

Niagara CAER Group Chemical Companies

**National Emissions Reduction
Masterplan (NERM)**

2010 Report for 2009 Emissions

Niagara CAER Group Chemical Companies

2010 NERM Report

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Member Companies

Chemtrade Logistics Inc.

CYTEC Canada Inc.

Durez Canada

Kemira Chemicals Canada Inc.

Mancuso Chemicals Limited

Oxy Vinyls Canada Inc.

Member Companies Contact Names

Company	Contact Name and Number	
Chemtrade Logistics Inc.	Dave Smith	905-356-8763
CYTEC Canada Inc.	Rene Lemay	905-374-5944
	Ken Milo	905-374-5812
Durez Canada.	Robert Hunt	905-871-3206
Kemira Chemicals Canada Inc.	Bruno Montpetit	905-688-6470
	Clifton Brown	905-688-6470
Mancuso Chemicals	Robert Patel	905-357-3626
Oxy Vinyls Canada Co.	Don Davidson	905-374-5601
	Ron Morettin	905-374-5669

NIAGARA CAER GROUP 2009 COMPOSITE PROFILE

For 2010 NERM Report		
Number of Employees		313
Payroll (Including Benefits)	\$	29.63 Million
Taxes	\$	1.04 Million
Utilities	\$	8.54 Million
Value of Supplies and Services	\$	16.06 Million
Value of Sales	\$	279.2 Million
Percent of Products Exported	%	68.2%
2009 Production Level,	kg	169.62 Million
2010 Production Estimate,	kg	222.74 Million
Charity Support (United Way etc.)	\$	\$40,773

Introduction

In 2009 the Global and Canadian economics had severe impact on Canadian Chemical industry in Canada. Two of our former member companies, Lubrizol Canada Limited and PolyOne Canada Inc. have closed their operations during 2009 and several other companies operated at severely reduced rates.

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** (Formerly the CCPA. The Canadian Chemical Producers Association).

This is the **Eighteenth** year of its publication.

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.

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. As may be seen from the graphs, we are continuing to make progress on our commitment.

Summary

In 2009, Chemical Emissions were reduced by 11% from 2008 levels. Most of this reduction can be attributed to reduced production levels. Production volumes in 2009 were much lower than in 2008 with 2010 production estimates showing an increase. Waste generation is sporadic but as Chart No. 4 shows, the long term trend is generally down. Combustion emissions were lower due to the reduced levels of production. The combustion emission levels per Kg. of production will continue to drop as a result of some more efficient fuel burning equipment being installed.

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

Explanations

Chemical Emissions

In 2009 the Niagara CAER Group Companies continued their exemplary performance of operating with very low chemical emissions. Overall chemical emissions were reduced by 11% from 2008 levels. Most of this reduction was due to the reduction of production levels in 2009. Some of the chemical emissions can be attributed to normal tank venting of stored chemicals. This is normal as tanks breath with ambient temperature changes.

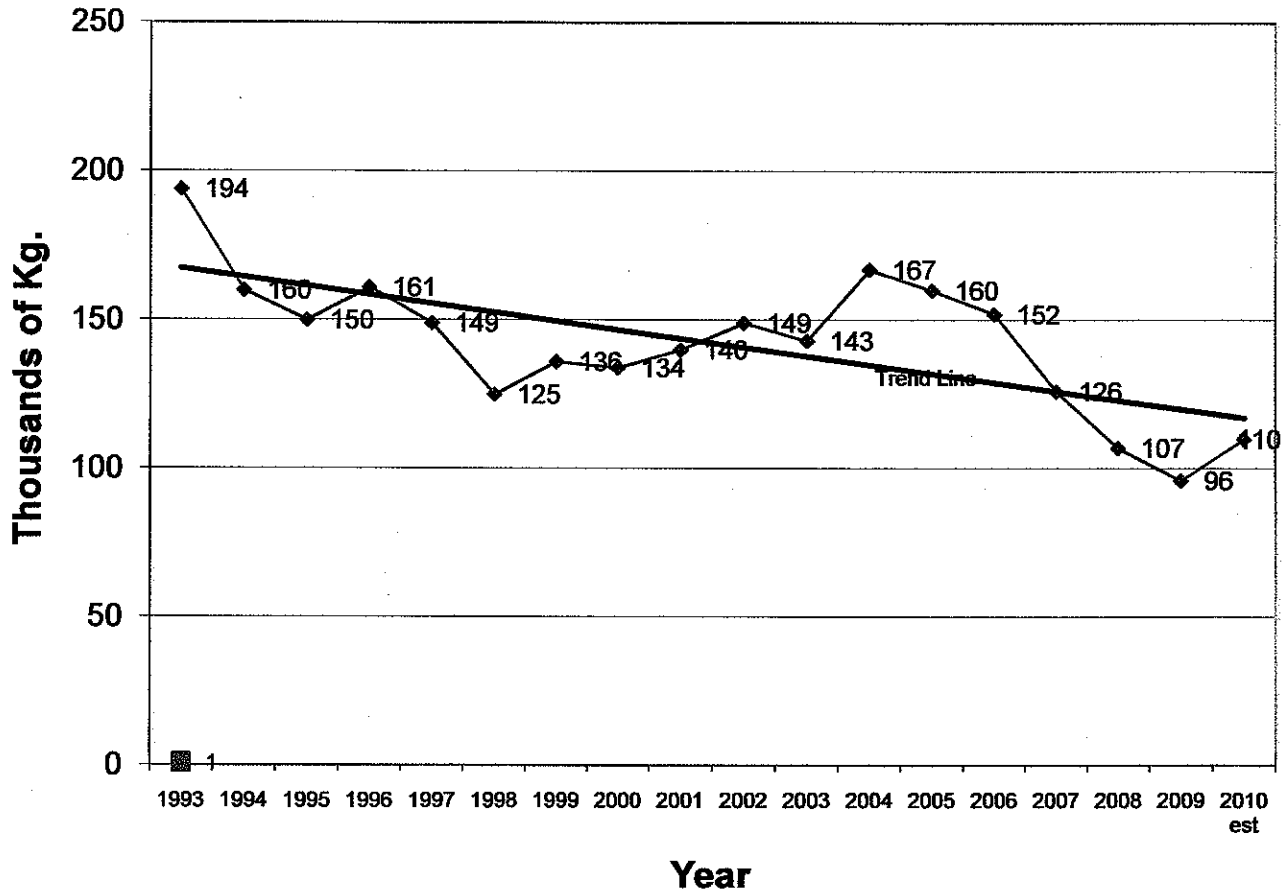
Chemical Wastes

Due to intermittent shipping of Wastes being sent to recycling operations, the reporting of Waste generation is quite cyclic. For example, in 2008 we reported a Chemical Waste reduction of 38% and for 2009, an increase of 7%. However the long term trend line on Chart No. 4 shows that Waste production is being reduced over time. Landfill rates were reduced by nearly 50%. Recycle/treated waste increased due to plants taking the opportunity to clean storage tanks and production vessels of sludge accumulated over time.

Combustion Emissions

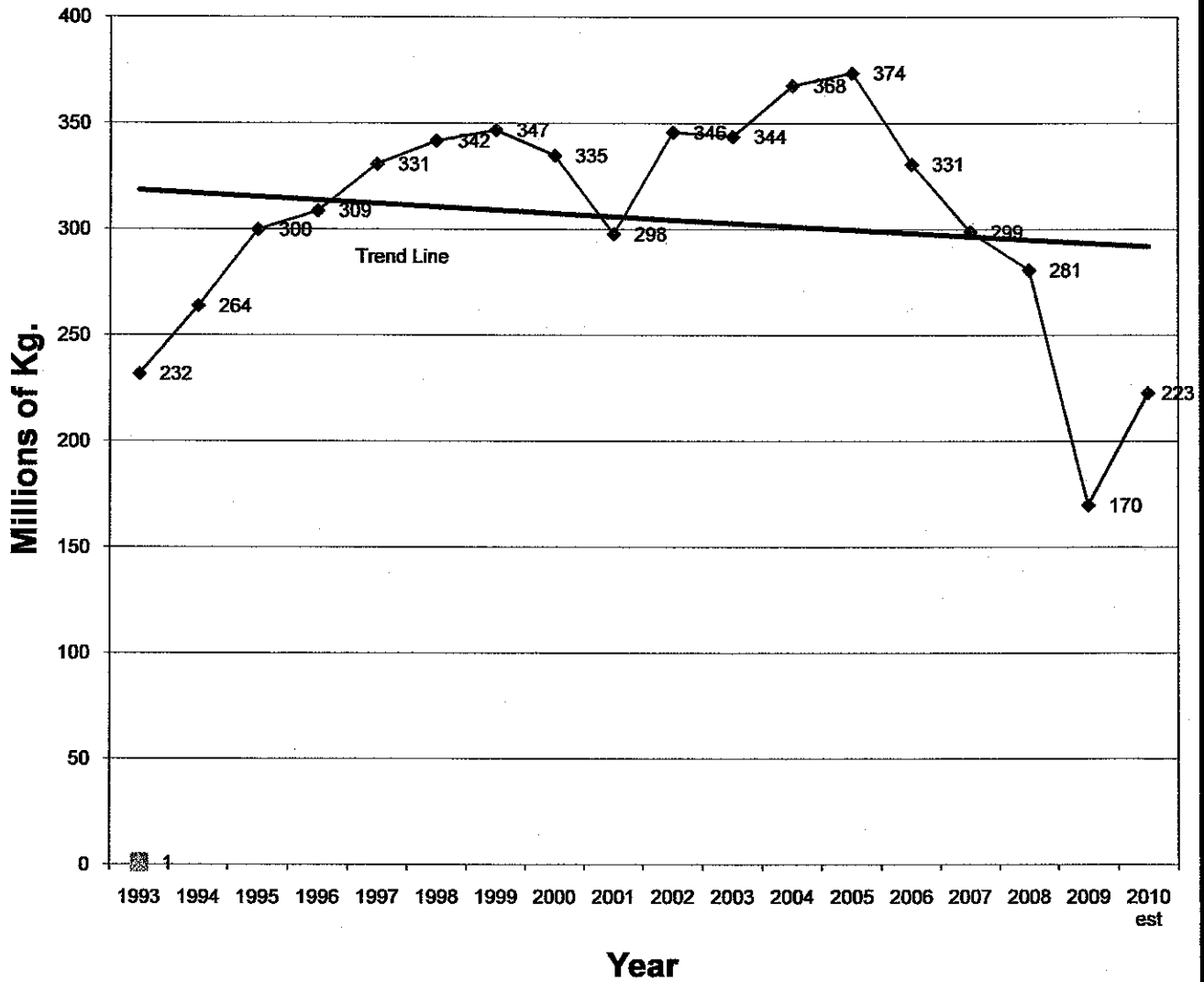
The reduction in Greenhouse Gases has been a real success story at the chemical plants. Emission levels for 2009 were reduced by 22.8% from the 2008 levels. The combustion emission levels per kg of production are high due to fixed quantities for the heating season. The reduction trend is continuing as there has been higher efficiency equipment installed in some of the facilities.

**Chart No. 1
Chemical Emissions**



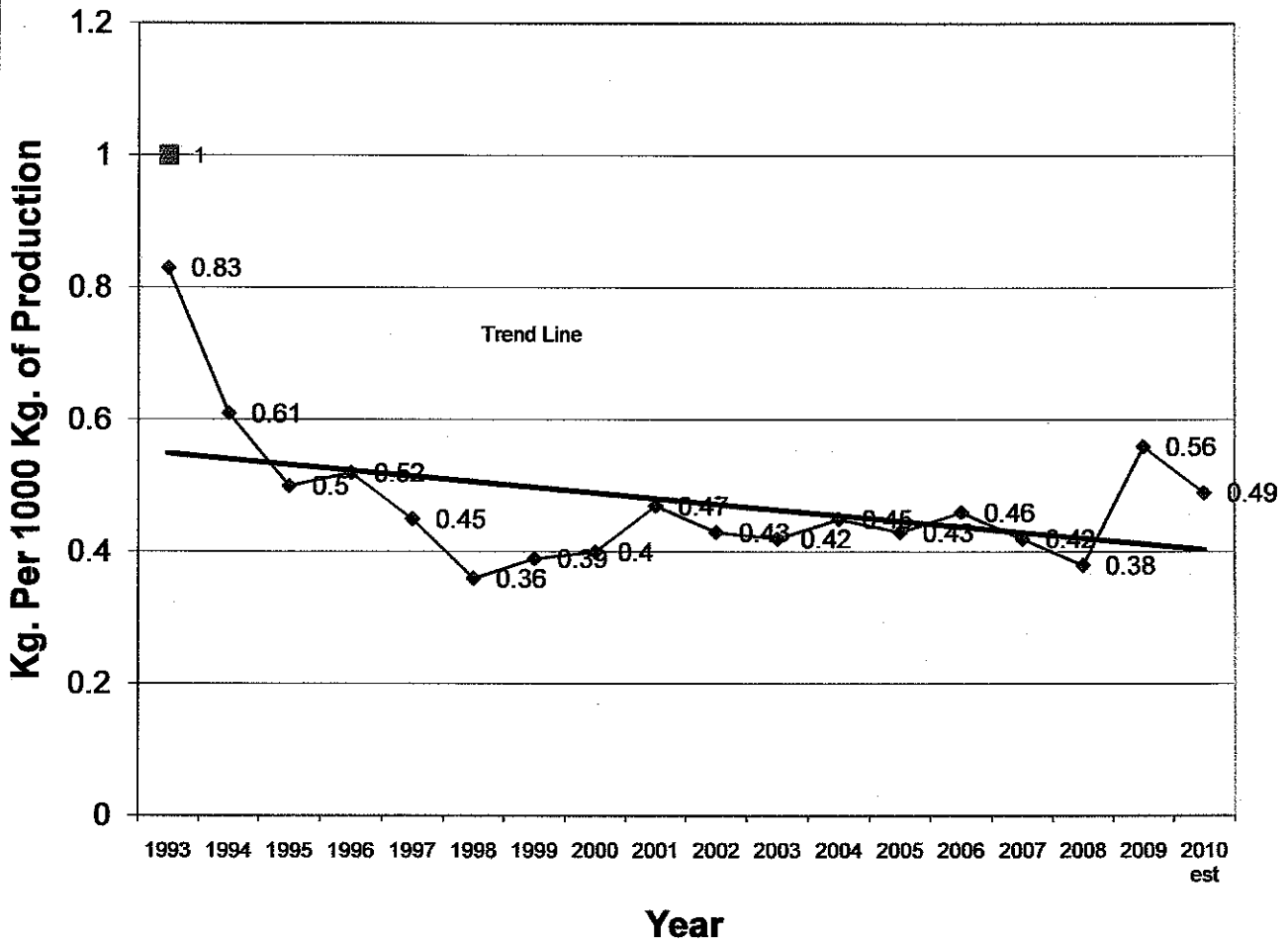
Overall Chemical Emissions were reduced by 12.2% from the 2008 levels. Most of this reduction can be attributed to reduced production levels from 2008. A continued sluggish Canadian and worldwide economy slowed production levels in 2009. Estimates for 2010 shows there will be an increase in emissions due to projected higher production levels.

**Chart No. 2
Production Volume**



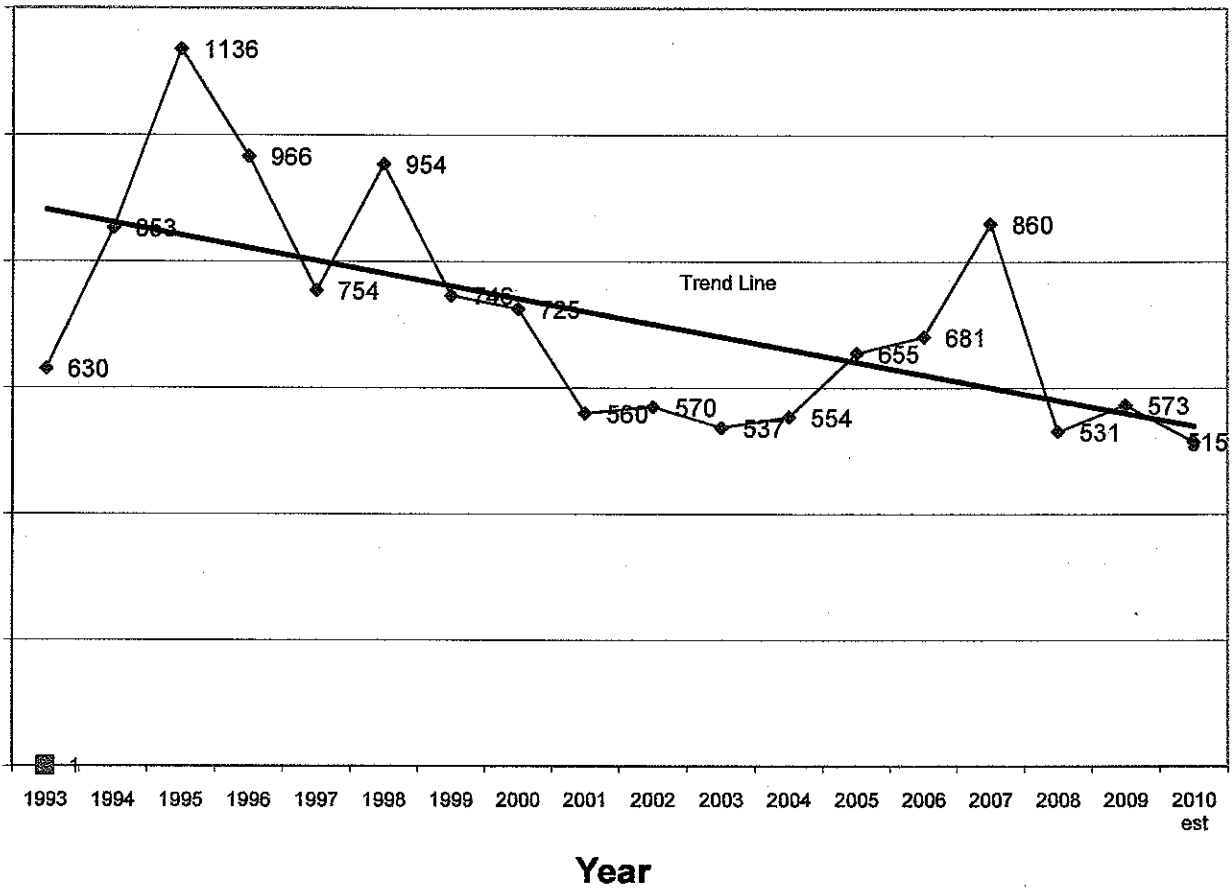
This chart shows the continued effects of the sluggish economy on production output. Production levels in 2009 were 39.5% lower than in 2008, and only 45% of the production levels in 2005. Outlook for 2010 is much more promising.

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



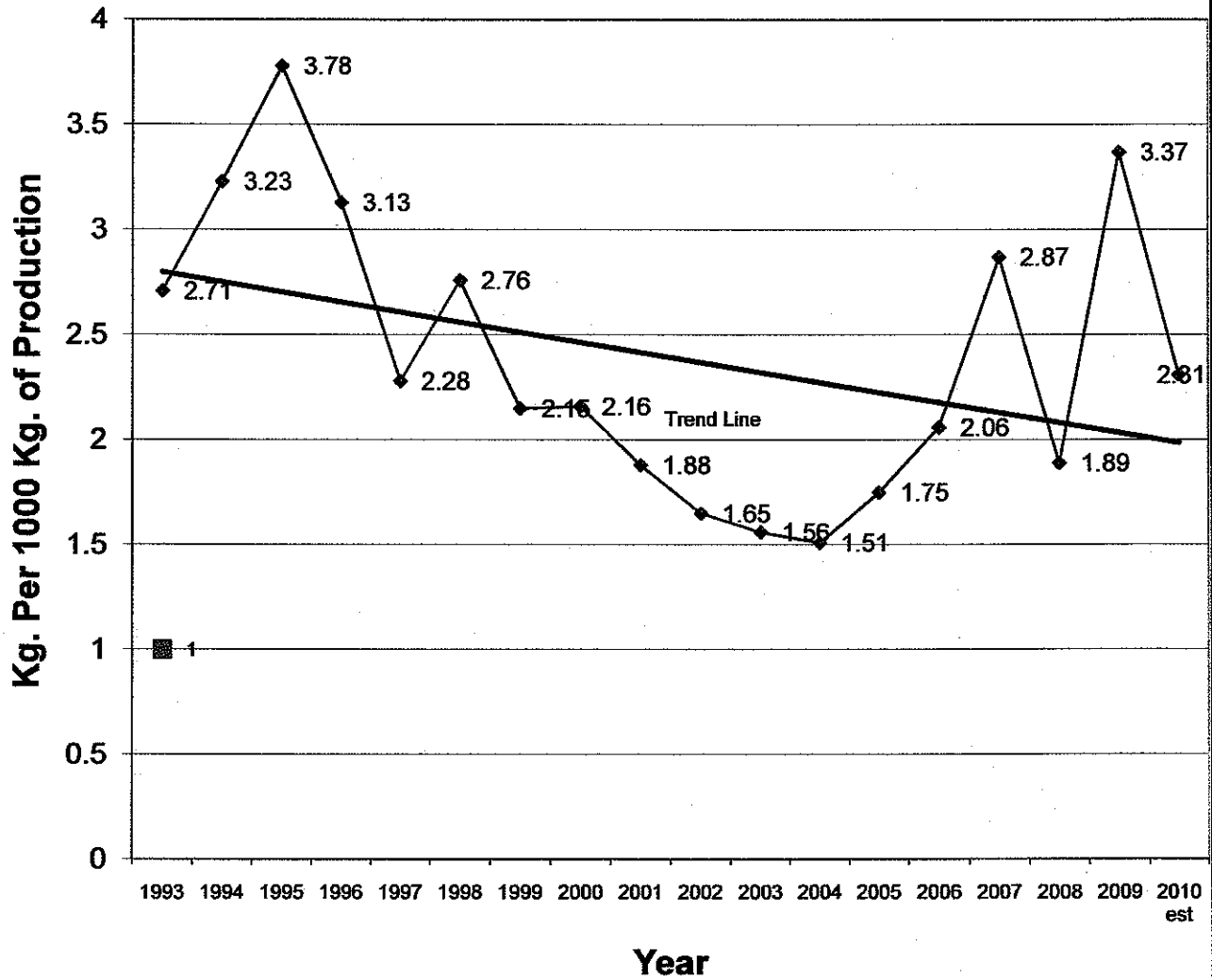
The trend to lower emissions continues. However due to the severe low levels of production and with some fixed emissions the rate of emissions per Kg of production increased even though the emissions were 12% lower then in 2008.

**Chart No. 4
Chemical Wastes**



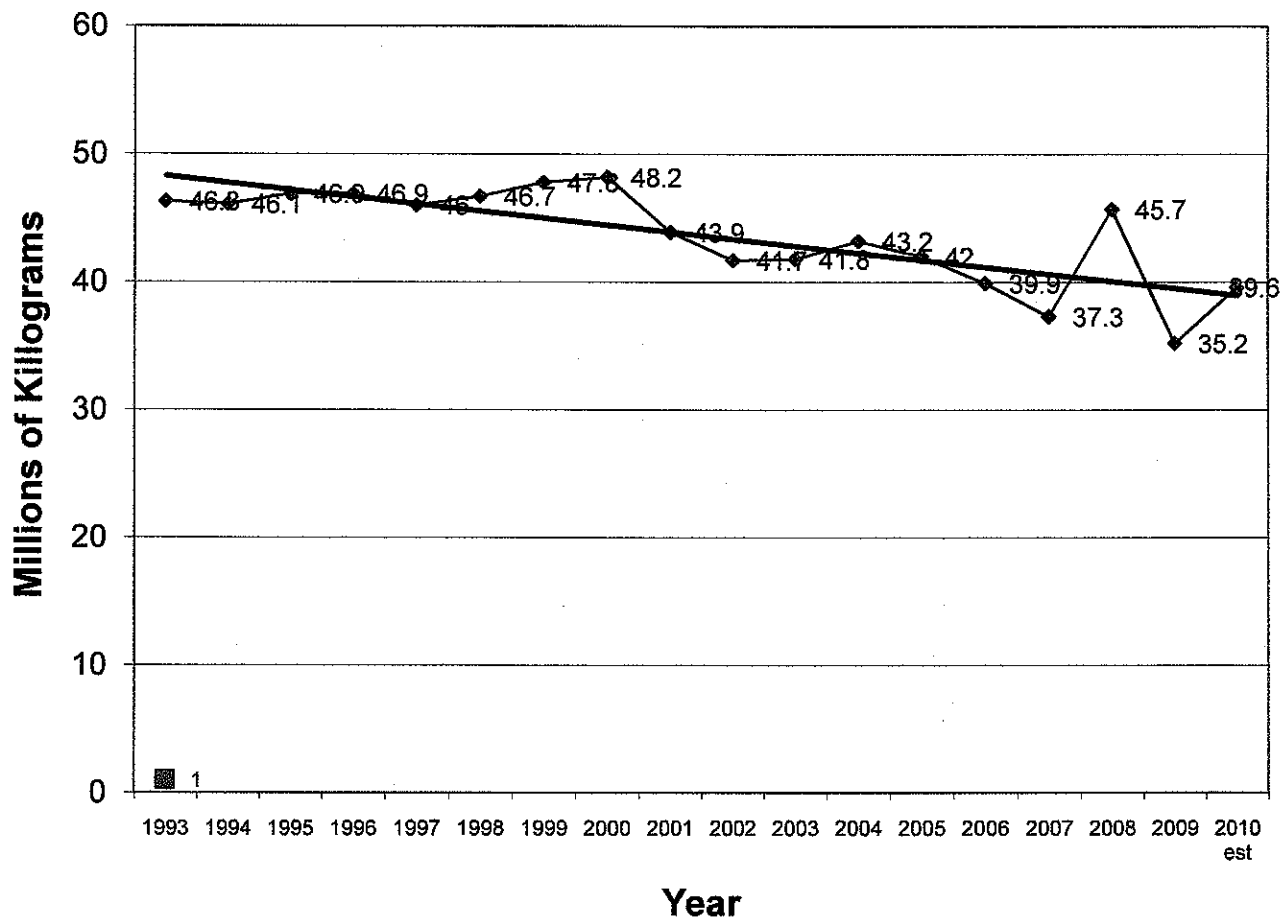
Chemical Wastes are accumulated over time and periodically shipped out for treatment. As a result, depending on the shipping dates, there can be big swings in "apparent" generation of wastes. Landfill rates were reduced by nearly 50%. Recycled/treated waste increased due to plants taking the opportunity while production levels were curtailed to clean storage tanks and production vessels of accumulated waste sludge. As may be seen by the long term "Trend Line" on the above chart, the generation of wastes is on a continued downward trend.

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



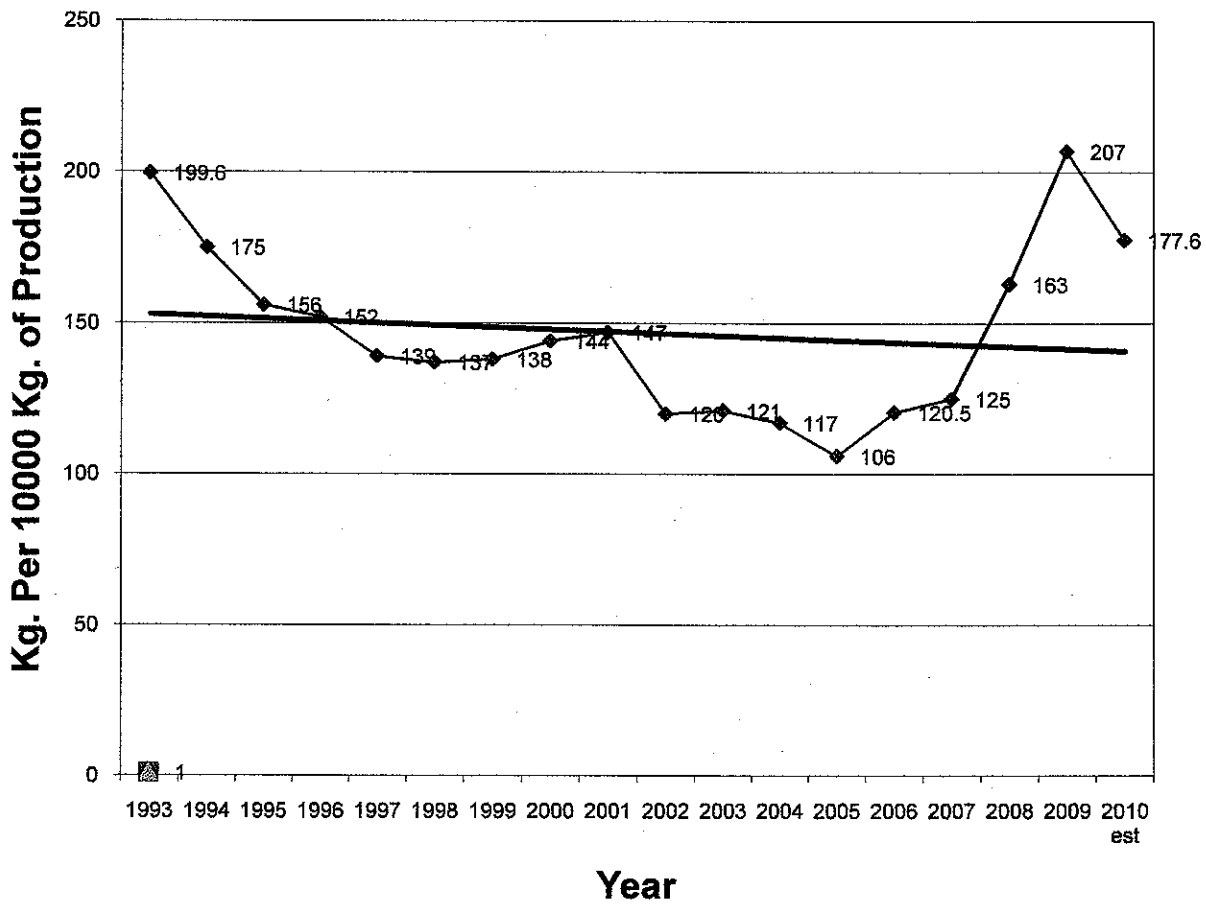
Continued lower production volumes will result in an increase in this value. Although the waste per KG of production is high the downward trend is continuing for waste reduction. Efforts are continuing to lower waste rates.

**Chart No. 6
Combustion Emissions**



Combustion Emissions decreased by 22.8% over 2008 due to the reduced production levels. The downward trend continues with plants installing more efficient fuel burning equipment.

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



As a result of the 39% lower production levels in 2009 vrs 2008 the combustion emissions per kg of production was much higher due to fixed quantities for heating. The combustion emissions for 2010 estimates to be lower as the production levels improve .

Chart No. 8 Emissions Plus Wastes

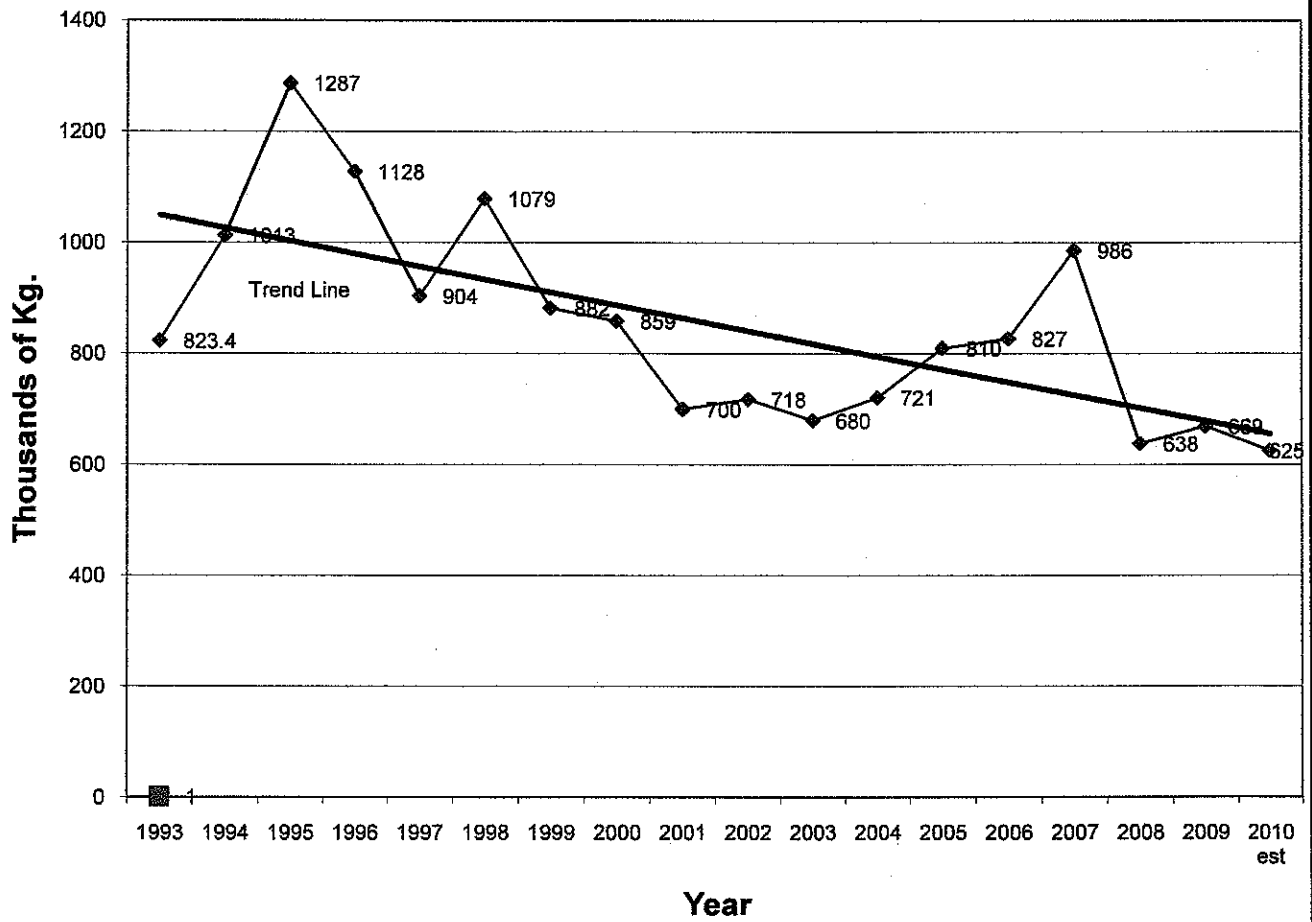
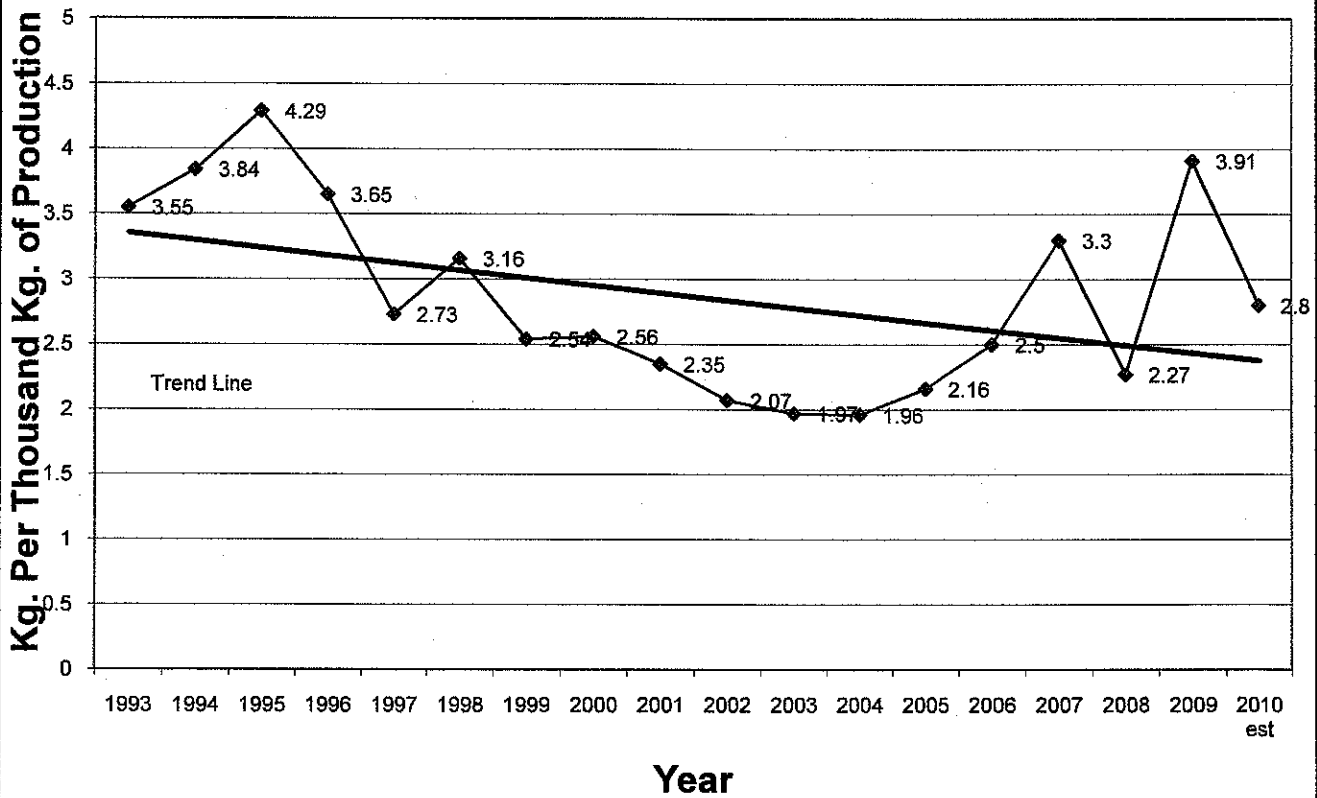


Chart No. 9
Emissions Plus Wastes
Kg. Per Thousand Kg. of Production



Chemical Emissions to Air and Water

Year 2009 Emissions and Comparisons with 2008 results

Table 1

Plant No.	Chemical Name	Amount Released in 2009 Kilograms		Total 2009 kg.	Total 2008 kg.	% Change From 2008	Estimate 2010 kg.
		Waterway	Air				
4	Nitrogenous Material	925	0	925	1,361	-32	1,000
1,4,5	Ammonia	1,717	15,874	17,591	17,083	+3	19,150
4,5,7,9	Methanol	0	259	259	519	-50	511
4	Iso Octane	0	2,920	2,920	5,992	-51	3,000
4	Vinyl Chloride	2	425	427	568	-25	500
1,9	Toluene	0	115	115	143	-20	146
7,2	Kerosene Type Solvents	0	739	739	1,751	-58	1000
5	Ethyl Alcohol	0	31,762	31,762	25,847	+24	35,200
1,4	Nitrate Ion	37,257	0	37,257	48,704	-31	45,600
1,7	Isopropanol	0	22	22	206	-89	202
4,5	Phenol*	1	2045	2046	3,428	-40	2,612
1,5	Formaldehyde	0	45	45	49	-8	55
9	Xylene	0	92	92	147	-37	150
4	Oil and Grease	848	0	848	644	+32	1,000
4	Phosphorus Salts	302	0	302	347	-13	300
4	Aluminum Ion	83	0	83	138	-40	110
7	Acetic acid	0	188	188	181	+4	200
	Emissions less than 100 kg./yr.**		310	310	156	+50	700
	Total Emissions, kg.	41,135	54,796	95,931	107,264 (-11.2% vs. 2008)	-11	111,470

Identification of Companies: (1) Cytec (2) (4) Oxy Vinyls (5) Durez (6) Chemtrade Logistics (7) Kemira Chemicals (8) (9) Mancuso Chemicals Number (2) was Lubrizol (3) was CYRO, (8) was Poly-One now shut down. The numbering system has been maintained to allow comparison with previous years. * Phenol emissions reported are now based on a new Government Certificate of Approval calculation. Emissions have NOT increased, the "calculated" emission number has.

**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 2009

Kg. of Emissions Per 1000 Kg. of Production

Table 2

	1993 Base Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010 Estimate
Production Volume MM Kg	232	264	300	309	331	342	347	335	298	346	344	368	374	331	299	281	170	223
% Change from Base Year*		+ 13.8	+ 29.5	+33	+42. 8	+47. 4	+ 49.6	+ 44.4	+ 28.6	+49. 3	+48	+58. 6	+61.3	+42. 6	+29	+21	-27	-4
Chemical Emissions M Kg.	194	160	150	161	149	125	136	134	140	149	143	167	160	152	126	107	96	110
% Change from Base Year*		-18	-22	-17	-23	-36	-30	-31	-28	-24	-26	-13.8	-	-21.6	-35	-45	-50	-43
Chemical Emissions: Kg. per 1000 Units of Production	0.83	0.61	0.50	0.52	0.45	0.36	0.39	0.40	0.47	0.43	0.42	0.45	0.43	0.46	0.42	0.38	0.56	0.49
% Change from Base Year, 1993		-27	-40	-37	-46	-57	-53	-52	-43	-48	-49.4	-45.8	-	-44.6	-	-54	-32	-41

*Base Year – 1993 is the year against which plant performance is being compared.

Chemical Wastes

Year 2009 Data and Comparisons with 2008 and 2010 Estimates

Table 3

Plant No.	Chemical Name	Amount Transferred in 2009 Kilograms		Total 2009 Kg	Total 2008 Kg	% Change From 2008	Estimate 2010 kg.
		Landfill	Recycled/Trated				
1	Tributyl-Phosphine Sulfide	25,797	0	25,797	42,850	-39	35,000
5	Phenol*	2,405	57,205	59,610	51,675	+15	95,000
1,2,7	Liquid Industrial Waste (Oils, etc.)	0	259,262	259,562	239,041	+8	181,000
2	Zinc	0	0	0	198	-100	0
4	Vinyl Resins & Compounds	65,500	65,500	131,000	130,908	+1	93,000
1,2	Phosphorus Salts	0	4,577	4,577	2,910	+57	3,000
1,4,7	Waste Misc. Haz. Prod. & Rinses	1,820	82,836	84,656	61,687	+37	102,000
5	Formaldehyde*	144	4,038	4,182	1,636	+225	5,800
2	2,6-Di-t-butyl-4-methylphenol	0	0	0	110	-100	0
2	Contaminated Soil (oil)	0	0	0	0	0	0
8	Antimony	0	0	0	153	0	0
6	Sodium Hydroxide	0	3750	3750	2230	+40	4000
	Chemicals with wastes of 100 Kg. or less per year **				22		
	Total Chemical Wastes	95,666	477,168	573,134	531,190	+7	518,800

Identification of Companies: (1) Cytec (2) (4) Oxy Vinyls (5) Durez (6) Chemtrade Logistics (7) Kemira Chemicals (8) (9) Mancuso Chemical

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

** Includes: Mercury and Batteries.

Chemical Wastes per 1000 Units of Production, 1993 to 2009

Kg. of Wastes per 1000 Kg. of Production

Table 4

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Production Volume M Kg	232	264	300.5	308.6	331.3	342	347	335	298.41	346.3	344.3	368	374.3	330.9	299	281	170	223
% Change from Base Year, 1993		+13.8	+29.5	+33	+42.8	+47.4	+49.6	+44.4	+28.6	+49.3	+48.4	+58.6	+61.3	+42.6	+29	+21	-27	-4
Chemical Wastes Kg	630	853	1,136	966	754	954	746	725	560	570	537	514	655	681	860	531	573	515
% Change from Base Year, 1993		+35.4	+80.4	+53.5	+19.8	+51.4	+18.4	+15.1	-11.1	-9.4	-14.7	-12	+4	+8.1	+36	-16	-10	-18
Chemical Wastes: Kg. per 1000 Kg. of Production	2.71	3.23	3.78	3.13	2.28	2.76	2.15	2.16	1.88	1.65	1.56	1.51	1.75	2.06	2.87	1.89	3.37	2.31
% Change from Base Year, 1993		+19.3	+39.5	+15.5	-15.9	+1.8	-21.0	-20.3	-30.6	-39.2	-42.4	-44.3	-35.4	-24	+6	-30	+24	-41

**Combustion Emissions
 Burning Fuel For Steam Generation And Drying
 Emissions for 2009 and 2008 and Estimates for 2010
 Table 5**

Combustion Product Component	Amount Released		
	2009	2008	2010 Estimate
Carbon Dioxide MM kg	35.185	45.62	37.52
Nitrogen Dioxide M kg	28.28	38.7	31.63
Carbon Monoxide M kg	21.16	28.4	23.57
Sulfur Oxides M kg	0.636	1.06	1.16
Methane M kg	1.59	1.75	1.72
Volatile Organic Carbon M kg	5.82	7.79	6.27
Totals Millions of kg	35.24	45.7	39.58

Combustion Emissions Per 1000 Kilograms of Production, 1993 to 2009

Table 6

	1993 Base Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010 Est
Production Volumes Millions of Kg.	232	264	300.5	308.7	331.2	342	347	335	298.4	346.3	344.3	368	374.3	330.9	299	281	170	223
% Change from Base Year 1993		+13.8	+29.5	+33	+42.8	+47.4	+49.6	+44.4	+28.6	+49.3	+48.4	+56.6	+61.3	+42.6	+29	+21	-27	-4
Combustion Emissions Millions of Kg.	56.3	57.4	60.4	60.4	59	58.5	60.9	62.3	55.8	53.1	53.1	54.8	42	39.9	37.3	45.7	35.2	39.6
% Change from Base Year 1993		+1.9	+7.3	+7.3	+4.8	+3.9	+8.2	+10.7	-1.0	-5.7	-5.7	-2.7	-25.4	-29.1	-34	-19	-37	-30
Combustion Emissions Kg. Per 1000 Kg. Of Production	242.6	217.3	201	195.7	178.1	172.2	175.5	186	186.4	153.3	154.1	148.8	106	120.5	124.5	162.6	207.1	177.6
% Change from Base Year 1993		-10.4	-17.1	-19.3	-26.6	-29	-27.7	-23.3	-23.0	-36.8	-36.5	-38.7	-56.3	-50.3	-48.7	-33	-14.6	-26.8