

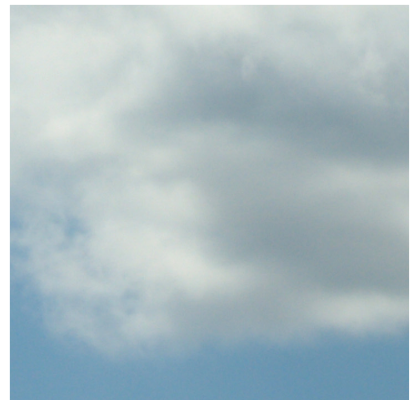
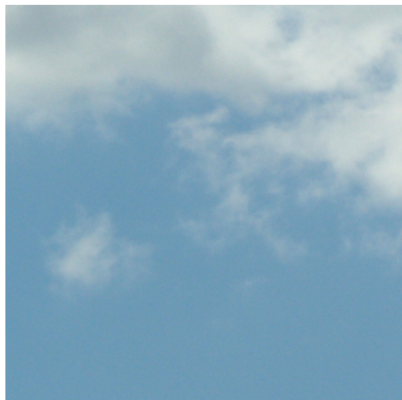
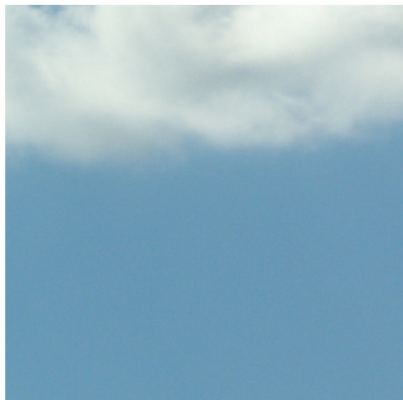
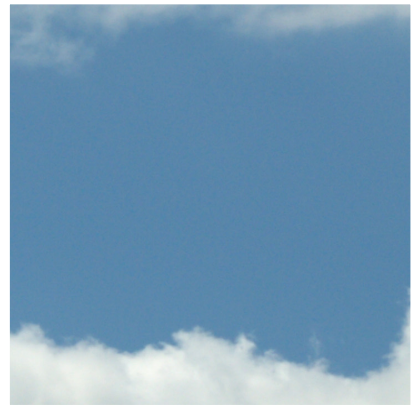
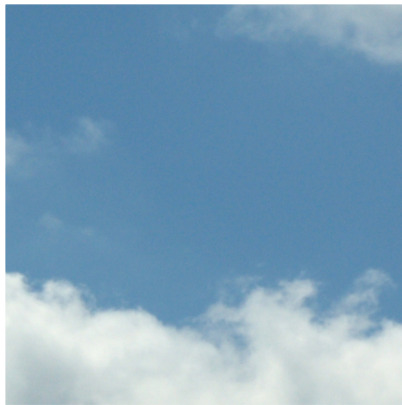
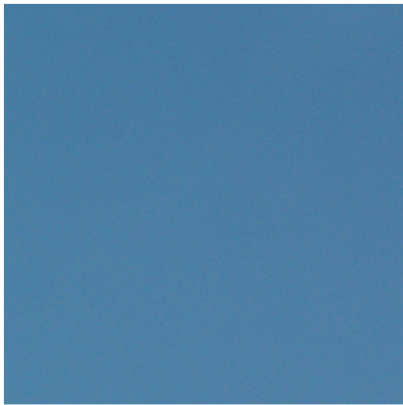
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Annual Environmental Report 2016

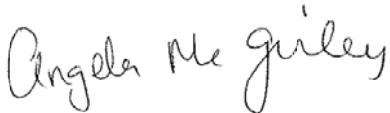

Balbane Landfill Site

IBR0859 / March 2017



Document Control Sheet

Client	Donegal County Council					
Project Title	Annual Environmental Report 2016					
Document Title	Balbane Landfill Site (W0090-01)					
Document No.	IBR0859					
This Document Comprises	DCS	TOC	Text	No. of Tables	No. of Figures	No. of Appendices
	1	1	21	5	1	5

Rev.	Status	Author(s)	Reviewed & Approved By	Issue Date
1.0	Final	 _____ Angela McGinley, Senior Scientist	 _____ Donal Doyle, Director	30 th March 2017

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1 Introduction

This Annual Environmental Report (AER) has been prepared to meet the requirements of Condition 11.5 of Waste Licence 90-1 for Balbane Landfill Site, and includes the information listed in Schedule F of the Licence.

Balbane Landfill Site, as shown on Drawing IBR0859/003, is located approximately 6.5 km north of Killybegs, in the townland of Balbane, County Donegal. The landfill covers an area of approximately 2.9 hectares. The landfill site was developed to operate on the dilute and disperse principle whereby leachate generated by rainfall was allowed to disperse into the surrounding environment.

Donegal County Council submitted an application to the Environmental Protection Agency for the continued operation of the landfill site, as required by the Waste Management (Licensing) Regulations 1997. On the 13th of November 2001 the Environmental Protection Agency granted the Council a Waste Licence (registration number 90-1) for the facility, in accordance with the Third Schedule of the Waste Management Act, 1996. The site closed in January 2004.

A summary of Facility Information is provided in Table 1.1 below.

Table 1.1 Facility Information Summary

AER Reporting Year	2016
Licence Register Number	W0090-01
Name of site	Balbane Landfill Site
Site Location	Balbane, County Donegal
NACE Code	3821
Class/Classes of Activity	Landfill

2 Report Period

The report period for this Annual Environmental Report (AER) is from January to December 2016.

3 Waste Activities Carried Out at the Facility

In accordance with Condition 1 of the waste licence only those waste types and quantities of waste listed in Schedule A shall be disposed of at the facility unless the prior agreement of the Agency has been obtained. The maximum annual tonnage of individual waste types for disposal is listed in Schedule A of the Waste Licence at 7,500 tonnes from the date of grant of licence for municipal waste and 70,000 tonnes of inert material of the purpose of restoration.

The licensed waste disposal activities in accordance with the Third Schedule of the waste Management Act, 1996 are restricted to those listed as follows:

- **Class 1:** Deposit on, in or under land (including landfill). This activity is limited to deposition of municipal and inert waste.
- **Class 4:** Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons. This activity is limited to leachate collection and treatment.
- **Class 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. This activity is limited to leachate collection and storage prior to treatment.

The site is closed and is now secured to prevent unauthorised entry.

4 Quantity and Composition of Waste Received and Disposed of During the Reporting Period and each Previous Year

A temporary computerised weighbridge was installed at the site in 2002 and this was used to record waste data figures until the facility closed in January 2004. No waste has been received at the site since closure. Annual figures for the period 1998-2004 are shown in Table 4.1.

Table 4.1 Waste Quantities Accepted

Waste Types	1998	1999	2000	2001	2002	2003	2004
Municipal Waste (20 03 01)	3228	3716	4721	4107	5069	2790	187
Street Cleanings (20 03 03)						57	3

5 Summary Report on Emissions, Results and Interpretation of Environmental Monitoring

5.1 Environmental Monitoring Requirements

There are no continuous air, groundwater, surface water or wastewater (sewer) monitoring at Balbane landfill site. Periodic/non-continuous monitoring of groundwater, surface water, leachate, and landfill gas are carried out at the site as per Schedule D of the licence, and as agreed with the EPA, as set out in Tables A2, A3 and A4 of Appendix B.

Details of the monitoring locations are shown on Drawing IBR0859/004 in Appendix A and are given in Table A1 of Appendix B.

5.2 Monitoring Results

Laboratory results certifications for groundwater, surface water, leachate and gas monitoring are contained in Appendix C. Trend graphs for key parameters are also provided.

5.3 Groundwater

The groundwater results contained in this report were assessed against the following:

- EPA Interim guideline values¹ (IGV);
- SI No 278 of 2007 EC (Drinking water) Regulations (DWR); and
- SI No 9 of 2010 European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended (GTV).

Groundwater locally flows in a south-easterly direction and GW1 reflects baseline conditions up-gradient of the site. GW2 & GW4 are down-gradient but in / adjacent to waste. It should be noted that BH2 is also located within waste and is considered to be a leachate well. The direction of groundwater flow is presented in Figure 5 in Appendix A.

¹EPA (2003) Towards setting guideline values for the protection of groundwater in Ireland. Interim Report

The GTV for ammonium is 0.175 mg/l N. Elevated concentrations of ammonia (as N) were recorded up-gradient of the site in GW1 in 3 of the 4 monitoring dates which reflects the baseline conditions of the groundwater up-gradient of the site. Ammonia (as N) concentrations ranged from 0.332 to 2.87 mg/l.

Elevated concentrations of ammonia (as N) were also recorded down gradient of the site in boreholes GW2 and GW4 throughout the sampling period. Concentrations ranged from 1.14 to 5.55 mg/l in GW2 and ranged from 5.31 to 23.00 mg/l in GW4. Monitoring wells GW2 and GW4 are located adjacent to the waste body.

Electrical conductivity (EC) levels up-gradient in GW1 were consistently below the GTV of 800-1875 $\mu\text{S}/\text{cm}$ ranging between 233 and 680 $\mu\text{S}/\text{cm}$. EC levels down-gradient within GW2 (ranging between 56 and 79.9 $\mu\text{S}/\text{cm}$) and within GW4 (ranging between 502 and 777 $\mu\text{S}/\text{cm}$) were also below the guideline value.

Chloride concentrations were consistently below the GTV guideline value of 185.7 mg/l in all boreholes. The highest chloride concentrations are recorded in GW4. However a reducing trend since is evident and the levels continue to reduce with the most recent concentration recorded at 55 mg/l in October 2016.

Potassium concentrations were below the IGV guideline value for Potassium of 5 mg/l in GW1 and GW2. Potassium concentrations within GW4 were recorded at levels ranging between 37.2 to 42.1 mg/l.

The GTV guideline value for iron is 200 $\mu\text{g}/\text{l}$. Elevated concentrations of iron were recorded in all boreholes in May (ranging from 189 to 560 $\mu\text{g}/\text{l}$). Iron concentrations ranged from <20 to 560 $\mu\text{g}/\text{l}$ throughout the monitoring period.

pH levels were within the IGV range except for GW4 throughout the year. Levels ranged from 9.8 to 11.4.

Phenol concentrations were less than the limit of detection (<0.15 and <0.1 mg/l) except GW1 in August (0.13 mg/l). This is above the IGV of 0.5 $\mu\text{g}/\text{l}$.

Ortho phosphate concentrations were less than the IGV of 0.03 mg/l except for GW2 with concentrations ranging from 0.048 to 0.488 mg/l throughout the monitoring period.

All other parameters measured quarterly are below the GTV and/or IGV.

Analysis for metals and List I / II substances were undertaken in Quarter 2 (June 2014), as agreed with the EPA (to be undertaken every three years) and therefore are not required until 2017.

The landfill site was developed to operate on the dilute and disperse principle and results show that groundwater is being impacted from leachate generated within the landfill. It should be noted that groundwater monitoring boreholes in Balbane are adjacent to /within the unlined waste body and it is expected that concentrations in groundwater have reduced further down gradient of the site. The graphs in appendix C also show the seasonal variation in parameter concentration at the site.

A hydrogeological risk assessment was undertaken in 2015 and submitted to the EPA. The report found that the area of impact to groundwater from the landfill leachate is considered to be minor relative to the groundwater body catchment area of the Northwest Donegal GWB i.e. < 0.001%. To-date no remedial works have been completed at Balbane landfill and a remedial strategy has been proposed to the EPA for agreement. Please refer to Section 7.

A series of proposed mitigation measures and additional investigation have been proposed to address the data gaps at the site, to facilitate a more detailed understanding of the hydrogeological regime and to assess the risk posed to downgradient receptors.

Plans for all actions identified in the hydrogeological risk assessment across all 6 sites are being developed. The overall plan is being finalised at present and will be issued to the Agency when complete.

Table 5.1 Groundwater Concentrations 2016

Location	Sample Date	Ammonia (as N)	Chloride	Conductivity @ 20°C	Dissolved Oxygen	pH	Temperature	Depth	Total Organic Carbon	Nitrate (as N)	Phenols	Iron	Nitrite (as N)	Potassium	Ortho-phosphate	Sodium	Total Oxidised Nitrogen
		mg/l	mg/l	µS/cm	mg/l	pH units	°C	m	mg/l	mg/l	mg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l
GW	25-Feb	1.06	14.9	292		7	6.6										
GW2	25-Feb	1.14	16.9	79.9		6.3	7.6										
GW4	25-Feb	6	91.3	758		11.4	7.1										
GW	30-May	2.87	6.95	233	5.83	6.9	19	0.7	2.8	0.25 3	< 0.15 ***	368	0.037	2 ***	< 0.01	14.3 ***	0.29
GW2	30-May	5.55	12.91	67.9	6.24	6.2	18	3.1	1.24	< 0.1	< 0.15 ***	189	0.018	1.2 ***	0.048	6.8 ***	0.037
GW4	30-May	6.21	79.41	515	9.59	9.8	18	3.6	4.04	< 0.1	< 0.15 ***	560	0.127	37.2	0.01	64.4 ***	0.196
GW	31-Aug	0.715	15.88	560	7.34	6.7	15.6	0.86	7.59	< 0.1	0.13	< 20	< 0.01	2.4	< 0.01	32.9	< 0.11
GW2	31-Aug	1.22	7.94	56	7.86	5.9	15.8	4.81	0.84	1.87 4	< 0.1	28	< 0.01	1.8	0.488	4.6	1.87
GW4	31-Aug	5.31	71.47	502	8.1	9.8	15.8	4.32	3.94	0.10 1	< 0.1	< 20	0.176	41	0.011	87.9	0.277
GW	27-Oct	0.332	0.99	680 *	6.94	6.7 *	12.1	0.52	9.94	0.12	< 0.1 ***	< 20 ***	< 0.01	2.5 ***	< 0.01	33.6 ***	0.12
GW2	27-Oct	2.34	4.96	76.5 *	8.09	6.3 *	12.3	3.8	3.86	1.00 9	< 0.1 ***	100 ***	0.031	4.3 ***	0.313	5.6 ***	1.04
GW4	27-Oct	23	54.59	777 *		11.1 *	12.1	4.1	5.39	0.21	< 0.1 ***	< 20 ***	0.21	42.1	< 0.01	87.4 ***	0.42

*Accredited **Sub-Contract ***Accredited & Sub-Contract

5.4 Surface Water

The surface water results contained in this report were assessed against the following:

- SI No 294 of 1989 European Communities (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations (SWQS); and
- SI No 272 of 2009 European Communities Environmental Objectives (Surface Water) Regulations 2009 (EQS).

S1 is upstream of the site, whilst S4–S7 inclusive are downstream. S2 and S3 were relocated and relabelled at the request of the EPA.

The EQS 2009 guideline values for total ammonia ranges from 0.09 (high) to 0.14 mg N/l (good). Upstream of the site, at surface water monitoring point S1, ammonia (as N) concentrations were within the guideline values of 0.09 mg N/l (high) except in February with a concentration of 1.18 mg/l. The source of this is unknown.

Elevated ammonia (as N) concentrations, relevant to the EQS 2009 guideline value were recorded downstream of the site for the majority of the sampling dates ranging from <0.04 to 5.27 mg/l. There is a generalised reduction in ammonia concentration over time as shown in graphs in Appendix C. In addition, contamination levels appear to be reducing with distance from the site (S5, S6, S7) except for an elevated ammonia (as N) concentration recorded furthest downstream at S6 (2.99 mg/l) and S7 (4.65 mg/l) in May. This indicates a source of ammonia independent of the landfill is being detected at this location.

The EQS 2009 guideline value for BOD is 2.6 mg/l (good). BOD values recorded at monitoring point S1 were above the EQS guideline value in 3 of the 4 monitoring dates. Concentration ranged from 4 to 27.8 mg/l. These results reflect the baseline conditions of the surface water upstream of the site.

Elevated concentrations of BOD were recorded downstream of the site. These elevated concentrations were recorded in 3 of the 4 monitoring dates but not at all downstream surface water monitoring points indicating a source of contamination independent from the landfill. Values ranged from <1 to 27.68 mg/l.

An elevated concentration of COD above the SWQS (40 mg/l) was recorded upstream in S1 in August (50 mg/l).

Suspended solids concentrations were within the SWQS of 50 mg/l throughout the monitoring period except S1 in October (188 mg/l).

No elevated concentrations above the appropriate EQS and/or SWQS values have been recorded for chloride or electrical conductivity throughout the monitoring period both upstream and downstream of the site.

All other parameters measured quarterly are below the EQS and SWQS were comparable.

Analysis for metals and List I / II substances were undertaken in Quarter 2 (June 2014), as agreed with the EPA (to be undertaken every three years) and therefore are not required until 2017.

The restoration of this landfill has not been undertaken to date. A hydrogeological risk assessment was undertaken in 2015. The report found that the site in its present condition appears to be impacting significantly on surface waters immediately downstream from the landfill predominantly via surface water discharges from leachate breakout from the waste body and subsequent overland flow and shallow groundwater flow. Donegal County Council are actively developing remedial options for the site. Please refer to Section 7.

Graphs of the concentrations for key parameters are provided in Appendix C.

Table 5.2 Surface Water Concentrations 2016

Location	Sample Date	Ammonia (as N)	BOD	Chloride	COD	Conductivity @ 20°C	Dissolved Oxygen	Nitrate (as N)	Nitrite (as N)	Ortho-phosphate	pH	Temperature	Suspended Solids	Total Suspended Solids
		mg/l	mg/l	mg/l	mg/l	µS/cm	mg/l	mg/l	mg/l	mg/l	pH units	Degree s C	mg/l	mg/l
S 1	25-Feb	1.18	10	26.8	< 20	80	10.29				6.4	5.3		< 6
S 4	25-Feb	1.72	1	31.8	< 20	258	10.34				7.2	5.8		< 6
S 5	25-Feb	3	1	32.8	< 20	254	10.33				7.5	5.8		< 6
S 6	25-Feb	1.38	1	33.7	< 20	218.8	10.39				7.5	5.7		< 6
S 7	25-Feb	0.241	1	25.8	< 20	118.8	10.41				7.6	5.3		< 6
S 1	30-May	< 0.04	27.8	12.9	16	48.4	9.55	< 0.1	0.02	< 0.01	6.6	18	< 6	
S 4	30-May	4.4	< 1	31.76	13	330	9.24	1.515	0.03	0.055	7.3	19	< 6	
S 5	30-May	0.256	27.52	32.76	16	332	9.41	2.341	0.02	< 0.01	7.7	18	< 6	
S 6	30-May	2.99	< 1	36.72	17	264	9.61	1.736	0.02	< 0.01	7.7	18	< 6	
S 7	30-May	4.65	27.68	12.9	12	115.7	9.74	0.468	0.03	< 0.01	7.6	18	< 6	
S 1	31-Aug	< 0.04	4	12.9	50	62	8.6	< 0.1	< 0.01	< 0.01	6.8	14.9		36
S 4	31-Aug	0.127	9	21.84	36	97	9	0.514	0.014	< 0.01	7.3	15		7
S 5	31-Aug	0.0699	1	12.9	37	91	9.1	0.345	0.013	< 0.01	7.3	15.1		< 6
S 6	31-Aug	0.0731	1	11.91	38	87	9.3	0.405	0.011	< 0.01	7.3	15		< 6
S 7	31-Aug	< 0.04	6	8.93	39	54	9.2	< 0.1	< 0.01	< 0.01	7.2	15.2		6
S 1	27-Oct	< 0.04	1	5.96	26	60.9 *	9.09	< 0.1	< 0.01	< 0.01	7.4 *	11.9	188	188 *

Location	Sample Date	Ammonia (as N)	BOD	Chloride	COD	Conductivity @ 20°C	Dissolved Oxygen	Nitrate (as N)	Nitrite (as N)	Ortho-phosphate	pH	Temperature	Suspended Solids	Total Suspended Solids
		mg/l	mg/l	mg/l	mg/l	µS/cm	mg/l	mg/l	mg/l	mg/l	pH units	Degrees C	mg/l	mg/l
S 4	27-Oct	5.27	9	20.84	18	101 *	9.11	0.198	0.01	0.029	7.2 *	12	< 6	< 6 *
S 5	27-Oct	1.33	3	9.93	17	107.8 *	9.13	0.306	0.01	0.014	7.3 *	11.8	< 6	< 6 *
S 6	27-Oct	0.812	< 1	19.84	22	96.1 *	9.22	0.324	< 0.01	< 0.01	7.2 *	11.9	< 6	< 6 *
S 7	27-Oct	0.602	< 1	4.96	24	69.5 *	9.19	< 0.1	< 0.01	< 0.01	7.3 *	11.6	< 6	< 6 *

*Accredited **Sub-Contract ***Accredited & Sub-Contract

5.5 Leachate

Leachate quality varies during the lifetime of a landfill depending on the stage of decomposition of waste. No samples were obtained from BH2 in 2016 as the well was inaccessible.

5.6 Gas Monitoring

The gas monitoring piezometers on the site at Balbane are located within waste, and are not perimeter wells. The results (Table 5.3) are similar to previous reporting period with landfill gas concentration being relatively low.

Table 5.3 Landfill Gas Results 2016

Location	Date	Carbon Dioxide %v/v	Methane %v/v	Oxygen %v/v	Atmospheric Pressure
Bh1 (Gas)	25-Feb	7.6	22.8	1.4	996
Bh2 (Gas)	25-Feb	2	1.1	20	996
Bh1 (Gas)	30-May	8.8	30.4	0.4	1003
Bh2 (Gas)	30-May	1	0.6	20	1003
Bh1 (Gas)	31-Aug	10.6	31.8	0.4	992
Bh2 (Gas)	31-Aug	0.8	0.1	20.7	992
Bh1 (Gas)	27-Oct	10.4	37.3	0.5	1000
Bh2 (Gas)	27-Oct	0.5	0.2	20.9	1000

5.7 Dust Monitoring

As previously agreed with the Agency, monitoring of dust ceased when the site closed. When any activity commences, such as restoration works for example, a dust-monitoring programme will be resumed as necessary.

6 Volume of Leachate Produced and Volume of Leachate Transported / Discharged Off Site

A water balance calculation has been undertaken and is presented in Appendix D. It estimates that 7,910 m³ of leachate will have been generated from this waste body during the period. Due to a lack of collection infrastructure there is no leachate transported off site. Correspondingly it is assumed that all leachate generated disperses into the surrounding environment.

7 Report on Development Work Undertaken during the Reporting Period and a Timescale for those Proposed during the Coming Year

The restoration of this landfill has been delayed due to lack of funds available to Donegal County Council as a result of the removal of grant funding for such projects. The Council met with the Agency in November 2009 and discussed this issue. The Agency requested that the Council investigate the viability of carrying out some focused works to address leachate emissions, this being the significant environmental risk from the site. This was carried out and a proposal for leachate treatment submitted to the Agency for consideration in 1st June 2010. The Council received a response from the Agency in May 2011 citing Condition 6.4.1 of the Licence and requesting a demonstration that leachate discharges will have no significant impact on receiving waters. This remained under consideration for a period thereafter due to the complexities of fulfilling the request. In the intervening years the Council has been investigating the viability of bio-technologies as engineering techniques to remediate landfills.

A site remediation scoping study to assess proposals for remediation works at Balbane landfill site has been compiled with a view to determining the most effective and sustainable option which achieves the goal of restoring the site in line with waste licensing requirements and minimising fugitive emissions to the environment.

This report considers what is the optimal restoration solution for this unengineered remote landfill site by assessing options and proposing the scope to the EPA for their preliminary approval to complete a Specified Engineering Works (SEW) for the restoration works. This has been submitted to the EPA for their approval.

The preferred option is a reduced engineered cap and the installation of an integrated constructed wetland (ICW) on the existing site. The preferred option will proceed to detailed design once the scope of works is signed off by the Agency. This would incorporate information derived from the commissioning of the ICW which is being utilised to treat leachate on Churchtown Landfill Site and it can be demonstrated that there would be no impact on receiving waters.

8 Report on Restoration of Completed Cells / Phases

The Restoration and Aftercare Plan was submitted to the Agency in October 2004 and approved in November 2004.

Balbane was scheduled to be restored last out of Donegal County Council's six closed landfill sites. Restoration works will begin as soon as works are complete at Churchtown Landfill site and the Scope of the Remediation is agreed with the Agency. See also comments in Section 7 above.

9 Site Survey showing Existing Levels of the Facility at the End of the Reporting Period

A topographical survey of the site was last carried out in December 2002. This was included in the 2002 AER.

10 Annual Water Balance Calculation and Interpretation

A water balance calculation has been undertaken and is presented in Appendix D. The calculation for monthly water balance is as follows:

$$L_o = [ER (A) + LW + IRCA + ER (I)] - [aW]$$

Where

L_o = leachate produced (m^3)

ER = effective rainfall

A = area of cell (m^2)

LW = liquid waste

IRCA = infiltration through restored areas and capped areas (m)

a = absorptive capacity of waste (m^3/t)

W = weight of waste deposited

I = surface area of lagoons (m^2)

11 Reported Incidents and Complaints Summaries

Other than the reporting of on-going emissions exceedances detected in the routine surface water and groundwater monitoring programme (7 in total), no other incidents occurred during the monitoring period and no complaints were received.

DCC currently reports all Ammonia exceedances when compared to relevant regulations/guidance values at any groundwater or surface water monitoring point as incidents for all licensed landfill sites in Donegal via EDEN to the EPA. Results are currently screened using the following regulations/guidance.

- SI No 9 of 2010 European Communities Environmental Objectives (Groundwater) Regulations (GTV),
- SI No 272 of 2009 European Communities Environmental Objectives (Surface Water) Regulations 2009 (EQS).

Revised screening levels for incident reporting based on a combination of compliance points derived from the hydrogeological review, or standards as appropriate to each site and location have been submitted to the EPA for approval.

A site visit was undertaken by the EPA on the 28/06/2016. Samples were taken from GW1, GW2, GW4, S1, S4, and S6 for analysis.

No non compliances were issued in 2016. The groundwater risk screening report was submitted on 16/12/15. See comments in Section 7 with regards to the restoration of the facility.

12 Review of Nuisance Controls

As the facility is no longer operational, all areas formerly used for the placement of municipal waste have been covered by clay and topsoil. There has been a resultant reduction in nuisance on foot of this and, by agreement with the Agency, monitoring programmes and control systems employed whilst operational are now in abeyance.

However, precautionary measures are employed to ensure the detection and appropriate management of any nuisances that may arise. As part of the Environmental Management System for the site a procedure has been developed to provide for regular inspections of the site as part of the quarterly monitoring programme. Should this inspection reveal the incidence of any type of nuisance (vermin, litter, dust, birds or odours) then appropriate action is initiated.

13 Report on Financial Provisions made under this Licence, Management and Staffing Structure of the Facility and a Programme for Public Information

Donegal County Council being a local authority is able to provide the necessary finances to ensure the proper management, development and restoration of Balbane Landfill Site.

Overall responsibility for the ongoing operations and development of the landfill site is held by the Senior Engineer. The Senior Engineer is assisted by an Executive Engineer assigned to the Environment Section of Donegal County Council.

As part of the Environmental Management System (EMS) for the site, a communication programme (in accordance with Condition 2.8 of waste licence) is provided in Section 2 of the EMS to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times.

The Management Structure at Balbane Landfill site is set out in Figure 13.1 below.

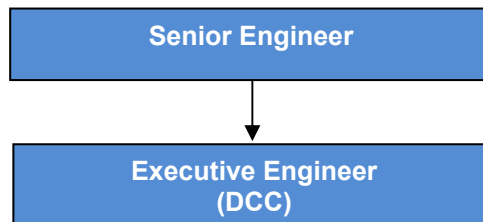


Figure 13.1 Management Structure

An Environmental Liability Risk Assessment has not been carried out at this facility as the landfill site is closed it is not a requirement of the licence.

14 Report on Staff Training

No training has been undertaken as the facility is now closed and there are no operational personnel on the site.

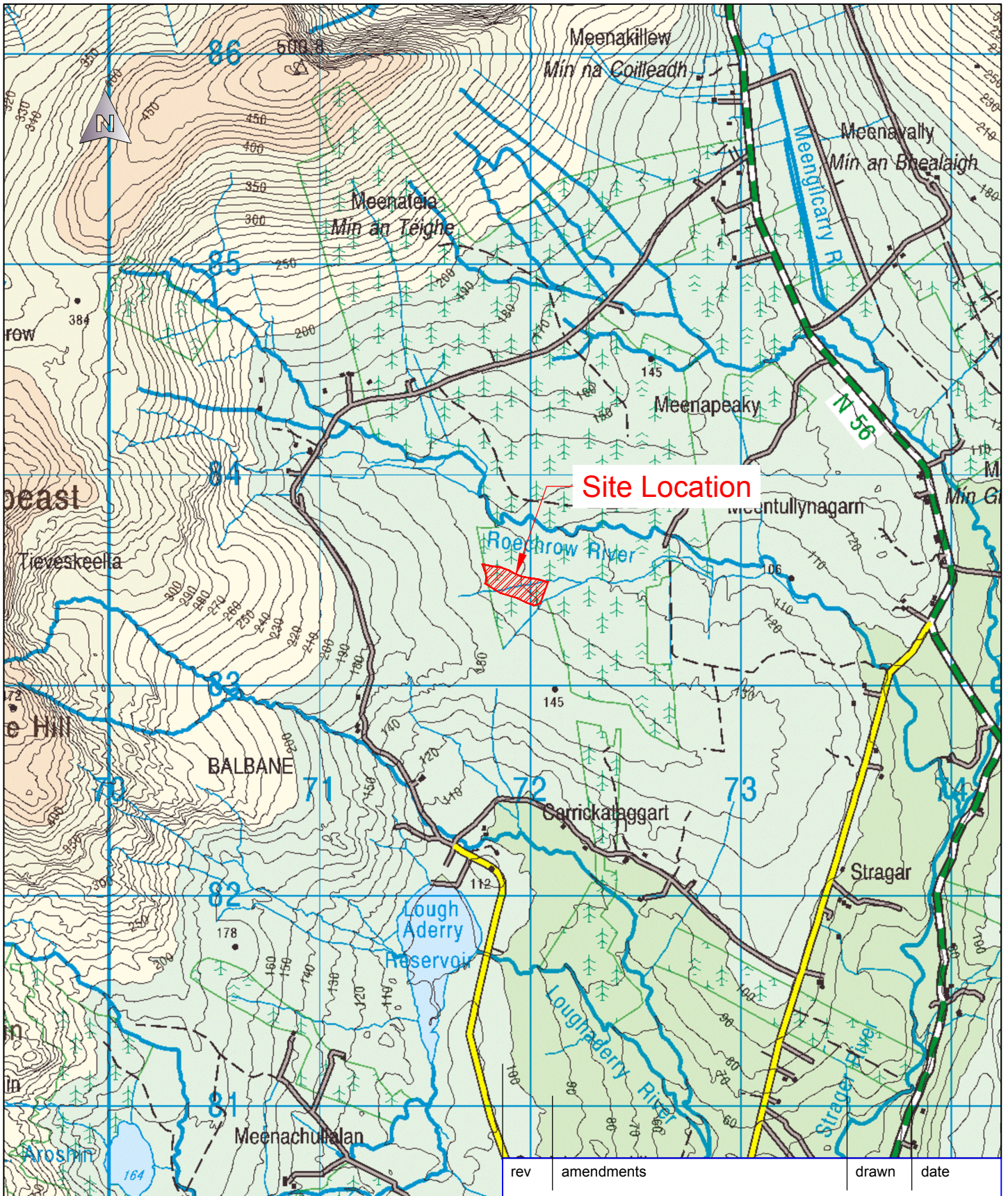
15 Resources and Energy Consumption Summary

An energy efficiency audit has not been carried out at this facility as the landfill site is closed it is not a requirement of the licence. No energy was consumed on the site during the reporting period.

16 Report on Environmental Management Programme

An Environmental Management Programme (EMP) was revised in 2004 to take into consideration the closure of the site and was submitted in to the Agency in December 2004 for its agreement. A public communication programme has been initiated in accordance with Condition 2 of the Waste Licence to ensure that information concerning the environmental performance is available at reasonable times. The public may view environmental records at the Donegal County Council headquarters. Details regarding this are contained in Section 2 of the Environmental Management System Manual.

Appendix A Drawings



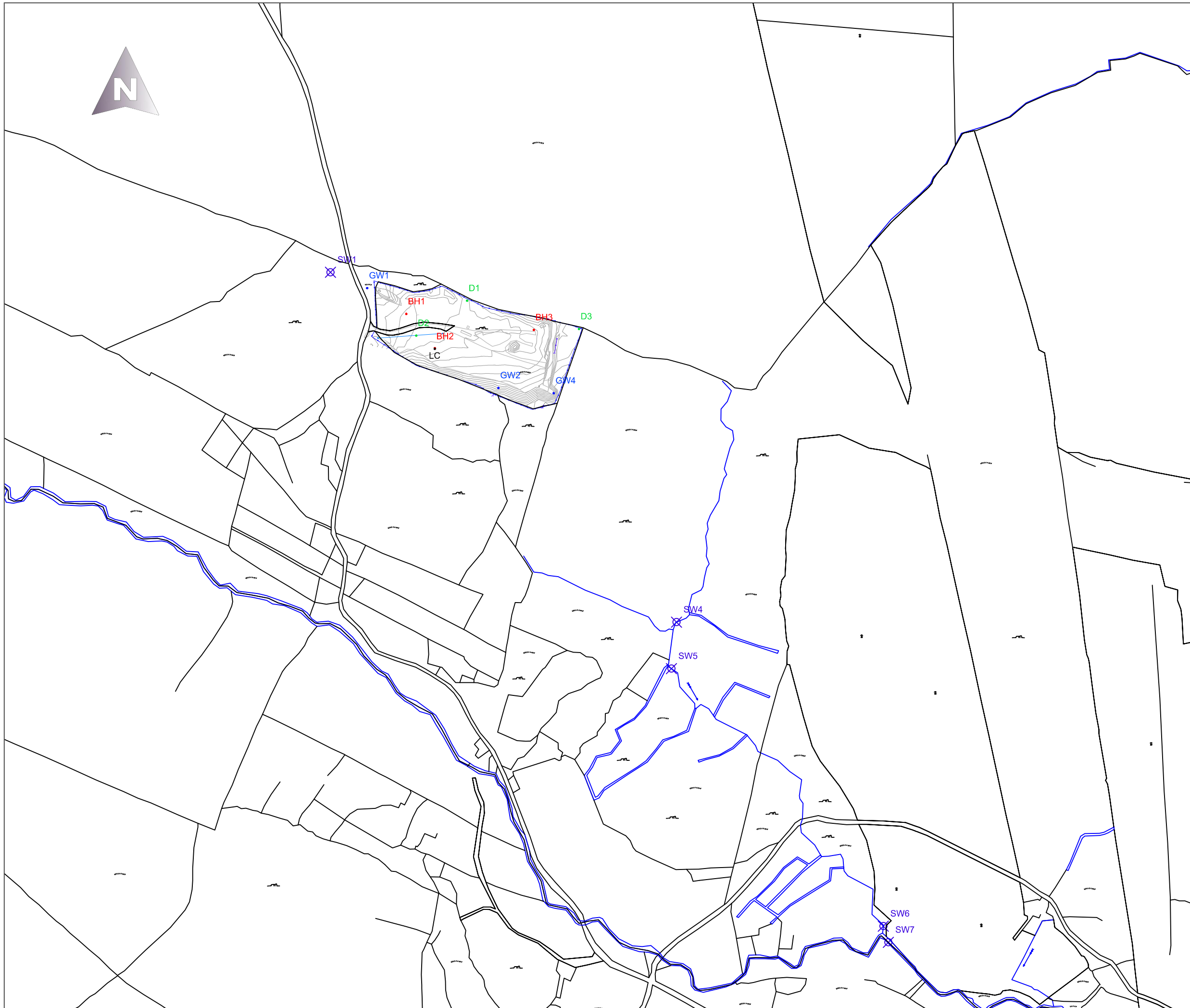
rev	amendments	drawn	date
-----	------------	-------	------

 Enterprise Fund Business Centre Ballyraine Letterkenny Co. Donegal	T +353 74 9161927 F +353 74 9161928 W www.rpsgroup.com/ireland E ireland@rpsgroup.com	Drawing Number IBR0859 / 003	Rev 0
--	--	--	-----------------

Project Donegal Landfill Site Reporting 2016	Title Balbane Landfill Site Location
--	--

Client Donegal County Council	Architect
---	-----------

Drawing Status Preliminary	Sheet Size A4	Drawing Scale 1:25,000	Project Leader DD	Drawn By AMB	Date Apr '15	Initial Review AMcG
-------------------------------	------------------	---------------------------	----------------------	-----------------	-----------------	------------------------



NOTES

1. Verifying Dimensions.
The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services.
Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
3. Issue of Drawings.
Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipient's own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipient's drawing production, or setting out on site.

4. Keys:
- BH3 Landfill Gas Monitoring Boreholes
 - D3 Dust Monitoring Points
 - GW4 Groundwater Monitoring Locations
 - LC Leachate Monitoring Locations
 - X SW4 Surfacewater Monitoring Locations

A	SW location amended	AMB	Mar '17
rev	amendments	drawn	date

	RPS Consulting Engineers	T	+353 (0) 74 91 61927
	Enterprise Fund Business Centre	F	+353 (0) 74 91 61928
	Ballyraine	W	www.rpsgroup.com/ireland
	Letterkenny	E	ireland@rpsgroup.com
	Co. Donegal		

Client
Donegal County Council

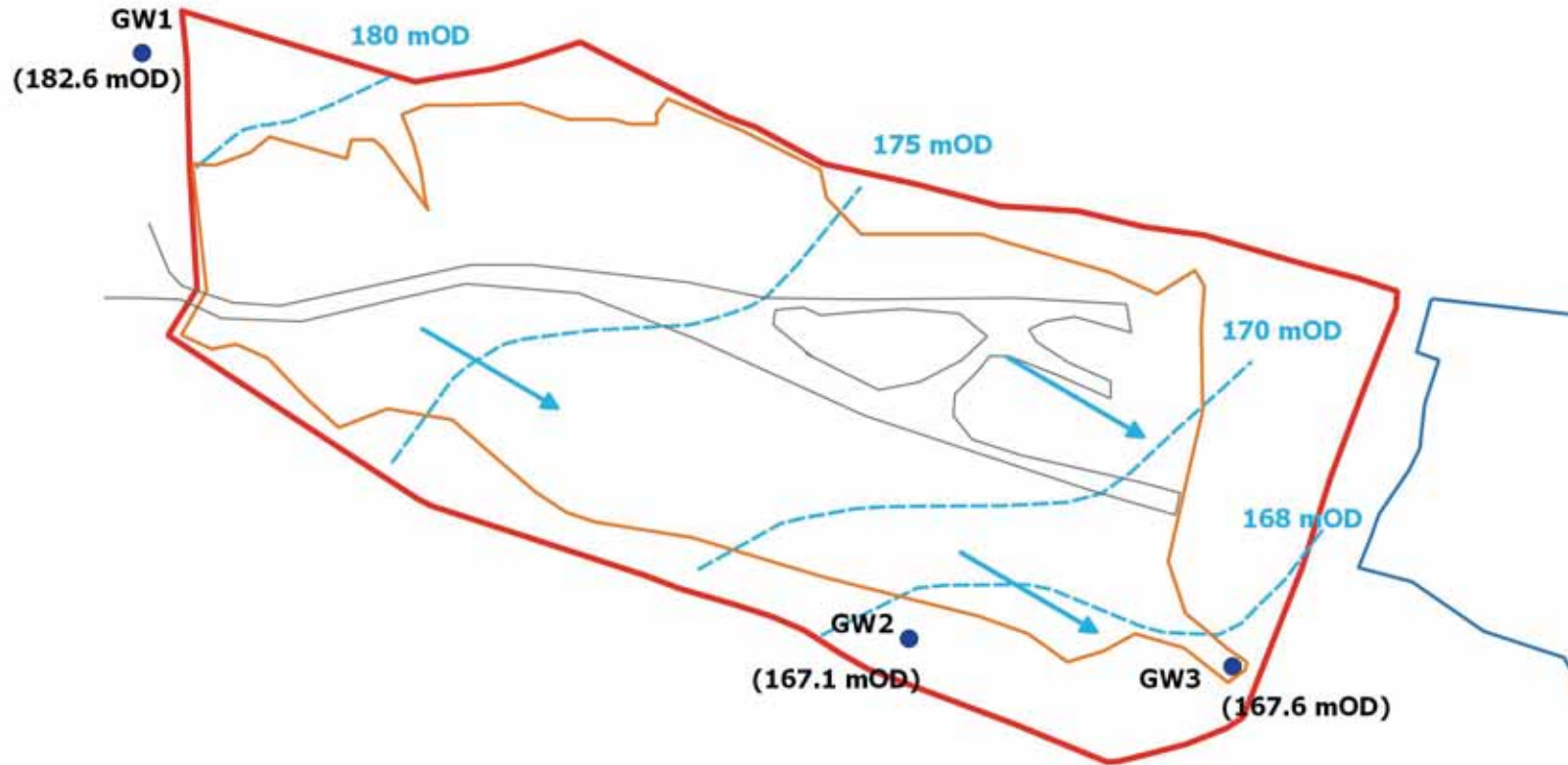
Project
Donegal Landfill Site Reporting 2016

Title
Balbane LFS - Monitoring Points

Drawing Status	Sheet Size	Drawing Scale
Preliminary	A3	1:5000

Drawing Number	Rev
IBR0859 /004	A

Project Leader	Drawn By	Date	Initial Review
DD	AMB	Mar '17	AMcG



Legend

- Road
- Waste Boundary
- - - Groundwater Contours
- Stream
- Wells
- Site Boundary
- Groundwater Flow Direction

Project

**Balbane Landfill
Hydrogeological Risk
Assessment**

Client

**Donegal County
Council**

Drawing

Figure 5

Title

**Groundwater Contours
September 2014**

BlueRock
Environmental 
**The Hydrogeological and
Contaminated Land Consultancy**

T 00353 863856884
E admin@bluerockenv.ie
W www.bluerockenvironmental.ie

File Ref : BRE14021
Drawing Ref : BRE14021DG05
Revision : V01
Date : 09/09/2015
Drawn by : SB
Copyright : OSI EN0075112

Appendix B

Monitoring Information

Appendix A - Monitoring Information

Table A1 Grid References of Monitoring Points

Station Purpose	Station Name	Northing	Easting
Landfill Monitoring - Groundwater	Balbane GW 1	383193	171246
Landfill Monitoring - Groundwater	Balbane GW 2	383055	171427
Landfill Monitoring - Groundwater	Balbane GW 4	383048	171503
Landfill Monitoring - Surface Water	Balbane S 1	363215	171187
Landfill Monitoring - Surface Water	Balbane S 4	382720	171657
Landfill Monitoring - Surface Water	Balbane S 5	382673	171658
Landfill Monitoring - Surface Water	Balbane S 6	362314	171949
Landfill Monitoring - Surface Water	Balbane S 7	362297	171965
Landfill Monitoring - Leachates	BH 2 (Leachate)	383110	171339
Landfill Monitoring - Air Quality	BH1 (Gas)	383157	171300
Landfill Monitoring - Air Quality	BH2 (Gas)	383110	171339
Landfill Monitoring - Air Quality	BH3 (Gas)	383136	171476

Table A2 Groundwater Parameters and Monitoring Frequencies

Quarterly		Every Three Year (Due 2017)	
Temperature	Chloride	Boron	Magnesium
Groundwater Level	Dissolved Oxygen	Cadmium	Manganese
	Sodium	Calcium	Mercury
	TON	Chromium	Orthophosphate
	TOC	Copper	Zinc
	Phenols	Cyanide	
	Ammoniacal Nitrogen	Fluoride	
	Electrical Conductivity	Lead	
	pH	List I/II substances	
	Iron	Sulphate	
	Potassium		

Table A3 Surface Water Parameters and Monitoring Frequencies

Quarterly		Once Every Three Year (Due 2017)	
Temperature	Chloride	Iron	Magnesium
pH	Dissolved Oxygen	Cadmium	Manganese
Ammoniacal Nitrogen	COD	Calcium	Mercury
BOD		Chromium	Orthophosphate
Electrical Conductivity		Copper	Zinc
TSS		Sodium	Potassium
		Fluoride	TON
		Lead	Sulphate
		List I/II substances	

Table A4 Landfill Gas Parameters and Monitoring Frequencies

Quarterly
Atmospheric Pressure
Carbon Dioxide
Methane
Oxygen

Appendix C

Results of Monitoring



Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Balbane Gw 1
Sample Notes : ---- ----
Sample Details : Sample Reference : 162500597
 Sampled by : Nigel Breslin On : 25/02/2016 - 12:01 Hrs.
 Sample Template : Balbane Quarterly GW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Donegal CoCo

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Iron	µg/l	5.4P-TMC20	--	--	25/02/16			< 20 ***
pH	pH units	5.4P-TMC1	14	1	25/02/16	16:18		7
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	25/02/16	12:00		1.06
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		14.9
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	12:01		292
Depth	m		--	--	25/02/16	12:01		0.7
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16		Not measured on site.	--
Potassium	mg/l		--	--	25/02/16			1.4 ***
Sodium	mg/l		--	--	25/02/16			21.8 ***
Temperature	Degrees C	5.4P-TMC1	100	--	25/02/16	12:01		6.6
Total Organic Carbon	mg/l	5.4P-TMC10	--	--	10/03/16	13:09		3.3
Total Oxidised Nitrogen	mg/l	5.4P-TMC5	--	--	04/03/16	12:00		0.22
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Light Orange
Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		12
Phenols	mg/l		--	--	25/02/16			< 0.1 ***

Approved..... *Nigel Breslin* : Date 31/3/16 : Technical Manager

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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Balbane Gw 2
Sample Notes : -----
Sample Details : Sample Reference : 162500598
 Sampled by : Nigel Breslin On : 25/02/2016 - 11:41 Hrs.
 Sample Template : Balbane Quarterly GW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Donegal CoCo

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Iron	µg/l	5.4P-TMC20	--	--	25/02/16			< 20 ***
pH	pH units	5.4P-TMC1	14	1	25/02/16	16:20		6.3
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	25/02/16	12:00		1.14
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		16.9
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	11:41		79.9
Depth	m		--	--	25/02/16	11:41		3.2
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16		Not measured on site.	--
Potassium	mg/l		--	--	25/02/16			0.9 ***
Sodium	mg/l		--	--	25/02/16			8.7 ***
Temperature	Degrees C	5.4P-TMC1	100	--	25/02/16	11:41		7.6
Total Organic Carbon	mg/l	5.4P-TMC10	--	--	10/03/16	12:20		0.74
Total Oxidised Nitrogen	mg/l	5.4P-TMC5	--	--	04/03/16	12:00		< 0.11
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Acceptable
Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		23
Phenols	mg/l		--	--	25/02/16			< 0.1 ***

Approved..... *Joe Feary* : Date 31/3/16 : Technical Manager

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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Balbane Gw 4
Sample Notes : -----
Sample Details : Sample Reference : 162500599
 Sampled by : Nigel Breslin On : 25/02/2016 - 11:47 Hrs.
 Sample Template : Balbane Quarterly GW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Donegal CoCo

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Iron	µg/l	5.4P-TMC20	--	--	25/02/16			41 ***
pH	pH units	5.4P-TMC1	14	1	25/02/16	16:21		11.4
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	04/03/16	15:00		6
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		91.3
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	11:47		758
Depth	m		--	--	25/02/16	11:47		3
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16		No DO taken on site.	--
Potassium	mg/l		--	--	25/02/16			39.2 ***
Sodium	mg/l		--	--	25/02/16			80.4 ***
Temperature	Degrees C	5.4P-TMC1	100	--	25/02/16	11:47		7.1
Total Organic Carbon	mg/l	5.4P-TMC10	--	--	10/03/16	12:54		4.97
Total Oxidised Nitrogen	mg/l	5.4P-TMC5	--	--	04/03/16	12:00		0.11
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Orange-
Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		92
Phenols	mg/l		--	--	25/02/16			< 0.1 ***

Approved..... *Joe Ferry* : Date 31/3/16 : Technical Manager

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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Balbane S 1
Sample Notes : ----
Sample Details : Sample Reference : 162500592
 Sampled by : Nigel Breslin On : 25/02/2016 - 12:05 Hrs.
 Sample Template : Balbane Quarterly SW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Lucia Kilcawley

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	25/02/16	16:00		1.18
BOD	mg/l	5.4P-TMC9	--	--	25/02/16	10:00		10
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		26.8
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	12:05		80
pH	pH units	5.4P-TMC1	--	--	25/02/16	16:11		6.4
Total Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		< 6
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16	16:00		10.29
COD	mg/l	5.4P-TMC3	--	--	26/02/16	13:00		< 20
Temperature	Degrees C	5.4P-TMC1	--	--	25/02/16	12:05		5.3
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Acceptable

Approved..... *Joe Feeney* : Date 31/3/16 : Technical Manager

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Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Balbane S 4
Sample Notes : -----
Sample Details : Sample Reference : 162500593
 Sampled by : Nigel Breslin On : 25/02/2016 - 12:15 Hrs.
 Sample Template : Balbane Quarterly SW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Lucia Kilcawley

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	25/02/16	16:00		1.72
BOD	mg/l	5.4P-TMC9	--	--	25/02/16	10:00		1
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		31.8
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	12:15		258
pH	pH units	5.4P-TMC1	--	--	25/02/16	16:14		7.2
Total Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		< 6
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16	16:00		10.34
COD	mg/l	5.4P-TMC3	--	--	26/02/16	13:00		< 20
Temperature	Degrees C	5.4P-TMC1	--	--	25/02/16	12:15		5.8
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Acceptable

Approved..... *[Signature]* : Date 31/3/16 : Technical Manager

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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Balbane S 5
Sample Notes : ---- ----
Sample Details : Sample Reference : 162500594
 Sampled by : Nigel Breslin On : 25/02/2016 - 12:23 Hrs.
 Sample Template : Balbane Quarterly SW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Lucia Kilcawley

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	04/03/16	15:00		3
BOD	mg/l	5.4P-TMC9	--	--	25/02/16	10:00		1
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		32.8
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	12:33		254
pH	pH units	5.4P-TMC1	--	--	25/02/16	16:15		7.5
Total Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		< 6
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16	16:00		10.33
COD	mg/l	5.4P-TMC3	--	--	26/02/16	13:00		< 20
Temperature	Degrees C	5.4P-TMC1	--	--	25/02/16	12:23		5.8
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Acceptable

Approved..... *Joe Ferry* : Date *31/3/16* : Technical Manager

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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Balbane S 6
Sample Notes : ---- ----
Sample Details : Sample Reference : 162500595
 Sampled by : Nigel Breslin On : 25/02/2016 - 12:40 Hrs.
 Sample Template : Balbane Quarterly SW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Lucia Kilcawley

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	25/02/16	16:00		1.38
BOD	mg/l	5.4P-TMC9	--	--	25/02/16	10:00		1
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		33.7
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	12:40		218.8
pH	pH units	5.4P-TMC1	--	--	25/02/16	16:16		7.5
Total Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		< 6
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16	16:00		10.39
COD	mg/l	5.4P-TMC3	--	--	26/02/16	13:00		< 20
Temperature	Degrees C	5.4P-TMC1	--	--	25/02/16	12:40		5.7
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Acceptable

Approved..... *Joe Ferry* : Date..... *31/3/16* : Technical Manager

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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring
--

Sample Station : Balbane Landfill, Balbane S 7
Sample Notes : ---- ----
Sample Details : Sample Reference : 162500596
 Sampled by : Nigel Breslin On : 25/02/2016 - 12:46 Hrs.
 Sample Template : Balbane Quarterly SW
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Lucia Kilcawley

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Ammonia (as N)	mg/l	5.4P-TMC5	--	--	25/02/16	15:10		0.241
BOD	mg/l	5.4P-TMC9	--	--	25/02/16	10:00		1
Chloride	mg/l	5.4P-TMC14	--	--	26/02/16	11:00		25.8
Conductivity @ 20°C	µS/cm	5.4P-TMC2	--	--	25/02/16	12:46		118.8
pH	pH units	5.4P-TMC1	--	--	25/02/16	16:17		7.6
Total Suspended Solids	mg/l	5.4P-TMC4	--	--	26/02/16	15:37		< 6
Dissolved Oxygen (Measurement) keep	mg/l	5.4P-TMC18	--	--	25/02/16	16:00		10.41
COD	mg/l	5.4P-TMC3	--	--	26/02/16	13:00		< 20
Temperature	Degrees C	5.4P-TMC1	--	--	25/02/16	12:40		5.3
Visual Inspection	Descriptive		--	--	25/02/16	15:00		Acceptable

Approved..... *Joe Ferry* : Date *31/3/16* : Technical Manager
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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring

Sample Station : Balbane Landfill, Bh1 (Gas)
Sample Notes : -----
Sample Details : Sample Reference : 162500590
 Sampled by : Nigel Breslin On : 25/02/2016 - 12:00 Hrs.
 Sample Template : Landfill Monitoring - Landfill Gas
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Lucia Kilcawley

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC
Atmospheric Pressure	mBar		--	--	25/02/16	11:26		996
Carbon Dioxide	%		--	--	25/02/16	11:26		7.6
Methane	%		--	--	25/02/16	11:26		22.8
Oxygen	% O2		--	--	25/02/16	11:26		1.4

Approved.....*Joe Feeney*..... : Date.....*31/3/16*..... : Technical Manager

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Donegal County Council

Central Laboratory, The Kube, Magheranan, Letterkenny

Analysis Report - Landfill Monitoring
--

Sample Station : Balbane Landfill, Bh2 (Gas)

Sample Notes : -----

Sample Details : Sample Reference : 162500591
 Sampled by : Nigel Breslin On : 25/02/2016 - 11:20 Hrs.
 Sample Template : Landfill Monitoring - Landfill Gas
 Sample Method: Grab
 Laboratory : Donegal Co Co Analyst : Lucia Kilcawley

Sample Parameters			Parameter Standards		Results			
Parameter	Unit	Test Method	Max. Limit	Min. Limit	Date	Time	Notes	Result A*SC*
Atmospheric Pressure	mBar		--	--	25/02/16	11:20		996
Carbon Dioxide	%		--	--	25/02/16	11:20		2
Methane	%		--	--	25/02/16	11:20		1.1
Oxygen	% O2		--	--	25/02/16	11:20		20

Approved..... *Joe Feeney* : Date 31/3/16 : Technical Manager

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Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787

Sample No.:	162501683	Sample Date/Time:	30/05/2016 @ 12:15
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Gw 1	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly GW	Analyst:	Donegal CoCo
Sample Notes:	Do+temperature read by KA in Lab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501683
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
		Report Date:	22/06/2016
Customer Reference:	Landfill Compliance Monitoring	Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT
					Accredited* Sub-Contract**
Iron µg/l	5.4P-TMC20	--	--	02/06/16	368
pH pH units	5.4P-TMC1	14	1	30/05/16	6.9
Ammonia (as N) mg/l	5.4P-TMC5	--	--	02/06/16	2.87
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	6.95
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	233
Depth m	5.4P-TMC27	--	--	30/05/16	0.7
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	5.83
Potassium mg/l		--	--	30/05/16	2 ***
Sodium mg/l		--	--	30/05/16	14.3 ***
Temperature Degrees C	5.4P-TMC1	100	--	30/05/16	19
Total Organic Carbon mg/l	5.4P-TMC10	--	--	16/06/16	2.8
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	02/06/16	0.29
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Phenols mg/l		--	--	30/05/16	< 0.15 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	02/06/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC6	--	--	02/06/16	0.037
Nitrate (as N) mg/l	5.4P-TMC6	--	--	02/06/16	0.253
Dissolved Iron µg/l		--	--	30/05/16	< 20

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Notes 4.....

Notes 5.....



Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787

Sample No.:	162501684	Sample Date/Time:	30/05/2016 @ 11:40
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Gw 2	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly GW	Analyst:	Donegal CoCo
Sample Notes:	DO+temperature read by KA in Lab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501684
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
Customer Reference:	Landfill Compliance Monitoring	Report Date:	22/06/2016
		Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT Accredited* Sub-Contract**
Iron µg/l	5.4P-TMC20	--	--	02/06/16	189
pH pH units	5.4P-TMC1	14	1	30/05/16	6.2
Ammonia (as N) mg/l	5.4P-TMC5	--	--	02/06/16	5.55
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	12.91
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	67.9
Depth m	5.4P-TMC27	--	--	30/05/16	3.1
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	6.24
Potassium mg/l		--	--	30/05/16	1.2 ***
Sodium mg/l		--	--	30/05/16	6.8 ***
Temperature Degrees C	5.4P-TMC1	100	--	30/05/16	18
Total Organic Carbon mg/l	5.4P-TMC10	--	--	16/06/16	1.24
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	02/06/16	0.037
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Phenols mg/l		--	--	30/05/16	< 0.15 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	02/06/16	0.048
Nitrite (as N) mg/l	5.4P-TMC6	--	--	02/06/16	0.018
Nitrate (as N) mg/l	5.4P-TMC6	--	--	02/06/16	< 0.1
Dissolved Iron µg/l		--	--	30/05/16	< 20

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Notes 4.....

Notes 5.....



Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787

Sample No.:	162501685	Sample Date/Time:	30/05/2016 @ 12:05
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Gw 4	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly GW	Analyst:	Donegal CoCo
Sample Notes:	Only 300 mls of sample. DO+Temperature read by KA in Lab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501685
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
		Report Date:	22/06/2016
Customer Reference:	Landfill Compliance Monitoring	Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT Accredited* Sub-Contract**
Iron µg/l	5.4P-TMC20	--	--	02/06/16	560
pH pH units	5.4P-TMC1	14	1	30/05/16	9.8
Ammonia (as N) mg/l	5.4P-TMC5	--	--	02/06/16	6.21
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	79.41
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	515
Depth m	5.4P-TMC27	--	--	30/05/16	3.6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	9.59
Potassium mg/l		--	--	30/05/16	37.2 ***
Sodium mg/l		--	--	30/05/16	64.4 ***
Temperature Degrees C	5.4P-TMC1	100	--	30/05/16	18
Total Organic Carbon mg/l	5.4P-TMC10	--	--	16/06/16	4.04
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	02/06/16	0.196
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Phenols mg/l		--	--	30/05/16	< 0.15 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	02/06/16	0.01
Nitrite (as N) mg/l	5.4P-TMC6	--	--	02/06/16	0.127
Nitrate (as N) mg/l	5.4P-TMC6	--	--	02/06/16	< 0.1
Dissolved Iron µg/l		--	--	30/05/16	< 20

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Notes 4.....

Notes 5.....



**Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**

Sample No.:	162501678	Sample Date/Time:	30/05/2016 @ 12:21
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 1	Laboratory:	Donegal Co Council
Template:	8albane Quarterly SW	Analyst:	Donegal CoCo
Sample Notes:	DO+temperature read by KA in Lab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501678
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
Customer Reference:	Landfill Compliance Monitoring	Report Date:	20/06/2016
		Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT Accredited* Sub-Contract**
Ammonia (as N) mg/l	5.4P-TMC5	--	--	03/06/16	< 0.04
BOD mg/l	5.4P-TMC9	--	--	02/06/16	27.8
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	12.9
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	48.4
pH pH units	5.4P-TMC1	--	--	30/05/16	6.6
Total Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	9.55
COD mg/l	5.4P-TMC3	--	--	01/06/16	16
Temperature Degrees C	5.4P-TMC1	--	--	30/05/16	18
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Orthophosphate mg/l		--	--	03/06/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	03/06/16	0.0186
Nitrate (as N) mg/l	5.4P-TMC5	--	--	03/06/16	< 0.1

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Notes 4.....

Notes 5.....



Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787

Sample No.:	162501679	Sample Date/Time:	30/05/2016 @ 12:30
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 4	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo
Sample Notes:	DO+temperature read by KA in Lab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501679
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
		Report Date:	20/06/2016
Customer Reference:	Landfill Compliance Monitoring	Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT Accredited* Sub-Contract**
Ammonia (as N) mg/l	5.4P-TMC5	--	--	02/06/16	4.4
BOD mg/l	5.4P-TMC9	--	--	02/06/16	< 1
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	31.76
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	330
pH pH units	5.4P-TMC1	--	--	30/05/16	7.3
Total Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	9.24
COD mg/l	5.4P-TMC3	--	--	01/06/16	13
Temperature Degrees C	5.4P-TMC1	--	--	30/05/16	19
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Orthophosphate mg/l		--	--	02/06/16	0.055
Nitrite (as N) mg/l	5.4P-TMC5	--	--	02/06/16	0.025
Nitrate (as N) mg/l	5.4P-TMC5	--	--	02/06/16	1.515

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Notes 4.....

Notes 5.....



**Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**

Sample No.:	162501680	Sample Date/Time:	30/05/2016 @ 12:37
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 5	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo
Sample Notes:	DO+temperature read by KA in lab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501680
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
Customer Reference:	Landfill Compliance Monitoring	Report Date:	20/06/2016
		Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT <small>Accredited* Sub-Contract**</small>
Ammonia (as N) mg/l	5.4P-TMC5	--	--	02/06/16	0.256
BOD mg/l	5.4P-TMC9	--	--	02/06/16	27.52
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	32.76
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	332
pH pH units	5.4P-TMC1	--	--	30/05/16	7.7
Total Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	9.41
COD mg/l	5.4P-TMC3	--	--	01/06/16	16
Temperature Degrees C	5.4P-TMC1	--	--	30/05/16	18
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Orthophosphate mg/l		--	--	02/06/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	02/06/16	0.019
Nitrate (as N) mg/l	5.4P-TMC5	--	--	02/06/16	2.341

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Notes 4.....
Notes 5.....



Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787

Sample No.:	162501681	Sample Date/Time:	30/05/2016 @ 12:50
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 6	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo
Sample Notes:	DO+temperature read by KA in Llab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501681
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
Customer Reference:	Landfill Compliance Monitoring	Report Date:	20/06/2016
		Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT Accredited* Sub-Contract**
Ammonia (as N) mg/l	5.4P-TMC5	--	--	02/06/16	2.99
BOD mg/l	5.4P-TMC9	--	--	02/06/16	< 1
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	36.72
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	264
pH pH units	5.4P-TMC1	--	--	30/05/16	7.7
Total Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	9.61
COD mg/l	5.4P-TMC3	--	--	01/06/16	17
Temperature Degrees C	5.4P-TMC1	--	--	30/05/16	18
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Orthophosphate mg/l		--	--	02/06/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	02/06/16	0.024
Nitrate (as N) mg/l	5.4P-TMC5	--	--	02/06/16	1.736

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Notes 4.....

Notes 5.....



Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787

Sample No.:	162501682	Sample Date/Time:	30/05/2016 @ 12:59
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 7	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo
Sample Notes:	DO +temperature read by KA in lab		
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501682
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	OK
		Date Started:	30/05/2016
		Report Date:	20/06/2016
Customer Reference:	Landfill Compliance Monitoring	Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT Accredited* Sub-Contract**
Ammonia (as N) mg/l	5.4P-TMC5	--	--	03/06/16	4.65
BOD mg/l	5.4P-TMC9	--	--	02/06/16	27.68
Chloride mg/l	5.4P-TMC14	--	--	02/06/16	12.9
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	30/05/16	115.7
pH pH units	5.4P-TMC1	--	--	30/05/16	7.6
Total Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	30/05/16	9.74
COD mg/l	5.4P-TMC3	--	--	01/06/16	12
Temperature Degrees C	5.4P-TMC1	--	--	30/05/16	18
Visual Inspection Descriptive	5.4P-TMC26	--	--	30/05/16	0
Suspended Solids mg/l	5.4P-TMC4	--	--	02/06/16	< 6
Orthophosphate mg/l		--	--	03/06/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	03/06/16	0.0263
Nitrate (as N) mg/l	5.4P-TMC5	--	--	03/06/16	0.468

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Notes 4.....

Notes 5.....



**Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**

Sample No.:	162501686	Sample Date/Time:	30/05/2016 @ 11:34
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Bh1 (Gas)	Laboratory:	Donegal Co Council
Template:	Landfill Monitoring - Landfill Gas	Analyst:	Donegal CoCo

Sample Notes:			
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501686
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Field Test
		Condition On Delivery:	n/a
		Date Started:	30/05/2016
Customer Reference:	Landfill Compliance Monitoring	Report Date:	20/06/2016
		Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT <small>Accredited* Sub-Contract**</small>
Atmospheric Pressure mBar		--	--	30/05/16	1003
Carbon Dioxide %		--	--	30/05/16	8.8
Methane %		--	--	30/05/16	30.4
Oxygen % O2		--	--	30/05/16	0.4

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Notes 4.....
Notes 5.....



**Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**

Sample No.:	162501687	Sample Date/Time:	30/05/2016 @ 11:32
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Bh2 (Gas)	Laboratory:	Donegal Co Council
Template:	Landfill Monitoring - Landfill Gas	Analyst:	Donegal CoCo

Sample Notes:			
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. - Laboratory:	162501687
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. - Customer:	
		Date Received:	30/05/2016
		Mode Of Delivery:	Field Test
		Condition On Delivery:	n/a
		Date Started:	30/05/2016
		Report Date:	20/06/2016
Customer Reference:	Landfill Compliance Monitoring	Report Reference:	Original Test Report

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	RESULT Accredited* Sub-Contract**
Atmospheric Pressure mBar		--	--	30/05/16	1003
Carbon Dioxide %		--	--	30/05/16	1
Methane %		--	--	30/05/16	0.6
Oxygen % O2		--	--	30/05/16	20

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Notes 4.....
Notes 5.....



Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787

Sample No.:	162502887	Sample Date/Time:	31/08/2016 @ 10:55
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Gw 1	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly GW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502887
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	Ok
		Date Started:	31/08/2016
		Report Date:	26/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Iron µg/l	5.4P-TMC20	--	--	12/09/16	< 20 ***
pH pH units	5.4P-TMC1	14	1	01/09/16	6.7
Ammonia (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.715
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	15.88
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	560
Depth m	5.4P-TMC27	--	--	31/08/16	0.86
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	08/09/16	7.34
Potassium mg/l		--	--	12/09/16	2.4 ***
Sodium mg/l		--	--	12/09/16	32.9 ***
Temperature Degrees C	5.4P-TMC1	100	--	31/08/16	15.6
Total Organic Carbon mg/l	5.4P-TMC10	--	--	08/09/16	7.59
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	31/08/16	< 0.11
Visual Inspection Descriptive	5.4P-TMC26	--	--	31/08/16	0
Phenols mg/l		--	--	12/09/16	0.13 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	31/08/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC6	--	--	31/08/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC6	--	--	31/08/16	< 0.1

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Letterkenny
 074-9122787

Sample No.:	162502888	Sample Date/Time:	31/08/2016 @ 12:09
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Gw 2	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly GW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502888
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	Ok
		Date Started:	31/08/2016
		Report Date:	26/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Iron µg/l	5.4P-TMC20	--	--	12/09/16	28 ***
pH pH units	5.4P-TMC1	14	1	01/09/16	5.9
Ammonia (as N) mg/l	5.4P-TMC5	--	--	31/08/16	1.22
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	7.94
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	56
Depth m	5.4P-TMC27	--	--	31/08/16	4.81
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	08/09/16	7.86
Potassium mg/l		--	--	12/09/16	1.8 ***
Sodium mg/l		--	--	12/09/16	4.6 ***
Temperature Degrees C	5.4P-TMC1	100	--	31/08/16	15.8
Total Organic Carbon mg/l	5.4P-TMC10	--	--	08/09/16	0.84
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	31/08/16	1.87
Visual Inspection Descriptive	5.4P-TMC26	--	--	31/08/16	0
Phenols mg/l		--	--	12/09/16	< 0.1 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	31/08/16	0.488
Nitrite (as N) mg/l	5.4P-TMC6	--	--	31/08/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC6	--	--	31/08/16	1.87353
Dissolved Iron µg/l		--	--		

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Comhairle Contae Dhún na nGall
Donegal County Council
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 074-9122787

Sample No.:	162502889	Sample Date/Time:	31/08/2016 @ 11:49
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Gw 4	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly GW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502889
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	ok
		Date Started:	31/08/2016
		Report Date:	26/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Iron µg/l	5.4P-TMC20	--	--	12/09/16	< 20 ***
pH pH units	5.4P-TMC1	14	1	01/09/16	9.8
Ammonia (as N) mg/l	5.4P-TMC5	--	--	05/09/16	5.31
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	71.47
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	502
Depth m	5.4P-TMC27	--	--	31/08/16	4.32
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	08/09/16	8.1
Potassium mg/l		--	--	12/09/16	41 ***
Sodium mg/l		--	--	12/09/16	87.9 ***
Temperature Degrees C	5.4P-TMC1	100	--	31/08/16	15.8
Total Organic Carbon mg/l	5.4P-TMC10	--	--	08/09/16	3.94
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	31/08/16	0.277
Visual Inspection Descriptive	5.4P-TMC26	--	--	31/08/16	0
Phenols mg/l		--	--	12/09/16	< 0.1 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	05/09/16	0.011
Nitrite (as N) mg/l	5.4P-TMC6	--	--	05/09/16	0.176
Nitrate (as N) mg/l	5.4P-TMC6	--	--	05/09/16	0.101
Dissolved Iron µg/l		--	--		

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Comhairle Contae Dhún na nGall
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 074-9122787

Sample No.:	162502882	Sample Date/Time:	31/08/2016 @ 11:50
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 1	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502882
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	Ok
		Date Started:	31/08/2016
		Report Date:	15/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	31/08/16	< 0.04
BOD mg/l	5.4P-TMC9	--	--	07/09/16	4
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	12.9
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	62
pH pH units	5.4P-TMC1	--	--	01/09/16	6.8
Total Suspended Solids mg/l	5.4P-TMC4	--	--	06/09/16	36
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	31/08/16	8.6
COD mg/l	5.4P-TMC3	--	--	02/09/16	50
Temperature Degrees C	5.4P-TMC1	--	--	31/08/16	14.9
Visual Inspection Descriptive	5.4P-TMC26	--	--		
Suspended Solids mg/l	5.4P-TMC4	--	--	06/09/16	30
Orthophosphate mg/l		--	--	31/08/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	31/08/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC5	--	--	31/08/16	< 0.1

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Comhairle Contae Dhún na nGall
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 074-9122787

Sample No.:	162502883	Sample Date/Time:	31/08/2016 @ 12:35
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 4	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502883
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	Ok
		Date Started:	31/08/2016
		Report Date:	15/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.127
BOD mg/l	5.4P-TMC9	--	--	07/09/16	9
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	21.84
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	97
pH pH units	5.4P-TMC1	--	--	01/09/16	7.3
Total Suspended Solids mg/l	5.4P-TMC4	--	--	06/09/16	7
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	31/08/16	9
COD mg/l	5.4P-TMC3	--	--	02/09/16	36
Temperature Degrees C	5.4P-TMC1	--	--	31/08/16	15
Visual Inspection Descriptive	5.4P-TMC26	--	--		
Suspended Solids mg/l	5.4P-TMC4	--	--	06/09/16	7
Orthophosphate mg/l		--	--	31/08/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.0136
Nitrate (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.5144

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Comhairle Contae Dhún na nGall
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 074-9122787

Sample No.:	162502884	Sample Date/Time:	31/08/2016 @ 12:42
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 5	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502884
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Cooler Box
		Condition On Delivery:	Ok
		Date Started:	31/08/2016
		Report Date:	15/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.0699
BOD mg/l	5.4P-TMC9	--	--	07/09/16	1
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	12.9
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	91
pH pH units	5.4P-TMC1	--	--	01/09/16	7.3
Total Suspended Solids mg/l	5.4P-TMC4	--	--	06/09/16	< 6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	31/08/16	9.1
COD mg/l	5.4P-TMC3	--	--	02/09/16	37
Temperature Degrees C	5.4P-TMC1	--	--	31/08/16	15.1
Visual Inspection Descriptive	5.4P-TMC26	--	--	06/09/16	0
Suspended Solids mg/l	5.4P-TMC4	--	--		
Orthophosphate mg/l		--	--	31/08/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.0129
Nitrate (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.3451

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Comhairle Contae Dhún na nGall
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Sample No.:	162502885	Sample Date/Time:	31/08/2016 @ 13:05
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 6	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502885
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	cooler box
		Condition On Delivery:	ok
		Date Started:	31/08/2016
		Report Date:	15/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.0731
BOD mg/l	5.4P-TMC9	--	--	07/09/16	1
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	11.91
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	87
pH pH units	5.4P-TMC1	--	--	01/09/16	7.3
Total Suspended Solids mg/l	5.4P-TMC4	--	--		
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	31/08/16	9.3
COD mg/l	5.4P-TMC3	--	--	02/09/16	38
Temperature Degrees C	5.4P-TMC1	--	--	31/08/16	15
Visual Inspection Descriptive	5.4P-TMC26	--	--	31/08/16	0
Suspended Solids mg/l	5.4P-TMC4	--	--	06/09/16	< 6
Orthophosphate mg/l		--	--	31/08/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.0114
Nitrate (as N) mg/l	5.4P-TMC5	--	--	31/08/16	0.4046

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Comhairle Contae Dhún na nGall
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 074-9122787

Sample No.:	162502886	Sample Date/Time:	31/08/2016 @ 13:11
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 7	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:		Sample No. Laboratory:	162502886
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Customer:	
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Date Received:	31/08/2016
		Mode Of Delivery:	Cooler box
		Condition On Delivery:	ok
		Date Started:	31/08/2016
Customer Ref:	Landfill Compliance Monitoring	Report Date:	15/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	31/08/16	< 0.04
BOD mg/l	5.4P-TMC9	--	--	07/09/16	6
Chloride mg/l	5.4P-TMC14	--	--	14/09/16	8.93
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	31/08/16	54
pH pH units	5.4P-TMC1	--	--	01/09/16	7.2
Total Suspended Solids mg/l	5.4P-TMC4	--	--	06/09/16	6
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	31/08/16	9.2
COD mg/l	5.4P-TMC3	--	--	02/09/16	39
Temperature Degrees C	5.4P-TMC1	--	--	31/08/16	15.2
Visual Inspection Descriptive	5.4P-TMC26	--	--		
Suspended Solids mg/l	5.4P-TMC4	--	--		
Orthophosphate mg/l		--	--	31/08/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	31/08/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC5	--	--	31/08/16	< 0.1

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 074-9122787

Sample No.:	162502890	Sample Date/Time:	31/08/2016 @ 11:30
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Bh 2 (Leachate)	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly Leachate	Analyst:	Donegal CoCo
Sample Notes:	No Access.		

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502890
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Not applicable
		Condition On Delivery:	Not applicable
		Date Started:	31/08/2016
		Report Date:	15/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC6	--	--		
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--		
pH pH units	5.4P-TMC1	--	--		
Total Oxidised Nitrogen µg/l	5.4P-TMC6	--	--		
BOD mg/l	5.4P-TMC9	--	--		
Chloride mg/l	5.4P-TMC14	--	--		
COD mg/l	5.4P-TMC3	--	--		
Depth m	5.4P-TMC27	--	--		
Temperature Degrees C	5.4P-TMC1	--	--		
Visual Inspection Descriptive	5.4P-TMC26	--	--		

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26/09/2016

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Letterkenny
 074-9122787

Sample No.:	162502879	Sample Date/Time:	31/08/2016 @ 11:22
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Bh1 (Gas)	Laboratory:	Donegal Co Council
Template:	Landfill Monitoring - Landfill Gas	Analyst:	Donegal CoCo

Sample Notes:

Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Laboratory:	162502879
Contact Details:	Julie McMahan Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahan@donegalcoco.ie	Sample No. Customer:	
Customer Ref:	Landfill Compliance Monitoring	Date Received:	31/08/2016
		Mode Of Delivery:	Field test
		Condition On Delivery:	n/a
		Date Started:	31/08/2016
		Report Date:	09/09/2016
		Report Reference:	Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Atmospheric Pressure mBar		--	--	31/08/16	992
Carbon Dioxide %		--	--	31/08/16	10.6
Methane %		--	--	31/08/16	31.8
Oxygen % O2		--	--	31/08/16	0.4

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Sample No.:	162502880	Sample Date/Time:	31/08/2016 @ 11:29
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Bh2 (Gas)	Laboratory:	Donegal Co Council
Template:	Landfill Monitoring - Landfill Gas	Analyst:	Donegal CoCo

Sample Notes:

Customer Name: Landfill Monitoring Donegal Co. Council
Contact Details: Julie McMahon
 Central Lab
 The Kube, Magheranan
 Letterkenny
 0749122787: 0872861096
 julie.mcmahon@donegalcoco.ie
Customer Ref: Landfill Compliance Monitoring

Sample No. Laboratory: 162502880
Sample No. Customer:
Date Received: 31/08/2016
Mode Of Delivery: Field test
Condition On Delivery: n/a
Date Started: 31/08/2016
Report Date: 09/09/2016
Report Reference: Report No. 16DL57

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Atmospheric Pressure mBar		--	--	31/08/16	992
Carbon Dioxide %		--	--	31/08/16	0.8
Methane %		--	--	31/08/16	0.1
Oxygen % O2		--	--	31/08/16	20.7

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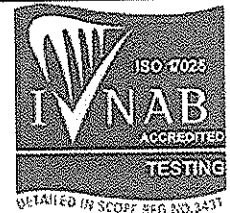
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 074-9122787



Sample No.:	162503611	Sample Date/Time:	27/10/2016 @ 10:50
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane Gw 1	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly GW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name: Landfill Monitoring Donegal Co. Council
Contact Details: Julie McMahon
 Central Lab
 The Kube, Magheranan
 Letterkenny
 0749122787: 0872861096
 julie.mcmahon@donegalcoco.ie
Customer Ref: Landfill Compliance Monitoring

Sample No. Laboratory: 162503611
Sample No. Customer:
Date Received: 27/10/2016
Mode Of Delivery: coolbox
Condition On Delivery: ok
Date Started: 27/10/2016
Report Date: 10/01/2017
Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Iron µg/l	5.4P-TMC20	--	--	10/11/16	< 20 ***
pH pH units	5.4P-TMC1	14	1	28/10/16	6.7 *
Ammonia (as N) mg/l	5.4P-TMC5	--	--	07/11/16	0.332
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	0.99
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	680 *
Depth m	5.4P-TMC27	--	--	27/10/16	0.52
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	6.94
Potassium mg/l		--	--	10/11/16	2.5 ***
Sodium mg/l		--	--	10/11/16	33.6 ***
Temperature Degrees C	5.4P-TMC1	100	--	27/10/16	12.1
Total Organic Carbon mg/l	5.4P-TMC10	--	--	28/10/16	9.94
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	07/11/16	0.12
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing reported
Phenols mg/l		--	--	10/11/16	< 0.1 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	07/11/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC6	--	--	07/11/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC6	--	--	07/11/16	0.12

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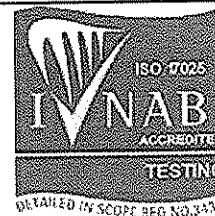
Geraldine Finel
 Dr. Joe Ferry, Laboratory Manager

10/01/2017

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Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787



Sample No.: 162503612
Category: Landfill Monitoring
Entity: Balbane Landfill
Station: Balbane Gw 2
Template: Balbane Quarterly GW
Sample Date/Time: 27/10/2016 @ 11:28
Sample Method: Grab
Sampled By: Nigel Breslin
Laboratory: Donegal Co Council
Analyst: Donegal CoCo

Sample Notes:

Customer Name: Landfill Monitoring Donegal Co. Council
Contact Details: Julie McMahon
Central Lab
The Kube, Magheranan
Letterkenny
0749122787: 0872861096
julie.mcmahon@donegalcoco.ie
Customer Ref: Landfill Compliance Monitoring

Sample No. Laboratory: 162503612
Sample No. Customer:
Date Received: 27/10/2016
Mode Of Delivery: coolbox
Condition On Delivery: ok
Date Started: 27/10/2016
Report Date: 10/01/2017
Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Iron µg/l	5.4P-TMC20	--	--	10/11/16	100 ***
pH pH units	5.4P-TMC1	14	1	28/10/16	6.3 *
Ammonia (as N) mg/l	5.4P-TMC5	--	--	07/11/16	2.34
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	4.96
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	76.5 *
Depth m	5.4P-TMC27	--	--	27/10/16	3.8
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	8.09
Potassium mg/l		--	--	10/11/16	4.3 ***
Sodium mg/l		--	--	10/11/16	5.6 ***
Temperature Degrees C	5.4P-TMC1	100	--	27/10/16	12.3
Total Organic Carbon mg/l	5.4P-TMC10	--	--	28/10/16	3.86
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	07/11/16	1.04
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing reported
Phenols mg/l		--	--	10/11/16	< 0.1 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	07/11/16	0.313
Nitrite (as N) mg/l	5.4P-TMC6	--	--	07/11/16	0.031
Nitrate (as N) mg/l	5.4P-TMC6	--	--	07/11/16	1.009

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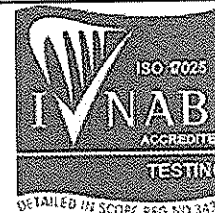
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Central Laboratory, The Kube
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Letterkenny
074-9122787



Sample No.: 162503613
Category: Landfill Monitoring
Entity: Balbane Landfill
Station: Balbane Gw 4
Template: Balbane Quarterly GW
Sample Notes: insufficient sample volume
Customer Name: Landfill Monitoring Donegal Co. Council
Contact Details: Julie McMahon
 Central Lab
 The Kube, Magheranan
 Letterkenny
 0749122787: 0872861096
 julie.mcmahon@donegalcoco.ie
Customer Ref: Landfill Compliance Monitoring

Sample Date/Time: 27/10/2016 @ 11:36
Sample Method: Grab
Sampled By: Nigel Breslin
Laboratory: Donegal Co Council
Analyst: Donegal CoCo

Sample No. Laboratory: 162503613
Sample No. Customer:
Date Received: 27/10/2016
Mode Of Delivery: coolbox
Condition On Delivery: ok
Date Started: 27/10/2016
Report Date: 10/01/2017
Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Iron µg/l	5.4P-TMC20	--	--	10/11/16	< 20 ***
pH pH units	5.4P-TMC1	14	1	28/10/16	11.1 *
Ammonia (as N) mg/l	5.4P-TMC5	--	--	02/11/16	23
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	54.59
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	777 *
Depth m	5.4P-TMC27	--	--	27/10/16	4.1
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	--
Potassium mg/l		--	--	10/11/16	42.1 ***
Sodium mg/l		--	--	10/11/16	87.4 ***
Temperature Degrees C	5.4P-TMC1	100	--	27/10/16	12.1
Total Organic Carbon mg/l	5.4P-TMC10	--	--	28/10/16	5.39
Total Oxidised Nitrogen mg/l	5.4P-TMC5	--	--	07/11/16	0.42
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing reported
Phenols mg/l		--	--	10/11/16	< 0.1 ***
Orthophosphate mg/l	5.4P-TMC6	--	--	02/11/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC6	--	--	02/11/16	0.21
Nitrate (as N) mg/l	5.4P-TMC6	--	--	02/11/16	0.21

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Geraldine Briel

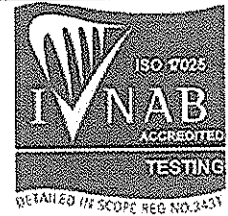
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**Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**



Sample No.:	162503606	Sample Date/Time:	27/10/2016 @ 10:42
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 1	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name: Landfill Monitoring Donegal Co. Council
Contact Details: Julie McMahon
 Central Lab
 The Kube, Magheranan
 Letterkenny
 0749122787: 0872861096
 julie.mcmahon@donegalcoco.ie
Customer Ref: Landfill Compliance Monitoring

Sample No. Laboratory: 162503606
Sample No. Customer:
Date Received: 27/10/2016
Mode Of Delivery: coolbox
Condition On Delivery: ok
Date Started: 27/10/2016
Report Date: 10/01/2017
Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	07/11/16	< 0.04
BOD mg/l	5.4P-TMC9	--	--	28/10/16	1
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	5.96
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	60.9 *
pH pH units	5.4P-TMC1	--	--	28/10/16	7.4 *
Total Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	188 *
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	9.09
COD mg/l	5.4P-TMC3	--	--	28/10/16	26
Temperature Degrees C	5.4P-TMC1	--	--	27/10/16	11.9
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing Observed
Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	188
Orthophosphate mg/l	5.4P-TMC5	--	--	07/11/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	07/11/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC5	--	--	07/11/16	< 0.1

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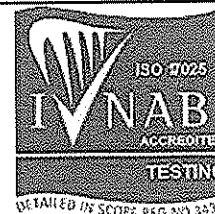
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Magheranan
Letterkenny
 074-9122787



Sample No.:	162503607	Sample Date/Time:	27/10/2016 @ 11:50
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 4	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name: Landfill Monitoring Donegal Co. Council
Contact Details: Julie McMahon
 Central Lab
 The Kube, Magheranan
 Letterkenny
 0749122787: 0872861096
 julie.mcmahon@donegalcoco.ie
Customer Ref: Landfill Compliance Monitoring

Sample No. Laboratory: 162503607
Sample No. Customer:
Date Received: 27/10/2016
Mode Of Delivery: coolbox
Condition On Delivery: ok
Date Started: 27/10/2016
Report Date: 10/01/2017
Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	01/11/16	5.27
BOD mg/l	5.4P-TMC9	--	--	28/10/16	9
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	20.84
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	101 *
pH pH units	5.4P-TMC1	--	--	28/10/16	7.2 *
Total Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6 *
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	9.11
COD mg/l	5.4P-TMC3	--	--	28/10/16	18
Temperature Degrees C	5.4P-TMC1	--	--	27/10/16	12
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing Observed
Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6
Orthophosphate mg/l	5.4P-TMC5	--	--	01/11/16	0.029
Nitrite (as N) mg/l	5.4P-TMC5	--	--	01/11/16	0.013
Nitrate (as N) mg/l	5.4P-TMC5	--	--	01/11/16	0.198

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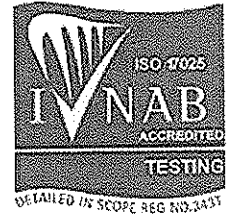
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Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787



Sample No.:	162503608	Sample Date/Time:	27/10/2016 @ 12:03
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 5	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:

Customer Name: Landfill Monitoring Donegal Co. Council
Contact Details: Julie McMahon
 Central Lab
 The Kube, Magheranan
 Letterkenny
 0749122787; 0872861096
 julie.mcmahon@donegalcoco.ie
Customer Ref: Landfill Compliance Monitoring

Sample No. Laboratory: 162503608
Sample No. Customer:
Date Received: 27/10/2016
Mode Of Delivery: coolbox
Condition On Delivery: ok
Date Started: 27/10/2016
Report Date: 10/01/2017
Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	01/11/16	1.33
BOD mg/l	5.4P-TMC9	--	--	28/10/16	3
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	9.93
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	107.8 *
pH pH units	5.4P-TMC1	--	--	28/10/16	7.3 *
Total Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6 *
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	9.13
COD mg/l	5.4P-TMC3	--	--	28/10/16	17
Temperature Degrees C	5.4P-TMC1	--	--	27/10/16	11.8
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing Observed
Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6
Orthophosphate mg/l	5.4P-TMC5	--	--	01/11/16	0.014
Nitrite (as N) mg/l	5.4P-TMC5	--	--	01/11/16	0.014
Nitrate (as N) mg/l	5.4P-TMC5	--	--	01/11/16	0.306

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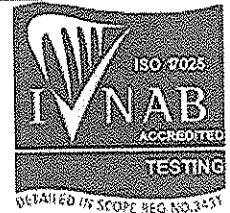
10/01/2017

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Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
 074-9122787



Sample No.:	162503609	Sample Date/Time:	27/10/2016 @ 12:17
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 6	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:		Sample No. Laboratory:	162503609
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Customer:	
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Date Received:	27/10/2016
		Mode Of Delivery:	coolbox
		Condition On Delivery:	ok
		Date Started:	27/10/2016
		Report Date:	10/01/2017
Customer Ref:	Landfill Compliance Monitoring	Report Reference:	17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	07/11/16	0.812
BOD mg/l	5.4P-TMC9	--	--	28/10/16	< 1
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	19.84
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	96.1 *
pH pH units	5.4P-TMC1	--	--	28/10/16	7.2 *
Total Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6 *
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	9.22
COD mg/l	5.4P-TMC3	--	--	28/10/16	22
Temperature Degrees C	5.4P-TMC1	--	--	27/10/16	11.9
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing Observed
Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6
Orthophosphate mg/l	5.4P-TMC5	--	--	07/11/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	07/11/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC5	--	--	07/11/16	0.324

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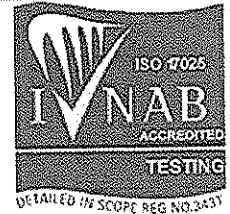
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 PP Dr. Joe Ferry, Laboratory Manager

10/01/2017

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Sample No.:	162503610	Sample Date/Time:	27/10/2016 @ 12:26
Category:	Landfill Monitoring	Sample Method:	Grab
Entity:	Balbane Landfill	Sampled By:	Nigel Breslin
Station:	Balbane S 7	Laboratory:	Donegal Co Council
Template:	Balbane Quarterly SW	Analyst:	Donegal CoCo

Sample Notes:		Sample No. Laboratory:	162503610
Customer Name:	Landfill Monitoring Donegal Co. Council	Sample No. Customer:	
Contact Details:	Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Date Received:	27/10/2016
		Mode Of Delivery:	coolbox
		Condition On Delivery:	ok
		Date Started:	27/10/2016
		Report Date:	10/01/2017
Customer Ref:	Landfill Compliance Monitoring	Report Reference:	17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC5	--	--	07/11/16	0.602
BOD mg/l	5.4P-TMC9	--	--	28/10/16	< 1
Chloride mg/l	5.4P-TMC14	--	--	02/11/16	4.96
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	69.5 *
pH pH units	5.4P-TMC1	--	--	28/10/16	7.3 *
Total Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6 *
Dissolved Oxygen (Measurement) keep mg/l	5.4P-TMC18	--	--	28/10/16	9.19
COD mg/l	5.4P-TMC3	--	--	28/10/16	24
Temperature Degrees C	5.4P-TMC1	--	--	27/10/16	11.6
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	Nothing Observed
Suspended Solids mg/l	5.4P-TMC4	--	--	08/11/16	< 6
Orthophosphate mg/l	5.4P-TMC5	--	--	07/11/16	< 0.01
Nitrite (as N) mg/l	5.4P-TMC5	--	--	07/11/16	< 0.01
Nitrate (as N) mg/l	5.4P-TMC5	--	--	07/11/16	< 0.1

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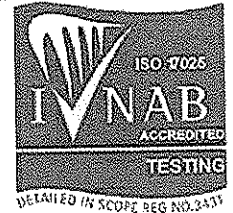
10/01/2017

PR Dr. Joe Ferry, Laboratory Manager

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Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**



Sample No.: 162503617	Sample Date/Time: 27/10/2016 @ 11:12
Category: Landfill Monitoring	Sample Method: Grab
Entity: Balbane Landfill	Sampled By: Nigel Breslin
Station: Balbane Bh 2 (Leachate)	Laboratory: Donegal Co Co
Template: Balbane Quarterly Leachate	Analyst: Donegal CoCo
Sample Notes: No Access to obtain sample	
Customer Name: Landfill Monitoring Donegal Co. Council	Sample No. Laboratory: 162503617
Contact Details: Julie McMahon	Sample No. Customer:
Central Lab	Date Received: 27/10/2016
The Kube, Magheranan	Mode Of Delivery: n/a
Letterkenny	Condition On Delivery: n/a
0749122787: 0872861096	Date Started: 27/10/2016
julie.mcmahon@donegalcoco.ie	Report Date: 10/01/2017
Customer Ref: Landfill Compliance Monitoring	Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Ammonia (as N) mg/l	5.4P-TMC8	--	--	27/10/16	--
Conductivity @ 20°C µS/cm	5.4P-TMC2	--	--	27/10/16	--
pH pH units	5.4P-TMC1	--	--	27/10/16	--
Total Oxidised Nitrogen µg/l	5.4P-TMC6	--	--	27/10/16	--
BOD mg/l	5.4P-TMC9	--	--	27/10/16	--
Chloride mg/l	5.4P-TMC14	--	--	27/10/16	--
COD mg/l	5.4P-TMC3	--	--	27/10/16	--
Depth m	5.4P-TMC27	--	--	27/10/16	--
Temperature Degrees C	5.4P-TMC1	--	--	27/10/16	--
Visual Inspection Descriptive	5.4P-TMC26	--	--	27/10/16	No access

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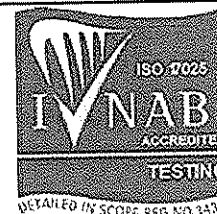
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Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**



Sample No.: 162503614	Sample Date/Time: 27/10/2016 @ 11:04
Category: Landfill Monitoring	Sample Method: Grab
Entity: Balbane Landfill	Sampled By: Nigel Breslin
Station: Bh1 (Gas)	Laboratory: Donegal Co Co
Template: Landfill Monitoring - Landfill Gas	Analyst: Donegal CoCo
Sample Notes:	
Customer Name: Landfill Monitoring Donegal Co. Council	Sample No. Laboratory: 162503614
Contact Details: Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer: Date Received: 27/10/2016 Mode Of Delivery: field test Condition On Delivery:
Customer Ref: Landfill Compliance Monitoring	Date Started: Report Date: 07/11/2016 Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Atmospheric Pressure mBar		--	--	27/10/16	1000
Carbon Dioxide %		--	--	27/10/16	10.4
Methane %		--	--	27/10/16	37.3
Oxygen % O2		--	--	27/10/16	0.5

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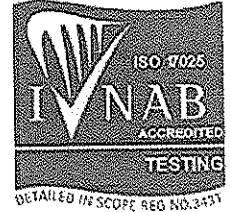
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**Comhairle Contae Dhún na nGall
Donegal County Council
Central Laboratory, The Kube
Magheranan
Letterkenny
074-9122787**



Sample No.: 162503615	Sample Date/Time: 27/10/2016 @ 11:12
Category: Landfill Monitoring	Sample Method: Grab
Entity: Balbane Landfill	Sampled By: Nigel Breslin
Station: Bh2 (Gas)	Laboratory: Donegal Co Co
Template: Landfill Monitoring - Landfill Gas	Analyst: Donegal CoCo
Sample Notes:	
Customer Name: Landfill Monitoring Donegal Co. Council	Sample No. Laboratory: 162503615
Contact Details: Julie McMahon Central Lab The Kube, Magheranan Letterkenny 0749122787: 0872861096 julie.mcmahon@donegalcoco.ie	Sample No. Customer: Date Received: 27/10/2016 Mode Of Delivery: field test Condition On Delivery:
Customer Ref: Landfill Compliance Monitoring	Date Started: Report Date: 07/11/2016 Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Atmospheric Pressure mBar		--	--	27/10/16	1000
Carbon Dioxide %		--	--	27/10/16	0.5
Methane %		--	--	27/10/16	0.2
Oxygen % O2		--	--	27/10/16	20.9

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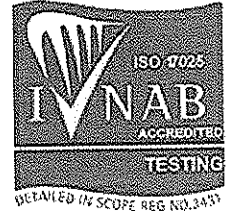
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Letterkenny
 074-9122787



Sample No.: 162503616	Sample Date/Time: 27/10/2016 @ 11:18
Category: Landfill Monitoring	Sample Method: Grab
Entity: Balbane Landfill	Sampled By: Nigel Breslin
Station: Bh3 (Gas)	Laboratory: Donegal Co Co
Template: Landfill Monitoring - Landfill Gas	Analyst: Donegal CoCo
Sample Notes: Flooded	
Customer Name: Landfill Monitoring Donegal Co. Council	Sample No. Laboratory: 162503616
Contact Details: Julie McMahon	Sample No. Customer:
Central Lab	Date Received: 27/10/2016
The Kube, Magheranan	Mode Of Delivery: field test
Letterkenny	Condition On Delivery:
0749122787: 0872861096	Date Started:
julie.mcmahon@donegalcoco.ie	Report Date: 23/11/2016
Customer Ref: Landfill Compliance Monitoring	Report Reference: 17DL06

Parameter/Unit	Test Method	Maximum Limit	Minimum Limit	Test Date	Test RESULT
Atmospheric Pressure mBar		--	--	27/10/16	--
Carbon Dioxide %		--	--	27/10/16	--
Methane %		--	--	27/10/16	--
Oxygen % O2		--	--	27/10/16	--

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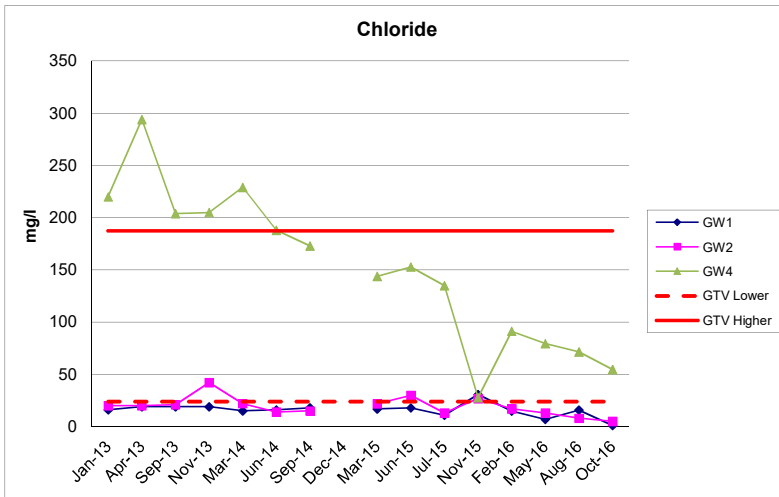
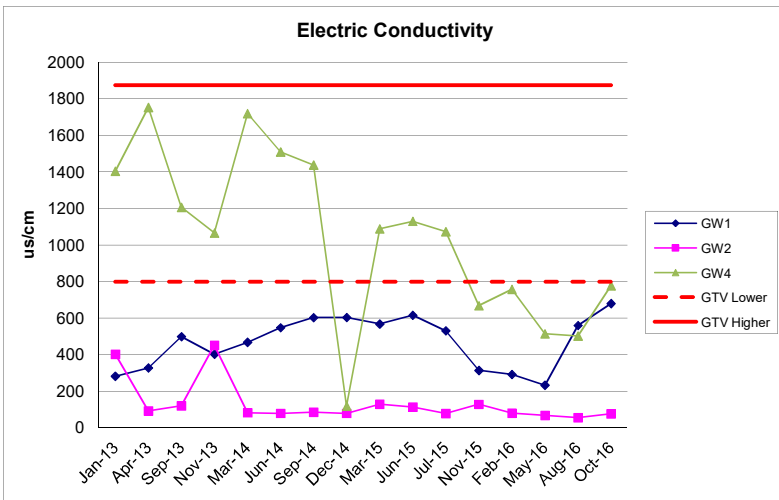
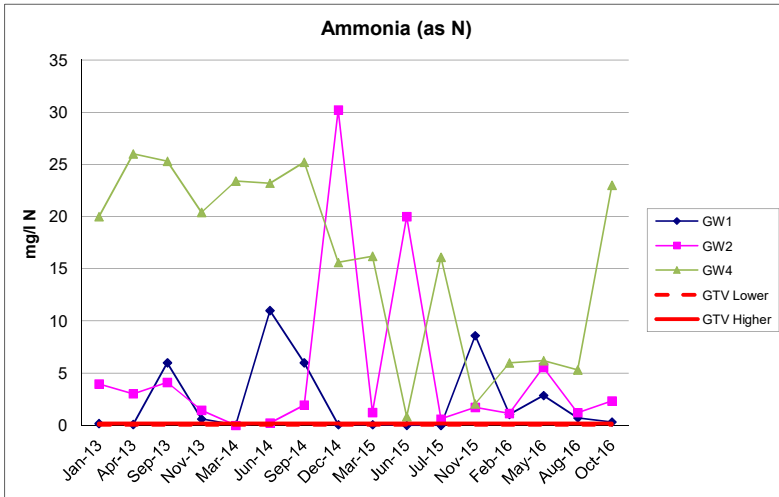
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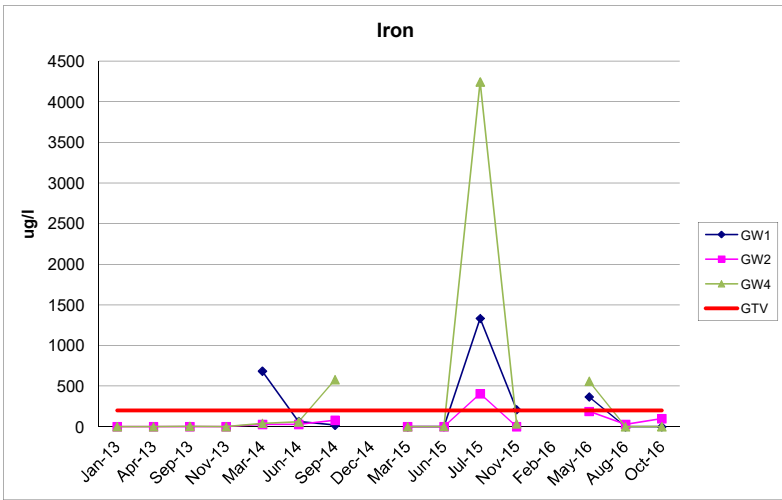
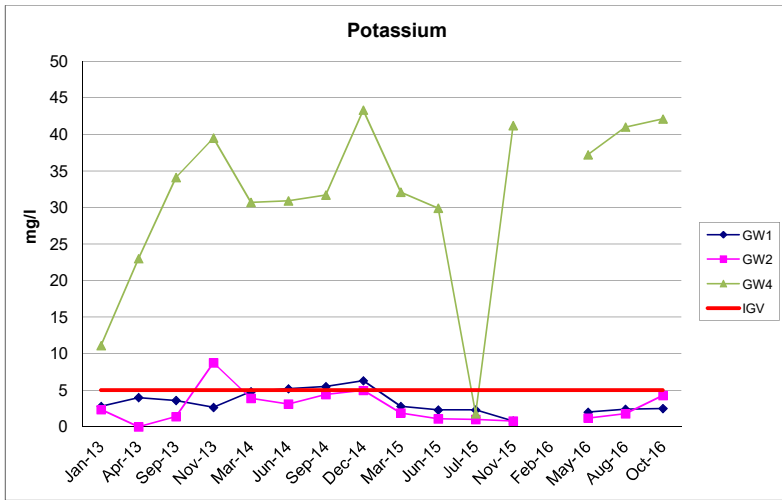
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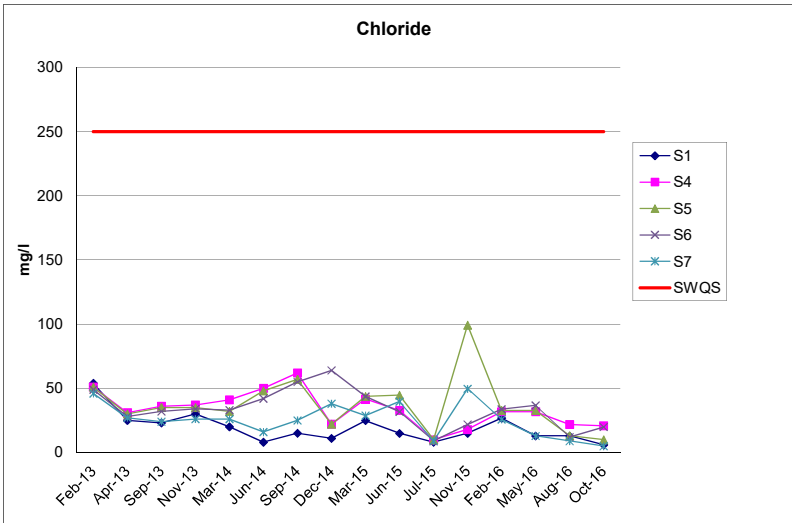
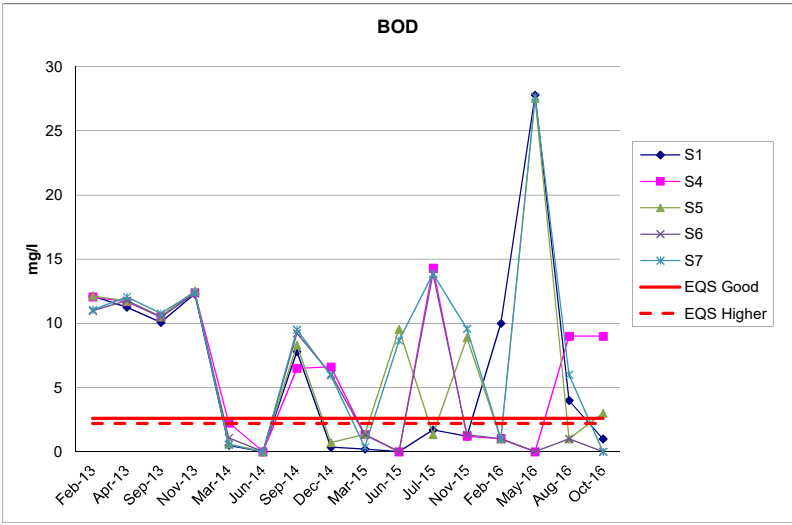
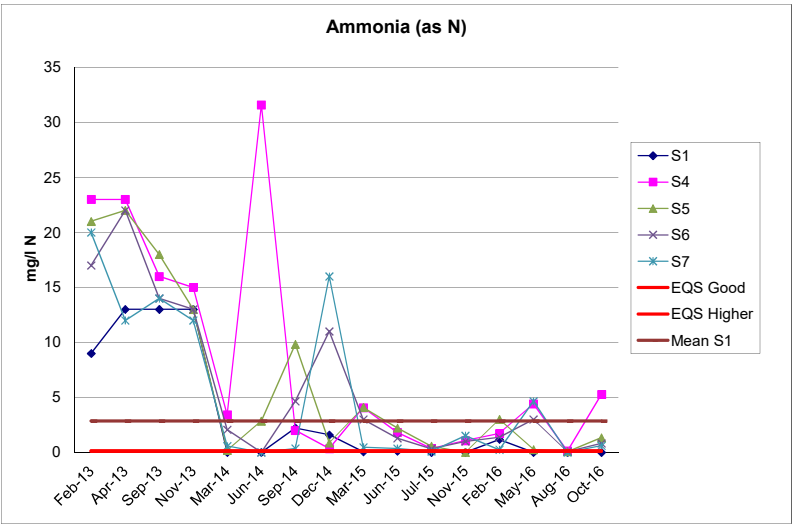
10/01/2017

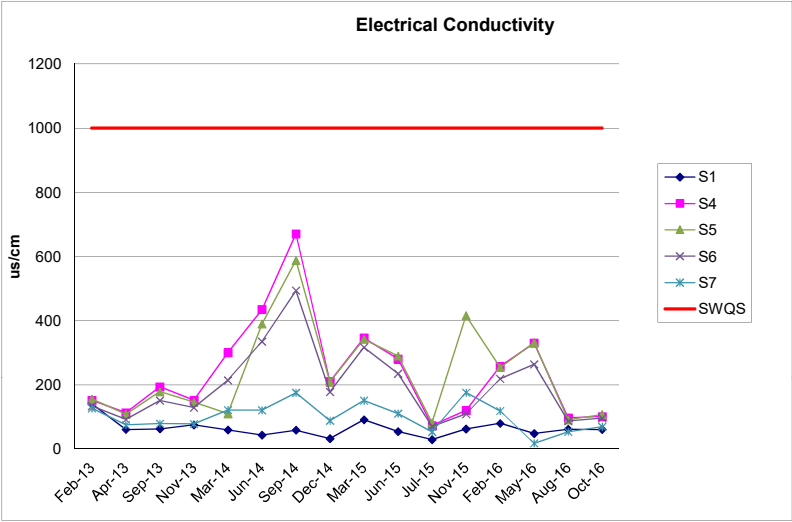
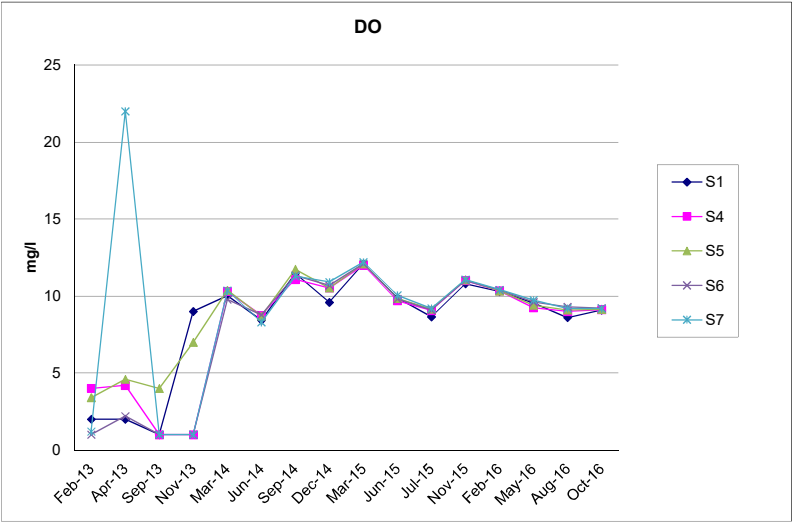
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Appendix D

Water Balance Calculation and Meteorological Data

BALBANE WATER BALANCE CALCULATION

Year	Status	Rainfall (mm)	Restored area	Temp Restored area RCA(m ²)	Temp Restored area infiltration IRCA(m ³)	Total Water	Leachate produced Lo(m ³)
2016	Closed	1,073	0	29,500	7,910	7,910	7,910
Total							7,910

Assumptions

IRCA=	Temp restored area infiltration of rainfall estimated % (25-30% of annual rainfall, EPA Manual)	30%	%
Temporary restored area	Area of landfill site temporary restored, site closed in Jan 2004	29,500	m ²
Rainfall Data	Data taken from Malin Head. Evaporation losses have not been	1,073	mm

Total rainfall in millimetres for Malin_head	Year	2016	2015	2014	2013	2012
	Jan	166.3	176.0	162.2	140.9	134.7
	Feb	130.7	85.8	189.9	74.1	68.1
	Mar	72.7	123.1	71.6	61.7	29.8
	Apr	52.9	64.7	33.4	61.6	46.3
	May	65.6	137.0	86.8	102.5	50.7
	Jun	72.4	56.1	48.6	85.5	141.1
	Jul	109.9	132.7	86.0	56.5	91.4
	Aug	79.9	111.0	95.3	92.6	87.3
	Sep	94.7	29.7	23.0	69.7	139.2
	Oct	37.6	71.9	131.4	103.8	123.5
	Nov	113.9	222.9	134.4	116.0	87.4
	Dec	76.0	272.9	150.5	178.6	149.3
	Annual	1072.6	1483.8	1213.1	1143.5	1148.8

Appendix E

E-PRTR

(AER Electronic Reporting System)



Environmental Protection Agency

| PRTR# : W0090 | Facility Name : Balbane Landfill Site | Filename : W0090_2016.xls
 | Return Year : 2016 |

[Guidance to completing the PRTR workbook](#)

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2016
-----------------------	------

1. FACILITY IDENTIFICATION

Parent Company Name	Donegal County Council
Facility Name	Balbane Landfill Site
PRTR Identification Number	W0090
Licence Number	W0090-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Balbane
Address 2	Killybegs
Address 3	
Address 4	
	Donegal
Country	Ireland
Coordinates of Location	-8.44483 54.6955
River Basin District	GBNIIENW
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Julie McMahon
AER Returns Contact Email Address	julie.mcmahon@donegalcoco.ie
AER Returns Contact Position	Executive Engineer
AER Returns Contact Telephone Number	0749122787
AER Returns Contact Mobile Phone Number	0872861096
AER Returns Contact Fax Number	0749161304
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

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](#)

| PRTR# : W0090 | Facility Name : Balbane Landfill Site | Filename : W0090_2016.xls | Return Year : 2016 |

30/03/2017 12:21

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	QUANTITY		
			Method Code	Designation or Description		T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)	C	OTH	Landgem	0.0	146352.68	0.0	146352.68
03	Carbon dioxide (CO2)	C	OTH	Landgem	0.0	401557.44	0.0	401557.44
02	Carbon monoxide (CO)	C	OTH	Landgem	0.0	71.56	0.0	71.56
07	Non-methane volatile organic compounds (NMVOC)	C	OTH	Landgem	0.0	943.59	0.0	943.59
55	1,1,1-trichloroethane	C	OTH	Landgem	0.0	0.0	0.0	1.17

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

SECTION B : REMAINING PRTR POLLUTANTS

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	QUANTITY		
			Method Code	Designation or Description		T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
56	1,1,2,2-tetrachloroethane	C	OTH	Landgem	0.0	3.37	0.0	3.37
34	1,2-dichloroethane (EDC)	C	OTH	Landgem	0.0	0.74	0.0	0.74
62	Benzene	C	OTH	Landgem	0.0	2.71	0.0	2.71
58	Trichloromethane	C	OTH	Landgem	0.0	0.07	0.0	0.07
35	Dichloromethane (DCM)	C	OTH	Landgem	0.0	21.7	0.0	21.7
65	Ethyl benzene	C	OTH	Landgem	0.0	8.91	0.0	8.91
73	Toluene	C	OTH	Landgem	0.0	65.57	0.0	65.57
60	Vinyl chloride	C	OTH	Landgem	0.0	8.33	0.0	8.33
78	Xylenes	C	OTH	Landgem	0.0	23.25	0.0	23.25
57	Trichloroethylene	C	OTH	Landgem	0.0	6.71	0.0	6.71

* 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)

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	QUANTITY		
			Method Code	Designation or Description		T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

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

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:	Balbane Landfill Site			
Please enter summary data on the quantities of methane flared and / or utilised	T (Total) kg/Year	M/C/E	Method Used	Facility Total Capacity m3 per hour
	Total estimated methane generation (as per site model)	0.0		N/A
	Methane flared	0.0		0.0 (Total Flaring Capacity)
	Methane utilised in engine/s	0.0		0.0 (Total Utilising Capacity)
	Net methane emission (as reported in Section A above)	0.0		N/A