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ANNUAL ENVIRONMENTAL REPORT

FOR

KILCULLEN LANDFILL LIMITED

LICENCE NO. W0081-04

JANUARY – DECEMBER 2015

Prepared For: -

Kilcullen Landfill Ltd,
Brownstown,
Kilcullen,
Co Kildare.

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18th May 2016

Project	Annual Environmental Report 2015			
Client	Kilcullen Landfill Limited W0081-04			
Report No	Date	Status	Prepared By	Reviewed By
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	09/05/2016	Final		

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1. INTRODUCTION

This is the 2015 Annual Environmental Report (AER) for the Kilcullen Landfill Limited non-hazardous residual landfill at Brownstown, Kilcullen, County Kildare. It covers the period from the 1st January 2015 to the 31st December 2015.

The content is based on Schedule F of the Waste Licence (Reg. No. W0081-04) and the report format follows guidelines set in the "Guidance Note for Annual Environmental Report" issued by the Environmental Protection Agency (Agency)[1]. Account is also taken of the AER Draft Guidance Document and AER Information Templates issued by the Agency in December 2013[2].

[1] EPA (Environmental Protection Agency) 1999 Waste Licensing – Draft Guidance on Environmental Management Systems and Reporting to the Agency

[2] EPA (Environmental Protection Agency) AER Draft Guidance Document 2013

2. SITE DESCRIPTION

2.1 Site Location & Layout

The site is located in the Townland of Brownstown approximately 2km to the north east of Kilcullen Town.

The site layout is shown on the topographical survey drawing included in Appendix 1 and includes: -

- Administration Block (offices, stores, canteen, toilets and showers);
- Weighbridges (2 No.);
- Wheel Wash;(De commissioned)
- Capped Landfill Cells
- Security Fencing.
- Landscaped Areas
- Landfill gas utilisation compounds

2.2 Site History

KLL operates the Kilcullen Landfill under Waste Licence Register Number W0081-04. KTK Landfill was granted a Waste Licence (W0081-01) by the Environmental Protection Agency (EPA) in April 1999. In July 2001, KTK Landfill submitted an application for a Review of Waste Licence W0081-01. An amended Licence, No. W0081-02 was granted by the Agency on 8 April 2002. In November 2004 an application for revision of Waste Licence W0081-02 was submitted. An amended Licence, No. W0081-03 was granted on 16 February 2006. This licence was replaced on the 25th of July 2011 by waste Licence W0081-04. In March 2014 the Waste Licence was transferred from KTK Landfill Ltd to Kilcullen Landfill Ltd.

Acceptance of waste material ceased in December 2011 and the site entered its closure, restoration and aftercare phase. During 2012, the final capping works were brought to practical completion and the facility is now managed in an aftercare capacity, while some top soiling and grass seeding remain along with other decommissioning works to be progressed over a phased bases. A detailed site map showing all monitoring locations at the site is presented in Drawing KTK/602, Rev E1, Site Layout plan showing monitoring locations (Appendix 1).

2.3 Waste Activities Carried Out at the Facility

The facility is a full containment landfill, which is designed to accept treated waste for final disposal. The licensed waste activities are summarised in Tables 2.1 and 2.2. The landfill is now closed and fully capped. No waste for disposal was accepted on site in 2015.

Table 2.1 Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act 1996 as amended

Class 1	Deposit on, in or under land (including landfill).
Class 5	Specially engineered landfill, including placement into lined discrete cells, which are capped and isolated from one another and the environment.
Class 11	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
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.

Table 2.2 Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Act 1996 as amended

Class 3	Recycling or reclamation of metals and metal compounds.
Class 4	Recycling or reclamation of other inorganic materials.
Class 9	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

2.4 Waste Received & Consigned

As the site ceased waste acceptance in December 2011 waste was not accepted at the site. To complete the restoration final topsoil placement 13,921 m^3 of topsoil and subsoil were accepted in 2015. A limited amount of leachate was transported to Kilcullen Landfill from Ballynagran Landfill in 2015 for treatment following a high rainfall event and leachate outlet shortage. Table 2.3 provides the details of waste received at the facility in 2015.

Table 2.3 Waste received 2015

EWC	Description	Tonnes	Source
19 07 03	Leachate	921.940	Ballynagran Landfill 2015
17 05 04	Topsoil and subsoil	13,921 m^3	Various

2.5 Report on Development and Restoration at the Site

In 2015, Kilcullen landfill completed the final landfill capping works. There was some subsoil placement for re-profiling before the placement of topsoil on the remaining un-grassed area of the final cap. This involved the placement of over 15,000 m^3 of topsoil over a 50,000 m^2 area of the subsoil layer. After topsoil placement, the area was sown with grass seed and now the entire final landfill cap is fully seeded.

2.6 Progress and Implementation of Landscaping Programme

There was minor landscaping changes in the facility following the removal of an obsolete office. Landscaping maintenance (grass mowing, hedge cutting and general site appearance upkeep) was undertaken during 2015.

It is proposed to plant new hedgerows on the final cap where historic hedgerows existed, this will be completed in accordance with the closure, restoration and aftercare plan for the facility.

2.7 Programme for Public Information

Kilcullen Landfill has entered the closure phase but still maintains a programme of disseminating information on its facility operations to interested parties. Kilcullen Landfill's community development fund made significant donations to a number of local groups during the operation of the active landfill and in 2012 the fund ceased dispensing monies as the facility ceased waste acceptance in 2011.

A comprehensive public information programme developed in April 2000 continues to be used however in a scaled down version as the site is now non-operational. The communications programme contains 8 specific objectives:

- To promote public awareness of the Company's activities and environmental policies;
- To maintain an ongoing dialogue with authorities that have direct involvement with waste disposal activities;
- To make available Environmental Performance Data relating to Kilcullen Landfill;
- To disseminate information relating to the operation and management of the site as appropriate;
- To encourage liaison between Kilcullen Landfill, and local residents and those who may be affected by the sites operations;
- To provide general information on Waste Management Issues;

- To ensure all users and customers of the site are conversant with the requirements of the Site Licence; and
- To ensure that all objectives are, where possible, measurable and quantifiable.

The objectives of the programme are met through the following elements as appropriate:

- Personal Contact;
- Residents Meetings/Liaison Groups;
- Information Displays;
- Site Visits;
- Published Information.

3. ENVIRONMENTAL MONITORING

Kilcullen Landfill implements a comprehensive environmental monitoring programme to assess the significance of emissions from site activities. The programme includes groundwater, surface water, leachate and landfill gas monitoring. The monitoring locations are shown in Appendix 1.

This section presents a summary of the monitoring. A summary of all monitoring data for 2015 is included in Appendix 2.

3.1 Groundwater Monitoring

3.1.1 Groundwater Levels

Groundwater levels were monitored on a quarterly basis in accordance with Schedule C of Waste Licence Register No. W0081-04. The results of groundwater level monitoring were submitted to the Agency in the quarterly groundwater reports. The groundwater movement is from north to south across the site.

3.1.2 Groundwater Quality

During 2015, two (2 No.) private groundwater well samples were collected and analysed. This sampling event took place in December 2015. The results of the analysis were reported in the Q-4 quarterly report. All residents received copies of the results from their respective wells. All the parameters were lower that the IGV or GTV. Groundwater quality in the private wells was good and consistent with previous rounds.

Groundwater quality was monitored in the on-site monitoring wells and reported to the Agency at quarterly intervals. The sampling was carried out in accordance with internationally accepted techniques and control procedures and the analyses were completed by a laboratory using standard and internationally accepted procedures.

The groundwater analysis is compared to the licence specific trigger levels as well as the Interim Guideline Values (IGVs) for groundwater published by the Agency and the Groundwater Regulations Threshold Value (GTV) which were introduced in 2010 (S.I. 9 of 2010).

The IGV represent typical background or unpolluted conditions; however levels higher than the IGV may occur naturally depending on the local geological and hydrogeological conditions. While the GTV's are more appropriate for large scale abstraction wells used for potable supply, they can be used to assess the significance of contamination where

present in non-potable groundwater supplies. Because GTVs have not been established for all of the parameters monitored, the relevant IGV was used for comparative purposes.

The results from the on-site monitoring wells are consistent with previous results. The groundwater quality at the facility is influenced by an ongoing groundwater contamination plume emanating from the adjacent partially lined Silliot Hill landfill.

The quality of the water in both private wells is generally good and shows no impacts associated with the landfill facility.

3.2 Surface Water Monitoring

Surface water monitoring was conducted at the facility in accordance with Schedule C.3 of Waste Licence Register No. W0081-04. The monitoring comprised weekly visual inspections and bi-annual sampling and analyses, which are discussed in more detail below.

3.2.1 Visual Assessment

Kilcullen Landfill carries out weekly inspections of the surface water drainage system. The inspections did not identify the presence of any impact on the drainage system associated with site activities.

3.2.2 Chemical Assessment

The surface water monitoring was conducted quarterly at the four monitoring locations specified in the Licence and reported to the Agency on a bi-annual basis. The sampling was carried out in accordance with internationally accepted techniques and control procedures, the analyses were completed by a laboratory using standard and internationally accepted procedures. The 2015 results are generally consistent with previous years of monitoring. A summary of the results are presented in Appendix 2.

3.3 Leachate

3.3.1 Leachate level results during 2015

Leachate levels are recorded every 30 minutes using a system of data collection known as DataTaker. Historically leachate levels were reported on a monthly basis however these are now presented as a weekly average since Quarter 3 of 2010 and are reported to the Agency in a bi-annual monitoring reports. All exceedances of the 1 meter level limit were reported to the Agency at the time of occurrence. The recorded leachate levels are in Appendix 2.

3.3.2 Chemical Analysis

The monitoring programme involves the collection and testing of leachate samples from the collection sumps and the storage tank. LP-3 was not sampled during the second round of bi-annual sampling. The results for 2015 are generally consistent with the previous year's results.

Kilcullen Landfill operates two reverse osmosis treatment plants (RO-1 and RO-2) on-site which treat landfill leachate before discharging it to the Irish Water sewer. The treated leachate is referred to as permeate and the discharge limit is 150m^3/day. Concentrate from the units is re-circulated within the waste mass, as per the agreement with the Agency.

Kilcullen Landfill report the results of the monitoring of the plants (leachate input, permeate output and concentrate output) to the Agency bi-annually and the results are in Appendix 2.

3.4 Landfill Gas (LFG)

Landfill gas monitoring was conducted at 14 monitoring well locations on a monthly basis during the reporting period and the results submitted to the Agency.

Access to G3 – G7 and G14 – G16 (8 wells) was not possible between September and November 2015 as a result of land access restriction issue. This was resolved for the December round of monitoring.

Category 3 non-urgent incident reports were forwarded to the Agency not later than 24 hours after a landfill gas emission level value was breeched.

Potential Landfill Gas is monitored at the facility offices and buildings by an onsite continuous monitoring system. No measured landfill gas level in any of the facility buildings exceeded the above limits during 2015.

3.5 Fugitive Gas Emissions Report 2015

3.5.1 Locations and Methods

In 2015 monitoring of emissions to air was carried out at the enclosed gas Flare No. 1 (HAASE 2500) and at the gas Utilisation Plant Engine GE01 Air Scientific Ltd.

undertook this monitoring on the 7th July 2015. These reports were submitted to the Agency throughout 2015. The emissions were below the licence ELV's. The results of the monitoring are presented in Tables 3.1 and 3.2 below.

Table 3.1 Emission value results from landfill gas flare No. 1 July 2015 (2,500 HAASE)

Parameter	Normalised Concentration (mgN/m^3)	Emission Limit Value (mgN/m^3)
Nitrogen oxides (NO_x)	97.09	150
Sulphur dioxide (SO_x)	144.07	-

Table 3.2 Emission value results from gas utilisation engine GE01 July 2015

Parameter	Normalised Concentration (mgN/m^3)	Emission Limit Value (mgN/m^3)
Nitrogen oxides (NO_x)	481.24	500
Carbon Monoxide (CO)	974.31	1,400
TNMVOCs	<0.08	75
Sulphur dioxide (SO_x)	646.21	-

3.6 Meteorological Monitoring

Rainfall data for 2015 was collected from the synoptic stations at Casement Aerodrome Table 3.1 below details summary monthly data for 2015.

Table 3.1 Rainfall Data: Casement Aerodrome – 2015

Year	2013	2015
January	69.5	63.4
February	45.2	30.5
March	63.3	56.4
April	47.5	56.2
May	52.8	96.4
June	43.2	17.4
July	42.7	62.5
August	62.9	67.5
September	35.1	26.2
October	100.4	39.4
November	21.2	114.3
December	104.7	206.3
Annual	**688.5**	**836.5**

4. SITE DEVELOPMENT WORKS

4.1 Summary of Resource & Energy Consumption

The principal energy resources consumed at the site are electricity, water for potable supply, site cleaning and dust suppression, diesel fuel and hydraulic oils. All site vehicles are fuelled by diesel. Table 4.1 presents an estimate of the resources used in 2015.

Table 4.1 Resources Used On-Site

Resource	Units	Total Consumption in 2015
Electricity	kWh	192,600
Water mains	Litres	661
Diesel	Litres	9,090
Hydraulic Oils	Litres	100
Grease	Litres	10

Kilcullen Landfill gas utilisation plant exported 8,916 MWh of electricity to the national grid during 2013. This is down approximately 21% on 2014 exports (11,390MWhr).

The main materials recovered at the facility during the reporting period were subsoil and topsoil to complete the final capping process. Approximately 10,000m^3 of subsoil and 3,921m^3 of topsoil were accepted. In addition to the soils received, approximately 12,000 m^3 of topsoil that were in on-site stockpiles were used in the restoration works. The details are listed in Table 4.2 below.

Table 4.2 Material Recovery and Electricity Production 2015

Resource	Units	Total in 2015
Electricity	MWh	8,916
Waste lubricating oil recovered from landfill gas utilisation engines	Litres	7,800
Soil and topsoil recovered for final capping	m^3	25,921

4.2 Proposed Site Development Works 2016

The facility is closed and not accepting waste. There are no site development works planned for 2016.

5. EMISSIONS

5.1 Leachate

Kilcullen Landfill discharges permeate from the reverse osmosis treatment plants directly to sewer. The volume discharged in 2015 is Table 5.1.

Table 5.1 Volume of Permeate discharged from site 2015

Type	Volume
Permeate to Sewer	6,960 m^3

5.2 Landfill Gas

There are three landfill gas engines on site. Engine 1 extracted 2,209,920m^3, Engine 2 extracted 32,202m^3 and Engine 3 was not used. Two enclosed landfill gas flares were installed on site in October 2005. Flare 1 has a capacity of 2,500 m^3/hour and Flare 2 a capacity of 1,500 m^3/hour. Flare 1 flared a total of 210,201m^3 in 2015. Flare 2 (a backup flare) did not run in 2015.

5.3 Estimated Annual and Cumulative Quantity of Indirect Emissions to Groundwater

The potential sources of indirect emissions into groundwater are:

- **Landfill Base**

The landfill site has a composite base lining system comprising a HDPE geomembrane and one metre thick layer of compacted clay. A leak location survey of the HDPE geomembrane after placement of the drainage stone layer was completed and defects to the membrane were repaired in accordance with industry standards.

- **Surface Water Collection and Treatment System**

Surface water from the paved access road and service platform is collected and discharged into a water infiltration area. However, prior to final discharge into the ground, surface water is conveyed to a concrete silt settlement tank and a Class 1 Klargester surface water bypass separator. The quality of the surface water discharge downstream of the separator is measured quarterly at the monitoring manhole identified as SW7.

- **Treated Sewage Effluent**

There is one BioCycle waste water treatment unit on the site which treats the canteen and office waste water prior to discharge into a percolation area.

In summary as the landfill is fully contained there will be minimal to nil indirect emissions to ground water.

5.4 Surface Water

Rainfall run-off from the capped areas is collected by a series of swale drains and discharges to peculation areas or surface water discharge points .Rainfall on the roads and paned areas is directed to the silt settlement tank before discharge. Rainfall on the leachate treatment area is contained in the bunded area and pumped into the landfill before treatment by reverse osmosis.

6. NUISANCE CONTROL

KLL is committed to operating Kilcullen Landfill in the best possible manner using best available techniques to minimise impacts to the environment and local residential neighbours. KLL welcomes communications from local residents and any interested parties and all reasonable and practical measures will be implemented to eliminate or minimise any issues or nuisances. All nuisance control measures continue to be implemented so as to ensure licence compliance.

6.1 Vermin Control

An external contractor is employed for vermin control in the gas utilisation plant and site staff maintain vermin control in the offices and leachate treatment facility. Since the closure of the site the requirement for bird control has ceased.

7. ENVIRONMENTAL INCIDENTS AND COMPLAINTS

7.1 Incidents

In total there were thirteen (13 No.) reportable incidents in the reporting period. These were reported to the Agency as soon as the licensee was notified and did not cause any environmental impacts. One (1 No.) related to a leachate level exceedance, two (2 No.) related to transducer failures and ten (10 No.) to perimeter gas CO_2 exceedances.

7.2 Register of Complaints

There was one complaint was received in regard to odour for a resident in Kilcullen, upon investigation it was deemed not to be related to the facility, the complainant was contacted and satisfied with the outcome of the investigation.

8. ENVIRONMENTAL MANAGEMENT SYSTEM

8.1 Management Structure

The Management Structure as required by Condition 2.1.1 of the waste licence the licensee employs a suitably qualified and experienced facility. A summary of the management structure is presented below.

8.1.1 Site Management Structure

The day to day management of the facility and supervision of waste activities are the responsibility of KLL, the facility Manager, nominated Deputy Manager(s) and the site operatives. The positions and names of the persons who provide management and supervision are set out below: -

- Directors, Alan Cousins and Tim Hodnett
- Landfill Manager, Tomas Fingleton
- Assistant Landfill Manager, Thomas Finnegan
- Site Caretaker, Dominic Talbot

8.1.2 Responsibilities

Tomas Fingleton is the facility manager and he attends the Kilcullen site on a regular and as needs basis. Thomas Finnegan is also Assistant Facility Manager at Knockharley landfill and continues to attend the site to conduct site monitoring and other environmental and licence compliance related functions. Dominic Talbot is the site caretaker and attends the site daily.

8.2 EMP

Kilcullen Landfill implemented an Integrated Management System (IMS) in accordance with the requirements of Occupational Health and Safety Assessment Series (OHSAS) 18001:2007 and International Standard Organisation (ISO) 14001:2004 in order to manage the Health, Safety and Environmental performance of their business and to control health and safety risk and to minimise their environmental aspects and impacts.

The IMS was developed for the achievement of continual improvement taking into the requirements of the Waste Licence Conditions. Kilcullen Landfill has prepared and effectively implemented documented procedures and instructions in accordance with the requirements of both the OHSAS 18001:2007 and ISO 14001:2004.As the site is closed and in its aftercare phase KLL has not pursued re-certification at this time, but continues to maintain the system in place.

The schedule of Objectives and Targets, including their status for 2015 (Table 8.1), as well as the proposed Objectives and Targets for 2016 (Table 8.2) are presented below.

8.2.1 Schedule of Objectives 2015

Table 8.1 describes the implementation of the objectives and targets in the reporting period.

8.2.2 Schedule of Objectives 2016

KLL has set a schedule of targets and objectives for 2016. These are presented in Table 8.2.

Table 8.1 Schedule of Targets and Objectives 2015

Ref. No.	Objective	Target	ENV Aspect	Resources Required	Person Responsible	Time Frame for Completion	Progress as of End of 2015.
1	CRAMP	Complete the topsoil placement and seeding of the final cap at Kilcullen Landfill	1, 9	External contractors	Facility Manager	before autumn 2015	Topsoil placement and seeding completed in September 2015
		Complete installation of Permanent Surface Water Management System	1,9	Works programme - plant & labour and materials. Landowner approval	Facility Manager	before autumn 2015	not completed
		Removal of surplus equipment and materials etc. on site	1,9	Management and staff and contractors	Facility Manager	ongoing	Removed weighbridge and external office from site.
2	Training	Continue to train staff on a regular basis in EMS system, waste licence and Emergency Response.		Management Team	Site Manager	Ongoing Annual Basis	Completed and ongoing
3	Lower the environmental impacts associated with the Landfill in the aftercare phase, Landfill Gas.	Review of protocol for gas management, review/reduction in utilisation over capacity systems on site. Zero surface emission detection	1,9	Management Team	Assistant Manager	Jul-14	Updated protocols with Gas utilisation company BPS - completed. Removal of excess gas engines from site - completed. VOC survey capping integrity check - completed. Simplification of condensate system with tank removal completed

Table 8.2 Schedule of Targets and Objectives 2016

Ref. No.	Objective	Target	ENV Aspect	Resources Required	Person Responsible	Time Frame for Completion	Status
1	CRAMP	Complete installation of the permanent Surface Water Management System	1,9	Works programme - plant & labour and materials. Landowner approval	Facility Manager	before autumn 2016	
		Removal of surplus equipment and materials etc. on site	1,9	Management and staff and contractors	Facility Manager	ongoing	
2	Minimise the amount of natural resources (water, power etc.) consumed at the Facility.	Conduct Energy Audit of Facility and identify opportunities for improved energy efficiency in aftercare phase.	4	Management Team	Site Manager	September 2016	
3	Training	Continue to train staff on a regular basis in EMS system, waste licence and Emergency Response.		Management Team	Site Manager	Ongoing Annual Basis	

9. OTHER REPORTS

9.1 Financial Provision

Under condition 12.3.3 of the site licence Kilcullen Landfill is required to maintain a financial provision that is sufficient to cover all liabilities incurred whilst carrying on the activities to which this licence relates. As part of the licence transfer from KTK Landfill Ltd to Kilcullen landfill Ltd, the CRAMP liability was recalculated and agreed with the Office for Environmental Enforcement as being €3.42M as at 1 January 2013. Financial provision, to the satisfaction of the Board of the EPA, was then put in place sufficient to cover the cost of this CRAMP liability.

As part of Condition 12.3.2, the Licensee has completed a fully costed Environmental Liabilities Risk Assessment for the site. This document outlines the potential unknown environmental liabilities associated with the landfill and estimates the possible cost of these liabilities. An environmental liability insurance policy has been taken out for €10M which is more than sufficient to cover any unforeseen event contemplated within the ELRA.

9.2 European Pollutant Release and Transfer Register

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 Kilcullen Landfill is required to submit information annually to the Agency. A copy of the information submitted to the Agency via the web-based data reporting system is included in Appendix 3.

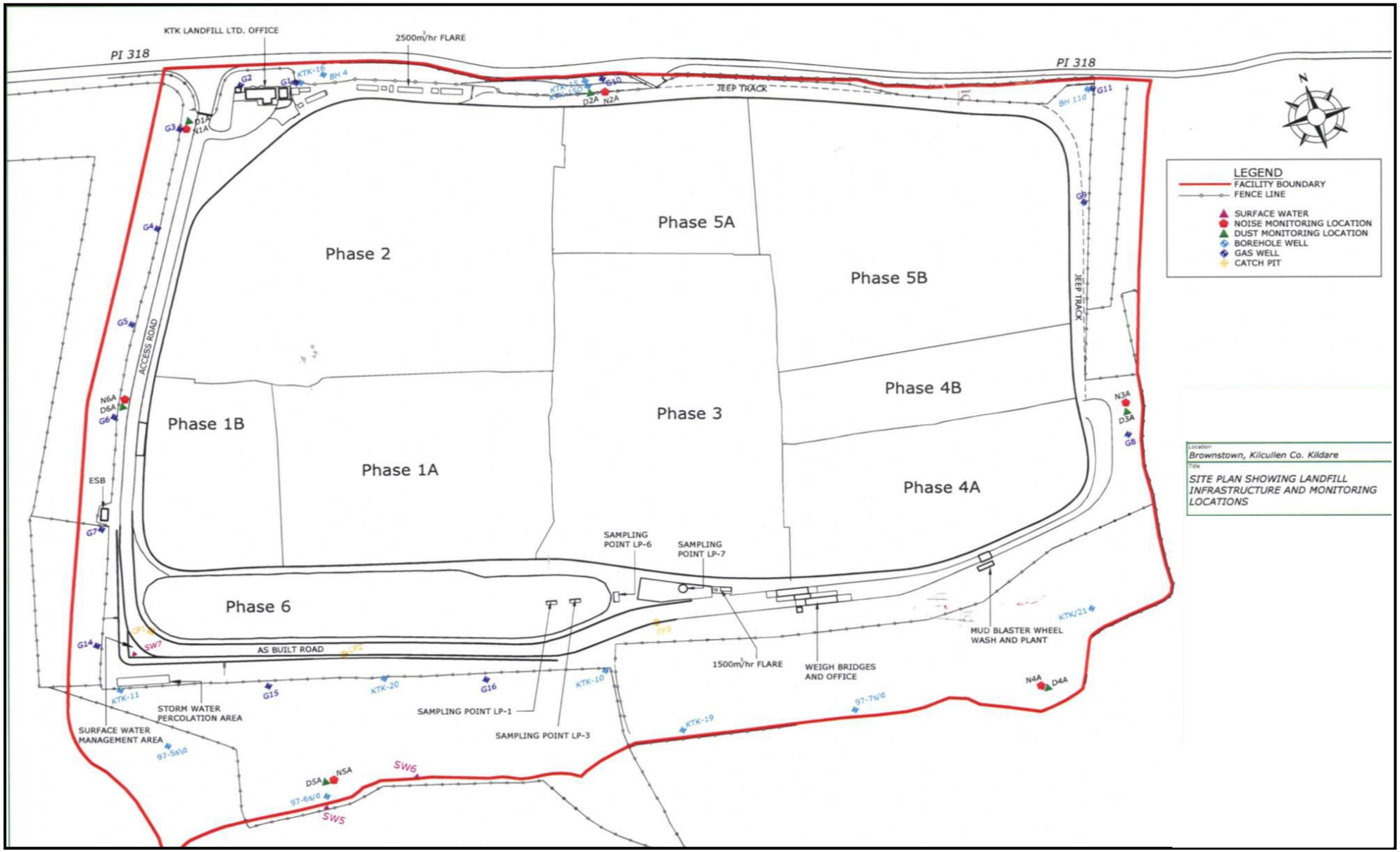
9.3 Tank, drum, pipeline and bund testing and inspection report

There was no integrity or bund testing completed in 2015, but this is due and will be completed in 2016.

APPENDIX 1

Topographic Survey with Monitoring Locations

Figure 2.1 Kilcullen Landfill



APPENDIX 2

Monitoring Results 2015

Groundwater Data 2015

Well ID	2015 Water Level			
	Q1	Q2	Q3	Q4
97-4d	Artesian	115.99	116.04	Artesian
97-5d	Artesian	Artesian	Artesian	Artesian
97-6d	Artesian	116.69	116.32	116.97
97-7d	117.13	116.78	116.38	117.08
BH 11d	122.02	121.57	121.3	121.93
KTK-10	117.04	116.71	116.33	116.99
KTK-11	117.04	116.71	116.34	116.96
KTK-15d	117.45	116.42	116.31	116.91
KTK-16	117.22	116.93	116.78	117.01
KTK-19	117.08	117.76	116.36	118.04
KTK-20	117.09	116.75	116.34	117.02
KTK-21	117.52	116.85	116.59	118.06

2015		BH-11D				KTK-16				KTK-15 D				IGV	GTV
Parameters	**Units**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**		
Dissolved Arsenic	µg/l	7.6	<2.5	<2.5	<2.5	13.6	<2.5	<2.5	<2.5	21.7	6.3	<2.5	6.1	**10**	**7.5**
Dissolved Barium	µg/l	50	54	51	56	195	326	196	192	399	443	405	410	**100**	**-**
Dissolved Boron	µg/l	12	17	<12	14	65	70	69	75	918	882	948	829	**1000**	**750**
Dissolved Cadmium	µg/l	<0.5	<0.5	0.5	0.5	0.6	0.6	0.9	0.9	<0.5	<0.5	0.5	<0.5	**5**	**3.75**
Dissolved C	µg/l	135.2	133	140.2	140.7	306.5	301.5	299	280.4	47.2	65.3	50.7	45	**200**	**-**
Total Dissolved Chromium	µg/l	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	3.4	3.6	2.9	2.9	**30**	**37.5**
Dissolved Copper	µg/l	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	**30**	**1,500**
Total Dissolved Iron	µg/l	<20	<20	<20	<20	<20	<20	<20	<20	50	53	50	35	**200**	**-**
Dissolved Lead	µg/l	<5	<5	<5	6	<5	<5	<5	5	<5	<5	<5	<5	**10**	**18.75**
Dissolved Magnesium	mg/l	17.3	16	17.2	16.5	31.1	29.8	34.3	32.1	24.1	23.2	24.9	23.3	**50**	**-**
Dissolved Manganese	µg/l	<2	<2	<2	157	2	581	2	40	120	116	98	80	**50**	**-**
Dissolved Mercury	µg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1**	**0.75**
Dissolved Nickel	µg/l	<2	<2	<2	<2	<2	20	2	5	79	75	83	77	**20**	**15**
Dissolved Potassium	mg/l	0.8	0.9	1.2	1.3	25.6	38.1	48	42.8	93.8	92.5	132.9	103	**5**	**-**
Dissolved Sodium	mg/l	8.1	7.7	8.7	9.5	18.3	19	23.4	21.5	315.3	251.5	335.7	272.1	**150**	**-**
Dissolved Zinc	µg/l	<3	5	189	<3	15	51	17	16	5	7	5	5	**100**	**-**
T Phosphorus	mg/l	10	10	29	<5	27	14	47	27	29	30	50	37	**-**	**-**
Total Phenols	µg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.5**	**-**
Fluoride	mg/l	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	**1**	**-**
Sulphate	mg/l	9.67	14.07	11.27	9.99	104.01	123.79	123.06	132.48	0.69	16.72	0.33	23.14	**200**	**187.5**
Chloride	mg/l	11.7	11.1	10.9	12.1	48.4	40.6	34.4	37.9	249.2	232.6	243	242.8	**30**	**187.5**
Nitrate as NO3	mg/l	18	3.5	16.2	12.6	32.5	2.5	17.1	27.9	159	59.9	88.1	192.8	**25**	**37.5**
Nitrite as NO2	µg/l	<0.02	<0.02	<0.02	0.69	<0.02	0.43	<0.02	0.14	0.55	1.81	1.25	1.09	**0.1**	**0.375**
Ortho Phosphate	mg/l	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.33	0.09	0.11	**0.03**	**-**
Ammoniacal Nitrogen as N	mg/l	<0.03	<0.03	<0.03	5.4	<0.03	0.29	0.04	0.03	154.13	150.42	166.19	135.52	**0.15**	**0.065-0.175**
Total Alkalinity as CaCO3	mg/l	446	378	378	418	784	716	668	686	1052	804	852	606	**NAC**	**-**
DO	mg/l	9	8	7	4	7	6	9	6	8	7	5	7	**-**	**-**
Electrical Conductivity	Us/cm	766	693	706	700	1479	1378	1,383	1373	2896	2666	3004	2679	**1,000**	**800-1,875**
TOC	mg/l	<2	<2	3	11	8	10	10	11	40	31	33	26	**NAC**	**-**
Dissolved Selenium	µg/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	**-**	**-**
VOCs (TICs)	µg/l				ND				ND				ND	**-**	**-**
Semi - VOCs	µg/l				ND				ND				ND	**-**	**-**
Pesticides MS	µg/l				ND				ND				ND	**0.1**	**-**
Total Coliform					14				0				> 100	**0**	**-**
Faecal Coliform					13				0				0	**0**	**-**

2015		97-4				97-5D				97-6				IGV	GTV
Parameter	**Units**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**		
Dissolved Arsenic	µg/l	3.8	<2.5	<2.5	<2.5	7.1	<2.5	<2.5	<2.5	7.4	<2.5	<2.5	<2.5	**10**	**7.5**
Dissolved Barium	µg/l	28	31	36	29	126	84	81	101	98	100	99	99	**100**	**-**
Dissolved Boron	µg/l	13	21	17	20	130	59	57	73	53	52	47	47	**1000**	**750**
Dissolved Cadmium	µg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	**5**	**3.75**
Dissolved C	µg/l	109.5	110.2	118.6	105.2	154.4	148.5	148.2	142.7	147	148.2	154	142.7	**200**	**-**
Total Dissolved Chromium	µg/l	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	**30**	**37.5**
Dissolved Copper	µg/l	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	**30**	**1,500**
Total Dissolved Iron	µg/l	<20	<20	29	<20	<20	<20	<20	<20	<20	<20	<20	<20	**200**	**-**
Dissolved Lead	µg/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**10**	**18.75**
Dissolved Magnesium	mg/l	5.9	5.5	5.9	5.3	18.6	15.9	16.6	17.1	18.6	17.1	18	17.3	**50**	**-**
Dissolved Manganese	µg/l	<2	<2	562	<2	<2	<2	<2	<2	<2	<2	<2	<2	**50**	**-**
Dissolved Mercury	µg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1**	**0.75**
Dissolved Nickel	µg/l	<2	<2	<2	<2	4	<2	<2	2	<2	<2	<2	<2	**20**	**15**
Dissolved Potassium	mg/l	<0.1	<0.1	1.6	0.1	4.1	1.9	2	2.5	1.7	1.7	1.9	1.8	**5**	**-**
Dissolved Sodium	mg/l	2	2.2	2.9	1.9	56.1	27.9	30.8	36.8	20.7	19.7	21.2	20.4	**150**	**-**
Dissolved Zinc	µg/l	<3	<3	4	<3	<3	<3	4	<3	<3	<3	5	<3	**100**	**-**
T Phosphorus	mg/l	5	<5	19	10	11	23	31	10	12	13	13	12	**-**	**-**
Total Phenols	µg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.5**	**-**
Fluoride	mg/l	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	**1**	**-**
Sulphate	mg/l	3.52	3.85	4.32	3.25	40.77	16.32	16.01	17.59	16.48	20.16	17.74	18.61	**200**	**187.5**
Chloride	mg/l	2.8	3	3.6	1.5	60	37.1	37	47.3	30.3	29.6	28.3	32.1	**30**	**187.5**
Nitrate as NO3	mg/l	5.4	3.8	0.7	2.3	11.6	11.8	13.3	13.6	11.4	9.3	12	11.8	**25**	**37.5**
Nitrite as NO2	µg/l	<0.02	<0.02	0.09	<0.02	<0.02	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	**0.1**	**0.375**
Ortho Phosphate	mg/l	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.11	<0.06	<0.06	<0.06	<0.06	<0.06	**0.03**	**-**
Ammoniacal Nitrogen as N	mg/l	<0.03	0.04	0.17	<0.03	2.57	0.04	0.03	0.55	0.3	0.32	0.3	0.3	**0.15**	**0.065-0.175**
Total Alkalinity as CaCO3	mg/l	322	300	280	264	514	398	402	438	502	414	406	436	**NAC**	**-**
DO	mg/l	7	8	3	8	5	8	7	3	6	9	7	7	**-**	**-**
Electrical Conductivity	Us/cm	521	524	526	475	1047	862	873	902	880	809	769	809	**1,000**	**800-1,875**
TOC	mg/l	<2	<2	5	10	3	<2	3	16	<2	<2	3	10	**NAC**	**-**
Dissolved Selenium	µg/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	**-**	**-**
VOCs (TICs)	µg/l				ND				ND				ND	**-**	**-**
Semi - VOCs	µg/l				ND				ND				ND	**-**	**-**
Pesticides MS	µg/l				ND				ND				ND	**0.1**	**-**
Total Coliform	µg/l				0				0				0	**0**	**-**
Faecal Coliform	µg/l				0				0				0	**0**	**-**

2015		97-7				KTK-10				KTK-11				IGV	GTV
Parameters	**Units**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**		
Dissolved Arsenic	µg/l	7	<2.5	<2.5	<2.5	4.2	<2.5	<2.5	<2.5	6.3	<2.5	<2.5	<2.5	**10**	**7.5**
Dissolved Barium	µg/l	72	76	81	78	38	45	46	52	76	73	58	56	**100**	**-**
Dissolved Boron	µg/l	18	17	16	19	15	16	13	24	80	57	61	51	**1000**	**750**
Dissolved Cadmium	µg/l	<0.5	<0.5	0.5	0.7	<0.5	<0.5	<0.5	0.5	<0.5	0.5	0.8	0.6	**5**	**3.75**
Dissolved C	µg/l	140.8	149.9	159.3	145.6	92.8	100.3	107.9	106.6	160.1	172.1	159.9	143	**200**	**-**
Total Dissolved Chromium	µg/l	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	**30**	**37.5**
Dissolved Copper	µg/l	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	**30**	**1,500**
Total Dissolved Iron	µg/l	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	**200**	**-**
Dissolved Lead	µg/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**10**	**18.75**
Dissolved Magnesium	mg/l	17.8	17.2	18.8	17.4	10.4	10.7	11.4	10.8	11.9	10.6	9.3	9.3	**50**	**-**
Dissolved Manganese	µg/l	<2	<2	<2	<2	<2	<2	<2	2	1134	1357	985	889	**50**	**-**
Dissolved Mercury	µg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1**	**0.75**
Dissolved Nickel	µg/l	<2	<2	<2	<2	<2	<2	<2	<2	6	5	6	5	**20**	**15**
Dissolved Potassium	mg/l	0.5	0.6	0.8	0.6	0.2	0.3	0.2	0.2	4.5	3.9	3.6	3.4	**5**	**-**
Dissolved Sodium	mg/l	10.1	10	12.2	10.2	14.9	15.6	16.7	15.2	23.9	21.9	22.1	22	**150**	**-**
Dissolved Zinc	µg/l	<3	<3	<3	<3	<3	<3	11	4	3	4	5	<3	**100**	**-**
T Phosphorus	mg/l	10	10	<5	10	<5	<5	7	5	11	<5	14	12	**-**	**-**
Total Phenols	µg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.5**	**-**
Fluoride	mg/l	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	**1**	**-**
Sulphate	mg/l	16.46	15.82	17.12	16.7	22.72	30.89	29.61	32.93	109.68	118.12	90.26	86.77	**200**	**187.5**
Chloride	mg/l	17.7	16.9	17.3	18.2	21.1	19.4	18.4	20.5	23.9	27.1	31.7	19.2	**30**	**187.5**
Nitrate as NO3	mg/l	29.3	14.2	16.1	15.9	3.5	5.5	7.1	8.3	1.2	0.7	<0.2	1.1	**25**	**37.5**
Nitrite as NO2	µg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.08	**0.1**	**0.375**
Ortho Phosphate	mg/l	<0.06	<0.06	0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	**0.03**	**-**
Ammoniacal Nitrogen as N	mg/l	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	<0.03	1.92	2.56	1.13	1.16	**0.15**	**0.065-0.175**
Total Alkalinity as CaCO3	mg/l	430	388	404	422	272	268	272	296	416	358	318	330	**NAC**	**-**
DO	mg/l	8	8	7	5	10	9	9	8	8	7	6	5	**-**	**-**
Electrical Conductivity	Us/cm	813	760	851	753	563	622	609	587	902	879	816	780	**1,000**	**800-1,875**
TOC	mg/l	<2	<2	3	17	<2	<2	<2	15	4	<2	6	11	**NAC**	**-**
Dissolved Selenium	µg/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	**-**	**-**
VOCs (TICs)	µg/l				ND				ND				ND	**-**	**-**
Semi - VOCs	µg/l				ND				ND				ND	**-**	**-**
Pesticides MS	µg/l				ND				ND				ND	**0.1**	**-**
Total Coliform	µg/l				0				2				> 100	**0**	**-**
Faecal Coliform	µg/l				0				2				0	**0**	**-**

2015		KTK-19				KTK-20				KTK-21				IGV	GTV
Parameter	**Units**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**		
Dissolved Arsenic	µg/l	6.4	<2.5	<2.5	<2.5	5.9	<2.5	<2.5	2.7	8.3	<2.5	<2.5	<2.5	**10**	**7.5**
Dissolved Barium	µg/l	139	134	142	155	183	180	172	172	73	71	68	68	**100**	**-**
Dissolved Boron	µg/l	35	36	34	43	23	22	21	19	17	19	19	17	**1000**	**750**
Dissolved Cadmium	µg/l	<0.5	<0.5	0.5	0.7	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	0.6	**5**	**3.75**
Dissolved C	µg/l	87.2	85.7	91.5	86.7	149.8	150.3	137.1	144.6	139.2	131.6	140.8	133.3	**200**	**-**
Total Dissolved Chromium	µg/l	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	**30**	**37.5**
Dissolved Copper	µg/l	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	**30**	**1,500**
Total Dissolved Iron	µg/l	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	**200**	**-**
Dissolved Lead	µg/l	<5	<5	<5	10	<5	<5	<5	6	<5	<5	<5	<5	**10**	**18.75**
Dissolved Magnesium	mg/l	22.9	22.4	23.4	23	29.3	28.2	29.5	28.7	11.9	10.4	9.9	10.5	**50**	**-**
Dissolved Manganese	µg/l	702	493	745	834	905	861	696	892	<2	<2	9	<2	**50**	**-**
Dissolved Mercury	µg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1**	**0.75**
Dissolved Nickel	µg/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**20**	**15**
Dissolved Potassium	mg/l	1.4	1.5	1.4	1.5	1.3	1.3	1.4	1.4	0.3	0.4	0.2	0.3	**5**	**-**
Dissolved Sodium	mg/l	15	14.8	15.9	19	12.1	12.2	13.3	14.7	3.1	2.8	3.2	2.9	**150**	**-**
Dissolved Zinc	µg/l	<3	<3	9	12	<3	<3	5	<3	13	<3	5	<3	**100**	**-**
T Phosphorus	mg/l	9	<5	9	7	8	<5	7	<5	7	6	<5	7	**-**	**-**
Total Phenols	µg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.5**	**-**
Fluoride	mg/l	<0.3	0.4	<0.3	0.4	<0.3	0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	**1**	**-**
Sulphate	mg/l	25.94	24.32	25.3	29.98	67.5	66.34	63.2	68.63	3.22	3.74	2.58	2.71	**200**	**187.5**
Chloride	mg/l	11.3	10.8	10.7	11.5	16.3	15.6	15	16.4	4.8	4.6	3.8	4.7	**30**	**187.5**
Nitrate as NO3	mg/l	0.6	0.8	5	1.4	0.8	0.7	<0.2	0.8	1.7	0.9	1	2	**25**	**37.5**
Nitrite as NO2	µg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.1**	**0.375**
Ortho Phosphate	mg/l	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	**0.03**	**-**
Ammoniacal Nitrogen as N	mg/l	0.16	0.12	0.17	0.19	0.12	0.16	0.12	0.12	<0.03	0.03	0.12	<0.03	**0.15**	**0.065-0.175**
Total Alkalinity as CaCO3	mg/l	334	306	330	332	496	446	426	426	420	346	368	452	**NAC**	**-**
DO	mg/l	6	7	6	6	6	7	7	5	9	9	6	8	**-**	**-**
Electrical Conductivity	Us/cm	625	585	598	518	911	839	811	860	671	624	641	604	**1,000**	**800-1,875**
TOC	mg/l	<2	<2	<2	17	<2	<2	4	15	<2	<2	3	13	**NAC**	**-**
Dissolved Selenium	µg/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	**-**	**-**
VOCs (TICs)	µg/l				ND				ND				ND	**-**	**-**
Semi - VOCs	µg/l				ND				ND				ND	**-**	**-**
Pesticides MS	µg/l				ND				ND				ND	**0.1**	**-**
Total Coliform	µg/l				0				4				0	**0**	**-**
Faecal Coliform	µg/l				0				4				0	**0**	**-**

2015	Units	Pri 1 EC	Pri 2 CK	IGV	GTV
Dissolved Arsenic	µg/l	<2.5	<2.5	**10**	**7.5**
Dissolved Barium	µg/l	36	68	**100**	**-**
Dissolved Boron	µg/l	23	19	**1000**	**750**
Dissolved Cadmium	µg/l	<0.5	<0.5	**5**	**3.75**
Dissolved Calcium	µg/l	102.2	149.8	**200**	**-**
Total Dissolved Chromium	µg/l	<1.5	<1.5	**30**	**37.5**
Dissolved Copper	µg/l	7	<7	**30**	**1,500**
Total Dissolved Iron	µg/l	<20	<20	**200**	**-**
Dissolved Lead	µg/l	5	<5	**10**	**18.75**
Dissolved Magnesium	mg/l	2.8	13.5	**50**	**-**
Dissolved Manganese	µg/l	3	2	**50**	**-**
Dissolved Mercury	µg/l	<1	<1	**1**	**0.75**
Dissolved Nickel	µg/l	<2	<2	**20**	**15**
Dissolved Potassium	mg/l	1	0.4	**5**	**-**
Dissolved Sodium	mg/l	2.7	7.8	**150**	**-**
Dissolved Zinc	µg/l	9	5	**100**	**-**
Dissolved Phosphorus	mg/l	19	12	**-**	**-**
Total Phenols	µg/l	<0.1	<0.1	**0.5**	**-**
Fluoride	mg/l	<0.3	<0.3	**1**	**-**
Sulphate	mg/l	10.17	10.46	**200**	**187.5**
Chloride	mg/l	1.9	12.6	**30**	**187.5**
Nitrate as NO3	mg/l	1.5	4.8	**25**	**37.5**
Nitrite as NO2	mg/l	<0.02	<0.02	**0.1**	**0.375**
Ortho Phosphate	mg/l	<0.06	<0.06	**0.03**	**-**
Ammoniacal Nitrogen as N	mg/l	<0.03	<0.03	**0.15**	**0.065-0.175**
Total Alkalinity as CaCO3	mg/l	230	380	**NAC**	**-**
DO	mg/l	5	7	**-**	**-**
Electrical Conductivity	µS/cm	435	696	**1,000**	**800-1,875**
TOC	mg/l	9	5	**NAC**	**-**
Dissolved Selenium	µg/l	<3	<3	**-**	**-**
VOCs (TICs)	µg/l	ND	ND	**-**	**-**
Semi - VOCs	µg/l	ND	ND	**-**	**-**
Pesticides MS	µg/l	ND	ND	**0.1**	**-**
Total Coliform	µg/l	0	0	**0**	**-**
E-Coli	µg/l	0	0	**0**	**-**

ND - Not Detected

Surface Water Data 2015

SW4	Units	Round 1	Round 2
CBODS	mg/l	<1	<1
Zinc	ug/l	1.28	<3
Mercury	ug/l	<0.01	<1
Nickel	ug/l	5.13	<2
Manganese	ug/l	187	30
Magnesium	mg/l	8.18	7.3
Lead	ug/l	<0.02	<5
Iron	ug/l	105	38
Copper	ug/l	-	<7
Chromium	ug/l	<3	<1.5
Cadmium	ug/l	<0.1	<0.5
Boron	ug/l	32	14
Ortho-Phosphate	mg/l	<0.05	<0.06
Sulphate	mg/l	21.2	53.45
Sodium	mg/l	18	10.4
Potassium	mg/l	<1	1.8
Phosphorous	mg/l	26.5	7
Chloride	mg/l	22.7	13.8
Calcium	mg/l	111	117
Ammonia	mg/l	0.321	0.05
TOC	mg/l	11.2	10
Nitrate	mg/l	1.17	1.3
Nitrite	mg/l	0.06	<0.02
Akalinity	mg/l	332	278
TSS	mg/l	3.5	13
Dissolved Oxygen	mg/l	4.71	
Conductivity	us/cm	618	550
COD	mg/l	23.4	18
pH	pH units	8	7.68

SW5	Units	Round 1	Round 2
CBODS	mg/l	<1	<1
Zinc	ug/l	0.707	6
Mercury	ug/l	<0.01	<1
Nickel	ug/l	2.59	<2
Manganese	ug/l	145	46
Magnesium	mg/l	7.02	8.1
Lead	ug/l	<0.02	<5
Iron	ug/l	105	57
Copper	ug/l		<7
Chromium	ug/l	<3	<1.5
Cadmium	ug/l	<0.1	<0.5
Boron	ug/l	<9.4	<12
Ortho-Phosphate	mg/l	<0.05	1.14
Sulphate	mg/l	48.2	119.96
Sodium	mg/l	7.96	9.3
Potassium	mg/l	<1	0.7
Phosphorous	mg/l	18	13
Chloride	mg/l	16.4	18.4
Calcium	mg/l	113	133.2
Ammonia	mg/l	0.267	0.05
TOC	mg/l	12.6	13
Nitrate	mg/l	<0.3	5.2
Nitrite	mg/l	<0.05	<0.02
Akalinity	mg/l	288	230
TSS	mg/l	11.5	<10
Dissolved Oxygen	mg/l	6.43	
Conductivity	us/cm	583	653
COD	mg/l	34.7	35
pH	pH units	7.98	7.16

SW6	Units	Round 1	Round 2
CBODS	mg/l	6.13	<1
Zinc	ug/l	1.43	9
Mercury	ug/l	<0.01	<1
Nickel	ug/l	3.66	<2
Manganese	ug/l	313	<2
Magnesium	mg/l	8.03	6.2
Lead	ug/l	<0.02	<5
Iron	ug/l	458	199
Copper	ug/l		<7
Chromium	ug/l	<3	<1.5
Cadmium	ug/l	<0.1	<0.5
Boron	ug/l	<9.4	<12
Ortho-Phosphate	mg/l	0.064	0.07
Sulphate	mg/l	82.8	104.79
Sodium	mg/l	10.3	7.7
Potassium	mg/l	<1	1
Phosphorous	mg/l	45.9	57
Chloride	mg/l	19.5	14.8
Calcium	mg/l	136	107.7
Ammonia	mg/l	0.278	0.16
TOC	mg/l	19.6	23
Nitrate	mg/l	0.326	1.7
Nitrite	mg/l	<0.05	0.03
Akalinity	mg/l	272	180
TSS	mg/l	57	<10
Dissolved Oxygen	mg/l	4.41	
Conductivity	us/cm	624	518
COD	mg/l	81.1	65
pH	pH units	7.65	6.85

SW7	Units	Round 1	Round 2
CBODS	mg/l	<1	<1
Zinc	ug/l	1.02	3.6
Mercury	ug/l	<0.01	<0.01
Nickel	ug/l	4.83	6.47
Manganese	ug/l	199	196
Magnesium	mg/l	12.3	12.7
Lead	ug/l	<0.02	0.364
Iron	ug/l	<19	<19
Copper	ug/l		4.4
Chromium	ug/l	<	<3
Cadmium	ug/l	<0.1	0.238
Boron	ug/l	38.9	56.8
Ortho-Phosphate	mg/l	<0.05	<0.02
Sulphate	mg/l	67.6	108
Sodium	mg/l	28.5	24.5
Potassium	mg/l	2.49	3.33
Phosphorous	mg/l	17.8	
Chloride	mg/l	34.2	39.6
Calcium	mg/l	180	212
Ammonia	mg/l	0.294	<0.2
TOC	mg/l	7.08	9.47
Nitrate	mg/l	2.16	2.02
Nitrite	mg/l	<0.05	0.045
Akalinity	mg/l	360	418
TSS	mg/l	15	2.5
Dissolved Oxygen	mg/l	6.24	-
Conductivity	us/cm	840	878
COD	mg/l	14.3	18.7
pH	pH units	7.82	8
Total Coliforms	no/100mls	-	25
Faecal Coliforms	no/100mls	-	25

Leachate Data 2015

Week No	B.LP1 Level m(Ave)	B.LP3 Level m(Ave)	B.LP6 Level m(Ave)
1	1	0.98	1.01
2	0.85	0.86	0.68
3	0.74	0.75	0.56
4	0.74	0.74	0.68
5	0.69	0.73	0.68
6	0.55	0.6	0.34
7	0.63	0.69	0.28
8	0.62	0.66	0.37
9	0.72	0.76	0.71
10	0.7	0.74	0.61
11	0.66	0.68	0.72
12	0.73	0.73	0.75
13	0.81	0.77	0.78
14	0.74	0.74	0.76
15	0.75	0.73	0.74
16	0.77	0.76	0.73
17	0.79	0.78	0.66
18	0.55	0.82	0.69
19	0.18	0.78	0.47
20	0.22	0.82	0.66
21	0.19	0.8	0.83
22	0.12	0.77	0.34
23	0.21	0.78	0.56
24	0.21	0.83	0.74
25	0.27	0.84	0.82
26	0.26	0.9	0.9

Week No	B.LP1 Level m(Ave)	B.LP3 Level m(Ave)	B.LP6 Level m(Ave)
27	1.97	0.99	1.01
28	2.21	0.94	0.99
29	0.44	0.87	0.74
30	0.02	0.9	0.71
31	0.68	0.88	0.83
32	0.93	0.9	0.91
33	0.92	0.91	0.81
34	0.88	0.88	0.74
35	0.86	0.86	0.7
36	0.86	0.87	0.81
37	0.86	0.87	0.87
38	0.8	0.82	0.77
39	0.71	0.74	0.63
40	0.63	0.67	0.21
41	0.7	0.74	0.44
42	0.73	0.77	0.58
43	0.77	0.12	0.7
44	0.86	-0.73	0.85
45	0.9	-0.73	0.7
46	0.79	-0.73	0.71
47	0.69	-0.73	0.64
48	0.7	-0.73	0.62
49	0.65	-0.73	0.74
50	0.66	-0.73	0.74
51	0.83	-0.73	0.81
52	0.82	0.54	0.7

Suspected Faulty Low Level reading on Transducer

Level above 1m - exceeding waste licence limit

LP1	units	Round 1	Round 2
CBODS	mg/l	119	166
Zinc	ug/l	88.6	
Mercury	ug/l	<0.01	
Nickel	ug/l	232	
Manganese	ug/l	218	
Magnesium	mg/l	69.9	
Lead	ug/l	1.2	
Iron	ug/l	2.22	
Copper	ug/l	15.5	
Chromium	ug/l	408	
Cadmium	ug/l	0.346	
Boron	ug/l	11,000	
Ortho-Phosphate	mg/l	41.2	
Sulphate	mg/l	<40	
Sodium	mg/l	2,060	
Potassium	mg/l	626	
Phosphorous	mg/l	17,600	
Chloride	mg/l	2,010	
Calcium	mg/l	40	
Ammonia	mg/l	2,080	
TOC	mg/l	-	
Nitrate	mg/l	-	
TSS	mg/l	14	
Conductivity	us/cm	21,000	
COD	mg/l	4,490	4,390
pH	pH units	8.03	7.93
cyanide	mg/l	0.071	
TON	mg/l	<2	
Phenol	mg/l	-	0.07
Total Coliforms	no/100mls	-	13
Faecal Coliforms	no/100mls	-	21

LP3	units	Round 1	Round 2
CBODS	mg/l	123	
Zinc	ug/l	69.6	
Mercury	ug/l	<0.01	
Nickel	ug/l	208	
Manganese	ug/l	267	
Magnesium	mg/l	70.7	
Lead	ug/l	0.824	
Iron	ug/l	2.33	
Copper	ug/l	10.1	
Chromium	ug/l	419	
Cadmium	ug/l	0.388	
Boron	ug/l	11,500	
Ortho-Phosphate	mg/l	38.5	
Sulphate	mg/l	<40	
Sodium	mg/l	2,000	
Potassium	mg/l	614	
Phosphorous	mg/l	16,600	
Chloride	mg/l	1,980	
Calcium	mg/l	38.3	
Ammonia	mg/l	2,050	
TOC	mg/l	1,420	
Nitrate	mg/l	<1.35	
Nitrite	mg/l		
Akalinity	mg/l		
TSS	mg/l	21	
Dissolved Oxygen	mg/l		
Conductivity	us/cm	20,500	
COD	mg/l	4,650	
pH	pH units	8.05	
cyanide	mg/l	0.065	
TON	mg/l	<2	
Phenol	mg/l	-	
Total Coliforms	no/100mls	-	
Faecal Coliforms	no/100mls	-	

LP6	units	Round 1	Round 2
CBODS	mg/l	106	64.2
Zinc	ug/l	58.7	
Mercury	ug/l	<0.01	
Nickel	ug/l	142	
Manganese	ug/l	575	
Magnesium	mg/l	52.6	
Lead	ug/l	2.09	
Iron	ug/l	0.438	
Copper	ug/l	2.18	
Chromium	ug/l	332	
Cadmium	ug/l	0.161	
Boron	ug/l	7,030	
Ortho-Phosphate	mg/l	27.5	
Sulphate	mg/l	<40	
Sodium	mg/l	1,160	
Potassium	mg/l	414	
Phosphorous	mg/l	12,200	
Chloride	mg/l	1,180	
Calcium	mg/l	80.6	
Ammonia	mg/l	1,340	
TOC	mg/l	-	
Nitrate	mg/l	-	
Nitrite	mg/l	-	
Akalinity	mg/l	-	
TSS	mg/l	59	
Dissolved Oxygen	mg/l	-	
Conductivity	us/cm	12,300	
COD	mg/l	2,470	2,350
pH	pH units	8.07	7.87
cyanide	mg/l	<0.05	
Flouride	mg/l	1.58	
TON	mg/l	<2	
Phenol	mg/l	-	0.04
Total Coliforms	no/100mls	-	4,700
Faecal Coliforms	no/100mls	-	2,400

LP7	units	Round 1	Round 2
CBODS	mg/l	125	144
Zinc	ug/l	72.4	
Mercury	ug/l	<0.1	
Nickel	ug/l	140	
Manganese	ug/l	150	
Magnesium	mg/l	63.96	
Lead	ug/l	0.603	
Iron	ug/l	1.93	
Copper	ug/l	8.49	
Chromium	ug/l	401	
Cadmium	ug/l	0.132	
Boron	ug/l	11,300	
Ortho-Phosphate	mg/l	10.8	
Sulphate	mg/l	<40	
Sodium	mg/l	1,910	
Potassium	mg/l	598	
Phosphorous	mg/l	15,600	
Chloride	mg/l	2,070	
Calcium	mg/l	36.5	
Ammonia	mg/l	2,010	
TOC	mg/l	1,450	
Nitrate	mg/l	<1.35	
TSS	mg/l	14	
Conductivity	us/cm	20,800	
COD	mg/l	4,620	3,840
pH	pH units	8.12	8.04
cyanide	mg/l	0.076	
Flouride	mg/l	4.73	
TON	mg/l	<2	
Phenol	mg/l	-	0.1
Total Coliforms	no/100mls	-	2
Faecal Coliforms	no/100mls	-	2

Round 1 2015		Plant 1		Plant 2		Final	
Parameter	**units**	**Concentrate**	**Permate**	**Concentrate**	**Permate**	**Concentrate**	**Permate**
TSS	mg/l	100	<2	11.5	<2	92	
CBODS	mg/l	280	<5	317	13.9	36.9	
TOC	mg/l	2,430	<12	3,830	<6	3,540	
Ammonia	mg/l	3,390	48.6	7,810	1.8	3,760	4.39
COD	mg/l	7,180	7	12,200	<7	10,900	
Conductivity	us/cm	32,100	738	49,200	658	44,000	
Chloride	mg/l	3,400	18.7	5,620	<2	11,600	
Ortho-Phosphate	mg/l	0.887	0.11	1.45	<0.05	-	
Nitrate	mg/l	<0.01	<0.0677	<0.01	<0.0677	-	
Methane	ug/l	107	90.5	762	1,870	28.7	745
pH	pH units	7.76	6.5	8.03	6.53	8.09	6.95

Round 2 2015		Plant 1		Plant 2		Final	
Parameter	**units**	**Concentrate**	**Permate**	**Concentrate**	**Permate**	**Concentrate**	**Permate**
TSS	mg/l	78	<2	41		356	<2
CBODS	mg/l	289	<5	298		328	<1
TOC	mg/l	4,260	<3	3,680		5,260	<3
Ammonia	mg/l	4,650	7.11	4,590		5,310	6.35
COD	mg/l	12,300	8	9,160		14,100	<7
Conductivity	us/cm	42,900	789	42,600		50,800	826
Chloride	mg/l	4,990	<2	4,880		6,000	<2
Ortho-Phosphate	mg/l	32.9	<0.02	31.4		35.3	<0.02
Nitrate	mg/l	<1.35	<0.0677	<1.35		<1.35	<0.0677
Methane	ug/l	39.9	31.4	102		11.3	42.2
pH	pH units	7.82	6.44	76		7.75	7.23

Landfill Gas Data 2015

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
CH4	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)
G1	0.1	0	0.2	0	0	0.1	0	0	0	0	0	0
G2	0.2	0	1.8	0	0	0	0	0	0	0	0	0
G3	0	0	0	0	0	0	0	0				0
G4	0	0	0	0	0	0	0	0				0
G5	0	0	0	0	0	0	0	0				0
G6	0	0	0	0	0	0	0	0				0
G7	0	0	0	0	0	0	0	0				0
G8	0	0	0	0	0	0	0	0	0	0	0	0
G9	0	0	0	0	0	0	0	0	0	0	0	0
G10	0	0	0	0	0	0	0	0	0	0	0	0
G11	0	0	0	0	0	0	0	0	0	0	0	0
G14	0	0	0	0	Inaccessible	0	0	0				0
G15	0	0	0	0	Inaccessible	0	0	0				0
G16	0	0	0	0	Inaccessible	0	0	0				0

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
CO2	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)
G1	0.1	3.7	9.9	0.1	1.3	0.2	0.6	0	0	0.2	0.8	0.1
G2	0.1	0	3.2	0	1.5	0	0.1	0	0	0.2	0.5	0.1
G3	2	4.6	7.1	5.3	4.9	3.4	4.4	3.8				4.2
G4	4.6	4.4	7.3	5.2	5.2	3.5	5	4.3				5.4
G5	1.4	1.6	2.6	0.7	1.7	1.3	0.6	1				2.7
G6	2.4	2.3	3.3	2	2.1	1.7	1.7	1.8				2.2
G7	3.6	2.8	5	0.8	2.7	1.7	0.9	1.4				0.3
G8	4.3	3.5	5	3.2	3.5	3.4	1.6	3.3	0	0.1	2.6	2.1
G9	6.8	0.6	4.4	0.1	1.5	3.4	0.2	0	0.4	0.3	4.6	0.1
G10	5.8	5.6	6.8	0	0.6	0.8	0.1	0	0.1	0.1	0.1	0.2
G11	3.2	2.9	3.1	0	0.5	3	0	0.1	0	0	0	0.1
G14	2.3	2.3	3.1	2.2	2.9	2.2	1.8	2				2.4
G15	1.1	2.3	1.8	2	2.2	2.1	2.3	2.1				2.9
G16	0.9	1	0.6	0.9	0.6	0.4	0.2	0.9				1.6

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
O2	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)
G1	21	17.1	4.7	19.6	18.8	20.9	19.9	20.6	21.1	21.8	20.5	22.6
G2	21	21	8.36	19.9	15.6	21.5	20.4	20.7	21	20.7	20.4	22.6
G3	19.4	18.1	13.1	16.4	14.8	18.5	16.1	16.5				19.2
G4	17.4	17.8	13.4	15.2	14.7	18	15.8	16.3				18.6
G5	19.8	19.7	18.1	17.3	18.6	19.6	20	19.6				19.7
G6	10.8	19	17.6	17.8	18.6	19.6	19	19.1				20.3
G7	10.1	19.7	17.6	19.8	19.1	19.9	19.9	19.8				22.6
G8	17.7	18.6	16.2	18.2	17.6	17.6	19.8	18.3	20	20	19.6	20.9
G9	14.8	20.3	16.7	20.4	19.6	17.5	20.2	20.7	20.9	20	17.6	22.8
G10	16.1	15.8	14.3	20.1	20	20.2	20.1	20.7	20.2	21.1	21.6	22.5
G11	17.5	19	17.1	20.5	20.7	17.5	20.8	20.1	20	20	20.8	22.9
G14	18.7	19.3	18.2	18.7	17.5	19.4	19.1	19.3				21.2
G15	19.8	19.3	20.2	18.2	18.6	20.1	19.1	19.6				19.8
G16	20.4	20.2	21	19.6	20	20.7	20.2	20.2				21.6

APPENDIX 3

E-PRTR Returns

Environmental Protection Agency

Guidance to completing the PRTR workbook

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2015

1. FACILITY IDENTIFICATION

Parent Company Name	Kilcullen Landfill Limited
Facility Name	Kilcullen Landfill Limited
PRTR Identification Number	W0081
Licence Number	W0081-04

Classes of Activity

No.	**class_name**
-	Refer to PRTR class activities below

Address 1	Brownstown and Carnalway
Address 2	Kilcullen
Address 3	
Address 4	
	Kildare
Country	Ireland
Coordinates of Location	-6.71785 53.1451
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Tomas Fingleton
AER Returns Contact Email Address	tomas.fingleton@landfills.ie
AER Returns Contact Position	Landfill Manager
AER Returns Contact Telephone Number	0867741813
AER Returns Contact Mobile Phone Number	0867741813
AER Returns Contact Fax Number	045 482629
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	3
User Feedback/Comments	Methane variance due to data input error in previous year
Web Address	

2. PRTR CLASS ACTIVITIES

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

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

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

4. WASTE IMPORTED/ACCEPTED ONTO SITE Guidance on waste imported/accepted onto site

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

4.1 RELEASES TO AIR

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs				
POLLUTANT		METHOD					QUANTITY		
			Method Used		Flare 1	GE01			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
02	Carbon monoxide (CO)	M	EN 15058:2004		4.24	4959.57	4963.81	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	M	EN 14792:2005		47.01	2449.68	2496.69	0.0	0.0
11	Sulphur oxides (SOx/SO2)	M	ALT	TGN 21	69.76	3289.43	3359.19	0.0	0.0
01	**Methane (CH4)**	C	OTH	Gassim model and monitoring data	0.0	0.0	632789.0	0.0	632789.0

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

SECTION B : REMAINING PRTR POLLUTANTS

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

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

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

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

Please enter summary data on the quantities of methane flared and / or utilised	T (Total) kg/Year	M/C/E	Method Used: Method Code	Method Used: Designation or Description	Facility Total Capacity m3 per hour	
Total estimated methane generation (as per site model)	2125467.0	C	OTH	GasSim Lite	N/A	
Methane flared	127945.0	M	OTH	Facility on-site Monitoring	0.0	(Total Flaring Capacity)
Methane utilised in engine/s	1364733.0	M	OTH	Facility on-site Monitoring	0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	632789.0	C	OTH	Model and monitoring data	N/A	

4.2 RELEASES TO WATERS

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as t

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

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

SECTION B : REMAINING PRTR POLLUTANTS

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

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

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

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

4.3 RELEASES TO WASTEWATER OR SEWER

Link to previous years emissions data

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

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

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

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					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

4.4 RELEASES TO LAND

Link to previous years emissions data

SECTION A : PRTR POLLUTANTS

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

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

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

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

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE | PRTR# : W0081 | Facility Name : Kilcullen Landfill Limited | Filename : W0081_2015.xls | Return Year : 2015 | 03/05/2016 16:30

Please enter all quantities on this sheet in Tonnes 0

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					

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