator shall provide to the Agency for approval management plans having regard to the appropriate guidance which details measures for the control of Litter, Odour; and Pests.	18/04/11
10	The Operator shall review available groundwater monitoring data relating the recently installed boreholes 81701213 (GW13) and submit to the Environment Agency for approval proposed control and trigger levels for key determinands based on a minimum of at least 12 months monitoring data, including ammoniacal nitrogen and chloride, for groundwater quality for individual downgradient monitoring locations. Derivation of compliance limits and assessment criteria shall be undertaken in accordance with Environment Agency publication H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010 and good statistical practice and shall include assessment for and removal of outliers in the data sets and the use of graphical time / concentration charts. On approval in writing by the Environment Agency, the compliance limits and assessment criteria for groundwater quality shall be implemented.	01/03/14

Table S3.1 of the permit EPR/RP3733PC/V004, as it relates to condition 2.8.1 and 3.5.1, shall be amended to:

Table S3.1 Leachate level limits and monitoring requirements

Monitoring point reference/ Description (1)	Limit	Monitoring frequency	Monitoring method
81703050 (LW5) and 81703060 (LW6) (Monitoring points located in Phase 1)	5 metres above the base of Phase 1 (2)	Monthly	Unless otherwise agreed in writing with the Environment Agency, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02).
81703010 (LW1), 81703020 (LW2), 81703030 (LW3) and 81703040 (LW4) 81703070 (LW7) and 81703080 (LW8) (Monitoring points located in Phase 2)	33 metres above the base of Phase 2 (2)	Monthly	
Monitoring points located in 'Merthyr Waste' area (3).	(3)	(3)	

(1) identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.

(2) Limits apply after compliance with condition 2.4.1 table S1.3 reference 4.

(3) Determined in compliance with condition 2.4.1, Table S1.3, Reference 7, where the revised HRA deems these necessary.

Table S3.2 of the permit EPR/RP3733PC/V004, as it relates to condition 3.1.1, 3.1.2 and 3.5.1, shall be amended to:

Table S3.2 Point source emissions to air – emission limits and monitoring requirements

Emission point Ref. & Location (1)	Parameter	Source	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
T1G1, T2G1	Oxides of Nitrogen	Gas utilisation plant	650 mg/m^3	Hourly mean	Annually	As per M2 version 7 issued August 2010 'Monitoring of stack emissions to air'.
	CO		1500 mg/m^3			
	Total VOCs		1750 mg/m^3			
T1G2, T2G2, T2G3 and T2G4	Oxides of Nitrogen	Gas utilisation plant	500 mg/m^3	Hourly mean	Annually	As per M2 version 7 issued August 2010 'Monitoring of stack emissions to air'.
	CO		1400 mg/m^3			
	Total VOCs		1000 mg/m^3			
A8, A9, and A10	Oxides of Nitrogen	Landfill Gas Flares	150 mg/m^3	Hourly mean	Annually (2)	As per M2 version 7 issued August 2010 Monitoring of stack emissions to air'.
	CO		100 mg/m$^{3(}$ (50 mg/m^3)(3)			
	Total VOCs		10 mg/m^3			

Table S3.2 Point source emissions to air – emission limits and monitoring requirements						
Emission point Ref. & Location (1)	**Parameter**	**Source**	**Limit (including unit)**	**Reference Period**	**Monitoring Frequency**	**Monitoring Standard or Method**

(1) Identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.

(2) Annual monitoring of flares is only required when flare operate in excess of 10% of the time, taken on an annual assessment period.

(3) 50 mg/m³ limit applies for flares commissioned after 31 December 2003.

Table S3.3 of the permit EPR/RP3733PC/V004, as it relates to condition 3.1.1 and 3.5.1, shall be amended to:

Table S3.3 Point source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point Ref. & Location	**Parameter**	**Source**	**Limit (including unit)**	**Reference Period**	**Monitoring Frequency**	**Monitoring Standard or Method**
81702001 and 81702002 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Site drainage and uncontaminated groundwater from beneath composite liner via balancing lagoon system.	Volume of pumped discharge	8985 cubic metres per day	-	Daily	As per LFTGN02 issued February 2003 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'.
		Rate of pumped discharge	150 litres per second	-	Continuous	
		Suspended solids	100 mg/l	Spot sample	Monthly	
		COD	120 mg/l			
		Ammoniacal nitrogen	5 mg/l			
		Ph	Minimum 6 pH units Maximum 8 pH units			
		Oil and grease	None visible	Observation	Monthly	

Table S3.4 of the permit EPR/RP3733PC/V004, as it relates to condition 3.1.1 and 3.5.1, shall be amended to:

Table S3.4 Point source emissions to sewer, effluent treatment plant or by tankering or other transfer off-site– emission limits and monitoring requirements

Emission point Reference & Location	Parameter	Source	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
81703400 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Determined in compliance with condition 2.4.1 table S1.3, reference 3.	Leachate treatment plant	Determined in compliance with condition 2.4.1 table S1.3, reference 3.	Spot Sample	Determined in compliance with condition 2.4.1 table S1.3, reference 3.	As per LFTGN02 issued February 2003 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'. H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010.

Table S3.5 of the permit EPR/RP3733PC/V004, as it relates to condition 3.1.5 and 3.5.1, shall be amended to:

Table S3.5 Trigger levels for emissions into groundwater and monitoring requirements

Monitoring point reference (1)	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
81701110 (GW1) and 81701120 (GW2)	Ammoniacal Nitrogen	1.50 mg/l	Spot sample	Quarterly	As per LFTGN02 (issued February 2003 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'. H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010.
	Chloride	250 mg/l			
	Cadmium	0.10 μg/l			
	Mecoprop	0.04 μg/l			
	Toluene	4.00 μg/l			
	Xylene	3.00 μg/l			
	Naphthalene	1.00 μg/l			
81701209 (GW9), 81701210 (GW10), 81701211 (GW11) and 81701212 (GW12)	Determined in compliance with condition 2.4.1, Table S1.3, Reference 1	Determined in compliance with condition 2.4.1, Table S1.3, Reference 1			
81701213 (GW13)	Determined in compliance with condition 2.4.1, Table S1.3, Reference 10	Determined in compliance with condition 2.4.1, Table S1.3, Reference 10			

(1) identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.

Table S3.6 of the permit EPR/RP3733PC/V004, as it relates to condition 3.1.7 and 3.5.1, shall be amended to:

Table S3.6 Landfill gas in external monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method
81701001, 81701002, 81701003, 81701006, 81701007, 81701009, 81701010, 81701011, 81701012, 81701013, 81701014, 81701015, 81701017, 81701018, 81701019, 81701020, 81701022, 81701023 and 81701024. identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Methane	1.0 %v/v	Monthly	As per LFTGN 03 issued September 2004 'Guidance on the management of landfill gas'.
	Carbon Dioxide	10.0 %v/v		
	Oxygen	No limit		
	Atmospheric pressure	No limit		
	Differential Pressure	No limit		
	Meteorological data	No limit		
81701004 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Methane	3.0 %v/v		
	Carbon Dioxide	10.0 %v/v		
	Oxygen	No limit		
	Atmospheric pressure	No limit		
	Differential Pressure	No limit		
	Meteorological data	No limit		
81701008 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Methane	1.0 %v/v	Monthly	As per LFTGN 03 issued September 2004 'Guidance on the management of landfill gas'.
	Carbon Dioxide	12.0 %v/v		
	Oxygen	No limit		
	Atmospheric pressure	No limit		
	Differential Pressure	No limit		
	Meteorological data	No limit		
81701016, 81701021, 81701025 and 81701026 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Methane	(1)		
	Carbon Dioxide	(1)		
	Oxygen	No limit		
	Atmospheric pressure	No limit		
	Differential Pressure	No limit		
	Meteorological data	No limit		

(1) Determined in compliance with condition 2.4.1, Table S1.3, reference 8.

Table S3.8 of the permit EPR/RP3733PC/V004, as it relates to condition 3.5.1, shall be amended to:

Table S3.8 Landfill gas – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
T1G1, T1G2, T2G1, T2G2, T2G3 and T2G4 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	NOx and CO	Quarterly	Portable combustion analyser, as agreed with the Agency.	
	Sulphur Dioxide	Annually	As per M2 version 7 issued August 2010 'Monitoring of stack emissions to air'.	
gas collection system at well control valve and manifolds on gas system	Methane Carbon Dioxide Oxygen Carbon Monoxide Atmospheric pressure Differential pressure Suction % Balance Gas (calculated as the difference between the sum of measured gases and 100%)	Weekly	As per LFTGN03 issued September 2004 'Guidance on the management of landfill gas'.	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 undertaken.
Manifolds 1, 2, 3, 3A, 4, 5 and 7.	Gas flow rate			
Input to LFG Utilisation Compound identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Trace gas analysis in accordance with LFTGN04.	Annually	As per LFTGN04 issued September 2004 'Guidance for Monitoring Trace Components in Landfill Gas'.	The concentration of trace gas components shall be assessed against the assumptions made in the Landfill gas risk assessment and dispersion modelling.
Flares- A8, A9 and A10 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Temperature	Weekly while flare operational	As per M2 version 7 issued August 2010	

Table S3.8 Landfill gas – other monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Input to LFG Utilisation Compound identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Methane Carbon Dioxide Oxygen Gas flow rate % Balance Gas (calculated as the difference between the sum of measured gases and 100%)	Weekly	As per LFTGN05 issued September 2004 'Guidance for monitoring enclosed landfill gas flares'.	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.
81701005 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Methane Carbon Dioxide Oxygen Atmospheric pressure Differential Pressure	Monthly	As per LFTGN 03 issued September 2004 'Guidance on the management of landfill gas'.	

Table S3.9 of the permit EPR/RP3733PC/V004, as it relates to condition 3.5.1, shall be amended to:

Table S3.9 Leachate– other monitoring requirements

Emission point reference or source or description of point of measurement (1)	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
81703050 (LW5) and 81703060 (LW6). (Monitoring points located in Phase 1) 81703010 (LW1), 81703020 (LW2), 81703030 (LW3) and 81703040 (LW4). 81703070 (LW7) and 81703080 (LW8) (Monitoring points located in Phase 2) Monitoring points located in 'Merthyr Waste' area determined in compliance with condition 2.4.1, Table S1.3, Reference 7, where the revised HRA deems these necessary.	Electrical conductivity, Chloride, Ammoniacal Nitrogen, pH ,Total alkalinity, Magnesium, Potassium, Total sulphates, Calcium, Sodium, BOD, COD, TOC, TON, Manganese, Iron, Chromium, Copper, Lead, Zinc, Nickel, Mecoprop, Toluene, Xylene, Naphthalene and Cadmium	Quarterly	As per LFTGN02 issued February 2003 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'. H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010.	-
	Hazardous substances	Annually		-
	Depth to base of monitoring well	Annually		-

(1) identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.

Table S3.10 of the permit EPR/RP3733PC/V004, as it relates to condition 3.5.1, shall be amended to:

Table S3.10 Surface water – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
81702001, 81702002 and 81702003 identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Electrical conductivity, Chloride, Ammoniacal nitrogen, pH, Suspended solids, COD and BOD.	Monthly	As per LFTGN02 issued February 2003 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'.	

Table S3.11 of the permit EPR/RP3733PC/V004, as it relates to condition 3.5.1, shall be amended to:

Table S3.11 Groundwater – other monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
81701110 (GW1), 81701120 (GW2), 81701130 (GW3), 81701140 (GW4), 81701150 (GW5), 81701160 (GW6), 81701170 (GW7), 81701180 (GW8) 81701209 (GW9), 81701210 (GW10), 81701211 (GW11) and 81701212 (GW12) and 81701213 (GW13) identified on monitoring infrastructure plan T3180504, revision 4, dated 12/10/12.	Water level	Monthly	As per LFTGN02 issued February 2003 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'. H1 - Technical Annex to Annex (j): Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control Levels and Compliance Limits, v2.0, April 2010.	
	Electrical conductivity, Chloride, Ammoniacal nitrogen, pH, Total alkalinity, Magnesium, Potassium, Total sulphates, Calcium, Sodium, Nitrates, Nitrites, Phosphates, Manganese, Iron, Chromium, Copper, Lead, Zinc, Nickel, Mecoprop, Toluene, Xylene, Naphthalene and Cadmium.	Quarterly		
	Hazardous substances	Annually		
	Depth to base of monitoring well	Annually		

Table S3.12 of the permit EPR/RP3733PC/V004, as it relates to condition 3.1.8 and 3.5.1, shall be amended to:

Table S3.12 Particulate matter in ambient air - limits and monitoring requirements					
Monitoring Point Ref./Description	**Parameter**	**Limit (Including Unit)**	**Reference Period**	**Monitoring Frequency**	**Monitoring Standard or Method**
D1, D2, D3 and D4 identified on monitoring infrastructure T3180504, revision 4, dated 12/10/12.	PM10	40μ/m3 - annual mean. 50μ/m3 - 24 hour mean, not to be exceeded >35 times per year.	24 hours	Six monthly	As per M17 issued March 2004 'Monitoring of Particulate Matter in ambient air around waste facilities'.
	Deposited particulate	200 mg/m-2 day-1	24 hours	Six monthly	

Table S4.1 of the permit EPR/RP3733PC/V004, as it relates to condition 4.2.3, shall be amended to:

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	81703010 (LW1), 81703020 (LW2), 81703030 (LW3), 81703040 (LW4), 81703050 (LW5), 81703060 (LW6) 81703070 (LW7) and 81703080 (LW8) monitoring points located in 'Merthyr Waste' area determined in compliance with condition 2.4.1, Table S1.3, Reference 7, where the revised HRA deems these necessary.	Every 3 months	1 January, 1 April, 1 July, 1 October From date of installation and then 1 January, 1 April, 1 July, 1 October.
Emissions to air Parameters as required by condition 3.5.1	T1G1, T1G2, T2G1, T2G2, T2G3, T2G4, A8, A9, and A10	Every 12 months	1 January
Emissions to water Parameters as required by condition 3.5.1	81702001 and 81702002	Every 3 months	1 January, 1 April, 1 July, 1 October
Emissions to sewer, effluent treatment plant, etc. Parameters as required by condition 3.5.1	81703400	Every 3 months	1 January, 1 April, 1 July, 1 October
Groundwater Parameters as required by condition 3.5.1	81701110 (GW1), and 81701120 (GW2). 81701209 (GW9), 81701210 (GW10), 81701211 (GW11), 81701212 (GW12) and 81701213 (GW13)	Every 3 Months	1 January, 1 April, 1 July, 1 October From date of installation and then 1 January, 1 April, 1 July, 1 October.
Landfill gas lateral migration Parameters as required by condition 3.5.1	81701001, 81701002, 81701003, 81701004, 81701006, 81701007, 81701008, 81701009, 81701010, 81701011, 81701012, 81701013, 81701014, 81701015, 81701016, 81701017, 81701018, 81701019, 81701020, 81701021, 81701022, 81701023, 81701024, 81701025 and 81701026.	Every 3 months	1 January, 1 April, 1 July, 1 October
Landfill gas surface emissions Parameters as required by condition 3.5.1	Permanently and Temporarily capped zone	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 Trace gases	81701005	Every 3 months	1 January, 1 April, 1 July, 1 October
	Input to LFG Utilisation Compound	Every 12 months	1 January, 1 April, 1 July, 1 October
Other leachate monitoring Parameters as required by condition 3.5.1	81703010 (LW1), 81703020 (LW2), 81703030 (LW3), 81703040 (LW4), 81703050 (LW5) and 81703060 (LW6) 81703070 (LW7) and 81703080 (LW8)	Monthly and quarterly parameters every 3 months	1 January, 1 April, 1 July, 1 October
Hazardous substances, and Monitoring point base		Every 12 months	1 January
	Monitoring points located in 'Merthyr Waste' area determined in compliance with condition 2.4.1, Table S1.3, Reference 7, where the revised HRA deems these necessary.	Monthly and quarterly parameters every 3 months	From date of installation and then 1 January, 1 April, 1 July, 1 October.
Hazardous substances, and Monitoring point base		Every 12 months	1 January
Other surface water monitoring Parameters as required by condition 3.5.1	81702001, 81702002 and 81702003.	Every 3 months	1 January, 1 April, 1 July, 1 October
Particulate matter Parameters as required by condition 3.5.1	D1, D2, D3 and D4	Every 6 months	1 January, 1 April, 1 July, 1 October
Other groundwater monitoring Parameters as required by condition 3.5.1	81701110 (GW1), 81701120 (GW2), 81701130 (GW3), 81701140 (GW4), 81701150 (GW5), 81701160 (GW6), 81701170 (GW7), and 81701180 (GW8).	Monthly and quarterly parameters every 3 months	1 January, 1 April, 1 July, 1 October
Hazardous substances, and Monitoring point base		Every 12 months	1 January
	81701209 (GW9), 81701210 (GW10), 81701211 (GW11), 81701212 (GW12) and 81701213 (GW13)	Monthly and quarterly parameters every 3 months	From date of installation and then : 1 January, 1 April, 1 July, 1 October.
Hazardous substances, and Monitoring point base		Every 12 months	1 January

Schedule 3 – conditions to be added

None.