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Introduction

Enva Ireland Ltd is a wholly owned subsidiary company of DCC's Environmental Division.

The following Annual Environmental Report (AER) is for the period January 2009 to December 2009 for Enva Ireland Ltd, Raffeen Industrial Estate, Ringaskiddy Road, Monkstown, Co. Cork. This is a summary report on all aspects of the site's environmental performance for the given period and has been prepared as per Condition 11.8 outlined in the Waste Licence (Register No. W0145-02) and the EPA document, "IPC Guidance Note For Annual Environmental Report".

Enva Ireland Ltd is fully committed to the continuous improvement requirement of the waste licencing process and is proactive in relation to Environmental Management. Enva is registered to the ISO 14001 Environmental Management System Standard. Enva's environmental management system was certified during 2007 and was reaudited in February 2009. The Enva Ireland Ltd Health, Safety and Environmental Policy is presented on the following page.

Site Description

The company is located in Raffeen Industrial Estate, Ringaskiddy Road, Co. Cork, and is currently the sole occupant of the industrial estate. The facility is licensed to operate a waste transfer station as well as acceptance and treatment of healthcare waste. To date no healthcare waste has been accepted and there are no immediate plans to do so. Acceptance of waste batteries commenced during 2008 in addition to the waste oil already accepted on-site.

The facility also carries on activities which do not require an EPA license, principally the provision of water treatment products and associated services to various industries. These activities include storage and formulation of water treatment products as well as laboratory activities.

The licensed activity is the transfer of waste materials, to date the only waste activities taking place are the transfer of waste oil and batteries to our Enva Portlaoise site. All operations are contained inside the main building, tank farm and warehouse which are all bunded.

Waste Management Activities at the Facility.

The licensed activities taking place are the transfer of waste oil and batteries to our Enva Portlaoise site. Waste oil and batteries are collected by Enva Portlaoise at local garages etc and delivered to the Cork site. The waste oil is offloaded into tanks and bulked up, the waste batteries are off loaded and placed in a designated bund. The waste oil and batteries are collected and transported to Enva Portlaoise.

Waste Data

Details of waste oil and batteries accepted by Enva Ireland Ltd at the Cork facility during the reporting period including European Waste Catalogue (EWC) Code, Waste Quantities and location of transfer are presented below.

Waste Type	Max. Quantity per annum (Tonnes)	Actual Quantity of Waste Oil in 2009 (Tonnes)	Actual Quantity of Waste Batteries in 2009 (Tonnes)
Hazardous Waste	5,000	1,534	59.9

Haulage Contractors

A list of approved transport contractors and the waste type they carry (classes in accordance with the ADR and IMDG Regulations) is as follows: The haulage companies are licenced to collect and transport the waste oil to Enva's Portlaoise facility.

Enva Portlaoise – Collection Permit No. CK WMC 16/01

Cassery Transport – Collection permit No CK WMC 368/06

Tank Trans – Collection permit No. CK WMC 67/01

Pat Reynolds – Collection permit No. CK WMC 503/07

Waste Types Transported

The only licensed wastes transported off site were waste oil and batteries, which were transferred to Enva's Portlaoise site.

WASTE DATA

Waste Oil Accepted at Enva Cork

Date	Haulier	EWC Code	Tonnage
06.01.09	Pat Reynolds	13 02 08*	14,440kg
11.01.09	Pat Reynolds	13 02 08*	14,340kg
13.01.09	Pat Reynolds	13 02 08*	19,620kg
14.01.09	Enva Portlaoise	16 06 01*	12,900kg
26.01.09	Pat Reynolds	13 02 08*	17,640kg
30.01.09	Pat Reynolds	13 02 08*	16,700kg
05.02.09	Pat Reynolds	13 02 08*	17,540kg
09.02.09	Pat Reynolds	13 02 08*	18,120kg
11.02.09	Pat Reynolds	13 02 08*	17,680kg
15.02.09	Pat Reynolds	13 02 08*	10,920kg
16.02.09	Pat Reynolds	13 02 08*	6,740kg
18.02.09	Pat Reynolds	13 02 08*	14,020kg
24.02.09	Pat Reynolds	13 02 08*	18,020kg
26.02.09	Pat Reynolds	13 02 08*	16,400kg
02.03.09	Pat Reynolds	13 02 08*	20,280kg
06.03.09	Pat Reynolds	13 02 08*	19,000kg
09.03.09	Pat Reynolds	13 02 08*	16,020kg
11.03.09	Pat Reynolds	13 02 08*	10,040kg
12.03.09	Pat Reynolds	13 02 08*	9,440kg
23.03.09	Pat Reynolds	13 02 08*	14,200kg
24.03.09	Pat Reynolds	13 02 08*	20,460kg
25.03.09	Pat Reynolds	13 02 08*	20,360kg
26.03.09	Pat Reynolds	13 02 08*	11,680kg

Date	Haulier	EWC Code	Tonnage
01.04.09	Pat Reynolds	13 02 08*	18,300kg
03.04.09	Pat Reynolds	13 02 08*	17,840kg
14.04.09	Pat Reynolds	13 02 08*	19,360kg
16.04.09	Pat Reynolds	13 02 08*	16,880kg
21.04.09	Pat Reynolds	13 02 08*	9,740kg
27.04.09	Pat Reynolds	13 02 08*	17,100kg
01.05.09	Pat Reynolds	13 02 08*	15,560kg
06.05.09	Pat Reynolds	13 02 08*	14,300kg
08.05.09	Pat Reynolds	13 02 08*	10,860kg
12.05.09	Pat Reynolds	13 02 08*	17,300kg
14.05.09	Pat Reynolds	13 02 08*	18,400kg
18.05.09	Pat Reynolds	13 02 08*	16,880kg
19.05.09	Pat Reynolds	13 02 08*	14,440kg
20.05.09	Pat Reynolds	13 02 08*	20,840kg
22.05.09	Pat Reynolds	13 02 08*	0
22.05.09	Pat Reynolds	13 02 08*	14,220kg
02.06.09	Pat Reynolds	13 02 08*	18,660kg
05.06.09	Pat Reynolds	13 02 08*	16,180kg
09.06.09	Pat Reynolds	13 02 08*	18,760kg
12.06.09	Pat Reynolds	13 02 08*	15,000kg
16.06.09	Pat Reynolds	13 02 08*	18,680kg
17.06.09	Pat Reynolds	13 02 08*	8,900kg
18.06.09	Pat Reynolds	13 02 08*	12,420kg
19.06.09	Pat Reynolds	13 02 08*	14,120kg
24.06.09	Pat Reynolds	13 02 08*	18,460kg
29.06.09	Pat Reynolds	13 02 08*	16,420kg
01.07.09	Pat Reynolds	13 02 08*	20,520kg
06.07.09	Pat Reynolds	13 02 08*	19,560kg
08.07.09	Pat Reynolds	13 02 08*	18,460kg
14.07.09	Pat Reynolds	13 02 08*	18,960kg
16.07.09	Pat Reynolds	13 02 08*	19,540kg
21.07.09	Pat Reynolds	13 02 08*	17,280kg
28.07.09	Pat Reynolds	13 02 08*	18,780kg
30.07.09	Pat Reynolds	13 02 08*	18,300kg
06.08.09	Pat Reynolds	13 02 08*	19,320kg
12.08.09	Pat Reynolds	13 02 08*	20,360kg
18.08.09	Pat Reynolds	13 02 08*	13,400kg
18.08.09	Pat Reynolds	13 02 08*	17,060kg
24.08.09	Pat Reynolds	13 02 08*	16,520kg
26.08.09	Pat Reynolds	13 02 08*	14,340kg
27.08.09	Pat Reynolds	13 02 08*	10,780kg
30.08.09	Pat Reynolds	13 02 08*	21,400kg
31.08.09	Pat Reynolds	13 02 08*	6,120kg
01.09.09	Pat Reynolds	13 02 08*	21,620kg
02.09.09	Pat Reynolds	13 02 08*	14,740kg
10.09.09	Pat Reynolds	13 02 08*	19,960kg
11.09.09	Pat Reynolds	13 02 08*	18,980kg

Date	Haulier	EWC Code	Tonnage
15.09.09	Pat Reynolds	13 02 08*	18,360kg
21.09.09	Pat Reynolds	13 02 08*	14,300kg
21.09.09	Pat Reynolds	13 02 08*	14,740kg
25.09.09	Pat Reynolds	13 02 08*	16,740kg
29.09.09	Pat Reynolds	13 02 08*	16,020kg
05.10.09	Pat Reynolds	13 02 08*	18,680kg
08.10.09	Pat Reynolds	13 02 08*	18,400kg
13.10.09	Pat Reynolds	13 02 08*	19,140kg
15.10.09	Pat Reynolds	13 02 08*	16,940kg
20.10.09	Pat Reynolds	13 02 08*	19,320kg
23.10.09	Pat Reynolds	13 02 08*	17,160kg
02.11.09	Pat Reynolds	13 02 08*	14,480kg
02.11.09	Pat Reynolds	13 02 08*	6,000kg
03.11.09	Pat Reynolds	13 02 08*	17,800kg
05.11.09	Pat Reynolds	13 02 08*	18,980kg
09.11.09	Pat Reynolds	13 02 08*	17,220kg
13.11.09	Pat Reynolds	13 02 08*	19,260kg
16.11.09	Pat Reynolds	13 02 08*	8,180kg
18.11.09	Pat Reynolds	13 02 08*	20,460kg
24.11.09	Pat Reynolds	13 02 08*	15,500kg
08.12.09	Pat Reynolds	13 02 08*	8,520kg
08.12.09	Pat Reynolds	13 02 08*	20,240kg
11.12.09	Pat Reynolds	13 02 08*	19,440kg
15.12.09	Pat Reynolds	13 02 08*	16,840kg
17.12.09	Pat Reynolds	13 02 08*	19,100kg

Waste Oil Transported off site to Enva Portlaoise

Date	Tonnage	Haulier	Destination	EWC Code
05.01.09	16,640kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
13.01.09	27,940kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
21.01.09	25,720kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
28.01.09	13,320kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
29.01.09	17,480kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
13.02.09	26,320kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
19.02.09	25,080kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
26.02.09	26,400kg	Enva Portlaoise	Enva Portlaoise	13 02 08
02.03.09	17,620kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
02.03.09	15,200kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
04.03.09	14,400kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
06.03.09	17,780kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
12.03.09	14,940kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
12.03.09	14,720kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
13.03.09	14,680kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
23.03.09	17,960kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
26.03.09	14,600kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
27.03.09	17,240kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
27.03.09	14,220kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
30.03.09	17,500kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
31.03.09	9,200kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
07.04.09	17,780kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
28.04.09	14,820kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
30.04.09	27,000kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
05.05.09	13,620kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
06.05.09	13,740kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
07.05.09	14,640kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
15.05.09	14,280kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
21.05.09	26,420kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
27.05.09	26,540kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
28.05.09	23,980kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
29.05.09	26,520kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
03.06.09	20,080kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
11.06.09	14,080kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
16.06.09	14,400kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
17.06.09	26,100kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
18.06.09	18,220kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
19.06.09	26,440kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
29.06.09	13,780kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
03.07.09	18,020kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
15.07.09	26,280kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
21.07.09	25,960kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
22.07.09	26,220kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
23.07.09	26,280kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
24.07.09	14,300kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
29.07.09	14,860kg	Enva Portlaoise	Enva Portlaoise	13 02 08*

Date	Tonnage	Haulier	Destination	EWC Code
05.08.09	18,020kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
07.08.09	17,780kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
10.08.09	17,280kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
17.08.09	27,020kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
21.08.09	13,580kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
25.08.09	18,720kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
26.08.09	18,200kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
26.08.09	0	Enva Portlaoise	Enva Portlaoise	13 02 08*
28.08.09	24,780kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
28.08.09	0	Enva Portlaoise	Enva Portlaoise	13 02 08*
01.09.09	27,040kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
02.09.09	21,440kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
14.09.09	27,160kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
17.09.09	14,540kg	Enva Portlaoise	Enva Portlaoise	13 02 08
24.09.09	22,000kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
29.09.09	16,460kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
01.10.09	26,440kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
05.10.09	15,840kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
13.10.09	26,280kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
13.10.09	17,660kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
13.10.09	0	Enva Portlaoise	Enva Portlaoise	13 02 08*
16.10.09	19,220kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
19.10.09	14,460kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
27.10.09	26,520kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
28.10.09	12,700kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
04.11.09	13,680kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
06.11.09	26,260kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
11.11.09	18,500kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
13.11.09	16,340kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
17.11.09	19,280kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
18.11.09	18,620kg	Enva Portlaoise	Enva Portlaoise	13 02 08*
25.11.09	14,580kg	Enva Portlaoise	Enva Portlaoise	13 02 08*

Waste Batteries Accepted by Enva Cork

Waste Type (EWC Code)	Date of collection	Date of arrival	Consignment weight (KG)	C1 Number	Haulier
16 06 01*	14.01.09	14.01.09	2560	B 520206	Enva Portlaoise
16 06 01*	14.01.09	14.01.09		B 520206	Enva Portlaoise
16 06 01*	14.01.09	14.01.09		B 520206	Enva Portlaoise
16 06 01*	28.01.09	29.01.09	3460	B 495341	Enva Portlaoise
16 06 01*	28.01.09	29.01.09		B 495343	Enva Portlaoise
16 06 01*	28.01.09	29.01.09		B 495343	Enva Portlaoise
16 06 01*	28.01.09	29.01.09		COR055	Enva Portlaoise
16 06 01*	04.02.09	05.02.09	2160	B 495347	Enva Portlaoise
16 06 01*	04.02.09	05.02.09		B 520222	Enva Portlaoise
16 06 01*	04.02.09	05.02.09		B 520219	Enva Portlaoise
16 06 01*	18.06.09	19.06.09	4940	B 489208	Enva Portlaoise
16 06 01*	18.06.09	19.06.09		B 489211	Enva Portlaoise
16 06 01*	18.06.09	19.06.09		B 489212	Enva Portlaoise
16 06 01*	18.06.09	19.06.09		B 489214	Enva Portlaoise
16 06 01*	18.06.09	19.06.09		B 489214	Enva Portlaoise
16 06 01*	18.06.09	19.06.09		B 490228	Enva Portlaoise
16 06 01*	02.07.09	03.07.09	3580	B 537897	Enva Portlaoise
16 06 01*	02.07.09	03.07.09		B 537890	Enva Portlaoise
16 06 01*	02.07.09	03.07.09		B 537898	Enva Portlaoise
16 06 01*	03.07.09	03.07.09		B 537894	Enva Portlaoise
16 06 01*	03.03.09	03.07.09		B 537896	Enva Portlaoise
16 06 01*	13.07.09	14.07.09	4320	B 537889	Enva Portlaoise
16 06 01*	13.07.09	14.07.09		B 537895	Enva Portlaoise
16 06 01*	13.07.09	14.07.09		B 537900	Enva Portlaoise
16 06 01*	13.07.09	14.07.09		B 537900	Enva Portlaoise
16 06 01*	13.07.09	14.07.09		B 537900	Enva Portlaoise
16 06 01*	13.07.09	14.07.09		B 537900	Enva Portlaoise
16 06 01*	13.07.09	14.07.09		B 537900	Enva Portlaoise
16 06 01*	23.07.09	24.07.09	3720	COR038	Enva Portlaoise
16 06 01*	23.07.09	24.07.09		COR038	Enva Portlaoise
16 06 01*	23.07.09	24.07.09		B 538009	Enva Portlaoise
16 06 01*	23.07.09	24.07.09		B 568126	Enva Portlaoise
16 06 01*	23.07.09	24.07.09		B 538010	Enva Portlaoise
16 06 01*	06.08.09	06.08.09	1880	B 538012	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538012	Enva Portlaoise
16 06 01*	06.08.09	06.08.09	8400	B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise
16 06 01*	06.08.09	06.08.09		B 538014	Enva Portlaoise

Waste Type (EWC Code)	Date of collection	Date of arrival	Consignment weight (KG)	C1 Number	Haulier
16 06 01*	27.08.09	28.08.09	3180	B 092938	Enva Portlaoise
16 06 01*	27.08.09	28.08.09		B 489215	Enva Portlaoise
16 06 01*	27.08.09	28.08.09		B 538017	Enva Portlaoise
16 06 01*	27.08.09	28.08.09		B 538022	Enva Portlaoise
16 06 01*	03.09.09	04.09.09	7240	B 538021	Enva Portlaoise
16 06 01*	03.09.09	04.09.09		B 538021	Enva Portlaoise
16 06 01*	03.09.09	04.09.09		B 538025	Enva Portlaoise
16 06 01*	04.09.09	04.09.09		B 539180	Enva Portlaoise
16 06 01*	04.09.09	04.09.09		B 539181	Enva Portlaoise
16 06 01*	04.09.09	04.09.09		B 539182	Enva Portlaoise
16 06 01*	03.09.09	04.09.09		B 539183	Enva Portlaoise
16 06 01*	03.09.09	04.09.09		B 539184	Enva Portlaoise
16 06 01*	03.09.09	04.09.09		B 568134	Enva Portlaoise
16 06 01*	01.10.09	01.10.09	7380	B 539196	Enva Portlaoise
16 06 01*	01.10.09	01.10.09		B 539199	Enva Portlaoise
16 06 01*	01.10.09	01.10.09		B 539199	Enva Portlaoise
16 06 01*	01.10.09	01.10.09		B 539199	Enva Portlaoise
16 06 01*	01.10.09	01.10.09		B 539199	Enva Portlaoise
16 06 01*	01.10.09	01.10.09		B 539199	Enva Portlaoise
16 06 01*	01.10.09	01.10.09		B 539199	Enva Portlaoise
16 06 01*	01.10.09	01.10.09		B 539200	Enva Portlaoise
16 06 01*	05.11.09	05.11.09	5480	B 103744	Enva Portlaoise
16 06 01*	05.11.09	05.11.09		B 103744	Enva Portlaoise
16 06 01*	05.11.09	05.11.09		B 103744	Enva Portlaoise
16 06 01*	05.11.09	05.11.09		B 103744	Enva Portlaoise
16 06 01*	05.11.09	05.11.09		B 103744	Enva Portlaoise
16 06 01*	05.11.09	05.11.09		B 103744	Enva Portlaoise
16 06 01*	22.12.09	22.12.09	1200	B 567164	Enva Portlaoise
16 06 01*	22.12.09	22.12.09		B 566906	Enva Portlaoise

Waste Batteries Transported to Enva Portlaoise from Enva Cork

Load Weight kg	EXPORT C1	EXPORT Date	EXPORT Destination	HAULIER
8,080kg	B 495350	24/02/09	Enva Portlaoise	Enva Portlaoise
6,460kg	B 496461	24/06/09	Enva Portlaoise	Enva Portlaoise
10,440kg	B 568127	29/07/09	Enva Portlaoise	Enva Portlaoise
12,040kg	B 568131	12/08/09	Enva Portlaoise	Enva Portlaoise
10,740kg	B 568141	29/09/09	Enva Portlaoise	Enva Portlaoise
7,360kg	B 568144	13/10/09	Enva Portlaoise	Enva Portlaoise

MONITORING AND EMISSIONS SUMMARY

PRTR

Enva Ireland Ltd have looked in detail at the new guidelines for PRTR. At present our facility activities do not release any emissions to the air, waters or land. Enva do not have a sewer and do not have any wastewater going to sewer. Enva Ireland Ltd operations act as a transfer station for waste oil and batteries to our Portlaoise site. There is no treatment of any wastes on site. See attached completed PRTR in relation to the transfer of waste oil and batteries to our Portlaoise site. (See attached appendix A)

NOISE

In accordance with license requirements and discussions with the EPA, Enva carried out a baseline noise survey early in 2007 prior to commencement of licensed activities. There were some difficulties in carrying this out as an anticipated calm period between completion of site construction activities and occupation of the offices and building did not arise. Nonetheless, the baseline report gives an indication of general noise levels in the area in the absence of Enva's activities.

Noise monitoring during Enva activities was again carried out in December 2009 and the report draws comparisons with the earlier baseline study. This report is set out in Appendix B.

Enva's activities do not significantly impact on noise levels in the area. Noise at the site and at nearest noise sensitive locations are dominated by the heavy traffic from the nearby N28 road.

STORMWATER

A daily inspection of the stormwater is carried out as per license condition 6.11.1. Stormwater analysis is carried out on a weekly and monthly basis as per licence condition C.2.3. It was agreed after the EPA audit in July 2007 to put a sampling point after the interceptor. The sampling point was put in place and stormwater sampling is carried out at this point. There were no exceedances during the reporting period, results obtained from the analysis were all within licence limits.

Enva Storm water analysis for 2009

Sample Date	Flow	PH	Cond	SS	Mineral Oil
05.01.09	Flow	7.15	223	<10	<0.01
12.01.09	Flow	7.19	245	<10	N/A
19.01.09	Flow	7.23	261	<10	N/A
26.01.09	Flow	7.36	256	<10	N/A
02.02.009	Flow	7.21	212	<10	<0.01
09.02.09	Flow	7.15	210	<10	N/A
16.02.09	No Flow	N/A	N/A	N/A	N/A
23.02.09	Flow	7.12	289	<10	N/A
02.03.09	Flow	7.16	231	<10	<0.01
09.03.09	Flow	7.21	312	<10	N/A
16.03.09	No Flow	N/A	N/A	N/A	N/A
23.03.09	No Flow	N/A	N/A	N/A	N/A
30.03.09	No Flow	N/A	N/A	N/A	N/A
06.04.09	No Flow	N/A	N/A	N/A	<0.01
13.04.09	No Flow	N/A	N/A	N/A	N/A
20.04.09	Flow	7.35	187	<10	N/A
27.04.09	Flow	7.54	219	<10	N/A
04.05.09	No Flow	N/A	N/A	N/A	N<0.01
11.05.09	No Flow	N/A	N/A	N/A	N/A
18.05.09	Flow	7.8	154	18	N/A
25.05.09	No Flow	N/A	N/A	N/A	N/A
01.06.09	No Flow	N/A	N/A	N/A	<0.01
08.06.09	No Flow	N/A	N/A	N/A	N/A
15.06.09	Flow	8.16	135	<10	N/A
22.06.09	No Flow	N/A	N/A	N/A	N/A
29.06.09	No Flow	N/A	N/A	N/A	N/A
06.07.09	Flow	7.89	157	<10	<0.01
13.07.09	Flow	7.01	144	<10	N/A
20.07.09	Flow	7.31	129	<10	N/A
27.07.09	Flow	7.46	117	<10	N/A
03.08.09	Flow	7.46	102	<10	<0.01
10.08.09	No Flow	N/A	N/A	N/A	N/A
17.08.09	Flow	7.64	141	12	N/A
24.08.09	Flow	7.82	62	<10	N/A

Sample Date	Flow	PH	Cond	SS	Mineral Oil
31.08.09	No Flow	N/A	N/A	N/A	N/A
07.09.09	No Flow	N/A	N/A	N/A	<0.01
14.09.09	No Flow	N/A	N/A	N/A	N/A
21.09.09	No Flow	N/A	N/A	N/A	N/A
28.09.09	No Flow	N/A	N/A	N/A	N/A
05.10.09	Flow	7.56	57	<10	<0.01
12.10.09	No Flow	N/A	N/A	N/A	N/A
19.10.09	Flow	7.32	94	11	N/A
26.10.09	Flow	7.54	112	<10	N/A
02.11.09	Flow	7.04	86	<10	<0.01
09.11.09	Flow	7.12	63	<10	N/A
16.11.09	Flow	7.24	98	<10	N/A
23.11.09	Flow	6.96	74	<10	N/A
30.11.09	Flow	7.25	104	<10	N/A
07.12.09	Flow	7.14	88	<10	<0.01
14.12.09	No Flow	N/A	N/A	N/A	N/A

GROUNDWATER

Ground water monitoring and sampling was carried out by Enva. Analysis was carried out by Severn Trent Laboratory on behalf of RPS Consulting Engineers. The groundwater monitoring report can be seen in Appendix C. During 2009 Enva carried out quarterly analysis of the groundwater locations. It was found that pH varied over the different quarters due to seasonal trends rather than the activities of Enva. The results for the boreholes are as follows.

Sample/Quarter	30.06.09	30.09.09	10.12.09
Borehole 1	7.45	7.19	6.74
Borehole 2	7.65	7.15	6.66
Borehole 3	7.54	7.42	6.63
Borehole 4	7.82	7.32	6.64

RESOURCE COMSUMPTION

Energy and Resource Usage

The main resources consumed during the reporting period were electricity, diesel, and water, usage figures are summarised below. Electricity is principally used for motors, compressors, forklift and domestic purposes. Enva have an air conditioning facility to heat or cool offices and canteen. Water is supplied from the mains. Water is used for non licenced activities processes and daily use in canteen and welfare facilities. Diesel is used for transport.

Water Usage

DATE	Meter 80013176	Usage m³	Meter 80015803	Ugase m³	DOMESTIC	Usage m³	Total Usage
06.01.09	268.1		21				
10.02.09	445.6	177.5	32.3	11.3	0.9208		188.8
06.03.09	490.6	45	38.8	6.5	0.9372	0.0164	51.5164
14.04.09	513.2	22.6	49.6	10.8	0.934	-0.0032	33.3968
01.05.09	521.1	7.9	53.2	3.6	0.9655	0.0315	11.5315
12.06.09	543.5	22.4	66.1	12.9	0.9759	0.0104	35.3104
30.07.09	579	35.5	88.2	22.1	1.0028	0.0269	57.6269
31.08.09	593.4	14.4	102	13.8	1.015	0.0122	28.2122
02.10.09	613.6	20.2	108.3	6.3	1.029	0.014	26.514
30.10.09	629	15.4	116.2	7.9	1.041	0.012	23.312
04.12.09	640.7	11.7	125.7	9.5	1.046	0.005	21.205
08.01.10	663.9	23.2	139.1	13.4	1.066	0.02	36.62
					Total m³ per annum		514.0452

There is no true data available from 2008 to compare with as figures for 2008 were based on estimates, monitoring commenced in 2009.

Electricity Usage

Electricity units used in 2009 – 1187.2 Kvarh

There is no true data available from 2008 to compare with, as all data from 2008 were estimates

Fuel Usage

27,515 Liters of Diesel were consumed in 2009 as opposed to 21,855 liters in 2008.

4,194 Liters of petrol were consumed in 2009

The only use of diesel is for company cars used by sales representatives and management.

PROCEDURES & MANAGEMENT SYSTEMS

Enva Ireland Ltd is certified to the ISO 14001 environmental management system. During 2007 Enva obtained the certification as part of group harmonisation of health, safety and environmental (HSE) management across the four Enva sites in the Republic. Enva Ireland sites are also certified for safety management standard OHSAS 18001. Enva Ireland Ltd Cork operations are also ISO 9001:2008 accredited.

A copy of the revised HSE Manual is attached in Appendix C along with the site specific appendix for the Cork site. This manual includes the current structure within Enva.

INCIDENTS & COMPLAINTS

There were no incidents or complaints against Enva in 2009. No license non-compliances were noted by Enva or the EPA during the same period.

EMP / OBJECTIVES & TARGETS

A programme of environmental objectives and targets was agreed with the Agency during 2007 in accordance with license requirements. It addresses a five year period and forms an integral component of Enva's environmental management system.

A report on progress towards achieving the programme's objectives and targets is set out in Appendix D.

Each year the programme is reviewed in the light of achievements to date, Agency requirements, ISO 14001 and other considerations. Thus the 2010 revision of the EMP is set out in Appendix E.

SITE DEVELOPMENTS & BUND INTEGRITY

Waste license W0145-02 was awarded to Enva Ireland Ltd in 2006 and the existing site premises was consequently redeveloped in accordance with the license. This involved extension of the existing building, installation of a bunded tank-farm, installation of internal bunded areas, offices, laboratory facilities, hard-standing area for traffic, weighbridge, diversion tank, oil interceptor, drainage and associated services. These works were completed in early 2007 prior to commencement of licensed activities. No further significant works were carried out in 2009.

APPENDIX A – PRTR 2009



| PRTR# : W0145 | Facility Name : Enva Ireland Ltd | Filename : Appendix A.xls |
Return Year : 2009 |

20/04/2010 11:32

AER Returns Worksheet

Version 1.1.10

REFERENCE YEAR	2009
-----------------------	------

1. FACILITY IDENTIFICATION

Parent Company Name	Enva Ireland Ltd
Facility Name	Enva Ireland Ltd
PRTR Identification Number	W0145
Licence Number	W0145-02

Waste or IPPC Classes of Activity

No.	class_name
	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.
4.13	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.11	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.12	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.
3.13	#####
3.7	#####
Address 1	Unit 9
Address 2	Raffeen Industrial Estate
Address 3	Raffeen
Address 4	Monkstown, Cork
Country	Ireland
Coordinates of Location	-8.36503 51.8335
River Basin District	IESW
NACE Code	3832
Main Economic Activity	Recovery of sorted materials
AER Returns Contact Name	Colette Horgan
AER Returns Contact Email Address	chorgan@enva.ie
AER Returns Contact Position	HSe & Compliance Manager
AER Returns Contact Telephone Number	021 - 4387200
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	021 - 4387299
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(a)	Installations for the recovery or disposal of hazardous waste
5(c)	Installations for the disposal of non-hazardous waste

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

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

4.1 RELEASES TO AIR

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

POLLUTANT	RELEASES TO AIR		METHOD		QUANTITY		
	Name	M/C/E	Method Used Description or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
No. Annex II					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

POLLUTANT	RELEASES TO AIR		METHOD		QUANTITY		
	Name	M/C/E	Method Used Description or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
No. Annex II					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)

Pollutant No.	RELEASES TO AIR		METHOD		QUANTITY		
	Name	M/C/E	Method Used Description or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) 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

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 (Total) kg/yr for Section A, Sector specific PRTR pollutants above. Please complete the table below.

Landfill: Enva Ireland Ltd

Please enter summary data on the quantities of methane flared and / or utilised

Total estimated methane generation (as per site model)	Methane flared	Methane utilised in engines	Net methane emission (as reported in Section A above)	M/C/E		Method Used Description or Description		Facility Total Capacity m³ per hour	
				T (Total) kg/Year	Methane Code	Emission Point 1	Facility Total Capacity		
0.0	0.0	0.0	0.0					N/A	
0.0	0.0	0.0	0.0					0.0	(Total Flaring Capacity)
0.0	0.0	0.0	0.0					0.0	(Total Utilising Capacity)

[PRTR# : W0145 | Facility Name : Enva Ireland Ltd | Filename : Appendix A.xls | Return Year : 2009 | 20042010 1132

4.2 RELEASES TO WATERS

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										
POLLUTANT	No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	QUANTITY			0.0
							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										
POLLUTANT	No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	QUANTITY			0.0
							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										
POLLUTANT	Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	QUANTITY			0.0
							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

SECTION A : PRTR POLLUTANTS

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

| PRTR# : W0145 | Facility Name : Enva Ireland Ltd | Filename : Appendix A.xls | Return Year : 2009 |

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SECTION A : PRTR POLLUTANTS

POLLUTANT		METHOD		QUANTITY	
No. Annex II	Name	M/C/E	Method Used Designation or Description	T (Total) KG/Year	A (Accidental) KG/Year
			Method Code	0.0	0.0
			Emission Point 1	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)

POLLUTANT		METHOD		QUANTITY	
Pollutant No.	Name	M/C/E	Method Used Designation or Description	T (Total) KG/Year	A (Accidental) KG/Year
			Method Code	0.0	0.0
			Emission Point 1	0.0	0.0

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

[PRTR# : W0145 | Facility Name : Enva Ireland Ltd | Filename : Appendix A.xls | Return Year : 2009]

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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 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 ie. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	16 06 01	Yes	59.9	Lead Acid Batteries	R4	M	Weighed	Onsite in Ireland	Enva Ireland Ltd,W184-01	Cionminam Industrial Estate, ...Portlaoise Co. Laois, ...Ireland	Campine Recycling NV,A1160,Nilverheidsstraat 2 B - 2340 ..BEERSE, ...Belgium Enva Ireland Ltd,W184-01,Cionminam Industrial Estate, ...Portlaoise Co. Laois, ...Ireland	Nilverheidsstraat 2 B - 2340 ..BEERSE, ...Belgium Cionminam Industrial Estate, ...Portlaoise Co. Laois, ...Ireland
Within the Country	13 02 08	Yes	1534.0	Waste Oils from garages and ships	D8	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W184-01	Cionminam Industrial Estate, ...Portlaoise Co. Laois, ...Ireland	Campine Recycling NV,A1160,Nilverheidsstraat 2 B - 2340 ..BEERSE, ...Belgium Enva Ireland Ltd,W184-01,Cionminam Industrial Estate, ...Portlaoise Co. Laois, ...Ireland	Nilverheidsstraat 2 B - 2340 ..BEERSE, ...Belgium Cionminam Industrial Estate, ...Portlaoise Co. Laois, ...Ireland

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



ANNUAL NOISE SURVEY 2009

REPORT

EPA WASTE LICENCE W0145-02

ENVA ANNUAL NOISE SURVEY 2008

EPA License W0145-02

This report presents the results of the Annual Environmental Noise Survey carried out at Enva, Raffeen Industrial Estate, Ringaskiddy, Co. Cork in compliance with Waste License W0145-02.

Measurements were taken during normal conditions of operation on the 8th and 20th of January 2010.

The survey was carried out in accordance with the EPA publications “Environmental Noise Survey, Guidance Document (2003)” and “Guidance Note For Noise In Relation To Scheduled Activities 2nd Edition (2006)”.

MEASUREMENT & LOCATIONS

Four on-site noise monitoring locations (N1 to N4) have been agreed with the EPA. Each of these is at the midway point along a site boundary fence. One noise sensitive location (NSL 1) was agreed also. This is located in front of a private dwelling situated approximately 50 metres from the site boundary on the opposite side of the N28 public road.

In each case the meter was located approximately 1.5 meters above ground and as far away from any sound reflecting objects as feasible. A foam windshield was placed on the microphone to reduce any wind interference during measurements.

At each location at least the following parameters were measured over a 30 minute reference period, L_{Aeq} , L_{A10} , L_{A90} . In addition to this an octave band analysis was carried out over a 1 minute reference period to determine if tonal components existed.

INSTRUMENTATION & CALIBRATION

The instrument used was a Pulsar Model 30 Real Time Analyser complete with microphone, serial number T224580 calibrated on the 3rd September 2008 (see Calibration cert no. 162897 valid for 12 months from 3rd September 2008).

Prior to commencing readings calibration was checked to 93.7 dB(A) using a Pulsar Model 100B 1kHz calibrator, serial number 41799 calibrated on the 3rd September 2008 (see Calibration cert no. 162898 valid for 12 months from 3rd September 2008).

Following completion of the readings calibration was rechecked as above.

Data from the calibration check is reproduced in the appendices from the following files;

File: 2008-12-18_11-03-41_021_SLM.ccf

File: 2008-12-18_13-27-24_027_SLM.ccf

File: 2008-12-18_17-08-40_034_SLM.ccf

ENVA ANNUAL NOISE SURVEY 2008

EPA License W0145-02

SURVEY IMPLEMENTATION

The survey was conducted by Jamie Barry BSc and Certificate in Health and Safety of Enva Ireland Ltd.

Meteorological conditions were noted at the time of the measurements. All sources of noise were noted during the taking of measurements. The primary measurement parameter was the equivalent continuous A-weighted sound pressure level L_{Aeq} , over 30 minute time intervals. A statistical analysis of the measurement results was also completed so that the percentile levels, L_{A90} and L_{A10} over 30 minute time intervals were also recorded. L_{A90} and L_{A10} represent noise level in dB(A) exceeded for 90% and 10% of the measurement time respectively. These can be useful guides to indicating noise conditions such as background noise levels and noise sources of short duration.

In addition, octave band analysis was conducted at each noise monitoring position to determine the presence of any tonal component of the noise.

GENERAL CONDITIONS & OBSERVATIONS:

Weather was dry cold day with no significant breezes on the day of the survey.

Care was taken to ensure readings were taken while key plant was operational.

Measurements were taken during daytime only as the facility does not normally operate during night hours.

ENVA ANNUAL NOISE SURVEY 2008

EPA License W0145-02

RESULTS

The following are the results of measurements and observations. Where tonal and/or impulsive components existed the 5 dB(A) penalty has been added as per EPA guidance documents and the L_{A10} is shown in brackets in bold type.

LOCATION	L_{Aeq}	L_{A90}	L_{A10}	OBSERVATIONS
N1 08/01/2009	49.7	42.3	51.1	On site: Traffic entering and leaving the site, forklift loading a delivery. Off site: Traffic on the main road was audible throughout. IMPULSIVE: NO TONAL: YES (at 2kHz).
N2 20/01/2009	51.6	44.4	53.6	On site: Incoming truck. Off-site: Traffic on main road. Pylon (distant). Birds. IMPULSIVE: NO TONAL: NO
N3 20/01/2009	54.5	43.1	58.1	On-site sources: N/A Off-site sources: Traffic on main road (dominant). IMPULSIVE: NO TONAL: NO
N4 20/01/2009	56.6	43.4	58.6	On site noise sources: Truck entering site at back door. Birds flying past Off site sources: Traffic on main road (dominant). IMPULSIVE: NO TONAL: NO (does not meet criteria).
NSL 1 20/01/2009	78.6	59.2	82.2	No audible noise from Enva. Road traffic dominant. IMPULSIVE: NO TONAL: Yes (at 1 kHz).

ENVA ANNUAL NOISE SURVEY 2008

EPA License W0145-02

DISCUSSION:

Measured noise levels at N1 of 58.0 dB(A) are attributable to on-site and off-site sources. This monitoring location is near to the site entrance/exit and to the location where loading and unloading takes place. The tonal characteristic, incurring a penalty of 5 dB(A) and bringing the L_{Art} to 63.0 dB(A), is considered to be due to off-site sources.

Noise levels at N2 were measured as 59.7 dB(A), slightly above the EPA guidance value of 55 dB(A) and broadly consistent with the reporting level determined during an earlier baseline survey (59.4 dB(A)). Both on-site and off-site sources contributed to the overall noise levels detected on this occasion.

At N3 levels were measured at 61.9 dB(A) which is just slightly above the level detected during the baseline study (58.4 dB(A)). On-site and off-site sources contributed to the overall measured level although the dominant source was traffic on the main road nearby.

Noise levels at N4 (56.2 dB(A)) were only slightly above the EPA guidance level and were influenced by on-site and off-site sources. An audible hum was noted coming from the tank farm but did not meet the EPA criteria for tonality when measured on the Real Time Analyser.

Noise levels at the nearest noise sensitive location, NSL 1, were completely dominated by road traffic. No noise was audible from the Enva site. Measured noise levels here were 78.3 dB(A), well above all other measurements, and incurred a further penalty due to tonality, bringing the final reporting level to 83.3 dB(A).

CONCLUSIONS:

Noise levels in the area of Enva are dominated over by road traffic from the nearby N28 and are well in excess of any noise generated by Enva.

By comparison with an earlier baseline study noise levels at Enva were found to have increased only slightly at N2, N3 and N4. Noise levels at N1 increased somewhat but are lower than all other noise locations and only marginally above the EPA guideline value.

Given the very high noise levels at the N28 roadway and the absence of any noise sensitive locations closer to the site than NSL1 the impact of Enva on environmental noise quality in the area and its potential for noise nuisance is negligible.

ENVA ANNUAL NOISE SURVEY 2008

EPA License W0145-02

APPENDICES

DATA EXTRACTED FROM .CCF FILES

ENVA ANNUAL NOISE SURVEY 2008

EPA License W0145-02

Note times recorded by the noise level meter were based on summer time and hence were an hour ahead of actual time of recording.

CALIBRATION FILES

File: 2008-12-18_11-03-41_021_SLM.ccf

File: 2008-12-18_13-27-24_027_SLM.ccf

File: 2008-12-18_17-08-40_034_SLM.ccf

TIME/DATE	CALIBRATION CHECK 93.7 dB(A)
18/12/07 10:03 AM	93.7
18/12/07 12:27 PM	93.7
18/12/07 4:08 PM	93.7

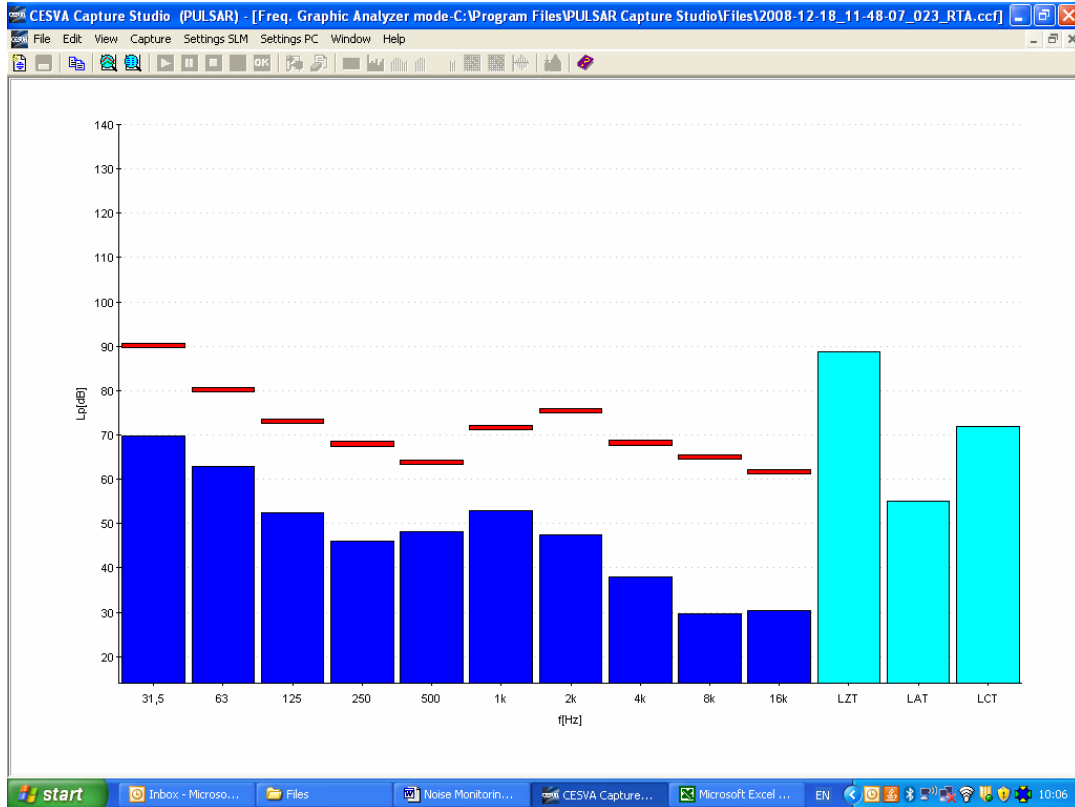
MEASUREMENT FILES

NOISE LOCATION: N1

File: 2008-12-18_11-16-02_022_SLM.ccf

Start	End	L1	L5	L10	L50	L90	LAtt
18/12/2008 11:16:02	18/12/2008 11:46:01	64.4	60.6	59.1	54.9	51.3	58

File: 2008-12-18_11-48-07_023_RTAc.ccf



ENVA ANNUAL NOISE SURVEY 2008

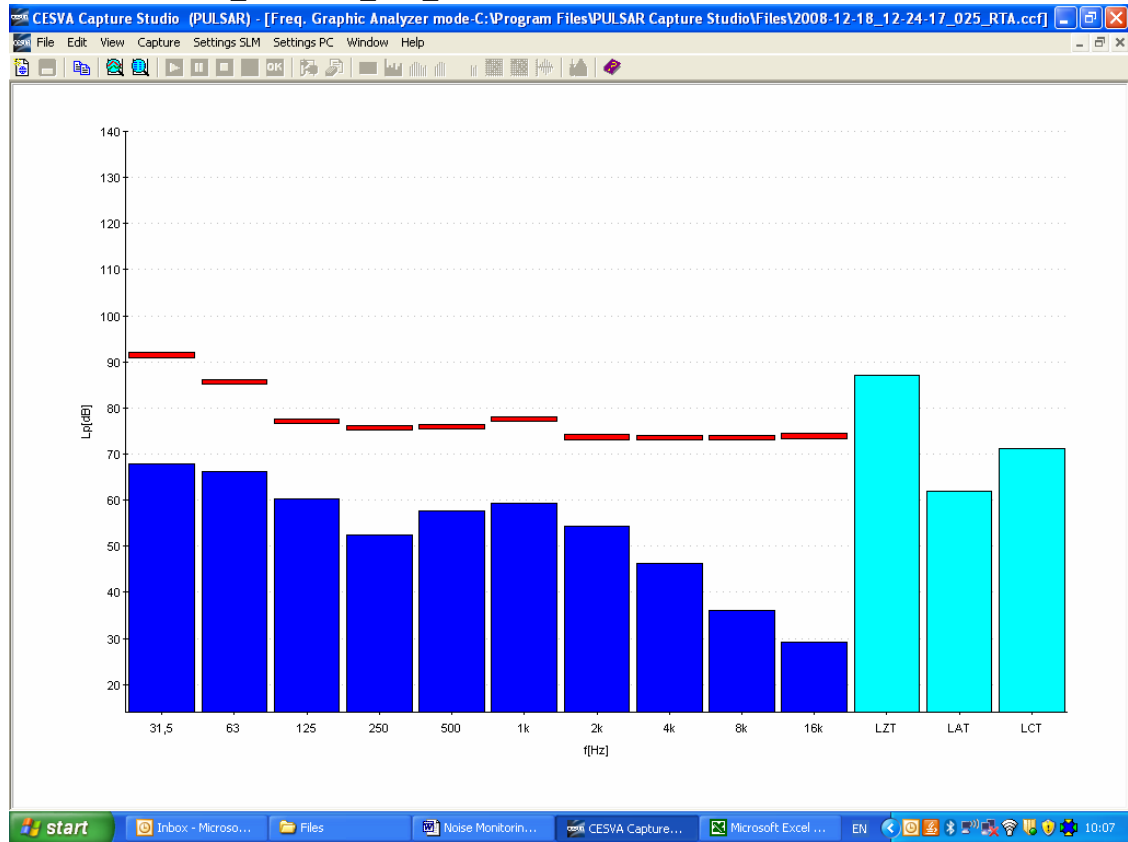
EPA License W0145-02

NOISE LOCATION: N2

File: 2008-12-18_11-52-38_024_SLM.ccf

Start	End	L1	L5	L10	L50	L90	LAtt
18/12/2008 11:52:38	18/12/2008 12:22:37	66.4	64.1	62.9	58.2	51.8	59.7

File: 2008-12-18_12-24-17_025_RTA.ccf



ENVA ANNUAL NOISE SURVEY 2008

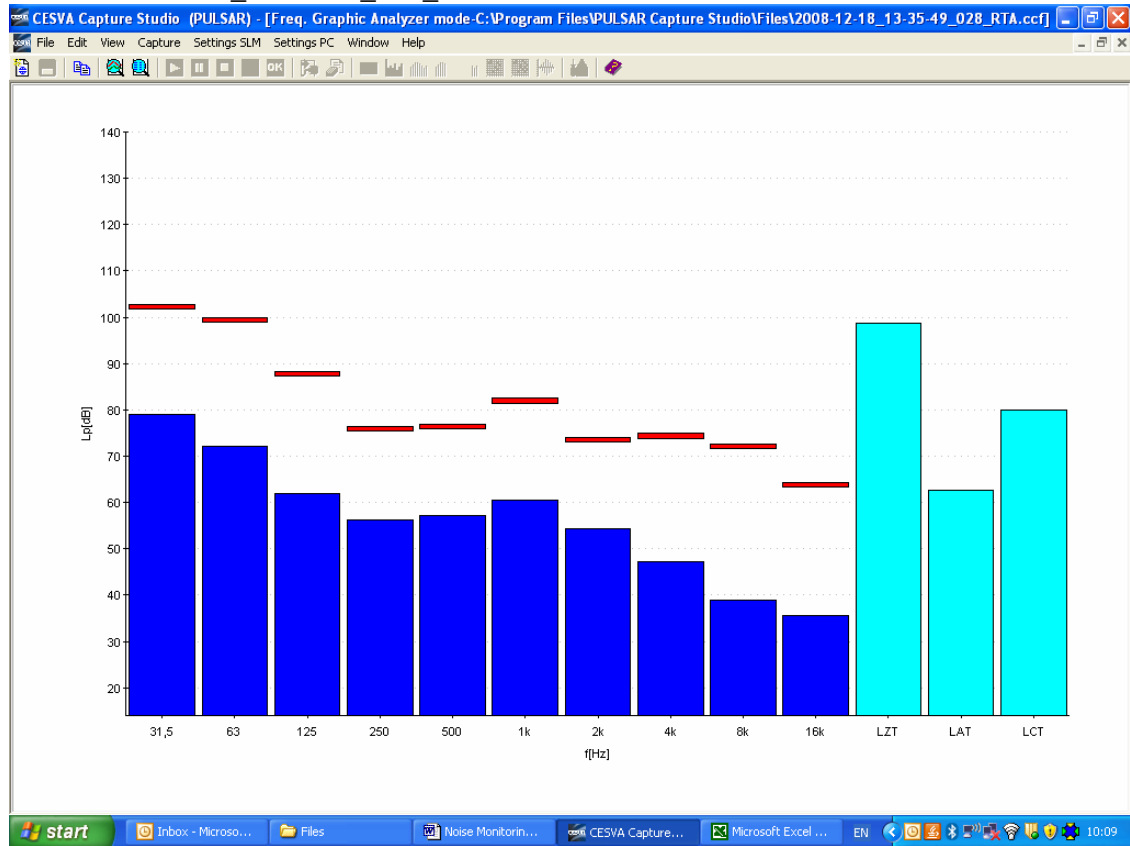
EPA License W0145-02

NOISE LOCATION: N3

File: 2008-12-18_12-26-56_026_SLM.ccf

Start	End	L1	L5	L10	L50	L90	LAtt
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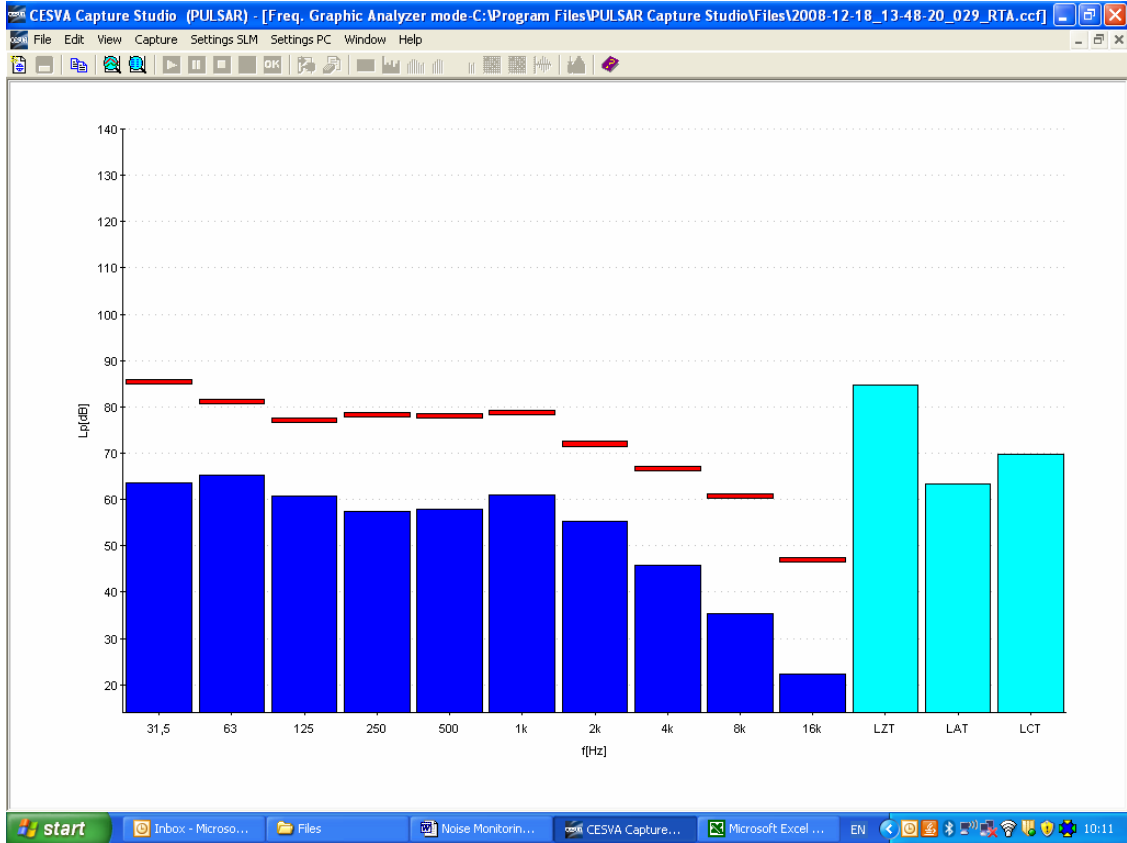
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File: 2008-12-18_13-48-20_029_RTA.ccf



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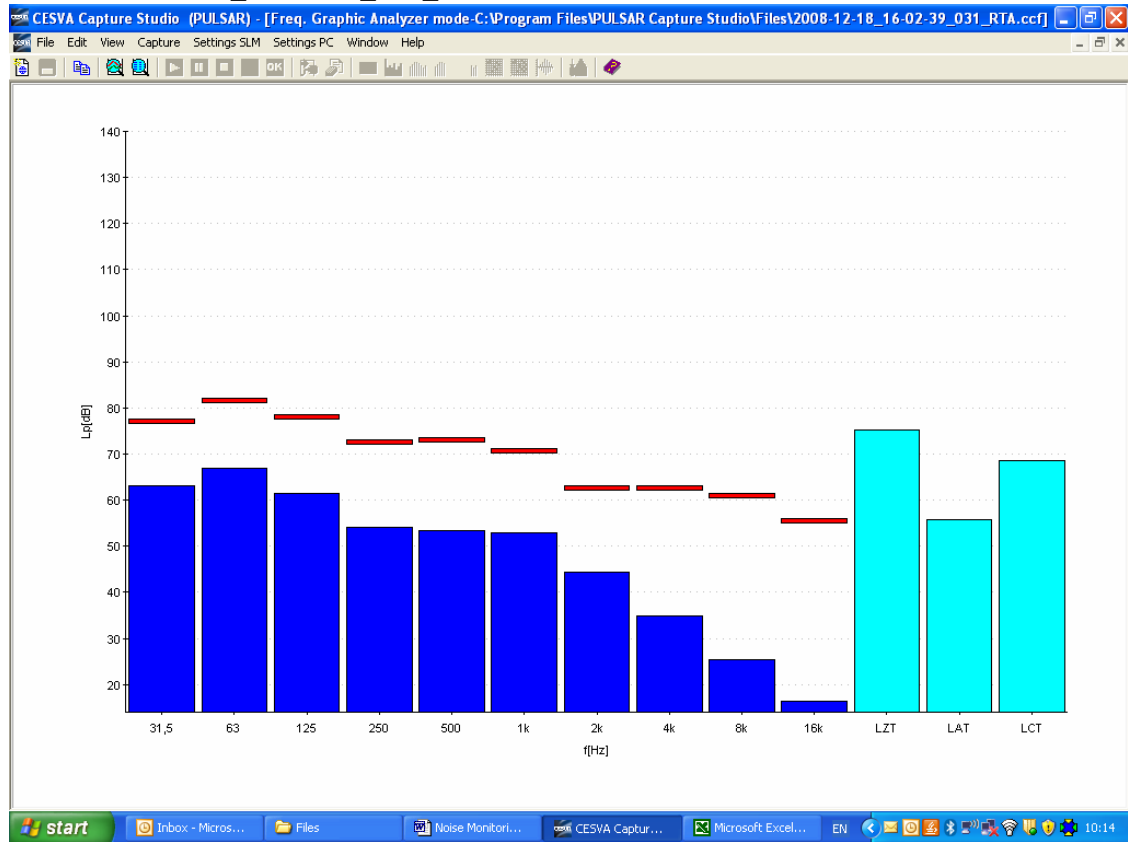
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NOISE LOCATION: N4

File: 2008-12-18_15-29-53_030_SLM.ccf

Start	End	L1	L5	L10	L50	L90	LAtt
18/12/2008 15:29:53	18/12/2008 16:00:04	62.7	60.5	59.5	55	49	56.2

File: 2008-12-18_16-02-39_031_RTA.ccf



ENVA ANNUAL NOISE SURVEY 2008

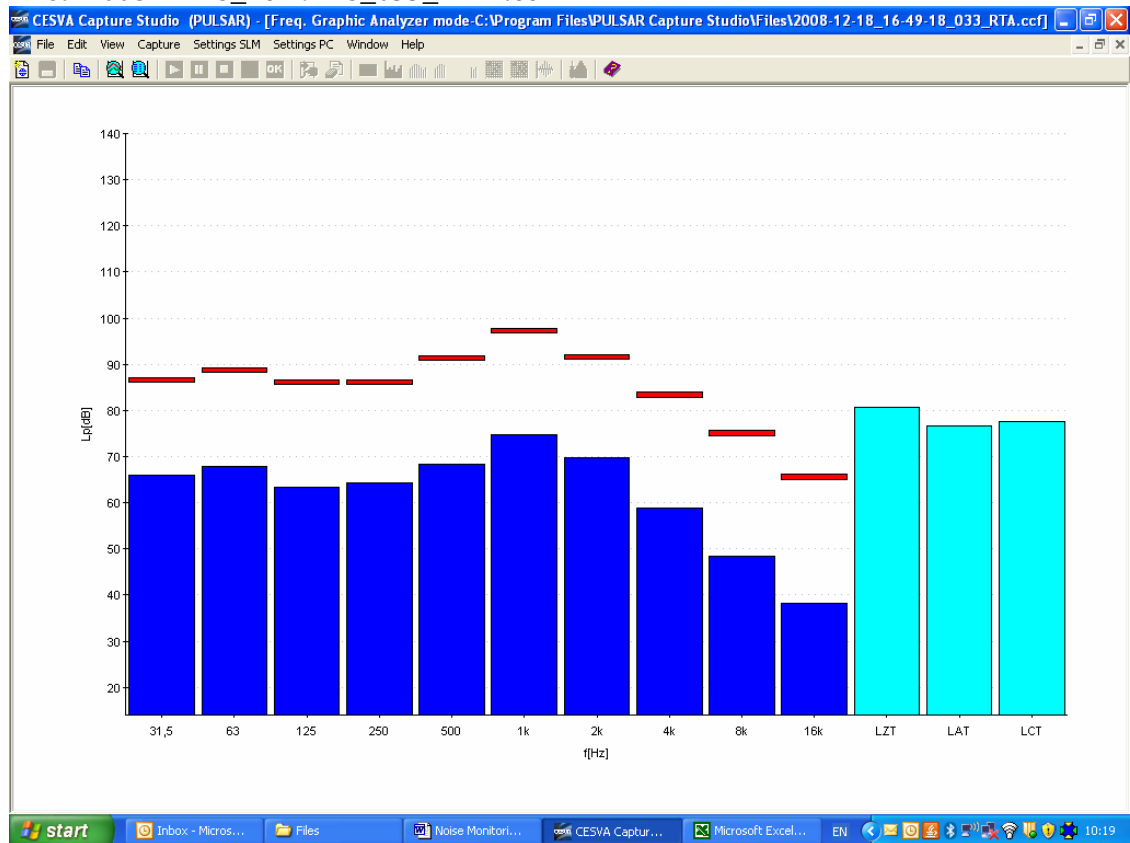
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NOISE LOCATION: NSL 1

File: 2008-12-18_16-17-18_032_SLM.ccf

Start	End	L1	L5	L10	L50	L90	LAtt
18/12/2008 16:17:18	18/12/2008 16:47:18	87.7	85	83.2	71.8	59.6	78.3

File: 2008-12-18_16-49-18_033_RTA.ccf



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CALIBRATION CERTIFICATES

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MAP OF NOISE MONITORING LOCATIONS



Enva Cork

2009 Compliance Monitoring Groundwater Monitoring

DOCUMENT CONTROL SHEET

Client	Enva Cork					
Project Title	Enva Cork 2009 Compliance Monitoring					
Document Title	2009 Groundwater Monitoring					
Document No.	MDE0976Rp0001F01					
This Document Comprises	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	1	17	1	-	1



Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
D01	Draft	C. Reilly	N. Mitchell	S. Herlihy	West Pier	09/03/10
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1 INTRODUCTION

RPS has been commissioned by Enva Ireland Ltd to oversee the annual groundwater compliance monitoring at their facility in Raffeen Industrial Estate, Monkstown, Co. Cork. Groundwater monitoring has been carried out in accordance with condition 6.12 with regard to the criteria set out in Schedule C.7 of Waste Licence W0145-02.

Enva Ireland, has been operating under waste licence W0145-02 since 2007 and is required to submit a report to the Environmental Protection Agency (EPA) on an annual basis, outlining the existing groundwater quality underlying the site.

A trained member of Enva staff collected groundwater samples from a series of monitoring wells (BH01, BH02, BH03 and BH04) within the site boundaries on the 9th of February 2009. The samples underwent laboratory analysis for the suite of parameters specified in Schedule C.7 of Waste Licence W0145-02.

This report outlines the results of the monitoring, which corresponds to the annual monitoring for 2009.

2 METHODOLOGY

Groundwater samples were collected from 4 no. on-site groundwater-monitoring wells (B01, BH02, BH03, BH04), (See Figure 1) using dedicated Waterra tubing, in accordance with RPS's standard sampling protocol. A non-return foot valve was fixed to the bottom of the tubing and inserted into the well, close to the base of the borehole. Separate tubing and foot valves were used at each monitoring well to eliminate the possibility of cross contamination.

Groundwater in the well casing is not considered representative of the groundwater quality at a given location. For this reason, three well volumes were purged from each well prior to collection of the groundwater sample. By the time purging was complete all field test water parameters (namely pH, Temperature, Electrical Conductivity and Dissolved Oxygen) were within 10% variance in three consecutive measurements. This ensured that the groundwater sample extracted from the monitoring borehole was representative of the water held in the subsurface strata and not water held stagnant in the borehole casing. The purged volumes were calculated on-site from the measured static water levels and total well depths using an electronic dip meter.

Groundwater samples were collected in laboratory supplied containers and stored in chilled cool boxes following sampling and during transit to the laboratory. A rigorous chain of custody procedure was used during the sample round.

All groundwater samples were analysed at a UKAS accredited laboratory, Severn Trent Laboratories (STL) for the suite of analyses listed in Table 1. Table 1 also indicates the analytical techniques used by the laboratory.

Table 1: Analytical Methods – STL Laboratories

Parameter	Analytical Methodology
Heavy Metals	Nitric digest/ICP
Arsenic & Selenium	ICP-MS
Mercury	Atomic Fluorescence
Major Ions	Nitric digest/ICP
Fluoride as F	ISE
Chloride	Colorimetry
Sulphate	Colorimetry
Phosphate	Colorimetry
Nitrate	Colorimetry
COD	HACH
SVOCs	GCMS
VOCs	GCMS VOC
TPH	GC-FID

3 RESULTS

The results of all field analysis and laboratory analysis are presented in this section.

Field observations for groundwater monitoring are summarised in Table 3.1. The results of the laboratory monitoring are presented in Table 3.2.

Groundwater was encountered in all of the 4 monitoring boreholes installed at the site. The depth to the water table ranged from 2.98 to 3.76 metres below ground level (mbgl) during the sampling period.

Site-specific field parameters, Temperature, Dissolved Oxygen, Conductivity & pH were collected during the sampling.

The results are discussed in relation to appropriate guideline values in Section 4. Results that are above the relevant Interim Guideline Value (IGV) are highlighted in bold.

Table 3.1: Results of Field Parameters measured at each monitoring well

Field Parameters										
Monitoring Well	Depth of Borehole (mbgl)	Static Water level (mbgl)	Volume Extracted (litres)	pH (pH units)	Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/l)	Observations		
BH01	9.23	2.98	25	6.74	11.1	386	8.9	Purged water brown in colour, extremely silty, no odour noted.		
BH02	8.52	3.32	25	6.66	11.5	442	8.0	Purged water brown in colour turning clear, no odour detected.		
BH03	9.79	3.76	25	6.63	9.8	804	8.2	Purged water brown in colour, with some silt, no odour.		
BH04	7.96	3.67	25	6.64	10.5	378	7.5	Purged water brown in colour turning clear, no odour detected.		
Interim EPA Guideline Value (Units as Indicated)	-	-	-	≥6.5 & ≤9.5	25	1000	No abnormal Change			-

mbgl = metres below ground level

Table 3.2: Results of Major Cation & Anion Analysis

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
pH	pH units	7.9	7.8	7.9	7.8	≥6.5 & ≤9.5
Electrical Conductivity (Laboratory)	µS/cm	487	530	846	476	1000
COD	mg/l	130	24	52	<20	No abnormal change
Calcium, Total as Ca	mg/l	78	107	150	99	200
Magnesium, Total as Mg	mg/l	3.88	3.99	3.55	3.14	50
Potassium, Total as K	mg/l	0.96	0.62	5.3	2.44	5
Sodium, Total as Na	mg/l	17	14	24	14	150
Ammonical Nitrogen as N	mg/l	<0.3	<0.3	<0.3	<0.3	0.12
Nitrate as NO ₃	mg/l	16.1	18.4	9.2	11.3	25
Nitrite as NO ₂	mg/l	<2.5	<2.5	<2.5	<2.5	0.1
Chloride as Cl	mg/l	35	26	214	32	30
Fluoride as F	mg/l	0.1	0.1	0.1	0.1	1.0
Phosphate, Ortho as P	mg/l	<0.1	<0.1	<0.1	<0.1	0.03
Sulphate as SO ₄	mg/l	8	15	9	12	200
Alkalinity as CaCO ₃	mg/l	207	252	148	205	200

Note 1: Figures in bold exceed the guideline value

Table 3.3: Results of Heavy Metals Groundwater Analysis

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
Arsenic, Filtered as As	mg/l	<0.001	<0.001	<0.001	<0.001	0.01
Boron, Filtered as B	mg/l	<0.3	<0.3	<0.3	<0.3	1.0
Cadmium, Filtered as Cd	mg/l	<0.0003	<0.0003	<0.0003	<0.0003	0.005
Chromium, Filtered as Cr	mg/l	<0.001	<0.001	<0.001	<0.001	0.03
Copper, Filtered as Cu	mg/l	<0.001	<0.001	<0.001	<0.001	0.03
Iron, Filtered as Fe	mg/l	0.34	0.18	0.11	0.08	0.2
Mercury, Total as Hg	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Lead, Total as Pb	mg/l	0.011	0.004	0.004	0.004	0.01
Manganese, Filtered as Mn	mg/l	0.02	0.023	0.033	0.021	0.05
Nickel, Filtered s Ni	mg/l	<0.0009	<0.0009	<0.0009	<0.0009	0.02
Selenium, Filtered as Se	mg/l	<0.001	0.001	0.001	<0.001	-
Zinc, Filtered as Zn	mg/l	<0.002	<0.002	<0.002	<0.002	0.1

Table 3.4: Results of Volatile Organic Compounds

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
1,1,1,2-tetrachloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,1,1-Trichloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	500
1,1,2,2-tetrachloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,1,2-trichloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,1-Dichloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,1-Dichloroethene	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,1-Dichloropropene	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,2,3-trichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,2,3-trichloropropane	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,2,4-trichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	0.4
1,2,4-trimethylbenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,2-dibromo-3-chloropropane	µg/l	<2.0	<2.0	<2.0	<2.0	-
1,2-dibromoethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,2-dichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	10
1,2-Dichloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	3
1,2-Dichloropropane	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,3,5-trimethylbenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,3-dichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,3-dichloropropane	µg/l	<1.0	<1.0	<1.0	<1.0	-

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
1,4-dichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
2,2-Dichloropropane	µg/l	<1.0	<1.0	<1.0	<1.0	-
2-chlorotoluene	µg/l	<1.0	<1.0	<1.0	<1.0	-
4-chlorotoluene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Benzene	µg/l	<1.0	<1.0	<1.0	<1.0	1
Bromobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Bromochloromethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Bromodichloromethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Bromoform	µg/l	<1.0	<1.0	<1.0	<1.0	-
Bromomethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Carbon Tetrachloride	µg/l	<1.0	<1.0	<1.0	<1.0	-
Chlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	1
Chloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Chloroform	µg/l	<1.0	<1.0	<1.0	<1.0	12
Chloromethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Cis-1,2-dichloroethene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Cis-1,3-dichloropropene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Dibromochloromethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Dibromomethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Dichlorodifluoromethane	µg/l	<1.0	<1.0	<1.0	<1.0	-

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
Dichloromethane	µg/l	<1.0	<1.0	<1.0	<1.0	10
Ethyl Benzene	µg/l	<1.0	<1.0	<1.0	<1.0	10
Hexachlorobutadiene	µg/l	<1.0	<1.0	<1.0	<1.0	0.1
Isopropylbenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
m,p-xylene	µg/l	<1.0	<1.0	<1.0	<1.0	-
MTBE	µg/l	<1.0	<1.0	<1.0	<1.0	-
Naphthalene	µg/l	<1.0	<1.0	<1.0	<1.0	1
n-butylbenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
n-propylbenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
o-xylene	µg/l	<1.0	<1.0	<1.0	<1.0	10
p-isopropyltoluene	µg/l	<1.0	<1.0	<1.0	<1.0	-
sec-butylbenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Styrene	µg/l	<1.0	<1.0	<1.0	<1.0	-
tert-butylbenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Tetrachloroethene	µg/l	<1.0	<1.0	<1.0	<1.0	40
Toluene	µg/l	<1.0	<1.0	<1.0	<1.0	10
Trans-1,2-dichloroethene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Trans-1,3-dichloropropene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Trichloroethene	µg/l	<1.0	<1.0	<1.0	<1.0	70
Trichlorofluoromethane	µg/l	<1.0	<1.0	<1.0	<1.0	-

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
Vinyl Chloride	µg/l	<1.0	<1.0	<1.0	<1.0	-

Table 3.5: Results of Semi-Volatile Organic Compounds

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
1,2,4-Trichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	0.4
1,2-Dichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	10
1,3-Dichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
1,4-Dichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	-
2,4,5-Trichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0	-
2,4,6-Trichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0	200
2,4-Dichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0	-
2,4-Dimethylphenol	µg/l	<1.0	<1.0	<1.0	<1.0	-
2,4-Dinitrotoluene	µg/l	<1.0	<1.0	<1.0	<1.0	-
2,6-Dinitrotoluene	µg/l	<1.0	<1.0	<1.0	<1.0	-
2-Chloronaphthalene	µg/l	<1.0	<1.0	<1.0	<1.0	-
2-Chlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0	200
2-Methylnaphthalene	µg/l	<1.0	<1.0	<1.0	<1.0	-
2-Methylphenol	µg/l	<1.0	<1.0	<1.0	<1.0	-
2-Nitrophenol	µg/l	<1.0	<1.0	<1.0	<1.0	-
3&4-Methylphenol	µg/l	<1.0	<1.0	<1.0	<1.0	-
4-Bromophenyl Phenyl Ether	µg/l	<1.0	<1.0	<1.0	<1.0	-
4-Chloro-3-methylphenol	µg/l	<1.0	<1.0	<1.0	<1.0	-
4-Chlorophenyl phenyl ether	µg/l	<1.0	<1.0	<1.0	<1.0	-

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
4-Nitrophenol	µg/l	<5.0	<5.0	<5.0	<5.0	-
Acenaphthene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Acenaphthylene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Anthracene	µg/l	<1.0	<1.0	<1.0	<1.0	10000
Benzo(a)anthracene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Benzo(a)pyrene	µg/l	<1.0	<1.0	<1.0	<1.0	0.01
Benzo(b)fluoranthene	µg/l	<1.0	<1.0	<1.0	<1.0	0.5
Benzo(g,h,i)perylene	µg/l	<1.0	<1.0	<1.0	<1.0	0.05
Benzo(k)fluoranthene	µg/l	<1.0	<1.0	<1.0	<1.0	0.05
Benzyl Butyl Phthalate	µg/l	<1.0	<1.0	<1.0	<1.0	-
Bis(2-chloroethoxy)methane	µg/l	<2.0	<2.0	<2.0	<2.0	-
Bis(2-chloroethyl)ether	µg/l	<1.0	<1.0	<1.0	<1.0	-
Bis(2-chloroisopropyl)ether	µg/l	<1.0	<1.0	<1.0	<1.0	-
Bis(2-ethylhexyl)phthalate	µg/l	<10.0	<10.0	<10.0	<10.0	-
Chrysene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Dibenzo(a,h)anthracene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Dibenzofuran	µg/l	<1.0	<1.0	<1.0	<1.0	-
Diethylphthalate	µg/l	<1.0	<1.0	<1.0	<1.0	-
Dimethylphthalate	µg/l	<1.0	<1.0	<1.0	<1.0	-
di-n-Butylphthalate	µg/l	<1.0	<1.0	<1.0	<1.0	2.0

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
Di-n-octylphthalate	µg/l	<1.0	<1.0	<1.0	<1.0	-
Diphenylamine	µg/l	<1.0	<1.0	<1.0	<1.0	-
Fluoranthene	µg/l	<1.0	<1.0	<1.0	<1.0	1.0
Fluorene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Hexachlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	0.03
Hexachlorobutadiene	µg/l	<1.0	<1.0	<1.0	<1.0	0.10
Hexachloroethane	µg/l	<1.0	<1.0	<1.0	<1.0	-
Indeno(1,2,3-c,d)pyrene	µg/l	<1.0	<1.0	<1.0	<1.0	0.05
Isophorone	µg/l	<1.0	<1.0	<1.0	<1.0	-
Naphthalene	µg/l	<2.0	<2.0	<2.0	<2.0	1.0
Nitrobenzene	µg/l	<1.0	<1.0	<1.0	<1.0	10
n-Nitrosodi-n-propylamine	µg/l	<1.0	<1.0	<1.0	<1.0	-
Pentachlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0	2.0
Phenanthrene	µg/l	<1.0	<1.0	<1.0	<1.0	-
Phenol	µg/l	<1.0	<1.0	<1.0	<1.0	0.5
Pyrene	µg/l	<1.0	<1.0	<1.0	<1.0	-

Table 3.6: Results of TPH Analysis

Parameter	Units	Borehole Monitoring Location				Interim EPA Guideline Values (Units as indicated)
		BH01	BH02	BH03	BH04	
TPH >C6-C8	µg/l	<10	<10	<10	<10	-
TPH >C8-C10	µg/l	<10	<10	<10	<10	-
TPH >C10-C16	µg/l	<10	<10	<10	<10	-
TPH >C16-C24	µg/l	<10	<10	<10	<10	-
TPH >C24-C40	µg/l	<10	<10	<10	<10	-
TPH >C6-C40	µg/l	<10	<10	<10	<10	-

4 DISCUSSION OF RESULTS

The results of the annual groundwater monitoring for 2009 are included in Table 3.1 to 3.6. Groundwater results are compared to the EPA Interim Guideline Values (IGV) as set out in the Interim Report "Towards Setting Guideline Values for the Protection of Groundwater in Ireland" 2004. Exceedance of the guideline value is highlighted within the tables.

4.1 FIELD PARAMETERS

Groundwater samples recorded field pH levels ranging between 6.63 and 6.74. All pH levels were within the EPA Interim Guideline range of ≥ 6.5 to ≤ 9.0 . Temperature measurements ranged from 9.8°C to 11.5°C and were lower than the EPA IGV of 25°C.

Field measurements of Electrical conductivity were within the IGV of 1000 $\mu\text{S}/\text{cm}$ at all groundwater monitoring locations.

Field measurements for dissolved oxygen ranged from 7.5 to 9.0 mg/l. Factors such as climate, nutrients in the water, suspended solids; organic wastes and groundwater inflow can all influence the dissolved oxygen values. Observations relating to colour and odour varied from well to well as detailed in Table 3.1.

4.2 MAJOR ANIONS/CATIONS

The results of the anion and cation analysis are presented in Table 3.2. The results of the analysis indicate that Potassium, Ammonical Nitrogen as N, Chloride and Alkalinity have recorded elevated levels above the recommended IGV's.

Potassium concentrations exceeded the IGV of 5mg/l at BH03. All other borehole locations were below the IGV. The potassium concentrations have increased slightly from the previous monitoring event in December 2007 at all locations with the exception of BH02, which noted a decrease in concentration from 0.7mg/l to 0.62mg/l. The concentration at BH01 has increased from 0.8mg/l to 0.96mg/l. The concentration at BH02 and BH04 has increased from 3.2mg/l to 5.3mg/l and 2.3mg/l to 2.44mg/l respectively.

Orthophosphate and nitrite concentrations exceeded the IGV of 0.03mg/l and 0.1mg/l respectively at all 4 groundwater monitoring locations (BH01, BH02, BH03 and BH04). However it should be noted that the laboratory detection limits for nitrite (2.5mg/l) and orthophosphate (0.1mg/l) exceeds their respective IGVs of 0.1mg/l and 0.03mg/l.

Chloride as Cl exceeded the IGV of 30 mg/l at BH01 and BH03. The chloride concentration in BH03 (214 mg/l) showed the most significant increase in concentration from previous monitoring events, which recorded levels ranging between 9mg/l and 23mg/l. The remaining 2 borehole locations were recorded below the IGV.

Ammonical Nitrogen levels did not exceed the laboratory detection limit of 0.3mg/l at all monitoring locations. However it should be noted that the laboratory limit of detection for ammonical nitrogen exceeds the IGV of 0.12mg/l.

Alkalinity as CaCO_3 exceeded the IGV of 200 mg/l at BH01, BH02 and BH04. This is consistent with previous monitoring results. The concentration at BH03 was below the IGV.

4.3 HEAVY METALS

The results of the Heavy Metals analysis are presented in Table 3.3 and indicate that Iron and Lead were recorded slightly above the IGV at BH01. These detections are deemed representative of natural background conditions.

All other parameters were below their respective IGV's.

4.4 VOLATILE ORGANIC COMPOUNDS

The results of the volatile organic compounds analysis are presented in Table 3.4. The results of the analysis indicate that no VOC's were detected above the laboratory limits of detection (1.0 µg/l).

4.5 SEMI-VOLATILE ORGANIC COMPOUNDS

The results of the semi-volatile organic compounds analysis are presented in Table 3.5. The results of the analysis indicate that no sVOC's were detected above the laboratory limits of detection (1.0 µg/l).

4.6 TOTAL PETROLEUM HYDROCARBONS (TPH)

The results of the TPH analysis are presented in Table 3.6. The results of the analysis indicate that TPH was not detected above the laboratory limits of detection of 10 µg/l.

5 CONCLUSION

In accordance with condition 6.12 of the licence and having regard to the criteria set out in Schedule C.7 of Waste Licence W0145-02, groundwater monitoring was carried out on the 9th of February 2010, corresponding to the 2009 annual monitoring event. A trained member of Enva staff carried out the groundwater monitoring from 4 on-site monitoring wells and submitted the samples to an accredited laboratory for analysis.

The results presented have been referenced against the Environmental Protection Agency's (EPA) Interim Guideline Values (IGV) as set out in the Interim Report *'Towards Setting Guideline Values for the Protection of Groundwater in Ireland' 2004*.

No detections of hydrocarbons, VOC's and sVOCs were recorded.

Slightly elevated levels of Iron and Lead were recorded in BH01. In addition, slightly elevated levels of potassium, chloride and alkalinity were recorded. These levels are deemed representative of natural background conditions.

APPENDIX A

Sampling & Analysis – Methods & Details

A.1.1 Location of Sampling

Enva Ireland Ltd,

Raffeen Industrial Estate,

Ringaskiddy Road,

Monkstown,

Co. Cork

A.1.2 Date of Sampling

9th February 2010

A.1.3 Personnel Present During Sampling

Jamie Barry, Senior Supervisor of Operations, Enva Ireland Ltd.

A.1.4 Instrumentation

Waterra Tubing

Standard Petrol Pump

Non-return foot valve

Dip Meter

Multiparamater Environmental Monitoring Kit



ACHIEVEMENT OF EMP for March 2009 to March 2010

Objective	Target	STATUS
EPA Objective No. 1 Complete all training requirements specified in the Waste License.	1.1 Facility manager or deputy to complete waste management training programme	COMPLETED (see AER 2008)
	2.1 Carry out an energy audit of the site and set future targets for energy reduction where feasible.	COMPLETED (see AER 2007)
EPA Objective No. 2 To maximise efficiency of energy and resources use at the site.	2.2 Identify opportunities for reducing water consumption on site.	CLOSED (see AER 2007)
	2.3 Assess efficiency of use of raw materials with a view to waste reduction.	COMPLETED (see AER 2008)
	2.4 Implement measures with a view to achieving a 17% reduction in annual electrical energy consumption by end 2009.	CLOSED An energy audit was carried out in Feb 2008, which concluded that “ <i>energy consumption at the site was quite low compared to good practice and typical benchmarks</i> ”. Where possible recommendations within the report have been implemented. The requirement for running the air compressor 24/7 was reviewed and continuous supply of compressed air is required for laboratory equipment. The option of purchasing a smaller air compressor to run during out of office hours was investigated and not considered financially viable.
	2.5 Implement measures with a view to achieving a 50% reduction in use of mains water supply for production activities by end 2009.	ON-GOING 2009 was a challenging year for the company both commercially and economically, as a result of these challenges achievement of this objective has been delayed. It is intended to review options and put a revised timeframe in place by the end of 2010 for achievement of this target. Options for diverting rain-water for use in production were investigated and designed in 2008, installation costs however continue to be prohibitive. A new steam washer which uses 60% less water for washing IBCs was rented and trialled in 2009. It is planned to purchase and install this equipment on a permanent basis in 2010.



ACHIEVEMENT OF EMP for March 2009 to March 2010

Objective	Target	STATUS
<p>EPA Objective No. 3 To review all operations and processes vis-à-vis energy and resource efficiency, cleaner technology, cleaner production, and prevention, reduction and minimisation of waste with a view to setting improvement targets. [NB This objective to be quantified in subsequent years.]</p>	<p>3.1 To review all on-site & off-site operations and processes as per objective number 3.</p> <p>3.2 Implement measures to achieve a reduction in annual waste wash-water arisings by 20% where feasible by March 2013.</p>	<p>ON-GOING This objective is due for June 2012.</p>
<p>EPA Objective No. 4 Provide catchment systems where necessary to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water.</p>	<p>4.1 To identify all relevant pipelines for risk of chemical leaks from flanges and valves.</p>	<p>ON-GOING In 2008 a cleaning system was devised to reuse wash-water – Tank washings are collected and re-used as part of the production process, where possible changeover to new products has been minimised to reduce the cleaning requirements between batches. In 2009 a new steam washer for washing IBCs was rented and trialled. Trials showed a 60% reduction in the volume of wash water required for this operation. It is planned to purchase and install this equipment on a permanent basis in 2010.</p>
<p>EPA Objective No. 5 Carry out fugitive emissions reduction programme.</p>	<p>5.1 To identify potential sources of fugitive emissions and establish a programme for their reduction where relevant.</p>	<p>COMPLETED (see AER 2007)</p>
<p>EPA Objective No. 6 Evaluate contribution of Enva (Cork) to achievement of recovery targets stated in national and EU waste policies.</p>	<p>6.1 Prepare and submit a report on the impact of Enva (Cork) on achieving national and EU waste recovery targets.</p>	<p>CLOSED (see AER 2007)</p> <p>COMPLETE Report evaluating Enva Cork's contribution towards achievement of waste recovery targets was completed in Dec 2009 and submitted to the EPA.</p>



Environmental Management Programme – March 2009 to March 2013

Objective	Target	Programme for achieving the target.	Responsibility	Timeframe for target completion	Rationale for target
EPA Objective No. 1 Complete all training requirements specified in the Waste License.	1.1 Facility manager or deputy to complete waste management training programme.			COMPLETE	License condition 2.1.2
EPA Objective No. 2 To maximise efficiency of energy and resources use at the site. [NB This objective to be quantified in subsequent years.]	2.1 Carry out an energy audit of the site and set future targets for energy reduction where feasible.	[See Target 2.4]		CLOSED See AER 2007	License conditions 7.1 & 7.2. & Environmental Aspect no. 8 identified as significant.
	2.2 Identify opportunities for reducing water consumption on site.	[See Target 2.5]		CLOSED See AER 2007	License conditions 7.3. Environmental Aspect no. 13 identified as significant.
	2.3 Assess efficiency of use of raw materials with a view to waste reduction.			COMPLETE	License conditions 7.4.
	2.4 Implement measures with a view to achieving a 17% reduction in annual electrical energy consumption by end 2009.	If feasible and cost effective, implement measures to reduce need for 24/7 running of large air compressor. (Jul 2009).	Operations Manager	CLOSED	License conditions 7.1 & 7.2. & Environmental Aspect no. 8 identified as significant.
	2.5 Implement measures with a view to achieving a 50% reduction in use of mains water supply for production activities by end 2009.	Installation and use of rain-water containment if feasible and cost effective (Dec 2009).	Operations Manager	December 2010 (extended from Dec 2009)	License conditions 7.3. Environmental Aspect no. 13 identified as significant.



Environmental Management Programme – March 2009 to March 2013

Objective	Target	Programme for achieving the target.	Responsibility	Timeframe for target completion	Rationale for target
EPA Objective No. 3 To review all operations and processes vis-à-vis energy and resource efficiency, cleaner technology, cleaner production, and prevention, reduction and minimisation of waste with a view to setting improvement targets.	3.1 To review all on-site & off-site operations and processes as per objective number 3.	Review on-site operations and consider newest technologies and methods, BAT etc and incorporate projects into this EMP. (March 2009) Commence implementation of the selected projects. (Dec 2010) Completion of selected projects. (June 2012)	HSE Manager & Operations Manager Operations Manager Operations Manager	June 2012	License condition 2.2.2.2.
	3.2 Implement measures to achieve a reduction in annual waste wash-water arisings by 20% where feasible by March 2013.	Examine options for reuse of wash-water for heavily soiled drums and design of system. (Dec 2010) Implement the above system and monitor its effectiveness. (March 2013).	HSE Manager & Operations Manager HSE Manager & Operations Manager	March 2013	License condition 2.2.2.2.



Environmental Management Programme – March 2009 to March 2013

Objective	Target	Programme for achieving the target.	Responsibility	Timeframe for target completion	Rationale for target
EPA Objective No. 4 Provide catchment systems where necessary to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water.	4.1 To identify all relevant pipelines for risk of chemical leaks from flanges and valves.			CLOSED See AER 2007	License condition 3.20 Aspects no 7 & 15 identified as significant.
EPA Objective No. 5 Carry out fugitive emissions reduction programme. [NB This objective to be quantified in subsequent years.]	5.1 To identify potential sources of fugitive emissions and establish a programme for their reduction where relevant.			CLOSED See AER 2007	License condition 6.8.
EPA Objective No. 6 Evaluate contribution of Enva (Cork) to achievement of recovery targets stated in national and EU waste policies.	6.1 Prepare and submit a report on the impact of Enva (Cork) on achieving national and EU waste recovery targets.	Review/revise all relevant policies and targets and prepare a report for submission to the Agency. (Dec 2009)	HSE Manager & Business Unit Manager	COMPLETE See AER 2009	License condition 11.11.



Schedule of Objectives & Targets – March 2009 to March 2013

Objective	Target	Timeframe
EPA Objective No. 1 Complete all training requirements specified in the Waste License.	1.1 Facility manager or deputy to complete waste management training programme.	COMPLETE See AER 2008
EPA Objective No. 2 To maximise efficiency of energy and resources use at the site.	2.1 Carry out an energy audit of the site and set future targets for energy reduction where feasible. 2.2 Identify opportunities for reducing water consumption on site.	CLOSED See AER 2007 CLOSED See AER 2007
	2.3 Assess efficiency of use of raw materials with a view to waste reduction.	COMPLETE See AER 2008
	2.4 Implement measures with a view to achieving a 17% reduction in annual electrical energy consumption by end 2009.	CLOSED See AER 2009
	2.5 Implement measures with a view to achieving a 50% reduction in use of mains water supply for production activities by end 2009.	December 2009 – to be revised in 2010
EPA Objective No. 3 To review all operations and processes vis-à-vis energy and resource efficiency, cleaner technology, cleaner production, and prevention, reduction and minimisation of waste with a view to setting improvement targets.	3.1 To review all on-site & off-site operations and processes as per objective number 3.	June 2012
	3.2 Implement measures to achieve a reduction in annual waste wash-water arisings by 20% where feasible by March 2013.	March 2013
EPA Objective No. 4 Provide catchment systems where necessary to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water.	4.1 To identify all relevant pipelines for risk of chemical leaks from flanges and valves.	CLOSED See AER 2007
EPA Objective No. 5 Carry out fugitive emissions reduction programme.	5.1 To identify potential sources of fugitive emissions and establish a programme for their reduction where relevant.	CLOSED See AER 2007
EPA Objective No. 6 Evaluate contribution of Enva (Cork) to achievement of recovery targets stated in national and EU waste policies.	6.1 Prepare and submit a report on the impact of Enva (Cork) on achieving national and EU waste recovery targets.	COMPLETE See AER 2009