

**SUMMARY OF THE CONSULTATIVE MEETING
AND RESPONSE TO COMMENTS ON THE DEVELOPMENT OF
THE *TAKING STOCK 2000* REPORT**



**Meeting of the Consultative Group for the North American Pollutant Release and
Transfer Register (PRTR) Project
12-13 December 2001
Montreal, Quebec, Canada**

COMMISSION FOR ENVIRONMENTAL COOPERATION

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SUMMARY OF CONSULTATIVE MEETING AND RESPONSE TO COMMENTS ON THE DEVELOPMENT OF THE *TAKING STOCK 2000* REPORT

Montreal, 12-13 December 2001

Introduction

The Commission for Environmental Cooperation (CEC) organized a public meeting in Montreal, Canada on 12 and 13 December 2001 as a forum for exchanging ideas and obtaining stakeholder input in the development of the *Taking Stock—2000* report. *Taking Stock* is an annual report which analyses publicly available data from the Canadian National Pollutant Release Inventory (NPRI), the U.S. Toxics Release Inventory (TRI) and wherever possible from the Mexican *Registro de Emisiones y Transferencia de Contaminantes* (RETC).

Over forty people from industrial associations, non-governmental groups, academia and government, from Canada, Mexico and the United States, attended the meeting. The list of participants is attached as Annex A. Two papers, entitled "Consultations for the *Taking Stock—2000* report on North American Pollutant Releases and Transfers- Discussion Paper," and a "Background Document" were circulated in advance to provide background for the meeting (available from the CEC).

This document summarizes the discussions held on the various options presented in the papers and additional topics raised by participants. No written comments were received by the deadline of 15 January 2002.

This document also outlines the proposed directions for *Taking Stock—2000*. In previous years, this information has been covered in a separate "Response to Comments" document. Because no written comments were received this year, and in light of the continuous drive to develop the report in a timely manner, this document will serve both as the meeting summary and as the "Response to Comments" document. Comments of the development of *Taking Stock* are welcome at any time.

This document presents:

1. Country updates for Canada, the United States and Mexico
2. CEC update
3. Recent developments in PRTRs around the world
4. Update on the Ad Hoc PRTR Group
5. Opportunities for *Taking Stock—2000*
6. Proposed directions for *Taking Stock—2000*

The CEC wishes to thank all of the members of the Consultative Group for their comments and suggestions, and for their continued involvement in the *Taking Stock* report and the CEC's PRTR project.

1. Country Updates

Janine Ferretti, Executive Director, CEC, welcomed participants, thanked participants for their assistance in developing the *Taking Stock* report and noted the growing linkages among PRTRs and other CEC programs. Erica Phipps, Program Manager, PRTR program, provided an overview of the two-day meeting. Following the consultations on the *Taking Stock* report, a special session on Air Without Borders- Enhancing the Comparability of Criteria Air Contaminants Inventory was held on 13 December 2001. A summary of this session is available from the CEC.

1.1 Update on the National Pollutant Release Inventory (NPRI) in Canada

François Lavallée of Environment Canada described current progress in the NPRI. He noted several drivers for the continuous evolution of the NPRI program:

- A Ministerial Clean Air Agenda, with emphasis on reducing ozone and particulates;
- The need to track chemicals considered toxic or under review by the Canadian Environmental Protection Act;
- The need to track metals and other contaminants for international treaties such as the Aarhus Convention and the Stockholm Convention on Persistent Organic Pollutants (POPs);
- The need to work with the Ontario Ministry of Environment's new monitoring regulation.

François Lavallée noted that the data for the 2000 reporting year was released on the Internet in November 2001, meeting the governmental goals of releasing data 5 months after receipt of the data from the companies, and in the same year as reporting. A summary report on the 2000 NPRI data is under development and scheduled for release in spring 2002. Data is available at the Environment Canada web site <www.ec.gc.ca/pdb/npri/>

One of the major changes to the NPRI program has been the addition of criteria air contaminants (carbon monoxide, nitrogen oxides, sulphur oxides, particulates (total particulates, PM₁₀, PM_{2.5}), and volatile organic compounds). Facilities will be required to report on air releases of these criteria air contaminants starting in the 2002 reporting year. This will help Environment Canada meet its obligations under the Canada- United States Ozone Annex, meet domestic inventory needs and improve air quality modeling.

Other changes for NPRI for the 2002 reporting year include:

- Listing of hexavalent chromium at the proposed threshold of 50 kilograms with a concentration exemption of 0.1%
- Lowering the threshold for reporting of lead to the proposed 50 kilograms and an 0.1% concentration exemption (excluding lead in alloys)
- Lowering the threshold for cadmium to 5 kilograms and 0.1% concentration exemption
- Lowering the threshold for arsenic to 50 kilograms and 0.1% concentration exemption
- Deletion of phosphoric acid, with consideration of adding phosphorus in later reporting years
- Creating an effluent trigger for municipal waste water facilities of 10,000 cubic meters/day, with no employee threshold
- Redesigning pollution prevention reporting to expand the list of activities, which will make it more similar to TRI.

François Lavallée also noted a number of topics that are or will be addressed through ongoing stakeholder consultations for 2003 reporting and beyond, including:

- Possible addition of greenhouse gas chemicals for 2003 reporting
- Requiring upstream oil and gas facilities to report
- Reporting of road dust
- Reviewing the current exemption for mining facilities
- Continuing to consider the addition of other chemicals
- Continuing to develop an alternate threshold framework
- Continuing to integrate with the Ontario Ministry of Environment's monitoring program

For more information, see the NPRI website at <www.ec.gc.ca/pdb/npri>.

Participants voiced general support for the changes to NPRI, and encouraged additional changes to bring in agricultural industries such as hog farms and pesticide use, and further lower thresholds. One participant noted that the recently signed international agreement, the Canada/US Ozone Annex, had become a major driver for domestic environmental policy. The recent \$120 million dollar federal commitment is being used to gear up for the expected increase in facilities from approximately 2,000 to 7,000 facilities with the addition of the criteria air contaminants, to change to an annual inventory of criteria air contaminants, to develop new reporting software, and to create a new NPRI web site.

One participant requested clarification and expressed concern over the proposed changes to pollution prevention reporting. These changes were described as minor. Some participants agreed on the need to include upstream oil and gas, and suggested that the definition of a facility for this sector would be very important in determining the coverage of reporting. The reporting of fuel consumption data would not be required for 2002, but is under consideration for 2003. A concern was raised over the deletion of phosphoric acid, noting that there have been large releases of phosphoric acid, a reactive volatile organic compound, to air. Environment Canada is planning an evaluation of nutrients, which will assist in determining whether phosphorus could be added to NPRI in the future.

1.2 Update on the Toxics Release Inventory (TRI) in the United States

Maria Doa of the U.S. Environmental Protection Agency highlighted recent developments in the TRI program:

- The release of the 1999 data: the 1999 data contained a second year of data from the newly reporting sectors and accounted for 68% of the releases reported to TRI. In 1999, 3.5 billion kilograms of chemicals were released in the U.S., and 13.4 billion kilograms were further managed. The manufacturing sector showed a 7.5% reduction in total releases (on and off-site) from 1995-1999. On-site releases had decreased by 16% and off-site releases had increased by 52% from 1995 to 1999.
- A new rule on persistent, bioaccumulative and toxic (PBT) chemicals for the 2000 reporting year: the rule sets criteria for persistence and bioaccumulation (toxicity criteria were set previously). Thresholds are based on the degree of persistence, bioaccumulation and toxicity. Persistent, bioaccumulative and toxic compounds have a 100 pound threshold; highly persistent and highly bioaccumulative compounds have a 10 kilogram threshold. Dioxins and furans have a 0.1 gram threshold. Consistent with all other chemicals reported to TRI, the threshold for dioxins and furans is based on total mass rather than an adjusted toxicity approach.
- A new finalized rule on lead which lowers the threshold to 100 pounds for the 2001 reporting year (except for certain alloys)

- Emphasis on data quality: Sixteen new guidance manuals on particular chemicals such as PBTs, dioxins, mercury, pesticides and polycyclic aromatic hydrocarbons (PAHs); and new and updated manuals for industry sectors
- Further development of TRI-ME, a user friendly software to assist industries in reporting. After a pilot last year, TRI-ME is expected to be fully released this year.
- Continued development of public access. The search engine for the TRI database, TRI Explorer, has been expanded and comments are welcome (view at <www.epa.gov/triexplorer>)
- Participation in international initiatives such as the proposed development of a PRTR protocol under the UN/ECE Aarhus Convention.

Participants asked if adding criteria air contaminants and greenhouse gases to TRI was under consideration. Maria Doa responded that chemicals are generally added to TRI because they are toxic, and it was unclear if greenhouse gases would meet the criteria. Addition of criteria air contaminants has been proposed for TRI because they meet the toxicity criteria. Linking other databases, such the criteria air contaminants and greenhouse gas databases, to the TRI site is also under consideration.

In response to questions, Maria Doa expanded on the rationale for the reporting of dioxins and furans. Dioxins and furans are reported on a mass basis, consistent with all other TRI chemicals. No chemicals reported to TRI are adjusted to account for toxicity or any other factors. The toxic equivalent factors used to calculate toxicity equivalents (TEQs) can change over time and can differ among different agencies, which makes comparisons and trends based on TEQ difficult. A proposal to report dioxins and furans as TEQ in addition to the reporting as grams is under consideration. TRI does request the distribution of the congeners of dioxins which may be useful in converting to the TEQ approach used by NPRI and other agencies.

Data quality checks in TRI consist of a variety of procedures, including checking information against other inventories in EPA, calling facilities to verify information, analyzing facilities reporting large increases or decreases and periodic audits. EPA is currently analyzing the quality of the newly reported PBT data.

In response to a question about mercury, Maria Doa noted that dentists are not required to report to TRI, but that manufacturers of dental amalgam containing mercury are required to report. Pharmaceutical companies are also covered by TRI reporting which may catch some use of mercury in vaccines.

For more information, see the TRI web site at <www.epa.gov/tri>.

1.3 Update on Registro de Emisiones y Transferencia de Contaminants (RETC) in Mexico

Juan David Reyes, sub-director for the RETC in Mexico, presented the new vision and organization of SEMARNAT. He noted that the RETC still has some challenges ahead: it needs to be a useful information tool for industry and authorities to support environmental management decisions, it needs to be simplified, and it needs to be made publicly accessible.

Currently, 14 Mexican states are participating in a program to decentralize environmental responsibilities, known as the Program of Institutional Environmental Development. The first states to assume responsibility of the RETC are the Federal District and the State of Mexico.

During the reporting period of 1999 to 2000, 1,525 COA forms were received, of which 353 forms had completed Section V, the voluntary reporting of releases and transfers known as the RETC. For the first time, the National Institute of Ecology gave feed-back to industry to increase both reporting quality and participation. After the government analyzed the report, a letter was sent to 1,042 facilities indicating which information was successfully integrated into the data base, as well as any errors or missing information. Some of the leading companies have decided to start reporting data to the RETC.

A number of measures have been developed to improve reporting, including:

- Updating of the COA reporting software, now available at www.ine.gob.mx/dggia/retc/coa/coaprint.html This electronic program helps users avoid the most common errors, such as reporting using incorrect units and problems in the conversion of units.
- Updating of Guidelines for completing the COA, now available in print and electronic versions.
- Improving the internal quality assurance system at INE, especially the collection and the evaluation of the quality and quantity of the reported information.

The voluntary reporting to the RETC has been aided by the publication of a Mexican norm (NMX-AA-118-SCFI-2001) on 18 April 2001 which came into effect 60 days later. This norm establishes the list of substances, the procedures to modify the substance lists, the reporting format and procedures.

There has been a major step forward in the legal framework for RETC, with the passage of enabling legislation by the Mexican Congress on 31 December 2001. Article 109 of the federal environmental law, *Ley General del Equilibrio Ecológico y la Protección Ambiental* was modified. Now the Ministry, States, Federal District and municipalities have to integrate a RETC based on the data and documents contained in the environmental authorizations, licenses, reports, permits and concessions received by the different authorities. The physical and moral persons responsible for the contaminant sources are obliged to hand over to the authorities all information, data, and documents necessary to integrate the RETC. The reported information will be public and will function as a declaration. Access to this information is given by the Ministry and will be given proactively.

Juan David Reyes noted that in addition to the amendments to the Federal Environmental Law, supporting regulations still need to be developed for the RETC. More communication with the NGOs has to be established, as well as increased capacity building.

A participant emphasized that as the rejection rate of the received COAs was approximately 50%, there is still a pressing need to improve the quality of reporting, as well as a need to analyze the existing list of substances.

Another participant noted that instead of concentrating on the legal framework and how to enforce compulsory reporting, the emphasis should be on improving the usefulness and quality of the information.

2. CEC Update

2.1 Current Status of CEC's Pollutant Release and Transfer Register (PRTR) Project

Erica Phipps, Program Manager for CEC's PRTR project, noted the new two volume format and web site launched with *Taking Stock 1998*, and provided a summary of the features of the upcoming *Taking Stock 1999* report:

- Analyzes five years of data, 1995-1999;
- Continues with the new two volume format comprised of a *Summary* volume and the more detailed *Sourcebook*;
- Analyses chemicals based on new groupings including ozone depleters, CEPA chemicals and California Proposition 65 chemicals;
- Includes adjustment analyses to account for the amounts of chemicals sent off-site that are also reported by receiving facilities;
- Expected release in spring 2002.

2.2 Development of PRTR Web Site

Patrick Scantland, CEC Webmaster, presented the new *Taking Stock Online* web site. The web site allows users to do customized searches and analyses of the matched data sets used in the *Taking Stock* reports. Users can generate customized tables by chemical, by sector, for facilities or by geographic region, and for specific years (currently 1995-1998) or to view multi-year trends. The site is available in English, French and Spanish.

One participant noted that the use of computers and the Internet differs among countries and that this needs to be taken into account. Patrick Scantland noted that of the 50% of the visitors to the site that could be identified by location, 10% of these were from Mexico. In response to questions about the value of the web site, it was noted that the CEC site was the only site providing the matched TRI/NPRI data set for analysis, which allows for a unique, regional perspective on PRTR substances, industry sectors and amounts. Links to national PRTR data bases were also available.

2.3 Update on the North American Fund for Environmental Cooperation (NAFEC)

Janice Astbury, NAFEC Coordinator, provided an overview of the recent grants of interest to the PRTR program. Of the recent 160 grants, many had a strong emphasis on PRTR reporting and access to environmental information. These projects included: Pollution Watch, a new PRTR web site; voluntary reporting in Agua Prieta and Nogales, Sonora, a water quality project, and an Alaskan dioxin project. A description of the grants and NAFEC criteria are available on the CEC website. The new call for proposals will have a March 31 deadline, and an energy focus.

2.4 Exploring Linkages with Other CEC Pollutants and Health Programs

2.4.1 CEC Air Program

Paul Miller, Air Quality Program Manager at CEC, provided an overview of the activities underway in the air program. The CEC is working with Mexico to establish a professional association of air quality managers. A second area of activity is to enhance comparability of air emission inventories in the three countries. This activity is guided by Council Resolution 01-05 and grew from comments at previous Summary of the Consultative Meeting and Response to Comments on the Development of the *Taking Stock 2000* report

PRTR Consultative Group meetings. Possible contaminants to include are SO₂, NO_x, VOCs, PM 2.5, PM 10, total suspended particulates, carbon monoxide and lead. The project could assist with atmospheric modeling and track trends, support reciprocity in data exchange among the countries, provide transparency in cross border trading, and give public access to environmental information.

A summary document describing the current state of emission inventories in Canada, Mexico and the US has been developed, and is available from the CEC. Governmental agencies met in November to discuss the current state of inventories, and potential areas of cooperation. At this meeting, potential areas of cooperation included increased training and information exchange on mobile sources and increased data sharing and exchange using one sector, the power plants. List serves for mobile sources and stationary sources have been created, to assist in information exchange. A public meeting to discuss air emission inventories was held in the afternoon of 13 December 2001, following the *Taking Stock* meeting. The CEC is also working with the Western Governors Association to assist with the development of criteria air contaminant inventories in Mexico.

A third area of activity focuses on Trade and Transportation issues. An initial scoping document proposed a series of voluntary steps to improve air quality in border towns. Some potential projects include the development of a trinational smoke testing protocol and analyzing diesel exposure and health concerns among congested corridors using common methods.

To subscribe to the two list serves, for meeting summaries, or for more information, please contact Paul Miller at CEC at (514) 350 4326 or pmiller@ccemtl.org

2.4.2 Children's Health and the Environment

Erica Phipps described the CEC's initiative on children's health and the environment, which is guided by Council Resolution 00-10. The initial focus of the initiative is on asthma and other respiratory disease, and the effects of lead and other toxic substances. Highlights to date include a national workshop in Mexico which resulted in a joint declaration of the health and environment ministers, the formation of an Expert Advisory Board, and the ongoing development of a trilateral Cooperative Agenda for Children's Health and the Environment. A draft of the Cooperative Agenda will be discussed during a joint meeting of the CEC's Joint Public Advisory Committee (JPAC) and the Expert Advisory Board on 7 March 2002 in Mexico City.

The initiative also seeks to ensure that children's environmental health concerns are taken into account in existing work areas of the CEC, including the Sound Management of Chemicals, the Air Quality Program and the PRTR project. As part of the *Taking Stock* series, a special feature on children's health and the environment is under preparation.

Participants suggested that the recent National Environmental Trust and Physicians for Social Responsibility report, which used TRI data on the releases of neurotoxins, could be a starting point. Others suggestions included: to focus on the health of aboriginal children who may be less healthy than other groups, and to look at pulp and paper releases and pesticide use.

2.4.3 Sound Management of Chemicals

Vic Shantora, Head, Pollutants and Health Program, joined the meeting by telephone to provide an overview of the Sound Management of Chemicals (SMOC) Program. To date, regional action plans

have been developed for DDT, mercury, PCBs, and chlordane. The DDT plan is well advanced with significant reductions in the use of DDT. The use of chlordane has been discontinued in all three countries. Over 80 actions make up the mercury action plan. The regional action plan for PCBs is also well advanced. Draft regional action plans for dioxins, furans and hexachlorobenzene, and a monitoring and assessment document are expected to be released in early 2002. Regional action plans may be developed for lindane and lead.

There was considerable interest in strengthening the linkages between the SMOC and PRTR programs, particularly with respect to mercury and dioxins/furans/hexachlorobenzene. These substances are required to be reported to PRTRs and also have, or will have, regional action plans.

Participants noted that lindane is still licensed for use to control ticks in animals, and is used on ranches in British Columbia. Participants saw the potential to link PRTR data between the mercury, dioxins/furans and hexachlorobenzene regional action plans now, with the potential to look at lead in the future.

2.4.4 Biodiversity Program

Carlos Valdez, the CEC's Environmental Informatics Program Manager, outlined a holistic approach to biodiversity, based on land and sea environments, shared species and common threats. The biodiversity program is active in several areas including the Gulf of Maine and the Bight of the Californias, in the context of which there has been some use of PRTR data to map sources of pollution. The program has also discussed how to put data into common formats that can be broadly used.

Participants suggested that two aspects need to be considered with respect to linkages with PRTR. First, what data from PRTRs can be used to support other programs? And secondly, what types of questions are encountered when looking at children's health or other areas which could be answered by current or future PRTR data?

3. Recent Developments In PRTRs Around the World

Erica Phipps described the following six international activities related to PRTRs:

- Intergovernmental Forum on Chemical Safety: an international forum which featured a special session on PRTRs during its third session held in Brazil in October 2000 that resulted in a resolution promoting the development of PRTRs in countries worldwide;
- Inter-Organization Programme for the Sound Management of Chemicals (IOMC) PRTR Coordinating Group – a coordinating mechanism among various United Nations agencies, the OECD, countries and non-governmental organizations, currently chaired by Canada;
- Organization for Economic Cooperation and Development (OECD): passed a 1996 resolution calling for the development of PRTRs in OECD countries, has developed a guidance manual for governments, and has a Task Force on Release and Estimation Techniques that is chaired by the US;
- European Pollutant Emission Register (EPER), a regional register among countries of the European Union that will cover releases for approximately 50 chemicals, and be compiled every three years starting in 2003. The current model may evolve into a more comprehensive PRTR.
- The Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, under which a PRTR working group is

developing an international protocol for PRTRs. The PRTR Protocol would be open to all countries for signature, not just those that have ratified the Aarhus Convention.

Maria Doa provided additional detail on the OECD Task Force on PRTR Release Estimation Techniques. The Task Force is gathering existing guidance on estimation methods and identifying gaps. A Resource Compendium of Release Estimation Techniques is being developed for point and diffuse sources, and for transfers. Canada is taking the lead on developing a Clearinghouse of Release Estimation Techniques that will allow searches of existing guidance materials by chemical, industry and process. The release estimation techniques are being reviewed with the goal of providing the best quality data. Guidance is being developed on communication tools.

François Lavallée provided additional detail on the UN/ECE protocol on PRTRs being developed under the Aarhus Convention. A number of issues are under discussion, including the inclusion of transfers, and the list of chemicals and sectors. An original proposal also called for the inclusion of data on noise, radiation, energy and water use, however there is not broad support for these additional elements. Some countries are encouraging reporting on diffuse sources and voluntary reporting of releases in products. François Lavallée also noted that Environment Canada will be working with Chile on the development of a PRTR in 2002.

4. Update on the Ad Hoc PRTR Group

Fernando Gutierrez Moreno from the *Instituto para la Protección Ambiental de Nuevo Leon*, an industrial organization in the state of Nuevo Leon, gave an overview of the goals, membership and projects of the ad hoc group. The ad hoc group is comprised of 12 volunteers from Canada, Mexico and the US who are interested in promoting the understanding and use of PRTR data. Members share their industrial, non-governmental and academic experience to work together on projects. The first project was the development of a brochure on PRTRs entitled "PRTRs: An Innovative Tool for Efficient Industry." The brochure presents quotations from industrial leaders, community groups and governments in the three countries describing their experience with PRTRs. Copies in three languages are available for distribution from the CEC

The group is also discussing a second project, potentially addressing the documentation of trends in TRI and NPRI data over time, the collection of PRTR case studies, and an exploration of the links between PRTR data and economic and social indicators.

Some participants requested additional clarification of the objectives, timetable and expectations of the ad hoc group. Fernando Gutierrez noted that the development of the brochure grew from the need to present information on PRTRs in a way that was easily understood, and drawing upon the experience in all three countries. Several participants requested copies of the brochure for distribution to their local groups. It was suggested that an improved mechanism be developed for communication between the Consultative Group and the ad-hoc group, perhaps through posting summaries of teleconferences on the CEC web site and/or directly via e-mail. The Secretariat confirmed that increased communication measures could be put in place.

5. Opportunities for *Taking Stock*—2000

5.1 Addition of Persistent Bioaccumulative, Toxic Compounds

Taking Stock 2000 has a significant new opportunity to analyze data on persistent bioaccumulative toxins, which will be reported for the first time in 2000.

Mercury and mercury compounds

Facilities have reported mercury to both TRI and NPRI for a number of years at the reporting threshold of approximately 10 tonnes. Recognizing that mercury and mercury compounds can have significant environmental and health impacts at relatively low levels, the threshold for mercury has been lowered in both TRI and NPRI to approximately 5 kilograms. The effect of this lowered threshold will be to increase the number of facilities reporting mercury and the amount of mercury reported, resulting in an improved picture of mercury releases and transfers from certain sources in Canada and the U.S. Mercury is on the list of chemicals to be reported under the RETC.

Many participants were interested in an extended analysis of mercury in *Taking Stock 2000*. It was noted that a mercury analysis could support the 2003 Global Assessment of mercury, make a linkage to the SMOC regional action plan on mercury, support existing inventories and other studies on mercury in the three countries, support Canada Wide Standards for Mercury, provide a picture of mercury emissions from utilities, and indicate progress made over time in reducing mercury emissions. Mercury contamination of fish remains a widespread concern in many rivers and lakes in North America, and the legacy of mercury contamination in sediments also needs to be discussed. Mercury could be discussed using a food system /body burden approach.

Participants cautioned that the 2000 year reporting of mercury at the lower threshold was the first year of such data. It was also noted that there may be more certainty in the mercury reporting data due to widespread use of more established emission factors and sampling data than for the first year of reporting of dioxins and furans. The analysis could demonstrate the historical progress made in reducing emissions as well as the importance of PRTR reporting of mercury which identified new sources not previously part of the mercury inventory.

Dioxins and Furans

Dioxin and furans have been identified for reduction by many governments due to their health and environmental effects. Dioxins and furans are on the list of chemicals to be voluntarily reported to RETC. Both TRI and NPRI have required the reporting of dioxins and furans for 2000. However the method of reporting differs among the three countries:

Table 1: Dioxin and furan reporting in NPRI, TRI and RETC

| Description of reporting | NPRI | TRI | RETC |
|--------------------------|--|--------------------|--------------------------------------|
| Who reports? | “list approach”: certain processes or activities that are likely to release dioxins and furans are | All sectors report | All sectors under federal competence |

| | | | |
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| | identified and only these sectors are required to report. These sectors include: incinerators and wood preservation | | |
| What are the thresholds for reporting? | No quantity threshold. For identified processes, all quantities have to be reported. | 0.1 grams of dioxins and furans (manufacture only) | All quantities have to be reported |
| How many employees? | No employee threshold. Facilities with identified processes such as incineration need to report, regardless of number of employees. For other processes, the 10 employee threshold applies | 10 employees | No employee threshold |
| What is reported? | Toxicity equivalent (TEQ): The amount of each congener of dioxins and furans is multiplied by a specific toxicity factor and summed to result in one number expressed in TEQs | Total mass: The amount of each congener of dioxins and furans is summed to result in one number expressed in grams. The percentage distribution of congeners is also reported. | Total mass |

Various options for the analysis of dioxins and furans in *Taking Stock* were presented for consideration. These included : analyze TRI/NPRI/RETC data separately, use the reporting of congeners under TRI as a crosswalk between the two systems, match data with caveats, and use other data to match dioxin and furan data.

Participants were interested in analyzing dioxins and furans in *Taking Stock 2000*. Reasons included: the availability of the new data; the environmental and health significance of dioxins and furans; the cumulative nature of dioxin and furan loadings; the numerous regulatory and governmental programs to reduce dioxins and furans; and the potential to link to future SMOC activities.

Many participants also noted that the discussion of dioxins and furans should stress that this is the first year of data, that much of the data is based on emission factors, which may need revising, and that facilities are less familiar with estimating dioxins and furans than some other compounds. Suggestions were made to discuss the methods a facility could use to estimate releases and transfers, as there is little public awareness of how the numbers are prepared. As part of this discussion, the report could analyze the number of facilities using direct measurement, or emission factors, or engineering estimates. The large amount of variability in measurement of dioxin emissions was noted. One participant suggested

developing an index of quality approach for emission factors. As part of this discussion, facilities could be asked how they developed their dioxin and furan numbers and the congener distribution in TRI.

Many participants suggested that *Taking Stock* use the TRI reporting of congeners as a way to match the dioxin and furan data between TRI and NPRI. In addition, participants felt that the report should also analyze the unique parts of each system, for example, analyzing the TRI data to see how much dioxin is being reported by facilities not included in the NPRI “list” approach. The analysis could also look at how much dioxin is being reported to NPRI by facilities with less than 10 employees, which would not be captured under TRI reporting. Participants were also interested in looking at other data sources such as dioxin inventories and other dioxin studies to allow a broader discussion on dioxin and furan sources. It was suggested that the report could link to the POPs Convention as hexachlorobenzene and dioxins/furans are two of the substances targeted under this treaty.

PAHs

Polycyclic aromatic hydrocarbons (PAHs) are a large family of chemicals, many of which are persistent, bioaccumulative and/or toxic. Both TRI and NPRI added and changed thresholds for reporting of PAHs for 2000. However, there are fundamental differences in the reporting of PAHs that makes it difficult to match the data between TRI and NPRI. For example, benzo (g,h,i) perylene and other PAHs have a threshold of approximately 50 kilograms in NPRI and 4.5 kilograms in TRI.

There was less discussion on PAHs at the meeting than for mercury and dioxin and furans. Participants were interested in discussing PAHs due to their environmental and health significance, but recognized the difficulty in matching that data for these compounds. It was suggested that the PAH data for TRI and NPRI be discussed separately. It was suggested that PAH releases from aluminum plants could be analyzed.

Hexachlorobenzene

Due to its environmental significance, both TRI and NPRI lowered the threshold for reporting of hexachlorobenzene (HCB) in 2000. NPRI specifies certain activities, such as incineration and wood preservation, that must report HCB regardless of the amount released or transferred. In TRI the threshold is 4.5 kilograms manufactured, processed or otherwise used and applies to all industrial processes. Participants were interested in discussing HCB due to its environmental and health significance, but recognized the difficulty in matching these compounds. It was suggested that the HCB data for TRI and NPRI could be discussed separately. Since some of the same sources may produce both dioxins and furans and PAHs, it was suggested that the ratio of these compounds per sector could be analyzed. The poor emission factors for HCB for the pulp and paper sector were also noted. The potential for PRTRs to miss important sources of contamination such as lagoon dredging at pulp and paper mills was noted.

5.2 Option Two: Taking a More In-Depth Look at the Reasons Behind the Data

Many questions arise about some of the reasons behind the trends seen in the PRTR data. It was proposed that *Taking Stock* explore some of these questions, such as: Why are on-site releases decreasing? Why are off-site releases increasing? Why are average releases per facility changing? Why do facilities reporting smaller amounts of chemicals show different patterns?

Participants were generally supportive of exploring the reasons behind some of the observed trends. They cautioned, however, that resources are required to make the analysis meaningful and not superficial. There may be many reasons for a particular macro trend. One participant questioned the purpose and objectives of looking more deeply at the data, and suggested that the report concentrate on the chemicals that are a priority for the CEC. The report should also clearly state the limitations of the data, what is not covered by PRTR data and what gaps exist in PRTR reporting.

It was suggested that the report could examine some of the popular myths around PRTRs and environmental reporting such as the relationships between reduced pollutant levels and competitiveness, economic and social measures. Previous studies have found that states that have reduced pollution levels have become more efficient at resource use and have higher economic prosperity.

Participants were interested in exploring if the trend of decreasing releases on-site and increasing quantities of chemicals sent offsite means that substances that are no longer being released are instead appearing in the data as transfers. This could reflect end-of-pipe control technology that creates sludges, ashes and other materials that require further management.

5.3 Opportunity Three: Hazardous Waste Data and Cross Border Transfers

Transboundary hazardous waste flows were of interest to participants, as often information on facilities and materials shipping across borders is difficult to obtain from other sources. Only a handful of facilities are shipping wastes across the border, so this analysis would be easy to scope. Participants were interested in discovering where materials are sent and also the origin of materials at a particular receiving facility. Participants were not very interested in an analysis of the trends in the PRTR data and hazardous waste data, because of the basic differences between these data sets, the difficulty in getting good Canadian and Mexican hazardous waste data, the differences in classification of hazardous waste, the real problems in hazardous waste facilities facility reporting to PRTRs and potential overlaps with a parallel activity at CEC.

While progress has been made in standardizing names of receiving facilities in both TRI and NPRI, one participant suggested that it would be useful to have a common number to identify these facilities or a common pick list.

5.4 Opportunity Four and Five : Watershed- , Ecoregion- and/or Airshed-Based Analyses

It was proposed that PRTR data could be analyzed by receiving river, lake or watershed or airshed. PRTR data could also be mapped on an ecoregion basis.

Participants were interested in increasing the geographic analysis in the *Taking Stock* report. A table showing loadings of different chemicals to rivers and lakes was suggested. The Mississippi River was suggested for analysis as it drains 41% of the U.S. Many participants felt that the watershed approach would need to be a trinational analysis. The Baja-to-Bering region would be more of a trinational approach than a particular river or watershed. An inland water that receives cumulative loadings from many sources was suggested, such as the Great Lakes. Environment Canada is still planning to do a study on the PRTR loadings to the Great Lakes, with a report expected in fall 2002. Other areas suggested include: Chapala Lake or the grasslands of North America, which cover three countries and

contain one third of the species of concern. Many participants suggested a holistic approach, bringing together other databases with the PRTR data.

5.5 Opportunity Six: Participants' Ideas

An analysis of benzene was suggested, because it is a toxic air pollutant, a precursor for ozone, emitted from stationary, mobile and other sources, has shown reductions over time, doesn't travel long distances due to its relatively short half life, and because of the availability of a variety of monitoring and other data. Areas with high benzene concentrations such as Montreal, areas in New Jersey, Hamilton and Monterrey could be examined. The analysis could also include time trends of benzene in air quality monitoring data and PRTR data, what factors are driving reductions, and linkages to wages and economy.

Other suggestions included a request to exclude recycling from the total reported amounts of chemicals, and to include emissions from other sources such as agriculture and municipal wastewater plants. It was noted that there has been a long history of environmental damage from recycling facilities, and that the report provides many different ways of looking at the data depending on the reader's interest.

One participant sought clarification on how PRTR data and the *Taking Stock* report have reduced releases. Several studies have found that chemicals reported to TRI show larger reductions than chemicals not on the TRI. A number of case studies also demonstrate that PRTR reporting can help facilities to identify ways to reduce releases and transfers. ("What gets measured, gets managed.") The amount of releases reported to TRI fell 50% in Louisiana after TRI reporting.

Other suggestions included: to add a list of facilities that voluntarily report in Mexico; to link PRTR to toxic ambient air quality data; and to include criteria air contaminants in the report.

6. Proposed Directions for *Taking Stock 2000*

The annual consultative meetings provide an important opportunity for stakeholders to help guide the development of the *Taking Stock* report. Taking into account comments heard at the meeting and availability of resources, following is an overview of the directions to be taken for *Taking Stock 2000*:

Format

As participants generally were supportive of the two volume format, this will continue for *Taking Stock 2000*. The *Summary* volume will contain key findings and frequently asked questions. The second volume, the *Sourcebook*, will contain more in-depth analyses of the data.

The website will continue to provide query functions of the matched TRI and NPRI data base, and will be expanded to allow for a broader range of queries.

Analyses

Taking Stock 2000 has an opportunity to analyze the new data on mercury collected under the lowered thresholds in TRI and NPRI. This will provide additional insights on the volumes and sources of mercury in North America. The report could also describe the historical trends in mercury releases. A

brief overview of government programs to reduce mercury in the three countries could be included. The relationship between PRTR reporting and the SMOC program will also be further explored.

The reporting of dioxins and furans also offers another important opportunity for *Taking Stock 2000*. However due to the differences in reporting between TRI and NPRI, this analysis is more difficult than for mercury. The data on distribution of congeners in TRI will be reviewed. Based on the completeness of this data, and EPA's assessment of data quality, this distribution may allow the TRI data to be converted into the TEQ approach used by NPRI. Ideally all data could be converted in this way. Depending on the data that has been reported, it may be possible to analyze for a particular sector or facilities. The analysis will also:

- explain that the dioxin and furan reporting is the first year of data;
- describe the basis of estimating releases and transfers;
- analyze the distribution of different methods of estimation;
- discuss the historical trend in dioxin and furan releases;
- describe briefly the key government and industry programs to reduce releases and transfers;
- discuss other sources of dioxins and furans as documented in dioxin inventories;
- analyze the unique aspects of TRI and NPRI reporting; and
- note the potential linkage with the SMOC regional action plan

Taking Stock 2000 will also present data on PAHs and hexachlorobenzene separately for TRI and NPRI, as matching these chemicals is difficult

Taking Stock 2000, as in previous reports, will discuss the limitations of PRTR data, what is covered and what are the gaps in PRTR reporting. This year's report will also discuss the variability often seen in the first year of data and the methods of estimating releases and transfers.

As a step towards examining some of the reasons behind the data, *Taking Stock 2000* will examine the patterns of facilities releasing smaller amounts. Often TRI and NPRI data is dominated by a few facilities that report large quantities. Below this slice are the majority of facilities, which often demonstrate a different pattern, sometimes showing increases in on-site releases. This analysis will provide insight into the patterns of the majority of facilities reporting to PRTRs, as compared to the facilities reporting larger quantities. The facilities reporting smaller quantities may be especially relevant to Mexican reporting.

As in previous reports, *Taking Stock 2000* will examine cross border flows of chemicals. The report will also examine the origin of waste received by several facilities handling large quantities of materials.

The CEC will explore the possibility of increasing the linkage between PRTR data as an input into some of the Baja-to-Bering mapping under the Biodiversity Program. The *Taking Stock* report may also analyze the loadings of different chemicals into one or two major rivers or lakes. This may be a simple table presentation rather than a detailed mapping of watershed or airshed approach.

The CEC also plans to develop a special analysis on benzene for *Taking Stock 2000*. This analysis could describe the environmental and health effects of benzene, the historical trends, the main regulations driving the reduction of benzene, the variety of sources contributing to benzene levels and discuss the national and community monitoring data for benzene.

Annex A: List of Participants

Meeting of the Consultative Group for North American PRTR Project Réunion du Groupe consultatif sur le projet de RRTP nord-américain Reunión del Grupo Consultativo para el proyecto RETC de América del Norte

Dec 12-13, 2001, Montreal

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