

## OXIGEN ENVIRONMENTAL LIMITED



**Annual Environmental Report  
2008  
W152-03  
for Waste Baling and Transfer Facility  
in Robinhood Industrial Estate  
Robinhood Road  
Dublin 22  
Ph: (01) 4624459**

*Prepared By: Rachel Griffith, Environmental Compliance Officer.*

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## 1.0 Introduction

Oxigen Environmental Limited hold EPA Waste Licence Register Number W0152-03 to operate a Waste Transfer Station at the Robinhood Industrial Estate, Robinhood Road, Ballymount, Dublin 22. In accordance with the requirements of Condition 11.9 of the Waste Licence, an Annual Environmental Report (AER) for the facility must be submitted to the Environmental Protection Agency (EPA).

This AER covers the reporting period from the 1<sup>st</sup> of January 2008 to the 31<sup>st</sup> of December 2008.

This facility is located at:

Oxigen Environmental Ltd.,  
Robinhood Industrial Estate,  
Robinhood Road,  
Ballymount,  
Dublin 22.

Tel: 01 4600197

Fax: 01 4600699

## 2.0 Description of the activities carried out at the Facility (Process Operations)

The Waste Transfer Station is located within an industrial area. The facility is surrounded by warehouses and industrial businesses. The Robinhood Road is located at the northern boundary of the site.

Waste handling activities at the site in 2008 consisted of accepting and baling municipal waste preceding transfer to landfill. Baling and temporary storage of a small quantity of dry recyclables and plastic bottles also took place.

### 2.1 Process Operations

The licensed waste activities, permitted under the Third Schedule of the Waste Management Acts 1996 to 2003, in the Waste Licence W0152-3 are as follows:

***Third Schedule, Class 11 Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.***

This activity is limited to bulking and transfer of waste.

***Third Schedule, Class 12 Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.***

This activity is limited to the transfer and reloading of waste.

***Third 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.***

This activity is limited to storage prior to bulking and transfer or waste.

All the waste that enters the facility is recorded on arrival using the Genesys software system. The vehicle is then directed to the tipping area inside the shed where the load is inspected. Any non-conforming material such as recyclables or large bulky items are segregated out from the pile, reloaded into a skip and transferred to the Oxigen Ballymount Facility for recovery.

### 3.0 Quantity and Composition of waste recovered, received and disposed of during the reporting period 2008.

3.1 Waste received at the facility consisted of household and commercial municipal solid waste that was baled for transfer to landfill and recycling material that was temporary stored or baled before transfer for recycling. The waste received at Robinhood during the reporting period was recorded in tonnes. The breakdown of quantities received as per each EWC type is listed in Table 3.1.1.

*Table 3.1.1 Tonnage of Waste Received by Source and Material Type*

Source/Material	MSW	Plastic	Food	Canteen	Dry Recycling	Cardboard	Bulky Waste	Total
	20 03 01	15 01 02	20 02 01	20 03 01	20 03 01	20 01 01	20 03 07	
<b>Domestic</b>	9,751.91	1.19						<b>9,753.10</b>
<b>Commercial</b>	8,538.91	19.78	25.4	232.7				<b>8,816.79</b>
<b>Internal Transfers</b>	16,560.90	27.52			7,709.38	47.5	329.9	<b>24,675.20</b>
<b>Third Party</b>	28,778.13	56.1						<b>28,834.23</b>
<b>Total</b>	<b>63,629.85</b>	<b>104.59</b>	<b>25.40</b>	<b>232.7</b>	<b>7,709.38</b>	<b>47.5</b>	<b>329.90</b>	<b>72,079.32</b>

3.2 All waste transferred from the Oxigen Robinhood Facility was transferred to EPA approved permitted or licensed facilities. The majority of waste removed from the facility was baled municipal waste which was transferred to Arthurstown Landfill in Kill, Co. Kildare. Other waste consigned was sent for further recovery or temporary storage.

*Table 3.2.1 Tonnage of Waste Removed from the facility by Destination and Material Type*

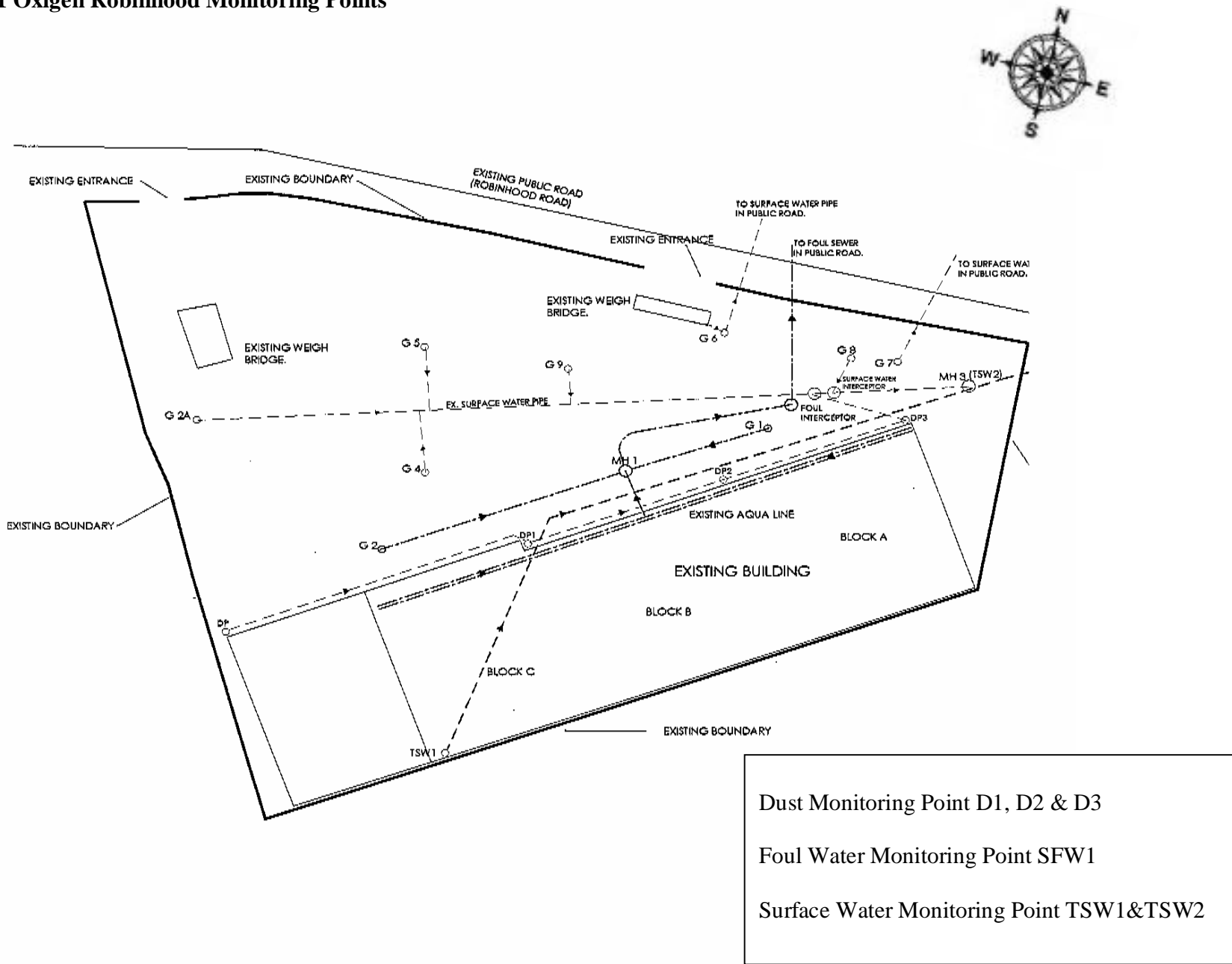
Destination/ Material	Permit/Licence Number	Plastic	Dry Rec	MSW	Bulky	Total
		15 01 02	20 03 01	20 03 01	20 03 07	
Ballymount	W0208-01	151.38		9.28	4.82	165.48
Greyhound	W0095-02			3.52		3.52
Cavan Landfill	W0077-02			18,382.49		18,382.49
Arthurstown Landfill	W0004-03			40,652.63		40,652.63
Derryclure Landfill	W0029-02			2,671.36		2,671.36
Scotch Corner	W0020-02			2,344.72		2,344.72
Whiteriver Landfill	W0060-02			215.73		215.73
Kyletalesha Landfill	W0026-02			19.48		19.48
JVC, Clonsaugh	WFP-DC-08- 0003-01		7,516.55			7,516.55
<b>Total</b>		<b>151.38</b>	<b>7,516.55</b>	<b>64,299.21</b>	<b>4.82</b>	<b>71,971.96</b>

All waste destinations that Oxigen Environmental, Robinhood use are EPA licensed or Local Authority permitted.

#### 4.0 Emissions from the facility

Environmental monitoring results for the reporting period are outlined in the following sections. The results have been summarised in the tables below. A brief description of monitoring and location plan of all monitoring points is also presented. There is a high level of compliance with the standards set in the licence. Copies of the original monitoring reports are available on site. An environmental monitoring results summary is also presented in the 2008 PRTR Returns Worksheet in Appendix 1.

Figure 4.0.1 Oxygen Robinhood Monitoring Points



4.1 Schedule B.3 and C.3.2 of Waste Licence W0152-03 requires that emissions to sewer be monitored at a specified frequency. Monthly sampling is carried out for Temperature, pH, Biological Oxygen Demand, Chemical Oxygen Demand, Suspended Solids and Oils, Fats & Greases, Mineral Oils and Detergents. Sulphates and Flow are measured on a quarterly basis.

*Tables 4.1.1 and 4.1.2 Monthly Foul Water Results 2008*

Parameter	Unit	ELV	Jan	April	July	Oct
Sulphates (as SO <sub>4</sub> )	mg/l	1000	102.1	79.8	135.4	57.9
Flow Rate	m <sup>3</sup> /hr	n/a	0.15	0.09	0.22	0.37

Parameter	Units	ELV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature	*C	42*C max	n/a	n/a	14.1	13.2	22.1	15.4	15.7	15.1	18.7	15.1	11.4	9.9
pH	pH Units	06-Oct	6.59	6.45	6.32	6.89	6.4	5.92	7.23	6.83	6.56	6.67	7.83	6.51
BOD	mg/l	1000	42	2	468	328	968	649	305.2	97	679	124	204	375
COD	mg/l	3000	65	46	800	440	1980	1520	220	112	1300	330	1100	800
Total Suspended Solids	mg/l	1000	58	69	154	91	175	162	96	89	263	120	400	54
Oils, Fats & Grease	mg/l	100	18.2	<1	8	14	10.7	90	7.2	<1	52	76	88	7
Mineral Oils	mg/l	10	<0.01	<0.01	0.063	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Detergents	mg/l	100	0.099	0.18	0.066	1.12	<0.01	<0.001	0.168	0.173	3.44	1.091	0.154	0.584

4.2 Schedule B.2 and C.2.2 of Waste Licence W0152-03 requires that emissions to surface water are analysed on the monthly basis. The samples are analysed for Biological Oxygen Demand, Suspended Solids, Ammonia and Mineral Oils. The results are presented below. TSW1 is located at a border of the facility and the samples that are analysed at this point are representative of what came onto the site. TSW2 is located at the far end of the facility, the water that is sampled at this point flows through the site and the interceptor before arriving at TSW2. Therefore, in order to get an accurate reading for emissions contributed by Oxygen, we have taken the difference between the emissions at TSW1 and TSW2.

Table 4.2.1 Monthly Surface Water Results 2008

Parameters	Units	ELV	Monitoring Point	Monitoring											
				Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
BOD	mg/l	35	TSW1	<1	9	35	6	5	18	165.2	5.8	10	29	Dry	Dry
			TSW2	1	<1	6	6	4	7	34	4.56	6	7	Dry	Dry
			Increase/Decrease	0	-9	-29	0	-1	-11	-131.2	-1.32	-4	-22	0	0
Suspended Solids	mg/l	n/a	TSW1	65	22.7	141	10.8	74	82	132.7	195	24.7	174	Dry	Dry
			TSW2	4	2	8	8.8	4.4	47	14	6	12.7	87	Dry	Dry
			Increase/Decrease	-61	-20.7	-133	-2	-69.6	-35	-118	-189	-12	-87	0	0
Ammonia (as N)	mg/l	0.3	TSW1	0.33	0.25	0.61	0.35	0.58	0.44	0.3	0.55	0.94	0.14	Dry	Dry
			TSW2	0.13	0.08	0.68	0.02	0.12	0.3	0.2	0.26	0.1	0.23	Dry	Dry
			Increase/Decrease	-0.2	-0.17	0.07	-0.33	-0.46	-0.14	-0.1	-0.29	-0.84	0.09	0	0
Mineral Oils	mg/l	5	TSW1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	Dry	Dry
			TSW2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	Dry	Dry
			Increase/Decrease	0	0	0	0	0	0	0	0	0	0	0	0



4.3 Schedule B.1 and C.6 of Waste Licence W0152-03 requires that dust emissions are monitored on a quarterly basis. The results are displayed below.

Table 4.3.1 Quarterly Dust Results 2008

Monitoring Station	Units	ELV	January	March	June	August
D1	mg/m <sup>2</sup> /day	350	Missing	301.1	338.3	249.4
D2	mg/m <sup>2</sup> /day	350	292.5	129.4	237.8	149.4
D3	mg/m <sup>2</sup> /day	350	314.3	257.5	Missing	190.5

4.4 Schedule B.1 and C.1.2 of Waste Licence W0152-03 requires that certain emissions to air are monitored. Ammonia, Hydrogen Sulphide and Mercaptans are monitored on the monthly basis while amines, odour units and particulates are monitored bi-annually. The results are displayed below.

Table 4.4.1 Monthly Air Emissions Results 2008

Monitoring Point	Parameter	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec
Emission Point A	Mercaptan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hydrogen Sulphide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Ammonia	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Emission Point B	Mercaptan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hydrogen Sulphide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Ammonia	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Emission Point C	Mercaptan	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hydrogen Sulphide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Ammonia	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Table 4.4.2 Particulates Results 2008

Monitoring Point	April					October				
	Sampling Times		Particulates Conc $\mu\text{g}/\text{m}^3$			Sampling Times		Particulates Conc $\mu\text{g}/\text{m}^3$		
	Start	Finish	Average	Min	Max	Start	Finish	Average	Min	Max
A1	3.43	9.28	22	3	177	9.04	9.49	17	11	37
A2	9.31	10.16	5	1	25	10.45	11.3	11	6	35
A3	10.18	11.03	5	1	17	11.37	12.22	33	17	91

\*\*The particulates results displayed on the PRTR form are given in  $\text{kg}/\text{m}^3$  and not  $\text{kg}/\text{year}$ .

Table 4.4.3 Odour Results 2008

Monitoring Point	Average Odour Unit	April	October
A1	ou/m <sup>3</sup>	2	2.5
A2	ou/m <sup>3</sup>	2	1.5
A3	ou/m <sup>3</sup>	2	2

4.5 Schedule B.4 and C.5 of Waste Licence W0152-03 requires that noise monitoring is carried out on an annual basis. The annual noise monitoring for 2008 was carried out on the 6<sup>th</sup> December. The results of the noise monitoring are detailed below.

Table 4.5.1 Annual Noise Results 2008

Location	Sampling Interval	Duration (mins)	L <sub>AEQ</sub>	L <sub>A10</sub>	L <sub>A90</sub>	Wind Speed m/s	Sampling Notes
<b>Day Time Measurement</b>							
N1	08:44 - 09:44	60	63.6	61.5	51	0.1 - 3.0	10 Cars (~65-70dB) and 20 lorries (~73-92 dB) passed during monitoring. Activity can be heard-52-55dB. Passing Traffic brings levels to 55-60 dB.
N2	11.40 - 12.40	60	58.2	56.6	48.1	0.1 - 3.5	Activity is audible at this location between 48 and 53 dB. 8 cars (~ 60 dB) and 4 Lorries (~ 80-90 dB) passed during monitoring.
N3	10.31 - 11.31	60	54.7	57	47.5	0.1 - 3.0	Plant can be heard at between 50-52 dB. Lorries entering the plant reach up to 65 dB.
N4	13.42 - 14.42	60	49	52.7	43.5	0.1 - 3.0	Plant can be heard at between 46-51 dB. A truck passed close by at 12:07. Paused.
NSL1	15.38 - 16.38	60	55.5	52.5	40.3	0.1 - 2.0	There were 19 traffic movements during the monitoring period and these reached up to 80 dB. Plant barely audible above background.
<b>Night Time Measurement</b>							
NSL1	22.42 - 22.57	15	41.5	43	24.7	0.1 - 1.0	Passing Traffic and distant traffic is the main source of noise. The plant is not operating at this time.



## 5.0 Resource and Energy Consumption Summary

Gas oil and Electricity are the two forms of energy used on site. This energy is used to power machinery such as the baler and to fuel vehicles such as the front end loader and shunter. Electricity is also used in the day to day running of the canteen and office.

*Table 5.1 Summary Table of Resource Consumption for the Reporting Period*

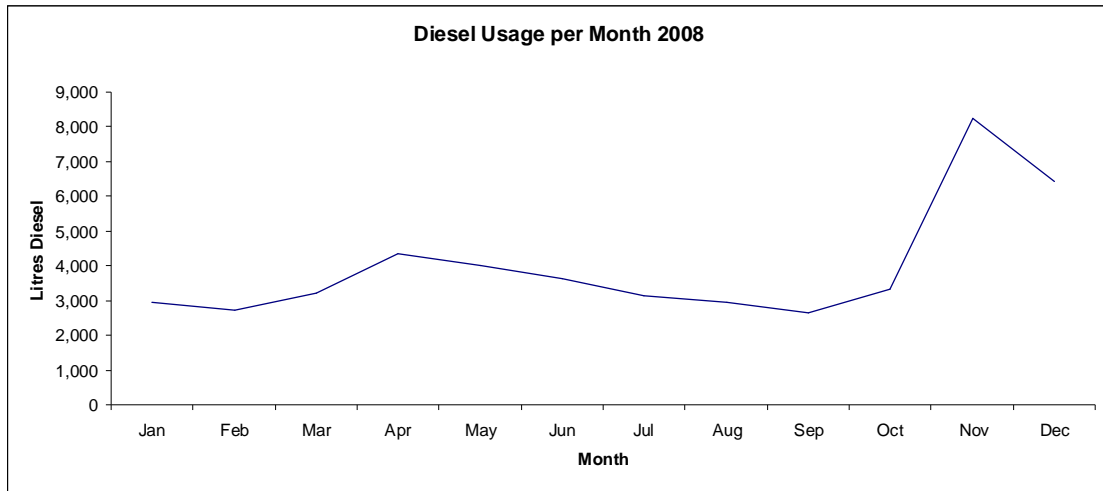
Site Energy Usage 2008	Quantity	Units
Gasoil	27,664	Litres
Electricity	706,957	kWh

## 5.2 Diesel Consumption

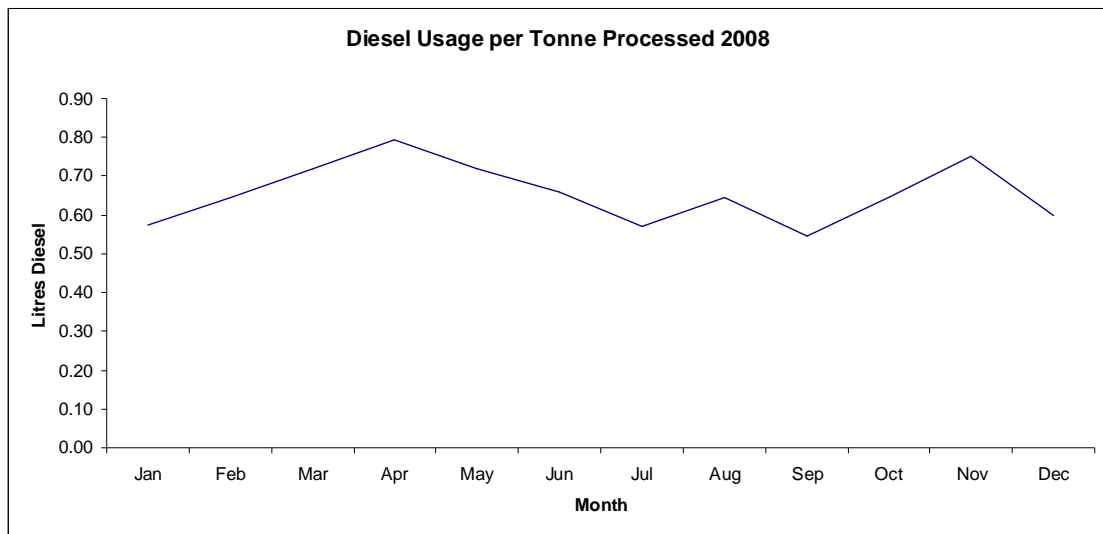
*Table 5.2.1 Diesel Usage per Month 2008*

Month 2008	Litres Used
Jan	2,953
Feb	2,718
Mar	3,227
Apr	4,352
May	3,999
Jun	3,626
Jul	3,139
Aug	2,942
Sep	2,654
Oct	3,317
Nov	8,234
Dec	6,439
Total	47,600

*Graph 5.2.2 Diesel Usage by Month 2008*



*Graph 5.2.3 Diesel usage per tonne Processed 2008*

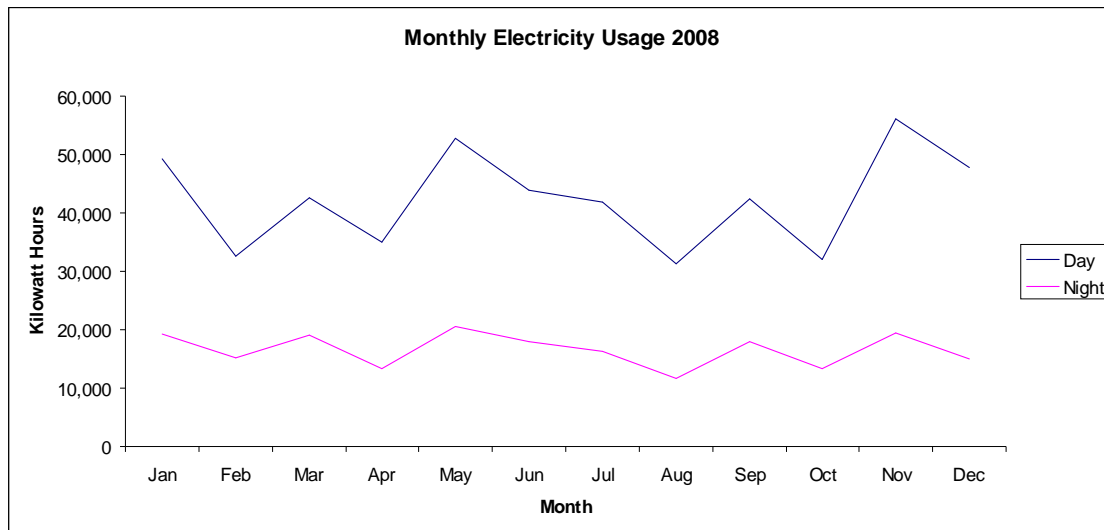


### 5.3 Electricity Consumption

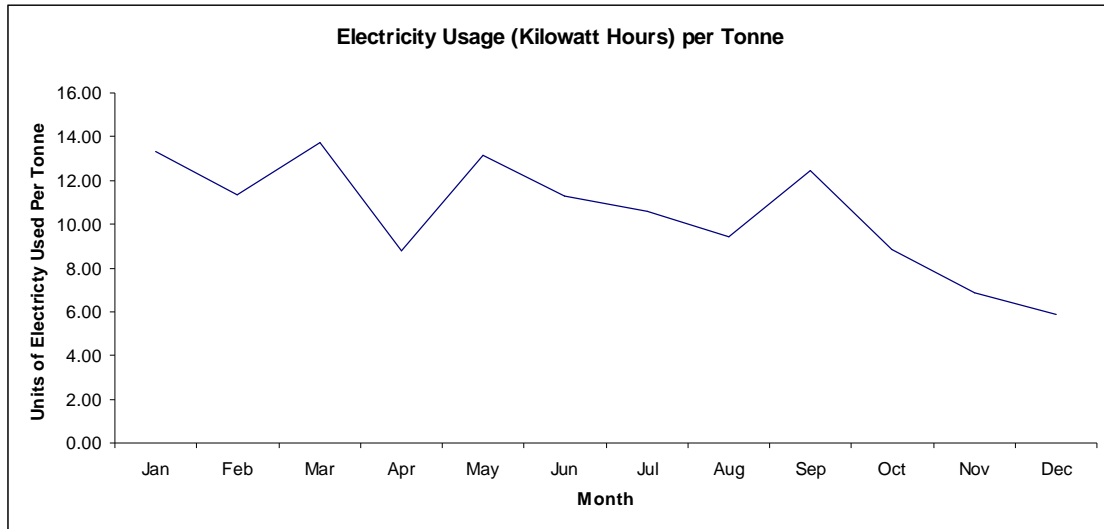
Table 5.3.1 Electricity Usage per Month 2008

	Day	Night	Total
<b>Jan</b>	49,202	19,309	68,511
<b>Feb</b>	32,677	15,163	47,840
<b>Mar</b>	42,670	19,025	61,695
<b>Apr</b>	34,961	13,352	48,313
<b>May</b>	52,820	20,499	73,319
<b>Jun</b>	43,932	17,987	61,919
<b>Jul</b>	41,913	16,308	58,221
<b>Aug</b>	31,290	11,645	42,935
<b>Sep</b>	42,498	17,961	60,459
<b>Oct</b>	32,060	13,287	45,347
<b>Nov</b>	56,106	19,427	75,533
<b>Dec</b>	47,807	15,058	62,865
<b>Total</b>	507,936	199,021	706,957

Graph 5.3.2 Monthly Electricity Usage 2008 by Day and Night



Graph 5.3.3 Electricity Usage per Tonne





## 6.0 Proposed Development/Infrastructural Works 2009

There are currently no definite plans for further development of the facility during the next year. However, Oxigen will be considering several options including Mechanical Biological treatment (MBT) to reduce tonnage to landfill. Any development proposed will be submitted to the Agency with Specified Engineering Works.

## 7.0 Objectives and Targets

The Robinhood facility is purely a baling and transfer station and so there is limited scope to increase recycling and recovery rates. However, an objective in the coming year is to look at different options to reduce tonnage to landfill. The company will look at processes such as MBT with a view to reducing the tonnage of material that is consigned to landfill every year in line with Government and EU targets.

The second objective for the coming year is to improve the facility's EMS, develop its procedures and work towards achieving the ISO 14001 Standard.

Every year, it is Oxigen Environmental's objective to operate this facility in compliance with EPA Licence number W0152-03 and other applicable legislation and to minimise any impact on the environment caused by the activities on site.

### 7.1 Environmental Management Plan

As part of the overall EMS at the facility, an Environmental Management Plan is in place in order to achieve the objectives and targets set out for the coming year and to ensure the facility is operating to high environmental standards.

<b>Objective 1</b> – Explore options to reduce tonnage to Landfill.
<b>Reason</b> – To help reach Government and EU targets.
<b>Method for Achieving Target</b> – Research all option, look for case studies, pull together info and communicate findings to senior management.
<b>Responsibility</b> – The Environmental Manager and Environmental Compliance Officer are responsible for the achievement of this target.

<b>Objective 2</b> – Upgrade EMS
<b>Reason</b> – To improve the environmental performance of the company and as a step towards attaining the ISO 14001 Environmental Standard.
<b>Method for Achieving Target</b> – Upgrade and formalise procedures
<b>Responsibility</b> – The Environmental Manager and Environmental Compliance Officer are responsible for the achievement of this target.

## **8.0 Procedures Developed by Oxigen Environmental in 2008.**

No new procedures were developed in 2008

## **9.0 Tank and Pipeline testing and inspection report**

**9.1** A survey of the complete drainage system at the facility was carried out by P.C. Drain Cleaning Ltd., on the 25<sup>th</sup> June 2008 and all drains were found to be in good working order. Details of the drainage survey including maps and reports were submitted to the Agency on the 23<sup>rd</sup> July 2008.

**9.2** Portable bunds are maintained on site for the storage of hydraulic oil, engine oil, waste oil, diesel, coolants and waste chemicals. These bunds have all been certified for integrity by the suppliers for a period of 3 years from the date of purchase.

## **10.0 Reported Incidents and Complaints Summary**

Oxigen Environmental, Robinhood received two complaints during the reporting period in relation to flies in the surrounding area.

The first complaint was received on the 7<sup>th</sup> July from a neighbouring business on the Turnpike Road. The complaint was not directly aimed at Oxigen, Robinhood as there were two other facilities named and the source of the problem was not specifically identified. The complaint was immediately investigated at the facility and upon inspection did not appear to have significant fly activity. However, as a precautionary measure, the Oxigen Robinhood facility was fogged for flies on the 9<sup>th</sup> July.

The second complaint was received on the 31<sup>st</sup> July from two companies in the neighbouring area. It was not clear as to which Oxigen facility this complaint was directed at and therefore action was taken at both sites. The facility at Robinhood was fogged for flies on 15<sup>th</sup> August.

## Appendix 1 PRTR Emissions Data

**\*\*The particulates results displayed on the PRTR form are given in kg/m<sup>3</sup> and not kg/year.**