

STEP BY STEP GUIDELINE
FOR
EMISSION CALCULATION, RECORD KEEPING
AND REPORTING
FOR
AIRBORNE CONTAMINANT DISCHARGE

ONTARIO MINISTRY OF THE ENVIRONMENT

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Glossary

“by-product” is a substance listed in Table 2A, 2B or 2C in the Guideline, that is incidentally manufactured, processed or otherwise used at the facility and is released on-site to the environment or transferred off-site for disposal.

“CAS number” stands for Chemical Abstracts Service Registry number assigned to the contaminant, referenced in the Guideline. The CAS information is the property of the American Chemical Society and any use or redistribution, except as required in supporting regulatory requirements and/or for reports to the government when the information and the reports are required by law or administrative policy, is not permitted without the prior, written permission of the American Chemical Society.

“criteria air contaminants” (CACs) are: oxides of nitrogen (NO_x), sulphur dioxide (SO₂), volatile organic compounds (VOCs), carbon monoxide (CO), and particulate matter (PM) including PM₁₀ (particulate matter with a diameter less than or equal to 10 micrometers) and PM_{2.5} (particulate matter with a diameter less than or equal to 2.5 micrometers).

“coating material” includes paints, lacquers, enamels, varnishes, urethanes, polishes, sealers, vinyls and other materials that are used in surface coating operations for decorative or protective purposes, but does not include printing ink.

“Director” is the Director of the Environmental Monitoring and Reporting Branch, Ontario Ministry of the Environment, 125 Resources Road, Toronto, Ontario, M9P 3V6.

“discharge” when used as a verb, means add, deposit, leak or emit to the atmosphere, and when used as a noun, means addition, deposition, emission or leak to the atmosphere.

“discharge unit” means a device, or a group of devices that operate together in such a manner that one device cannot function independently of the other devices in the unit, and that discharges or has the potential to discharge a contaminant into the air.

“emissions” include stack or point emissions to air, fugitive emissions to air, storage or handling emissions to air, emissions to air from spills, and other non-point emissions to air.

“emissions monitoring system” includes a suite of options: continuous emission monitoring system or other methods including, but not limited to, the methods described in the Guideline. Other methods include, but are not limited to, predictive emission monitoring system, mass balance, emission factors, emission estimation model and engineering calculations which provide accuracy typically obtained through source testing conducted in accordance with the Ontario Source Testing Code, or better.

“facility” includes all buildings, equipment, structures and stationary items, such as surfaces and storage piles, that,

- (a) are located on a single site, or
- (b) are located on two or more contiguous or adjacent sites that are owned or operated by the same person and function as a single integrated site.

“fugitive emissions” are the total of all emissions to air that are not emitted through confined process streams. These emissions include: fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; evaporative losses from surface impoundments and spills; emissions from building ventilation systems; and any other fugitive or non-point air emissions from land treatment, mine tailings, storage piles, road dust, etc.

“generation facility” means a facility that is a generation facility as defined in subsection 2 (1) of the Electricity Act, 1998 but does not include a generation facility that has a generating capacity of 1 megawatt or less or that sells 10 per cent or less of its total electricity generated to the IMO-administered markets as defined in that subsection.

“generation unit” means a unit that is used to generate electricity.

“Guideline” means the Ministry of the Environment publication entitled “Step by Step Guideline for Emission Calculation, Record Keeping and Reporting for Airborne Contaminant Discharge” and dated April 2001, as amended from time to time.

“hours of labour” is the total number of hours worked, including paid vacation and sick leave. Owners, students, part-time and contract employees are included in this calculation. This calculation depends specifically on the number of hours worked by all employees at the facility during the calendar year and not on the number of persons working. 10 “full-time employees” is equivalent to 20,000 hours worked.

“Independent Market Operator (IMO) - administered markets” means the markets established by the market rules made under Section 32 of the *Electricity Act, 1998*.

“manufacture” means to produce, prepare or compound a substance (in Table 2B or 2C). It also includes the incidental production of a substance as a *by-product* resulting from the manufacture, processing or other use of other substances. The production of chlorine dioxide by a chemical plant is an example of manufacturing. The production of hydrochloric acid during the manufacture of chlorofluorocarbons is an example of incidental production.

“MPO” means manufacture, process or otherwise use.

“name plate capacity” means,

- (a) with respect to a discharge unit, the total designed energy input capacity of the discharge unit, including but not limited to the energy input from fuel, steam, electricity, heat of chemical reactions and process materials, and
- (b) with respect to a facility, the total of the name plate capacities of all the discharge units in the facility.

“other non-point emissions” are any other non-point air emissions not estimated in one of the emission types listed under the term “emissions”.

“other use” and “otherwise used” encompass any use of a substance at a facility that does not fall under the definitions of “manufacture” or “process”. This includes the use of the substance as a chemical processing aid, manufacturing aid or some other ancillary use. The use of trichloroethylene in the maintenance of equipment used for manufacturing and processing is considered an “other use”. “Other use” does not include routine janitorial or facility grounds maintenance.

“oxides of nitrogen” includes nitric oxide and nitrogen dioxide, but does not include nitrous oxide.

“portable facility” means a facility that can be entirely relocated for operation, including portable polychlorinated biphenyls (PCB) destruction equipment, or an asphalt or concrete plant.

“process” means the preparation of a substance (in Tables 2B or 2C), after its manufacture, for distribution in commerce. Processing includes preparation of a substance with or without changes in physical state or chemical form. The term also applies to the processing of a mixture or formulation that contains a substance as one component, as well as the processing of “articles”. The use of chlorine to manufacture hypochloric acid is an example of the processing of chlorine. The use of toluene and xylenes to blend paint solvent mixtures is an example of processing without changes in chemical form.

“printing ink” is ink that is used in the printing processes (web offset lithography, web letterpress, rotogravure, flexography and screen printing, etc.). Printing is a coating operation which results in an image or design on the substrate. Printing inks generally consist of 3 major components: pigments, binders and solvents. The binder and solvent make up the “vehicle” part of the ink and the solvent will evaporate from the ink into the atmosphere during the drying process.

“quarter” means a period of three consecutive months that begins on January 1, April 1, July 1 or October 1 of any year.

“smog period” means the period from May 1 to September 30.

“solvent” means any volatile organic compound that is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent or for a similar purpose.

“spills” are any accidental emissions to air that do not qualify as point or non-point air emissions.

“stack or point emissions” are total air emissions from stack or point sources including stacks, vents, ducts, pipes or other confined process streams. Emissions to air from pollution-control equipment generally fall into this category.

“storage or handling emissions” are the quantity of emissions to air from storage or the handling of a contaminant listed in Table 2A, 2B or 2C.

Step by Step Guideline

1 INTRODUCTION

This document is intended to assist members of the regulated community in determining how to satisfy the requirements of Ontario Regulation (O.Reg. 127/01) entitled “Airborne Contaminant Discharge - Monitoring and Reporting”, which became law on May 1, 2001 pursuant to the Environmental Protection Act (EPA). Step by step procedures for calculating emissions, record keeping and reporting of annual, smog season, and quarterly emissions are also presented in this document.

In this Guideline, the terms “emission” and “discharge to air” will be used interchangeably with “airborne contaminant discharge”.

Also, all references to “the regulation” mean O.Reg. 127/01.

O.Reg. 127/01 covers air contaminants. The list of contaminants was developed by a group of technical experts, comprised of ministry staff from the Environmental Sciences and Standards Division, the Operations Division and the Integrated Environmental Planning Division. Contaminants were included based on various domestic, transboundary and international environmental programs, including the MOE Air Standards/Guidelines, the Air Standards Plan, the Great Lakes Commission (GLC) Regional Air Toxic Emissions Program, the Canada-Ontario Agreement (COA) Tier I and II, Electricity Sector Reporting, the Anti-Smog Action Plan, the Acid Rain Program, the Inhalable Particulate/Respirable Particulate (IP/RP) Program, the Climate Change Program and the Air Toxics Program, as well as Environment Canada’s National Pollutant Release Inventory (NPRI).

The contaminants have been divided into three lists, which appear as Tables 2A, 2B and 2C to this Guideline.

Table 2A lists 11 contaminants comprised of criteria air contaminants and greenhouse gases, which have release based reporting thresholds (see Section 2.2).

Table 2B lists 75 contaminants with graded MOE manufactured, processed or otherwise used (MPO) reporting thresholds (see Section 2.3).

Table 2C lists contaminants which are common to the NPRI list and have the same reporting criteria as NPRI (see Section 2.4).

The list of contaminants includes both individual contaminants (e.g., toluene) as well as contaminant groups/compounds (e.g., VOC). The public should exercise caution in aggregating contaminant emissions. For example, toluene should not be summed with

total VOC since the total VOC value should already include toluene. Similar caution should apply to other contaminant groups/compounds such as xylene, mineral spirits, glycol ethers, dioxins and furans.

The regulation requires the calculation and reporting of air emissions if specific criteria are met by the various facilities set out in Table 1 of this Guideline. Those criteria are set out in the regulation, and discussed in Section 2 of this Guideline.

Facility owners and operators are required to ensure that certain reports are submitted under the regulation, and that those reports are accessible, without charge, to the public. That obligation can be met by making the report available at the facility's business premises, or electronically through the internet, and requires that reports be retained and accessible for at least seven years after the day the report is required to be submitted.

Owners and operators need to communicate with each other to ensure the requirements are met.

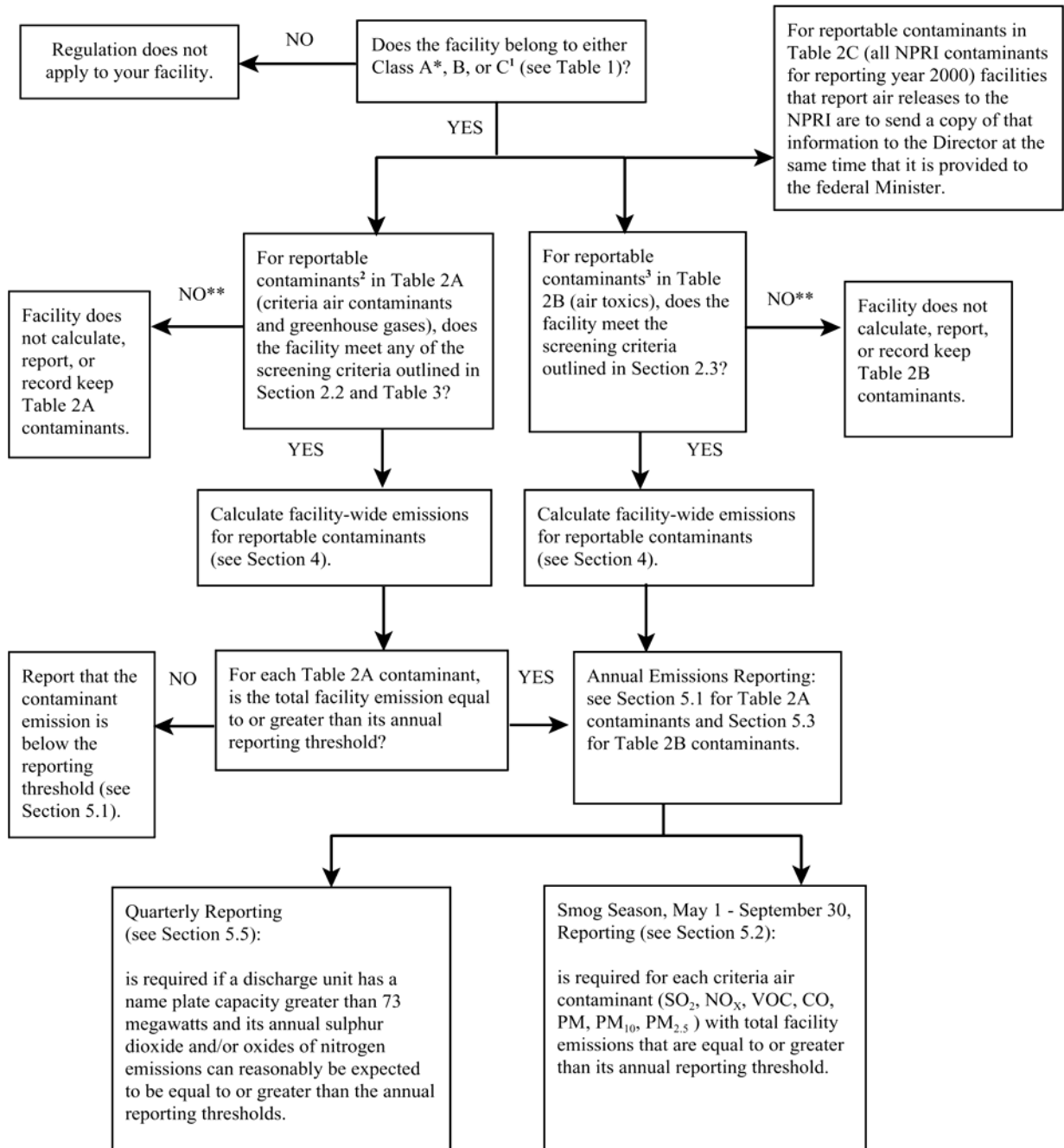
Annual reporting is required for contaminants in Tables 2A, 2B, and 2C if the respective reporting criteria are met (see Sections 5.1, 5.3 and 5.4 for assistance on determining what contaminants are reportable). For criteria air contaminants, smog season reporting is required in addition to annual reporting (see Section 5.2). NO_x and SO₂ are contaminants of particular significance to domestic and transboundary problems such as smog and acid rain. There are additional reporting criteria outlined in Section 5.5 of the Guideline for NO_x and SO₂ which call for facilities that meet the reporting criteria to report quarterly NO_x and/or SO₂ emissions using an emission monitoring system.

Persons reporting under this regulation are expected to use due diligence to comply with the requirements of the regulation. For the purpose of reporting under this regulation, it is intended that for any given contaminant with emissions that are equal to or greater than the reporting threshold, at least 95 percent of the total facility emissions are accounted for.

The contents of this Guideline and the associated tables may change from time to time due to MOE review. When this happens, notice of amendment will be published in *The Ontario Gazette*, or in the registry under the *Environmental Bill of Rights*.

Figure 1 of this document provides a quick reference of the reporting requirements under the regulation.

FIGURE 1: QUICK REFERENCE FOR REPORTING



¹ If the facility belongs to Class C, the gathering of emission data will begin on January 1st 2002.
² Consult process and sector specific substance lists (Appendices B, C, and D) to determine reportable contaminants common to Table 2A.
³ Consult process and sector specific substance lists (Appendices B, C, and D) to determine reportable contaminants common to Table 2B.
 * For Class A, this regulation does not apply to a generation facility that has a generating capacity of 1 megawatt or less or that sells 10 percent or less of its total electricity generated to the IMO-administered markets.
 ** For Class A, generation facilities that do not meet the criteria outlined here must still report the parameters listed in Section 1 and 1.1 of Table 5.

2 REPORTING CRITERIA

The “Airborne Contaminant Discharge - Monitoring and Reporting” regulation came into effect on May 1, 2001. Its application to the various facilities covered is phased-in.

2.1 Phasing of Application

Phase I began on May 1, 2001 and required that facilities described in Classes A and B (Table 1) monitor and report in accordance with the regulation.

Phase II began on January 1, 2002 and requires that facilities described in Classes A, B and C (Table 1) monitor and report in accordance with the regulation.

This regulation does not apply to evaporative emissions from a vehicle as defined in the *Highway Traffic Act* or contaminants emitted from the exhaust system of a vehicle as defined in the *Highway Traffic Act*.

2.2 Reporting Criteria for Criteria Air Contaminants and Greenhouse Gases Listed in Table 2A

The regulation requires that the owner and operator of a facility to which this section applies is required to calculate the air emissions of contaminants listed in Table 2A of the Guideline during a calendar year if any one or more of the following criteria are satisfied:

1. The facility can reasonably be expected to use coal, refuse, wood or waste oil as fuel at any time during the year.
2. The facility can reasonably be expected to have, at any time during the year, a name plate capacity of greater than 3 million British Thermal Units per hour.
3. The facility can reasonably be expected to use 3,000 kilograms or more of solvents during the year.
4. The facility can reasonably be expected to use 3,000 kilograms or more of coating materials during the year.
5. The facility can reasonably be expected to use 3,000 kilograms or more of printing ink during the year.
6. The facility can reasonably be expected to use 5,000 kilograms or more of welding rods or welding wires during the year.

Table 3 to this Guideline outlines the criteria and applicability of this provision for various facilities by sector. Industrial sectors that are identified with "NA" in one or more columns for the screening criterias in Table 3, should proceed to calculate emissions of reportable contaminants regardless of the criteria listed above.

Facilities that meet any one or more of the above requirements should proceed to consult Sections 3 and 4 of the Guideline for assistance in identifying reportable contaminants and general procedures for calculating emissions. Section 5 should be consulted for direction on reporting annual (see Section 5.1), smog season (see Section 5.2), and quarterly emissions (see Section 5.5), as required. Section 6 provides direction on record keeping provisions.

2.3 Reporting Criteria for Contaminants with MOE Graded MPO Thresholds Listed in Table 2B

Owners and operators of facilities must ensure that air emissions of contaminants in Table 2B are monitored and reported for the calendar year if the contaminant is manufactured or processed or otherwise used at a facility during the year and both of the following criteria are satisfied:

1. The facility can reasonably be expected to employ or engage persons who will together work a total of 20,000 hours or more during the year.
2. The contaminant can reasonably be expected to be manufactured or to be processed or otherwise used at the facility during the year in an amount equal to or greater than the threshold amount for the contaminant set out in Table 2B to the Guideline.

The amount of a contaminant that "can reasonably be expected to be manufactured or to be processed or otherwise used" at a facility during the calendar year shall be determined by including the amount of the contaminant that was manufactured at the facility at a concentration greater than or equal to 1% by weight (with the exception of contaminants considered to be by-products) and the amount of the contaminant that was processed or otherwise used at the facility at a concentration greater than or equal to 1% by weight (with the exception of contaminants considered to be by-products). If the contaminant is a by-product, its total weight at any concentration must be included. Care must be taken to avoid double counting in situations where a contaminant is both an input to a process and a manufactured product at the facility.

For assistance in calculating and reporting the total quantities of Table 2B contaminants that are manufactured or processed or otherwise used, including by-products, please refer to the NPRI¹⁶ guideline document and see Section 5.3 of the Guideline for further details.

2.4 Reporting Criteria for Contaminants with NPRI Thresholds Listed in Table 2C

If, pursuant to a notice published under Section 46 of the *Canadian Environmental Protection Act, 1999* (Canada) in connection with the National Pollutant Release Inventory (NPRI), a person is required to provide the federal Minister of the Environment with information on the release from a facility into the air of a contaminant listed in Table 2C to the Guideline, the person shall send a copy of that information to the Director at the same time that it is provided to the federal Minister.

The intention of the regulation is to ensure that Ontario compiles a complete inventory of contaminant emissions. To avoid duplication with the federal NPRI program requirements, contaminants common to both the provincial and federal contaminant lists were separated out into Table 2C. Facilities reporting to NPRI are required by O.Reg. 127/01 to copy the Director with information on air releases compiled and submitted to the federal Minister pursuant to the NPRI program.

3 CONTAMINANT EMISSIONS

The owner and operator of a facility that meets the screening criteria for Table 2A or 2B has a duty under the regulation to calculate and report total facility air emissions of the contaminants listed in these tables. The MOE recognizes that different facilities will generate different emissions, and does not expect every owner and operator of a facility to calculate and report on every contaminant listed in Tables 2A, 2B and 2C. Only those contaminants discharged by the individual facility are required to be calculated and reported.

The MOE considers that a person who owns or operates a facility is in the best position to know what contaminants are used and generated by the facility, however, to assist in determining what contaminants might be emitted, the owner and operator of a facility can use Appendices B, C, and D as a guide. These Appendices provide lists of contaminants commonly associated with fuel combustion processes (Appendix B), solvent evaporation processes (Appendix C), and process emissions specific to relevant sectors (Appendix D). This information is extracted from USEPA FIRE² emission factors and SPECIATE⁵ speciation databases.

Tabulated information in Appendices B, C, or D on reportable contaminants were extracted from USEPA FIRE at the time the Guideline was prepared and are intended to serve as a general reference. A facility may have additional contaminants which are listed in Table 2 that are subject to reporting depending on specific operations at the facility and whether threshold requirements are met.

4 CALCULATING EMISSIONS

Facilities required to calculate emissions will need to follow these steps:

- Identify emission sources within the facility;
- Select emission estimation methodology;
- Gather supporting information for calculating emissions; and
- Calculate emissions.

4.1 Identify Emission Sources Within the Facility

The first step is very important because it will identify any process within the facility that may generate emissions of contaminants. Information on emission sources may be available from plant operation personnel or from published emission inventory handbooks^{1, 3, 4, 18}. An example is AP-42¹ which is published by the United States Environmental Protection Agency (USEPA). AP-42 provides process flow diagrams^a and details regarding the general operation, emission sources, applicable emission control techniques and emission factors associated with various industries. To facilitate electronic data manipulation, a coding system (Source Classification Code, SCC²⁵) is used to identify these emission related processes.

In general, these processes can be grouped into 5 categories:

- i) Combustion (e.g., boiler, furnace, heater, etc.);
- ii) Manufacturing (e.g., blast furnace, chrome-plating, etc.);
- iii) Solvent evaporation (e.g., degreasing, cleaning, printing, painting, etc.);
- iv) Storage (e.g., silos, tanks, etc.); and
- v) Fugitive (e.g., exposed storage piles, road dust, equipment leakage, etc.).

4.1.1 **Combustion**

Combustion can be external (e.g., boilers, furnaces, space heaters, etc.) or internal (e.g., diesel generators, internal combustion engines, etc.). The primary activity in combustion is the burning of fuel (e.g., coal, oil, gas, etc.) to generate thermal or mechanical energy. The input material to the combustion equipment is the type and quantity of fuel consumed. It should be noted that there are some processes that also involve the input of fuel but are not considered to be combustion processes in this context. For example, coke ovens and blast furnaces involve fuel input, but are considered to be manufacturing processes.

^aA process flow diagram is a schematic diagram which shows the possible equipment/devices and steps that may exist in a manufacturing process and how they are related. It also shows the flow of both the input raw materials and processed materials to and from various equipment/devices. The possible emission points and the contaminants may be indicated.

For the purpose of simplifying emission calculation and reporting, where a reporting facility operates numerous individual space heaters, using one type of fuel, their emissions can be aggregated as if it is from one single combustion source.

4.1.2 Manufacturing

The list of manufacturing processes is extensive and depends on the nature of the facility and its various components. Emissions can exist at every stage of the manufacturing process or at the final stage of the manufacturing process. For example, in a foundry operation, emissions occur at each stage of the operation (i.e., casting cooling, casting shakeout, casting knock out, casting cleaning, casting finishing, sand handling, core making, core baking, heat treatments, grinding, etc.). Conversely, in an electroplating process, the emissions primarily occur at the electroplating baths.

4.1.3 Solvent Evaporation

Solvents evaporate in activities such as cleaning, degreasing, thinning, coating (painting), printing, dry cleaning, etc. The solvent vapour is either allowed to evaporate to the atmosphere or is captured for emission control (e.g., incineration) or vapour recovery.

In cases where the solvent is used for general purposes that cannot be associated with a definite process (e.g., cleaning, thinning, etc.) one emission source is to be identified for each type of solvent usage.

4.1.4 Storage

Volatile compounds may be emitted to the atmosphere during storage (standing/breathing loss) and during loading and unloading of the stored material (working/withdrawal loss). Particulates may also be emitted during the loading and unloading operation of storage silos. There are various emission control techniques available to reduce the emission of volatile compounds or particulates.

4.1.5 Fugitive

Generally, fugitive emissions occur at different stages in the manufacturing process(es) (e.g., equipment leakage at pumps, valves, flanges, coke oven doors, etc.). Fugitive emissions can also come from unpaved roads due to traffic movement, wind erosion of exposed storage piles, etc.

For any of the above categories, there are various emission control devices available to reduce emissions of certain contaminants.

It should be noted that a discharge unit may have more than one process associated with it. Examples are:

- i) A combustion boiler which burns both oil and natural gas. In this situation, there will be two processes (two SCCs) to differentiate emissions from oil burning and gas burning.
- ii) A gasoline or volatile organic solvent storage tank which incurs both standing loss and working loss requires the identification of two processes.

A complete list of the potential emission sources must be compiled together with the assigned SCC and information on the control efficiency of the emission control devices. This list will help to determine the appropriate emission estimation methodology to be used for each process.

4.2 Select Emission Estimation Methodology

There are several methodologies available for calculating air emissions from the processes at the facility. The choice of emission estimation method used is dependent upon the available data. In general, site-specific data that are representative of normal operations at a facility's site are preferred over industry-average data (such as emission factors). The following paragraphs give a general description of the common emission estimation methodologies available to facilities. Refer to the corresponding referenced documents for detailed information on the implementation and application of the emission estimation methodologies. Examples of emission calculations using the following estimation methods are presented in Appendix A.

Besides the following listed methodologies, emission estimation methods and information compiled for compliance with EPA Regulation 346 may also be used to estimate annual and smog season emissions for this regulation¹⁷. Methods other than those listed may be used if approved by the Director. To obtain approval for the use of an alternate method, it is the responsibility of the owner and operator of a facility to provide documentation and justification for the proposed method and to obtain written approval from the Director before the beginning of the reporting year.

The facility must select methodologies that are applicable to the facility's emission processes. In most cases, a combination of methodologies will be required by the facility. For example, an installed continuous emission monitoring system (CEMS) can be used for calculating SO₂ and NO_x emissions from a boiler; source testing results may be used for calculating VOC emissions, controlled with an incinerator, from a surface coating operation; mass balance may be used for calculating cleaning solvent loss; and emission factors may be used for material handling.

Any of the methodologies listed below will be acceptable for the calculation of emissions in most cases, however, please note that if a facility is one of those required by Section 3(4) of the regulation to use an emissions monitoring system, the methodology used must be one referred to in section 5.5 of this Guideline.

Once the methodology has been selected, the owner and operator of a facility shall follow the directions as set out below for the selected methodology.

4.2.1 Continuous Emission Monitoring System (CEMS)

A CEMS^{7,8} provides a continuous record of emissions over an extended and uninterrupted period of time. Various principles are employed to measure the concentration of contaminants in the gas stream; they are usually based on photometric measurements. Once the contaminant concentration and the flow rate is known, emission rates can be obtained by multiplying the contaminant concentration by the volumetric stack gas flow rate. The emissions can then be calculated from this data.

Appendix A.1 presents an example of how to use CEMS results to calculate emissions.

4.2.2 Predictive Emission Monitoring (PEM)

PEM^{7,8} is based on developing a correlation between contaminant emission rates and process parameters (e.g., fuel usage, steam production or furnace temperature) and could be considered a hybrid of continuous monitoring, emission factors and stack tests. A correlation test must first be performed to develop the relationship between contaminant emission rates and process parameters. Emissions can then be calculated or predicted using process parameters to predict emission rates based on the results of the initial source test. For example, emissions of particulates from a boiler could be predicted based on the correlation of the particulate emissions to the fuel flow rate.

Appendix A.2 presents an example of how to use PEM results to calculate emissions.

4.2.3 Source Testing

Source testing^{9,10,19,20} provides a "snapshot" of emissions during the period of the test. Samples are collected using probes inserted into the exhaust stack, and contaminants are collected in or on various media and sent to a laboratory for analysis or are analysed on-site. Contaminant concentrations are obtained by dividing the amount of contaminant collected during the test by the volume of the sample. Emission rates are then determined by multiplying the contaminant concentration by the volumetric stack gas flow rate. Emission loadings are then determined from these emission rates and the total period of operation.

Appendix A.3 presents an example of how to use source testing results to calculate emissions.

4.2.4 Mass Balance

Mass balance (material balance) is based on the application of the law of conservation of mass to the process. Essentially, if there is no accumulation within the system, then all the materials that go into the system must come out.

Fuel analysis^{11,12,13} data is a good example of the mass balance approach in predicting emissions. For example, if the concentration of a contaminant or contaminant precursor in a fuel is known, emissions of that contaminant can be calculated by assuming that all of the contaminant is emitted prior to the application of an emission control. This approach is appropriate for contaminants such as metals, SO₂, VOCs and CO₂. Mass balance should not be used to estimate NO_x emissions because of the high variability of emissions in most combustion processes. It should be noted, however, that some of the contaminants will require further analysis to determine the portion emitted to the atmosphere since some of these contaminants may end up in various physical or chemical states^{14,15} (ash, etc.) and not emitted to the atmosphere.

The general equation for the mass balance approach is:

$$M_e = M_i - M_p - M_a - M_c$$

Where

- M_e = Mass of compound A emitted
- M_i = Mass of compound A in the raw material feed
- M_p = Mass of compound A in the finishing product
- M_a = Mass of compound A accumulated in the system
- M_c = Mass of compound A captured for recovery or disposal

Appendices A.4 and A.5 present examples of how to use the mass balance approach to calculate emissions.

4.2.5 Emission Factors

Emission factors are available for many emission source categories and are based on the results of source tests performed at one or more facilities within an industry. Basically, an emission factor is the contaminant emission rate relative to the level of source activity. Emission factors have been compiled by the USEPA for criteria and toxic contaminants [AP-42 document³, the Locating and Estimating Air Emissions (L&E) series of documents¹, the Factor Information Retrieval (FIRE) System², EIIP documents⁴, the VOC/Particulate Matter (PM) Speciation Database Management System (SPECIATE)⁵ and PM Calculator⁶]. Emission factors compiled by specific industrial associations or by other agencies¹⁸ may also be available.

The facility may be able to develop its own emission factors based on direct monitoring (CEMS/PEM) or measurement (source testing) results. Facility-specific established emission factors (mass of emission per unit time, mass of emission per input material flow, or mass of emission per unit output production) will be applicable to the measured processes or similar equipment/processes of other facilities when the operating conditions are comparable. Generic emission factors are commonly used when site-specific source monitoring data are unavailable.

The basic equation used in an emission factor emissions calculation is:

$$E_x = BQ * EF_x * \frac{100 - CE_x}{100}$$

Where: E_x = Emission of contaminant x, kg
BQ = Activity rate or base quantity (BQ), BQ unit
 EF_x = Uncontrolled emission factors of contaminant x, kg/BQ unit
 CE_x = Overall emission control efficiency of contaminant x, %

or

$$E_x = BQ * CEF_x$$

Where: E_x = Emission of contaminant x, kg
BQ = Activity rate or base quantity (BQ), BQ unit
 CEF_x = Controlled emission factors of contaminant x, kg/BQ unit

Appendix A.6 presents an example of how to use generic emission factors to calculate emissions.

4.2.6 Emission Estimation Model

There are some emission estimation models and/or algorithms that estimate emissions from various emission sources. For example, USEPA TANKS⁶ software is commonly used to estimate VOC emissions from storage tanks. The Landfill Gas Emissions Model⁶ software may be used to calculate the air contaminant emissions from municipal solid waste landfills.

Appendix A.7 presents an example of how to use the road dust algorithm to calculate emissions from road dust.

4.2.7 Engineering Calculation

A significant volume of data pertaining to emission estimating factors and methodologies has been assembled by Environment Canada and the U.S. Environmental Protection Agency. Nevertheless, a large data gap in certain processes still remains where emission test data or published emission factors for VOC discharges are either not available, or not appropriate. In such cases, sound engineering assessment is the best approach to determine process factors and base quantity values. To apply an engineering assessment method, there are four basic principles which should be followed:

- (i) Review all data pertaining to the specific emission source and to the industrial sector in general;

- (ii) Use this data to provide gross approximations and refine these using sound engineering principles as data becomes available to provide more accurate estimations;
- (iii) Whenever possible, alternate methods of calculation should be conducted to cross-check each level of approximation; and
- (iv) Employ good record keeping which involves documenting all related information for further emission refinement when more accurate data becomes available.

There are additional examples presented in Appendix A which will provide reference for calculating emissions.

4.3 Gather Supporting Information for Calculating Emissions

Once the emission estimation methodologies have been chosen for the emission sources, the next step is to gather the necessary information required by the specific methodology. Since facility processes and related emission estimation methodologies are diverse, it is not possible to provide a comprehensive list of exactly what information is required in each situation. The following paragraphs provide generalized requirements for the supporting information.

4.3.1 *Combustion*

For large combustion boilers, CEMS may be installed, which provide a continuous record of emissions of monitored contaminants. CEMS can then be programmed to monitor the total emissions in a selected interval (e.g., hourly, daily, etc.) when there is no downtime of the CEMS. Reference 8 provides more details on how to report emissions using CEMS.

Other methodologies may be used to calculate emissions. The following information is required for combustion processes:

- (a) Process Identifier - reference ID
- (b) Process Description - description of process and assigned SCC
- (c) Combustion Equipment Type - reference for selecting emission factors
- (d) Combustion Equipment Parameters - reference for selecting emission factors
- (e) Process Activity - the quantity of fuel burned
- (f) Fuel Analysis - for mass balance
- (g) Installed Control Device
- (h) Controlling Contaminant(s) and Control Efficiency(ies)
- (i) Exhaust Stack/Vent ID & Description

Items (b), (c) and (d) are useful for obtaining the SCC that best describes the combustion process and the emission factors for a certain set of contaminants. Item (e) provides the quantity of input material to the combustion equipment and will be used by mass balance and emission factor methodologies. Fuel consumption can be obtained from utility bills or from acquisition records. When

the fuel consumption of an individual combustion equipment is not measured, it may be necessary to apportion the total facility consumption based on the capacity and operating time of each equipment. Item (f), fuel analysis (physical characteristics and fuel composition), can be obtained from the fuel supplier or performed by analytical laboratories. Fuel analysis provides information on the contaminant contained in the fuel and the potential emissions. Mass balance can then be used to calculate the emissions of certain metal contaminants. Item (h) is the control efficiency of the installed emission control device/technique (g) and is available from the device manufacturer or from on-site test results.

4.3.2 Manufacturing

Stack testing results and emission factors are the most common methods used for calculating emissions from manufacturing processes. Supporting information required for manufacturing processes is similar to that needed for combustion processes.

The following information is required for manufacturing processes:

- (a) Process Identifier - reference ID
- (b) Process Description - description of process and assigned SCC
- (c) Process Activity - the quantity of material fed or produced
- (d) Installed Control Device
- (e) Controlling Contaminant(s) and Control Efficiency(ies)
- (f) Exhaust Stack/Vent ID & Description

Item (b) is required to obtain the SCC that describes the manufacturing process and the emission factors of certain contaminants. Item (c) provides the quantity of input raw material to the process equipment or final product produced. This information will be used by emission factor methodologies. Item (e) is the control efficiency of the installed emission control device/technique (d) and is available from the device manufacturer or from on-site test results.

4.3.3 Solvent Evaporation

Mass balance, emission factors and stack testing results are the most common methods used for calculating emissions from solvent evaporation processes. Supporting information required for solvent evaporation processes is similar to that for combustion processes.

The following information is required for solvent evaporation processes:

- (a) Process Identifier - reference ID
- (b) Process Description - description of process and assigned SCC
- (c) Process Activity - the quantity of solvent used
- (d) Solvent Physical Properties/Composition - for mass balance
- (e) Installed Control Device/Techniques
- (f) Controlling Contaminant(s) and Control Efficiency(ies)
- (g) Exhaust Stack/Vent ID & Description

Item (b) is required to obtain the SCC that describes the solvent evaporation process and the associated emission factors. Item (c) provides the quantity of solvent used for the process; this information will be used by emission factor methodologies. Solvent consumption can be obtained from an acquisition record. When the solvent consumption for an individual process is not measured, it may be necessary to apportion the total facility consumption based on the capacity and operating time of each process. Item (d), solvent physical properties/composition information, can be obtained from the Material Safety Data Sheet (MSDS) that comes with the solvent. The MSDS lists the concentration of hazardous contaminants in various solutions and can be used to calculate the emissions of the contaminant. Item (f) is the control efficiency of the installed emission control device/technique (e) and is available from the device manufacturer or from on-site test results.

4.3.4 Storage

The USEPA has developed the emission estimation model TANKS. This model requires information on materials stored and physical parameters/design of storage tanks in order to generate the emission factors for a particular tank and material combination. This model will be useful in facilities that have huge storage tanks that store volatile liquids. Examples are petroleum refineries and bulk terminal/plants. Owing to the complexity of this model, there are emission factors generated for common tank configurations and material stored.

The following information is required when the emission factor method is used:

- (a) Storage Tank Identifier - reference ID
- (b) Tank Description - description of tank/material stored and assigned SCC
- (c) Process Activity - capacity of the storage tank
- (d) Process Activity - throughput of storage tank
- (e) Installed Control Device/Techniques
- (f) Controlling Contaminant(s) and Control Efficiency(ies)
- (g) Exhaust Stack/Vent ID & Description

Item (b) is required to obtain the SCC that describes the storage tank configuration, material stored and the associated emission factors. There are two process identifiers required for storage tank emissions. Items (c) and (d) provide activity information related to the operation of the tank for the application of emission factor methodologies. Item (f) is the control efficiency of the installed emission control device/technique (e) and is available from the device manufacturer or from on-site test results.

4.3.5 Fugitive

The quantitative analysis of fugitive emissions may require field measurements or the use of computer models. There have been some emission factors developed for selected fugitive emissions such as equipment leakage at pumps and valves, flanges in petroleum refineries, leaks at coke oven doors/seals, or wind erosion of exposed storage piles. The information required for calculating

fugitive emissions varies depending on the nature of the emission sources and the methodologies used. Consult Table 7 for information required for typical fugitive emission sources.

4.4 Calculate Emissions

When all emission processes are identified, emission methodologies are selected, and related information is assembled, the next step is to calculate the emissions.

If CEMS is used, it can be programmed to monitor the total emissions in a selected interval (e.g., hourly, daily, etc.). The direct output of the CEMS emissions can be used when there is no downtime of the CEMS. Reference 8 provides more detail on how to report emissions using CEMS.

When other methods are used, the equation below [also shown in Section 4.2.5 (emission factors)] can be used to generalize the emission calculation procedure:

$$E_x = BQ * EF_x * \frac{100 - CE_x}{100}$$

Where: E_x = Emission of contaminant x, kg
 BQ = Activity rate or base quantity (BQ), BQ unit
 EF_x = Uncontrolled emission factors of contaminant x, kg/BQ unit
 CE_x = Overall emission control efficiency of contaminant x, %
 or

$$E_x = BQ * CEF_x$$

Where: E_x = Emission of contaminant x, kg
 BQ = Activity rate or base quantity (BQ), BQ unit
 CEF_x = Controlled emission factors of contaminant x, kg/BQ unit

To use PEM, a correlation must be developed between the emission rate and monitored activity levels (e.g., coal feed in a boiler, lime production in a lime kiln). These established emission factors will be used to calculate the emissions when the total activity rate (e.g., total coal consumption, total lime production) within the period is known. Care should be taken to determine whether the emission rates are derived before or after any control devices. If the emission measurement is conducted before any control devices, the emission rate is uncontrolled and control efficiencies of the devices must be considered in the first equation. When the emission measurement is conducted after all control devices, the emission rate is controlled. Therefore, the second equation should be used since control efficiencies of the devices have already been included.

Use the first equation if the emission factors are uncontrolled. For controlled emission factors, select the proper emission factors associated with a similar control device and use the second equation. When no controlled emission factors are available for the

control device, use the uncontrolled emission factors together with the control efficiency in the first equation.

The USEPA has established SCC coding to facilitate emissions calculation using generic emission factors. The USEPA AP-42 or FIRE emission factors are identified with the SCC and the contaminant name. Computer algorithms may be developed to perform the emission calculation automatically with the SCC as a reference code.

When the mass balance method is used, emissions can be calculated with an analysis of the fate of the contaminants.

Emission estimation models or formulas are different depending on their application; users should consult the relevant user guides or manuals for the application of these models. Some of the model outputs will generate emission factors for a particular system at certain conditions. The general emission factor equation needs to be used to calculate the final emissions.

4.5 Calculating Emissions from Glycol Ethers and Mineral Spirits

The calculation of emissions and the application of the threshold for the group contaminants is handled differently than the other contaminants in Table 2B. The group contaminants typically occur as a mixture consisting of one or more of the contaminants within the group. Depending on the mixture, some contaminants may be predominant and others may occur in marginal amounts. The emissions from these marginal contaminants may not be calculated with confidence to the same degree of accuracy as the predominant contaminants in the group. Because of this uncertainty, a di minimus emission value for each contaminant within a group has been set. This means that where a group threshold has been exceeded, then reporting is required for those contaminant that have emissions exceeding their respective di minimus values. The di minimus values are as follows:

Group	MPO Threshold (kg)	Di Minimus (kg)
Glycol Ether Group	3000	150
Mineral Spirits Group 1	3000	150
Mineral Spirits Group 2	3000	150
Mineral Spirits Group 3	500	25

Glycol Ether Group

Refer to Annex 1 to Tables 2A, B and C for contaminants listed under glycol ethers (misc.). If one contaminant is manufactured, processed, or otherwise used in quantities equal to or greater than the threshold, then all air emissions for all contaminants in the group are to be calculated, and those which have emissions to the atmosphere greater than 150 kg, must be reported. No emission value should be calculated or reported for contaminants that facilities do not manufacture, process or otherwise use.

Mineral Spirits Groups 1 and 2

Refer to Annex 2 to Tables 2A, B and C for definitions of Mineral spirits groups 1 and 2 and the associated contaminants. If one contaminant in the group is manufactured, processed, or otherwise used in quantities equal to or greater than the threshold, then all air emissions for all contaminants in the group are to be calculated, and those which have emissions to the atmosphere greater than 150 kg, must be reported. No emission value should be calculated or reported for contaminants that facilities do not manufacture, process or otherwise use.

Mineral Spirits Group 3

Refer to Annex 2 to Tables 2A, B and C for definitions of Mineral spirits groups 3 and the associated contaminants. If one contaminant in the group is manufactured, processed, or otherwise used in quantities equal to or greater than the threshold, then all air emissions for all contaminants in the group are to be calculated, and those in that group which have emissions to the atmosphere greater than 25 kg, must be reported. No emission value should be calculated or reported for contaminants that facilities do not manufacture, process or otherwise use.

5 REPORTING EMISSIONS

The regulation requires the facility to report annual and smog season emissions data, and quarterly data using an emissions monitoring system should the respective monitoring and reporting requirements be met. Annual and smog season reports for a given year are due on June 1st of the following year, and quarterly reports are due 60 days after the end of each quarter. The parameters to be reported for annual and smog season data are listed in Table 5, and are listed in Table 6 for quarterly emissions monitoring system data.

The regulation provides that reports are to be submitted in a form approved by the Director. The Director intends to advise on what format is approved prior to the first reporting deadline. It is intended that the approved form will be an electronic one. The regulated community will be advised when the approved form is available.

It is also intended that reported data be compiled and be accessible electronically.

5.1 Table 2A Criteria Air Contaminants and Greenhouse Gases - Annual Reporting

For release based threshold contaminants in Table 2A, the facility has to compare the calculated total facility emissions of the contaminants one by one against their respective reporting thresholds. The facility total annual emissions for each contaminant are generated by summing the emissions of individual processes. If the contaminant emissions are equal to or greater than the reporting threshold, the annual emission value must be reported. If not, the contaminant name has to be reported and identified with assigned codes

indicating that the emission is below the reporting threshold or that there is no emission reportable.

A facility that is a university or college of applied arts and technology or an office building, hotel, shopping centre or similar commercial building (i.e. having a primary NAICS of 531120, 611310 or 611210 as listed in Table 1) is required to report only SO₂, NO_x, and HFC-134A emissions, from heating or cooling systems.

5.2 Table 2A Criteria Air Contaminant (CAC) - Smog Season Reporting

The reporting facility is also required to report CAC emissions for the smog period (May 1st to September 30th) for each CAC in Table 2A that is equal to or greater than its respective annual reporting threshold.

5.3 Table 2B Contaminants with MOE Graded MPO Thresholds - Annual Reporting

This section of the Guideline shall be used for calculating the total quantities of Table 2B contaminants that are manufactured or processed or otherwise used, including by-products. The terms “manufacture”, “process”, and “otherwise use” are used by the federal NPRI¹⁶ program, and have been reproduced in the Glossary at the beginning of this Guideline.

A facility is required to calculate and report the emissions of a contaminant listed in Table 2B only if it meets all of the screening criteria outlined in Section 2.3 of the Guideline. For example, the facility does not have to calculate and report the emissions of a contaminant in Table 2B if that contaminant was never manufactured, processed, or otherwise used at the facility during the reporting year.

The reporting threshold is based on the quantity of the contaminant (in Table 2B) manufactured or processed or otherwise used at the facility at concentrations equal to or greater than 1% plus the quantity of the same contaminant, at any concentration, that is considered to be a by-product which is released on-site to the environment or transferred off-site for disposal.

According to the NPRI¹⁶ guideline document, when calculating the reporting threshold, include the quantity of the contaminant that is:

- manufactured at a concentration equal to or greater than 1%;
- processed at a concentration equal to or greater than 1%;
- otherwise used at a concentration equal to or greater than 1%;
- a by-product, at any concentration, released on-site to the environment;
- a by-product, at any concentration, transferred off-site for disposal.

For contaminants (in Table 2B) equal to or greater than 1% concentration, the total quantity manufactured or processed or otherwise used at any time or in any part of the facility must be included in the calculation for comparison to the corresponding threshold. For example, the quantity of a contaminant received by a facility at 30% concentration and then diluted to less than 1% for use must be included in the calculation for comparison to the corresponding threshold. The same will apply for a contaminant received at the facility at less than 1% and subsequently concentrated to 5%.

Following the NPRI¹⁶ approach to reporting, any contaminants that are recycled off-site and returned to the facility should be treated as the equivalent of newly purchased material for the purpose of threshold determination. Since a contaminant may undergo many processes in a facility, care should be taken not to double-count process streams when calculating the reporting threshold.

For examples on how to calculate the total quantity manufactured, processed or otherwise used, the percent by weight, and by-products for contaminants, please refer to the NPRI¹⁶ guideline document. Appendix A.4 of this Guideline provides an example of how to calculate the total quantity of contaminants manufactured, processed or otherwise used.

Only upon determining that all of the screening criteria in Section 2.3 of the Guideline have been met shall the facility proceed to calculate (using estimation methods outlined in Section 4 of the Guideline) and report the emissions of a contaminant listed in Table 2B.

5.4 Table 2C Contaminants with NPRI Thresholds - Annual Reporting

To comply with O.Reg. 127/01, any facility described in Table 1 of this Guideline that is required to report to the federal Minister pursuant to the NPRI program and the Notice published in the *Canada Gazette* for that purpose, is required to copy the Director with the air releases portion of the report provided to the federal government.

5.5 Emissions Monitoring System and Quarterly Reporting of NO_x and SO₂

If a reporting facility has a discharge unit with a name plate capacity of more than 73 megawatts total energy input and the annual amount of sulphur dioxide and/or oxides of nitrogen discharged by the unit can reasonably be expected to be equal to or greater than the respective reporting thresholds [i.e., 20 tonnes for sulphur dioxide and 14 tonnes for oxides of nitrogen (expressed as NO)], NO_x and/or SO₂ reporting is required on a quarterly basis using an emission monitoring system.

The definition of discharge unit relates only to the functioning of equipment and does not relate to whether or not the production process can be completed when a discharge unit is shut down.

For example, a facility that requires a two step sequence to manufacture widgets, Process A and Process B, would be considered to have 2 separate discharge units if the equipment associated with process A can still function independently when the equipment associated with process B is turned off, and vice versa. There are two discharge units even though Process A or B on its own is not sufficient to manufacture a widget.

“Emissions monitoring system” means a system designed to monitor emissions of specific contaminants based on any of the following suite of options which provide at least the accuracy typically obtained through source testing conducted in accordance with the Ontario Source Testing Code²⁰, or better (see Table 4).

These methods are namely:

- CEMS
- PEM
- Source testing
- Mass balance (the mass balance method cannot be used to estimate NO_x emissions)
- Site specific emission factors [that are verified for accuracy from three separate source tests done in accordance with the Ontario Source Testing Code or other relevant Canadian or U.S. methods (see Table 4)]
- Published emission factors (with USEPA ratings A, B and C for known industrial processes)
- Emission estimation models and engineering calculations
- Any other methods approved by the Director (allowing for future development of methods)

6 RECORD KEEPING

The regulation requires the owner and operator of a facility to ensure that a copy of the report and of any record prepared for the purpose of the report is kept for at least seven years after the day the report is required to be submitted. The report and/or the related records are to be made available to the MOE upon request. The regulation also specifies that records be prepared and maintained in accordance with the Guideline. The following sections outline the requirements for record keeping.

The record keeping parameters listed in table 7 and 8 of the Step-by-Step Guideline under O.Reg.127/01 must be kept, where applicable, in an electronic format (excluding process diagrams). The format of Tables 7 and 8 has been provided as a guideline, which the facility can elect to use when storing the required parameters electronically.

6.1 Record Keeping For Annual And Smog Season Emissions

If a facility is required to perform annual and smog season monitoring and reporting, it must keep records, in electronic format, of the applicable parameters listed in Table 7, for a period of 7 years (see Table 7 for the list of parameters).

**6.2 Record Keeping For Quarterly Emissions - Emission Monitoring System
NO_x and SO₂ Emissions**

If a facility is required to perform quarterly monitoring and reporting, it must keep records, in electronic format, of the applicable parameters listed in Table 8 for a period of 7 years (see Table 8 for the list of parameters).

Table 1

Source Sectors for Airborne Contaminant Discharge Reporting

SECTOR DESCRIPTION WITH NAICS²⁴ CODES	
CLASS A - ELECTRICITY GENERATION	
<i>ELECTRIC POWER GENERATION</i>	
221111	Hydro-Electric Power Generation
221112	Fossil-Fuel Electric Power Generation
221113	Nuclear Electric Power Generation
221119	Other Electric Power Generation
CLASS B - LARGE SOURCES	
<i>METAL ORE MINING</i>	
212210	Iron Ore Mining
212220	Gold and Silver Ore Mining
212231	Lead-Zinc Ore Mining
212232	Nickel-Copper Ore Mining
212233	Copper-Zinc Ore Mining
212291	Uranium Ore Mining
212299	All Other Metal Ore Mining
<i>NON-METALLIC MINERALS MINING AND QUARRYING</i>	
212314	Granite Mining and Quarrying
212315	Limestone Mining and Quarrying
212316	Marble Mining and Quarrying
212317	Sandstone Mining and Quarrying
212323	Sand and Gravel Mining and Quarrying
212326	Shale, Clay and Refractory Mineral Mining and Quarrying
212394	Asbestos Mining
212395	Gypsum Mining
212396	Potash Mining
<i>NATURAL GAS DISTRIBUTION</i>	
221210	Natural Gas Distribution
<i>WATER, SEWAGE AND OTHER SYSTEMS</i>	
221330	Steam and Air-Conditioning Supply
<i>TEXTILE MILLS AND TEXTILE MILL PRODUCTS</i>	
313110	Fibre, Yarn and Thread Mills
313210	Broad-Woven Fabric Mills
313310	Textile and Fabric Finishing
313320	Fabric Coating
314110	Carpet and Rug Mills
<i>WOOD PRODUCT MANUFACTURING</i>	
321111	Sawmills (except Shingle and Shake Mills)
321112	Shingle and Shake Mills

SECTOR DESCRIPTION WITH NAICS²⁴ CODES	
321114	Wood Preservation
321211	Hardwood Veneer and Plywood Mills
321212	Softwood Veneer and Plywood Mills
321215	Structural Wood Product Manufacturing
321216	Particle Board and Fibreboard Mills
321217	Waferboard Mills
321911	Wood Window and Door Manufacturing
<i>PULP, PAPER AND PAPERBOARD MILLS</i>	
322111	Mechanical Pulp Mills
322112	Chemical Pulp Mills
322121	Paper (except Newsprint) Mills
322122	Newsprint Mills
322130	Paperboard Mills
<i>CONVERTED PAPER PRODUCT MANUFACTURING</i>	
322211	Corrugated and Solid Fibre Box Manufacturing
322212	Folding Paperboard Box Manufacturing
322219	Other Paperboard Container Manufacturing
322220	Paper Bag and Coated and Treated Paper Manufacturing
322230	Stationery Product Manufacturing
322291	Sanitary Paper Product Manufacturing
<i>PRINTING AND RELATED SUPPORT ACTIVITIES</i>	
323113	Commercial Screen Printing
323116	Manifold Business Forms Printing
323119	Other Printing (Includes Commercial Lithographic, Gravure and Flexographic Printing)
<i>PETROLEUM REFINING AND DISTRIBUTION</i>	
324110	Petroleum Refineries
412110	Petroleum Product Wholesaler-Distributors <i>(For gasoline bulk plants and terminals only)</i>
<i>ASPHALT, OTHER PETROLEUM AND COAL PRODUCTS</i>	
324121	Asphalt Paving Mixture and Block Manufacturing
324122	Asphalt Shingle and Coating Material Manufacturing
324190	Other Petroleum and Coal Products Manufacturing
<i>CHEMICAL MANUFACTURING</i>	
325110	Petrochemical Manufacturing
325120	Industrial Gas Manufacturing
325130	Synthetic Dye and Pigment Manufacturing
325181	Alkali and Chlorine Manufacturing
325189	All Other Basic Inorganic Chemical Manufacturing
325190	Other Basic Organic Chemical Manufacturing
325210	Resin and Synthetic Rubber Manufacturing
325220	Artificial and Synthetic Fibres and Filaments Manufacturing
325313	Chemical Fertilizer (except Potash) Manufacturing
325314	Mixed Fertilizer Manufacturing

SECTOR DESCRIPTION WITH NAICS²⁴ CODES	
325320	Pesticide and Other Agricultural Chemical Manufacturing
325410	Pharmaceutical and Medicine Manufacturing
325510	Paint and Coating Manufacturing
325520	Adhesive Manufacturing
325610	Soap and Cleaning Compound Manufacturing
325620	Toilet Preparation Manufacturing
325910	Printing Ink Manufacturing
325920	Explosives Manufacturing
325991	Custom Compounding of Purchased Resins
325999	All Other Miscellaneous Chemical Product Manufacturing
<i>PLASTICS AND RUBBER PRODUCTS MANUFACTURING</i>	
326111	Unsupported Plastic Bag Manufacturing
326114	Unsupported Plastic Film and Sheet Manufacturing
326121	Unsupported Plastic Profile Shape Manufacturing
326122	Plastic Pipe and Pipe Fitting Manufacturing
326130	Laminated Plastic Plate, Sheet and Shape Manufacturing
326140	Polystyrene Foam Product Manufacturing
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing
326160	Plastic Bottle Manufacturing
326191	Plastic Plumbing Fixture Manufacturing
326193	Motor Vehicle Plastic Parts Manufacturing
326210	Tire Manufacturing
326220	Rubber and Plastic Hose and Belting Manufacturing
<i>NON-METALLIC MINERAL PRODUCT MANUFACTURING</i>	
327110	Pottery, Ceramics and Plumbing Fixture Manufacturing
327120	Clay Building Material and Refractory Manufacturing
327214	Glass Manufacturing
327215	Glass Product Manufacturing from Purchased Glass
327310	Cement Manufacturing
327320	Ready-Mix Concrete Manufacturing
327330	Concrete Pipe, Brick and Block Manufacturing
327410	Lime Manufacturing
327420	Gypsum Product Manufacturing
327910	Abrasive Product Manufacturing
<i>IRON AND STEEL MILLS AND FERRO-ALLOY MANUFACTURING</i>	
331110	Iron and Steel Mills and Ferro-Alloy Manufacturing
<i>STEEL PRODUCT MANUFACTURING FROM PURCHASED STEEL</i>	
331210	Iron and Steel Pipes and Tubes Manufacturing from Purchased Steel
331221	Cold-Rolled Steel Shape Manufacturing
331222	Steel Wire Drawing
<i>ALUMINA AND ALUMINUM PRODUCTION AND PROCESSING</i>	
331313	Primary Production of Alumina and Aluminum
331317	Aluminum Rolling, Drawing, Extruding and Alloying

SECTOR DESCRIPTION WITH NAICS²⁴ CODES	
<i>NON-FERROUS METAL (EXCEPT ALUMINUM) PRODUCTION AND PROCESSING</i>	
331410	Non-Ferrous Metal (except Aluminum) Smelting and Refining
331420	Copper Rolling, Drawing, Extruding and Alloying
331490	Non-Ferrous Metal (except Copper and Aluminum) Rolling, Drawing, Extruding and Alloying
<i>FOUNDRIES</i>	
331511	Iron Foundries
331514	Steel Foundries
331523	Non-Ferrous Die-Casting Foundries
331529	Non-Ferrous Foundries (except Die-Casting)
<i>FABRICATED METAL PRODUCT MANUFACTURING</i>	
332113	Forging
332118	Stamping
332210	Cutlery and Hand Tool Manufacturing
332311	Prefabricated Metal Building and Component Manufacturing
332314	Concrete Reinforcing Bar Manufacturing
332319	Other Plate Work and Fabricated Structural Product Manufacturing
332321	Metal Window and Door Manufacturing
332410	Power Boiler and Heat Exchanger Manufacturing
332420	Metal Tank (Heavy Gauge) Manufacturing
332431	Metal Can Manufacturing
332510	Hardware Manufacturing
332611	Spring (Heavy Gauge) Manufacturing
332619	Other Fabricated Wire Product Manufacturing
332720	Turned Product and Screw, Nut and Bolt Manufacturing
332810	Coating, Engraving, Heat Treating and Allied Activities
332910	Metal Valve Manufacturing
332991	Ball and Roller Bearing Manufacturing
<i>COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING</i>	
334110	Computer and Peripheral Equipment Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334290	Other Communications Equipment Manufacturing
334410	Semiconductor and Other Electronic Component Manufacturing
334511	Navigational and Guidance Instruments Manufacturing
334512	Measuring, Medical and Controlling Devices Manufacturing
335110	Electric Lamp Bulb and Parts Manufacturing
335120	Lighting Fixture Manufacturing
335210	Small Electrical Appliance Manufacturing
335223	Major Kitchen Appliance Manufacturing
335311	Power, Distribution and Specialty Transformers Manufacturing
335312	Motor and Generator Manufacturing

SECTOR DESCRIPTION WITH NAICS²⁴ CODES	
335315	Switchgear and Switchboard, and Relay and Industrial Control Apparatus Manufacturing
335910	Battery Manufacturing
335920	Communication and Energy Wire and Cable Manufacturing
335930	Wiring Device Manufacturing
TRANSPORTATION EQUIPMENT MANUFACTURING	
336110	Automobile and Light-Duty Motor Vehicle Manufacturing
336120	Heavy-Duty Truck Manufacturing
336211	Motor Vehicle Body Manufacturing
336212	Truck Trailer Manufacturing
336215	Motor Home, Travel Trailer and Camper Manufacturing
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing
336340	Motor Vehicle Brake System Manufacturing
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing
336360	Motor Vehicle Seating and Interior Trim Manufacturing
336370	Motor Vehicle Metal Stamping
336390	Other Motor Vehicle Parts Manufacturing
336410	Aerospace Product and Parts Manufacturing
336510	Railroad Rolling Stock Manufacturing
336611	Ship Building and Repairing
336612	Boat Building
336990	Other Transportation Equipment Manufacturing
CLASS C - SMALL SOURCES	
WATER, SEWAGE AND OTHER SYSTEMS	
221320	Sewage Treatment Facilities
FOOD MANUFACTURING (FOR ANIMAL CONSUMPTION)	
311111	Dog and Cat Food Manufacturing
311119	Other Animal Food Manufacturing
FOOD MANUFACTURING (FOR HUMAN CONSUMPTION)	
<i>This sector applies to facilities using food ingredients which are subject to the Canadian Food and Drug Act in the manufacturing of products for human consumption, who:</i>	
<i>a) derive <50% revenues from annual retail sales on premises; OR</i>	
<i>b) utilize combustion with the maximum rated heat input capacity > 10 MMBTU/hour burning fuel other than coal, wood or waste oil.</i>	
311211	Flour Milling
311214	Rice Milling and Malt Manufacturing
311221	Wet Corn Milling
311224	Oilseed Processing
311225	Fat and Oil Refining and Blending
311230	Breakfast Cereal Manufacturing
311310	Sugar Manufacturing
311320	Chocolate and Confectionery Manufacturing from Cacao Beans

SECTOR DESCRIPTION WITH NAICS²⁴ CODES

311330 Confectionery Manufacturing from Purchased Chocolate
311340 Non-Chocolate Confectionery Manufacturing
311410 Frozen Food Manufacturing
311420 Fruit and Vegetable Canning, Pickling and Drying
311511 Fluid Milk Manufacturing
311515 Butter, Cheese, and Dry and Condensed Dairy Products Manufacturing
311520 Ice Cream and Frozen Dessert Manufacturing
311614 Rendering and Meat Processing from Carcasses
311615 Poultry Processing
311710 Seafood Product Preparation and Packaging
311814 Commercial Bakeries and Frozen Bakery Product Manufacturing
311821 Cookie and Cracker Manufacturing
311822 Flour Mixes and Dough Manufacturing from Purchased Flour
311823 Dry Pasta Manufacturing
311830 Tortilla Manufacturing
311911 Roasted Nut and Peanut Butter Manufacturing
311919 Other Snack Food Manufacturing
311920 Coffee and Tea Manufacturing
311930 Flavouring Syrup and Concentrate Manufacturing
311940 Seasoning and Dressing Manufacturing
312110 Soft Drink and Ice Manufacturing
312120 Breweries
312130 Wineries
312140 Distilleries

TOBACCO MANUFACTURING

312210 Tobacco Stemming and Redrying
312220 Tobacco Product Manufacturing

LEATHER AND ALLIED PRODUCT MANUFACTURING

316110 Leather and Hide Tanning and Finishing
316210 Footwear Manufacturing
316990 Other Leather and Allied Product Manufacturing

MACHINERY MANUFACTURING

333110 Agricultural Implement Manufacturing
333120 Construction Machinery Manufacturing
333130 Mining and Oil and Gas Field Machinery Manufacturing
333210 Sawmill and Woodworking Machinery Manufacturing
333220 Rubber and Plastics Industry Machinery Manufacturing
333291 Paper Industry Machinery Manufacturing
333310 Commercial and Service Industry Machinery Manufacturing
333413 Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
333416 Heating Equipment and Commercial Refrigeration Equipment Manufacturing

SECTOR DESCRIPTION WITH NAICS²⁴ CODES	
333511	Industrial Mould Manufacturing
333519	Other Metalworking Machinery Manufacturing
333611	Turbine and Turbine Generator Set Unit Manufacturing
333619	Other Engine and Power Transmission Equipment Manufacturing
333910	Pump and Compressor Manufacturing
333920	Material Handling Equipment Manufacturing
FURNITURE AND RELATED PRODUCT MANUFACTURING	
337110	Wood Kitchen Cabinet and Counter Top Manufacturing
337121	Upholstered Household Furniture Manufacturing
337123	Other Wood Household Furniture Manufacturing
337126	Household Furniture (except Wood and Upholstered) Manufacturing
337127	Institutional Furniture Manufacturing
337213	Wood Office Furniture, including Custom Architectural Woodwork, Manufacturing
337214	Office Furniture (except Wood) Manufacturing
337215	Showcase, Partition, Shelving and Locker Manufacturing
337910	Mattress Manufacturing
337920	Blind and Shade Manufacturing
TRANSPORTATION OPERATION <i>(For maintenance and repair yard only)</i>	
485110	Urban Transit Systems
485210	Interurban and Rural Bus Transportation
COMMERCIAL BUILDINGS <i>(Commercial buildings include office buildings, hotels, shopping centres. Report SO₂, NO_x, and HFC-134A emissions from heating or cooling systems if the emissions are equal to or greater than their respective reporting thresholds)</i>	
531120	Lessors (or Owners) of Non-Residential Buildings (except Mini-Warehouses)
TESTING LABORATORIES <i>(For product development and testing only)</i>	
541380	Testing Laboratories
WASTE MANAGEMENT AND REMEDIATION SERVICES	
562110	Waste Collection
562210	Waste Treatment and Disposal
562910	Remediation Services
562920	Material Recovery Facilities
562990	All Other Waste Management Services
EDUCATIONAL SERVICES <i>(For universities, report SO₂, NO_x, and HFC-134A emissions from heating or cooling systems if the emissions are equal to or greater than their respective reporting thresholds)</i>	
611310	Universities

SECTOR DESCRIPTION WITH NAICS²⁴ CODES
HEALTH CARE <i>(For hospitals with incinerators only)</i> 622111 General (except Paediatric) Hospitals 622112 Paediatric Hospitals 622210 Psychiatric and Substance Abuse Hospitals 622310 Specialty (except Psychiatric and Substance Abuse) Hospitals
AUTO REPAIR SERVICES 811121 Automotive Body, Paint and Interior Repair and Maintenance
DRY CLEANING AND LAUNDRY SERVICES <i>(For bulk dry cleaning depots/plants only)</i> 812320 Dry Cleaning and Laundry Services (except Coin-Operated)
CLASS C - SMALL SOURCES MISCELLANEOUS
OIL AND GAS EXTRACTION 211113 Conventional Oil and Gas Extraction 211114 Non-Conventional Oil Extraction
COAL MINING 212114 Bituminous Coal Mining 212115 Subbituminous Coal Mining 212116 Lignite Coal Mining
NON-METALLIC MINERALS MINING AND QUARRYING 212392 Diamond Mining 212393 Salt Mining 212397 Peat Extraction 212398 All Other Non-Metallic Mineral Mining and Quarrying
SUPPORT ACTIVITIES FOR MINING AND OIL AND GAS EXTRACTION 213111 Oil and Gas Contract Drilling 213117 Contract Drilling (except Oil and Gas) 213118 Services to Oil and Gas Extraction 213119 Other Support Activities for Mining
ELECTRIC POWER TRANSMISSION AND DISTRIBUTION 221121 Electric Bulk Power Transmission and Control 221122 Electric Power Distribution
FOOD MANUFACTURING (FOR HUMAN CONSUMPTION) <i>This sector applies to facilities using food ingredients which are subject to the Canadian Food and Drug Act in the manufacturing of products for human consumption, who:</i> <i>a) derive <50% revenues from annual retail sales on premises; OR</i> <i>b) utilize combustion with the maximum rated heat input capacity > 10 MMBTU/hour burning fuel other than coal, wood or waste oil.</i> 311611 Animal (except Poultry) Slaughtering 311990 All Other Food Manufacturing

SECTOR DESCRIPTION WITH NAICS²⁴ CODES***TEXTILE MILLS AND TEXTILE MILL PRODUCTS***

- 313220 Narrow Fabric Mills and Schiffli Machine Embroidery
- 313230 Nonwoven Fabric Mills
- 313240 Knit Fabric Mills
- 314120 Curtain and Linen Mills
- 314910 Textile Bag and Canvas Mills
- 314990 All Other Textile Product Mills

CLOTHING MANUFACTURING

- 315110 Hosiery and Sock Mills
- 315190 Other Clothing Knitting Mills
- 315210 Cut and Sew Clothing Contracting
- 315221 Men's and Boys' Cut and Sew Underwear and Nightwear Manufacturing
- 315222 Men's and Boys' Cut and Sew Suit, Coat and Overcoat Manufacturing
- 315226 Men's and Boys' Cut and Sew Shirt Manufacturing
- 315227 Men's and Boys' Cut and Sew Trouser, Slack and Jean Manufacturing
- 315229 Other Men's and Boys' Cut and Sew Clothing Manufacturing
- 315231 Women's and Girls' Cut and Sew Lingerie, Loungewear and Nightwear Manufacturing
- 315232 Women's and Girls' Cut and Sew Blouse and Shirt Manufacturing
- 315233 Women's and Girls' Cut and Sew Dress Manufacturing
- 315234 Women's and Girls' Cut and Sew Suit, Coat, Tailored Jacket and Skirt Manufacturing
- 315239 Other Women's and Girls' Cut and Sew Clothing Manufacturing
- 315291 Infants' Cut and Sew Clothing Manufacturing
- 315292 Fur and Leather Clothing Manufacturing
- 315299 All Other Cut and Sew Clothing Manufacturing
- 315990 Clothing Accessories and Other Clothing Manufacturing

WOOD PRODUCT MANUFACTURING

- 321919 Other Millwork
- 321920 Wood Container and Pallet Manufacturing
- 321991 Manufactured (Mobile) Home Manufacturing
- 321992 Prefabricated Wood Building Manufacturing
- 321999 All Other Miscellaneous Wood Product Manufacturing

CONVERTED PAPER PRODUCT MANUFACTURING

- 322299 All Other Converted Paper Product Manufacturing

PRINTING AND RELATED SUPPORT ACTIVITIES

- 323114 Quick Printing
- 323115 Digital Printing
- 323120 Support Activities for Printing

PLASTICS AND RUBBER PRODUCTS MANUFACTURING

- 326198 All Other Plastic Product Manufacturing
- 326290 Other Rubber Product Manufacturing

SECTOR DESCRIPTION WITH NAICS²⁴ CODES	
NON-METALLIC MINERAL PRODUCT MANUFACTURING	
327390	Other Concrete Product Manufacturing
327990	All Other Non-Metallic Mineral Product Manufacturing
FABRICATED METAL PRODUCT MANUFACTURING	
332329	Other Ornamental and Architectural Metal Products Manufacturing
332439	Other Metal Container Manufacturing
332710	Machine Shops
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing
MACHINERY MANUFACTURING	
333299	All Other Industrial Machinery Manufacturing
333990	All Other General-Purpose Machinery Manufacturing
COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING	
334310	Audio and Video Equipment Manufacturing
334610	Manufacturing and Reproducing Magnetic and Optical Media
335229	Other Major Appliance Manufacturing
335990	All Other Electrical Equipment and Component Manufacturing
OTHER MISCELLANEOUS MANUFACTURING	
339110	Medical Equipment and Supplies Manufacturing
339910	Jewellery and Silverware Manufacturing
339920	Sporting and Athletic Goods Manufacturing
339930	Doll, Toy and Game Manufacturing
339940	Office Supplies (except Paper) Manufacturing
339950	Sign Manufacturing
339990	All Other Miscellaneous Manufacturing
MISCELLANEOUS WHOLESALE-DISTRIBUTORS	
418190	Other Recyclable Material Wholesaler-Distributors
418410	Chemical (except Agricultural) and Allied Product Wholesaler-Distributors
TRANSPORTATION OPERATION	
<i>(For maintenance and repair yard only)</i>	
481110	Scheduled Air Transportation
481214	Non-Scheduled Chartered Air Transportation
481215	Non-Scheduled Specialty Flying Services
482112	Short-Haul Freight Rail Transportation
482113	Mainline Freight Rail Transportation
482114	Passenger Rail Transportation
483115	Deep Sea, Coastal and Great Lakes Water Transportation (except by Ferries)
483116	Deep Sea, Coastal and Great Lakes Water Transportation by Ferries
486110	Pipeline Transportation of Crude Oil
486210	Pipeline Transportation of Natural Gas
486910	Pipeline Transportation of Refined Petroleum Products
486990	All Other Pipeline Transportation

SECTOR DESCRIPTION WITH NAICS²⁴ CODES
SUPPORT ACTIVITIES FOR TRANSPORTATION
488111 Air Traffic Control
488119 Other Airport Operations
488190 Other Support Activities for Air Transportation
488210 Support Activities for Rail Transportation
488390 Other Support Activities for Water Transportation
488490 Other Support Activities for Road Transportation
488519 Other Freight Transportation Arrangement
PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES
541990 All Other Professional, Scientific and Technical Services
ADMINISTRATIVE AND SUPPORT SERVICES
561990 All Other Support Services
EDUCATIONAL SERVICES
<i>(For colleges of applied arts and technology, report SO₂, NO_x, and HFC-134A emissions from heating or cooling systems if they are equal to or greater than their respective reporting thresholds)</i>
611210 Community Colleges and C.E.G.E.P.s (collège d'enseignement générales et professionnelles)
PHOTO FINISHING SERVICES
<i>(For commercial and professional photo finishing laboratories on a large scale basis)</i>
812921 Photo Finishing Laboratories (except One-Hour)

Table 2A

Airborne Contaminants with MOE Release Based Thresholds

The following contaminants have MOE release based thresholds.		
Contaminant	CAS ^[1]	Release Threshold (kg/yr)
CARBON DIOXIDE	124-38-9	100,000,000
CARBON MONOXIDE	630-08-0	20,000
HFC-134A	811-97-2	10
METHANE	74-82-8	5,000,000
NITROUS OXIDE	10024-97-2	2,700
OXIDES OF NITROGEN (EXPRESSED AS NO)	10102-43-9	14,000
PM - PARTICULATE MATTER ^[25]	N/A - M08	20,000
PM ₁₀ - PARTICULATE MATTER <=10 MICROMETERS ^[25]	N/A - M09	500
PM _{2.5} - PARTICULATE MATTER <=2.5 MICROMETERS ^[25]	N/A - M10	300
SULPHUR DIOXIDE	7446-09-5	20,000
VOLATILE ORGANIC COMPOUNDS (VOC) ^[20]	N/A - M16	10,000
Total Contaminants:		11

Table 2B

Airborne Contaminants with MOE Graded MPO^[22] Thresholds

The following contaminants have MOE graded MPO thresholds.		
Contaminant	CAS ^[1]	MPO ^[22] Threshold (kg/yr)
ACETIC ACID	64-19-7	3,000
ACETONE	67-64-1	3,000
ACETYLENE	74-86-2	3,000
BORON	7440-42-8	3,000
BORON TRIBROMIDE	10294-33-4	3,000
BORON TRICHLORIDE	10294-34-5	3,000
CALCIUM HYDROXIDE	1305-62-0	3,000
CALCIUM OXIDE	1305-78-8	3,000
DECABORANE	17702-41-9	3,000
DICAPRYL PHTHALATE	131-15-7	3,000
1,1-DICHLOROETHANE	75-34-3	3,000
DIMETHYL DISULPHIDE	624-92-0	3,000
DIMETHYL SULPHIDE	75-18-3	3,000
ETHYL ACETATE	141-78-6	3,000
ETHYL ETHER	60-29-7	3,000
FERRIC OXIDE	1309-37-1	3,000
FURFURAL	98-01-1	3,000
FURFURYL ALCOHOL	98-00-0	3,000
GLYCOL ETHERS (MISC.) ^[18]	N/A - M04	3,000
N-HEPTANE	142-82-5	3,000
IRON (AND ITS COMPOUNDS) ^{[17] [26]}	7439-89-6	3,000
LITHIUM - OTHER THAN HYDRIDES	7439-93-2	3,000
MAGNESIUM OXIDE	1309-48-4	3,000
MINERAL SPIRITS GROUP #1 ^[19]	N/A - M06	3,000
MINERAL SPIRITS GROUP #2 ^[19]	N/A - M17	3,000
PENTACHLORONITROBENZENE	82-68-8	3,000
TETRAHYDROFURAN	109-99-9	3,000
TIN (AND ITS COMPOUNDS) ^{[17] [26]}	7440-31-5	3,000
TITANIUM (AND ITS COMPOUNDS) ^{[17] [26]}	7440-32-6	3,000
TOTAL REDUCED SULPHUR (TRS) ^[24]	N/A - M14	3,000
1,1,1-TRICHLOROETHANE	71-55-6	3,000
2,4,5-TRICHLOROPHENOL	95-95-4	3,000
1,2,3-TRICHLOROPROPANE	96-18-4	3,000
VINYL BROMIDE	593-60-2	3,000
VINYL FLUORIDE	75-02-5	3,000
ARSINE	7784-42-1	500
BENZIDINE	92-87-5	500
BERYLLIUM (AND ITS COMPOUNDS)	7440-41-7	500
BIS (2-CHLOROETHYL) ETHER	111-44-4	500
BIS (CHLOROMETHYL) ETHER	542-88-1	500
CARBON BLACK	1333-86-4	500
COAL TAR PITCH VOLATILES - SOLUBLE FRACTION	8007-45-2	500
COKE OVEN EMISSIONS ^[21]	N/A - M02	500

The following contaminants have MOE graded MPO thresholds.

Contaminant	CAS ^[1]	MPO^[22] Threshold (kg/yr)
DIBORANE	19287-45-7	500
1,2-DIBROMOETHANE	106-93-4	500
3,3-DICHLOROBENZIDINE	91-94-1	500
1,2-DIMETHYLHYDRAZINE	57-14-7	500
1,6-DINITROPYRENE	42397-64-8	500
1,8-DINITROPYRENE	42397-65-9	500
HEPTACHLOR	76-44-8	500
HEXACHLORO-1,3-BUTADIENE	87-68-3	500
HEXACHLOROCYCLOHEXANE	319-84-6	500
HEXAMETHYLENE DIISOCYANATE MONOMER	822-06-0	500
LITHIUM HYDRIDES	7580-67-8	500
MERCAPTANS (AS METHYL MERCAPTAN) -TOTAL	74-93-1	500
METHYLCYCLOPENTADIENYL MANGANESE TRICARBONYL (MMT)	12108-13-3	500
MINERAL SPIRITS GROUP #3 ^[19]	N/A - M18	500
MONOMETHYL AMINE	74-89-5	500
NICKEL CARBONYL	13463-39-3	500
N-NITROSODIETHYLAMINE	55-18-5	500
N-NITROSODIMETHYLAMINE	62-75-9	500
OCTACHLOROSTYRENE	29082-74-4	500
PARATHION	56-38-2	500
PENTABORANE	19624-22-7	500
PENTACHLOROPHENOL (PCP)	87-86-5	500
POLYCHLORINATED BIPHENYLS (PCBS)	1336-36-3	500
TELLURIUM - EXCLUDING HYDROGEN TELLURIDE	13494-80-9	500
TRIBUTYL TIN	688-73-3	500
2,4,6-TRICHLOROPHENOL	88-06-2	500
METHYL MERCURY	22967-92-6	5
PAH - ACENAPHTHENE	83-32-9	5
PAH - ACENAPHTHYLENE	208-96-8	5
PAH - FLUORENE	86-73-7	5
2,3,7,8-TETRACHLORODIBENZOFURAN (TEQ)	51207-31-9	0.0001
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TEQ)	1746-01-6	0.0001
Total Contaminants:		75

Table 2C

Airborne Contaminants with NPRI^[23] Thresholds

Table 2C consists of all contaminants listed in the most current National Pollutant Release Inventory (NPRI) *Canada Gazette* notice.

Further information and the list of contaminants may be obtained through Environment Canada's NPRI website at <http://www.ec.gc.ca/pdb/npri/>

Notes to Tables 2A, 2B and 2C

- * No single CAS number applies to this NPRI listing.
- [1] CAS No. denotes the Chemical Abstracts Service Registry Number, as appropriate. MOE assigned codes denoted with "N/A - Mxx" to contaminants when no single CAS number applies to a specific contaminant.
- [2] "and its salts" — The CAS number corresponds to the weak acid or base. However, the NPRI listing includes the salts of these weak acids and bases. When calculating the weight of these substances and their salts, use the molecular weight of the acid or base, not the total weight of the salt.
- [3] "fume or dust"
- [4] "fibrous forms"
- [5] "Ammonia (total)" means the total of both of ammonia (NH₃ — CAS number 7664-41-7) and the ammonium ion (NH₄⁺) in solution.
- [6] "and its compounds"
- [7] "friable form"
- [8] "mixed isomers"
- [9] "ionic"
- [10] The isomers include, but are not necessarily limited to, HCFC-122 (CAS Number 354-21-2).
- [11] The isomers include, but are not necessarily limited to, HCFC-123 (CAS Number 306-83-2) and HCFC 123a (CAS Number 90454-18-5).
- [12] The isomers include, but are not necessarily limited to, HCFC 124 (CAS Number 2837-89-0) and HCFC 124a (CAS Number 354-25-6).
- [13] "in solution at a pH of 6.0 or greater"
- [14] "yellow or white"
- [15] The reporting requirements for mercury have changed for the 2000 reporting year.
- [16] This class of substances is restricted to the following congeners:
2,3,7,8-Tetrachlorodibenzo-p-dioxin (1746-01-6); 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (40321-76-4); 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (39227-28-6);
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (19408-74-3); 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (57653-85-7); 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (35822-46-9);
Octachlorodibenzo-p-dioxin (326-87-9); 2,3,7,8-Tetrachlorodibenzofuran (51207-31-9);
2,3,4,7,8-Pentachlorodibenzofuran (57117-31-4); 1,2,3,7,8-Pentachlorodibenzofuran (57117-41-6); 1,2,3,4,7,8-Hexachlorodibenzofuran (70648-26-9); 1,2,3,7,8,9-Hexachlorodibenzofuran (72918-21-9); 1,2,3,6,7,8-Hexachlorodibenzofuran (57117-44-9);
2,3,4,6,7,8-Hexachlorodibenzofuran (60851-34-5); 1,2,3,4,6,7,8-Heptachlorodibenzofuran (67562-39-4); 1,2,3,4,7,8,9-Heptachlorodibenzofuran (55673-89-7);
and Octachlorodibenzofuran (39001-02-0).
- [17] Refers to the metal portion of the compounds.
- [18] Refer to Annex 1 to Tables 2A, B and C for contaminants listed under glycol ethers (misc.). If one contaminant is manufactured, processed, or otherwise used in quantities equal to or greater than the threshold, then all air emissions for all contaminants in the group are to be calculated, and those which have emissions to the atmosphere greater than 150 kg, must be reported. No emission value should be calculated or reported for contaminants that facilities do not manufacture, process or otherwise use.
- [19] Refer to Annex 2 to Tables 2A, B and C for definitions of the three mineral spirits groups and the associated contaminants. For mineral spirits groups 1 and 2, if one contaminant in the group is manufactured, processed, or otherwise used in quantities equal to or greater than the threshold, then all air emissions for all contaminants in the group are to be calculated, and those which have emissions to the atmosphere greater than 150 kg, must be reported. For Mineral Spirits Group 3, if one contaminant in the group is manufactured, processed, or otherwise used in quantities equal to or greater than the threshold, then all air emissions for all contaminants in the group are to be calculated, and those which have emissions to the atmosphere greater than 25 kg, must be reported. No emission value should be calculated or reported for contaminants that facilities do not manufacture, process or otherwise use..

Notes to Tables 2A, 2B and 2C

- [20] Refer to Annex 3 to Tables 2A, B and C for the definition of VOC.
- [21] “Coke oven emissions” means the emissions discharged to the atmosphere in the operation of coke oven batteries. Emissions will occur at charging, pushing or quenching operation, bypass, bleeder, and from coke oven doors. Organic compounds soluble in benzene are the major constituents of PM emissions and are also included as VOC. Among the toxic air pollutants included in the organic emissions are benzene, toluene, xylenes, cyanide compounds, naphthalene, phenol, and Polycyclic Organic Matters (POM), all of which are contained in coke oven emissions³.
FIRE² has emission factors for coke oven emissions for pushing operation, oven door leaks and topside leaks.
- [22] MPO means manufactured, processed or otherwise used. By-products must be included in the calculation of the MPO reporting threshold (tonnes or kilograms), even if they are at a concentration of less than one percent by weight. A facility must report its air emissions if contaminants are equal to or greater than the MPO thresholds and the facility has employees that worked a total of 20,000 hours or more (which is equivalent to 10 full-time employees) during the reporting year.
- [23] National Pollutant Release Inventory, Environment Canada. Reporting requirements and thresholds as gazetted for the reporting year (also refer to NPRI¹⁶ reporting guidelines for details). Record keeping requirements will be the same as in Table 7.
- [24] Total reduced sulphur (TRS) consists of hydrogen sulphide (H_2S), dimethyl sulphide [$(CH_3)_2S$], dimethyl disulphide [$(CH_3)_2S_2$] and methyl mercaptan (CH_3SH).
- [25] Only filterable PM, PM_{10} , $PM_{2.5}$ emitted to the atmosphere is to be reported. This regulation requires reporting for three size fractions of particulate matters:
- total particulate matter with a diameter less than 100 microns (TPM),
- total particulate matter with a diameter less than or equal to 10 microns (PM_{10}), and
- total particulate matter with a diameter less than or equal to 2.5 microns ($PM_{2.5}$).
Emission factors exist for primary PM, condensable PM and filterable PM. Ensure that correct emission factors for filterable PMs are used.
Road dust emissions are to be included in your particular matter estimates and when reporting to this regulation.
- [26] For metal and its compounds, reporting facilities are only required to report PM, PM_{10} , and $PM_{2.5}$ components of fugitive dust emissions from storage piles, road dust, landfill sites, quarries and mine tailings.

Annex 1 to Tables 2A, 2B and 2C

Contaminants Listed under Glycol Ethers

Contaminant	Abbreviation	CAS
ETHYLENE GLYCOL BUTYL ETHER	EGBE	111-76-2
ETHYLENE GLYCOL BUTYL ETHER ACETATE	EGBEA	112-07-2
DIETHYLENE GLYCOL BUTYL ETHER	DEGBE	112-34-5
DIETHYLENE GLYCOL BUTYL ETHER ACETATE	DEBBEA	124-17-4
DIETHYLENE GLYCOL METHYL ETHER	DEGME	111-77-3
DIETHYLENE GLYCOL METHYL ETHER ACETATE	DEGMEA	629-38-9
DIETHYLENE GLYCOL ETHYL ETHER	DEGEE	111-90-0
DIETHYLENE GLYCOL ETHYL ETHER ACETATE	DEGEEA	112-15-2
ETHYLENE GLYCOL PROPYL ETHER	EGPE	2807-30-9
ETHYLENE GLYCOL HEXYL ETHER	EGHE	112-25-4
1-METHOXY-2-PROPANOL	PGME	107-98-2
PROPYLENE GLYCOL METHYL ETHER ACETATE	PGMEA	108-65-6
PROPYLENE GLYCOL PROPYL ETHER	PGPE	1569-01-3
PROPYLENE GLYCOL BUTYL ETHER	PGBE	5131-66-8
PROPYLENE GLYCOL ETHYL ETHER	PGEE	1569-02-4
DIPROPYLENE GLYCOL METHYL ETHER	DPGME	34590-94-8
2-METHOXY-1-PROPANOL	PGME	1589-47-5
ETHYLENE GLYCOL PHENYL ETHER	EGPhE	122-99-6

Annex 2 to Tables 2A, 2B and 2C

Definition of Three Mineral Spirits Groups and the Associated Contaminants

MINERAL SPIRITS GROUP #1

Contaminant	CAS
HEAVY ALKYLATE NAPHTHA	64741-65-7
HEAVY NAPHTHA	68551-17-7
HYDROTREATED HEAVY NAPHTHA	64742-48-9
MINERAL SPIRITS	64475-85-0
NAPHTHA	8030-30-6
NAPHTHA HEAVY STRAIGHT RUN	64741-41-9
NAPHTHA, FULL RANGE ALKYLATE	64741-64-6
SOLVENT NAPHTHA LIGHT ALIPHATIC	64742-89-8
SOLVENT NAPHTHA MEDIUM ALIPHATIC	64742-88-7
VM & P NAPHTHA	8032-32-4
STODDARD SOLVENT	8052-41-3

MINERAL SPIRITS GROUP #2

Contaminant	CAS
HEAVY AROMATIC SOLVENT NAPHTHA	64742-94-5
HYDRODESULPHURIZED MIDDLE Distillate	64742-80-9
HYDROTREATED HEAVY NAPHTHENIC Distillate	64742-52-5
HYDROTREATED LIGHT DISTILLATE	64742-47-8
HYDROTREATED MIDDLE DISTILLATE	64742-46-7
LIGHT AROMATIC SOLVENT NAPHTHA	64742-95-6
PETROLEUM DISTILLATES, ACID TREATED	64742-14-9
SWEETENED MIDDLE DISTILLATE	64741-86-2

MINERAL SPIRITS GROUP #3

Contaminant	CAS
HYDROTREATED HEAVY PARAFFINIC MINERAL SPIRITS	64742-54-7
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE	64742-53-6
HYDROTREATED LIGHT PARAFFINIC DISTILLATE	64742-55-8
MINERAL OIL	8012-95-1
SOLVENT REFINED HEAVY PARAFFINIC DISTILLATE	64741-88-4
WHITE MINERAL OIL	8042-47-5

Annex 3 to Tables 2A, 2B and 2C

Definition of Volatile Organic Compounds

For the purposes of this Guideline, volatile organic compounds (VOCs) are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and has a vapour pressure of 0.01 kPa or greater at 25°C ^{21, 22}.

The following compounds are not included as VOC because of their negligible photochemical reactivity²²:

methane;
ethane;
methylene chloride (dichloromethane);
1,1,1-trichloroethane (methyl chloroform);
1,1,2-trichloro-1,2,2- trifluoroethane (CFC-113);
trichlorofluoromethane (CFC-11);
dichlorodifluoromethane (CFC-12);
chlorodifluoromethane (HCFC-22);
trifluoromethane (HFC-23);
1,2- dichloro 1,1,2,2-tetrafluoroethane (CFC-114);
chloropentafluoroethane (CFC-115);
1,1,1-trifluoro 2,2-dichloroethane (HCFC-123);
1,1,1,2- tetrafluoroethane (HFC-134a);
1,1-dichloro 1-fluoroethane (HCFC-141b);
1-chloro 1,1-difluoroethane (HCFC-142b);
2-chloro-1,1,1,2- tetrafluoroethane (HCFC-124);
pentafluoroethane (HFC-125);
1,1,2,2- tetrafluoroethane (HFC-134);
1,1,1-trifluoroethane (HFC-143a);
1,1- difluoroethane (HFC-152a);
parachlorobenzotrifluoride (PCBTf);
cyclic, branched, or linear completely methylated siloxanes;
acetone;
perchloroethylene (tetrachloroethylene);
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);
difluoromethane (HFC-32);
ethylfluoride (HFC-161);
1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
1,1,2,2,3-pentafluoropropane (HFC-245ca);
1,1,2,3,3-pentafluoropropane (HFC-245ea);
1,1,1,2,3-pentafluoropropane (HFC-245eb);
1,1,1,3,3-pentafluoropropane (HFC-245fa);

1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
1,1,1,3,3-pentafluorobutane (HFC-365mfc);
chlorofluoromethane (HCFC-31);
1-chloro-1-fluoroethane (HCFC-151a);
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C₄F₉OCH₃);
2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF₃)₂CFCF₂OCH₃);
1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅);
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF₃)₂CFCF₂OC₂H₅);
methyl acetate and perfluorocarbon compounds which falls into these classes:

- (i) Cyclic, branched, or linear, completely fluorinated alkanes;
- (ii) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
- (iii) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
- (iv) Sulphur containing perfluorocarbons with no unsaturations and with sulphur bonds only to carbon and fluorine.

Owing to the numerous VOC species, it is not possible to give an all inclusive list of atmospherically important VOCs. A list of VOC compounds based on Carter's²³ list of ozone forming potential contaminants, not including those in the aforementioned USEPA exclusion list, is available from the Ministry of the Environment's Public Information Centre upon request.

Table 3

**Criteria for Applicability to the Facility by Sector for
Reporting of Criteria Air Contaminants and Greenhouse Gases**

If your facility belongs to one of the following NAICS and if one or more of the following criteria are met, calculating and reporting of emissions of contaminants listed in Table 2A of the Guideline is required.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
CLASS A - ELECTRICITY GENERATION					
<i>ELECTRIC POWER GENERATION</i>					
221111 Hydro-Electric Power Generation	NA				
221112 Fossil-Fuel Electric Power Generation	NA				
221113 Nuclear Electric Power Generation	NA				
221119 Other Electric Power Generation	NA				
CLASS B - LARGE SOURCES					
<i>METAL ORE MINING</i>					
212210 Iron Ore Mining	✓	✓			
212220 Gold and Silver Ore Mining	✓	✓			
212231 Lead-Zinc Ore Mining	✓	✓			
212232 Nickel-Copper Ore Mining	✓	✓			
212233 Copper-Zinc Ore Mining	✓	✓			
212291 Uranium Ore Mining	✓	✓			
212299 All Other Metal Ore Mining	✓	✓			
<i>NON-METALLIC MINERALS MINING AND QUARRYING</i>					
212314 Granite Mining and Quarrying	✓	✓			
212315 Limestone Mining and Quarrying	✓	✓			
212316 Marble Mining and Quarrying	✓	✓			
212317 Sandstone Mining and Quarrying	✓	✓			
212323 Sand and Gravel Mining and Quarrying	✓	✓			
212326 Shale, Clay and Refractory Mining and Quarrying	✓	✓			
212394 Asbestos Mining	✓	✓			
212395 Gypsum Mining	✓	✓			
212396 Potash Mining	✓	✓			
<i>NATURAL GAS DISTRIBUTION</i>					
221210 Natural Gas Distribution	✓				
<i>WATER, SEWAGE AND OTHER SYSTEMS</i>					
221330 Steam and Air-Conditioning Supply	✓				
<i>TEXTILE MILLS AND TEXTILE MILL PRODUCTS</i>					
313110 Fibre, Yarn and Thread Mills	✓	✓			
313210 Broad-Woven Fabric Mills	✓	✓			
313310 Textile and Fabric Finishing	✓	✓			
313320 Fabric Coating	✓	✓			
314110 Carpet and Rug Mills	✓	✓			
<i>WOOD PRODUCT MANUFACTURING</i>					
321111 Sawmills (except Shingle and Shake Mills)	✓	✓			

- NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.
- * NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.
- ** See Section 2.2(2) of the Guideline.
- *** The term "solvent" is described in the Glossary section of the Guideline.
- **** The term "coating material" is described in the Glossary section of the Guideline.
- ✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
321112 Shingle and Shake Mills	✓	✓			
321114 Wood Preservation	✓	✓			
321211 Hardwood Veneer and Plywood Mills	✓	✓	✓		
321212 Softwood Veneer and Plywood Mills	✓	✓	✓		
321215 Structural Wood Product Manufacturing	✓	✓	✓		
321216 Particle Board and Fibreboard Mills	✓	✓	✓		
321217 Waferboard Mills	✓	✓	✓		
321911 Wood Window and Door Manufacturing	✓	✓	✓		
<i>PULP, PAPER AND PAPERBOARD MILLS</i>					
322111 Mechanical Pulp Mills	✓	✓			
322112 Chemical Pulp Mills	✓	✓			
322121 Paper (except Newsprint) Mills	✓	✓			
322122 Newsprint Mills	✓	✓			
322130 Paperboard Mills	✓	✓			
<i>CONVERTED PAPER PRODUCT MANUFACTURING</i>					
322211 Corrugated and Solid Fibre Box Manufacturing	✓	✓		✓	
322212 Folding Paperboard Box Manufacturing	✓	✓		✓	
322219 Other Paperboard Container Manufacturing	✓	✓		✓	
322220 Paper Bag and Coated and Treated Paper Manufacturing	✓	✓		✓	
322230 Stationery Product Manufacturing	✓	✓		✓	
322291 Sanitary Paper Product Manufacturing	✓	✓		✓	
<i>PRINTING AND RELATED SUPPORT ACTIVITIES</i>					
323113 Commercial Screen Printing	✓	✓		✓	
323116 Manifold Business Forms Printing	✓	✓		✓	
323119 Other Printing (Includes Commercial Lithographic, Gravure and Flexographic Printing)	✓	✓		✓	
<i>PETROLEUM REFINING AND DISTRIBUTION</i>					
324110 Petroleum Refineries	✓	✓			
412110 Petroleum Product Wholesaler-Distributors (For gasoline bulk plants and terminals only)	NA				
<i>ASPHALT, OTHER PETROLEUM AND COAL PRODUCTS</i>					
324121 Asphalt Paving Mixture and Block Manufacturing	✓	✓			
324122 Asphalt Shingle and Coating Material Manufacturing	✓	✓			
324190 Other Petroleum and Coal Products Manufacturing	✓	✓			
<i>CHEMICAL MANUFACTURING</i>					
325110 Petrochemical Manufacturing	✓	✓			
325120 Industrial Gas Manufacturing	✓	✓			
325130 Synthetic Dye and Pigment Manufacturing	✓	✓			
325181 Alkali and Chlorine Manufacturing	✓	✓			
325189 All Other Basic Inorganic Chemical Manufacturing	✓	✓			
325190 Other Basic Organic Chemical Manufacturing	✓	✓			
325210 Resin and Synthetic Rubber Manufacturing	✓	✓			

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
325220 Artificial and Synthetic Fibres and Filaments Manufacturing	✓	✓			
325313 Chemical Fertilizer (except Potash) Manufacturing	✓	✓			
325314 Mixed Fertilizer Manufacturing	✓	✓			
325320 Pesticide and Other Agricultural Chemical Manufacturing	✓	✓			
325410 Pharmaceutical and Medicine Manufacturing	✓	✓			
325510 Paint and Coating Manufacturing	✓	✓	✓		
325520 Adhesive Manufacturing	✓	✓			
325610 Soap and Cleaning Compound Manufacturing	✓	✓			
325620 Toilet Preparation Manufacturing	✓	✓			
325910 Printing Ink Manufacturing	✓	✓		✓	
325920 Explosives Manufacturing	✓	✓			
325991 Custom Compounding of Purchased Resins	✓	✓			
325999 All Other Miscellaneous Chemical Product Manufacturing	✓	✓			
PLASTICS AND RUBBER PRODUCTS MANUFACTURING					
326111 Unsupported Plastic Bag Manufacturing	✓	✓		✓	
326114 Unsupported Plastic Film and Sheet Manufacturing	✓	✓			
326121 Unsupported Plastic Profile Shape Manufacturing	✓	✓			
326122 Plastic Pipe and Pipe Fitting Manufacturing	✓	✓			
326130 Laminated Plastic Plate, Sheet and Shape Manufacturing	✓	✓			
326140 Polystyrene Foam Product Manufacturing	✓	✓			
326150 Urethane and Other Foam Product (except Polystyrene) Manufacturing	✓	✓			
326160 Plastic Bottle Manufacturing	✓	✓			
326191 Plastic Plumbing Fixture Manufacturing	✓	✓			
326193 Motor Vehicle Plastic Parts Manufacturing	✓	✓			
326210 Tire Manufacturing	✓	✓			
326220 Rubber and Plastic Hose and Belting Manufacturing	✓	✓			
NON-METALLIC MINERAL PRODUCT MANUFACTURING					
327110 Pottery, Ceramics and Plumbing Fixture Manufacturing	✓	✓			
327120 Clay Building Material and Refractory Manufacturing	✓	✓			
327214 Glass Manufacturing	✓	✓			
327215 Glass Product Manufacturing from Purchased Glass	✓	✓			
327310 Cement Manufacturing	✓	✓			
327320 Ready-Mix Concrete Manufacturing	✓	✓			
327330 Concrete Pipe, Brick and Block Manufacturing	✓	✓			✓
327410 Lime Manufacturing	✓	✓			
327420 Gypsum Product Manufacturing	✓	✓			
327910 Abrasive Product Manufacturing	✓	✓			
IRON AND STEEL MILLS AND FERRO-ALLOY MANUFACTURING					
331110 Iron and Steel Mills and Ferro-Alloy Manufacturing	✓	✓	✓		
STEEL PRODUCT MANUFACTURING FROM PURCHASED STEEL					
331210 Iron and Steel Pipes and Tubes Manufacturing	✓	✓	✓		✓
331221 Cold-Rolled Steel Shape Manufacturing	✓	✓	✓		
331222 Steel Wire Drawing	✓	✓	✓		

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
ALUMINA AND ALUMINUM PRODUCTION AND PROCESSING					
331313 Primary Production of Alumina and Aluminum	✓	✓	✓		
331317 Aluminum Rolling, Drawing, Extruding and Alloying	✓	✓	✓		
NON-FERROUS METAL (EXCEPT ALUMINUM) PRODUCTION AND PROCESSING					
331410 Non-Ferrous (except Aluminum) Smelting and Refining	✓	✓	✓		
331420 Copper Rolling, Drawing, Extruding and Alloying	✓	✓	✓		
331490 Non-Ferrous (except Copper and Aluminum) Rolling, Drawing, Extruding and Alloying	✓	✓	✓		
FOUNDRIES					
331511 Iron Foundries	✓	✓	✓		
331514 Steel Foundries	✓	✓	✓		
331523 Non-Ferrous Die-Casting Foundries	✓	✓	✓		
331529 Non-Ferrous Foundries (except Die-Casting)	✓	✓	✓		
FABRICATED METAL PRODUCT MANUFACTURING					
332113 Forging	✓	✓			
332118 Stamping	✓	✓			
332210 Cutlery and Hand Tool Manufacturing	✓	✓	✓		✓
332311 Prefabricated Metal Building and Component Manufacturing	✓	✓	✓		✓
332314 Concrete Reinforcing Bar Manufacturing	✓	✓			✓
332319 Other Plate Work and Structural Product Manufacturing	✓	✓			✓
332321 Metal Window and Door Manufacturing	✓	✓	✓		✓
332410 Power Boiler and Heat Exchanger Manufacturing	✓	✓			✓
332420 Metal Tank (Heavy Gauge) Manufacturing	✓	✓	✓		✓
332431 Metal Can Manufacturing	✓	✓	✓		✓
332510 Hardware Manufacturing	✓	✓	✓		
332611 Spring (Heavy Gauge) Manufacturing	✓	✓			
332619 Other Fabricated Wire Product Manufacturing	✓	✓			
332720 Turned Product and Screw, Nut and Bolt Manufacturing	✓	✓			
332810 Coating, Engraving, Heat Treating and Allied Activities	✓	✓	✓		
332910 Metal Valve Manufacturing	✓	✓			
332991 Ball and Roller Bearing Manufacturing	✓	✓			
COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING					
334110 Computer and Peripheral Equipment Manufacturing	✓	✓	✓		
334210 Telephone Apparatus Manufacturing	✓	✓	✓		
334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	✓	✓	✓		
334290 Other Communications Equipment Manufacturing	✓	✓	✓		
334410 Semiconductor and Other Electronic Component Manufacturing	✓	✓	✓		
334511 Navigational and Guidance Instruments Manufacturing	✓	✓	✓		

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
334512 Measuring, Medical and Controlling Devices Manufacturing	✓	✓	✓		
335110 Electric Lamp Bulb and Parts Manufacturing	✓	✓	✓		
335120 Lighting Fixture Manufacturing	✓	✓	✓		
335210 Small Electrical Appliance Manufacturing	✓	✓	✓		
335223 Major Kitchen Appliance Manufacturing	✓	✓	✓		
335311 Power, Distribution and Specialty Transformers Manufacturing	✓	✓	✓		
335312 Motor and Generator Manufacturing	✓	✓	✓		
335315 Switchgear and Switchboard, and Relay and Industrial Control Apparatus Manufacturing	✓	✓	✓		
335910 Battery Manufacturing	✓	✓	✓		
335920 Communication and Energy Wire and Cable Manufacturing	✓	✓	✓		
335930 Wiring Device Manufacturing	✓	✓	✓		
TRANSPORTATION EQUIPMENT MANUFACTURING					
336110 Automobile and Light-Duty Motor Vehicle Manufacturing	✓	✓	✓		✓
336120 Heavy-Duty Truck Manufacturing	✓	✓	✓		✓
336211 Motor Vehicle Body Manufacturing	✓	✓	✓		✓
336212 Truck Trailer Manufacturing	✓	✓	✓		✓
336215 Motor Home, Travel Trailer and Camper Manufacturing	✓	✓	✓		✓
336310 Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	✓	✓	✓		✓
336320 Motor Vehicle Electrical and Electronic Equipment Manufacturing	✓	✓	✓		✓
336330 Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	✓	✓	✓		✓
336340 Motor Vehicle Brake System Manufacturing	✓	✓	✓		✓
336350 Motor Vehicle Transmission and Power Train Parts Manufacturing	✓	✓	✓		✓
336360 Motor Vehicle Seating and Interior Trim Manufacturing	✓	✓	✓		✓
336370 Motor Vehicle Metal Stamping	✓	✓	✓		✓
336390 Other Motor Vehicle Parts Manufacturing	✓	✓	✓		✓
336410 Aerospace Product and Parts Manufacturing	✓	✓	✓		✓
336510 Railroad Rolling Stock Manufacturing	✓	✓	✓		✓
336611 Ship Building and Repairing	✓	✓	✓		✓
336612 Boat Building	✓	✓	✓		✓
336990 Other Transportation Equipment Manufacturing	✓	✓	✓		✓
CLASS C - SMALL SOURCES					
WATER, SEWAGE AND OTHER SYSTEMS					
221320 Sewage Treatment Facilities	✓				
FOOD AND KINDRED PRODUCTS (FOR ANIMAL CONSUMPTION)					
311111 Dog and Cat Food Manufacturing	✓	✓			

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
311119 Other Animal Food Manufacturing	✓	✓			
FOOD AND KINDRED PRODUCTS (FOR HUMAN CONSUMPTION)					
311211 Flour Milling	✓	✓			
311214 Rice Milling and Malt Manufacturing	✓	✓			
311221 Wet Corn Milling	✓	✓			
311224 Oilseed Processing	✓	✓			
311225 Fat and Oil Refining and Blending	✓	✓			
311230 Breakfast Cereal Manufacturing	✓	✓			
311310 Sugar Manufacturing	✓	✓			
311320 Chocolate and Confectionery Manufacturing from Cacao Beans	✓	✓			
311330 Confectionery Manufacturing from Purchased Chocolate	✓	✓			
311340 Non-Chocolate Confectionery Manufacturing	✓	✓			
311410 Frozen Food Manufacturing	✓	✓			
311420 Fruit and Vegetable Canning, Pickling and Drying	✓	✓			
311511 Fluid Milk Manufacturing	✓	✓			
311515 Butter, Cheese, and Dry and Condensed Dairy Products Manufacturing	✓	✓			
311520 Ice Cream and Frozen Dessert Manufacturing	✓	✓			
311614 Rendering and Meat Processing from Carcasses	✓	✓			
311615 Poultry Processing	✓	✓			
311710 Seafood Product Preparation and Packaging	✓	✓			
311814 Commercial Bakeries and Frozen Product Manufacturing	✓	✓			
311821 Cookie and Cracker Manufacturing	✓	✓			
311822 Flour Mixes and Dough Manufacturing from Purchased Flour	✓	✓			
311823 Dry Pasta Manufacturing	✓	✓			
311830 Tortilla Manufacturing	✓	✓			
311911 Roasted Nut and Peanut Butter Manufacturing	✓	✓			
311919 Other Snack Food Manufacturing	✓	✓			
311920 Coffee and Tea Manufacturing	✓	✓			
311930 Flavouring Syrup and Concentrate Manufacturing	✓	✓			
311940 Seasoning and Dressing Manufacturing	✓	✓			
312110 Soft Drink and Ice Manufacturing	✓	✓			
312120 Breweries	✓	✓			
312130 Wineries	✓	✓			
312140 Distilleries	✓	✓			
TOBACCO MANUFACTURING					
312210 Tobacco Stemming and Redrying	✓	✓			
312220 Tobacco Product Manufacturing	✓	✓			
LEATHER AND ALLIED PRODUCT MANUFACTURING					
316110 Leather and Hide Tanning and Finishing	✓	✓	✓		

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
316210 Footwear Manufacturing	✓	✓			
316990 Other Leather and Allied Product Manufacturing	✓	✓	✓		
MACHINERY MANUFACTURING					
333110 Agricultural Implement Manufacturing	✓	✓	✓		✓
333120 Construction Machinery Manufacturing	✓	✓	✓		✓
333130 Mining and Oil and Gas Field Machinery Manufacturing	✓	✓	✓		✓
333210 Sawmill and Woodworking Machinery Manufacturing	✓	✓	✓		✓
333220 Rubber and Plastics Industry Machinery Manufacturing	✓	✓	✓		✓
333291 Paper Industry Machinery Manufacturing	✓	✓	✓		✓
333310 Commercial and Service Industry Machinery Manufacturing	✓	✓	✓		✓
333413 Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	✓	✓	✓		✓
333416 Heating Equipment and Commercial Refrigeration Equipment Manufacturing	✓	✓	✓		✓
333511 Industrial Mould Manufacturing	✓	✓	✓		✓
333519 Other Metalworking Machinery Manufacturing	✓	✓	✓		✓
333611 Turbine and Turbine Generator Set Unit Manufacturing	✓	✓	✓		✓
333619 Other Engine and Power Transmission Equipment Manufacturing	✓	✓	✓		✓
333910 Pump and Compressor Manufacturing	✓	✓	✓		✓
333920 Material Handling Equipment Manufacturing	✓	✓	✓		✓
FURNITURE AND RELATED PRODUCT MANUFACTURING					
337110 Wood Kitchen Cabinet and Counter Top Manufacturing	✓	✓	✓		
337121 Upholstered Household Furniture Manufacturing	✓	✓	✓		
337123 Other Wood Household Furniture Manufacturing	✓	✓	✓		
337126 Household Furniture (except Wood and Upholstered) Manufacturing	✓	✓	✓		✓
337127 Institutional Furniture Manufacturing	✓	✓	✓		✓
337213 Wood Office Furniture, including Custom Architectural Woodwork, Manufacturing	✓	✓	✓		
337214 Office Furniture (except Wood) Manufacturing	✓	✓	✓		✓
337215 Showcase, Partition, Shelving and Locker Manufacturing	✓	✓	✓		✓
337910 Mattress Manufacturing	✓	✓	✓		
337920 Blind and Shade Manufacturing	✓	✓	✓		
TRANSPORTATION OPERATION (For maintenance and repair yard only)					
485110 Urban Transit Systems	✓	✓			
485210 Interurban and Rural Bus Transportation	✓	✓			

- NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.
- * NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.
- ** See Section 2.2(2) of the Guideline.
- *** The term "solvent" is described in the Glossary section of the Guideline.
- **** The term "coating material" is described in the Glossary section of the Guideline.
- ✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
COMMERCIAL BUILDINGS (Commercial buildings include office buildings, hotels, shopping centres. Report SO ₂ , NO _x , and HFC-134A emissions from heating or cooling systems if the emissions are equal to or greater than their respective reporting thresholds)					
531120 Lessors (or Owners) of Non-Residential Buildings (except Mini-Warehouses)	✓				
TESTING LABORATORIES (For product development and testing only)					
541380 Testing Laboratories	✓	✓			
WASTE MANAGEMENT AND REMEDIATION SERVICES					
562110 Waste Collection	✓	✓			
562210 Waste Treatment and Disposal	NA				
562910 Remediation Services	✓	✓			
562920 Material Recovery Facilities	✓	✓			
562990 All Other Waste Management Services	✓	✓			
EDUCATIONAL SERVICES (For universities, report SO ₂ , NO _x , and HFC-134A emissions from heating or cooling systems if the emissions are equal to or greater than their respective reporting thresholds)					
611310 Universities	✓				
HEALTH CARE (For hospitals with incinerators only)					
622111 General (except Paediatric) Hospitals	NA				
622112 Paediatric Hospitals	NA				
622210 Psychiatric and Substance Abuse Hospitals	NA				
622310 Specialty (except Psychiatric and Substance Abuse) Hospitals	NA				
AUTO REPAIR SERVICES					
811121 Automotive Body, Paint and Interior Repair and Maintenance	✓	✓	✓		✓
DRY CLEANING AND LAUNDRY SERVICES (For bulk dry cleaning depots/plants only)					
812320 Dry Cleaning and Laundry Services (except Coin-Operated)	✓	✓			
CLASS C - SMALL SOURCES MISCELLANEOUS					
OIL AND GAS EXTRACTION					
211113 Conventional Oil and Gas Extraction	✓	✓			
211114 Non-Conventional Oil Extraction	✓	✓			
COAL MINING					
212114 Bituminous Coal Mining	✓	✓			
212115 Subbituminous Coal Mining	✓	✓			
212116 Lignite Coal Mining	✓	✓			

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
NON-METALLIC MINERALS MINING AND QUARRYING					
212392 Diamond Mining	✓	✓			
212393 Salt Mining	✓	✓			
212397 Peat Extraction	✓	✓			
212398 All Other Non-Metallic Mineral Mining and Quarrying	✓	✓			
SUPPORT ACTIVITIES FOR MINING AND OIL AND GAS EXTRACTION					
213111 Oil and Gas Contract Drilling	✓	✓			
213117 Contract Drilling (except Oil and Gas)	✓	✓			
213118 Services to Oil and Gas Extraction	✓	✓			
213119 Other Support Activities for Mining	✓	✓			
ELECTRIC POWER TRANSMISSION AND DISTRIBUTION					
221121 Electric Bulk Power Transmission and Control	NA				
221122 Electric Power Distribution	NA				
FOOD AND KINDRED PRODUCTS (FOR HUMAN CONSUMPTION)					
311611 Animal (except Poultry) Slaughtering	✓	✓			
311990 All Other Food Manufacturing	✓	✓			
TEXTILE MILLS AND TEXTILE MILL PRODUCTS					
313220 Narrow Fabric Mills and Schiffl Machine Embroidery	✓	✓			
313230 Nonwoven Fabric Mills	✓	✓			
313240 Knit Fabric Mills	✓	✓			
314120 Curtain and Linen Mills	✓	✓			
314910 Textile Bag and Canvas Mills	✓	✓			
314990 All Other Textile Product Mills	✓	✓			
CLOTHING MANUFACTURING					
315110 Hosiery and Sock Mills	✓	✓			
315190 Other Clothing Knitting Mills	✓	✓			
315210 Cut and Sew Clothing Contracting	✓	✓			
315221 Men's and Boys' Cut and Sew Underwear and Nightwear Manufacturing	✓	✓			
315222 Men's and Boys' Cut and Sew Suit, Coat and Overcoat Manufacturing	✓	✓			
315226 Men's and Boys' Cut and Sew Shirt Manufacturing	✓	✓			
315227 Men's and Boys' Cut and Sew Trouser, Slack and Jean Manufacturing	✓	✓			
315229 Other Men's and Boys' Cut and Sew Clothing Manufacturing	✓	✓			
315231 Women's and Girls' Cut and Sew Lingerie, Loungewear and Nightwear Manufacturing	✓	✓			
315232 Women's and Girls' Cut and Sew Blouse and Shirt Manufacturing	✓	✓			
315233 Women's and Girls' Cut and Sew Dress Manufacturing	✓	✓			
315234 Women's and Girls' Cut and Sew Suit, Coat, Tailored Jacket and Skirt Manufacturing	✓	✓			
315239 Other Women's and Girls' Cut and Sew Clothing Manufacturing	✓	✓			

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
315291 Infants' Cut and Sew Clothing Manufacturing	✓	✓			
315292 Fur and Leather Clothing Manufacturing	✓	✓			
315299 All Other Cut and Sew Clothing Manufacturing	✓	✓			
315990 Clothing Accessories and Other Clothing Manufacturing	✓	✓			
WOOD PRODUCT MANUFACTURING					
321919 Other Millwork	✓	✓	✓		
321920 Wood Container and Pallet Manufacturing	✓	✓	✓		
321991 Manufactured (Mobile) Home Manufacturing	✓	✓	✓		
321992 Prefabricated Wood Building Manufacturing	✓	✓	✓		
321999 All Other Miscellaneous Wood Product Manufacturing	✓	✓	✓		
CONVERTED PAPER PRODUCT MANUFACTURING					
322299 All Other Converted Paper Product Manufacturing	✓	✓		✓	
PRINTING AND RELATED SUPPORT ACTIVITIES					
323114 Quick Printing	✓	✓		✓	
323115 Digital Printing	✓	✓		✓	
323120 Support Activities for Printing	✓	✓		✓	
PLASTICS AND RUBBER PRODUCTS MANUFACTURING					
326198 All Other Plastic Product Manufacturing	✓	✓			
326290 Other Rubber Product Manufacturing	✓	✓			
NON-METALLIC MINERAL PRODUCT MANUFACTURING					
327390 Other Concrete Product Manufacturing	✓	✓			
327990 All Other Non-Metallic Mineral Product Manufacturing	✓	✓			
FABRICATED METAL PRODUCT MANUFACTURING					
332329 Other Ornamental and Architectural Metal Products Manufacturing	✓	✓	✓		✓
332439 Other Metal Container Manufacturing	✓	✓	✓		✓
332710 Machine Shops	✓	✓			
332999 All Other Miscellaneous Fabricated Metal Product Manufacturing	✓	✓	✓		✓
MACHINERY MANUFACTURING					
333299 All Other Industrial Machinery Manufacturing	✓	✓	✓		✓
333990 All Other General-Purpose Machinery Manufacturing	✓	✓	✓		✓
COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING					
334310 Audio and Video Equipment Manufacturing	✓	✓	✓		
334610 Manufacturing and Reproducing Magnetic and Optical Media	✓	✓	✓		
335229 Other Major Appliance Manufacturing	✓	✓	✓		
335990 All Other Electrical Equipment and Component Manufacturing	✓	✓	✓		
OTHER MISCELLANEOUS MANUFACTURING					
339110 Medical Equipment and Supplies Manufacturing	✓	✓	✓		
339910 Jewellery and Silverware Manufacturing	✓	✓	✓		
339920 Sporting and Athletic Goods Manufacturing	✓	✓	✓		
339930 Doll, Toy and Game Manufacturing	✓	✓	✓		
339940 Office Supplies (except Paper) Manufacturing	✓	✓	✓		

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

SECTOR DESCRIPTION WITH NAICS* CODES	CRITERIA FOR APPLICABILITY OF THE REGULATION				
	>3 MM BTU/hr**	≥ 3,000 kg/year solvents***	≥ 3,000 kg/year coating materials****	≥ 3,000 kg/year printing inks	≥ 5,000 kg/year welding rods or wires
339950 Sign Manufacturing	✓	✓	✓	✓	
339990 All Other Miscellaneous Manufacturing	✓	✓	✓		
MISCELLANEOUS WHOLESALE-DISTRIBUTORS					
418190 Other Recyclable Material Wholesaler-Distributors	✓	✓			
418410 Chemical (except Agricultural) and Allied Product Wholesaler-Distributors	✓	✓			
TRANSPORTATION OPERATION (For maintenance and repair yard only)					
481110 Scheduled Air Transportation	✓	✓			
481214 Non-Scheduled Chartered Air Transportation	✓	✓			
481215 Non-Scheduled Specialty Flying Services	✓	✓			
482112 Short-Haul Freight Rail Transportation	✓	✓			
482113 Mainline Freight Rail Transportation	✓	✓			
482114 Passenger Rail Transportation	✓	✓			
483115 Deep Sea, Coastal and Great Lakes Water Transportation (except by Ferries)	✓	✓			
483116 Deep Sea, Coastal and Great Lakes Water Transportation by Ferries	✓	✓			
486110 Pipeline Transportation of Crude Oil	✓	✓			
486210 Pipeline Transportation of Natural Gas	✓	✓			
486910 Pipeline Transportation of Refined Petroleum Products	✓	✓			
486990 All Other Pipeline Transportation	✓	✓			
SUPPORT ACTIVITIES FOR TRANSPORTATION					
488111 Air Traffic Control	✓	✓			
488119 Other Airport Operations	✓	✓			
488190 Other Support Activities for Air Transportation	✓	✓			
488210 Support Activities for Rail Transportation	✓	✓			
488390 Other Support Activities for Water Transportation	✓	✓			
488490 Other Support Activities for Road Transportation	✓	✓			
488519 Other Freight Transportation Arrangement	✓	✓			
PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES					
541990 All Other Professional, Scientific and Technical Services	✓	✓			
ADMINISTRATIVE AND SUPPORT SERVICES					
561990 All Other Support Services	✓	✓			
EDUCATIONAL SERVICES (For colleges of applied arts and technology, report SO ₂ , NO _x , and HFC-134A emissions from heating or cooling systems if the emissions are equal to or greater than their respective reporting thresholds)					
611210 Community Colleges and C.E.G.E.P.s (collège d'enseignement générales et professionnelles)	✓				
PHOTO FINISHING SERVICES (For commercial and professional photo finishing laboratories on a large scale basis)					
812921 Photo Finishing Laboratories (except One-Hour)	✓	✓			

NA Not applicable. The facility must proceed to calculate and report emissions of contaminants against thresholds.

* NAICS - North American Industry Classification System, Canada, Statistics Canada 1997.

** See Section 2.2(2) of the Guideline.

*** The term "solvent" is described in the Glossary section of the Guideline.

**** The term "coating material" is described in the Glossary section of the Guideline.

✓ Criteria applicable to the respective sectors.

Table 4

References of Source Testing Methodologies for Emission Monitoring Systems

Environment Canada, Reference Method for the Monitoring of Gaseous Emissions from Fossil Fuel-fired Boilers EPS 1/RM/15 September 1990.
MOE Source Testing Code (Version #2) Report#ARB-66-80, November 1980.
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 6 - Determination of sulfur dioxide emissions from stationary sources.*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 6A - Determination of sulfur dioxide, moisture, and carbon dioxide emissions from fossil fuel combustion sources.*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 6B - Determination of sulfur dioxide and carbon dioxide daily average emissions from fossil fuel combustion sources.*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 6C - Determination of Sulfur Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure).*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 7 - Determination of nitrogen oxide emissions from stationary sources.*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 7A - Determination of nitrogen oxide emissions from stationary sources—Ion chromatographic method.*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 7B - Determination of nitrogen oxide emissions from stationary sources (Ultraviolet spectrophotometry).*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 7C - Determination of nitrogen oxide emissions from stationary sources—Alkaline-permanganate/colorimetric method.*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 7D - Determination of nitrogen oxide emissions from stationary sources—Alkaline-permanganate/ion chromatographic method.*
U.S. EPA 40CFR60 Appendix A - Test Methods: Method 7E - Determination of nitrogen oxide emissions from stationary sources (Instrumental Analyzer Procedure).*
Other source testing methods as approved by the Ministry.

* http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr60a_00.html

Table 5

Annual and Smog Season Emissions Reporting Parameters

The following elements shall be included in a report submitted to the Director pursuant to Section 5 of the Guideline and made available to the public by the owner and operator of a facility upon request:

- Notes: [1] The information within the square brackets represents the data storage format of the parameter.
The first letter in Aw, Nw or Nw.d means type of information, alphanumeric (A) or numeric (N).
The second part in Aw, Nw or Nw.d means the maximum width (w) and decimal places (d) of the field.
[2] '*' in front of a parameter means there may be multiple records/information.

1. Facility

Provincial Identifier (MOE) of the Discharge Facility [A10]
NPRI ID [A10]
Primary Industrial Classification (North America Industrial Classification System, NAICS) [NAICS reference table:A6]
Other NAICS (3 Additional NAICS, separated by comma) [NAICS reference table:A20]
Data Reporting Year [N4]
Reporting Period [REPT reference table:A4]
Specific Reporting Period, if applicable [Begin date:A8, end date:A8]
Company Name [A30]
Company Location - Address [2 lines: A30, A30]
Company Location - City, Province, Country, Postal Code [A20, A20, A10, A10]
Facility Name/Division [A30]
Facility Location - Address [2 lines: A30, A30]
Facility Location - City, Postal Code [A20, A6]
Facility Location - Geographical Reference [Latitude:N7.4, longitude:N8.4]
*Contact Person (who prepared the report) and Information [Name:A50, position:A20, tel.no.:A10, fax.no.:A10, email:A50]

1.1 Electricity Generation Sector Only

Design Capacity of the Facility (MW) [N10]
*Type of Energy Source [ENERGY reference table:A4]
*Fuel Type [FUEL reference table:A4]
Amount of Electricity Generated by the facility annually [N20.9, UNIT reference table:A20]
Amount of Electricity Generated by the facility during the smog season
(May 1 - September 30) [N20.9, UNIT reference table:A20]

2. Facility-wide Air Emission Data

For annual reporting

- *CAS number of Contaminant [CONTAM reference table:A11]
- *Emissions [N20.9, UNIT reference table and Code:A20]
- *Mode of Releases of Emissions [RMODE reference table:A4]
- *Estimation Method [METHOD reference table:A10]

For smog season reporting (May 1 - September 30)

Report ONLY SO₂, NO_x, VOC, PM, PM₁₀, PM_{2.5} and CO emissions.

*CAS number of Contaminant [CONTAM reference table:A11]

*Emissions [N20.9, UNIT reference table:A20]

*Mode of Releases of Emissions [RMODE reference table:A4]

*Estimation Method [METHOD reference table:A10]

Reference Tables for Reporting and Recording Keeping

The following reference tables are available to assist in reporting and record keeping.
(See Appendix E for details)

1. CDEV: Control Devices
2. CONTAM: Contaminant List
3. DUEQT: Discharge Unit Type
4. ENERGY: Energy Type
5. FUEL: Fuel Type
6. FUGTYPE: Fugitive Emission Type
7. METHOD: Emission Estimation Method Code
8. NAICS: North America Industrial Classification System Code
9. REPT: Reporting Period
10. RMODE: Release Mode
11. ROADTYPE: Road Type
12. SCC: Source Classification Code
13. TANK: Storage Tank Type
14. UNIT: Engineering Units

Table 6

Quarterly Emissions Reporting Parameters

The following elements shall be included in a report submitted to the Director pursuant to Section 5 of the Guideline and made available to the public by the owner and operator of a facility upon request:

Notes: [1] The information within the square brackets represents the data storage format of the parameter.
The first letter in Aw, Nw or Nw.d means type of information, alphanumeric (A) or numeric (N).
The second part in Aw, Nw or Nw.d means the maximum width (w) and decimal places (d) of the field.
[2] '**' in front of a parameter means there may be multiple records/information.

1. Facility

Provincial Identifier (MOE) of the Discharge Facility [A10]
NPRI ID [A10]
Primary Industrial Classification (North America Industrial Classification System, NAICS) [NAICS reference table:A6]
Other NAICS (3 Additional NAICS, separated by comma) [NAICS reference table:A20]
Data Reporting Year [N4]
Reporting Period [REPT reference table:A4]
Specific Reporting Period, if applicable [Begin date:A8, end date:A8]
Company Name [A30]
Company Location - Address [2 lines: A30, A30]
Company Location - City, Province, Country, Postal Code [A20, A20, A10, A10]
Facility Name/Division [A30]
Facility Location - Address [2 lines: A30, A30]
Facility Location - City, Postal Code [A20, A6]
Facility Location - Geographical Reference [Latitude:N7.4, longitude:N8.4]
*Contact Person (who prepared the report) and Information [Name:A50, position:A20, tel.no.:A10, fax.No.:A10, email:A50]

2. Discharge Unit(s) to Which Reporting of Emission Monitoring System Applies

***Discharge Unit to which reporting of emission monitoring system applies**

Discharge Unit Identifier (ID) [A10]
Discharge Unit Name [A30]
Discharge Unit Description [A30]
Discharge Unit Type [DUEQT reference table:A3]
Discharge Unit Name Plate Capacity [N10, (MW) for electricity generation sector; (MMBTU) for non-electricity generation sectors]
Discharge Unit Activity [N20.9, electricity generated (MWH) for electricity generation sector; heat input (MMBTU) for non-electricity generation sectors]
Type of Energy Source [ENERGY reference table:A4]
Fuel Type [FUEL reference table:A4]

3. Discharge Unit(s) Air Emission Data

The following SO₂ and NO_x emission information would be required for quarterly, cumulative year-to-date, and cumulative smog-season-to-date reporting.

SO₂ Estimation Method [METHOD reference table:A10]
SO₂ Emission Control Device [CDEV reference table:A3]
SO₂ Emission [N20.9, in tonnes]
SO₂ Average Emission Rate [N20.9, for electricity generation sector only (kg/MWH)]

NO_x Estimation Method [METHOD reference table:A10]
NO_x Emission Control Device [CDEV reference table:A3]
NO_x Emission [N20.9, in tonnes]
NO_x Average Emission Rate [N20.9, for electricity generation sector only (kg/MWH)]

Information that does not change from one report to the next (e.g., address, location, etc.) can be omitted from reports subsequent to the first one.

Reference Tables for Reporting and Recording Keeping

The following reference tables are available to assist in reporting and record keeping.
(See Appendix E for details)

1. CDEV: Control Devices
2. CONTAM: Contaminant List
3. DUEQT: Discharge Unit Type
4. ENERGY: Energy Type
5. FUEL: Fuel Type
6. FUGTYPE: Fugitive Emission Type
7. METHOD: Emission Estimation Method Code
8. NAICS: North America Industrial Classification System Code
9. REPT: Reporting Period
10. RMODE: Release Mode
11. ROADTYPE: Road Type
12. SCC: Source Classification Code
13. TANK: Storage Tank Type
14. UNIT: Engineering Units

Table 7

Record Keeping Parameters for Annual and Smog Season Emissions

All facilities to which Sections 5.1, 5.2, 5.3 and/or 5.4 of the Guideline apply shall make a record annually of the following parameters where applicable. “Where applicable” means that if a listed parameter was used for calculating emissions, the relevant information must be recorded. If a listed parameter is not recorded, the facility owner and operator should be prepared to demonstrate that the particular parameter was not used to estimate emissions. These records shall be kept on-site for a period of 7 years and made available to the MOE on request.

The records of the parameters must be kept, where applicable, in an electronic format (excluding process diagrams). The format for the parameters has been provided as a guideline, which the facility can elect to use when storing the required parameters electronically.

- Notes: [1] When a paragraph is indented, it means it is a sub-level table.
[2] The information within the square brackets represents the data storage format of the parameter. The first letter in Aw, Nw or Nw.d means type of information, alphanumeric (A) or numeric (N). The second part in Aw, Nw or Nw.d means the maximum width (w) and decimal places (d) of the field.
[3] ‘*’ in front of a parameter means there may be multiple records/information.

1. Facility

Provincial Identifier (MOE) of the Discharge Facility [A10]

NPRI ID [A10]

Primary Industrial Classification (North America Industrial Classification System, NAICS) [NAICS reference table:A6]

Other NAICS (3 Additional NAICS, separated by comma) [NAICS reference table:A20]

Data Reporting Year [N4]

Reporting Period [REPT reference table:A4]

Specific Reporting Period, if applicable [Begin date:A8, end date:A8]

Company Name [A30]

Company Location - Address [2 lines: A30, A30]

Company Location - City, Province, Country, Postal Code [A20, A20, A10, A10]

Facility Name/Division [A30]

Facility Location - Address [2 lines: A30, A30]

Facility Location - City, Postal Code [A20, A6]

Facility Location - Geographical Reference [Latitude:N7.4, longitude:N8.4]

*Contact Person (who prepared the report) and Information [Name:A50, position:A20, tel.No.:A10, fax.No.:A10, email:A50]

*Process Diagram [hardcopy, computer graphics file, or Acrobat PDF format] showing the location of the discharge units (generation units in the electricity sector), any stack through which the contaminants are discharged from the discharge unit, and every pollution control device that is intended to reduce emissions of the contaminants from the discharge unit

*Provincial Permit Number(s) (e.g., Certificate of Approval) (separated by comma) [A50]

1.1 For Electricity Generation Sector Only

Design Capacity of the Facility (MW) [N10]

Type of Energy Source [ENERGY reference table:A4]

Amount of Electricity Generated by the facility annually [N20.9, UNIT reference table:A20]

Amount of Electricity Generated by the facility during the smog season (May 1 - September 30)

[N20.9, UNIT reference table:A20]

*Electricity Generation Equipment Type and Description [DUEQT reference table:A3, A30]

2. Facility-wide Air Emission Data

For annual reporting

*CAS number of Contaminant [CONTAM reference table:A11]

*Emissions [N20.9, UNIT reference table:A20]

*Mode of Releases of Emissions [RMODE reference table:A4]

*Estimation Method [METHOD reference table:A10]

For smog season reporting (May 1 - September 30)

Report ONLY SO₂, NO_x, VOC, PM, PM₁₀, PM_{2.5} and CO emissions.

*CAS number of Contaminant [CONTAM reference table:A11]

*Emissions [N20.9, UNIT reference table:A20]

*Mode of Releases of Emissions [RMODE reference table:A4]

*Estimation Method [METHOD reference table:A10]

3. *Stack

Stack Identifier (ID) [A10]

Stack Description [A30]

Stack Gas Flow Rate, m³/min [N7.2]

Stack Gas Temperature, °C [N7.2]

Stack Equivalent Diameter, m [N7.2]

Stack Height above Grade, m [N7.2]

Stack Height above Roof, m [N7.2]

Building Dimensions in metres and orientation from North [Length:N7.2, Width:N7.2, Diameter:N7.2, Height:N7.2, Orientation:N7.2]

*Upstream Process ID [{Link}Process ID:A10]

*CAS of Contaminant [CONTAM reference table:A11]

*Emissions [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

4. *Fuel Consumption, Facility Level

Fuel Identifier [A10]

Fuel Type [FUEL reference table:A4]

Fuel Quality

[Heating value:N20.9, UNIT reference table:A20, %S:N7.2, %Ash:N7.2, %moisture:N7.2, *(species:CONTAM reference table:A11, %concentration:N7.2)]

Total Fuel Consumption [N20.9, UNIT reference table:A20]

*Apportionment (%) to Combustion Equipment [{Link}Process ID:A10,N7.2]

5. *Solvent Consumption, Facility Level

Solvent Identifier (ID) [A10]

Solvent Description [A30]

MSDS No. [A20]

Solvent Parameters [%volatile:N7.2, SG:N7.2, *(species:CONTAM reference table:A11, %composition:N7.2)]

Total Solvent Consumption [N20.9]

*Apportionment (%) to Process [{Link}Process ID:A10, N7.2]

6. *Process (Combustion)

Process Identifier (ID) [A10]

Process Description [A30]

Fuel Identifier [{Link}Fuel ID,A10]

SCC Code [SCC reference table:A11]

Process Activity [Quantity:N20.9, UNIT reference table:A20]

Combustion Equipment Type [DUEQT reference table:A3]

Equipment Parameters [Designed capacity:N10, UNIT reference table:A20, Combustion Temperature, °C:N10]

*CAS of Contaminant [CONTAM reference table:A11]

*Emissions before Control Device [N20.9, UNIT reference table:A20]

*Emission Control Device [CDEV reference table:A3]

*Control Efficiency [N7.2]

*Emissions after Control Device [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

Exhaust Stack ID [{Link}Stack ID:A10]

Operating Schedule, Number of Operating Weeks in Each Month [January:N1, February:N1, March:N1, April:N1, May:N1, June:N1, July:N1, August:N1, September:N1, October:N1, November:N1, December:N1, separated by comma]

Operating Schedule, Percent of Facility Operating Capacity in Each Month [January:N3, February:N3, March:N3, April:N3, May:N3, June:N3, July:N3, August:N3, September:N3, October:N3, November:N3, December:N3, separated by comma]

7. *Process (Non-combustion, non-fugitive)

Process Identifier ID [A10]

Process Description [A30]

Solvent Identifier [{Link}Solvent ID, A10] or Empty

SCC Code [SCC reference table:A11]

Process Activity [Quantity:N20.9, UNIT reference table:A20]

*CAS of Contaminant [CONTAM reference table:A11]

*Emissions before Control Device [N20.9, UNIT reference table:A20]

*Emission Control Device [CDEV reference table:A3]

*Control Efficiency [N7.2]

*Emissions after Control Device [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

Exhaust Stack ID [{Link}Stack ID:A10]

Operating Schedule, Number of Operating Weeks in Each Month [January:N1, February:N1, March:N1, April:N1, May:N1, June:N1, July:N1, August:N1, September:N1, October:N1, November:N1, December:N1, separated by comma]

Operating Schedule, Percent of Facility Operating Capacity in Each Month [January:N3, February:N3, March:N3, April:N3, May:N3, June:N3, July:N3, August:N3, September:N3, October:N3, November:N3, December:N3, separated by comma]

8. *Fugitive - Equipment Leakage

Fugitive Source Type [FUGTYPE reference table:A4]

Equipment Identifier ID [A10]

Equipment Description [A30]

SCC Code [SCC reference table:A11]

Equipment Activity [Quantity:N20.9, UNIT reference table:A20]

*CAS of Contaminant [CONTAM reference table:A11]

*Emissions before Control Device [N20.9, UNIT reference table:A20]

*Emission Control Device [CDEV reference table:A3]

*Control Efficiency [N7.2]

*Emissions after Control Device [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

Exhaust Stack ID [{Link}Stack:A10]

Operating Schedule, Number of Operating Weeks in Each Month [January:N1, February:N1, March:N1, April:N1, May:N1, June:N1, July:N1, August:N1, September:N1, October:N1, November:N1, December:N1, separated by comma]

Operating Schedule, Percent of Facility Operating Capacity in Each Month [January:N3, February:N3, March:N3, April:N3, May:N3, June:N3, July:N3, August:N3, September:N3, October:N3, November:N3, December:N3, separated by comma]

9. *Fugitive - Road Dust within Facility

Fugitive Source Type [FUGTYPE reference table:A4]

Road Identifier [A10]

Road Description [A30]

Type of Road [ROADTYPE reference table:A3]

SCC Code [SCC reference table:A11]

Length of Service Road [N10, UNIT reference table:A20, speed limit:N10, UNIT reference table:A20]

Surface Material Silt Content, % [N7.2]

Surface Material Silt Loading, g/m2 [N7.2]

Surface Material Moisture Content, % [N7.2]

Traffic Volume/Pattern, trucks/day [N10]

Vehicle Parameters [Mean weight, tonnes:N10, average number of wheel:N10]

*CAS of Contaminant [CONTAM reference table:A11]

*Dust Suppression Method/Device [CDEV reference table:A3]

*Control Efficiency [N7.2]

*Emissions [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

10. *Storage Tanks (volatile organics/fuel)

Fugitive Source Type [FUGTYPE reference table:A4]

Tank Identifier ID [A10]

Tank Description [A30]

Tank Type [TANK reference table:A4]

*Material Stored [{Link}Fuel ID or {Link}Solvent ID:A10]

*SCC Code for Breathing/Standing Loss [SCC reference table:A11]

*Storage Tank Capacity [Quantity:N20.9, UNIT reference table:A20]

*CAS of Contaminant [CONTAM reference table:A11]

*Emission Control Device at Tank [CDEV reference table:A3]

*Control Efficiency [N7.2]

*Emission [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

*SCC Code for Working/Withdrawal Loss [SCC reference table:A11]

*Annual Throughput [Quantity:N20.9, UNIT reference table:A20]

*CAS of Contaminant [CONTAM reference table:A11]

*Emission Control Device at Tank [CDEV reference table:A3]

*Control Efficiency [N7.2]

*Emission after Control [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

11. *Exposed Storage Piles

Fugitive Source Type [FUGTYPE reference table:A4]

Storage Pile Identifier ID (A10)

Storage Pile Description (A30)

SCC Code [SCC reference table:A11]

Material Storage Activity [Material:A30, quantity:N20.9, UNIT reference table:A20]

Material Parameters [%silt content:N7.2, duration (days):N10, exposed area, m2:N10, erosion potential, g/m2:N7.2]

*CAS of Contaminant [CONTAM reference table:A11]

*Emission Control Device or Method [CDEV reference table:A3]

*Control Efficiency [N7.2]

*Emission [N20.9, UNIT reference table:A20]

*Estimation Method [METHOD reference table:A10]

12. *Other Fugitive Emissions

Fugitive Source Type [FUGTYPE reference table:A4]
Identifier ID [A10]
Description [A30]
SCC Code [SCC reference table:A11]
Activity Level [Quantity:N20.9, UNIT reference table:A20]
*CAS of Contaminant [CONTAM reference table:A11]
 *Emission Control Device or Method [CDEV reference table:A3]
 *Control Efficiency [N7.2]
*Emission [N20.9, UNIT reference table:A20]
*Estimation Method [METHOD reference table:A10]

Reference Tables for Reporting and Recording Keeping

The following reference tables are available to assist in reporting and record keeping.
(See Appendix E for details)

1. CDEV: Control Devices
2. CONTAM: Contaminant List
3. DUEQT: Discharge Unit Type
4. ENERGY: Energy Type
5. FUEL: Fuel Type
6. FUGTYPE: Fugitive Emission Type
7. METHOD: Emission Estimation Method Code
8. NAICS: North America Industrial Classification System Code
9. REPT: Reporting Period
10. RMODE: Release Mode
11. ROADTYPE: Road Type
12. SCC: Source Classification Code
13. TANK: Storage Tank Type
14. UNIT: Engineering Units

Table 8

Record Keeping Parameters for Quarterly Emissions

All facilities to which Section 5.5 of the Guideline applies shall make a record annually of the following parameters where applicable. “Where applicable” means that if a listed parameter was used for calculating emissions, the relevant information must be recorded. If a listed parameter is not recorded, the facility owner and operator should be prepared to demonstrate that the particular parameter was not used to estimate emissions. These records shall be kept on-site for a period of 7 years and made available to the MOE on request.

The records of the parameters must be kept, where applicable, in an electronic format (excluding process diagrams). The format for the parameters has been provided as a guideline, which the facility can elect to use when storing the required parameters electronically.

- Notes: [1] When a paragraph is indented, it means it is a sub-level table.
[2] The information within the square brackets represents the data storage format of the parameter.
The first letter in Aw, Nw or Nw.d means type of information, alphanumeric (A) or numeric (N).
The second part in Aw, Nw or Nw.d means the maximum width (w) and decimal places (d) of the field.
[3] ** in front of a parameter means there may be multiple records/information.

1. Facility

- Provincial Identifier (MOE) of the Discharge Facility [A10]
- NPRI ID [A10]
- Primary Industrial Classification (North America Industrial Classification System, NAICS) [NAICS reference table:A6]
- Other NAICS (3 Additional NAICS, separated by comma) [NAICS reference table:A20]
- Data Reporting Year [N4]
- Reporting Period [REPT reference table:A4]
- Specific Reporting Period, if applicable [Begin date:A8, end date:A8]
- Company Name [A30]
- Company Location - Address [2 lines: A30, A30]
- Company Location - City, Province, Country, Postal Code [A20, A20, A10, A10]
- Facility Name/Division [A30]
- Facility Location - Address [2 lines: A30, A30]
- Facility Location - City, Postal Code [A20, A6]
- Facility Location - Geographical Reference [Latitude:N7.4, longitude:N8.4]
- *Contact Person (who prepared the report) and Information [Name:A50, position:A20, tel.No.:A10, fax.No.:A10, email:A50]
- *Provincial Permit Number(s) (e.g., Certificate of Approval) (separated by comma) [A50]

2. Discharge Unit(s) to Which Reporting of Emission Monitoring System Applies

***Stack to which reporting of emission monitoring system applies**

- Stack Identifier (ID) [A10]
- Stack Description [A30]

***Discharge Unit to which reporting of emission monitoring system applies**

- Discharge Unit Identifier (ID) [A10]
- Discharge Unit Name [A30]
- Discharge Unit Description [A30]
- Discharge Unit Type [DUEQT reference table:A3]

Discharge Unit Name Plate Capacity [N10, (MW) for electricity generation sector; (MMBTU) for non-electricity generation sectors]
Discharge Unit Activity [N20.9, electricity generated (MWH) for electricity generation sector; heat input (MMBTU) for non-electricity generation sectors]
Type of Energy Source [ENERGY reference table:A4]
Fuel Type [FUEL reference table:A4]

3. Discharge Unit(s) Air Emission Data

The following SO₂ and NO_x emission information would be required for quarterly, cumulative year-to-date, and cumulative smog-season-to-date reporting.

SO₂ Estimation Method [METHOD reference table:A10]
SO₂ Emission Control Device [CDEV reference table:A3]
SO₂ Emission [N20.9, in tonnes]
SO₂ Average Emission Rate [N7.2, for electricity generation sector only (kg/MWH)]

NO_x Estimation Method [METHOD reference table:A10]
NO_x Emission Control Device [CDEV reference table:A3]
NO_x Emission [N20.9, in tonnes]
NO_x Average Emission Rate [N7.2, for electricity generation sector only (kg/MWH)]

For additional record keeping requirements for reporting facilities using CEM or PEM for Emission Monitoring System reporting, please refer to the "Guideline for the Installation and Operation of Continuous Emission Monitoring Systems (CEMS) and their Use for Reporting Under the Provisions of Regulation O. Reg. 127/01", Ontario Ministry of the Environment, April 2001⁷.

Reference Tables for Reporting and Recording Keeping

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9. REPT: Reporting Period
10. RMODE: Release Mode
11. ROADTYPE: Road Type
12. SCC: Source Classification Code
13. TANK: Storage Tank Type
14. UNIT: Engineering Units

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