APPENDICES
to Recommended Framework for
State/Local/Tribal Air Toxics Risk Reduction Program

Final Workgroup Report
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Submitted to:

Emission Standards Division
Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

Submitted by:

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Disclaimer: This report reflects the comments and discussions of the workgroup on integrated air toxics State/local/Tribal program structure and does not constitute EPA's position on these topics.

Appendix A: Workgroup Membership List

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2 Cities and Elected Officials
1 Academic Association
1 Tribal
2 Environmental Groups
2 EJ Groups
4 Industry
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Appendix B: Summary of State and Local Air Toxics Program

Activities

List of Programs Summarized:

Broward County Florida
California
Colorado
Florida
Illinois
Louisiana
Maine
Massachusetts
Minnesota
Nebraska
New Hampshire
New Jersey
New York
Oklahoma
Oregon
Puget Sound
South Carolina

BROWARD COUNTY FLORIDA'S AIR TOXICS PROGRAM

Background

In late 1991, Broward County Department of Planning and Environmental Protection (DPEP) acquired expertise, equipment and instrumentation necessary to initiate an independent program involving the measurement and analysis of air toxics in the ambient air. The program also included a partnership with Florida Department of Environmental Protection (DEP) in which guidance and funding were made available, and monitoring data was shared accordingly. Continuous monitoring of ambient air was ongoing at nine (9) distinct locations throughout the County. Analysis of these samples revealed that solvent emissions and motor vehicles exhaust emissions are the major contributors of toxic pollutants in Broward County's urban environment. The analysis also revealed that toxic emissions can approach concentration levels that are commensurate with established adverse health effects.

Goals and Objectives

< Develop ambient air toxics information to support quantitative evaluation, characterization and tracking of risk based factors through improvement and expansion of the air toxics monitoring network. Develop ambient monitoring plan and network - focus on those pollutants that pose the greatest health risk.

  < **Permanent sites**: Since regulation of air toxics is gearing more toward risk-based standards than technology-based, sites were established to collect data for the next ten years to aid in establishing health risks. Use existing ambient air monitoring sites located in Miami-Dade, Broward and Palm Beach Counties to collect air toxic data which will correlate with PM-2.5 monitoring and allow for future speciation data.

  < **Temporary sites**: Since regulation of air toxics is gearing more toward risk-based standards than technology-based, two type of sites, source-oriented and neighborhoods-oriented target area will be established to collect data for six months to one year durations to aid in locating and calculating possible health risks.

• Implement sampling techniques and analytical methodologies for select HAPS.

  < The analysis of the air samples is performed using a specially designed Varian Saturn 11 Gas Chromatography/Mass Spectrometer using EPA Method TO-14, Volatile Organic Compounds. Currently DPEP has the ability to analyze 48 HAPS. A new CG/MS is required to implement these Method TO-15 Toxic metals may be determined using EPA's Method IO-3.1 and IO-3.4.

• Implement methodology to evaluate collected data.

  < The purpose of ambient air toxics concentration data evaluation is to provide a

comprehensive and accurate information to be used in risk characterization.

< Four selected permanent air toxics monitoring sites located in Broward are scheduled to operated twenty four hour period every six days. One monitoring location in West Palm Beach is scheduled to operated twenty four hour period, every twelve days. Datum will be evaluate during the next calendar year to produce a comprehensive report. A future site selected in Miami-Dade is expected to be in operation during the second half of the year 2000.

< Data from the Laboratory Information Management System is analyzed using statistical analysis procedures. Range of frequency occurrence, arithmetic mean and geometric mean for each compound is tabulated to calculate medians and standard deviations. Average concentrations of selected air toxics compounds, and risk assessment are compared with EPA National Air Toxics Assessment (NATA) information to demonstrate consistency.

- Develop emissions inventories to identify trends and to monitor progress in emissions reductions.

  < Broward County is compiling information of air toxic emissions for the calendar year 1998 and 1999 using data submitted by facilities subject to report Annual Operation Reports. Processed information is reported to EPA to be included in the national emission inventories.

- Perform air toxics related regulatory activities. Incorporate all EPA and DEP guidance into permitting procedures. Evaluate and permit facilities for applicable MACT and NESHAP rules. As MACTS and NESHAP rules are promulgated, identify applicable point source facilities and incorporate requirements into permit conditions.

- Develop compliance assistance tools and target high risk source categories. Assess whether pollution prevention or voluntary programs can be effectively used to improve compliance with MACT rules. Promote pollution prevention to small industry through workshops and site visits.

  < As part of DPEP's compliance assurance program, compliance checklists have been developed for each point source subject to MACT or NESHAP requirements. The checklists ensure that Departmental expectations are clearly defined and compliance inspections are through and accurate.

- Identify high risk areas and create strategies to encourage air toxics emission reductions.

  < The Integrated Urban Air Toxics Strategy developed under the authority of sections

112(k) and 112(c)(3) of the Clean Air Act. includes activities under multiple authorities to reduce air toxics emissions from all sources, including major industrial sources, smaller stationary sources, and mobile sources. By integrating activities under different parts of the Act, We can better address cumulative public health risks and adverse environmental impacts posed by exposures to multiple air toxics in areas where the emissions and risks are most significant.

- Evaluate point source emissions and their impact. Model air toxics emissions from facilities with significant pollutant emissions using mathematical dispersion models.

- Educate the public and businesses through one-on-one meetings, workshops, fact sheets and technical publications.

- Share DPEP's resources and expertise to maximize air quality improvements throughout the State of Florida.

- Provide air toxics monitoring training and laboratory analytical services to other air quality programs within the State of Florida upon request.

  < The Broward County DPEP, Air Quality Division actively provide sample analysis for determination of ambient air toxics to Miami-Dade Department of Environmental Resource Management (DERM), Palm Beach County Health Department Air Pollution Control Section and Alachua County Department of Environmental Protection.

CALIFORNIA'S AIR TOXICS PROGRAM

Legislative Citation: Assembly Bill 1807 (1983), Assembly Bill 2588 (1987) (both have been subsequently amended)

Regulatory Citation: California Health and Safety Code, Division 26, Part 2 Chapter 3.5, Section 39650 et seq. and Part 6, Chapter 1, Section 44300 et seq.

Program Goal: The intent of California's air toxics program is to identify toxic air contaminants, determine priorities for control, achieve early control, promote advanced control technologies and alternative processes, assist local air pollution control districts, and provide a consistent level of protection throughout the state.

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Treatment of Area Sources

California statutes apply to all sources of air pollution. There are no provisions within the California Health and Safety Code that differentiates between major and area (non-major) sources.

Overview of California's Toxic Air Contaminant Control Programs for Stationary Sources

California has two primary programs in place to address air toxics. The Toxic Air Contaminant (TAC) Program established by Assembly Bill 1807 (1983) and the Air Toxics "Hot Spots" Program (Hot Spots Program) established by Assembly Bill 2588 (1987). The Toxic Air Contaminant Program consists of a two-phase process for the identification and control of air toxics by the Air Resources Board (ARB or Board). In the identification phase, the law requires the Office of Environmental Health Hazard Assessment (OEHHA), in consultation with the ARB, to evaluate the health effects and prepare recommendations regarding substances which may be determined to be TACs. This health evaluation is combined with an exposure assessment that the ARB prepares to complete the risk assessment evaluation of a substance. These health and exposure evaluations must be reviewed by an independent Scientific Review Panel (SRP) and found to be based upon sound scientific knowledge, methods, and practices before being presented to the Board for formal identification as a TAC. Once identified as a TAC, a substance enters the second phase of the process, risk management, where it is evaluated for

the development of a possible airborne toxic control measure (ATCM). ARB staff develops, through a public process, a "Needs Assessment" report. This report identifies sources of emissions of the identified TAC and recommends to the Board what regulatory action should be taken to reduce these emissions. After Board approval, ARB staff develops an ATCM. The ATCM development is an open, public process. The Board must approve the ATCM before it can become a State regulation.

The second program, the Hot Spots Program was established to ensure that the public is informed of potential health risks associated with exposures to air toxics emissions from stationary sources. Under the Hot Spots Program, facilities are required to inventory air toxic emissions, assess the potential health risks from exposure to the emissions, and if necessary, notify the public and reduce significant risks through the implementation of a risk reduction audit and plan. This air quality control program is unique to California and has been very successful in reducing the public's exposure to toxic air contaminants.

California has a list of potentially toxic air pollutants and is evaluating the need for regulations for pollutants that are designated as a TAC as a result of the State's review process. To date, all pollutants designated as TACs are known or suspected carcinogens, including inorganic lead which was also designated because of its serious non-carcinogenic health effects. The ARB has designated all of the HAPs identified in CAA Section 112(b) as TACs in California. However, nine of California's priority TACs are not in the Urban Air Toxics Strategy list of 33 HAPs (UATS HAPs). Of those nine, and of significant concern in California, is particulate emissions from diesel-fueled engines (diesel PM), identified by the ARB as a TAC in August 1998.

To date, specific TAC control measures for stationary sources have been promulgated for eight UATS HAPs (benzene, dioxins, chromium compounds, cadmium, arsenic, nickel, ethylene oxide, and perchloroethylene) from designated source categories, as discussed on the following page.

California regulates toxic air emissions from both new and existing sources and has no statutory source category or de minimus emission exemptions. However, individual control measures may have exemptions based on a de minimus risk or cost-effectiveness. Sources whose risks are low may be deferred so that ARB resources can be devoted to source categories and pollutants that pose higher risks. In addition, sources which emit toxic substances and are deemed to pose a significant risk by local air districts must prepare and implement a risk reduction audit and plan. Acceptable risk levels are generally established at the local level.

Treatment of Toxic Sources

For new sources (both major and area sources), California uses a combination of control technology requirements and risk assessment to limit toxic emissions. California's approach is best characterized as "technology-based in consideration of cost and risk."

When evaluating potentially toxic substances, the ARB first performs a risk assessment in consultation

with the OEHHA. If sufficient evidence exists, the pollutant may then be designated as a TAC. If appropriate, a threshold level is set. For the 20 TACs identified to date (see Table 1), the ARB has found that there is not sufficient available scientific evidence to support the identification of a threshold level, below which no significant adverse health effects are anticipated from exposure to the TAC. (Benzo[a]pyrene and acetaldehyde have also had formal risk assessments prepared and were identified as TACs along with the federal HAPs.)

Sources of toxic substances for which a threshold level has been specified by the ARB are required to operate in a manner that ensures that the threshold level is not exceeded. Where no threshold level has been identified (this is the case to date since only carcinogens have been regulated), control measures must be designed to reduce emissions to the lowest level achievable through the application of Best Available Control Technology (BACT), unless an alternate level of emission reduction is adequate or necessary to prevent adverse public health effects. Control measures may include emission limitations, control technologies, operating and maintenance requirements, closed system engineering, and substitute compounds. These measures are developed in consideration of the cost and risk remaining after control. ARB prepares a report on the appropriate degree of regulation and adopts control measures accordingly. To date, the State has completed this process for the following TACs and source categories:

- Benzene emissions from retail service stations;
- Hexavalent chromium from decorative and hard chrome plating and chromic acid anodizing;
- Chromate-treated cooling towers;
- Dioxins from medical waste incinerators;
- Asbestos from asbestos-containing serpentine rock;
- Toxic metals form non-ferrous metal melting (cadmium, arsenic, nickel);
- Ethylene oxide from sterilizers and aerators; and
- Perchloroethylene from dry cleaning operations.

The ARB has begun an open public process to evaluate the need, feasibility, and cost of control to further reduce the public's exposure to organic gases and particulate matter emissions from diesel-fueled engines. To help identify additional opportunities to reduce these emissions, the ARB has formed an Advisory Committee composed of interested industries, associations, environmental groups, other governmental agencies such as the United States Environmental Protection Agency, local air districts, and other interested parties. Subcommittees formed include Stationary Source, Fuels, Mobile Sources, Alternative Strategies, and Risk Management.

After the ARB adopts TAC control measures, the local air districts implement the measures, or adopts measures that are at least as stringent. The ARB proposes, adopts, and implements vehicular regulations, if appropriate.

ARB and the California Air Pollution Control Officers Association (CAPCOA) have developed a

number of guidance documents to assist in the implementation of the toxic air contaminant control requirements. In 1992, ARB, CAPCOA, and OEHHA developed risk assessment guidelines for conducting site-specific risk analysis of sources of TACs. In 1993, Risk Management Guidelines for new and modified stationary sources were approved by the ARB. The guidelines were intended to promote statewide uniformity among the local districts in designing permitting programs which evaluate cancer and noncancer risks from new source of toxic air pollutants. The guidelines suggest that Districts use a combination of risk levels and ranges suggested by the ARB for evaluating new and modified sources of toxic air pollutants. As estimated exposures and risks associated with a new project increase, actions ranging from requiring BACT to disapproving the project are recommended.

In addition to assessing cancer and noncancer risks for a project, other factors such as the benefits of the project, the uncertainty in the risk assessment process, and the impact of the project on sensitive receptors can be considered. A discussion of these other factors are to be provided in a Specific Findings Report prepared by the applicant. The Air Pollution Control Officer in the District reviews this report and prepares findings supporting a decision to approve or disapprove the project.

California has also established ambient air quality standards for the non-criteria pollutants vinyl chloride, sulfates, hydrogen sulfide, and visibility-reducing particles. The objective of these and the criteria pollutant ambient standards discussed below is to provide a basis for preventing or abating the effects of air pollution, including effects on health, esthetics, and the economy.

Implementation Mechanism

California incorporates existing sources into the air toxics program through implementation of toxic control measures source registration, operating permit renewal, and the emissions inventory process. Existing sources are identified primarily through toxics inventory data, district permits, and surveys. New sources are incorporated through construction permits, operating permits, and on a case-by-case basis.

Criteria Pollutant Regulations

California maintains criteria pollutant ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, PM, lead, and nitrogen dioxide. The California ambient standards for ozone, carbon monoxide, sulfur dioxide, and PM are more stringent than their federal counterparts; the standards for lead are the same. For nitrogen dioxide, California maintains a 1-hour average standard of 0.25 ppm compared to the federal annual average standard of 0.053 ppm.

In California the authority to regulate stationary sources lies primarily at the local air district level. The ARB has adopted criteria pollutant emissions standards for the specific source categories listed in Table 2. In addition, local air districts have adopted regulations limiting criteria pollutants from over one hundred source categories. These regulations have substantially reduced exposure to toxic air contaminants through the control of volatile organic compounds and particulate matter emissions.

Treatment of Mobile Sources

California has been the leader in the control of motor vehicle emissions since 1966. In 1990, the ARB approved regulations for low-emission vehicles and clean fuels. These regulations require vehicle manufacturers to produce low-emission vehicles meeting exhaust emission standards substantially more stringent than national standards and to ensure that clean fuels are available to the consumer at retail outlets. With respect to low-emission vehicles, four categories of vehicles were created by the regulations: transitional low-emission vehicles, low-emission vehicles, ultra-low emission vehicles, and zero-emission vehicles. For each of these vehicle categories, progressively more stringent standards for nonmethane organic gases, carbon monoxide, oxides of nitrogen, and formaldehyde have been established. These regulations are also expected to result in substantial emission and risk reductions for toxic substances emitted by motor vehicles. Beginning in 1994, low-emission passenger cars and light-duty trucks were phased in under an emission averaging program. Phase-in of low-emission medium-duty vehicles will begin in 1998.

As part of the clean fuels initiative, new State standards for reformulated gasoline became effective in 1996. These standards limit the following gasoline properties:

- The content of aromatic hydrocarbons, olefins, sulfur, benzene, and oxygen;
- The 50% and 90% distillation temperatures; and
- The Reid vapor pressure (RVP).

While the reformulated gasoline standards were designed primarily to reduce levels of criteria pollutants such as ozone, they also have the effect of reducing toxic emissions, especially benzene and 1,3-butadiene. It is estimated that the total mass of toxic emissions from gasoline vehicles will be reduced by 30 to 40 percent as a result of these standards.

The following areas of California are also subject to the federal reformulated gasoline program:

Los Angeles County
Ventura County
Orange County
Sacramento County
San Diego County
Yolo County
Riverside County (partial)
Riverside County (partial)
El Dorado County (partial)
Placer County (partial)
San Bernardino County (partial)
Solano County (partial)
Sutter County (partial)

Emissions Data

California maintains a comprehensive air toxics emission inventory as well as collecting emissions data from permit applications, ambient monitoring, stack testing, and questionnaires and surveys. The toxics emission inventory is a development of the Hot Spots Program, which requires subject facilities to report their emissions of approximately 300 air toxics. Approximately 6,500 larger facilities have reported their toxics emissions. Inventory data are stored with criteria pollutant data in the California Emission Inventory Development and Reporting Systems (CEIDARS II) and are required to be updated every four years. Inventories for approximately 25,000 "industry wide" or area source facilities (gas stations, dry cleaners, autobody shops, and printers) are being developed and will also be stored in CEIDARS II.

Monitoring Data

The ARB also maintains a statewide ambient air toxics monitoring network. This network, consisting of 21 sites, is one of the most comprehensive air toxics monitoring networks. The network routinely monitors for about 60 toxic substances and generates over 40,000 measurements each year to support the California program. The data generated from the network is used to evaluate emission trends, to establish background exposure concentrations, and to prioritize identification and control actions.

Test Methods

The ARB has developed source testing methods for over 80 toxic substances. Source test results are used to estimate exposure, evaluate rule effectiveness, and determine compliance.

Table 1. California Toxic Air Contaminants

Benzene	Trichloroethylene
Ethylene Dibromide	Chloroform
Ethylene Dichloride	Vinyl Chloride
Hexavalent Chromium	Inorganic Arsenic
Asbestos	Metallic Nickel and Inorganic Nickel Compounds
Dibenzo-p-dioxions/Dibenzofurans	Perchloroethylene
Metallic Cadmium and Cadmium Compounds	Formaldehyde
Carbon Tetrachloride	1,3-Budadiene
Ethylene Oxide	Inorganic Lead

Methylene Chloride	All federal CAA Section 112(b) HAPs

Table 2. List of Specified Source Categories that the California Resources Board has Authority to Regulate for Criteria Pollutants*

Agricultural Burning
Abrasive Blasting
Gasoline Marketing Operations
Consumer Products
Aerosol Coating Products
Motor Vehicles
Motor Vehicle Fuels
Portable Equipment
Utility Equipment

* The local air districts have primary authority for regulating stationary sources and have adopted regulations covering over 80 source categories.

California's Guidance Documents Available to Assist Agencies in Assessing and Managing Risk from Toxic Air Contaminant Emissions

HEALTH EFFECTS OF TOXIC AIR CONTAMINANTS

1. Toxic Air Contaminant Identification List Summaries (September 1997)

Description: Fact sheets provide individual summaries of general exposure and health effects information for the 243 substances included on California ARB Toxic Air Contaminant Identification List. These summaries provide readily-available information on the physical properties, sources and emissions, ambient concentrations, indoor sources and concentrations, atmospheric persistence, risk assessment information, and potential health effects.

Available: CD and http://www.arb.ca.gov/toxics/tac/tac.htm

2. OEHHA Draft Air Toxics Hot Spots Risk Assessment Guidelines (five parts)

Description: The first three documents provide guidance on determining the cancer, acute non cancer, and chronic non cancer health values for compounds. The fourth document provides guidance for conducting source-specific risk assessments. The fifth document serves as a cookbook or how-to document for conducting risk assessments.

Part I: *Technical Support Document for Determination of Acute Toxicity Exposure Levels for Airborne Toxicants*

Part II: *Technical Support Document for Determining Cancer Potency Factors*

Part III: *Technical Support Document for the Determination of Chronic Toxicity Exposure Levels for Airborne Toxicants*

Part IV: *Technical Support Document for Exposure Assessment and Stochastic Analysis*

Part V: *Quantitative Evaluation of Health Effects* (not available)

Available: http://www.oehha.org/scientific/other.html. Printed copies may be obtained for a fee from Copy World, 2154 University Ave., Berkeley, CA 94704.

EMISSIONS INVENTORY AND AIR QUALITY DATA

3. Emission Inventory Criteria and Guidelines Report For The Air Toxics "Hot Spots" Program May 15, 1997 (Effective July 1, 1997)

Description: The Guidelines provide direction and criteria on how to compile and submit air toxics'

emission inventory data. The Guidelines contain emission factors and speciation information.

Available: Hard copy and http://www.arb.ca.gov/ab2588/2588guid.htm

4. Facility Toxic Emissions and Risk Data

Description: This site will access the CEIDARS toxic and criteria emissions database. A search engine will identify a specific facility or group of facilities, and then reports the toxic and criteria pollutants and health risk information for a specific facility.

Available: http://www.arb.ca.gov/emisinv/disclaim.htm

5. ARB's Toxics Air Quality Data

Description: This website provides Statewide or site-by-site summaries of specific volatile organic compounds

Available: http://www.arb.ca.gov/aqd/toxics.htm

6. The California Air Quality Data Homepage

Description: The ARB compiles data from 22 toxic air quality monitoring stations located throughout California. You can view air quality data dynamically, that is, directly from the ARB air quality database, in addition, to having air quality data available on a compact disk or in a summarized web page/table format. This site provides interactive data, air quality data CDS, $PM_{2.5}$ Network Design, Annual Summaries for Ozone, PM_{10}, and Toxics, Daily Pollutant Report, Year-To-Date Ozone Report, Special Studies, and State Area Designations.

Available: http://www.arb.ca.gov/aqd/aqd.htm and
http://www.arb.ca.gov/aqd/aqdcd/aqdcdreq.htm

7. The 1999 California Almanac of Emissions & Air Quality

Description: The 1999 Almanac contains information about current and historical emissions and air quality in California. This edition represents a May 1998 snapshot of the 1995 emissions inventory and the 1997 air quality databases.

Available: Hard copy and http://www.arb.ca.gov/aqd/almanac/almanac99.htm

8. The ARB's most current emission inventory and air quality databases

Description: Contains the most current criteria and toxics emission inventory for California

Available: http://www.arb.ca.gov/emisinv/emsmain/emsmain.htm

9. ARB Emission Inventory publications

Description: Updated information on emission inventory information including new emission factors and speciation profiles.

Available: http://www.arb.ca.gov/emisinv/pubs/pubs.htm

SOURCE RISK ASSESSMENT METHODOLOGIES

10. CAPCOA Air Toxics "Hot Spots" Program Revised 1992 Risk Assessment Guidelines (October 1993)

Description: These guidelines provide procedures for use in preparing source-specific health risk assessments.

Available: Hard copy and http://www.arb.ca.gov/ab2588/riskassess.htm

11. CAPCOA Air Toxics "Hot Spots" Program Facility Prioritization Guidelines (July 1990)

Description: These guidelines provide suggested screening procedures to identify facilities that need to conduct more refined health risk assessments..

Available: Hard copy and http://www.arb.ca.gov/ab2588/prioritization.htm

12. CAPCOA Air Toxics"Hot Spots" Program Gasoline Service Station Industrywide Risk Assessment Guidelines (December 1997)

Description: This document provides specific guidance for assessing the risk from gasoline station emissions.

Available: Hard copy and http://www.arb.ca.gov/ab2588/rrap-iwra/gasiwra.pdf

13. CAPCOA Air Toxics"Hot Spots" Program Auto Bodyshop Industrywide Risk Assessment Guidelines (September 1996)

Description: This document provides specific guidance for developing and conducting a health risk

assessment for auto bodyshops.

Available: Hard copy and http://www.arb.ca.gov/ab2588/rrap-iwra/autbody.pdf

RISK REDUCTION AUDITS AND PLANS

14. General Guidance for Preparing Risk Reduction Plans and General Checklist for Completion of A Risk Reduction Audit and Plan (November 1997)

Description: The general guidelines presents information to be used by a facility that emits toxic air contaminants to assist them in preparing a risk reduction audit and plan.

Available: Hard copy and http://www.arb.ca.gov/ab2588/rrap.htm

15. Source Specific Risk Reduction Audits and Plans Guidelines

Description: ARB staff has developed the six source-specific guidelines for preparing risk reduction audits and plans for aerospace, automobile refinishing, chrome plating, degreasing, dry cleaners, and service stations. The documents include information on risk reduction techniques.

Available: Hard copy and http://www.arb.ca.gov/ab2588/rrap.htm.

16. Risk Management Guidelines for New and Modified Sources of Toxic Air Pollutants (July 1993)

Description: This document provides guidance to air districts' staff in making permitting decisions for new and modified stationary sources of TACs. The guidelines provide direction on managing potential cancer and noncancer health risks from these sources.

Available: Hard copy and http://www.arb.ca.gov/toxics/diesel/rm.htm

RISK COMMUNICATION

17. Final CAPCOA Air Toxics "Hot Spots" Program Public Notification Guidelines (October 1992)

Description: This document provides air districts with a tool for communicating risks to the public.

Available: Hard copy only

EMISSION CONTROL TECHNOLOGY RESOURCES

18. A Compilation of California BACT Determination Received by the CAPCOA BACT Clearinghouse (November 1993)

Description: This document provides information to assist in determining best available control technology (BACT) or lowest achievable control requirements (LAER) for a given stationary source category. Tables contain key information on district BACT/LAER determinations.

Available: Hard copy and http://www.arb.ca.gov/bact/bact.htm

19. The South Coast Air Quality Management District, Best Available Control Technology Guidelines

Description: The BACT Guidelines consist of two parts: Part A - Policy and Implementation Procedures, and Part B - BACT Determinations. Part A established the policies and procedures for determining BACT requirements, and Part B lists BACT requirements for categories of sources or equipment commonly evaluated for permits in the District.

Available: http://www.aqmd.gov/bact/index.htm#home1

20. Identification of Performance Standards for Existing Stationary Sources A Resource Document (April 1999)

Description: The resource document is intended to assist air districts in updating their rules to ensure inclusion of all feasible emission control requirements. Summary tables compare rule requirements by district, identify the achievable performance standards, and emerging technologies for 25 source categories.

Available: Hard copy and http://www.arb.ca.gov/aps/aps.htm

21. California Air Pollution Control Districts Rules Database

Description: This database contains all of California's local air pollution control districts (35 districts) rules.

Available: http://www.arb.ca.gov/html/drdb.htm

TOXIC AIR CONTAMINANT EMISSIONS FROM DIESEL-FUELED ENGINES

22. Identification of Particulate Matter from Diesel-Fueled Engines as a Toxic Air Contaminant

Description: This web site contains detailed background information on the identification of particulate matter from diesel-fueled engines as a toxic air contaminant.

Available: http://www.arb.ca.gov/toxics/dieseltac/dieseltac.htm.

23. California's Risk Management Activities Addressing Diesel-Fueled Engines and Vehicles

Description: This website provides detailed information concerning the current risk management activities in California regarding diesel-fueled engines and vehicles.

Available: http://www.arb.ca.gov/toxics/diesel/diesel.htm

24. Draft Diesel Risk Reduction Plan

Description: This document presents information that identifies the available options to reduce diesel PM, and identifies recommended control measures to achieve further reductions.

Available: http://www.arb.ca.gov/toxics/diesel/diesel.htm

25. Draft Diesel Permitting Guidance

Description: This document is the Air Resources Board staff's proposed guidance to assist local air pollution control districts and air quality management districts in making risk management decisions associated with the permitting of new stationary diesel-fueled engines.

Available: http://www.arb.ca.gov/toxics/diesel/diesel.htm

LEAD RISK MANAGEMENT ACTIVITIES

26. Proposed Identification of Inorganic Lead as a Toxic Air Contaminant Staff Report.

Description: This document summarizes the basis for the identification of lead as a toxic air contaminant.

Available: Hard copy only.

27. Proposed Identification of Inorganic Lead as a Toxic Air Contaminant Technical Support Document

Description: This document presents the detailed analysis which served as the basis for the

identification of lead as a toxic air contaminant. It is bound in three volumes; Part A Exposure Assessment, Part B Health Assessment, and Part C Staff Response to Comments.

Available: Hard copy only.

28. Draft Risk Management Guidelines for New, Modified and Existing Sources of Lead.

Description: This document is the Air Resources Board staff's proposed guidance to assist local Air Pollution Control Districts and Air Quality Management Districts in making risk management decisions associated with the permitting of new and modified sources of lead and regarding notification and risk reductions for existing sources of lead.

Available: http://www.arb.ca.gov/toxicx/lead/lead.htm

COMMUNITY/NEIGHBORHOOD ASSESSMENT PROGRAM

29. Clean Air for California Communities

Description: This document contains information on California's community health program. The document describes new and on-going programs for identifying air pollution's health effects, assessing public health risks in California's communities, and reducing public health risk.

Available: http://www.arb.ca.gov/ch/clean_air_communities.pdf

GENERAL INFORMATION ON CALIFORNIA'S AIR TOXICS PROGRAM

30. Air Resources Board's (ARB) Air Toxics Program Home Page

Description: The ARB air toxics home page.

Available: http://www.arb.ca.gov/toxics/toxics.htm.

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE)

Air Pollution Control Division (APCD)

Urban Air Toxics

A new national strategy to deal with urban air toxics has been released by the U.S. Environmental Protection Agency. The Clean Air Act (CAA) requires that urban air toxics be regulated, as seen in the Clean Air Act Sections 112 (k) and 202 (l).

- Section 112 (k) stipulates that EPA must develop an Urban Air Toxics Strategy, such that Hazardous Air Pollutant (HAP) emissions from area sources (those emitting less than 10 tons/year of a single HAP or 25 tons/year of two or more HAPs) must be reduced so that a 75 percent reduction in cancer incidence attributable to emissions from such sources is achieved.
- Section 202 (l) stipulates that, as necessary, the EPA shall pass regulations containing reasonable requirements to control hazardous air pollutants from motor vehicles and motor vehicle fuels. The regulations are to contain standards for fuels and/or vehicles which the EPA determines reflect the greatest degree of reasonable emission reduction achievable.

In early July the Environmental Protection Agency (EPA) released its Final Urban Air Toxics Strategy.

National Toxics Inventory Presentation:

On April 7, 1999, the Environmental Protection Agency (EPA) met with Colorado Air Pollution Control Division staff and interested parties regarding the National Toxics Inventory (NTI), a national repository of air toxics data being developed by the EPA. The April 7 presentation was held to educate the public regarding the NTI and to ask local stakeholders to review and comment on the reported data and inventory development methods. For more information, contact Lisa Silva within the Colorado Air Pollution Control Division at (303) 692-3119

If you have any other general comments or questions, please contact Lisa Silva at (303) 692-3119, or Mark McMillan, at (303) 692-3140 both with the Colorado Air Pollution Control Division.

Multiple Air Toxics Exposure Study (MATES-II)

The Multiple Air Toxics Exposure Study (MATES-II) is a landmark urban air toxics monitoring and evaluation study conducted for the South Coast Air Basin in California. The study was initiated in 1997 and represents one of the most comprehensive air toxics programs ever conducted in an urban environment and certainly more comprehensive than a similar study (MATES I) completed a decade ago.

Highlights of the study include:

- Average risk for cancer in the local air basin is approximately 1,400 per million people with 70% of the risk from diesel particulate emissions, close to 20% from other mobile sources, and

about 10% from stationary source emissions;

- Cancer risk from some pollutants has declined by as much as 75% over the past decade with noticeable improvements with 3 Hazardous Air Pollutants (HAPs) in particular (Chromium +6, benzene, and butadiene- trend data for diesel particulates were not available since Cancer risk was not included in the first MATES study);
- Differences in risk from one site to the next are more the results of the influence of mobile source emissions than stationary source emissions; and,
- Strong seasonal variations exist in pollutant levels (higher in late fall and winter) especially for mobile HAPs.

For more information, either see the MATES II web site or contact Mark McMillan at 303-692-3140, or Lisa Silva at 303-692-3119, both of the Colorado Air Pollution Control Division.

FLORIDA DEP'S AIR TOXICS PROGRAM

Legislative Citation: Florida Statutes, Title XXIX Public Health, Chapter 403, Environmental Control

Website Location: http://www.leg.state.fl.us/citizen/documents/statutes/1999/ch0403/titl0403.htm

Regulatory Citation: Chapter 62-4, and Chapters 62-200 through 62-297, Florida Administrative Code

Website Location: http://www.dep.state.fl.us/ogc/documents/rules/rulelistpa.htm#air

Air Program Mission: The mission of Division of Air Resources Management is to protect human health, conserve the state's air resources and ecosystems, and improve air quality.

Website Location: http://www.dep.state.fl.us/air/

Treatment of Area Sources

Florida has developed many mechanisms to aid in streamlining the permitting of area sources. An area source can obtain a permitting exemption if the facility has no unit-specific regulatory requirement, and its PTE is less than 10% of a major source threshold. Title V general permits have been developed for area sources subject to the federal NESHAPS program, and non-Title V general permits have been developed for other source categories, such as bulk gasoline plants, surface coating operations, cast polymer operations, heating units, concrete batch plants, and human and animal crematories.

Website location for Title V general permit forms:
http://www.dep.state.fl.us/air/forms/t5forms.htm
Website location for non-Title V general permit forms:
http://www.dep.state.fl.us/air/forms/nont5forms.htm

Overview of Florida DEP's Air Toxics Program

The state's air toxics program is largely driven by the requirements of the federal Clean Air Act. The Florida DEP adopts-by-reference federally promulgated NESHAPs within 6 months of their promulgation by EPA. The DEP was the first state agency to adopt and implement the Section 112(g) case-by-case MACT program, and has completed a dozen MACT determinations since the program's inception. All facilities subject to the NESHAPs program are required to be permitted through a Title V mechanism, although, as noted above, the DEP has developed Title V general permits for area sources subject to NESHAPs. The DEP uses both federally enforceable state construction and operating permits to restrict sources whose potential to emit HAPs is above a major source threshold, yet are willing to operate at area source emission levels to avoid MACT-based requirements for major sources.

Although Florida has a very well developed ambient monitoring program for criteria pollutants, long-term monitoring for HAPs has only been conducted in a few urban areas (Jacksonville, Ft. Lauderdale, Delray Beach and St. Petersburg). In 2000, DEP received the legislative authority and resources to develop 6 more HAP monitoring sites, which are expected to be operating around Jan. 2001.

The DEP's Tallahassee headquarters, it's 6 district offices and 8 county environmental programs coordinate the implementation of Florida's air toxics program. Representatives from each of these offices participate in the Florida Air Toxics Working Group, to disseminate new information, review issues, and to provide updates and feedback on current air toxics projects. The group meets on an ad hoc basis and serves as the focal point for conducting the state's air toxics program activities.

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ILLINOIS' AIR TOXICS PROGRAM

Legislative Citation: 415 Illinois Compiled Statutes (ILCS), Act 5, Environmental Protection Act, Title II, Air Pollution (415 ILCS 5/8-10)

Regulatory Citation: 35 Illinois Administrative Code (IAC), Sections 201-276.

Program Goal: The intent of Illinois's air toxics program is to list toxic air contaminants and identify toxic air contaminant emissions from permitted sources. The State is currently reviewing reported toxic air contaminant emissions to determine whether control standards are required to protect public health.

Contact:
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(fax) 217/524-5023

Treatment of Area Sources

Area sources of toxic air pollutants in Illinois are regulated in three ways: (1) the Illinois Toxic Air Contaminant (ITAC) regulation, Rule 232 (35 IAC 232); (2) State construction and operating permit regulations; and (3) State Volatile Organic Material (VOM) rules. These programs regulate "small sources" as defined by the rules and therefore may apply to area sources as defined under Section 112 of the Clean Air Act. The permit rules and the VOM rules are part of the State Implementation Plan (SIP), and their requirements are therefore enforceable by the State and by the U.S. EPA. The ITAC regulation, promulgated in 1992, is not part of the SIP and is therefore enforceable only by the State.

Rule 232 covers numerous toxic air contaminants, including all 33 l 112(k) HAPs. The stated goal of the program is to control releases of toxic air contaminants that may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or may pose a significant threat to human health. The program does not require a quantified reduction in cancer or noncancer risk, but the potential to cause death (acute lethality), the potential to cause adverse health effects after chronic exposure (chronic toxicity), and carcinogenic effects are considered in listing toxic air contaminants. The program is under development and currently only requires recordkeeping and reporting of emissions of the listed contaminants. Any new or existing facility that manufactures, processes, or imports 25,000 pounds or more of any individual listed contaminant in any calendar year or otherwise uses 10,000 pounds or more of any individual contaminant in any calendar year is subject to the recordkeeping and reporting requirements of the ITAC regulation (Rule 232). Sources must

keep records of chemical use and manufacture, and report rates of use to the State. They must update the reports if emissions increase by more than 10 percent in a given year.

Illinois is currently evaluating whether the reported emissions constitute significant health risks and are sufficient to warrant development of an approach to manage residual risk and control technology requirements. The State expects to make these decisions in the fall of ' 2000, after assessing the cancer and noncancer risks from individual facilities. Considerations of cumulative risks on site-specific, county, and regional bases will also inform the State's decisions. Whether a residual risk component should be added will also be addressed during the State's review of the program. The State expects to model any control technology requirements on the Federal National Emission Standards for Hazardous Air Pollutants.

The State construction and operating permit requirements (35 1AC 201) apply to any new or existing stationary source, including area sources, that is not exempt under 35 1AC 201.146. Although these regulations do not provide authority to regulate the potential 112(k) HAPs, the State reviews emissions of these chemicals on a case-by-case basis as part of the permitting process. For new and modified sources, the review occurs during the review of construction permit applications. For existing sources, the review occurs during the review of operating permit applications. The State uses the Industrial Source Complex (ISC) model to predict ambient concentrations at the fence line or at other locations. Depending on their findings, the State suggests that the facility begin a voluntary control strategy. Illinois EPA staff reported that multiple facilities have opted to install voluntary controls in response to the program.

Depending on size, throughput, or other criteria, some area sources will fit the applicability criteria in Illinois's VOM rules (35 IAC 215). The rule was promulgated in 1972 and has been amended numerous times. Certain existing sources constructed before the promulgation and amendment dates are exempt. With certain exceptions, VOM are any compounds of carbon that participate in atmospheric photochemical reactions; several potential II2(k) HAPs are photo-chemically reactive and hence volatile organic materials. The rules cover storage and loading operations, miscellaneous equipment, solvent cleaning, and coating operations, and polymer equipment leaks as well as a number of industries, including vegetable oil processing, printing and publishing, synthetic organic chemical manufacturing, petroleum refining, asphalt, rubber and plastic parts, pharmaceuticals, coke manufacturing, air oxidation, construction, gasoline distribution, dry cleaning, paint and ink manufacturing, polystyrene, miscellaneous forms manufacturing, and miscellaneous organic chemicals. The VOM rules impose control technology requirements on regulated sources or in some other way limit emissions.

Rules 218 and 219 regulate VOM in the Chicago and Metro East (of Chicago) ozone non-attainment areas these areas. Rule 215 applies elsewhere in the state.

Treatment of Major Sources of Toxic Air Pollutants

The regulation of major sources of toxic air pollutants parallels the regulation of area sources. The ITAC regulations require certain major sources to keep records on chemical use and manufacture, and report rates of use to the State. Under rules 35 IAC 203 and 270, the State reviews emissions of the potential 112(k) HAPs (and other toxic air pollutants) on a case-by-case basis as part of the permitting process for new and existing major stationary sources. The VOM rules also apply to major sources.

Mercury Reduction Initiative

Illinois EPA has been pro-active in working with the other Great Lakes States in focusing on mercury reductions in the Great Lakes Basin.

Mercury cycles in the environment as a result of natural and human (anthropogenic) activities. The amount of mercury mobilized and released into the biosphere has increased since the beginning of the industrial age. Most of the mercury in the atmosphere is elemental mercury vapor, which circulates in the atmosphere for up to a year, and hence can be widely dispersed and transported thousands of miles from likely sources of emission. Most of the mercury in water, soil, sediments, or plants and animals is in the form of inorganic mercury salts and organic forms of mercury (e.g., methyl mercury). Illinois EPA has joined with the State of Ohio in establishing mercury monitoring sites in the lower Great Lakes States area to attempt measurement of mercury in ambient air and point source identification. This effort is intended to create an effective strategy for mercury deposition reductions.

Illinois is also involved in peripheral programs focused on Mercury use reduction and waste handling measures. The Illinois Pollution Control Board has adopted the Universal Waste Rule which effects the landfilling of fluorescent light bulbs, mercury containing batteries and thermostats. At the annual public multiple-site toxic materials recovery program, elemental mercury is turned in to the Illinois EPA for proper handling and disposal.

Cumulative Risk Initiative (CRI)

The Cumulative Risk Initiative (CRI) is a community-based effort to assess cumulative air pollutant hazards and to reduce the risks posed by exposure to residents of the Chicago area and northwestern Indiana. CRI was initiated in response to a Toxic Substances Control Act §21 Citizen's Petition from 11 Chicago-area community groups. The petition focused upon the regulatory gap in the Clean Air Act that allowed industrial air permits to be approved on a site by site (rather than cumulative) basis. The CRI focus has expanded beyond the limited, sector- and media-specific concerns (e.g., incinerator siting) originally expressed in the petition and has taken the form of a multi-phased process. In the first phase of the project general information on multi-media sources of pollution was collected and compiled in an Environmental Loading Profile (Versar 1999). The cumulative assessment phase has produced a Screening document, which focuses more specifically on air quality. Implementation of pollution prevention or other hazard reduction activities is planned as the ultimate outcome. CRI is being conducted outside the scope of the traditional regulatory process. The cumulative assessment phase is both a hazard assessment and mapping exercise designed to provide information for problem prioritization and better decision-making. Objectives of the two-county screening study are to:

(1) Better understand environmental conditions in Cook County, IL and Lake County, IN by examining the air quality impact of point, area and mobile sources;
(2) Foster dialogue with stakeholders;
(3) Develop a transferable methodology that can be used in other urban areas; and inform enforcement targeting and pollution prevention strategies.

At the request of the citizens' groups, the project includes a special focus on children. The project also is a pilot for Region V in the collection and use of a limited number of environmental health/susceptibility indicators (e.g., blood lead, asthma). Products of the cumulative assessment phase that are included in this screening document include baseline measures for different geographical areas and a series of GIS maps and overlays. The baseline year for the assessment is 1996, although some datasets include multiple years.

The approach to the Screening Assessment has evolved over time through dialogue with the petitioners and other stakeholders, including Illinois EPA. The approach is also shaped by the availability of data and methods. The assessment uses a weight of evidence approach to identify geographic areas within the two county study area which may merit further attention. Multiple environmental measures including emissions databases, monitored ambient air concentrations, and modeled ambient air concentrations from U.S. EPA's National Cumulative Exposure Project (CEP) are employed in the assessment. Hazard loadings and levels are assessed using toxicity weights (U.S. EPA 1998) and risk-based benchmark

Emissions Reduction Marketing System (ERMS)
The ERMS Program is intended to reduce VOM to achieve the 1-hour ozone National Ambient Air Quality Standards in northeastern Illinois. The Illinois Pollution Control Board (IPCB) has adopted the ERMS Rule, Title 35, Part 205. The program begins operation in 2000. A key feature of the ERMS, as compared to other emission control programs, is the ozone season. Since the focus of the ERMS is ambient ozone air quality, it addresses the time period, May 1 through September 30 of each year, in which excursions of the ozone Air Quality Standard now occur. VOM emission allowances will be assigned to major sources in the Chicago non-attainment area with actual VOM emissions of at least 10 tons per year. Facilities participating in the program are able to buy and sell the allowances. Although the program focuses on VOM reductions, the state also intends to evaluate reductions in toxic air pollutant emissions as a result of the program.

Treatment of Mobile Sources
The State of Illinois has several areas, listed in Table 1, which participate in the federal reformulated gasoline program. The counties are all in the Chicago ozone non-attainment area.

Table 1. Illinois Areas Which Are Subject to the Federal Reformulated Gasoline Program

Required Areas	Opt-In Areas
Cook County	None
Du Page County	
Kane County	
Lake County	
McHenry County	
Will County	
Grundy County (partial coverage)	
Kendall County (partial coverage)	

The Alternative Fuels program (35 IAC 275) also applies in the Chicago area. It is a State rule and is not part of the SIP. The rule allows individuals converting an existing vehicle to clean fuels, purchasing a clean fuel vehicle, or buying domestic renewable fuel to receive rebates. Clean fuels include any fuel containing 85 percent methanol, ethanol, or alcohol; and reformulated gasoline, diesel, or natural gas. The use of electricity as a power source also qualifies as a clean fuel. The program is expected to be implemented in the future, but rebate applications have already been received.

Emissions Data

All permitted major and area sources, approximately 8,200, are required to submit annual statements of the emissions of all regulated air pollutants, including all 34 potential 112(k) HAPs. These sources must also annually report rates of emission for the pollutants subject to the ITAC regulation (Rule 232). Illinois also collects data on HAP emissions from Title V permit applications.

In addition, Illinois participates in two regional efforts to develop air toxic emission inventories. The first is the Southwest Lake Michigan Urban Areas Air Toxics Pilot Study, which resulted in an inventory of small point and area sources of toxic air contaminants from the combined 12-county areas of Chicago, Gary, and Milwaukee. The inventory for the pilot study was completed using the Regional Air Pollutant Development System (RAPIDS), which calculates air toxic emissions from criteria pollutant emissions. Initially, 49 toxic pollutants were targeted, as well as seven; additional non-toxic compounds. The list of compounds has now been expanded to all 188 Hazardous Air Pollutants (HAPs).

The Southwest Lake Michigan Urban Areas Air Toxics Pilot Study was conducted as part of the development of the Great Lakes Regional Air Toxics Emission Inventory, a database of toxic pollutant

emissions for all the Great Lakes states. Point, area, and mobile source inventories of toxic air pollutants have been completed for Illinois. The regional database will be used to assist the effort by EPA and the Great Lakes states to define and regulate sources, evaluate control technologies, and establish guidelines for the siting of new facilities.

Pollution Prevention

The state's Toxic Pollution Prevention Act of 1989 created a pollution prevention program in Illinois. The program's goals are to stimulate pollution prevention in industry and to establish pollution prevention as the preferred means of achieving compliance with environmental laws. The Illinois Pollution Prevention Act of 1992 requires the Illinois Environmental Protection Agency to report annually on progress in pollution prevention. Facilities that submit toxic pollution prevention innovation plans receive preferred treatment in permitting or environmental law compliance. This incentive may motivate area sources to reduce emissions of the potential 112(k) HAPs.

The State also expects to add a pollution prevention component to the ITAC regulation. Pollution prevention, including substitution of unlisted chemicals for chemicals on the list of Toxic Air Contaminants, probably will be an allowable alternative to any control technology requirements promulgated under Rule 232.

LOUISIANA'S AIR TOXICS PROGRAM

Legislation

The Louisiana DEQ regulates emissions of toxic air pollutants under the authority of Louisiana statute R.S. 30:2060. This law was originally enacted as Act 184 of 1989, in response to public concern over the high levels of toxic air releases reported for 1987, published for the first time in 1989 under the national Toxics Release Inventory. The Louisiana legislature won national recognition for this progressive act. The legislation is comprehensive in scope, mandating regulation of both major and minor sources. The law established a goal to reduce air toxics by 50% from 1987 levels by December 1996. To date, facilities in the Air Toxics Program have reduced their toxic air pollutant emissions by over 60%. The law provided a broad definition of "toxic air pollutant," at R.S. 30:2053: ". . . any air pollutant which, based on scientifically accepted data, . . . can reasonably be anticipated to cause. . .adverse effects in humans. . .". The law required DEQ to develop and publish a list of such pollutants and to develop ambient air concentrations and/or technical control standards for those pollutants. It further mandated that DEQ require facilities to provide air toxic emissions inventories and immediate notification of any unauthorized toxic discharge. Revisions to the law were enacted in 1991, at a time when regulations proposed by DEQ were under public comment. The statutory revisions established separate timelines for the regulation of major and minor sources, provided for a small business assistance program, and cited maximum achievable control technology as the standard which "shall be defined and required in regulations adopted pursuant to this Section."

Regulation - Major Sources

DEQ adopted regulations governing major sources of toxic air pollutants in December 1991, at LAC 33:III.Chapter 51, Subchapter A. Regulated sources include existing, new and modified stationary sources which emit or have the potential to emit ten or more tons per year of any single toxic air pollutant or twenty-five or more tons per year of any combination of listed toxic air pollutants. Chapter 51 lists regulated toxic air pollutants by Class designation: Class I includes known and probable human carcinogens; Class II includes suspected human carcinogens and known or suspected human reproductive toxins; Class III includes acute and chronic non-carcinogenic toxins.

DEQ initially listed approximately one hundred toxic air pollutants in the December 1991 rulemaking, in accordance with Louisiana law which specified that the initial list be limited to one hundred toxics. In 1992, DEQ promulgated a supplemental list of approximately one hundred additional toxic air pollutants. The supplemental list includes all federally listed hazardous air pollutants not initially included on the Louisiana list. Control technology and ambient air standard compliance is not currently required for the supplemental list of toxics, which represent approximately 1% of the total air toxic emissions reported.

The Louisiana Air Toxics Program requires that all major sources apply Maximum Achievable Control Technology (MACT) for emissions of Class I and II toxic air pollutants which the source emits or is permitted to emit above minimum emission rates. In addition, the program requires compliance with

health-based Ambient Air Standards for Class I, II, and III pollutants which the source emits or is permitted to emit above the minimum emission rate. Regulated sources were required to submit to DEQ by December 1992 either plans for achieving MACT and Ambient Air Standards, or certifications documenting compliance with MACT and Ambient Air Standards. With the exception of paper mills, which were granted a compliance extension through a rule revision, the rule required all major sources to be in compliance with MACT and Ambient Air Standards by December 20, 1996. LDEQ has received over 265 plans from major sources. These include compliance plans, certifications of compliance, and plan modifications. A public comment period is required prior to approval of any compliance plan. In addition to complying with MACT requirements, over 250 facilities must report annual emission totals of air toxics to LDEQ.

Regulation - Minor Sources

Smaller industries, or "minor sources," are also regulated under the Air Toxics Program. For minor sources, LDEQ implemented a program consistent with the federal Area Source Program under Title III of the Clean Air Act Amendments. The state promulgated a rule in April 1994 requiring emissions-reporting from those area source categories listed for regulation by EPA. The initial emissions reports were submitted in October 1994. The Air Toxics Section and the Small Business Assistance Program work together to provide outreach to affected sources.

Louisiana Toxic Emissions Data Inventory

Chapter 51 also established emissions reporting requirements for all major sources of toxic air pollutants, separate from the federal requirements to report air releases to the Toxic Release Inventory. Regulated sources are required to submit annual reports of actual emissions for each listed toxic air pollutant each July 1 for the previous calendar year. Those reports are compiled in the Louisiana Toxic Emissions Data Inventory (TEDI). TEDI reports have been received for calendar years 1991 through 1998.

Correlation With Federal Title III Program

The Louisiana Air Toxics Program was designed to avoid conflicts with the Clean Air Act Amendments. The federal House and Senate bills as available in 1989 and 1990 were used as resources in the development of the Louisiana regulations. Some critical points of consistency include: MACT as the control technology standard; MACT definition which tracks the federal law; Major source/minor source definitions which track the federal law; and, Health risk determinations to back-up control technology. The Louisiana program surpasses the federal program by requiring that MACT be in place for major sources by 1996, and by listing pollutants of particular concern in Louisiana which are not federal hazardous air pollutants (see following list). The Louisiana program also requires that Ambient Air Standards be met at the time MACT is implemented, while the federal program will review residual risk eight years after MACT is implemented. On the other hand, the Louisiana program does not require MACT for Class III (acute) toxins, while the federal program will require MACT for such pollutants.

Taps Not On the HAP List

The following list of chemicals are toxic air pollutants (TAPs) which are regulated by the Louisiana DEQ, but which are not regulated under the federal Clean Air Act, Title III, Section 112(b) -- Hazardous Air Pollutants (HAPs). Louisiana's state air toxics regulation is more stringent than the federal regulations, as it also sets an ambient air standard for each of the listed toxic air pollutants (TAPs). The state list may be found in the Louisiana Administrative Code - LAC 33:III.Chapter 51, Tables 51.1 - 51.3

List of TAPs Not on the Federal HAP List

CAS Number	Chemical Name
7664-41-7	Ammonia
7440-39-3	Barium (and compounds)
71-36-3	N-Butyl Alcohol
10049-04-4	Chlorine dioxide (chlorine peroxide)
7440-50-8	Copper (and compounds)
25376-45-8	Diaminotoluene
606-20-2	2,6-Dinitrotoluene
7783-06-4	Hydrogen sulfide
7697-37-2	Nitric acid
110-86-1	Pyridine
7664-93-9	Sulfuric acid
91-08-7	Toluene-2,6-Diisocyanate
7440-66-6	Zinc (and compounds)

MAINE'S AIR TOXICS PROGRAM

In 1983 Maine was given authority to collect an maintain an emissions inventory of hazardous air pollutants. This inventory data was collected in 1984 and compiled along with health information from the Bureau of Health into a document entitled "HAZARDOUS AIR POLLUTANTS IN MAINE - Emissions Inventory and Ranking System". Using the information from that report, the inventory has been maintained with periodic questionnaires. Data was collected for 1988, 1990, 1993, 1996, and 1998. The last three inventories were structured to fulfill the Chapter 137 requirements. Each year's survey covers approximately 600 facilities, and is governed by a list of pollutant and associated thresholds referred to as "Appendix A". Appendix A covers roughly 215 pollutants, including all of the CAAA list (112(b)), pollutants from the TRI list that we have seen reported in Maine (since 1988), and other pollutants as identified in the 1985 report mentioned earlier. The thresholds are for the most part 2000 pounds, but in 18 instances the threshold is 200 pounds, for Hexavalent chromium it is 10 pounds, and for TCDD it is 0.001 pounds.

Maine also has a drycleaner regulation (Chapter 125). In this regulation, drycleaners are required to submit inventory information to us on an annual basis. In 1983 the Department was also given the authority to develop health based standards and guidelines for HAPs that were found to be of concern. Standards were developed for toluene and perchloroethylene, along with guidelines for about 70 other pollutants. Regulations implementing this health-based program were removed when Maine adopted regulations to implement Title V.

MASSACHUSETTS' AIR TOXICS PROGRAM

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The primary objective of DEP's air toxics program is to control, to the maximum extent possible, emissions of toxics into the atmosphere of the Commonwealth which may cause or contribute to an increase in mortality or serious illness, or which may otherwise pose a present or potential hazard to public health, welfare, or the environment. DEP's air toxics program has evolved to expand upon and mesh with existing air pollution control programs while allowing for innovation through new initiatives. DEP believes that different source types (major, mobile, and area) must be addressed when dealing with air toxics, and will continue to seek additional resources to continue to integrate air toxics and criteria pollutant control programs. The different facets of DEP's air toxics program are discussed below.

Major Sources

Major stationary sources of toxics in Massachusetts are subject to National Emissions Standards for Hazardous Air Pollutants (NESHAP) pursuant to Title III of the Clean Air Act. Several of these standards have been adopted, and others are scheduled to be adopted and phased-in over the next several years. With some, like the municipal waste combustor rule, Massachusetts has gone significantly further than the federal standard in reducing toxics emissions (i.e., mercury).

In addition to the NESHAP program, DEP's air toxics program evaluates selected categories of new or modified stationary sources for toxics emissions. DEP requires these sources of air contaminants to demonstrate, through the application of Best Available Control Technology (BACT), and assess, through computer modeling, the ambient air concentrations caused by that source's emissions, sometimes in aggregate with other proximate sources in that source category. These modeling results are compared to DEP's health-based air toxics guidelines (Allowable Ambient Limits or AALs). AALs are based on potential known or suspected carcinogenic and toxic health properties of individual compounds. Safety factors are incorporated into the AALs to account for exposures from pathways other than air. AALs are reviewed and updated periodically to reflect current toxicity information. This analysis is not limited to a specific list of toxics. Which toxics to model is determined on a case-by-

case basis. Generally, analysis is done for air contaminants for which DEP has an AAL, are emitted by the source, and may be injurious to human health or welfare.

The following facilities must assess their contribution(s) to air toxics when applying for a plan approval:

- Sources which require a Prevention of Significant Deterioration permit
- Electric generating facilities
- Municipal waste combustors
- Medical waste incinerators
- Sewage sludge incinerators
- Major remedial actions
- Hazardous waste incineration
- Pathological incinerators
- Wastewater treatment facilities

Area Sources

DEP's Environmental Results Program (ERP) is a regulatory compliance system that replaces case-by-case conventional permits with industry-wide environmental performance standards and an annual self-certification. ERP currently applies to three small business sectors: dry cleaning, photo processing, and printing. Two additional sector rollouts underway are: companies discharging industrial wastewater and companies installing or modifying boilers. ERP is an effective way or area sources to comply with environmental standards and reduce toxics emissions. Compliance assistance tools are provided in the form of workshops and easy to understand workbooks outlining a firm's environmental obligations. ERP also ensures implementation of Pollution Prevention activities by incorporating those principles into the standards and the workbooks.

DEP has also passed several regulations that apply to Volatile Organic Compounds (VOC) area source emissions from reformulated consumer, traffic, industrial, and commercial products, bulk storage plants, gas stations, and architectural coatings. Although these regulations do not regulate toxics specifically, they require VOC emission controls, which includes many toxic compounds.

Mobile Sources

Massachusetts has several programs in place to control emissions from mobile sources. In 1995, the introduction of reformulated gasoline resulted in a greater than 15% reduction in air toxic emissions from conventional gasoline. This year, gasoline was again reformulated to reduce air toxic emissions by 22% from conventional gasoline.

In 1999, Massachusetts enhanced its Emissions and Safety program. The program now uses a dynamometer to simulate driving conditions and to more accurately measure emissions and identify polluting vehicles. The program also employs an auditing and quality control system, and requires emission testing of diesel cars, trucks, and buses. By testing vehicles that have never been tested and by

repairing or removing the most polluting vehicles from the road, Massachusetts will see a significant reduction in air toxics emissions from mobile sources.

Monitoring Data

DEP is enhancing its ability to characterize the ambient concentrations of air toxics, to assess the effects of air toxics emissions within the Commonwealth, and to determine the effects of stationary, area, and mobile source toxics emissions. As part of the PAMS program, DEP has begun collecting and analyzing canisters for a limited number of air toxics year round. During 1999, two locations in the Boston area began monitoring for hydrocarbon air toxics.

Emission Inventory

DEP is identifying challenges and opportunities for developing a toxics emission inventory, and expects to implement this project over the next several years, in tandem with criteria pollutant inventory development.

Pollution Prevention

The Massachusetts Toxics Use Reduction Act was signed into law in July 1989. Its goal is to promote in-plant changes in production processes or raw materials that reduce, avoid, or eliminate the use of toxic or hazardous substances or generation of hazardous byproducts per unit of product. This reduces the risks posed to workers, consumers, and the environment. The act:

- Established a statewide goal of reducing toxic waste generated by 50% by the year 1997
- Established toxics use reduction as the preferred means for achieving compliance with any federal or state law or regulation
- Sustains, safeguards and promotes the competitive advantage of Massachusetts businesses, large and small, while advancing innovation in toxics use reduction and management
- Promotes reductions in the production and use of toxic and hazardous substances in the Commonwealth
- Enhances and strengthens the enforcement of existing environmental laws and regulations
- Promotes coordination and cooperation between Massachusetts's agencies administering toxics-related programs

The Commonwealth is mandated to assist industry in seeking toxics use reduction opportunities and to otherwise create a regulatory environment that is supportive of toxics use reduction investments. The TURA program has been effective in reducing emissions of toxics; between 1990 and 1998, participating Massachusetts manufacturers have decreased their total chemical use by 33%, their byproduct generation by 48%, and their toxic releases to the environment by 83%.

Mercury Activities

The New England Governors and the Eastern Canadian Premiers have committed to a regional Mercury Action Plan to meet the regional objective of eliminating releases of man-made mercury into the environment, with an interim goal of reducing those emissions by 50% by 2003.

The plan uses a multi-disciplinary approach to reduce mercury releases in the Northeast and Canada, and commits to:

- Establishing strict mercury emissions limits at large municipal waste combustors and large medical waste incinerators
- Emphasizing mercury source reduction methods, such as reducing or eliminating the unnecessary use of mercury in consumer and medical products
- Emphasizing outreach and public education on the hazards of mercury and potential replacement products
- Establishing programs to foster proper management and recycling of mercury-containing wastes such as fluorescent lamps, batteries, thermometers, and thermostats.

MINNESOTA'S AIR TOXICS PROGRAM

Legislative Citation: Minnesota Statutes Chapter 116

Regulatory Citation: Minnesota currently has no state rules or statutes specifically directed to reducing air toxic concentrations in outdoor air.

Program Goal: MPCA's Five Year Strategic Plan: Reduce exposure to toxic air pollutants. EnPPA Subgoal: To protect human health from the effects of air toxics

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General

Over the past year, the MPCA has reviewed information developed by EPA's Cumulative Exposure Project as well as monitoring and modeling conducted by the MPCA. A staff paper has been released that identifies ten air toxics with predicted or measured levels above health benchmarks: formaldehyde, benzene, carbon tetrachloride, chloroform, ethylene dibromide, 1,3-butadiene, acrolein, arsenic, nickel, and chromium. Much of the excess cancer risk found in this study stems from exposure to toxics from mobile sources. This work is viewable at http://www.pca.state.mn.us/air/airtoxics.html. Although much work remains to be done to improve our knowledge of the risk really posed by these pollutants, reduction of risk due to mobile sources is key to meeting the MPCA's long term goal of reducing exposure to air toxics. Initial reduction efforts will be focused on dissemination of the monitoring and estimated risk information, gathering information on reduction options, and consultation with citizens and interest groups.

Treatment of Area and Major Sources

Prior to this year the goals of Minnesota's air toxics strategy were threefold: 1) Smooth, fair implementation of Clean Air Act of 1990, 2) Protection of health and the environment through risk review of high priority point sources, and 3) Collection of information on the emissions and ambient concentrations of toxic pollutants. Based upon information developed through the information collection effort, "reducing exposure to toxic air pollutants" was established as a long-term strategic goal.

Area and Major sources are currently addressed through implementation of the federal NESHAP regulations, and through risk assessment of high priority point sources. Minnesota, at first, attempted to review NESHAP promulgations to assure that neighborhood risks were acceptable. After completing a

health-based review of the NESHAP for perchloroethylene dry cleaning facilities, we quickly found that we did not have the resources to do this for a significant number of NESHAP standards. Instead our efforts today are focused on implementation of the federal standards through outreach, education, and tracking. The MPCA small business program has undertaken several sector initiatives to inform and consult with sources affected by NESHAP. Several sectors addressed recently include wood furniture manufactures, dry cleaners, and fiberglass resin users.

Major new air sources (typically less than 5 facilities a year) that must undergo environmental review in Minnesota are also required to assess the risk that they pose to neighboring communities. In a limited number of cases, where there is local or agency concern, other smaller or existing facilities have been reviewed. An Air Toxics Review Guide was developed this year to help facilitate this process. The Guide is more of a narrative than a cook book approach. Concerns exist over the resources that these reviews use within the MPCA and at affected sources. Neither state rules nor statutes have been developed for a program to judge source acceptability through our permitting process. The Minnesota Department of Health will shortly start the process to adopt rules that will establish Health Risk Values for air toxics. This rule will establish health benchmark concentrations for 43 air toxics with chronic health effects, 21 air toxics with subchronic health effects, 42 air toxics with acute health effects and 9 persistent multimedia chemicals. The HRVs will be used in performing site specific risk assessments and may be used in other venues. The rule itself will not dictate how the HRVs will be used.

Treatment of Mobile Sources

The MPCA has operated a centralized Inspection – Maintenance program in the Twin Cities since 1992. The program was adopted to reduce carbon monoxide levels but also tests for hydrocarbon emissions. The program did not directly address air toxic emissions. Carbon monoxide levels have dropped in the Twin Cities, and the area has been redesignated to attainment. The Inspection-Maintenance program ended in December 1999. A Mobile Source Reduction Strategies Team formed in fall of 1999 that will investigate options to reduce toxic emissions from mobile sources as well as reduce emissions of other pollutants such as ozone precursors and carbon dioxide.

The team is exploring measures to address environmental impacts (including air toxics) from transportation and other area-wide and mobile sources. These efforts will include outreach with partners, stakeholders, and the general public to raise general awareness of the situation to examine transportation and air quality and offer policy recommendations to the Agency and Legislature in January, 2001.

Emissions Data

Minnesota requires that certain permit applicants quantify toxic air pollutant emissions. Minnesota does not have a specific requirement for periodic submission of toxic air pollutant emission data but does have broad statutory authority to require sources to submit such information when asked.

Minnesota has participated along with the other seven Great Lakes states and Ontario Province in development of the Great Lakes Regional Air Toxics Emission Inventory. In August 1998, the first regional pilot inventory was released for 49 toxics. This inventory was based on 1993 data and can be accessed at http://www.glc.org/projects/air/final93/93report.html. The second inventory uses 1996 data and has been expanded to include 82 toxic air pollutants. This inventory, including emissions from point, area and mobile sources, is accessible at http://www.glc.org/air/1996/1996.html. The Regional Emission Inventory will be updated annually.

Minnesota has also provided data to the National Toxics Emission Inventory which requires an inventory only every three years. Also, a required legislative report contains inventory information on a biannual basis.

The 1996 Minnesota air toxics emission inventory includes 109 chemicals: 16 polycyclic aromatic hydrocarbons, 80 non-metal compounds (excluding PAHs), and 13 metals. These pollutants were selected based on two criteria: 1) the 1996 Great Lakes Inventory and 2) the Urban Air Toxics Study, a study funded by EPA to examine exposure levels under realistic lifestyle patterns in the Twin Cities. Eighty two of the pollutants are Great Lakes Inventory pollutants. The 1996 inventory includes estimates for point, area, and mobile sources. Point source estimates were obtained by using direct reporting values, emission factor calculations, and Toxic Release Inventory data. The efforts are focused on the development of source-specific emission factors for selected industrial sectors, such as metal mining/ iron ore and electrical services/coal burning facilities. Results and detailed analyses of the 1996 Minnesota air toxics emission inventory are available from http://www.pca.state.mn.us/air/toxics.html#1996. The inventory for calendar year 1999 will include all HAPs and the pollutants significant to the Great Lakes.

Monitoring Data

In fall 1999, Minnesota began the fourth year of a five year assessment of toxic pollutant concentrations in both small and large cities throughout the state. Over 18 sites are currently being monitored throughout the state. Several sites in the Twin Cities area and Duluth are monitored continuously while seven sites are rotated to new locations each year. Sampling is conducted for 35 VOCs, 7 carbonyl compounds, and 37 particulate metals and other compounds. The objectives of the monitoring study were to characterize and compare concentrations across the state, provide data for a screening risk assessment, and provide a basis for future monitoring efforts.

Data from the MPCA toxics network have been used recently to compare with concentration estimates from EPA's Cumulative Exposure Study and MPCA generated concentration estimates. For almost two-thirds of the air toxics with both modeled and monitored data, the CEP's model underestimated current concentrations. Further information on Minnesota's response to this information is accessible at http://www.pca.state.mn.us/air/airtoxics.html.

Pollution Prevention

Minnesota Statutes (115D) requires that sources that must submit TRI reports, must also develop pollution prevention plans and must submit progress reports to the MPCA. However, the statute does not require that the plans themselves be submitted to the MPCA. The MPCA also supports several pollution prevention assistance efforts through small business assistance programs and a technical assistance office at the University of Minnesota. Minnesota Statutes (114C) provide for variance of state rules if a source is willing to go beyond compliance. This provision has been little used because of complications in varying federal regulations

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Section

General Program Activities

The objectives of the Air Quality Program are to achieve and maintain Ambient Air Quality Standards, to protect air quality in those areas of the state that have air cleaner than the standards, and to implement Air Quality Rules and Regulations. By fulfilling these objectives, the Department is confident that public health and the environment are adequately protected.

The Air Quality Section consists of three units: the Engineering and Permitting Unit; the Compliance Assurance Unit; and the Implementation and Monitoring Unit. See descriptions below.

Three local agencies - the Lincoln/Lancaster County Health Department, the Omaha Public Works Department and the Douglas County Health Department - have accepted through contract with the NDEQ, responsibility for various facets of the program. These responsibilities include air quality monitoring, planning, permitting and enforcement within their areas of jurisdiction. The delegation contract has enabled the Lincoln/Lancaster County Health Department and the Omaha Public Works Department to accept, through agreement with the EPA, responsibility for their own major source operating permit program.

Engineering and Permitting Unit

The Engineering and Permitting Unit is responsible for the review of construction and operating permit applications. The permit programs ensure that the state and national standards are being met. This is accomplished through the review of construction and operating permit applications.
Revisions to the operating permit regulations in September will relieve a considerable number of sources from the permit requirements. These revisions shift the focus of the permit program from Potential-to-Emit to actual emissions. In general, if sources can demonstrate that their actual emissions are below levels established in the regulations, then they will not be required to obtain an operating permit. The result will be a significant reduction in the number of permits that will need to be issued, with no subsequent degradation of our air quality.

Compliance Assurance Unit

The Compliance Assurance Unit is responsible for conducting compliance inspections of air pollution sources, responding to complaints from the public, observing emission tests, and initiating enforcement actions when compliance problems are serious, chronic, or cannot be otherwise resolved. Compliance Specialists and Program Specialists routinely offer assistance to sources to help them comply with applicable regulations and avoid enforcement actions. While conducting regular inspections, many other sources are surveyed, which often reveals normal operating conditions and potential problems. Compliance Specialists and Program Specialists are also improving their skills in finding compliance assistance and pollution prevention opportunities while inspecting sources.

As promoted in the Nebraska Environmental Protection Act, the Air Program stresses obtaining compliance with environmental regulations through voluntary efforts. This concept has been helpful to both the Department and the regulated community. Assisting sources in achieving voluntary compliance has helped bring about a better working relationship with the regulated community without sacrificing environmental goals. This type of relationship is more productive than the regulatory command and control approach that had traditionally been the primary method of obtaining compliance.

Implementation and Monitoring Unit

The Implementation and Monitoring Unit is responsible for the compilation of emission inventories and submission to federal data bases, oversight of asbestos removal and disposal, operation of an ambient air quality network and the development, adoption and implementation of new regulations. Additionally, the unit publishes a bulletin called *AirWaves*. This bulletin, provides up-to-date information on air quality issues to the public and regulated community.

Ambient air quality monitoring reveals that most Nebraskans continue to enjoy very high quality ambient air. One small area in downtown Omaha near the Asarco lead refinery did not meet the applicable National Ambient Air Quality Standard. The area was listed as non-attainment for lead. On July 1, 1997, Asarco shut down operations in order to comply with an Administrative Order issued by the Department. Since the facility shut down, ambient monitoring has shown a dramatic reduction in lead levels. The Department is confident that the area will soon be redesignated as attainment with the standard. As of March 1998, areas in Dakota County do not meet the state's ambient air quality standard for total reduced sulfur. Efforts are ongoing to bring the area into compliance with the standard.

NEW HAMPSHIRE'S AIR TOXICS CONTROL PROGRAM

What is the Air Toxics Control Program?

On May 08, 1998, the New Hampshire Department of Environmental Services adopted a list of regulated toxic air pollutants (RTAPs) pursuant to the revised Air Toxics Control Program which was promulgated with an effective date of March 3, 1997. This program, codified in the N.H. Code of Administrative Rules, Section Env-A 1400, will aim to protect public health and the environment by reducing the emission(s) of 750 RTAPs likely to be used by businesses in the state. New Hampshire businesses which emit any of the listed RTAPs into the ambient air may be subject to the requirements of this rule. Effective May 08, 1998, a three year phase-in clock will begin counting down with new (upon start-up) and existing businesses (now or no later than May 8, 2001) required to demonstrate compliance with Env-A 1400. Affected businesses should maintain records on site to confirm, in the event of a regulatory compliance inspection, that a compliance demonstration has been completed for any RTAPs emitted.

Which toxic air pollutants are regulated?

The program is aimed to protect public health and the environment by reducing the emission(s) of 750 RTAPs. Unlike the former air toxics control program (Env-A 1300), compliance with the regulatory ambient air limits under this program must be demonstrated for all listed RTAPs, not only those compounds classified as "highly toxic". The final list of RTAPs includes: those substances or compounds listed as Hazardous Air Pollutants (HAPs) pursuant to Section 112 (b) of the Clean Air Act (42 U.S.C 7412), as amended; those chemical substances for which a threshold limit value (TLV) has been established by the American Conference of Governmental Industrial Hygienists (ACGIH) as of December 31, 1995, as amended; and compounds regulated under Env-A 1300 or by the Occupational Safety and Health Administration (OSHA) but not represented in the previous two categories.

Who is subject to these requirements?

Industries subject to the requirements of this regulation include: the owner of any new, modified, or existing stationary source, area source or device which emits a RTAP into the ambient air (Env-A 1402.01(a)). Whereas, A mobile source; a normal agricultural operation; the application of a pesticide regulated pursuant to RSA 430:48; the combustion of coal, natural gas, wood, or virgin petroleum products; a gasoline dispensing or storage facility or cargo truck as regulated pursuant to Env-A 1204 or Env-a 1205; or an exempt activity as classified in Env-a 609.03(c)(1) through (7), and (10) through (20) would not be subject to the requirements of this rule (Env-A 1402.01 (b)(1)-(6)). These exemptions aim to prevent duplicative regulatory requirements in certain industry categories already subject to other Federal and State air pollution control requirements. A toxic air pollutant is regulated by the State of New Hampshire if all of the following criteria are met:

- The chemical substance is emitted into the ambient air in any amount and is currently being used or is proposed for use in the state.
- The chemical substance is listed in either the United States Environmental Protection Agency (U.S. EPA) Code of Federal Regulations, Title 40, Part 261, Subparts C and D, and/or Table 4 of U.S. EPA document #450/5-86-011a, National Air Toxics Information Clearinghouse (NATICH) data base report and subsequent updates.
- A Threshold Limit Value (TLV) has been established for the chemical substance by the American Conference of Governmental Industrial Hygienists (ACGIH), the Occupational Safety and Health Administration (OSHA), or the National Institute for Occupational Safety and Health (NIOSH).

When is a permit review and impact analysis required?
A permit review and impact analysis is required if either of the following criteria are applicable:

- A new or modified device or process is proposed, which emits to the ambient air, any toxic air pollutant that is regulated under Env-A Chapter 1300, or
- An existing device or process, which emits to the ambient air, a toxic air pollutant that is regulated under Env-A Chapter 1300 and is classified as a high toxicity air contaminant.

What are toxicity classifications?
Regulated toxic air pollutants are classified as either high, moderate, or low. These three classifications are related to the health effects that may be caused when humans are exposed to that particular chemical substance. A high toxicity classification indicates the potential for more severe human health effects than a low toxicity classification.

A detailed explanation of the criteria used in determining toxicity classifications can be found in the New Hampshire Code of Administrative Rules, Part Env-A 1303.02.

What is an ambient air limit?
An Ambient Air Limit (AAL) is a concentration limit of a toxic air pollutant not to be exceeded in the ambient air. It is intended to provide public health protection. The AAL is expressed in micrograms per cubic meter (ug/m3) and represents a twenty-four (24) hour average.

The AAL is calculated by modifying the Threshold Limit Value (TLV) to reflect a concentration limit as it relates to the general public. A TLV is the airborne concentration to which all healthy workers can be exposed, for a normal eight (8) hour day, forty (40) hour week without ill effects. Since the AAL must protect the general population of the state, the TLV has to be adjusted for continuous exposure to the pollutant for susceptible people such as children, the elderly, the chronically ill, and pregnant women. This adjustment is accomplished by converting the eight (8) hour TLV exposure limit to a twenty-four (24) equivalent and then dividing that value by the applicable safety factor. The safety factors generally

used in conjunction with occupational standards are one hundred (100) for high toxicity, seventy-one (71) for moderate toxicity, and twenty-four (24) for low toxicity.

What is the list of ambient air limits for toxic air pollutants?
The New Hampshire Department of Environmental Services' Air Resources Division publishes a listing of regulated toxic air pollutants for which Ambient Air Limits have already been established. This list is updated approximately once a year.

It is important to note that an AAL is established for a regulated pollutant as soon as it is identified as being used or proposed for use in the state, not when the Air Toxics List is updated. The fact that a chemical substance is not found on the list does not necessarily mean that the substance is unregulated. The Air Resources Division should be consulted whenever a chemical substance is being emitted into the ambient air.

For additional information on the Air Toxics Control Program and toxic air pollutants which are regulated in New Hampshire, consult the following website:
http://www.des.state.nh.us/ard/toxpage.htm.

NEW JERSEY DEP's AIR TOXICS PROGRAM

In 1979, NJDEP adopted a regulation that specifically addressed air toxics emissions. This rule (Control and Prohibition of Air Pollution by Toxic Substances) listed 11 Toxic Volatile Organic Substances (TVOS) and required that sources emitting those TVOS to the air should register with the Department and demonstrate that they were using state-of-the-art controls to limit their emissions. Since that time, the NJDEP Air Toxics Program has continued to grow to include other approaches that result in the reduction of air toxic emissions.

NJDEP now has a three-pronged approach to decreasing air toxic emissions in our state:

- A combination of control technology and risk assessment requirements employed in the permitting process (described below)

Voluntary reductions that result from Right-To-Know and similar disclosure programs:

- Community Right to Know
- Pollution Prevention
- Toxic Release Prevention Program
- Greenstart

Air toxics reductions that result as a side benefit of control programs that address ozone precursors, particulate matter, and other pollutants (see our Air Toxic Emission Reduction Efforts in NJ page for some examples)

Control Technology and Risk Assessment in the Permitting Process

NJDEP uses a combination of control technology requirements and risk assessment to set limits on the emissions of hazardous air pollutants ("air toxics"). When a company applies for an Air Pollution Control Permit for a new or modified source of air emissions, they are required to use state-of-the-art control techniques. These techniques generally include performance limits that are based on air pollution control technology, pollution prevention methods, and process modifications or substitutions that will provide the greatest emission reductions that are technologically and economically feasible. These technology requirements have been a part of the program for almost 30 years.

In the early 1980s, NJDEP recognized that one shortcoming of the control technology approach was that it does not guarantee that the emissions from a source with state-of-the-art controls are sufficiently low to protect public health. So now many potentially large sources of air toxic emissions must submit a risk assessment along with their permit application, and hundreds of other sources are routinely screened by the permit evaluators for potentially high cancer risk.

Large sources that must prepare their own risk assessments have included municipal waste and hazardous waste incinerators, coal-fired power generating facilities, and cogeneration units. Following NJDEP guidance, they predict the exposures to air toxics that could occur in the vicinity of their plants

and compare these exposures to health benchmarks. This risk assessment is then submitted to the Department for review. The final document is made available to interested members of the public.

Permits for other (generally small) sources are screened by NJDEP Air Quality Permitting program staff for the potential to cause a high exposure to air toxics. If the exposure predicted by the screening procedure is greater than a threshold amount, then additional modeling and risk assessment are done by the dispersion modeling staff. This risk screening step provides consistency and efficiency in the review process, while ensuring adequate protection of public health.

Guidance on how to prepare a risk assessment can found in Technical Manual 1003.

NEW YORK'S AIR TOXICS PROGRAM

Legislative Citation: Environmental Conservation Law 3-0301, 19-0301, 19-0303

Regulatory Citation: New York Code of Rules and Regulations, Title 6, Chapter III, Subchapter A, Parts 201(1996), 212 (1994), and 257 (1997)

Program Goal: To provide protection from the adverse health effects of air contaminants; to protect and conserve the natural resources and environment; and to promote maximum comfort and enjoyment and use of property consistent with the economic and social well-being of the community.

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Treatment of Area Sources

Area sources are not regulated directly under New York statutes. The State does not use CAA Section 112(a) definitions to differentiate between area and major sources. Instead, the Department of Environmental Conservation (DEC) exempts certain low-emission source categories from its regulations, including, but not limited to, combustion installations with heat input capacity less than ten million Btu per hour; stationary internal combustion engines under 400 horsepower; unit space heaters; fuel burning equipment; emergency relief vents, stacks and ventilation systems; process, exhaust or ventilation systems in bakeries and certain food processing facilities.

New York regulates emissions of air toxics from both new and existing sources through the permitting process. The federal part of the permit is limited to the reporting of regulated air pollutants (e.g. hazardous air pollutants and criteria air pollutants) and NESHAP control technology requirements, while the state part of the permit does not limit the regulation of emissions to a specific list of pollutants. Rather, the State prohibits emissions of odorous, toxic, or deleterious substances in concentrations, or of such duration, that will affect human health and well-being; unreasonably interfere with the enjoyment of property; or unreasonably and adversely affect plant and animal life. As a result, all priority urban hazardous air pollutants (HAPs) are technically covered by New York regulations.

With respect to control technology requirements, New York has adopted an environmental rating system for new and existing sources. In addition, New York has developed state control technology emission standards for the specific source categories listed in Table 2.

Table 1 of Section 212.9 is reproduced below with some of the key wording underlined:

Section 212.9 Table 1
Environmental Rating Criteria

Rating

A An air contaminant whose discharge results or may result in serious adverse effects on receptors or the environment. These effects may be of a health, economic or aesthetic nature or any combination of these.

B An air contaminant whose discharge results or may result in only moderate and essentially localized effects or where the multiplicity of sources of the contaminant in any given area would require an overall reduction of the atmospheric burden of that contaminant.

C An air contaminant whose discharge may result in localized adverse effects of an aesthetic or nuisance nature.

D An air contaminant whose discharge will not result in measurable or observable effects on receptors, nor add to an existing or predictable atmospheric burden of that contaminant which may cause adverse effects, considering properties and concentrations of the emissions, isolated conditions, stack height and other factors.

The following items will be considered in making a determination of the environmental rating to be applied to an air contaminant:

a) Toxic and other properties and the emission rate potential of the air contaminant;

b) Location of the source with the respect to residences or other sensitive environmental receptors, including a consideration of the area's anticipated growth;

c) Emission dispersion characteristics at or near the source, taking into the physical location of the source relative to surrounding buildings and terrain;

d) The projected maximum cumulative impact of taking into account emissions from all sources in the facility under review and the pre-existing ambient concentration of the air contaminant under review.

In general, emission reduction requirements decrease as environmental rating decreases but increase as emission rate potential increases. For example, an assignment of an A environmental rating would require that a source with an emission rate potential above one pound per hour to reduce emissions by at least 99% or install Best Available Control Technology (BACT). An assignment a B environmental rating would require a source with an emission rate potential between 10 to 20 pounds per hour to reduce emissions by at least 90%, 20 to 100 pounds per hour by 91% and the reduction requirements continue to become more stringent as the emission rate potential increases.

In addition to the control technology requirements discussed above, New York requires that an inhalation risk screening assessment be conducted to evaluate the ambient impacts of a facility's toxic air emissions and to determine the acceptability of the specified control measures. New York's program requirements are based on the toxicity classification of the pollutant(s) emitted -- high, moderate, or low. The high toxicity category includes human carcinogens (confirmed and potential) and other substances posing a significant risk to humans because of irreversible or progressive effects or acute toxicities. The moderate toxicity category includes animal carcinogens, mutagens, teratogens, and other substances posing a significant risk to humans. The low toxicity category includes primarily irritants with no confirmed carcinogenicity in animals. Initial environmental ratings of A, B, and C are assigned to high, moderate, and low toxicity pollutants, respectively. These ratings can be modified using the a) - d) criteria outlined above.

If adequate data exist, the DEC also assigns to each air contamainant an Annual Guideline Concentration (AGC) and/or a Short-term Guideline Concentration (SGC). These are used to evaluate potential long-term and short-term effects, respectively, on public health and the environment. The AGCs for human carcinogens are based on an ambient air concentration which corresponds to an increased lifetime cancer risk of one in one million (1×10^{-6}).

Over 1,300 AGCs and SGCs are currently contained in the Air Guide-1 Software Program. The guideline concentrations are derived on a chemical-specific basis using qualitative and quantitative toxicological data. The following hierarchy of data sources is utilized in developing guideline concentrations: toxicological assessments conducted by the DEC or New York State Department of Health (NYSDOH); data from EPA's Integrated Risk Information System (IRIS), data from EPA Health Assessment Documents; data from the National Toxicology Program; data from the American Conference of Governmental Industrial Hygienists-Threshold Limit Values and the National Institute of Occupational Safety and Health-Recommended Exposure Limits (whichever is more restrictive).

The ambient impact analysis consists of a screening analysis followed by, if necessary, a refined analysis. For the screening analysis, the DEC requires the use of an air dispersion model (Air Guide 1 Software Program) to determine the maximum annual and short-term (1-hr) ambient air concentrations for (1) building cavities and (2) areas beyond the cavity region for all sources of each air contaminant, including other significant industrial sources and background concentrations. For the screening air dispersion model, the facility may use the standard point source method, an area source model (which predicts maximum impacts for ground-level area sources), or an alternate source model (which predicts maximum impacts within an area source and may be used to model urban-scale emissions). If the predicted worst-case annual or short-term maximum ambient concentrations are below the AGCs and SGCs, the facility's emissions and associated control measures are acceptable. If the guidelines are not met, a refined, site-specific analysis is required. The DEC requires that the site-specific analysis be conducted using EPA-recommended models such as Industrial Source Complex-Short Term and - Long Term or similar models which account for specific source-receptor configurations.

In addition to criteria pollutant ambient air quality standards (discussed below), New York has established specific ambient air standards for non-methane hydrocarbons (NMHCs), fluorides, beryllium, and hydrogen sulfide. Beryllium is a priority urban HAP and the category of fluorides includes hydrogen fluoride, also a priority urban HAP.

Implementation Mechanism
The State incorporates existing sources into its control program through the operating permit renewal process. New sources are incorporated through construction permits and operating certificates.

Criteria Pollutant Regulations
New York implements the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

Treatment of Mobile Sources
New York has adopted emission standards for motor vehicles and motor vehicle engines which apply to all 1993 and subsequent model-year passenger cars (PCS) and light-duty trucks (LDTs). Beginning with the 1993 model year, only PC and LDT models which have been certified as meeting the State of California standards for exhaust emissions are allowed to be sold in New York. However, New York has adopted in-use compliance standards which are slightly more lenient than the California new vehicle standards. For example, a 1993 model year PC certifying to the 0.25 g/mile NMHC standard must limit emissions to 0.32 g/mile for the first 50,000 miles of use. In-use compliance standards are waived beyond 50,000 miles for 1993 and 1994 vehicles. This mileage limit rises to 75,000 miles for 1995 and 1996 vehicles. In addition to NMHCs, exhaust emission limits have been established for carbon monoxide (CO) and oxides of nitrogen (NO_x).

Following the California model, New York has also established exhaust emission standards for new 1995 and subsequent model year light-duty transitional low-emission vehicles, low-emission vehicles (LEV), and ultra-low-emission vehicles. These standards limit emissions of CO, NO_X, non-methane organic carbon (NMOC), and formaldehyde.

New York has established fleet-average non-methane organic gas (NMOG) emission limits for large-volume vehicle manufacturers selling PCS and LDTs in the State. The limits are to be met during the first 50,000 miles of vehicle use; these limits become more stringent for each successive model year. For example, fleet-average emissions from PCS are limited to 0.23 g NMOG/mile for model year 1995 and decline to 0.062 g NMOG/mile for model year 2003 and beyond. More lenient fleet-average emission standards are specified for small- and intermediate-volume vehicle manufacturers.

New York has also mandated that each vehicle manufacturer's sales fleet of PCS and LDTs contain a minimal percentage of zero-emission vehicles (ZEV). The mandated level for large-volume manufacturers begins at 2 percent in 1998 and increases to 10 percent in 2003 and beyond. Intermediate-volume manufacturers do not have to meet the ZEV percentage requirements until the

2003 model year; small-volume manufacturers are exempt from this requirement. New York will also develop regulations to require newer cleaner California LEV
standards for light and medium duty vehicles by 2004. The new program, known as LEV II, will require further reductions in emissions of hydrocarbons and nitrogen oxides, make vehicle emission control systems more durable, and regulate larger pick-up trucks and sport utility vehicles the same as passenger cars.

In addition to exhaust emission standards, New York has adopted fuel evaporation emission limits for PCS and LDTs, beginning in 1993. Only "hot soak plus diurnal" emission limits are applicable to 1993 and 1994 model-year vehicles for the first 50,000 miles of use. Beginning with the 1995 model year, "running loss" standards were added and the compliance time was increased to the useful life of the vehicle. The percentage of new vehicles certifying to running loss and useful life standards started at 10 percent in 1995 and was specified to increase to 50 percent by 1997.

The following areas in New York are also subject to the federal reformulated gasoline program:

- Bronx County
- Kings County
- Nassau County
- New York County
- Orange County
- Queens County
- Richmond County
- Rockland County
- Suffolk County
- Westchester County
- Dutchess County
- Essex County (partial)

Emissions Data

New York has an extensive air toxics emissions inventory, including over 60,000 sources and approximately 2,000 compounds identified by Chemical Abstracts Service (CAS) Registry numbers. DEC collects information from permit applications, ambient monitoring, stack monitoring, and source testing.

Table 1. List of Source Categories Regulated by New York

Architectural surface coatings
Primary aluminum reduction plants
Ferrous jobbing foundries
Byproduct coke oven batteries
Open fires
Iron and steel processes
Incineration
Portland cement plants
Synthetic organic chemical manufacturing facility component leaks
Consumer and commercial products
Express terms graphic arts
Pharmaceutical and cosmetic manufacturing processes
Dry cleaning
Gasoline dispensing sites and transport vehicles
Surface coating processes
Stationary combustion installations
Solvent metal cleaning processes
Sulfuric and nitric acid plants
Petroleum refineries
Asbestos-containing surface coating material
Petroleum and volatile organic liquid storage and transfer

OKLAHOMA'S AIR TOXICS PROGRAM

Legislative Citation: 27A Oklahoma Statute Section 2-5-114

Regulatory Citation: Oklahoma Administrative Code (OAC) Title 252: Chapter 100, Subchapter 41 (Control of Emission of Hazardous and Toxic Air Contaminants)

Program Goal: To control the routine emission of hazardous and toxic air contaminants from stationary sources, not to include accidental or catastrophic releases.

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Treatment of Area Sources and Major Sources
The Air Quality Division lists over 1500 toxic air contaminants (TAC) emitted by facilities operating in Oklahoma. The list includes the 39 potential 112(k) Hazardous Air Pollutants (HAP), lead compounds being excluded. AQD regulates sources of these TAC using the Maximum Acceptable Ambient Concentration (MAAC) at the property line and facility-specific emission limits. Of the 39 listed potential 112(k) HAP, the state has established MAAC for all but quinoline (see Table 1).

There are 3 categories of TAC based on toxicity. Category A substances are highly toxic substances based on acute toxicity from either inhalation, oral and dermal studies. All suspect and confirmed human carcinogens are category A substances also. Category B substances are moderately toxic substances shown to produce moderate toxicity from inhalation, oral, or dermal studies. They are substances shown to demonstrate or produce carcinogenic, mutagenic, or teratogenic action in a single animal species with little or no human evidence of carcinogenic, mutagenic, or teratogenic action. Category C substances are substances that have been shown to produce low toxicity or irritation from inhalation, oral, or dermal studies. MAAC is developed by dividing the most restrictive 8-hour TWA concentration (selected from either NIOSH REL, ACGIH TLV, or AIHA WEEL) with 100 for category A, 50 for category B and 10 for category C. MAAC is expressed in ug/m3 or ppm.

Since 1987, all sources of TAC have been subject to regulation by the State. New and modified sources are incorporated in the air toxics program through the permitting process. A new source emitting category A pollutants is required at a minimum install BACT. Any source unable to demonstrate compliance with MAAC can submit a risk assessment showing that the ground level

concentration of TAC will not create a hazardous condition for the nearby community. The air toxic rule does not apply to: 1) any criteria pollutant for which Oklahoma Air Quality primary and secondary standards exist, or 2) application of pesticides and fertilizers, or 3) any source operation subject to a NESHAP standard, or 4) any substance which would be considered to be a TAC by virtue of its radioactivity, or 5) sources with de minimus emissions for category A substance of 0.6 TPY, not to exceed 0.57 lb/hr; for category B substance of 1.2 TPY, not to exceed 1.1 lb/hr; and for category C substances, 6 TPY, not to exceed 5.6 lb/hr. The rule is applicable to exempted facilities, which can be shown to violate the MAAC.

Treatment of Mobile Sources

The State of Oklahoma has an Anti-tampering Program designed to help reduce ozone precursor emissions in the Oklahoma City and Tulsa. There are no regulations or policies specifically related to reducing toxic air contaminants from mobile sources.

Emissions Data

All sources are required to register and submit an annual emissions inventory of toxic air contaminants, otherwise known as the Turn-Around Document. This document generally consist of a) physical information like process unit size, stack diameter, stack flow rates, b) process information like tons used, tons produced, c) control equipment and efficiencies, and d) emission rates based on best information available from actual tests, material balances, emission factors, or engineering estimates. These inventories are due no later than 3 months from the date of request.

Monitoring Data

Oklahoma does not have any air toxics monitoring program in place at this time.

Emissions Trading

Oklahoma does not have any emissions trading program in place.

Pollution Prevention

Oklahoma passed the Pollution Prevention Act on 1996. This program has a goal of reducing waste through source reduction and sound environmental management. One of its programs is the voluntary toxics use reduction program but it has an unknown potential for reducing emissions of the 112(k) HAP.

Table 1
112(k) Chemicals that Oklahoma Regulates

HAP	Category	Maximum Acceptable Ambient Concentration (ug/m3)
1,1,2,2-Tetrachlroethane	A	68

HAP	Category	Maximum Acceptable Ambient Concentration (ug/m3)
1,1,2-Trichloroethane	A	545
1,2-Dichloropropane (Propylene dichloride)	B	6931
1,3-Butadiene	A	44
1,4-Dichlorobenzene	B	9000
Acetaldehyde	B	3600
Acrolein	A	2
Acrylamide	A	0.3
Acrylonitrile	A	21
Arsenic compounds	A	0.02
Benzene	A	32
Beryllium compounds	A	0.02
Cadmium compounds	A	0.5
Carbon tetrachloride	A	125
Chloroform	A	97
Chromium compounds	A	varies
Coke oven emissions	A	1
Dioxins/furans	A	2E-06
Ethyl acrylate	A	200
Ethylene dibromide (Dibromomethane)	A	3
Ethylene oxide	A	1
Ethylene dichloride (1,2-Dichloroethane)	A	20
Formaldehyde	A	12

HAP	Category	Maximum Acceptable Ambient Concentration (ug/m3)
Hexachlorobenzene	A	Not established
Hydrazine	A	0.393
Lead compounds	Not subject	
Manganese compounds	Varies A-C	Varies
Mercury compounds	A	0.5
Methylene chloride (Dichloromethane)	A	1736
Methylene diphenyl diisocyanate (MDI)	A	0.51
Nickel compounds	A	0.15
Polychlorinated biphenyls	A	0.01
Polycyclic organic matter	A	1
Quinoline	B	Not established
Styrene	B	4260
Tetrachloroethylene (Perchloroethylene)	A	3350
Trichloroethylene	A	1343
Vinyl chloride	A	127
Vinylidene chloride (1,1-Dichloroethylene)	A	198

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

What are toxic air pollutants and where do they come from?
Toxic or hazardous air pollutants are substances in the air that can harm the environment and your health. Many types of human activities produce toxic air emissions in varying amounts. Manufacturing, energy production, burning waste materials or wood, painting, cleaning activities and driving vehicles all produce toxic air pollutants. Natural sources can also produce toxic air emissions. For example, radon gas comes up from the ground.

Breathing toxic air pollutants can increase your chances of experiencing health problems ranging from throat irritation to cancer, emphysema or reproductive disorders. For instance, inhaling benzene fumes given off when gas is pumped into your car can increase your chances of getting leukemia. The danger to human health from a toxic air pollutant depends on the amount and length of exposure.

There are three ways toxic air pollutants get released into the air. Cars, factories, gas stations and other sources may give off toxic air pollutants **continuously** over time. When a plant's production is done in batches, toxic chemicals may be released **intermittently.** An explosion, equipment failure or transportation accident can produce very dangerous air toxics **unexpectedly** and must be properly contained.

Federal Laws Controlling Toxic Air Pollutants
The Clean Air Act Amendments of 1990 require the U.S. Environmental Protection Agency (EPA) to regulate emission of 188 hazardous air pollutants, including benzene, dioxin, chromium, perchloroethylene and toluene.

EPA has identified sources of these toxic air pollutants and has classified them into about 170 categories. To significantly reduce emissions, EPA is developing national technology-based performance standards and regulations for each category.

EPA is developing a standard for each hazardous air pollutant category. EPA is working out the details of what kinds of controls qualify as "maximum control" for each category of air toxic sources such as dry cleaners, gasoline distributing facilities and chemical manufacturing. EPA has adopted regulations for over 25 percent of the identified source categories. EPA expects standards for all types of sources to be completed by the year 2000.

Under the federal Title V Air Operating Permit Program, a facility with the potential to emit 10 tons of any toxic air pollutant, or 25 tons per year of any combination of toxic air pollutants, is defined as a major source of hazardous air pollutants. Title V permits include requirements for these facilities to limit toxic air pollutant emissions.

EPA regulations require certain industrial facilities and businesses to have and use a plan to prevent accidental toxic air pollutant releases, and to minimize their impacts on the surrounding community in a worst case accident scenario.

How does DEQ control toxic air pollution?

The Department of Environmental Quality (DEQ) implements the Clean Air Act in Oregon. DEQ adopts as state rules the federal standards for toxic air pollutant sources. DEQ will also adopt federal accidental release regulations.

Through an air permitting program, DEQ issues permits to approximately 1,400 industrial and commercial businesses in Oregon that produce air pollution. The permits ensure that businesses comply with air quality standards or are on schedule for compliance by a specific date. Regional DEQ office staff help businesses achieve compliance, or even go beyond requirements. DEQ staff regularly inspect these businesses for compliance with permit conditions and recommend enforcement actions when permit violations occur.

Oregon now has a state Title V Air Operation Permit Program for major industrial air pollution sources. DEQ incorporates the industry specific technology-based standards into Title V permits.
DEQ regulates hazardous air pollutant emission from smaller facilities through requirements in Air Contaminant Discharge Permits.

DEQ implements other state rules that reduce toxic air pollutants including benzene from cars and trucks. The Vehicle Inspection Program in Portland and Medford reduces vehicle emissions that contain toxic air pollutants by making sure air pollution control systems in vehicles are working properly.

DEQ requires manufacturers to restrict the amount of volatile organic compounds (VOCs) in paints and household products sold in the Portland region. Some of these VOCs are hazardous air pollutants.

Getting Involved

DEQ is committed to informing and involving people in air quality decisions and issues that affect them. DEQ uses advisory committees composed of citizens and technical experts to develop rules about toxic air pollutants and other issues. People have an opportunity to comment on new permits and modifications to existing permits during publicized comment periods and public hearings.

PUGET SOUND CLEAN AIR AGENCY

The Puget Sound Clean Air Agency was established by state law in 1967 (RCW Chap. 70.94) to enforce federal, state and local air pollution laws and regulations in King, Kitsap, Pierce and Snohomish counties in Washington State. Our jurisdiction spans 6,300 square miles and is home to about 3 million people, more than half the state's population. Our policies and programs are designed to meet and maintain air quality standards, protect human health, prevent injury to plant and animal life and protect Puget Sound's panoramic views. Our air toxics regulations were adopted in 1990 to reduce air pollution and protect public health. This document summarizes key elements of our air toxics program.

Legislative Authority: 70.94 Revised Code of Washington

Regulatory Citation: Puget Sound Clean Air Agency Regulations I, II and III and 173-460 Washington Administrative Code

Program Goal: To control the emission of toxic air contaminants and to provide for uniform enforcement of air pollution control in its jurisdiction and to carry out the mandates and purposes of the Washington Clean Air Act, the Federal Clean Air Act, and the National Emission Standards for Hazardous Air Pollutants.

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Treatment of Major and Area Sources

In a continuing effort to reduce air pollution and protect public health, the Puget Sound Clean Air Agency developed an air toxics regulation. Regulation III, adopted August 9, 1990, regulates air toxic emissions from both new and existing sources.

New or modified air contaminant sources cannot obtain approval to construct until Best Available Control Technology (BACT) is applied and a toxic impact analysis indicates the source will not cause air pollution. BACT is determined on a case-by-case basis during Puget Sound Clean Air Agency's Notice of Construction review process. The toxic impact analysis compares modeled ambient concentrations of toxic air contaminants (TACs) to Acceptable Source Impact Levels (ASILs).

ASILs used in the toxic impact analyses are based on those developed by the Washington Department of Ecology in their regulation to control toxic air contaminants from new sources. ASILs for carcinogens correspond to a risk of one in one million; ASILs for noncarcinogens are based on the

American Conference of Governmental Industrial Hygienists Threshold Limit Values divided by a safety factor of 300.

Existing sources are also evaluated by comparing modeled ambient concentrations of TACs to ASILs. Sources are prioritized for evaluation according to the quantity and toxicity of emissions. If ASILs are exceeded, BACT must be employed. In cases where there are several facilities in the same source category, a rule will be developed which specifies control requirements for that industry. This provides economic equity to all affected sources by requiring all facilities to comply with the requirements of the rule on the same schedule. Specific regulations were adopted to control toxic emissions from chromic acid plating and anodizing facilities, vapor degreasers, ethylene oxide sterilizers and aerators and perchloroethylene dry cleaners.

The Puget Sound Clean Air Agency incorporates by reference the National Emission Standards for Hazardous Air Pollutants and updates the incorporation by reference annually.

Treatment of Mobile Sources

The Washington State Department of Ecology retains authority to regulate mobile sources. The Puget Sound Clean Air Agency supports their efforts.

Emission Inventory

The Puget Sound Clean Air Agency collects toxics emission inventory data from industrial facilities on an annual basis (reporting threshold of 2 tons/year of any single toxic air contaminant and 6 tons/year of any combination of toxic air contaminants). The Agency performs a complete toxic air contaminant of area sources and mobile sources every three years.

Pollution Prevention

The Puget Sound Clean Air Agency incorporates pollution prevention strategies into our new source review permitting and regulation of existing source.

SOUTH CAROLINA'S AIR TOXICS PROGRAM

South Carolina currently collects toxic emissions inventories from major sources on a biennial basis. The State recently began generating toxic emissions estimates for area and mobile sources. There is no state law requiring industries to submit toxic emissions data. However, South Carolina strongly encourages its industry to supply this data and most provide it voluntarily.

South Carolina does very limited toxics ambient monitoring, mostly for special studies. The State is currently seeking EPA grant funds to conduct a wide range of toxics monitoring in rural and small urban areas.

In 1991, South Carolina began implementing its state air toxics regulation (61-62.5, Standard No. 8, *Toxic Air Pollutants*). This standard requires all existing and newly constructed sources of air toxics (257 pollutants regulated) to conduct air dispersion modeling to demonstrate compliance with established 24-hour fenceline maximum allowable concentrations.

South Carolina currently implements all Federal toxic emissions standards (i.e., MACT). No technology-based state standards for toxic emissions have been established.

Appendix C: Special Monitoring Studies to Assess Exposure and Risk from Air Toxics

California

MATES-I and MATES-II

From 1986 to 1987, the South Coast Air Quality Management District conducted a Multiple Air Toxics Exposure Study (MATES-I) to determine the South Coast Air Basin (Basin) wide risks associated with major airborne carcinogens. (For more information, see http://www.aqmd.gov/news1/studies.htm) Integration of measured ambient concentrations, population distribution, and health risk data for individual chemical species constituted a method of estimating regional inhalation exposure, risk, and number of potential excess cancer cases.

The Multiple Air Toxics Exposure Study (MATES-II), more comprehensive than the MATES-I, is a landmark urban toxics monitoring and evaluation study conducted for the Basin. The study represents one of the most comprehensive air toxics programs ever conducted in an urban environment, consisting of a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize Basin risk.

MATES II showed that the contribution to risk is dominated by mobile sources (e.g,. cars, trucks, trains, ships, aircraft, etc.). About 70 percent of all risks is attributed to diesel particulate emissions; about 20 percent to other toxics associated with mobile sources (including benzene, 1,3-butadiene, and formaldehyde); about 10 percent of all risk is attributed to stationary sources (which include industries and other certain businesses such as dry cleaners and print shops).

As a result of numerous California state and district regulations, MATES-II showed that concentrations of 1,3-butadiene, benzene, carbon tetrachloride, methylene chloride, perchloroethylene, trichloroethylene, hexavalent chromium, lead, and nickel have been reduced significantly in the Basin. These reductions in toxics exposure have resulted in 44 to 63 percent reductions in carcinogenic risk to residents of the Basin since 1990.

Barrio Logan Air Quality Study

The California Air Resources Board, in coordination with the San Diego County Air Pollution Control District and other local community groups, has initiated a multi-phase study of the air quality in the Barrio Logan and Logan Heights neighborhoods of San Diego. The study will include air quality monitoring and computer modeling of air pollutant emissions. The purpose of the study is to better understand air pollution in the community and its origin, including motor vehicles and local businesses.

U.S. EPA

Baltimore Case Study: Risk-Based Air Screening

The Baltimore Case Study is summarized in a report issued in April 2000 that describes the work and the results of a risk-based air screening project in Baltimore, Maryland. The report was prepared by technical support staff of the EPA's Office of Pollution Prevention and Toxics and Versar, Inc., for the Air Committee of the Community Environmental Partnership, located in southern Baltimore City and northern Anne Arundel County, Maryland. The project involved a six-step risk-based air screening process applied to 125 sources and 175 chemicals, identification of chemicals of concern and a discussion of accomplishments and limitations. For more information, see the final report, "Baltimore Community Environmental Partnership Air Committee Technical Report, Community Risk-Based Air Screening: A Case Study in Baltimore, MD" (EPA 744-R-00-005).

New York/New Jersey/USEPA Region 2

Staten Island/New Jersey Urban Air Toxics Assessment Report

From October 1987 through September 1989, a cooperative undertaking by the U.S. Environmental Protection Agency Region II, the States of New York and New Jersey, the College of Staten Island, and the University of Medicine and Dentistry of New Jersey took place to determine the Staten Island/ Northern New Jersey area wide risk associated with selected air toxics. Quantitation of 40 pollutants (22 volatile organic compounds, 16 metals, benzo(a)pyrene and formaldehyde) were made. These data were used to characterize the distribution of air toxics spatially and temporally over the area and to perform risk assessments for the ambient air pathway. The 1993 study report is titled the "Staten Island/New Jersey Urban Air Toxics Assessment Project Report" (EPA/902/R-93-001).

New York

Ambient Air Monitoring and Analysis Plan for Fresh Kills Air Quality Characterization Study

The New York State Department of Environmental Conservation (NYSDEC) has initiated a study to collect, report and analyze quality scientific data on the air quality in and around the Fresh Kills landfill to fulfill the goal of better characterization of the potential effects of the landfill on the surrounding community. The data from this study will continue to expand the air quality database in the Staten Island area, with an emphasis on supplementing the data collected by DEC in and around the landfill from 1994 -1998. The primary goal of the study is to attempt to discern the contribution of the Fresh Kills Landfill to the observed pollutant levels at the monitor sites in and around the landfill and how these levels compare to state ambient standards and guideline values. The project title is "Ambient Air

Monitoring and Analysis Plan for Fresh Kills Air Quality Characterization Study" (Division of Air Resources. Albany, New York. 2000)

OHIO

Tri-State Geographic Initiative

Ohio participates in the Tri-State Geographic Initiative, which is a cooperative effort between EPA Regions 3, 4, and 5; the Ohio, Kentucky, and West Virginia State environmental agencies; and local industry, citizens, and environmental groups. Program goals are to collect air toxics information and complete a baseline risk assessment for the six-county area where the three States intersect. Data will be collected from six major industrial areas or "clusters." Of these, the Greenup, Ironton, and Portsmouth clusters are located in Ohio. Monitoring will be initiated at one additional site each year, assuming funds are available.

Appendix D: Summary of EPA Air Toxics Program Activities Related to Step 1, Assessment

NATA

Description

The EPA's major effort to characterize risk and monitor progress associated with hazardous air pollutant (HAP) emission reduction has been through the undertakings of the national air toxics assessment (NATA). The NATA consists of four building blocks:

- Emission inventories
- Air dispersion modeling
- Inhalation exposure modeling
- Risk assessment/characterization.

The EPA is in the process of developing the 1996 national scale assessment to characterize air toxics risks nationwide (so-called because it is based on the 1996 national toxics inventory). In 2000, summaries of emissions and ambient estimates will be provided on the EPA website along with model-to-monitor comparisons. Final exposure and risk estimates are also expected from this effort. As the national toxics inventory (NTI) is updated every three years, the NATA will also be updated every three years. The data for the NTI and NATA update for 1999 will be completed and made available in 2002.

The national scale assessment includes four major steps that will be completed in 2001:

- Compiling the NTI for 1996 for air toxics emissions of the 188 HAPs listed in the Clean Air Act (CAA) from major stationary sources, area sources, and mobile sources
- Estimating 1996 air toxics ambient concentrations for the 33 urban HAPs, using a national scale air dispersion model and the 1996 NTI as input to the model. The ambient concentrations will be compared to available ambient air toxics monitoring data to evaluate model performance
- Estimating 1996 population exposures for the 33 urban HAPs, using estimated ambient concentrations as input to a national scale inhalation exposure model
- Characterizing potential public health risks due to inhalation of air toxics, including both cancer and noncancer effects, using available information on air toxics health effects, current EPA risk assessment and risk characterization guidelines, and estimated population exposure

Other NATA activities planned for 2000 include:

- Developing and implementing a plan to characterize the concentrations of ambient air toxics through an expanded monitoring network based on model-to-monitor data (The EPA plans to establish new or expanded monitoring stations in 36 areas in 2000)
- Evaluating air toxics on a more local scale using more refined modeling tools that factor in local information, such as terrain and local weather patterns
- Comparing air toxics inventories from 1990 and 1996 on a toxicity-weighted basis to help determine progress toward meeting the risk reduction goals
- Recommending tools to State, local, and Tribal (S/L/T) regulatory agencies for evaluating air toxics concentrations, exposures, and risks. This will include a comparison of the results of national scale models to those from more local scale models

Relationship to Step 1: Data Gathering to Characterize Risk

Overall, the infrastructure built and data gathered will serve as the initial basis for the activities to be carried out under this step. The S/L/T agencies will need to supplement the information and infrastructure produced by NATA to further understand and characterize the risks in their local areas. For example, the 1996 assessment is intended to provide S/L/T agencies information on where air toxics problems may that exist that warrant further analysis.

Proposed Consolidated Emissions Reporting Rule

Description

The purpose of this consolidated reporting rule proposed May 23, 2000 will be to simplify emissions reporting, offer options for data collection and exchange, and unify reporting dates for various categories of inventories. Previous emissions reporting requirements have, at times, forced reporting agencies into inefficient collecting and reporting activities. This consolidated rule will provide options for collecting and reporting that allows an agency to match its normal activities with Federal reporting requirements. This action summarizes several emission inventory requirements (Statewide, Emission Statements, and 3-year Cycle Periodic Emission Inventory programs) and lists the applicable source size reporting thresholds. This action consolidates the numerous emission inventory reporting requirements found in various parts of the CAA.

Relationship to Step 1: Assessment

In the proposed rule, EPA is asking for comment on the advisability of requiring reporting of hazardous air pollutant emissions. In the proposal, EPA describes provisions in the CAA which support requiring HAP emissions reporting. This issue clearly relates to Step 1 and one of its major activities: emissions inventory development.

AIRS

Description

The AIRS (Aerometric Information Retrieval System) is a computer-based repository of information about airborne pollution in the United States and various World Health Organization member countries. The system is administered by EPA, and any organization or individual with access to the EPA computer system may use AIRS to retrieve air pollution data. The CAA requires every State to establish a network of air monitoring stations for criteria pollutants, using criteria set by EPA for their location and operation. The AIRS is used to monitor States' progress in meeting ambient air quality standards by measuring concentrations of criteria pollutants. The States must provide EPA with an annual summary of monitoring results at each monitor, and detailed results must be available to EPA upon request. However, to obtain more timely and detailed information about air quality in strategic locations across the nation, an additional network of monitors was established. These monitors must meet more stringent monitor siting, equipment type, and quality assurance criteria and must also submit detailed quarterly and annual monitoring results to EPA.

Relationship to Step 1: Assessment

The AIRS is a Federal activity that supports data gathering for assessments.

AP-42

Description

The AP-42 is a Compilation of Air Pollutant Emission Factors divided into two volumes. Volume I contains information on over 200 stationary source categories. This information includes brief descriptions of processes used, potential sources of air emissions from the processes and in many cases common methods used to control these air emissions. Methodologies for estimating the quantity of air pollutant emissions are presented in the form of Emission Factors. Volume II contains information on emission factors from mobile sources.

Relationship to Step 1: Assessment

The AP-42 is a Federal activity that supports data gathering for assessments.

TRI

Description

In 1986, Congress passed the Emergency Planning & Community Right-to-Know Act (EPCRA) making previously voluntary reporting programs mandatory. Under EPCRA's Section 313, specific manufacturing facilities must annually report on their toxic releases into the air, land and water. This information is collected into an annual report, the Toxics Release Inventory (TRI). It is available so EPA, other levels of government, and the public can analyze industries' progress toward reducing its pollution. It also allows individuals to monitor pollution coming from facilities located near residential communities.

Relationship to Step 1: Assessment

The TRI is a Federal activity that supports data gathering for assessments.

IRIS

Description

The Integrated Risk Information System (IRIS), prepared and maintained by EPA, is an electronic data base containing information on human health effects that may result from exposure to various chemicals in the environment. The IRIS was initially developed for EPA staff in response to a growing demand for consistent information on chemical substances for use in risk assessments, decision-making and regulatory activities. The heart of the data base consists of chemical files that contain descriptive and quantitative information on oral reference doses and inhalation reference concentrations (RfDs and RfCs, respectively) for chronic noncarcinogenic health effects, and also for hazard identification, oral slope factors, and oral and inhalation unit risks for carcinogenic effects.

Relationship to Step 1: Assessment

The IRIS is a Federal activity that supports data gathering for assessments.

Risk Assessment Guidelines

Description

The EPA has proposed or finalized several guidance documents for performing risk assessments, including the following:

- Reproductive Toxicity Risk Assessment Guidelines
- Guidelines for Carcinogen Risk Assessment
- Guidelines for Ecological Risk Assessment
- Guidelines For Neurotoxicity Risk Assessment.

These Guidelines set forth principles and procedures to guide EPA scientists in the conduct of risk assessments and to inform Agency decision makers and the public about these procedures. Policies in these documents are intended as internal guidance for EPA, with risk assessors and risk managers at EPA as the primary audience, although these guidelines may also be useful to others who wish to perform or review risk assessments.

Relationship to Step 1: Assessment

The issuance of risk assessment guidelines is a Federal activity that supports data gathering for assessments.

Residual Risk Determinations

Description

Under the CAA, EPA is required to develop and implement a program for assessing risks remaining to public health and the environment after facilities have implemented maximum achievable control technology (MACT) standards. If necessary, EPA must issue regulations to reduce identified residual risks within eight years of MACT promulgation. These analyses are conducted on a source category basis, and the approach for conducting these analyses was released in a report on March 3, 1999. To date, 13 analyses have been initiated. The first of these are due in 2001, with 18 required by the end of 2003.

The source categories included in these 18 are Coke Ovens, Dry Cleaning, Gasoline Distribution, Halogenated Solvent Cleaning, Industrial Cooling Towers, Magnetic Tape, Commercial EO Sterilizers, Aerospace, Chrome Electroplating, Petroleum Refineries, Polymers and Resins I, II, IV, Secondary Lead Smelters, Shipbuilding, Wood Furniture, Marine Vessel Loading, Offsite-Waste, Printing/Publishing, and the Hazardous Organic National Emission Standards for Hazardous Air Pollutants.

Relationship to Step 1: Assessment

Under the CAA, the national air toxics program is structured in two phases: the technology-based phase and the risk-based phase. The risk-based phase encompasses several CAA air toxics program, including the urban air toxics strategy and the residual risk program The EPA has asked for this workgroup to consider how to structure the S/L/T program across both of these programs.

For the residual risk program, EPA is responsible for performing the assessments. However, this workgroup may want to consider whether, in some instances, States may want the flexibility to perform these assessments using national guidelines and procedures. If the workgroup is interested in

this option, EPA would need to further consider whether such an approach is permitted under the CAA.

Resource Conservation and Recovery Act/Comprehensive Environmental Response, Construction, and Liability Act (RCRA/CERCLA) Data

Description

The Agency for Toxic Substances and Disease Registry's (ATSDR) Hazardous Substance Release/Health Effects Database (HazDat), is the scientific and administrative database developed to provide access to information on the release of hazardous substances from Superfund sites or from emergency events and on the effects of hazardous substances on the health of human populations. The following information is included in HazDat:

- Site characteristics
- Activities and site events
- Contaminants found
- Contaminant media and maximum concentration levels
- Impact on population
- Community health concerns
- ATSDR public health threat categorization
- ATSDR recommendations
- Environmental fate of hazardous substances
- Exposure routes
- Physical hazards at the site/event.

In addition, HazDat contains substance-specific information such as the ATSDR Priority List of Hazardous Substances, health effects by route and duration of exposure, metabolites, interactions of substances, susceptible populations, and biomarkers of exposure and effects. The ATSDR also has created a list of minimal risk levels (MRL's) for the priority chemicals found at the sites listed on the CERCLA national priority list of Superfund sites. The MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse noncancer health effects specified duration of exposure.

Relationship to Step 1: Assessment

The RCRA/CERCLA data is a Federal activity that supports data gathering for assessments.

TSCA Data

Description

Under the Toxic Substances Control Act (TSCA), EPA has broad authority to issue regulations designed to gather health/safety and exposure information on, require testing of, and control

exposure to chemical substances and mixtures. The EPA's Office of Pollution Prevention and Toxics (OPPT), which is charged with implementing TSCA, maintains several databases and links to study reports containing information on toxic chemicals. Following is a list of some of this information:

8(e) Triage Chemical Studies Database: Searchable database of scientific studies on the health and environmental effects of toxic chemicals related to Section 8(e) of TSCA..

Chemical Registry System (CRS): http://www.epa.gov/crs Replaces SIS/L (Screening Information System/LAN), which was developed by OPPT scientists to allow them to search for and look up chemical information on Production & Use; Release, Exposure & Monitoring; Toxicity & Hazard; and Risk. The CRS is envisioned to be the way EPA's data customers (including the Federal government, States, municipalities, scientists, industry, public interest groups and concerned citizens) search for and ultimately get to all EPA chemical information, documents and regulations. It is searchable by chemical identity: chemical abstract system number and chemical name. Synonyms are displayed along with their source and context (i.e., database and record or document number). Search results are ultimately displayed in a matrix format that shows both which lists a chemical is on and which lists it isn't on.

Chemicals on Reporting Rules (CORR): Consists of two dBASE (.DBF) files which can be linked together to provide Federal Register information about regulated chemicals under certain sections of TSCA.

TSCA Interagency Testing Committee (ITC): This site provides public access to the TSCA ITC's tracking system, including the ITC Priority Testing List, Tracking Database, and Supporting Documentation and Dossiers.

TSCA Inventory: A searchable CD-Rom version of the TSCA Inventory, including Superfund Amendments and Reauthorization Act (SARA) Title III data, is available through the National Technical Information Service (NTIS) at http://www.ntis.gov/index.html, and by calling NTIS at (703)487-4650 or 1-800-553-NTIS. An extract of the Inventory is also available from the Cornell University web site at http://www.msds.pdc.cornell.edu/issearch/tscasrch.htm .

Toxic Substances Control Act Test Submissions (TSCATS): An index to unpublished, nonconfidential studies submitted by United States industries to EPA under TSCA.

Additional information on the impact of confidential business information on the utility of information submitted under TSCA for state environmental quality programs is included as an attachment to this appendix.

Relationship to Step 1: Assessment

The TSCA data is a Federal activity that supports data gathering for assessments.

ATTACHMENT TO APPENDIX D:

Utility of Information Submitted under TSCA for State Environmental Quality Programs

This attachment contains electronically scanned material.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 24 1996

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Note to FOSTTA Participants

In the Fall of 1995, EPA retained as contractors the Georgia Department of Natural Resources, the New York State Department of Environmental Conservation, the Illinois Environmental Protection Agency and the Wisconsin Department of Natural Resources to determine the value of TSCA data, including that claimed as confidential business information (CBI), to state programs. We recently received the final reports. We have placed them in the public files, and they are enclosed in this package.

As indicated in the attached history, which was gleaned from documents in EPA*s files and dockets, the issue of state access to TSCA data, including CBI, has been around for some time. Almost from the time of TSCA*s inception, people have contemplated what the value of TSCA data might be for state environmental and public health efforts. In the recent past, the issue was again raised, primarily due to a recognition that with limited resources at both the state and federal level to address a full myriad of public health and environmental problems, it was critical that chemical management efforts be well focused to insure biggest return for resource dollar. Access to all pertinent information is fundamental to making such directional decisions. The statutory bar on state access to TSCA data claimed as CBI potentially thwarts the development of these kinds of efficiencies.

Through the State Access Project, the Agency has been able for the first time to get an idea of the value of TSCA data, including CBI, to state programs. In the past, our analysis of the issue had always been conceptual, based on what we thought might be the case: now we have actual, “real,” data on the subject.

During the next several months the Agency will be considering carefully the reports to determine appropriate next steps. To assist the Agency in its consideration, we will be seeking comment on these papers: Announcement of this will occur through the normal Federal Register notice process m the next several weeks. If this subject is of interest to you or your state, I urge you to consider submitting comments to the Agency.

Finally, I would like to thank the state officials who participated in this project from Georgia, New York, Illinois and Wisconsin. These are fine papers which substantively contribute to the resolution of this issue.

Linda A. Travers, Division Director

Chronology of Development of State Access
to TSCA Data. including. CBT Issue.[1]

I. History of Program.

The Toxic Substances Control Act does not provide that states may receive access to information claimed as confidential Yet there is a long history of interest in and consideration of the issue. At the same time, there is a recognition by all parties that any effort to facilitate state access must be tempered by the establishment of processes through which information claimed as confidential business information (CBI) is adequately protected. The older history of the state access issue includes the following:

August, 1979. The Council on Environmental Quality (CEQ) publishes the Report to the President by the Toxic Substances Strategy Committee. The report notes "Current1y federal laws do not appear to permit agencies to share confidential data with the states. Traditionally the states have major responsibility for protecting public health, and many have programs specifically designed to control toxic chemicals. Access to confidential data collected by the federal agencies could be of assistance to the states and could significantly reduce the burden on data submitters of duplicative reporting requirements. However, such disclosure may significantly increase the risk of unauthorized disclosure."

February, 1982. Administrator Anne Gorsuch in a letter to William E. Milliken, Governor of Michigan, noted that as TSCA has no provision allowing for state access to TSCA CBI, EPA will not be able to filly address that state*s request for information pertaining to the confidential inventory and premanufacture notices. The Administrator expresses support for Michigan*s efforts to "avoid imposing duplicative reporting requirements to obtain the information the State of Michigan believes it needs to carry out its environmental program7

Fall, 1983. EPA, through John Moore, Assistant Administrator of Pesticides and Toxic Substances, initiates a program to review TSCA CBI protections and policies.

March, 1984. In an industry presentation to Senate subcommittee staff addressing the issue of state access to TSCA data, including CBT. the presenter notes "we fully realize that State governments may need to know specific information about a particular toxic substance or any products manufactured under TSCA. We do not believe that the appropriate state officials should be routinely denied access to this important information provided that they have adequate safeguards to protect the confidentiality of said information"

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[1]The Chronology reflects excerpts of documents contained in OPPT's files and public dockets. OPPT has endeavored to make this a complete history, capturing the substance of comments on the issue of state access. OPPT invites persons to review the Chronology and if it is believed that it is not complete, and is missing pertinent references, please contact Scott Sherlock at (202) 260-1536.

March, 1984. Administrator*s Toxic Substance Advisory Committee (ATSAC) meets with Chemical Manufacturers Association (CMA) and asks the organization to address eleven questions. State access to TSCA data, including CBI, is one of these questions.

May, 1984. CMA in its response to ATSAC observes that states under TSCA do not have routine access to information claimed as CBI. CMA acknowledges a legitimacy to the view that states might want to have access to this information and supports disclosure to states "in principal." (CMA Response to ATSAC, May, 1984)

Summer-Fall, 1984. In the July, 1984 edition of "The Environmental Forum," Senator Dave Durenberger notes that a reauthorized TSCA should provide that "confidential data should also be shared with state regulatory agencies that have adequate security programs." Subsequently in the Fall of 1984, Senator Durenberger introduces a TSCA reauthorization bill specifically providing for state access to TSCA CBI.

Spring, 1985. Raymond W. Hussey of Lubrizol in a presentation to the National Governors* Association (NGA) notes that "TSCA may be useful to state officials by providing to them certain types of information in carrying out their own responsibilities in the health and safety field . . .we in industry concur that information which is gathered under this important federal law should be made available to state officials..." He notes three principals that must guide consideration of the issue: (1) states should have access to information where it is needed for the protection of health and the environment; (2) procedures need to be in place by states to protect information claimed as CBI; (3) states need to have in place a security scheme which does in fact protect CBI.

Summer-Fall, 1986. The Conservation Foundation sponsored group Toxic Substances Dialogue Group is established. The group includes NGA, CMA, Chemical Specialty Manufacturers Association (CSMA), Synthetic Organic Chemical Manufacturers Association (SOCMA), individual companies, states, environmental groups. "Consensus"draft legislation is agreed to and in September of 1986 is directed to both Senator Durenberger and Congressman Jim Flono. The draft legislation provided for only two changes to the statute: state access and implementation of information management systems to increase the utility of TSCA data to the Federal government, states and the general public. The cover letter notes that the intent of the "prepared changes to TSCA ...would extend the usefulness of information gathered under TSCA. Many states have agencies with health and environmental protection programs that have a need for the information reported to EPA under TSCA."

Fall, 1986. Henry Williams, Commissioner of New York State Department of Environmental Conservation, observing that the state understands "several substances regulated under TSCA are regulated as confidential substances for which information necessary to protect the environment and public welfare is unknown to this agency," requests all information on these substances. including storage sites, handling standards and emergency response plans. In the Agency response, Assistant Administrator John Moore, expresses a desire and intent to help the state in a variety of ways but notes that "to the extent any confidential information is available. Section 14(a) precludes EPA from sharing such information with the states."

II. Recent History of the Program. including State Access Project.

For reasons which are not clear, the issue of state access to TSCA data faded between 1986 and 1990. In 1990, OPPT initiated a TSCA CR1 Reform Program designed to address the issue of inappropriate TSCA CBI claims and increase the overall utility of TSCA data. State access became an important issue which was consistently raised in the context of CR1 Reform actions. Below is some of the more recent history of the issue.

1990-93. TSCA CBI Reform. Dialogue with interested public, including industry, states, environmental groups initiated.

Spring. 1992. EPA commissioned Hampshire Research Associates (HRA) study "Influence of CBI Requirements on TSCA Implementation" published. HRA observes that current language of statute bars state access to TSCA data claimed as confidential. I-IRA quotes one state official who "expressed extreme frustration" at EPA because it could not secure access to TSCA derived data claimed as CBI. I-IRA recommends legislative amendment to allow state access to CBI which might facilitate state chemical management of chemicals.
November, 1992. In its comments on the HRA Report, CMA states it "supports sharing confidential data with states providing that adequate CBI safeguards are observed." CMA provides suggestions for several mechanisms to facilitate state access to TSCA CBI but observes that ultimately "it may be necessary to amend TSCA so that CBI can be shared with state regulators who will implement adequate confidentiality safeguards."

Spring, 1993. A State of California EPA official in comments on the HRA Report notes that "Complete toxicological and health effects data on manufactured chemicals are necessary to review existing standards, and develop levels for the most commonly used and transported chemicals. If the data needed to develop these standards are not accessible to states because of antiquated CBI laws under TSCA, public health is at risk." The official urges consideration of action to change this.

Spring, 1993. EPA releases the working paper "Proposed Actions to Reform TSCA Confidential Business Information." State access to TSCA data is raised as an issue.

Fall, 1993. In response to EPA*s working paper, SOCMA "agrees that CBI information should be made available to the states, but urges EPA to ensure that state regulators handle CBI in a proper manner to safeguard against its disclosure."

Spring, 1994. Senate TSCA Reauthorization hearings. Assistant Administrator Lynn Goldman testifies in favor of legislative consideration of statutory changes supporting state access. She notes that states are "coregulators along with EPA," yet can not get access to state specific information claimed as CBI. In written Qs and As, Dr. Goldman observes that "TSCA CBI is a major obstacle to fully empowering states to effectively manage health and environmental risks." Her testimony is mirrored by other witnesses including representatives from Chemical Manufacturers Association (CMA), the State of Illinois, Environmental Action, and the Governmental Accounting Office (GAO). Robert Hagerman of Dow Chemical Company notes "I am sure the Subcommittee understands fully that our concern about

CBI is protecting it from our competitors, not from anyone in government nor the general public. As a consequence, we support dissemination of all data, including CBI, if necessary, to state governments and Tribal leaders..."

June. 1994. EPA OPPT releases the paper "Final Action Plan: TSCA Confidential Business Information Reform." In the discussion on state programs, the Agency states that "irrespective of the level of security provided. EPA may not distribute TSCA CBI to states for states own environmental protection and public health *efforts*." In responses to comments, EPA notes that the information gathered through TSCA may have significant utility to states and that it would be a waste of state resources for states to be required to gather information already in OPPT*s possession.

Fall, 1994. GAO Report "TSCA: Legislative Changes Could make the Act More Effective" published. Report reflects that the statute bars access to TSCA data claimed as confidential. GAO endorses revising TSCA to authorize "states to have access to CBI when they can demonstrate a legitimate need for the information."

Spring, 1995. At a Forum on State Tribal Toxics Action (FOSTTA) meeting, Assistant Administrator Dr. Goldman notes that one of the shortcomings of TSCA is that under the statute, EPA can not share data claimed as CBI with states. "EPA remains committed to providing states with access to all data that we receive. The Administration recognizes that with access to information - comes power." And in order for states to become fully empowered to address environmental priorities within their borders, they need full access to information on the toxic chemicals manufactured, used transported and consumed within their borders."

Spring-Summer of 1995. CMA, EPA and five state members of FOSTTA (California, Georgia. Illinois, New York and Wisconsin) design the State Access Project. Through this project, via a contract, states were to have access to TSCA data to quantify the value of TSCA information to states. Subsequently, California has to decline withdraw from participation citing resource implications but notes "we wholly support the concept of states having access to TSCA data including CBI."

Fall-Winter, 1995. State Access Project initiated with Wisconsin, Illinois, Georgia and New York. Originally a 120 day project this is extended due to delays caused by Federal government shutdown.

Spring, 1996. Preliminary findings are made available to the public. Final papers from the states are placed in the public docket on June 10, 1996.

New York State Department of Environmental Conservation
50 Wolf Road. Albany, New York 12233-3259

Michael D. Zagata
Commissioner

May 24, 1996

Mr. Scott Sherlock, Project Officer
Office of Pollution Prevention & Toxics
U.S. Environmental Protection Agency
401 M Street S.W. (7407)
Washington, DC 20460

Dear Mr. Sherlock:

I have enclosed a report prepared by the New York State Department of Environmental Conservation entitled Evaluation of Utility of Toxics Substance Control Act (TSCA) Data to State Programs which was prepared under contract with the United States Environmental Protection Agency (contract number 68W50040). The individuals who worked on this project believe that increased State access to information reported under TSCA would improve decision-making by State Environmental Quality and Health programs. We would like to thank you and your staff for all of the assistance in handling our numerous and sometimes lengthy request for information. It was a pleasure working with you on this project. If you have any questions or need any clarification about the contents of the report do not hesitate to contact me at (518) 457-3200.

Sincerely,

Thomas J. Gentile
Chief, Toxics Assessment Section
Bureau of Air Research
Division of Air Resources

cc: D. Sterman (w/attachment)
A. Fossa
T. Allen
S.T. Rao
E. Perkins
S. DeSantis
T. Johnson

New York State Department of

Environmental Conservation Report:
Evaluation of Utility of
Toxics Substance Control Act
(TSCA) Data To State Programs
(Contract #68W50040)

Project Participants

Thomas Gentile - Project Officer
Edwin Perkins - Document Control Officer
Steven De Santis
Thomas Johnson, PhD.

Evaluation of Utility of Toxics Substance Control Act
Data to State Programs

Introduction

The Toxics Substance Control Act (TSCA) provides the U.S. Environmental Protection Agency (EPA) with authority to request, gather and review chemical information in an effort to investigate potential hazards associated with chemical usage and releases to the environment. The information received and maintained by the EPA under TSCA is a critical element of the public health and environmental safety net currently in place in the United States. This information, is used by the EPA for one basic purpose, to restrict or possibly ban the introduction, manufacture, processing, use, distribution and disposal of any chemical when such activity poses an "unreasonable risk of injury to health or the environment".

In addition, TSCA enables the EPA to require testing of individual chemicals or chemical mixtures in commerce if they suspect that the chemical may pose an unreasonable risk and information is inadequate to make an informed decision. It also enables the EPA to conduct chemical surveillance under Section 8(e)"notices of substantial risk" and provides statutory power to have the chemical evaluated before humans are ever exposed through section 5 Premanufacture notices. In some instances, this chemical information is claimed as confidential business information (CBI) for trade secret protection which prevents possible uses by State environmental quality organizations.

The New York State Department of Environmental Conservation entered into a pilot project with the EPA to evaluate the impact of CBI claims on the utility of this information for State environmental quality programs. We have reviewed this information with the New York State Department of Environmental Conservation*s mission statement in mind "... to conserve, improve and protect its natural resources and environment and control water, land, and air pollution in order to enhance the health, safety and welfare of the people of the State and their overall economic and social well-being."

New York has conducted a limited review of CEI information submitted under §5 Premanufacture and Significant New Use Notifications subsection 5(d) Premanufacture Notices (PMNs) and Reporting and Recordkeeping Requirements under TSCA Sections 8(a)~ 8(d) and 8(e). Overall, access to CEI and non-CBI information submitted by facilities currently operating in New York and other states provided us an illuminating view of how the State and Federal government could work together to maximize our roles as protectors of public health and the environment. This final report will discuss some of the opportunities that might arise should States receive routine access to TSCA data including CEI.

§8(a) Inventory Update Rule Information/Preliminary Assessment Information Reports

The information reported to the USEPA under the Inventory Update Rule (IUR) would be useful for cross-checking chemical information across various state environmental quality program areas. This would include the Toxics Release Inventory, chemical bulk storage inventory, existing water and air pollution permit systems and for special cases such as the workload analysis for the 112 (r) Accidental Release Prevention Program as mandated by the 1990 Clean Air Act Amendments.

New York has reviewed the 1994 IUR information submitted under the authority of §8(a). We reviewed this information in tandem with a 112 (r) Accidental Release Prevention Program (ARPP) project which was conducted by New York last year to identify and count the number of facilities which would be required to comply with 112(r). Under 112(r) owners and operators of stationary sources who produce, process, handle, or store substances listed under §112(r)3 or any other extremely hazardous substance have a general duty to initiate specific activities to prevent and mitigate accidental releases.

When we cross-checked the information contained in the 1994 IUR with the list prepared using the existing 1994 NYS databases we found additional companies which we did not originally identify as being subject to 112(r). Some of the companies were manufacturing facilities located in New York which would be subject to the 112 (r) program. Other companies were importers with office addresses. The ability to cross-check information would be valuable for New York to conduct outreach to the affected manufacturing facilities so they could be advised of their rights and responsibilities under §112(r) of the 1990 Clean Air Act Amendments. In addition, it would help us with our workplans and human resource needs. Having the identity of the importing facilities is also useful since their storage facilities may or may not be identified in our current §112(r) affected facility database, but we could use this information to make a single phone call concerning the verification of the chemical quantity stored at specific locations in the State.

In 1986, our former Commissioner Henry G. Williams requested access to TSCA information concerning the storage of hazardous substances in New York for accidental release prevention purposes. (i.e. New York*s Chemical Bulk Storage registration and inspection program).[1] A response by the former Assistant Administrator for Pesticides and Toxics Substances, John A. Moore indicated that the EPA did not have current chemical storage data and if they did §14(a) of TSCA would prevent the sharing of this information with the State.[2] We realized this correspondence occurred before the EPA promulgated regulations for updating the inventory database every four years, however, this

[1]Williams H.G., Letter to Lee Thomas, Administrator United States Environmental Protection Agency dated August 22, 1986.

[2]Moore.J.A., Letter to Henry. G. Williams, Commissioner, New York State Department of Environmental Conservation dated September 22, 1986.

information is now largely available through the IUR and should be shared with the States for accidental release prevention program development and other State environmental program needs.

We did not conduct an extensive review and cross-check of this information with other state permit databases or the toxics release inventory, but state access to information received every four years under the IUR would have obvious and multiple benefits to our current state environmental quality programs.

We reviewed CBI submitted under the Manufacturer*s Report Preliminary Assessment Information (PAIR) forms. The information contained in Section IV of the form would be extremely beneficial to state environmental quality programs since it provides information on facility activities concerning the quantity of chemicals which are lost during the manufacturing process, consumed in products and lost to the environment. This type of information would be useful when conducting preconstruction or modification reviews of air emission points. Individuals working for state environmental quality programs would be able to know with some certainty if the chemical would be expected to be emitted or totally consumed during the manufacturing process. This type of information when used with 8(d) studies and premanufacturing information submitted under TSCA would be invaluable in prioritizing permit reviews and may lift the burden off the submitter or other manufacturers using similar processes to conduct stack or effluent testing to qualify and quantify emissions or discharges.

§8(d) Health & Safety Studies

New York has reviewed CBI information submitted under S8(d) Health and Safety studies. We reviewed studies which included medical surveillance of workers, chronic and acute animal toxicity tests, and ecotoxicity tests of individual chemicals and chemical mixtures.. The chemical mixture studies represented three distinct exposure scenarios: (1) documentation of the daily multiple chemical exposures for workers on-site, (2) chemical mixtures for products currently in commerce which would involve animal toxicity test of the actual product, and (3) ecotoxicity testing of actual wastewater discharges. Many of these studies were also interesting because they also provided information on fugitive emissions which are not routinely collected by State programs. In some cases the individual chemical identity or mixture was declared CBI.

From a state regulatory point of view the sanitized versions of these studies would be worthless without individual chemical or chemical mixture identity. CBI claims on chemical identity prevent the state regulatory authority from integrating the information from these CBI studies with TSCA non-CBI information and information available in the general medical and toxicology literature. This results in an incomplete hazard assessment of the chemical or chemical mixture during the permit review process. Subsequent risk management decisions will be made on the basis of an incomplete characterization of the associated health and environmental effects. In the face of uncertainty state regulatory agencies err on the side of caution which results in the use of conservative uncertainty factors that may or may not be

necessary. This would be especially troubling when the information declared as CBI could, possibly be used to increase or reduce possible pollution. control requirements due to a better understanding of the hazards associated with community exposures.

For example, we reviewed one submission which involved a battery of acute toxicity and ecotoxicity test for wastewater discharges. The chemical identity of the effluent was declared CBI, therefore the actual toxicity test results had no value to a State regulator who may have to issue a state permit for the discharge with little or no understanding of the ecological impact of the actual chemical mixture discharged. This information provides real-time data for decision-making and can only improve the process of informed permit decisions.

Another example would be the results of an animal toxicity study for a chemical which indicated that the endpoint of concern was kidney toxicity. The chemical identity was declared CBI. A search of the available peer-reviewed medical and toxicity literature did not find reports of this toxic endpoint. Again, this information could be used in the hazard assessment to make an informed permit decision involving air or water discharges of the chemical in question.

We also reviewed 8 (d) studies submitted under TSCA which did not conceal chemical identity which allows for the integration of this information into the hazard assessment evaluation which is conducted by some state environmental quality programs before permits are issued and before construction of new emission or discharge points. Overall, the information submitted under §8(d) was extremely informative when trying to develop a clear picture of the possible ramifications associated with chemical releases in a community in regards to sensitive subpopulations (i.e. individuals with pre-existing disease, children) which may be impacted.

§8(e) Notices of Substantial Risk

In order to effectively review the information submitted under §8(e) we requested and received a print out of all §8(e) filings which were declared CBI between 1990 and 199G. A total of 101 of these filings had chemical identity declared as CBI. In addition, 15 of these §8(e) submissions had facility identity also declared as CBI. From a state regulatory perspective the sanitized versions of these submissions would be worthless without chemical identity and facility location information.

Due to time constraints New York only reviewed a handful of the §8(e) submissions and in each case found CBI information which would be useful in conducting hazard assessments for various individual chemicals and chemical mixtures. One §8(e) submission actually characterized a serious toxic reaction in a worker who was exposed to what would normally be characterized as a small quantity, low exposure event. Access to information such as this would be important for State environmental quality programs who act as community sentinels. The ability to have access to this information would be critical when investigating community complaints of unknown origin.

Another important use for §8(e) submissions for State environmental programs involves their use for potential hazard identification. A number of State programs use lists to regulate releases of toxic substances and may have to undergo rulemaking to add chemicals to the list. State access to this information would assist States in their efforts to identify chemical hazards for. possible regulatory actions.

§5(d) Premanufacture Notices (PMNs)

Our analysis of Premanufacture Notices for New Chemical Substances containing CBI indicates that the information contained on these forms would be invaluable to state environmental quality programs when making risk assessment and management decisions concerning emissions or discharges of new and existing chemicals. The release of information on chemical identity, physical and chemical properties, percent impurities, chemical byproducts, environmental release and exposure information, pollution prevention and material safety data sheet. (MSDS) would make a tremendous difference in reducing the time it would normally take to conduct a proper hazard assessment before a state emission or discharge permit is issued. Access to this information would result in more informed decision-making by the state environmental quality programs and would help reduce the uncertainty and public anxiety which are currently associated with the release of multiple chemical emissions into a community.

The EPA should also. consider allowing state access to the reports prepared during the EPA review and disposition of PMNs. This would be one-step above state access to raw PNN information since there has been a technical review of the information submitted on the PMN and conclusions concerning potential health and environmental effects, and exposure potential to the new chemical have been made. State access to these reports for facilities operating within the state or in close proximity to the state border would be extremely beneficial in making informed permit decisions.

The latter point is important since New York is attempting to look at individual facilities in a more holistic manner concerning multiple emissions by developing facility air contaminant management plans. One key element of the plan is for larger facilities to conduct an intra-facility comparative risk ranking to prioritize emissions reductions for the greatest overall community risk reductions. Decisions can only be as good as the information on which they are based.. Without access to the PMN information we would not be able to properly characterize risk for the comparative analysis. Subsequent decisions concerning emission reductions and subsequent risk reductions may be made in error.

New York currently has the ability to screen multiple emission points at a facility for community impacts. Without access to the information contained in the PMNs our view of the facility is limited unless the facility volunteers to provide the information. .The combination of State and Federal databases on chemical information and releases will provide a true assessment of potential community impacts from a facility as a whole rather than on an emission point or chemical-by-chemical basis. Full

access by New York to TSCA data including CBI would greatly enhance our (state/federal) efforts of risk reduction and pollution prevention.

For example, a total of 551 PMNs have been filed by facilities in New York State since 1978 and 522 of them have been classified as CBI. Any. of these chemicals could become high-production/high environmental release chemicals in New York or in other states. Given this it is important to have state- access to information concerning the potential health and environmental effects as early. as possible. Currently in New York, a facility will usually provide the chemical name, chemical abstract registry number, emission rate (pounds per hour/tons per year) and in some cases an Manufacturers Material Safety Data Sheet (MSDS). Then we begin a hazard assessment of the information using all the available toxicity databases including chemical & physical properties if available on CAS-ONLINE[3], Dangerous Properties of Industrial Materials[4], the Merck Index[5] and any other databases with public access. This process takes time at the State level and results in permit delays for facilities which need the quick-to-market competitive edge. The permitting process is important and should not be rushed since it assures the impacted community and facility that the information has been reviewed and a decision has been made to the best of our ability that an "ample margin of safety" exists concerning the environmental releases.

New York State access to TSCA data including CHI would enhance the state permit review process by providing baseline health risk assessments or toxics reviews which have already been conducted by the EPA. It would allow us to focus our resources on other public health and environmental issues at entire facilities affected by TSCA. It would also provide baseline risk assessment information for use at other facilities which have environmental releases of the same chemicals. State access would allow State environmental quality programs and the EPA to work as a more effective team versus the work which is currently conducted in two separate voids in which communication and information transfer is hindered by CBI claims. The latter resulting in redundant state and federal reporting requirements for affected facilities.. Allowing state access to the raw PMN data and subsequent EPA reports used in the determination of "reasonable risk" is a major and serious step in the right direction of public health and environmental responsibility.

Fifty-three percent of the CBI claims for new chemical filings were made by research and development facilities concerning low volume production. Assuming that the filings contains information

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[3]American Chemical Society. 1996. CAS ONLINE (The ChemicalSearch System From Chemical Abstracts Service). Columbus, Ohio.

[4]Sax N.I. and Lewis R.J. Sr. Dangerous Properties of Industrial Materials Seventh Edition. VanNostrand Reinhold, New York. 1989.

[5]Windholz M. (ed.) The Merck Index: An Encyclopedia of Chemicals, Drugs and Biologicals Tenth Edition. Merck & Company, New Jersey, 1983.

on control technology, and efficiency claims are correct these low volume PMNs may not be of significant concern for state review concerning releases to the environment. However, 47% of these CBI submissions may have large environmental releases associated with them and the States need to have access to this information to make good, defendable permit decisions concerning these releases. The information contained on the PMNs is the most logical place to star the permit review process.

Other Observations on the Utility of TSCA CBI

Complex Mixtures

Our review of 8(a), 8(d), and PMNs indicates that the information contained in the TSCA database represents one of the largest repositories and source of information on the toxic effects of complex mixtures from both a human health and ecosystem perspective. The toxicity testing of actual multiple chemical discharge or emission streams provides a unique opportunity to understand the effects of complex chemical mixtures on biological systems which is in direct contrast with the current regulatory approach of single chemical hazard assessment. There are situations where. one chemical may be responsible for the primary toxic effect, but having information on the effects of the mixture provides a more focused, and in some instances a more real picture of potential toxic endpoints which should be considered when making a permit decision.

Community Epidemiology

The primary focus of the pilot project was on the prospective use of TSCA information to make more informed permit decisions, but another equally important component includes retrospective analysis of cancer clusters and other acute or chronic diseases in communities across the country. The critics of community studies often indicate that these studies are expensive and rarely yield any definitive answers when studying possible environmental causation of disease. The crux of the argument stems from the lack of proper accounting for previous community environmental exposures. However, it may also result of a lack of knowledge by the investigators that a wealth of information about the toxicity and environmental releases of chemicals in a given community exist as. CBI under TSCA. The information received on PMNs and under 8(d) (e) provides useful information to investigators which needs to be properly utilized to identify. or rule-out specific chemical exposures in community health studies.

Environmental Audits

The PMNs and 8(a) both require information on control technology and efficiency or controlled releases, respectively. The verification of this information by State personnel during multi-media pollution .prevention audits which are conducted on larger facilities in New York and general facility inspections would be beneficial to both EPA and State environmental programs.

Conclusion

The New York State Department of Environmental Conservation*s participation and review of information under this pilot project indicates that TSCA data including CBI has the potential to be used by the States to make improved risk assessment and risk management decisions. Improvement in these areas will lead to the development of more effective non-redundant State regulatory programs. The development of a Federal/State information sharing process will facilitate and improve permit decision making and facility recordkeeping by State environmental quality programs.

Over the years State environmental programs have strived to develop an understanding of site-specific facility information from actual chemical releases, pollution control needs, pollution prevention opportunities, and public health and natural resource protection. State access to TSCA data including CBI provides an unprecedented opportunity for a renewed state and federal environmental partnership.

ILLINOIS EPA

TSCA CBI EVALUATION

FINAL REPORT

MAY 31, 1996

Prepared and Submitted

by

Illinois EPA

INTRODUCTION

The Illinois EPA (IEPA) entered into a contract with EPA for a pilot project to evaluate the impact of confidential business information (CBI) claims on the utility of information submitted under the Toxic Substances Control Act (TSCA) for state environmental quality programs. This report represents the principal work product that the IEPA was responsible for preparing under this contract.

The Illinois EPA ("Agency") assembled a group of senior staff to examine TSCA CBI in order to assess how the information would assist the Agency*s data needs in addressing issues of environmental and public health protection. This group represented most Agency program areas including air permitting, solid and hazardous waste management, surface water permitting, public water supply groundwater protection, emergency response, risk assessment, enforcement/compliance and policy staff. In all, eighteen staff were qualified to view TSCA CBI according to procedures specified in the contract.

FINDINGS AND CONCLUSIONS

- Based on the types of TSCA filings examined within the limited time frame of this project, including IUR, PMN, 8(a)PAIR, 8(d) and 8(e) information, our preliminary conclusion is that TSCA data, including CBI, would significantly assist the Agency in its efforts related to environmental and public health protection.

- In general terms, TSCA CBI represents significant value added information to existing data collections for each media program area represented on the review team.

- TSCA information filers also have extensive involvement with our other environmental protection programs, which supports the need for on-going comparison and coordination among these many types of toxics data.

- Several specific examples were found where facilities filing information under TSCA had not obtained necessary permits or had not reported under another requirement: Such information might be useful for compliance outreach activities.

- TSCA CBI contains specific information about chemical processes and properties which is not available to the state in other information sources.

- TSCA CBI contains detailed information describing pollution prevention efforts which is not otherwise available to the state.

(The last two findings may provide information which would support further development of regulatory relief efforts.)

GENERAL INFORMATION ANALYSIS

Initially, the Agency received hard copy and computer lists of all IUR filings for 1990 and 1994, as well as an example Premanufacture Notice and Notice of Significant Risk which were randomly selected by EPA. Based on an examination of these documents, the Agency requested an additional listing of all other TSCA filings by businesses with facilities in Illinois, in addition to IUR. These lists were merged into a list of unique Illinois facilities filing under the various provisions of TSCA. In all, one hundred and fifty-two Illinois facilities filed under one or more requirements of TSCA. This list of unique facilities was used to guide further analysis by members of the team.

The first analytical task undertaken was to test the hypothesis that TSCA OBI represented value added to environmental data collections available to the Agency in the gross sense. Ten facilities were randomly selected from the file of Illinois IUR submitters. These facilities were assigned numbers in order to create a non-CBI file for analysis. A file was created which contained specific chemicals reported by the randomly selected facilities under TSCA, the Toxic Release Inventory (TRI), air permit applications, the Permit Compliance System (PCS) and the Agency*s Incident Management System. (spill reporting). Our evaluation of this file indicated that there was very little duplication of chemical information reported under the other programs by that reported under TSCA (that is to say, the TSCA information, much of which was CBI, was unique).

The next generalized analysis performed was to check out the extent of involvement that these TSCA facilities had with our other environmental protection programs. To do this, we compared the total number of other information collections which contained submissions from, or information about, the *152* TSCA filers. Statistical findings are displayed in Figures 1 through 3. These charts indicate that most TSCA filers (96%) had information available in at least one other information collection, and over half had information in five or more information collections. Only six of the 152 facilities had information contained in just TSCA. This supports the need for on-going comparison and coordination among these many types of toxics data.

Figure 1

Number & Percentage of Facilities Having a TSCA* Filing and a Given Type of State Interaction

State Interaction Type	# Having TSCA and State Interaction Type	% of all TSCA Filers Having State Interaction Type
		83.6%
RCRA	127	75.0%
Air	114	55.3%
TRI	84	49.3%
HazAnnual	75	48.7%
ICSA	74	45.4%
Incident	69	39.4%
Tier 2	60	30.2%
Pretreatment	46	25.0%
NPDES	38	16.4%
Biomonitoring	25	13.2%
Solid/Special Waste	20	2.0%
Special Waste	3	

*152 Facilities Filed for TSCA

Figure 2

TSCA Facilities involvement in State Programs
 # Facilities by # State Programs

Figure did not scan properly

Figure 3

TSCA Facilities involvement In State Programs
Cumulative - # Facilities by # State Programs

Figure did not scan properly

PROGRAM-SPECIFIC ANALYSES

Following the generalized analysis, team members individually analyzed and compared information about facilities and geographic areas of programmatic interest. Following is a summary of their findings by program area.

1. Bureau of Air - The TSCA data, including the CBI in particular, would be useful in the air permit program in that it provides a good cross reference to check whether a facility should have a state air permit or Title V CAAP permit. It also provides much more detailed speciation on toxics than that provided in permit applications. In the limited time available, two facilities were identified which apparently should have permits based on the TSCA data, in this case CBI, but have not applied. The CBI contains a great deal more information about chemicals, in particular projected emissions, than that given in permit applications.

A number of facilities were identified for which the state has information, but which appear to be conspicuously absent from those facilities filing under TSCA. This may well be a great benefit to EPA to know about such facilities.

2. Bureau of Land - The PMNs would appear to be of greatest value to the Agency in determining minimum safe exposure levels and may also be of potential value to EPA in determining if additional waste streams should be regulated under one of the programs. It might be of some value to the state in that if the wastes are not regulated at the federal level, a determination of coverage could be made under the state*s special waste regulations. Under Illinois* regulations, any waste from chemical use or manufacturing would be a special waste unless the generator obtains a permit decision to the contrary.

The greatest potential immediately identifiable value would be as a cross check to determine companies which have not filed hazardous or non-hazardous, special waste reports, although this alone would not be an indication of a problem because the actual quantities of waste might be below reporting thresholds. A possible future use would be for targeting new sites for investigation under state or federal superfund, particularly if the company had chemicals or wastes not included in waste reports submitted to the state. The cross-check as discussed could be an identifier of sites with possible problems.

The three PMNs reviewed indicate that PMNs would be a valuable source of information in identifying waste streams and impurities and providing a starting point for confirming that they are permitted or regulated. However, in order to be an effective source, the state would need all such information (i.e. all of the TSCA data, including CBI, for the state) so that the information could be aggregated for individual facilities and companies.

3. Bureau of Water - The TSCA data, including CBI, would be of great value to compare with state site inventories in community drinking water supply well head protection areas (WHPAs). One such area was selected for review by a team member who manages the Illinois groundwater protection

program. By way of example, a request was made for PMN information for a TSCA facility in the WHPA. It is interesting to note that this facility was one of the six facilities mentioned earlier in this report which filed under TSCA only. The TSCA data, in this case CBI, would also be of value in further analysis of community water supplies with unknown contaminants or contaminants from an unknown source.

4. Environmental Policy

a. Risk Assessment - The Section 8(e) Substantial Risk Notices could be useful in that they provide toxicity information that is not otherwise available to the state. Some information is available through TSCATS, but that information is sanitized and many details of the situation are left out, including the company name. These details are available in the original CBI versions, as seen by specific examples.

b. Emergency Response and Contingency Planning - The PMN and IUR information would be of great utility in investigating releases of "unknown" contaminants from a facility. The Section 8(e) information would also assist in identifying substances which should be included in contingency plans to alert emergency response and planning personnel of the presence of highly acutely toxic substances at a facility. One example of such a report was obtained from EPA in the course of this project which contained information which would not otherwise be available to the state because it was claimed CBI.

c. Community Right-to-Know - An evaluation of PMN and IUR information identified several facilities which apparently should have filed under TRJ but did not, including two of the six facilities which filed under TSCA only. The CBI would represent another information source to identify such facilities for compliance outreach activities. The PMNs are especially valuable in that they list raw materials, impurities and waste streams.

Three individual PMNs which were examined described significant pollution prevention projects.

d. Hazard Evaluation - The list of unique TSCA facilities was, examined. It was noted that several CBI submissions had been made for chemicals which were the subject of hazard evaluations under Agency consent orders arising from litigation. It would be very useful to have this OBI for reference in review of a hazard evaluation. Much information submitted to support hazard evaluations is claimed as CBI.

Section 8(a) PAIR data and one PMN were requested for three facilities which had been the subject of one or more hazard evaluations. In particular, comparison of the PMN with documents submitted to support the hazard evaluation for one specific facility indicated that the PMN contained important additional information which would be valuable to the hazard evaluation reviewer.

It was very interesting to note that the PMN mentioned in the paragraph above detailed a very significant pollution prevention project which converted most of a hazardous waste stream from one

facility into a beneficial reuse. The Agency would not have known about this beneficial project otherwise.

5. Legal Counsel (Enforcement) - The two team members who are attorneys felt that the TSCA data, including CBI, would be an important information source in identifying facilities which should have permits but have not applied for them, especially in the Bureaus of Air and Land. This would possibly facilitate compliance outreach.

GENERAL COMMENTS

The EPA Project Manager was very helpful in supplying requested documents in a timely manner. EPA is admittedly not set up to provide information in the format and time frame of requests which were made during this project. There was some difficulty in EPA*s retrieval of certain documents due to filing and indexing procedures. Overcoming these difficulties, which were minor relative to this project, is not seen as an insurmountable task.

Many TSCA filings dill not identify the specific facility location, but rather the corporate headquarters address. This somewhat limited the usefulness of some of the information, but in general terms did not diminish the overall utility of TSCA CBI to the state.

The exercise of merging the TSCA facilities into a unique set and the subsequent matching of these facilities with information from other information collections clearly demonstrated the utility of a unique facility identifier to facilitate information retrieval and analysis.

The process of examining the limited number of TSCA CBI filings requested within the limited context of this project raises a strong suspicion that there may be confusion about reporting responsibilities under programs other than TSCA if a CBI claim is made.

Most of the PMNs which were examined in this project described significant pollution prevention projects for the reported chemicals.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
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May 13, 1996

Mr. Scott Sherlock
EPA OPPT Information Mgmt. Div.
Mail Code 7407
401 M Street, SW
Washington, D.C. 20460

Subject: Contract No. 68W50037 (TSCA/CBI)

Dear Mr. Sherlock:

I have enclosed three copies of the completion report for "Evaluation of Utility of TSCA Data to State Programs."

The TSCA information clearly provides a more comprehensive insight to the chemicals present at a facility than currently available from other sources. Use of the information is however badly confounded by CBI claims from these facilities, and there is no apparent justification for CBI. in most cases. In my opinion, the public's interest would be better served if the information were readily accessible to everyone.

Thank you for the opportunity to review the TSCA database. I hope EPA is successful in establishing a higher level of CBI justification. Facilities should shoulder the burden of proof, including some form of significant documentation.

Sincerely,

Russ Dunst
Toxics Coordinator
Office of Technical Services

RD/bjb(RD34-96 .bjb)

EVALUATION OF UTILITY OF TSCA DATA
TO STATE PROGRAMS (Contract #68W50037)
Completion Report

Background

TSCA was enacted by Congress to protect human health and the environment from unreasonable risks. EPA is charged with implementing TSCA. EPA addresses this responsibility by examining the characteristics of chemical substances and mixtures in commerce, determining if the manufacture, processing, distribution in commerce, use or disposal may present an unreasonable risk of injury to human health or the environment, and utilizing the most effective way to address such identified risk.

In order to facilitate this Congressionally mandated charge, EPA has utilized a variety of information collections and testing requirements with which it assesses chemical substances and mixtures. Much of this information is believed by manufacturers and processors to be proprietary and business sensitive for a variety of reasons. Therefore, as provided under TSCA section 14(a), information submitters often claim that some of the information it has submitted is confidential business information (CBI). The effect of a CBI claim on the information is that the data claimed as CBI may not be viewed by any person who is not a Federal employee, or an employee of a contractor for the Federal government which needs the information for the successful performance of the contract. In essence, CBI claims prevent the Agency from releasing some information to the public.

Project Purpose

To determine whether information on toxic chemicals that chemical manufacturers and processors are required to provide to EPA under the federal Toxic Substances Control Act (TSCA), including CBI, may be of value to state environmental protection programs, particularly for chemical risk assessment and evaluation, emergency responsiveness, and regulatory compliance. Also, to determine whether TSCA information might significantly assist state and/or community based pollution abatement/prevention initiatives.

Procedures

The project began in September, 1995. The CBI data security issues were easy to deal with by restricting access to the locked cabinet to one individual and maintaining the in/out records as per the CBI Manual.. Eventually security clearance for use of the materials was granted to technical specialists in the following programs - - Wastewater Management, Water Supply, Pollution Prevention, Environmental Enforcement, Solid & Hazardous Waste Management, Air Management, Water Resources, and Technical Services. These specialists reviewed information from the 8(e) triage databases, PAIRs, IURs, PMNs, select chemical searches, and some miscellaneous TSCA materials from the Federal Register and other public sources.

Findings

The Inventory Update Rule (IUR) reports were initially examined in terms of chemicals being reported, number of WI facilities and type of facility, and magnitude of CBI claims.

Nationwide, facilities reported on over 8,900 chemicals in 1990. In Wisconsin, the filings for 1990 included about 240 chemicals at 28 facilities. For 1994 the totals were 270 and 34, respectively. Because of overlap between the two years, there were actually 40 facilities that filed in one or both years. These facilities belonged to the following standard Industrial Classifications: SIC 26, Paper Industry (10); SIC 28, Chemical Industry (26); SIC 29, Refineries (2); and SIC 36, Manufacture of Electrical Equipment (1).

Of the 28 facilities that filed in 1990, the following CBI claims were made:

1) none - 10 facilities
2) company name only - 2 facilities
3) activity only for one of several chemicals - one facility
4) production volume at least - 15 facilities

Consequently, roughly 50% of the information is non-CBI but its interspersion with CBI makes it mostly inaccessible to the public.

1. Regulatory Compliance

A variety of chemical regulatory programs have been established for the general goal. of environmental and/or public health protection. The TSCA information was examined for its usefulness in finding facilities in non-compliance with one of these regulatory programs, SARA 313.

The SARA 313 program contains a list of about 320 chemicals (at the time of our evaluation), potentially subject to annual reporting requirements. Two-thirds of these are also on the TSCA IUR list (one third is not).

During 1990-93, 25 of the *28* facilities that filed a TSCA report in 1990 also filed a report under the 313 program (as shown by the 313 database). However, most of the chemicals reported under 313 were not chemicals on the TSCA IUR list.

Only 7 facilities filed a TSCA report for a 313 chemical. Two of these facilities did not file the required 313 report in 1990 as indicated by their SIC code and level of production for the chemical. One other facility also appeared to be in non-compliance; however, some additional information would be necessary for clarification.

Therefore, TSCA data may be helpful in identifying facilities in noncompliance with other chemical regulatory programs. In this case 7% of the TSCA facilities appear to have been in violation of the SARA 313 reporting requirements.

2. Environmental Monitoring

Recent studies have indicated that 7 chemicals function as pseudo-estrogens, thereby stimulating the occurrence of breast cancer. At least some of these chemicals are also of concern regarding their aquatic toxicity. Therefore, there is a need to identify the environmental presence and concentration of these chemicals as part of a monitoring and/or investigative program.

Several databases were examined as follows:

Chemical	CAS. No.	TSCA 1994 Production USA (lbs)	Facilities in WI Reporting Use/Emission of the Chemical			
			TSCA	AEI	313	DMRS
bisphenol A	80-05-7	"CBI" This report has been sanitized to exclude actual production quantities.			6	
dibutyl phthalate	84-74-2			16	6	1
butyl benzyl phthatate	85-68-7				14	
octyl phenol	140-66-9					
nonyl phenol polyethoxylate	9016-45-9					
octyl phenol polyethoxylate	9036-19-5				1	

nonyl phenol	25154-52-3					

The databases included TSCA, AEI (air emission inventory), SARA 313, and DHRS (wastewater discharge monitoring system).

Although the TSCA information did not identify any additional facilities in this case, it provides a potential source of information for this type of interest because the TSCA lists typically include many more chemicals than identified under other programs. For example, if the concern had been for oxalyl chloride (79-37-8), the TSCA database would have been the only one identifying a WI facility.

Therefore, TSCA information can significantly supplement other databases for the design of monitoring and/or investigative efforts involving new chemicals of concern.

3. Risk Assessment

The 8(e) triage information provides useful wastestream toxicity for application in public/environmental health studies. For many facilities TSCA will identify many new chemicals at the site (IUR; CBI) as well as toxicity for use by health specialists (8(e) triage; non-CBI).

One facility recorded the production of about 125,000,000 pounds of spent sulfite/cooking liquors (GAS #66071-92-9) which would have been significant new information (previously unavailable) for local health officials. A recent study in Wood County, WI has shown a relationship between the emission for sulfur compounds and the incidence of asthma. Although an on-site inspection would be necessary, the liquor could be a significant and until now unknown source of sulfur, potentially affecting the respiratory condition of the adjacent community.

Therefore, regulatory agencies can much better perform their mission of public/environmental health protection when both chemicals and toxicity information is available for a facility. TSCA greatly expands an agency*s insight into both of these areas.

4. Permitting Contingency Planning

The Department has established an Integrated Toxics Reporting System (ITRS) that allows a comprehensive examination of a facility*s chemical emissions as reported under the primary regulatory programs - SARA 313, AEI, DMRS, AR (Annual Hazardous Waste Report), and MAN (Manifest System). It has greatly improved our ability for cross-media p~permitting and spills contingency planning. It has also been proven useful for various other state and local community interests, ranging

from enforcement actions to voluntary pollution prevention efforts. Access to all TSCA information would be a significant supplement.

During the TSCA evaluation project, a tabulation of the chemicals/waste codes reported under the various programs was prepared for each of the 40 TSCA facilities in WI. As discussed earlier, there is some overlap between the chemical coverage for each of these programs; however, it is incomplete at best. The chemical list for some facilities was expanded dramatically via the TSCA database. For example, one facility reported on 39 chemicals under TSCA in 1994; none of them duplicated the 14 chemicals reported elsewhere. Another facility reported 76 and 70 TSCA chemicals in 1990 and 1994, respectively. Only one of the 1994 chemicals was included in the chemicals reported under the other programs. There are several other examples of chemicals that might have been covered under one or more of the permitting programs if the Department had been aware of their presence.

Therefore, TSCA will provide a comprehensive listing of chemicals at a facility, well beyond our current sources of information. This is especially true because the SARA 311/312 submittals are not available to WDNR in a usable form. Wisconsin statutes delegated authority for 311/312 to another agency, and the information has not been computerized to date.

Summary/Recommendations

1. Access to the TSCA information provides a greatly expanded insight to the chemicals being used/produced at the covered facilities in Wisconsin.

   The Department has established an Integrated Toxics Reporting System (ITRS) that allows a comprehensive examination of a facility*s chemical emissions as reported under the primary regulatory programs.

   Addition of the TSCA information would be a significant expansion of the chemical information currently available.

2. TSCA access helps identify facilities in non-compliance with our environmental regulatory statutes/codes; helps in establishing monitoring programs; helps in specific site risk analyses; and helps formulate permit requirements. Analyses have shown specific examples for each of these benefits.

3. TSCA is an excellent source of chemical information on a nationwide basis. Production information is available for over 8,900 chemicals plus toxicity, loss during production, etc. This type of information is very useful in targeting pollution

prevention efforts between within industrial categories. WI facilities that fall outside the nationwide norm for an industrial process may warrant special pollution prevention attention.

4. CBI criteria need to be established with much higher justification. The public*s interest is currently subordinate to what often appears to be frivolous CBI claims.

5. TSCA is complex/multi-faceted with a need for technical assistance in information provision. If CBI restrictions are relaxed, thereby improving public accessibility to the database, EPA will have to furnish access assistance during some transition or learning period. Without this service, use will grow slowly despite information access.

RD/bjb(RD3O-96 .bjb)

CONFIDENTIAL BUSINESS INFORMATION DATA REVIEW

Georgia Department of Natural Resources
Albert K. Langley, Jr., Ph.D., Program Manager
Emergency Response Team and Title Ill Office
Kirby S. Olson, Ph.D., Environmental Specialist
Emergency Response Team and Title HI Office

SUMMARY

Overall, we believe that having access to TSCA CBI data would benefit our organization more than routine maintenance of this information at our facility. Health and safety data proved most useful to us on initial review. Particularly for complex mixtures, this data could provide information for environmental decision making and risk analysis. Other aspects of the data, such as production volumes and inventory updates did not provide a significant amount of useful information from an environmental regulatory prospective. Our review also indicates that changes to CBI laws should include some examination of the bases for these claims.

SCOPE OF REVIEW

The review of TSCA CBI in Georgia focused on two possible uses for these data. First we evaluated the usefulness of the data from an emergency response/emergency planning standpoint. Could the CBI data provide us with information which would be useful during response and planning and did the data already exist in other, non-CBl formats? We also evaluated the potential usefulness of the section 8d health and safety data, in particular in terms of its usefulness in setting permit limits, or for establishing clean-up standards for site remediations. Is addition, we examined section 8A (pair Data) and a small sample of section 4 data. We restricted our requests to the data actually claimed as confidential, and. did not review any of the nonconfidential data available under TSCA.

Given the limited time and resources which could be allocated to this project, this review must be considered very preliminary. It focused on items which were easy to verify and quantify and did not attempt to evaluate, more subtle uses for these data.

INVENTORY UPDATE RULE

Georgia*s review of the documents submitted under the Inventory Update Rule (IUR) was designed to determine if these data provided significant information, useful For emergency

response/planning, not available from other sources. To accomplish this, the IUR data were imported into a computer database and compared to existing databases which incorporate the information required by the Emergency Planning and Community Right-to-Know Act (SARA Title III Section 311/312 and Section 313). Much of the information available from the Inventory Update Rule was already available in these existing, non-CBI databases. Once the companies that are merely importers and who don*t manufacture or store chemicals in the state were removed from the list, we located almost no facilities that should have filed inventories of hazardous materials under Section 311/312 of Title III but did not. Eleven facilities listed under IUR did not appear in the 313 database of companies reporting routine releases of specific listed toxic chemicals. However, only two of these facilities had chemicals in inventory for which they might have to file under section 313, and even these may have had exemptions based on other criteria (such as SIC code or number of employees). Since Georgia currently has 657 Section 313 facilities and close to 6000 Section 311/312 facilities, only an extremely small percentage of facilities could be located using IUR data that are not already under the Title III umbrella.

There were a significant number of chemicals (216) identified through IUR data which were not found in the facilities' 311/312 inventories, but an examination of this list indicated that almost all these chemicals were food products, inert food derivatives, or salts of acids and generally not of extensive concern to us from an emergency planning or response viewpoint.

Overall, the value added from IUR data was not significant. In terms of emergency planning or response activities we found little information that would be of any use. Comparison with the 313 database indicated that less than 1% of facilities could be identified as out of compliance using this information. Georgia has fewer than 100 facilities that file under the IUR, so this observation may not be true for states that have a larger number of TSCA facilities.

8D/E HEALTH & SAFETY DATA

Some of the information available under the 8D health and safety data proved of substantial me. In particular, aquatic and environmental toxicology data on some of the CBI compounds showed sharp thresholds above which environmental damage might be expected to occur. This information is often unavailable from other sources, particularly for complex mixtures, because of the expense involved in environmental testing. However, this information is only useful to us if it could be used in setting permit limits and cleanup standards so that those Emits and standards could be set to not allow substantial impact but still not be overly stringent. Such information could provide the opportunity for regulatory relief on some substances. Georgia DNR lacks the personnel to develop more complex information such as new risk factors from such data, but could potentially get such valuable new factors from other states that do. have the resources to develop them. CBI data could then provide not only new tools for risk analysis, but also enhance state-state interactions on environmental issues.

Information on product composition on the confidential MSDS sheets could be useful in dealing with spills, but we have never experienced a significant problem in obtaining these data from a responsible party at a spill site. Also, in order to use data from this section we would need a superior method for sorting 8D data so that we can specifically target environmental data. By just ordering random documents based on chemical name, we ended up with about 30% of the documents we received being health monitoring results for workers. However, the section SD data seem to have the most potential for usefulness to us.

8A PAIR DATA

The sample of PAIR data collected under 8A appears to contain information similar to that given on page 3 of a Form R. That portion of the form gives information on the chemical identity, what the chemical is used for at the facility, and how much of the chemical is stored there. ml. information would be useful to us only for non-TRI chemicals we might wish to investigate.

The production volume information available under TSCA is not particularly useful to us. We don*t feel production volumes correlate substantially with emissions or exposure; both emissions and exposure can vary greatly for the same chemicals depending on the type of process within the facility and the pollution controls employed. It can be difficult to elucidate storage volumes or usage of. chemicals from production volume data, as some large volume users have smaller storage and more numerous deliveries.

SECTION 4 REQUESTS FOR ADDITIONAL TESTING

Some section 4 data (requests for additional testing) may prove useful to us. Although. the actual testing data is apparently not CBI, the pretest submissions discussing the relation between the new chemical and these already in use, as well as the reasons for testing concerns is CBI and could be useful in allowing DNR to take a proactive stance on evaluating new chemicals.

We have a concern with utilizing TSCA CBI as the basis, for certain decision making. Setting permit limits or remediation standards on the basis of CBI data, results in our not being able to adequately provide the public with complete documentation of our basis of decision. Although this would often not be an issue, the situation will arise. We have to balance this concern with our duty to provide the best protection of human health and the environment that we can. Although it is true that many companies will relax the CBI claims on information when requested. to do so, this is by no means universal. Setting permit standards or clean-up levels with “confidential” information is not acceptable to either the public or the industry involved. For section 8D/E data, the composition of the tested compound is often what is desired to be kept confidential. This could be accommodated in cleanup and permitting reviews by using proprietary names as long as the actual results could be

made public as part of the review. We believe it is important that discussions of changes to the CBI laws consider this aspect.

INDIRECT BENEFITS

In discussing the overall usefulness of CBI to the Georgia Department of Natural Resources with our toxicologist, he pointed out that even information we could not we ourselves could benefit us indirectly. We lack the resources to carefully review large amounts of raw (i.e., not reviewed by peer review through journal publication) data on chemicals and mixtures; but a number of other states do have adequate resources to allow this data to be used to develop new limits and risk factors on various chemicals. These limits and risk factors may then be of use to the Georgia DNR in pursuing our own environmental policies. A policy allowing states access to CBI could provide opportunities for increased state-state interactions on environmental issues in addition to providing raw information to those states.

CBI CLAIMS

Much of the IUR data identified as confidential was available in other non-confidential databases. It appears that the TSCA CBI process is such that much information available to the public is claimed confidential in TSCA submissions. For example, a large plant in Georgia claimed the presence of a compound as confidential under the IUR, even though the plant*s name incorporates the name of the compound. Georgia suggests that a very close look needs to be given to the whole issue of the ease with which information may be claimed as CBI under TSCA.

CONCLUSIONS

In summary, although there is some value added from the TSCA IUR data, the costs associated with these data may outweigh their benefits. Maintaining TSCA CBI files, restricting access etc. results in a high administrative cost, for an often minimal net gain in information. The fact that Georgia has relatively few TSCA IUR files obviously is part of the basis for this observation.

The data available regarding health and environmental impacts are of potentially much greater value. Particularly for complex mixtures, this data could provide information for environmental decision making and risk analysis. Other aspects of the data, such as production volumes and inventory updates did not provide a significant amount of useful information from an environmental regulatory prospective. Our review also indicates that changes to CBI laws should include some examination of the bases for these claims.

Overall, we believe that having access to TSCA data would benefit our organization more than routine maintenance of this information at our facility. The usefulness of data from the various

sections, particularly health and safety data, is particularly dependent on the existence of some type of index that would allow us to target the type of information that we want.

Appendix E: Resources Available to State/Local/Tribal Agencies for Program Development

Air Dispersion Modeling

- Support Center for Regulatory Air Models (SCRAM) available at: http://www.epa.gov/scram001

Ambient Monitoring

- Ambient Monitoring Technology Information Center (AMTIC) at: http://www/epa/ttn/amtic
- Concept Paper available at: http://www.epa.gov/ttnuatw1/urban/urbanpg.html
- Pilot Studies - - Science Advisory Board at: http://www.epa.gov/science1
- Tribal Air Monitoring Support. Contact budd.gregory@epa.gov for information

Chemical Data

- ChemFinder Searching at http://chemfinder.camsoft.com/
- Molecular Structure: Indiana University at http://saturn.chem.indiana.edu/
- NIST Chemistry WebBook at http://webbook.nist.gov/chemistry/
- NTP Chemical Structures Page at http://ntp-db.niehs.nih.gov/Main_Pages/pub-Structures.html
- US NPS Toxic Encyclopedia Listing at http://www1.nature.nps.gov/toxics/list.html

Crystalline silica

- CRISTOBALITE (Silicon Dioxide) at http://mineral.galleries.com/minerals/silicate/cristoba/cristoba.htm
- NTP Crystalline Silica Cancer Assessment at http://ntp-server.niehs.nih.gov/htdocs/ARC/ARC_RAC/silicia-crystalline.html
- QUARTZ (Silicon Dioxide) at http://mineral.galleries.com/minerals/silicate/quartz/quartz.htm
- TRIDYMITE (Silicon Dioxide) at http://mineral.galleries.com/minerals/silicate/tridymit/tridymit.htm
- USGS Crystalline Silica Primer at http://geology.usgs.gov/pdf/silica.html

Endocrine Disruptors

- ECME: Environmental Estrogens at http://www1.omi.tulane.edu/ecme/EEHome/default.html
- ECME: Environmental Estrogens (Types of hormones) at http://mi.tulane.edu/ecme/EEHome/1_WhatDoWeKnow/2_UnderstandEndoSys/3HormoneTypes.html
- Known and Suspected Hormone Disruptors at http://www.wwfcanada.org/

- NIHS-Japan Endocrine Disruptor Page at http://www.nihs.go.ip/hse/environ/endocrin.html

EPA Sites

- 1996 Emission Inventory Website at http://www.epa.gov/ttnchie1/ei/
- Information on specific chemical and PBT Action Plans: http://ww.epa.gov/oppt/opptpub.htm
- General information on assessment tools and chemical information: http://www.epa.gov/oppt/
- Cumulative Exposure Project at http://www.epa.gov/CumulativeExposure/air/air.htm
- EPA Guide to Regulatory Development at http://dchqdomino1.wsm.epa.gov:9876/oppe/ris/rdweb.nsf
- EPA Home Page at http://www.epa.gov/
- EPA - Risk Assessment Guidelines at http://www.epa.gov/ncea/raf/rafguid.htm
- EPA website for fish advisories at http://www.epa.gov/waterscience/fish/
- EPA website for safe drinking water at http://www.epa.gov/safewater/
- Extremely Hazardous Substances (EHS) Chemical Profiles at http://www.epa.gov/swercepp/ehs/ehslist.html
- Integrated Urban Air Toxics Strategy & Docket Files at http://www.epa.gov/ttn/uatw/urban/urbanpg.html
- Mercury Study Report to Congress at http://www.epa.gov/ttnuatw1/112nmerc/mercury.html
- NCEA Publications at http://www.epa.gov/ncea/document.htm
- OAQPS Air Modeling Guidance at http://www.epa.gov/ttn/scram
- OAQPS Unified Air Toxics Website at http://www.epa.gov/ttn/uatw/
- Office of Transportation and Air Quality Land Use Planning Guidance at http://www.epa.gov/oms/trnsp/traqsusd.htm
- OAR Home Page at http://www.epa.gov/oar/oarhome.html
- OPPT Chemical Fact Sheets : Office of Pollution Prevention and Toxics: US Environmental Protection Agency at http://www.epa.gov/chemfact/
- ORD Publications at http://www.epa.gov/ORD/publications/
- Region 3 Risk Assessment Guidance at http://www.epa.gov/reg3hwmd/risk/riskmenu.htm
- RTP Library Services Home Page at http://www.epa.gov/library-rtp/
- SAB Peer Review Handbook at http://www.epa.gov/ordntrnt/ORD/spc/prhandbk.pdf
- Science Advisory Board at http://www.epa/gov/science1/
- Science Policy Council (SPC) Home Page at http://www.epa.gov/ordntrnt/ORD/spc/
- Toxic Release Inventory (TRI) at http://www.epa.gov/enviro/html/tris/tris_overview.html
- UATW - Health Effects Notebook for Hazardous Air Pollutants at http://www.epa.gov/uatw/hapindex.html

H2S

- HoustonChronicle.com - The Brimstone Battles at http://www.chron.com/content/chronicle/nation/h2s/index.html

- Kaye H. Kilburn M.D. Home Page at http://www-hsc.usc.edu/~kilburn/
- Kilburn 1997: Exposure to Reduced Sulfur Gases at http://www.sma.org/smj1997/octsmj97/6text.htm
- Missouri DNR H2S data at http://www.dnr.state.mo.us/deq/esp/aqm/allrep.txt
- Toxline on H2S at http://www.webshells.com/medsrch/hydrgslf.txt

Hazardous Air Pollutant Exposure Modeling

- March 1998 Final Report: Analysis of Carbon Monoxide Exposure for Fourteen Cities using HAPEM-MS3. Also Peer Review Comments on HAPEM, comments by NESCAUM, comments by Mark A. DeLucchi, University of California, Davis and comments by Ted Johnson, TRJ Environmental available at: http://www.epa.gov/otaq/toxics.htm

Methanol

- CIIT methanol report at http://www.ciit.org/ACT96/ACTIVITIESFEB96/feb96.html

National Air Toxics Assessments (NATA)
(Public web site to be announced - see attached schedule)

- 1996 Base Year National Toxics Inventory Documentation (6 reports) at the following web site: http://www.epa.gov/ttn/chief/ei_guide.html
- 1996 NTI modeling files will be placed on the following ftp site for State and local agencies in August, 2000. This site is password protected. The address will be ftp://ftp.epa.gov/EmisInventory/nti_96/ The site can be accessed **outside** the EPA via Netscape, Internet Explorer, telnet or any ftp software.
- 1996 NTI summary data files will be available to the public at the end of August, 2000 via AIRSDATA. AIRSDATA is available at the following addresses:
  http://www.epa.gov/airsdata
  http://www.epa.gov/ttn/uatw/pollsour.html
  http://hill.nccr.epa.gov/oar/nata/nap3.html
  http://www.epa.gov/tri/
  http://www.epa.gov/ttn/uatw/epaprogs.html
  http://www.epa.gov/ttn/uaatw/basicfac.html
  http://www.epa.gov/ttn/uatw/eparules.html
- Emission estimation methodologies and resources are available on the AIR CHIEF CD-ROM, Version 7.0, EPA 454/C-99-004. Information on how to obtain AIR CHIEF CD is available at: http://www.epa.gov/ttn/chief

Non-Government Sites

- EDF Scorecard at http://www.scorecard.org/
- HEI Home Page at http://healtheffects.org
- Land use and urban planning tools at http://www.brook.edu/es/urban/urban.htm
- Online Library System (OLS) at http://www.epa.gov/natlibra/ols.htm
- RTK NET Homepage RTK NET Homepage at http://ww.rtk.net/
- RTK NET Environmental Databases at http://www.rtk.net/trisearch.html
- Standard Industrial Codes at http://www.ecrc.uofs.edu/sic-codes/sic.html
- The World-Wide Web Virtual Library: Biodiversity, Ecology, and the Environment (Biosciences) at http://conbio.rice.edu/vl/
- TRI Scorecard--Env. Def. Fund at www.scorecard.org/

Other Government Sites

- ATSDR - main page at http://www.atsdr.cdc.gov/
- ATSDR - Minimal Risk Levels for Hazardous Substances (MRLs) at http://ww.atsdr.cdc.gov/mrls.html
- ATSDR - ToxFAQs (TM): Hazardous Substance Fact Sheets at http://www.atsdr.cdc.gov/toxfaq.html
- Brookhaven Lab AIHA ERPG listing at http://www.scapa.bnl.gov/
- Cal OEHHA: Air - Hot Spots at http://www.oehha.ca.gov/air/hot_spots/index.html
- Center for Disease Control at http://www.cdc.gov/
- EHP Articles Online First at http://ehis.niehs.nih.gov/docs/admin/newest.html
- IARC Home Page at http://www.iarc.frl
- NIEHS Carcinogen Nominations at http://roc.niehs.gov/rocpublic/
- NIEHS - National Institute of Environmental Health Sciences at http://www.niehs.nih.gov/home.html
- NIH Molecules R Us (biochem) at http://molbio.info.nih.gov/cgi-bin/pdb
- NIOSH IDLH Database at http://www.cdc.gov/niosh/idlh/idlh-1.html
- NTP Report on Carcinogens - 1998 at http://ntp-server.niehs.nih.gov/Main_pages/NTP_8RoC_pg.html
- Oak Ridge Lab Risk Information Web Server at http://risk.lsd.ornl.gov/
- Oak Ridge Lab Toxicity Profiles at http://risk.lst.ornl.gov/rap_hp.shtml
- U.S. Government Printing Office at http://www.access.gov.gov/
- U.S. National Library of Medicine - Home Page at http://www.nlm.nih.gov/

POM

- Research Note 94-22 - Mutagenic activity of air pollutants at http://www.arb.ca.gov/research/resnotes/Notes/94-22.htm

Regulatory DR Assessments

- IARC Evaluations & Classifications at http://193.51.164.11/monoeval/grlist.html
- IRIS at http://www.epa.gov/iris/
- NAC AEGL at http://www.epa.gov/fedrgstr/EPA-TOX/1997/October/Day-30/t28642.htm
- RBC Table at http://www.epa.gov/reg3hwmd/risk/rbctable.htm

Risk Characterization & Public Risk Communication

- Characterization & Monitoring Branch, Environmental Sciences Division, National Exposure Research Laboratory available at: http://www.epa.gov/crd1vweb
- EPA's Framework for Community-Based Environmental Protection available at: http://www.epa.gov/ecocommunity
- MATES II at http://www.aqmd.gov/news1/studies.htm
- U.S. EPA. 1992e. Guidance on Risk Characterization for Risk Managers and Risk Assessors ("Habicht Memorandum"). Risk Assessment Council, Washington, DC. February 26.
- U.S. EPA. 1995a. Guidance for Risk Characterization. Science Policy Council, Washington, DC. February.
- U.S. EPA. 1996f. Policy for risk characterization ("Browner Memorandum"). Office of the Administrator, Washington, DC. March.

Tox Data

- Environmental Health Information Service at http://ehis.niehs.nih.gov/

Toxicologic Databases

- EPA/IARC GAP Database at http://www.epa.gov/mdwgapdb/index.htm
- HSR Carcinogen List at http://www.ozemail.com.aul~paulr/cancer.html
- NTP Testing Information at http://ntp-server.niehs.nih.gov/Main_Pages/NTP_ALL_STDY_PG.html
- UCB Carcinogenic Potency Database Project at http://potency.berkley.edu/cpdb.html
- UNEP Persistent Organic Pollutants at http://irptc.unep.ch/pops/
- USDA Pesticide Index at http://waffle.nal.usda.gov/cbp/pestind.html

Toxicology of Specific Substances

- 1,3-butadiene reassessment at http://www.epa.gov/nceawww1/pdfs/but/butadiene.pdf
- Asphalt fumes: NIOSH at http://www.cdc.gov/niosh/78-106.html
- Dioxin Health Assessment at http://www.epa.gov/ORD/health/
- Mineral Fibers-OSHA at http://www.osha.gov/oshinfo/priorities/synthetic.html
- NTP Reports at http://ehis.niehs.nih.gov/ntp/docs/

Tox Profiles

- EMCI HazMat Chemical Fact Sheets at http://www.epa.gov/enviro/html/emci/chemref/index.html
- NCSU Pesticide Information Profiles at http://ace.orst.edu/info/extoxnet/pips/ghindex.html
- UCSD Material Safety Data Sheets On-line at http://chem-courses.ucsd.edu/CoursePages/Uglabs/MSDS/
- Unified Air Toxics Website - Health Effects Notebook for Hazardous Air Pollutants at http://www.epa.gov/ttn/uatw/hapindex.html
- U. of Georgia Material Safety Database at http://www.ps.uga.edu/rtk/msds.htm

Risk Assessment

- Commission on Risk Assessment & Risk Management (CRARM), 1997a. Framework for environmental health risk management. Final report, Volume 1, Wash, D.C.
- Commission on Risk Assessment & Risk Management (CRARM). 1997b. Risk assessment and risk management in regulatory decision-making. Final report, Volume 2, Wash, D.C.
- EPA-453/R99-001 http://www.epa.gov/ttnoarpg/t3/reports/risk_rep.pdf
- EPA Homepage http://www.epa.gov
- IRIS Homepage http://www.epa.gov/iris
- National Center for Environmental Assessment http://www.epa.gov/nceawww1
- National Research Council (NRC). 1983. Risk assessment in the federal government: Managing the process. National Academy Press, Wash, D.C.
- National Research Council (NRC). 1994. Science and Judgment in risk assessment. National Academy Press, Wash, D.C.
- Natural Resources Defense Council (NRDC), Inc. v. EPA. 1987. 824 F.2d at 1146.
- "Tiered Modeling Approach for Assessing the Risks Due to Hazardous Air Pollutants" is available at: http://www.epa.gov/ttn/scram/guidance/guide/toxguide.zip
- Presidential/Congressional Commission on Risk Assessment and Risk Management is available at: http://www.riskworld.com
- Residual Risk Report to Congress (3/3/99)
- Science Advisory Board http://www.epa.gov/science1
- Science Policy Council http://www.epa.gov/ord/spc

- Total Risk Integrated Methodology (TRIM). May 2000. http://www.epa.gov/ttn/uatw/urban/trim/trimpg.html
- U.S. EPA. 1986a. Guidelines for mutagenicity risk assessment. *Federal Register* 51:34006-34012. September 24.
- U.S. EPA. 1986b. Guidelines for carcinogen risk assessment. *Federal Register* 51:33992-34003. September 24.
- U.S. EPA. 1986c. Guidelines for the health risk assessment of chemical mixtures. *Federal Register* 51:34014-34025. September 24.
- U.S. EPA. 1986f. Guidelines for exposure assessment. *Federal Register* 51:34042-34054. September 24.
- U.S. EPA. 1988b. National emission standards for hazardous air pollutants. *Federal Register* 53(145):28496-28056, Proposed Rule and Notice of Public Hearing. July 28.
- U.S. EPA. 1989a. National emission standards for hazardous air pollutants; Benzene. *Federal Register* 54(177):38044-38072, Rule and Proposed Rule. September 14.
- U.S. EPA. 1991. Guidelines for developmental toxicity risk assessment. *Federal Register* 56:63798-63826.
- U.S. EPA. 1992a. Guidelines for exposure assessment. *Federal Register* 57:22888-22938. May 29.
- U.S. EPA. 1992b. Framework for ecological risk assessment. Risk Assessment Forum, Office of Research and Development, Washington, DC. EPA-630/R-92-001. February.
- U.S. EPA. 1992c. A tiered modeling approach for assessing the risks due to sources of hazardous air pollutants. Office of Air Quality Planning and Standards, Research Triangle Park, NC EPA-450/4-9-001.
- U.S. EPA. 1992e. Guidance on risk characterization for risk managers and risk
- U.S. EPA. 1995h. Proposed guidelines for neurotoxicity risk assessment. *Federal Register* 60(192):52032-52056. Office of Research and Development, Research Triangle Park, NC.
- U.S. EPA. 1996b. Proposed guidelines for carcinogen risk assessment. Office of Research and Development, Washington, DC. EPA-600/P-92-003C.
- U.S. EPA. 1996c. Guidelines for reproductive toxicity risk assessment. EPA-630/R-96-009.
- U.S. EPA. 1997c. Guiding principles for Monte Carlo analysis. Risk Assessment Forum, Washington, DC. EPA-630/R-97-001. March
- U.S. EPA. 1997d. Draft guidelines for risk assessment of chemical mixtures. Office of Research and Development, Washington, DC.
- U.S. EPA. 1997k. Policy for use of probabilistic analysis in risk assessment. Office of the Administrator, Washington, DC. May 15
- U.S. EPA. 1998c. Guidelines for neurotoxicity risk assessment. *Federal Register* 63:26926. May 14.
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- U.S. EPA. 1998i. US Environmental Protection Agency: Integrated Risk Information System (IRIS) at http://www.epa.gov/IRIS. Updated October 5.

- U.S. EPA. 1998j. ECOTOX Database (AQUIRE, PHYTOTOX, and TERRETOX). (Database is available to EPA and contractors through on-line connection; updated regularly). Office of Research and Development, National Health and Environmental Effects Research Laboratory, Mid-continental Ecology Division, Duluth, MN.

ATTACHMENT TO APPENDIX E:

NATA Schedule

National Air Toxics Assessment (NATA)

- Background:

  188 toxic air pollutants
  Different statutory requirements than for ozone, particulate matter, etc.

- EPA in the past has not maintained a national monitoring network for air toxics

- In 1998 EPA released the cumulative exposure project assessment based on 1990 emissions estimates

- NATA National Scale Assessment is an effort to better characterize the National Air Toxics problem

  < Targets 33 urban air toxics of concern
  < Based on detailed National Toxics Inventory data for 1996
  < Extensive State and local input into the inventories
  < Will include detailed exposure and risk assessments
  < Will be fully peer-reviewed by Science Advisory Board

National Scale Assessment

- Needed as one of several tools to inform State, local, national priority setting; will not be used independently as basis for regulations

- Developed and made available in two phases:

  1. Concentrations data
  2. Exposure/risk results

- EPA will present final results on National and State scales

- Results available on county-by-county basis; provides more accurate picture over larger scale

- Modeled concentration data are being "ground tested" through comparison with actual monitored data

NATA National Scale Assessment: Schedule (as of July 15, 2000)

1998-1999	EPA worked with States and local agencies to develop and define National Toxics Inventory for 1996
Fall 1999-Spring 2000	Discussions with industry and environmental groups about the process, caveats, etc.
March-May 2000	States/local agencies reviewed estimates for air toxics concentrations; EPA incorporated their comments
Early August 2000	Final 1996 concentrations data will be available for State/local preview
Late August 2000	Final 1996 concentrations data will be made publicly available
September 2000	EPA will share modeled exposure and risk data with States, local agencies
Early November 2000	EPA will make exposure/risk results available to the public at the same time the analysis is sent to Science Advisory Board for review
Late November 2000	Science Advisory Board will peer review results and analysis
Winter 2000/01	EPA will release final peer reviewed exposure/risk results
2001-2002	EPA will repeat analysis for 1999 air toxics data

Appendix F: National EPA Air Toxics Plan

09/11/00

US EPA's Action Plan for the National Air Toxics Program

Introduction:

This action plan provides an overview of the activities under EPA's air toxics program. Air toxics are also known as hazardous air pollutants; these are pollutants that are known or suspected to cause cancer or other serious health effects such as birth defects or reproductive effects. EPA's air toxics program reflects the mandates under the Clean Air Act to develop technology-based air toxics regulations and then subsequently to implement a more risk-based program. For example, in amending the Act in 1990, Congress required EPA to establish national regulations to reduce emissions of air toxic emissions from stationary and mobile sources. Further, the Act contains additional provisions that have a risk-based focus. For example, EPA is required to evaluate the public health risk remaining (i.e., the "residual risk") after implementation of technology-based air toxics regulations for stationary sources. Under this residual risk program, EPA must decide if the Agency needs to develop additional stationary source regulations to protect public health and the environment. Other sections of the Act call for study of specific types of air toxics problems including a focus on certain toxic air pollutants that persist and bioaccumulate in the environment.

The purpose of this action plan is to describe the variety of activities underway within the air toxics program, identify interrelationships among activities and highlight timeframes for products and opportunities for public participation. The action plan includes both near-term activities as well as milestones and deadlines that are many years in the future. The action plan is divided into four components:

Component 1: Standards
Component 2: Multi-media Projects and Risk Initiatives
Component 3: National Air Toxics Assessments
Component 4: Education and Outreach

EPA developed its current national air toxics goal to meet requirements of the Government Performance and Results Act (GPRA), which requires the Agency to report on the status of its progress in implementing programs. That goal is to reduce air toxics emissions by 75 percent from baseline levels and to significantly reduce the risk to the public of cancer and other serious adverse health effects caused by airborne toxics. Because EPA's knowledge and tools to assess the impacts of these emissions on public health and the environment were limited when the Agency set this current goal, it reflects the straightforward intent to reduce total air toxics emissions as a means to reduce risks

associated with exposure to air toxics. However, as EPA extends its knowledge, develops better assessment tools and begins to address the risks associated with air toxics emissions as required by the Act, the Agency expects to modify its goal to one directed specifically at risk reductions associated with exposure to air toxics. In working toward such a risk-based goal, the Agency will focus particularly on populations and areas disproportionately impacted, including, for example, densely populated areas, children at risk of developmental effects and people who are highly exposed to water and food affected by air toxics (e.g., subsistence fishers living near contaminated water bodies).

The action plan that follows includes an overview of each of the four components of the air toxics program, a timeline for activities, and a table that contains key milestones related to the activity.

Component 1: Standards

Overview - The Clean Air Act requires EPA to develop many different types of standards (also known as regulations or rules) for both stationary and mobile sources. These include:

- **National Technology-Based Standards** - Under the Clean Air Act Amendments of 1990, EPA is required to regulate stationary sources of 188 listed toxic air pollutants. On July 16, 1992, EPA published a list of 174 industry groups (known as source categories) that emit one or more of these air toxics. For listed categories of "major" sources (those that emit, or have the potential to emit, 10 tons/year or more of a listed pollutant or 25 tons/year or more of a combination of pollutants), the Clean Air Act requires EPA to develop standards that require the application of stringent air pollution reduction measures known as maximum achievable control technology (MACT) standards. To date, EPA has finalized 46 standards affecting 82 source categories. The EPA has also proposed an additional 10 standards covering 8 source categories. Five source categories have been "delisted." The Agency is continuing to develop standards for the remaining source categories.

- **Combustion Standards -** EPA has also issued two final rules to control emissions of certain toxic air pollutants from certain types of solid waste combustion facilities. These rules set emission limits for new solid waste combustion facilities and provide emissions guidelines for existing solid waste combustion facilities. These rules affect municipal waste combustors and hospital/medical/infectious waste incinerators, which account for 30 percent of the national mercury emissions to the air. By the time these rules are fully implemented, they are expected to reduce mercury emissions from these sources by about 90 percent from current levels, and reduce dioxin/furan emissions from these sources by more than 95 percent from current levels. EPA is working on additional rules to address industrial and commercial waste incinerators, other solid waste incinerators and small municipal waste combustor units.

- **Residual Risk Standards** - The residual risk program is designed to assess the risk remaining from stationary source categories after EPA implements a technology-based standard. EPA is required to set additional standards if the level of "residual risk" doesn't provide an "ample margin of safety to protect public health" or if further emissions reductions are needed "to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect." These residual risk standards are required within 8 years (9 years for the earliest standards) after EPA finalizes the technology-based standard.

- **Area Source Standards -** Under the Integrated Urban Air Toxics Strategy, EPA must ensure that 90 percent of the area source emissions of the 30 "area source" urban air toxics listed in the Strategy are regulated. In order to accomplish this, EPA identified 13 new categories of smaller commercial and industrial operations or so-called "area" sources for regulation. EPA plans to finalize regulations for these area source categories by 2004. EPA has completed or

nearly completed regulations on an additional 16 area source categories. However, the Agency will be adding source categories to the list for regulation to meet the requirement to regulate 90 percent of the area source emissions. [1]

C **Seven Specific Pollutants -** The Act also lists seven specific pollutants (alkylated lead compounds, polycyclic organic matter (POM), hexachlorobenzene, mercury, polychlorinated biphenyls, 2,3,7,8-tetrachlorodibenzofurans (TCDF) and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)) for special attention by the EPA. The Act requires that EPA assure that sources accounting for 90 percent of the emissions of these toxics are subject to regulation. EPA plans to complete these standards by 2003.

C **Utility Determination and Actions -** EPA is continuing to gather data on the mercury emissions from coal-fired electric utility power generation plants to evaluate the need for regulation of toxic air pollutants from these sources. Utility plants (primarily coal-fired plants) emit approximately 50 tons per year of mercury nationwide, which is almost 1/3 of the manmade mercury emissions in the United States. Mercury compounds are one of the listed 188 toxic air pollutants. It is a concern because it persists in the environment and can accumulate (e.g., can bioaccumulate in the food chain and lead to human exposure through food consumption). EPA will make a determination on whether to regulate air toxics emissions from electric utilities by December 2000.

C **Mobile Source Standards -** EPA started enforcing the first federal emission standards for passenger cars in 1968. Since then, the Agency has developed emission standards for all types of highway vehicles, their fuels, and engines used in virtually all varieties of mobile or portable nonroad equipment such as tractors, construction vehicles, recreational and commercial vessels, and lawn and garden equipment. EPA has made the emission standards more stringent over time. In December of 1999, EPA finalized stringent new standards for all cars and light duty trucks, and the gasoline they use. EPA, also issued a proposed rulemaking to solicit information relating to control of diesel fuel quality. In addition, EPA is reviewing standards for heavy-duty highway vehicles and engines for 2004, and considering new emission standards for these vehicles and engines beyond 2004. EPA is also reviewing standards for nonroad diesel engines.

While the toxic reductions from EPA's mobile source emission standards have been large, prior to 1990 EPA had no specific directions from Congress for a planned program to control toxic emissions from mobile sources. However, in 1990 Congress amended the Clean Air Act,

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[1]In EPA's Integrated Urban Air Toxics Strategy, the Agency identified the 33 air toxics that present the greatest threat to public health in the largest number of urban areas, and further identified the 30 of these with the greatest area source contribution to total emissions.

adding a formal requirement to consider motor vehicle air toxics controls. Section 202(l), requires the Agency to complete a study of motor vehicle-related air toxics, and to promulgate requirements for the control of air toxics from motor vehicles. EPA completed the required study in 1993, and is presently conducting analyses to update emissions and exposure analyses done for that study, and recently proposed a rulemaking to address the requirements of section 202(l).

- **Stakeholder Workgroup on State, Local and Tribal Program Structure to Support the Risk Reduction Goals of the Air Toxics Program** - The EPA established a workgroup under the Clean Air Act Advisory Committee's Subcommittee on Permits/New Source Review/Toxics. The workgroup met for 6 months from February through August, 2000. The EPA will use the product from this workgroup and other public comments to develop and issue a plan by February 2001. The plan will address how to structure a comprehensive program encompassing Federal, State, local and Tribal authorities to coherently address air toxics risk.

- **Implementation** - EPA has a number of activities underway to help facilitate implementation of air toxics standards or regulations. They include rulemaking for delegation of the programs to the States, as well as activities to track progress, and provide guidance. Many of these activities are on-going and therefore do not have specific milestones.

Element/ Sub-elements	Activities	Estimated Dates
National Technology-Based Standards		
Standards required by the Act in 1992 and 1994 (2&4-year)	Promulgate the 2&4 year air toxics standards	Completed
Standards required by the Act in 1997 (7-year)	Promulgate remaining 7-year air toxics standards	Completed
Standards required by the Act in 2000 (10-year)	Develop 10-year air toxics standards	May 2002
Combustion standards	Promulgate remaining combustion standards	November 2000
Residual Risk (RR) Program		
Residual risk	Finalize any additional standards needed for coke ovens	2001
	Finalize any necessary residual risk standards for 2- and 4-year technology based standards	2002-2004
Area Source Category Listing and Standards		
Update area source category list	Complete the area source list	December 2003
Develop area source standards	Promulgate 13 area source standards	2004
	Promulgate additional area source standards	2006
	Promulgate last group of area source standards	2009
Seven specific pollutant - Source Category List and Standards		
Standards for seven specific pollutants	Promulgate any standards necessary to meet requirement that sources accounting for 90% of emissions are subject to regulation for seven specific pollutants	2003

Element/ Sub-elements	Activities	Estimated Dates
Utilities Determination and Action		
Information collection	Collect information from the utility industry, conduct analysis of potential control technologies, and analyze health-related issues (see component 2)	December 2000
	Develop regulation (if positive determination is made) for utilities	2001-2004
Office of Transportation and Air Quality(OTAQ) -Related Activities		
Tier 2 rule	Final rule for stringent new emissions standards and gasoline sulfur controls that are expected to reduce NO_x, HC, and PM emissions from light-duty vehicles and light-duty trucks	Completed
2004 Heavy-Duty Diesel standards	Reconfirms standards for heavy-duty diesels that were finalized in 1997. Adds new test procedures and compliance requirements to ensure that standards are met "in use." Requires on-board diagnostics for some engines beginning in 2005. Requires new standards for heavy-duty gasoline engines and vehicles	Proposed in October 1999. Final rule signed July 31, 2000
Diesel Fuel Sulfur Control and Post-2004 Heavy-Duty Diesel Standards	Proposal to control sulfur in diesel fuel as well as establish new emission standards for heavy-duty diesel vehicles and engines beginning in 2007, based on after treatment technologies enabled by low-sulfur fuel	Proposal signed May 17, 2000. Final rule by December 2000
Tier 3 Standards for Nonroad Diesel Engines	Proposal expected to review test procedure and Tier 3 emission standards for nonroad diesel engines, and consider nonroad diesel fuel sulfur control. Proposed program could result in dramatic diesel PM reductions	Proposal planned for late 2000. Final rule December 2001

Element/ Sub-elements	Activities	Estimated Dates
Section 202(l) rule	Proposal designates motor vehicle air toxics and considers control options, particularly for benzene and formaldehyde	Proposal signed July 14, 2000. Final rule December 2000 (court-ordered deadline)
Assessments activities	Emissions and exposure analyses and risk assessment and characterization for motor vehicle-related air toxics	Completed
	Final Diesel Health Assessment Document	Fall 2000
State Programs delegation (section 112(l))		
Federal Register notice and promulgation of amendments	Promulgation of rule amendments for delegation of the air toxics program implementation to the State/local/Tribal agencies	Final signed August 2000
Stakeholder Workgroup on State/Local/Tribal Program Structure		
Workgroup under CAAAC, Permits/NSR/ Toxics Subcommittee	Public meetings (see component 4)	Completed
Plan for State/local/ Tribal Program structure	Prepare and issue plan	By February 2001
National Technology-Based Standards Implementation		
Implementation documents (to support State/local/Tribal implementation of air toxics standards)	Publish implementation assistance documents for highest priority needs for 7-year standards	June 2001
	Publish implementation assistance documents for highest priority needs for 10-year standards	May 2001 - November 2004

Component 2: Multimedia projects and risk initiatives

Overview - The Act requires a number of risk studies to help EPA better characterize risk to human health and the environment from air toxics. Information from these studies will provide information for rulemaking in some cases but will also provide information to support national and local efforts to address risks through other voluntary and pollution prevention programs.

- **Integrated Urban Air Toxics Strategy -** On July 19, 1999 EPA published the National Air Toxics Program: The Integrated Urban Strategy. The urban strategy contains the same components of the overall air toxics program. However, it has risk-based goals for addressing risks in the urban areas. Specifically, the Strategy has three goals for urban areas nationwide. The first, to ensure a 75% reduction in cancer incidence from stationary sources. The second to ensure a "substantial" reduction in health risks from area sources. The third to ensure that disproportionate risks are addressed first, thus focusing our efforts for sensitive populations or where there are geographic hot spots.

- **Urban Community-Based Pilot Projects** - The Integrated Urban Air Toxics Strategy has the goal of reducing public health risks (of cancer and other effects) from air toxics. It presents an approach for reducing these risks by looking at the cumulative risks posed by multiple sources (mobile, area, major and indoor air) and multiple pollutants in urban areas. However, since air toxics exposures vary (in terms of toxic air pollutants and sources) between urban areas across the country, EPA's activities to reduce risk on a national scale may not address potential risks on the more local level. Consequently, the Strategy includes local and community-based initiatives which EPA envisions will involve partnerships between EPA and the State, local and Tribal governments.

  For example, EPA is planning to conduct pilot projects in one or more urban areas. These pilot projects will involve working with representatives from all parts of the community to identify local health concerns and then to work on strategies to address public health concerns. On the national level these pilot projects will provide information that EPA will use to develop guidance for other urban areas for identifying and addressing risks.

- **Great Waters -** The Act directs EPA to monitor, assess and report on the deposition of toxic air pollutants to the "Great Waters," which include the Chesapeake Bay, Lake Champlain, the Great Lakes, National Estuary Program areas, and National Estuarine Research Reserves. Activities include assessing deposition to these waters by establishing a deposition monitoring network, investigating the sources of pollution, improving monitoring methods, evaluating adverse effects, and sampling for the pollutants in aquatic plants and wildlife. Pollutants of concern to the Great Waters include mercury, lead, cadmium, nitrogen compounds, polycyclic organic matter/polynuclear aromatic hydrocarbons (POM/PAHs), dioxins and furans, PCBs and seven banned or restricted pesticides. As part of the Great Waters Program, EPA is

currently funding special monitoring studies at five different coastal areas. In addition, EPA is expanding the National Atmospheric Deposition Program to include more coastal sites for long-term deposition records. EPA will continue to develop coastal monitoring and to support improvement of air deposition monitoring methods.

The Great Waters program is multimedia in nature and requires cross-program approaches to investigate and address problems. EPA's air and water programs are working together on two pilot studies to address mercury deposition to waterways, and the outcome of this effort will influence the development of joint national guidance for addressing Total Maximum Daily Loads (TMDLs) where air deposition is a factor. TMDLs specify the amount of pollutant that may be present in the water and still allow the water body to meet State water quality standards. TMDLs allocate pollutant loads among pollution sources (e.g., point and nonpoint sources), and include a margin of safety that accounts for uncertainty in the relationship between pollutant loads and characteristics of the waterbody. In part because of the efforts of the Great Waters program, there is now a greater level of coordination among research agencies and institutions to target areas of critical uncertainty and suspected threats to human health and the environment. Recent research continues to show that the diffuse emissions of urban areas can significantly affect nearby deposition rates to water bodies. The EPA recently provided a draft action plan for public comment which will detail measures to protect both public health and our nation’s waterbodies from atmospheric deposition of pollutants. This plan will be revised and reissued every two years.

C **Mercury Initiatives -** The Act requires EPA to issue a report to Congress on the sources and impacts of mercury. EPA released the report in December 1997. The report includes an assessment of the emissions of mercury from all known anthropogenic sources in the United States, the health and environmental implications of these emissions, and the availability and cost of control of these emissions.

C **PBT Initiatives -** EPA has a number of activities to identify and address risks from specific types of pollutants. This includes the Persistent Bioaccumulative Toxics (PBT) initiative that requires coordination between EPA offices, and other Federal and State and local agencies. For example, in an effort to coordinate programs under the Clean Air Act and the Clean Water Act, EPA is conducting a pilot study to link air dispersion and deposition models with watershed fate and transport models. The results of this study will help EPA improve multimedia analysis efforts and will allow the Agency to look at the connection between legal authorities under the two Acts.

Element/ Sub-elements	Activities	Estimated Dates
Integrated Urban Air Toxics Strategy		
Establish pilot projects working with interested mayors, NEJAC, etc.	Compile descriptions of existing efforts	Completed
	Choose area for early coordination	Completed, Cleveland chosen
	Prepare action plan/description of pilots	Completed
	Begin discussions with Mayors, State, others to identify cities for pilot projects	Winter 2000
Assessment of Progress with the risk reduction goals	Present/discuss risk characterization based on 1996 assessment activities (see component 3)	Winter 2000-2001
Great Waters		
Conduct two mercury Total Maximum Daily Load (TMDL) pilot studies	Develop model TMDL report for air deposition impacts	Fall 2000
Conduct pilot study to quantify benefits to water quality resulting from air pollution controls	Develop economic and fate transport model	2001
Develop air/water Interface Action Plan	Develop draft action plan with public participation	Completed
	Target State-identified impaired waterbodies and model regional air deposition loads	2001
	Examine rules and activities currently in place to address impairment caused by atmospheric deposition and recommend new necessary actions	Winter 2001
Mercury Initiatives		
Information gathering and action plan	National Academy of Science report on health effects of mercury	Completed

Element/ Sub-elements	Activities	Estimated Dates
	Final analysis of new mercury emissions data gathered under the information collection request (ICR) for utilities	December 2000
	Update technical report on mercury (to support regulatory determination for utilities)	December 2000
	Regulatory determination for air toxics emissions (including mercury) from electric utilities	December 2000
Coordination Activities		
Persistent Bioaccumulative Toxics initiatives	Finalize Persistent Bioaccumulative Toxics (PBT) strategy	Spring 2001
	Development of action plans for pollutants (including hexachlorobenzene)	Spring 2001
	Selection of new chemicals for PBT initiative	Spring 2001

Component 3: National Air Toxics Assessment Activities

Overview - National air toxics assessment (NATA) activities are a primary component of EPA's national air toxics program. Over time, these activities will help us set program priorities, characterize risks, and track progress toward meeting our overall national air toxics program goals, as well as specific risk-based goals, such as those of our Integrated Urban Air Toxics Strategy. More specifically, our NATA activities broadly include expanding air toxics monitoring, improving and periodically updating emissions inventories, periodically conducting national- and local-scale air quality, multi-media and exposure modeling, characterizing risks associated with air toxics exposures, and continued research on health and environmental effects and exposures to both ambient and indoor sources of air toxics.

As part of these NATA activities EPA is now conducting an initial screening-level assessment to demonstrate our approach to characterizing air toxics risks nationwide. This initial screening-level assessment will help to characterize the potential health risks associated with inhalation exposures to the 33 hazardous air pollutants (HAPs) identified as priority pollutants in our Integrated Urban Air Toxics Strategy, based on our 1996 national toxics emissions inventory. While such a broad-scale assessment is necessarily limited in the scope of the risks that it can address quantitatively, and by the uncertainties inherent in the various types of data and methods currently available, it represents an important step in characterizing air toxics risks nationwide. Our initial national, screening-level air toxics assessment includes four major steps:

- Compiling a national emissions inventory for 1996 of air toxics emissions from outdoor sources of air toxics emissions. The types of emissions sources in the inventory include major stationary sources (e.g., large waste incinerators and factories), area sources (e.g., dry cleaners, small manufacturers), and both on-road and off-road mobile sources (e.g., cars, trucks, boats). This inventory includes the 188 HAPs listed in the Clean Air Act, and will be completed late 1999.

- Estimating 1996 air toxics ambient concentrations across the continental United States (and Puerto Rico and the Virgin Islands) for the 33 urban HAPs, using a screening-level air dispersion model and the 1996 national air toxics inventory as input to the model. As part of this modeling exercise, estimated ambient concentrations will be compared to available ambient air toxics monitoring data to evaluate model performance. These activities are targeted for completion early 2000.

- Estimating 1996 population exposures across the continental United States (and Puerto Rico and the Virgin Islands) to the 33 urban HAPs, using a screening-level inhalation exposure model and the estimated ambient concentrations as input to the model. Exposure modeling is an important step in this assessment because it can provide more realistic estimates of actual population exposures to air toxics from outdoor emission sources by accounting for time people spend indoors and in other "microenvironments" (e.g., in vehicles), patterns of movement (e.g.,

commuting between home and work locations), and activity levels. This exposure modeling is targeted for completion in the Spring 2000.

C Characterizing potential public health risks due to inhalation of air toxics, including both cancer and noncancer effects, using available information on air toxics health effects, current Agency risk assessment and risk characterization guidelines, and the estimated population exposures. This characterization will quantify, as appropriate, potential cumulative risks to public health due to inhalation of air toxics from outdoor emission sources, discuss the uncertainties and limitations of the assessment, and identify other potential risks to public health from air toxics that are beyond the scope of this quantitative assessment. The characterization is now targeted for completion by mid-2000.

The assessment approach outlined above is fundamentally based on using screening-level computer models to estimate ambient air toxics concentrations and population exposures nationwide. While such computer models necessarily require simplifying assumptions and introduce significant uncertainties, they are needed to conduct such a large scale assessment since direct measurements of ambient air toxics concentrations are limited, and direct personal exposure measurements are even more limited . Such measurements are available for only a subset of air toxics in relatively few locations and for small study populations. Although EPA is working to expand the number and locations of ambient air toxics monitors and the study of personal exposures, direct measurement of air toxics concentrations is not practical for all air toxics of interest across all areas of the country. Over time, such measurement data can and will be used, however, to evaluate the models so as to better understand some of the uncertainties in such assessments and to improve our modeling tools.

In describing what this assessment will include, it is also important to recognize potentially important sources and pathways of risks to public health that are beyond the scope of this quantitative assessment. For example, while we recognize that indoor sources of air toxics emissions likely contribute substantially to the total exposures that people experience for a number of these HAPs, assessing these indoor sources of exposure cannot be done on a national scale at this time. Further, for a subset of these HAPs (i.e., those that persist and bioaccumulate in the environment), dietary exposures (e.g., eating contaminated fish) likely contribute much more to the total risk associated with exposure to these pollutants than do the inhalation exposures that will be addressed in this assessment. These and other important aspects of total population exposures to air toxics will be addressed more fully over time as part of our NATA assessment activities as more comprehensive data and assessment tools become available.

Additionally, NATA includes other key activities that will support further risk characterizations on the local and national level in the future. These include:

C Developing and implementing a plan to characterize the concentrations of ambient air toxics through an expanded monitoring network. Data from existing state and local air monitoring

programs will be compiled to summarize our current knowledge about ambient air toxics. Existing ambient air toxics monitoring data will be compiled and summarized and then be used as a "reality check" on model output. A national monitoring strategy (**AIR TOXICS MONITORING *CONCEPT* PAPER**) calls for incremental changes to existing monitoring networks, guided by data analysis and model predictions, to improve the collection of ambient data for future model evaluations. As the monitoring program matures, trend sites will then be established to assess the effectiveness of the air toxics program components.

- Evaluating air toxics on a more local scale (e.g., an urban area) using more refined air quality modeling tools that factor in specific local information such as terrain (mountainous or flat) and local weather patterns. The results of national and local-scale modeling can be compared to provide a more complete context for the evaluation of air toxics.

- Comparing air toxics inventories from 1990 and 1996 on a toxicity-weighted basis to help inform future assessments of progress toward meeting the risk reduction goals.

- Recommending tools to State, local and tribal regulatory agencies for evaluating air toxics concentrations, exposures and risk. This will include a comparison of the results of national scale models to those from more local scale models.

This initial national, screening-level assessment is part of an iterative and evolving process to assess and characterize risks from exposures to air toxics, measure progress in meeting goals, and inform future directions for EPA's national air toxics program. While there continue to be significant uncertainties and gaps in methods, models, and data that limit our ability to assess risks to public health and the environment associated with exposures to air toxics, continued research will enable future assessment activities, both at the national screening-level and at more local refined levels, to yield improved assessments of cumulative air toxics risks. An important component of our future NATA activities will be to repeat this type of national screening-level assessment every three years – with the next such assessment focusing on 1999 air toxics data.

Element/ Sub-elements	Activities	Estimated Dates
Emission Inventory		
National-scale air toxics emission inventory	Complete 1996 National Toxics Inventory Summary files available (NTI)	Completed
	Begin development of 1999 NTI	Ongoing
	Preliminary comparison of toxicity-weighted baseline and 1996 NTI emission inventories	Fall 2000
Modeling		
National-scale air quality modeling	Stakeholder review of example air quality modeling output	Completed
	Present/discuss air quality results (33 urban air toxics)	Completed
	Comparison of monitoring data with modeling results	1st stage completed
National-scale exposure modeling	Stakeholder review of example exposure modeling output	Completed
	Complete exposure/risk segments and submit entire assessment (including NTI and ASPEN modeling) for peer review. Make peer review draft available to the public	November 2000
	Complete exposure/risk segments and submit entire assessment (including NTI and ASPEN modeling)	December 2000
Local scale air quality and exposure modeling	Evaluate air quality and exposure in two selected urban areas	Winter 2001
	Comparison of local scale modeling with National scale modeling	Winter 2001
Risk Characterization Analyses		
National Scale Characterization	Present and discuss characterization based on 1996 assessments	Winter 2000 - 2001

Element/ Sub-elements	Activities	Estimated Dates
	Present and discuss characterization based on National and local scale assessments	Winter 2000 - 2001
Integrated Urban Air Toxics Strategy	Compare toxicity weighted inventories analysis	Fall 2000
	Estimate progress in meeting risk reduction goals 1990-1996	Winter 2000 - 2001
Monitoring		
Database and analyses	Compilation of State/local monitoring data	Completed
	Public access of monitoring data/summary report	Fall 2000
Network development	Revise air toxics monitoring network concept paper	Completed
	Develop detailed monitoring plan for FY-2000 monitoring	Completed
	Science Advisory Board review	Completed

Component 4: Education and Outreach

Overview - EPA believes that public participation is vital for the implementation of the overall air toxics program. The Agency is committed to working with cities, communities, State, local and Tribal agencies, and other groups and organizations that can help implement activities to reduce air toxics emissions. For example, the Agency expects to work with the cities and other interested stakeholders in the national air toxics assessments that will be conducted. In addition, EPA will continue to work with stakeholders on regulation development. The Agency intends to involve local communities and industries in the development of local risk initiatives such as the urban community-based pilot projects. Other outreach and education efforts include:

- **Urban Air Toxics Report to Congress** - EPA is required under the Act to provide two reports to Congress on actions taken to reduce the risks to public health posed by the release of toxic air pollutants from area sources. The Act also requires that the reports identify specific metropolitan areas that continue to experience high risks to public health as a result of emissions from area sources. EPA will complete the first of these two reports in 2000. This report will provide specific information about the Integrated Urban Air Toxics Strategy, including further details on the methodologies EPA used to develop the final urban air toxics list and the list of source categories. The report will also provide an overview of previous studies conducted in various cities to characterize their respective urban air toxics problems and will contain a detailed discussion of the research needed to achieve the goals of the Strategy. The second report is due in 2004. EPA also expects to report to the public about air toxics emissions trends and air quality in urban and other areas in its annual Air Quality and Emissions Trends Reports in the future.

- **Great Waters Program Outreach** - the Act directs EPA to periodically report its findings related to the results of any monitoring, studies and investigations conducted under this program. The EPA has already submitted a *First* and *Second Report to Congress* and is in the process of completing the *Third Great Waters Report to Congress*. EPA is also working on additional outreach tools for the public such as an educational brochure to inform the public about air deposition issues and further enhancements to Great Waters websites. During 2000, EPA will be developing a handbook to assist water resource managers in understanding how to characterize air deposition problems.

- **Stakeholder Meetings on State, Local and Tribal Program Structure** - The EPA established a workgroup under the Clean Air Act Advisory Committee's Subcommittee on NSR/Permits/Toxics. The workgroup met for 6 months from February through August, 2000. The EPA will use the product from this workgroup and other public comments to develop and issue a plan by February 2001. The plan will address how to structure a comprehensive program encompassing Federal, State, local and Tribal authorities to coherently address air toxics risk.

- **Website Activities** - EPA will continue to develop and maintain websites with information on the urban air toxics program, the National Air Toxics Assessment and other air toxics programs.

Element/ Sub-elements	Activities	Estimated Dates
Reports to Congress		
Issue Urban Air Toxics Report to Congress (section 112(k))	Publish final Report to Congress	Awaiting Signature
	Publish Second Urban Air Toxics Report to Congress	November 2004
Great Waters Program Outreach		
Third Report to Congress	Complete third Great Waters report covering six required elements	Completed June 2000
Public information website	Update and improve EPA's Great Waters website	Winter 2001
State/Local/Tribal Program Structure Stakeholder Workgroup Meetings		
1st public FACA meeting to discuss State/Local/Tribal program structure (Washington DC)	Hold public meeting	Completed February 2000
2nd public FACA meeting to discuss State/Local/Tribal program structure (Washington DC)	Hold public meeting	Completed June 2000
3rd & Final public FACA meeting to discuss State/Local/Tribal program structure (Washington, DC)	Hold public meeting	Completed August 2000
Plan for State/Local/ Tribal Program Structure	Prepare and issue plan (see Component 1)	By February 2001
National Air Toxics Assessments (NATA) Outreach Activities		
Stakeholder meetings on example presentation of NATA results	Request comments on example presentation formats for NATA results	Completed

Element/ Sub-elements	Activities	Estimated Dates
NATA results	Results of air quality modeling	Completed
	Add all exposure modeling results	Completed

Appendix G: Additional Issues the Workgroup Identified

Listed below are issues which the workgroup did not address, but which the workgroup believes are important and will need to be addressed.

1. Nationally, what is an unacceptable level of air toxics risk?
2. If acceptable levels of air toxics risk can vary, how do you address disparities in public health protection across communities (especially low income and people of color communities)?
3. How should ecosystem risk be addressed in S/L/T risk-based air toxics programs?
4. How should urban sprawl and brownfield development be addressed in the framework recommended in this report?
5. How should the program backstop be designed that is discussed in Step 4 of this report?
6. Should there be a common currency for air toxics information reported to EPA because EPA needs for national goals to be measurable?
7. What should EPA or S/L/T agencies do if there are no emissions or dose-response data or they are inadequate?

Appendix H: Summary and Brief Discussion on Public Participation Procedures

A. Clean Air Act Operating Permit Program Public Participation Procedures

States that issue title V permits must provide the public with an opportunity to comment (usually during a 30-day public comment period) on the initial permit given to an air pollution source as well as on significant changes to the permit, the renewal of the permit (after 5 years), and any reopening of the permit. States must alert the public about these opportunities by publishing a notice in the newspaper or a State register and by individually notifying citizens who have asked to be on a mailing list for this purpose. Citizens have the right to request a public hearing to raise concerns about the draft permit. In addition, citizens have the right to request that EPA object to the permit that the State proposes to issue. This is done by a petition to the Administrator. Citizens who made comments on the draft permit and who believe the permit is unlawful can (1) challenge the permit in State court, and/or (2) sue EPA for failing to object to the permit (assuming EPA denied their petition). After the permit is issued, citizens can also review the numerous reports that the air pollution source must send to the State permitting authority, which should help the public to determine if the source is complying with its permit.

The public has an important oversight role to play. Title V permits are designed to make the sources more accountable to the regulators and to the public. To date, the most important step in the process for the public has been the chance to review and comment on draft permits.

B. State and Local Agencies Public Participation Procedures

California

California has two primary programs in place to address air toxics, the Toxic Air Contaminant (TAC) Program and the Air Toxics "Hot Spots" Program (Hot Spots Program). Both programs actively involve the public and affected stakeholders though an open public process.

The TAC Program consists of a two-phase process for the identification and control of air toxics by the California Air Resources Board (ARB). In both the identification and control phase of the TAC Program, a series of public workshops, meetings and public hearings are conducted to solicit input from the public, affected industry, environmental groups and other stakeholders. Where the public has expressed concern, ARB staff have invited the public to participate in site visits to facilities to openly discuss their concerns. ARB has also hosted town meetings to discuss air toxics concerns with local residents.

California's Hot Spots Program was established to ensure that the public is informed of potential health risks associated with exposures to air toxics emissions from stationary sources. Similar to the TAC Program, public input is critical to the success of the program. Under the Hot Spots Program, facilities

which pose a significant risk are required to notify the public of the potential health risks posed by the facility. In some cases, a public meeting is required to inform the public of the health risks posed by the facility. In addition, health risk assessment guidance for use in the Hot Spots Program is also required to go through public workshops and public comment along with review from an independent scientific review panel.

Under the Hot Spots Program, local air pollution control districts or air quality management districts (districts) are required to conduct public hearings to present their annual reports. Annual reports include information pertaining to the Hot Spots Program, such as prioritization of facilities and potential cancer risk and non-cancer health impacts posed by a facility. Health risk assessments are available for public review through the district.

The ARB is redirecting its air toxics program toward implementing an aggressive community health program where California communities are being assessed to determine the cumulative effects of exposure to multiple pollutants. The ARB is working with communities to develop strategies to reduce public health risks. This program will involve all interested parties, such as community and environmental leaders, local air districts, and affected businesses. The success of this program is dependent upon strong community involvement.

New York

In New York State, there is a requirement for public participation built into the State Environmental Quality Review Act (SEQR) process. If an action is determined not to have significant adverse environmental impacts, a determination of nonsignificance (Negative Declaration) is prepared. If an action is determined to have potentially significant adverse environmental impacts, an Environmental Impact Statement (EIS) is required. If a draft EIS is required, its scope will be determined and a minimum 30-day public comment period is required for review of the accepted draft. A public hearing may be held. An EIS concisely describes and analyzes a proposed action which may have a significant impact on the environment. The SEQR process uses the EIS to examine ways to avoid or reduce adverse environmental impacts related to a proposed action. This includes an analysis of all reasonable alternatives to the action. The SEQR decision making process encourages communication among government agencies, project sponsors and the general public.

Through this process, New York State has built a requirement for potential public participation into the air permitting process. The permitting municipality is notified of the proposed application, as well as any person who has previously expressed in writing an interest in receiving such notification. Notice of the application will be published in the state Environmental Notice Bulletin within 10 days after the date of notice to the applicant. The applicant may also be required to provide other reasonable public notice of a complete application and opportunity for public comment (i.e., in a local newspaper). All major projects require publication of a notice of complete application in a newspaper (i.e., in a local newspaper).

The completed application will be evaluated, along with any comments received, to determine whether a public hearing must be held. A significant degree of public interest may be sufficient reason to hold a public hearing. Within 60 calender days of the date the application is complete, the applicant and all persons who have filed comments shall be notified by mail of a public hearing.

If it is determined that a public hearing is to be held, it must be within 90 days after the application is complete. Under certain circumstances, if a permit was denied or significant conditions were attached, a request for a public hearing may be requested within 30 days of the mailing of the denial of the permit or the permit with conditions.

Appendix I: Summary of EPA Air Toxics Program Activities Related to Step 2, Program Development

Section 112(d) MACT standards

Description

The maximum achievable control technology (MACT) program is based on the development of national performance and/or technology-based standards. Under the Clean Air Act (CAA) amendments of 1990, EPA is required to regulate stationary sources of 188 listed toxic air pollutants. On July 16, 1992, EPA published a list of 174 industry groups (known as source categories) that emit one or more of these air toxics. For listed categories of major sources (those that emit, or have the potential to emit, 10 tons/year or more of a listed pollutant or 25 tons/year or more of a combination of pollutants), the CAA requires EPA to develop standards that require the application of stringent air pollution reduction measures known as MACT standards. Where warranted, smaller sources (area sources) of air toxics such as dry cleaning operations, solvent cleaning activities, commercial sterilizers, secondary lead smelters, and chromium electroplating facilities are also controlled. As of July 2000, EPA has finalized 46 standards for 82 source categories and proposed 10 standards for 8 source categories. Five source categories have been delisted.. The EPA is continuing to develop standards for the remaining source categories.

Relationship to Step 2: Program Development

The CAA's air toxics program includes a technology phase and a risk phase. In the technology phase, the MACT standards produce significant emission reductions to address the air toxics problem. Many State and local programs are also in place and have been reducing air toxics for many years. In some cases the CAA technology phase standards and the State and local programs may solve the air toxics problem, and in others they may not. The emission reductions of these efforts (including the MACT standards) serve as the baseline for the risk-based phase of the CAA's air toxics program.

The MACT standards, whose compliance dates for the 2-, 4-, and 7-year standards have passed or will be approaching soon, is projected to produce emission reductions that affect the 2002 national toxics inventory (NTI). The emission reduction effects of the 10-year standards are projected to begin to be seen in the 2005 NTI. With the completion of the MACT program, EPA will have finished a major portion of its statutory requirements under the CAA to regulate air toxics. Sources that are uncontrolled or undercontrolled (from the urban air toxics perspective) will be a focus for future potential reductions as part of Step 2.

Section 129 Combustion Standards

Description

Under section 129 of the CAA, EPA has issued two final rules to control emissions of certain toxic air pollutants from certain types of solid waste combustion facilities. These rules set emission limits for new solid waste combustion facilities and provide emissions guidelines for existing solid waste combustion facilities. These rules affect municipal waste combustors and hospital/medical/infectious waste incinerators, which account for 30 percent of the national mercury emissions to the air. The EPA is working on additional rules to address industrial and commercial waste incinerators, other solid waste incinerators, and small municipal waste combustor units.

Relationship to Step 2: Program Development

The section 129 solid waste combustion standards are expected to reduce mercury emissions from these sources by about 90 percent from current levels and reduce dioxin/furan emissions from these sources by more than 95 percent from current levels. Additional reductions will be realized from standards on industrial and commercial waste incinerators, other solid waste incinerators, and small municipal waste combustor units. In areas where these units are important to the local inventory, the national rules will establish a new, lower baseline as the starting point for any additional reductions resulting from Step 2 programs.

Section 112(f) Residual Risk Standards

Description

The residual risk program is designed to assess the risk remaining from stationary source categories after EPA implements a technology-based standard. The EPA is required to set additional standards if the level of residual risk doesn't provide an ample margin of safety to protect public health, or if further emissions reductions are needed to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect. These residual risk standards are required within 8 years (9 years for the earliest standards) after EPA finalizes the technology-based standard. This strategy provides EPA with the flexibility to address a wide range of air toxics problems. The provisions of this strategy describe the approaches for identifying the nature and scope of the problem and the mechanisms for involving all concerned parties in discussions.

Relationship to Step 2: Program Development

The CAA's air toxics program includes a technology phase and a risk phase. Many State and local programs are also in place and have been reducing air toxics for many years. Because not all air toxics problems are addressed by technology standards alone, the residual risk program is needed to maintain the goal of protecting the public health and preventing an adverse environmental effect by

providing a more complete approach for dealing with a variety of adverse effects. The EPA is in the process of conducting the initial residual risk analyses and will finalize standards for the 2- and 4-year MACT in the 2002 to 2004 time frame. These assessments and resulting actions can help inform Step 2 program development decisions as well as identify potential sources that are of local concern.

Section 112(k) Area Source Standards

Description

Under the Integrated Urban Air Toxics Strategy, EPA must ensure that 90 percent of the area source emissions of the 30 area source urban air toxics listed in the Strategy are regulated. In order to accomplish this, EPA identified 13 new categories of smaller commercial and industrial operations or so-called area sources for regulation. The EPA plans to finalize regulations for these area source categories by 2004. The EPA has completed or nearly completed regulations on an additional 16 area source categories. The EPA will be adding source categories to the list for regulation to meet the requirement to regulate 90 percent of the area source emissions by 2003.

In addition, EPA must ensure that the following three goals are met:

- 75% reduction in cancer "incidence"
- Substantial" reduction in noncancer risks
- Address disproportionate impacts of air toxics hazards across urban areas

Relationship to Step 2: Program Development

The CAA's air toxics program includes a technology phase and a risk phase. In the technology phase, the section 112(k) area source standards are or will produce emission reductions to address the air toxics problem. Many State and local programs are also in place and have been reducing air toxics for many years. In some cases the CAA technology phase standards and the State and local programs may solve the air toxics problem and in others they may not. The emission reductions of these efforts (including the area source standards) serve as the baseline for the risk-based phase of the CAA's air toxics program. The program should provide for meeting the risk reduction goals of the CAA on the national level, while providing flexibility to establish and address local air toxics goals.

Section 112(c)(6) List of Seven Specific Pollutants

Description

Section 112(c)(6) of the Act also lists seven specific pollutants (alkylated lead compounds, polycyclic organic matter, hexachlorobenzene, mercury, polychlorinated biphenyls, 2,3,7,8-tetrachlorodibenzofurans and 2,3,7,8-tetrachlorodibenzo-p-dioxin) for special attention by the EPA. The CAA requires that EPA assure that sources accounting for 90 percent of the emissions of these

toxics are subject to regulation. On June 20, 1997, EPA published notice of a draft listing of source categories for regulation under section 112(c)(6) of the CAA (62 FR 33625). The EPA plans to complete these standards by 2003.

Relationship to Step 2: Program Development

In April 1998 (63 FR 17838), EPA published its findings based on a review of the available data that a substantial majority of source categories emitting the seven pollutants have already been listed for regulation under another section of the CAA (section 112(d)(2)) or are subject to comparable regulation under other CAA authorities. Consequently, EPA issued a list of only two additional source categories in response to the requirement to ensure that 90 percent of the emissions of the seven pollutants has been targeted for regulation:

Utility Determination and Actions

Description

As part of the second phase of the program outline in the 1990 CAA amendments, EPA is required to conduct specific studies to assess the potential for adverse effects and, if necessary, to take action to reduce the potential for these effects. These studies include the *Mercury Study Report to Congress* (EPA 1997a) and the *Utilities Study* (EPA 1998b). At the present time, EPA is continuing to gather data on mercury emissions from coal-fired electric utility power generation plants to evaluate the need for regulation of toxic air pollutants from these sources. Utility plants (primarily coal-fired plants) emit approximately 50 tons per year of mercury nationwide, which is almost 1/3 of the manmade mercury emissions in the United States. The EPA will make a determination on whether to regulate air toxics emissions from electric utilities by December 2000. If a positive determination is made, EPA will develop a regulation in the 2001 - 2004 time frame.

Relationship to Step 2: Program Development

Depending on the outcome of the determination, national utility regulations to reduce mercury emissions could address a major source of these emissions in local areas.

Mobile Source Standards

Description

The EPA started enforcing the first Federal emission standard for passenger cars in 1968. Since then, the Agency has developed emission standards for all types of highway vehicles, their fuels, and engines used in virtually all varieties of mobile or portable nonroad equipment such as tractors, construction vehicles, recreational and commercial vessels, and lawn and garden equipment. The EPA has made the emission standards more stringent over time. In December 1999, EPA finalized stringent

new standards for all cars and light duty trucks and the gasoline they use. In May 2000, EPA issued a notice of proposed rulemaking to control sulfur in diesel fuel. In addition, in May 2000 EPA proposed new emission standards for heavy duty diesel vehicles and engines beginning in 2007. The EPA is also reviewing standards for nonroad diesel engines.

While air toxics emissions reductions from EPA's mobile source emission standards have occurred largely due to collateral reductions from the criteria pollutant program, EPA had no specific directions from Congress for a planned program to control toxics emissions from mobile sources. However, in 1990, Congress amended the CAA, adding a formal requirement to consider motor vehicle air toxics controls. Section 202(l), requires EPA to complete a study of motor vehicle-related air toxics, and to promulgate requirements for the control of air toxics from motor vehicles. The EPA completed the required study in 1993, is presently conducting analyses to update emissions and exposure analyses done for that study, and in July 2000 proposed a rule to address the requirements of section 202(l).

Relationship to Step 2: Program Development

The CAA's air toxics program includes a technology phase and a risk phase. In the technology phase, the mobile source standards are and will produce emission reductions to address the air toxics problem. Many State and local programs are also in place and have been reducing air toxics for many years. In some cases the CAA technology phase standards and the State and local programs may solve the air toxics problem and in others they may not. The emission reductions of these efforts (including the mobile source standards) serve as the baseline for the risk-based phase of the CAA's air toxics program.

Section 112(l) Approval of State Programs and Delegation of Federal Authorities

Description

Under section 112(l) of the CAA, EPA is authorized to approve alternative State, local, territorial agencies, and Indian tribes (S/L/T) hazardous air pollutant standards or programs when such requirements are demonstrated to be no less stringent than EPA's section 112 rules. Subpart E (40 CFR 63) implements section 112(l) of CAA and contains procedures for delegating hazardous air pollutant standards and other requirements to S/L/T agencies. In August the Administrator signed a rule containing changes to subpart E to help S/L/T agencies preserve the integrity of existing S/L/T hazardous air pollutant programs by offering a range of options for demonstrating equivalence with the Federal requirements and expediting the approval process. In addition, the amendments will clarify what S/L/T agencies must or can do to obtain delegated authority under subpart E.

Relationship to Step 2: Program Development

Subpart E will exist as a tool for S/L/T agencies to use in submitting their programs under the Federal urban air toxics program to take delegation and achieve Federal equivalency. However, there may be flexibility to enhance or replace the delegation opportunities for rules, requirements, or programs designed to implement the urban air toxics strategy developed under Step 2 that go beyond subpart E. The issue of how to define and measure functional equivalency is a key element of workgroup discussions under program development.