

Niagara CAER Group Chemical Companies

**National Emissions Reduction
Masterplan (NERM)**

2012 Report for 2011 Emissions

Niagara CAER Group Chemical Companies 2012 NERM Report Index

Page	Description
1	Index
2	Introduction and Summary
3	Company Contact List
4	CAER Group Impact on Communities
5	Explanations
6	Chart No.1 – Chemical Emissions
7	Chart No.2 – Production Volumes
8	Chart No.3 – Chemical Emissions per 1000 Kg. Production
9	Chart No.4 – Chemical Wastes
10	Chart No.5 – Chemical Wastes per 1000 Kg. Production
11	Chart No.6 – Combustion Emissions
12	Chart No.7 – Combustion Emissions per 10000 Kg. Production
13	Table 1 – Chemical Emissions to Air and Water
14	Table 2 – Chemical Emissions per 1000 Kg. Production, 1993 to 2008
15	Table 3 – Chemical Wastes
16	Table 4 – Chemical Wastes per 1000 Kg. Production, 1993 to 2008
17	Table 5 – Combustion Emissions
18	Table 6 – Combustion Emissions per 1000 Kg. Production

Introduction

This report is issued by the Niagara CAER Group Chemical Companies as part of their commitment to being open to the public and to operating their businesses according to the principles of **Responsible Care**[®], an initiative of CIAC. (**The Chemistry Industries Association of Canada**.) This is the **Nineteenth year** of its publication.

Production levels have improved over 2010 and should continue to improve in 2012. Operating the chemical plants with the absolute minimum impact on the health, safety and environmental well being of the communities in which we operate and live, continues to be our top priority.

The CAER Member companies strive to reduce chemical emissions and reduce chemical waste.

Results are presented as Charts with accompanying explanations. Data is presented at the end of the report in the form of tables. Persons wishing to obtain more information are asked to contact the company directly at the numbers listed in this report, or to send an e-mail with their questions to: pcollee@cogeco.ca.

Summary

In 2011, Chemical Emissions per kilogram of production remained unchanged from the previous year and is still 31% lower than the base year, showing a continuous downward trend. Waste generation is variable and was reduced by 14% from the previous year. The combustion emission levels per kg of production continue to drop as a result of some more efficient fuel burning equipment installed, however a baseline level of heating is required regardless of production volumes.

Overall the Niagara CAER Chemical Companies have performed exceptionally well controlling and reducing combustion and chemical emissions and wastes.

NIAGARA CAER

Member Companies

Chemtrade Logistics Inc.

CYTEC Canada Inc.

Durez Canada Company Ltd.

Kemira Chemicals Canada Inc.

Mancuso Chemicals Limited

Oxy Vinyls Canada Co.

Member Companies Contact Names

Company	Contact Name and Number	
Chemtrade Logistics Inc.	Dave Smith	905-356-8763
	Joe Iuliano	905-356-8763
CYTEC Canada Inc.	Rene Lemay	905-374-5944
Durez Canada Company Ltd.	Robert Hunt	905-346-8615
Kemira Chemicals Canada Inc.	Bruno Montpetit	905-688-6470
	Clifton Brown	905-688-6470
Mancuso Chemicals Ltd.	Barry Rose	905-357-3626
	Bob Montgomery	905-357-3626
Oxy Vinyls Canada Co.	Don Davidson	905-374-5601
	Ron Morettin	905-374-5669

Chemicals Manufactured and Uses

- **Cytec: Phosphine, Fumigants, Mineral Extractants, Speciality Phosphine Chemicals**
Electronics Industry, Metal Recovery, Mining industry, Fumigation, Biocides
- **Durez: Phenolic Resins and Compounds**
Automotive, Brake pistons, Clutch Facings, Electrical Applications.
- **Chemtrade Logistics: Distributes Sulphur Products, Sulphur Dioxide and Molten Sulphur.**
Pulp and paper, Electronics, mines and cyanide destruction.
- **Oxy Vinyls: PVC Resins**
Construction: Pipe & fittings, House Siding, Window Frames, Floors, Wallpaper, Fencing, roof and pool membranes. Packaging, Medical Tubing, Wire and Cable, Automotive dashes, bumpers and trim.
- **Kemira: Defoamers, Dyes and specialty Chemicals.**
Water treatment and allied processes in pulp and paper production; oil & mining processes, and paint formulation.
- **Mancuso: Phenolic, Furan and Alkyd Resins, Aryl Sulfonic Acids, Binder systems for foundries and Alkyds for Industrial Coatings.**

NIAGARA CAER GROUP
2011 COMPOSITE PROFILE
For 2012 NERM Report

		2011	2010
Number of Employees		339	323
Payroll (Including Benefits)	\$	35,298,922	31,114,273
Taxes	\$	1,088,751	1,043,533
Utilities	\$	9,677,305	9,570,308
Value of Supplies and Services	\$	17,221,962	17,112,241
Value of Sales	\$	388,066,224	355,978,135
Percent of Products Exported	%	73.8	69.17
2011 Production Level,	kg	287,359,125	258,780,830
2012 Production Estimate,	kg	307,375,295	289,347,240
Charity Support (United Way etc.)	\$	45,053	40,568

Company Business Comments

- **Niagara CAER Group Companies are growing or holding their own in the marketplace**
- **Market place competition continues to increase both locally and globally**
- **Member companies comply with all applicable environmental regulations and are always looking for opportunities to improve and reduce their environmental footprint and increase sustainability**
- **Niagara CAER Group member plants have various projects to improve or maintain competitiveness**
- **Major competitive disadvantages for plants are the elevated cost of electricity and high levels of red tape and government regulations**

Explanations

Chemical Emissions

Chemical emissions per kilogram of material produced remained unchanged from 2010. Some chemical emissions were reduced. However there are some emissions that are tied directly to production levels. Production levels increased by 11% over 2010 levels. The 2011 emission was still below the base year by 31%. Some chemical emissions were reduced while others increased due to product mix and the formulations used to calculate these emissions in the NPRI (National Pollutants Registry Inventory). The trend of lower chemical emissions per 1000kg of production continues to drop as production increases.

Chemical Wastes

Chemical Wastes are accumulated over time and periodically shipped out for treatment. As a result, depending on the shipping dates, there can be big swings in "apparent" generation of wastes. Chemical wastes were reduced by 14% from 2010 levels. The plants are doing an excellent job in reducing waste to landfill or incineration and to water. They are doing more recycling to reduce these waste materials.

Combustion Emissions

The Greenhouse Gases per kilogram of product were reduced by 2.7% from 2010. As a result of the higher production levels in 2011 the combustion emissions were higher than the previous year but remain below the base year by 23%. Combustion emission levels are tied directly to production levels and are variable due to weather conditions during winter months.

**Chart No. 1
Chemical Emissions**

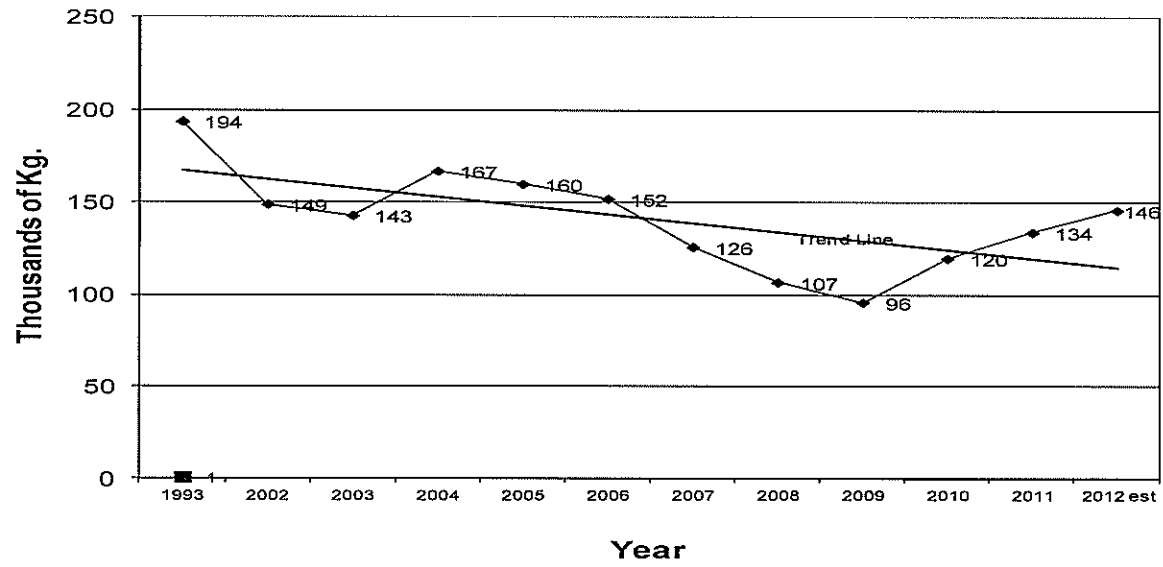
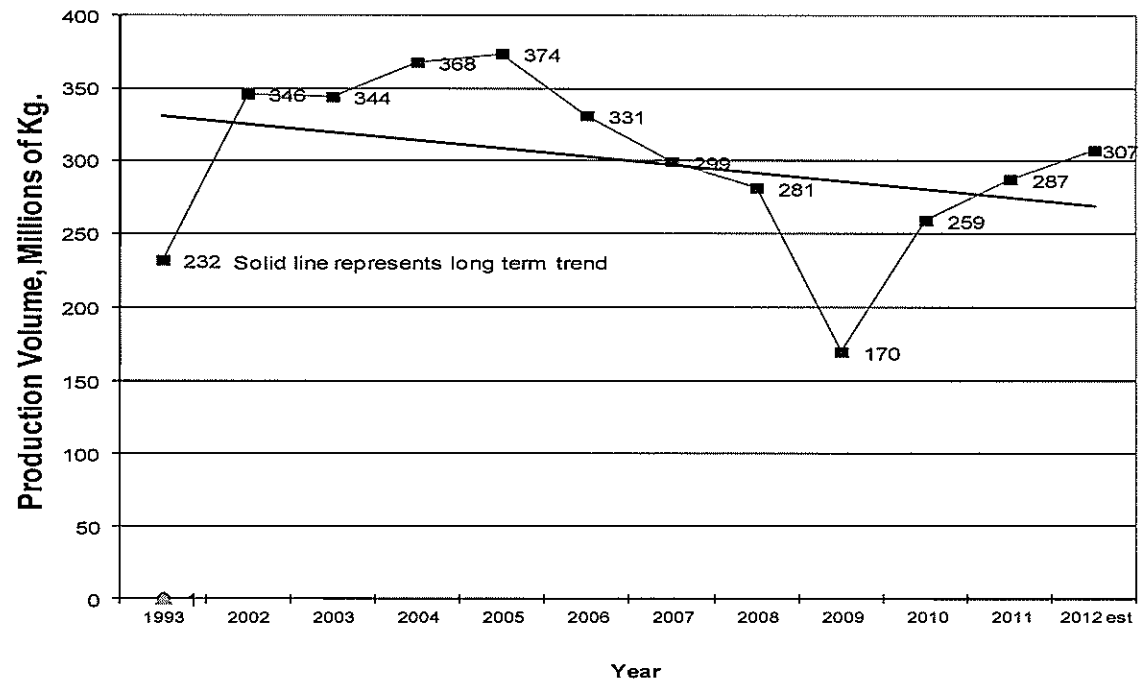
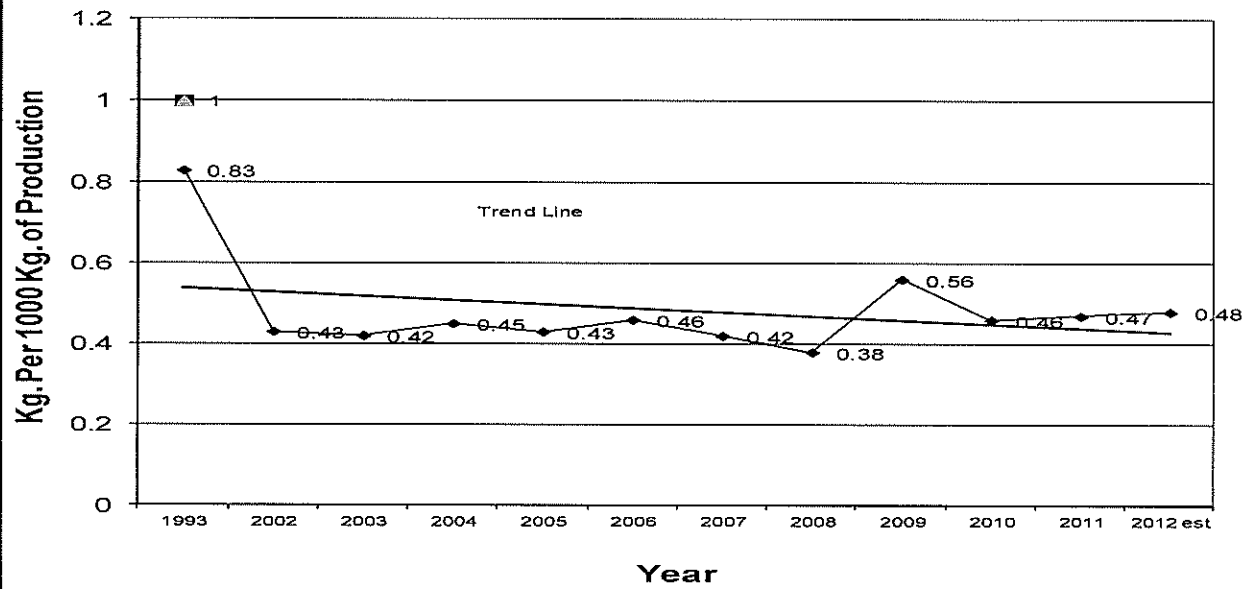


Chart No.2
Production Volume



Text Box

Chart No. 3
Chemical Emissions Per 1000 Kg. Of Production



**Chart No. 4
Chemical Wastes**

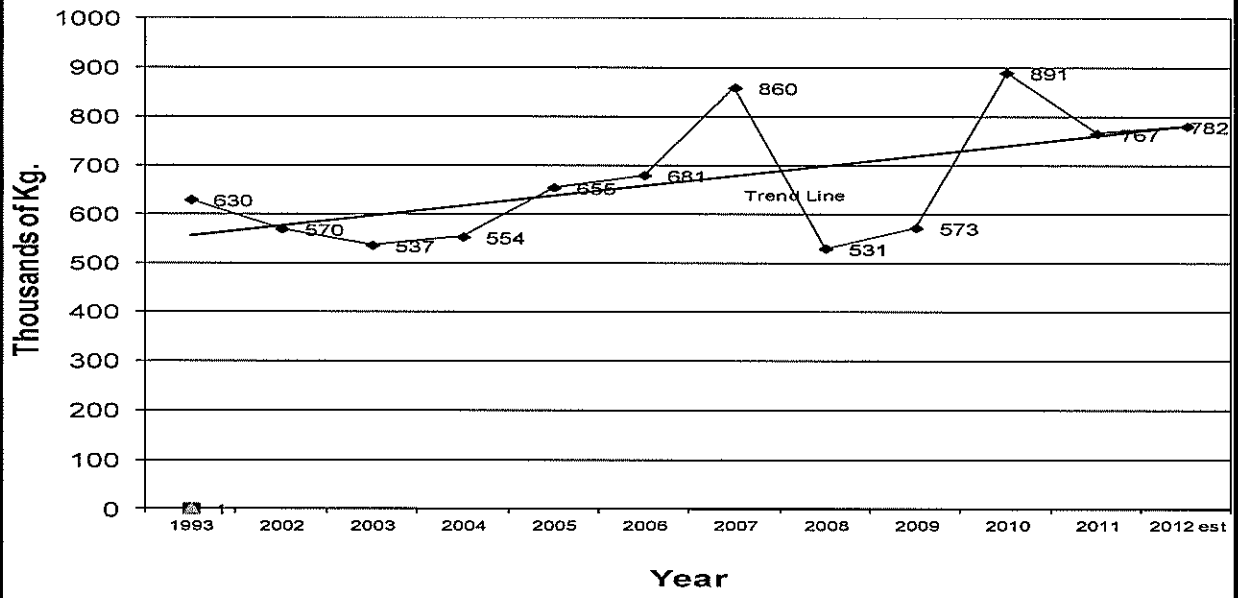
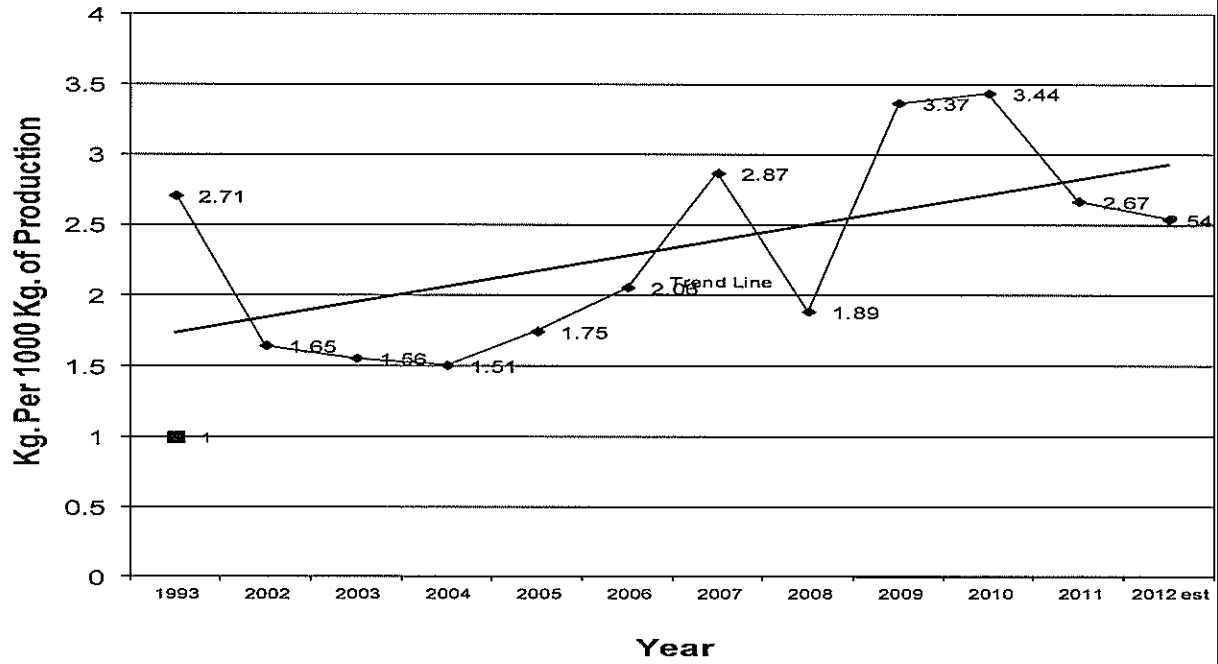


Chart No. 5
Chemical Wastes Per 1000 Kg. of Production



**Chart No. 6
Combustion Emissions**

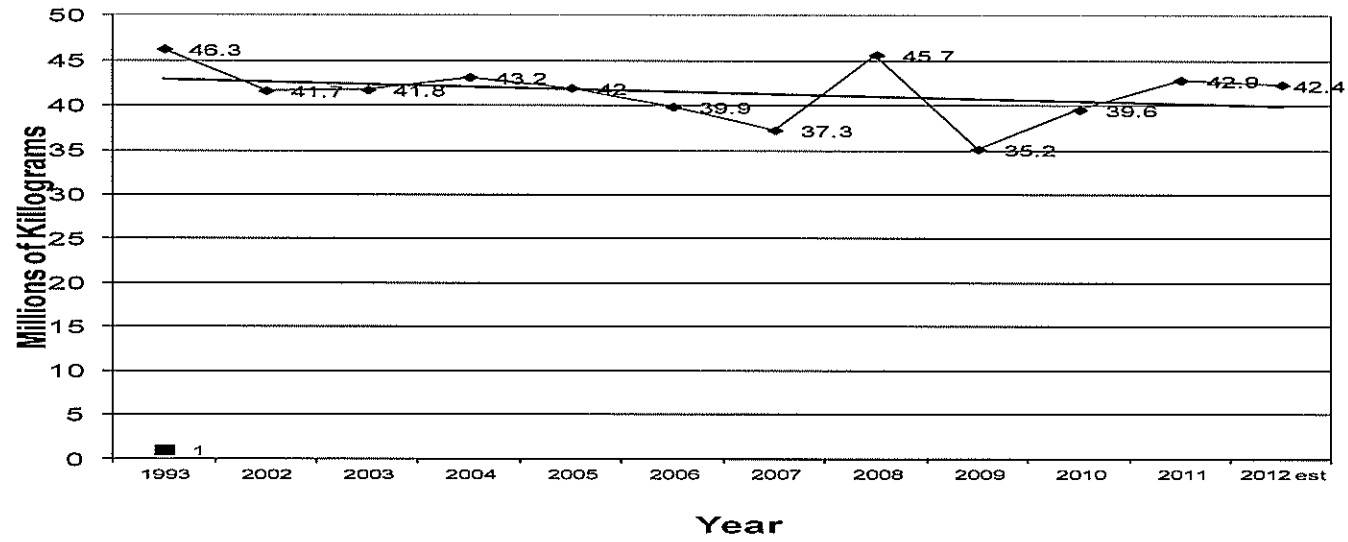
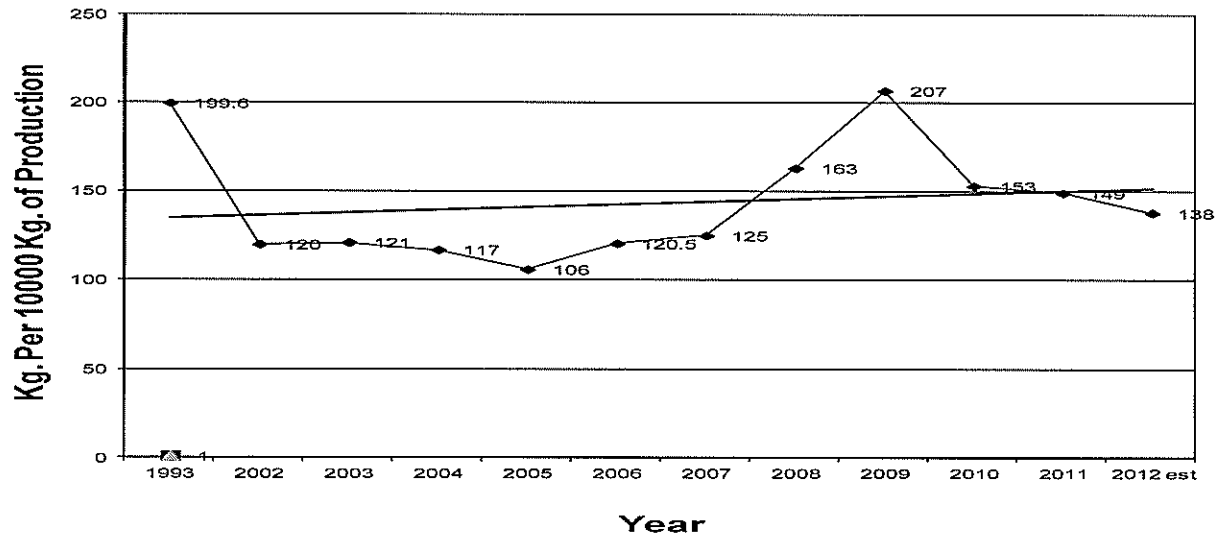


Chart No. 7
Combustion Emissions per 10000 Kg. of Production



Chemical Emissions to Air and Water

Year 2011 Emissions and Comparisons with 2010 results

Table 1

Plant No.	Chemical Name	Amount Released in 2011 Kilograms		Total 2011 kg.	Total 2010 kg.	% Change From 2010	Estimate 2012 kg.
		Waterway	Air				
2	Nitrogenous Material	2182	0	2182	1208	+80	2000
1,2,3	Ammonia	2345	23,784	26,129	26,210	0	34,350
2,3,5,6	Methanol	0	393	393	222	+77	396
2	Iso Octane	0	5,700	5,700	2801	+103	3000
2	Vinyl Chloride	1	302	303	329	-9	400
1,6	Toluene	0	48	48	157	-69	51
3,5	Kerosene Type Solvents	0	1,516	1,516	1,352	+12	1510
3,5	Ethyl Alcohol	0	54,416	54,416	53,540	+2	60,200
1,2	Nitrate Ion	38,141	185	38,326	28,255	+36	39,500
1,5	Isopropanol	0	229	229	254	-10	303
2,3,6	Phenol	1	3,093	3094	3,228	-4	3,309
1,3,6	Formaldehyde	0	78	78	71	+10	80
6	Xylene	0	77	77	81	-5	80
2	Oil and Grease	703	0	703	813	-14	800
2	Phosphorus Salts	174	0	174	281	-62	250
2	Aluminum Ion	184	0	184	171	+8	170
5	Acetic acid	0	546	546	180	+203	600
4	Sulphur Dioxide	0	171	171	152	+13	120
	Emissions less than 100 kg./yr.*	37	184	221	285	-29	283
	Total Emissions, kg.	43,768	90,722	134,490	119,590	+12	145,602

Identification of Companies: (1) Cytec (2) Oxy Vinyls (3) Durez (4) Chemtrade Logistics (5) Kemira Chemicals (6) Mancuso Chemicals

*Includes: zinc; HCFC; cyanide; calcium hydroxide; ferric oxide; carbon black; naphthalene; 1,2,4-trimethyl benzene; furfuryl alcohol; ethyl benzene; gasoline

Chemical Emissions Per 1000 Kg. of Production, 1993 to 2011
Kg. of Emissions Per 1000 Kg. of Production

Table 2

	1993 Base Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 est
Production Volume 1000 tonnes % Change from Base Year*	232	346 +49	344 +48	368 +58	374 +61	331 +43	299 +29	281 +21	170 -27	259 +12	287 +24	307 +32
Chemical Emissions - tonnes. % Change from Base Year*	194	149 -24	143 -26	167 -14	160 -18	152 -22	126 -35	107 -45	96 -50	120 -38	134 -31	145 -25
Chemical Emissions: Kg. per 1000 t of Production % Change from Base Year, 1993	0.83	0.43 -48	0.42 -49	0.45 -45	0.43 -48	0.46 -44	0.42 -50	0.38 -54	0.56 -32	0.46 -44	0.46 -44	0.47 -43

Chemical Wastes
Year 2011 Data and Comparisons with 2010 and 2012 Estimates
Table 3

Plant No.	Chemical Name	Amount Transferred in 2011 Kilograms		Total 2011 Kg	Total 2010 Kg	% Change From 2010	Estimate 2012 kg.
		Landfill	Recycled/Treated				
1	Tributyl-Phosphine Sulfide	12,131	0	12,131	16,646	-27	15,000
3	Phenol*	3,177	156,213	159,390	185,907	-16	190,000
1,2,5	Liquid Industrial Waste (Oils, etc.)	0	230,245	230,245	228,948	+1	253,500
2	Vinyl Resins*	138,864	0	138,864	270,698	-95	144,500
1	Phosphorus Salts	0	1,874	1,874	1945	-5	2,500
1,2,4,5	Waste Misc. Haz. Prod. & Rinses	1,825	182,780	184,605	165,718	+11	156,500
3	Formaldehyde*	258	11,027	11,285	12,960	-12	15,000
4	Sodium Hydroxide	0	28,710	28,710	8660	+300	5000
	Chemicals with wastes of 100 Kg. or less per year **						
	Total Chemical Wastes	156,255	610,849	767,104	891,482	-14	782,000

Identification of Companies: (1) Cytec (2) Oxy Vinyls (3) Durez (4) Chemtrade Logistics (5) Kemira Chemicals (6) Mancuso Chemical

*Amounts shown do not include material recycled into a customer's process stream and converted into a finished product.

** Includes: Mercury and Batteries.

Chemical Waste per 1000 Units of Production, 1993 to 2011

Kg. of Waste per 1000 Kg. of Production

Table 4

	1993	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Production Volume 1000 t	232	346	344	368	374	331	299	281	170	259	287	Est. 307
% Change from Base Year, 1993		+49	+48	+59	+61	+43	+29	+21	-27	+12	+24	+32
Chemical Waste Tonnes	630	570	537	514	655	681	860	531	573	891	767	782
% Change from Base Year, 1993		-9	-15	-12	+4	+8	+36	-16	-10	+41	+22	+24
Chemical Waste ; Kg. per tonnes of Production.	2.71	1.65	1.56	1.51	1.75	2.06	2.87	2.89	3.37	3.44	2.67	2.54
% Change from Base Year 1993		-39	-42	-41	-35	-24	+6	-30	+24	+27	-2	-6

Combustion Emissions
Burning Fuel For Steam Generation And Drying
Emissions for 2011 and 2010 and Estimates for 2012

Table 5

Combustion Product Component	Amount Released		
	2011	2010	2012 Estimate
Carbon Dioxide 1000 tonnes	42.874	39.6	42.38
Nitrogen Dioxide tonnes	38.364	34.23	38.88
Carbon Monoxide tonnes	26.161	23.86	25.98
Sulfur Oxides tonnes	1.633	0.748	1.344
Methane tonnes	1.203	1.13	1.197
Volatile Organic Carbon tonnes	3.017	7.11	3.339
Totals 1000 tonnes	42.944	39.698	42.450

Combustion Emissions Per 10000 Kilograms of Production, 1993 to 2011

Table 6

	1993 Base Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 est
Production Volumes Millions of Kg.	232	346.3	344.3	368	374.3	330.9	299	281	170	258	287	307
% Change from Base Year 1993		+49.3	+48.4	+56.6	+61.3	+42.6	+29	+21	-27	+11	+24	+32
Combustion Emissions Millions of Kg.	56.3	53.1	53.1	54.8	42	39.9	37.3	45.7	35.2	39.6	42.9	42.5
% Change from Base Year 1993		-5.7	-5.7	-2.7	-25.4	-29.1	-34	-19	-37	-30	-23	-23
Combustion Emissions Kg. Per 10000 Kg. Of Production	242.6	153.3	154.1	148.8	106	120.5	124.5	162.6	207.1	153.5	149.5	138.4
% Change from Base Year 1993		-36.8	-36.5	-38.7	-56.3	-50.3	-48.7	-33	-14.6	-36.7	-38.4	-43.0