

# **Niagara CAER Group**

**Community Awareness – Emergency Response**

## **Chemical Companies**

**Emissions Report**

**(NERM)**

**2013 Report for 2012 Emissions**

# Niagara CAER Group Chemical Companies

## 2013 Emissions Report

(For 2012)

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## ***Introduction***

- Issued annually by the Niagara CAER Group Chemical Companies.
- A commitment to being open with the public.
- This is the twentieth year of publication.
- Production levels have improved in 2012 over 2011 and continue to improve.
- Member companies strive to reduce chemical emissions and chemical waste.
- Results are presented as charts and tables.

## ***Summary of Report***

- 2012 Chemical emissions were reduced by 14.5% from previous year.
- Chemical emissions Per Kg of production were 21% lower than the previous year.
- There is a continuous downward trend.
- Waste generation was reduced by 18% from previous year.
- Combustion emission levels per kilogram of production continue to drop.

**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**

<b>Company</b>	<b>Contact Name and Number</b>	
<b>Chemtrade Logistics Inc.</b>	<b>Dave Smith</b>	<b>905-356-4527</b>
	<b>Joe Iuliano</b>	<b>905-356-4527</b>
<b>CYTEC Canada Inc.</b>	<b>Glen Harron</b>	<b>905 374-5907</b>
	<b>Gary Sommer</b>	<b>905-374-5812</b>
<b>Durez Canada Company Ltd.</b>	<b>Robert Hunt</b>	<b>905-346-8615</b>
<b>Kemira Chemicals Canada Inc.</b>	<b>Bruno Montpetit</b>	<b>905-688-6470</b>
	<b>Lynn Blanchard</b>	<b>905-688-6470</b>
<b>Mancuso Chemicals Ltd.</b>	<b>Barry Rose</b>	<b>905-357-3626</b>
	<b>Bob Montgomery</b>	<b>905-357-3626</b>
<b>Oxy Vinyls Canada Co.</b>	<b>Don Davidson</b>	<b>905-374-5601</b>
	<b>Ron Morettin</b>	<b>905-374-5669</b>

## **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**  
**2012 COMPOSITE PROFILE**  
**For 2013 Emissions Report**

		2012	2011
Number of Employees		336	339
Payroll (Including Benefits)	\$	34,095,829	32,318,922
Taxes	\$	974,437	1,088,751
Utilities	\$	10,036,882	9,677,305
Value of Supplies and Services	\$	15,126,701	17,221,962
Value of Sales	\$	443,651,500	388,066,224
Percent of Products Exported	%	70	73.8
Production Levels,	kg	315,948,878	287,359,125
2013 Production Estimate,	kg	348,677,368	
Charity Support (United Way etc.)	\$	41,962	45,053

# ***Explanations***

## ***Chemical Emissions***

- Chemical emissions per kilogram of production dropped by 27% from previous year
- Production levels were up by 10% over 2011.
- 2012 emission levels decreased by 14% from previous year.
- Most chemical emissions were reduced while some increased slightly due to product mix and calculations and formulas for the NPRI report.
- The trend of lower chemical emissions per kilogram of production continues to drop as production increases.

## ***Chemical Wastes***

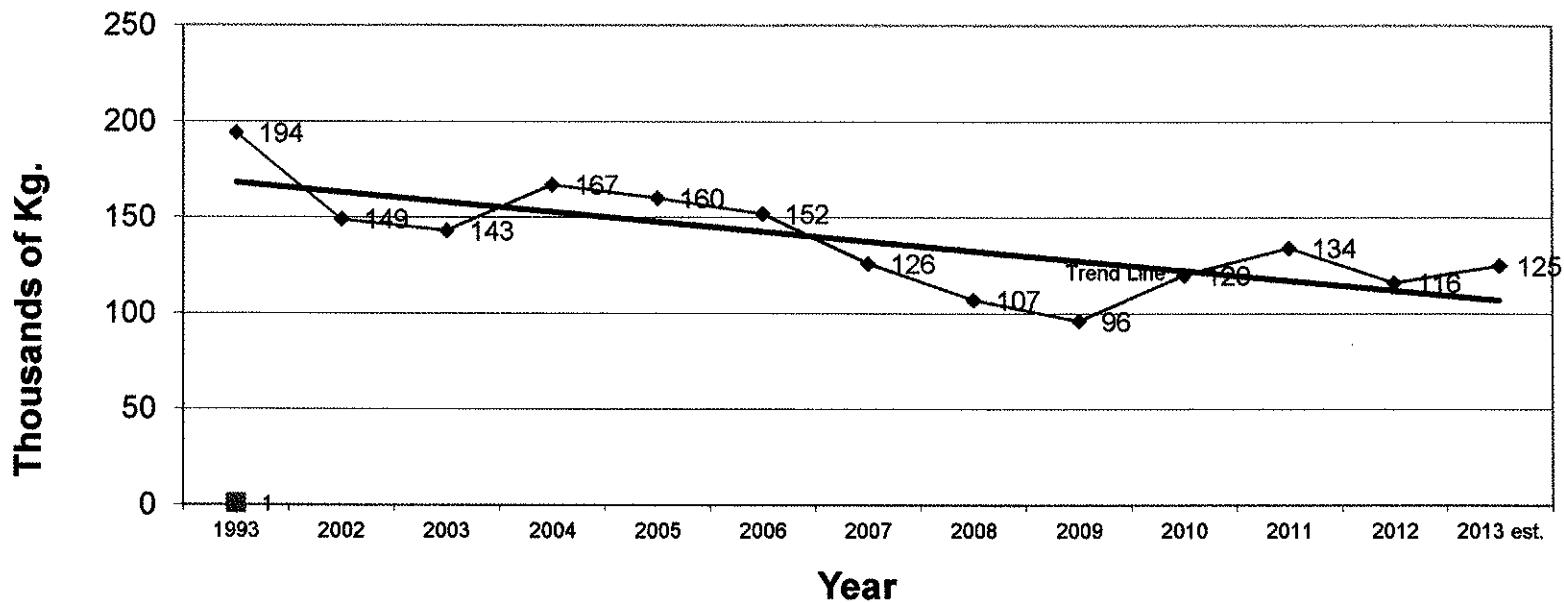
- Chemical wastes were reduced by 18% from 2011 levels.
- Chemical wastes per kg of production were lower by 35% from the previous year
- Chemical wastes are sometimes accumulated over time and sent for treatment.
- Plants are doing a great job in controlling waste to landfill, incineration and water.
- More recycling is being done to reduce waste materials.

## ***Combustion Emissions***

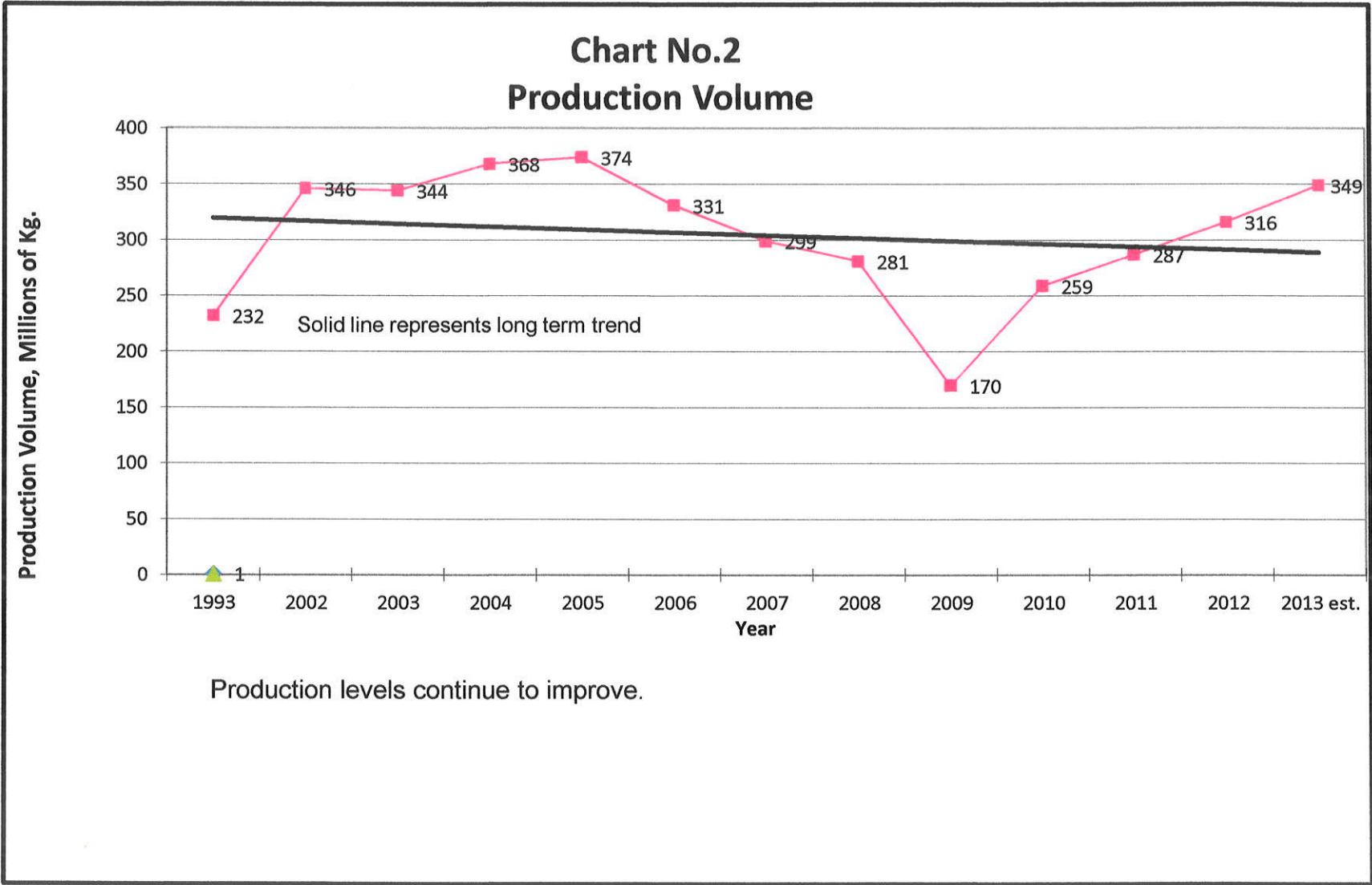
- Greenhouse gases per kilogram of product were reduced by 6.4% from 2011.
- Combustion emissions are tied directly to production levels and heating requirements so were up slightly by 3% from previous year.
- Combustion emission levels are 27% below the base year.
- Combustion levels are variable due to weather conditions.



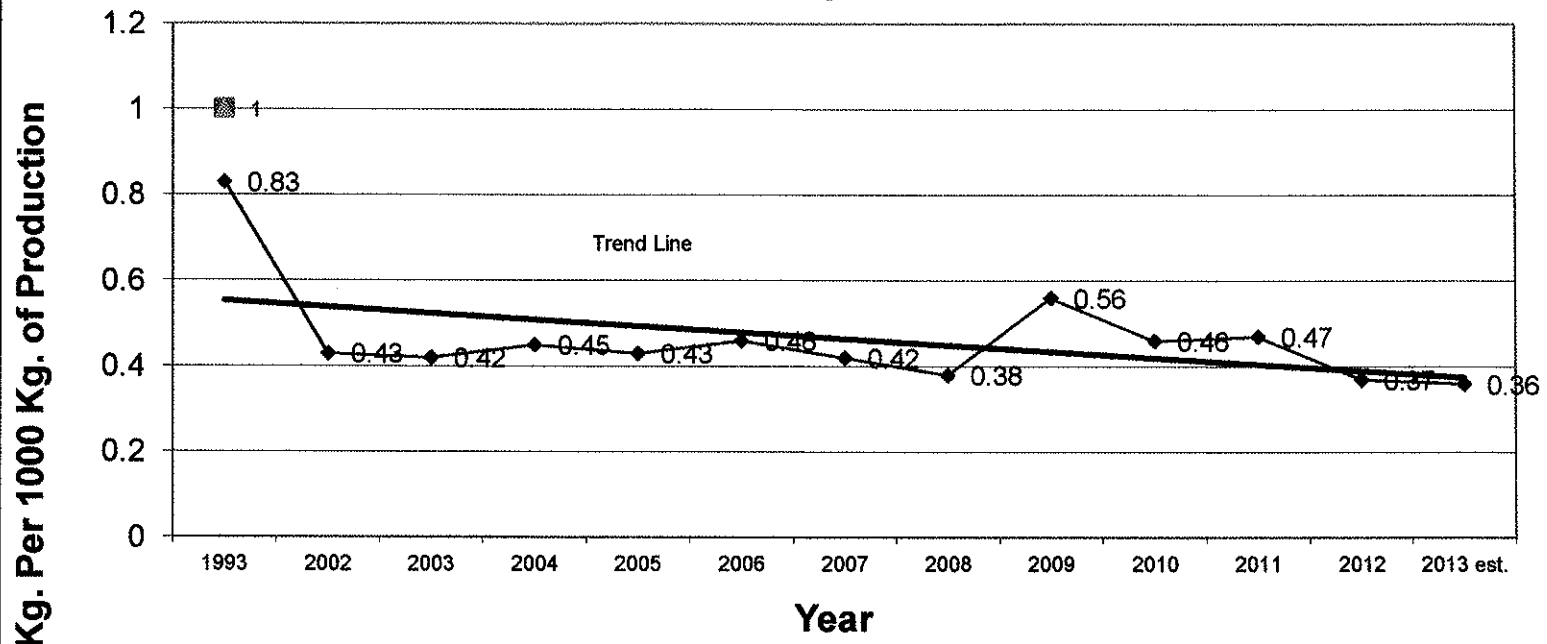
**Chart No. 1  
Chemical Emissions**



Overall Chemical Emissions were reduced by 14.5% from the 2011 levels.

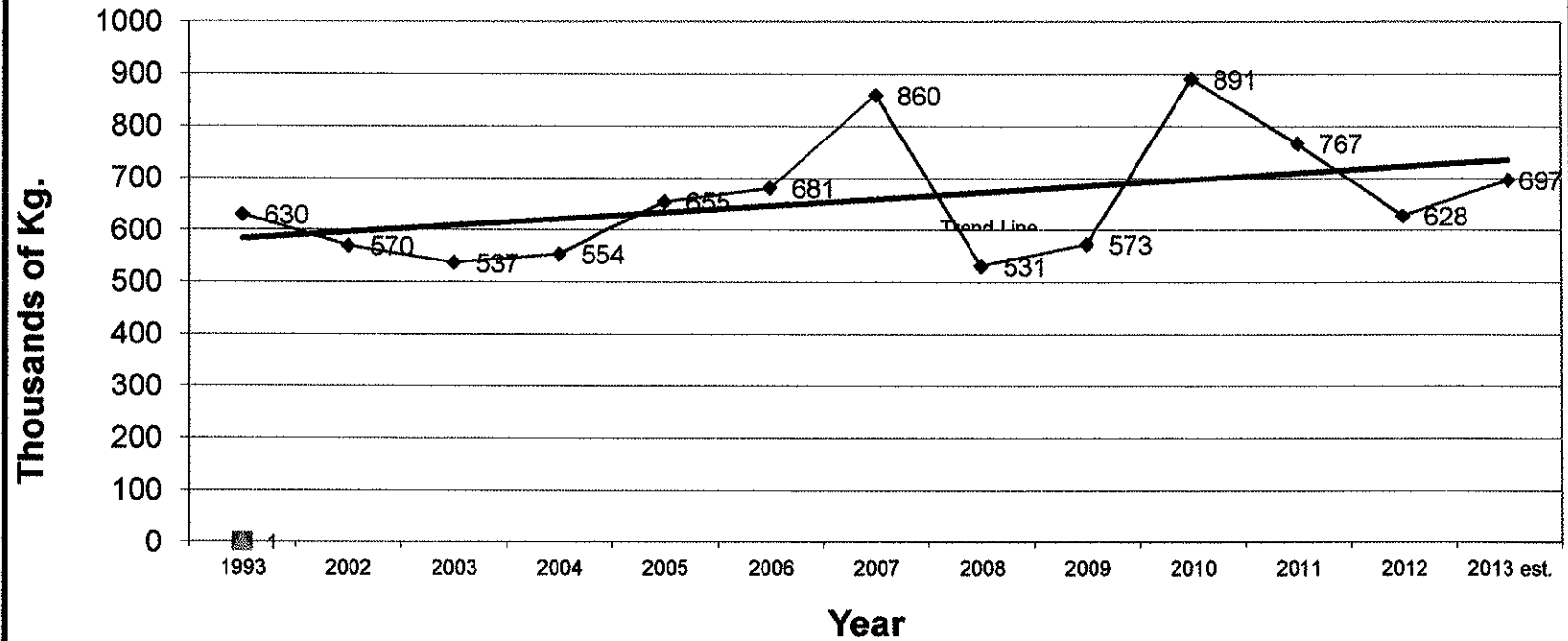


**Chart No. 3**  
**Chemical Emissions Per 1000 Kg. Of Production**



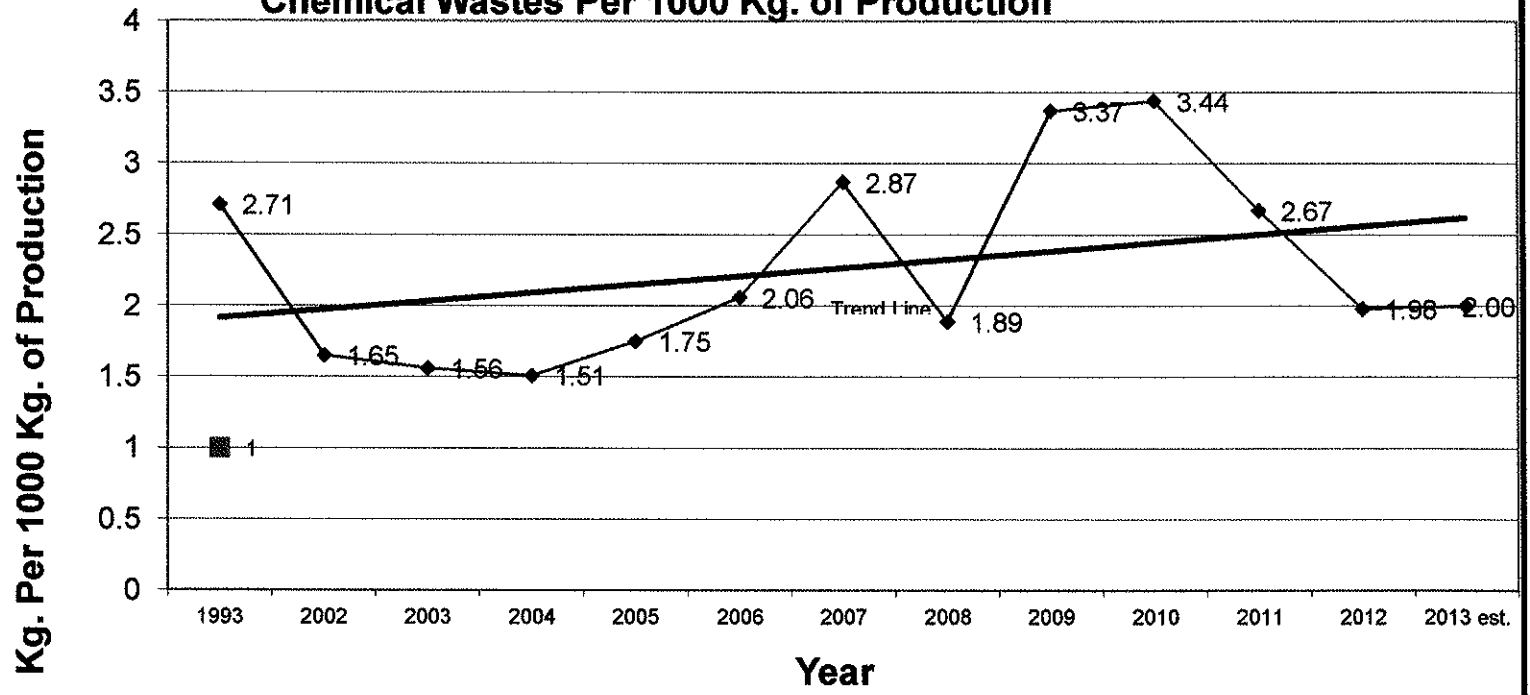
The trend to lower emissions continues. Chemical emissions per kg of production was 21% lower then 2011

**Chart No. 4  
Chemical Wastes**

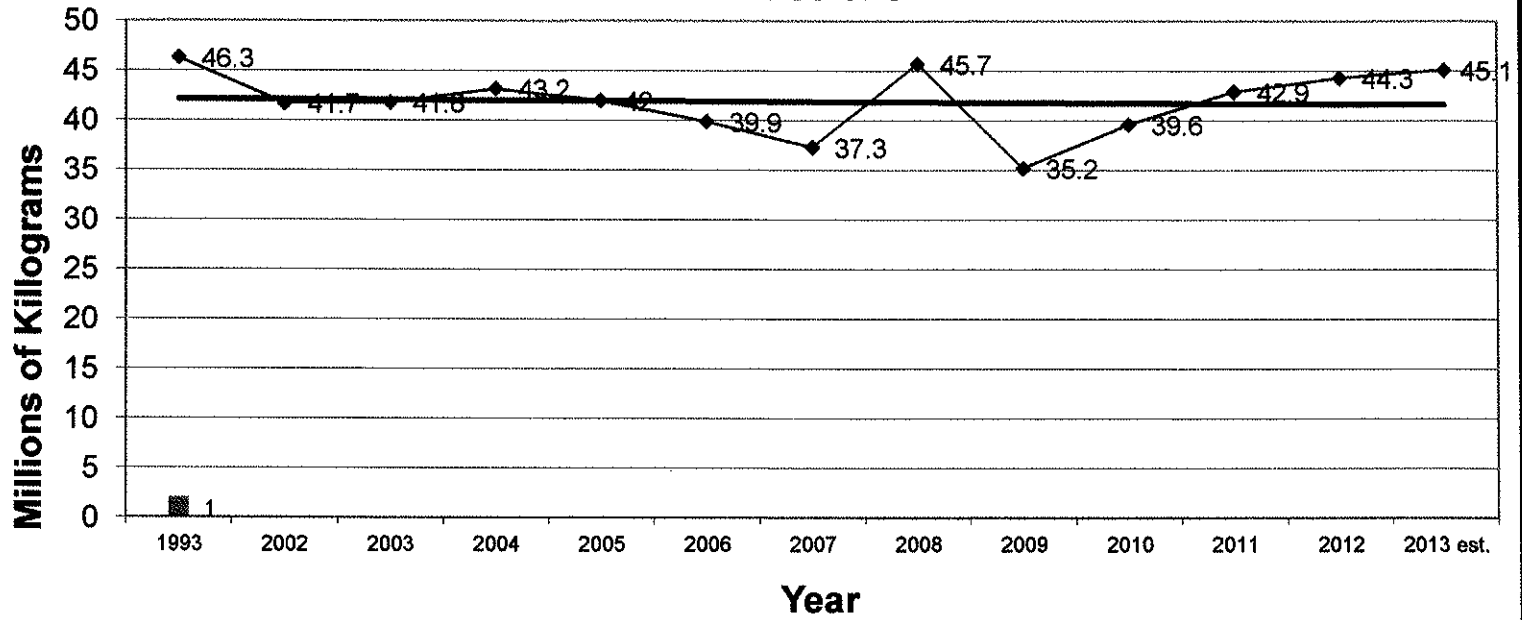


Chemical Wastes are accumulated over time and periodically shipped out for treatment. As a result, depending on the shipping dates, there can be big swings in "apparent" generation of wastes. Chemical wastes were lowered by 18% from 2011.

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

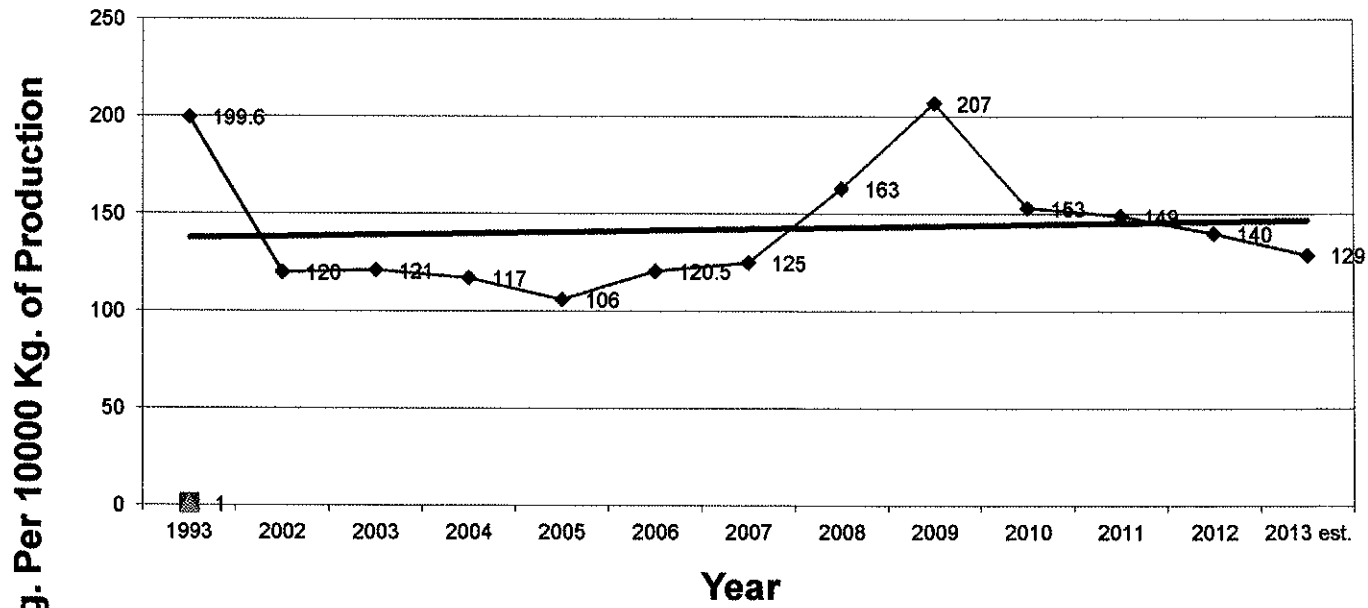


**Chart No. 6  
Combustion Emissions**



Combustion Emissions were up slightly over 2011 levels. This is a direct result of higher production levels.

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



Combustion levels per Kg of production continues to drop as a result of increased production.

# Chemical Emissions to Air and Water

## Year 2012 Emissions and Comparisons with 2011 results

### Table 1

Plant No.	Chemical Name	Amount Released in 2012 Kilograms		Total 2012 kg.	Total 2011 kg.	% Change From 2011	Estimate 2013 kg.
		Waterway	Air				
2	Nitrogenous Material	2,187		2,187	2,182	0	2,100
1,2,3	Ammonia	1,768	25,848	27,616	26,129	+5.7	28,100
2,3,5,6	Methanol		1,456	1,456	393	+370	1,388
2	Iso Octane		5,720	5,720	5,700	0	5,700
2	Vinyl Chloride	1	614	615	303	+203	500
6	Hydrochloric Acid		392	392	0	+100	390
3,5	Kerosene Type Solvents		757	757	1,516	-50	800
3,5	Ethyl Alcohol		48,626	48,626	54,416	-11	52,030
1,2	Nitrate Ion	21,744		21,744	38,326	-42	27,500
1,5	Isopropanol		112	112	229	-51	103
2,3,6	Phenol	2	3,275	3,277	3,094	+6	3,334
1,3,6	Formaldehyde		526	526	78	+570	530
6	Polymeric diphenylmethane diisocyanate		132	132	00	+100	135
6	Methylene bis(phenylisocyanate)		120	120	00	+100	120
2	Oil and Grease	1,043		1,043	703	+48	800
2	Phosphorus Salts	172		172	174	0	175
2	Aluminum Ion	116		116	184	-58	150
5	Acetic acid		998	998	546	+75	1,000
4	Sulphur Dioxide		177	177	171	0	300
	Emissions less than 100 kg./yr.*	14	330	344	221	+51	350
	<b>Total Emissions, kg.</b>			<b>116,130</b>	<b>134,490</b>	<b>-14.5</b>	<b>125,505</b>

Identification of Companies: (1) Cytex (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, Toluene, Xylene



# Chemical Emissions Per 1000 Kg. of Production, 1993 to 2012

## Kg. of Emissions Per 1000 Kg. of Production

### Table 2

	1993 Base Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 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	316 +39	349 +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	116 -67	126 -54
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	0.37 -55	0.36 -55

**Chemical Wastes**  
**Year 2012 Data and Comparisons with 2011 and 2013 Estimates**  
**Table 3**

Plant No.	Chemical Name	Amount Transferred in 2012 Kilograms		Total 2012 Kg	Total 2011 Kg	% Change From 2011	Estimate 2013 kg.
		Landfill	Recycled/ Treated				
1	Tributyl-Phosphine Sulfide	12,743		12,743	12,131	+5	13,000
3	Phenol*	1,789	144,415	146,204	159,390	-9	170,000
1,2,5,6	Liquid Industrial Waste (Oils,etc)		168,025	168,025	230,245	-28	211,000
2	Vinyl Resins*	88,064	0	88,064	138,864	-24	100,000
1	Phosphorus Salts		1,060	1,060	1,874	-44	1,500
1,2,4,5	Waste Misc. Haz. Prod. & Rinses	4,070	191,730	195,800	184,605	+6	183,000
3	Formaldehyde*	102	10,194	10,296	11,285	-9	13,000
4	Sodium Hydroxide		5,520	5,520	28,710	-80	5,000
<b>Total Chemical Wastes</b>				<b>627,712</b>	<b>767,104</b>	<b>-18</b>	
<b>Chemicals with wastes of 100 Kg. or less per year **</b>							

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 2012

Kg. of Waste per 1000 Kg. of Production

**Table 4**

	1993	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Production Volume 1000 t</b>	232	346	344	368	374	331	299	281	170	259	287	316	Est. 349
<b>% Change from Base Year, 1993</b>		+49	+48	+59	+61	+43	+29	+21	-27	+12	+24	+36	+50
<b>Chemical Waste Tonnes</b>	630	570	537	514	655	681	860	531	573	891	767	628	697
<b>% Change from Base Year, 1993</b>		-9	-15	-12	+4	+8	+36	-16	-10	+41	+22	-1	+11
<b>Chemical Waste ; Kg. per tonnes of Production.</b>	2.71	1.65	1.56	1.51	1.75	2.06	2.87	2.89	3.37	3.44	2.67	1.98	2.00
<b>% Change from Base Year 1993</b>		-39	-42	-41	-35	-24	+6	+7	+24	+27	-2	-36	-35

**Combustion Emissions**  
**Burning Fuel For Steam Generation And Drying**  
**Emissions for 2012 and 2011 and Estimates for 2013**

**Table 5**

Combustion Product Component	Amount Released		
	2012	2011	2013 Estimate
Carbon Dioxide      1000 tonnes	44.24	42.87	45.05
Nitrogen Dioxide      tonnes	40.72	38.36	44.58
Carbon Monoxide      tonnes	28.76	26.16	29.0
Sulfur Oxides      tonnes	0.80	1.63	0.83
Methane      tonnes	1.44	1.20	1.197
Volatile Organic Carbon      tonnes	2.73	3.02	2.28
Totals      1000 tonnes	44.3	42.94	45.12

## Combustion Emissions Per 10000 Kilograms of Production, 1993 to 2012

Table 6

	1993 Base Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 est
Production Volumes Millions of Kg.	232	346.3	344.3	368	374.3	330.9	299	281	170	258	287	316	349
% Change from Base Year 1993		+49.3	+48.4	+56.6	+61.3	+42.6	+29	+21	-27	+11	+24	+36	+50
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	44.3	42.5
% Change from Base Year 1993		-5.7	-5.7	-2.7	-25.4	-29.1	-34	-19	-37	-30	-23	-21	-20
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	140	129
% Change from Base Year 1993		-36.8	-36.5	-38.7	-56.3	-50.3	-48.7	-33	-14.6	-36.7	-38.4	-42	-47

## **Non Plant Members**

*Fire Departments From*

Fort Erie

Niagara Falls

Thorold

St Catharines

## **Associate Member**

Team 1 Academy

## **New members for 2013**

Newalta, Fort Erie site

Photech Environmental Solutions

## **New Associate Members for 2013**

First Response Environmental

Itech Environmental Services