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Comhairle Contae County Council

Ballyogan Landfill Facility and Recycling Park Waste Licence W0015-01

Annual Environmental Report 2009

June 2010

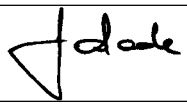
RPS

Ballyogan Landfill Facility and Recycling Park Waste Licence W0015-01

Annual Environmental Report

DOCUMENT CONTROL SHEET

Client	Dun Laoghaire Rathdown County Council					
Project Title	Ballyogan Landfill Facility and Recycling Park					
Document Title	Annual Environmental Report 2009					
Document No.	088510001Rp076					
This Document Comprises	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	1	43	1	1	4

Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
F01	Final	Brenda McEvoy	Una Fitzgerald	Larry O' Toole	West Pier	June 2010
						

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1 INTRODUCTION AND SITE DESCRIPTION

This Annual Environmental Report (AER) for Ballyogan Landfill Facility and Recycling Park for 2009 has been prepared by RPS on behalf of Dun Laoghaire Rathdown County Council (DLR). The AER includes, where applicable, the information specified in Schedule C of Waste Licence W0015-01, 'Content of the Annual Environmental Report', and has been prepared in accordance with the Environmental Protection Agency publication 'Waste Licensing - Draft Guidance on Environmental Management Systems and Reporting to the Agency' (1999).

1.1 WASTE LICENCE REGISTER NUMBER

Dun Laoghaire Rathdown County Council are the licensee for the Ballyogan Landfill Facility and Recycling Park under Waste Licence W0015-01. Ballyogan Landfill (now closed) is operated by DLRCC and Ballyogan Recycling Park (BRP) is operated by Greenstar under a three year short term contract with DLR. This contract elapsed in 2008. An interim contract is currently in place at the BRP. These facilities are located in Jamestown, Carrickmines, Dublin 18.

1.2 REPORTING PERIOD

The reporting period for the purposes of this AER is January to December 2009 inclusive.

Quarterly reports follow the standard periods of:

- Quarter 1: January - March
- Quarter 2: April - June
- Quarter 3: July - September
- Quarter 4: October - December

1.3 WASTE ACTIVITIES AND QUANTITIES

The principal activity at the Ballyogan Facility up to March 2005 was 'deposit in, on or under land' within the landfill site. Commissioning of the Baling Station within the BRP began in January 2005. The landfill ceased accepting waste on 29th March 2005 and subsequently the principal activity shifted to the Baling Station where waste was baled and transported off-site for disposal at Arthurstown Landfill, Kill, Co. Kildare. Waste activities at the Ballyogan Waste Transfer Facility (WTF) ceased in May 2009 with collected waste subsequently transferred to Ballymount Baling Station. Recycling facilities are provided for members of the public at the Civic Recycling Facility (CRF) within the Recycling Park, under the operation of Greenstar.

The total quantity of waste landfilled between 1975 when the landfill opened and March 2005 is estimated at 3,079,673 tonnes.

1.4 SITE DESCRIPTION

Local Environmental Conditions

Ballyogan Landfill Facility and Recycling Park is located in the Townland of Jamestown, Carrickmines, Dublin 18, approximately 7km south west of Dun Laoghaire. The surrounding area is characterised by a mixture of agricultural, recreational, residential and commercial land use. The total site area is approximately 62 hectares, 43 of which have been used for landfilling. The BRP currently occupies approximately 11 hectares. The remaining area consists of the landfill site entrance and service roads, former landfill site compound, landfill gas combustion plant and other services. The site layout is shown on Figure 1.1.

Topography

Ballyogan Landfill is a 'land raise' situation where the landfill has been built on the original ground topography. The landfill rises between 10-30m above the original ground surface. The levels of the original topography ranged from circa 84m OD (Poolbeg) in the northeast of the site to circa 109m OD in the south west of the site. The Ballyogan Stream is situated in the north of the site and marks the lowest point. Generally, older areas of the landfill were filled to approximately 10m above the original levels, whilst filling in the centre of the site continued to approximately 30m above the original ground. A valley transverses the site due to the presence of ESB high voltage power lines. Waste was tipped on either side of the power lines creating the valley profile.

The Recycling Park is located between Ballyogan Road and the Ballyogan Stream. The site slopes away from the road and southwards towards the stream.

Geology

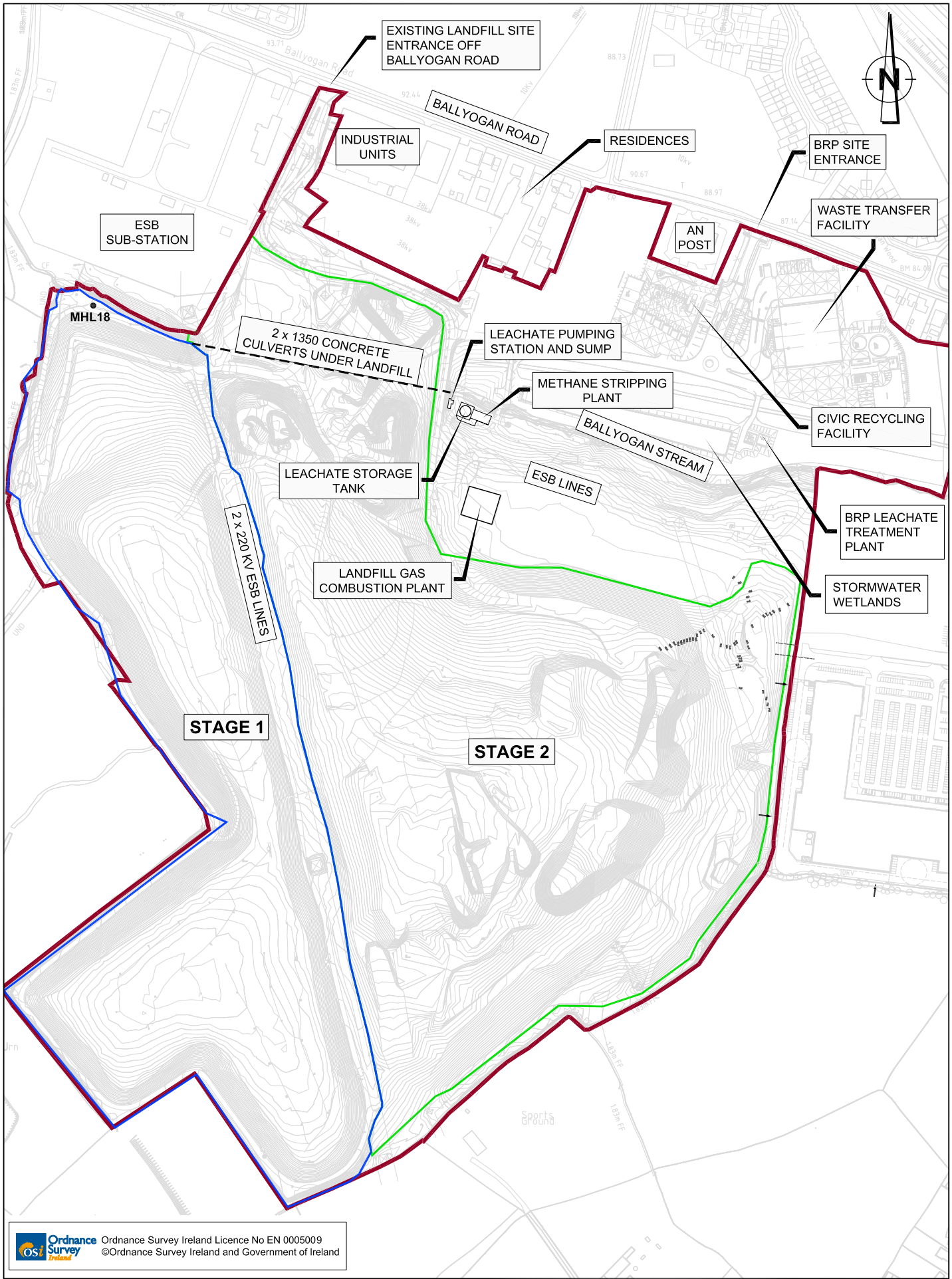
The Ballyogan Facility is underlain by Granite bedrock, which lies at the northern edge of the Leinster Granite Massif that formed the Wicklow Mountains. There is a degree of weathering at the top of the bedrock under most of the site and surrounding land. On average 0.5-1m of the granite is weathered.

The overburden geology of the Ballyogan area is dominated by boulder clay deposited in an ice sheet, which moved south-eastwards over the granite terrain and pushed up against the Dublin Mountains to the south and west of the site. Some discrete pockets of outwash sand and gravel were deposited by melt water as the ice sheet retreated. There are also alluvial sand and gravel deposits associated with the Ballyogan Stream.

Landfill Containment Details

The naturally occurring low permeability boulder clay underlying the landfill site provides a natural liner for the landfill. Bund walls were constructed from imported clay to act as lateral containment. Leachate is collected via a network of pipes which are directed to the leachate sump. The leachate lagoon has been replaced with a new system of leachate management comprising a leachate storage tank and methane stripping plant, both of which are located adjacent to the leachate sump. Leachate from the site is discharged to the Carrickmines sewer which runs through the northern part of the site.

The Stage 2 Capping works were ongoing in 2009 (started in August 2008), and were approximately 95% complete by the end of 2009.



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Project: Ballyogan Landfill & Recycling Park
Annual Environmental Report 2009

Title: SITE LAYOUT

Issue Details	
Drawn:	HF
Checked:	BMcE
Approved:	PL
Scale:	1:5,000 @ A4
Date:	June '10

Office Use Only	
Job No.	MDE0010
File Ref.	088510001FG1.1_F01

Fig No. Figure 1.1

Rev. F01

Hydrogeology

Established ground water flow patterns are from southwest to northeast through the site towards the Ballyogan Stream. North of the stream the direction of flow is northwest to southeast. It appears that the Ballyogan Stream and/or the sand and gravel deposits running along its channel are acting as a discharge area for the groundwater in both over burden and bedrock.

Previous intrusive investigations (boreholes and trial pits) at the site have shown that groundwater moves slowly in the bedrock and overburden and therefore, the underlying geology is not considered significant as a potential or existing water source.

Hydrology

The Ballyogan Stream is located in the northern part of the site, and separates the landfill from the Recycling Park. The stream is culverted under the oldest area of waste for a length of approximately 250m. It flows eastwards and joins the Loughlinstown River approximately 2.5km east of the site.

The 'Golf Stream' was previously culverted through the landfill in the south west of the site. It was diverted in 2005 to flow around the landfill along the western boundary of the site, as part of the Stage 1 Capping works. This stream drains areas to the west of the site, including the adjacent golf course. It formerly discharged into an open drain along the south eastern boundary of the landfill. The diversion works in 2005 re-directed it to flow northwards and join the Ballyogan Stream. The south east boundary drain flows eastwards from the landfill to meet the Glenamuck Stream. The Glenamuck Stream then flows northwards and joins the Ballyogan Stream approximately 300m east of the site.

Local Meteorology

A meteorological station in the BRP records the local meteorological conditions on a daily basis. Rainfall for the twelve month period from January to December 2009 was recorded at 925mm. It should be noted that 12 days of data is absent from the records due to technical difficulties encountered at the meteorological station in the BRP.

2 MANAGEMENT OF THE ACTIVITY

2.1 MANAGEMENT AND STAFFING STRUCTURE

Ballyogan Landfill and Recycling Park is under the overall operational control of the Director of Services as well as the Senior Engineer, Water and Waste Services, Dun Laoghaire - Rathdown County Council.

Once waste acceptance ceased in 2005, the number of staff at the landfill was reduced to the Landfill Manager Mr Brian Cryan, with office support from the Senior Executive Engineer, and the Senior Engineer from DLRCC Water and Waste Services. Table 2.1 outlines the details of the management personnel for the site.

Table 2.1: Management Personnel for Ballyogan Landfill

Name	Contact Details
Frank Austin Director of Services, Water and Waste Services	Dun Laoghaire Rathdown County Council County Hall Marine Road Dun Laoghaire Tel: 01 - 2054700 Fax: 01 - 2054736
Peter Goodwin Senior Engineer, Water and Waste Services	
Michael Whelan Senior Executive Engineer, Water and Waste Services	
Brian Cryan, Site Manager Site representative for DLR for the Landfill and the Recycling Park	Ballyogan Landfill and Recycling Park Ballyogan Road Carrickmines Dublin 18 Tel: 01 - 2913600 Fax: 01 - 2913625

Greenstar's staff structure for the BRP as at December 2009 is outlined in Table 2.2 below. The Landfill Manager's office has been located in the BRP since waste acceptance ceased in 2005. The Landfill Manager's role has since expanded to include supervision of the Operator's (Greenstar) activities at the CRF, Baling Station and ancillary activities, and management of the Operating Contract. Support is also provided by the Senior Executive Engineer.

Table 2.2: Greenstar's Staff Structure at the BRP

Role	Name
General Manager	Pearse McGrath
Engineering Manager/Operations Engineer	David Sweeney
Operations Supervisor	Derek Turner
Facility Administrator	Jacqui King
Weighbridge Operator	Audrius Janusauskas
Security Staff	Cill Dara Security
Waste Transfer Facility	
Control Room Operative	Michael Kelleher
Plant Operator	Piotr Topkin
Maintenance Fitter	Jarlath Reynolds
Civic Recycling Facility	
Team Leader	Alan McNulty
General Operatives	Keith Halpin
	Kieran McFarlane
	James Dunne
	Anthony Byrne
	Kevin Walshe
Note: Pearse McGrath replaced Mark Heesom as General Manager of BRP in July 2009. * Since May 2009 Ballyogan WTF was closed and the positions of weighbridge officer and WTF staff were made redundant.	

2.2 SCHEDULE OF ENVIRONMENTAL OBJECTIVES AND TARGETS FOR THE FORTHCOMING YEAR

A schedule of Objectives and Targets for the period 2010 - 2011 is set out in Table 2.3 below. With respect to the landfill, since waste acceptance ceased in March 2005, the objectives and targets relate mainly to the protection of the receiving environment and the restoration and aftercare of the site.

Table 2.3: Objectives and Targets for 2010 - 2011

SCHEDULE OF OBJECTIVES AND TARGETS 2010 - 2011				
Objective	**Target**	**Measures**	**Timescale**	**Designation of Responsibility**
Maintain as a minimum level 2009 levels of waste recovery from waste arising at CRF.	As a minimum target, to maintain 2009 levels of waste recovery and recycling of 76%.	2009 recovery percentage as target and baseline measures, respectively.	Reported on monthly, and measured over 2010.	Greenstar
Reduce service level complaints at CRF by a further 20% on 2008	20% reduction upon 2008 figures.	Complaint Records	Reported on monthly and measured over 2010.	Greenstar
Maintain reportable accidents to zero.	Zero occurrence of reportable accidents.	Accident Records.	Reported on monthly and measured over 2010.	Greenstar
Maintain (and improve if possible) lower levels of incidents recorded.	All facility users to be fully compliant with site safety rules.	Incident Records	Reported on monthly, and measured over 2010.	Greenstar
Support of the Dublin Waste Region Waste Management Strategy	Maintain baling facility and associated infrastructure on 'stand-by'	Regular inspections and appropriate maintenance	Reported on monthly, and measured over 2009.	Greenstar
Maintain zero odour nuisances during 2009.	Maintain odour complaints to zero.	Complaints Records and Community Liaison Groups.	Reported on monthly and measured throughout 2010.	Greenstar
Minimise nuisances to immediate boundary neighbours.	Ensure facility operations do not give rise to complaints from immediate neighbours.	Improvement measured against 2010 complaint records.	Reported on monthly and measured throughout 2010.	Greenstar
Minimise energy and water usage through effective measures across the site.	Maintain energy awareness with staff.	Utility bills/real time monitoring	Measured monthly	Greenstar

SCHEDULE OF OBJECTIVES AND TARGETS 2010 - 2011				
Objective	**Target**	**Measures**	**Timescale**	**Designation of Responsibility**
Reduce leachate generation.	Complete the capping of the landfill.	Stage 2 capping contract.	To be completed by May 2010	Senior Engineer, Water & Waste Services
Reduce the number of incidents of landfill gas exceedence at the perimeter of the site and reduce landfill gas emissions to the atmosphere.	Complete the capping of the landfill and the installation of a perimeter LFG Management System.	Stage 2 capping including the installation of a perimeter system.	To be completed by May 2010	Senior Engineer, Water & Waste Services
Commission wells lost due to capping works and install replacement perimeter monitoring lost due to new DLR Depot works	Replace monitoring infrastructure lost due to development works.	Installation of replacement wells and monitoring points by appropriate contractors.	Following completion of the capping works and new DLR Depot	Senior Engineer, Water & Waste Services
Support of the Dublin Waste Region Waste Management Protocols	Have up to date best practice operational procedures in place for the CRF.	Appoint Operating Contractor for Civic Recycling Facility	July 2010	Senior Engineer, Water & Waste Services
Public Amenity of Landfill	Finalise proposal	Discuss with EPA, DLR Depts, including Parks	October 2010	Parks Department

2.3 REPORT ON THE PROGRESS TOWARDS ACHIEVEMENT OF THE ENVIRONMENTAL OBJECTIVES AND TARGETS CONTAINED IN THE PREVIOUS YEARS REPORT (AER 2008)

A Schedule of Objectives and Targets for 2009 - 2010 was submitted to the Agency with the AER for 2008. Table 2.4 outlines the progress made in 2009 towards achieving these targets.

Table 2.4: Schedule of Objectives and Targets 2009 - 2010: Progress Towards Achievement

SCHEDULE OF OBJECTIVES AND TARGETS 2009 - 2010: PROGRESS TOWARDS ACHIEVEMENT			
Objective	**Target**	**Project**	**% Completion**
Maintain as a minimum level 2008 levels of waste recovery from waste arising at CRF.	As a minimum target, to maintain existing levels of waste recovery and recycling. To explore and determine new methods, systems and practices of increasing diversion levels.	2008 recovery percentage as baseline measure. Measured by either improvement in recycling percentage; and/or recovery of materials not previously diverted; specific measures to be developed for individual waste streams where possible and measurable.	A similar quantity of waste was accepted at the CRF in 2009 (13,135.58 tonnes) in comparison to quantities accepted in 2008 (13,133.1tonnes)
Reduce service level complaints at CRF by a further 10% on 2008	10% reduction upon 2008 figures	Complaints records	Target reached - service level complaints were reduced and the target of 10% reduction was reached in 2009
Reduce reportable accidents to zero.	Zero occurrence of reportable accidents.	Accident records	Target reached – No accidents were recorded on site in 2009
Maintain (and improve if possible) lower levels of incidents recorded.	All facility users to be fully compliant with site safety rules.	Incident records	The number of incidents recorded in 2009 was reduced by approx 60% since 2008. No HSA reportable incidents were recorded during 2009.
Support of the Dublin Waste Region Waste Management Protocols to ensure that inputs into Arthurstown Landfill Site are in line with regional requirements to preserve void space.	40,000 tonnes maximum throughout into WTF during 2009.	Waste Input records.	In May 2009 the WTF ceased operation with all waste directed to the Ballymount Baling Station from May onwards. In 2009, 4,762tonnes of waste was consigned to Arthurstown. This is within the 40,000tonnes restriction.
Remove odour nuisances during 2009.	Reduce odour complaints to zero.	Complaints records	Target reached - No odour complaints were recorded in 2009

SCHEDULE OF OBJECTIVES AND TARGETS 2009 - 2010: PROGRESS TOWARDS ACHIEVEMENT			
Objective	**Target**	**Project**	**% Completion**
Minimise nuisances to immediate boundary neighbours.	Ensure facility operations do not give rise to complaints from immediate neighbours.	Ensure facility operations do not give rise to complaints from immediate neighbours	There were no nuisance complaints from neighbours during 2009.
Contract Completion	Submit Exit Plan to DLRCC and comply with handover according to terms of STOC.	Handover facility in original state less normal wear and tear.	The Exit plan was submitted and completed and agreed as per the STOC extension terms. Some items outside of the WTF area remain outstanding into 2010 and are due for completion before the end of the extension period, as agreed with DLRCC.
Minimise energy and water usage through effective measures across the site.	Maintain baling rates and maintain energy awareness with staff.	Measures to be developed during audits.	39% decrease in gas consumption since 2008. 6.5% decrease in electricity consumption since 2008. 23% decrease in water usage since 2008. 91% decrease in detergent usage in 2009 50% decrease in the usage of cleanair 100 Odour Neutraliser. Termination of baling aided in the reduction of energy and water consumption for the site. Further efforts were made to identify water leaks on site and the MIC was also reduced to reflect the new electricity consumption levels.
Provide for the biological treatment of organic waste.	Construction of a 45,000 tonne capacity organic waste composting facility.	Procure a PPP Design and Build Contractor for the construction of this facility.	Provision of a biological facility was removed as an objective for Ballyogan for the year 2009.
Reduce leachate generation.	Complete the capping of the landfill.	Stage 2 Capping	Substantial completion of Stage 2 Capping by late 2009. The full engineered cap was in place by December 2009.
Reduce the number of incidents of landfill gas exceedence at the perimeter of the site, and reduce landfill gas emissions to the atmosphere.	Complete the capping of the landfill and the installation of a perimeter LFG Management System.	Completion of Stage 2 Capping Works and installation of LFG Management System.	In 2009 the incidents of LFG exceedances increased from 11 exceedances in 2008 to13 exceedances in 2009. Substantial completion of Stage 2 Capping by late 2009.
Undertake representative environmental monitoring of the facility.	Replace monitoring infrastructure lost due to development works.	Installation of new wells as required by an appointed drilling contractor	New in waste wells were installed in the Stage 2 Capping area in 2009.

SCHEDULE OF OBJECTIVES AND TARGETS 2009 - 2010: PROGRESS TOWARDS ACHIEVEMENT			
Objective	**Target**	**Project**	**% Completion**
Methane Stripping Plant (Landfill) undertake energy assessment during 2009 with aim of reducing usage.	Reduce consumption by 10%	Utility Bills	Ongoing
Support of the Dublin Waste Region Waste Management Protocols	Have up to date best practice operational procedures in place for the CRF and former Landfill.	Update operations and maintenance manual for the BRP. Implement a staff training programme on same.	Under review but influenced by proposal to re-tender the operations contract

2.4 PROPOSED ENVIRONMENTAL MANAGEMENT PROGRAMME

The existing Environmental Management Programme (EMP) dated March 2008, outlines the operational procedures for the landfill site and Ballyogan Recycling Park.

2.5 PROGRAMME FOR PUBLIC INFORMATION

RPS Group were engaged by Dún Laoghaire Rathdown County Council in 2006 to provide public relations input for the Ballyogan Landfill and Recycling Park. Prior to 2006 Enviros Consulting Ltd carried out this function.

For 2009 this work involved the following:

- Liaison Group Meetings
- Website

At the request of DLR Councillors and community members, RPS have maintained the existing liaison group format, as was previously implemented by Enviros Consulting Ltd.

The liaison group meetings provide a forum where DLR and the community can discuss the issues that concern stakeholders. It also ensures that stakeholders are informed of developments regarding the Recycling Park, Landfill and the Biological Treatment Facility.

Formal meetings were held with the Community members. Informal meetings were held in absence of the contractor in order to inform the community representatives as to the plans for the Biological Treatment Plant.

Due to the fact that it was decided not to move forward with the contract for the Biological Treatment Facility, the number of meetings that took place was less than in previous years, and their purpose was to look at the current operations and the future contract for the recycling park.

Formal meetings were held on the following dates:

- 25/11/2008
- 25/02/2009
- 08/07/2009
- 02/12/2009

Website

The Dún Laoghaire Rathdown County Council website www.dlrcoco.ie includes downloadable (PDF) versions of the minutes of the liaison group meetings. This website is maintained by DLR.

3 ENVIRONMENTAL NUISANCES, INCIDENTS AND COMPLAINTS

3.1 ENVIRONMENTAL NUISANCES

Since waste acceptance ceased in 2005, nuisance inspections at the landfill have been undertaken weekly by the Landfill Manager.

In 2009, the contractor for the Stage 2 Capping Works (including leachate management works), Priority Construction Ltd, operated under the conditions of Waste Licence W0015-01 with respect to nuisance control. In May 2009 Ballyogan WTF ceased operations.

Nuisance abatement at the BRP is as follows:

Odour

In general terms, odour is managed through the following housekeeping measures:

- Use of fast acting doors in reception hall, and air curtains to main doors in baling hall;
- Road sweeping and daily wash down of process areas and reception hall;
- No waste is left on the floor at the end of each day;
- Use of detergents as necessary.

Odour extraction and abatement equipment in the form of a carbon filter unit, as well as an air extraction dust filter unit has been fitted at the Waste Transfer Facility by Greenstar. Odour in the Stage 2 capping works has been managed, where applicable, by the application of an odour neutraliser.

Dust

Dust generation in the BRP is not a significant issue. It is generally managed through regular wash down and cleaning coupled with daily road sweeper usage.

Dust control for the Stage 2 Capping Contract is managed using road sweepers to wet and clean tarmac roads, wetting of internal haul roads and speed restrictions.

Litter

Measures employed to control litter are as follows:

- Twice daily littler pick within the site and immediate environs; more frequently in windy weather;
- Use of road sweeper daily;
- Internal waste transfer procedures within the WTF minimise litter drop during the transfer process.

Noise

Measures employed to minimise noise impact are as follows:

- Specific operating regimes are in place to minimise periods of operation to avoid noise generation at sensitive times e.g later start at weekends;
- Controls are fitted to some items of equipment to prevent operation outside of the working day.

Vermin

Greenstar have a contract with Pest Guard who visit the site on a planned basis to bait for mice and rats and spray for insects.

3.2 SUMMARY OF REPORTED INCIDENTS

There were a total of 22 reported incidents during the period January 2009 to December 2009.

These incidents included 14 instances of exceeded trigger levels of CO_2 and 2 instances of exceeded trigger levels for CH_4. A full summary is given in Table 3.1.

Table 3.1: Summary of Reported Incidents, January 2009 - December 2009

Date	Incident Report No.	Details	Corrective Action/Conclusions
3rd Jan 2009	159	Failure of TOC Analyser on inlet to Stormwater Wetlands.	Analyser has been examined and requires repairs by service agent. Estimated down time is 1 week.
25th Nov 2008	160	Exceedences of the CO2 trigger levels at: GW9a, GW10a, GW15, GW19a, GW20a, GW24, GW45, GW48a, GW49a, GW51a, GW53a, GW56, GW59a, GW66, GW75a, GW77a, GW79a.	Extend the landfill gas collection system.
19th Dec 2008	161	Exceedences of the CO2 trigger levels at GW4, GW5, GW6, GW8, GW9a, GW10a, GW12a, GW15, GW16, GW17, GW18, GW19a, GW20a, GW24, GW45, GW47a, GW48a, GW49a, GW51a, GW53a, GW57a, GW59a, GW66, GW75a, GW76a, GW77a, GW79a, GW83.	Extend the landfill gas collection system.
3rd February 2009	162	Exceedances of CO_2 trigger levels at GW9a, GW10a, GW15, GW20a, GW24, GW48a, GW49a, GW53a, GW56, GW59a, GW77a, GW79a.	Extend the landfill gas collection system.
17th February 2009	163	Exceedances of CO2 trigger levels at GW9a, GW10a, GW15, GW55, GW56, GW67, GW77a, GW79a	Extend the landfill gas collection system.
20th February 2009	164	Failure of pH monitor on discharge to sewer from the Methane Stripping Plant was noted.	This is resulting in the ongoing inaccurate measurement of pH on the discharge to sewer. The problem pH probe was first fitted and calibrated on 17th Dec 2008.
17th April 2009	165	Exceedances of CO_2 trigger levels at GW9a, GW10a, GW48a,	Extend the landfill gas collection system.

Date	Incident Report No.	Details	Corrective Action/Conclusions
		GW77a, GW79a	
24th April 2009	166	Exceedances of CO_2 trigger levels at GW9a, GW10a, GW48a, GW77a, GW79a.	Extend the landfill gas collection system.
7th May 2009	167	Exceedances of CO_2 trigger levels at GW9a, GW48a, GW77a, GW79a.	Extend the landfill gas collection system.
29th June – 30th June 2009	168	Failure to record continuous monitoring data for (a) discharge to sewer and (b) discharge of surface water to Ballyogan Stream	Daily monitoring of scada system, to verify that monitoring data is being recorded. The reason for the SCADA PC crashing is unknown as no power surge or cut was recorded for the time in question.
2nd July 2009	169	Exceedences of the CO2 trigger levels at GW4, GW5, GW8, GW15, GW16, GW17, GW19a, GW20a, GW24, GW45, GW48a, GW49a, GW51a, GW55, GW56, GW57a, GW58, GW59a, GW62a, GW66, GW67, GW75a, GW76a, GW77a, GW79a, GW81, GW82.	Extend the landfill gas collection system.
3rd July 2009	170	Failure to treat and monitor all the leachate discharged from landfill to sewer as set out in Schedule G.6 Discharge to sewer from monitoring station F17a	Incident occurred as a result of the intense rainfall on the 2nd July 09 which resulted in silt laden surface water run off from the partially capped landfill overtopping kerbing and entering the raw leachate tanks. This blocked filters and cut off flow to the MSP. As a result untreated leachate was discharged direct to sewer, bypassing the monitoring equipment. The surface water collection element of the new cap has yet to be installed in the area adjacent

Date	Incident Report No.	Details	Corrective Action/Conclusions
			to the leachate plant. The capping contractor has been requested to expedite this work. Once the cap has been completed the clean surface water runoff will be captured
1st May – 20th May 2009	171	Exceedences of the trigger level for dust at sampling location D5a, near to the Waste Transfer Facility. D5a BRP Ground Dust (1100.8 mg/m2/day).	All waste activity ceased in the Waste Transfer Facility on 8th May 2009 and it is highly unlikely that elevated levels of dust deposition were caused by activities in or around the transfer station.
22nd July 2009	172	Exceedences of the trigger levels for landfill gas (CO2) at: GW9a, GW10a, GW48a, GW53a, GW77a, GW79a.	Extend the landfill gas collection system.
9th September 2009	173	Exceedences of the trigger levels for landfill gas (CO2) at : GW4, GW5, GW6, GW8, GW16, GW17, GW19a, GW20a, GW24, GW47a, GW48a, GW49a, GW51a, GW58, GW59a, GW79a, Gw81, GW82	Extend the landfill gas collection system.
25th September 2009	174	Exceedences of the trigger levels for landfill gas (CO2) at: GW19a, GW20a, GW24, GW47a, GW48a, GW49a, GW51a, GW59a, GW77a, GW79a, Gw81, GW82	Extend the landfill gas collection system.
18th October 2009	175	Control unit error in TOC Analyser on inlet to Stormwater Wetlands.	Analyser has been examined and requires parts and repairs by service agent. Estimated remaining down time is 1 week.
29th October 2009	176	Failure to monitor for pH/Temp on discharge to sewer from the Methane Stripping Plant from 29 October to date.	The pH/Temp probe and monitor was returned to manufacturer for testing and will be replaced as soon as possible.
31st October 2009	177	Exceedences of the trigger levels for landfill gas (CH4 & CO2) as follows: CH4 exceedances: GW77a CO2 exceedences: GW9a, GW19a,	Extend the landfill gas collection system.

Date	Incident Report No.	Details	Corrective Action/Conclusions
		GW20a, GW24, GW48a, GW77a, GW79a, Gw81, GW82	
From 14th December 2009 - 16th December 2009	178	A fault occurred in the gas booster station serving the landfill gas combustion engines BN01 and BN02, which resulted in a shutdown of both engines as well as the emergency flair.	The landfill gas collection system at Ballyogan Landfill is in the process of being upgraded with an entirely new system. Repairs to the booster station were completed at 1.30 pm on the 16th Dec 2009 and normal operation of the gas plant resumed.
	179	* Occurred in 2010	
27th November 2009	180	Exceedences of the trigger levels for landfill gas (CH4 & CO2) as follows: **CH4:** GW44 **CO2:** GW4, GW5, GW6, GW9a, GW15, GW20a, GW48a, GW51a, GW58, GW77a, GW79a, GW80, Gw81, GW82, GW83	Extend the landfill gas collection system.
18th December 2009	181	Exceedences of the CO2 trigger levels at: GW9a, GW20a, GW48a, GW51a, GW77a, GW79a, GW81, GW82	Extend the landfill gas collection system.
Note: Incidents 160 and 161 occurred in 2008 however it was not included in the 2008 AER. This incident was reported in January 2009 and so is included in the 2009 AER. *Incident 179 occurred in 2010. For this reason it is not included in the 2009 AER.			

3.3 SUMMARY OF COMPLAINTS

During the reporting period, site management received a total of 7 complaints. A breakdown of the nature of these complaints is given in Table 3.2 below. All complaints were recorded by site management and investigated. Corrective action was taken where necessary and follow-up contact and discussion with complainants was undertaken where appropriate. Full details of all complaints and outcomes are kept on file on site and at County Buildings.

Table 3.2: Summary of Complaints Received During Reporting Period

Date	Category	Number of Occurrences	Comments/Corrective Action
19/02/2009	Procedural	4	Complaints due to the charging system in place at BRP. They included complaints regarding the charges in place, lack of clear signs, the malfunction of the cash register, payment methods and overcharging. All complaints were addressed and information, refunds or explanations were sent where appropriate
05/05/2009			
08/05/2009			
18/11/2009			
04/06/2009	Miscellaneous	3	These complaints were regarding incidents where staff were allegedly aggressive or abusive. All complaints were logged and investigated. Staff were consulted and apologies were sent where appropriate.
12/06/2009			
22/06 2009			

4 SITE INFRASTRUCTURE

4.1 DEVELOPMENT WORKS UNDERTAKEN DURING THE REPORTING PERIOD

The Stage 2 Capping works were ongoing in 2009 (started in August 2008), and were approximately 95% complete by the end of 2009. This involved the engineered capping of the remaining 26 hectares of waste body plus installation of associated leachate and surface water drainage infrastructure, as well as the installation of a perimeter landfill gas collection network. As part of the Stage 2 Capping works, the twin culverts of the Ballyogan Stream which traverse the northern part of the waste body were rehabilitated using an in-situ lining method. This work was undertaken during August and September 2009.

Bioverda Power Systems completed the installation of the remainder of their landfill gas utilisation network across the Stage 2 Capping area of the landfill.

The construction of a new DLRCC depot and associated offices for DLRCC began in 2009. The depot is situated in the northern part of the landfill site, outside of the waste body. This area of the site is the subject of an application for a technical amendment to Waste Licence W0015-01 to revise the licence boundary so that the depot site would be situated on DLRCC land outside of the landfill licenced boundary. A car park for the depot is to be situated on the waste body, and within the landfill boundary, and construction of this element of the depot works will take place in 2010.

4.2 PROPOSED DEVELOPMENT OF THE FACILITY AND TIMESCALE FOR SUCH DEVELOPMENT

The Stage 2 Capping works will continue into 2010 and are due to be completed by May 2010.

The construction of the depot, as outlined in Section 4.1 above, will be ongoing in 2010 and is due to be completed by December 2010.

4.3 ANNUAL TOPOGRAPHIC SITE SURVEY

The most recent topographic survey was carried out in October 2007 by BKS Surveys Limited. During 2009 extensive capping works continued on-site and due to this a topographic survey was not carried out for the site in 2009. A complete survey will be carried out once capping is complete and forwarded to the Agency.

5 WASTE ACTIVITIES

Ballyogan Landfill and Recycling Park is licensed to accept a maximum of 400,000 tonnes per annum of municipal waste, industrial non-hazardous, and construction and demolition wastes combined. The types of waste accepted at the Recycling Park (Civic Recycling Facility and Waste Transfer Facility) are listed below:

- Household waste collected by Dun Laoghaire Rathdown County Council in the functional area of Dun Laoghaire Rathdown County Council or, in the case of emergency, from any other Local Authority from time to time, e.g in the event of baling equipment malfunction at other baling stations.
- Commercial waste (similar in character to household waste) collected by Dun Laoghaire Rathdown County Council in the functional area of Dun Laoghaire Rathdown County Council or, in the case of emergency, from any other Local Authority from time to time.
- Municipal solid waste collected by Greenstar or MSW from companies/facilities contracted to or part of the Greenstar group is also accepted at the BRP.
- Household waste which is transported directly to the CRF by householders, including green waste, household C&D waste.
- Household waste for recycling which is temporarily stored on site. These materials include glass, paper, cardboard, cans, metals, WEEE, etc.
- Commercial WEEE is accepted from retail outlets. Ballyogan Recycling Park is a designated WEEE drop off point for retails.
- Household hazardous waste which is transported directly to the CRF by householders, including motor oil, fluorescent tubes, batteries etc.
- Non-hazardous C&D waste which is specifically required for site restoration purposes and which is accepted by agreement with the Local Authority, e.g topsoil or subsoil for capping layers.

5.1 QUANTITY AND COMPOSITION OF WASTE RECEIVED DURING THE REPORTING PERIOD

From January 2009 to December 2009, **17,897.58 tonnes** of municipal waste was accepted at the Ballyogan Facility, all of which was accepted between the Waste Transfer Facility and the Civic Recycling Facility. No wastes were disposed of to Ballyogan Landfill. A breakdown of the wastes accepted is as follows:

Table 5.1: Wastes accepted at Ballyogan Recycling Park in 2009

Category	EWC	Quantity (tonnes)
Non-hazardous municipal waste accepted at the Waste Transfer Facility.	15 01 01, 19 12 12, 20 01 01, 20 03 07, 20 03 01, 20 02 01	4,762
Non-hazardous municipal waste accepted at the Civic Recycling Facility.	See Table 5.3 for list of EWC Codes	12,246.11
Hazardous municipal waste accepted at the Civic Recycling Facility.	16 05 04; 20 01 21; 20 01 26; 20 01 27; 20 01 33; 20 01 35	889.47
	Total	**17,897.58**

Note: The Waste Transfer Facility at Ballyogan closed on 8th May 2009. All waste collected was subsequently transported directly to Ballymount Baling Station.

5.2 QUANTITIES OF WASTE REMOVED OFF SITE FOR RECOVERY OR DISPOSAL

Table 5.2 below provides a summary of wastes removed off site from the CRF for recycling, recovery or disposal. Table 5.3 outlines the quantities of waste removed off-site from the Waste Transfer Facility. A more detailed table including destinations of these wastes is included in Appendix A.

Table 5.2: Quantities of Waste Removed Off Site for Recovery or Disposal from the CRF

EWC Code	Material Type - CRF	Quantity (tonnes)
15 01 01	Cardboard	266
15 01 02	Plastic Packaging	117
15 01 04	Metallic Packaging	37
15 01 05	Composite Packaging / Tetra Pak	13.54
15 01 07	Glass Packaging	344
20 01 01	Paper	362
20 01 02	Glass non packaging	14
20 01 11	Clothing/Textiles	187
20 01 25	Edible Oil & Fat	3.89
17 08 02	Plasterboard	43.52
20 01 38	Wood	1001
20 01 40	Metals	399
20 02 01	Green Biodegradable Waste	5,504
20 02 02	Soil & Stones (Household C&D)	694.69
20 03 01	Mixed Municipal Waste	2,184
20 03 07	Bulky Waste	1,073
08 03 99	Printer Cartridges	1.17
16 05 04*	Gas Cylinders	5.42
20 01 21*	Fluorescent Tubes	1.47
20 01 26*	Motor Oil	23.08
20 01 27*	Paints, Inks, Adhesives (Household Hazardous Waste)	94.12
20 01 33*	Batteries	38.1
20 01 35*	Hazardous Discarded Electrical Equipment	727.28
16 05 05	Fire extinguishers	1.3
	TOTAL	**13,135.58**

Table 5.3: Quantities of Waste Removed Off Site from the Waste Transfer Facility for Disposal

Category	EWC Code	Quantity (tonnes)
Mixed Baled Municipal Waste	19 12 12	4,762
Leachate sludge	19 07 03	17.88
	TOTAL	**4,779.88**

5.3 AREA OCCUPIED BY WASTE

The extent of the area occupied by waste at Ballyogan Landfill is approximately 43 hectares.

5.4 TOTAL ACCUMULATED QUANTITIES OF WASTE DEPOSITED

The total accumulated quantity of waste deposited at Ballyogan Landfill is estimated at 3,079,673 tonnes. This is based on the tonnages reported in the waste licence application from 1975 to 2000, and the subsequent recorded tonnages for 2001 to 2005. Waste acceptance at the landfill ceased in 2005.

5.5 REMAINING CAPACITY

The landfill reached capacity in March 2005 when acceptance of waste ceased.

It is estimated that approximately 3,079,673 tonnes of waste has been deposited at the site between 1975 when the site opened, and March 2005. This equates to 3,849,591m^3 of waste. This figure is based on the tonnages reported in the waste licence application for the years 1975 to 2000, and the subsequent recorded tonnages to 2005.

When DLR submitted the Waste Licence Application in July 1998, the Recycling Park was intended to be completed by September 1999. However, construction of the Recycling Park didn't commence until January 2002, and additional void space was required to allow the landfill to remain open until commissioning of the Waste Transfer Facility. For the extension of the landfill, three new areas (Phases 1-3) were identified and agreed with the Agency, giving a total combined void space of approximately 350,000m^3.

Phase 1: provided for 40,000m^3 of void space and was filled to agreed levels by May 2003.

Phase 2: provided for 110,000m^3 of void space and was filled to agreed levels by November 2004.

Phase 3: provided for 200,000 m^3 of void space. However, this area was reserved for inert waste only; no municipal waste would be permitted in this area.

By September 2004, it was estimated that the remaining capacity within the Phase 2 filling area would be filled by November 2004. The WTF wasn't due to be commissioned until January 2005, and as a result, a new area for extended filling was identified and agreed with the Agency. The most suitable area for filling at the time was within the Phase 3 area. This last area provided for 37,000m^3 of void space. Filling ceased in this area in March 2005 when waste acceptance was transferred to the Waste Transfer Facility.

6 MASS BALANCE OF SPECIFIED SUBSTANCES (MBSS)

The purpose of the MBSS is to itemise and quantify all material flows at the facility. The concept of MBSS derives from the law of conservation of mass, which is equivalent to:

Input = Output + Accumulation + Consumption - Generation

Inputs to the facility in 2009 include municipal waste to the BRP, as well as electricity, water and fuel to run the facility. The main outputs are leachate (Section 6.3 and 7.7), air emissions (i.e landfill gas Section 7.1 and combustion plant exhaust emissions Section 7.2), dust (Section 7.4), noise (Section 7.3) and waste departing the Waste Transfer Facility and Civic Recycling Facility (Section 5.2).

In terms of generation, leachate is generated as a result of rainfall infiltration into the landfill as well as run-off from the WTF. Landfill gas is generated as a result of the decomposition of waste. Accumulation refers to the total amount of waste accumulated at the site since it opened in 1975. Capping of the site will result in reduced generation of leachate within the landfill and reduced emissions of landfill gas to the atmosphere.

6.1 RESOURCE AND ENERGY CONSUMPTION

Tables 6.1 and 6.2 summarise the resource and energy consumption at the Facility. Additional resources not listed here were used by the capping contractor.

Table 6.1: Resource and Energy Consumption at Ballyogan Landfill

Resource	Consumption (2009)
Electricity	BPS **generated** 7,218 MWh at the Gas Combustion Plant.

Table 6.2: Resource and Energy Consumption at the BRP

Resource	Consumption (2009)
Electricity	300,377 KWh
Gas	144,649 KWh
Fuel (diesel)	13,612 litres
Water	5507 m^3
Chemical Usage	Detergent: 220 litres Cleanair 100 Odour Neutraliser: 25 litres Road salt: 500kg

6.2 ESTIMATED ANNUAL AND CUMMULITIVE QUANTITIES OF LANDFILL GAS EMITTED FROM THE SITE

Using the GasSim 2 modelling programme, the calculated quantity of landfill gas generated at the site in 2009 (January to December) is 13,315,200m^3. The cumulative figure of landfill gas generated at the site over the life of the landfill to the end of 2009 has been calculated as 449,029,865.8m^3. Much of this has already been extracted for combustion and electricity generation by BPS and some remains stored in the landfill within voids in the waste mass. A portion of LFG has been lost to the atmosphere over the years, a process which is being reduced by the progressive capping of the landfill. The total estimated landfill gas generation for the life of the site, updated for 2009, is shown in Figure 6.1 below.

From the GasSim 2.0 model run for the site for 2009, the estimated quantity of methane generated at the site is 3,691,402.203Kg. The estimated quantity of methane emitted from the site, post combustion i.e taking into account the quantity of gas that is consumed by combustion is 512,000Kg for 2009.

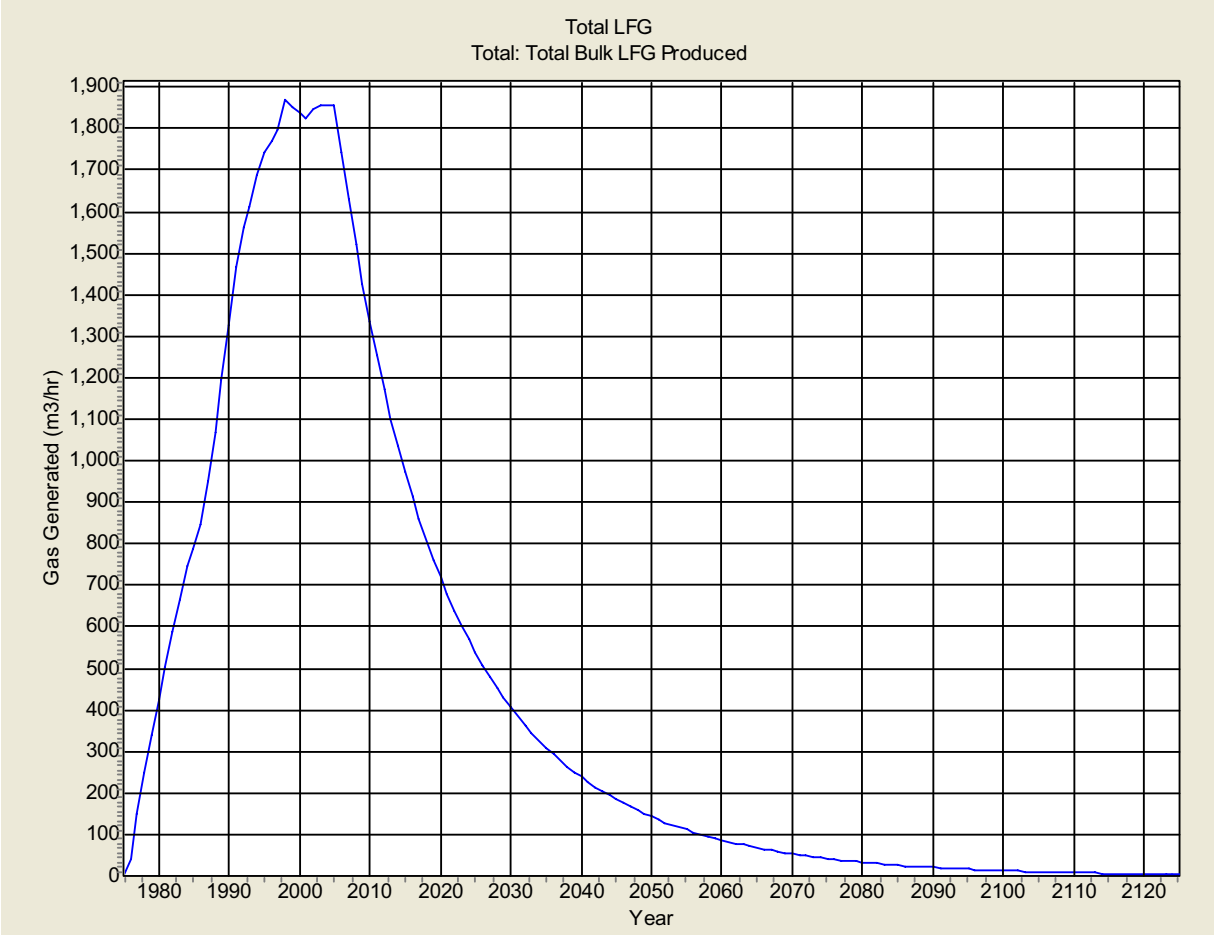


Figure 6.1: Estimated Hourly LFG Generation at Ballyogan Landfill

6.3 MONTHLY WATER BALANCE CALCULATIONS

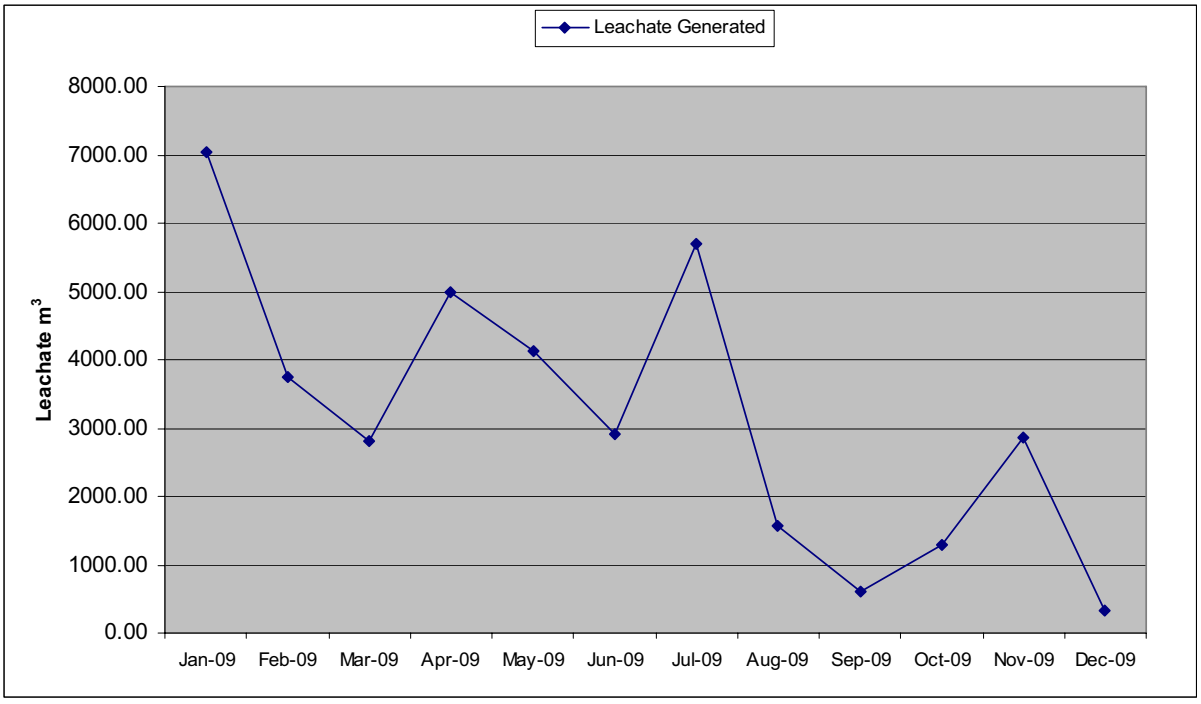
Rainfall data obtained from the BRP on-site weather station reported 925.28mm of rainfall in the area for 2009. Data for 12 days of 2009 was not available due to technical difficulties on site. However this has been taken in to consideration and adjusted accordingly. The data recorded at the BRP on-site weather station is included in Appendix C. As per the 2007 calculations (and the EPA Landfill Site Design Manual (2000), evapotranspiration has been ignored to provide a safety factor in the calculations.

As per the method outlined in the EPA Landfill Site Design Manual (2000), monthly volumes of leachate were calculated for the entire landfill area based on monthly rainfall and the stage at which the area is at. During 2009 Phase 2 of the capping on-site was largely completed. For the purpose of the leachate calculations it is therefore estimated that the landfill was 100% capped by the end of 2009.

The leachate lagoon was de-commissioned by 2007. Figure 6.2 shows the estimated leachate generation for the reporting period. The water balance calculations are outlined in Appendix B.

As a result of capping, leachate generation in 2009 has decreased considerably since 2008. It is estimated that a total volume of leachate of 37,972.61m^3 (37,972,610 litres) was generated during the reporting period (this does not take into account the effects of storage).

Figure 6.2: Monthly Leachate Generation at Ballyogan Landfill 2009



6.4 ESTIMATED ANNUAL AND CUMULATIVE QUANTITY OF EMISSIONS TO GROUNDWATER

Ballyogan Landfill is an unlined landfill relying on the underlying low permeability boulder clay and containment bunds constructed of clay, to contain the leachate. Notwithstanding this, overall since monitoring began, emissions to groundwater have not been significant in the context of an unlined landfill.

7 SUMMARY OF ENVIRONMENTAL MONITORING

RPS carried out all monitoring and reporting at Ballyogan Landfill for the 2009 reporting period.

All environmental monitoring locations as at December 2009 are shown on Figure 7.1 below.

All weekly, monthly and quarterly environmental monitoring results have been forwarded to the EPA as part of the routine quarterly reports. The results of the additional annual monitoring for surface water, groundwater, private wells and leachate were reported in the third quarterly report for the year.

Reports of all other biannual and annual monitoring (i.e. biological water quality, gas combustion plant exhausts and noise monitoring) have also been forwarded separately to the Agency.

This report provides a summary of the monitoring results for the 2009 reporting period. Copies of all monitoring results are kept on site at DLRCC offices.

7.1 LANDFILL GAS

Environmental monitoring for landfill gas is carried out for the parameters listed in Table F1.2 of Waste Licence W0015-01. Monitoring of the gas wells throughout the landfill is undertaken at monthly intervals.

At the beginning of 2009 a total of 47 gas monitoring wells were in use at the landfill, 46 perimeter wells and 1 in-waste well (GW22). By the end of 2009 there were approximately 40 perimeter gas wells and 1 in-waste well monitored. In 2009, six gas wells were lost due to capping and construction works on or around the vicinity of the landfill.

Owing to the age of the landfill, no baseline information regarding the natural background levels of methane and carbon dioxide is available. Therefore, the trigger levels are set at 1% v/v and 1.5% v/v for methane and carbon dioxide respectively. For the purpose of licence compliance, the trigger levels only apply to the perimeter wells that are monitored on a monthly basis, where measurements may indicate the off-site migration of landfill gas.

Two exceedences of methane were detected in October and November 2009 of 1.3% at GW77a and 1% at GW44 respectively. Carbon dioxide concentrations were elevated in several wells throughout 2009. This is consistent with previous years. The average number of wells per month where exceedences were recorded was 11. The maximum concentration recorded every month ranged from 3.2% in July to 9% in March. Elevated carbon dioxide levels may be attributed to other factors not necessarily indicative of landfill gas migration. Hedgerows and ditches and old sewage systems located along parts of the perimeter of the landfill may contribute to the presence of carbon dioxide detected in the perimeter wells.

7.2 LANDFILL GAS COMBUSTION PLANT

There are two monitoring stations at the Landfill Gas Combustion Plant; BN01 and BN02, located at the exhaust stacks of each of the two engines. The parameters for analysis are set out in Table F.2.2 of the Waste Licence, together with the required frequency of monitoring. Monitoring of the inlet gases to the combustion plant is also undertaken.

LEGEND

- OUTLINE OF SITE
- CARRICKMINES SEWER
- BURIED ESB CABLES
- GW14 GAS MONITORING WELL
- SW5 SURFACE WATER MONITORING POINT
- MW14D GROUNDWATER MONITORING WELL
- PW1 PRIVATE GROUNDWATER MONITORING WELL
- MW9a LEACHATE MONITORING WELL
- D2 AIR QUALITY MONITORING POINT
- NSL 5 NOISE MONITORING POINT
- BNO 1 LFG COMBUSTION PLANT MONITORING POINT
- F17a SEWER EMISSIONS MONITORING POINT
- SITE 6a ECOLOGICAL MONITORING POINT
- SI2 STORMWATER INLET MONITORING POINT
- SO STORMWATER OUTLET MONITORING POINT

N

SITE 3 SW1 SITE 4 SITE 4A SW2 SITE T1 SITE 5 SITE 6a SITE T2
GW24 GW44 GW45 GW48a GW47a GW83 GW82 GW81 GW58 GW80 SW6a GW7 GW28a GW27a GW29a GW30a GW23a GW22a GW31a MW17 MW18 GW8 GW33a MW9a GW32a GW40a GW41a GW6 SW5 GW34a MW19 GW35a GW42a GW36a GW5 GW74a MW20 GW43a GW37a GW4 GW73a GW71a SW7a GW3 MW21 GW72a MW10a GW2 GW70a GW1 GW50a GW51a GW69a MW22 GW49a GW54 GW53a GW56 GW57a GW68a GW66 GW67
D2a PM10 D1a Dust D1a PM10 D4a Dust D4a PM10 PW2 MW1D MW1S MW7D MW7S PW1
NSL 1 NSL 2 NSL 3 NSL 4 NSL 5 NSL 7
MW13D MW13S D3a Dust D3a PM10 D5a MW14D MW14S MW15S MW15D MW3D MW3S
SI1 SI2 SO1 SO1B
GW18 GW15 GW17 GW9a GW16 GW19a GW20a GW21b GW76a GW79a
BNO 1 BNO 2
SW3 SW4a SW8
GW59a MW4D MW4S GW77a GW60a GW62a GW61a The Park
MW6Sa MW6Da

Client: dlr Comhairle Contae County Council — DÚN LAOGHAIRE RATHDOWN COUNTY COUNCIL, Comhairle Chontae Dún Laoghaire Rath Dún, County Hall, Marine Road, Dún Laoghaire, Co. Dublin, Phone: 01 2054700 Fax: 01 2806969	RPS, West Pier Business Campus, Dun Laoghaire, Co. Dublin, Ireland. T: +353 1 488 2900 - F: +353 1 283 5676 E: ireland@rpsgroup.com W: www.rpsgroup.com/ireland	**NOTES** 1. This drawing is the property of RPS, it is a confidential document and must not be copied, used, or its content divulged without prior written consent. 2. All Levels refer to Ordnance Survey Datum, Malin Head. 3. DO NOT SCALE, use figured dimensions only, if in doubt ask.	No. / Date / Amendment / Issue / App.
Project: Ballyogan Landfill and Recycling Park Annual Environmental Report 2009	Title: Environmental Monitoring Locations December 2009	Drawn by: RH; Checked by: ÚF; Approved by: ÚF; Scale: 1:5000@A3; Date: June '10	Job No: MDE0010; File No: 088510001FG7.1F01; Drg. No: Figure 7.1; Rev: F01

Inlet Monitoring

Bioverda Power Systems Ltd (BPS) carry out monitoring of the inlet gas to the landfill gas combustion plant on a weekly basis. Over the course of the year, yields of methane and carbon dioxide range from between 37 - 70% (average 51%) and 21 - 38% (average 32%) respectively. The reference composition values of landfill gas for use as fuel for the engines employed on site is set as 50% methane and 27% CO_2. Data for January 2009 to December 2009 is summarised in Table 7.1 below. Measured values recorded in excess of the reference composition levels are highlighted in bold.

Table 7.1: Weekly Inlet Gas Monitoring Results, January 2009 - December 2009

Week	Date	CH_4 %	CO_2 %	O_2 %
2	05-Jan-09	45	**32**	1.2
3	12-Jan-09	**70**	**28**	0
4	19-Jan-09	**52**	**35**	0.5
5	26-Jan-09	49	**30.8**	5.3
6	26-Jan-09	**57**	**33.8**	2.6
7	02-Feb-09	**53**	**35**	0.5
8	09-Feb-09	**52**	**32**	0.3
9	16-Feb	**56**	**34**	0.5
10	23-Feb	**53**	**33**	0.8
11	02-Mar	38.5	**30**	1.5
12	09-Mar	**50**	**31**	0.6
13	16-Mar	38	**28**	0.4
14	23-Mar	42	**31**	0.9
15	31-Mar	37	**30**	0.8
16	06-Apr	44	**29**	0.8
17	14-Apr	41	**30**	1.8
18	20-Apr	**66**	**34**	0.3
19	27-Apr	47	**32.9**	0.3
20	05-May	40.6	**31.2**	1
21	11-May	**62.3**	**34.2**	0.5
22	18-May	**63.8**	21	0
23	25-May	45	**30.5**	1.3
24	02-Jun	38	**28.7**	1
25	08-Jun	**63**	**36.4**	0.1
26	15-Jun	45	**32**	1
27	22-Jun	44	**32**	1.5
28	29-Jun	**50**	**30**	1.5
29	06-Jul-09	No Results Available		
30	13-Jul-09			
31	20-Jul-09			
32	27-Jul-09			

33	03-Aug-09	40	**34**	4.5
34	10-Aug-09	**62**	**38.1**	0.4
35	17-Aug-09	**60**	**34**	0.3
36	24-Aug-09	**58**	**38**	0.3
37	31-Aug-09	**53**	**35.6**	0.3
38	07-Sep-09	**56**	24	0.3
39	14-Sep-09	**53**	**33.7**	1
40	21-Sep-09	47.5	**33.7**	0.6
41	28-Sep-09	46.6	**32**	0.2
42	05-Oct	**54.6**	**35.9**	0.8
43	12-Oct	**50.8**	**35.4**	0.8
44	19-Oct	**53.9**	**33.2**	0.2
45	27-Oct	**57.1**	**28.3**	0.8
46	02-Nov	**53.9**	**31.5**	0.2
47	09-Nov	46	**34**	0.5
48	16-Nov	**50**	**35**	0.2
49	23-Nov	**51**	**34**	0.2
50	30-Nov	48	**32**	0.8
51	07-Dec	**51**	**34**	0.3
52	14-Dec	49	**30**	1.2
53	21-Dec	49	**31**	0.2
Reference Levels		*50%*	*27%*	*N/a*

Outlet Monitoring

Monitoring of gas combustion plant exhaust gases from the two combustion engines on site, BN01 and BN02, was carried out in April and December 2009, as per Schedule F.2 of the waste licence. BN02 was offline during the 2nd round of monitoring in December 2009. As a result this was monitored in January 2010. A detailed report has already been prepared and sent to the Agency separately. A summary is provided below.

The volumetric flow rate from BN01 and BN02 were 6,012m3/hr and 5,014m3/hr respectively during the 1st round of monitoring. In the 2nd round of monitoring volumetric flow rates of 6,454m3/hr and 4,896m3/hr were recorded at BN01 and BN02 respectively.

Carbon monoxide emissions are monitored on a continuous basis by an inline flue gas analyser.

A summary of the results obtained is provided in Table 7.2 below.

Table 7.2: Outlet Monitoring Results April 2009 and December 2009

Monitoring Point	Parameter	Round 1 (April 2009)	Round 2 (December 2009*)	Emission Limit
		Result	Result	
BN01	Nitrous Oxides (NO_x) as NO_2	6.34mg/Nm^3	11.8mg/Nm^3	500 mg/m^3
	Sulphur Dioxide	0.62mg/Nm^3	0mg/Nm^3	-
	Carbon Monoxide	631.66mg/Nm^3	554.05mg/Nm^3	650 mg/m^3
	Particulates	n/a	0.34mg/m^3	130mg/m^3
	TA Luft Class I	n/a	<1.78mg/Nm^3	20 mg/Nm^3 (at mass flow >0.1kg/hr)
	TA Luft Class II	n/a	<1.78 mg/Nm^3	100 mg/Nm^3 (at mass flow >2 kg/hr)
	TA Luft Class II	n/a	<1.78 mg/Nm^3	150 mg/Nm^3 (at mass flow >3 kg/hr)
	Hydrogen chloride	n/a	0.55 mg/m^3	50 mg/Nm^3 (at mass flow >0.3 kg/hr)
	Hydrogen Fluoride	n/a	0.64 mg/m^3	5 mg/Nm^3 (at mass flow >0.05 kg/hr)
BN02	Nitrous Oxides (NO_x) as NO_2	5.35 mg/Nm^3	14.01 mg/Nm^3	500 mg/m^3
	Sulphur Dioxide	1.12 mg/Nm^3	1.04 mg/Nm^3	-
	Carbon Monoxide	532.83 mg/Nm^3	546.35 mg/Nm^3	650 mg/m^3
	Particulates	n/a	0.64 mg/m^3	130mg/m^3
	TA Luft Class I	n/a	<1.78 mg/Nm^3	20 mg/Nm^3 (at mass flow >0.1kg/hr)
	TA Luft Class II	n/a	<1.78 mg/Nm^3	100 mg/Nm^3 (at mass flow >2 kg/hr)
	TA Luft Class II	n/a	<1.78 mg/Nm^3	150 mg/Nm^3 (at mass flow >3 kg/hr)
	Hydrogen chloride	n/a	0.36 mg/m^3	50 mg/Nm^3 (at mass flow >0.3 kg/hr)
	Hydrogen Fluoride	n/a	0.29 mg/m^3	5 mg/Nm^3 (at mass flow >0.05 kg/hr)

Note: - means no limit specified; n/a means monitoring not undertaken, only one round required.
*BN02 was offline in December 2009, the 2nd round of monitoring for BN02 took place in January 2010.

All of the parameters analysed were within emission limits for both monitoring rounds, where relevant. Carbon monoxide is monitored from both exhaust stacks on a continuous basis by means of an on-line flue gas analyser. Whilst not required by the licence, carbon monoxide was also monitored during the bi-annual monitoring rounds, by means of a Testo 350 flue gas analyser, over a 30 minute sampling interval. The results of this analysis have been normalised to specified conditions (temperature 273K, pressure 101.3kPa, dry gas at 5% oxygen).

7.3 NOISE

Seven noise sensitive locations (numbered NSL1-NSL7) are monitored in the vicinity of the Ballyogan Facility. Monitoring is undertaken in accordance with Schedule F.3 of Waste Licence W0015-01. A summary of the results is provided below.

Noise monitoring was conducted in December 2009. Tables 7.3 and 7.4 below outline the results obtained for the day time and night time monitoring respectively. The noise emission limits are 55 d(B)A $L(A)_{eq}$ for day time and 45 d(B)A $L(A)_{eq}$ for night time. The sampling interval in each case was 30 minutes. Exceedences are highlighted in bold.

The results of monitoring show that noise levels at some of the monitoring locations were exceeded a number of times during the day and night time measurement periods. It has been noted that in most cases these higher levels were not caused as a result of noise generated from the landfill or landfill related activities and that noise sources external to the landfill were more dominant during the majority of surveying. During night time monitoring in particular, noise from the landfill was nearly non-existent. Noise from vehicular traffic was the most dominant source of noise at a number of these locations. No tonal components in the noise can be attributable to activities related to the Ballyogan Landfill and associated works.

Table 7.3: Day Time Noise Monitoring Results 2009

Location	Start Time	$L(A)_{eq}$	$L(A)_{10}$	$L(A)_{90}$	Comments
NSL 1	12:19	**59.6**	63	49.4	***Cold/Dry/Frosty*** Road traffic dominant intermittent noise source, no landfill activities audible.
NSL 2	13:29	52.8	55.6	46.2	***Cold/Dry/Frosty*** Traffic audible from road intermittently, construction works on ESB site dominant continuous noise source (banging/hammering, angle grinder, small diesel generator), landfill activities not audible or discernible fro ESB works.
NSL 3	12:56	**68.9**	73	56.8	***Cold/Dry/Frosty*** Intermittent Road traffic noise dominant source. Oil Truck nearby. No landfill activities audible.
NSL 4	11:07	**74**	78	62.2	***Cold/Dry/Frosty*** Dominant noise sources at this location were passing traffic along Ballyogan Rd and LUAS site works. No landfill activities audible.
NSL 5	11:41	54.8	56.7	51.3	***Cold/Dry/Frosty*** Traffic audible from road intermittently, construction works on ESB site dominant continuous noise source (banging/hammering, angle grinder, small diesel generator), landfill activities not audible or discernible fro ESB works. Some localised traffic also audible within the An Post compound.
NSL 6	16:15	46	47.9	43.1	***Cold/Dry/Frosty*** Dominant noise sources at this location were traffic passing along Enniskerry Rd., rustling

Location	Start Time	$L(A)_{eq}$	$L(A)_{10}$	$L(A)_{90}$	Comments
					foliage, dog barking and birdsong. Landfill inaudible at this location.
NSL 7	16:45	45.7	47.6	42.7	***Cold/Dry/Frosty*** Dominant noise sources at this location were traffic passing along Enniskerry Rd. audible in distance, rustling foliage and birdsong.

Table 7.4: Night Time Noise Monitoring Results 2009

Location	Start Time	$L(A)_{eq}$	$L(A)_{10}$	$L(A)_{90}$	Comments
NSL 1	23:17	**47.6**	50.8	43.4	***Cold/Dry/Frosty*** Road traffic dominant intermittent noise source, no landfill activities audible.
NSL 2	00:26	**45.2**	47.9	40.1	***Cold/Dry/Frosty*** Some traffic audible throughout the period, no works audible on the ESB or the landfill.
NSL 3	23:54	**61.1**	60.4	44	***Cold/Dry/Frosty*** Intermittent Road traffic noise dominant source. No landfill activities audible.
NSL 4	22:05	**66.6**	70.6	50.6	***Cold/Dry/Frosty*** Passing traffic along Ballyogan Road was the dominant source of noise. No landfill activities audible.
NSL 5	22:39	**65.2**	68.3	50.1	***Cold/Dry/Frosty*** Traffic audible from road intermittently, construction works on ESB site dominant continuous noise source (banging/hammering, angle grinder, small diesel generator), landfill activities not audible or discernible fro ESB works. Some localised traffic also audible within the An Post compound.
NSL 6	01:11	41.1	43.5	36.6	***Cold/Dry/Frosty*** Dominant noise sources at this location were rustling foliage and passing traffic along Enniskerry Rd. Humming noise audible from pylon nearby.
NSL 7	01:42	43.7	47	37	***Cold/Dry/Frosty*** Dominant noise sources at this location were rustling foliage and passing traffic along Enniskerry Rd audible in distance.

7.4 AIR QUALITY

Air quality monitoring locations around the Ballyogan Facility comprise five dust and five PM_{10} monitoring locations (D1a - D5a). These are located around the perimeter of the facility and are monitored on a quarterly basis, in accordance with Schedule F.4 of the waste licence. Dust and PM_{10} monitoring results are summarised in Table 7.5.

Exceedences are highlighted in bold.

Table 7.5: Dust and PM_{10} Monitoring Results for 2009

Monitoring Point	Quarter 1		Quarter 2		Quarter 3		Quarter 4		Limit	Limit
	Dustfall (mg/m^2/ day)	PM_{10} ($\mu g/m^3$)	Dustfall (mg/m^3/ day)	PM_{10} ($\mu g/m^3$)	Dustfall (mg/m^2/ day)	PM_{10} ($\mu g/m^3$)	Dustfall (mg/m^2/ day)	PM_{10} ($\mu g/m^3$)	Dustfall Limit (mg/m^2/ day)	PM_{10} Trigger level ($\mu g/m^3$)
D1a	18.1	24.44	93.1	15.24	67.9	8.4	117	6.67		
D2a	199.8	37.08	111.2	33.91	Destroyed	30.48	n/s	n/s		
D3a	80.6	2.22	135.8	12.4	131	9.26	<LOD	9.58		
D4a	62.4	n/s - v	195.3	n/s - v	Destroyed	n/s - v	18.5	n/s - v	**350**	**50**
D5a	35.5	46.71	**1100.8**	21.54	122.9	21.43	<LOD	7.92		

Note: PM_{10} values are reported as 24 hour averages;
n/s -v means not sampled, no power outlet available during monitoring; n/s means not sampled

Dust Deposition

One exceedence for dustfall was recorded during the year; this was at D5 in Quarter 2 (May 2009), at a concentration of 1,100.8mg/m^3/day. It must be noted however the dust pot collected at D5 was noted to contain debris and detritus.

Particulate Matter (PM_{10})

No exceedances were recorded at D1a, D2a, D3a and D5a for PM_{10} monitoring in 2009. Monitoring was not carried out throughout 2009 at monitoring location D4a for PM_{10}, situated within the Bective Rugby Club due to the absence of a power outlet for monitoring equipment. In quarter 4 of 2009 ESB works were carried out at monitoring point D2a and a sample was not obtained for either dustfall or PM_{10}.

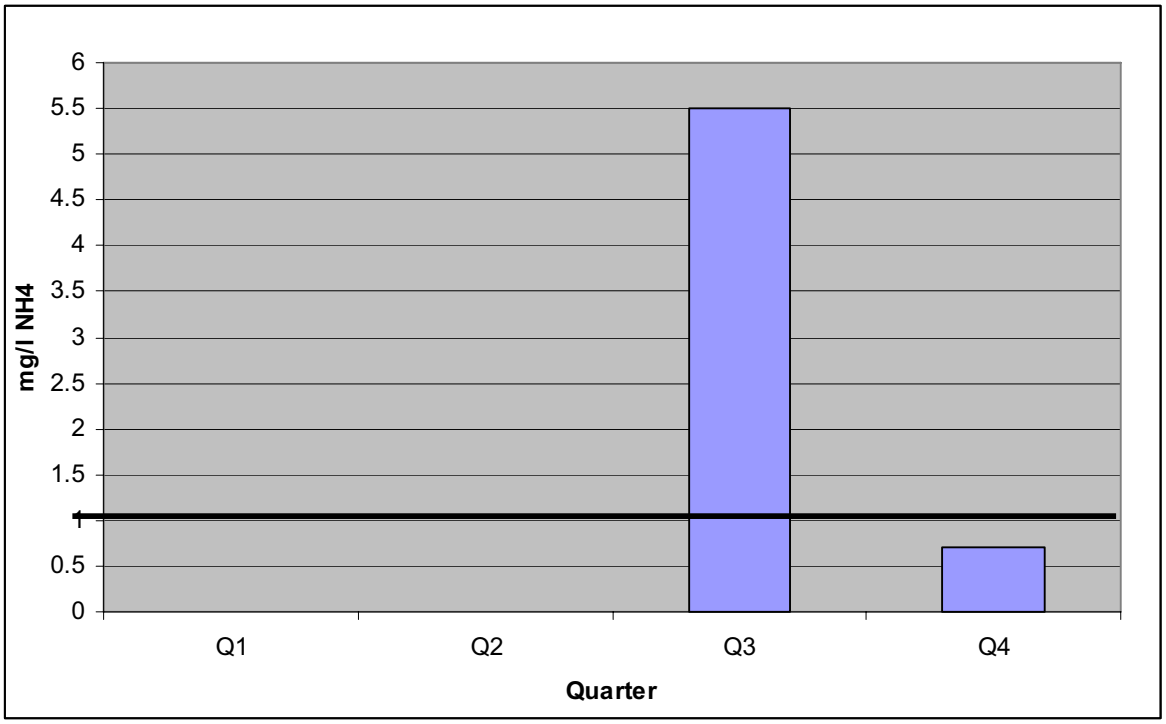
7.5 SURFACE WATER

There are eight surface water monitoring locations around the landfill. Monitoring is carried out at quarterly and annual intervals as per Schedule F.5 of Waste Licence W0015-01. A visual and olfactory inspection of surface waters is also undertaken to provide a basic assessment of the condition of the surface water. The full list of parameters specified in Table F.5.4 of the Waste Licence is monitored on an annual basis. Annual monitoring was undertaken in October 2009, the results of which were submitted to the Agency in the Quarter 3 report.

For the annual monitoring, the majority of parameters analysed were within the range expected for clean waters. Suspended solids were above the guideline values of 25Mg/l set in the Freshwater Fish Directive at SW3, SW4, SW5 and SW8. Iron levels recorded at SW6A (5.51mg/l) were above the limits set in the Surface Water Directive (3.11mg/l). All other metals were recorded at concentrations well below threshold levels.

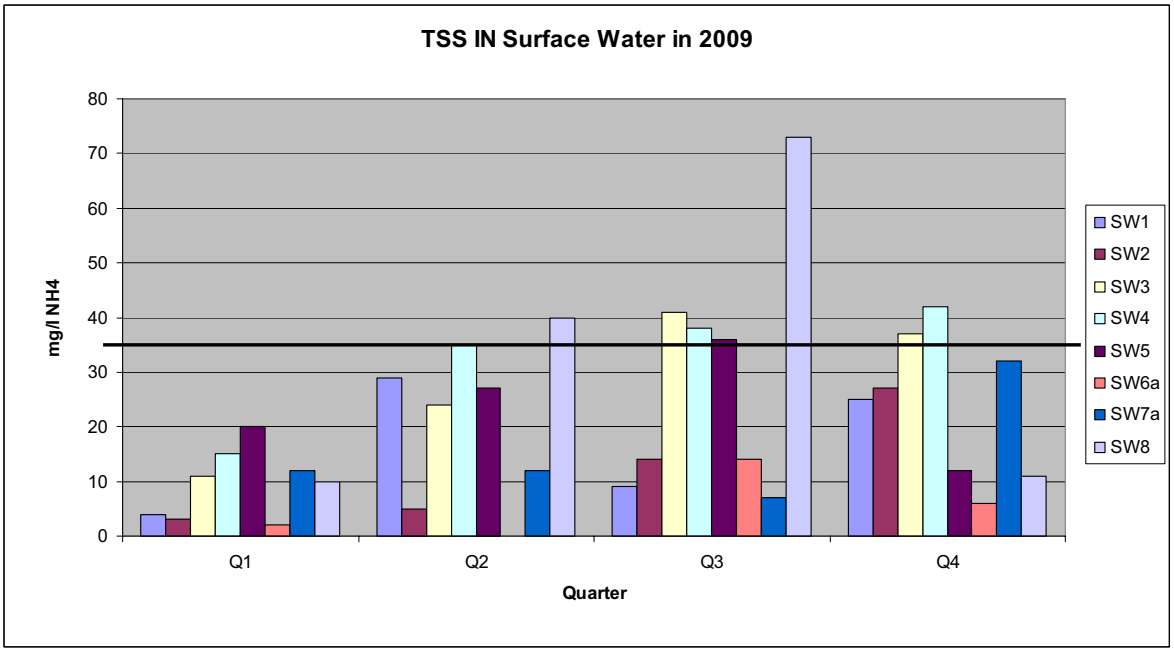
Ammoniacal nitrogen concentrations at SW8 were elevated in the 3rd quarter of the year, as illustrated in Figure 7.2 below. This was the only location where high levels of ammoniacal nitrogen were recorded. The presence of ammoniacal nitrogen ($N\text{-}NH_3$) in landfill leachate is a common problem faced by landfill operators. Slow leaching of wastes producing nitrogen, with no significant mechanism for transformation of $N\text{-}NH_3$, causes a high concentration of ammoniacal nitrogen in leachate over a long period of time. Hence, the presence of ammoniacal nitrogen in surface water bodies surrounding a landfill is often used as an indicator of leachate pollution.

Figure 7.2: Ammoniacal Nitrogen in Surface Water at SW8 during 2009



Suspended solid concentrations were above the limits of 35mg/l set by the licence at SW8 in Quarter 2, SW3, SW4, SW5 and SW8 in Quarter 3 and SW3 and SW4 in Quarter 4 with exceedances ranging from 36mg/l TSS to 73mg/l TSS.

Figure 7.3: Total Suspended Solids in Surface Water in 2009



COD concentrations were above the limits of 30mg/l at SW1, SW4, SW5 and SW8 in Quarter 2, SW2 in Quarter 3 and SW2, SW3 SW4 and SW7a in Quarter 4 with exceedances ranging from 37mg/l COD to 68mg/l COD.

Visual assessment of the surface water quality showed no evidence of significant contamination at any of the monitoring locations.

The majority of chemical parameters analysed in 2009 were within the range expected for clean waters. Overall, the quality of the surface water in the vicinity of the landfill in 2009 showed an improvement on the water quality in 2008.

7.6 GROUNDWATER INCLUDING PRIVATE WELLS

Groundwater

Eight groundwater monitoring stations are positioned around the perimeter of the landfill, MW1, MW3, MW4, MW6, MW7, MW13, MW14 and MW15. There are two monitoring wells at each location. A deep well (D) monitors groundwater in the bedrock and a shallow well (S) monitors groundwater in the overburden. Monitoring wells MW5S & MW5D were lost in November 2006 as a result of the ongoing development of The Park immediately east of the landfill. Monitoring wells 2S and 2D were lost in August 2009 as a result of DLR Depot works. Monthly and annual groundwater monitoring was carried out in 2009, as per Schedule F.5 of Waste Licence W0015-01. The annual monitoring was undertaken in September 2009; the results of which were submitted to the Agency in the Quarter 3 report.

The results of the groundwater analyses are interpreted with reference to the EPA Interim Guideline Values, taken from the 2003 EPA publication - Toward Setting Guideline Values for the Protection of Groundwater in Ireland, Interim Report.

The results of the annual monitoring in Quarter 3 showed elevated concentrations of ammoniacal nitrogen, chloride, manganese, and phosphorus. Elevated levels of the metals – cadmium, iron and lead were also recorded in the annual monitoring carried out in September 2009. Otherwise results for Pesticides, Organotins, TPH and SVOC remained below the interim guideline values at all on-site and perimeter groundwater monitoring wells.

Iron was present in concentrations of 0.22 mg/l (at MW14D) above a guideline value of 0.2 mg/l. Lead was present in concentrations of 0.013 mg/l (at MW1D), 0.022 mg/l (at MW3D), 0.018 mg/l (at MW4D) and 0.013mg/l (MW14D) above a guideline value of 0.01 mg/l.

Otherwise results for Pesticides, Organotins, TPH and SVOC remained below the interim guideline values at all on-site and perimeter groundwater monitoring wells.

Manganese concentrations were recorded in excess of the guideline value of 0.05mg/l in 4 of the 14 monitored wells - GW3S, GW4D, GW6S and GW13D, with levels ranging from 0.06mg/l to 0.37mg/l. Elevated manganese concentrations can be indicative of organic pollution if accompanied by elevated ammonia, chloride, sodium or potassium.

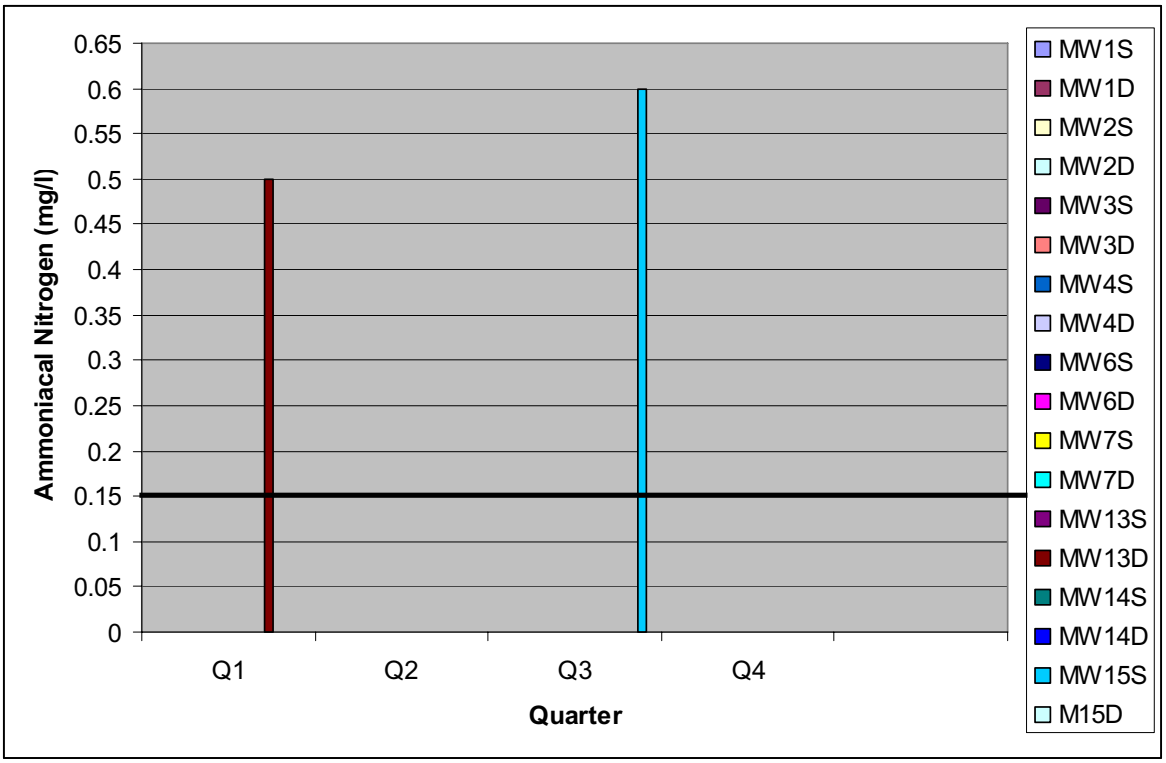
Elevated levels of phosphorus were recorded at 5 of the 14 wells monitored –GW3S, GW6D, GW6S, GW7D and GW14D, with levels ranging from 0.036mg/l to 0.129mg/l. This is above the guideline value of 0.03mg/l. Phosphorus is primarily a surface water quality issue giving rise to eutrophication. It is typically retained in soils owing to the ability of soil particles to adsorb soluble phosphorus, and as such it usually doesn't reach the groundwater. Notwithstanding this, phosphorous is not particularly harmful to humans.

Results for metals analysis shows that elevated concentrations of Cadmium, Lead and Iron were present in perimeter wells around the site. Cadmium was present in concentrations of 0.0012 mg/l (at MW1D), 0.0017 mg/l (at MW3D), 0.0013 mg/l (at MW3S), 0.0013 mg/l (at MW4D), 0.0006 mg/l (at MW6D), 0.0006 mg/l (at MW6S) and 0.0007 mg/l (at MW14D) above a guideline value of 0.0005mg/l.

Monitoring results throughout the year showed elevated levels of chloride and ammoniacal nitrogen at several locations and at varying levels. The results of ammoniacal nitrogen and chloride analyses are illustrated in Figures 7.3 and 7.4 below.

The ongoing capping of the landfill will significantly reduce the generation of leachate and consequently will reduce the risk posed to groundwater quality in the area.

Figure 7.3: Wells where Ammoniacal Nitrogen was elevated in Groundwater during Quarterly Monitoring in 2009



Private Wells

There are two private wells located within 500m of the landfill site. Neither well is nor has been used for drinking water purposes. PW1 is located on the Stepaside Golf Course to the south west of the site, and is used for watering of greens and landscaped areas. PW2 is located at a private residence to the south east of the site and was used for watering of commercial vegetables. This well is no longer in use.

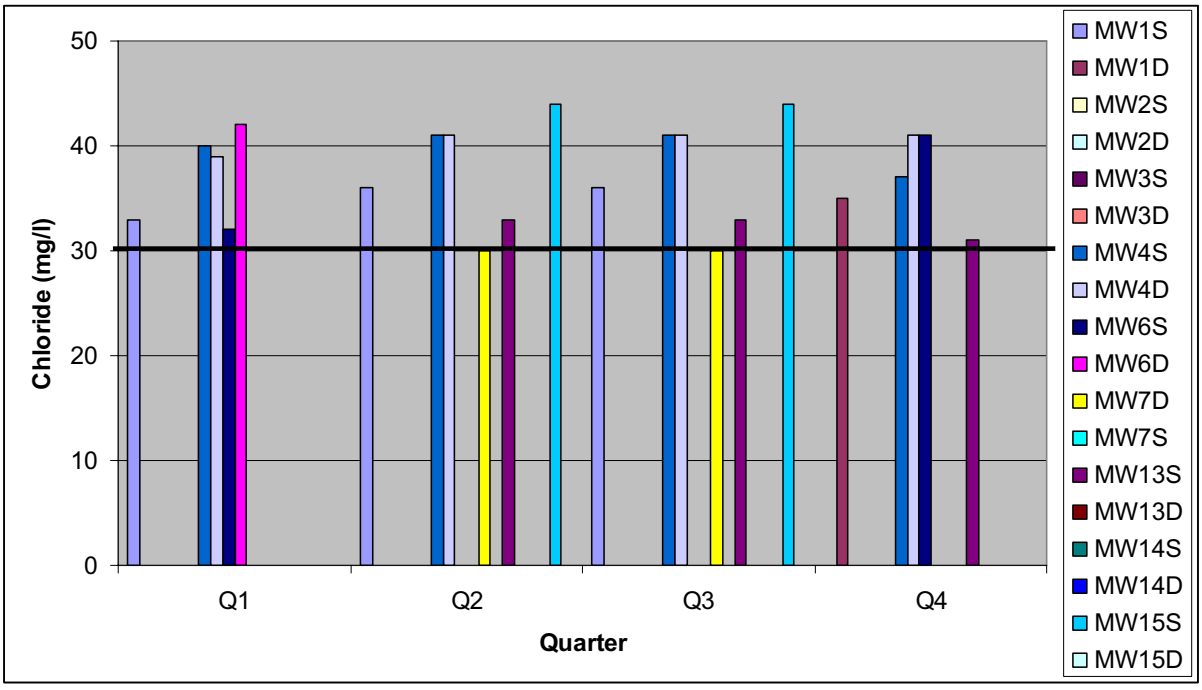
Monitoring of groundwater from the private wells was carried out on a monthly, quarterly and annual basis during 2007. The results of this monitoring are reported on a quarterly basis to the EPA. The annual monitoring was undertaken in 3rd Quarter of 2009; the results of which were submitted to the Agency with the Quarter 3 report.

PW2 displayed concentrations of Manganese and Phosphorus above the relevant guideline values of 0.52 mg/l (IGV 0.05 mg/l) and 0.044 mg/l (IGV 0.03mg/l) respectively. A concentration of Cadmium of 0.0006 mg/l was present at PW1.

For the annual monitoring round, all parameters analysed were found to be within the guideline values for PW1 and PW2.

Ammoniacal nitrogen was below the laboratory detection limit at both wells throughout the year. No pesticides, VOCs or SVOCs were detected in PW1 or PW2.

Figure 7.4: Groundwater Wells where Chloride was elevated in Groundwater during 2009



7.7 LEACHATE

Quarterly and annual monitoring of leachate was carried out as per Schedule F.5 of Waste Licence W0015-01. The results of this monitoring are reported on a quarterly basis to the EPA. The annual monitoring was undertaken in October 2009; the results of which were submitted to the Agency in the 3rd Quarter report.

Monitoring of leachate was undertaken at two monitoring wells in 2009 - MW10a and MW17.

All monitored parameters were recorded at concentrations that are considered to be typical of leachate from municipal waste landfills.

7.8 STORMWATER WETLANDS

The inlet and outlet points from the stormwater wetlands in the Recycling Park are monitored on a continuous and weekly basis, as per Schedule F.6 of the waste licence.

The stormwater inflow is monitored continuously by an inline pH, TOC, conductivity and flow rate monitor. A weekly grab sample is also taken and analysed for ammonia and suspended solids. At the outlet, the flow is monitored continuously by an inline flow rate monitor and a weekly grab sample is taken for analysis of suspended solids and ammoniacal nitrogen.

The maximum concentration of total suspended solids recorded at the stormwater outlet was 14mg/l on 18/01/2009 and 08/03/2009. This is well below the emission limit of 35mg/l. The majority of the results throughout the year were below the laboratory limit of detection. Similarly, the majority of results for ammoniacal nitrogen at the outlet were below the laboratory limit of detection throughout the year However a concentration of 11mg/l was recorded on 10/12/2009. This is above the threshold value of 1mg/l.

The maximum discharge limit from the stormwater outlet point is 0.097 m³/sec or 97 l/s. The flow metre on site records flow at litres per second (l/s). The flow rate did not exceed the discharge limit on any occasion throughout 2009 and was well below this limit. The maximum flow for the year was recorded 8.28 l/s in November 2009. The maximum flows for the remaining three quarters were 7.47 l/s, 3.1 l/s and 7.95 l/s, for Q1, Q2, and Q3 respectively.

7.9 EMISSIONS TO SEWER

Emissions to sewer from the landfill and the Baling Hall are monitored on a continuous and monthly basis, as per Schedule F.7 of the waste licence.

For those parameters analysed on a monthly basis i.e ammoniacal nitrogen, BOD, COD, sulphates, suspended solids, detergents and extractable oils, grease and fats, the parameter which showed exceedences was ammoniacal nitrogen from the landfill in January and November 2009, with no parameters exceeding the limit from BRP. The remaining parameters were below the emission limits set out in the licence for the landfill and the BRP.

Ammoniacal nitrogen from the landfill was below the emission limit of 300mg/l in all of 2009, apart from January & November 2009. Exceedances were recorded in January and November with concentrations of 409mg/l and 320mg/l respectively. In Decemeber the concentration returned to below the emission limit value at 183 mg/l.

For the parameters monitored on a continuous basis i.e flow, pH and temperature, as well as methane in the discharge from landfill, exceedences were recorded for pH, whilst the remaining parameters were below the emission limits.

The maximum discharge into the sewer per hour permitted by the waste licence is 108m^3/hr. The combined recorded flow rates from both the landfill and baling hall were well below this. The maximum

combined flow in 2009 from both discharges was 29.47m^3/hr on 102/07/2009 (6.88m^3/hr from the baling hall and 24.4m^3/hr from the landfill).

7.10 METEROLOGICAL MONITORING

Meteorological information was recorded at an on-site weather station within the BRP. Due to technical difficulties data for 12 days of 2009 has not been provided. This has been taken in to account and adjusted accordingly to represent 2009. Graphical representations of monthly totals for precipitation are presented in Appendix C.

7.11 ECOLOGICAL MONITORING

Ecological monitoring was carried out at 7 locations around the facility in September 2009, as per Schedule F.10 of the waste licence. A complete survey report has already been sent to the Agency separately. A summary is provided below.

After a marked improvement in the background condition of the main stream of the Ballyogan river upstream of Ballyogan landfill in 2006, the river returned to its usual moderately polluted condition in 2007 and 2008. The invertebrate data from September 2009 indicates moderately polluted (Q3) conditions at all sites on the Ballyogan River upstream and downstream of the landfill.

The 2009 biological results indicate that water quality in the western stream is unchanged since 1999, with a continuing moderately polluted rating of Q3. It is not possible to rule out the possibility of some landfill contribution to the moderately polluted state of this stream in the absence of an upstream control site. However the Ballyogan River immediately upstream and downstream of its confluence with the Western Tributary (Sites 4 & 4A) also has a moderately polluted Q-rating of Q3. The biological monitoring results therefore contain no evidence of a significant biological impact from the landfill on the Ballyogan River via the Western Tributary.

The 2009 biological results indicate a slight deterioration in water quality in the eastern stream since 2008, with a moderately polluted rating of Q2-3 compared with Q3 in 2008. It is not possible to rule out the possibility of some landfill contribution to the moderately polluted state of this stream in the absence of an upstream ‘control site’.

7.12 PRTR REPORTING

The PRTR report was submitted to the Agency in April 2010 in accordance with the requirements of the E-PRTR Regulations 2006. Gas Sim 2.0 was used to complete the E-PRTR and details of the uploaded results are presented in Appendix D.

8 FINANCIAL ARRANGEMENTS

In accordance with Condition 11 of Waste Licence W0015-01, Charges and Financial Provisions, Dun Laoghaire Rathdown County Council has made the necessary provisions to ensure that there is adequate funding for the management and development of Ballyogan Landfill Facility and Recycling Park, as well as the restoration of the landfill site.

APPENDIX A

DESTINATIONS OF WASTE REMOVED OFF-SITE FOR RECOVERY OR DISPOSAL

Non-Hazardous Waste sent off-site from the CRF for Recovery/Disposal

Description	EWC Code	Total Tonnes	Tonnes breakdown	Waste Licence/ Permit No.	Destination for Processing, Recovery or Disposal
Paper (non Packaging)	20 01 01	361.65	282.99	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
			78.66	WPR 014	Textile Recycling, Glen Abbey Complex, Belgard Road, Tallaght, Dublin 24
Cardboard Packaging	15 01 01	266	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Tetra Pak	15 01 05	13.54	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Metallic Packaging Aluminium	15 01 04	14	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow

Description	EWC Code	Total Tonnes	Tonnes breakdown	Waste Licence/ Permit No.	Destination for Processing, Recovery or Disposal
Metallic Packaging Steel		23	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Glass Packaging	15 01 07	344	187	WP 160-2004	Glassco, Ballymount , Dublin 12
			157	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Clothing/Textiles	20 01 11	187	-	WPR 014	Textile Recycling, Glen Abbey Complex, Belgard Road, Tallaght, Dublin 24
Plastic Bottles	15 01 02	37.01	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Plastic Packaging	15 01 02	80.29	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Wood	20 01 38	1,001	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Soil & Stones “Construction Waste”	20 02 02	694.69	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Metals	20 01 40	399	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Green Waste	20 02 01	5,504	1,686	WMP 2004/57	Enrich Composting, Kilcock , Co. Kildare

Description	EWC Code	Total Tonnes	Tonnes breakdown	Waste Licence/ Permit No.	Destination for Processing, Recovery or Disposal
			3,818	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Mixed Municipal Waste "Baleable"	20 03 01	2,184	859	W0015-01	Waste Transfer Facility, BRP
			1,325	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Bulky Municipal Waste "Non baleable"	20 03 07	1,073	-	W0053-02	Greeenstar, Fassaroe, Bray, Co.Wicklow
Cooking Oil	20 01 25	3.89	-	WP 98084	Mitchell Taylor Exports Ltd, Newmarket, Dublin 8.
Plasterboard	17 08 02	43.52	-	-	Gypsum Recycling Ireland
Glass Non Packaging	20 01 02	14	-	WP 160-2004	Glassco, Ballymount , Dublin 12
Fire Extinguishers	16 05 05	1.3	-	-	Doyle & Doyle Wholesale
Printer Cartridges	08 03 99	1.17	-	-	David Kiernan
Total		**12,246.06**			

Non-Hazardous Waste sent off-site from the Waste Transfer Facility for Recovery/Disposal

Description	EWC Code	Tonnes	Waste Licence/ Permit No.	Destination for Processing, Recovery or Disposal
C&I Dry Mixed	19 12 12	4,762	W0004-01	Arthurstown Landfill, Kill, Co. Kildare
Leachate Sludge	19 07 03	17.88	D0034-01	Ringsend Treatment Works, Dublin 4
TOTAL		**4,779.88**		

Hazardous Waste sent off-site for Recovery/Disposal

Description	EWC Code	Tonnes	Waste Licence/ Permit No.	Destination for Processing, Recovery or Disposal
Fluorescent Tubes	20 01 21*	1.47	02/2000A (Kildare Waste Permit)	Irish Lamps, Kilkenny Rd., Athy, Co.Kildare
Motor Oil	20 01 26*	23.08	WO-184-01	ENVA Ireland Ltd.,Clonminam Industrial Estate, Port Laoise, Co. Laois
Paints, Inks, Adhesives - Municipal Wastes	20 01 27*	94.12	W0054-01	Ecosafe Systems,Unit 1a, Allied Industrial Estate, Kylemore Road,Dublin 10
Batteries (Municipal)	20 01 33*	38.1	W0113-02	WEEE Recycle (KMK)
Hazardous discarded electrical equipment	20 01 35*	727.28	WP98099	Tech Rec, 51 Parkwest Industrial Estate,Nangor Road, Dublin 12
Gas Cylinders	16 05 04*	5.42	N/A	BOC Gasses
Total		**889.47**		

APPENDIX B

WATER BALANCE CALCULATIONS

Ballyogan Landfill: Estimated Volume of Leachate Generated 2009

Month	Rainfall[1] (mm)	Engineered Capped Area	Temporary Capped Area	Volume of Water/Infiltration (m^3)	
				Completed Areas - Temporary Cap[2]	Completed Areas - Engineered Cap[3]
January	91.1	140000.0	260000.0	7108.92	510.38
February	55.8	163636.4	236363.6	3956.73	365.24
March	47.6	187272.7	212727.3	3037.75	356.57
April	85.6	210909.1	189090.9	4855.85	722.15
May	79.8	234545.5	165454.5	3960.98	748.67
June	65.8	258181.8	141818.2	2799.49	679.53
July	134.3	281818.2	118181.8	4760.13	1513.48
August	53.2	305454.5	94545.5	1508.95	650.01
September	34.2	329090.9	70909.1	727.53	450.20
October	66.4	352727.3	47272.7	941.11	936.28
November	155.0	376363.6	23636.4	1099.09	2333.45
December	56.5	400000.0	0.0	0.00	904.24
Total	**925.3**	-	-	34756.52	10170.20
Total Volume of Water					44,926.71
Volume of Water Absorbed into Waste Mass					6,954.10
TOTAL VOLUME OF LEACHATE GENERATED					**37,972.61**

Notes

[1] Rainfall was recorded at the on-site weather station. Due to technical difficulties data was not obtained for 12 days of 2009. This has been taken in to account and an average for the year has been used to calculate the Total Rainfall for the year.

[2] 4% infiltration of rainfall used as worst case scenario for capped areas.

[3] 30% infiltration of rainfall used for temporary capped areas.

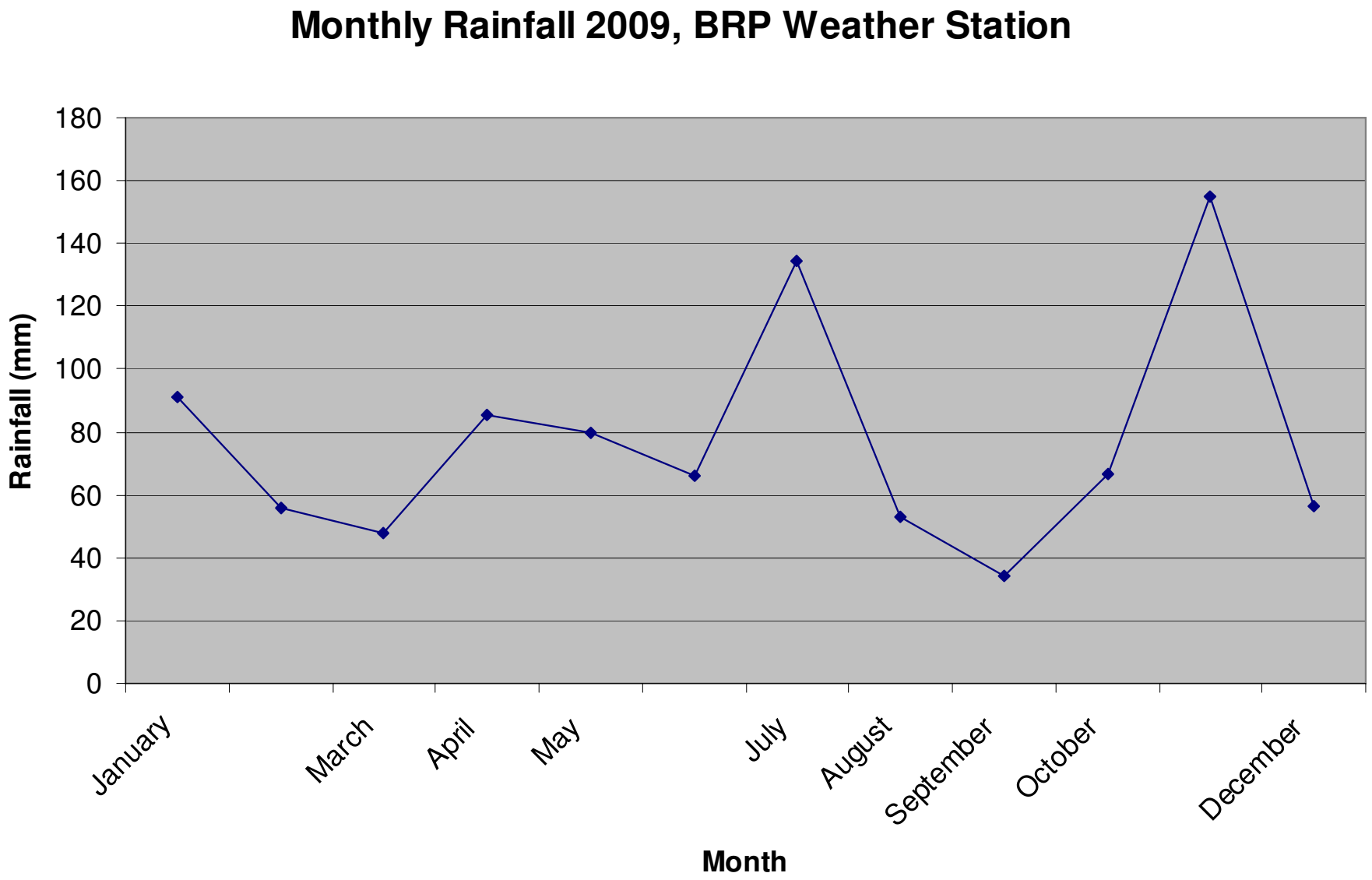
Note: The Stage 2 capping contract was ongoing during 2009, with the completion of the engineered cap onsite by December 2009. It is assumed that 23,636.4m^2 of the landfill was capped in each month of 2009.

Average waste tonnages landfilled per annum: 99,344 tonnes; waste density: 0.8 tonnes/m^3; absorptive capacity: 0.07m^3/tonne.

Leachate Lagoon de-commissioned.

APPENDIX C

METEOROLOGICAL DATA 2008


Monthly Rainfall 2009, BRP Weather Station
Rainfall (mm)
180
160
140
120
100
80
60
40
20
0
January
March
April
May
July
August
September
October
December
Month

APPENDIX D

PRTR Report 2008

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

AER Returns Worksheet

Version 1.1.10

REFERENCE YEAR	2009

1. FACILITY IDENTIFICATION

Parent Company Name	Dun Laoghaire-Rathdown County Council
Facility Name	Ballyogan Landfill Facility Ballyogan Recycling Park
PRTR Identification Number	W0015
Licence Number	W0015-01

Waste or IPPC Classes of Activity

No.	class_name
3.1	Deposit on, in or under land (including landfill).
3.11	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.12	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
3.4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
3.5	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
3.6	Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule.
3.7	##
4.1	Solvent reclamation or regeneration.
4.10	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
4.11	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
4.12	Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.
4.6	Recovery of components used for pollution abatement.
4.9	Use of any waste principally as a fuel or other means to generate energy.

Address 1	Ballyogan Road
Address 2	Jamestown Townland
Address 3	Carrickmines
Address 4	Dublin 18
Country	Ireland
Coordinates of Location	-6.19293 53.252
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Michael Whelan
AER Returns Contact Email Address	mwhelan@dlrcoco.ie
AER Returns Contact Position	Senior Executive Engineer, Water and Waste Services
AER Returns Contact Telephone Number	01-2054700
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(d)	Landfills
5(c)	Installations for the disposal of non-hazardous waste
5(d)	Landfills
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR								
POLLUTANT		METHOD				QUANTITY		
			Method Used		output from engines			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
03	Carbon dioxide (CO2)	C	OTH	Gas Sim 2	7528696.249	21959999.497	0.0	14431303.248
01	Methane (CH4)	C	OTH	Gas Sim 2	32115.174	512000.0	0.0	479884.826
02	Carbon monoxide (CO)	C	OTH	Gas Sim 2	0.0	91000.0	0.0	91000.0
55	1,1,1-trichloroethane	C	OTH	Gas Sim 2	0.0	6.75	0.0	6.75
08	Nitrogen oxides (NOx/NO2)	C	OTH	Gas Sim 2	0.0	61800.0	0.0	61800.0
07	Non-methane volatile organic compounds (NMVOC)	C	OTH	Gas Sim 2	0.0	331.0	0.0	331.0
86	Particulate matter (PM10)	C	OTH	Gas Sim 2	0.0	425.0	0.0	425.0
11	Sulphur oxides (SOx/SO2)	C	OTH	Gas Sim 2	0.0	8290.0	0.0	8290.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR								
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
56	1,1,2,2-tetrachloroethane	C	OTH	Gas Sim 2	0.0	0.199	0.0	0.199
62	Benzene	C	OTH	Gas Sim 2	0.0	4.3	0.0	4.3
35	Dichloromethane (DCM)	C	OTH	Gas Sim 2	0.0	0.157	0.0	0.157
14	Hydrochlorofluorocarbons (HCFCs)	C	OTH	Gas Sim 2	0.0	7.34	0.0	7.34
52	Tetrachloroethylene (PER)	C	OTH	Gas Sim 2	0.0	0.142	0.0	0.142
73	Toluene	C	OTH	Gas Sim 2	0.0	0.649	0.0	0.649
54	Trichlorobenzenes (TCBs)(all isomers)	C	OTH	Gas Sim 2	0.0	0.00684	0.0	0.00684
57	Trichloroethylene	C	OTH	Gas Sim 2	0.0	0.975	0.0	0.975
60	Vinyl chloride	C	OTH	Gas Sim 2	0.0	8.73	0.0	8.73
78	Xylenes	C	OTH	Gas Sim 2	0.0	0.397	0.0	0.397
15	**Chlorofluorocarbons (CFCs)**	C	OTH	Gas Sim 2	0.0	11.5	0.0	11.5

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR								
POLLUTANT		METHOD				QUANTITY		
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
212	Formaldehyde	C	OTH	Gas Sim 2	0.0	0.0185	0.0	0.0185

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Ballyogan Landfill Facility Ballyogan Recycling Park

Please enter summary data on the quantities of methane flared and / or utilised	**T (Total) kg/Year**	**M/C/E**	**Method Used**		**Facility Total Capacity m3 per hour**	
			Method Code	**Designation or Description**		
Total estimated methane generation (as per site model)	3691402.203	C	OTH	Gas Sim 2 & Calcs	N/A	
Methane flared	0.0				0.0	(Total Flaring Capacity)
Methane utilised in engine/s	3179402.203	C	OTH	Gas Sim 2 & Calcs	0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	512000.0	C	OTH	Gas Sim 2 & Calcs	N/A	

4.2 RELEASES TO WATERS

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

RELEASES TO WATERS								
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS								
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS									
POLLUTANT					QUANTITY				
			Method Used						
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
238	Ammonia (as N)	C	OTH	Scaled up using monitoring results and flow data	15.819	0.0	15.819	0.0	0.0
240	Suspended Solids	C	OTH	Scaled up using monitoring results and flow data	32.284	0.0	32.284	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER

POLLUTANT		METHOD			QUANTITY				
			Method Used		Landfill Leachate to Sewer	BRP Leachate to Sewer			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)	C	OTH	Scaled-up using monitoring results and flow data	0.397	0.0	0.397	0.0	0.0
06	Ammonia (NH3)	C	OTH	Scaled-up using monitoring results and flow data	6247.74	1019.78	7267.52	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER

POLLUTANT		METHOD			QUANTITY				
			Method Used		Landfill Leachate to Sewer	BRP Leachate to Sewer			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
306	COD	C	OTH	Scaled-up using monitoring results and flow data	6864.4	8396.583	15260.983	0.0	0.0
303	BOD	C	OTH	Scaled-up using monitoring results and flow data	3084.383	3793.774	6878.157	0.0	0.0
343	Sulphate	C	OTH	Scaled-up using monitoring results and flow data	231.085	351.837	582.922	0.0	0.0
314	Fats, Oils and Greases	C	OTH	Scaled-up using monitoring results and flow data	38.947	25.873	64.82	0.0	0.0
308	Detergents (as MBAS)	C	OTH	Scaled-up using monitoring results and flow data	0.0	0.0	0.0	0.0	0.0
240	Suspended Solids	C	OTH	Scaled-up using monitoring results and flow data	6088.708	1541.512	7630.22	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND							
POLLUTANT		METHOD			QUANTITY		
			Method Used				
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND							
POLLUTANT		METHOD			QUANTITY		
			Method Used				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	20 03 01	No	859.0	Mixed Residual Waste	R13	M	Weighed	Onsite in Ireland	DLRCC ,W0015-01	WTF,Ballyogan Recycling Pk,Carrickmines,Dublin 18,Ireland		
Within the Country	20 03 01	No	1325.0	Mixed Residual Waste	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	20 02 01	No	1686.0	Green Waste	R13	M	Weighed	Onsite in Ireland	Enrich Composting,WMP 2004/57	Kilcock,., Co. Kildare,.,Ireland		
Within the Country	20 02 01	No	3818.0	Green Waste	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	15 01 01	No	266.0	Cardboard Packaging	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	20 01 01	No	282.99	Paper, newspaper, magazines	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	20 01 01	No	78.66	Books	R13	M	Weighed	Onsite in Ireland	Textile Recycling,WPR 014	Glen Abbey Complex,Belgard Rd,Tallaght,D24,Ireland		
Within the Country	15 01 07	No	186.99	Glass Packaging	R13	M	Weighed	Onsite in Ireland	Glassco,WP 160-2004	Ballymount,.,Dublin 12,.,Ireland		
Within the Country	15 01 07	No	157.0	Glass Packaging	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	20 01 02	No	14.0	Glass Non Packaging	R13	M	Weighed	Onsite in Ireland	Glassco,WP 160-2004	Ballymount,.,Dublin 12,.,Ireland		
Within the Country	15 01 04	No	14.0	Aluminium Cans - Packaging	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	15 01 04	No	23.0	Steel cans -Packaging	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	20 01 40	No	399.0	Other metals - Non Packaging	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	15 01 02	No	37.01	Bottles	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	15 01 02	No	80.29	Plastic Packaging	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	20 01 11	No	187.0	Textiles, non packaging	R13	M	Weighed	Onsite in Ireland	Textile Recycling,WPR 014	Glen Abbey Complex,Belgard Rd,Tallaght,D24,Ireland		
Within the Country	20 01 38	No	1001.0	Wood, non packaging	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	16 06 01	Yes	34.22	Lead Acid Batteries	R13	M	Weighed	Onsite in Ireland	Recycling Village Ltd,WP2007/020	Unit 4 Tenure Business Park,Monasterboice,Drogheda ,Co Louth,Ireland	Recycling Village Ltd,WP2007/020,Unit 4 Tenure Business Park,Monasterboice,Drogheda ,Louth,Ireland	Unit 4 Tenure Business Park,Monasterboice,Drogheda ,Louth,Ireland
Within the Country	20 01 33	Yes	3.88	Portable alkaline Batteries	R13	M	Weighed	Onsite in Ireland	Recycling Village Ltd,WP2007/020	Unit 4 Tenure Business Park,Monasterboice,Drogheda ,Co Louth,Ireland	Recycling Village Ltd,WP2007/020,Unit 4 Tenure Business Park,Monasterboice,Drogheda ,Louth,Ireland	Unit 4 Tenure Business Park,Monasterboice,Drogheda ,Louth,Ireland
Within the Country	20 01 26	Yes	23.08	Waste mineral oils	R13	M	Weighed	Onsite in Ireland	Enva Ireland Ltd,W0184-01	Clonmainam Ind Est,Portlaoise,Co. Laois,.,Ireland	Enva Ireland Ltd,W0184-01,Clonmainam Ind Est,Portlaoise,Co. Laois,.,Ireland	Clonmainam Ind Est,Portlaoise,Co. Laois,.,Ireland
Within the Country	20 01 25	No	3.89	Waste cooking or vegetable oils	R13	M	Weighed	Onsite in Ireland	Mitchell Taylor Exports Ltd,WP 98084	Newmarket,Dublin 8,.,.,Ireland		
Within the Country	20 01 27	Yes	94.12	Waste Paint & Varnish	R13	M	Weighed	Onsite in Ireland	Ecosafe Systems,W0054-01	Unit 1A,Allied Industrial Estate,Kylemore Road,Dublin 10,Ireland	Ecosafe Systems,W0054-01,Unit 1A,Allied Industrial Estate,Kylemore Road,Dublin,Ireland	Unit 1A,Allied Industrial Estate,Kylemore Road,Dublin,Ireland
Within the Country	17 08 02	No	43.52	Plasterboard	R13	M	Weighed	Onsite in Ireland	Gypsum Recycling Ireland,WPT 95	Rathcofey,Donadea,Naas,Co Kildare,Ireland		
Within the Country	20 03 07	No	1073.0	Bulky waste	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	20 02 02	No	694.69	Household soil & stones	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	08 03 99	No	1.17	Printer Cartridges	R13	M	Weighed	Onsite in Ireland	David Kiernan,WPT 89	Fingal Recycling ,Balbriggan,Dublin,.,Ireland		
Within the Country	15 01 05	No	13.54	Tetra Pak	R13	M	Weighed	Onsite in Ireland	Greenstar,W0053-02	Fassaroe,Bray,Co. Wicklow,.,Ireland		
Within the Country	16 05 04	Yes	5.42	Gas Cylinders	R13	M	Weighed	Onsite in Ireland	BOC Gases IrelandLtd,N/A	.,Bluebell,Dublin 12,.,Ireland	BOC Gases Ireland Ltd,.,.,.,Bluebell,Dublin 12,Ireland	.,.,Bluebell,Dublin 12,Ireland
Within the Country	19 12 12	No	4762.0	Baled MSW	D13	M	Weighed	Onsite in Ireland	Arthurstown Landfill,W0004-01	Kill ,.,.,Co Kildare,Ireland		
Within the Country	16 05 05	No	1.3	Fire extinguishers	R13	M	Weighed	Onsite in Ireland	Doyle & Doyle Wholesalers,N/A	Cookstown Industrial Estate,78A ,Tallaght,Dublin 24,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button