Environmental Protection Agency
Office of Environmental Enforcement
McCumiskey House, Richview
Clonskeagh Road
Dublin 14

30th March 2012

Your Ref: Indaver Ireland Limited, Carranstown, Duleek, Co-Meath.
Licence number: W0167-02
Our Ref: 68/AER 2011

Dear Sir/Madam,

Please find attached Indaver Ireland Limited's Annual Environmental Report for the reporting period January 2011 to December 2011 for the licence W0167-02.

I trust this is to the satisfaction of the Agency but should there be any further queries please do not hesitate to contact me.

Kind Regards,

Grace McCormack

Grace McCormack
Quality & Environmental Manager MSW
Indaver Ireland Limited
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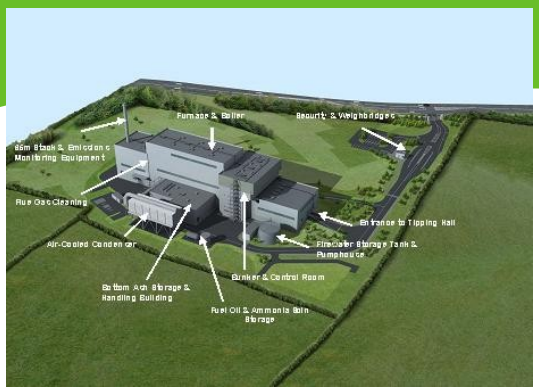

Indaver Ireland Limited– Annual Environmental Report W0167-02

Reporting Year January 2011 to December 2011

ANNUAL ENVIRONMENTAL REPORT

Waste Licence Registration No.:	W0167-02
Licensee:	Indaver Ireland Limited
Location of Activity:	Carranstown, Duleek, Co-Meath
Attention:	Environmental Protection Agency Office of Environmental Enforcement McCumiskey House, Richview Clonskeagh Road Dublin 14

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1.0 Introduction

1.1 Reporting Period

The following is the Annual Environmental Report (AER) for the period 1st January 2011 to the 31st December 2011 for the Waste to Energy Facility located at Carranstown, Duleek, Co-Meath and operated by Indaver Ireland Limited. Waste activities commenced at the site on the 15th August 2011.

This report has been prepared as per schedule D of Indaver's waste licence (Register No. W0167-02)

1.2 Description of On-Site Waste Activities

Indaver commenced operations in 1977 and is one of Ireland's leading companies in the recovery, treatment and disposal of hazardous and non hazardous waste.

Indaver has offices in Dun Laoghaire, Dublin Port, Cork and Meath and operates:

- A custom-built hazardous waste transfer station and solvent recovery facility in Dublin Port
- A Waste to Energy Facility in Duleek, Co Meath
- Civic amenity sites in Newcastle West, Killmallock and Mungret on behalf of Limerick County Council

The development in Meath is valued at €130 million and represents the largest ever single investment in solid waste management infrastructure in Ireland. Indaver's Meath facility uses the most advanced technology, to process 200,000 tonnes of waste annually, generating enough energy to meet the needs of 20,000 homes. The development of a thermal treatment plant with energy recovery is in line with the North East Regional Waste Management Plan.

Construction of the facility began in September 2008. This state of the art WTE facility will provide the Northeast region and surrounding areas with an alternative recovery treatment solution to landfill. It offers municipal waste collectors and Local Authorities a treatment solution for their residual waste.

Indaver currently employs 165 people with 35 of these working at the Meath facility

Meath Waste to Energy Facility:

The primary operation on the Meath Waste-to-Energy Facility is the incineration of non hazardous wastes with associated energy recovery in the form of steam which will be used to generate electricity.

In general terms, the Meath WtE Facility is designed to incinerate and recover energy from the residual fraction of non-hazardous household, commercial and industrial waste and non-hazardous wastewater sludge. It consists of an incineration plant with energy recovery and ancillary services, and the throughput of the facility for incineration is 200,000tpa.

The facility comprises of the following main elements:

- The main process building (comprising of tipping hall, waste bunker, furnace boiler, steam turbine, flue gas treatment and ash storage) including the control room, labs and administration offices
- The building housing the air cooled condenser
- A contractors' compound / building with workshop
- A transformer compound and ESB substation with emergency generator
- A security building with weighbridge at facility entrance
- A water storage tank and pump house

The main process building is approximately 160 m long, 40 m wide at the widest point and 40 m above ground at the highest point. The stack is 65 m tall and will vent the treated combustion gases to atmosphere. The plant is based on conventional grate furnace technology with a horizontal steam boiler and an advanced flue gas treatment system designed to meet the current emissions regulations. The plant will produce up to 17.2 MW electricity of which approximately 15.1MW is expected to be exported to the national grid.

Waste is transported to the site by waste contractors in accordance with the site's licensed opening hours. On entering the site, waste contractors follow a well marked two-way route to the tipping hall where inspections on the waste are conducted by Indaver on a routine basis. There is a large turning area outside the tipping hall to allow the waste delivery vehicles turn safely before entering the hall and a maximum speed limit of 15 km/h. In the tipping hall, waste is deposited into the waste bunker where it is mixed by the crane before being placed in the hopper for the furnace. In the furnace, the waste is incinerated at temperatures exceeding 850ºC. The ash collected from the bottom of the furnace passes through a wet bath before being stored for collection and removal from the site. The combustion gases from the process pass through a number of treatment stages. This includes two stages of dosing (lime milk and lime) for acid removal and two stages of dosing (expanded clay and activated carbon) for dioxin removal, before passing through filter bags and being discharged to atmosphere via the emissions stack. The emissions to air is continuously monitored automatically and fed back to the control room for the facility where the levels of dosing can be adjusted if required. A schematic of the process is attached as Appendix 1.

Figure 1 Aerial Photograph of the Waste to Energy Facility

Overview of status of commissioning:

The commissioning of the plant is almost finalised. Reports are still to be sent to the Agency before getting the final approval from the EPA under Condition 3.18.4. There are a few packages that still need to be finalised e.g. the surface water attenuation pond and associated monitoring and the final report on the T2S verification. It is anticipated that this will be finalised by Quarter 2 of 2012 with reports issued to the Agency.

1.3 Summary of quantity and composition of waste received, recovered and disposed of in reporting period

1.3.1 Waste received on site for recovery

Licenced annual tonnage limit for your site (total tonnes/annum)	EWC code	Source of waste accepted	Description of waste accepted	Quantity of waste accepted in current reporting year (tonnes)	Quantity of waste accepted in previous reporting year (tonnes)	Disposal/Recovery or treatment operation carried out at your site and the description of this operation	Quantity of waste remaining on site at the end of reporting year (tonnes)
200,000	20 03 01	*20- MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS*	mixed municipal waste	31,170.88	0	R1	
200,000	20 03 99	*20- MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS*	municipal wastes not otherwise specified	267.62	0	R1	
50,000	19 12 10	*19-Waste from waste mamabement facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use*	combustible waste (refuse derived fuel)	492.82	0	R1	
50,000	19 12 12	*19-Waste from waste mamabement facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use*	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	10,087.92	0	R1	
50,000	19 10 04	*19-Waste from waste mamabement facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use*	fluff-light fraction and dust other than those mentioned in 19 10 03	24.22	0	R1	
50,000	19 05 01	*19-Waste from waste mamabement facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use*	non-composted fraction of municipal and similar wastes	40.22	0	R1	
50000	19 02 03	*19-Waste from waste mamabement facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use*	premixed wastes composed only of non-hazardous wastes	39.50	0	R1	
50000	16 03 06	*16- Wastes not otherwise specified in the list*	organic wastes other than those mentioned in 16 03 05	2.04	0	R1	
20000	07 05 12	*07- WASTES FROM ORGANIC CHEMICAL PROCESSES*	sludges from on-site effluent treatment other than those mentioned in 07 05 11	3.98	0	R1	
			Total:	**42,129.20**		**37403**	**4726.2**

All waste accepted to site was accepted from within the state.

1.3.2 Waste moved off site for recovery/disposal

European Waste Code	Quantity T/Year	Description of Waste	Waste Treatment Operation	Name and Licence / Permit No. of Recoverer / Disposer / Broker
19 01 12	4659.82	bottom ash and slag other than those mentioned in 19 01 11	D1	Whiteriver Landfill[Louth County Council],W0060-03
19 01 02	65.32	ferrous materials removed from bottom ash	R4	Hammond Lane Metal Company Limited,WFP-DC-0013-01
19 01 02	216.88	ferrous materials removed from bottom ash	R4	Hegarty Metal Processors (International) limited,WFP-LKC-11-001-01
19 01 13*	240.96	fly ash containing dangerous substances	R5	K&S Kali GmBH,LicenceM76D310/57
19 01 07*	1291.98	solid wastes from gas treatment	R5	K&S Kali GmBH,LicenceM76D310/57
20 03 07	4.56	bulky waste	D1	Whiteriver Landfill[Louth County Council],W0060-03
16 10 02	6968.12	aqueous liquid wastes other than those mentioned in 16 10 01	D9	EPS Dundalk and Drogheda WWTW,EPS Pumping & Treatment Systems
16 10 02	41.86	aqueous liquid wastes other than those mentioned in 16 10 01	D9	Rilta Environmental,W0192-03
20 03 04	453.78	septic tank sludge	D9	EPS Dundalk and Drogheda WWTW,EPS Pumping & Treatment Systems

European Waste Code	Quantity T/Year	Description of Waste	Waste Treatment Operation	Name and Licence / Permit No. of Recoverer / Disposer / Broker
17 02 01	18.98	wood	R13	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03
17 05 04	98.92	soil and stones other than those mentioned in 17 05 03	D15	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03
17 04 05	6.5	iron and steel	R13	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03
20 03 01	1.98	mixed municipal waste	R13	Nurendale Limited trading as Panda Waste Services Limited,W0140 – 03
17 09 04	39.94	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	D15	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03
20 03 01	12.64	mixed municipal waste	D15	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03
17 06 04	0.78	insulation materials other than those mentioned in 17 06 01 and 17 06 03	D15	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03
16 10 01*	10.5	aqueous liquid wastes containing dangerous substances	D9	Rilta Environmental,W0192-03

European Waste Code	Quantity T/Year	Description of Waste	Waste Treatment Operation	Name and Licence / Permit No. of Recoverer / Disposer / Broker
13 05 07*	13.06	oily water from oil/water separators	D9	Enva Ireland Ltd,196-1
20 03 04	16.02	septic tank sludge	D9	Meath County Council-Navan,D0059-01
20 03 01	0.45	mixed municipal waste	R1	Indaver Ireland Limited,W0167-02

1.4 Summary Report on emissions

1.4.1 Air Emission Reports

1.4.1.1 Continuous Monitoring

Please see below the summary report on the continuous air monitoring emissions.

Figure 1.4.1.1.1 gives an overview of compliance against the A and B norm using the confidence intervals as stated in Condition 4.1.1.2.

Installation	parameter	# half-hours	# non compliances against A norm
ME1	Dust	3494	0
	CO	3464	13
	TOC	3462	1
	HCl	3464	0
	HF	3464	0
	SO2	3464	0
	NOx	3464	0
Total		24276	14

Installation	parameter	# half-hours	97% B-norm
ME1	Dust	3494	100.0
	CO	3464	100*
	TOC	3462	99.9
	HCl	3464	100.0
	HF	3464	100.0
	SO2	3464	99.3
	NOx	3464	99.9
Total		24276	99.7

*=95% of all measurements for CO for Periodic Monitoring as per Schedule B of W0167-02

Figure 1.4.1.1.1 Overview of compliance with half hour ELV including confidence intervals for A and B norm.

Figure 1.4.1.1.2 gives an overview of compliance against the Daily emission Limit per month and the average for the year 2011.

Parameter	Day Average	Unit	Year Average	Sept 2011	Oct 2011	Nov 2011	Dec 2011
Dust	10	mg/Nm3	0.07	0.06	0.05	0.08	0.07
CO	50	mg/Nm3	2.86	3.9	2.63	2.08	2.81
TOC	10	mg/Nm3	0.6	0.87	0.94	0.39	0.21
HCl	10	mg/Nm3	0.71	0.34	0.8	0.54	1.16
SO2	50	mg/Nm3	8.88	3.78	2.54	8.02	21
NOx	200	mg/Nm3	113	102	102	121	124
HF	1	mg/Nm3	0.03	0.02	0.02	0.01	0.08

Installation	parameter	# Days	Total Daily ELV exceeded	% daynorm
ME1	Dust	69	0	100.0
	CO	68	0	100.0
	TOC	67	0	100.0
	HCl	68	0	100.0
	HF	68	0	100.0
	SO2	68	0	100.0
	NOx	68	0	100.0
TOTAL		476	0	100.0

Figure 1.4.1.1.2 Overview of compliance with the daily emission limit value including confidence intervals (measured to standard conditions including 11% O2)

1.4.1.2 Quarterly Testing

Quarterly testing of the air emissions took place on the 12th to the 16th December 2012. Please see below for a summary of all the results of this monitoring campaign. All parameters are in compliance with Schedule B W0167-02

		Concentration				Mass Emission			
Parameter	**Units**	**Result**		**MU +/-**	**Limit**	**Units**	**Result**	**MU +/-**	**Limit**
Total Particulate Matter [1]	mg/m³	1.4		3.02	30*	g/hr	178	385	-
PM_{10} [1]	mg/m³	0.37		0.59	-	g/hr	47.0	75.3	-
$PM_{2.5}$ [1]	mg/m³	0.27		0.35	-	g/hr	34.1	44.6	-
Cadmium & Thallium [1]	mg/m³	0.001		0.0002	0.05	g/hr	0.19	0.03	-
Heavy Metals [1]	mg/m³	0.04		0.01	0.5	g/hr	5.6	0.93	-
Mercury [1]	mg/m³	0.0002		0.00002	0.05	g/hr	0.02	0.003	-
Arsenic [1]	mg/m³	0.001		0.0002	0.2	g/hr	0.18	0.02	-
Dioxins & Furans Upper Limit (worst case where <LOD = LOD)									
Dioxins & Furans (NATO I-TEQ) [1]	ng/m³	0.0019		0.00039	0.1	µg/hr	0.24	0.049	-
Dioxins & Furans (WHO TEQ Humans / Mammals) [1]	ng/m³	0.0019		0.00038	-	µg/hr	0.24	0.048	-
Dioxins & Furans (WHO TEQ Fish) [1]	ng/m³	0.0021		0.00042	-	µg/hr	0.26	0.053	-
Dioxins & Furans (WHO TEQ Birds) [1]	ng/m³	0.0032		0.00065	-	µg/hr	0.40	0.082	-
Dioxins & Furans Lower Limit (best case where <LOD = 0)									
Dioxins & Furans (NATO I-TEQ) [1]	ng/m³	0.0013		0.00027	-	µg/hr	0.17	0.034	-
Dioxins & Furans (WHO TEQ Humans / Mammals) [1]	ng/m³	0.0012		0.00023	-	µg/hr	0.15	0.030	-
Dioxins & Furans (WHO TEQ Fish) [1]	ng/m³	0.0014		0.00028	-	µg/hr	0.17	0.035	-
Dioxins & Furans (WHO TEQ Birds) [1]	ng/m³	0.0024		0.00049	-	µg/hr	0.31	0.062	-
Hydrogen Fluoride [1]	mg/m³	0.05		0.004	4*	g/hr	6.9	0.56	-
Total VOCs (as Carbon) [1]	mg/m³	0.24		0.14	20*	g/hr	30.3	17.5	-
Oxides of Nitrogen (as NO_2) [1]	mg/m³	149		8.3	400*	g/hr	18929	1052	-
Sulphur Dioxide [1]	mg/m³	42.7		2.7	200*	g/hr	5434	343	-
Carbon Monoxide [1]	mg/m³	0.17		0.79	100*	g/hr	21.5	100	-
Hydrogen Chloride [1]	mg/m³	1.9		0.72	60*	g/hr	244	92	-
Nitrous Oxide [1]	mg/m³	0.42		1.6	-	g/hr	53.7	200	-
Oxygen	% v/v	Dry	8.7	0.20					
Water Vapour	% v/v		18.0	0.92					
Stack Gas Temperature	°C		138						
Stack Gas Velocity	m/s		14.3						
Volumetric Flow Rate (ACTUAL)	m³/hr		195057						
Volumetric Flow Rate (REF) [1]	m³/hr		127188		147000				

NOTE: VOLUMETRIC FLOW RATE DATA TAKEN FROM THE PRELIMINARY VELOCITY TRAVERSE.

[1] Reference Conditions (REF) are: 273K, 101.3kPa, dry gas, 11% oxygen.

*These limits are the half hourly averages taken from table B1, column A on page 34 of the Waste Licence Number W0167-02.

1.4.1.3 Dioxin Monitoring

Dioxin monitoring on a fortnightly periodic basis started on the 8th December 2011 in accordance with the commissioning plan. Below are the results for December 2011.

Date	Results	Units
8/12/2012-22/12/2012	0.00065-0.0013	ng/Nm^3 TEQ
22/12/2012-05/01/2012	0.00139-0.00140	ng/Nm^3 TEQ

1.4.2 Surface Water Emissions

Surface Water/Pond

Currently all data is inputted into our Automation X system. A reporting system for this still needs to be written and this is part of the handover deliverable from project from the commissioning of the plant due for February 2012. The pond has not been handed over to operations fully but will be handed over in Quarter 1, 2012.
The system is managed using the DCS at the site and is monitored continuously and the trigger levels as agreed with the Agency have been adhered to. Any trigger levels that have not have been adhered to have been reported as incidents in accordance with the licence.

Surface Water Agreed Trigger Levels:

pH	TOC	Conductivity
6-9	Warning Level 15 mg/L Action Level 20mg/L	Warning Level 650µScm^{-1} Action Level 800µScm^{-1}

1.5 Summary of Noise Survey

Noise monitoring was performed on the 23rd November, 1st December and the 2nd December 2011 by KD Environmental. The programme was sent to the Agency prior to this on the 28th September 2011. The conclusion of the report is that the noise levels were outside the permitted day time limit of 55dB(A) and night time noise limit of 45 dB(A) at monitoring locations AN1-1, AN1-2 and AN1-3. This is due to road traffic on the R152 road which runs along the front of the facility. Noise levels were within the permitted day and night time noise levels at monitoring location AN1-4 at the rear of the site. No tonal or impulsive noise from site activities were recorded during either day or night time monitoring. Noise levels detected at AN1-4 are seen as being representative of the typical site generated noise at the site boundary and are not subjected to interference from road traffic. In conclusion, noise emissions from the site have a minimal impact on the local environment.

1.5.1 Noise Level Results

Monitoring Point	Date/ Time	Sampling Interval minutes	L(A)eq	$L(A)_{10}$	$L(A)_{90}$	Audible Noise Sources
AN1-1	01/12/2011 15:45	30	**60.6**	64.5	47.9	Low level audible noise from site activities during daytime hours. Road traffic noise from R152 main audible noise source.
	22:12	30	**53.6**	58.8	43.7	Little if any noise from site activities. Road traffic noise from R152 main audible noise source.
AN1-2	23/11/2011 17:07	30	**69.1**	72.5	58.7	Little if any noise from site activities. Road traffic noise from R152 main audible noise source.
	01/12/2011 23:16	30	**59.6**	79.4	40.5	Little if any noise from site activities. Road traffic noise from R152 main audible noise source.
AN1-3	23/11/2011 15:57	30	**63.2**	66.2	56.2	Little if any noise from site activities. Some site traffic noise entering and exiting main gate approx. 60m away. Road traffic noise from R152 main audible noise source.
	02/12/2011 00:25	30	**50.9**	54.4	33.6	Little if any noise from site activities. Road traffic noise from R152 main audible noise source.
AN1-4	01/12/2011 14:32	30	47.1	51.8	46.6	Forklift operating approx. 70m away and waste truck unloading approx. 80m away main source of site noise during daytime hours
	02/12/011 01:32	30	43.0	63.6	42.1	Some low level noise audible from forklift and loader operating on site during night time hours.

1.5.2 Tonal or Impulsive Noise

Monitoring Point	Time	Tonal or Impulsive Noise from Site Activity	Comments
AN1-1	Day 13:36	No	No significant tonal and impulsive noise. from site activities. None recorded.
	Night 22:42	No	No significant tonal and impulsive noise. from site activities. None recorded.
AN1-2	Day 17:37	No	No significant tonal and impulsive noise. from site activities. None recorded.
	Night 23:48	No	No significant tonal and impulsive noise. from site activities. None recorded.
AN1-3	Day 16:27	No	No significant tonal and impulsive noise. from site activities. Recorded at 315Hz and 500Hz due to off site traffic on R152.
	Night 00:55	No	No significant tonal and impulsive noise. from site activities. None recorded.
AN1-4	Day 15:03	No	No significant tonal and impulsive noise. from site activities. None recorded.
	Night 02:02	No	No significant tonal and impulsive noise. from site activities. None recorded.

1.6 Summary of all Environmental Monitoring

1.6.1 Groundwater Monitoring

It is a requirement of Schedule C.6.1 of W0167-02 that monthly groundwater monitoring and biannual monitoring of the groundwater monitoring boreholes takes place. Please see below a summary of the results for the same.

AGW1-1 Upgradient Monitoring Point

Monitoring Frequency	TOC(mg/L)	Ammonia (NH4) Ug/L as N	Conductivity uscm-1@25C
Sep-11	0.94	10	780
Oct-11	6.89	44	729
Nov-11	2.7	10	911
Dec-11	6.16	10	921

AGW1-2 Downgradient Monitoring Point

Monitoring Frequency	TOC(mg/L)	Ammonia (NH4) Ug/L as N	Conductivity uscm-1@25C
Sep-11	2.78	10	657
Oct-11	2.97	21	650
Nov-11	2.56	10	667
Dec-11	9.49	22	667

AGW1-3 Downgradient Monitoring Point

Monitoring Frequency	TOC(mg/L)	Ammonia (NH4) Ug/L as N	Conductivity uscm-1@25C
Sep-11	2.75	23	643
Oct-11	2.74	10	642
Nov-11	1.73	10	669
Dec-11	5.2	10	697

Biannual Results

	AGW1-1	AGW1-2	AGW1-3
Date	30/11/2011	29/11/2011	29/11/2011
pH	7.1	7.4	7.2
Nitrate(mg/L as N)	3.97	10.02	12.61
Nitrite(mg/L as N)	<0.002	<0.002	<0.002
Chloride (mg/L)	83.52	30.9	31.56
Fluoride (mg/L)	0.14	0.12	0.14
Metals-Cd (ug/L)	<0.09	<0.09	<0.09
Metals Tl (ug/L)	<0.06	<0.06	<0.06
Metals Hg (ug/L)	<0.04	<0.04	<0.04
Metals Pb (ug/L)	<0.02	<0.02	<0.02
Metals Cr (ug/L)	<2.14	<2.14	<2.14
Metals Cu (ug/L)	<0.11	<0.11	<0.11
Metals Mn (ug/L)	<0.04	<0.04	<0.04
Metals Ni (ug/L)	<0.14	<0.14	<0.14
Metals As (ug/L)	<0.1	<0.1	<0.1
Metals CO (ug/L)	<0.02	<0.02	<0.02
Metals V (ug/L)	<0.16	<0.16	<0.16
Metals Sn (ug/L)	<2.8	<2.8	<2.8
Organohalogens	<1	<1	<1
Total coliforms(no/100ml)	0	0	0
Faecal Coliforms(no/100ml)	0	0	0

Overall it can be stated the activities on the site at W0167-02 has no significant impact on the groundwater quality as can be shown by the above results.

1.7 Summary record of the use of the emergency generator

The emergency generator was used a total of 33 hours in 2011. The majority of these hours would have been for testing purposes as part of the commissioning of the plant. The generator is tested once a week for a period of 300seconds.

Month	Hours Used
September	11
October	3
November	6
December	13

1.8 Resource and Energy Consumption Summary

An energy audit is to be completed at the facility prior to August 2012 as required by Condition 7.3 of W0167-02.

1.8.1 Diesel Usage

For the year 2011 Indaver Ireland Limited used 1,879,795L of Diesel fuel oil. This is used in the auxiliary burners of the plant. The majority of this fuel usage was during the commissioning period for steam blow and during the drying out and heating up of the plant from cold. Fuel oil is also used whenever the temperature goes below 850°C .

1.8.2 Water Usage

1.8.2.1 Groundwater:

For the year 2011, Indaver Ireland Limited used 17389m^3 of groundwater for use in the process. This equates to approximately 11m^3 an hour. This is used for the process to mix with lime which creates lime milk for use in the flue abatement system. Water would also be used inside the plant for clean down purposes. All the clean down washings are reused in the process again. Indaver also has a demineralisation plant to ensure water is of a sufficient quality for use in the boiler.
It is anticipated that the volumes will be similar for the year 2012 also.

1.8.2.2 Public Supply: The public water supply is only used on site for general office purposes and welfare facilities (Showers/toilets/drinking water etc) in the administration block. It is not envisaged to monitor or reduce the amount of water used here.

1.8.3 Energy Consumption

For the reporting year 2011 the plant consumed 3,805,940 kWh. An energy audit will be conducted in 2012 to verify the energy efficiency of the plant and any actions which are required to be completed will be inputted into our schedule of objectives and targets (Indaver Improvement Plan). The plant will produce electricity which will be exported and produce sufficient electricity for on site usage also.

1.9 Waste Recovery Report

The End of Life Vehicles Directive sets a minimum reuse and recovery target of 85% from 2006 increasing to 95% reuse and recovery by 2015. Up to 10% of this target may be met through energy recovery. The Meath waste-to-energy facility is positioned to accept End of Life Vehicle residue in the form of car shred and contribute to this recovery target from 2011 onwards. In 2011, 24.22T of automotive shredder waste was accepted and recovered.

As a recovery option, the waste-to-energy facility can contribute to packaging recovery targets set out under the Packaging Directive (currently 60% recovery). It is estimated that up to 48,000t residual packaging waste in the MSW accepted will be recovered at the facility.

The facility contributed to the national target of diverting 50% household waste from landfill. Approximately 42,059.46 tonnes waste was treated at the facility in 2011, compared with 843,842 tonnes household waste disposed of to landfill in the country. Therefore, the facility contributed 4.98% towards this diversion target.

Flue Gas Residue and Boiler ash are removed from site and sent to an underground salt mine in Germany. This is considered a recovery operation, R5, as the mine is being filled up with this material in order to remediate the ground above.

Ferrous metals are recovered from the bottom ash on site using a magnet and sent to metal brokers within Ireland.

Residue	Tonnage	Recovery Option
Ferrous Metal	282.20	R4
Flue Gas Residue	1291.98	R5
Boiler Ash	240.96	R5

Bottom ash is currently being landfilled. The EPA have in their letter W0167-02/GC13IM stated that Indaver must submit to the Agency opportunities and proposals for the recovery/recycling of bottom ash from our site prior to September 28th, 2012.

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

The plant was still in commissioning in 2011. The bunds test reports, including tanks, were sent to the Agency after installation and prior to use. There were no issues reported in any of these areas. Testing is not required again until 2013.

1.11 Summary of reported incidents and complaints

1.11.1 Summary of Incidents

All Environmental Incidents are dealt with as per the Environmental Incident Investigation and Reporting Procedure Operations 6.4.

There were 28 reported environmental incidents in 2011. There were 24 elevated ELV(Emission Limit Value) values and of these 10 were low temperature at the furnace which is not directly in itself an ELV. The majority of these incidents were due to the commissioning of the plant as the

plant only started incinerating waste on the 21st September. There were 2 surface water elevated trigger levels however these did not result in any offsite environmental pollution as the monitoring point which detected the elevated trigger level was at the inlet to the pond and the water was diverted to the underground fire water retention tank. No surface water was discharged outside of our agreed trigger levels. There was 1 black out of the site due to the synchronising of the turbine for electricity production. There was 1 breakdown of the air emission analyser. All of these incidents were reported to the Agency by the following working day in accordance with the guidance issued by the Agency.

1.11.2 Summary of complaints

All Environmental Complaints are dealt with as per the Environmental Complaints Procedure Operations 6.2.

There were 4 environmental complaints in 2011. Three of these were related to steam blow that occurred during the commissioning of the plant. They were noise related complaints. Each was dealt with to the complainants satisfaction. The last complaint was due to litter in a neighbours back garden. There was no proof that it had come from our facility however Indaver removed it from the garden. All 2011 complaints have been closed out.

1.12 Summary of audits of waste disposal, treatment and recovery sites for the residues from facility

During 2011, Indaver Group audited K&S, the facility for the recovery of our flue gas residues and boiler ash. There two minor observations raised at this audit. The facility was approved for use and continued use.
For 2012 it is scheduled that Indaver Ireland will audit an Irish facility e.g metal broker or landfill for our bottom ash.

1.13 Environmental Management System

1.13.1 Environmental Management Programme – Report for previous year

Indaver Ireland Limited commenced waste activities on the 15th August 2011. Condition 2.3.2.3 of W0167-02 requires that an Environmental Management Programme be submitted to the Agency not later than six months from the date of commencement of waste activities. The EMP was submitted in February 2012. Correspondence (W0167-02/ap02mg) was received from the Agency stating that the EMP was largely to the Agency's agreement and any changes that were required to the schedule of objectives and targets were updated in accordance to the letter that was received by the Agency.

1.13.2 Environmental Management Programme – Proposal for current year- Indaver Improvement Plan - Schedule of QESH Objectives and Targets

The Indaver Improvement Plan details the company's objectives and targets for the improvement and maintenance of the quality, environmental and safety & health management systems.

The plan is set out in the form of a table which identifies specific objectives and targets under a number of sub headings. The Indaver Improvement Plan specifies the following information:

Specific objective and associated targets

1. The specific actions outlined for achieving targets
2. Where the action arose from
3. Target date for completion of the action
4. Person responsible for completion of the action
5. Manager of person responsible for completion of the action
6. Department of the person responsible for completion of the action
7. Current status of objective/target

Version 65 of the Indaver Improvement Plan was issued on the 6th of April 2011. A number of actions were added to this Version in relation to the Meath Facility. These actions address a 5 year period as per Condition 2.3.2.2 of the licence. Version 66 will be issued in April 2012.

Condition 2.3.2.3 of W0167-02 also requires that an Environmental Management Programme be submitted to the Agency not later than six months from the date of commencement of waste activities. The Indaver Improvement Plan actions relevant to the Meath Facility were submitted to the Agency in February 2012 in accordance with this condition. Correspondence (W0167-02/ap02mg) was received from the Agency stating that the EMP was largely to the Agency's agreement. Any changes that were required to the schedule of objectives and targets were updated in accordance to the letter that was received by the Agency. A small number of actions have already been closed to date and a number of new actions may be added as the year progresses. Progress towards close out of these actions will be reported to the Agency as part of the Annual Environmental Report for 2012.

1.13.3 Overview of Environmental Management System

It is the policy of Indaver to conduct its activities in such a manner as to minimise or eliminate any potential adverse effects on the environment

This commitment is expressed in the company's QESH (Quality, Environmental and Safety & Health) Policy and by the installation of an Environmental Management System to control and minimise the environmental impact that the activities on site may pose.

1.13.4 Structure of Environmental Management System

Indaver have an integrated Quality, Environmental and Safety & Health (QESH) management system. The Quality, Environmental or the Health & Safety Management Systems for the Facility are not yet certified to the ISO 9001, ISO 14001 and OHSAS 18001 standards respectively but the systems are progressing towards certification to these standards in the near future.

Figure 1.13.4.1 shows the basic structure of the QESH Management System.

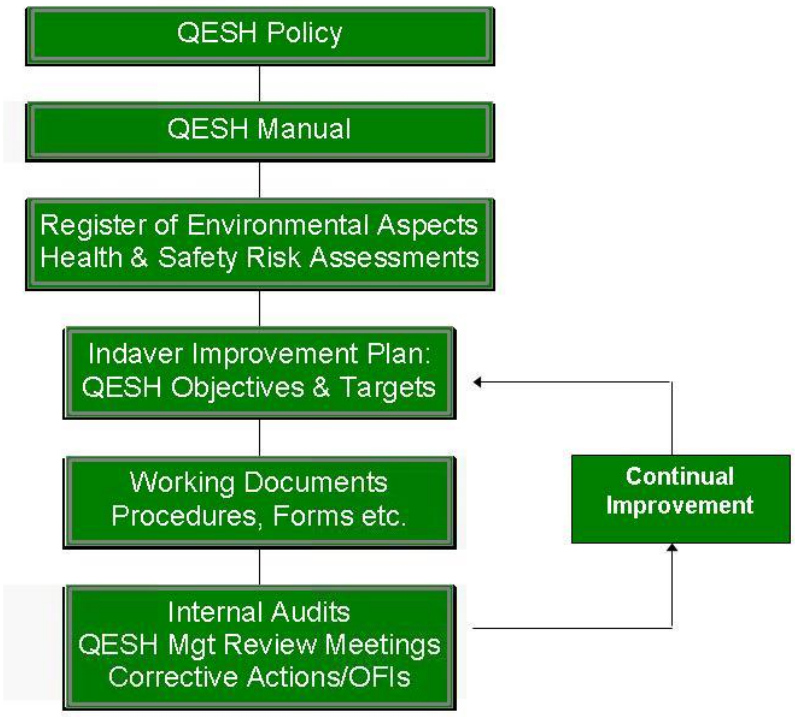


Figure 1.13.4.1 Structure of QESH Management System

1.13.5 Register of Environmental Aspects

The Register of Environmental Aspects identifies any significant environmental aspects of Indaver's activities. An environmental aspect is an element of Indaver's activities that can interact with the environment. The Register of Environmental Aspects for the Meath facility is in draft form and will be completed in the coming months.

The following 9 aspects are currently under review:

1. Vehicle Movements
2. Tipping Hall
3. Storage & mixing of wastes
4. Heat treatment of wastes
5. Ash handling & storage

6. Air emissions treatment process
7. Fire & Firewater
8. Ancillary Services
9. Resource & energy usage

Each aspect is assigned a Significance Rating. Aspects with a significance rating of >350 are deemed significant. All of these aspects where deemed significant and are controlled via the objectives and targets or through operational procedures.

1.13.6 Operational Procedures

Indaver has Operational Procedures covering all aspects of our activities. The purpose of these procedures is to ensure that Indaver:

- Maintains control over the environmental, quality and safety aspects of its activities
- Meets the aims laid down in the environmental, quality and safety policies
- Remains compliant with all relevant operating permits, licences and legislative requirements

A number of QESH system, environmental and operational procedures have been written for the Meath facility. Work will continue over the coming months in writing, finalising and amending procedures relevant to the facility.
Indaver are currently progressing a project1 of moving all our procedures, forms, manuals etc from a Lotus notes document management system - QESH Software to a Microsoft Office SharePoint (MOSS) document management system.

The procedures for the Meath facility are currently split between the QESH software and MOSS systems. The project will continue to integrate all procedures onto the one system.

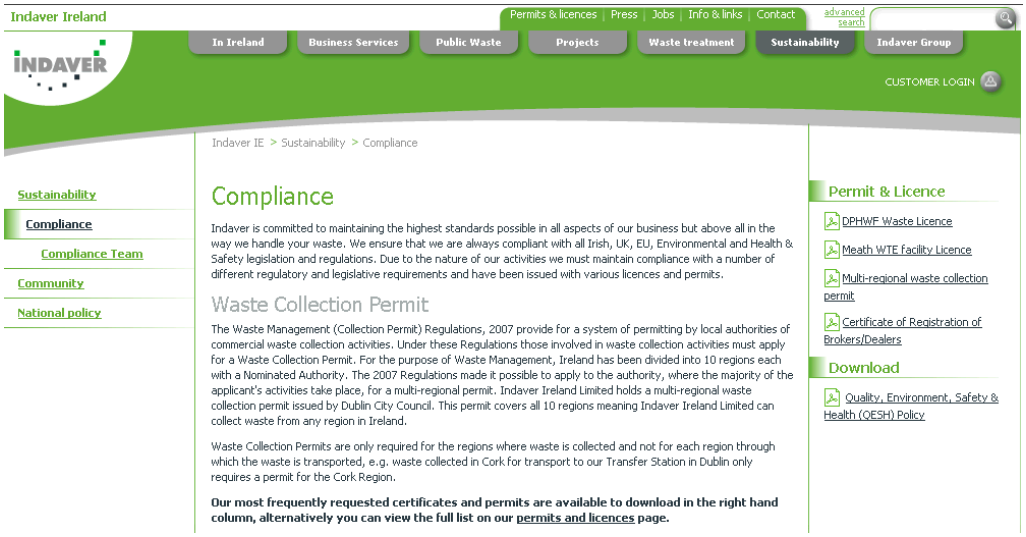
1.13.7 Communication/Public Information

All communications with interested parties is dealt with as per Operations 6.1 Internal & External Communications Procedure.

Environmental information is made available to interested parties upon request and Indaver aims to facilitate all requests by customers to conduct audits and by interested partied to conduct visits of the facility.

Indaver's website, www.indaver.ie, is a valuable source of information for customers and interested parties.

[1] Please note this project will result in a new numbering system for all procedures and therefore numbers may be different to what numbers the Agency previously would have recorded for certain procedures. Indaver will take note of previous numbers to allow for easy tracking of changes between system.



The “Compliance” Page provides access to downloads of the following:

- All of Indaver’s waste licences, waste permits and waste collections permit
- Indaver’s ISO 9001, ISO 14001 and OHSAS 18001 certificates
- Indaver’s Quality, Environmental and Health & Safety Policy
- Certificate of Registration of Brokers and Dealers

Indaver is also an active member of the Indaver Community Liaison Committee which consists of Slane Area Councillors, Carranstown Residents Committee and Indaver personnel and is chaired by Meath County Council.

1.15 Pollutant Release and Transfer Register-report for previous year

As per the PRTR regulations, S.I. No 123 of 2007, require that Indaver report releases of pollutants and off site transfers of waste. Indaver submitted their E-PRTR on 28th March 2011 and is attached in Appendix 2.

1.16 Pollutant Release and Transfer Register-report for current year

It is anticipated that Indaver will continue to monitor the same pollutants in our air emissions as in 2011. These are TOC, HCl, HF, SO_2, NO_x, CO and dust. Indaver will also put forward the results for dioxins released as part of the submission.

1.17 Particulates Monitoring

Dust is monitored continuously using as per Schedule B of W0167-02.

The dust produced and emitted through A1-1 for the year 2011 is the following:

Month	September 2011	October 2011	November 2011	December 2011
Dust Kg	0.00	0.00	1.84	3.52

Quarterly testing occurred in December 2011 and the following is the results of the particulate monitoring from this campaign.

	Concentration				Mass Emission			
Parameter	Units	Result	MU +/-	Limit	Units	Result	MU +/-	Limit
Total Particulate Matter [1]	mg/m³	1.4	3.02	30*	g/hr	178	385	-
PM_{10} [1]	mg/m³	0.37	0.59	-	g/hr	47.0	75.3	-
$PM_{2.5}$ [1]	mg/m³	0.27	0.35	-	g/hr	34.1	44.6	-

[1] Reference Conditions (REF) are: 273K, 101.3kPa, dry gas, 11% oxygen.

*These limits are the half hourly averages taken from table B1, column A on page 34 of the Waste Licence Number W0167-02.

1.18 Review of Decommissioning Management Plan

The Closure, Restoration, Aftercare management plan was completed and sent to the EPA for review in 2011. This was approved by the Agency on the 22nd August 2011. This will be reviewed by August 2012 and a review written in the 2012 AER.

1.19 Statement of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities)

Condition 12.2.1 of waste licence W0167-02 requires Indaver to submit an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage.

The statement of measures is outlined in Appendix 5 of the Environmental Liabilities Risk Assessment that was submitted to the Agency and agreed by the Agency on 22nd August 2011. A copy of this is attached in Appendix 3.

1.20 Environmental Liabilities Risk Assessment Review (every 3 years or more frequently as dictated by relevant on site change including financial provisions)

Condition 12.2.2 requires that the ELRA shall be reviewed as necessary to reflect any significant changes on site and in any case within three years following initial agreement. The ELRA was submitted to the Agency and received agreement on the 22nd August 2011. The financial provisions which were in place were also agreed with the Agency on the same date. This will be reviewed in light of any significant changes which occur and in any case within the three years i.e. by August 2014.

Appendix 1: Schematic of Process

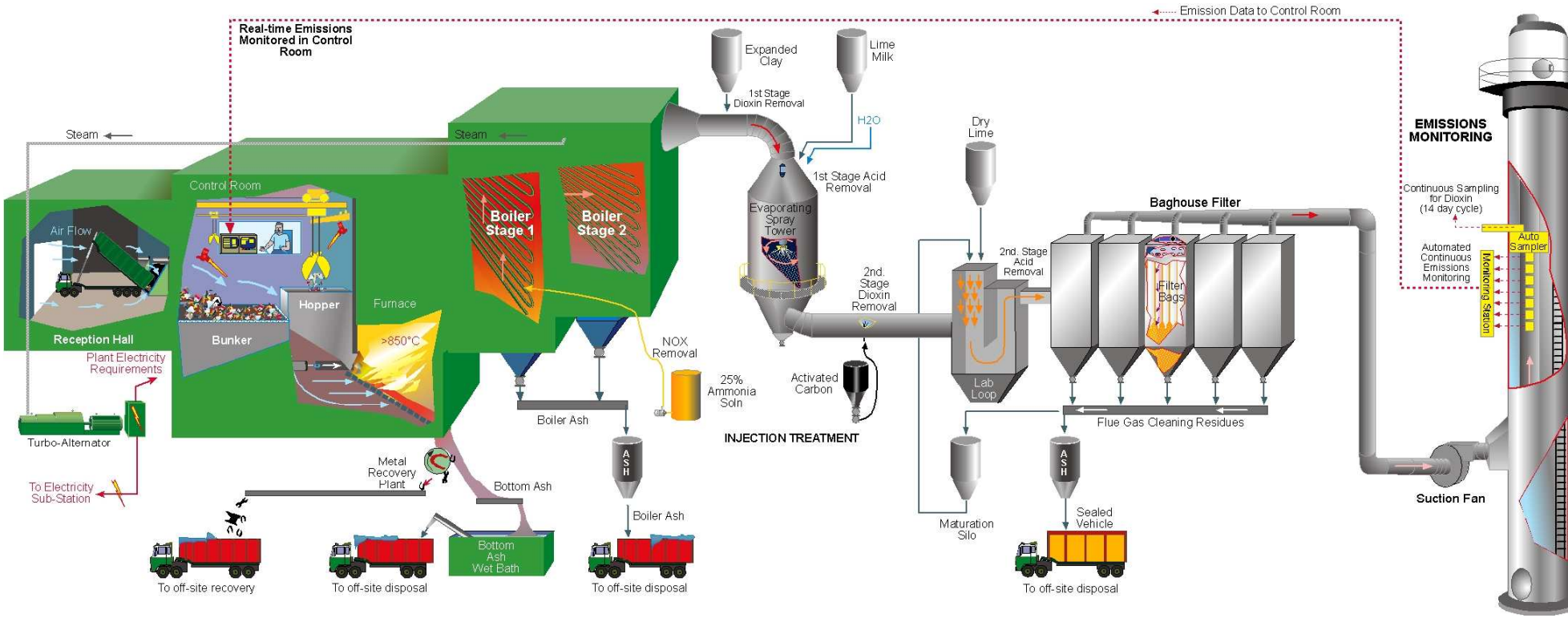


Figure 5.6 Process Overview

Appendix 2: E-PRTR

From: aerreturns@epa.ie

Sent: 29 March 2012 08:04

To: Grace McCormack

Subject:AER / PRTR Emissions Data VERIFICATION OF ACCEPTANCE

(w0167_2011.xml)

Thank you,

Your AER / PRTR Emissions Data submission has been accepted by our data system.

You may now proceed to print your submitted emissions and waste transfers information for insertion into your Full AER report. The Full AER Report must be submitted in BOTH hardcopy (paper) form (Only Applicable to Urban Waste Water Treatment Plants) and electronic (PDF) form.

Please retain the receipt / tracking number below in case of future queries about this submission and in case a request is made by an authorised person in this regard.

6c37a5bb2220088fc1fb0a01087a72e1

****

do not necessarily reflect the policy of the Environmental Protection Agency.

****

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.13

REFERENCE YEAR	2011

1. FACILITY IDENTIFICATION

Parent Company Name	Indaver Ireland Limited
Facility Name	Indaver Ireland Limited
PRTR Identification Number	W0167
Licence Number	W0167-02

Waste or IPPC Classes of Activity

No.	class_name
3.8	Incineration on land or at sea.
3.12	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
3.7	##########
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.
4.6	Recovery of components used for pollution abatement.
4.9	Use of any waste principally as a fuel or other means to generate energy.
Address 1	Carranstown
Address 2	Duleek
Address 3	Meath
Address 4	
	Meath
Country	Ireland
Coordinates of Location	-6.39215 53.6765
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Grace McCormack
AER Returns Contact Email Address	grace.mccormack@indaver.ie
AER Returns Contact Position	Quality & Environmental Manager
AER Returns Contact Telephone Number	+353 41 213 4005
AER Returns Contact Mobile Phone Number	+353 86 046 4224
AER Returns Contact Fax Number	n/a
Production Volume	42129.2
Production Volume Units	Tonnes recovered(T)
Number of Installations	1
Number of Operating Hours in Year	1606
Number of Employees	35
User Feedback/Comments	
Web Address	www.indaver.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(b)	Installations for the incineration of non-hazardous waste in the scope of Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste
5(c)	Installations for the disposal of non-hazardous waste
50.1	General

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

Is it applicable?	No
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# : W0167 | Facility Name : Indaver Ireland Limited | Filename : EPRTR.xls | Return Year : 2011 | 28/03/2012 16:17

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	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
80	Chlorine and inorganic compounds (as HCl)	M	OTH	EN 14181(Continuous monitoring using FTIR)	108.0	0.0	108.0	0.0	0.0
02	Carbon monoxide (CO)	M	OTH	EN 14181(Continuous monitoring using FTIR)	330.0	0.0	330.0	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	M	OTH	EN 14181(Continuous monitoring using FTIR)	15501.0	0.0	15501.0	0.0	0.0
84	Fluorine and inorganic compounds (as HF)	M	OTH	EN 14181(Continuous monitoring using FTIR)	5.37	0.0	5.37	0.0	0.0
11	Sulphur oxides (SOx/SO2)	M	OTH	EN 14181(Continuous monitoring using FTIR)	1595.0	0.0	1595.0	0.0	0.0
					0.0	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 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
210	**Dust**	M	OTH	EN 14181	5.36	5.36	0.0	0.0
351	Total Organic Carbon (as C)	M	OTH	EN 14181(Continuous monitoring using FID)	60.0	60.0	0.0	0.0
					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: Indaver Ireland Limited

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)	0.0				N/A	
Methane flared	0.0				0.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0				N/A	

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 this only concerns Releases from your facility

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

Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of 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 01 12	No	4659.82	bottom ash and slag other than those mentioned in 19 01 11	D1	M	Weighed	Offsite in Ireland	Whiteriver Landfill[Louth County Council] ,W0060-03	Whiteriver and Gunstown Townland ,Dunleer,Co-Louth,Co-Louth,Ireland		
Within the Country	19 01 02	No	65.32	ferrous materials removed from bottom ash	R4	M	Weighed	Offsite in Ireland	Hammond Lane Metal Company Limited,WFP-DC-0013-01	Pigeon House Road,Ringsend,Dublin 4,Ringsend,Ireland		
Within the Country	19 01 02	No	216.88	ferrous materials removed from bottom ash	R4	M	Weighed	Offsite in Ireland	Hegarty Metal Processors (International) limited,WFP-LKC-11-001-01	Ballysimon road,.,Limerick City,Limerick City,Ireland		
To Other Countries	19 01 13	Yes	240.96	fly ash containing dangerous substances	R5	M	Weighed	Abroad	K&S Kali GmBH,LicenceM76D310/57	Reutilisation Salt Mines(Phillippstaal),Nipper StraBe 33,36269 Philippsthal,36269,Germany	K&S Kali GmBH,LicenceM76D310/57, Reutilisation Salt Mines(Phillippstaal),Nipper StraBe 33,36269 Philippsthal,36269 Philippsthal,Germany	Reutilisation Salt Mines(Phillippstaal),Nipper StraBe 33,36269 Philippsthal,36269 Philippsthal,Germany
To Other Countries	19 01 07	Yes	1291.98	solid wastes from gas treatment	R5	M	Weighed	Abroad	K&S Kali GmBH,LicenceM76D310/57 Whiteriver Landfill[Louth County Council]	Reutilisation Salt Mines(Phillippstaal),Nipper StraBe 33,36269 Philippsthal,36269,Germany Whiteriver and Gunstown Townland ,Dunleer,Co-Louth,Co-Louth,Ireland	K&S Kali GmBH,LicenceM76D310/57, Reutilisation Salt Mines(Phillippstaal),Nipper StraBe 33,36269 Philippsthal,36269 Philippsthal,Germany	Reutilisation Salt Mines(Phillippstaal),Nipper StraBe 33,36269 Philippsthal,36269 Philippsthal,Germany
Within the Country	20 03 07	No	4.56	bulky waste	D1	M	Weighed	Offsite in Ireland				
Within the Country	16 10 02	No	6968.12	aqueous liquid wastes other than those mentioned in 16 10 01	D9	M	Weighed	Offsite in Ireland	EPS Dundalk and Drogheda WWTW,EPS Pumping & Treatment Systems	Dundalk WWTW,Lower point road,Co-Louth,Co-Louth,Ireland		
Within the Country	16 10 02	No	41.86	aqueous liquid wastes other than those mentioned in 16 10 01	D9	M	Weighed	Offsite in Ireland	Rilta Environmental,W0192-03	Block 402,Greenogue Business Park,Rathcoole,Dublin,Ireland		
Within the Country	20 03 04	No	453.78	septic tank sludge	D9	M	Weighed	Offsite in Ireland	EPS Dundalk and Drogheda WWTW,EPS Pumping & Treatment Systems	Dundalk WWTW,Lower point road,Co-Louth,Co-Louth,Ireland		
Within the Country	17 02 01	No	18.98	wood	R13	M	Weighed	Offsite in Ireland	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03	Rathdrinagh,Beauparc,Navan ,Co Meath ,Ireland		
Within the Country	17 05 04	No	98.92	soil and stones other than those mentioned in 17 05 03	D15	M	Weighed	Offsite in Ireland	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03	Rathdrinagh,Beauparc,Navan ,Co Meath ,Ireland		
Within the Country	17 04 05	No	6.5	iron and steel	R13	M	Weighed	Offsite in Ireland	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03	Rathdrinagh,Beauparc,Navan ,Co Meath ,Ireland		
Within the Country	20 03 01	No	1.98	mixed municipal waste	R13	M	Weighed	Offsite in Ireland	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03	Rathdrinagh,Beauparc,Navan ,Co Meath ,Ireland		
Within the Country	17 09 04	No	39.94	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	D15	M	Weighed	Offsite in Ireland	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03	Rathdrinagh,Beauparc,Navan ,Co Meath ,Ireland		
Within the Country	20 03 01	No	12.64	mixed municipal waste	D15	M	Weighed	Offsite in Ireland	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03	Rathdrinagh,Beauparc,Navan ,Co Meath ,Ireland		
Within the Country	17 06 04	No	0.78	insulation materials other than those mentioned in 17 06 01 and 17 06 03	D15	M	Weighed	Offsite in Ireland	Nurendale Limited trading as Panda Waste Services Limited,W0140 - 03	Rathdrinagh,Beauparc,Navan ,Co Meath ,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	16 10 01	Yes	10.5	aqueous liquid wastes containing dangerous substances	D9	M	Weighed	Offsite in Ireland	Rilta Environmental,W0192-03	Block 402,Greenogue Business Park,Rathcoole,Dublin,Ireland	Rilta Environmental,W0192-03,Block 402,Greenogue Business Park,Rathcoole,Dublin,Ireland	Block 402,Greenogue Business Park,Rathcoole,Dublin,Ireland
Within the Country	13 05 07	Yes	13.06	oily water from oil/water separators	D9	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,196-1	MacAnulty Clear Drains,John F Kennedy Industrial Estate John F Kennedy Road,Naas Road,Dublin 12,Ireland	Enva Ireland Ltd,196-1,MacAnulty Clear Drains,John F Kennedy Industrial Estate John F Kennedy Road,Naas Road,Dublin 12,Ireland	MacAnulty Clear Drains,John F Kennedy Industrial Estate John F Kennedy Road,Naas Road,Dublin 12,Ireland
Within the Country	20 03 04	No	16.02	septic tank sludge	D9	M	Weighed	Offsite in Ireland	Meath County Council-Navan,D0059-01	County Hall,Railway Street,Navan,Co-Meath,Ireland		
Within the Country	**20 03 01**	**No**	0.45	mixed municipal waste	R1	E	Volume Calculation	Onsite of generati	Indaver Ireland Limited,W0167-02	Carranstown,Duleek,Co-Meath,N/A,Ireland		
Within the Country	20 03 03	No	0.96	street-cleaning residues	R1	M	Weighed	Onsite of generati	Indaver Ireland Limited,W0167-02	Carranstown,Duleek,Co-Meath,N/A,Ireland		

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

Link to previous years waste data
Link to previous years waste summary data & percentage change

Appendix 3: Statement of Measures

Master List of Risk Reduction and Consequence Mitigation Measures

Ref	Process / Area	Measure
01	Vehicle movements	Vehicles only travel over hardstanding areas with drainage to surface water drainage system
		Vendor selection procedures to eliminate high risk waste contractors
		Well marked two-way system for waste deliveries on site with a large turning area at tipping hall
		Outdoor lighting in vehicle movement areas
		Security gate at weigh bridge entrance to site
		15 km/h speed limit to be set on site
		All trucks carrying waste must present paperwork prior to gaining entry to site
		Visitor pass system
02	Tipping Hall	All waste depositing operations are manned activities
		Random waste inspections carried out to identify any unsuitable wastes in contractors loads
		SOP to be developed for waste loading / unloading
		Waste quarantine area designated at delivery area for diesel storage
03	Storage & mixing of wastes	Concrete specification is impervious to liquids that could enter the waste bunker
		Automatic foam / water cannons system in waste bunker
		All waste mixing activities in waste bunker are manned activities
		All waste mixed in waste bunker by grab to achieve consistency in waste to furnace and dilute any spot contamination loads
04	Heat treatment of wastes	Furnace designed to withstand minor explosions
05	Ash handling & storage	Ash loading operations are manned activities

Ref	Process / Area		Measure
			High level alarms on all ash holding silos
			Low level alarms on all ash holding silos
			Fill detectors on road tankers used for unloading ash from silos
			Bottom ash holding area graded to contain wet ash
			Spill kits (including absorbent materials)
			Spill procedures for containing and disposing of ash spills
			Bottom ash storage capacity of 1,600 m^3, over one weeks estimated storage capacity
			Approved vendor supplier vetting process
			Leak detection system on waste bunker to prevent any leachate entering groundwater
			Boiler ash and bottom ash to be collected in sealed container or sealed IBCs for disposal
06	Air emissions treatment process		Ammonia solution area is kerbed & graded towards a dedicated isolated underground 10,000 litre forecourt separator with closure valve to the south west of the tank
			Ammonia solution tank filling operations are manned activities
			Double skinned tank with leak detection and overfill protection used for ammonia solution
			Tank inspection regime as part of preventative maintenance procedures
			All ammonia solution pipework above ground
			High level alarms on all air emission treatment silos
			Low level alarms on all air emission treatment silos
			All drains in process building drain to recovered water tanks beside NaOH delivery area
			Spill kits (including absorbent materials)

Ref	Process / Area		Measure
			Emergency overpressure vent on activated carbon silo - if overpressure a vent system relieves overpressure to atmosphere
			Approved vendor supplier vetting process
			All NaOH and Nitric acid will be contained in IBCs
			Activated carbon quantities will be minimised once the process has been established
			Duty standby motors for suction fan for process
			Automatic process shutdown for fan failure
07	Fires & Firewater		Fire detection across site with smoke detectors in buildings (connected to fire alarm)
			UV / IR combined fire detectors used in waste bunker are better and more effective than smoke detectors due to height of bunker and dust levels expected
			Four directable water cannons in waste bunker for extinguishing spot fires
			Firewater retention tank with diversion valve linked to control room
			Waste bunker is impermeable and can contain firewater. Manual system for pumping out bunker after a fire event if required
			Fire main & hydrants across process building (hose reels inside, hydrants outside)
			Hand held fire extinguishers across site
			Foam supplies
			TOC, pH and conductivity of runoff monitored twice before leaving outfall
			All surface water runoff must be pumped to hydrobreak before release to drainage ditch
08	Ancillary services		Routine inspections of piping and tanks as per maintenance programme
			Diesel storage area is kerbed & graded towards a dedicated isolated underground 10,000 litre forecourt separator to the south west of the tank

Ref	Process / Area		Measure
			Diesel tank filling operations are manned activities
			Double skinned tank with leak detection used for diesel
			Engine shutoff during diesel unloading
			All diesel pipework above ground
			Spill kits (including absorbent materials)
			Concrete specification is impervious to liquids that could enter the septic tank
			Tank inspection regime as part of preventative maintenance procedures
			Automatic foam / water deluge system in Turbine area for turbine lube oil tank and pipework
			Spill procedure for containment and removal of material/chemical spills
			Break Glass Units across site
			All electrics to ETCI Rules
			Elevated pipe tracks, all process pipes are above ground (apart from drain pipes)
			Planned / preventative maintenance
			Operator training
			Safety briefing for contractors
			Use of qualified vendors
			Chemstore units with spill trays to be used in the contractors' compound for small quantities of hazardous materials stored there
			Inspection / monitoring chamber on puraflo system for domestic type waste effluent
			Bunding around transformers on site

Ref	Process / Area		Measure
			Eye washes and safety showers will be placed in the required locations across the site
			Emergency response and spill response drills will be carried out quarterly as part of the annual training regime for the site