Citizen's Environment Alliance
Of Southwestern Ontario and Southeast Michigan

REVIEW OF THE NATIONAL POLLUTANT RELEASE INVENTORY (1996)

PREPARED FOR THE TOXIC TRACKER PROGRAMME OF THE CITIZENS ENVIRONMENT ALLIANCE OF SOUTHWESTERN ONTARIO

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National Pollutant Release Inventory (1996) - Windsor-Essex County Summary

The National Pollutant Release Inventory (NPRI) of 1996 is a public inventory of 176 substances released from 1,818 point sources across Canada. It is the fourth annual report released by Environment Canada. This review of the NPRI examines the local (Windsor-Essex) inventory and compares the data with the 1995 report. Its highlights include:

34 local facilities reported to the NPRI, one fewer than in 1995;
the combined total of on-site releases and off-site transfers increased locally;
the largest local releases were to the air and the largest transfers were to landfills;
the largest local polluters remained virtually the same in 1996: General Chemical, Zalev Brothers, City of Windsor-West Windsor Pollution Control Plant, Chrysler-Windsor Assembly Plant, Ford-Windsor Casting Plant;
the Detroit River received the third highest amount of on-site releases to a water body in Canada;
the largest chemical releases locally were: ammonia (total), zinc (and its compounds), methyl ethyl ketone;
more facilities reported the release and/or transfer of toxic and carcinogenic pollutants than in 1995; and,
the combined total of on-site releases and off-site transfers of toxic and carcinogenic substances increased locally in 1996.

The Windsor-Essex area does not compare well with national trends, however, Windsor-Essex is typical of Ontario. The NPRI revealed that Ontario's worsening pollution record coincided with the provincial

government's lax "voluntary compliance" agenda for protecting the environment and the downgrading of the Ministry of the Environment.

The NPRI is the only national, publicly accessible inventory of pollutants in Canada. However, the NPRI is not comprehensive and provides only a minuscule picture of the total pollution problem in Canada.

The process of assessing the toxicity of a substance in Canada is languorous, ensuring that new chemicals enter the environment long before any public assessment of their impact is completed. Thus, the NPRI compiles only limited information on a small percentage of the chemicals in use in Canada.

What we know, from the NPRI, is based upon what industry reveals through estimation methods. Precise measurement is not required; what is reported may not actually be what is released.

Industrial lobbying and the federal government's disinterest in environmental protection has severely restricted the public information provided through the NPRI. Funding is insufficient to expand the NPRI to the size of the Toxic Release Inventory in the United States. Information, such as pollution prevention reporting, that would improve the NPRI, has been rejected by industry.

National Pollutant Release Inventory (1996) - Windsor-Essex County

Introduction

The 1996 National Pollutant Release Inventory (NPRI) is the fourth annual report from Environment Canada. The report provides information on 176 substances[1] and 1,818 reporting facilities. The NPRI is intended to be a publicly accessible data base about the on-site releases to air, water, land and underground injection; off-site transfers to landfill, incineration, municipal sewage treatment plant (MSTP), physical treatment, chemical treatment, biological treatment, land treatment, storage, underground injection; and recovery, re-use, recycling and energy recovery. Reporting the 3Rs and energy recovery was optional for 1996, making the data incomplete, and was not included in the local data reviewed below.

The data contained in the calendar years 1995 and 1996 is as it appeared in the NPRI database on August 10, 1998. New and revised reports may be submitted and updated on the NPRI Internet site. Revisions submitted after August 1998 may lead to differences between the NPRI database and the information in this report.

This report examines NPRI data from Windsor-Essex County reports. It must be noted that the NPRI contains reports based upon a threshold that excludes vast quantities of pollution. Thus, the data for Windsor-Essex County should not be interpreted as a comprehensive pollutant inventory.

The information below is organized into several tables showing individual and total releases and transfers from reporting facilities. Additionally, details of the type of release and transfer of pollutants in the Windsor-Essex County area are shown. Data from 1995 are used to compare and contrast the data from 1996.

Methodology

This report simulates the data organization of the 1996 NPRI. The data have been organized to reveal a regional (Windsor-Essex) effect. However, the data below frequently show combined totals (on-site releases + off-site transfers). Using combined totals, this report attempts to reemphasize that off-site transfers are not preferable to on-site releases.

Pollutants may be transferred to a different medium creating a new set of problems; for example, landfills leak, creating leachate, and incineration may create toxic byproducts such as dioxins, furans and toxic ash. Thus, the combined totals in this report are intended to limit a bias in the NPRI report that favours off-site transfers as a form of pollutant release.

Analysis

The 1996 NPRI contains some obvious improvements from the 1995 report. The 1996 report provides a comparison with the 1995 report and provides rankings of polluters; overall, making the 96 NPRI more user friendly, based, primarily, on cosmetic improvements.

However, the NPRI continues to have serious gaps in data that severely limit its effectiveness. The NPRI sets thresholds which, when met or exceeded, require facilities to report their pollutant releases and transfers. A facility at which employees worked a total of 20,000 hours or more (equivalent to 10 full-time employees) and manufactured, processed or otherwise used any of the NPRI-listed substances, in concentrations equal to or greater than 1% by weight and in quantities equal to or greater than 10 tonnes had to file a report with Environment Canada.

The thresholds remain, as in previous years, far too high, allowing for many smaller polluters to continue their unreported activities. When combined, the facilities that do not meet the thresholds can contribute significant amounts of pollution to the environment; for example, small dry cleaners and solvent degreasers.

The NPRI also provides outright exemptions for many sectors that would otherwise have to report their activities. There is little doubt that many of these exemptions mask significant pollutant releases:

education and training of students (universities, colleges and schools);
research or testing;
the maintenance and repair of transportation vehicles;
the distribution, storage or retail sale of fuels;
the wholesale or retail sale of articles or products which contain listed substances, but which were not released during normal use at the facility;
the retail sale of listed substances;
growing, harvesting and management of renewable resources (forestry, fisheries and agriculture), but not those facilities which process or otherwise use their products;
mining, but not those facilities engaged in the further processing of mined materials; and,
the drilling or operating of oil and gas wells, but not those facilities which process or otherwise use their products.[2]

The NPRI is based upon the United States' Toxic Release Inventory (TRI); yet the NPRI examines only 176 substances, while the TRI contains over 600 substances. Pollution prevention reporting is part of the TRI, but in Canada pollution prevention is not part of the NPRI. Many of the parent companies' branch plants that operate in Canada have vigorously and hypocritically (these same companies must report to

the TRI) opposed pollution prevention reporting to the NPRI.

Perhaps the most egregious failure of the NPRI, is its catering to the financial concerns of the companies that must report. In order to reduce the cost of preparing a NPRI report, precise measurement is not required. Various estimation methods[3] are allowed and no independent verification, based upon actual measurements, is required in reporting to the NPRI. Data collected in such a lackadaisical manner reveals the crucial weakness of the NPRI: it does not provide a complete view of the "life"[4] of a substance within the country's borders.

Analysis-Trends

The 1996 NPRI showed a decrease in the combined total of on-site releases and off-site transfers from 1995: 219,740 tonnes in 1995 to 207,239 tonnes in 1996. Specifically, on-site releases decreased while off-site transfers increased. In Ontario, the combined total of on-site releases and off-site transfers increased: 95,794 tonnes in 1995 to 98,485 tonnes in 1996. Specifically, on-site releases decreased, however, a large increase in off-site transfers resulted in the combined total increase.

In Windsor, the 1996 NPRI shows an increase in the combined total of on-site releases and off-site transfers compared to 1995 (Table 1.0). Specifically, releases increased while off-site transfers decreased (Table 1.0). Thirty-five facilities reported to the NPRI in 1995 and thirty-four reported in 1996.

Several local facilities reported a substantial, combined total increase since 1995: BASF Canada; Chrysler-Windsor Assembly Plant; City of Windsor-West Windsor Pollution Control Plant; and Zalev Brothers (Table 1.0). The largest local polluters, based upon the combined total of releases and transfers, were the same in 1995 and 1996, although the order of appearance changed slightly, 1995: General Chemical; Zalev Brothers; Chrysler-Windsor Assembly Plant; City of Windsor-West Windsor Pollution Control Plant; Ford-Windsor Casting Plant; and in 1996: General Chemical; Zalev Brothers; City of Windsor-West Windsor Pollution Control Plant; Chrysler-Windsor Assembly Plant; Ford-Windsor Casting Plant.

In detail, the 1996 NPRI revealed that the largest on-site releases were to the air, followed by releases into underground injection. The largest off-site transfers were to landfills, followed by transfers to incineration and underground injection. In Ontario, the largest on-site releases were to the air, followed by releases to the water. The largest off-site transfers, in Ontario, were to landfills followed by underground injection and municipal sewage treatment.

In Windsor, on-site releases and off-site transfers changed marginally in terms of detailed media. In 1995, the largest on-site releases were to the air, followed by releases to the water (Table 1.1).[5] This trend continued in 1996. Off-site transfers changed slightly in 1996. The largest off-site transfers, in 1995, were to landfills followed by incineration and chemical treatment (Table 1.1). In 1996, the largest off-site transfers were to landfills followed by incineration and municipal sewage treatment (Table 1.1).

Nationally, the 1996 NPRI showed that on-site releases and off-site transfers of toxic and carcinogenic substances decreased: 24,165 tonnes in 1995 to 22,679 tonnes in 1996. Unfortunately, this trend was not followed in Ontario. In Ontario, the combined total of on-site releases and off-site transfers of CEPA toxic and carcinogenic substances increased in 1996: 10,953 tonnes in 1995 to 12,247 tonnes in 1996.

In Windsor, the combined total of on-site releases and off-site transfers of CEPA toxic and carcinogenic substances substantially increased in 1996, by 25.377 tonnes (tables 2.0, 2.1). More facilities reported

CEPA toxic and carcinogenic substances to the NPRI than in 1995: seven reported in 1995 and ten reported in 1996 (tables 2.0, 2.1). Some facilities reported increases: A.G. Simpson; Fabricated Steel; Chrysler-Windsor Assembly Plant; Zalev Brothers; and others reported in 1996, but not in 1995: Ford-Windsor Engine Plant; Engine Plant #1; and Lynx Environmental (tables 2.0, 2.1). The facilities that had the largest combined total of on-site releases and off-site transfers of toxic and carcinogenic substances remained the same in 1995 and 1996: Zalev Brothers; Ford-Windsor Casting Plant; Chrysler-Windsor Assembly Plant (tables 2.0, 2.1).

Tables 3.0 and 3.1 show the largest substance reports and which facility reported: ammonia; zinc; and xylene (1995); Methyl ethyl ketone (1996) were released and/or transferred in the largest quantity per report. The facilities appearing in the top three substance reports most frequently were Chrysler-Windsor Assembly, BASF-Windsor, and Ford-Windsor Casting (1995); Chrysler-Windsor Assembly, BASF-Windsor, and Chrysler-Truck Assembly (tied) (1996). The number of substances released and/or transferred totalled thirty-five in 1995 and thirty-four in 1996 (tables 2.0, 2.1, 3.0, 3.1).

1.0 Windsor-Essex County Facility Substance Releases and Transfers-1995, 1996 (in tonnes)

Facility	**1995** **Releases** **Transfers**		**1996**
A.G. Simpson	0.2		.40
	1.432		1.16
	1.632	**Total**	1.56
Anchor Lamina - Windsor	0.10		0.10
(Devon Rd.)	0.0		0.0
	0.10	**Total**	0.10
Anchor Lamina - Windsor	0.10		0.10
(Home Office)	0.0		0.0
	0.10	**Total**	0.10
Arrow Canada -	45.99		(Did not report)
Leamington	123.19		
	169.18	**Total**	
BASF Canada	86.016		78.0
	297.383		325.53
	383.399	**Total**	403.53
Canadian Regional -	(Did not		7.0
Windsor Airport	report)		0.0
		Total	7.0
Centerline			
	0.0		0.0
	0.0		9.0

	0.0	**Total**	9.0
Chemfil Canada	0.0		.02
	0.0		.02
	0.0	**Total**	.04
Chrysler - Pillette Road Truck Assembly Plant	264.811		198.59
	6.682		2.47
	271.493	**Total**	201.06
Chrysler - Windsor Assembly Plant	501.529		587.99
	30.401		48.90
	531.93	**Total**	636.89
City of Windsor - Little River Pollution Control Plant	15.7		21.12
	0.0		0.0
	15.7	**Total**	21.12
City of Windsor - West Windsor Pollution Control Plant	480.9		638.57
	0.0		0.0
	480.9	**Total**	638.57
CXY Chemicals - Amherstburg	2.8		2.20
	4.7		0.0
	7.5	**Total**	2.20
DNN Galvanizing	0.0		0.0
	0.0		0.0
	0.0	**Total**	0.0
Fabricated Steel Products	.825		.88
	.63		0.0
	1.455	**Total**	.88
Ford - Essex Alluminum Plant	69.62		16.17
	88.365		47.19
	157.985	**Total**	63.36
Ford - Essex Engine Plant	.012		.01
	.603		1.10
	.615	**Total**	1.11
Ford - Windsor Casting Plant	91.97		65.40
	387.17		384.78
	479.14	**Total**	450.18
Ford - Windsor Engine Plant	0.0		0.0
	0.4		7.25
	0.4	**Total**	7.25
Ford - Windsor Engine Plant #1	.43		0.0
	0.0		.92

	.43	**Total**	.92
Ford - Windsor Aluminum Plant	8.702		4.5
	13.901		22.39
	22.603	**Total**	26.89
General Chemical - Amherstburg	1942.7		1909.70
	0.0		0.0
	1942.7	**Total**	1909.70
General Motors - Windsor Transmission	0.0		(Did not report)
	0.0		
	0.0	**Total**	
Integram Windsor Seating - Tecumseh	.10		.10
	.12		.49
	.22	**Total**	.59
LDM Technologies - Leamington	(Did not report)		49.75
			55.36
		Total	105.11
Lynx Environmental Services	0.0		0.0
	103.303		83.62
	103.303	**Total**	83.62
Macdonald and White Varnish and Paint	5.15		3.66
	6.10		1.64
	11.25	**Total**	5.30
Reliance Steel Fabricators	.10		.10
	0.0		0.0
	.10	**Total**	.10
Riverside Fabricating	7.654		5.4
	0.0		0.0
	7.654	**Total**	5.4
Rockwell International - Tilbury Brake Plant	2.12		.61
	9.64		9.4
	11.76	**Total**	10.01
Standard Induction Castings	.02		.02
	.043		.04
	.063	**Total**	.06
The Canadian Salt Company - Windsor Plant	(Did not report)		0.0
			.28
		Total	.28
Tooling Technology Centre - Oldcastle	0.0		0.0
	0.0		0.0

	0.0	**Total**	0.0
Tooling Technology Centre - Windsor	0.0 0.19		(Did not report)
	0.19	**Total**	
Tooling Technology Centre - Windsor	0.0 0.11		(Did not report)
	0.11	**Total**	
Universal Fasteners	0.0 .284		0.0 .28
	.284	**Total**	.28
Woodbridge Foam - Tilbury Plant	0.0 0.0		0.0 0.0
	0.0	**Total**	0.0
Zalev Brothers	.453 849.84		.46 877.61
	850.293	**Total**	878.07

Releases	3528.002	**Total**	3590.85
Transfers	1924.487	**Total**	1879.43
Combined	5452.489	**Total**	5470.28

1.1 Details of Total Releases and Transfers - 1995,1996 - Windsor and Essex County (in tonnes)

Releases (1995)			Air (1) 2805.023 (79.5%)		Water 721.597 (20.4%)	Land 0.34 (.1%)	
Transfers (1995)	Landfill 1350.5056 (70.1%)	Incineration 502.237 (26%)	CT (2) 40.16412 (2%)	MSTP (3) 31.22922 (1.6%)	Storage 0.34208 (.2%)	PT (4) .009 (.1%)	
Releases (1996)			Air 2719.68 (75.7%)		Water 863.16 (24%)	Land 7.0 (.3%)	
	Landfill	Incineration	MSTP	PT	CT	Storage	

Transfers (1996)	1361.9 (73%)	458.16 (24.5%)	34.83 (1.8%)	9.06 (.5%)	0.8 (.1%)	0.14 (.1%)

1. Releases and transfers by environmental media may differ from totals in other tables since releases and transfers of less than one tonne could be reported as undifferentiated totals.
2. chemical treatment
3. municipal sewage treatment plant
4. physical treatment

2.0 CEPA Toxic and/or Carcinogenic Substances (1995), Windsor and Essex County (in tonnes)

Facility	Substance[2]	Details	Total
Arrow Canada	formaldehyde	air	1.2
A.G. Simpson	chromium	landfill	.032
	nickel	landfill	.059
Chrysler - Windsor Assembly Plant	lead	incineration, .004; landfill, 1.927; MSTP[3], .037	1.968
Fabricated Steel	chromium	air	.015
	lead	air	.057
Ford - Essex Aluminum Plant	cadmium	landfill	.021
	lead	landfill	.11
	nickel	landfill	.13
Ford - Windsor Casting Plant	formaldehyde	air	1.8
	chromium	air, .01; water, .18; landfill, 3.8	3.99
	lead	air, .19; water, 2.6;landfill, 26.0	28.79
Zalev Brothers	cadmium	air, .001; landfill, 1.765	1.766
	lead	air, .045; landfill, 48.368; storage, .003	48.416
	nickel	air, .015; landfill, 13.061; storage, .003	13.079
		1995 Total	101.433

1. Canadian Environmental Protection Act (CEPA)
2. Carcinogenic substances are designated based upon the criteria of the International Agency for

Cancer.
3. municipal sewage treatment plant

2.1 CEPA Toxic and/or Carcinogenic Substances (1996), Windsor and Essex County (in tonnes)

Facility	Substance[2]	Details	Total
A.G. Simpson	chromium	unknown	.10
	nickel	landfill, .02; MSTP[3], .07	.19
Chrysler - Windsor Assembly Plant	formaldehyde	air	14.2
	lead	landfill	2.9
	nickle	landfill, 2.4; MSTP, .05	2.45
Fabricated Steel	lead	air	.17
Ford - Essex Aluminum Plant	cadmium	landfill	.01
	lead	landfill	.11
	nickel	landfill	.08
Ford - Windsor Casting Plant	chromium	air, .01; water, .2; landfill, 3.8	4.01
	lead	air, .19; water, .32;landfill, 27.0	27.51
Ford - Windsor Engine Plant	nickel	landfill	4.25
Ford - Windsor Engine Plant #1	chromium	landfill	.26
LDM Technologies	formaldehyde	air	1.5
Lynx Environmental	benzene	incinerator	3.63
Zalev Brothers	cadmium	landfill	1.766
	lead	air, .05; landfill, 49.95; storage, .01	48.416
	nickel	air, .02; landfill, 13.49; storage, .01	13.079
		1996 Total	126.81

1. Canadian Environmental Protection Act (CEPA)
2. Carcinogenic substances are designated based upon the criteria of the International Agency for Cancer.
3. municipal sewage treatment plant

3.0 Windsor-Essex County Pollutant Releases and Transfers - 1995 (tonnes) (Top three facilities included where applicable)

Pollutant	Facility	Details(1)	Total
Acetone	Chrysler Truck Assembly	Air, 45.509; landfill, .004; MSTP(2), .004	45.517
	Arrow Canada	Incineration, 32.0	32.0
	Lynx Environmental	Incineration, 23.8	23.8
Aluminum (fume or dust)	Ford - Essex Aluminum	Air, .06; landfill, 84.0	84.6
	Ford - Windsor Aluminum	Air, 3.539; landfill, 6.2	9.739
Ammonia (total)	General Chemical West Windsor	Air, 1757.6; water, 184.4	1942.0
	Pollution Control Little River	Air, 25.4; water, 455.5	480.9
	Pollution Control	Air, 6.1; water, 9.6	15.7
Bis(2-ethylhexyl) adipate	Ford - Windsor Casting	Air, 0.2	0.2
I-Butyl alcohol	BASF - Windsor	Air, 2.9; incineration, 3.9	6.8
n-Butyl alcohol	Arrow Canada	Air, 21.1	21.1
	Chrysler - Truck Assembly	Air, 16.5; landfill, .002; MSTP, .002	16.504
	BASF - Windsor	Air, 3.1; incineration, 4.5	7.8
Butyl benzyl phthalate	Chrysler - Windsor Assembly	Air, .047; landfill, 1.011	1.058
Chlorine	CXY Chemicals	Air, 2.7	2.7
	General Chemical	Air, 0.7	0.7
	Ford - Essex Aluminum	Air, .015	.015
Cobalt (and its compounds)	Zalev Brothers	Air, .002; landfill, 3.24	3.242
	Ford - Essex Aluminum	Landfill, .004	.004
Copper (and its compounds)	Zalev Brothers	Air, .081; water, .001; landfill, 289.974; storgae, .014	290.07
	Ford - Windsor Casting	Air, .06; water, .28; landfill, 6.4	6.74

	Chrysler - Windsor Assembly	Air, 4.33; $PT_{(3)}$, .009; incineration, .019; landfill, .255	4.613
Ethylbenzene	BASF - Windsor	Air, .206; incineration, .283	.489
Ethylene glycol	Lynx Environmental	Incineration, 5.703	5.703
	Chrysler - Windsor Assembly	Air, 1.69; MSTP, .201	1.891
	Chrysler - Truck Assembly	Air, .013; MSTP, .088	.39
Hydrochloric acid	Ford - Essex Aluminum	Air, 16.0	16.0
	Rockwell International Tilbury	MSTP, 9.64	9.64
	CXY Chemicals	$CT_{(4)}$, 4.7	4.7
Isopropyl alcohol	Chrysler - Windsor Assembly	Air, 36.0; landfill, .002	36.002
	BASF - Windsor	Air, 7.5, incineration, 12.0	19.5
	Ford - Windsor Casting	Air, 17.0	17.0
Manganese (and its compounds)	Ford - Windsor Casting	Air, .35; water, 5.9; landfill, 130.0	136.25
	Zalev Brothers	Air, .107; water, .005; landfill, 83.419; storage, .024	83.55
	Rockwell International Tilbury	Air, .04; water, 1.13	1.17
Methanol	Chrysler - Windsor Assembly	Air, 33.61; landfill, .004	33.614
	Lynx Environmental	Incineration, 7.7	7.7
	BASF - Windsor	Air, 3.0; incineration, 1.6	4.6
2-Methoxyethanol	Arrow Canada	Air, 6.3; incineration, 32.4	38.7
Methylenebis (phenylisocyanate)	Integram Windsor	Landfill, .12	.22
	Ford - Windsor Aluminum	Air, .001	.001
Methyl ethyl ketone	BASF - Windsor	Air, 44.0; incineration, 230.0	274.0
	Chrysler - Windsor Assembly	Air, 70.88	70.88
	Arrow Canada	Air, 8.3	8.3

Methyl isobutyl ketone	Chrysler - Windsor Assembly	Air, 22.304; landfill, .002	22.306
Naphthalene	Ford - Windsor Aluminum	Air, .028	.028
Nitrate ion in solution at pH>=6.5	Chrysler - Windsor Assembly	Landfill, .014; MSTP, 20.588	20.602
Phenol (and its salts)	Ford - Windsor Casting	Air, .3; water, 6.0; landfill, .97	7.27
Phosphoric acid	Chrysler - Windsor Assembly	Air, .026	.026
Styrene	Ford - Essex Aluminum	Air, 53.0	53.0
Sulphuric acid	Lynx Environmental	CT, 35.2	35.2
	Ford - Windsor Aluminum	Incineration, 7.431	7.431
	Chrysler - Windsor Assembly	Air, .001	.001
Toluene	Arrow Canada	Air, 1.19; incineration, 52.9	54.09
	Chrysler - Windsor Assembly	Air, 39.961; landfill, .001	39.962
	Chrysler - Truck Assembly	Air, 25.219; landfill, .002; MSTP, .002	25.223
1,2,4 - Trimethylbenzene	Ford - Windsor Aluminum	Air, 5.082	5.082
	BASF - Windsor	Air, .21; incineration, 1.6	1.81
xylene (mixed isomers)	Chrysler - Windsor Assembly	Air, 292.017; landfill, .031	292.048
	Chrysler - Truck Assembly	Air, 177.023; landfill, .01; MSTP, .011	177.044
	BASF - Windsor	Air, 16.0; incineration, 42.0	58.0
Zinc (and its compounds)	Zalev Brothers	Air, .195; water, .001; landfill, 409.949; storage, .02	410.65
	Ford - Windsor Casting	Air, 1.1; water, 56.0; landfill, 220.0	277.1
	Chrysler - Windsor Assembly	Air, .58; landfill, 6.239; MSTP, .057	6.876

1. The 'total' pollutant releases and transfers may differ from the sum of the 'details' since releases

and transfers of less than one tonne could be reported as undifferentiated totals.

2. municipal sewage treatment plant
3. physical treatment
4. chemical treatment

3.1 Windsor-Essex County Pollutant Releases and Transfers - 1996 (tonnes) (Top three facilities included where applicable)

Pollutant	Facility	Details[(1)]	Total
Acetone	Chrysler Truck Assembly		
	Chrysler - Windsor Assembly	Air, 79.01; landfill, .01	79.02
	Lynx Environmental	Air, 56.7; landfill, .12 Incineration, 3.7	56.82 3.7
Aluminum (fume or dust)	Ford - Essex Aluminum	Air, .14; landfill, 44.0	44.14
	Ford - Windsor Aluminum	Air, .03; landfill, 14.85	14.88
Ammonia (total)	General Chemical West Windsor	Air, 1728.0; water, 181.0	1909.0
	Pollution Control Little River	Air, 27.61; water, 610.96	638.57
	Pollution Control	Air, 7.05; water, 14.08	21.12
I-Butyl alcohol	Chrysler - Windsor Assembly	AIR, 24.1	24.1
	Chrysler - Truck Assembly	Air, 12.1	12.1
	BASF - Windsor	Air, 2.0; incineration, 5.3	6.4
n-Butyl alcohol	LDM Technologies	Air, 26.5	26.5
	Chrysler - Windsor Assembly	Air, 24.1	24.1
	BASF - Windsor	Air, 1.1; incineration, 5.3	6.4
sec-Butyl alcohol	BASF - Windsor	Air, .1; incinerator, .48	.58
Chlorine	CXY Chemicals	Air, 2.0	2.0
	General Chemical	Air, 0.7	0.7
Cobalt (and its compounds)	Zalev Brothers	Landfill, 3.35	3.35

Copper (and its compounds)	Zalev Brothers	Air, .08; landfill, 299.43; storgae, .03	299.54
	Centerline	$PT_{(2)}$, 9.0	9.0
	Ford - Windsor Casting	Air, .07; water, .46; landfill, 6.5	7.03
Ethylbenzene	Chrysler - Truck Assembly		
	Lynx	Air, 13.1	13.1
	Environmental	Incineration, 5.37	5.37
Ethylene glycol	Windsor Airport	Land, 7.0	7.0
	Chrysler - Windsor Assembly	Air, 5.04; $MSTP_{(3)}$, .28	5.32
	Chrysler - Truck Assembly	Air, .01; MSTP, .09	.1
Hydrochloric acid	Ford - Essex Aluminum	Air, 16.0	16.0
	Rockwell International		
	Tilbury	MSTP, 9.4	9.4
	CXY Chemicals	$NA_{(4)}$	0.1
Isopropyl alcohol	Chrysler - Windsor Assembly	Air, 53.4; landfill, 2.4	55.8
	BASF - Windsor	Air, 15.0, incineration, 11.0	26.0
	Ford - Windsor Casting	Air, 6.4	6.4
Manganese (and its compounds)	Ford - Windsor Casting	Air, .36; water, .72; landfill, 126.6	136.25
	Zalev Brothers	Air, .11; water, .01; landfill, 86.14; storage, .04	83.55
	Chrysler - Windsor Assembly	Air, .01; landfill, 5.2; MSTP, .11	1.17
Methanol	Lynx Environmental	Incineration, 3.03	3.03
	Chrysler - Windsor Assembly	Air, 2.57; landfill, 0.1	2.67
	BASF - Windsor	Air, 1.5; incineration, .34	1.84
Methylenebis (phenylisocyanate)	Integram Windsor	Landfill, .49	.59
Methyl ethyl ketone	BASF - Windsor	Air, 48.0; incineration, 300.0	348.0
	Chrysler - Windsor Assembly	Air, 152.39; landfill, .01	152.4
	Lynx	incineration, 18.56	18.56

	Environmental		
Methyl isobutyl ketone	BASF - Windsor	Air, 1.5; incineration, .15	1.65
Naphthalene	Ford - Windsor Aluminum	Air, .02	.02
Nitrate ion in solution at pH>=6.5	Chrysler - Windsor Assembly	Air, .26; Landfill, .02; MSTP, 24.0	24.28
Nitric acid	Chemfil Canada	Air, .01	.01
Phenol (and its salts)	Ford - Windsor Casting	Air, .07; water, 5.4; landfill, .88	6.35
Phosphoric acid	Chrysler - Windsor Assembly	Air, .39	.39
	Chemfil Canada	PT, .01	.01
Sulphuric acid	Ford - Windsor Aluminum	Incineration, 6.97	6.97
Toluene	Chrysler - Windsor Assembly		
	LDM	Air, 105.12; landfill, 0.1	105.22
	Technologies	Air, 1.48; incineration, 48.0	49.48
	Chrysler - Truck Assembly	Air, 14.51	14.51
1,2,4 - Trimethylbenzene	Chrysler - Truck Assembly	Air, 13.1	13.1
	Ford - Windsor Aluminum	Air, 4.34	4.34
xylene (mixed isomers)	Chrysler - Windsor Assembly		
	Chrysler - Truck Assembly	Air, 148.0; landfill, .24	148.24
	Lynx	Air, 66.02; landfill, .02;	66.04
	Environmental	Incineration, 23.78	23.78
Zinc (and its compounds)	Zalev Brothers	Air, .19; landfill, 423.31; storage, .04	423.55
	Ford - Windsor Casting	Air, 1.2; water, 50.0; landfill, 220.0	271.20
	Lynx Environmental	Landfill, 14.96	14.96

1. The 'total' pollutant releases and transfers may differ from the sum of the 'details' since releases

and transfers of less than one tonne could be reported as undifferentiated totals.
2. PT (physical treatment)
3. (municipal sewage treatment plant)
4. NA (not available)

Conclusions

The 1996 NPRI contains marginal improvements over the 1995 report. The improvements are mainly cosmetic: more comparisons with the 1995 reporting year; and more rankings. However, in substance, the 1996 NPRI report is woefully inadequate.

The 1996 report provides an extremely limited view of the pollution problem in Canada. As with other recent efforts of Environment Canada, the weakness of the 1996 NPRI can be traced to the petulant demands of industry. The NPRI does not require independent measurement and verification of the reports submitted by industry. The cost of the reporting is minimal to industry, but the data are not comprehensive. Substantive improvements, such as pollution prevention reporting, done in the United States' TRI, have been vetoed by industry in Canada.

Although the NPRI provides a small and limited view of the pollution problem in Canada, the 1996 report reveals disturbing trends in Ontario and Windsor-Essex County. Ontario and Windsor-Essex reported increases in the combined totals of on-site releases, off-site transfers, and of CEPA toxic and carcinogenic substances. The timing of these increases coincides with the Ontario government's downgrading of the environmental portfolio and general shift toward "voluntary" pollution control measures.

The value of the NPRI can only be measured in the reliability and comprehensiveness of the data provided to the public. Comprising only 176 substances, substantial exemptions from reporting, excessively high reporting thresholds, languorous reporting deadlines, primarily unverified estimates of releases and transfers, and no complete examination of the life-cycle of any pollutant, the NPRI's value remains dubious.

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1. Substance and pollutant are used interchangeably throughout this report. In order to be categorized as a pollutant, according to NPRI criteria: the substance has the potential to cause harm to human health or the environment.

2. Environment Canada, National Pollutant Release Inventory, Summary Report 1996, p.2.

3. The estimation methods may be based upon monitoring data, materials balance calculations, or best engineering judgement. The estimation method for a particular industry may be supplied by a trade association or by manufacturers of equipment widely used in that industry. See, Commission on Environmental Cooperation, Taking Stock: North American Pollutant Releases and Transfers, 1995

4. The life of a chemical includes its creation, production, use, release and impact upon the environment and human health.

5. The NPRI ranked the Detroit River as receiving the third highest amount (849 tonnes) of on-site

releases to bodies of water. The Saint John River and St.Lawrence River were ranked first and second, respectively.