

Meeting of the Consultative Group for the North American Pollutant Release and Transfer Register (PRTR) Project

San Diego, California, US
28–29 November 2006

Consultations for the *Taking Stock 2005* Report
on North American Pollutant Releases and Transfers

Discussion Paper

Commission for
Environmental Cooperation



1. Introduction

The Commission for Environmental Cooperation of North America (CEC) is holding a public meeting in San Diego, California, United States, on 28–29 November 2006, as a forum for exchanging ideas and obtaining stakeholder input for the *Taking Stock 2005* report. The aim of this paper is to introduce a range of issues, with relevant background information, as a basis for the discussions at this meeting.

Taking Stock is an annual report providing information on pollutants in North America, based on data collected through the national pollutant release and transfer registers (PRTRs). These registers are designed to track the quantities of certain chemicals that are released to the air, water and land, and transfers off-site. The CEC recognizes the importance of these PRTRs—such as the Toxics Release Inventory (TRI) in the United States, the National Pollutant Release Inventory (NPRI) in Canada and the *Registro de Emisiones y Transferencia de Contaminantes* (RETC) in Mexico—for their potential to enhance the North American environment. Tracking chemicals through PRTRs is essential to:

- increase public and industry understanding of the types and quantities of chemicals released into the environment and transferred off-site as waste;
- encourage industry to prevent pollution, reduce waste generation, decrease releases and transfers and assume responsibility for chemical use; and
- track environmental progress and assist governments in identifying priorities.

The national PRTRs are continually changing and expanding, and each new *Taking Stock* report reflects these developments. Future reports will strive to include as much as possible from the additional data being collected by the national PRTRs.

Significant progress has been made in developing a mandatory and publicly accessible reporting system in Mexico. With the passage of enabling legislation in 2001, work on the supporting regulations continued throughout 2002, 2003 and 2004. Reporting for 2001–2003 was voluntary. The regulations were passed in June 2004, making reporting mandatory for the 2004 reporting year. The 2004 mandatory Mexican data will be incorporated into *Taking Stock*, along with the national PRTR data from Canada and the United States.

In previous years, comments from participants in the consultative meetings have resulted in significant changes to the format and content of the *Taking Stock* report. The Consultative Group has identified areas of particular interest that have then been explored in greater depth through special feature chapters focusing on, for example, specific industry sectors and chemicals, reporting of pollution prevention activities, and uses of PRTR data by industry and community groups.

The Consultative Group has also provided ideas on ways to improve the organization and presentation of the information, thereby contributing to the CEC's ongoing efforts to better meet users' needs. Such improvements include the *Taking Stock* web site, which allows for customized, user-driven analyses of the data sets used in *Taking Stock*.

The CEC invites and encourages interested parties to contribute to the development of the *Taking Stock 2005* report. The meeting of the Consultative Group, which is a public forum open to all interested parties, is a significant opportunity to discuss options, obtain new ideas and refine the report. The CEC is seeking feedback on a number of ideas, outlined below, and welcomes new ideas.

If you are not able to attend the meeting but would like to provide input, please send your written comments to Keith Chanon at the CEC in advance of the meeting, if possible, or by **29 December 2006**. Following the public meeting and receipt of written comments, the CEC will prepare a Response to Comments document that will summarize the comments received and outline the proposed approach for the development of the *Taking Stock 2005* report.

2. Update on CEC Activities

2.1 Update on the CEC PRTR Program

The CEC PRTR program continues to focus on:

- developing the Taking Stock report and web site as a means of fostering information access and use;
- increasing PRTR comparability among countries; and
- providing assistance to Mexico in the development of the RETC.

All three countries have committed to operating a PRTR. In the United States, the Toxics Release Inventory (TRI) started in 1988 and is now collecting data on releases and transfers of more than 650 chemicals from over 20,000 facilities for 2003. In Canada, the National Pollutant Release Inventory (NPRI) started in 1993 and now collects data on releases and transfers of over 300 chemicals from almost 8,000 facilities. For the first time in Mexico, facilities were required to report to the *Registro de Emisiones y Transferencia de Contaminantes* (RETC), which was mandatory for the 2004 reporting year.

Supporting the development of Mexico's PRTR has been a long-standing priority of the CEC's PRTR program. Mexico is currently working to develop a list of chemicals to supplement the 104 chemicals now reported. To support this, the

CEC has conducted analyses of the chemicals reported in the United States and Canada in large quantities that are not yet on the Mexican list. The CEC has also

supported NGO involvement in stakeholder consultations and contributed to industry training activities.

2.2 Update on Taking Stock reports

Some of the key findings of *Taking Stock 2003* released in July 2006 included:

- almost 3 million tonnes of chemicals were released and transferred in 2003;
- releases and transfers declined by 8 percent from 1998 to 2003 in North America;
- releases, alone, declined by 9 percent with releases of carcinogens and developmental and reproductive toxicants showing a larger decrease (more than 35 percent); and
- focus on reporting from the cement manufacturing sector

The *Taking Stock Online* web site is updated annually and allows customized queries of the matched data sets, time trends and downloading of the report. The site is available at <www.cec.org/takingstock/>.

Taking Stock 2004 is under development, with an expected release in the spring of 2007. Based on discussions at the last Consultative Group meeting, the report will focus on incorporating mandatory Mexican data with a new section on matched RETC-TRI-NPRI data, in addition to the matched NPRI and TRI analyses, a special feature on recycling, and to continue to provide a separate section for analysis of criteria air contaminants.

In August 2006, CEC hosted a meeting to discuss and promote the use of the *Taking Stock* report and web site. The meeting participants confirmed that the added value of *Taking Stock* include:

1. Providing a North American picture of industrial releases and transfers of toxic chemicals,
2. Promoting increased PRTR data comparability among the 3 countries, such as: chemical lists; industries reporting to PRTRs; thresholds; reporting protocols,
3. Raising awareness of key health and environmental issues relating to toxic chemicals and industry in North America,
4. Increasing dialogue and collaboration, and
5. Integrating PRTR data into an overarching framework for managing chemicals in North America

Target users of *Taking Stock* include:

- Governments (all levels)
- Academics
- NGOs
- Industry
- Individuals
- Media
- International community

Among the general conclusions that came out of the meeting, there was consensus about the need to upgrade and expand *Taking Stock Online* to provide more information, links with existing programs and enhanced data access, which may allow shortening of the printed *Taking Stock* report; to provide more context to the PRTR data; to provide additional analysis (e.g., cross-border transfers), and to highlight significant changes as a way for users to better understand the evolving industrial pollution situation. Details of the comments provided by participants can be found in the meeting summary available at <www.cec.org>.

2.3 Outreach to Indigenous Communities and Environment and Health Linkages

The CEC's Joint Public Advisory Committee, the Puebla Declaration and the PRTR Consultative Group have noted the limited involvement of indigenous groups in some of CEC's activities, and encouraged further outreach and engagement. At the meeting, two case studies will be presented, reporting on the priority concerns and chemical information needs of indigenous groups. One case study is focused on the Great Lakes region (Canada-U.S.), Aamjiwnaang and Garden River First Nations and the second study is on the U.S.-Mexico Border region. These case studies will discuss the interest in and use of PRTR data, key industrial sectors and chemicals of concern and community needs for chemical information among indigenous peoples. The CEC will convene a meeting, specifically with indigenous/tribal representatives on November 30 to further discuss opportunities for collaboration.

Presentations will also address health issues related to industrial chemicals and how PRTR data can be used to inform the public about potential risks associated with these chemicals. This will include the use of multi-layer geographic maps to identify potential areas of concern and will also include a discussion of children's health. In May 2006, the CEC published the report, *Toxic Chemicals and Children's Health in North America* which analyzed PRTR data and identified specific chemicals of concern. This was the final report and activity supported under the CEC's Cooperative Agenda for Children's Health and the Environment.

2.4 Outreach to Industrial Sectors

At the meeting, three industrial representatives (from the Aluminum Association of Canada, officials of Chrysler's plant in Toluca, Mexico, and Ricoh's in San Diego) will describe their companies' environmental activities and use of PRTR data in decision-making. This reflects CEC's interest in engaging industry in PRTR reporting, and in promoting the use of PRTRs to drive pollution prevention efforts and identify areas with data quality issues. PRTRs can be useful tools to assist industry in setting environmental goals and priorities, tracking progress and communicating results.

This past year the CEC worked with facilities of the cement manufacturing sector, analyzing their TRI and NPRI data, and has identified differences in reporting and worked with governments and the cement sector to understand and begin to resolve these differences. The CEC will continue to monitor progress in resolving such differences in this sector in the future.

2.5 Status of Action Plan

Over the past five years, the three governments have collaboratively developed the *Action Plan to Enhance Comparability of Pollutant Release and Transfer Registers in North America* (available at <www.cec.org>). This plan was adopted by the CEC Council through Council Resolution 02-05 in June 2002, and was updated in 2005. It describes a number of areas where comparability among the national PRTRs could be improved and proposes actions to address them.

Early changes in the PRTRs increased the amount of comparable data in such areas as: use of industry classification codes (North American Industrial Classification System—NAICS codes), addition of chemicals, lowering of thresholds for some substances such as mercury and lead, fewer reporting exemptions, improved pollution prevention reporting, mandatory reporting, and reporting on dioxins and furans and PCBs. However, more recent changes have reversed that trend. Changes such as lowered reporting thresholds for arsenic, cadmium and chromium for NPRI, but not for TRI, have led to data that cannot be matched for these substances.

Each year the governments review the Action Plan, discuss ideas and propose new actions. Suggestions from stakeholders and the public are welcome.

2.6 Update on the CEC Air Program

Since 2001, the CEC has been supporting the development of a national criteria air emissions inventory in Mexico that uses a common reporting format and estimation

methods comparable to those employed in Canada and the United States. This resulted in publication in 2006 of the first-ever national criteria air emissions inventory in Mexico. This is a collaborative effort between the CEC, the *Instituto Nacional de Ecología* (INE), Semarnat, the Western Governors' Association, and the US EPA. The inventory includes the air pollutants associated with smog and acid rain, such as sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), ammonia (NH₃), and particulate matter, and is available at <www.ine.gob.mx>. The future of the CEC's Air Program is under consideration by the three governments.

2.7 Update on International PRTR Activities

Several international organizations have active PRTR programs. The Organisation for the Economic Co-operation and Development (OECD) has a task force on PRTRs, which assists member countries in fulfilling the OECD recommendation encouraging all OECD countries to implement a PRTR. Several reports have been published including: a new database incorporating PRTR data from a number of countries, a compendium of estimation techniques for diffuse sources and also for off-site transfers, an evaluation framework for release estimation techniques, and the uses of PRTRs. Canada has taken the lead in developing a database on release estimation techniques, providing a clearinghouse for guidance manuals and documents, now available from the chemical safety section within <www.oecd.org/env/>.

In May 2003, 36 countries and the European Union (not including Canada, Mexico and the United States) signed a global protocol on PRTRs developed under the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. This legally binding protocol sets minimum requirements for reporting. The PRTR Protocol closed for signatures on 31 December 2003, but remains an "open global protocol" allowing for accession by countries that are not signatories to the entire Convention. Sixteen states are required to ratify the Protocol for it to enter into force. Currently only Luxembourg and the European Community have ratified the Protocol. Europe is planning to extend its current Pollutant Emission Register to a full PRTR by 2006. The first year of reporting under the European PRTR would be 2007. The full text of the PRTR protocol is available at <www.unece.org/env/pp/prtr.htm>.

The United Nations Institute for Training and Research (UNITAR) PRTR Training and Capacity Building Program assists countries in the design and implementation of a PRTR. As part of this work, in 2004 UNITAR assisted Chile with a pilot project to develop a national PRTR. UNITAR is also working with Environment Canada and Ecuador to develop a PRTR. UNITAR has also held a series of national (Costa Rica, Ecuador, Chile, South Africa, Cuba) and regional PRTR meetings. A series of 300 documents about PRTRs has been collected into a summary CD. A virtual classroom fosters exchange on PRTRs. For more information, please see <www.unitar.org/cwm/b/prtr/index.htm>.

3. Opportunities for the *Taking Stock 2005* Report

Each year, special analyses are undertaken based on the data in the *Taking Stock* report. The CEC is proposing the following nine topics as a starting point for discussion during the meeting, with a view to identifying those opportunities and potential analyses that are of greatest interest.

Our proposals for special feature analyses for the 2005 *Taking Stock* report include:

1. Mapping PRTR Data
2. Tracking Environmental Progress through Voluntary Initiatives and Regulations
3. Using PRTR Data as Indicators/Using Toxicity Weighting Systems
4. Pollution Prevention Reporting
5. PBTs and Other Chemicals Reported at Lower Thresholds
6. A Specific Industry Sector
7. Focus on Transfers to Disposal
8. Learning from Each Other (reporting in one system not contained in the others)
9. Your Ideas

In addition, we would welcome feedback on the consultative process for *Taking Stock*. Traditionally, the direction for *Taking Stock* has been chosen as a result of discussions from this annual meeting. Does this process still reflect the needs of stakeholders? In addition to the annual meeting, do stakeholders seek more regular updates on PRTR activities, perhaps through a list serve? Are there any suggestions on how to improve this consultative process?

Opportunity One: Mapping PRTR Data

The PRTR data have the potential to be explored using Geographic Information Systems (GIS) mapping. Mapping these data would allow readers to see the relative amounts of releases and transfers of a selected chemical(s) from industrial sources in North America. This chapter could be developed as part of the planning for the North American Atlas project. There are many different data layers that could be developed:

- Location of matched facilities
- Presenting amounts by individual matched chemical
- Presenting amounts based on health lists (carcinogens, etc.)
- Presenting amounts by sector

Several jurisdictions along the national borders also are “top” jurisdictions in terms of releases and transfers. A focus on, for example, Ontario and Michigan/Ohio/Indiana along the Canadian/US border and a focus on Texas and Tamaulipas/Nuevo León/Coahuila/Chihuahua along the US/Mexican border could look at industry sectors

and chemicals and regulatory regimes in these jurisdictions, and also could tie into the North American Atlas mapping feature. This could also be paired with a special analysis with the focus on particular watersheds or airsheds that cross national boundaries to take advantage of mapping capabilities.

The outcome of this work would be a series of static maps to present in the report and possibly the CEC publication *TRIO*, static and perhaps interactive maps presented on the Taking Stock Online web site, and the development of several PRTR data layers in GIS format for the North American Atlas, or other GIS applications. At previous Consultative Group meetings, participants have supported the use of maps to present the data. This chapter could be developed with the advice of academics and governments active in GIS mapping, industrial associations and NGOs.

Questions for discussion:

Is there interest in this type of analysis?

Are there any particular data layers that may be of interest?

Are there any good mapping designs that we should consider?

Is anyone interested in helping on this project?

Opportunity Two: Tracking Environmental Progress through Voluntary Industry Initiatives and Regulations

This chapter could use PRTR data to illustrate the reductions in toxic releases as a result of regulatory and/or voluntary programs. The Air Toxics Rules under the US Clean Air Act regulate emissions of hazardous air pollutants from a wide variety of industrial sectors. Sectors that are regulated by the air toxic rules and that also report to PRTRs could be chosen and the trends in air releases could be explored. The chapter could probe the reasons for the changes observed.

Similarly, trends in releases and transfers from NPRI facilities as a result of Canadian programs, such as pollution prevention plans, Canadian Environmental Protection Act programs and Canadian Council of Ministers of the Environment Canada-wide Standards, could be explored. In addition, this chapter could explore trends in PRTR data that result from voluntary programs such as Responsible Care (an initiative of the chemicals sector in all three countries), Environmental Leaders (a US initiative designed to achieve over-compliance with environmental regulations) and corporate initiatives.

Questions for discussion:

Is there interest in this type of analysis?

Are there examples of voluntary or mandatory programs that are of particular interest?

Are there chemicals or sectors that are of particular interest?

Opportunity Three: Using PRTR data as Indicators/ Using Toxicity Weighting Systems

Each country has worked on state of the environment reporting, gathering material from many different sources to provide an environmental overview. The CEC is exploring further work on a North American State of the Environment report. PRTR data have been used as indicators of toxic emissions by Environment Canada, in the CEC's North American Mosaic report and in the North American report on Children's Health and Environmental Indicators. Industry also often uses PRTR data to set corporate performance indicators. This chapter could review the existing use of PRTR data as indicators, discuss possible applications and suggest methods to use matched PRTR data as indicators in North America. This chapter could be developed with the assistance of state of the environment reporting staff, industry and NGOs.

The amount of releases and transfers reported to PRTR data are traditionally expressed in units of mass, either in pounds, kilograms or grams. To gain another perspective on the data, toxicity weighting systems can be used to express this data in terms of toxicity or other measures. A variety of different toxicity weighting measures has been developed, each with its own set of assumptions. In previous *Taking Stock* reports, a toxicity weighting system developed by the University of California has been used. When applied to PRTR data, it illustrated the importance of releases of lead and mercury and its compounds. A special feature could describe the different toxicity weighting systems available, apply several systems to the PRTR data, and review the results.

Questions for discussion:

Is there interest in this type of analysis?

Are there examples that are of particular interest?

Are there any toxicity weighting systems of particular interest?

Opportunity Four: Pollution Prevention Reporting

Pollution prevention is a governmental priority in all three countries. Since 2002, both TRI and NPRI have had similar categories of pollution prevention reporting. RETC, beginning with 2004, also has similar categories. The special feature could present the three countries' data on pollution prevention activity reporting, analyzing which activities are the most commonly reported, as well as which sectors, facilities and locations report more or less frequently on pollution prevention activities.

The feature also could further explore the previous finding (in *Taking Stock* 2003) that facilities with pollution prevention tended to have lower releases and transfers than those not reporting pollution prevention activities. Additionally, the feature could look at pollution prevention reporting by facilities reporting smaller amounts of releases and transfers versus those reporting the largest amounts. The group of facilities reporting smaller amounts report overall increases whereas the group with larger amounts report

overall decreases. If desired, it also could identify and present examples of facilities from all three countries that reported on pollution prevention activities. The chapter could also explore the barriers and opportunities for facilities to use PRTR data for pollution prevention planning. The Taking Stock 1997 report had a special feature on pollution prevention, and the 2005 report provides an ideal opportunity to see how things have changed since this time.

This chapter could also explore options for the development of a pollution prevention index or indicator, based on PRTR data, presenting different approaches and their relative strengths and limitations.

Questions for discussion:

Is there interest in this type of analysis?

Are there chemicals or sectors that are of particular interest?

Are there any examples of PRTR data driving pollution prevention efforts?

How can PRTRs help companies identify pollution prevention solutions?

Opportunity Five: Persistent Bioaccumulative Toxics and Other Chemicals Reported at Lower Thresholds

Some chemicals reported to TRI and NPRI, such as lead, mercury, dioxins and furans, hexachlorobenzene and polycyclic aromatic compounds (PACs or PAHs), are considered persistent, bioaccumulative toxics (PBTs) and reporting requirements include lowered thresholds. Other chemicals, such as arsenic and cadmium are reported under lower thresholds in NPRI only. The chapter would present trends and probe the underlying reasons for the changes. The chapter also could include a general description of the characteristics of these chemicals and current regulatory programs designed to reduce releases.

Because of the reporting differences, data for many of these chemicals would need to be discussed separately. These differences in reporting are also opportunities to learn from each other's PRTR programs. The recent proposals to modify some PBT reporting such as dioxin and furan reporting in both NPRI and TRI could be discussed. As much as possible, this section could explore the different results stemming from the national PRTR programs as a way of pointing out opportunities for improvements in comparability.

Questions for discussion:

Is there interest in this type of analysis?

Are there chemicals or sectors that are of particular interest?

Opportunity Six: A Specific Industry Sector

Several previous *Taking Stock* reports have focused on industrial sectors, including primary metals, pulp and paper and the cement industry. These special features have shown how a sector uses the chemicals, how it is regulated and how reductions in releases are achieved. A sector could be selected on the basis of:

- reporting in all three countries
- large releases and transfers of carcinogens or developmental/reproductive toxicants (California Proposition 65 chemicals) or PBT chemicals
- increasing (or decreasing) releases and transfers over time
- differences in reporting on pollution prevention activity

A sector analysis could describe the sector, facilities, chemicals released and transferred, and time trends. It could also discuss programs and regulations to reduce releases and transfers. Differences between releases in this sector in TRI/NPRI/RETSC could be compared. Some sectors that may be of interest include the plastics sector with large releases of many carcinogens or the automotive manufacturing industry with some companies with plants in all three countries, or the electronics industry with greater than average decreases in total releases. This analysis could be done cooperatively with an industrial sector, NGOs and government and coordinated with other CEC programs (e.g., Sound Management of Chemicals Working Group).

Questions for discussion:

Is there interest in this type of analysis?

Are there sectors that are of particular interest?

Opportunity Seven: Focus on Transfers to Disposal

This special feature could focus on off-site transfers to disposal (off-site releases), which were nine percent of the total releases and transfers in 2003. Transfers to disposal have shown substantial increases over time in both NPRI and TRI, while other releases and transfers have been decreasing. This special feature could analyze the amounts and types of chemicals sent for disposal, the sectors reporting large and small amounts of these chemicals, how off-site disposal compares to on-site land disposal and changes over time. Some of the facilities that show large swings (increases and decreases) could be interviewed to determine the factors influencing these changes. These types of transfers are reported to all three PRTRs.

Questions for discussion:

Is there interest in this type of analysis?

Which types of disposal are of the greatest interest?

Are there chemicals or sectors that are of particular interest?

Opportunity Eight: Learning from Each Other

Each country's system includes reporting elements not included in another country's system. These data elements include more industry sectors, different chemicals as well as different types of waste management. In addition, some chemicals have different reporting criteria. For example, ammonia must be reported to both TRI and NPRI (but not RETC), but in different ways. RETC and TRI, but not NPRI, include chemicals such as pesticides and some HCFCs. NPRI and RETC include reporting on hydrogen sulfide and sulfur hexafluoride, while TRI does not.

This chapter could further explore some of the chemicals with reporting differences and propose methods to make them more comparable. This would then increase the amount of comparable data among the countries.

Some examples that could be analyzed to demonstrate the value of such information are:

- NPRI and RETC require annual reporting on criteria air contaminants (CACs). TRI does not include reporting on CACs. The latest available US data for CACs are for 2002 and are collected only every three years.
- RETC requires annual reporting on greenhouse gases (such as CO₂), while TRI does not. In Canada, facilities report greenhouse gas data annually, but not within the NPRI system. While all three countries have greenhouse gas inventories, they are not facility-specific.
- NPRI requires reporting by sewage treatment plants, while TRI and the federal RETC do not cover these facilities. We could look at volumes of chemicals being sent to sewage and volumes being released into the air and water from NPRI sewage treatment plants. Also, we could include transfers to sewage treatment, which are reported by NPRI/TRI and RETC facilities.
- TRI facilities report on-site waste management (including on-site recycling, energy recovery and treatment) in addition to the releases and transfers reported under the NPRI and RETC systems. This information indicates total generation of waste and allows for a more complete picture of the scope for pollution prevention (source reduction) at a facility.
- NPRI and RETC collect information on the number of employees at the facility while TRI does not.
- NPRI and RETC collect information on the oil and gas sector, which reports large releases and transfers. TRI does not require reporting from the oil and gas sector.

Questions for discussion:

Is there interest in this type of analysis?

Are there any particular analyses that would be of interest?

Are there any particular chemicals or sectors that may be of interest?

Opportunity Nine: Your Ideas

Participants are invited and encouraged to come to the meeting with other ideas for special analyses or areas of interest that could be considered for the *Taking Stock* report or which might form the basis for separate special feature analyses. Your feedback and suggestions on the format of the report and the web site are also welcome.

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