

Commission for Environmental Cooperation of North America



Response to Comments Received on the Development of the
***Taking Stock 1999* Report on North American**
Pollutant Releases and Transfers

August 2001

Introduction

The North American Commission for Environmental Cooperation (CEC) organized a public meeting in Mexico City, Mexico, on 5 and 6 March 2001 as a forum for exchanging ideas and obtaining stakeholder input in the development of the *Taking Stock—1999* report. *Taking Stock* is an annual report which analyses publicly available data from the Canadian National Pollutant Release Inventory (NPRI), the US Toxics Release Inventory (TRI) and wherever possible from the Mexican *Registro de Emisiones y Transferencia de Contaminants* (RETC).

The CEC, which was set up under the North American Agreement on Environmental Cooperation, facilitates cooperation and public participation to foster conservation, protection and enhancement of the North American environment in the context of increasing economic, trade and social links between Canada, the United States and Mexico. The CEC recognizes the importance of the use of pollutant release and transfer registers (PRTRs) as a means of tracking progress and encouraging pollution reductions in North America.

Over one hundred people from industrial associations, non-governmental groups, academia and government, from Canada, Mexico and the United States, attended the meeting. A discussion paper entitled "Consultations for the *Taking Stock—1999* Report on North American Pollutant Releases and Transfers" was circulated in advance to all members of the Consultative Group, comprised of some 200 interested stakeholders in the three countries. The document laid out various options and provided a starting point for discussion.¹ Comments made at the Consultative Meeting are reflected in the document "Summary of the Consultative Meeting" which was distributed in May 2001. In addition to oral comments during the meeting, three written comments were received by the March 31 deadline (see [Annex I](#)).

This document:

- summarizes written and oral comments received on the development of the report *Taking Stock 1999: North American Pollutant Releases and Transfers*.
- outlines the proposed direction for the *Taking Stock 1999* report.

The consultations on *Taking Stock* were followed by a "Roundtable Discussion on Opportunities and Challenges of PRTR Reporting in Mexico" and a "Special Session on Tools that Use PRTR Data." Government representatives of the three national PRTR programs met the following day to discuss the CEC's PRTR program and next steps.

The CEC Secretariat thanks all those who have contributed their time and energy to this project.

¹ This and other documents are available on the PRTR program page of the CEC website <www.cec.org> or in hard copy, upon request, from the CEC Secretariat.

Options for *Taking Stock 1999*

Reviewers commented on the nine options for the development of *Taking Stock 1999* described in the Discussion Paper and presented at the Consultative Meeting.

The ideas, in approximate order of participant's interest, were:

1. Children's health and the environment
2. Ozone depleters
3. Watershed and airshed based analyses
4. Cross border analyses/recycling
5. Newly added chemicals
6. Presentation of data for specific chemical lists/sub-groups
 - High production volume chemicals
 - Persistent bioaccumulative toxics
 - Persistent organic pollutants
 - Volatile organic compounds
 - Endocrine disruptors
 - Regulatory lists
7. Estimation methods
8. Releasers of larger versus smaller quantities
9. Integration with the new web site
10. Other ideas from participants:
 - Opportunities to encourage mandatory reporting in Mexico
 - Analyses of voluntary versus mandatory systems
 - Systems-based analyses
 - Linkages with trade and environment topics
 - Analyses of the recently added sectors
 - Special analysis of benzene
11. Methodology: adjustment analysis

1. Children's Health and the Environment

The CEC Council has called for the development of a special feature report on children's health and the environment as part of the *Taking Stock* series. Many participants expressed an interest in such an analysis, due to the importance of children's environmental health as an issue of public concern. Other participants felt that such a large topic would be beyond the scope of the *Taking Stock* report and would require significant resources that could take away from other analyses.

Two general themes were heard during the discussion on children's health. Some participants stressed the need to link the special feature report closely to PRTR data to be appropriate to include in the *Taking Stock* series. Others noted the potential benefits of broadening the scope of inquiry beyond PRTR data. Many participants expressed interest in examining indigenous children and health, but this was generally seen as beyond the scope.

Several methods to link to PRTR data were suggested:

- analyze PRTR reporting of heavy metals and phthalates
- analyze PRTR data for the list of chemicals used by the U.S. Centers for Disease Control and Prevention (CDC) for its biomonitoring program
- use of the California "Proposition 65" list of chemicals
- use of other regulatory lists; emergency planning lists and/or occupational health lists
- take a regional approach, perhaps presenting PRTR data from Saint John's, New Brunswick, Canada, in combination with hospital statistics and data from previous studies on transboundary pollution
- link volatile organic compounds reported to PRTRs to ground level ozone and asthma
- present the health effects pyramid, a diagrammatic presentation of the increasing seriousness of effects from increasing exposure to a particular pollutant and focus on the lower levels of the pyramid.

Proposed Direction on Children's Health and the Environment

Given the broad interest in children's environmental health and the potential benefits of linking the PRTR analyses with other ongoing CEC initiatives, including the recently launched project on children's health and the environment, the special feature will take a broad perspective on the relationships between toxic chemicals and children's health. It will be published as a stand-alone report, an approach that the Consultative Group had previously encouraged the CEC to consider for special features that are likely to be of broader interest. The report will provide an informative overview of various categories of chemicals that are of concern from a children's health perspective (e.g. metals such as lead and mercury, developmental and neurological toxins, persistent toxic substances), their sources and associated health and/or environmental effects, and potential routes of exposure for children. The document will focus in particular on selected chemicals and chemical categories for which PRTR data are available, as well as chemicals that are being targeted through the CEC's Sound Management of Chemicals (SMOC) program.

CEC is establishing a Expert Advisory Board on Children's Health which will assist in integrating children's health into CEC programs. The input and guidance of this group will be sought during the development of the special feature report.

Some regulatory lists may be used as a starting point for *Taking Stock* analyses. Approximately 680 chemicals are on the California Proposition 65 list of carcinogens and reproductive toxins (www.oehha.ca.gov/prop65/prop_65list/newlist.html). For *Taking Stock 1999*, the California Proposition 65 list will be used to analyze the 1999 data, thus the results will be available for inclusion in the stand-alone special feature. Other regulatory lists such as the Canadian Environmental Protection Act are also under consideration.

The U.S. Centers for Disease Control and Prevention in their National Report on Human Exposure to Environmental Chemicals (www.cdc.gov/nceh/dls/report) measured levels of 27 chemicals (including metals, organophosphates pesticides, phthalates) in blood and urine samples in the US population. Of these 27 biomonitoring chemicals, five substances, lead, mercury, cobalt, antimony and cadmium are on the matched data set used for *Taking Stock* 1999. Because these five substances are metals they are already analyzed as part of the metal group in the *Taking Stock* reports. As more chemicals are added and thresholds lowered in the PRTR programs, this list of 27 chemicals used for biomonitoring may overlap to a greater degree with the matched data set, and so be more suitable to analyze as a separate group in the future.

Some volatile organic compounds (VOCs) can react in the atmosphere with other chemicals to form smog, which poses a threat to children's respiratory health. Using 1996 data, EPA estimated that VOC emissions reported to TRI were 995 million pounds, or approximately 3% of the 38 billion pounds of all VOCs emitted from industrial, utility, mobile, area and natural sources. This estimate may be different today, given that utilities and other new sectors now report to TRI. However, due to the resources required to analyze the regulatory chemical lists and the ozone depleters, *Taking Stock* 1999 will not analyze VOCs and links to asthma. VOCs may be analyzed in future *Taking Stock* reports.

The health effects pyramid may be added to the discussion of health and environmental impacts in *Taking Stock* 1999.

In summary, a stand-alone special feature report on children's health will be prepared, as part of the *Taking Stock* series. It will:

- Take a broad perspective on chemicals of concern to children's health and then focus in particular on PRTR and SMOC chemicals
- Take into account input from the Expert Advisory Board on Children's Health and the Environment
- Make use of the *Taking Stock* analyses of carcinogens, metals and selected regulatory lists of chemicals such as the Canadian Environmental Protection Act and California Proposition 65 lists

2. Ozone Depleters

For the 1999 report, there is the opportunity to analyze CFCs, HCFCs and halons for the first time, as NPRI has added these chemicals for 1999 reporting.

Participants were generally supportive of analyses of ozone depleting chemicals because of public concern about these substances and their environmental significance, because of the relevance to an international agreement (the Montreal Protocol), and as an opportunity to tell a positive story about reductions over time.

In addition, the data could be analyzed using the established ozone depletion potentials, a system designed to reflect the differing destructive ability of some CFCs, HCFCs and halons.

A few participants noted the ongoing public confusion between “good” and “bad” ozone, with ozone depleters destroying the “good” upper stratospheric ozone which protects the earth from harmful ultraviolet light, and VOCs contributing to the “bad” ground level ozone, causing smog and poor air quality. The analysis of ozone depleters could be coupled with an analysis of VOCs to clarify this distinction.

Proposed Direction on Ozone Depleters

Taking Stock 1999 will:

- analyze ozone depleting chemicals as a separate group
- apply the ozone depleting potentials to provide another perspective on the data
- briefly document the historical trend of ozone depleters provided by the TRI data
- briefly describe the connections to the Montreal Protocol
- briefly describe the differences between “good” and “bad” ozone

3. Watershed/Airshed Analyses

Participants were interested in a watershed and/or airshed based analysis, which can provide a regional picture of PRTR data, add value by integrating PRTR with other information, and provide additional context for PRTR data.

Some specific suggestions for watersheds to examine included: the Mississippi River, the Great Lakes, coastal waters, and two regions in which the CEC is already working: the Gulf of Maine and the Bight of California. Analyses could also include ecozones, permit data and depositional data.

Some felt that a Great Lakes report could overlap or conflict with the work and mandate of the International Joint Commission (IJC). Others felt that this would assist and complement IJC activities, perhaps using the Lakewide Management plans as a basis. It was also noted that Environment Canada-Ontario region is interested in developing a Great Lakes report.

Participants were also very interested in airshed based analyses, noting work done by the IJC on one- and two-day airsheds around the Great Lakes, and how this had expanded the zone of interest around the Great Lakes.

Proposed Direction on Watershed/Airshed Analyses

Environment Canada-Ontario region has confirmed their interest in developing a Great Lakes report using 1999 data from NPRI and TRI. CEC may provide technical assistance to Environment Canada for this effort.

Mapping an airshed requires significantly more resources than a watershed, due to the need to geographically define boundaries.

Given the proposed Environment Canada project and considering the number of other topics for which there is strong interest, an airshed/watershed analysis will not be included in *Taking Stock 1999* however this may be a good option for future reports. An airshed analysis may be of particular interest for the 2000 data set, which includes dioxins and furans.

4. Cross Border Analyses

Conducting analyses of transfers to disposal and recycling across borders was supported because it fits CEC's mandate of a North American perspective and is difficult to do with the data supplied on the internet. The discussion centered on transfers to recycling. Some participants felt that recycling was a positive activity that should be presented in a positive way in the report. They felt recycling should be placed in the context of the pollution prevention hierarchy that says that source reduction is the best method, followed by recycling, then treatment, and then release/disposal as a last resort. Other participants noted that many recycling facilities have become Superfund sites, and recommended that the report include lists of individual recycling and energy recovery facilities to aid communities in their understanding of such sites.

Proposed Direction on Cross Border Analyses

Taking Stock 1999 will analyze recycling data from 1999 and changes from 1998 to 1999. The analyses will center on:

- chemicals that are recycled in the largest quantities
- sectors that recycle the largest quantities
- areas receiving/sending the largest quantities

5. Newly Added Chemicals

Of the 73 chemicals added to NPRI for 1999 reporting, approximately 45 chemicals can be matched to TRI. Due to the diversity of newly added chemicals, participants felt it would not make sense to treat them as a group. Rather, they suggested pulling out sub-groups of the chemicals to increase understanding of environmental and health issues. The ozone depleters are the most obvious group within the newly added chemicals.

Proposed Direction on the Newly Added Chemicals

Taking Stock 1999 will discuss the role that the newly added chemicals play in the 1999 data. Analyses may include sectors reporting these chemicals, identification of the newly added chemicals reported in the largest amounts, or geographic areas reporting large

quantities of the chemicals. As discussed earlier, ozone depleters will be analyzed as a separate group.

6. Analyses of Additional Chemical Lists/Subgroups

Participants were also interested in new subgroupings of chemicals of the over 200 matched chemicals in the 1999 report as a focus for analysis. Some of the new groupings suggested are:

- High production volume chemicals
- Persistent bioaccumulative toxics
- Persistent organic pollutants
- Volatile organic compounds
- Endocrine disruptors
- Regulatory lists

US EPA has identified a set of high production volume (HPV) chemicals, i.e., chemicals that are produced and/or imported in annual volumes of more than one million pounds. EPA is reviewing the health and environmental information available for these chemicals. Approximately one-third of TRI chemicals are HPV chemicals.

Participants suggested that chemicals considered persistent, bioaccumulative and toxic (PBT) could be analyzed as a group. Others suggested that this analysis would be best left for the *Taking Stock 2000* report, when additional reporting from several PBTs such as dioxins and furans would be available.

Other participants suggested that the twelve chemicals targeted in the Rotterdam Convention on Persistent Organic Pollutants (POPs) for immediate phase-out and eventual elimination be analyzed as a group. However, most of these are pesticides, which are not on the matched list. Of the 12 POPs, none are on the matched chemical list for 1999. For the 2000 reporting year, however, hexachlorobenzene, dioxins and furans will be on the matched list since they were added to the NPRI and/or TRI lists.

Volatile organic compounds (VOCs) are compounds of carbon that participate in atmospheric photochemical reactions. Sources of these chemicals include industrial boilers and processes, fossil-fuel burning, steam, electric boilers and gas turbines, motor vehicles and natural sources. Participants generally supported an analysis of VOCs because of public concern about poor air quality and smog and because of the links to children's health. One participant suggested analyzing just VOC releases to air, or fugitive VOC emissions from organic chemical or petrochemical facilities. Some participants noted that the sources that report to PRTRs would be a small part of the total releases of VOCs, so additional context would be required. Several participants noted that the VOC analysis had the potential to be trilateral. The analysis could also draw from the newly signed Ozone Annex between Canada and the US.

Several participants suggested that an analysis of endocrine disruptors could be a valuable addition to *Taking Stock*. Others felt that this would be premature until some

consensus exists on a list of endocrine disruptors, and until more chemicals suspected of endocrine disruption are added to the PRTR lists.

Many participants liked the idea of analyzing the data using regulatory lists, however most also recognized the difficulties in choosing appropriate lists. Some suggested the California Proposition 65 list of carcinogens and reproductive toxins, emergency planning lists and occupational health lists. One participant noted that the Border List of Lists provides a regulatory breakout for 3,000 chemicals. Regulatory lists were seen to be important to the community. Participants suggested the creation of an appendix indicating how the matched chemicals are regulated in the three countries.

Proposed Direction on Analyses of Additional Chemical Lists/Subgroups

Of the 25 chemicals in the matched data set in *Taking Stock* that are released in largest quantities, 20 of them are considered high production volume chemicals. Because of the considerable overlap between these two lists, it does not seem necessary for *Taking Stock 1999* to analyze high production volume chemicals as a separate group. The 1999 report will identify which of the top chemicals are considered high production chemicals and the current status of research for these chemicals.

As none of the chemicals on the POPs treaty are part of the matched data set, this group will not be analyzed for the 1999 report. As additional chemicals are added for the 2000 reporting year and beyond, there may be an opportunity in future reports to analyze POP chemicals as a group.

Due to the amount of resources that would be required, *Taking Stock 1999* will not analyze VOCs. Such analyses may be included in future reports.

In the future *Taking Stock* may also analyze endocrine disruptors and persistent, bioaccumulative toxins (PBTs) as separate groups, since PBTs will be reported in 2000.

In summary, *Taking Stock 1999* will analyze the data using:

- Ozone depleters as a group
- California Proposition 65 list of carcinogens and reproductive toxins
- Canadian Environmental Protection Act toxic or regulated chemicals
- Carcinogens and metals, as in previous years
- Notes for chemicals released in large quantities which are also high production volume chemicals, and the current stage of research on these chemicals

7. Estimation Methods

Some participants suggested that an analysis of estimation methods used for PRTR reporting would be useful, because it could lead to improvements in the data. Others felt that estimation methods might not be of public interest and that, while direct measurement was seen to be generally more accurate, in some situations mass balance or other methods can give accurate answers. One participant noted that the term “mass balance” has a controversial history as it was used to describe materials accounting.

Another participant noted that facilities in The Netherlands are only allowed to use methods other than direct measurement if they are below a certain threshold volume of releases.

Proposed Direction on Estimation Methods

Due to the number of changes already proposed, *Taking Stock 1999* will not focus on estimation methods. A section on data quality procedures in the three countries may be added to the descriptions of the national PRTRs. Depending on participants' interests, estimation methods could be looked at in future reports.

8. Analyses of Releasers of Larger vs. Smaller Quantities

It was proposed that the report analyze releases and transfers from facilities reporting larger versus smaller quantities of releases and transfers. In *Taking Stock 1997*, this type of analysis found that facilities releasing smaller quantities of chemicals showed different trends, with increases in both releases and transfers, as compared to facilities reporting larger quantities of chemicals.

Proposed Direction on Releasers of Larger vs. Smaller Quantities

Taking Stock 1999 may analyze facilities reporting small quantities and facilities reporting large quantities, depending on availability of resources.

9. Web Site

Participants were very supportive of the new CEC PRTR web site, which allows customized queries based on the matched data set used for the *Taking Stock* report.² When asked about the appropriate balance between the web site and the report, participants saw the web site as an addition to and complementary to the hard copy report. Several participants expressed concern that the web site not replace the report, as the report is a handy reference, avoids problems of downloading large amounts of information, can be used by people lacking access to the Internet, effectively describes overall trends, and provides comparisons and context not as easily obtained from a web query.

CEC was encouraged to find ways to increase the distribution of a smaller, less technically written document to a broader audience. It was noted that *Taking Stock 1998* will be issued in two volumes, the first of which will be a short, user-friendly summary document.

The following specific suggestions were made on the web site:

- ensure sufficient context for the data;
- provide links to relevant section of the *Taking Stock* report;

² The web site was launched on 20 July 2001 and will be updated and improved in response to feedback. It is available via the main CEC web site at <www.cec.org> or directly at <<http://takingstock.cec.org>>.

- post the report in sections for downloading;
- post the full dataset for downloading and make downloading easy;
- provide details of changes in reporting systems over the years;
- clearly indicate which version of the PRTR data is being used;
- make help screens easy to understand;
- consider the issue of archiving the website as it is updated;
- add economic data;
- provide links to other sites;
- deep link to relevant pages on the other systems; and
- add comparisons wherever possible.

It was clarified that the carcinogen list will be updated annually and applied to all years of data.

Proposed Direction on Web Site

The CEC web site will be an addition to, not a replacement of, the *Taking Stock* report. The web site allows users to generate customized queries based on the matched data set used for the *Taking Stock* report.

The web site will provide context and information to assist the user, enable downloading of the data and query results, clearly indicate which data sets are being used and explain year-to-year changes in the data, provide links to other sites and add comparative information wherever possible. As the web site evolves, the CEC will explore options for adding economic data and the possibility of deep linking to pages on other sites.

10. Ideas Raised by Participants

Many participants expressed an interest in encouraging mandatory reporting under the Mexican RETC. Any analyses or actions that would encourage mandatory reporting were supported. The participants felt that the analyses in the *Taking Stock* report should strive to be trilateral as much as possible.

Participants were also interested in analyses of PRTR data reported under mandatory and voluntary programs. Previous *Taking Stock* reports did analyze the matched data using the voluntary ARET and EPA 33/50 lists. In 1996 in The Netherlands, a voluntary reporting system became mandatory for certain companies, with estimated emissions for 40,000 other facilities.

Participants also noted the potential to take a systems approach in *Taking Stock* reports, perhaps by analyzing nutrients such as ammonia and phosphoric acid. The cycle of nutrients could provide a sense of the interconnectedness of the ecosystem, and the role of these inputs.

Other participants were interested in an analysis of the role of the new sectors in the matched data. They noted that 67% of releases reported to TRI were from the newly added sectors.

One participant suggested that benzene might make a good case study because it is released from point and non-point sources, is a carcinogen, contributes to poor air quality, is the subject of regulations for some sectors, and could show a decline in releases over time.

Proposed Direction on Other Ideas

Taking Stock 1999 will strive to be as trilateral as possible. It is hoped that Semarnat and industrial associations and facilities will make 1999 RETC data available for publication. Additional opportunities to incorporate Mexican data may arise from the Montreal Protocol data on ozone depleters. Participants also discussed a separate project designed to encourage reporting in Mexico.

A systems approach based on nutrients is difficult with the matched data for *Taking Stock*, which does not include ammonia due to reporting differences between TRI and NPRI. A discussion of the systems approach could be added to the context section in the *Taking Stock* report.

The importance of data reported by recently added sectors will be emphasized in the *Taking Stock 1998* and *1999* reports. *Taking Stock 1999* will present data from the new sectors relative to the manufacturing sectors.

Due to the resources required to analyze the new regulatory chemical lists and the ozone depleters, *Taking Stock 1999* will not provide an overview of benzene emissions.

11. Methodology: Adjustment analysis

The recent inclusion of hazardous waste management facilities in the matched data set raises a new consideration for the *Taking Stock* data methodology. One facility may send chemicals for treatment or disposal to a hazardous waste facility which then also reports these chemicals as a release. The data need to be adjusted to ensure that a release is only counted once. This can be compared to a book that is lent to a friend, who lends it to another friend. Throughout the transfers to friends, there is still only one book. The same is true for chemicals being sent to multiple places: they are still the same chemicals.

For the 1998 report, the data were analysed to determine the amount of chemicals reported by one facility as a release and then subsequent reported by a receiving facility as a release. Because only a small amount of chemicals were found to match up in this adjustment analysis (0.7% of total releases in NPRI and 4.0% in TRI) and the matching varied so much for NPRI and TRI, the adjustment analyses was not incorporated into the *Taking Stock 1998* report.

Proposed Direction on Adjustment Analysis

With the aid of the national governments to improve comparability of reporting, the 1999 data will be again analyzed to determine the degree of matching, and if improved, then the 1999 report will adjust the data.

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Annex I: Written Comments Received

Written comments on the development of *Taking Stock* 1999 were received from:

- Rick Findlay, Pollution Probe, Ottawa, Canada
- Rick Blum, OMB Watch, Washington, D.C
- Pieter van der Post, The Netherlands.

Copies of these comments are publicly available from the CEC.