



Tracking and Reducing Chemicals in Toronto

6th Annual ChemTRAC Report

June 2017

Table of Contents

Chapter 1: Improving Health By Reducing Chemicals In Our Environment.....	5
Chapter 2: ChemTRAC 2015 Data Highlights	6
Facility Representation by Sector	6
Priority Substances Manufactured, Processed or Used.....	7
Priority Substances Released to the Environment.....	8
Health Ranking of Substances.....	9
Industry Contribution to Total Release.....	11
Chapter 3: Distribution of Facilities in Toronto	12
Chapter 4: Sector Quick Facts.....	16
Food and Beverage Manufacturing.....	16
Power Generation	20
Printing and Publishing	22
Water and Wastewater.....	24
Wood Industries	26
Auto Body, Collision Repair and Auto Refinishing Sector	28
Funeral Services	34
Medical and Diagnostic.....	36
Waste Management and Remediation	38
Computer and Electric Product Manufacturing.....	40
Electrical Equipment, Appliance and Component Manufacturing.....	42
Fabricated Metal Product Manufacturing	44
Non-Metallic Mineral Product Manufacturing	46
Paper Product Manufacturing	48
Primary Metal Manufacturing	50

List of Tables

Table 1: Number of facilities that reported data on priority substances for 2015 operations	6
Table 2: Total amounts of priority substances manufactured, processed, or otherwise used in 2015.....	7
Table 3: Total amounts of priority substances released to air in 2015	8
Table 4: Reported quantities of priority substances released to air in 2015 ranked by Cancer toxic equivalent potential (TEP) score.....	9
Table 5: Reported quantities of priority substances released to air in 2015 ranked by Non-Cancer toxic equivalent potential (TEP) score	10
Table 6: Sector contribution to Total Release (by mass), Cancer TEP and Non-Cancer TEP in 2015.....	11

List of Figures

Figure 1: Distribution of facilities within residential and non-residential areas that provided information on the manufacture, use or release of priority substances in 2015.....	12
Figure 2: Distribution of facilities that provided information on the manufacture, use or release of priority substances in 2015 and socioeconomic status as represented by proportion of residents living at or below the Low Income Measure	13
Figure 3: Distribution of Cancer TEP in 2015	14
Figure 4: Distribution of Non-Cancer TEP in 2015.....	15
Figure 5: Amount of substances reported by Food and Beverage facilities for 2015.....	17
Figure 6: Amount of substances reported by manufacturing facilities for 2015	19
Figure 7: Amount of substances reported by Power Generation facilities for 2015	21
Figure 8: Amounts of substances reported by Printing and Publishing facilities for 2015	23
Figure 9: Amounts of substances reported by Water and Wastewater Treatment facilities for 2015.....	25
Figure 10: Amounts of substances reported by Wood Industries for 2015	27

Figure 11: Amounts of substances reported by Autobody Refinishing facilities for 2015	29
Figure 12: Amount of substances reported for Chemical Wholesale in 2015	31
Figure 13: Amounts of substances reported by Dry Cleaning and Industrial Laundry facilities for 2015.....	33
Figure 14: Amount of substances reported for Funeral Services in 2015	35
Figure 15: Amounts of substances reported by Medical and Diagnostic services for 2015	37
Figure 16: Amounts of substances reported by Waste Management facilities for 2015	39
Figure 17: Amounts of substances reported by Computer & Electric Product Manufacturing facilities for 2015	41
Figure 18: Amounts of substances reported by Electrical Equipment, Appliance and Component Manufacturing facilities for 2015.....	43
Figure 19: Amounts of substances reported by Fabricated Metal Product Manufacturing facilities for 2015	45
Figure 20: Amounts of substances reported by Non-Metallic Mineral Product Manufacturing facilities for 2015	47
Figure 21: Amounts of substances reported by Paper Product Manufacturing facilities for 2015.....	49
Figure 22: Amounts of substances reported by Primary Metal Manufacturing facilities for 2015.....	51

Chapter 1: Improving Health By Reducing Chemicals In Our Environment

In an urban environment like Toronto, the public's health may be affected by a number of environmental factors, including chemicals that pollute the air, water and land. Exposure to these chemicals can occur in our homes, workplaces and outside.

Smog-forming pollutants and other chemical substances come from different sources. Some come from sources outside the city, others from inside the city itself. Production of electricity, heating of buildings, transportation and commercial and industrial facilities are all important contributors to pollution. Overall, air quality mostly depends on what sources exist in different neighbourhoods and how weather patterns carry pollutants in the air.

We come in contact with these chemicals outdoors and indoors, in homes and workplaces. Prolonged exposure to toxic substances, and in some cases even at low levels, may cause:

- Heart and lung damage
- Cancer
- Birth defects
- Reproductive problems
- Chronic diseases

The ChemTRAC program was developed to help better understand where 25 priority chemicals come from and to encourage pollution prevention to protect health. ChemTRAC collects information from businesses and institutions in Toronto. The information is collected through Toronto's Environmental Reporting and Disclosure Bylaw (Municipal Code Chapter 423). Similar programs in Canada and other countries have been found to lead to reductions in chemicals used and released from facilities.

The program can be divided into three main areas:

- The Environmental Reporting and Disclosure Bylaw, which requires businesses to track and report their manufacturing, use and release of priority chemicals.
- The analysis and release of chemical data; and
- The greening of businesses through pollution prevention and innovation.

ChemTRAC is a release inventory, a database of air pollution sources and their releases within our local airshed. Data collected in release inventories can be used to better understand contaminant trends over time, highlight key sources and support pollutant modelling studies.

This report contains information on facility operations during the 2015 calendar year. The data was reported to the City of Toronto in 2016.

Chapter 2: ChemTRAC 2015 Data Highlights

Facility Representation by Sector

The Environmental Reporting and Disclosure Bylaw requires facilities in Toronto to report their use and release of the 25 priority chemicals annually, if they meet reporting requirements. In total, more than 600 facilities reported on their 2015 operations. Table 1 shows the number of facilities within each sector that reported information on their manufacture, use and release of these chemicals.

Table 1: Number of facilities that reported data on priority substances for 2015 operations

Sector	Number of facilities that reported 2015
Automotive repair and maintenance	37
Chemical and related products manufacturing	109
Chemical wholesale	4
Computer and electronic product manufacturing	13
Dry cleaning and laundry services	84
Electrical equipment, appliance and component manufacturing	15
Fabricated metal product manufacturing	70
Food, beverage and tobacco products manufacturing	60
Funeral services	7
Medical and diagnostic laboratories	3
Non-metallic mineral product manufacturing	24
Paper product manufacturing	9
Power generation	2
Primary metal manufacturing	10
Printing and publishing	60
Waste management and remediation services	4
Water and wastewater treatment	8
Wood products manufacturing	30
All others	81
Total	630

Priority Substances Manufactured, Processed or Used

Table 2 shows the total amounts reported as manufactured, processed or otherwise used for each priority substance in 2015. Approximately 80,000 tonnes of priority substances were reported in total. Volatile organic compounds (VOCs), particulate matter <2.5 um (PM_{2.5}), manganese, nitrogen oxides (NO_x) and tetrachloroethylene were the priority substances with the largest reported amounts.

Table 2: Total amounts of priority substances manufactured, processed, or otherwise used in 2015.

Priority Substance	Manufactured (kg)	Processed (kg)	Otherwise Used (kg)
Acetaldehyde	1,132	0	1
Acrolein	-	-	-
Benzene	0	55	54
1,3-Butadiene	-	-	-
Cadmium	0	7,267	7
Carbon Tetrachloride	-	-	-
Chloroform	138	5,508	5,173
Chromium, Hexavalent	0	83,394	7,052
Chromium, Non-Hexavalent	0	589,336	0
1,2-Dibromoethane	-	-	-
1,4-Dichlorobenzene	-	-	-
1,2-Dichloroethane	-	80	80
Dichloromethane	372	166,970	69,938
Formaldehyde	6,360	29,767	28,605
Lead	200	348,993	11,965
Manganese	19	1,460,909	2,073
Mercury	2	303	513
Nickel	0	452,127	65,358
NO_x	1,498,567	57	-
PAHs	69	53	0
PM_{2.5}	1,043,726	2,161,525	12
Tetrachloroethylene	-	981,909	27,050
Trichloroethylene	1	37,118	4,443
Vinyl Chloride	1	249,750	-
VOCs	500,893	72,496,480	4,223,483
Total	3,051,480	79,071,521	4,445,852

(-) represents a null value.

Priority Substances Released to the Environment

Similar to data from 2014 operations, the total releases of priority substances represent a small proportion (about 10 per cent overall) of the total amount reported as manufactured, processed or used by facilities. This proportion varies for each pollutant. Table 3 shows the total amounts released to air, water and land for each substance in 2015. Volatile organic compounds (VOCs), nitrogen oxides (NO_x), and PM_{2.5} were the priority substances with the largest reported amounts.

Table 3: Total amounts of priority substances released to air in 2015

Priority Substance	Released to Air (kg)
VOCs	4,791,113
NO_x	1,496,327
PM_{2.5}	294,815
Trichloroethylene	35,316
Formaldehyde	14,965
Dichloromethane	14,691
Tetrachloroethylene	11,670
Acetaldehyde	1,132
Chloroform	784
Chromium, Non-hexavalent	435
Nickel	354
Manganese	337
Lead	328
PAHs	109
1,2-Dichloroethane	80
Benzene	62
Chromium, Hexavalent	27
Mercury	24
Cadmium	8
Vinyl chloride	1
Total	6,792,772

Health Ranking of Substances

The 25 priority substances vary in their toxicity. Some substances, such as PAHs and cadmium, are very toxic and could pose a risk even when released in small amounts. Other substances, for example volatile organic compounds (VOCs) and nitrogen oxides (NO_x), have a low toxicity but the overall health risk may be high when they are released in large quantities. One way of taking this different toxicity into account is to rank them by their toxic equivalency potentials (TEPs). Toxic equivalency potential provides a value based on the amount released and the toxicity of a substance. The substances can then be compared with each other to give a better indication of the relative health risk. A high TEP value represents a higher potential to cause harm. The TEP scoring system ranks substances that cause cancer (carcinogens) and substances with other health impacts (non-carcinogens) separately. Some of the 25 priority substances have both cancer and non-cancer effects and are assigned a TEP score for each category. Table 4 shows the reported releases to air ranked by the cancer TEP, and Table 5 ranks the releases by non-cancer TEP. The cancer ranking indicates that although substances like PAHs, cadmium and hexavalent chromium were reported in small amounts, the overall potential for adverse health impact of these releases are estimated to be much higher than for other substances. For non-cancer rankings, lead, mercury and cadmium are likely to be of highest health concern.

Table 4: Reported quantities of priority substances released to air in 2015 ranked by Cancer toxic equivalent potential (TEP) score

Priority Substance	Released to Air (kg)	Cancer TEP value	Cancer TEP Score
PAHs	109	6,300	686,700
Cadmium	8	26,000	208,000
Tetrachloroethylene	11,670	0.96	11,203
Lead	328	28	9,184
Chromium, Hexavalent	27	130	3,510
Dichloromethane	14,691	0.2	2,938
Trichloroethylene	35,316	0.05	1,766
Chloroform	784	1.6	1,254
Nickel	354	2.8	991
Formaldehyde	14,965	0.02	299
1,2-Dichloroethane	80	2.5	200
Benzene	62	1	62
Acetaldehyde	1,132	0.01	11
Vinyl chloride	1	1.9	2

Table 5: Reported quantities of priority substances released to air in 2015 ranked by Non-Cancer toxic equivalent potential (TEP) score

Priority Substance	Released to Air (kg)	Non-Cancer TEP value	Non-Cancer TEP Score
Lead	328	580,000	190,240,000
Mercury	24	5,000,000	120,000,000
Cadmium	8	1,900,000	15,200,000
PM2.5	294,815	17	5,011,855
VOCs	4,791,113	1.0	4,791,113
NOx	1,496,327	2.2	3,291,919
Chromium (total) *	435	3,100	1,348,500
Nickel	354	3,200	1,132,800
Tetrachloroethylene	11,670	65	758,550
Manganese	337	780	262,860
Formaldehyde	14,965	16	239,440
Dichloromethane	14,691	7.0	102,837
Trichloroethylene	35,316	0.63	22,249
Chloroform	784	14	10,976
Acetaldehyde	1,132	9.3	10,528
Benzene	62	8.1	502
1,2-Dichloroethane	80	4.2	336
Vinyl chloride	1	69	69

* Includes both hexavalent and non-hexavalent chromium

Industry Contribution to Total Release

The information reported by businesses on operations that took place in 2015 can be summarized by industry. Table 6 shows the percentage contribution by industry sectors to 1) total release by mass, 2) Cancer TEP, and 3) Non-Cancer TEP.

Table 6: Sector contribution to Total Release (by mass), Cancer TEP and Non-Cancer TEP in 2015

Sector ^a	Percent Contribution to Total Release (by mass) ^b	Percent Contribution to Cancer TEP ^b	Percent Contribution to Non-Cancer TEP ^b
Automotive	<1	<1	<1
Chemical Wholesale	4	<1	<1
Computer & Elect. Prod. Mfg	<1	<1	2
Dry Cleaning	<1	1	<1
Electrical Equip, Appl/Comp Mfg	<1	28	<1
Fab Metal Prod Mfg	5	<1	<1
Food & Beverage	10	<1	<1
Funeral Services	<1	<1	19
Manufacturing	37	1	27
Medical	<1	<1	<1
Non Metallic Mineral Prod Mfg	3	<1	6
Paper Prod Mfg	3	<1	<1
Power Generation	4	<1	<1
Primary Metal Mfg	<1	<1	20
Printing	13	<1	<1
Waste Management	<1	46	<1
Wastewater Treatment	6	9	18
Wood Industries	2	0.0	<1
All other	8	14	6

^a Sectors are defined based on the North American Industry Classification System (NAICS)

^b <1 indicates a value less than one

Chapter 3: Distribution of Facilities in Toronto

The majority of facilities reporting information on their operations to ChemTRAC were found in non-residential areas.

Figure 1: Distribution of facilities within residential and non-residential areas that provided information on the manufacture, use or release of priority substances in 2015

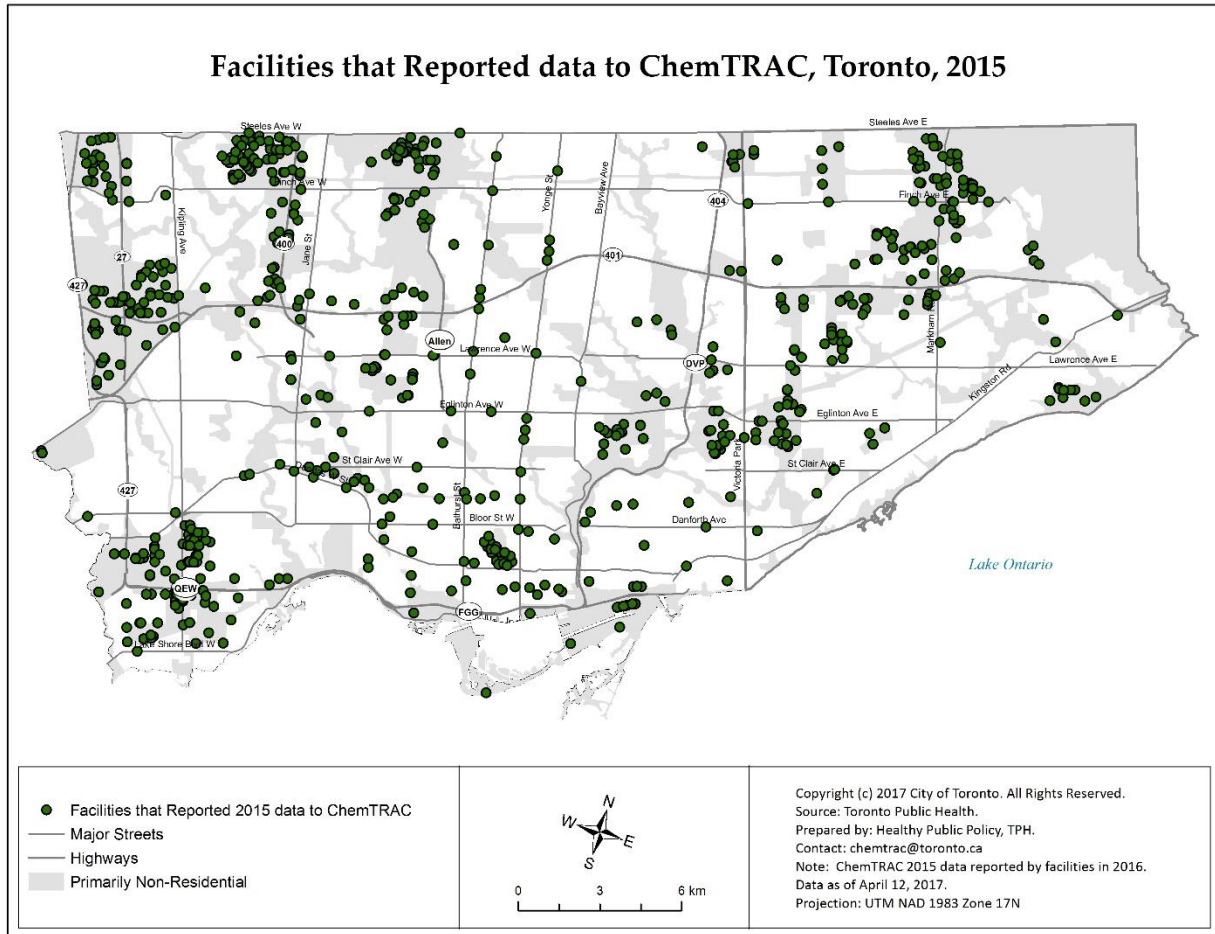


Figure 2: Distribution of facilities that provided information on the manufacture, use or release of priority substances in 2015 and socioeconomic status as represented by proportion of residents living at or below the 2013 Low Income Measure

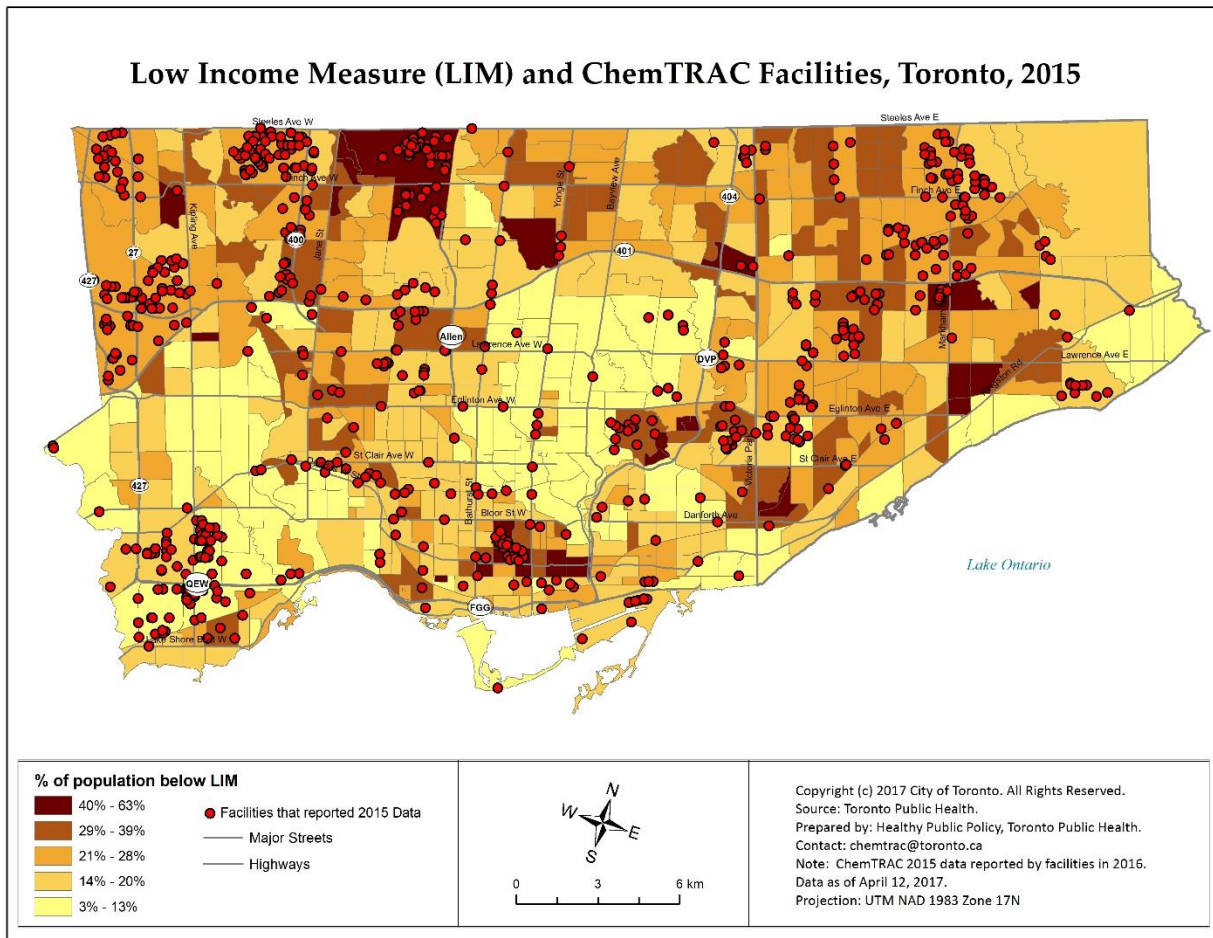


Figure 3: Location of air releases by Cancer TEP in 2015

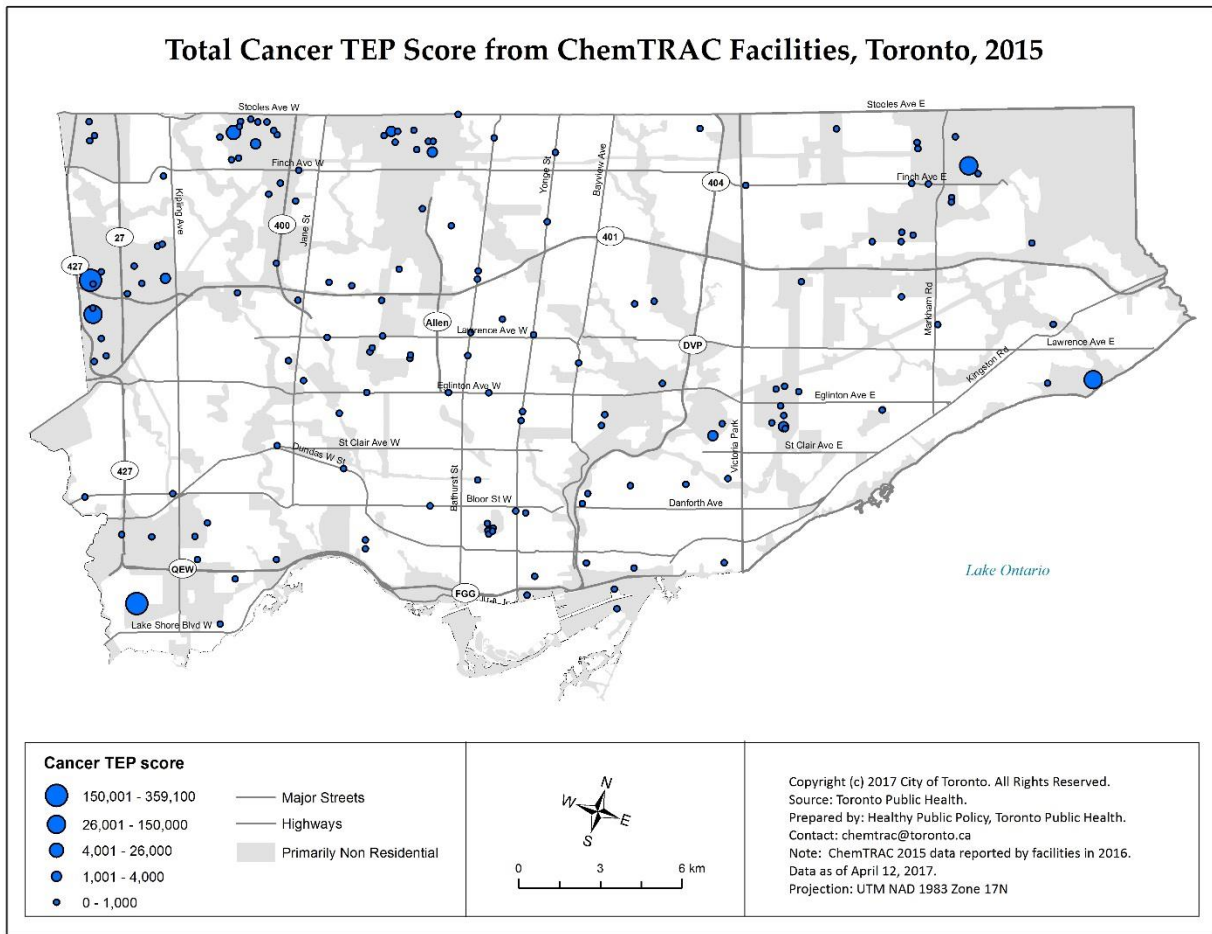
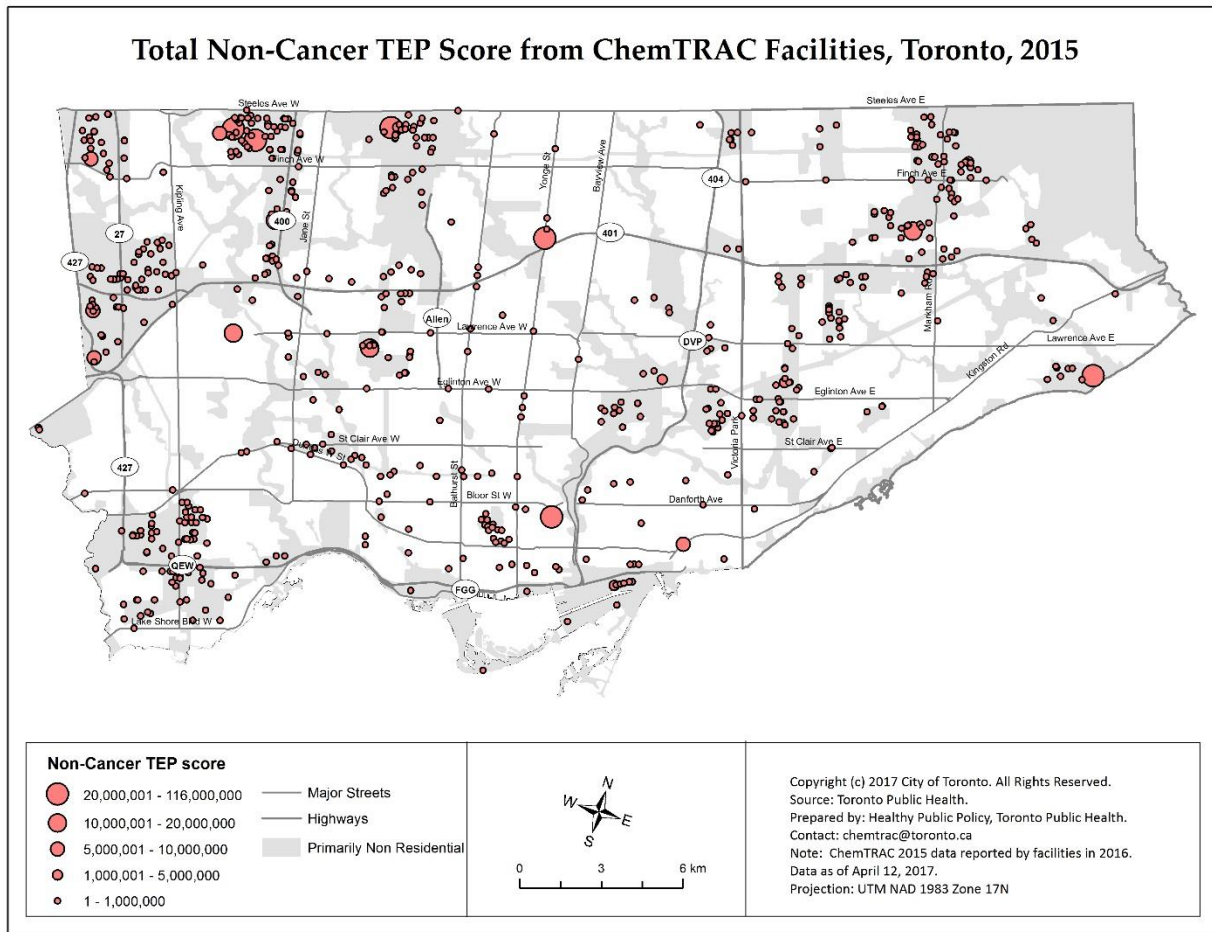


Figure 4: Location of air releases by Non-Cancer TEP in 2015



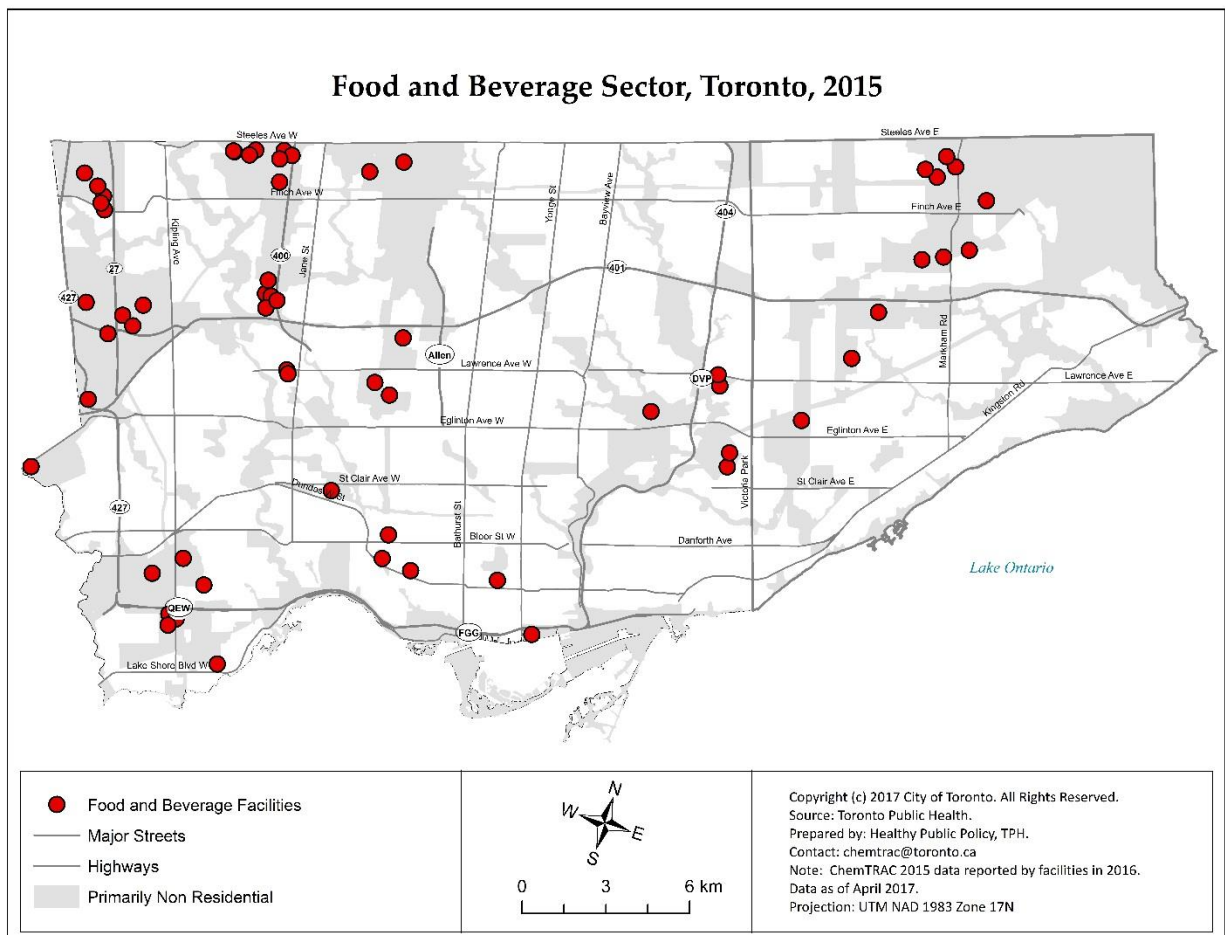
Chapter 4: Sector Quick Facts

The information reported by businesses in 2016 (about operations that took place in 2015) is summarized by industry type below.

Food and Beverage Manufacturing

Types of activities: meat processing, baking, fruit and vegetable canning, frozen food manufacturing and dairy product manufacturing, beverage manufacturing - soft drink, ice, and bottled water manufacturing, beer brewers and wine distillers, and tobacco manufacturing.

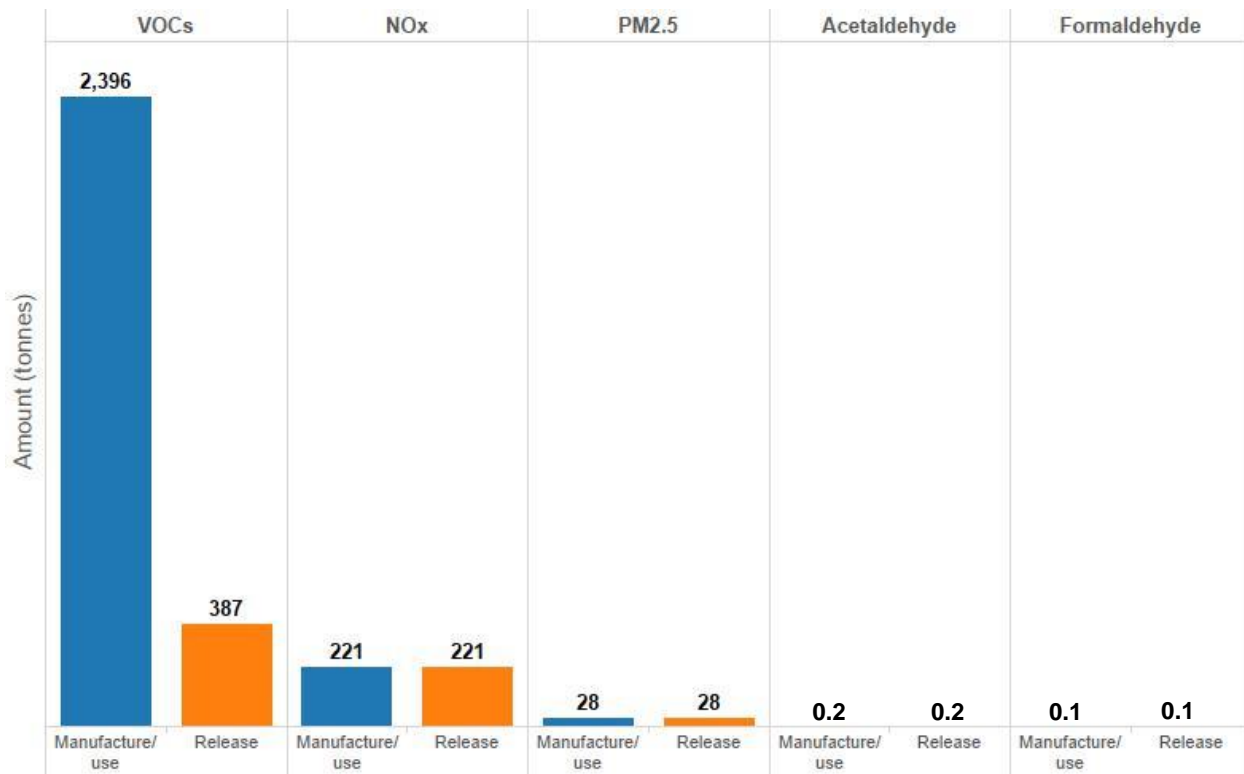
- Number of facilities that met the threshold: 62
- Range in number of employees per facility: 1 to 741
- Total amount released: 637 tonnes
- Total amount manufactured, processed or used: 2,646 tonnes
- Number of priority substances reported: 5



Top substances reported are:

- Volatile organic compounds (VOCs)
- Nitrogen oxides (NOx)
- Particulate matter 2.5 (PM_{2.5})
- Acetaldehyde
- Formaldehyde

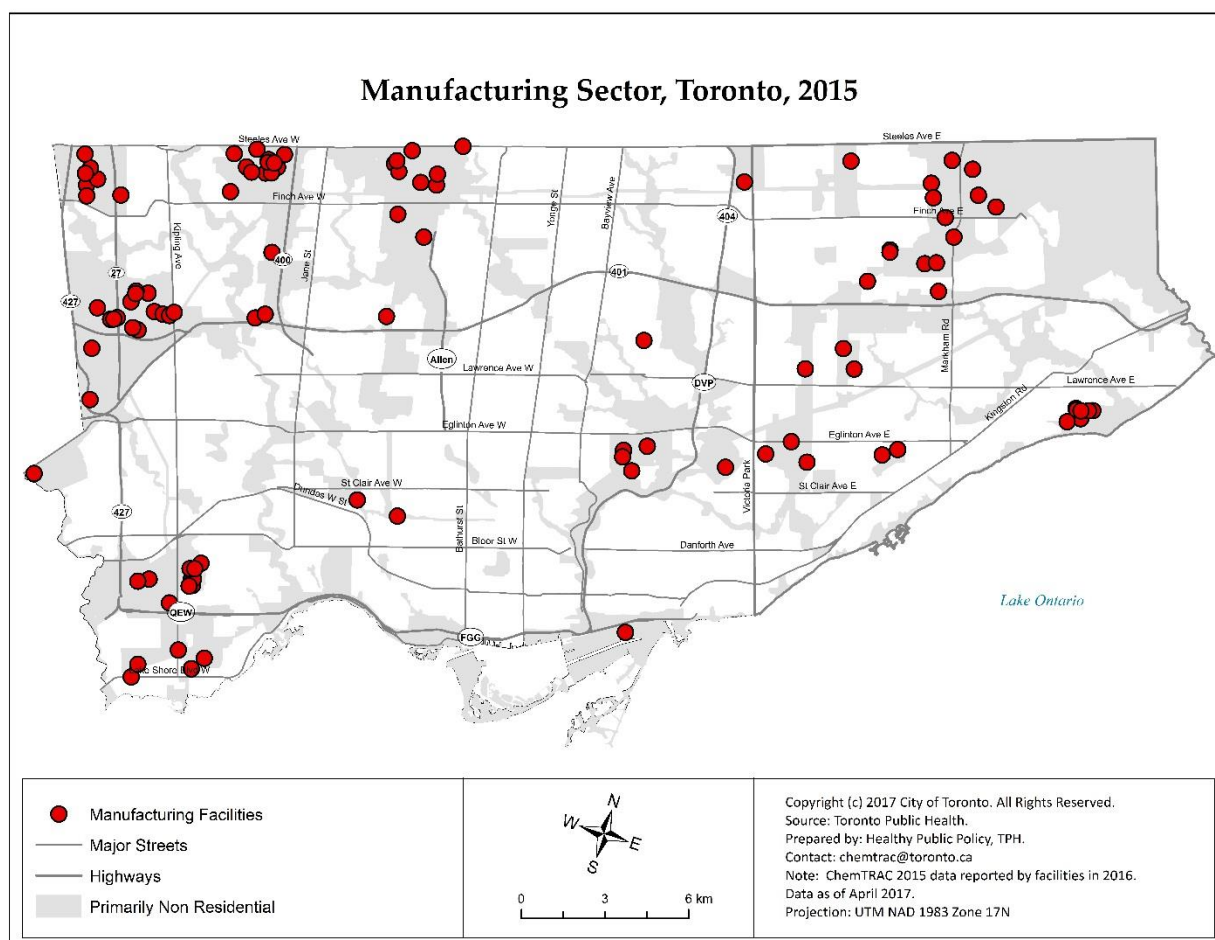
Figure 5: Amount of substances reported by Food and Beverage facilities for 2015



Manufacturing (including chemical and petroleum products)

Types of activities: Manufacturing of basic chemicals, synthetic fibers, plastics, pigments, paints, fertilizers, drugs, cosmetics and soaps.

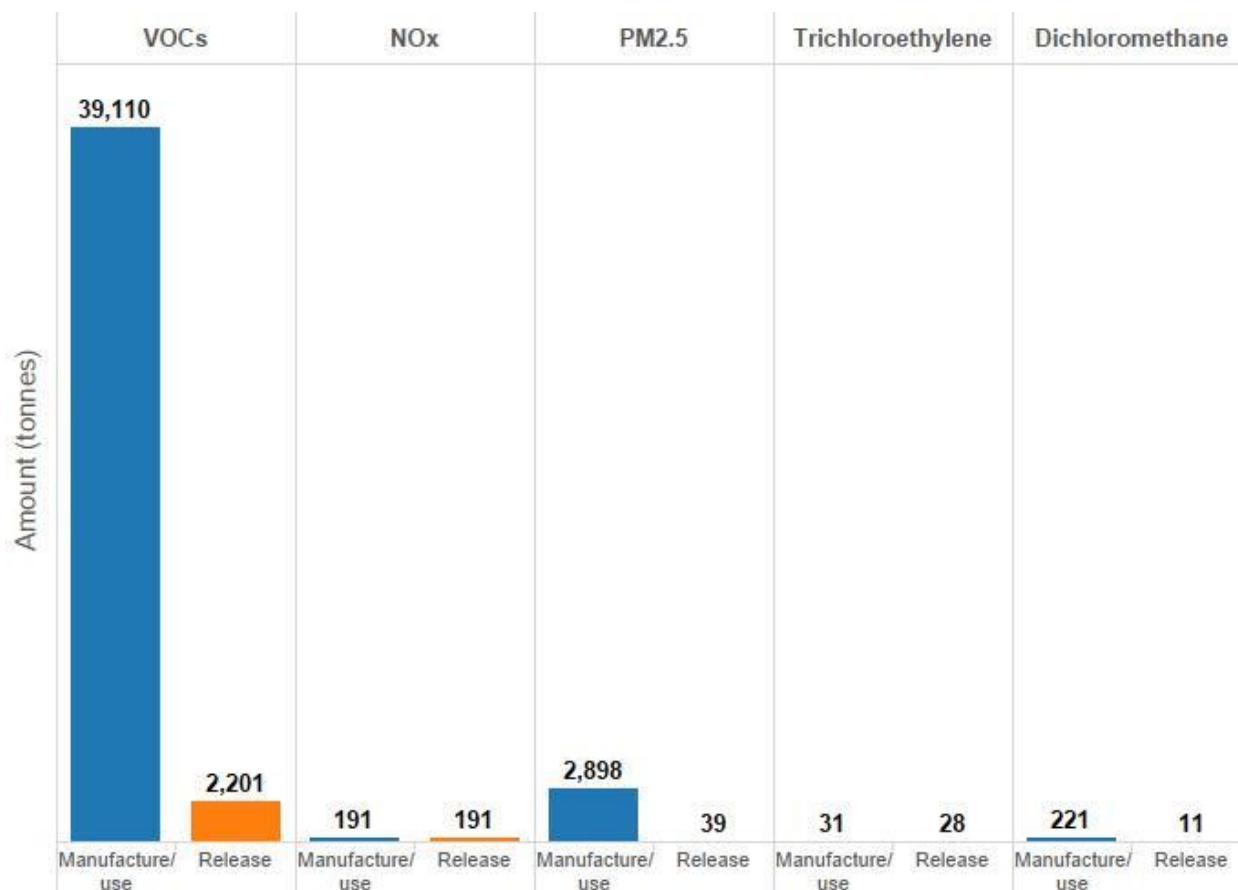
- Number of facilities that met the thresholds: 108
- Range in number of employees per facility: 1 to 1,200
- Total amount released: 2,473 tonnes
- Total amount manufactured, processed or used: 42,988 tonnes
- Number of priority substances reported: 16



Top substances reported are:

- Volatile organic compounds (VOCs)
- Nitrogen oxides (NOx)
- Particulate matter 2.5 (PM_{2.5})
- Trichloroethylene
- Dichloromethane

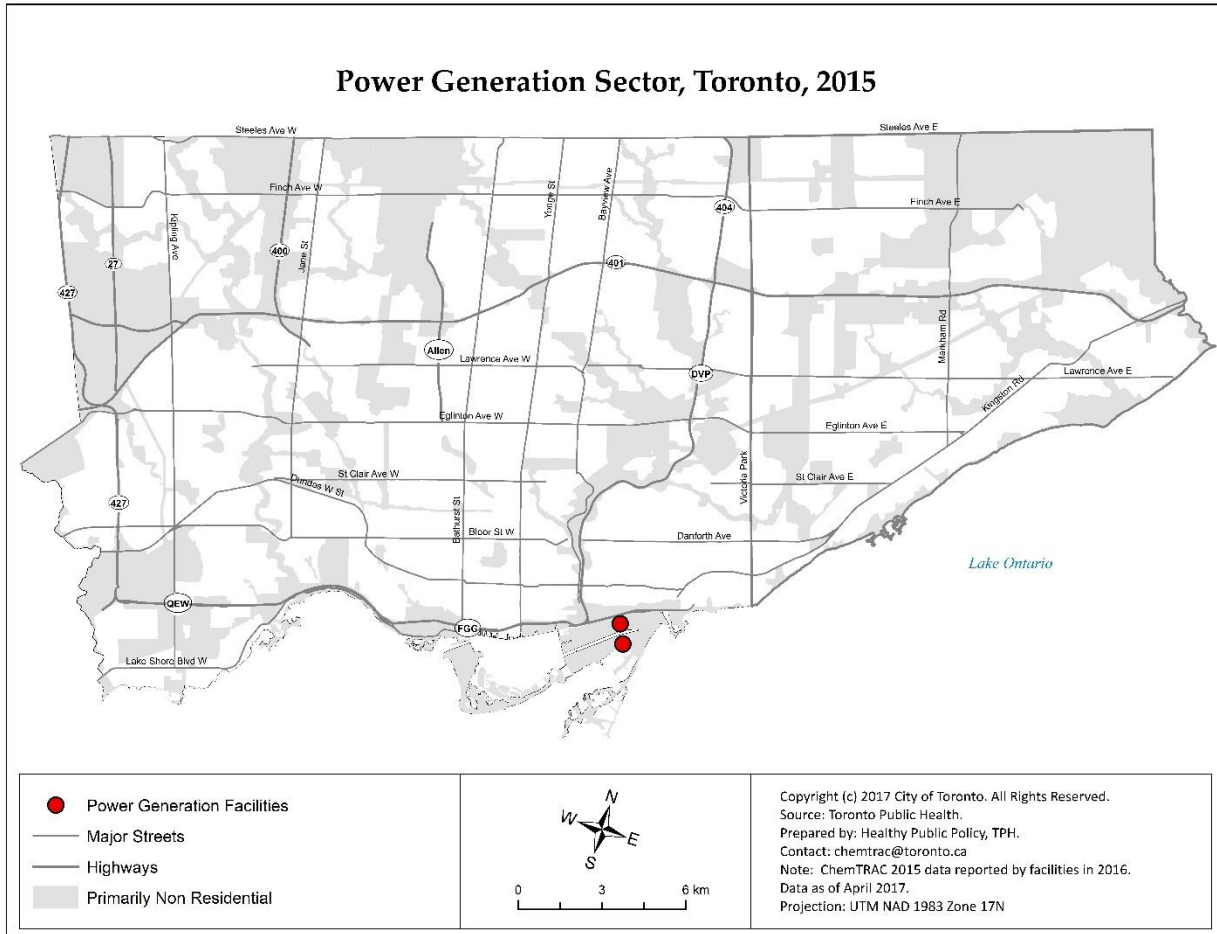
Figure 6: Amount of substances reported by manufacturing facilities for 2015



Power Generation

Types of activities: Generation of bulk electric power

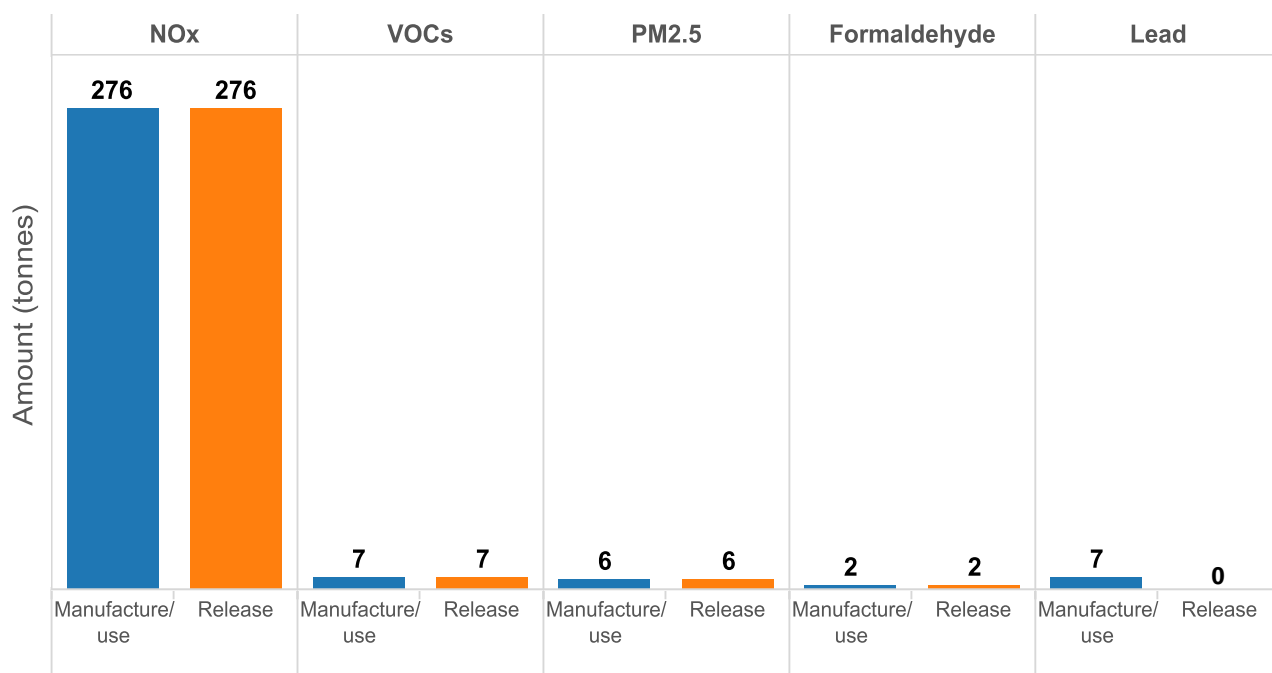
- Number of facilities that met the thresholds: 2
- Range in number of employees per facility: 30 to 850
- Total amount released: 292 tonnes
- Total amount manufactured, processed or used: 299 tonnes
- Number of priority substances reported: 6



Top substances reported are:

- Nitrogen oxides (NOx)
- Volatile organic compounds (VOCs)
- Particulate matter 2.5 (PM_{2.5})
- Formaldehyde
- Lead

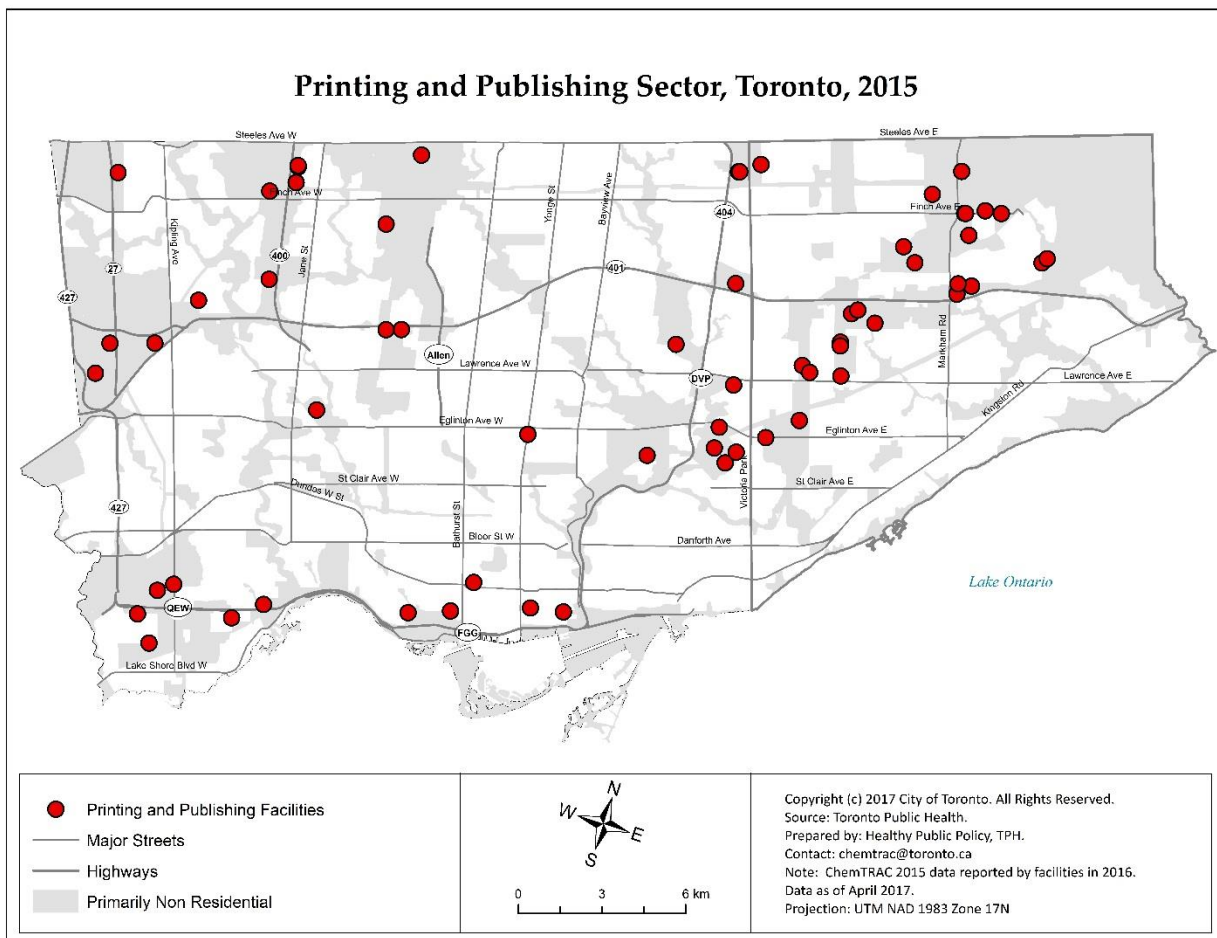
Figure 7: Amount of substances reported by Power Generation facilities for 2015



Printing and Publishing

Types of activities: Printing newspapers, books, labels, business cards, food wrappers, etc.

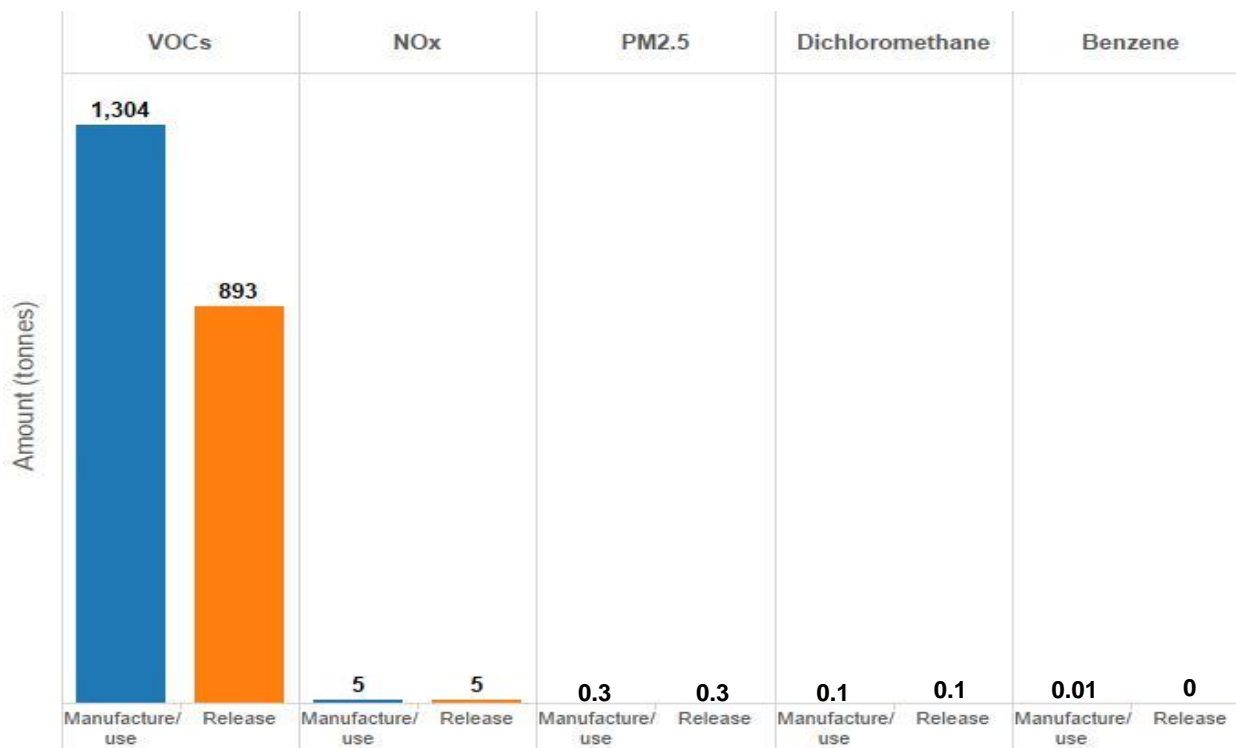
- Number of facilities that met the thresholds: 63
- Range in number of employees per facility: 1 to 200
- Total amount released: 899 tonnes
- Total amount manufactured, processed or used: 1,310 tonnes
- Number of priority substances reported: 5



Top substances reported are:

- Volatile organic compounds (VOCs)
- Nitrogen oxides (NOx)
- Particulate matter 2.5 (PM_{2.5})
- Dichloromethane
- Benzene

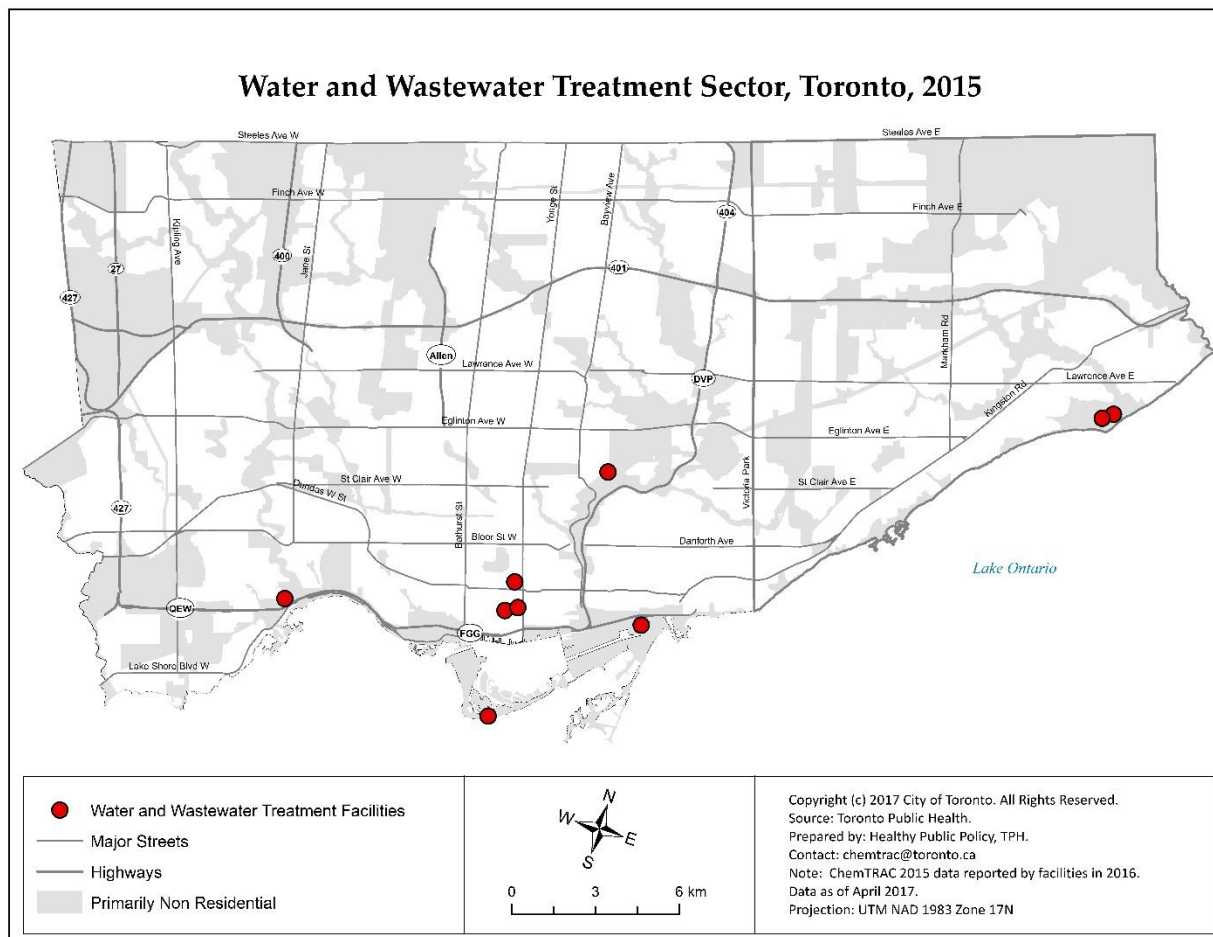
Figure 8: Amounts of substances reported by Printing and Publishing facilities for 2015



Water and Wastewater

Types of activities: Water, wastewater and sewage treatment plants

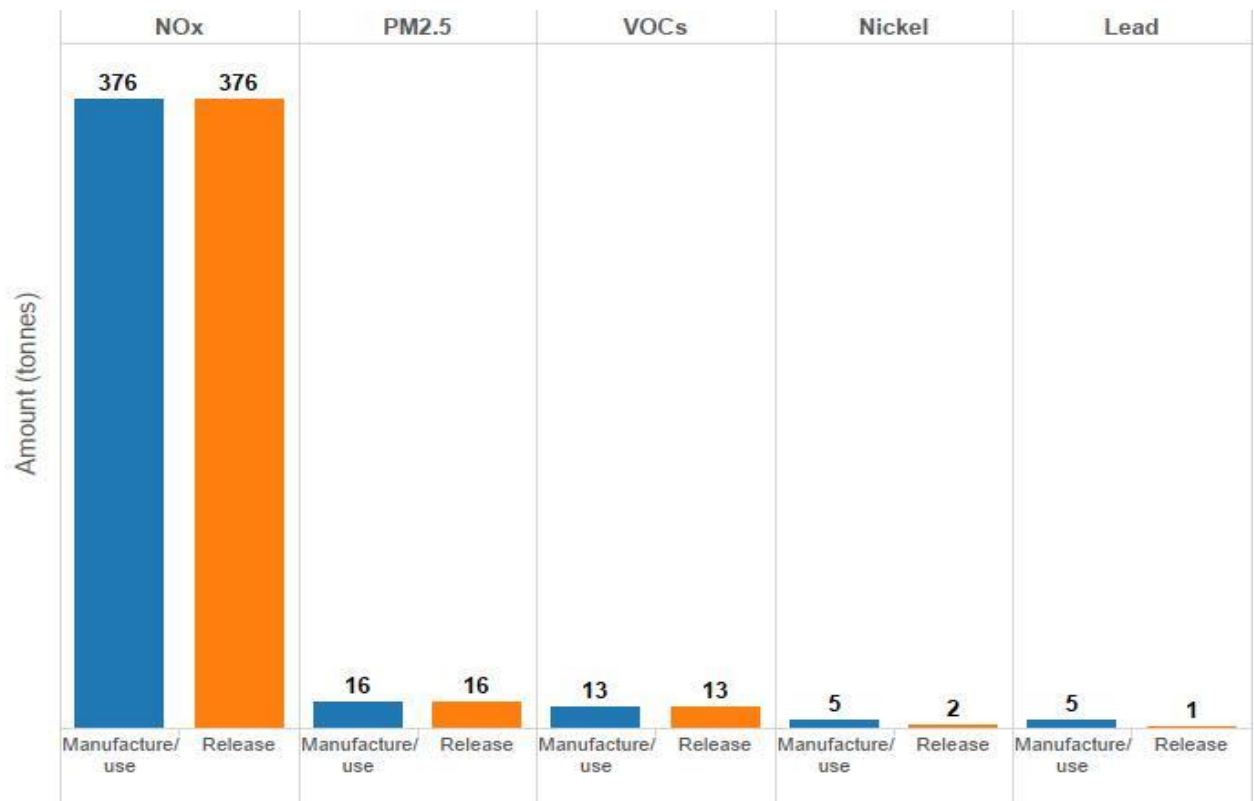
- Number of facilities that met the thresholds: 9
- Range in number of employees per facility: 5 to 174
- Total amount released: 409 tonnes
- Total amount manufactured, processed or used: 416 tonnes
- Number of priority substances reported: 7



Top substances reported are:

- Nitrogen oxides (NOx)
- Particulate matter 2.5 (PM_{2.5})
- Volatile organic compounds (VOCs)
- Nickel
- Lead

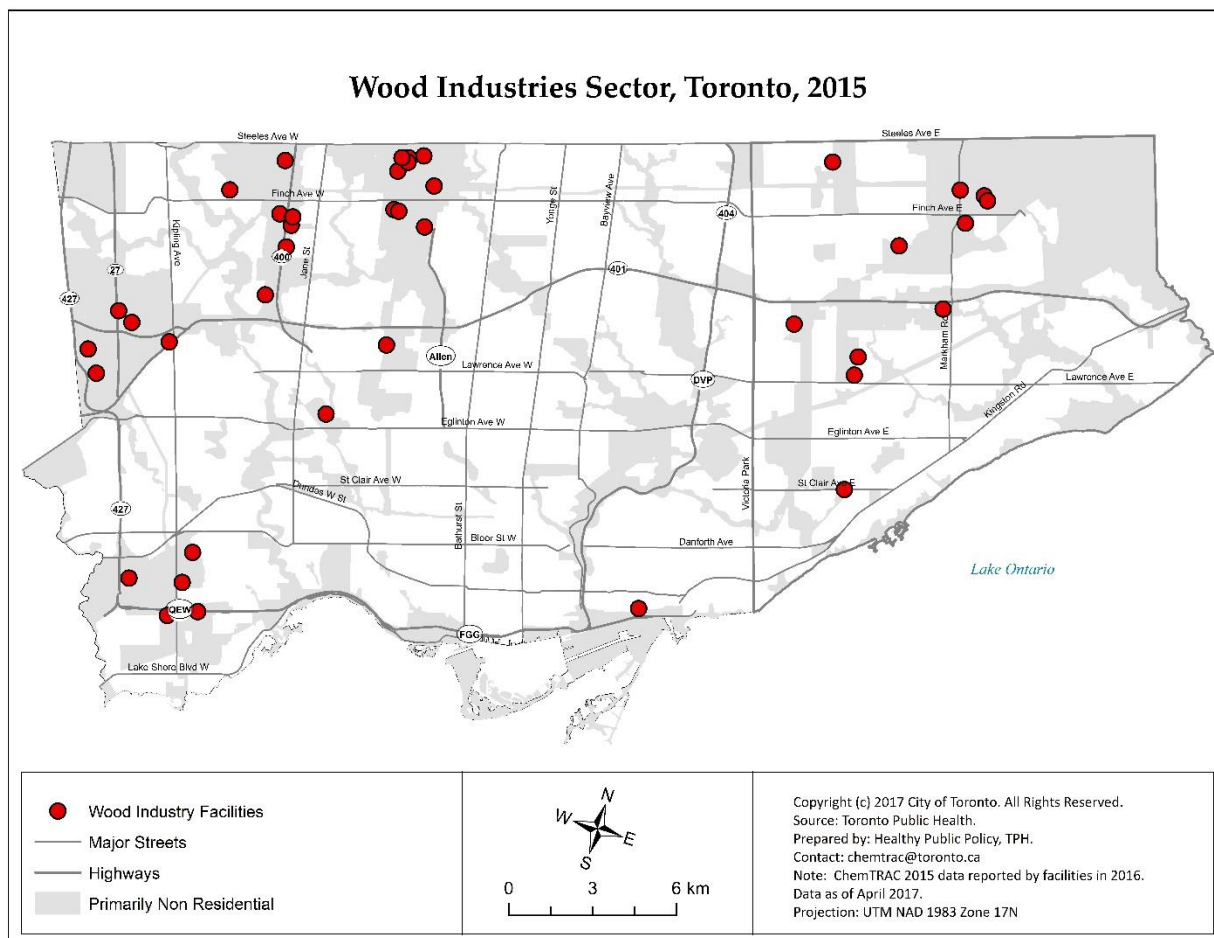
Figure 9: Amounts of substances reported by Water and Wastewater Treatment facilities for 2015



Wood Industries

Types of activities: Creation of wood-based products including paper, cardboard, pallets, furniture and cabinetry.

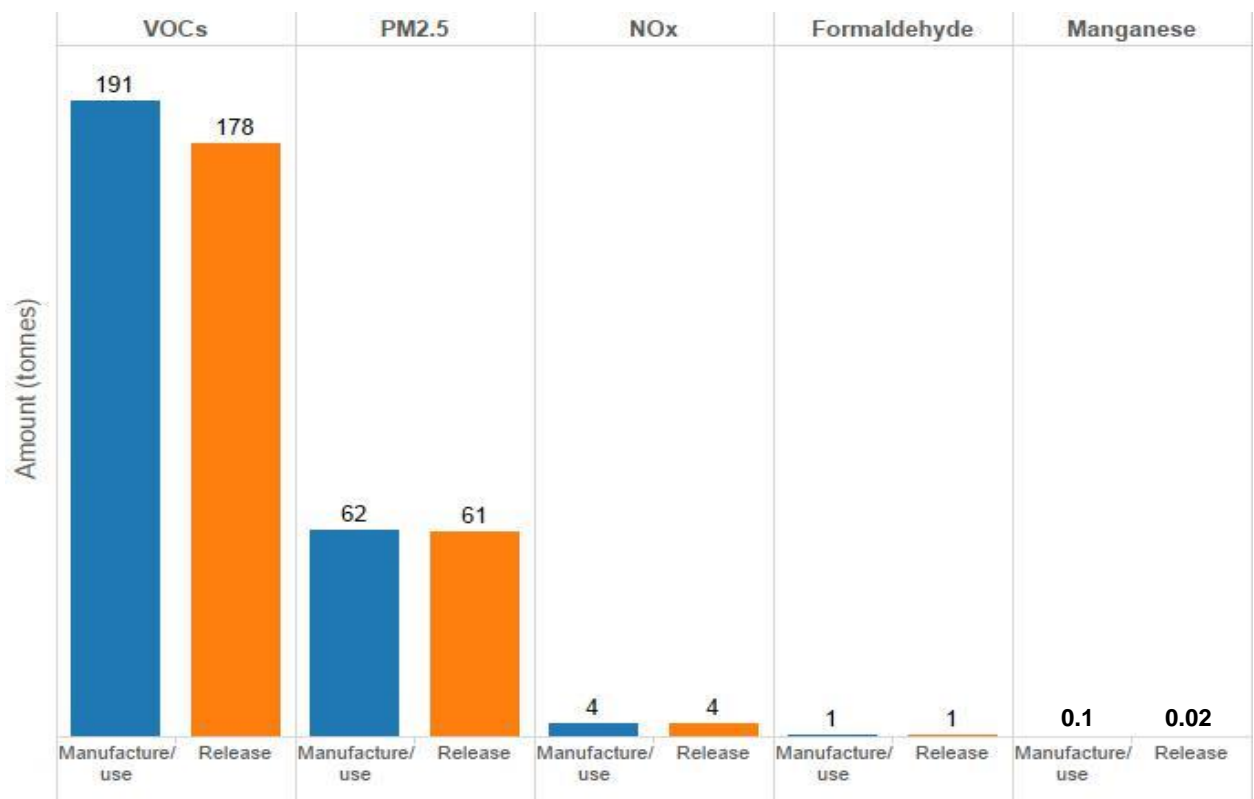
- Number of facilities that met the thresholds: 40
- Range in number of employees per facility: 1 to 681
- Total amount released: 244 tonnes
- Total amount manufactured, processed or used: 257 tonnes
- Number of priority substances reported: 6



Top substances reported are:

- Volatile organic compounds (VOCs)
- Particulate matter 2.5 (PM_{2.5})
- Nitrogen oxides (NO_x)
- Formaldehyde
- Manganese

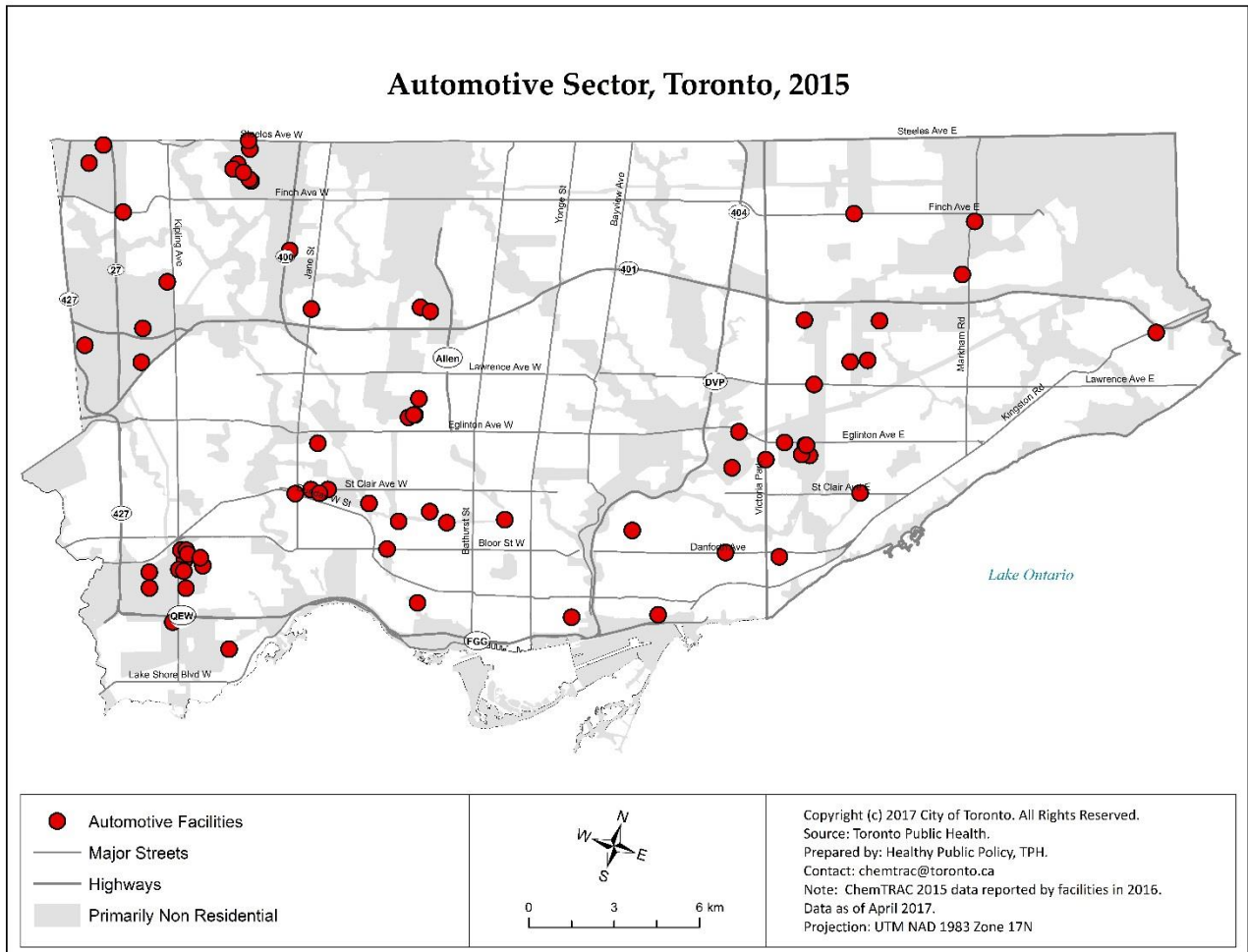
Figure 10: Amounts of substances reported by Wood Industries for 2015



Auto Body, Collision Repair and Auto Refinishing Sector

Types of activities: Painting, repairing and customizing cars, trucks, vans and commercial trailers.

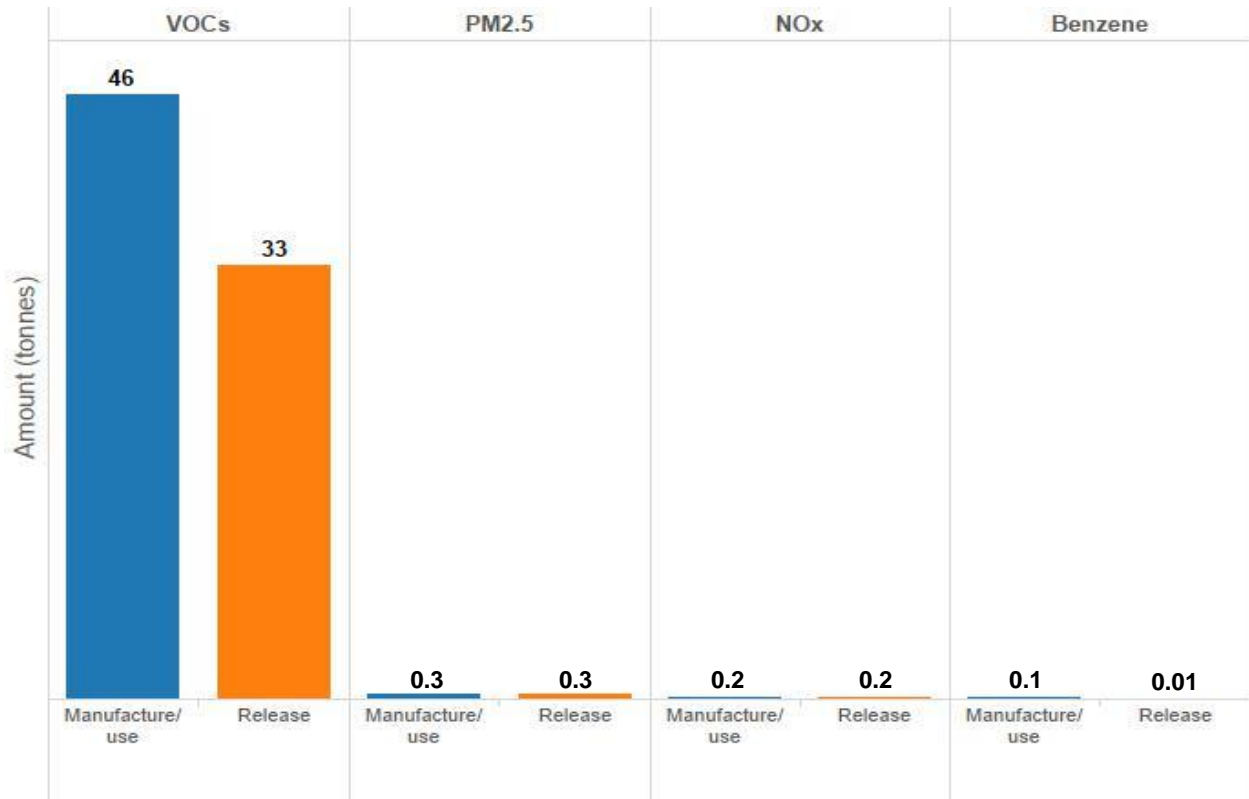
- Number of facilities that met the thresholds: 70
- Range in number of employees per facility: 1 to 65
- Total amount released: 34 tonnes
- Total amount manufactured, processed or used: 46 tonnes
- Number of priority substances reported: 4



Top substances reported are:

- Volatile organic compounds (VOCs)
- Particulate matter 2.5 (PM_{2.5})
- Nitrogen oxides (NO_x)
- Benzene

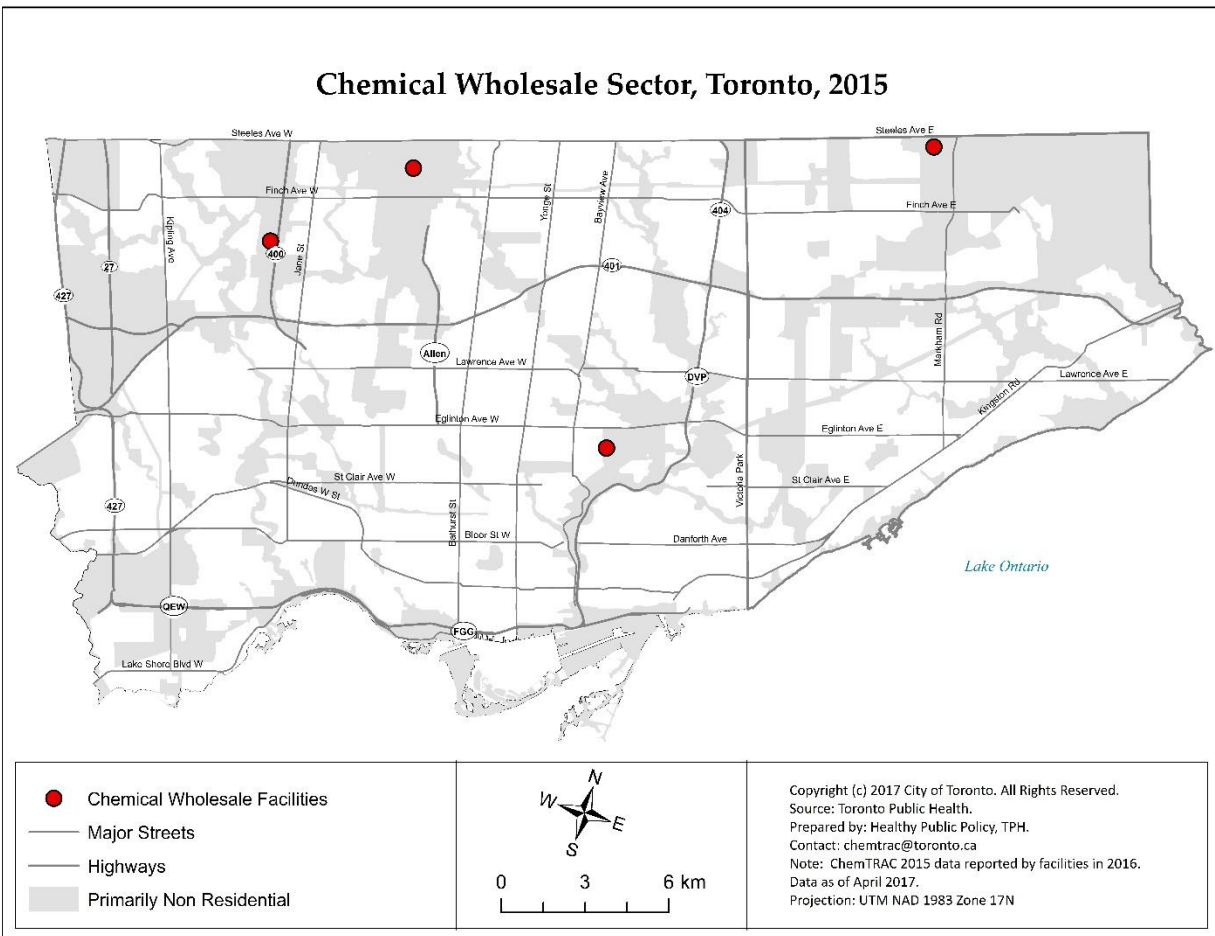
Figure 11: Amounts of substances reported by Autobody Refinishing facilities for 2015



Chemical Wholesale

Types of activities: Wholesale of industrial and household chemicals, cleaning compounds and preparations, plastics resins, plastic basic forms and shapes, and industrial gases.

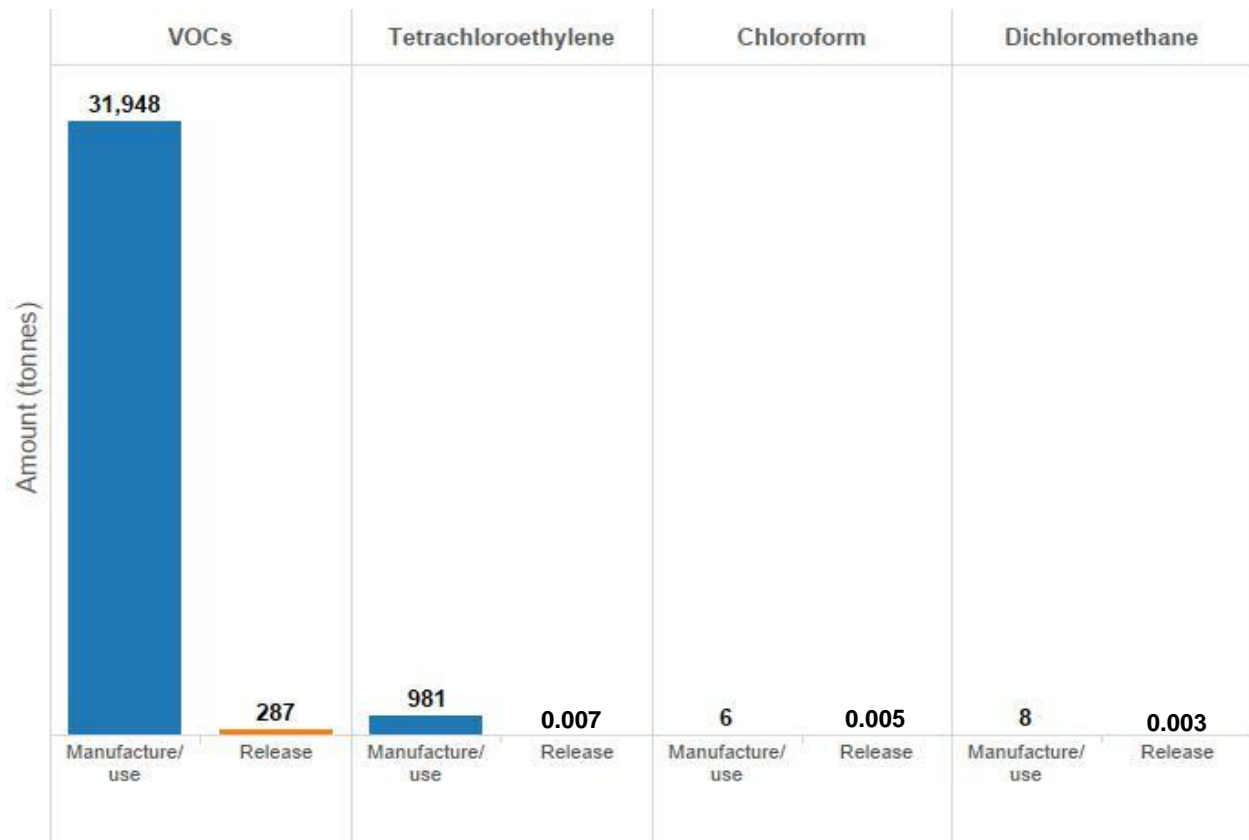
- Number of facilities that met the thresholds: 4
- Range in number of employees per facility: 16 to 125
- Total amount released: 287 tonnes
- Total amount manufactured, processed or used: 32,943 tonnes
- Number of priority substances reported: 4



Top substances reported are:

- Volatile organic compounds (VOCs)
- Tetrachloroethylene (Perchloroethylene)
- Chloroform
- Dichloromethane

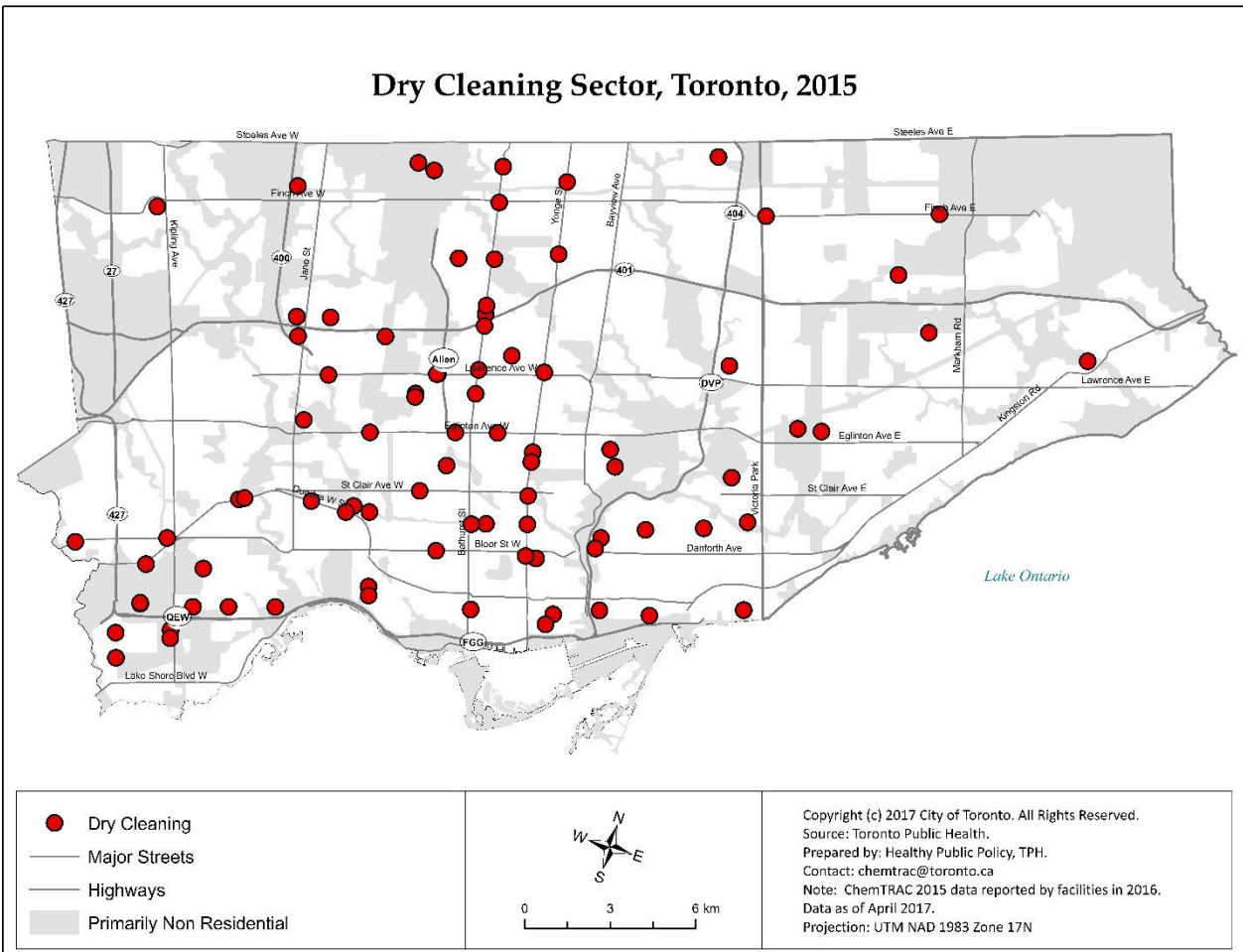
Figure 12: Amount of substances reported for Chemical Wholesale in 2015



Dry Cleaning and Industrial Laundry

Types of activities: Self-service laundry, laundering services, laundering and supplying laundered uniforms, linens and other fabric items and dry cleaning.

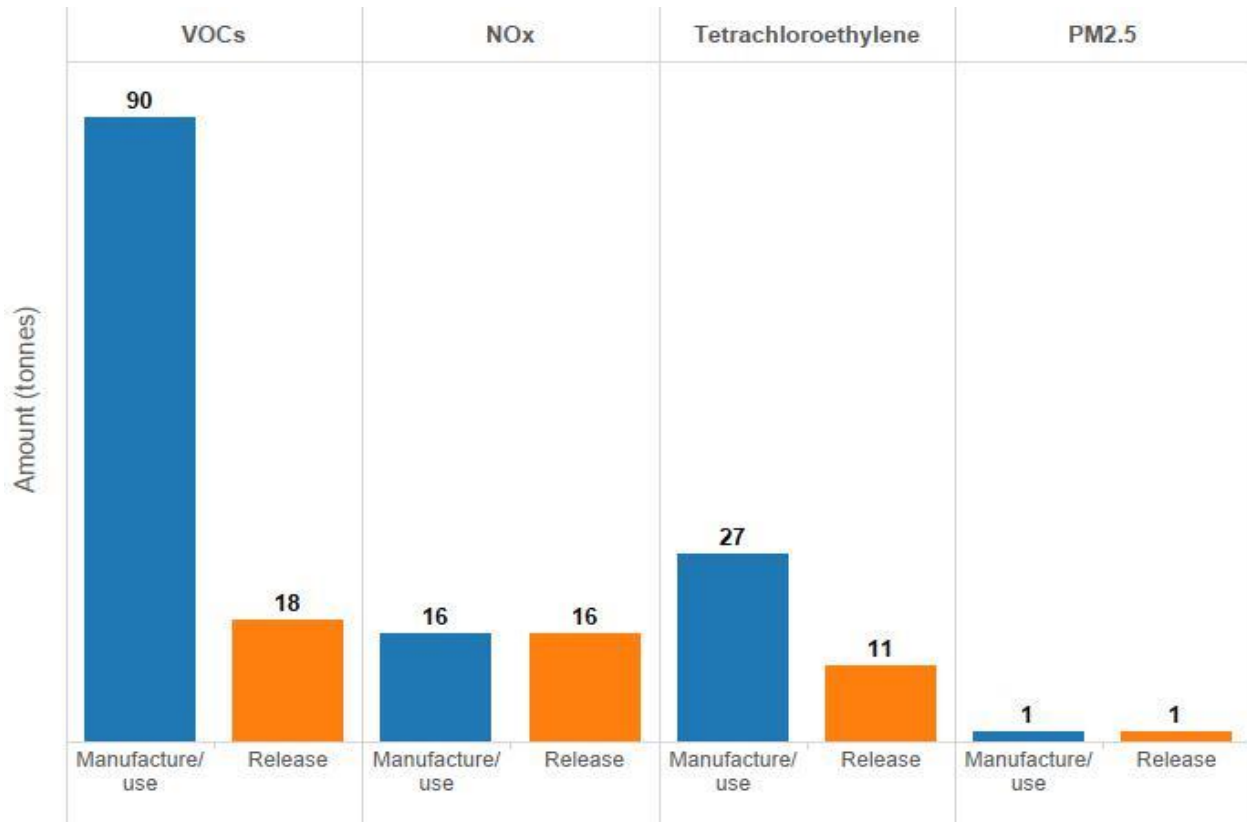
- Number of facilities that met the thresholds: 85
- Range in number of employees per facility: 1 to 240
- Total amount released: 45 tonnes
- Total amount manufactured, processed or used: 133 tonnes
- Number of priority substances reported: 4



Top substances reported are:

- Volatile organic compounds (VOCs)
- Nitrogen oxides (NOx)
- Tetrachloroethylene (Perchloroethylene)
- Particulate matter 2.5 (PM_{2.5})

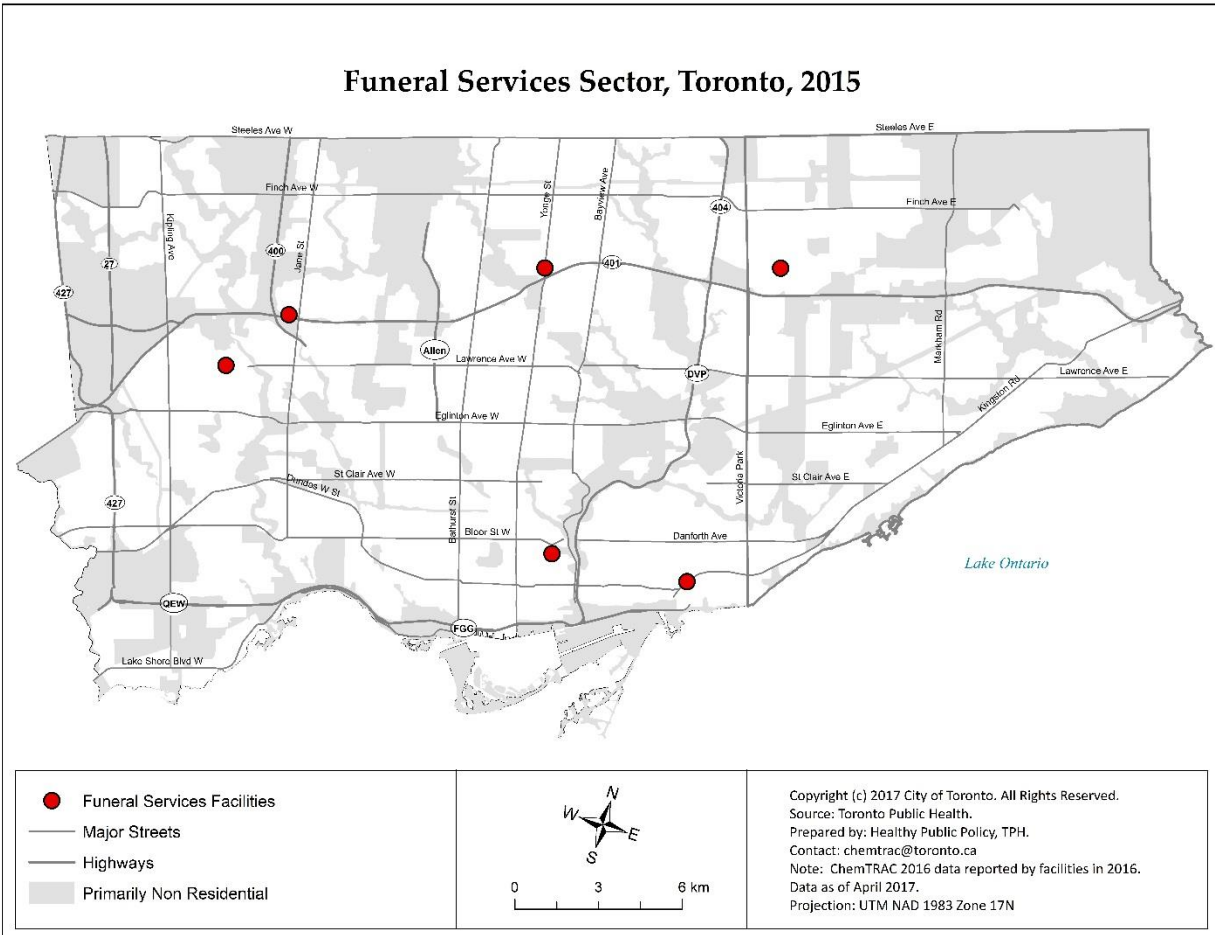
Figure 13: Amounts of substances reported by Dry Cleaning and Industrial Laundry facilities for 2015



Funeral Services

Types of activities: Funeral homes, cemeteries and crematoria

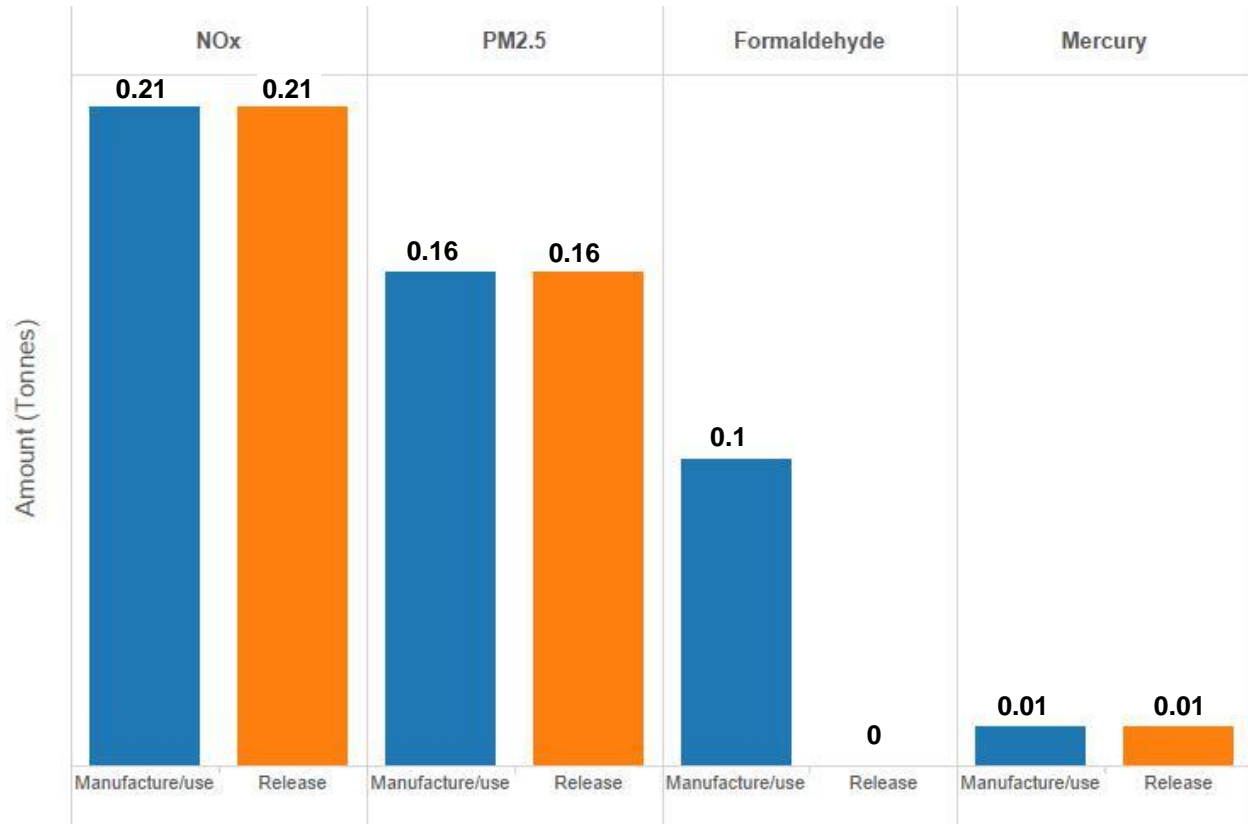
- Number of facilities that met the thresholds: 6
- Range in number of employees per facility: 5 to 25
- Total amount released: 0.4 tonnes
- Total amount manufactured, processed or used: 0.5 tonne
- Number of priority substances reported: 4



Top substances reported are:

- Nitrogen oxides (NO_x)
- Particulate matter 2.5 (PM_{2.5})
- Formaldehyde
- Mercury and its compounds

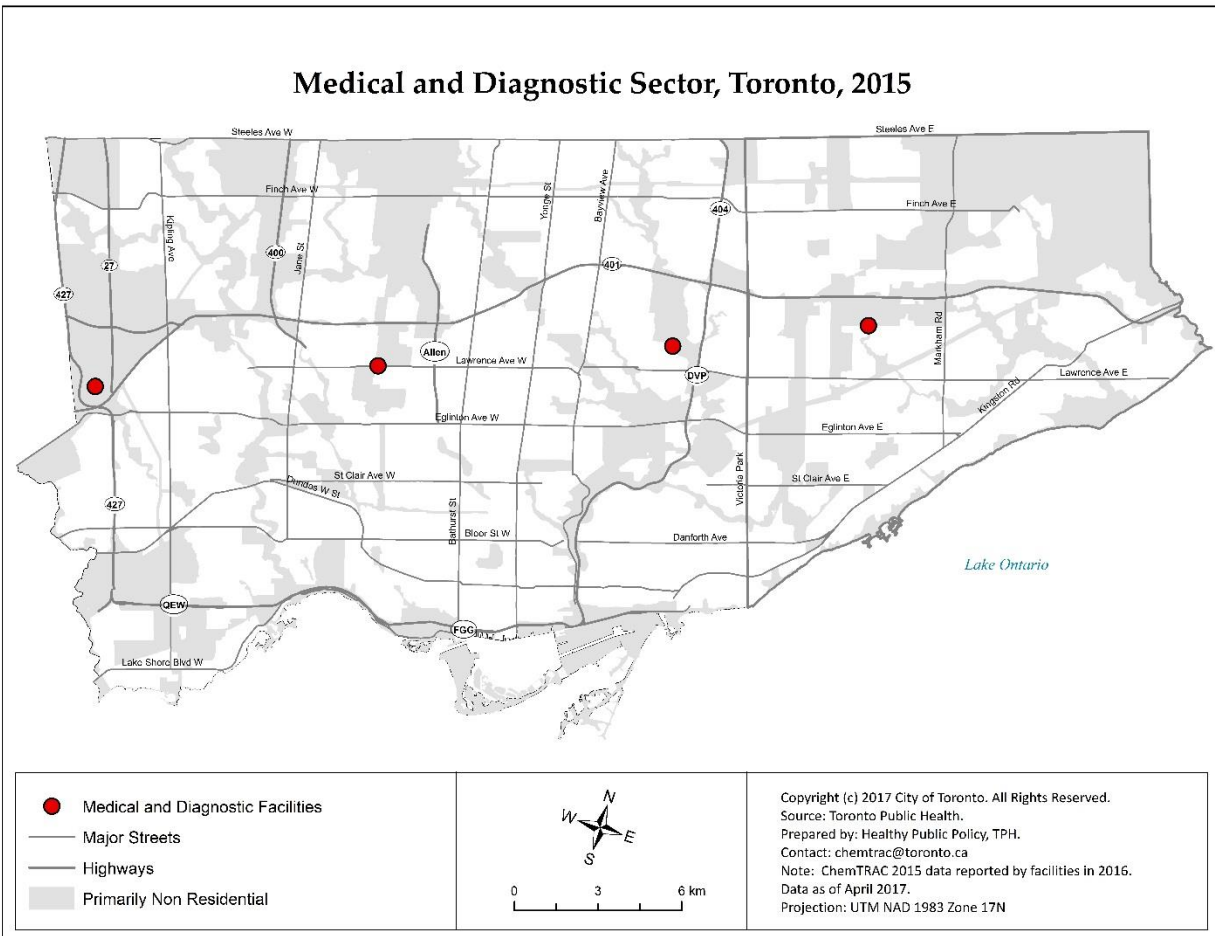
Figure 14: Amount of substances reported for Funeral Services in 2015



Medical and Diagnostic

Types of activities: Analytic or diagnostic services to the medical profession or patient on referral from a health practitioner.

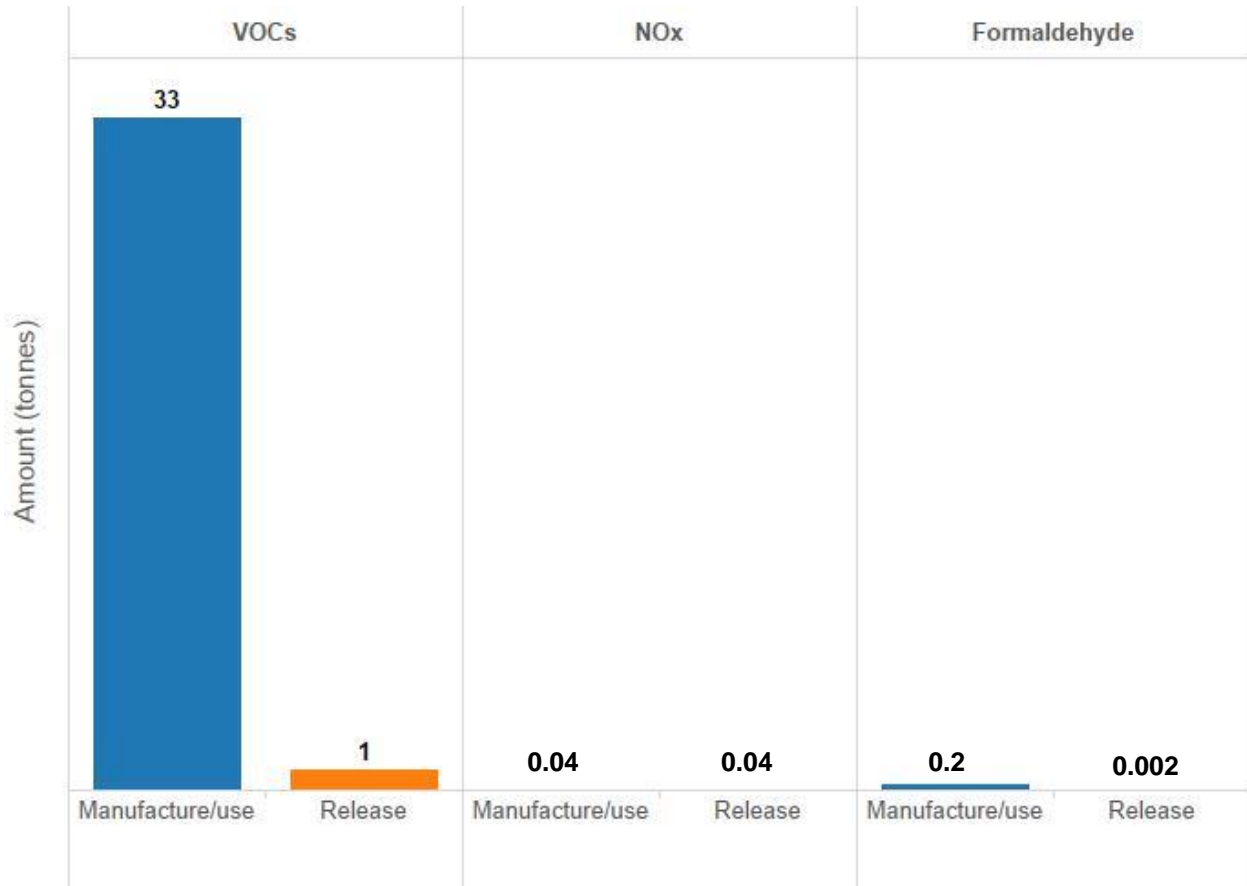
- Number of facilities that met the thresholds: 4
- Range in number of employees per facility: 13 to 600
- Total amount released: 1 tonnes
- Total amount manufactured, processed or used: 33 tonnes
- Number of priority substances reported: 3



Top substances reported are:

- Volatile organic compounds (VOCs)
- Nitrogen oxides (NOx)
- Formaldehyde

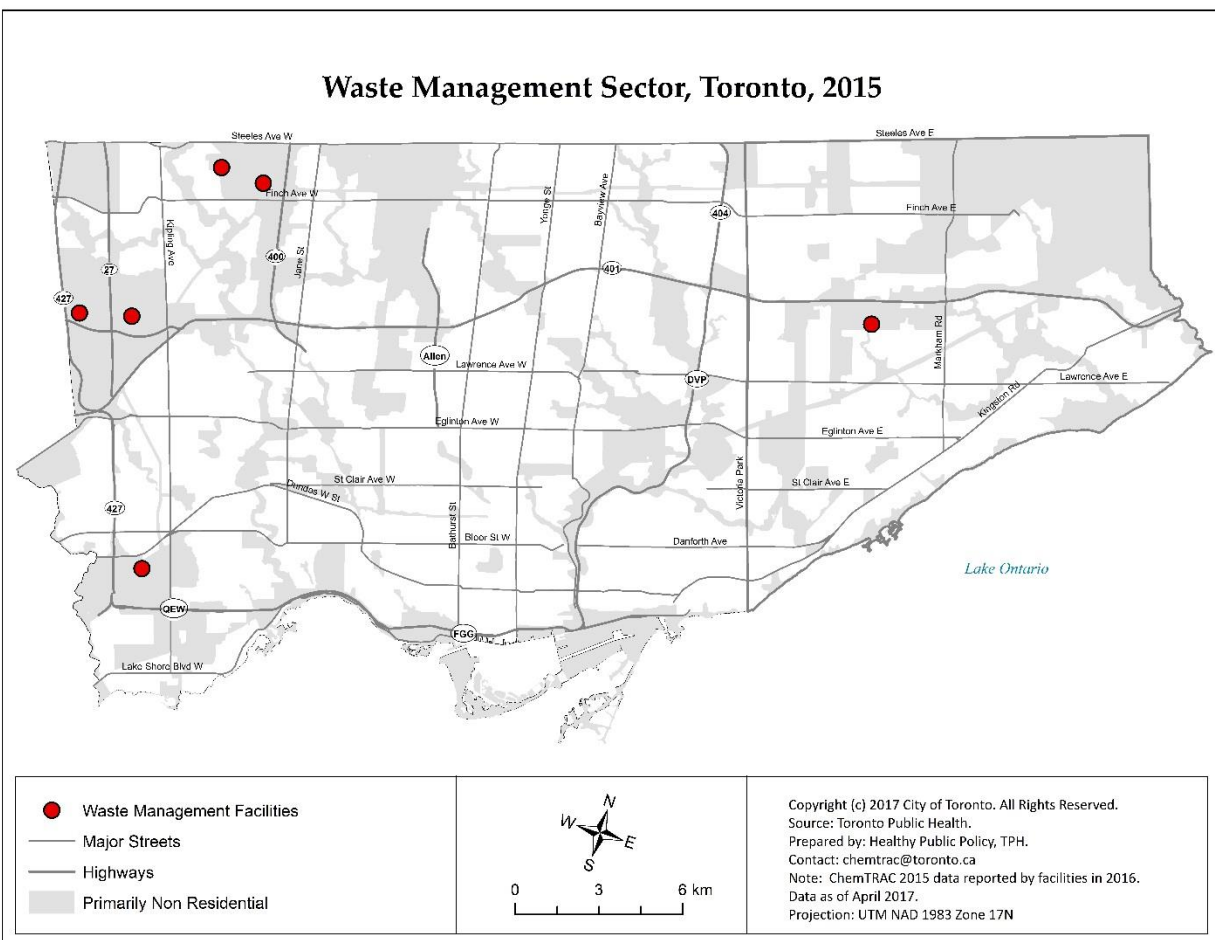
Figure 15: Amounts of substances reported by Medical and Diagnostic services for 2015



Waste Management and Remediation

Types of activities: Waste collection, treatment and disposal services, environmental remediation services, septic tank pumping services and recovery facilities.

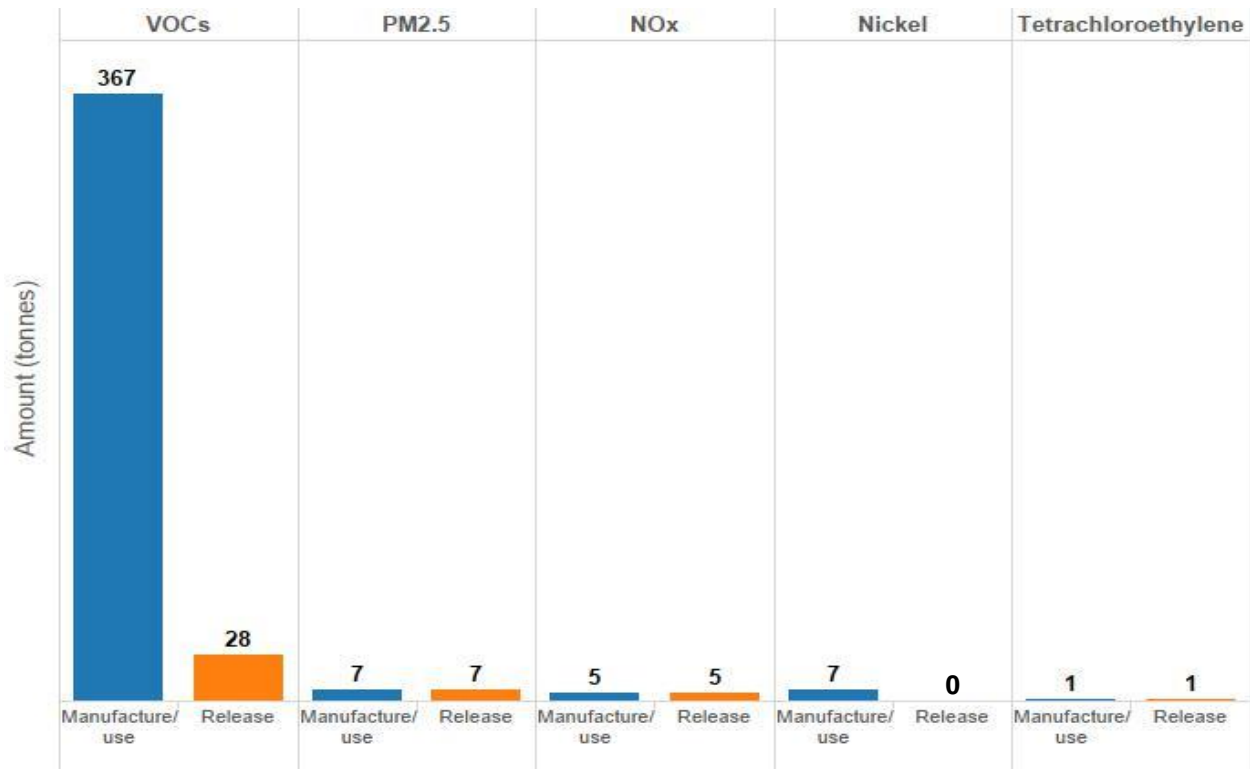
- Number of facilities that met the thresholds: 6
- Range in number of employees per facility: 1 to 193
- Total amount released: 40 tonnes
- Total amount manufactured, processed or used: 391 tonnes
- Number of priority substances reported: 12



Top substances reported are:

- Volatile organic compounds (VOCs)
- Particulate matter 2.5 (PM_{2.5})
- Nitrogen oxides (NO_x)
- Nickel
- Tetrachloroethylene

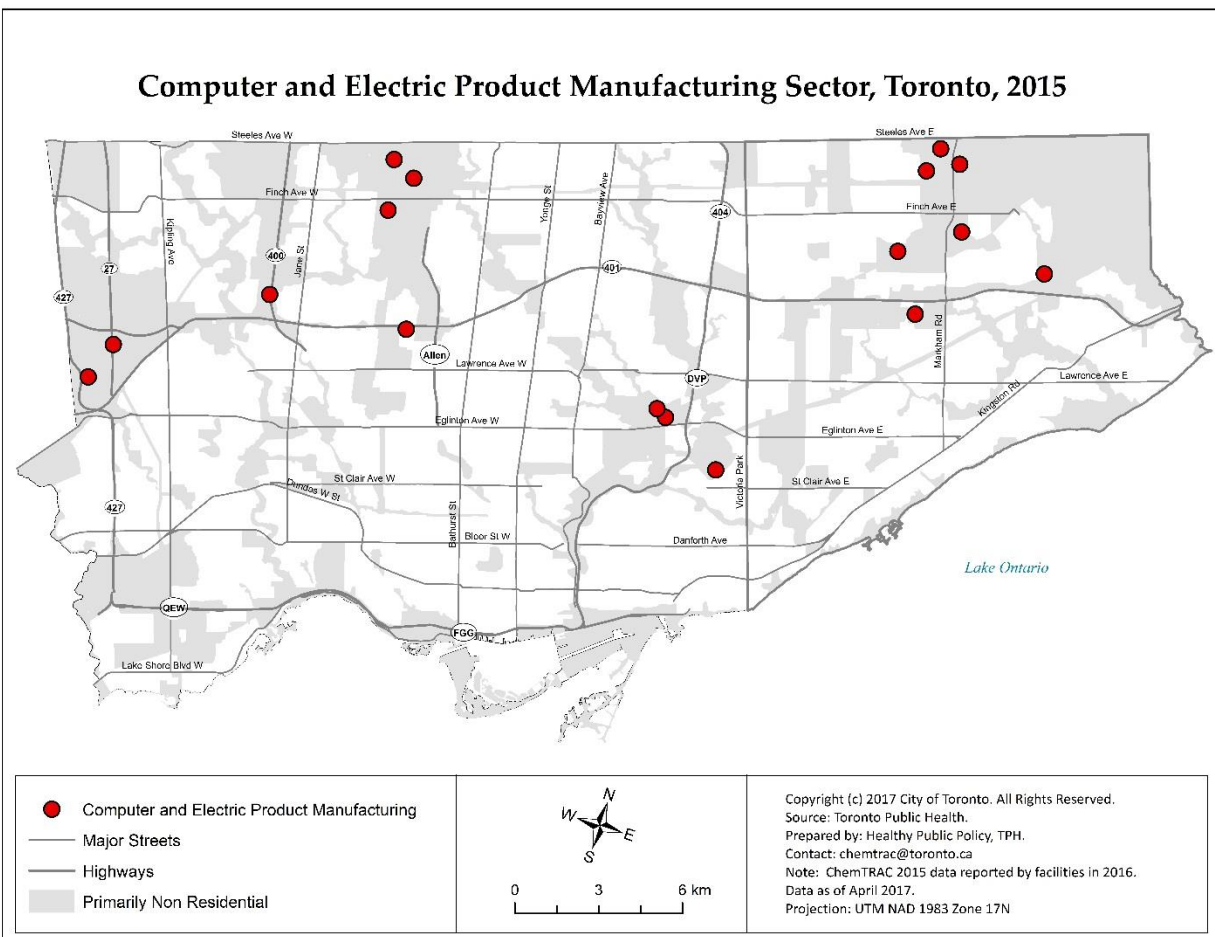
Figure 16: Amounts of substances reported by Waste Management facilities for 2015



Computer and Electric Product Manufacturing

Types of activities: Manufacture of computers, computer peripherals, and communications equipment.

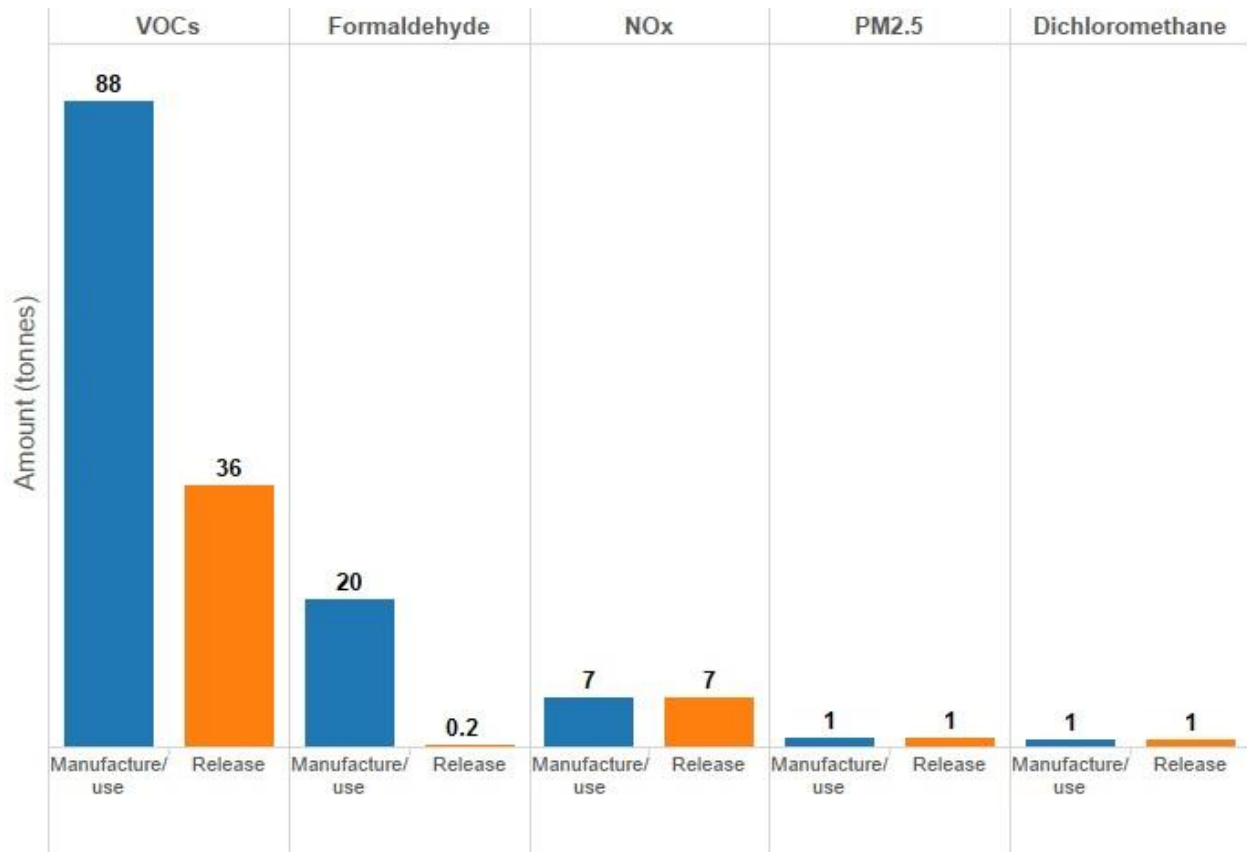
- Number of facilities that met the thresholds: 17
- Range in number of employees per facility: 1 to 800
- Total amount released: 45 tonnes
- Total amount manufactured, processed or used: 133 tonnes
- Number of priority substances reported: 9



Top substances reported are:

- Volatile organic compounds (VOCs)
- Formaldehyde
- Nitrogen oxides (NOx)
- Particulate matter 2.5 (PM_{2.5})
- Dichloromethane

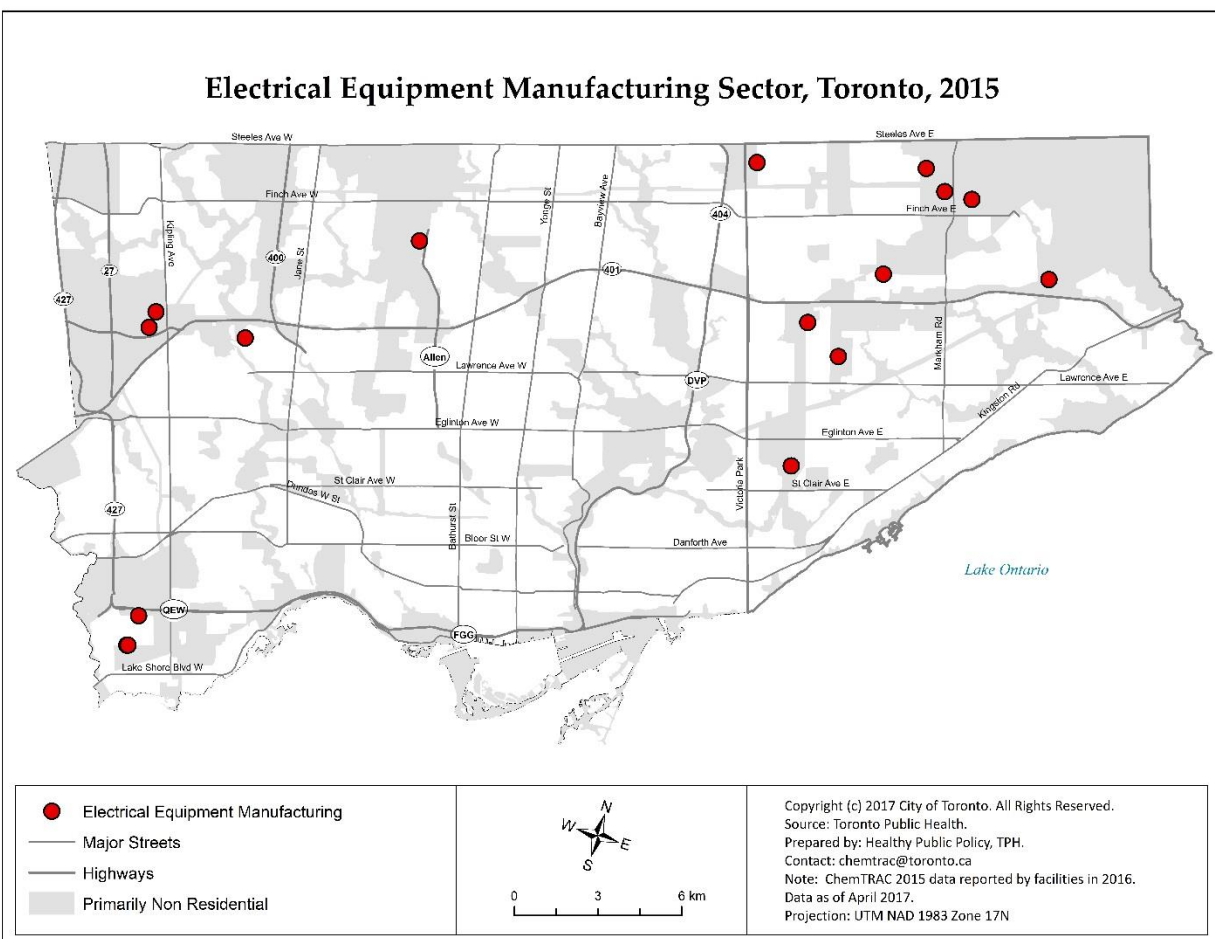
Figure 17: Amounts of substances reported by Computer and Electric Product Manufacturing facilities for 2015



Electrical Equipment, Appliance and Component Manufacturing

Types of activities: Manufacture of product that generate, use and distribute electrical power. Common activities include Metal cutting, metal processing, painting and welding.

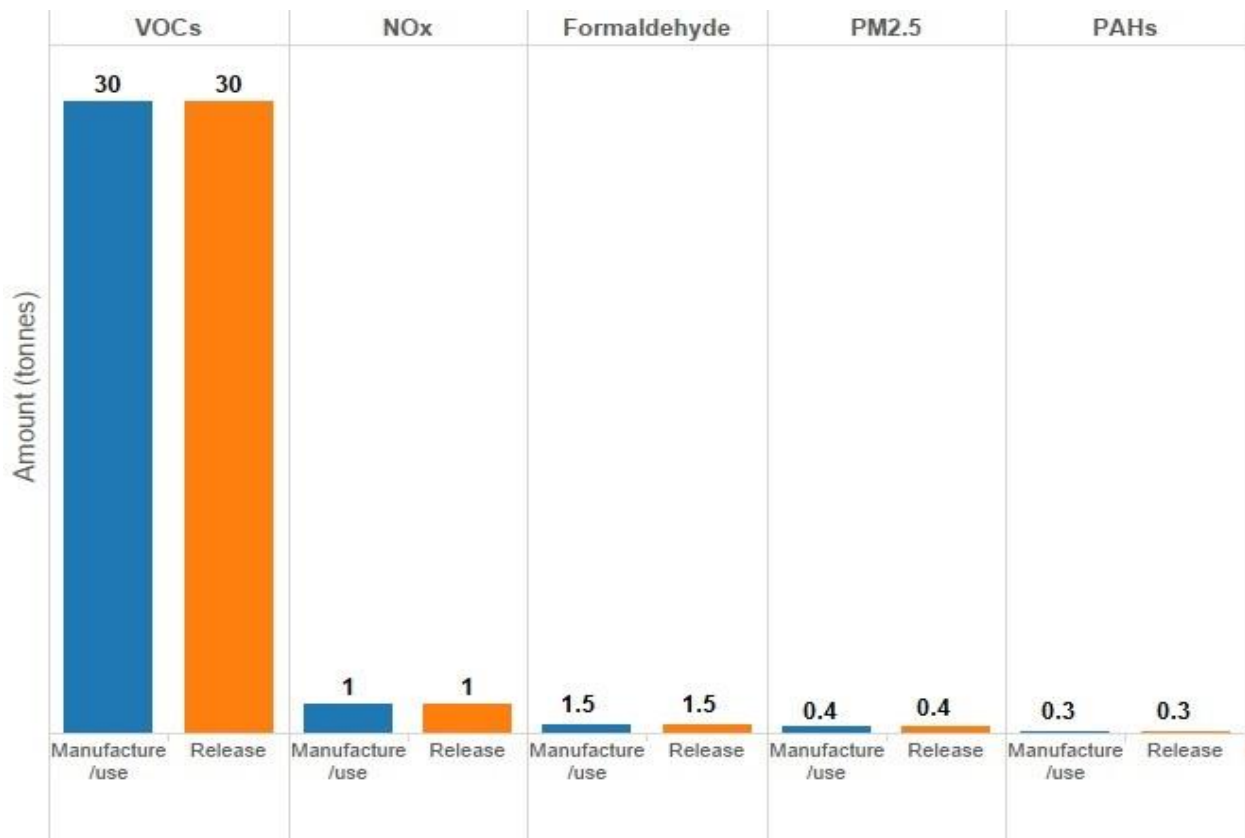
- Number of facilities that met the thresholds: 16
- Range in number of employees per facility: 3 to 320
- Total amount released: 32 tonnes
- Total amount manufactured, processed or used: 197 tonnes
- Number of priority substances reported: 10



Top substances reported are:

- Volatile organic compounds (VOCs)
- Nitrogen oxides (NOx)
- Formaldehyde
- Particulate matter 2.5 (PM_{2.5})
- Polycyclic aromatic hydrocarbons (PAHs)

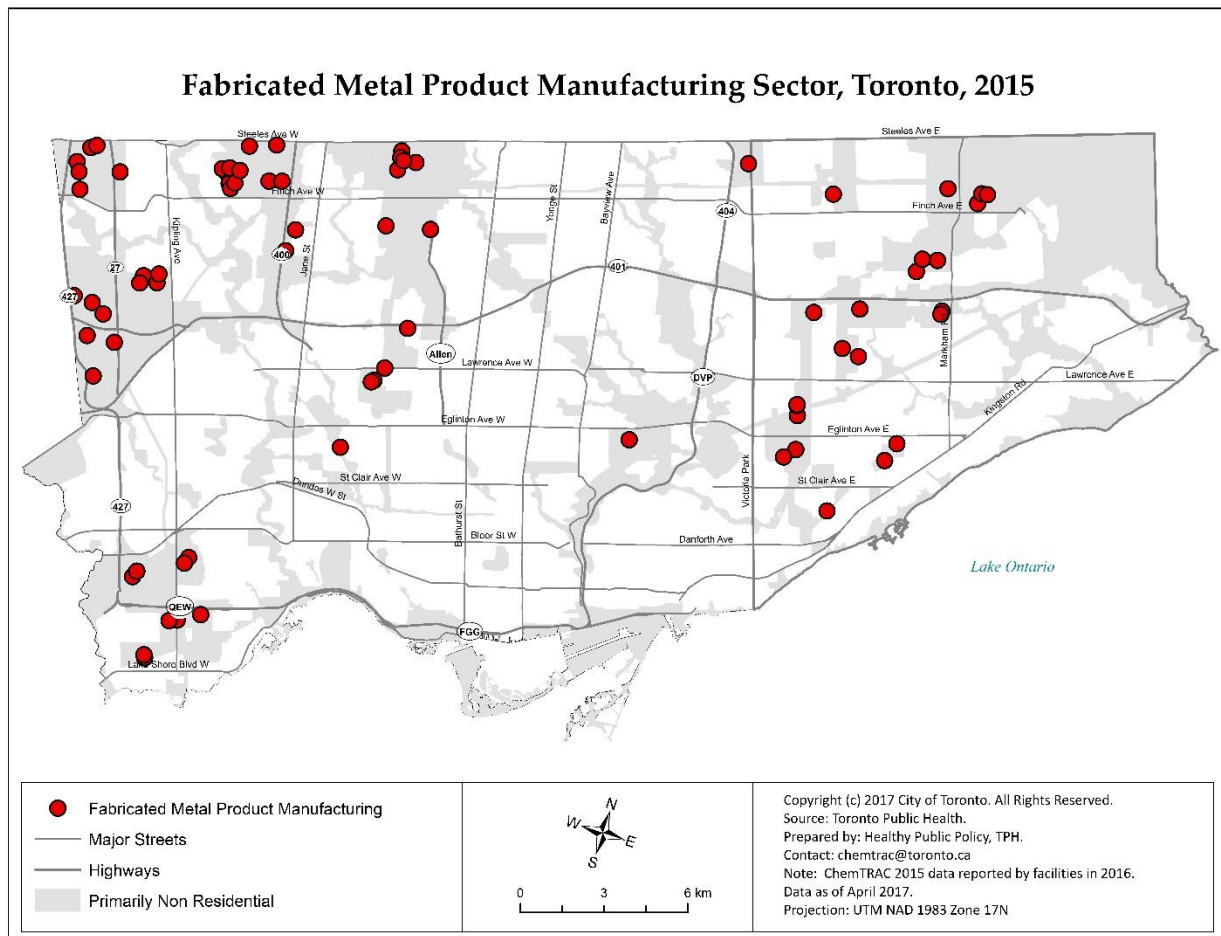
Figure 18: Amounts of substances reported by Electrical Equipment, Appliance and Component Manufacturing facilities for 2015



Fabricated Metal Product Manufacturing

Types of activities: Transformation of metal to end-use products by forging, stamping, bending, forming, machining, welding and assembling

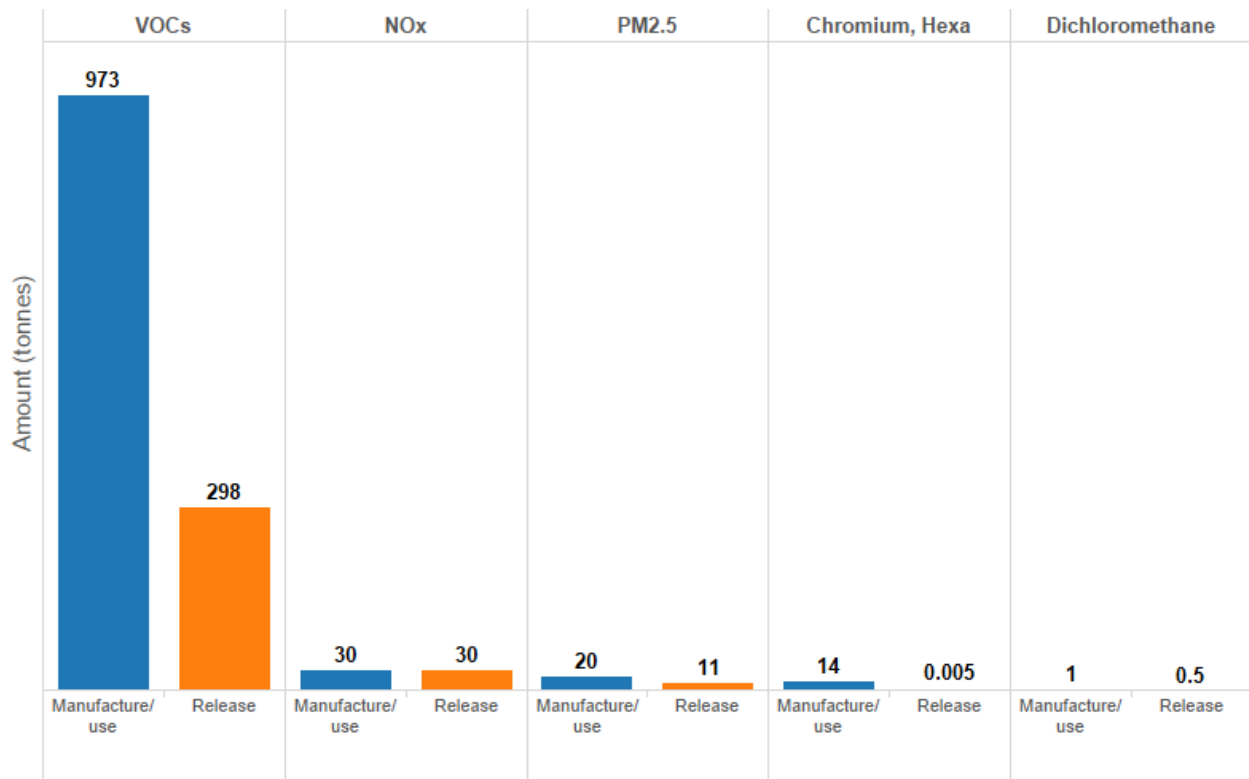
- Number of facilities that met the thresholds: 74
- Range in number of employees per facility: 1 to 293
- Total amount released: 341 tonnes
- Total amount manufactured, processed or used: 2,115 tonnes
- Number of priority substances reported: 12



Top substances reported are:

- Volatile organic compounds (VOCs)
- Nitrogen oxides (NOx)
- Particulate matter 2.5 (PM_{2.5})
- Chromium hexavalent
- Dichloromethane

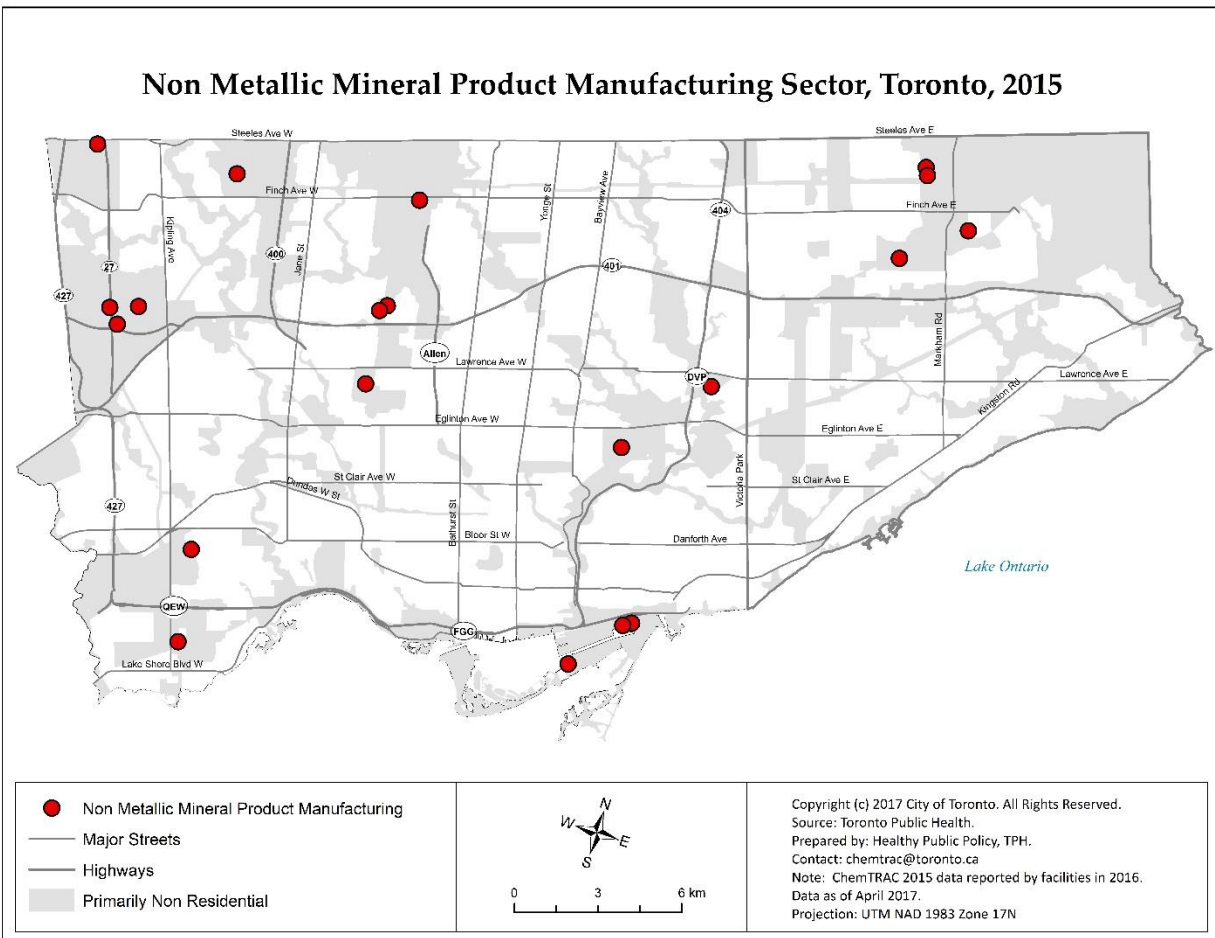
Figure 19: Amounts of substances reported by Fabricated Metal Product Manufacturing facilities for 2015



Non-Metallic Mineral Product Manufacturing

Types of activities: Transformers of mined or quarried non-metallic minerals, such as sand, gravel, stone, clay, and refractory materials into products for intermediate or final consumption. Processes used include grinding, mixing, cutting, shaping, and honing.

- Number of facilities that met the thresholds: 21
- Range in number of employees per facility: 1 to 200
- Total amount released: 187 tonnes
- Total amount manufactured, processed or used: 661 tonnes
- Number of priority substances reported: 8

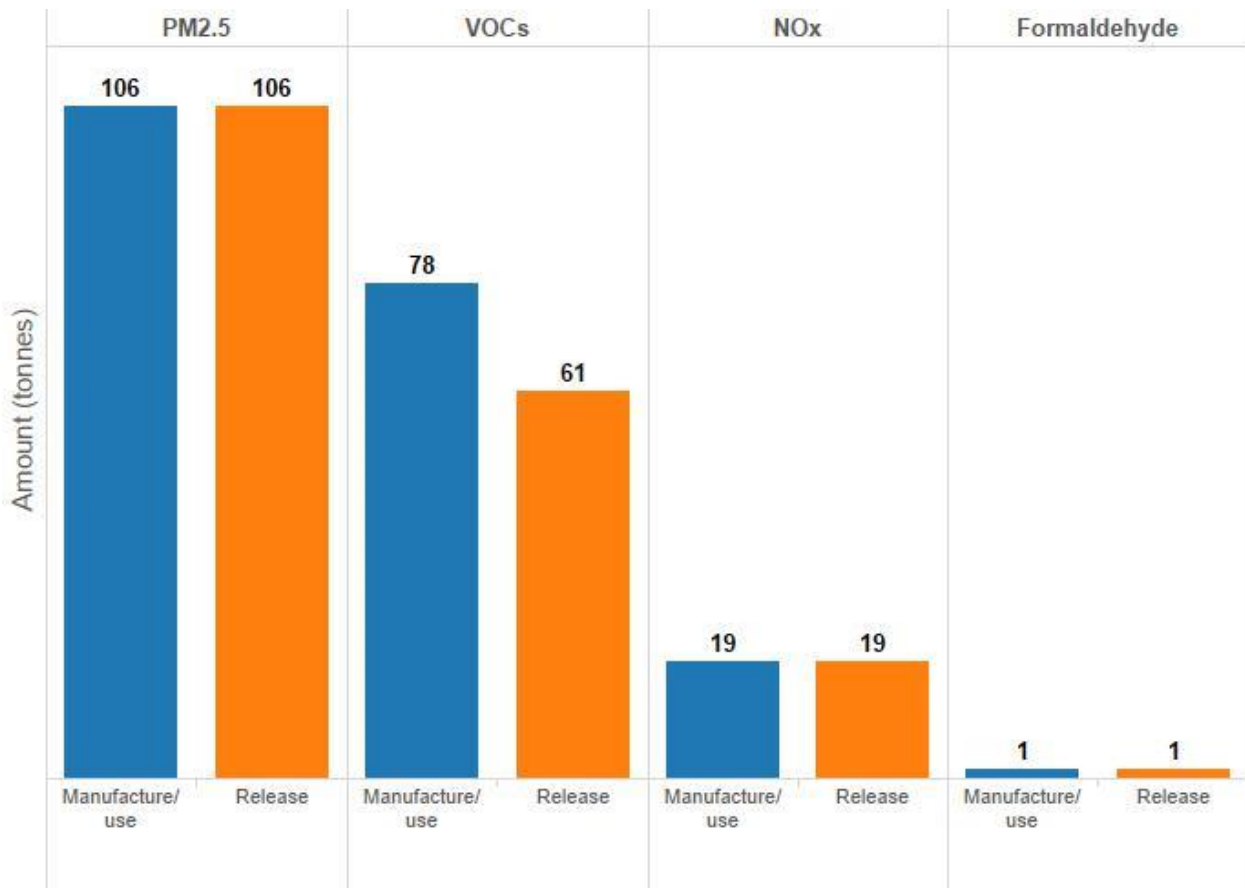


Top substances reported are:

- Particulate matter 2.5 (PM_{2.5})
- Volatile organic compounds (VOCs)
- Nitrogen oxides (NO_x)
- Formaldehyde

Figure 20: Amounts of substances reported by Non-Metallic Mineral Product Manufacturing facilities for 2015

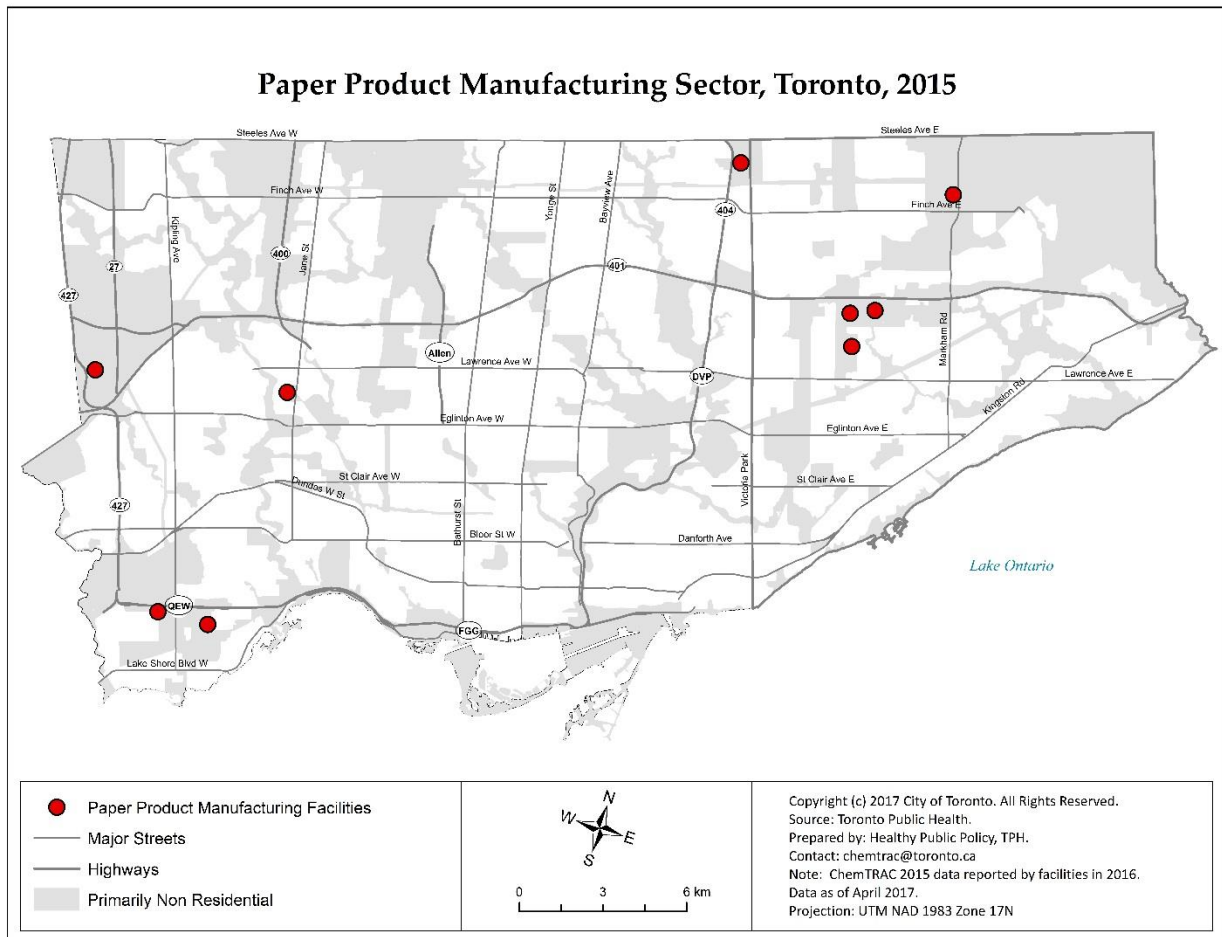
paper



Paper Product Manufacturing

Types of activities: Manufacturer pulp, paper and paper products. The manufacture of pulp involves separating the cellulose fibres from other impurities in wood, used paper or other fibre sources. The manufacture of paper involves matting these fibres into a sheet. Converted paper products are produced from paper and other materials by various cutting and shaping techniques.

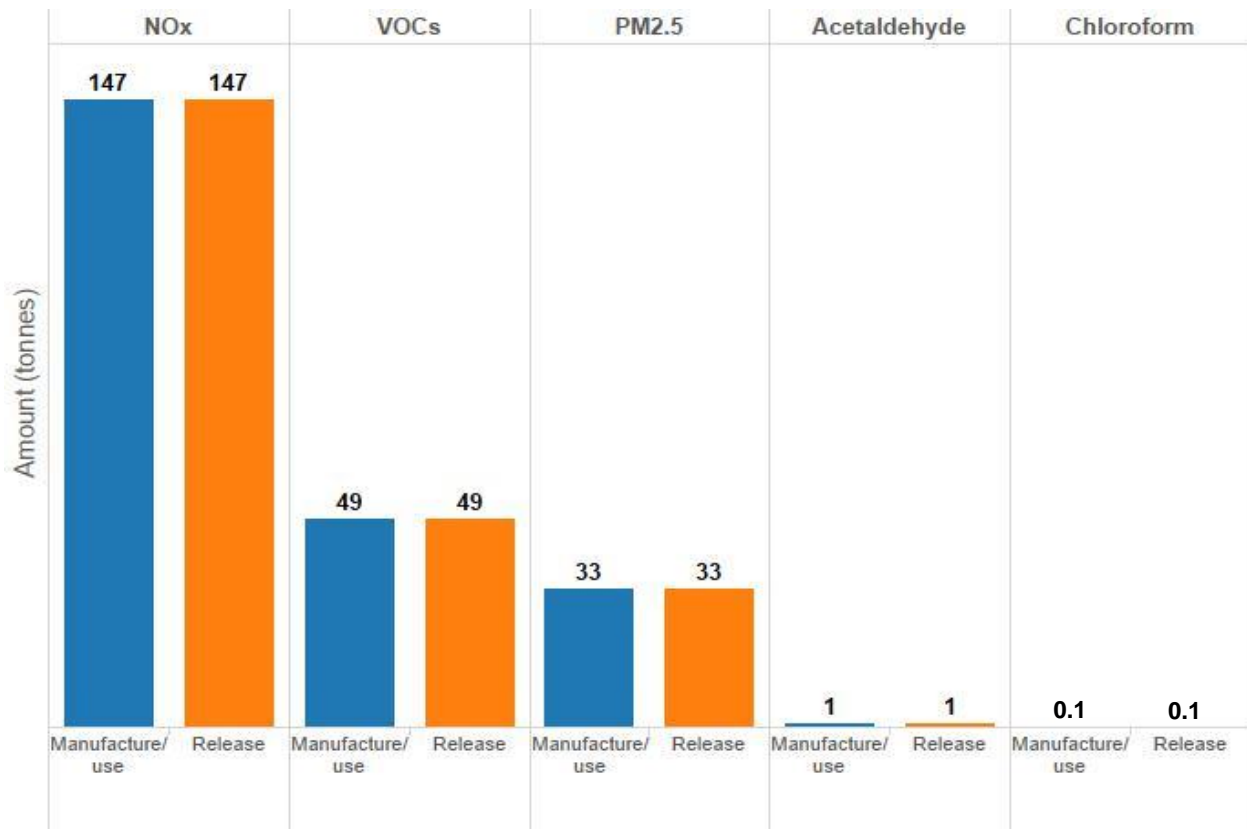
- Number of facilities that met the thresholds: 9
- Range in number of employees per facility: 6 to 457
- Total amount released: 230 tonnes
- Total amount manufactured, processed or used: 230 tonnes
- Number of priority substances reported: 6



Top substances reported are:

- Nitrogen oxides (NOx)
- Volatile organic compounds (VOCs)
- Particulate matter 2.5 (PM_{2.5})
- Acetaldehyde
- Chloroform

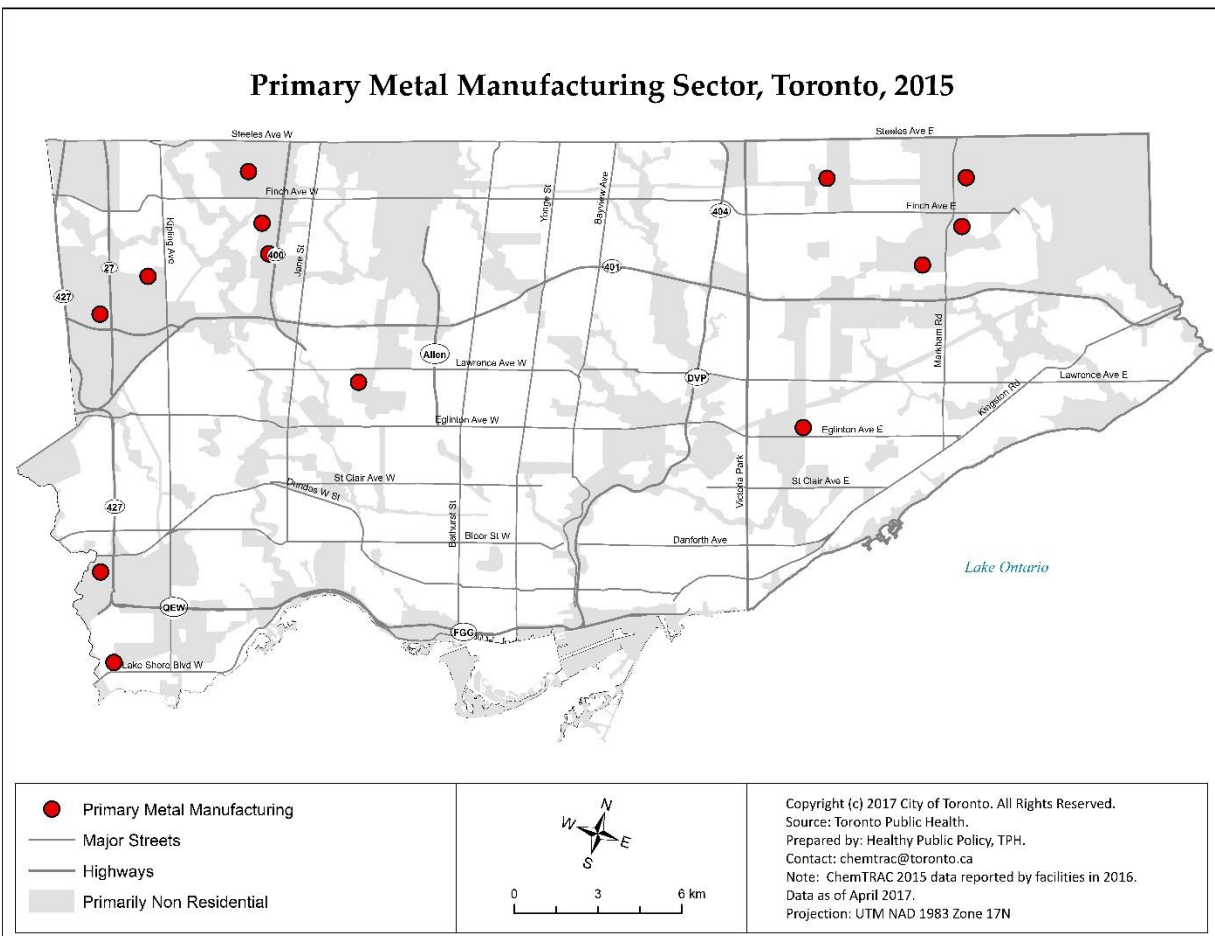
Figure 21: Amounts of substances reported by Paper Product Manufacturing facilities for 2015



Primary Metal Manufacturing

Types of activities: Primarily engaged in smelting and refining ferrous and non-ferrous metals from ore, pig or scrap in blast or electric furnaces. The output of smelting and refining is used in rolling and drawing operations to produce sheet, strip, bars, rods and wire, and in molten form to produce castings and other basic metal products.

- Number of facilities that met the thresholds: 13
- Range in number of employees per facility: 6 to 350
- Total amount released: 59 tonnes
- Total amount manufactured, processed or used: 600 tonnes
- Number of priority substances reported: 10



Top substances reported are:

- Nitrogen oxides (NOx)
- Particulate matter 2.5 (PM_{2.5})
- Volatile organic compounds (VOCs)
- Nickel
- Lead

Figure 22: Amounts of substances reported by Primary Metal Manufacturing facilities for 2015

