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Highlights of Findings of the National Pollutant Release Inventory (NPRI) Sector Coverage Study for the 2008 Reporting Year

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Overview:

The National Pollutant Release Inventory (NPRI) is Canada's legislated, publicly accessible inventory of pollutant releases (to air, water and land), disposals and transfers for recycling. The NPRI includes information collected from facilities that meet mandatory reporting requirements for over 300 listed substances, together with emission estimates compiled by Environment Canada for key air pollutants from other facilities and non-industrial sources such as motor vehicles, residential heating, agriculture and forest fires.

Since the establishment of the NPRI, Environment Canada has identified non-reporting facilities and promoted compliance with NPRI reporting requirements. This study expands on these efforts by analyzing NPRI coverage and compliance. It also responds to a recommendation of a report on the NPRI program published by the Commissioner for Environment and Sustainable Development in November 2009 which stated:

Environment Canada should develop methods to identify non-reporting facilities that may be subject to NPRI reporting requirements. The Department should make this sector coverage information available to NPRI users and use the information in its efforts to improve completeness of NPRI data.

The following are the main questions that guided the study:

- **Coverage:** What proportion of all facilities across Canada in given industry sectors are reporting to the NPRI?
- **Compliance:** Of those facilities that should be reporting to the NPRI, how many are? What are the priorities for future efforts to promote compliance with NPRI reporting requirements?

The study found that while gaps remain, both NPRI reporting coverage and compliance have increased significantly since the program's inception. The number of facilities reporting to the NPRI increased five-fold from less than 1400 facilities for 1993 to over 8800 facilities for 2008, mainly due to expanded reporting requirements and compliance promotion efforts by Environment Canada. This increase has resulted in expanded tracking of pollution in Canada, and more complete data for understanding and taking action on pollution.

Sector-by-sector analysis confirms that all operating coal-fired power plants, primary metal smelters, steel mills, oil sands facilities, off-shore oil and gas platforms, crude oil refineries, major automobile assembly plants, Portland cement manufacturing facilities and pulp & paper mills reported to the NPRI for 2008.

At the same time, the study found lower rates of NPRI coverage for other types of facilities, such as forest product manufacturing facilities, foundries, rubber and plastics manufacturing plants, transportation equipment manufacturing facilities (except major automobile assembly plants), conventional oil and gas extraction

facilities, pits and quarries, certain types of mines, and wastewater facilities. In many cases, lower rates of reporting coverage occur in industry sectors that have a number of small facilities that fall below mandatory reporting thresholds. In some cases, however, lower rates of reporting coverage are the result of certain facilities in a given sector not reporting to the NPRI as required. Where this is the case, recommendations are provided to guide future NPRI compliance promotion efforts. A summary of key findings for major industrial sectors is provided below.

It is important to note that in discussing sector coverage, this study examines whether facilities do or do not report to the NPRI, and what portion of total employment, capacity and/or production in a sector are accounted for by the facilities that do report.

Key Findings for Major Sectors:

Oil and Gas Extraction:

- Close to 4000 oil and gas extraction facilities reported to the NPRI for 2008 (representing over 40% of all facilities reporting to the NPRI). All producing Canadian oil sands operations and off-shore oil and gas extraction facilities reported, as did most natural gas processing plants.
- Reporting coverage is lower for conventional oil and gas batteries, compressor stations and gas gathering systems. Many facilities of these types were not required to report based on NPRI thresholds.
- Current NPRI reporting requirements capture most combustion-related emissions from the sector, but do not require reporting of fugitive emissions (e.g., volatile organic compounds and hydrogen sulphide) from oil and gas extraction facilities with fewer than the equivalent of 10 full-time employees.
- Changes to NPRI reporting requirements for oil and gas extraction facilities are being reviewed in order to achieve appropriate rates of reporting coverage for pollutants of concern, as well as simplified data reporting/data collection processes for industry and Environment Canada.

Electricity:

- 383 out of 514 active thermal electricity generating stations and co-generation facilities reported to the NPRI for 2008, accounting for 95% of total thermal electricity generating capacity in Canada.
- All coal-fired and nuclear power plants reported to the NPRI, as did most natural gas, fuel oil, diesel and biomass generating stations.
- Of the electricity generating stations that did not report, many were not required to report based on NPRI reporting thresholds. Some non-reporting stations likely did meet NPRI thresholds, and were recommended as priorities for follow-up by Environment Canada.

Wastewater:

- 178 wastewater facilities reported to the NPRI for 2008. These facilities served approximately 55% of Canada's population, and accounted for a similar percentage of Canadian wastewater flow.
- Approximately 30 non-reporting wastewater treatment plants at or above the applicable NPRI threshold of 10 000 m3 per day average wastewater flow were recommended as priorities for follow-up by Environment Canada.
- Over 3400 other small and/or rural wastewater systems were not required to report to the NPRI for 2008 because they discharged less than an average of 10 000 m3 of wastewater per day.
- It is also recommended that the current NPRI threshold for wastewater facilities be re-examined to determine if it is still appropriate in light of the new federal "Wastewater Systems Effluent Regulations", which would apply to wastewater facilities at a much lower threshold.

Mining and Quarrying:

- Mining operations reporting to the NPRI for 2008 accounted for 97% of Canadian coal production and 99.9% of Canadian iron ore production.
- The following reported to the NPRI for 2008: 18 out of 24 producing coal mines; 80 out of 90 producing metal ore mines or mills; and 172 out of 608 producing non-metallic mineral mines, pits, quarries and (peat) bogs. Several non-producing mines also reported to the NPRI for 2008, including nine mines of various types that were under construction or in the process of being de-commissioned.
- Available information indicates that NPRI thresholds were likely met by most of the non-reporting metal ore mines, but only two of the non-reporting coal mining operations. Many of the non-metallic mineral mining and quarrying operations that did not report to the NPRI were not required to do so (e.g., sand and gravel operations with annual production below the 500 000 tonne NPRI threshold that applies to pits and quarries). However, some non-metallic mineral mining operations are known to have met NPRI reporting criteria for 2008. These operations, including two of the 10 highest-producing pits and quarries in Canada, were recommended for NPRI compliance follow-up.
- New reporting requirements for tailings and waste rock were put in place in 2009, applying retroactively to 2006 for certain types of mining operations. Most mining operations subject to the tailings and waste rock requirements for 2008 reported, as required.

Manufacturing:

- Over 3100 manufacturing facilities reported to the NPRI for 2008, accounting for 36% of all NPRI reporting facilities (second only to the oil and gas extraction sector).

- NPRI reporting coverage for 2008 varied significantly among Canada's manufacturing sub-sectors (21 sub-sectors based on the 3-digit level of the North American Industry Classification System). NPRI coverage ranged from relatively high rates for primary metal, transportation equipment, petroleum and coal products and pulp & paper manufacturing, to lower rates for other manufacturing sub-sectors.
- Low rates of NPRI reporting coverage for a given sub-sector do not necessarily mean low rates of NPRI compliance. The majority of facilities in some sub-sectors (e.g., clothing manufacturing) are not required to report to the NPRI because they do not manufacture, process use or release NPRI-listed substances, or otherwise meet the reporting requirements.
- Compliance challenges exist with certain types of manufacturing facilities. Due to the large number of facilities operating in some manufacturing sub-sectors, further analysis is required to assess compliance with NPRI reporting criteria among them and to determine compliance promotion priorities.

Key Findings for Other Sectors:

- **Nuclear Fuel Chain:** Although uranium and other radionuclides are not listed on the NPRI, all operating uranium mines and mills and nuclear power stations in Canada reported to the NPRI for 2008 due to small releases of listed substances such as ammonia, hydrazine and sulphuric acid.
- **Federal House:** Federal facilities reporting to the NPRI for 2008 include 30 Canadian Forces bases, stations or training facilities; five Public Works and Government Services Canada central heating plants; four Canadian Food Inspection Agency incinerators; two federal correctional institutions; and one federal office complex.
- **Dry cleaning:** Two out of over 1500 operating dry cleaning establishments in Canada reported to the NPRI for 2008. NPRI reporting coverage for this sector is low, but compliance is high, as few dry cleaning facilities are large enough to meet NPRI reporting requirements such as the general 10 employee-equivalent threshold for mandatory reporting, or the 10-tonne threshold for use of the dry cleaning chemical tetrachloroethylene.

General Findings:

- NPRI reporting coverage varies by industry sector. Although compliance issues were identified with facilities in certain sectors, current NPRI thresholds explain the relatively low rates of reporting coverage found for others.
- To help ensure adequate tracking of the substances found in Canada to be of concern for human health and the environment, NPRI reporting thresholds are being reviewed for all-NPRI listed substances on the Toxic Substances List (Schedule 1) of the Canadian Environmental Protection Act, 1999.

Compliance Promotion:

Facilities that meet NPRI reporting requirements are required by law to annually submit information that is true, accurate, and complete to the best of their knowledge. The results of this study were used to verify that facilities meeting the reporting requirements had filed a report. Where compliance issues were identified, facilities were contacted by Environment Canada to ensure that reporting requirements are met. In 2011, compliance promotion activities were focused for the mining sector, whereas for 2012, foundries, waste water treatment plants, renewable fuel facilities, natural gas plants and electricity generation facilities were contacted. These activities help in expanded tracking of pollution in Canada, and more complete information for understanding and taking action on pollution.

Note: The full study on NPRI sector coverage is being finalized for publication. This summary provides an overview of the analysis completed and results found to date. To obtain a copy of the full study which is expected to be available in early 2013, please contact the NPRI at inrp-npri@ec.gc.ca.

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