9 Community Case Studies

Key Findings

- The uses of PRTR data are as varied as communities themselves. PRTR data are used by communities to understand industrial releases and transfers, to assist the company in reducing releases and transfers, and to build a regional picture of releases and transfers.
- Helpful tools communities have employed for using PRTR data include:
  - a new web site that maps and ranks PRTR data and provides detailed information on health, environmental and legislative aspects of listed substances;
  - the use of Good Neighbor Agreements to govern aspects of a facility's daily operation;
  - the creation of briefing books for politicians that summarize information on local facilities as a basis for action;
  - the use of a community advisory panel to create a two-way dialogue between the facilities and different sections of the community;
  - innovative strategies for promoting a PRTR program; and
  - mentoring of small companies by larger ones to encourage environmental management systems.

9.1 Introduction

Communities, industries and governments have used PRTR data for many different purposes. The examples in this chapter profile developments in this area grouped according to country, beginning with the United States. The various sections also highlight some of the tools that groups have used and provide contact information for other groups wishing to investigate the application of these tools in their own communities.

9.2 Innovative Tools using TRI Data in the United States

9.2.1 Public Access to TRI Data Gets a New Face: the Environmental Defense Fund's Scorecard

The Environmental Defense Fund's "Scorecard" is a web site on the Internet designed to help people learn about toxic chemical releases and chemical health effects in their neighborhoods. By integrating over 150 databases, the Environmental Defense Fund (EDF) has created a stir with its new web site. The web site has been wildly popular since its unveiling in April 1998, receiving approximately 125,000 visitors per month. Typically, each visitor views approximately 3–4 pages of information, resulting in about 500,000 page views per month. This makes the EDF site one of the most frequently visited environmental Internet database sites in the world.

The EDF site is unique in that it has become a new front for dialogue between communities and the facilities and provides a wealth of data to permit interpretation and action. It has accelerated and expanded the existing TRI role of spotlighting environmental data from facilities. In addition, by using banners attached to other high-volume web sites, such as Disney and Sportzone, it is building awareness of TRI and other environmental data with an audience not traditionally associated with TRI data use.

Scorecard provides the user with a convenient means of conducting a variety of searches of the available databases. Users may locate facilities using maps; generate TRI data summaries for facilities or geographic regions; compare chemical release information on a state, county, zip code, or facility level; retrieve chemical use information, toxicity profiles and other health effects data from a database of 5,000 chemicals; and browse through environmental and chemical regulations.

Scorecard also presents the Toxicity Equivalent Potential for TRI chemicals, indicating the relative human health risk of one pound of a chemical compared to that posed by a reference chemical. In EDF's risk scoring system, all releases of carcinogens are converted to equivalent pounds of benzene and all releases of chemicals with noncancer health effects are converted into equivalent pounds of toluene. Toxicity Equivalent Potentials vary widely for different chemicals. Chemicals with the highest Toxicity Equivalent Potentials exhibit extreme toxicity and have physical or chemical characteristics that result in very high exposure potential.

Scorecard has limitations, however, some of which are discussed by EDF at various locations in the web site. For example, technical reviewers have pointed out that:

- The model used to calculate human exposure to released chemicals was designed for organic chemicals. It does not work very well for inorganic chemicals such as metals. As a result, the ranking of relative risk among facilities releasing different kinds of substances may not be reliable.
- Scorecard bases exposure estimates on a single set of "landscape" variables that describe the geographic area in which the release takes place. In reality, of course, different parts of the country differ widely in local characteristics that affect dispersion of released chemicals. Actual exposure—and therefore actual risk—may be greatly different from that predicted by Scorecard.
- In the area of non-cancer toxic effects, Scorecard's risk rankings do not distinguish among a wide variety of effects of different importance; for example, bronchial irritation has the same "weight" as kidney damage.

For these reasons, as well as others, these reviewers urge that Scorecard's facility rankings be interpreted cautiously, especially when comparing different kinds of chemicals in different parts of the country.

The Scorecard web site has recently added new environmental databases, such as agricultural animal wastes, and has future plans to incorporate several EPA environmental databases, including the Cumulative Exposure Assessment Project, criteria air contaminants, and Superfund data. EDF is also beginning discussions with Canadian groups to customize its site with NPRI data and Canadian information. Another group, Friends of the Earth in the United Kingdom, will be setting up a site using the Scorecard approach with United Kingdom data.

Other features of Scorecard include a section on Frequently Asked Questions, a glossary, and a "Personalized Scorecard" that allows the user to customize how the web site presents information. For instance, the initial screen can be set to the user's community home page and will display information on the facilities in that area. A new feature of the Scorecard allows people to send requests for information directly to facilities or government by e-mail or fax. Discussion groups have also started around several facilities, allowing citizens to read previous responses and post their own questions. Several companies, such as Monsanto, have posted responses to these requests and added links to their facilities. Additional companies are expected to participate as the service matures. The Scorecard allows EDF to customize press releases for each US county, resulting in extensive local coverage of TRI data.

Tools available:

- information on chemical toxicity, environmental regulations, occupational exposure and environmental risk linked to TRI chemicals
- search TRI by facility name, community, zip code or chemical on the Internet

Web site address for the Environmental Defense Fund is <http://www.scorecard.org> and e-mail contact is via <bill_pease@edf.org>.

9.2.2 US Grass Roots Activism and the Birth of Right-to-Know Legislation

Lima, Ohio, is home to the British Petroleum Lima Integrated Complex (now BP-Amoco Chemicals, Lima Plant), a petroleum refining and chemical manufacturing site. In 1987, BP announced its intention to install a hazardous waste incinerator at this site. When the public notice appeared in local newspapers, a small group of concerned citizens began researching the probable impact on their community of BP's planned incinerator. The group also convened a public meeting, attended by more than 300 area residents along with British Petroleum representatives. In the community's view, BP's responses failed to address the citizens' concerns. The community therefore filed a complaint with the state board of environmental review and successfully blocked construction of the incinerator.

Federal and state lawmakers were already focusing on right-to-know issues, and the public response to the proposed incinerator in Lima, Ohio, became a model for proponents of right-to-know legislation. International coverage of the Lima story helped give it widespread attention.

With its success against the proposed incinerator, the citizens' group began to raise other concerns about toxic substances in the community. Now organized under the name of the Allen County Citizens for the Environment (ACCE), the group sought the help of a statewide organization, Ohio Citizen Action. Armed with TRI data gathered by Ohio Citizen Action, ACCE was able to develop a better understanding of the kinds of chemicals used and released by the BP complex. ACCE has also called in experts from around the country to help citizens understand the potential threat of living next door to the complex.

ACCE is continuing to seek a better understanding of the chemicals used by BP through the development of a Good Neighbor Agreement with BP. Features of a "Good Neighbor Agreement," sometimes also called a "Corporate-Community Compact," include: (1) a broad audit of regulatory compliance, safety training, accident prevention, emergency response, waste analysis and information systems, monitoring programs and waste minimization practices; (2) public disclosure of company documents covering hazard assessment and risk analysis, lists of accidents and corrective actions, and waste minimization and reduction plans; (3) a commitment by the company to negotiate in good faith on the audit recommendations; and (4) participation by community representatives in the audit and plant inspections. Such agreements may also be part of the local government's regulatory process and tied to permit compliance.

ACCE continues to seek better disclosure of information by BP and the end of toxic chemical releases in their community. Attempts to draft a Good Neighbor Agreement have not yet proved successful, and some citizens express frustration with the company's responses to community initiatives. Nevertheless, the citizens of Lima have played an integral role in helping to make industry publicly accountable not only in Allen County, Ohio, but also in their influence on right-to-know legislation.

Tools available:

- examples of Good Neighbor Agreements
- community groups experienced in understanding TRI data

More information on a variety of such agreements and their benefits and limitations can be found in the report by Sanford Lewis, *Precedents for Corporate-Community Compacts and Good Neighbor Agreements*, The Good Neighbor Project for Sustainable Industries (March 1996) at <http://www.enviroweb.org/gnp/compxpr2.html>.

For information on the Allen County Citizens for the Environment group contact Noreen Warnock at Ohio Citizen Action, 3400 North High Street, Suite 430, Columbus, OH 43202, (614) 263-4111, fax (614) 263-4540, or by e-mail at <nwarnock@ohiocitizen.org>.

9.2.3 Louisiana Briefing Books

The Louisiana Environmental Action Network (LEAN) has developed a strategy to encourage community decision-making and legislative challenge in neighborhoods near toxic chemical sites. The group locates waste disposal sites, dumps and industrial facilities that could potentially affect communities, and compiles TRI, accident release data, and state groundwater data on these types of sites. The resulting data compilations are then used as the spearhead of strategic campaigns directed at making changes at the legislative level.

The chemical data are assembled, together with geographic and demographic information for a number of release sites in a given area, in the form of a "briefing book." This is then presented to members of the Louisiana House and Senate environmental committees. After a briefing, the legislators are given tours of the focus sites. These are followed up by a public meeting held in a neighborhood near the focus sites to which grassroots groups, industry representatives, politicians, environmentalists, media and citizens are invited.

These briefing books can be the starting points for change. The goal is to build a knowledge base for legislators and communities and to raise awareness of local environmental problems. Two examples illustrate how the briefing books identified problems that had previously gone undetected.

In one case, a briefing book was compiled for neighborhoods near a railroad switchyard, where leaking valves on the chemical transport cars stored there overnight were found to have contaminated groundwater. The chemicals included styrene, perchloroethylene, benzene, toluene, hexachlorobenzene, hexachlorobutadiene, and vinyl chloride.

Another example was a bayou where local people sometimes went swimming. Upon analysis, the water there was found to contain chemical contaminants such as hexachlorobenzene in levels exceeding state water quality limits. The Louisiana Department of Environmental Quality had not been monitoring the bayou and had not posted it as being unsafe due to chemical contamination. They have now been informed about the problem at the site through the compilation and presentation of the briefing book.

Tools available:

- examples of briefing books with comprehensive environmental, geographic and demographic data developed to inform local politicians

Contact for Louisiana Environmental Action Network (LEAN):

web site <http://leanweb.org> or by telephone (504-928-1315) or e-mail at <LEAN@leanweb.org>.

9.3 Community Initiatives and Innovative Uses of NPRI Data in Canada

9.3.1 Community Advisory Panels in Fort Saskatchewan, Alberta

A small town in central Alberta is the home of an innovative program linking industry to its community. Fort Saskatchewan, Alberta, and its surrounding area are now home to three Community Advisory Panels (CAPs) that were first initiated by Dow Chemical Canada in 1991. These panels serve as a forum for two-way communication, where local citizens share their concerns and ideas with industry, and industry provides updates on processes, problems, and successes. Community Advisory Panels, part of the Canadian Chemical Producers' Association's Responsible Care' program, exist now at a number of other chemical plants across the country.

The first panel created in Fort Saskatchewan, the Dow Community Advisory Panel, sought to inform and receive comment about the plants in Fort Saskatchewan producing polyethylene, ethylene, vinyl chloride, ethylene dichloride, ethylene oxide, ethylene glycol, chlor-alkali and STYROFOAM[1] brand insulation. About 15 members from the community, with a variety of backgrounds such as education, youth, agriculture, and religion, are chosen for two- or three-year terms.

Each September, the advisory panel chooses different topics for their bimonthly meetings—ranging from Dow's involvement in the local community to safety in truck and rail transportation of products. NPRI results are usually one of these topics. The company presents its NPRI data, the reasons for significant changes from year-to-year and projections for future years. Highlights of facility release data of any of the approximately 500 chemicals listed by the National Emissions Reduction Masterplan of the Canadian Chemical Producers' Association are also presented at the panel. After these presentations, the difficulties in linking the releases and transfer data to environmental and health risks are also explored.

The panel has discussed a number of issues over the years, including health and safety, spills and emergency response, community events, provincial and federal standards, public complaints, Responsible Care™ requirements and environmental risks. The panel members have also been asked their opinion on such company decisions as plant expansion plans. In addition, the Community Advisory Panel provided advice on Dow's environment, health and safety goals for 2005, which included a commitment to "further reduce air and water emissions for the company's global operations involving priority compounds by 75 percent and for chemical emissions by 50 percent." NPRI and other data are used to track these commitments.

The panel members also assisted with the development of a community survey, first conducted in 1995 and again in 1997, that was designed to yield better understanding of the issues considered important by the community. Air quality, noise and flaring from the facility were three of the community's main concerns. Based on this feedback, Dow has developed action plans to address these specific issues. Also, a Reference Guide has been compiled by this panel, outlining the terms of reference, issues discussed and resolutions. The guide has been distributed to several community locations such as libraries, city halls, schools and the like.

Based on the success of this panel, two other companies, Degussa, which operates a hydrogen peroxide plant north of Fort Saskatchewan, and Agrium (formerly Sherritt), a chemical fertilizer plant, expressed an interest in starting their own panels. These two plants combined with a third company, NCL Ltd., a natural gas operation, to start a common community advisory panel in 1993. Agrium's other plant in Fort Saskatchewan combined with two other plants, Westaim and Sherritt-Corefco, to form a third community advisory panel. With Dow's support, rather than recreating the wheel, these two panels borrowed the terms of reference and operating procedures from the Dow panel. The panels are coordinated by the same third-party consultant. At all of these panels, NPRI data are discussed with the members.

As a result of the community's concerns about air quality, the city worked with the Fort Saskatchewan Regional Industrial Association to develop a new regional approach to air quality. The final product is the Fort Air Partnership, created in 1997 as a multistakeholder committee that "sees the benefit of sitting together to produce relevant, credible information to manage air quality, protect health and influence public policy." While currently funded by the City of Fort Saskatchewan and the Fort Saskatchewan Regional Industrial Association, the committee proposes to use "emitter pays" as the principle for future work. The voluntary partnership will determine the boundaries of the airshed, choose optimum sites for a monitoring program, develop a baseline human health study, assess environmental risks, and assist in communicating environmental information.

Tools available:

- draft terms of reference to create a community advisory panel
- experience in running a community advisory panel
- framework for an industrial monitoring program based on "emitter pays"
- Canadian Chemical Producers' Association annual reporting on environment

Contact:

Barbara Mayben, Dow Chemical Canada,
Fort Saskatchewan, Alberta, (403) 998-8937.

9.3.2 Canadian Nongovernmental Organizations Analyze NPRI Data on Local Industries

Citizens' groups across Canada, as exemplified by the four cases described below, use NPRI data to understand releases and transfers from local industries.

The **Citizens' Environmental Alliance of Southwestern Ontario** has begun to issue annual reports on NPRI releases and transfers from local and regional industries in southwestern Ontario. Their first "Toxic Tracker" report, which appeared in 1998, provided recommendations to improve the NPRI program and used 1995 NPRI data to identify 20 facilities with the largest NPRI releases in the Windsor area.

[1] STYROFOAM is a trademark of the Dow Chemical Company. Responsible Care™ is a certification mark of the Canadian Chemical Producers' Association. Used under license by Dow Chemical Canada Inc.

Local media focused on the facilities with the largest NPRI-reported releases. This year's report uses 1996 NPRI data to identify facilities with large releases and provides a comparison with 1995. Special interest focused on local facilities with the largest releases, especially releases of carcinogens. These have remained virtually the same from 1995 to 1996. They include General Chemical, Zalev Brothers, and the City of Windsor's West Windsor Pollution Control Plant. In addition, the neighboring Detroit River received the third largest releases to water in Canada, after the Saint John River and the St. Lawrence River.

Bruce Walker of Montreal's **Society to Overcome Pollution** (STOP) used NPRI data as a tool to evaluate the environmental performance of the two petroleum refineries in the Montreal area, one operated by Shell Canada and the other by Petro Canada. The group analyzed total benzene emissions from these refineries, trying to understand why one refinery, Petro Canada, was releasing almost twice as much benzene as its neighbor. The group further broke down the NPRI data on benzene releases to air to determine the quantity of fugitive releases from each refinery, as these can be major sources of releases. High fugitive air emissions could indicate that the facility was not fully implementing the Code of Practice for Fugitive Emissions for Petroleum Refineries developed under the NO_x/VOC Protocol. Last year, in response to numerous factors, including STOP's tracking of their NPRI data, the three petroleum refineries in Quebec signed a memorandum of understanding with the Quebec government and the Montreal Urban Community. Under this voluntary agreement, the three refineries pledged to reduce their benzene emissions. NPRI data will assist in the tracking of these reductions.

A third group, the **Center for Long-term Environmental Action** in Newfoundland, has recently used NPRI data to challenge environmental claims made by the North Atlantic Refining Ltd. oil refinery in Come-by-Chance. The Center noted that releases from the oil refinery of two carcinogenic compounds, nickel and benzene, had increased from 1995 to 1996. The NPRI information was a "breakthrough" for the group in their attempts to examine the environmental and health impacts of the refinery. A local doctor and the provincial health departments are now reviewing the information.

A fourth group, ***La Societé pour Vaincre la Pollution*** (SVP) in Montreal, has developed an index of environmental risk for NPRI facilities. SVP uses this index to map environmental risks from different facilities in the Montreal area. For each substance reported, a specific factor is developed, based on acute and chronic toxicity, and then this factor is multiplied by the release amount reported to NPRI. The subsequent ranking of facilities can then be used to identify facilities for priority action. The future of this project and, indeed, the group's continued existence, however, is threatened because the provincial government stopped its subventions three years ago and now (Spring 1999) SVP faces a severe budgetary shortfall.

A fifth group, the **Canadian Institute for Environmental Law and Policy**, in association with Environment Canada and the University of Toronto Cartography Department, has developed a poster-size map illustrating highlights from the NPRI data. The map shows the leading facilities by media and by substance. Designed to raise public awareness of NPRI data, the map will be distributed to schools and libraries.

Expertise and tools available:

- experience with using NPRI data to track local industries
- NPRI data customized for local industries on the Internet
- NPRI data on maps

Contacts:

Information on the Citizens' Environmental Alliance of Southwestern Ontario and its reports are available at the Alliance's web site: <http://www.mnsi.net/~cea/ceareports.html>, or by calling (519) 973-1116.

For more information on STOP, contact Bruce Walker at (514) 393-9559.

For more information on the Center for Long-term Environmental Action in Newfoundland, contact Lynda Whalen at (709) 722-8159or by e-mail at <clean@roadrunner.nf.net>.

For more information on SVP in Montreal, contact Daniel Green at (514) 486-9806.

For more information on Canadian Institute for Environmental Law and Policy maps, contact Mark Winfield at (416) 923-3529 or visit the web site for CIELAP at: <http://www.web.net/cielap>.

9.4 Tools for Communities and Industries in Mexico

9.4.1 Environmental Activities in the State of Jalisco, Mexico

El Colectivo Ecologista Jalisco is an NGO based in the state of Jalisco, Mexico, which has been actively promoting the proposed RETC among the different community groups of Jalisco. Part of the group's efforts have been to explain the objectives of the proposed RETC, holding workshops that describe the RETC to interested groups in the community, and meeting with environmental authorities and the media.

In December 1997, *El Colectivo Ecologista Jalisco* presented a report, entitled "*Divulgación Ciudadana del RETC en Jalisco*" (Citizen Promotion of the RETC in Jalisco), written under the aegis of the Commission for Environmental Cooperation. The report introduces PRTRs as a concept. It does not make use of quantitative data from the TRI or NPRI reports, but instead, based on the principle of a society's right-to-know, sets forth the objectives of the RETC and the legal foundation for its implementation as a component of the Mexican National Environmental Information System.

An important part of the report is the presentation of a strategy for promoting the proposed RETC to community groups in Jalisco. The report discusses the design of publicity material and gives practical advice on organizing meetings with environmental authorities and mass media as well as workshops and conferences oriented to such specific audiences as student groups, other NGOs and citizen groups.

The report also provides an evaluation of these activities as undertaken by *El Colectivo Ecologista Jalisco*, identifying barriers and opportunities. Based on the experience gained, it also makes suggestions for a number of proposed actions to facilitate the process of promoting the RETC.

Tools available:

- strategy and techniques for promoting the establishment of a PRTR program

Contact:

María Esther Cortés, *El Colectivo Ecologista Jalisco*, México (523) 615-0948 and e-mail: <semillas23@hotmail.com>.

9.4.2 Use of Hazardous Substances in the Industry of Tijuana, Mexico

El Proyecto Fronterizo de Educación Ambiental, A.C., is a nongovernmental organization based in Tijuana, Baja California, that has implemented a Right-to-Know program in Tijuana. Their strategy includes gathering publicly available information to identify pollution sources, promoting public involvement in the management of hazardous substances, disseminating the information to the public, and participating in international hazardous substances networks.

El Proyecto Fronterizo issues a monthly brochure called *Ecos de Frontera—Toxi Noticias* that provides information on the implementation of the proposed RETC and local environmental issues. *El Proyecto Fronterizo* was also one of the few active NGOs taking part in the National Coordinating Group that developed the framework for the RETC.

In collaboration with the US Environmental Health Coalition, the organization conducted a survey on the use of hazardous substances in Tijuana's industrial facilities. Over 700 industries that use such substances were surveyed and a sample of over 200 industries was chosen for in-depth analysis, using US EPA techniques to estimate substance type and release. The results of the survey showed that the most common types of industries (by labor force) are electronics/electrical equipment, metal/mechanical, wood furniture and accessories, and plastics. The most used hazardous substances in Tijuana are solvents, including acetone, dichloromethane, trichloroethane, methanol, methyl ethyl ketone, toluene and xylene. The survey also lists known potential risks to humans from exposure to these substances and determines the size of the exposed population, based on the facility location and demographic data. Although it does not consider meteorological conditions or releases to different media, the survey provided one of the first publicly available overviews of hazardous substance use in Tijuana.

Tools available:

- monthly brochure
- survey identifying local sources of hazardous chemicals from industry and associated health risks

Contact:

Laura Durazo, *El Proyecto Fronterizo de Educación Ambiental, A.C.*, Tijuana 52-66-30.05.90 and e-mail: <pfea@mail.tij.cetys.mx>.

A Spanish-language copy of their survey of hazardous substances is available from the CEC as an unedited working paper (L. Durazo and M. Díaz. "*Uso de Sustancias Peligrosas en la Industria de Tijuana, B.C.: Desde una Perspectiva del Derecho a la Información Ambiental*").

9.4.3 Mexican Industrial Mentoring

An innovative project in transferring environmental knowledge from large to small and medium-size companies started in Guadalajara in late 1996. Eleven large companies signed a voluntary agreement with Semarnap to mentor their small or medium-size suppliers in implementing an environmental management system (EMS). Each of the industrial companies invited one to three suppliers to participate in the two-year project. Partially funded by the World Bank, the project is also supported by the Mexican government, by universities, including the *Instituto Tecnológico de Estudios Superiores de Monterrey* and the *Universidad de Guadalajara*, and by the *Centro de Investigaciones y Estudios Superiores en Antropología Social* (CIESAS), a Mexican anthropological research group.

The corporate invitations to suppliers were vital to the project's success. Nearly half of the suppliers said they would not have participated without such a specific invitation. Suppliers were motivated by the need to strengthen or maintain ties with the large companies, especially for those whose performance is audited periodically by the large companies.

Project managers chose an internationally recognized management system—ISO 14001 EMS—as the model for the small and medium-size suppliers to incorporate into their business. Developed by the International Organization for Standardization (ISO), the ISO 14001 EMS sets voluntary standards for good environmental management practices. These guidelines are widely used. (ISO develops standards for many technical fields, including basic chemicals, non-metallic materials, environment, and the packaging and distribution of goods.)

From May 1997 to February 1998, the large companies, their suppliers and various experts participated in a series of workshops designed to guide the companies through the essential elements of the 14001 system. Suppliers were assigned a

consultant at one of the Mexican agencies to assist with the process. Access to this personalized, specialized knowledge was instrumental to the suppliers' success in implementing the EMS. Although some thought the ISO 14001 system might prove too complex for small and medium-size firms, the participating suppliers completed 85 percent of the required planning and almost 50 percent of the EMS implementation by February 1998.

Three months after the workshops, 80 percent of the suppliers reported reductions in environmental releases, 70 percent reported an improved work environment and approximately 50 percent reported improvements in waste handling, materials management, energy efficiency and compliance. These results had occurred even before full implementation of the EMS. The suppliers also noted a raised environmental awareness of all staff members and indicated that having measurable environmental goals and assigned environmental responsibilities have led to beneficial organizational changes. This was especially important in small and medium-size firms where environmental managers also bear significant other responsibilities.

Tools available:

- strategies to transfer environmental knowledge from large to smaller industrial companies

  For more information on the EMS workshops, see the full text of the World Bank report: *Mexico: The Guadalajara Environmental Management Pilot.* Report No. 18071-ME. 8 September 1998. <http://www.worldbank.org/nipr/work_paper/guada/>.