



Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

Annual Environmental Report 2012

**Ballaghveny Landfill, Ballymackey, Nenagh,
Co. Tipperary.**

North Tipperary County Council.
Environment Section,
Civic Offices,
Limerick Road,
Nenagh,
Co. Tipperary.

4th April 2013

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Executive Summary

This is the twelfth Annual Environmental Report (AER) produced for Ballaghveny Landfill Site, Ballymackey, Nenagh, Co. Tipperary and has been compiled in accordance with the requirements of Schedule G of Waste Licence 0078-03.

The purpose of the report is to summarise the interaction of the facility with the local environment. The Annual Environmental Report includes where applicable the information specified in Schedule G of the Waste Licence and in accordance with the EPA publication Landfill Manuals

- Investigations for Landfills 1995
- Landfill Monitoring, 2nd Ed 2004
- Landfill Operational Practices 1997
- Landfill Restoration and Aftercare 1999
- Landfill Site design 2001

1. INTRODUCTION

Waste licence Register Number: 0078-03

Name of Operator, Name and Address of Facility

North Tipperary County Council,
Ballaghveny Landfill Site,
Ballymackey,
Nenagh,
Co. Tipperary.

Reporting period

The reporting period for the purposes of this AER is the 1st of January 2012 to 31st December 2012.

Site Description

The site is located in a rural area, which is not heavily populated, and its surrounding lands consist of flat open fields screened by dense forestry. Agriculture is the principal land use in the vicinity of the landfill, with pig farming, horses and dairying as the main activities. Access to the site is generally from the Nenagh/Dublin N7 National Primary Route along rural roads.

The landfill is located in the townlands of Ballaghveny and Woodville approximately 4km north of Toomevara and 11km north-east of Nenagh. The site is approximately 16.3ha in size and is situated on the eastern side of approximately 40ha of land owned by North Tipperary County Council (NTCC) which also includes Woodville House.

The original site, approximately 5.3ha in size, was purchased as a disused quarry by North Tipperary County Council (NTCC) following an investigation by An Foras Forbartha in 1985. A total of 5 Cells were developed with cells 3-5 lined. In 2000 NTCC bought Woodville house and associated lands to the west and north of the existing landfill.

Three additional lined cells, cells 6, 7 and 8 were developed and filled from September 2001 to June 2005. Cells 9, 10 and 11 were constructed in 2004/2005 and came into operation in June 2005.

Current Status of Ballaghveny Landfill and Civic Amenity Facility

Landfilling of waste in Ballaghveny Landfill ceased on the 26th February 2011 when a temporary closure of the landfill was initiated.

The Civic Amenity Site was open to the public on Fridays and Saturdays only for recycling and bags of domestic waste but this facility closed on Saturday 30th June 2012.

2. WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

No waste was landfilled in Ballaghveny Landfill during 2012.

The Civic Amenity Facility was open until the 30th June 2012 and the only waste activities carried out at the facility were those activities listed on page 6 of the waste licence. They were:

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts, 1996 to 2008:

- Class 2 Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological transformation processes)
- Class 3 Recycling or reclamation of metals and metal compounds.
- Class 4 Recycling or reclamation of other inorganic materials.
- Class 10 The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
- Class 11 Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
- Class 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.

3. QUANTITY AND COMPOSITION OF WASTE RECEIVED, DISPOSED OF AND RECOVERED DURING PREVIOUS YEARS

Waste accepted for disposal/landfill at the Ballaghveny Landfill Facility-

The table below illustrates the tonnage of waste landfilled in Ballaghveny Landfill.

Year	Total tonnage accepted at Ballaghveny Landfill
2001	28,588
2002	35,787
2003	36,612
2004	32,622
2005	26,115
2006	31,802
2007	28,470
2008	25,096
2009	21,442
2010	17,004
2011	7,386

Total tonnage of materials recycled at the Ballaghveny Landfill Facility

Ballaghveny Landfill constructed its Civic Amenity Site in March 2003. The construction of this facility allowed for the expansion of recycling services. The Facility accepted the following for recycling:

- ***Scrap Metal***
 - ***Plastic***
 - ***Cardboard***
- ***Newspapers & Magazines***
 - ***Batteries***
 - ***Bottle Bank***
 - ***Clothes bank***
 - ***Fridge/Freezers***
 - ***WEEE***
 - ***Flourescent bulbs***
 - ***Gas cylinders***
 - ***Christmas trees***

In 2012 a total of 10.26 tonnes of materials were exported from the site for recycling.

Year	Total tonnage recycled at Ballaghveny Landfill
2001	112 (Mainly scrap metal)
2002	123 (Mainly scrap metal)
2003	101 (Mainly scrap metal)
2004	78 (Mainly scrap metal)
2005	67 (Mainly scrap metal + WEEE)
2006	272
2007	287
2008	319
2009	265.06
2010	205.8
2011	58.32
2012	10.26 Itemised breakdown in appendix 1

4. REMAINING FACILITY CAPACITY

The most recent topographical survey of Cell 9 was carried out in August 2012. A proposed filling plan was produced in January 2010 (See appendix 2)

Cells 10b

- The Floor Plan area of Cell 10b is 3,797m²
- This cell has a filling capacity of 46,376m³
- The most recent compaction rate was 0.71t/m³.
- A total of 32,927 tonnes of waste can be landfilled in this cell

Cell 11a

- The Floor Plan area of Cell 10b is 2,992m²
- This cell has a filling capacity of 30,441m³
- The most recent compaction rate was 0.71t/m³.
- A total of 21,613 tonnes of waste can be landfilled in this cell

Cell 11b

- The Floor Plan area of Cell 10b is 3,536m²
- This cell has a filling capacity of 34,776m³
- The most recent compaction rate was 0.71t/m³.
- A total of 24,691 tonnes of waste can be landfilled in this cell

The Wedge

- The Floor Plan area of Cell 10b is 2,345m²
- This cell has a filling capacity of 70,160m³
- The most recent compaction rate was 0.71t/m³
- A total of 49,814 tonnes of waste can be landfilled in this cell

5. METHODS OF DEPOSITION OF WASTE

No waste was landfilled in Ballaghveny Landfill during 2012.

6. SUMMARY REPORT OF EMISSIONS

The required monitoring programme at Ballaghveny Landfill Facility is specified in Schedule C of Waste Licence W0078/03. The environmental monitoring period for this AER is 1st January 2012 to the 31st of December 2012.

The following sections summarise the environmental monitoring undertaken at Ballaghveny Landfill Facility during the reporting period. Drawing DG 0001-01, Rev F06 in **Appendix 3** shows the location of all monitoring points. The results and analysis of this monitoring were submitted by North Tipperary County Council to the Agency in the form of four quarterly monitoring reports during 2012/2013. These results are included in **Appendix 4**.

A summary of emissions is contained in Table 6.1 below.

Table 6.1 - Summary of Emissions

Emission	Significance
Noise	No Noise Survey was carried out in 2012 as landfilling operations ceased in 2011
Dust	Dust monitoring was carried out at monitoring points <i>DSP1</i> , <i>DSP2</i> , <i>DSP3</i> and <i>DSP4</i> in June and August/September 2012. The dust deposition limit is 350mg/m ² /day. Dust Monitoring at <i>DSP1</i> exceeded the licence limit during June 2012 with a level of 431mg/m ² /day but it was noted that there was a lot of insects present in the jar and that the water was cloudy.
Landfill Gas	During 2012 levels of methane, carbon dioxide and oxygen were monitored. <ul style="list-style-type: none"> • Methane (CH₄) levels recorded at the perimeter boreholes were within the limits of the licence during 2012. • Carbon Dioxide (CO₂) levels recorded at the perimeter boreholes exceeded the limit of the licence as follows: <i>MP4</i> October & November 2012 <i>MP7</i> July, August, October, November & December 2012 <i>MP17</i> May 2012 • Gas monitoring detectors have been installed in the site offices. No exceedances were recorded.
Emissions to Surface Water	Five surface water sampling points were monitored throughout the year. These monitoring points were located on the Ballaghveny Stream and the Ollatrim River. The sampling points are located upstream and downstream of the Landfill facility.

	<p>Monitoring point <i>SW4</i> which is upstream of the facility exceeded the suspended solids limit during the first quarter of 2012 and it exceeded BOD & Dissolved Oxygen limits during the second quarter of 2012.</p> <p>Biological monitoring carried out by Conservation Services in July 2012 showed that Ballaghveny Landfill was not having a negative impact on local watercourses.- See Appendix 11</p>
Leachate	<p>The capping of Cells 1-10a has significantly reduced the level of leachate in the cells. There are 6 mobile leachate pumps in wells showing an exceedance.</p> <p>All collected leachate is tankard off-site to the Nenagh & Roscrea Waste Water Treatment Plants. The total volume tankard during the 2012 reporting period was <i>6,804.26m³</i>. A synopsis of leachate volumes can be seen in Appendix 5.</p>
Odours	<p>The level of nuisance odours for the reporting period was considered to be minimal and was mainly confined to areas surrounding the gas vents. A Surface Emissions Survey was carried out at the site in July 2012.</p>
PRTR Emissions Data	<p>The 2012 completed PRTR workbook is attached in Appendix 10.</p>

7. RESOURCE & ENERGY CONSUMPTION SUMMARY

Resource and energy consumption on site can be summarised approximately as follows:

Diesel fuel:

The landfill has a tractor, which used *503litres* of diesel in 2012.

Electricity consumption:

Ballaghveny Landfill obtains electrical energy from Energia.

A total of *86,027kwh* of electricity were used at the site during 2012.

Water consumption:

Water is used on site for drinking and washing purposes. It is sourced from the public water supply and approximately *15m³* was used in 2012.

Energy Audit:

An audit of North Tipperary County Council's recycling and landfill sites was carried out from the 23rd – 26th June 2009.

Based on this energy audit improvements were carried out at the Ballaghveny site during 2009.

8. VOLUME OF LEACHATE PRODUCED AND VOLUME OF LEACHATE TRANSPORTED /DISCHARGED OFF-SITE

Leachate

Condition 6.2 of Waste Licence 0078-03 deals with Leachate Management at the facility.

All leachate is pumped to the leachate storage lagoon to the north of cells 6-8. The existing leachate lagoon has a capacity of $1,020m^3$. Allowing for a free board of 0.5m in accordance with the waste licence, the leachate storage capacity of the lagoon is $694m^3$.

Leachate is tankered from the lagoon to the Nenagh Waste Water Treatment Plant for treatment. On occasion, leachate is also taken to the Roscrea Waste Water Treatment Plant.

In 2012, $6,804.26m^3$ of leachate was collected at the site and treated at the WWTPs in Nenagh and Roscrea. Every load of leachate transported was weighed and recorded.

Leachate Volumes Removed from Ballaghveny Landfill Facility from 2001 to 2012.

The total tonnage of Leachate transported from the Ballaghveny Landfill Site during the reporting period was $6.804.26m^3$. The table below illustrates the tonnage comparison with previous years.

Year	Total Leachate removed from Ballaghveny Landfill for treatment at the WWTP.
2001	6,210
2002	14,466
2003	12,217
2004	13,273
2005	18,672
2006	16,657
2007	26,016
2008	40,232
2009	22,313
2010	17,203
2011	15,670
2012	6,804

Leachate Levels

In accordance with condition 6.2 of waste licence 0078-03 leachate levels and the freeboard in leachate storage lagoons are to be monitored continuously.

Cells 1-10a have a final cap in place.

The leachate levels in the lagoon are monitored weekly and a freeboard of 0.5m is maintained.

The Scada/Telemetry System became operational on site in March 2010. This system records the following

- Levels of landfill leachate in the leachate lagoon
- Levels of Leachate at 20 points in the landfill including Leachate monitoring boreholes, gas monitoring wells and leachate pumping chambers.
- Levels and flow rates in each of the four surface water lagoons.
- Water quality analysis at the outlet at each of the four surface water lagoons.

There were issues with the Scada System in Ballaghveny during 2012. The original Scada System never gave accurate readings. In 2012, it was decided to replace the System as the original contractor had gone out of business. NTCC has employed a new contractor to install the new Scada System and maintain it in the future.

Additional data is available in the following appendices

- Details of leachate composition analysis are given in **Appendix 4** – Quarterly Monitoring Reference Documents.
- Leachate monitoring locations are identified in **Appendix 3** - Monitoring location reference drawing DG 0001-01 (F06)
- The Leachate Management Assessment Report is attached in **Appendix 6**

9. DEVELOPMENT WORKS

NTCC initiated a temporary closure at Ballaghveny Landfill on Saturday 26th February 2011.

No waste has been landfilled in Ballaghveny since March 2011 and all filled cells have been capped.

A Temporary Closure Plan was submitted to the Agency in 2011 and it is due for review in 2013.

10. REPORT ON RESTORATION OF COMPLETED CELLS/ PHASES

Cells 1-8 of the Landfill have been capped and restored as per waste licence W0078-02.

The filling of Cell 9 was completed in November 2009. This cell was capped during 2011.

Cell 10a was closed in March 2011 and capped during 2011.

All filled cells in Ballaghveny Landfill are permanently capped.

A green protective geotextile is currently covering the exposed liner at the side of Cells 6-8 and Cell 10a.

A decision will be made regarding the future of Ballaghveny Landfill in 2013 when it will be decided if the facility will reopen for waste disposal or if a permanent closure will be implemented.

11. SITE SURVEY SHOWING EXISTING LEVELS OF THE FACILITY DURING THE REPORTING PERIOD

Appendix 2 – Topographical survey of Ballaghveny Landfill shows a survey of Cell 9 which was carried out in August 2012

12. ESTIMATED ANNUAL AND CUMULATIVE QUANTITIES OF LANDFILL GAS EMITTED FROM THE FACILITY

Gas Generation Estimates using GasSIM

The GasSim model was adjusted in February 2012 to correlate with onsite conditions as is best practice. This adjustment also affected previous years gas generation figures. The figure of $315\text{m}^3/\text{hr}$ reported for 2010 was underestimated as a result ($455\text{m}^3/\text{hr}$ see Figure 1).

Total bulk landfill gas generated in 2012 was estimated to be $382\text{m}^3/\text{hr}$ as shown in Figure 1. This equated to $3,355,488\text{m}^3$ of landfill gas generated at the landfill in 2012 as estimated by GasSim. The average volume of landfill gas flared for 2012 was $363\text{m}^3/\text{hr}$.

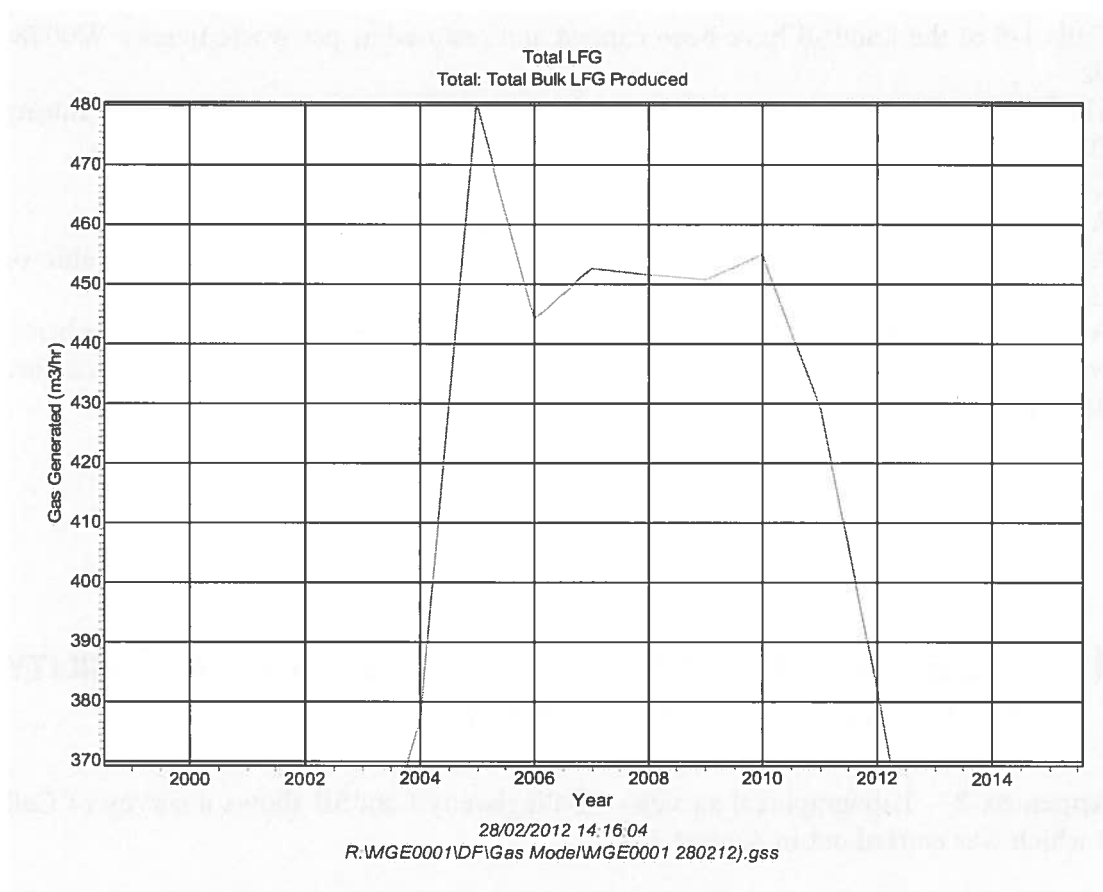


Figure 1: Total Bulk Landfill Generation as estimated by GasSim

Gas Collection and Flaring

The Landfill gas flare which was originally installed in 2002 was recommissioned in June 2008. The flare has a maximum capacity of $500m^3/hr$.

Landfill gas is now collected in 34 vertical wells throughout the landfill and directed to the gas flare.

A copy of the 2012 landfill gas survey is attached in **Appendix 7**.

13. MONTHLY WATER BALANCE CALCULATION AND INTERPRETATION

A revised water balance calculation was carried out in March 2011 in accordance with Section 7.2 of the EPA Manual Landfill Site Design. See **Appendix 8** attached.

The estimated leachate generation figure for 2012 was $9,563m^3$. As referred to in Section 8 above, the actual quantity of leachate tankered from the Landfill in 2012 was $6,804m^3$.

14. PROCEDURES

Lists of procedures developed to date are outlined below.

A comprehensive report under this heading can be seen in the Environmental Management Plan (EMP) for Ballaghveny Landfill for 2009/2010.

1. Awareness and Training Procedure
2. Communications Procedure
3. Corrective Action Procedure
4. Emergency Response Procedure
5. Environmental Incident Procedure
6. Fire Control Procedure
7. Leachate Monitoring Procedure
8. Leachate Handling Procedure
9. Waste Acceptance Procedure
10. Operation of the Facility in Adverse Wind Conditions
11. Vermin and Fly Infestation Programme
12. Procedure for CCTV at the facility
13. Procedure for the Landfilling of waste
14. Procedure for erecting Litter Netting
15. Procedure for litter picking on local roads
16. Site Safety Rules
17. Procedure for using the lawnmower
18. Weigh in/out procedure for customers using the weighbridge
19. Weigh in/out procedure for fixed charge customers
20. Procedure for collecting Cash at the Weighbridge

21. Procedure for Landfill Lodgements
22. Procedure for end of day closing at the Weighbridge/Cash Desk
23. Procedure for daily balance sheet
24. Procedure for daily transaction report
25. Procedure for setting up a new account

15. ENVIRONMENTAL OBJECTIVES AND TARGETS

A number of objectives and targets were outlined for 2011 in the AER for 2010. The following table shows the progress made on these objectives.

Status of Objectives and Targets for Site Works 2011/2012 -

Objective and Target	Target date	Status
Closure of Ballaghveny Civic Amenity Site	June 2012	Facility closed on 30 th June 2012
Installation of Mobile Pumps in Leachate Wells	September 2012	Completed December 2012
Capping of Cell 10a	June 2011	Completed June 2011
Surface water management system cell 9	March 2011	Completed April 2011.
Surface water management system cell 10a	June 2011	Completed June 2011
Final gas management system cell 9	March 2011	Completed June 2011

Schedule of Environmental Objectives and Targets for 2013 -

A Temporary Closure Plan is in place for Ballaghveny Landfill and if any works are to be carried out in 2013 the Agency will be notified in due course.

16. TANK, PIPELINE AND BUND TESTING AND INSPECTION REPORT

The leachate rising main from Cell 9 to the leachate lagoon was pressure tested in 2012 and passed. Confirmation of this test from RPS Consulting Engineers is attached in **Appendix 6**.

17. REPORTED INCIDENTS AND COMPLAINTS SUMMARIES

Complaints

- **16th of February 2012**
 - There was one odour complaint received during 2012. The complainant contacted the Agency and Ballaghveny Landfill office stating that there was a strong odour of landfill gas in the area around the landfill.

Incidents

- **19th of April 2012**
 - The Agency notified the Council that the BMW content of MSW accepted for disposal in 2011 exceeded the 47% limit specified in Condition 8.11.1(i) Waste Licence Register No. W0078-03.
- **4th of July 2012**
 - The Council notified the Agency that the gas flare was out of commission from the 3rd July until the 5th July 2012.
- **14th of August 2012**
 - The Agency notified the Council of non-compliances with IPPC Licence Register No. W0078-03 following an inspection of North Tipperary County Council's Ballaghveny Landfill on 01/05/2012.
- **14th of August 2012**

The Agency notified the Council of non-compliance with condition 11.1 of Waste Licence Register No. W0078-03 as the Council failed to notify the Agency of CO₂ level exceedances in January and February 2012.
- **30th of August 2012**
 - The Council notified the Agency that the CO₂ level during monthly monitoring at one of the perimeter gas wells exceeded the 1.5%v/v limit on 30/07/2012.
- **30th of August 2012**
 - The Council notified the Agency that leachate levels exceeded licence limits on 29/08/2012.
- **3rd of September 2012**
 - The Council notified the Agency that the CO₂ level during monthly monitoring at one of the perimeter gas wells exceeded the 1.5%v/v limit on 31/08/2012.
- **10th of September 2012**
 - The Agency notified the Council of non-compliance with Waste Licence Register No. W0078-03 as the incident notification received by the Agency on 30th August 2012 did not contain details of the leachate well reference numbers or the actual levels of leachate recorded.

- **4th of October 2012**
 - The Council notified the Agency that the CO₂ level during monthly monitoring at two of the perimeter gas wells exceeded the 1.5%v/v limit on 3/10/2012.

- **7th of November 2012**
 - The Council notified the Agency that the CO₂ level during monthly monitoring at two of the perimeter gas wells exceeded the 1.5%v/v limit on 6/11/2012.

- **2nd of November 2012**
 - The Council notified the Agency that leachate levels exceeded licence limits on 30/10/2012.

- **19th of December 2012**
 - The Council notified the Agency that the CO₂ level during monthly monitoring at one of the perimeter gas wells exceeded the 1.5%v/v limit on 19/12/2012.

All complaints and incidents are recorded and responded to as soon as possible. Corrective action, if considered necessary, is recorded and reported to the Agency. Details of all incidents, responses and corrective actions are maintained and available for inspection.

18. REVIEW OF NUISANCE CONTROLS

The vermin control programme is still maintained on site with monthly visits by Curtin Pest Control. This programme has been very successful in controlling the activity of vermin at the facility.

Appendix 9- Annual report for Vermin Control.

19. FINANCIAL PROVISIONS, STAFFING AND PUBLIC INFORMATION

Financial Provision

North Tipperary County Council has made the necessary provisions to ensure that there is adequate funding for the management, development and restoration of Ballaghveny landfill. An Environmental Liability Risk Assessment (ELRA) has been completed for the Facility and this is available for inspection at the site.

Section 53A reports have been returned to the Agency detailing Financial Provision for the site.

The Temporary Closure Plan highlights the financial provisions for the site going forward.

Staffing Structure of the Facility

Details of Management Structure

- North Tipperary County Council has overall responsibility for management and operation of the Ballaghveny landfill site.
- Senior Executive Engineer, Mr. Michael Woulfe, has overall responsibility for the management of the waste in North Tipperary.
- Executive Environmental Scientist, Ms. Olga Doyle is responsible for the day to day implementation of the waste licence for Ballaghveny landfill.
- Site Manager: Ms. Olga Doyle is responsible for the day-to-day management, monitoring and operation of the facility.
- Deputy site manager: Ms. Justine Haugh operates as an Environmental Technician at the facility and is in charge in the absence of the Landfill Manager.
- Site caretaker: Mr. Michael Haverty. (2.5 days per week)
- RPS Consulting engineers have been appointed to provide North Tipperary County Council with site engineering, infrastructure development and reporting assistance.

Public Information, Monitoring and Reporting Requirements

North Tipperary County Council submitted a Waste Licence Communications Programme to the Agency and this was approved by the Agency.

The following documentation may be viewed by the public at Ballaghveny Landfill, Ballymackey, Nenagh:

Public Information Documentation Index

- Complaints Register
- Corrective Action Procedure
- Training Records

Environmental Monitoring Records

- Monthly Landfill gas composition
- Quarterly Surface water composition
- Weekly Surface water visual & odour inspections
- Quarterly Leachate composition
- Quarterly Leachate visual & odour inspections
- Monthly Groundwater levels
- Quarterly Groundwater composition
- Quarterly Groundwater visual & odour inspections
- Quarterly report containing 5.1 to 5.9
- Annual Biological Assessment of Ballaghveny Stream
- Dust monitoring

Other Monitoring Activity

- Accident/First Aid Report Form
- Leachate Consignment Register.
- Fires Report.
- Waste Licence
- EIS for Landfill Extension Report
- AER (Annual Environmental Report)
- Environmental Management Programme
- Management Structure
- Licence Requirement Action Plan
- Operational Procedures/ Forms
- Document Control
- Calibration Register
- Contingency plans
- Maintenance Register
- Non-conformances

- Incident Reports
- Potential Fire Risk Assessment Report
- Once off reports to EPA
- Material Safety Data Sheets
- Topographical Surveys
- Integrity of tankers
- Conditioning plan
- Midlands waste management plan
- Visitors Logbook
- Plant Hire Logbook
- Rodent baiting records

All copies of environmental data and prescribed reports obtained and prepared on behalf of the licensee are forwarded to the Agency. Copies of reports and correspondence are retained and available for inspection at Ballaghveny Landfill.

20. ANNUAL BUDGET AND FACILITY RUNNING COSTS

Revenue/Operational Codes 2012

Landfill Operational Costs	Ref 05110011	= €195,523
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Capital Codes 2012

Capping Contract Cells 9 & 10a	Ref 00511017	= €2,502
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Landfill Development Cells 9-11 to Complete	Ref 00511025	= €24,950
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Landfill Miscellaneous Remedial Jobs	Ref 00511026	= €33,547
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Total Landfill Costs 2012 = €256,522

All further Budget assessments are available in the CRAMP

Appendix 1

Waste Sources Report for 2012

North Tipperary County Council

Ballaghveny Landfill
Ballymackey
Co. Tipperary

WASTE TYPE TRANSACTIONS

"Transaction Period: 01/01/2012 - 31/12/2012"

Print Date: 20/02/2013

Print Time: 11:40:13

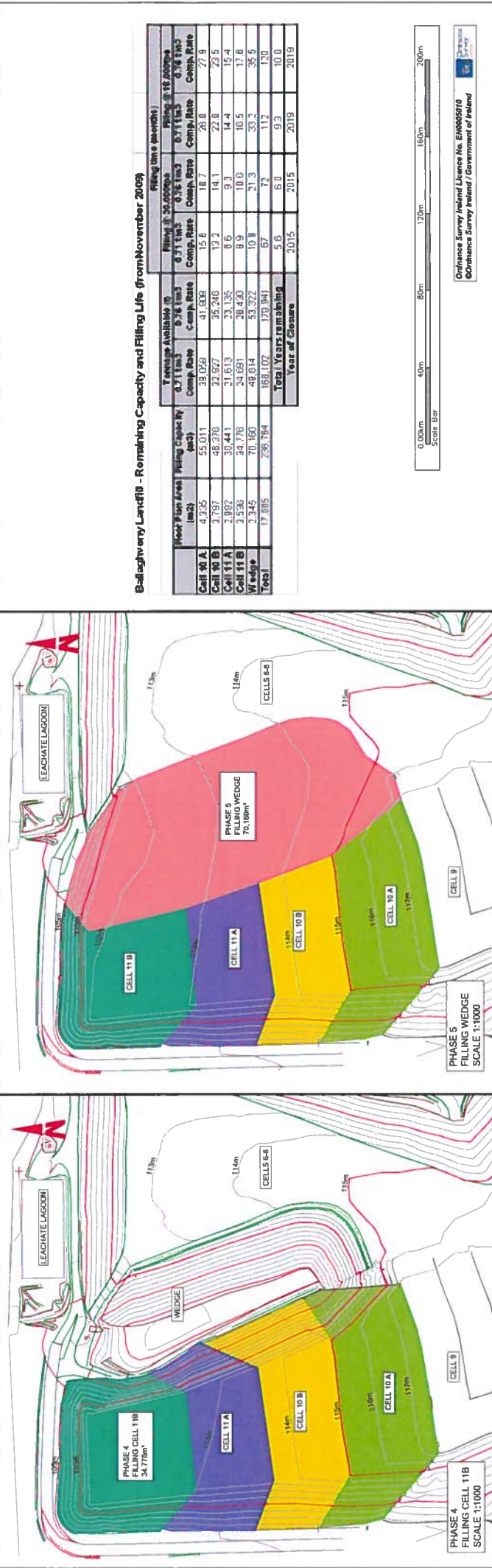
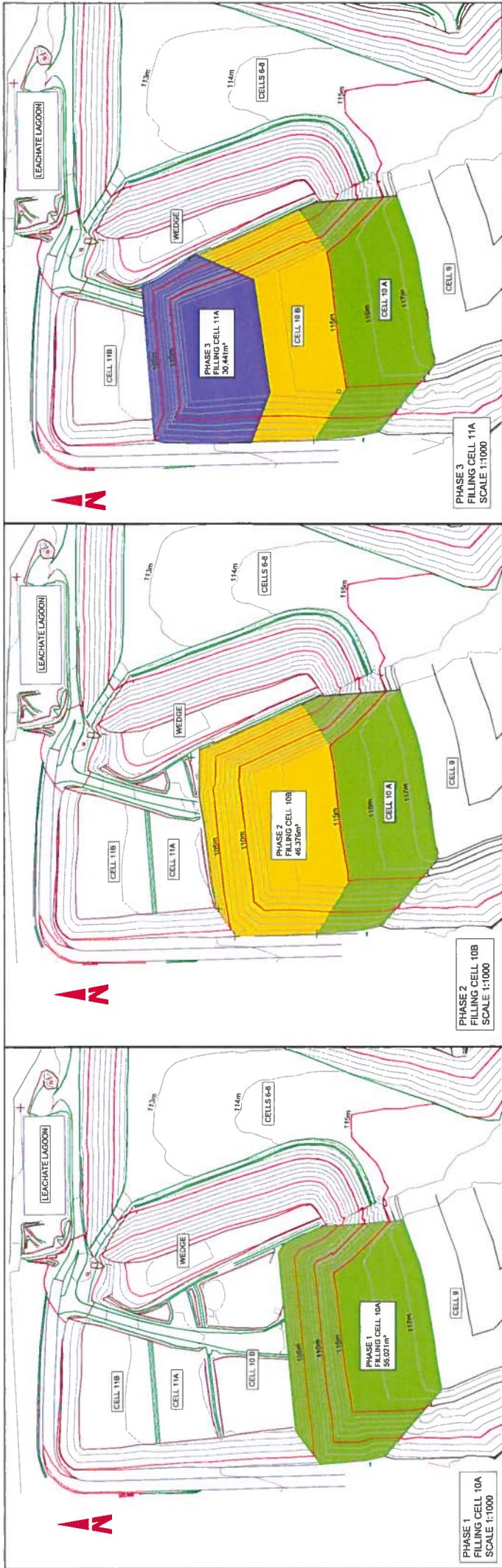
Page 1 of 1

Txn No	Vehicle	I/O	Date	Time	Account	Tare	Gross	Nett Kg
<i>Waste:</i>	150101				CARDBOARD & PAPER			
					CARDBOARD & PAPER		Total Kg :	8,620
<i>Waste:</i>	200301				DOMESTIC WASTE CIVIC AMENITY			
					DOMESTIC WASTE CIVIC AMENITY		Total Kg :	17,520
<i>Waste:</i>	190703				LEACHATE			
					LEACHATE		Total Kg :	6,804,260
<i>Waste:</i>	200135				MIXED WEEE			
					MIXED WEEE		Total Kg :	2,760
<i>Waste:</i>	200111				TEXTILES			
					TEXTILES		Total Kg :	300
<i>Waste:</i>	W/GOODS				WHITE GOODS			
					WHITE GOODS		Total Kg :	2,100
					GRAND	Total Nett :	6,835,560 Kg	
						Total Txn's :	533	

Report End...

Appendix 2

Topographical Survey



Ballaghveny Landfill - Remaining Capacity and Filling Life (from November 2009)

Cell No	Floor Area (m ²)	Filling Capacity (m ³)	Years Available @		Filling @ 30,000m ³ per year (to 18 June 2019)	
			0.71 t/m ³	0.76 t/m ³	0.71 t/m ³	0.76 t/m ³
Cell 10 A	4,335	55,011	15.6	18.7	26.0	27.9
Cell 10 B	4,335	48,270	13.2	14.1	22.0	23.5
Cell 11 A	2,982	30,441	8.6	9.3	14.4	15.4
Cell 11 B	2,520	24,778	8.9	10.0	16.5	17.8
Wedge	2,345	70,100	49.0	53.2	31.3	35.5
Total	17,085	236,784	67	72	112	120
Total Years Remaining			5.6	6.0	30.5	30.9
Years of closure			2015	2015	2019	2019



Ordinance Survey Ireland Licence No. EN0605010
 Ordnance Survey Ireland / Government of Ireland

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Job No: ACE0001
 Checked by: K.G. File No: ACE0001000171
 Approved by: W.A. Dwg. No: DG0171
 Scale: 1:1000 @ A1
 Date: Jan '19

BALLAGHVENY LANDFILL - WASTE LICENCE COMPLIANCE

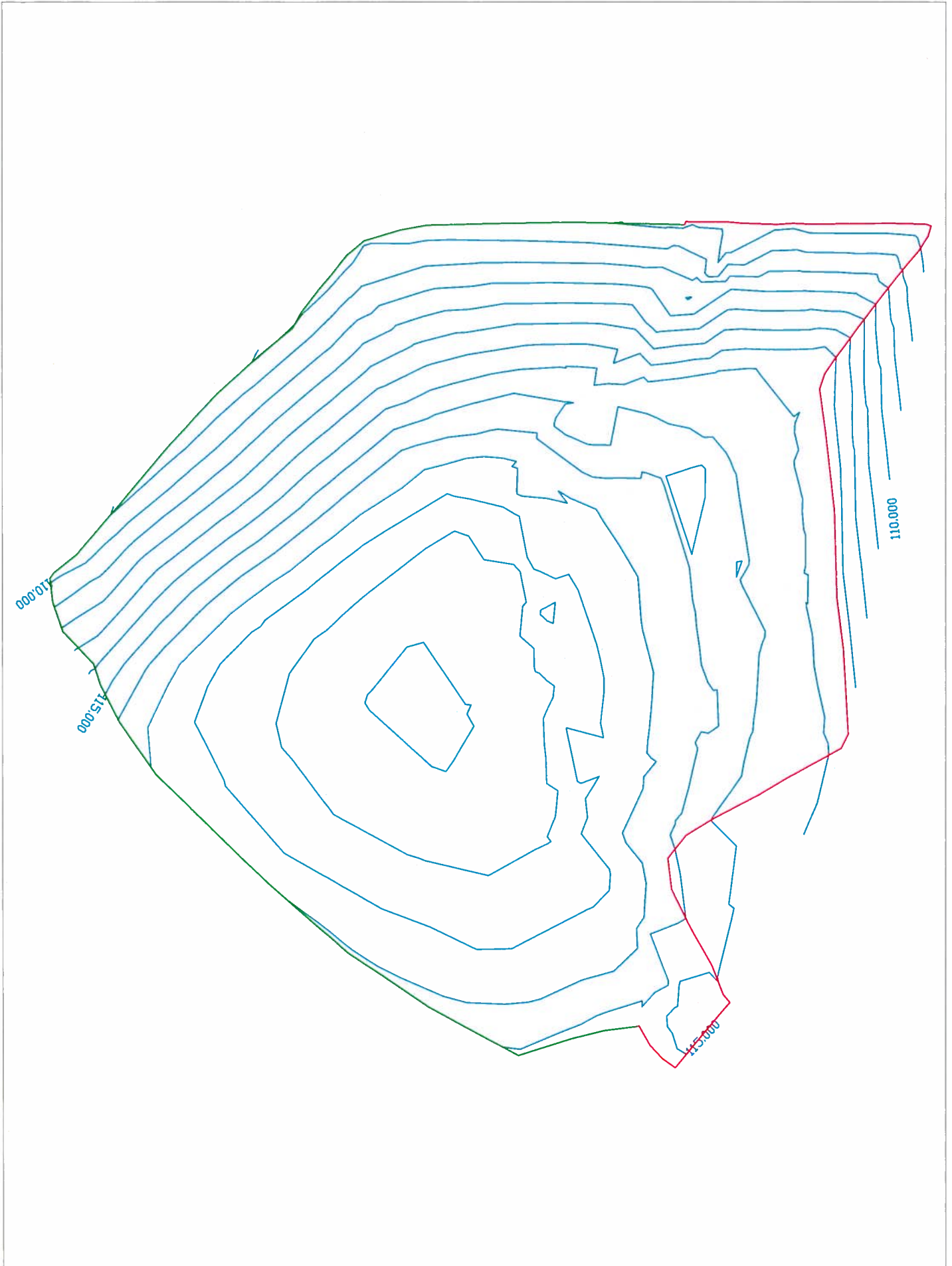
PROPOSED FILLING PLAN

Project: BALLAGHVENY LANDFILL - WASTE LICENCE COMPLIANCE

AD2: (RPS) W.A. REVISOR
 AD1: (RPS) W.A. ISSUE FOR APPROVAL

NOTES

- This drawing is the property of RPS Consulting Engineers. It is a confidential document and must not be copied, used, or its content divulged without prior written consent.
- All levels refer to Ordnance Survey Datum, Mean High.
- DO NOT SCALE, use figured dimensions only. If in doubt ask.



Topographical Survey of Cell 9 - 30th August 2012

Appendix 3

Monitoring Location Reference Map

Appendix 4

Quarterly Monitoring Reference Documents

Mr. Michael Woulfe,
Senior Executive Engineer,
Environment Section,
North Tipperary Co.Council
Civic Offices,
Limerick Road,
Nenagh,
Co. Tipperary.
10th June 2012
Our ref: WM/122/LF/R7

Ms. Mary Frances Rochford,
Waste Licence Inspector,
EPA Regional Inspectorate,
Seville Lodge,
Callan Road,
Kilkenny.

REF: Waste Licence 0078 –03, Ballaghveny Landfill – Environmental Monitoring Data
and Interpretation. Quarterly report one of 2012.

Dear Ms. Rochford,

I am corresponding with you in regard to Schedule C & E of waste licence 0078/03

- Groundwater composition, groundwater levels and groundwater visual inspections.
- Surface water inspections and surface water composition.
- Leachate levels, leachate composition and leachate visual inspections.
- Landfill gas composition and landfill gas migration monitoring.

Please find attached detailed reports on the groundwater composition, surface water composition and Leachate composition as listed in Waste Licence 0078-03. The samples were taken and tested by the EPA Regional Laboratory in Kilkenny.

Please also find attached detailed reports on groundwater levels and groundwater visual inspections, leachate levels, surface water visual inspections, landfill gas composition and landfill gas migration monitoring. Please find attached an interpretation of the above environmental data.

Yours sincerely

Michael Woulfe
Senior Executive Engineer,
Environment

Introduction

This is the quarterly report for January, February & March 2012.

Landfilling operations at Ballaghveny Landfill ceased on 26th February 2011.

The Civic Amenity facility is open on Fridays & Saturdays for domestic waste & recyclables which are taken off-site for treatment & disposal.

The quarterly monitoring is done by the EPA, Seville Lodge, Kilkenny except for monthly gas monitoring, weekly surface water inspections and the monthly groundwater levels which are carried out by the Landfill Technical Team.

The results of analysis carried out are compared to strict water standards, as there are no set limits for leachate, surface water and groundwater for Landfill Sites.

Any exceedances to these strict water standards are highlighted in bold in the tables below.

1. Leachate

(A) Leachate composition (See appendix 1)

Boreholes LM07, LM08, LM09, LM10 and LFG22 were dry on the day of sampling. Samples were taken from LM05, LFG21, LS2 and LS3 on 14/02/2012 and analysis results were received by the Local Authority on the 22/05/2012. Additionally one routine leachate sample was taken from the Leachate lagoon. This lagoon services cells 1 to 10a inclusive.

The analysis results were compared to Irish Water Quality Standards as there is no set standard for leachate samples.

Table 1.0 shows a comparison of leachate composition to Surface Water Abstraction Standards (Irish Standards SI No. 294 of 1989).

Any exceedances are highlighted in bold.

Results for the 14/02/2012

Parameters	Irish standard SI No. 294 of 1989	Leachate Lagoon	Wedge Chamber LS3	LS2	LM05	LFG21
BOD	5	23	2.3	37.5	333	168
COD	-	373	22	555	1190	1180
pH	5.5-8.5	7.6	7.0	7.7	7.4	7.5
∞S/cm	2500	6010	1086	6320	15570	20800
Ammonia	0.2	410	9.7	430	1100	2000
Chloride	250	-	32	838	1618	1365
TON	-	<0.20	2.1	1.22	0.37	<0.20
Lead	0.05	0.56	-0.0992	0.78	60.0	13.6

As can be expected the

- BOD, Conductivity, Ammonia, Chloride & Lead have exceeded the limits set by SI No. 294 of 1989.
- COD is high

The test results for the leachate boreholes, chambers and lagoon are higher than the surface water abstraction standards. This is the case for all landfill sites.

The BOD results for LS2 and LS3, collection chambers for Cells 1-5 and Cells 6-8 respectively, indicate that the waste is older and that the biological processes are in decline.

(B) Leachate Levels (See appendix 2)

Leachate levels are being monitored since April 2010 by telemetry in cells 1-10a inclusive.

Leachate levels in cells 1 – 10a are remaining static or reducing.

This is due to the fact that these cells are capped. There is a gravity flow system in operation draining the remaining leachate from these cells. This leachate is then pumped into the main leachate lagoon for transport to the Nenagh WWTP.

LL2 maintained a freeboard of 0.5m as per license conditions.

A leachate level investigation was carried out in November 2010 by Irish Biotech Systems Ltd. As a result, pumps were installed in boreholes LFG14, LFG16 & LM12 to reduce leachate levels.

There are issues with the telemetry system in Ballaghveny Landfill at present. NTCC is in the process of employing a new contractor to repair the leachate level problems and maintain the system in the future.

(C) Conclusion

The leachate samples appear to be normal for a Landfill Site. The leachate levels are reducing and will continue to reduce to the specified license conditions over the next quarter with the aid of the gravity flow system and the permanent capping of cells 1-10a. All waste filled cells in Ballaghveny Landfill are capped and landscaped and connected to the gas and telemetry systems.

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in table 2 above.

BOD

All monitoring stations are within the limits.

Ammonia

All monitoring stations are within the limits.

Chlorides

All monitoring stations are within the limits.

Suspended Solids

SW 4 is the only monitoring point showing an exceedance of the limit for this quarter.

This sampling point was described as being overgrown, peaty and brown on the day of sampling which would increase the suspended solids in the water.

(B) Surface water Visual Inspection (See appendix 4)

The weekly surface water visual inspections show that the Ballaghveny Stream appears uncontaminated by landfill leachate.

(C) Conclusion

The surface water results show that the Ballaghveny Stream and the Ollatrim River are unpolluted by leachate.

3. Groundwater

(A) Groundwater composition (see appendix 5)

The groundwater sample results were compared with drinking water standards (EU Directive 80/778/EEC and S.I. No. 81 of 1988 – see appendix 10)

Table 3.0 shows a comparison of groundwater composition to Drinking water standards (Irish Standards SI No. 439 of 2000). All values marked in bold are exceedances to the set directive limits

Results of samples taken 14/02/2012

	Irish Standard SI No. 439 of 2000	BH3	GW5	GW9	GW10	GW12
<i>Parameters</i>						
Temperature °C	25	9.7	10.1	10.6	10.0	9.2
Dissolved Oxygen % Saturation	-	52.0	29.0	49.0	80.0	88.0
PH	6.5-9.5	6.9	6.9	7.0	7.0	7.0
αS/cm	2500	968	730	1234	924	742
Ammonia Mg/l – N	0.2333	0.04	0.48	6.8	0.02	0.01
Chloride mg/l Cl	250	33	16	95	31	20
Sulphate mg/l SO ₄	-	15	48	26	16	7.4

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in Table 3 above.

Ammonia

GW5 and GW9 have elevated ammonia readings. These elevated readings are consistent with previous monitoring results for these stations. Groundwater flow within the landfill is in a southerly direction towards the Ollatrim River.

GW 5 is to the west of the landfill so it is unlikely that the landfill is impacting on the groundwater quality of this monitoring point. GW 5 is surrounded by boggy land that is naturally high in ammonia.

GW 9 is located in an old quarry which could have an impact on ammonia levels. Historically this monitoring point has always had elevated ammonia readings but the readings are consistent and are not deteriorating over time.

Chlorides

All monitoring stations are within the limits.

Sulphate

All monitoring stations are within the limits.

(B) Groundwater Levels (see appendix 6)

The groundwater levels appear to be normal.

(C) Groundwater visual inspection (see appendix 7)

The quarterly groundwater visual inspection showed all samples had no visible or nasal evidence of leachate contamination.

(D) Conclusion

The groundwater results show that Ballaghveny Landfill does not appear to be having a negative impact on groundwater quality in the area.

4. Landfill Gas Monitoring (see appendix 8)

Routine gas monitoring carried out on gas vents drilled into the waste bodies showed that the gas vents are working well with a variance in the rates of methane production.

MP17 had a CO₂ level of 2.5% in January and 1.8% in February 2012. There was a strong smell of slurry in the field where MP17 is located during these visits. MP17 had returned to an acceptable level in March 2012. Monitoring will be increased at MP17 to investigate the increase in CO₂ level at this borehole & to try & establish a trend.

All other perimeter gas boreholes had readings within licence limits for the specified monitoring dates.

The gas flare was operating continuously for this quarter.

Mr. Michael Woulfe,
Senior Executive Engineer,
Environment Section,
North Tipperary Co.Council
Civic Offices,
Limerick Road,
Nenagh,
Co. Tipperary.
28th August 2012

Ms. Mary Frances Rochford,
Waste Licence Inspector,
EPA Regional Inspectorate,
Seville Lodge,
Callan Road,
Kilkenny.

REF: Waste Licence 0078 –03, Ballaghveny Landfill – Environmental Monitoring Data
and Interpretation. Quarterly report two of 2012.

Dear Ms. Rochford,

I am corresponding with you in regard to Schedule C & E of waste licence 0078/03

- Groundwater composition, groundwater levels and groundwater visual inspections.
- Surface water inspections and surface water composition.
- Leachate levels, leachate composition and leachate visual inspections.
- Landfill gas composition and landfill gas migration monitoring.

Please find attached detailed reports on the groundwater composition, surface water composition and Leachate composition as listed in Waste Licence 0078-03. The samples were taken and tested by the EPA Regional Laboratory in Kilkenny.

Please also find attached detailed reports on groundwater levels and groundwater visual inspections, leachate levels, surface water visual inspections, landfill gas composition and landfill gas migration monitoring. Please find attached an interpretation of the above environmental data.

Yours sincerely

Michael Woulfe
Senior Executive Engineer,
Environment

Introduction

This is the quarterly report for April, May & June 2012.

Landfilling operations at Ballaghveny Landfill ceased on 26th February 2011.

The Civic Amenity facility which was open on Fridays & Saturdays for domestic waste & recyclables closed on 28th June 2012.

The quarterly monitoring is done by the EPA, Seville Lodge, Kilkenny except for monthly gas monitoring, weekly surface water inspections and the monthly groundwater levels which are carried out by the Landfill Technical Team.

The results of analysis carried out are compared to strict water standards, as there are no set limits for leachate, surface water and groundwater for Landfill Sites.

Any exceedances to these strict water standards are highlighted in bold in the tables below.

1. Leachate

(A) Leachate composition (See appendix 1)

Boreholes LM05, LM07, LM08, LM10, LFG21 and LFG22 were dry on the day of sampling.

A sample was taken from LS3 on 8/05/2012 and results were received by the Local Authority on the 9/07/2012. Additionally one routine leachate sample was taken from the Leachate lagoon. This lagoon services cells 1 to 10a inclusive.

The analysis results were compared to Irish Water Quality Standards as there is no set standard for leachate samples.

Table 1.0 shows a comparison of leachate composition to Surface Water Abstraction Standards (Irish Standards SI No. 294 of 1989). Any exceedances are highlighted in bold.

Results for the 14/02/2012

Parameters	Irish standard SI No. 294 of 1989	Leachate Lagoon	Wedge Chamber LS3	
BOD	5	28	>18	
COD	-	402	32	

As can be expected the

- BOD has exceeded the limits set by SI No. 294 of 1989.
- COD is high

The test results for the chamber and lagoon are higher than the surface water abstraction standards. This is the case for all landfill sites.

(B) Leachate Levels (See appendix 2)

Leachate levels are being monitored since April 2010 by telemetry in cells 1-10a inclusive.

LL2 maintained a freeboard of 0.5m as per license conditions.

A leachate level investigation was carried out in November 2010 by Irish Biotech Systems Ltd. As a result, pumps were installed in boreholes LFG14, LFG16 & LM12 to reduce leachate levels.

There are issues with the telemetry system in Ballaghveny Landfill at present. NTCC is in the process of employing a new contractor to repair the leachate level problems and maintain the system in the future.

(C) Conclusion

The leachate samples appear to be normal for a Landfill Site. The leachate levels are reducing and will continue to reduce to the specified license conditions over the next quarter with the aid of the gravity flow system and the permanent capping of cells 1-10a. All waste filled cells in Ballaghveny Landfill are capped and landscaped and connected to the gas and telemetry systems.

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in table 2 above.

BOD

All monitoring stations are within the limits.

Ammonia

All monitoring stations are within the limits.

Chlorides

All monitoring stations are within the limits.

Suspended Solids

All monitoring stations are within the limits.

(B) Surface water Visual Inspection (See appendix 4)

The weekly surface water visual inspections show that the Ballaghveny Stream appears uncontaminated by landfill leachate.

(C) Conclusion

The surface water results show that the Ballaghveny Stream and the Ollatrim River are unpolluted by leachate.

3. Groundwater

(A) Groundwater composition (see appendix 5)

The groundwater sample results were compared with drinking water standards (EU Directive 80/778/EEC and S.I. No. 81 of 1988 – see appendix 10)

Table 3.0 shows a comparison of groundwater composition to Drinking water standards (Irish Standards SI No. 439 of 2000). All values marked in bold are exceedances to the set directive limits

Results of samples taken 8/05/2012

	Irish Standard SI No. 439 of 2000	BH3	GW5	GW9	GW10	GW12
<i>Parameters</i>						
Temperature °C	25	9.8	10.0	10.7	10.6	10.0
Dissolved Oxygen % Saturation	-	25.0	32.0	28.0	60.0	80.0
PH	6.5-9.5	6.7	6.8	6.8	7.0	7.1
αS/cm	2500	1022	750	1328	887	650
Ammonia Mg/l – N	0.2333	0.21	0.6	8.8	0.03	0.02
Chloride mg/l Cl	250	40	17	117	33	18
Fluoride mg/l F	1.0	<0.5	<0.25	<0.5	<0.25	<0.25
Sulphate mg/l SO ₄	-	15	58	30	17	7.8

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in Table 3 above.

Ammonia

GW5 and GW9 have elevated ammonia readings. These elevated readings are consistent with previous monitoring results for these stations. Groundwater flow within the landfill is in a southerly direction towards the Ollatrim River.

GW 5 is to the west of the landfill so it is unlikely that the landfill is impacting on the groundwater quality of this monitoring point. GW 5 is surrounded by boggy land that is naturally high in ammonia.

GW 9 is located in an old quarry which could have an impact on ammonia levels. Historically this monitoring point has always had elevated ammonia readings but the readings are constant and are not deteriorating over time.

A hydrogeological assessment of Ballaghveny Landfill is currently being carried out and more groundwater data will be available when this report is completed.

Chlorides

All monitoring stations are within the limits.

Sulphate

All monitoring stations are within the limits.

(B) Groundwater Levels (see appendix 6)

The groundwater levels appear to be normal.

(C) Groundwater visual inspection (see appendix 7)

The quarterly groundwater visual inspection showed all samples had no visible or nasal evidence of leachate contamination.

(D) Conclusion

The groundwater results show that Ballaghveny Landfill does not appear to be having a negative impact on groundwater quality in the area.

4. Landfill Gas Monitoring (see appendix 8)

Routine gas monitoring carried out on gas vents drilled into the waste bodies showed that the gas vents are working well with a variance in the rates of methane production.

MP17 had a CO₂ level of 3.30% in May 2012. It had returned to an acceptable level in June. Monitoring will be increased at MP17 to investigate the increase in CO₂ level at this borehole & to try & establish a trend. All future exceedences will be notified to the Agency as per Agency protocol.

All other perimeter gas boreholes had readings within licence limits for the specified monitoring dates.

The gas flare was operating continuously for this quarter.

Mr. Michael Woulfe,
Senior Executive Engineer,
Environment Section,
North Tipperary Co. Council
Civic Offices,
Limerick Road,
Nenagh,
Co. Tipperary.
19th October 2012

Ms. Mary Frances Rochford,
Waste Licence Inspector,
EPA Regional Inspectorate,
Seville Lodge,
Callan Road,
Kilkenny.

REF: Waste Licence 0078 –03, Ballaghveny Landfill – Environmental Monitoring Data
and Interpretation. Quarterly report three of 2012.

Dear Ms. Rochford,

I am corresponding with you in regard to Schedule C & E of waste licence 0078/03

- Groundwater composition, groundwater levels and groundwater visual inspections.
- Surface water inspections and surface water composition.
- Leachate levels, leachate composition and leachate visual inspections.
- Landfill gas composition and landfill gas migration monitoring.

Please find attached detailed reports on the groundwater composition, surface water composition and Leachate composition as listed in Waste Licence 0078-03. The samples were taken and tested by the EPA Regional Laboratory in Kilkenny.

Please also find attached detailed reports on groundwater levels and groundwater visual inspections, leachate levels, surface water visual inspections, landfill gas composition and landfill gas migration monitoring. Please find attached an interpretation of the above environmental data.

Yours sincerely

Michael Woulfe
Senior Executive Engineer,
Environment

Introduction

This is the quarterly report for July, August & September 2012.

Landfilling operations at Ballaghveny Landfill ceased on 26th February 2011.

The Civic Amenity facility closed on 28th June 2012.

The quarterly monitoring is done by the EPA, Seville Lodge, Kilkenny except for monthly gas monitoring, weekly surface water inspections and the monthly groundwater levels which are carried out by the Landfill Technical Team.

The results of analysis carried out are compared to strict water standards, as there are no set limits for leachate, surface water and groundwater for Landfill Sites.

Any exceedances to these strict water standards are highlighted in bold in the tables below.

1. Leachate

(A) Leachate composition (See appendix 1)

Boreholes LM05, LM07, LM08, LM10, LFG21 and LFG22 were dry on the day of sampling.

Samples were taken from LS2 and LS3 on 30/07/2012 and analysis results were received by the Local Authority on the 5/09/2012. Additionally one routine leachate sample was taken from the Leachate lagoon. This lagoon services cells 1 to 10a inclusive.

The analysis results were compared to Irish Water Quality Standards as there is no set standard for leachate samples.

Table 1.0 shows a comparison of leachate composition to Surface Water Abstraction Standards (Irish Standards SI No. 294 of 1989).

Any exceedances are highlighted in bold.

Results for the 30/07/2012

Parameters	Irish standard SI No. 294 of 1989	Leachate Lagoon LL2	Wedge Chamber LS3	LS2
BOD	5	48.0	>18	56.0
COD	-	925	28	282
pH	5.5-8.5	8.5	7.3	7.9
∞S/cm	2500	4520	995	4570

As can be expected the

- BOD & Conductivity have exceeded the limits set by SI No. 294 of 1989.
- COD is high

The test results for the leachate chambers and the lagoon are higher than the surface water abstraction standards. This is the case for all landfill sites.

(B) Leachate Levels (See appendix 2)

Leachate levels are being monitored since April 2010 by telemetry in cells 1-10a inclusive.

All waste filled cells at Ballaghveny Landfill have been capped since 2011. There is a gravity flow system in operation draining the remaining leachate from all the cells. This leachate is then pumped into the main leachate lagoon for transport to the Nenagh WWTP.

LL2 maintained a freeboard of 0.5m as per license conditions.

A leachate level investigation was carried out in November 2010 by Irish Biotech Systems Ltd. As a result, pumps were installed in boreholes LFG14, LFG16 & LM12 to reduce leachate levels.

Leachate levels were manually measured in August 2012 by TQ Electrical Ltd. and Irish Biotech Systems Ltd. As a result of these measurements, pumps were installed in boreholes LFG29, LFG30 & LFG31 during September 2012 to reduce the leachate levels in Cell 9.

An incident report in relation to the high leachate levels was submitted to the Agency.

There are a total of 6 manual pumps in leachate boreholes in Ballaghveny Landfill at the moment in order to reduce leachate levels in the landfill.

There are issues with the telemetry system in Ballaghveny Landfill at present. NTCC has employed a new contractor to repair and resolve the telemetry issues but this work is slow as the contractors have to familiarise themselves with the system that is in place before the issues can be resolved.

(C) Conclusion

All waste filled cells in Ballaghveny Landfill are capped and landscaped and connected to the gas and telemetry systems.

There are issues with the leachate levels in Ballaghveny Landfill at the moment but NTCC is working to resolve these issues as quickly as possible.

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in table 2 above.

BOD

All monitoring stations are within the limits.

Ammonia

All monitoring stations are within the limits.

Chlorides

All monitoring stations are within the limits.

Suspended Solids

All monitoring stations are within the limits.

(B) Surface water Visual Inspection (See appendix 4)

The weekly surface water visual inspections show that the Ballaghveny Stream appears uncontaminated by landfill leachate.

(C) Conclusion

The surface water results show that the Ballaghveny Stream and the Ollatrim River are unpolluted by leachate.

3. Groundwater

(A) Groundwater composition (see appendix 5)

The groundwater sample results were compared with drinking water standards (EU Directive 80/778/EEC and S.I. No. 81 of 1988 – see appendix 10)

Table 3.0 shows a comparison of groundwater composition to Drinking water standards (Irish Standards SI No. 439 of 2000). All values marked in bold are exceedances to the set directive limits

Results of samples taken 30/07/2012

	Irish Standard SI No. 439 of 2000	BH3	GW5	GW9	GW10	GW12
<i>Parameters</i>						
Temperature °C	25	12.4	11.8	12.4	12.1	12.6
Dissolved Oxygen % Saturation	-	32.0	23.0	27.0	75.0	77.0
PH	6.5-9.5	6.8	6.9	7.0	7.1	7.0
αS/cm	2500	952	725	1322	942	744
Ammonia Mg/l – N	0.2333	0.05	0.52	8.9	0.06	0.09
Chloride mg/l Cl	250	32	17	114	16	15
Sulphate mg/l SO ₄	-	15	45	28	8.8	6.6

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in Table 3 above.

Ammonia

GW5 and GW9 have elevated ammonia readings. These elevated readings are consistent with previous monitoring results for these stations. Groundwater flow within the landfill is in a southerly direction towards the Ollatrim River.

GW 5 is to the west of the landfill so it is unlikely that the landfill is impacting on the groundwater quality of this monitoring point. GW 5 is surrounded by boggy land that is naturally high in ammonia.

GW 9 is located in an old quarry which could have an impact on ammonia levels. Historically this monitoring point has always had elevated ammonia readings but the readings are consistent and are not deteriorating.

Chlorides

All monitoring stations are within the limits.

Sulphate

All monitoring stations are within the limits.

(B) Groundwater Levels (see appendix 6)

The groundwater levels appear to be normal.

(C) Groundwater visual inspection (see appendix 7)

The quarterly groundwater visual inspection showed all samples had no visible or nasal evidence of leachate contamination.

(D) Conclusion

The groundwater results show that Ballaghveny Landfill does not appear to be having a negative impact on groundwater quality in the area.

A hydrogeological assessment is currently being carried out at Ballaghveny Landfill which includes an assessment of groundwater in the area. The Consultants have told NTCC that the report will be completed in November 2012 and a copy will then be forwarded to the Agency.

4. Landfill Gas Monitoring (see appendix 8)

Routine gas monitoring carried out on gas vents drilled into the waste bodies showed that the gas vents are working well with a variance in the rates of methane production.

MP7 had a CO₂ level of 2.3% in July and 2.8% in August 2012. Monitoring has been increased at MP7 to investigate the increase in CO₂ level at this borehole. The situation will continue to be monitored by the Landfill Technical Team. These exceedances were reported to the Agency.

All other perimeter gas boreholes had readings within licence limits for the specified monitoring dates.

There were some flare shutdowns during this quarter due to high O₂ levels & flow surges but these were resolved by Irish Biotech Systems Ltd.

The flare was restarted within 12 hours of the shutdowns & there were no odour issues reported during that time.

Mr. Michael Woulfe,
Senior Executive Engineer,
Environment Section,
North Tipperary Co.Council
Civic Offices,
Limerick Road,
Nenagh,
Co. Tipperary.
1st February 2013

Ms. Mary Frances Rochford,
Waste Licence Inspector,
EPA Regional Inspectorate,
Seville Lodge,
Callan Road,
Kilkenny.

REF: Waste Licence 0078 –03, Ballaghveny Landfill – Environmental Monitoring Data
and Interpretation. Quarterly report four of 2012.

Dear Ms. Rochford,

I am corresponding with you in regard to Schedule C & E of waste licence 0078/03

- Groundwater composition, groundwater levels and groundwater visual inspections.
- Surface water inspections and surface water composition.
- Leachate levels, leachate composition and leachate visual inspections.
- Landfill gas composition and landfill gas migration monitoring.

Please find attached detailed reports on the groundwater composition, surface water composition and Leachate composition as listed in Waste Licence 0078-03. The samples were taken and tested by the EPA Regional Laboratory in Kilkenny.

Please also find attached detailed reports on groundwater levels and groundwater visual inspections, leachate levels, surface water visual inspections, landfill gas composition and landfill gas migration monitoring. Please find attached an interpretation of the above environmental data.

Yours sincerely

Michael Woulfe
Senior Executive Engineer,
Environment

Introduction

This is the quarterly report for October, November & December 2012.

Landfilling operations at Ballaghveny Landfill ceased on 26th February 2011.

The Civic Amenity facility closed on 28th June 2012.

The quarterly monitoring is done by the EPA, Seville Lodge, Kilkenny except for monthly gas monitoring, weekly surface water inspections and the monthly groundwater levels which are carried out by the Landfill Technical Team.

The results of analysis carried out are compared to strict water standards, as there are no set limits for leachate, surface water and groundwater for Landfill Sites.

Any exceedances to these water standards are highlighted in bold in the tables below.

1. Leachate

(A) Leachate composition (See appendix 1)

Boreholes LM05, LM07, LFG21 and LFG22 were dry on the day of sampling.

Samples were taken from LS2 and LM3 on 6/11/2012 and analysis results were received by the Local Authority on the 15/01/2013. Additionally one routine leachate sample was taken from the Leachate lagoon (LL2). This lagoon services Cells 3 to 10a inclusive.

The analysis results were compared to Irish Water Quality Standards as there is no set standard for leachate samples.

Table 1.0 shows a comparison of leachate composition to Surface Water Abstraction Standards (Irish Standards SI No. 294 of 1989).

Any exceedances are highlighted in bold.

Results of samples taken on 6/11/2012

Parameters	Irish standard SI No. 294 of 1989	Leachate Lagoon LL2	LM3	LS2
BOD	5	44.0	7.6	56.0
COD	-	479	26	233
pH	5.5-8.5	8.0	7.3	7.8
∞S/cm	2500	5600	1041	4430

As can be expected the

- BOD & Conductivity have exceeded the limits set by SI No. 294 of 1989.
- COD is high

The test results for the leachate chambers and the lagoon are higher than the surface water abstraction standards. This is the case for all landfill sites.

(B) Leachate Levels (See Appendix 2)

Leachate levels are being monitored since April 2010 by telemetry in cells 1-10a inclusive but because of continuing issues with the telemetry system, wells are being manually dipped.

All waste filled cells at Ballaghveny Landfill have been capped since 2011. There is a gravity flow system in operation draining the remaining leachate from all the cells. This leachate is then pumped into the main leachate lagoon for transport to the Nenagh WWTP.

LL2 maintained a freeboard of 0.5m as per license conditions.

There are a total of 6 manual pumps in leachate boreholes in Ballaghveny Landfill at the moment in order to reduce leachate levels in the landfill. The pumps are installed in boreholes LFG14, LFG16, LM12, LFG29, LFG30 and LFG31

There are issues with the telemetry system in Ballaghveny Landfill at present. NTCC has employed a new contractor to repair and resolve the telemetry issues but this work is slow as the contractors have to familiarise themselves with the system that is in place but work is ongoing.

Leachate levels were manually measured in January 2013 by Irish Biotech Systems Ltd. A copy of these recent measurements is included in Appendix 2.

(C) Conclusion

All waste filled cells in Ballaghveny Landfill are capped and landscaped and connected to the gas and telemetry systems.

There are issues with the leachate levels in Ballaghveny Landfill but NTCC is working to resolve these issues and has installed a number of manual pumps into boreholes to reduce leachate levels.

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in table 2 above.

BOD

All monitoring stations are within the limits.

Ammonia

All monitoring stations are within the limits.

Chlorides

All monitoring stations are within the limits.

Suspended Solids

All monitoring stations are within the limits.

(B) Surface water Visual Inspection (See appendix 4)

The weekly surface water visual inspections show that the Ballaghveny Stream appears uncontaminated by landfill leachate.

(C) Conclusion

The surface water results show that the Ballaghveny Stream and the Ollatrim River are unpolluted by leachate.

3. Groundwater

(A) Groundwater composition (see appendix 5)

The groundwater sample results were compared with drinking water standards (EU Directive 80/778/EEC and S.I. No. 81 of 1988 – see appendix 10)

Table 3.0 shows a comparison of groundwater composition to Drinking water standards (SI No. 439 of 2000).

All values marked in bold are exceedances to the set directive limits

Results of samples taken on 6/11/2012

	Irish Standard SI No. 439 of 2000	BH3	GW5	GW9	GW10	GW12
<i>Parameters</i>						
Temperature °C	-	11.2	10.8	11.2	11.1	11.4
Dissolved Oxygen % Saturation	-	21.0	27.0	28.0	58.0	67.0
PH	6.5-9.5	6.7	6.7	6.9	6.9	6.9
αS/cm	2500	1010	755	1429	942	818
Ammonia Mg/l – N	0.2334	0.13	0.61	11.0	0.08	0.04
Chloride mg/l Cl	250	34	17	132	30	21
Sulphate mg/l SO ₄	-	16	43	30	18	9
E Coli per 100ml						10
Total Coliforms per 100ml						330

Temperature

All monitoring stations are within the limits.

% Saturation

All monitoring stations are within the limits.

Conductivity & pH

All conductivity and pH results were within the limits set in Table 3 above.

Ammonia

GW5 and GW9 have elevated ammonia readings. These elevated readings are consistent with previous monitoring results for these stations. Groundwater flow within the landfill is in a southerly direction towards the Ollatrim River.

GW 5 is to the west of the landfill so it is unlikely that the landfill is impacting on the groundwater quality of this monitoring point. GW 5 is surrounded by boggy land that is naturally high in ammonia.

GW 9 is located in an old quarry which could have an impact on ammonia levels. Historically this monitoring point has always had elevated ammonia readings but the readings are remaining consistent.

North Tipperary County Council will be submitting a more detailed report in relation to groundwater by the end of the first quarter of 2013.

Chlorides

All monitoring stations are within the limits.

Sulphate

All monitoring stations are within the limits.

(B) Groundwater Levels (see appendix 6)

The groundwater levels appear to be normal.

(C) Groundwater visual inspection (see appendix 7)

The quarterly groundwater visual inspection showed all samples had no visible or nasal evidence of leachate contamination.

(D) Conclusion

The groundwater results show that Ballaghveny Landfill does not appear to be having a negative impact on groundwater quality in the area.

4. Landfill Gas Monitoring (see appendix 8)

Routine gas monitoring carried out on gas vents drilled into the waste bodies showed that the gas vents are working well with a variance in the rates of methane production.

MP4 had a CO₂ level of 1.7% in October and 1.7% in November 2012.

MP7 had a CO₂ level of 3.8% in October, 3.4% in November and 2.0% in December 2012.

The lands surrounding the landfill were in tillage in early 2012. However since June/July 2012 there has been no further crop planted. There is a certain amount of rotting vegetation in this area and this may be a contributory factor to higher than normal CO₂ levels.

Monitoring has been increased at MP4 and MP7 to investigate the rise in CO₂ level at these boreholes. The situation will continue to be monitored by the Landfill Technical Team.

These exceedances were reported to the Agency.

All other perimeter gas boreholes had readings within licence limits for the specified monitoring dates.

The gas flare was operating continuously for this quarter.

Appendix 5

Details of Volumes of Leachate removed from the site

North Tipperary County Council

Ballaghveny Landfill
Ballymackey
Co. Tipperary

Print Date: 20/02/2013

Print Time: 11:38:23

TRANSACTION LISTING

"Transaction Period: 01/01/2012 - 31/12/2012"

Page 1 of 14

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
185955	06WD1018	OUT	13/01/2012		15640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185956	06TN2718	OUT	13/01/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185957	06WD1018	OUT	13/01/2012		15860	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185958	06TN2718	OUT	13/01/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185959	06WD1018	OUT	13/01/2012		15780	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185960	06TN2718	OUT	13/01/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185961	06WD1018	OUT	13/01/2012		15840	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185962	06WD1018	OUT	13/01/2012		15840	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185963	06WD1018	OUT	13/01/2012		15840	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185964	06TN2718	OUT	13/01/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185965	06WD1018	OUT	13/01/2012		15760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185966	06TN2718	OUT	18/01/2012		12280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185967	06WD1018	OUT	18/01/2012		15740	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185968	06TN2718	OUT	18/01/2012		12360	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185969	06TN2718	OUT	18/01/2012		12380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185970	06WD1018	OUT	18/01/2012		15700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185971	06WD1018	OUT	18/01/2012		15580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185972	06TN2718	OUT	18/01/2012		12260	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185973	06WD1018	OUT	18/01/2012		15760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185974	06WD1018	OUT	18/01/2012		15660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185975	06TN2718	OUT	18/01/2012		12380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185976	06WD1018	OUT	18/01/2012		15800	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185977	06TN2718	OUT	18/01/2012		12220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185978	06WD1018	OUT	19/01/2012		15700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185979	06TN2718	OUT	19/01/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185980	06WD1018	OUT	19/01/2012		15660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185981	06TN2718	OUT	19/01/2012		12400	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185982	06WD1018	OUT	19/01/2012		15700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185983	06TN2718	OUT	19/01/2012		12400	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185984	06WD1018	OUT	19/01/2012		15700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185985	06TN2718	OUT	19/01/2012		12380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185986	06WD1018	OUT	19/01/2012		15220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185987	06WD1018	OUT	19/01/2012		15240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
185988	06TN2718	OUT	19/01/2012		12160	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185990	06TN2718	OUT	20/01/2012		12400	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185991	06WD1018	OUT	20/01/2012		15620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185992	06TN2718	OUT	20/01/2012		12420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185993	06WD1018	OUT	20/01/2012		15860	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185994	06TN2718	OUT	20/01/2012		12120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185995	06WD1018	OUT	20/01/2012		15800	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185996	06WD1018	OUT	20/01/2012		15860	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185997	06TN2718	OUT	20/01/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185998	06WD1018	OUT	20/01/2012		15780	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
185999	06TN2718	OUT	20/01/2012		12460	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186000	12TN345	OUT	02/02/2012		11780	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186001	12TN345	OUT	02/02/2012		11540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186002	12TN345	OUT	02/02/2012		12240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186003	12TN345	OUT	02/02/2012		12220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186004	12TN345	OUT	02/02/2012		12040	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186005	12TN345	OUT	03/02/2012		12180	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186006	12TN345	OUT	03/02/2012		12320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186007	12TN345	OUT	03/02/2012		11420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186008	12TN345	OUT	03/02/2012		12080	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186009	12TN345	OUT	03/02/2012		12280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186010	12TN345	OUT	03/02/2012		12340	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186011	06WD1018	OUT	08/02/2012		15560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186012	06WD1018	OUT	08/02/2012		14440	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186013	06WD1018	OUT	08/02/2012		16020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186014	06WD1018	OUT	08/02/2012		15600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186015	06WD1018	OUT	08/02/2012		16280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186016	06WD1018	OUT	08/02/2012		16380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186017	06WD1018	OUT	09/02/2012		16340	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186018	06WD1018	OUT	09/02/2012		16180	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186019	06WD1018	OUT	09/02/2012		16420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186021	06WD1018	OUT	09/02/2012		16420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186022	06WD1018	OUT	09/02/2012		16420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186023	06WD1018	OUT	09/02/2012		16480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186024	06TN2718	OUT	14/02/2012		12040	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186025	06TN2718	OUT	14/02/2012		11800	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186026	06TN2718	OUT	14/02/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186027	06TN2718	OUT	14/02/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186028	06TN2718	OUT	14/02/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186029	06TN2718	OUT	15/02/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186030	06TN2718	OUT	15/02/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186031	06TN2718	OUT	15/02/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186032	06TN2718	OUT	15/02/2012		12120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186033	06TN2718	OUT	15/02/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186034	06TN2718	OUT	16/02/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186035	06TN2718	OUT	16/02/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186036	06TN2718	OUT	16/02/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186037	06TN2718	OUT	16/02/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186038	06TN2718	OUT	16/02/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186039	06TN2718	OUT	16/02/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186040	06WD1018	OUT	17/02/2012		15780	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186041	06WD1018	OUT	17/02/2012		16440	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186042	06WD1018	OUT	17/02/2012		16460	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186043	06WD1018	OUT	17/02/2012		16480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186044	06WD1018	OUT	17/02/2012		16440	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186045	06WD1018	OUT	17/02/2012		16440	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186046	06TN2718	OUT	22/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186047	06TN2718	OUT	22/02/2012		12700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186048	06TN2718	OUT	22/02/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186049	06TN2718	OUT	22/02/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186050	06TN2718	OUT	22/02/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186051	06TN2718	OUT	22/02/2012		12700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186052	06TN2718	OUT	23/02/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186053	06TN2718	OUT	23/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186054	06TN2718	OUT	23/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186055	06TN2718	OUT	23/02/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186056	06TN2718	OUT	23/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186057	06TN2718	OUT	23/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186059	06TN2718	OUT	29/02/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186060	06TN2718	OUT	29/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186061	06TN2718	OUT	29/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186062	06TN2718	OUT	29/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186063	06TN2718	OUT	29/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186064	06TN2718	OUT	29/02/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186066	02D861	OUT	22/03/2012		23000	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186067	02D861	OUT	22/03/2012		23120	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186068	02D861	OUT	22/03/2012		23220	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186070	06TN2718	OUT	13/04/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186071	04C1641	OUT	13/04/2012		12720	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186072	06TN2718	OUT	13/04/2012		11760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186073	04C1641	OUT	13/04/2012		12900	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186074	06TN2718	OUT	13/04/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186075	04C1641	OUT	13/04/2012		13180	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186076	06TN2718	OUT	13/04/2012		12120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186077	04C1641	OUT	13/04/2012		11980	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186078	06TN2718	OUT	13/04/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186079	06TN2718	OUT	18/04/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186080	06TN2718	OUT	18/04/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186081	06TN2718	OUT	18/04/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186082	06TN2718	OUT	18/04/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186083	06TN2718	OUT	18/04/2012		10820	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186084	06TN2718	OUT	18/04/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186085	06TN2718	OUT	19/04/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186086	06TN2718	OUT	19/04/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186087	06TN2718	OUT	19/04/2012		11880	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186088	06TN2718	OUT	19/04/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186089	06TN2718	OUT	19/04/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186090	06TN2718	OUT	20/04/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186091	06TN2718	OUT	20/04/2012		12360	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186092	06TN2718	OUT	20/04/2012		12460	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186093	06TN2718	OUT	20/04/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186095	06TN2718	OUT	20/04/2012		12340	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186096	10TN771	OUT	26/04/2012		11660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186097	10TN771	OUT	26/04/2012		11380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186098	10TN771	OUT	26/04/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186099	10TN771	OUT	26/04/2012		12460	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186100	04C1641	OUT	26/04/2012		13100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186101	04C1641	OUT	27/04/2012		11320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186102	04C1641	OUT	27/04/2012		11620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186103	04C1641	OUT	27/04/2012		11760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186105	04C1641	OUT	27/04/2012		12380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186106	06TN2718	OUT	02/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186107	06TN2718	OUT	02/05/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186108	06TN2718	OUT	02/05/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186109	06TN2718	OUT	02/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186110	06TN2718	OUT	02/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186111	06TN2718	OUT	03/05/2012		12380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186112	06TN2718	OUT	03/05/2012		12040	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186113	06TN2718	OUT	03/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186114	06TN2718	OUT	03/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186115	06TN2718	OUT	03/05/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186116	06TN2718	OUT	04/05/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186117	06TN2718	OUT	04/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186118	06TN2718	OUT	04/05/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186120	06TN2718	OUT	04/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186121	06TN2718	OUT	04/05/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186122	10C6587	OUT	10/05/2012		15020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186123	10C6587	OUT	10/05/2012		16240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186124	10C6587	OUT	10/05/2012		16240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186125	10C6587	OUT	10/05/2012		180	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186126	10TN771	OUT	11/05/2012		12180	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186127	10TN771	OUT	11/05/2012		12740	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186128	10TN771	OUT	11/05/2012		12700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186129	10TN771	OUT	11/05/2012		12760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186130	10TN771	OUT	11/05/2012		12760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186131	10TN771	OUT	11/05/2012		12740	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186132	06TN2718	OUT	16/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186133	06TN2718	OUT	16/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186134	06TN2718	OUT	16/05/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186135	06TN2718	OUT	16/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186136	06TN2718	OUT	16/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186137	06TN2718	OUT	16/05/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186138	06TN2718	OUT	17/05/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186139	06TN2718	OUT	17/05/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186140	06TN2718	OUT	17/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186141	06TN2718	OUT	17/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186142	06TN2718	OUT	17/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186143	06TN2718	OUT	17/05/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186144	06TN2718	OUT	18/05/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186145	06TN2718	OUT	18/05/2012		12380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186146	06TN2718	OUT	18/05/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186147	06TN2718	OUT	18/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186148	06TN2718	OUT	18/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186149	06TN2718	OUT	18/05/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186150	06TN2718	OUT	24/05/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186151	06TN2718	OUT	24/05/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186152	06TN2718	OUT	24/05/2012		12680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186153	06TN2718	OUT	24/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186154	06TN2718	OUT	24/05/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186155	06TN2718	OUT	24/05/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186156	06TN2718	OUT	25/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186157	06TN2718	OUT	25/05/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186158	06TN2718	OUT	25/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186159	06TN2718	OUT	25/05/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186160	06TN2718	OUT	25/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186161	06TN2718	OUT	25/05/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186162	10TN771	OUT	30/05/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186163	10TN771	OUT	30/05/2012		12760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186164	10TN771	OUT	30/05/2012		12720	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186165	10TN771	OUT	30/05/2012		12780	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186167	10TN771	OUT	30/05/2012		12760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186169	10TN771	OUT	30/05/2012		12700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186170	06TN2718	OUT	07/06/2012		12200	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186171	06TN2718	OUT	07/06/2012		12380	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186172	06TN2718	OUT	07/06/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186173	06TN2718	OUT	07/06/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186174	06TN2718	OUT	07/06/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186175	06TN2718	OUT	07/06/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186176	06TN2718	OUT	08/06/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186177	06TN2718	OUT	08/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186178	06TN2718	OUT	08/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186179	06TN2718	OUT	08/06/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186180	06TN2718	OUT	08/06/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186181	06TN2718	OUT	08/06/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186182	06TN2718	OUT	08/06/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186183	10C6587	OUT	13/06/2012		16280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186184	10C6587	OUT	13/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186185	10C6587	OUT	13/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186186	10C6587	OUT	13/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186187	10C6587	OUT	13/06/2012		16060	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186188	10C6587	OUT	13/06/2012		16100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186189	10C6587	OUT	14/06/2012		16040	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186190	10C6587	OUT	14/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186191	10C6587	OUT	14/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186192	10C6587	OUT	14/06/2012		16160	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186193	10C6587	OUT	14/06/2012		16100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186194	10C6587	OUT	14/06/2012		16160	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186195	10C6587	OUT	15/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186196	10C6587	OUT	15/06/2012		16160	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186197	10C6587	OUT	15/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186198	10C6587	OUT	15/06/2012		16140	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186199	06TN2718	OUT	20/06/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186200	06TN2718	OUT	20/06/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186201	06TN2718	OUT	20/06/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186202	06TN2718	OUT	20/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186203	06TN2718	OUT	20/06/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186204	06TN2718	OUT	20/06/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186205	06TN2718	OUT	21/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186206	06TN2718	OUT	21/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186207	06TN2718	OUT	21/06/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186208	06TN2718	OUT	21/06/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186209	06TN2718	OUT	21/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186210	06TN2718	OUT	22/06/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186211	06TN2718	OUT	22/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186212	06TN2718	OUT	22/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186213	06TN2718	OUT	22/06/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186214	06TN2718	OUT	22/06/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186215	06TN2718	OUT	28/06/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186216	06TN2718	OUT	28/06/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186217	06TN2718	OUT	28/06/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186218	06TN2718	OUT	28/06/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186219	06TN2718	OUT	28/06/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186220	06TN2718	OUT	28/06/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186221	10C6587	OUT	29/06/2012		15920	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186222	10C6587	OUT	29/06/2012		16140	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186223	10C6587	OUT	29/06/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186224	10C6587	OUT	29/06/2012		16100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186225	10C6587	OUT	29/06/2012		16100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186226	10C6587	OUT	29/06/2012		16020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186227	06TN2718	OUT	03/07/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186228	06TN2718	OUT	03/07/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186229	06TN2718	OUT	03/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186230	06TN2718	OUT	03/07/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186231	06TN2718	OUT	03/07/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186232	06TN2718	OUT	03/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186233	06TN2718	OUT	04/07/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186234	06TN2718	OUT	04/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186236	06TN2718	OUT	04/07/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186237	06TN2718	OUT	04/07/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186238	06TN2718	OUT	04/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186239	06TN2718	OUT	04/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186240	10C6587	OUT	11/07/2012		16320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186241	10C6587	OUT	11/07/2012		16160	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186242	10C6587	OUT	11/07/2012		16240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186243	10C6587	OUT	11/07/2012		16220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186244	10C6587	OUT	11/07/2012		16220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186245	10C6587	OUT	11/07/2012		16220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186246	06TN2718	OUT	17/07/2012		12440	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186247	06TN2718	OUT	17/07/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186248	06TN2718	OUT	17/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186249	06TN2718	OUT	17/07/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186250	06TN2718	OUT	17/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186251	06TN2718	OUT	17/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186252	06TN2718	OUT	18/07/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186253	06TN2718	OUT	18/07/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186254	06TN2718	OUT	18/07/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186255	06TN2718	OUT	18/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186256	06TN2718	OUT	18/07/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186257	06TN2718	OUT	18/07/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186258	12TN345	OUT	01/08/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186259	12TN345	OUT	01/08/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186260	12TN345	OUT	01/08/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186261	12TN345	OUT	01/08/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186262	12TN345	OUT	01/08/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186263	12TN345	OUT	01/08/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186264	12TN345	OUT	02/08/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186265	12TN345	OUT	02/08/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186266	12TN345	OUT	02/08/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186267	10C6587	OUT	08/08/2012		13620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186268	10C6587	OUT	08/08/2012		15980	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186269	10C6587	OUT	08/08/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186270	10C6587	OUT	08/08/2012		15760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186271	10C6587	OUT	08/08/2012		16100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186272	10C6587	OUT	08/08/2012		16060	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186274	12TN345	OUT	15/08/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186275	12TN345	OUT	15/08/2012		12660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186276	12TN345	OUT	15/08/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186277	12TN345	OUT	15/08/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186278	12TN345	OUT	15/08/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186279	12TN345	OUT	15/08/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186280	12TN345	OUT	16/08/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186281	12TN345	OUT	16/08/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186282	12TN345	OUT	16/08/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186283	06TN2718	OUT	22/08/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186284	06TN2718	OUT	22/08/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186285	06TN2718	OUT	22/08/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186286	06TN2718	OUT	22/08/2012		11560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186287	06TN2718	OUT	22/08/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186288	06TN2718	OUT	22/08/2012		12320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186289	06TN2718	OUT	23/08/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186290	06TN2718	OUT	23/08/2012		11240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186291	06TN2718	OUT	23/08/2012		12140	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186292	06TN2718	OUT	29/08/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186293	06TN2718	OUT	29/08/2012		12260	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186294	06TN2718	OUT	29/08/2012		11940	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186295	06TN2718	OUT	29/08/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186296	06TN2718	OUT	29/08/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186297	06TN2718	OUT	29/08/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186298	10TN771	OUT	04/09/2012		14400	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186299	10TN771	OUT	04/09/2012		15220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186300	06TN2718	OUT	04/09/2012		11800	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186301	10TN771	OUT	04/09/2012		14720	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186302	06TN2718	OUT	04/09/2012		11220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186303	10TN771	OUT	04/09/2012		14960	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186304	06TN2718	OUT	04/09/2012		11260	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186305	10TN771	OUT	04/09/2012		15360	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186306	06TN2718	OUT	04/09/2012		12420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186307	10TN771	OUT	04/09/2012		15900	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186308	06TN2718	OUT	04/09/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186309	10C6587	OUT	05/09/2012		16320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186310	06TN2718	OUT	05/09/2012		10800	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186311	10C6587	OUT	05/09/2012		16240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186312	06TN2718	OUT	05/09/2012		12460	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186313	10C6587	OUT	05/09/2012		16160	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186314	06TN2718	OUT	05/09/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186315	10C6587	OUT	05/09/2012		15540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186316	06TN2718	OUT	05/09/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186317	10C6587	OUT	05/09/2012		16120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186318	10C6587	OUT	05/09/2012		16260	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186319	06TN2718	OUT	05/09/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186320	06TN2718	OUT	12/09/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186321	10C6587	OUT	12/09/2012		14760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186322	06TN2718	OUT	12/09/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186323	10C6587	OUT	12/09/2012		15660	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186324	06TN2718	OUT	12/09/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186325	10C6587	OUT	12/09/2012		15580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186326	06TN2718	OUT	12/09/2012		11860	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186327	10C6587	OUT	12/09/2012		15260	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186328	06TN2718	OUT	12/09/2012		11760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186329	06TN2718	OUT	12/09/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186330	06TN2718	OUT	19/09/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186331	06TN2718	OUT	19/09/2012		11880	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186332	06TN2718	OUT	19/09/2012		12040	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186333	06TN2718	OUT	19/09/2012		12100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186334	06TN2718	OUT	19/09/2012		12120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186335	06TN2718	OUT	19/09/2012		11580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186336	06TN2718	OUT	26/09/2012		11860	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186337	06TN2718	OUT	26/09/2012		12020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186338	06TN2718	OUT	26/09/2012		12020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186339	06TN2718	OUT	26/09/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186340	06TN2718	OUT	26/09/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186341	06TN2718	OUT	26/09/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186342	06TN2718	OUT	02/10/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186343	06TN2718	OUT	02/10/2012		11420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186344	06TN2718	OUT	02/10/2012		12020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186345	06TN2718	OUT	02/10/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186346	06TN2718	OUT	02/10/2012		11480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186347	06TN2718	OUT	02/10/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186348	06TN2718	OUT	03/10/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186349	06TN2718	OUT	03/10/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186350	06TN2718	OUT	03/10/2012		12200	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186351	06TN2718	OUT	03/10/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186352	06TN2718	OUT	03/10/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186353	06TN2718	OUT	10/10/2012		12200	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186354	06TN2718	OUT	10/10/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186355	06TN2718	OUT	10/10/2012		12480	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186356	06TN2718	OUT	10/10/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186357	06TN2718	OUT	10/10/2012		12280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186358	06TN2718	OUT	11/10/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186359	06TN2718	OUT	11/10/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186360	06TN2718	OUT	11/10/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186361	10TN771	OUT	17/10/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186362	06TN2718	OUT	17/10/2012		12200	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186363	06TN2718	OUT	17/10/2012		12100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186364	06TN2718	OUT	17/10/2012		12200	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186365	06TN2718	OUT	17/10/2012		11680	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186366	06TN2718	OUT	17/10/2012		10920	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186367	06TN2718	OUT	17/10/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186368	06TN2718	OUT	18/10/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186369	06TN2718	OUT	18/10/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186370	06TN2718	OUT	18/10/2012		10740	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186371	06TN2718	OUT	23/10/2012		11820	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186372	10TN771	OUT	23/10/2012		12560	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186373	06TN2718	OUT	23/10/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186374	10TN771	OUT	23/10/2012		12600	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186375	06TN2718	OUT	23/10/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186376	10TN771	OUT	23/10/2012		12460	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186377	06TN2718	OUT	23/10/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186378	10TN771	OUT	23/10/2012		12380	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186379	06TN2718	OUT	23/10/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186380	10TN771	OUT	23/10/2012		12360	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186381	06TN2718	OUT	23/10/2012		12300	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186382	10TN771	OUT	23/10/2012		11980	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186383	06TN2718	OUT	24/10/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186384	10TN771	OUT	24/10/2012		11960	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186385	06TN2718	OUT	24/10/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186386	10TN771	OUT	24/10/2012		11920	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186387	06TN2718	OUT	24/10/2012		12280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186388	10TN771	OUT	24/10/2012		12500	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186389	06TN2718	OUT	24/10/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186390	10TN771	OUT	24/10/2012		12540	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186391	06TN2718	OUT	24/10/2012		11520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186392	10TN771	OUT	24/10/2012		12460	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186393	06TN2718	OUT	24/10/2012		12420	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186394	10TN771	OUT	24/10/2012		12320	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186395	06TN2718	OUT	31/10/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186396	06TN2718	OUT	31/10/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186397	06TN2718	OUT	31/10/2012		11540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186398	06TN2718	OUT	31/10/2012		12220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186399	06TN2718	OUT	31/10/2012		12320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186400	06TN2718	OUT	31/10/2012		11700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186401	06TN2718	OUT	01/11/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186402	06TN2718	OUT	01/11/2012		12460	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186403	06TN2718	OUT	01/11/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186404	10TN771	OUT	07/11/2012		11900	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186405	06TN2718	OUT	07/11/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186406	06TN2718	OUT	07/11/2012		12440	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186407	10TN771	OUT	07/11/2012		12580	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186408	06TN2718	OUT	07/11/2012		11940	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186409	10TN771	OUT	07/11/2012		12520	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186410	06TN2718	OUT	07/11/2012		11800	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186411	10TN771	OUT	07/11/2012		12560	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186412	06TN2718	OUT	07/11/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186413	10TN771	OUT	07/11/2012		12480	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186414	06TN2718	OUT	07/11/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186415	10TN771	OUT	07/11/2012		11680	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186416	06TN2718	OUT	08/11/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186417	06TN2718	OUT	08/11/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186418	06TN2718	OUT	08/11/2012		12360	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186419	10TN771	OUT	14/11/2012		12400	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186420	06TN2718	OUT	14/11/2012		12140	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186421	06TN2718	OUT	14/11/2012		12140	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186422	10TN771	OUT	14/11/2012		12320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186423	06TN2718	OUT	14/11/2012		12240	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186424	10TN771	OUT	14/11/2012		12340	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186425	06TN2718	OUT	14/11/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186426	06TN2718	OUT	14/11/2012		12360	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186427	10TN771	OUT	14/11/2012		11940	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186428	06TN2718	OUT	14/11/2012		11440	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186429	06TN2718	OUT	15/11/2012		12180	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186430	06TN2718	OUT	15/11/2012		12280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186431	06TN2718	OUT	15/11/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186432	06TN2718	OUT	21/11/2012		12120	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186433	06TN2718	OUT	21/11/2012		11220	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186434	06TN2718	OUT	21/11/2012		12020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186435	06TN2718	OUT	21/11/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186436	06TN2718	OUT	21/11/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186437	06TN2718	OUT	21/11/2012		11340	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186438	10TN771	OUT	22/11/2012		12200	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186439	06TN2718	OUT	22/11/2012		12560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186440	06TN2718	OUT	22/11/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186441	10TN771	OUT	22/11/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186442	06TN2718	OUT	22/11/2012		12040	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186443	10TN771	OUT	22/11/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186444	06TN2718	OUT	28/11/2012		12620	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186445	10TN771	OUT	28/11/2012		12560	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186446	06TN2718	OUT	28/11/2012		12280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186447	10TN771	OUT	28/11/2012		12500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186448	06TN2718	OUT	28/11/2012		12280	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186449	06TN2718	OUT	28/11/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186450	10TN771	OUT	28/11/2012		12480	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186451	06TN2718	OUT	28/11/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186452	06TN2718	OUT	29/11/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186453	06TN2718	OUT	29/11/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186454	06TN2718	OUT	29/11/2012		11880	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186455	06TN2718	OUT	11/12/2012		11900	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Txn No	Vehicle	I/O	Date	Order No	Nett Kg	Charge	Account	Destination	Waste Description
186456	06TN2718	OUT	11/12/2012		12060	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186457	06TN2718	OUT	11/12/2012		11140	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186458	06TN2718	OUT	11/12/2012		12580	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186459	06TN2718	OUT	11/12/2012		12060	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186460	06TN2718	OUT	12/12/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186461	10TN771	OUT	12/12/2012		13220	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186462	06TN2718	OUT	12/12/2012		11760	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186463	10TN771	OUT	12/12/2012		11840	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186464	06TN2718	OUT	12/12/2012		11560	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186465	10TN771	OUT	12/12/2012		13220	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186466	06TN2718	OUT	12/12/2012		12460	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186467	06TN2718	OUT	12/12/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186468	06TN2718	OUT	13/12/2012		11640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186469	06TN2718	OUT	13/12/2012		11600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186470	06TN2718	OUT	13/12/2012		12020	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186471	06TN2718	OUT	18/12/2012		11320	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186472	06TN2718	OUT	18/12/2012		12300	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186473	06TN2718	OUT	18/12/2012		11860	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186474	06TN2718	OUT	18/12/2012		11720	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186475	06TN2718	OUT	18/12/2012		12200	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186476	06TN2718	OUT	19/12/2012		12640	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186477	10TN771	OUT	19/12/2012		12220	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186478	06TN2718	OUT	19/12/2012		12600	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186479	10TN771	OUT	19/12/2012		11880	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186480	06TN2718	OUT	19/12/2012		12540	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186481	10TN771	OUT	19/12/2012		11620	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186482	06TN2718	OUT	19/12/2012		12100	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186483	10TN771	OUT	19/12/2012		10000	0.00	BALLAGHVENY LANDFILL	ROSCREA WWTP	LEACHATE
186484	06TN2718	OUT	19/12/2012		11980	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186485	06TN2718	OUT	20/12/2012		12520	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186486	06TN2718	OUT	20/12/2012		11500	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE
186487	06TN2718	OUT	20/12/2012		11700	0.00	BALLAGHVENY LANDFILL	NENAGH WWTP	LEACHATE

Total Records : 521 Total Nett : 6,804,260 Kg

Report End... Total Charge : €0.00

Appendix 6

Leachate Management Assessment Report

Justine Haugh

From: David Cronin [david.cronin@rpsgroup.com]
Sent: 04 April 2013 12:59
To: Justine Haugh
Cc: Olga Doyle
Subject: Ballghveny Landfill: Leachate Management System

Justine,

The leachate rising main from Cell 9 to the leachate lagoon was tested (air pressure test in accordance with manufacturer's recommendations) in 2012 and passed the test.

Regards,
David

RPS Group Ltd is a wholly owned subsidiary of RPS Group Plc. RPS Group Ltd is the parent company in the Republic of Ireland for all Irish subsidiary companies, namely: RPS Consulting Engineers Ltd and RPS Engineering Services Ltd. The Registered Office of each company is: West Pier Business Campus, Dun Laoghaire, Co. Dublin, Ireland, and each company is registered at the Irish Companies Registration Office in Dublin. Details of the companies registered numbers are as follows:

RPS Group Limited - Registration Number: 91911

RPS Consulting Engineers Limited - Registration Number: 161581

RPS Engineering Services Limited - Registration Number: 99795

**Certification of Leachate Management Structures
Ballaghveny Landfill Waste Licence 78-02**

The leachate management structures at Ballaghveny Landfill consist of the leachate lagoon and the leachate collection system within the landfill including leachate collection chambers in Phase 1 (Cells 6-8) and in Phase 2 (Cells 9-11).

A Construction Quality Assurance (CQA) report was prepared on behalf of North Tipperary County Council by an independent firm, Metlab International Ltd, Cork, in December 2001 which provided verification of the leachate structures associated with the development of Phase 1 which including the leachate lagoon. The leachate collection pipework to the leachate chamber was also tested at the time of installation in accordance with the required standards. A visual inspection of the leachate tank and pipework was conducted during the monitoring period by a RPS Consulting Engineers and there would not appear to be any visible integrity issue with either system. The groundwater monitoring location MP2 in the vicinity of the leachate lagoon also does not demonstrate any integrity issues with the lagoon.

We therefore certify the integrity of the leachate management structures at Ballaghveny Landfill as required under Condition 6.16 of Waste Licence 78-02.



David Cronin
Senior Design Engineer
For RPS Consulting Engineers

5th June 2008

Appendix 7

Landfill Gas Survey



Environmental Protection Agency

A survey of landfill sites to determine the quantity of methane flared and or recovered in utilisation plants for 2012

Please choose from the drop down menu the license number for your site

W0078

Please choose from the drop down menu the name of the landfill site

Balaghveny Landfill

Please enter the number of flares operational at your site in 2012

1

Please enter the number of engines operational at your site in 2012

0

Total methane flared

585,784 kg/year

Total methane utilised in engines

0 kg/year

Please note that the closing date for receipt of completed surveys is 31/03/2013

Introduction

The Office of Climate Licensing and Resource Use (OCLR) of the Environmental Protection Agency acts as the inventory agency in Ireland with responsibility for compiling and reporting national greenhouse gas inventories to the European Commission and the United Nations Framework Convention on Climate Change. In addition to meeting international commitments Ireland's national greenhouse gas inventory informs national agencies and Government departments as they face the challenge to curb emissions and meet Ireland's targets under the Kyoto Protocol. The national inventory also informs data suppliers, making them aware of the importance of their contributions to the inventory process and a means of identifying areas where input data may be improved.

It is on this basis that the Environmental Protection Agency is asking landfill operators to partake in this survey so that the most up to date information on methane flaring and recovery in utilisation plants at landfills sites is used in calculating the contribution of the waste sector to national greenhouse gas emissions

The Environmental Protection Agency wishes to thank you for partaking in this survey. If you have any questions about the survey and how to complete it please view the "Help sheet" worksheet. If however, your query is not answered by viewing the "Help sheet" worksheet please contact:

LFGProjecI@epa.ie

Once completed please send the completed file as an attachment clearly stating the name and or license number of the landfill site (e.g. W0000 Xanadu landfill_2012) to:

LFGProjecI@epa.ie

to be filled in by licensee calculated by spreadsheet

Flare No. 1

Flare type ? if "other" enter flare description here

is the flare an open or enclosed flare ? Rated flare capacity ? 500 m³/hr

Month/year commissioned ? 2008

Month decommissioned if decommissioned in 2012 ?

What is the function of the flare ? if "other" enter flare function here

Other Extraction from capped area

Enclosed

June

Select

Monthly	Method	Runtime days/month	Runtime hrs/day	Runtime hrs/month	Downtime hrs	Total runtime hrs/month	Average Inlet Pressure (mbg)	Average Flow Rate (m ³ /hr)	Average CH ₄ %v/v	Average CO ₂ %v/v	Average O ₂ %v/v	Combustion efficiency (%)	Total CH ₄ m ³	Total CH ₄ kgs
January	MCE	26	24.0	624	120.0	504	-40	365	28.10	23.10	3.20	98.0	50,617	33,569
February	MCE	29	24.0	696		696	-23	391	30.80	24.50	2.40	98.0	82,219	55,480
March	MCE	31	24.0	744		744	-22	388	30.60	24.10	1.90	98.0	86,203	58,227
April	MCE	30	24.0	720		720	-27	368	32.70	25.50	1.10	98.0	84,958	57,096
May	MCE	26	24.0	624	120.0	504	-39	343	34.40	22.70	1.50	98.0	58,348	38,736
June	MCE	28	24.0	672	48.0	624	-29	352	33.20	22.00	2.30	98.0	71,440	47,914
July	MCE	25	24.0	600	144.0	456	-24	329	34.40	21.80	1.00	98.0	34,050	23,035
August	MCE	25	24.0	600	144.0	456	-15	336	29.70	20.90	1.60	98.0	44,595	30,335
September	MCE	30	24.0	720		720	-18	378	29.40	21.50	1.00	98.0	78,386	53,160
October	MCE	31	24.0	744		744	-23	375	32.40	23.50	1.00	98.0	88,621	59,799
November	MCE	30	24.0	720		720	-21	378	33.00	23.60	1.00	98.0	88,077	59,552
December	MCE	31	24.0	744		744	-22	352	33.40	25.00	1.00	98.0	85,670	57,867
Total						7,632							869,646	585,784

Please note: Only fill the "Yearly" table if data is not available or cannot be calculated nor estimated on a monthly basis

Yearly	Method	Runtime days/year	Runtime hrs/day	Total runtime hrs/year	Downtime hrs	Average Inlet Pressure (mbg)	Average Flow Rate m ³ /hr	Average CH ₄ %v/v	Average CO ₂ %v/v	Average O ₂ %v/v	Combustion efficiency (%)	Total CH ₄ m ³	Total CH ₄ kgs
2012				0							98.0	0	0

Appendix 8

Water Balance Calculation

Water Balance Calculation - Ballaghveny Landfill (March 2011)

Year	Active Cell	Active area (m ²)	Annual Rainfall (mm)	P.E. (mm)	A.E. (mm)	Effective Rainfall (mm)	Active area Infiltration (m ³)	Restored Phase No.	Liquid Waste (m ³)	Restored area (m ²)	Infiltration to restored area (%)	Restored area infiltration (m ³)	Annual Leachate (m ³)	Cumulative leachate (m ³)
2007	4	6,7,8,9,10, W	804	0	0	804	40,569	3,4,5	0	13,070	20	2,102	42,671	132,153
2008	5	(50% 6,7,8),9,10,W	40,468	0	0	804	32,536	3,4,5 (50% 6,7,8)	0	23,062	20	3,708	36,244	168,397
2009	6	9,10,W	30,476	0	0	804	24,503	3,4,5,6,7,8	0	33,053	20	5,315	29,818	198,214
2010	7	9,10,W	30,476	0	0	804	24,503	3,4,5,6,7,8	0	33,053	20	5,315	29,818	198,214
2011	8	9, 10 (50%)	19,738	0	0	804	15,869	3,4,5,6,7,8, W	0	55,417	20	8,911	24,780	222,995
2012	9	10 (50%)	4,056	0	0	804	3,261	3,4,5,6,7,8,9, W	0	39,735	20	232,645	9,650	242,209
2013	10	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	251,772
2014	11	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	261,335
2015	12	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	270,898
2016	13	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	280,462
2017	14	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	290,025
2018	15	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	299,588
2019	16	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	309,151
2020	17	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	318,715
2021	18	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	328,278
2022	19	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	337,841
2023	20	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	347,404
2024	21	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	356,968
2025	22	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	366,531
2026	23	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	376,094
2027	24	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	385,657
2028	25	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	395,221
2029	26	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	404,784
2030	27	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	414,347
2031	28	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	423,910
2032	29	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	433,474
2033	30	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	443,037
2034	31	none	0	0	0	804	0	0 3,4,5,6,7,8,9,10 (50%), W	0	59,473	20	9,563	9,563	452,600
Annual Rainfall (mm):														
804 mm														
Note: The above Water Balance calculation has been updated to take account of the temporary closure of the landfill in February 2011 and assumes no filling of waste after this date. Should a landfilling programme recommence, this water balance calculation will be updated accordingly														
Leachate Lagoon volume:														
694 m ³														
Cell Areas (measured in plan)														
Cell 3,4,5														
13,070 m ²														
Cell 6,7,8														
19,983 m ²														
Cell 9														
15,682 m ²														
Cell 10														
8,112 m ²														
Cell 11														
6,849 m ²														
Wedge Area (W)														
6,682 m ²														

Appendix 9

Annual Vermin Control Report

Curtin Pest Control

Ballysimon Road, Limerick



Justine Haugh,
Facility Manager
Ballaghveney Landfill Site.
28th February 2013

Justine,

The following is a progress report on the Pest Management Plan at Ballaghveney Landfill facility for 2012 and to date.

The service agreement provides for:

- Eight rodent control service visits per year at regular intervals the facility and three adjoining properties.
- Any emergency calls to be responded to on the day at no extra charge.
- Each service visit to be documented in a service report folder, which will also contain a computer generated plan of all bait points and material safety data sheets for each product used.
- A signed copy of each service report and an annual report on the performance of the pest management plan.

The products used to control rodent activity are "Sakarar" a warfarin based anticoagulant rodenticide used in external tamper resistant bait stations and "Klerat" a brodificoum based anticoagulant in tamper resistant bait stations used only in the main office.

Annual update:

In the last year we have serviced the facility on 8 occasions.

We have installed new external tamper resistant bait stations at the Tip head area where there had been two bait stations damaged.

There was some mouse activity in the compound area and occurrence and around solar panel. Rat activity occurred in LM2 area, old compound and the lagoon area. The operation of the pest management system was effective in dealing with these incursions.

Rodent activity is controlled by the regular servicing and the service reports show that where activity occurs, it is dealt with before an infestation develops and is quickly controlled.

The pest management plan at this facility is working well and the effective cooperation between site staff and pest control technicians continues to ensure this.

Qualifications:

Curtin Pest Control is a founder member of the Irish Pest Control Association and each technician holds an IPCA diploma. We hold a Diploma in Environmental Pest Management from University College, Cork.

We also offer a presentation to staff on practical pest management precautions.

If you have any further queries please contact me at 061 419901 or 087 6484119 or email curtinpestcontrol@gmail.com

John Roche
Managing Director,
Sean Curtin Pest Control Ltd.

Tel 061 419901- Email: rocheservices@gmail.com

Appendix 10

PRTR Emissions Data



Environmental Protection Agency

| PRTR# : W0078 | Facility Name : Ballaghveny Landfill | Filename : W0078_2012.xls | Return Year : 2012 |

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.16

REFERENCE YEAR	2012
-----------------------	------

1. FACILITY IDENTIFICATION

Parent Company Name	North Tipperary County Council
Facility Name	Ballaghveny Landfill
PRTR Identification Number	W0078
Licence Number	W0078-03

Waste or IPPC Classes of Activity

No.	class name
3.5	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
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.
3.2	Land treatment, including biodegradation of liquid or sludge discards in soils.
3.4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
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.
4.13	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.

Address 1	Ballymackey
Address 2	Co. Tipperary
Address 3	
Address 4	
	Tipperary
Country	Ireland
Coordinates of Location	-7.46859 53.2333
River Basin District	IEGBNISH
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Justine Haugh
AER Returns Contact Email Address	justine.haugh@northtippcoco.ie
AER Returns Contact Position	Environmental Technician

AER Returns Contact Telephone Number	067 44766
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	1
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 ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	
--	--

4.1 RELEASES TO AIR [Link to previous years emissions data](#)

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS		RELEASES TO AIR						
No. Annex II	POLLUTANT	Name	METHOD		QUANTITY			
			M/C/E	Method Code	Method Used [Designation or Description GASSIM and On-Site Flare Data GASSIM GASSIM	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)		C	OTH		544943.2	0.0	0.0
02	Carbon monoxide (CO)		C	OTH		5.26	0.0	0.0
03	Carbon dioxide (CO2)		C	OTH		450964.8	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 AIR						
No. Annex II	POLLUTANT	Name	METHOD		QUANTITY			
			M/C/E	Method Code	Method Used [Designation or Description]	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) 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 C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)		RELEASES TO AIR						
Pollutant No.	POLLUTANT	Name	METHOD		QUANTITY			
			M/C/E	Method Code	Method Used [Designation or Description]	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) 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

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:	Ballaghveny Landfill			
	M/C/E	Method Code	Method Used [Designation or Description]	Facility Total Capacity m3 per hour
Total estimated methane generation (as per site model)				
Methane flared				
Methane utilised in engine's				
Net methane emission (as reported in Section A above)				

T (Total) kg/Year
1140727.2
585784.0
0.0
544943.2

N/A
N/A
500.0
0.0
N/A

(Total Flaring Capacity)
(Total Utilising Capacity)

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

[PRTR# : W0076 | Facility Name : Balaighweny(Leneff) Fabaire* W0076 2012-25 | Return Year : 2012]

03/04/2013 17:13

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

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

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

[Link to previous years emissions data](#)

| PRTR# : W0078 | Facility Name : Bellaghiwoty Landfill | Filename : W0078_2012 ds | Return Year :

03/04/2013 17:13

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER		METHOD		Please enter all quantities in this section in KGs			
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	QUANTITY		
					T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) 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)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER		METHOD		Please enter all quantities in this section in KGs			
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	QUANTITY		
					T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) 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

[Link to previous years emissions data](#)

4.4 RELEASES TO LAND

SECTION A : PRTR POLLUTANTS

POLLUTANT		RELEASES TO LAND		Please enter all quantities in this section in KGs	
No. Annex II	Name	MCE	METHOD Method Used (Description of Data Point)	T (Total) KG/Year	A (Accidental) KG/Year
				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)

POLLUTANT		RELEASES TO LAND		Please enter all quantities in this section in KGs	
Pollutant No.	Name	MCE	METHOD Method Used (Description of Data Point)	T (Total) KG/Year	A (Accidental) KG/Year
				0.0	0.0

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE | PRTR#: W0078 | Facility Name : Ballyghveny Landfill | Filename : W0078_2012.xls | Return Year : 2012 | 03/04/2013 17:17 5

Please enter all quantities on this sheet in Tonnes

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 Recoverer/Disposer	Haz Waste - Address of Next Destination Facility Non-Haz Waste: Address of Recoverer/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)
						MC/E	Method Used					
Within the Country	19 07 03	No	6804260.0	Leachate	D8	M	Weighted	Offsite in Ireland	Nenagh Wastewater Treatment Plant ,D0027-01	New Nenagh WWTP,Old Birr Road,Nenagh,..,Ireland 36 Magheralane Road		
Within the Country	20 01 11	No	300.0	Clothes Bank	R3	M	Weighted	Offsite in Ireland	Cookstown Textiles Recyclers ,WMEX 01/11 Antrim,..,Ireland			
Within the Country	20 01 23	Yes	2100.0	Fridges & Freezers	R4	M	Weighted	Offsite in Ireland	KMK Metals Recycling Ltd.,W0113-03 WEEE Recycling Ireland	Offaly,..,Ireland Cappincur Industrial Estate Daingean Rd.,Tullamore,..,Co. Offaly,Ireland,Ireland
Within the Country	20 01 35	Yes	2760.0	WEEE	R4	M	Weighted	Offsite in Ireland	Advanced Environmental Solutions ,WCF/OY/060/008/008	Springfort Cross,Nenagh,..,Ireland,Ireland,Ireland
Within the Country	20 03 01	No	17520.0	Domestic & Commercial, Local Authority Commercial Waste & Reception Skip	D5	M	Weighted	Offsite in Ireland	Advanced Environmental Solutions ,WCF/OY/060/108/00	Tipperary,..,Ireland		
Within the Country	15 01 01	No	8620.0	paper and cardboard packaging	R3	M	Weighted	Offsite in Ireland	Advanced Environmental Solutions ,WCF/OY/060/108/00	Tipperary,..,Ireland		

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

Appendix 11

Biological Monitoring

**BIOLOGICAL MONITORING OF WATER QUALITY IN THE
VICINITY OF BALLAGHVENY LANDFILL, COUNTY TIPPERARY**

July 2012



Conservation Services, Tullaha, Glenflesk, Killarney, Co. Kerry
Tel/Fax 064 6630130 e-mail cs@conservation-services.ie

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APPENDIX 1 HABITAT AT INVERTEBRATE SAMPLING SITES

1. INTRODUCTION

As part of the monitoring of water quality in the vicinity of Ballaghveny Landfill Site, Conservation Services, Ecological & Environmental Consultants have been commissioned by Tipperary N.R. County Council to carry out biological sampling and water quality assessment in accordance with EPA Q-rating methodology at five locations adjacent to the landfill site. The sites were most recently assessed by Conservation Services in July 2011 (Conservation Services 2011).

Sampling was carried out on 27th July 2012.

2. METHODOLOGY

2.1. SITE LOCATIONS

Biological sampling and water quality assessment was carried out at the following sites. Grid references were recorded at all sites using a GPS.

SITE	GRID REFERENCE (GPS)
Site A	R9728 8242
Site A1	R9740 8195
Site B	R9530 8204
Site 1	R9549 8188
Site 2	R9419 8193

The location of the sites is shown on Map 1.

2.2. HABITAT ASSESSMENT

Habitat assessment was carried out at each of the five sites selected for invertebrate/water quality assessment. These sites were assessed in terms of:

- Stream width and depth
- Substrate type, listing substrate fractions in order of dominance, i.e. large rocks, cobble, gravel, sand, mud etc.
- Flow type, listing percentage of riffle, glide and pool in the sampling area
- Instream vegetation, listing plant species occurring and their percentage coverage of the stream bottom at the sampling site

- Dominant bankside vegetation, listing the main species overhanging the stream
- Estimated summer cover by bankside vegetation, giving percentage shade of the sampling site
- Rating of the site as habitat for trout adult, nursery and spawning on a scale of Poor/Fair/Good/Very Good/Excellent. This rating assesses the physical suitability of the habitat; the presence/absence/density of salmonids at the site will also depend on present and historical water quality and accessibility of the site to fish.

2.3. INVERTEBRATE SAMPLING AND WATER QUALITY ASSESSMENT

A kick and stone wash invertebrate sample was taken at each site (ISO 7828:1985) using standard methodology employed by EPA. Each sample was retained in a large plastic bag at the sampling site. Sample processing and preservation was carried out under laboratory conditions within 24 hours of sampling. Mud was removed from each sample by sieving under running water through a 500 μ sieve. Sieved samples were then live sorted for 30 minutes in a white plastic sorting tray under a bench lamp (ISO 5667-3:1994) and if necessary using a magnifying lens. Macroinvertebrates were stored in 70% alcohol. Preserved invertebrates were identified to the level required for the EPA Q-rating method (McGarrigle *et al*, 2002) using high-power and low-power binocular microscopes when necessary. The preserved samples were archived for future examination or verification. Based on the relative abundance of indicator species, a biotic index (Q-rating) was determined for each site in accordance with the biological assessment procedure used by the Environmental Protection Agency (Statutory Instruments No. 258 of 1998) and more detailed unpublished methodology (McGarrigle, Clabby and Lucey pers. comm.)

Biotic Index	Water Framework Directive Ecological Status	Quality Status
Q5	High	Unpolluted Waters
Q4-5	High	
Q4	Good	
Q3-4	Moderate	Slightly Polluted Waters
Q3	Poor	Moderately Polluted Waters
Q2-3	Poor	
Q2	Bad	Seriously Polluted Waters
Q1-2	Bad	
Q1	Bad	

3. RESULTS

Detailed habitat assessment for each sampling site, including aquatic plant assessment, is contained in Appendix 1.

3.1. SITE A

As there was minimal water flow at the site, conditions were not optimal for the Q-rating method and the Q-value is tentative. The invertebrate community tabulated below merits a tentative Q-rating of Q2 indicating seriously polluted conditions and bad ecological status, a slight deterioration compared with Q2-3 in 2011.

INDICATOR GROUP	POLLUTION SENSITIVITY/TOLERANCE	TAXON	NUMBER 2012
A	Very Pollution Sensitive	None recorded	
B	Moderately Pollution Sensitive	None recorded	
C	Moderately Pollution Tolerant	Veliidae	1
		Dytiscidae	4
		Chironomidae (ex. <i>Chironomus</i>)	18
D	Very Pollution Tolerant	Hirudidae	1
		Sphaeriidae	3
		<i>Asellus aquaticus</i>	c.400
		Sialidae	28
E	Most Pollution Tolerant	None recorded	

3.2. SITE A1

The invertebrate community tabulated below merits a Q-rating of Q3 indicating moderately polluted conditions and poor ecological status, with no significant change since 2011.

INDICATOR GROUP	POLLUTION SENSITIVITY/TOLERANCE	TAXON	NUMBER 2012
A	Very Pollution Sensitive	None recorded	
B	Moderately Pollution Sensitive	Leuctridae	1
		Limnephilidae	1
C	Moderately Pollution Tolerant	<i>Potamopyrgus antipodarum</i>	1
		<i>Gammarus duebeni</i>	c.430
		<i>Baetis rhodani</i>	1
		Simuliidae	6
		Tipulidae (Pedicidae)	5
D	Very Pollution Tolerant	None recorded	
E	Most Pollution Tolerant	None recorded	
-	Not assigned to an indicator group	Lumbricidae	5
		Lumbriculidae	1
		Nematomorpha	1

3.3. SITE B

The invertebrate community tabulated below merits a Q-rating of Q3 indicating moderately polluted conditions and poor ecological status, with no significant change in water quality since 2011.

INDICATOR GROUP	POLLUTION SENSITIVITY/TOLERANCE	TAXON	NUMBER 2012
A	Very Pollution Sensitive	None recorded	
B	Moderately Pollution Sensitive	Limnephilidae	5
		Sericostomatidae	7
C	Moderately Pollution Tolerant	<i>Piscicola geometra</i>	1
		<i>Gammarus duebeni</i>	15
		Hydrachnida	3
		Haliplidae	6
		Chironomidae (ex. <i>Chironomus</i>)	58
		Tipulidae (Pediidae)	2
		Tipulidae (Limoniidae)	1
D	Very Pollution Tolerant	None recorded	
E	Most Pollution Tolerant	<i>Chironomus</i> sp.	1
-	Not assigned to indicator group	Lumbricidae	3
		<i>Lumbriculus variegatus</i>	14

3.4. SITE 1

The invertebrate community tabulated below merits a Q-rating of Q4 indicating unpolluted conditions and good ecological status, a slight reduction in water quality compared with Q4-5 in 2011.

INDICATOR GROUP	POLLUTION SENSITIVITY/TOLERANCE	TAXON	NUMBER 2012
A	Very Pollution Sensitive	<i>Isoperla grammatica</i>	1
		Heptageniidae	6
		<i>Rhithrogena sp.</i>	5
B	Moderately Pollution Sensitive	Leuctridae	5
		Lepidostomatidae	1
		Limnephilidae	1
		Glossosomatidae	10
		Sericostomatidae	1
C	Moderately Pollution Tolerant	<i>Potamopyrgus antipodarum</i>	1
		<i>Gammarus duebeni</i>	49
		<i>Baetis rhodani</i>	28
		Ephemerellidae	17
		Hydropsychidae	1
		Polycentropodidae	1
		Rhyacophilidae	3
		Elmidae	134
		Haliplidae	1
		Chironomidae	5
		Simuliidae	15
		Tipulidae (Pediciidae)	15
D	Very Pollution Tolerant	None Recorded	
E	Most Pollution Tolerant	None Recorded	
-	Not assigned to indicator group	Lumbricidae	3
		Lumbriculidae	3

3.5. SITE 2

The invertebrate community tabulated below merit a Q-rating of Q4 indicating unpolluted conditions and good ecological status, a slight reduction in water quality compared with Q4-5 in 2011.

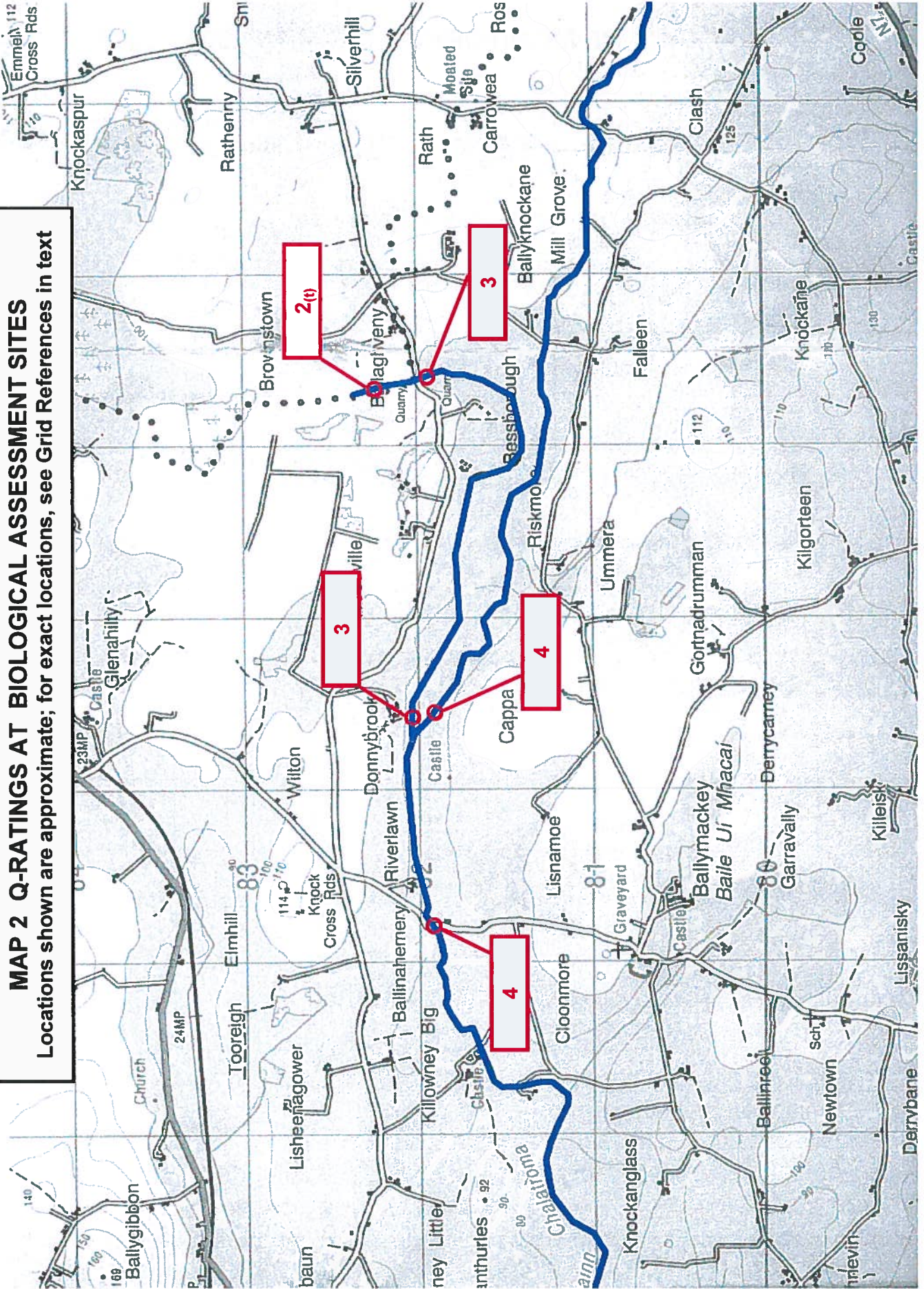
INDICATOR GROUP	POLLUTION SENSITIVITY/TOLERANCE	TAXON	NUMBER 2012
A	Very Pollution Sensitive	<i>Isoperla grammatica</i>	2
		<i>Ecdyonurus sp.</i>	11
		<i>Ephemera danica</i>	1
		Heptageniidae (small/damaged)	5
		<i>Rhithrogena sp.</i>	16
B	Moderately Pollution Sensitive	Leuctridae	6
		<i>Baetis muticus</i>	1
		Lepidostomatidae	1
		Limnephilidae	1
		Sericostomatidae	5
C	Moderately Pollution Tolerant	<i>Potamopyrgus antipodarum</i>	10
		<i>Theodoxus fluviatilis</i>	1
		<i>Gammarus duebeni</i>	10
		Hydrachnida	4
		<i>Baetis rhodani</i>	39
		Ephemerellidae	31
		Hydropsychidae	1
		Rhyacophilidae	16
		Elmidae	45
		Haliplidae	5
		Chironomidae	2
		Simuliidae	c.460
		Tipulidae (Pediciidae)	38
D	Very Pollution Tolerant	None Recorded	
E	Most Pollution Tolerant	Nine Recorded	
-	Not assigned to indicator group	Nematoda	1
		Lumbricidae	2

4. SUMMARY OF MONITORING RESULTS 1998 - 2012

	SITE A	SITE A1	SITE B	SITE 1	SITE 2
Aug 1998	3-4	-	3-4	4	4
May 2002	2	-	3	4-5	4-5
March 2003	3/0	3	3-4	4-5	4-5
May 2004	3-4 (tentative)	3-4	3-4	3-4	3-4
June 2005	3 (tentative)	3	3	4	3-4
May 2006	3 or 3-4 (tentative)	3	3	4	4-5
July 2007	3 or 3-4 (tentative)	3	3	4	3-4
May 2008	3-4 (tentative)	3	3	4	4-5
July 2009	3 (tentative)	3	3	3-4	3-4
July 2010	2-3 (tentative)	3	3	4	4-5
July 2011	2-3 (tentative)	3	3	4-5	4-5
July 2012	2 (tentative)	3	3	4	4

MAP 2 Q-RATINGS AT BIOLOGICAL ASSESSMENT SITES

Locations shown are approximate; for exact locations, see Grid References in text



5. CONCLUSIONS

5.1. Ballaghveny Stream

Habitat conditions at Site A upstream of the landfill are less than optimal for Q-rating assessment. Taking into account the flow and substrate conditions, the invertebrate data merit a tentative Q2 (seriously polluted) rating. The invertebrate data at Site A1, immediately downstream of the landfill, and at Site B c.3km downstream of the landfill, indicate Q3 moderately polluted conditions.

The results of the biological assessment contain no evidence of an impact from the landfill on the water quality of the Ballaghveny stream.

5.2. Ollatrim River

The Ollatrim River upstream and downstream of its confluence with the Ballaghveny Stream is unpolluted with a Q-value of Q4 at both the upstream site and the downstream site. The results of the present survey therefore contain no evidence of an adverse impact on the Ollatrim River from the Ballaghveny Stream.

Signed on behalf of Conservation Services

Bill Quirke BSc MSc MIEEM

6. REFERENCES

Conservation Services (2011) Biological monitoring of water quality in the vicinity of Ballaghveny Landfill, County Tipperary. Unpublished Report to Tipperary North Riding County Council.

McGarrigle *et al* (2002) Water Quality in Ireland 1998-2000. Environmental Protection Agency.

APPENDIX 1

HABITAT ASSESSMENT AT SAMPLING SITES

Site Code A

Site Location Upstream of drain from the extended landfill area

Grid Reference R9728 8242

Site Photograph



Width 2 m

Depth 25 cm

Substrate Mud

Flow Type Slow glide (almost imperceptible flow)

Instream Vegetation *Alisma plantago-aquatica* <5%
Rorippa nasturtium-aquaticum agg. <5%
Mentha aquatica 10%
Sparganium erectum 10%

Dominant Bankside Vegetation Willow, Meadowsweet, Grass

Estimated % Summer Cover of Stream by Bankside Vegetation 10%

Trout Adult Habitat None

Trout Nursery Habitat None

Trout Spawning Habitat None

Site Code

A1

Site Location

Downstream of road bridge.

Grid Reference

R9740 8195

Site Photographs



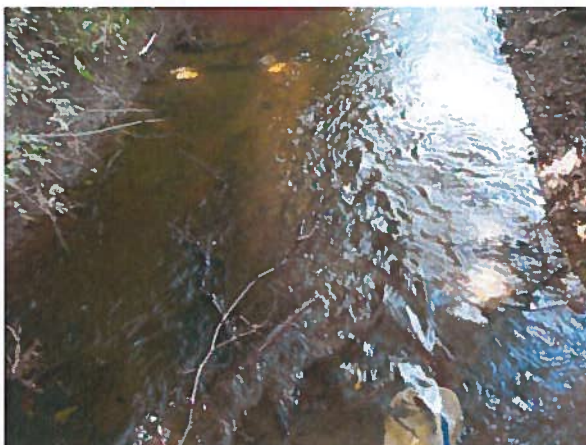
Width

1 m

Depth	5-10 cm
Substrate	Large Rocks, Cobble, Gravel, Mud
Flow Type	Riffle 50% Glide 50%
Instream Vegetation	Bryophytes <5% in open section <i>Rorippa nasturtium-aquaticum</i> agg. 30% <i>Apium nodiflorum</i> 10% <i>Caltha palustris</i> <5% <i>Mentha aquatica</i> <5%
Dominant Bankside Vegetation	Hazel, Grass
Estimated % Summer Cover of Stream by Bankside Vegetation	45%
Trout Adult Habitat	Poor-None
Trout Nursery Habitat	Fair
Trout Spawning Habitat	Poor

Site Code B
Site Location At Donnybrook House
Grid Reference R9530 8204

Site Photograph



Width 2 m
Depth 20-30 cm
Substrate Mud, Gravel
Flow Type Riffle 2%
Glide 98%
Instream Vegetation None
**Dominant Bankside
Vegetation** Ash, Beech
**Estimated % Summer
Cover of Stream by
Bankside Vegetation** 40%
Trout Adult Habitat Poor
Trout Nursery Habitat Poor
Trout Spawning Habitat None

Site Code 1

Site Location On the Ollatrim River at Donnybrook House upstream of the confluence with Ballaghveny Stream

Grid Reference R9549 8188

Site Photograph



Width 8-9 m

Depth 25-35 cm

Substrate Gravel, Sand, Cobble

Flow Type Riffle 30%
Glide 70%

Instream Vegetation Moss <1%
Rorippa nasturtium-aquaticum agg. <5%
Veronica beccabunga <5%
Apium nodiflorum <5%

Dominant Bankside Vegetation Bramble

Estimated % Summer Cover of Stream by Bankside Vegetation <5%

Trout Adult Habitat Fair

Trout Nursery Habitat Fair

Trout Spawning Habitat Fair-Good

Site Code 2
Site Location Downstream of Ballinahemery Bridge
Grid Reference R9419 8193
Site Photograph



Width 7 m
Depth 20-45 cm
Substrate Gravel, Sand, Cobble
Flow Type Riffle 25%
 Glide 75%
Instream Vegetation *Rorippa nasturtium-aquaticum* agg. <5%
Ranunculus sp. 10%
 Bryophyta <5%
Phalaris arundinacea <5%
Dominant Bankside Vegetation Grass, *Phalaris arundinacea*
Estimated % Summer Cover of Stream by Bankside Vegetation <5%
Trout Adult Habitat Fair-Good
Trout Nursery Habitat Fair
Trout Spawning Habitat Fair-Good

