Mayo County Council
Comhairle Chontae Mhaigh Eo

Annual Environmental Report for Derrinumera Landfill

Waste Licence W0021-02

2010

Submitted March 2011

Annual Environmental Report
Derrinumera Landfill

- **Reporting Period**
  This report is the tenth Annual Environmental Report (AER) for the facility. It covers the period from January to December 2010.

- **Details of Activity**
  This year the principle activity at the facility was the operation of the landfill and the civic amenity centre. Other activities include the collection of leachate at the leachate collection point, which is situated at the northern end of the site from where it is pumped to three leachate holding tanks. The leachate is removed from the facility by tanker to Castlebar and Westport Waste Water Treatment Plants.
  Derrinumera Civic Amenity Centre opened in July 2001 for the recycling and reclamation of materials by members of the public. The numbers of people using the Civic Amenity averaged 4,302 per month in 2010 giving a total of 51,624 users for the year.
  A landfill gas management system, which incorporates flaring, is active 24 hours a day at the facility.

- **Quantity and Composition of Waste Received during the Year**
  During 2010, 34,875 tonnes of waste were accepted at Derrinumera Landfill. The waste totals are set out in Appendix A.

  The civic amenity centre at Derrinumera Landfill was opened in July 2001. A list of the 1,432.46 tonnes of materials collected and recycled in 2010 is outlined in Appendix B.

- **Total Accumulated Quantities of Waste Deposited**
  By the end of 2009 it was estimated that the total quantity of waste deposited at Derrinumera Landfill was 413,972 tonnes. Including waste deposited during 2010 this figure now stands at 448,847 tonnes.

- **Calculated Remaining Capacity of the Site**
  P.J. Tobin & Co. Ltd. carried out computer generated profiling to calculate the remaining void space of the landfill in March 2008. The estimated material volumes for cell construction and final capping were extracted from the overall figures to determine final estimated waste void space.

  The total void space in New Cell 2 was approximately 145,336m^3. There was a remaining void space of 62,304 m^3 at 1/1/10. Waste deposited in 2010 used 44,734m^3 leaving an approximate void space at 31/12/10 of 17,570m3.

- **Year in which the Final Capacity is expected to be Reached**
  Once waste deposition re-commences in January 2011 it is estimated that capacity will be reached in approximately 6-8 months, by the third quarter of 2011. This assessment is based on the remaining capacity of the site and the volume of waste acceptable under Waste Licence W0021-02 (i.e. 40,000 tonnes).

- **Area Occupied by the Waste**
  The area occupied by the waste at the time of compiling this report is estimated at 14,066m^2 for the lined and fully capped Cell No.1. The surface area of new Cell No.2 is 20,140m^2, which is currently covered with waste. The entire area of Cell 2 is treated as leachate generating. The area contained within the confines of the cut-off wall, which includes Cell 1 and Cell 2 is 92,314.8m^2.

- **Methods of Deposition of Waste**
  When in operation the procedure is as follows, the waste hauliers tipped waste in close proximity to the working face and from there it is positioned and compacted by the excavator and compactor. Members of the public do not generally deposit their waste in the main tipping area, a compactor unit and a number of open skips are provided within the Civic Amenity Area for the disposal of household rubbish. The compactor unit and skips are emptied as necessary.

- **Summary of Results and Interpretations of Environmental Monitoring**

(a) Landfill Gas Monitoring

GW2 is located within 1m of Cell 1. Levels of methane and carbon dioxide have fluctuated slightly throughout the year; however the gas levels in this borehole are generally high due to its location in the old waste body.

Gas wells GW6, GW8, GW9, GW13 and GW15 are located within 50m of the waste body, outside the cut-off wall. Over the reporting period, gas levels in GW9, GW13 and GW15 followed normal trends for these wells. Little or no gas was detected in GW9. GW15 is closely linked to the actions of the flare, if the flare is running there is little or no gas present in this well however if the flare is not in operation GW15 shows a marked increase in both methane and carbon dioxide however this did not occur in 2010.

GW6 exceeded the trigger level for carbon dioxide at 1.5%v/v throughout most of the year. An investigation into the cause of this increase revealed no obvious source. This borehole will continue to be monitored in 2011 however it is likely that the levels of carbon dioxide gas are as a result of emissions from the blanket peat as there is no corresponding elevated level of methane being recorded.

GW8 showed a steady decrease in CH4 levels throughout the year. Carbon dioxide levels fluctuated but were mostly above the threshold during the year. This has been investigated on numerous occasions with no obvious source of gas detected. This well is close to the old waste body and is over 50m from the main building.

GW16 and GW17 were constructed at the end of 2001. GW16 showed mainly normal levels of oxygen throughout the year and no methane or carbon dioxide. GW17 showed slight fluctuations in carbon dioxide throughout the year. However as there is no corresponding methane it is unlikely that the source of this gas is biodegrading waste.

GW 14 located inside the cut-off wall showed some fluctuations in gas composition during the year. It is possible that these fluctuation relate to leachate reduction works carried out in the area surrounding this gas well. These works may have reduced fugitive emissions from the area concentrating any gas in the well. This will continue to be monitored in 2011.

The results of gas monitoring for each well is set out in Appendix C.

(b) Dust Monitoring

Annual dust monitoring was carried out in July/August 2010. The total dust levels in dust gauges D1, D2, D3 and D4 were below the dust limit set out in Waste Licence W0021-02 of 350mg/m^2/day. The dust report for Derrinumera was prepared and submitted to the agency.

(c) Noise Monitoring

Annual noise monitoring for 2010 at Derrinumera was carried out on November 23rd and 24th. Sampling locations N1, N2, N5 and N6 were monitored during the daytime and night-time. The annual noise report for Derrinumera was prepared and submitted to the agency.

(d) Groundwater/Surface Water

With regard to groundwater emissions some contamination was detected. Upgradient wells MW-1A, showed little or no contamination. Monitoring wells MW17-MW19 located both inside and outside the cut-off wall show evidence of leachate contamination. Wells MW20 - MW28 showed medium to gross contamination by leachate. The Wellpoint system installed in 2005 and in operation 24 hours per day 7 days per week is slowly reducing the contamination levels in these wells, this system will continue to operate during 2011.

Surface water quality showed little or no contamination throughout the year. SW-1 the background upstream well showed no evidence of contamination. Monitoring point SW-2 downstream from the site and SW-3 further downstream at the Glaishwy bridge, showed little or no contamination.

The results for both groundwater and surface water sampling from the most relevant wells/ locations is set out in Appendix D.

(e) Biological Monitoring

Biological monitoring was scheduled to be carried out by environmental consultants on the Glaishwy river during summer and winter. The summer results of the 2010 monitoring indicated a Q4 status. The winter monitoring had to be cancelled due to the icy weather conditions prevailing in December. Biological monitoring will take place again in summer 2011.

(f) Leachate Monitoring

Analysis of leachate during the reporting period showed high levels of ammonia, BOD, COD, chloride, conductivity, suspended solids, total phosphorous and ortho-phosphate. High sodium: potassium ratios were also found which is typical of leachate.

The amount of leachate transported off-site during the reporting period was 68,200.49m^3. Leachate is currently transported off-site to Westport Waste Water Treatment Plant by means of road tankers. A month by month summary of the loads removed from the site is contained in Appendix E.

- **Resource Consumption Summary**

Diesel

An estimate of diesel consumed during the reporting period is 64,102 litres. This total consisted of 694 litres of white diesel used for the site jeep. The compactor used approximately 25,000 litres. The excavator used approx 23,499 litres and the remainder 14,909 litres was used for the tractors, skidsteer and the diesel pumps. Approximately 80 litres of petrol was also consumed, for a running a generator, lawnmower, strimmer and a con saw.

Electricity

The number of units of electricity used on-site during 2010 was approx 215,418.4 units. The suppliers of electricity to the site in 2010 were Airtricity and Energia who provide a proportion of their power from renewable resources.

Water

During 2010 it is estimated that the total volume of water consumed was 953 m^3. Of this total 773 m^3 was used for dust control, and approximately 180 m^3 for control building and wheelwash unit. Due to heavy rainfall during the year no clean water had to be imported in 2010.

- **Report on development works undertaken during the reporting period**

The following works have been completed during the reporting period:
An area of approx 20,000m^2 was covered with a liner and drainage to divert rainwater away from the leachate collection zone.

- **Proposed development works to be undertaken during the coming year**

A considerable amount of the required site development works to ensure the landfill can be run in accordance with the requirements of the waste licence, have been completed. Due to a reduced amount of finance available in 2011, a final list of development works to be carried out is not currently available. However it is intended to further extend the embankment cover works by approx 10,000m^2. Should funding be made available for other large capital works an SEW will be submitted to the agency for approval prior to any works taking place.

- **Progress on Restoration of completed Cells/Phases**
  Derrinumera Landfill has been developed as a piggy-back facility where the two new engineered and lined cells are placed on top of the two old unlined cells. Waste deposition into the lined and fully engineered Cell 1 is complete and final capping is completed. Waste deposition will be taking place in the lined and fully engineered Cell No.2 in 2011 until it reaches capacity.

- **Site Survey showing existing levels.**
  The site survey was undertaken on 26th May 2010 and the resulting map issued to the agency. A further survey will take place in Q1 2011 and the results submitted.

- **Estimated Annual and Cumulative Quantity of Landfill Gas/Methane Emitted from the site.**
  No records of waste deposition exist for Derrinumera until January 2000, and with that from January until September 2000 only a record of the type of vehicle entering the site was kept. Therefore no accurate records exist with regard to the tonnage of waste accepted up to September 2000. Previous years estimates of the annual cumulative quantity of gas produced estimated the volumes of waste that may have placed previous to the installation of a weighbridge. It is estimated that from 1974 to 2010, 448,847 tonnes of waste was deposited at Derrinumera.

  Generally when in operation the flow rate per hour as recorded on the flaring unit averages 220-230m^3/hr. The flaring unit automatically shuts down when the flow rate falls below 25m3/hr in order to ensure that emissions remain below the limits set under W0021-02.

  Consultants were employed for the task of calculating the amount of landfill gas and methane generated on-site using the computerised gas model GASSIM to determine emissions as specified by the agency. A full report on this model including the emissions from this site was submitted to the agency in 2008. The predicted total amount of LFG emissions for 2010 is 1,064.69 tonnes of methane and 3,100.13 tonnes of Carbon dioxide. (These figures do not take account of LFG burned via the flare system)

- **Monthly Water Balance Calculation and Interpretation**
  Most of the rainwater falling onto the waste body permeates through to the base of the cells, the majority of which drains to the leachate collection point from where it is pumped to three leachate holding tanks. The waste absorbs some of this rainwater. The amount, which is absorbed, is, for the purpose of determining the monthly water balance, termed the Available Absorptive Capacity "C" and the theoretical formula for this is

  $$C = (H \times 0.1) + (T \times 0.05) - RA$$ where

  H = the mass in tonnes of household and commercial waste placed in the cell during the month.
  T = the mass of inert waste placed in the cell for the month.
  R = the effective rainfall for the month – actual rainfall minus evapotranspiration.
  A = the uncovered area of the cells into which the rain is falling.

For the leachate generation calculation it is the area inside the cut-off wall, which is used as the surface area generating leachate. The area within the cut-off wall is 92,314.8m^2. The old Cell No.1 lies beneath the fully capped and engineered Cell 1, and therefore can be regarded as being completely covered.

With regard to the composition of waste received at Derrinumera it is not possible to calculate the amount of household waste and inert waste accepted. Therefore all waste must be regarded as household waste for this calculation.
A meteorological station was set up on-site at end of September 2001. The actual rainfall recorded during 2010 was 1,325.5mm. Evaporation was calculated as 0.25.

The water balance sheet for Cell No 2 is attached in Appendix G.

The amount of leachate generated on-site is estimated by calculation at 65,088.21m^3 (Appendix F) and that which was transported off site was 68,200.49m^3 (Appendix E), the difference being 3,112.28m^3. The slight difference in volume of leachate removed from the facility and that generated is that a number of wastewater sources are not included in the leachate generation calculation. These include the leachate added by the Wellpoint system, the wheelwash system, and the site sewer. There is also a difference in the amount of leachate stored on-site at the start and end of each year.

- **Meteorological Report**
  The total rainfall recorded at the onsite meteorological station from January 2010 to December 2010 was 1,325.5 mm, which is average for the area.
  Temperatures ranged between - 8.8 and 25.6 degrees celcius.
  Atmospheric pressure ranging between 948.9 mbar and 1031.9 mbar. As weather data is recorded on an daily basis it has not been included in an appendix, but can be made available if requested.

  A summary of the monthly rainfalls for the site are set out in Appendix H.

- **Schedule of Environmental Objectives and Targets for the forthcoming year 2011**
  The Schedule of Environmental Objectives and Targets will be limited in 2011 due to reduced funding. The areas which will be prioritized are as follows:
  1. Reduce leachate generation by further extending the embankment cover as approved by the Agency.
  2. Prevent odours through effective gas collection and waste covering techniques.
  3. To make further progress in diverting BMW away from landfill in order to meet the targets set.

- **Report on the progress towards achievement of the Environmental Objectives and Targets.**
  The objectives set for 2010 were achieved by year end, including diverting surface water from the embankments, installing horizontal gas wells on Cell 2. New objectives are being set for 2011 to meet the conditions of the reviewed licence and reduced financial resources available, with odour management, leachate reduction and gas collection the main target areas.

- **Written Summary of any procedures developed by the licensee in the year which relates to the operation of the facility**
  There were no major changes to the Environmental Management System (EMS) during 2010, it will be reviewed during 2011 and submitted for agreement with the Agency. The EMS sets out all procedures drawn up in relation to operations at the facility.

- **Reported Incidents Summary**
  There were 25 category 3 incidents reported during 2010, the majority of these (16) related to the results of the monthly groundwater sampling showing evidence of historical leachate contamination and the monthly gas monitoring showing breaches of the threshold limits in the monitoring boreholes.

  There were 2 incidents involving the level of leachate in Cell 2 being in breach of the 1m threshold, these incidents occurred to allow leachate levels in the lagoon to be dealt with due to high rainfall.

  There was 4 incidents relating to odour complaints being received as outlined below in the complaints summary.

  There were 3 other incidents 1. Relating to a scheduled power outage between 9am and 5pm by the ESB during which the flare was in operable. 2. Related to a spill of leachate while loading a tanker. The spill was noticed, contained and removed by site staff immediately. 3. Related to a small spill of oil at the Civic Amenity while a collection of waste electrical goods was taking place. This spill was dealt with using the oil spill kits on-site.

- **Complaints Summary**
  There were 4 complaints received during 2010 in relation to the facility. All four related to odour being detected offsite. All the complaints occurred during the November and December and it is likely that climatic conditions played a part. All complainants were contacted by the deputy manager by phone and or letter to address the concerns and outline the mitigation measures taken to reduce odours at the facility.
  A tour of the site is offered to all complainants of environmental issues to allow those concerned to view at first hand the activities of the site.

- **Report on Financial Provision made under the licence**
  Derrinumera Landfill charges were €120/tonne, exclusive of the €30/tonne landfill levy. Bags of domestic refuse are charged at €6.80 per bag. Use of the Civic amenity for recycling is €3.40 to the public for all items except WEEE, batteries and textiles which are accepted free of charge. The estimated cost of operating Derrinumera Landfill for the year 2010 was €1.7m.

- **Report on Management and Staffing Structure of the facility**
  The staffing arrangements on-site at Derrinumera Landfill have not changed since the submission of the Management Structure in November 2009.

- **Report on the Programme for Public Information**
  Records of all monitoring results and reports are maintained at Derrinumera Landfill. In 2010 there were no requests from any member of the public seeking information pertaining to the landfill monitoring. Requests received mainly pertain to information on recycling and waste management. A number of requests for information were received from students both secondary and third level in relation to project work. All requests for information were replied to and invitations given to visit the facility if so required.

APPENDIX A

2010 Monthly Landfill Waste Return (tonnes)								
Month	**CA Site**	**Domestic**	**Commercial**	**Screenings**	**Industrial**	***Council clean up**	***Street cleanings**	**Total**
Jan	191.22	2084.12	178.2	4.08	13.14	2.14	90.4	**2563.3**
Feb	172.34	2215.02	55.7	7.26	27.18	67.12	79.2	**2623.82**
Mar	155.96	2634.96	76.5	10.38	9.58	27.84	106.74	**3021.96**
Apr	194.68	2338.56	10.42	4.26	1.16	25.56	141.82	**2716.46**
May	169.76	1805.38	13.68	4.1	0	46.34	113.2	**2152.46**
Jun	160.02	1897.66	18.28	2.98	3.84	11.2	110.38	**2204.36**
Jul	195.2	2273.14	76.26	4.78	32.72	3.32	109.94	**2695.36**
Aug	169.52	2666.24	95.88	1.84	9.12	1.16	108.98	**3052.74**
Sep	145.76	2916.46	88.9	3.98	8.02	11.1	75.84	**3250.06**
Oct	147.66	4106.66	98.98	8.7	0	0	104.06	**4466.06**
Nov	140.68	2788.06	52.92	3.18	0	5.12	108.42	**3098.38**
Dec	112.2	2783.8	38.38	8.88	0	0	87.06	**3030.32**
Total	**1955**	**30510.06**	**804.1**	**64.42**	**104.76**	**200.9**	**1236.04**	**34875.28**

APPENDIX B

Civic Amenity Totals	2010	(Tonnes)											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**TOTALS**
Paper	23.88	29.88	32.72	0	31.54	38.36	0	29.32	8.72	35.28	17.1	7.34	**254.14**
Cardboard	26.28	0	0	17.24	11.96	35.4	0	27.18	0	23.36	10.28	8.16	**159.86**
Glass	7.7	11.82	12.3	11.26	8.06	6.54	12.86	7.84	11.28	8.38	6.44	3.44	**107.92**
Car Batteries	0.8	3.48	1.72	1.38	1.34	2.3	1.38	1.9	0.76	0.8	1.7	0	**17.56**
Household batteries	0.32	0	0	0	0.72	0	0	0.56	0	0	0.36	0	**1.96**
Clothes	3.42	3.3	4.16	3.68	2.84	4.28	4.16	4.58	3.04	2.88	3.02	1.3	**40.66**
Electric fence batteries	0	0	0.42	0	0.34	0	0	0.38	0	0	0.44	0	**1.58**
White Goods	Figures provided by WEEE Ireland												**54.41**
Steel Cans	8.12	5.24	0	4.88	1.88	0	2.78	0	5.96	0	0	5.28	**34.14**
Scrap Metal	6.14	24.46	13.02	20.08	24.2	25.92	14.74	17.56	17.74	22.48	17.26	6.62	**210.22**
Aluminium Cans	0	0	0	0	0	0	3.34	0	0	0	0	0	**3.34**
Hard Plastics	0	1.38	2.34	1.88	1.82	2.34	1.18	2.78	3.26	2.04	2.8	0.74	**22.56**
Type 1 plastic	0	4.74	3.9	0	6.68	0	0	1.28	0	0	4.06	0	**20.66**
Type 2 plastic	0	6.66	0	0	0	3.8	0	10.22	3.06	0	6.98	0	**30.72**
Tetrapak	0	0	0	0	4.14	0	0	3.1	0	0	2.22	0	**9.46**
Timber	11.26	15.14	12.16	15.11	12.96	12.96	9.7	12.42	15.28	9.42	12.78	6.36	**145.55**
Motor Oil	0	0	1.08	0	1.42	0	1.08	0	2.16	1.4	0	0.92	**8.06**
Oil filters	0	0.32	0	0.28	0	0.16	0	0.32	0	0	0	0	**1.08**
Televisions	Figures provided by WEEE Ireland												**50.979**
Mixed WEEE	Figures provided by WEEE Ireland												**181.85**
Waste Paints	0	1.8	1.56	0	0	2.54	3.18	0	2.12	1.96	0	0	**13.16**
Fridges/Freezers	Figures provided by WEEE Ireland												**24.937**
Fluorescent Tubes	Figures provided by WEEE Ireland												**1.211**
Tyres (Stockpiled)	0	0	0	0	0	0	4.86	0	0	12.72	0	0	**17.58**
Window Glass	0	0	5.86	0	4.02	0	0	0	5.58	0	0	3.3	**18.76**
Aerosols	0	0	0.32	0	0.02	0	0	0	0.42	0	0.12	0	**0.88**
Gas Cylinders	0.36	0	0	0	0	0	0.16	0.34	0	0	0	0	**0.86**
Cooking oil	0	0	0	0	0	0.88	0	0	0	0	0	0	**0.88**
Plasterboard/Gypsum	0	2.42	1.8	1.38	0	2.48	0	0	0	0	0	2.06	**10.14**
Polystyrene	0.12	0	0	0.3	0	0.18	0	0.34	0	0	0.2	0	**1.14**
Green waste	0	0	0	0	0.74	1.02	2.04	3.6	3.06	2.24	0	0	**12.7**
Monthly Totals	**88.4**	**110.64**	**93.36**	**77.47**	**113.94**	**139.16**	**59.42**	**120.12**	**79.38**	**120.7**	**85.76**	**45.52**	**1133.89**

APPENDIX C

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW2	73.5	6.9	0.7	0	3	0.7
February	GW2	57.7	7.7	3	0	0	3
March	GW2	53.8	7.8	1.9	0	0	3.1
April	GW2	49.9	9.3	1.6	0	0	10.8
May	GW2	40.4	10.8	2.4	0	0	15.2
June	GW2	47.3	14.7	0.5	0	0	15.6
July	GW2	38.8	13.4	2.8	0	0	14.5
August	GW2	48.7	8.5	1.5	0	0	15.2
September	GW2	47.6	13.8	2.1	0	0	17.8
October	GW2	66.6	9.3	1.5	0	0	9.7
November	GW2	56.6	10.7	1.7	0	2	9.6
December	GW2	35.5	6.9	7.2	0	1	1.7

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW6	0.4	5.1	0.6	0	0	1.6
February	GW6	0.6	4.6	0.4	0	0	8.2
March	GW6	0.6	5.3	0.3	0	0	3.7
April	GW6	0.1	7.2	0.5	0	1	14.6
May	GW6	0	9.1	0.7	0	0	16.9
June	GW6	0	9.4	4.1	0	0	20.8
July	GW6	0	8.6	6	0	0	15.8
August	GW6	0	9.8	0.2	0	0	16.2
September	GW6	0	10	0.7	0	0	18.5
October	GW6	0	8.1	0.2	0	0	14.1
November	GW6	0	7.8	0.4	0	0	10.3
December	GW6	0	5.8	0.7	0	0	8.6

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW8	5.7	0.9	0.3	0	0	0.6
February	GW8	5.8	1.4	0.2	0	0	4.6
March	GW8	6.2	1.7	0.2	0	0	2.7
April	GW8	4.8	2.9	0.4	0	0	13.4
May	GW8	2.4	6.7	0.4	0	0	16.7
June	GW8	0.9	8.4	0	0	0	16.3
July	GW8	0.5	9.7	0.1	0	0	15.3
August	GW8	0.3	7	0.1	0	0	15.1
September	GW8	0.2	7.4	0.4	0	0	17.4
October	GW8	0.2	4	0	0	0	9.3
November	GW8	0.5	3.3	0.3	0	0	9.5
December	GW8	0.6	1.3	0.3	0	0	1.6

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW9	0	0.5	21.4	0	0	1.4
February	GW9	0	0.3	20.7	0	0	9.6
March	GW9	0	0.3	20.8	0	0	4.9
April	GW9	0	0.2	20.5	0	0	11.6
May	GW9	0	0.3	20.3	0	1	15.7
June	GW9	0	0.6	19	0	0	18.4
July	GW9	0	0.7	19.3	0	0	17.9
August	GW9	0	0.7	18.7	0	0	14.3
September	GW9	0	1.8	17.5	0	2	16.5
October	GW9	0	0.7	19.5	0	0	13.5
November	GW9	0	0.2	20	0	0	8.6
December	GW9	0	0.3	20.2	0	0	6.1

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW13	0.2	0	19.6	0	error	1.5
February	GW13	0.2	0	19.4	0	0	9.2
March	GW13	0.2	0	19.9	0	0	4.3
April	GW13	0.1	0	19.3	0	0	13.3
May	GW13	0	0	18.9	0	1	14.5
June	GW13	0	0	17.6	0	0	19.5
July	GW13	0.2	0	17.5	0	0	18.5
August	GW13	0.2	0	18.2	0	0	15.4
September	GW13	0.2	0	18.6	0	0	17.9
October	GW13	0.4	0	18.7	0	0	11.7
November	GW13	0.8	0	18.3	0	0	8.8
December	GW13	0.3	0	18.9	5	0	10.2

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW14	0	2.2	21	0	error	1.1
February	GW14	0	0.7	20.4	0	0	7.5
March	GW14	1.1	2.5	19.9	0	0	5
April	GW14	0	1	20.1	0	0	15.4
May	GW14	0	0.9	19.9	0	0	12.9
June	GW14	2.5	7	16.8	0	0	20.3
July	GW14	0.9	6.1	17	0	0	19.1
August	GW14	0	4.3	17.2	0	0	14.4
September	GW14	12.3	4	17	0	0	18.5
October	GW14	0	0.6	19.5	0	0	10.5
November	GW14	0	0.7	19.7	0	0	9.9
December	GW14	0.1	0.8	19.9	0	0	4.3

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW15	0.1	0	21.5	0	error	0.6
February	GW15	0	0.1	20.5	0	0	5.8
March	GW15	0	0.1	21	0	0	2.3
April	GW15	0	0	20.7	0	0	12.2
May	GW15	0	0	20.4	0	0	15.2
June	GW15	0	0.5	18.2	0	0	18.7
July	GW15	0	0.1	19.7	0	0	17.6
August	GW15	0	0	19.5	0	0	17
September	GW15	0	0	19.7	0	1	16.9
October	GW15	0	0	19.5	0	0	10.4
November	GW15	0	0.1	19.6	0	0	8.4
December	GW15	0.1	0.1	19.8	0	0	2.1

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW16	0	0	22	0	error	0.8
February	GW16	0	0	20.8	0	0	6
March	GW16	0	0.1	21.1	0	0	4.6
April	GW16	0	0	20.7	0	0	15.6
May	GW16	0	0	20.5	0	0	12.6
June	GW16	0	0	19.6	0	0	18.8
July	GW16	0	0	19.7	0	0	18.7
August	GW16	0	0	19.6	0	0	15.2
September	GW16	0	0	19.8	0	0	18.3
October	GW16	0	0	19.8	0	0	11.9
November	GW16	0	0	20.1	0	0	8.9
December	GW16	0	0	20.3	0	0	3.2

Month	Gas Well No.	CH4 %v/v	CO2 %v/v	O2 %v/v	H2S p.p.m	CO p.p.m	Temp.
January	GW17	0	0.3	22	0	error	1.3
February	GW17	0	0.1	20.9	0	0	7.3
March	GW17	0	0.2	21	0	0	5.8
April	GW17	0	0.1	20.7	0	0	13.5
May	GW17	0	0.2	20.3	0	0	16.3
June	GW17	0	0.3	19.2	0	0	20
July	GW17	0	0.6	19.4	0	0	19.3
August	GW17	0	0.4	19.2	0	0	16.6
September	GW17	0	0.4	19.6	0	0	16.5
October	GW17	0.1	1.1	18.9	0	0	13.1
November	GW17	0.1	1.7	18.9	0	0	9.5
December	GW17	0	0.9	19.5	0	0	5.4

APPENDIX D

GROUNDWATER

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
March	MW 1A.	0	0	6.9	621	0.015	0.046	<0.01
June	MW 1A.	0	0	7	703	0.021	0.29	0.015
September	MW 1A.	0	0	6.8	691	0.014	<0.05	<0.05
November	MW 1A.	0	0	6.9	488	1.171	<0.05	<0.01
November	MW 17.	0	0	6.5	1647	5.826	0.41	0.081
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 18.	0	0	6.4	1500	6.821	0.116	<0.01
June	MW 18.	0	0	6.4	1509	7.095	0.13	<0.01
September	MW 18.	0	0	6.3	1495	6.262	0.08	<0.01
November	MW 18.	0	0	6.4	1515	9.423	0.07	0.025
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 19.	0	0	6.4	1487	6.917	0.12	<0.01
June	MW 19.	0	0	6.4	1399	6.574	0.18	<0.01
September	MW 19.	0	0	6.3	1335	5.388	0.09	<0.01
November	MW 19.	0	0	6.4	1267	6.563	<0.05	0.015

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
March	MW 20.	0	0	6.7	2260	9.008	0.28	0.266
June	MW 20.	0	0	6.7	1819	71.42	0.13	<0.01
September	MW 20.	0	0	6.6	2700	135.663	0.12	0.105
November	MW 20.	0	0	6.7	1919	79.817	0.29	0.022
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 21.	0	0	6.8	2280	8.218	0.136	0.085
June	MW 21.	0	0	6.8	2430	102.485	0.07	0.027
September	MW 21.	0	0	6.7	2730	106.088	0.11	0.049
November	MW 21.	0	0	6.8	2280	128.179	0.94	0.031
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 22.	0	0	6.8	2330	11.583	0.368	0.748
June	MW 22.	0	0	6.7	2910	121.23	0.2	0.018
September	MW 22.	0	0	6.6	3230	177.501	0.13	0.339
November	MW 22.	0	0	6.7	3050	121.763	0.15	0.023
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 23.	0	0	6.7	2160	40.645	1.18	0.736
June	MW 23.	0	0	6.7	2090	106.08	0.49	0.293
September	MW 23.	0	0	6.6	2240	123.836	0.26	0.21
November	MW 23.	0	0	6.8	2230	123.706	0.66	0.018

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
March	MW 24.	0	0	6.6	2260	18.695	0.224	<0.01
June	MW 24.	0	0	6.5	2870	56.27	0.27	<0.01
September	MW 24.	0	0	6.4	2800	56.168	0.18	<0.01
November	MW 24.	0	0	6.5	2990	61.436	0.3	0.037
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 25.	0	0	6.7	850	8.734	0.082	<0.01
June	MW 25.	0	0	6.7	886	9.139	0.14	<0.01
September	MW 25.	0	0	6.5	860	5.48	0.05	<0.01
November	MW 25.	0	0	6.7	781	6.858	0.08	0.023
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 26.	0	0	6.7	808	0.586	0.58	<0.01
June	MW 26.	0	0	6.6	685	0.526	0.31	<0.01
September	MW 26.	0	0	6.4	672	0.602	<0.05	<0.01
November	MW 26.	0	0	6.7	670	1.604	0.05	0.013
Receipt Date	**Sample ID**	**BOD (mg/l)**	**Suspended Solids mg/l**	**pH (pH units)**	**Conductivity @20C uS/cm**	**Ammonia as NH3-N (mg/l)**	**Total Phosphorus as P (mg/l)**	**Orthophosphate as PO4-P (mg/l)**
March	MW 27.	0	0	6.6	737	0.825	0.082	<0.01
June	MW 27.	0	0	6.5	744	0.8	0.19	<0.01
September	MW 27.	0	0	6.4	724	0.821	<0.05	<0.01
November	MW 27.	0	0	6.6	744	2.315	<0.05	<0.01

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
March	MW 28.	0	0	6.4	576	1.78	0.073	<0.01
June	MW 28.	0	0	6.3	536	2.378	0.29	<0.01
September	MW 28.	0	0	6.2	596	1.552	<0.05	<0.01
November	MW 28.	0	0	6.4	600	2.905	<0.05	<0.01

SURFACE WATER

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
January	SW 1.	<1	<2	4.6	82.6	0.014	0.016	<0.01
February	SW 1.	<1	<2	4.7	84.2	<0.005	0.024	<0.01
March	SW 1.	<1	2	5.1	92.6	0.009	0.024	<0.01
April	SW 1.	<1	<2	4.6	72.3	<0.005	0.076	<0.01
May	SW 1.	<1	<2	5.1	85.7	0.04	0.092	<0.01
June	SW 1.	<1	13	4.9	107.5	<0.005	0.09	0.011
July	SW 1.	<1	2	5.1	150.3	0.018	<0.05	<0.01
August	SW 1.	<1	<2	6.1	84.9	0.062	<0.05	<0.01
September	SW 1.	<1	<2	5.4	73.6	<0.005	<0.05	<0.01
October	SW 1.	<1	5	5.9	80.9	0.066	<0.05	<0.01
November	SW 1.	<1	<2	4.2	85.7	0.012	<0.05	0.014
December	SW 1.	<1	<2	4.2	110.8	0.074	0.06	<0.01

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
January	SW 2.	<1	8	6.7	208	0.216	0.023	<0.01
February	SW 2.	<1	<2	6.8	226	0.617	0.043	<0.01
March	SW 2.	<1	5	7	323	1.451	0.057	<0.01
April	SW 2.	<1	2	7	149.3	0.31	0.048	<0.01
May	SW 2.	<1	2	6.8	367	2.08	0.046	<0.01
June	SW 2.	<1	3	6.9	375	1.811	0.13	<0.01
July	SW 2.	<1	3	6.2	413	1.338	<0.05	<0.01
August	SW 2.	<1	<2	7.2	224	0.218	<0.05	0.062
September	SW 2.	<1	<2	7.1	141.3	0.14	<0.05	<0.01
October	SW 2.	<1	31	6.9	215	0.437	0.1	<0.01
November	SW 2.	<1	4	6.5	158.7	0.15	<0.05	0.014
December	SW 2.	<1	<2	6.5	284	0.638	<0.05	<0.01

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
January	SW 3.	<1	<2	7.8	100.6	0.046	0.011	<0.01
February	SW 3.	<1	<2	7	124.7	0.085	0.035	<0.01
March	SW 3.	<1	5	7.6	164.9	0.147	0.03	<0.01
April	SW 3.	<1	<2	7.5	95	0.024	0.032	<0.01
May	SW 3.	<1	<2	7.6	206	0.032	0.032	<0.01
June	SW 3.	<1	15	7.5	220	0.039	0.24	0.012
July	SW 3.	<1	38	6.7	248	0.049	<0.05	<0.01
August	SW 3.	<1	4	7.1	116.4	0.03	<0.05	0.023
September	SW 3.	<1	<2	7.5	91.1	0.054	<0.05	<0.01
October	SW 3.	<1	<2	7.2	123.3	0.1	0.05	<0.01
November	SW 3.	<1	<2	7.3	105.2	0.024	<0.05	0.016
December	SW 3.	<1	<2	6.8	152.1	0.13	<0.05	<0.01

Receipt Date	Sample ID	BOD (mg/l)	Suspended Solids mg/l	pH (pH units)	Conductivity @20C uS/cm	Ammonia as NH3-N (mg/l)	Total Phosphorus as P (mg/l)	Orthophosphate as PO4-P (mg/l)
January	DSW1.	<1	17	7.5	252	0.133	0.067	<0.01
February	DSW1.	<1	13	7.5	267	0.36	0.076	<0.01
March	DSW1.	<1	6	7.1	308	0.041	0.031	<0.01
April	DSW1.	<1	8	6.6	205	0.107	0.063	<0.01
May	DSW1.	<1	3	7.5	323	0.043	0.043	<0.01
June	DSW1.	<1	7	7.7	272	0.13	<0.05	<0.01
July	DSW1.	<1	<2	7.6	310	<0.005	<0.05	<0.01
August	DSW1.	<1	4	7.3	293	0.021	<0.05	<0.01
September	DSW1.	<1	<2	7.5	200	0.029	0.05	<0.01
October	DSW1	<1	87	7.5	242	0.274	0.25	<0.01
November	DSW1.	<1	8	7.4	203	0.115	<0.05	0.013
December	DSW1.	<1	2	6.8	257	0.11	<0.05	<0.01

APPENDIX E

Volume of Leachate Transported Off-Site in 2010

MONTH	Volume m^3 (Tanker loads)
January	10,115.14m^3 (401)
February	5,357.74m^3 (220)
March	3,496.24m^3 (146)
April	4,154.26m^3 (174)
May	2,074.1m^3 (85)
June	1,579.2m^3 (66)
July	2,240.28m^3 (93)
August	2,695.18m^3 (109)
September	10,582.74m^3 (423)
October	7,428.80m^3 (301)
November	15,848.13m^3 (639)
December	2,628.68m^3 (104)
Total	**68,200.49m^3 (2,761)**

The volume transported by each tanker varies between 21-27m^3 with the average load removed in 2010 being 24.7 m^3

The total volume of leachate transported in 2010 was 68,200.49m^3

of which 34,660.26 m^3 was disposed of to Castlebar WWTP and 33,540.23m^3 to Westport WWTP.

APPENDIX F

Volume of Leachate Produced and Volume of Leachate Transported off-site
Calculation of Leachate Generated 2010

Lo = [ER(A) + LW + IRCA +ER(l)] – [aW] where:

Lo = leachate produced in cubic metres

ER = 994.125mm (rainfall recorded on-site (1,325.5) minus evaporation taken as 0.25 (331.375))

A = 92,314m^2 (Area within cut-off wall) – 15,000m^2(Capped Cell 1) – 5,000m2 (pilot cover) – 20,000 X 1/6 m^2 (embankment covered by 31/10/10) = 68,981m^2

LW = 0 (no sludge accepted)

IRCA = 0.

l = 0 (included in area within the cut off wall)

a = 0.1m^3/tonne

W = weight of waste deposited = 34,875.28 tonnes

January to December 2010

Lo = (.994125m x 68,981m^2) – (0.1 x 34,875.28)
= 65,088.21 m^3

Total estimate of leachate generated therefore = 65,088.21m^3

APPENDIX G

Water Balance Return Form

Site: Derrinumera Landfill
Year: 2010
Cell No.2: 20,140 m^2

Month	**Household Waste (tonnes)**	**Inert Waste (tonnes)**	**Effective Rainfall (m)**	**Available Absorptive Capacity for Cell (tonnes)**	
	H	**T**	**R**	**Month C**	**Cumulative C**
January	**2563.3**	0	0.1086	-1930.874	-1931
February	**2623.82**	0	0.0811	-1370.972	-3302
March	**3021.96**	0	0.0632	-970.652	-4272
April	**2716.46**	0	0.0574	-884.39	-5157
May	**2152.46**	0	0.0422	-634.662	-5792
June	**2204.36**	0	0.0354	-492.52	-6284
July	**2695.36**	0	0.1602	-2956.892	-9241
August	**3052.74**	0	0.1116	-1942.35	-11183
September	**3250.06**	0	0.2484	-4677.77	-15861
October	**4466.06**	0	0.1258	-2087.006	-17948
November	**3098.38**	0	0.242	-4564.042	-22512
December	**3030.32**	0	0.0496	-695.912	-23208

Available Absorptive Capacity "C" is defined as:

$$C = (H \times 0.1) + (T \times 0.05) - (RA) \text{ tonnes where}$$

H = the mass in tonnes of household and commercial waste input to the cell for the month;
T = the mass in tonnes of transfer station and general skip waste input to the cell for the month;
R = effective rainfall
A = original plan area of the cell in square metres

APPENDIX H

2010 Monthly Rainfall Figures.

DERRINUMERA LANDFILL - 2010

MONTH	RAINFALL (mm)
January	108.6
February	81.1
March	63.2
April	57.4
May	42.2
June	35.4
July	160.2
August	111.6
September	248.4
October	125.8
November	242
December	49.6
Total	1,325.5

Environmental Protection Agency

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.11

REFERENCE YEAR	2010

1. FACILITY IDENTIFICATION

Parent Company Name	Mayo County Council
Facility Name	Derrinumera Landfill Facility
PRTR Identification Number	W0021
Licence Number	W0021-02

Waste or IPPC Classes of Activity

No.	class_name
3.1	Deposit on, in or under land (including landfill).
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
3.5	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
3.6	Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule.
3.7	##
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.

Address 1	Derrinumera/Drumilra (Townlands)
Address 2	Newport
Address 3	County Mayo
Address 4	
Country	Ireland
Coordinates of Location	-9.45379 53.8838
River Basin District	IEWE
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Killian Farrell (W0021)
AER Returns Contact Email Address	kfarrell@mayococo.ie
AER Returns Contact Position	Deputy Landfill Manager
AER Returns Contact Telephone Number	098-41632
AER Returns Contact Mobile Phone Number	087-9155475
AER Returns Contact Fax Number	098-41676
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

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

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

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

4.1 RELEASES TO AIR Link to previous years emissions data | PRTR# : W0021 | Facility Name : Derrinumera Landfill Facility | Filename : W0021_2010.xls | Return Year : 2010 | 10/03/2011 16:22

SECTION A : SECTOR SPECIFIC 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
03	**Carbon dioxide (CO2)**	M	CRM	GASSIM	3100137.6	3100137.6	0.0	0.0
01	Methane (CH4)	E	OTH	Calculated from flare	652038.7	652038.7	0.0	0.0

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

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					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: Derrinumera Landfill Facility

Please enter summary data on the quantities of methane flared and / or utilised	**T (Total) kg/Year**	**M/C/E**	**Method Used**		**Facility Total Capacity m3 per hour**	
			Method Code	**Designation or Description**		
Total estimated methane generation (as per site model)	1064693.7	M	CRM	GASSIM	N/A	
Methane flared	412655.0	E	OTH	Bernard Hyde spreadsheet	250.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	652038.7	E	OTH	Calculated from flare and m	N/A	

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : W0021 | Facility Name : Derrinumera Landfill Facility | Filename : W0021_2010.xls | Return Year : 2010 | 10/03/2011 16:23

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					
Within the Country	19 07 03	No	34660.26	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Castlebar Wastewater Treatment Plant,D0047-01	Pontoon Road,NA,Castlebar,NA,Ireland		
Within the Country	19 07 03	No	33540.23	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Westport Wastewater Treatment Plant,D0055-01	NA,NA,Westport ,NA,Ireland		
Within the Country	20 01 01	No	254.14	paper and cardboard	R3	M	Weighed	Offsite in Ireland	WERS Waste,WFP-G-0002-02	Tuam Business Park Weir Road,NA,Tuam Co. Galway.,NA,Ireland		
Within the Country	20 01 01	No	159.86	paper and cardboard	R3	M	Weighed	Offsite in Ireland	WERS Waste,WFP-G-0002-02	Tuam Business Park Weir Road,NA,Tuam Co. Galway.,NA,Ireland		
Within the Country	20 01 39	No	22.56	plastics	R5	M	Weighed	Offsite in Ireland	WERS Waste,WFP-G-0002-02	Tuam Business Park Weir Road,NA,Tuam Co. Galway.,NA,Ireland		
Within the Country	15 01 02	No	30.72	plastic packaging	R5	M	Weighed	Offsite in Ireland	WERS Waste,WFP-G-0002-02	Tuam Business Park Weir Road,NA,Tuam Co. Galway.,NA,Ireland		
Within the Country	20 01 40	No	3.34	metals	R4	M	Weighed	Offsite in Ireland	Erin Recyclers Ltd,WP - SO-08-93	Deep Water Quay Finisklin, ,Sligo,NA,Ireland		
Within the Country	20 01 40	No	34.14	metals	R4	M	Weighed	Offsite in Ireland	Erin Recyclers Ltd,WP - SO-08-93	Deep Water Quay Finisklin, ,Sligo,NA,Ireland		
Within the Country	20 01 40	No	210.22	metals	R4	M	Weighed	Offsite in Ireland	Erin Recyclers Ltd,WP - SO-08-93	Deep Water Quay Finisklin, ,Sligo,NA,Ireland		
Within the Country	15 01 05	No	9.46	composite packaging	R3	M	Weighed	Offsite in Ireland	Barna waste,W0106-02	Carrowbrowne Headford Road ,,,Galway,,,Ireland		
Within the Country	15 01 02	No	20.66	plastic packaging	R5	M	Weighed	Offsite in Ireland	Castlebar Wastewater Treatment Plant,D0047-01	Pontoon Road,NA,Castlebar,NA,Ireland		
Within the Country	20 01 02	No	18.76	glass	R5	M	Weighed	Offsite in Ireland	Barna waste,W0106-02	Carrowbrowne Headford Road , ,Galway,NA,Ireland		
Within the Country	15 01 02	No	1.14	plastic packaging	R5	M	Weighed	Offsite in Ireland	Barna waste,W0106-02	Carrowbrowne Headford Road , ,Galway,NA,Ireland		
Within the Country	17 08 02	No	10.14	gypsum-based construction materials other than those mentioned in 17 08 01	R5	M	Weighed	Offsite in Ireland	Barna waste,W0106-02	Carrowbrowne Headford Road , ,Galway,NA,Ireland		
Within the Country	20 01 10	No	40.66	clothes	R3	M	Weighed	Offsite in Ireland	Textile Recycling Ltd,WPR - 014	Glen Abbey Complex Belgard Road Tallaght,.,Dublin,24,Ireland		
Within the Country	20 01 02	No	107.92	glass	R5	M	Weighed	Offsite in Ireland	Rehab,Exempt	Ballymount,.,Dublin,.,Ireland		
Within the Country	16 01 03	No	17.58	end-of-life tyres	R5	M	Weighed	Offsite in Ireland	Crumb rubber,WP 2007-01	Mooretown Dromiskin,.,Dundalk Co. Louth.,,,Ireland		
Within the Country	20 01 36	No	54.41	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	R4	M	Weighed	Offsite in Ireland	KMK metal,W0113-02	Cappincur Industrial Estate,.,Daingean Road Tullamore Co. Offaly.,,,Ireland		
Within the Country	20 01 36	No	181.85	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	R4	M	Weighed	Offsite in Ireland	KMK metal,W0113-02	Cappincur Industrial Estate,.,Daingean Road Tullamore Co. Offaly.,,,Ireland		
Within the Country	20 01 35	Yes	50.979	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and and 20 01 23 containing hazardous components	R4	M	Weighed	Offsite in Ireland	KMK metal,W0113-02	Cappincur Industrial Estate,.,Daingean Road Tullamore Co. Offaly.,,,Ireland	KMK metal,W0113-02,Cappincur Industrail Estate,.,Daingean Road Tullamore Co . Offaly,.,Ireland	.,.,.,.,Ireland

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	20 01 21	Yes	1.211	fluorescent tubes and other mercury-containing waste	R4	M	Weighed	Offsite in Ireland	KMK metal,W0113-02	Cappincur Industrial Estate,.,Daingean Road Tullamore Co. Offaly.,.,Ireland	KMK metal,W0113-02,Cappincur Industrail Estate,.,Daingean Road Tullamore Co . Offaly,.,Ireland	.,.,.,.,Ireland
Within the Country	20 01 23	Yes	24.937	discarded equipment containing chlorofluorocarbons	R4	M	Weighed	Offsite in Ireland	KMK metal,W0113-02	Cappincur Industrial Estate,.,Daingean Road Tullamore Co. Offaly.,.,Ireland	KMK metal,W0113-02,Cappincur Industrail Estate,.,Daingean Road Tullamore Co . Offaly,.,Ireland	.,.,.,.,Ireland
Within the Country	20 02 01	No	12.7	biodegradable waste	R3	M	Weighed	Offsite in Ireland	Barna waste,W0106-02	Carrowbrowne Headford Road , ,Galway,NA,Ireland		
Within the Country	20 01 38	No	145.55	wood other than that mentioned in 20 01 37	R3	M	Weighed	Onsite in Ireland	Derrinumera Landfill Site,W0021-02	Newport Co. Mayo,.,.,.,Ireland		
To Other Countries	20 01 27	Yes	13.16	paint, inks, adhesives and resins containing dangerous substances	R5	M	Weighed	Abroad	Eco-safe systems,W0054-02	.,Unit 1A Allied Industrial Estate Kylemore Road ,Dublin,10,Ireland	Recyfuel S.A.,BE 459735458,Zoning Industrial d'Hein,.,Engis,B4480,Belgium	.,.,.,.,Belgium
Within the Country	20 01 25	No	0.88	edible oil and fat	R9	M	Weighed	Offsite in Ireland	ENVA Recyclers,W0184-01	Clonminam Industrial estate,.,Portlaoise Co. Laois,.,Ireland		
Within the Country	20 01 26	Yes	8.06	oil and fat other than those mentioned in 20 01 25	R9	M	Weighed	Offsite in Ireland	ENVA Recyclers,W0184-01	Clonminam Industrial estate,.,Portlaoise Co. Laois,.,Ireland	ENVA,W0184-01,Clonminam Industrial estate,.,Portlaoise Co. Laois,.,Ireland	.,.,.,.,Ireland
Within the Country	16 01 07	Yes	1.08	oil filters	R9	M	Weighed	Offsite in Ireland	RILTA,W0192-02	Grants Drive,402 Greenogue Business Park,Rathcoole Co. Dublin,.,Ireland	RILTA,W0192-02,Grants Drive,402,Greenogue Business Park Rathcoole Co. Dublin,.,Ireland	.,.,.,.,Ireland
Within the Country	20 01 33	Yes	17.56	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	R4	M	Weighed	Offsite in Ireland	RILTA,W0192-02	Grants Drive,402 Greenogue Business Park,Rathcoole Co. Dublin,.,Ireland	RILTA,W0192-02,Grants Drive,402,Greenogue Business Park Rathcoole Co. Dublin,.,Ireland	.,.,.,.,Ireland
Within the Country	20 01 33	Yes	1.96	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	R4	M	Weighed	Offsite in Ireland	KMK metal,W0113-02	Cappincur Industrial Estate,.,Daingean Road Tullamore Co. Offaly.,.,Ireland	KMK metal,W0113-02,Cappincur Industrail Estate,.,Daingean Road Tullamore Co . Offaly,.,Ireland	.,.,.,.,Ireland
Within the Country	16 06 05	No	1.58	other batteries and accumulators	R4	M	Weighed	Offsite in Ireland	KMK metal,W0113-02	Cappincur Industrial Estate,.,Daingean Road Tullamore Co. Offaly.,.,Ireland	KMK metal,W0113-02,Cappincur Industrail Estate,.,Daingean Road Tullamore Co . Offaly,.,Ireland	.,.,.,.,Ireland
To Other Countries	16 05 04	Yes	0.88	gases in pressure containers (including halons) containing dangerous substances	D10	M	Weighed	Abroad	ENVA Recyclers,W0184-01	Clonminam Industrial estate,.,Portlaoise Co. Laois,.,Ireland	SBH,HRB 590 346,Austrasse 5,.,Krautheim,D74238,Germany	.,.,.,.,Germany

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