United States
Environmental Protection
Agency

Office of
Enforcement and
Compliance Assurance (2221)

EPA 300-R-00-005
July 2000
www.epa.gov/oeca

Annual Report on Enforcement and Compliance Assurance Accomplishments in 1999

August 21, 2000

Message from the Assistant Administrator

It is my pleasure to share with you the annual report for EPA's national enforcement and compliance assurance program, which highlights the strides we've made in targeting significant environmental risks through our use of a full set of enforcements tools, incentives, and compliance assistance. Our accomplishments during fiscal year 1999 (FY99), and our record for the last seven years, show that we have built a strong and aggressive enforcement program that has achieved significant environmental results, while also providing compliance assistance to both large and small businesses and offering real incentives to bring violators into compliance.

The goal of our program is to provide a credible deterrent to pollution and greater compliance with the law. In FY99, we strengthened our program by expanding, in consultation with the states and our stakeholders, innovative approaches to compliance and enforcement. By providing assistance designed to prevent violations, offering incentives to motivate compliance, and conducting monitoring and taking enforcement actions to identify and correct violations and deter others, we have obtained continuous improvement in compliance with standards, permits, and regulatory requirements. Our approach has resulted in mitigated environmental risks, better environmental management at regulated facilities, and public demands for environmental information being met.

In introducing our *Annual Report on Enforcement and Compliance Assurance Accomplishments in 1999*, I would like to highlight a few of our diverse accomplishments over the past year. Enforcement actions concluded in FY99 will reduce over 6.8 billion pounds of pollutants. Additionally, polluters were required to spend a record $3.4 billion to correct violations and take steps to protect the environment. We also achieved a record $236.8 million in environmentally beneficial projects. A record $166.7 million in civil penalties was assessed, including the largest Clean Air Act settlement in history against seven diesel engine manufacturers who used illegal devices to disable their emission control systems. This case alone will result in 75 million tons of nitrogen oxide reductions over the next quarter century. We took 3,935 civil judicial and administrative enforcement actions in 1999, the highest number of civil actions taken over the last three years.

Our strong criminal enforcement program reflects our goal of punishing those who callously disregard our nation's environmental laws and who put the public at serious risk when they do so. Most significantly in 1999, a record 208 years of jail time was imposed on criminal defendants. This increase in sentences is extremely important as a deterrent to others. A prison sentence is personal–it's not a cost of business that can be passed onto the consumer.

In FY99, we improved environmental compliance by offering a variety of incentives programs to small and large businesses. For example, we encouraged companies with multiple facilities to take advantage of EPA's Audit Policy to conduct corporate-wide audits. One such agreement is expected to eliminate 700 tons of air pollutants annually. We also offered an extensive set of compliance assistance tools to help businesses and communities nationwide comply with environmental requirements, including "plain English" guides to environmental requirements, translations of requirements in several languages, sector notebooks, and national Compliance Assistance Centers. In FY99, we added five new Centers, bringing the total to nine industry-specific, Internet-based Centers that are up and running.

These are but a few of the accomplishments that illustrate the success of our enforcement and compliance program in FY99. We are proud of these activities and grateful for the dedication of our staff, as well as that of states, tribes, local governments, and stakeholders. As we enter the 21st century, we will continue to work with states and stakeholders to foster and refine our efforts to ensure compliance with the nation's environmental laws. In doing so, we strive to achieve our goal of protecting all Americans from threats to our health and the environment.

Sincerely,

Steven A. Herman
Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency

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Acronyms

AFS	Air Facility Subsystem
AIRS	Aerometric Information Retrieval System
APO	Administrative penalty order
AOC	Administrative order on consent
BOD	Biological Oxygen Demand
CAA	Clean Air Act
CAP	Compliance Audit Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFC	Chlorofluorocarbon
CWA	Clean Water Act
DOJ	U.S. Department of Justice
EMR	Environmental Management Review
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
EOY	End of year
EPCRA	Emergency Planning and Community Right-to-Know Act
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FY	Fiscal year
GLP	Good Laboratory Practice
ICDS	Inspection Conclusion Data Sheet
NEIC	National Enforcement Investigation Center
NEPA	National Environmental Policy Act
NESHAP	National Emission Standard for Hazardous Air Pollutants
NOx	Nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPMS	National Performance Measures Strategy
NSR	New Source Review
OC	Office of Compliance
OECA	Office of Enforcement and Compliance Assurance
OPA	Oil Pollution Act
ORE	Office of Enforcement
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PPA	Prospective purchaser agreement
PM	Particular matter
PRP	Potentially responsible party
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
SDWA	Safe Drinking Water Act
SEP	Supplemental Environmental Project
SFIP	Sector Facility Indexing Project
SNC	Significant noncompliance
SO_2	Sulfur dioxide
tpy	tons per year
TRI	Toxic Release Inventory
TSCA	Toxic Substances Control Act
TSS	Total suspended solid
UAO	Unilateral Administrative Order
UIC	Underground injection control
UST	Underground storage tank
VOC	Volatile organic compound

1. Introduction

Our Mission: Protecting Human Health and the Environment

Working in conjunction with states, tribes, and local governments, the staff of the U.S. Environmental Protection Agency's (EPA's) national enforcement and compliance assurance program ensures compliance with the nation's environmental laws. The national enforcement and compliance assurance program staff are located in EPA's Office of Enforcement and Compliance Assurance (OECA) and in the EPA regional and satellite offices. Our mission is to protect the well-being of all Americans, our nation's environment, and its natural resources. By pursuing a strategic approach in which we systematically identify problems and adopt the appropriate tools to address their risks, EPA and the states, tribes, and local governments seek to maximize compliance and reduce threats to public health and the environment.

In response to the Government Performance and Results Act (GPRA), which promotes more results-based management, EPA developed a strategic plan that delineates specific goals, objectives, and performance measurements. Goal 9 of the strategic plan requires EPA to provide a credible deterrent to pollution and greater compliance with the law. Goal 9 is the core responsibility of the national enforcement and compliance assurance program.

We carry out our responsibility to provide a credible deterrent to pollution and greater compliance under the law by identifying priorities and then using particular approaches to achieve goals under the priority areas. Finally, we measure our performance, not only to meet the statutory mandates of GPRA, but also to inform the public of our progress and to inform ourselves about where improvements are needed. In Part 2 of this report, we will share with you the results of our performance in fiscal year 1999 (FY99).

Addressing Environmental Risks Using a Problem-Solving Approach

In FY99, we continued to strengthen our enforcement and compliance assurance program by expanding, in consultation with the states and our stakeholders, innovative approaches to compliance and enforcement. New tools that provide compliance assistance and compliance incentives complement a strong program of compliance monitoring and civil and criminal enforcement. A strong enforcement component provides the foundation for the national compliance program, motivating regulated entities to seek assistance and use incentive

FY99 Priority Industry Sectors

- Agricultural Practices/ Concentrated Animal Feeding Operations (CAFOs)
- Automotive Service and Repair Shops
- Coal Fired Power Plants
- Chemical Preparation
- Dry Cleaning
- Industrial Organic Chemicals
- Iron and Basic Steel Products
- Municipalities
- Petroleum Refining
- Primary Nonferrous Metals
- Pulp Mills

policies and providing fairness in the marketplace by ensuring that noncomplying facilities do not gain an unfair competitive advantage.

The innovative approaches that we have developed are tailored to the particular environmental problem and/or pattern of noncompliance and include, as appropriate, a mix of the following:

- **compliance monitoring** (i.e., determining compliance with environmental laws and regulations);
- **civil and criminal enforcement actions**;
- **compliance assistance** (i.e., providing information and guidance about environmental requirements to regulated entities); and
- **compliance incentives** (i.e., promoting policies that encourage self-policing through identification, correction, and disclosure of violations by regulated facilities).

We discuss each of these tools in Part 3 of this report and provide examples of how we have used these tools singly or in combination to achieve the greatest environmental results.

Our Priorities in 1999[1]

In FY99, EPA continued to address priority problems related to particular industry sectors as well as specific environmental media. For this fiscal year we focused on 11 priority sectors as listed in the box to the left. Sectors that were selected as priorities were based on several factors, including compliance history, regional and state concerns, national scope of the sector, and potential environmental and human health risk identified from pollutant loadings and Toxic Release Inventory (TRI) risk data. The priority industry sectors are discussed in detail in Appendix A. In addition to the sector priorities, we identified 29 media-specific priorities in FY99 including:

♦ **Clean Water Act (CWA)**

- Wet weather
- Concentrated Animal Feeding Operations (CAFOs)
- Wetlands

♦ **Safe Drinking Water Act (SDWA)**

- Public water system – microbial rules
- Safe drinking water information system
- SDWA amendments
- Underground Injection Control Class V wells

♦ **Clean Air Act (CAA)**

- Title V permits
- Synthetic minors
- Air toxics
- Chlorofluorocarbon (CFC) enforcement

♦ **Resource Conservation and Recovery Act (RCRA)**

- Organic air emissions rule
- Generators
- Combustion/fuel blenders
- Underground storage tanks (USTs)
- Transportation issues

[1] Reference to 1999 in this report means the fiscal year rather than the calendar year.

- **Superfund—Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA)**
  - Reduction of transaction costs
  - Construction completion
  - Federal facilities compliance
- **Emergency Planning and Community Right-to-Know (EPCRA)**
  - Section 313 expansion
  - Section 313 TRI data quality enforcement
  - Industrial organic chemical initiative
  - Federal facilities enforcement
- **Pesticides—Federal Insecticide, Rodenticide, and Fungicide Act (FIFRA)**
  - Antimicrobials
  - Urban pesticides control and enforcement
  - Adverse effects
- **Toxic Substances—Toxic Substances Control Act (TSCA)**
  - Asbestos
  - Lead-based paint
  - Polychlorinated biphenyls

Measuring Our Performance

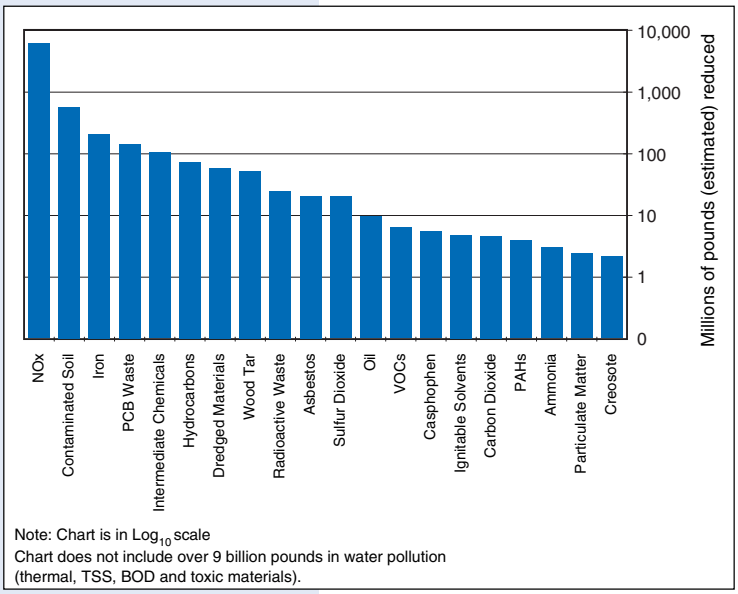
Just as it is important to identify the priority areas and the tools or approaches that we will use to address those priorities, it is equally important to measure the results of our enforcement and compliance assurance program. To do so, EPA continued to implement the National Performance Measures Strategy (NPMS) in FY99. While the strategy includes traditional measures, such as the number of inspections and enforcement actions conducted each year, it also establishes new outcome measures for evaluating the behavioral and environmental results of our activities. These measures include compliance rates for selected regulated populations, pollutant reductions resulting from enforcement actions, behavioral changes stemming from compliance assistance, and average time for significant violators to return to compliance. The NPMS will be discussed in greater detail in Part 2.

The objective of the NPMS is to identify, design, implement, and use an enhanced set of performance measures for EPA's enforcement and compliance assurance program. www.epa.gov/oeca/perfmeas

2. Achievements in 1999

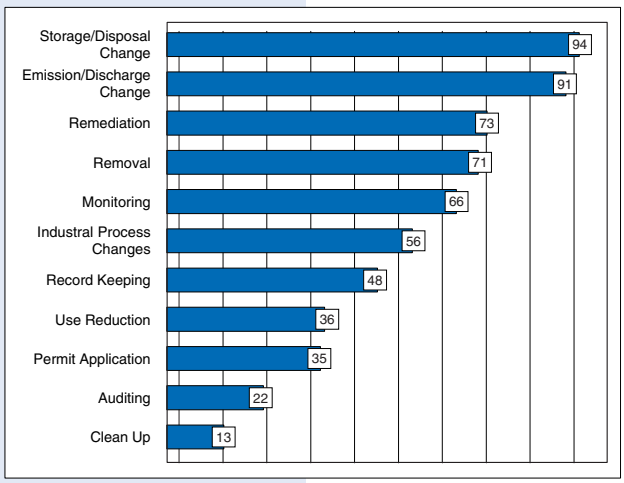
The significant environmental results achieved by EPA's enforcement and compliance assurance program in fiscal year 1999 (FY99) show that we have built a strong and aggressive enforcement program while providing compliance assistance to both large and small businesses and offering real incentives to motivate voluntary disclosure of violations. Following are highlights of our FY99 accomplishments and successes.

Exhibit 1. Twenty Pollutants with the Largest Reductions Reported for FY99 EPA Enforcement Settlements



Source: OECA/OC/EPTDD

Exhibit 2. Compliance Activities Resulting from FY99 Criminal Investigations/Resolutions



Reducing Pollution

- **Reducing Pollutants[2]:** In FY99, over 6.8 billion pounds of pollutants were reduced as a result of our enforcement actions. These actions resulted in the reduction of 5.8 billion pounds of nitrogen oxide (NOx), 573 million pounds of contaminated soil, 200 million pounds of iron, and 129 million pounds of polychlorinated biphenyl (PCB) waste.

  Exhibit 1 presents the top 20 pollutants with the largest reductions reported for FY99 enforcement actions.

- **Changes in Facility Operations:** Enforcement actions cause facilities to take actions that achieve compliance and improve the environment. Such actions were reported for 3,043 of the 3,451 FY99 civil enforcement settlements in FY99. A total of 18% of these complying actions required defendants to perform either use reduction, industrial process changes, emission or disposal changes, remediations or removals. Since FY96, a total of 3,404 actions have required these types of physical compliance actions. About 21% of the 3,043 actions resulted in improvements in the use or handling of pollutants to achieve emission and discharge reductions. Another 47% of the 3,043 concluded enforcement actions resulted in improvements in facility management

2. All pollutant reductions are based on OECA's Case Conclusion data sheet and are QA/QC'd by the Regions and Headquarters.

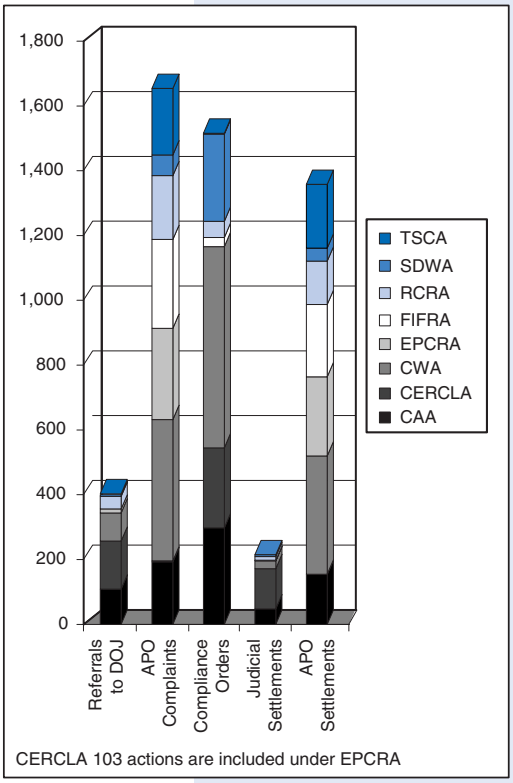
practices and information. Similarly, compliance activities resulting from 566 criminal investigations/cases concluded during FY99 are presented in exhibit 2.

Investing in Environmental Protection

- **Civil and Administrative Actions and Settlements:** Overall, EPA took a total of 3,935 civil judicial and administrative enforcement actions in FY99, the highest number of civil actions taken over the past three years. These activities identify and correct noncompliance and deter future violators. Exhibit 3 presents a summary of FY99 case initiations and conclusions by statute.
- **Civil Referrals:** In FY99, EPA maintained a robust civil referral program. We submitted 403 civil judicial referrals to the Department of Justice (DOJ). Exhibit 4 shows the trends in civil referrals to DOJ by statute since FY73.
- **Criminal Program:** Our strong criminal program reflects our goal of enforcing against those who intentionally disregard our nation's environmental laws and who put the public at serious risk when they do so. As shown in exhibits 5 and 6, EPA's criminal enforcement program set an annual record for sentences (208.3 years) and referred the fifth highest number of criminal cases (241) to DOJ in history. The criminal enforcement program has now assessed almost $600 million in criminal fines.
- **Administrative Orders Initiated:** In FY99, EPA increased its use of administrative penalty orders (APOs), issuing a record 1,654 complaints, which exceeds FY98 levels by 18% and FY97 levels by 26%. Exhibit 7 shows the EPA APO complaints since FY91 by statute.
- **Making Polluters Pay:** In FY99, polluters were required to spend more than $3.4 billion, a 72% increase over FY98 levels, to correct violations and take additional steps to protect the environment. The FY99 estimated value of injunctive relief ($3.4 billion) was at its highest total since we began to estimate this value in 1995; 80% more than the FY97 estimate (shown in exhibit 8).

Exhibit 9 presents the value of injunctive relief by statute for FY99 enforcement actions. The Clean Air Act (CAA) program was responsible for the most injunctive relief at $1.1 billion (32% of the $3.4 billion), followed by the Safe Drinking Water Act (SDWA) program at $811 million (23%) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program at $722 million (21%).

Exhibit 3. FY99 EPA Case Initiations and Conclusions by Statute

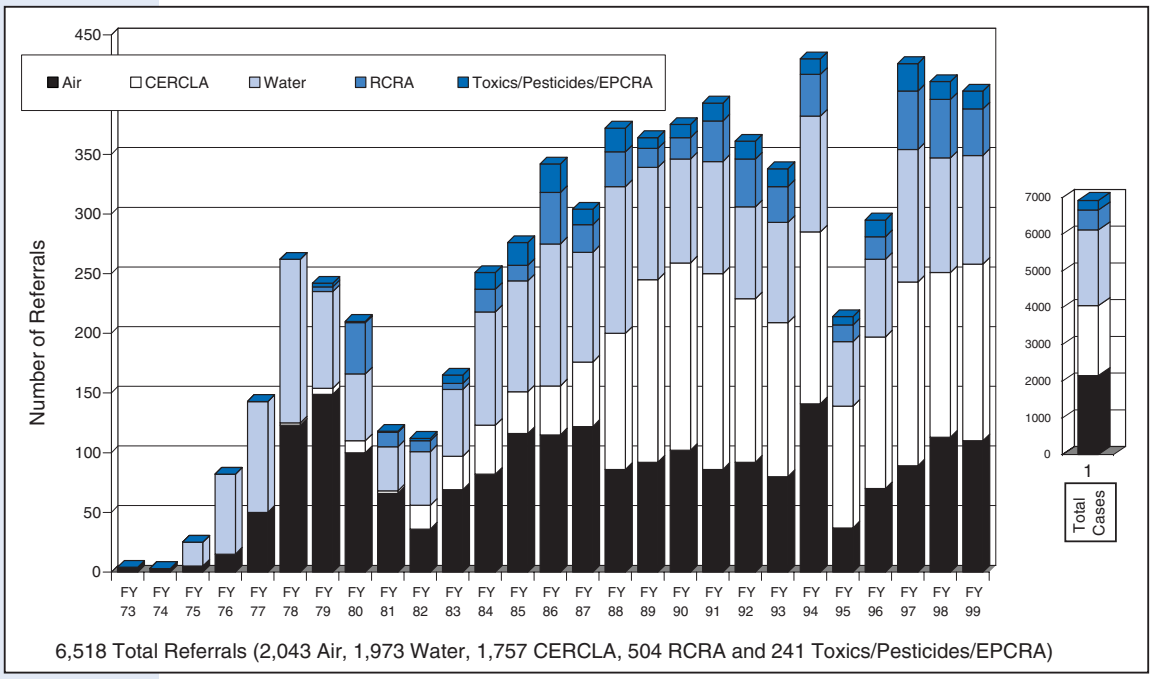


Source: OECA/OC/EPTDD/TEB

Do the Crime, Pay the Time

In FY99, a record 208 years of jail time was imposed on criminal defendants, including one sentence of 13 years for a man responsible for dumping 4 million gallons of contaminated wastewater into the Tampa, Florida, sewer system and sending 170,000 pounds of hazardous sludge to the city's incinerator, which was not designed to dispose of hazardous materials. This increase in sentences is extremely important as a deterrent to others. A prison sentence is personal—it is not a cost of business that can be passed onto the consumer.

Exhibit 4. EPA Civil Referrals to DOJ Since FY73



Source: OECA/OC/EPTDD/TEB

Exhibit 5. EPA Criminal Enforcement: Major Outputs FY97 to FY99

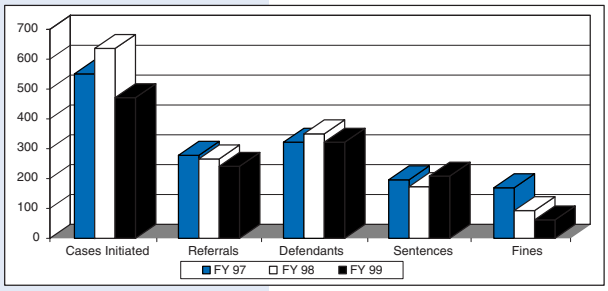
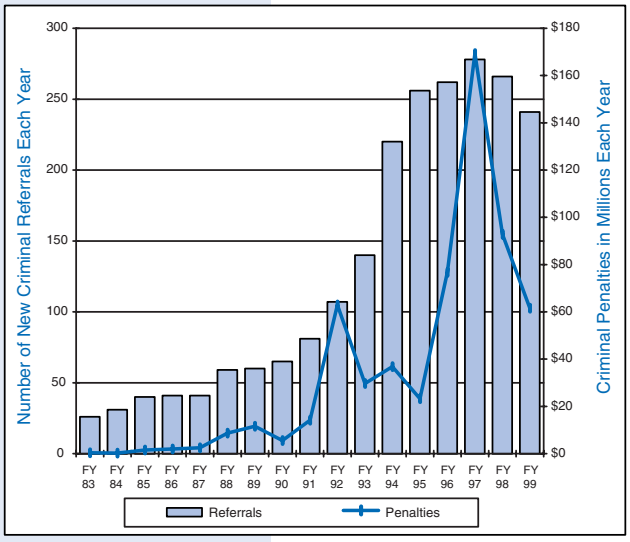


Exhibit 6. EPA Criminal Program: Growth and Maintenance of Key Outputs Since FY83



Source: OECA/OC/EPTDD/TEB

Exhibit 7. EPA APO Complaints by Statute

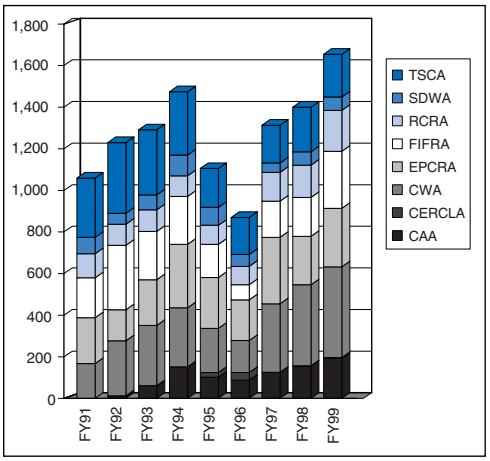
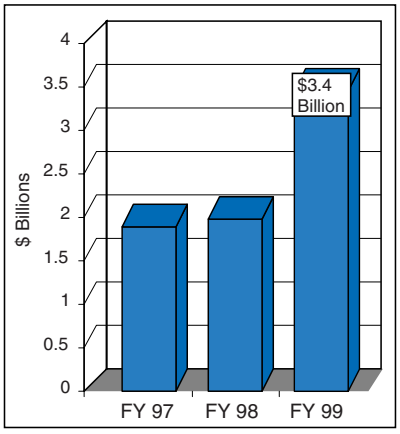


Exhibit 8. Value of Injuctive Relief: FY97-FY99



- **Penalties:** Overall, EPA assessed the highest total amount of civil penalties in FY99. Since 1974, we have assessed civil and criminal fines and penalties totaling almost $1.8 billion, as shown in exhibit 10.

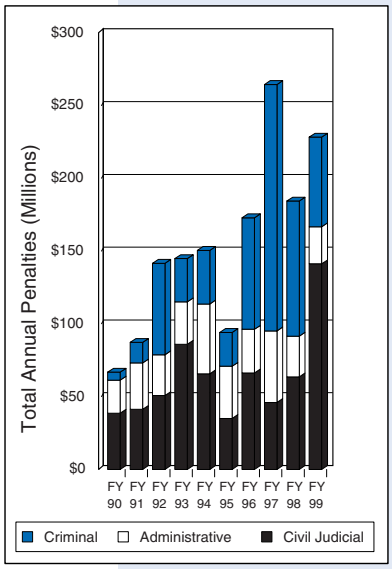
  Exhibit 11 presents the dollar value of FY99 enforcement actions by statute. The Resource Conservation and Recovery Act (RCRA) program was responsible for the most criminal penalties at $21.5 million (35%) and garnered the most administrative penalties at $7.4 million (29%). The CAA program was responsible for the most civil judicial penalties with $104.6 million (74%).

- **Federal Facilities:** EPA also is continuing to use its enforcement authorities at federal facilities. In FY99, EPA settled its first-ever federal facility SDWA case at the Army's Redstone Arsenal in Alabama for nearly $90,000 in civil penalties and $807,000 in Supplemental Environmental Projects (SEPs). This settlement will protect Redstone's water system. EPA issued its first CAA penalty order in the fall of 1998 against the U.S. Mint in Philadelphia. The complaint charged that the Mint violated regulations governing emissions of chromium compounds and chlorofluorocarbons (CFCs). Under the settlement, the Mint agreed to pay $16,000 in cash, as well as undertake a $90,427 SEP to upgrade pollution control equipment from its chromium electroplating operations.

Exhibit 9. FY99 Enforcement Actions: Summary of Injunctive Relief by Statute

Statute	Dollar Value of Injunctive Relief (% of FY99 Total)
CAA	$1.1 billion (32%)
SDWA	$811 million (24%)
CERCLA	$722 million (21%)
CWA	$577 million (17%)
EPCRA/FIFRA/TSCA	$2 million (<1%)
RCRA	$200 million (6%)
FY99 Total	**$3.4 billion**

Exhibit 10. EPA Enforcement Penalties Since 1990: By Year and Type



Source: OECA/OC/EPTDD/TEB

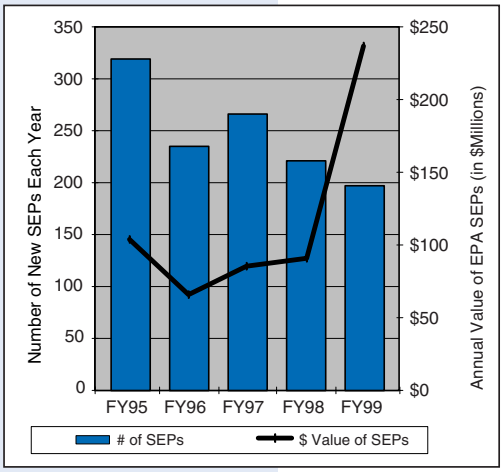
Exhibit 11. Dollar Value of FY99 Enforcement Actions by Statute (% of FY99 Total)

Statute	Criminal Penalties Assessed	Civil Judicial Penalties Assessed	Administrative Penalties Assessed
RCRA	$21.5 (35%)	$24.5 million (17%)	$7.4 million (29%)
CWA	$20.4 million (33%)	$7.4 million (5%)	$5.2 million (20%)
CAA	$2.2 million (4%)	$104.6 million (74%)	$5.1 million (20%)
SDWA	$3.2 million (5%)	$1.8 million (1%)	$0.4 million (1.5%)
CERCLA	$12.7 million (21%)	$2.9 million (2%)	$2,000 (<1%)
EPCRA	$0	$0	$3.8 million (15%)
FIFRA	$0.4 million (<1%)	$1,300 (<1%)	$1.4 million (5%)
TSCA	$16,000 (<1%)	$0	$2.3 million (9%)
Title 18/MPRSA	$1.1 million (2%)	$0	$0
FY99 Total	**$61.5 million**	**$141.2 million**	**$25.5 million**

* Criminal cases with U.S. Code - Title 18 or other violations.
Data comes from EPA criminal and civil dockets.

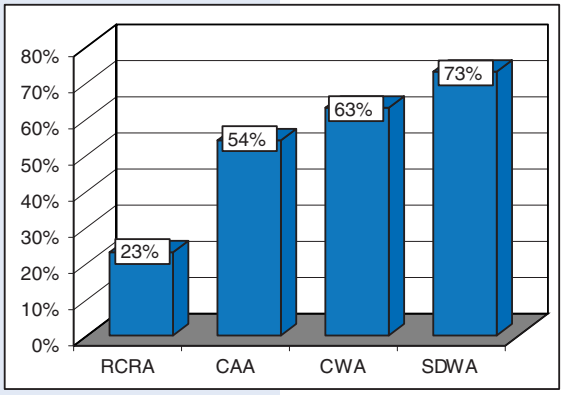
Source: OECA/OC/EPTDD/TEB

Exhibit 12. Use of SEPs in Settlement of Formal Enforcement Actions: FY95 to FY99



Source: OECA/OC/EPTDD/TEB

Exhibit 13. Addressed/Resolved Significant Noncompliance (SNC) Rates



Benefits to Local Communities (Supplemental Environmental Projects)

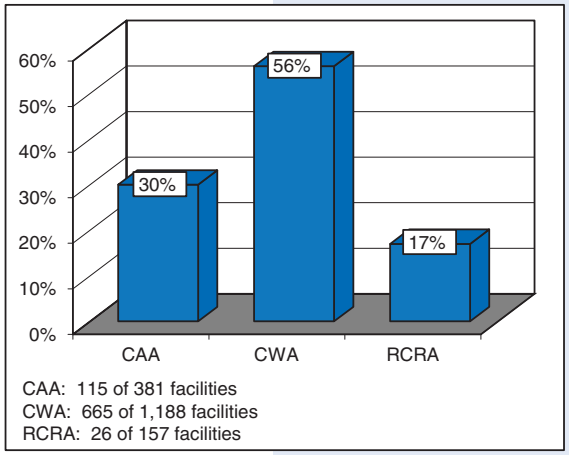
EPA frequently includes Supplemental Environmental Projects (SEPs) as part of the settlement of administrative penalty actions and, to a lesser extent, judicial settlements. SEPs are environmentally beneficial projects that may be proposed by a violator or EPA during the settlement of an enforcement action. We examine whether a violator is committed to, and has the ability to, perform a SEP when determining the appropriateness of including a SEP in the settlement. If a violator agrees to perform a SEP, their cash penalty may be lowered. The SEP must reduce risks to, improve, or protect public health or the environment.

- **Numbers of SEPs:** The value of SEPs in FY99 ($236.8 million) was at the highest level ever. In FY99, administrative and judicial settlements included 197 SEPs, as shown in exhibit 12. Of these, 173 SEPs were from administrative actions and 24 were included in judicial actions. The use of SEPs in FY99 was below FY98 levels in terms of the number of SEPs, but showed a 160% increase in value.
- **Types of Cases Producing SEPs:** In FY99, 12.5% (13.6% excluding CERCLA) of cases included a SEP. In FY99, the use of SEPs was most prevalent in the Emergency Planning and Community Right-to-Know Act (EPCRA) (32%) and RCRA (22%) programs. The SEPs in the CAA cases had the highest dollar value ($142 million) of any one program—responsible for 60% of the FY99 total SEP value ($236.8 million).
- **Environmental Benefits:** In FY99, pollution prevention continued to be the most frequent category of SEPs (32%), followed by emergency planning and preparedness (19%) and pollution reduction (19%).

Addressing Significant Noncompliance (SNC)

- **SNCs Addressed/Resolved:** In FY99, the degree to which SNC was addressed varied greatly by program area. As shown in exhibit 13, there were 1,385 facilities in SNC of which 23% (316) were resolved (meaning either returned to full physical compliance or meeting a compliance schedule) in the RCRA program. In the Clean Water Act (CWA) program, 63% of facilities (1,128 of 1,782) in SNC were addressed, meaning that either a facility was returned to non-SNC status on its own or it received a formal order. In the air program, 54% of facilities (1,854 of 3,419) in SNC were addressed by a formal enforcement action. In the SDWA program, 73% of systems (2,764 of 3,811) in SNC were addressed by a formal enforcement action.

Exhibit 14. National Averages of Two-Year Recidivism Rates



- **SNC Duration and Recidivism:** In FY99, EPA is reporting data on SNC duration and recidivism for the first time. Exhibit 14 shows the percentages of SNCs that had returned to compliance during FY97 but were in significant noncompliance again in FY99; this is the two year recidivism rate. Exhibit 15 presents the time needed for facilities to return from SNC for those that returned during FY99.

Exhibit 15. National Totals - Time for Facilities Returning from SNC in FY99

Statute	Number of Facilities Returned From SNC in:			
	<6 months	1 year	>1 year to 2 years	>2 years
CAA	417	226	278	258
CWA	570	134	129	116
RCRA	184	76	53	53

Monitoring Compliance

- **Inspections:** In FY99, EPA conducted 21,847 inspections, as shown in exhibit 16. The most inspections (34%) were conducted under the SDWA program, followed by the CWA (20%) and RCRA/ Underground Storage Tank (UST) (17%) programs.

  Overall, the number of facilities inspected (i.e., coverage) by EPA or states in FY99 varied considerably across programs, as shown in exhibit 17. For example, 46% of facilities under the CAA program were inspected. Under the CWA program 73% of majors and 36% of facilities with pretreatment programs were inspected. Under the RCRA program, 63% of treatment, storage, and disposal facilities were inspected, and 22% of large quantity generator facilities were inspected.

Exhibit 16. FY99 Inspections - National Totals

Program	Inspections
CAA [Stationary (includes chlorofluorocarbon), asbestos and mobile sources]	3,109*
CWA [NPDES (minors & majors), 311, and 404]	4,417
SDWA	7,329
EPCRA/FIFRA/TSCA	3,296
RCRA and UST	3,696
Total	**21,847***

Source: Program databases/IDEA, manual reports. There were also 113 GLP inspections and 363 data audits by HQ (OC/AED/LDIB).

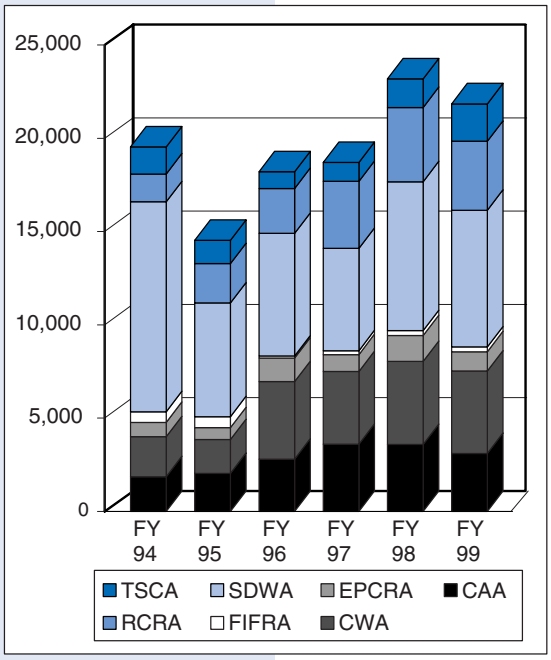
* These numbers are higher than reported in the EOY press release because of the addition of asbestos inspection data which was not previously available.

Exhibit 17. FY99 Facilities Inspected (Coverage) by EPA or States

Statutory Program	Facilities Inspected
CAA	46% of operating facilities (major, synthetic minor, and Part 61 NESHAP sources)
CWA	73% of majors
	36% of pretreatment facilities
RCRA	63% of treatment, storage, and disposal facilities (TSDFs)
	22% of large quantity generator (LQG) facilities

CAA universe: 41,003 facilities
CWA: 6,704 majors
1,470 pretreatment facilities
RCRA: 3,100 TSDFs
19,933 LQG facilities

Exhibit 18. EPA Inspections FY94 to FY99



Source: OECA/OC/EPTDD/TEB

- **At Federal Facilities:** A nationwide total of 27 multimedia inspections were performed at federal facilities during FY99. At each facility, inspections examined compliance with at least two statutes. Between FY93 and FY99, EPA conducted a total of 226 multimedia inspections at federal facilities.

  The trends in the numbers of national inspections conducted in each program area from FY94 to FY99 are shown in exhibit 18.

- **Civil Investigations:** For the first time, EPA is reporting information on two of the new performance measures — civil investigations and citizens complaints (see below). Civil investigations provide a more in-depth examination of a facility's operations and processes than a regular inspection.

  In FY99, as shown in exhibit 19, we conducted 716 complex, intensive compliance investigations in nine media programs, with the greatest number (74%) occurring in the air program, followed by the CWA (14%) and RCRA (3%) programs.

- **Citizen Complaints:** In FY99, EPA responded to 5,095 citizen complaints, which were received during the 3rd and 4th quarters of FY99. These citizen complaints were reported in 12 media programs and in multimedia, with the greatest number (49%) in the CAA program, followed by the CWA (16%) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) (14%) programs. Forty-seven percent were referred to state or local agencies; 3% were referred to other federal agencies; 7% resulted in compliance inspections; and less than 1% resulted in on-site visits (not compliance inspections).

Compliance Incentives

- **Audit Policy:** As shown in exhibit 20, the number of companies (260) and facilities (990) disclosing violations under the audit policy in FY99 were at all time highs since the inception of the policy.

Compliance Assistance

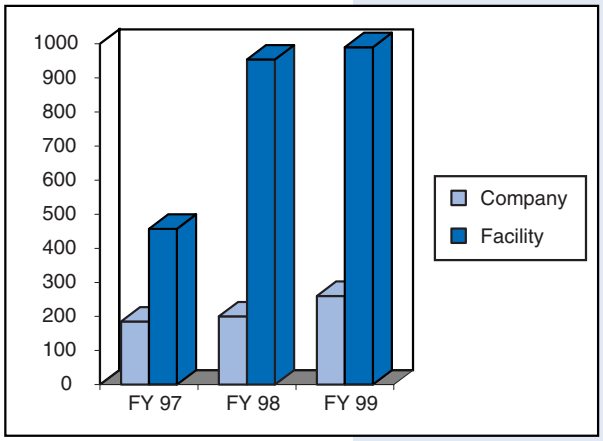
- **Numbers of Facilities Reached:** In FY99, EPA (Headquarters and Regional programs) collectively reached 333,118[3] regulated facilities through compliance assistance outreach in sector and statutory areas. As presented in exhibit 21, the highest amount of compliance assistance activity occurred through the distribution of compliance assistance outreach materials (87%), with regions reaching almost 290,000 facilities through this vehicle.

  Exhibits 22 and 23 present the compliance assistance national totals by statute and sectors, respectively. Almost 72% of facilities received assistance relating to EPCRA program requirements. Within the sector areas for which compliance assistance information is tracked, auto service and repair facilities received the highest amount of assistance (34%).

Exhibit 19. Summary of FY99 Civil Investigations and Citizen Complaints (FY99 3rd and 4th Quarters Only)

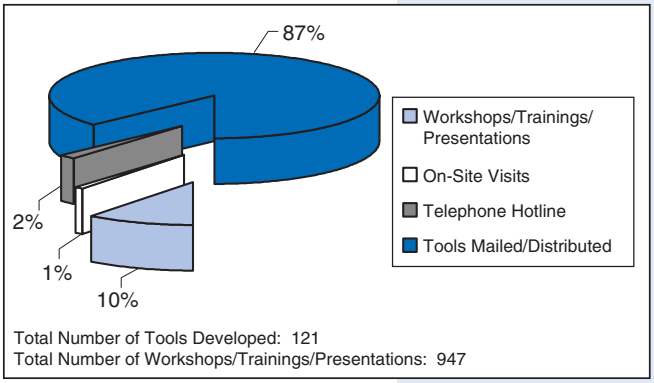
Media Program	Civil Investigations	Citizen Complaints
CAA Stationary	443	2,230
CAA Mobile Sources	88	273
Asbestos	1	1
CWA	102	798
SDWA	3	215
OPA	0	119
EPCRA/FIFRA/TSCA	45	875
RCRA	20	392
UST	11	91
CERCLA	0	15
Multimedia	3	86
TOTAL	**716**	**5,095**

Exhibit 20. Number of Companies and Facilities Disclosing Violations Under the Audit Policy



Source: ORE

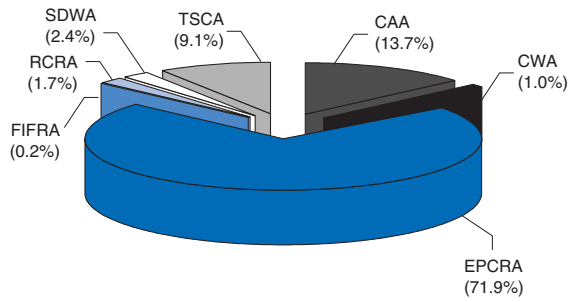
Exhibit 21. FY99 Compliance Assistance Activity (Percentage of Facilities Reached by Activity)



Source: RCATS

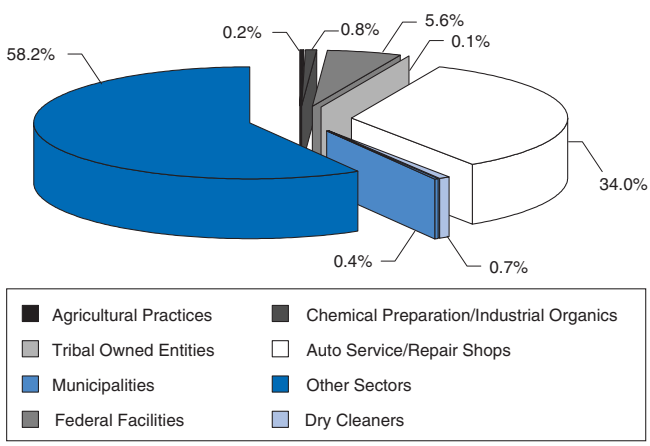
3. Regulated entities were counted based on each type of compliance assistance they received. Therefore, a regulated entity may be counted more than once.

Exhibit 22. FY99 Compliance Assistance National Totals By Statute (Total Number of Entities Reached = 192,262)



Total # Of Entities Reached All Sectors & Media = 333,118. Regulated entities were counted based on each type of compliance assistance they received. Therefore, a regulated entity may be counted more than once.

Exhibit 23. FY99 Compliance Assistance National Totals By Sectors (Total Number of Entities Reached = 140,856)



Total # Of Entities Reached All Sectors & Media = 333,118. Regulated entities were counted based on each type of compliance assistance they received. Therefore, a regulated entity may be counted more than once.

- **Compliance Assistance Centers:** In FY99, we operated nine Compliance Assistance Centers designed to help small businesses and small governmental entities understand and comply with their regulatory obligations. The Centers focus on specific industry sectors and provide applicable regulatory and technical information in a convenient and user-friendly manner. They offer "plain English" summaries of regulations and access to state regulations, vendor directories, and numerous other technical resources. In FY99, in total, the Centers were visited over 750 times a day by businesses, compliance assistance providers, other government representatives, and the general public, resulting in a total of 260,000 user sessions.
- **Industry-Specific Outreach Materials:** In addition to the Compliance Assistance Centers, we continued to develop a wide variety of other tools and outreach materials to promote compliance with environmental laws on an industry-by-industry basis. These tools include industry sector notebooks, plain language compliance guides, training modules, and compliance checklists. In FY99, EPA completed 10 sector guides and more than 30 other outreach documents for industries such as food processing and chemical manufacturing.
- **Capacity Building:** In FY99, EPA is reporting for the first time our national efforts in the area of capacity building to states, tribes and localities. Overall, the regions conducted 180 training courses; made 3,407 regulatory determinations, responded to 984 requests for assistance and conducted 266 assisted inspections.

Protecting Environmental Resources Under the National Environmental Policy Act (NEPA)

Under NEPA, federal agencies are required to carefully consider the environmental impacts of all major actions they take, and EPA reviews and comments on these assessments and often assists agencies with their development. In FY99, the NEPA review process resulted in the following examples of environmental improvements/harm avoided to a natural resource:

- **Expanding a Highway without Compromising Environmental Quality.** EPA's Great Lakes region, Region 5, announced a precedent-setting agreement in April 1999 with nine federal, state, and local organizations on expanding a highway in Wisconsin. The agreement will allow critical safety improvements to be made to the highway while protecting the unique scenery and maintaining a healthy ecosystem and the indigenous species in the area.
- **Benefitting the Galveston Bay Ecosystem.** In FY99, EPA's southwestern region, Region 6, helped finalize, using the NEPA process, the plan for the Houston Ship Channel project. In revising the initial plan, which would dump unconfined dredged material on 11,000 acres of Galveston Bay, we found beneficial uses for all dredged material, including the environmental restoration of 4,250 acres of tidal marsh.
- **Improving the Environment with a Flood Control Project.** In a U.S. Army Corps of Engineers flood control project along the Napa River in California, EPA comments on the draft environmental impact statement expanded habitat improvements to 540 acres, created an additional 12 acres of wetlands, and diverted 500,000 cubic yards of material from disposal in low-lying areas.

- **Protecting the Health and Safety of Tribal Members.** EPA's southwestern region (Region 6) NEPA program negotiated with the Bureau of Indian Affairs for environmental improvements to a solid waste landfill on Nambe Pueblo Tribal land. The negotiations involved the environmental impacts statement that the Bureau prepared for leasing the land. The Bureau and the tribe have agreed to operate the landfill in accordance with all EPA requirements, providing important health and safety protections for tribal members.

- **Completing Transportation Projects Faster While Protecting the Environment.** Regions engaged in a variety of activities in FY99 to implement the streamlining provisions of the Transportation Equity Act of 1998. By identifying issues early in the planning process and coordinating the various environmental requirements and processes, the regions are supporting Congressionally mandated efforts to complete transportation projects faster while protecting the environment. For example, Region 6 is helping the North Texas Tollway Authority scope out the Trinity Parkway environmental impact statement by providing advice on the consideration of alternatives, wetland impacts, and other requirements.

The National Performance Measures Strategy

The National Performance Measures Strategy was initiated by OECA in February 1997 to identify, design, implement, and use an enhanced set of performance measures for EPA's enforcement and compliance assurance program. The Strategy was designed to help us measure the state of compliance with environmental laws, the environmental results we achieve through our activities, and the degree to which program objectives are being met and noncompliance problems are being addressed.

The identification and design phases occurred in1997 and 1998 and included broad consultation with staff, regulatory partners, and external stakeholders. In 1999, the first phase of implementation began with the collection and analysis of information from the third and fourth quarters of FY99 for the following sets of measures from the Performance Profile:

- average duration for significant violators to return to compliance (Set #6);
- percentage of significant violators with recurrent violations (Set #7);
- number of investigations conducted (Set #8);
- responses to citizen complaints (Set # 8);
- number of notices of violation issued by media program (Set #9); and
- capacity building efforts provided to state, local, or tribal programs (Set #11).

Remaining measures to be implemented in FY 2000, Phase II are:

- statistically valid compliance rates for selected regulated populations (Set #1);
- environmental and human health improvements from compliance assistance (Set #3);
- environmental and human health improvements from integrated initiatives (Set #4); and
- number of record reviews (Set #8).

Compliance Measurement Grants

In 1999, OECA awarded $1.8 million in grants to10 states to develop and implement outcome- based performance measures for enforcement and compliance assurance programs. The projects selected will allow the pilot states to demonstrate outcomes from their enforcement and compliance assurance activities while serving as models for other states. Outcome measures from the Performance Profile Sets 1,2,3, 6, and 7 will be addressed in the state projects.

Improving Reporting Using the NPMS Performance Profile. The Performance Profile consists of output- and outcome-based measures selected for EPA's enforcement and compliance assurance program after extensive public outreach. The measures are now being implemented as follows:

♦ **Effects on Behavior of Regulated Populations (Outcomes)**

Levels of Compliance in Regulated Populations

Set 1. Rates of noncompliance for various populations.

Environmental or Human Health Improvements by Regulated Entities

Set 2. Improvements resulting from EPA enforcement action.

Set 3. Improvements resulting from compliance assistance tools and initiatives.

Set 4. Improvements resulting from integrated initiatives.

Set 5. Self-policing efforts by using compliance incentive policies. Responses of Significant Violators

Responses of Significant Violators

Set 6. Average number of days for significant violators to return to compliance or enter enforceable plans or agreements.

Set. 7. Percentage of significant violators with new or recurrent significant violations within two years of receiving previous enforcement action.

♦ **Enforcement and Compliance Assurance Activities (Outputs)**

Monitoring Compliance

Set 8. Number of inspections, responses to citizen complaints, and investigations conducted.

Enforcing the Law

Set 9. Number of notices issued, civil and criminal actions initiated, civil and criminal actions concluded, and self-policing settlements concluded.

Providing Assistance and Information

Set 10. Facilities/entities reached through compliance assistance tools and initiativesor information.

Building Capacity

Set 11. Capacity building efforts provided to state, local, or tribal programs.

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3. Addressing Environmental Problems Through the Integrated Use of Tools

Using Integrated Approaches

In fiscal year 1999 (FY99), EPA continued to identify and address environmental problems using innovative integrated initiatives that combine compliance assistance, incentives, monitoring, and enforcement to address the priorities of the enforcement and compliance assurance program. Our experience has shown that these techniques have been effective in addressing environmental and compliance problems. Experience has shown that use of these tools in a strategic, targeted way will address noncompliance. If you know what your target is, you can choose the appropriate tool or tools.

To address environmental problems or priorities, EPA will either select a compliance or enforcement tool or, where appropriate, use a mix of these tools to create an integrated strategy or initiative. Once we have determined the appropriateness of the integrated strategy, we will implement it, in partnership with states through the EPA regional/state planning process, to address the problem or priority. These integrated initiatives complement our ongoing compliance assurance efforts by addressing environmental priorities associated with major regulations, compliance problems, or sectors.

Examples of our use of an integrated approach on priority sectors can be found in Appendix A.

3.A. Maintaining a Strong Enforcement Presence Through Compliance Monitoring

One of the most important functions conducted by EPA's compliance assurance program is monitoring compliance with environmental laws and regulations. While a significant number of regulated entities routinely try to achieve compliance, it is the role of the compliance assurance program to monitor the level and degree of compliance. The Agency uses compliance monitoring to determine the appropriate tool (assistance, incentives, enforcement, or a combination of tools) to address a particular environmental problem. Compliance monitoring includes all of the activities we conduct to determine whether an individual facility or group of facilities are in compliance with environmental laws and regulations. Some of our main compliance monitoring activities include:

- performing compliance inspections, surveillance, and investigations;
- collecting, analyzing, evaluating, and managing compliance data;
- targeting, gathering information, and developing enforcement strategies;
- collecting and analyzing environmental samples;
- reviewing and evaluating self-reported documents, permits, and records;
- responding to citizen complaints and referrals from other governmental entities; and
- preparing reports and updating databases with compliance findings and inspection results.

Why do we conduct compliance monitoring activities?

- Demonstrate a credible field presence to the regulated community.
- Establish a deterrent effect to noncompliance.
- Fulfill statutory mandates to achieve compliance.
- Support and enhance the overall enforcement program.
- Evaluate state and tribal environmental compliance and enforcement programs.
- Oversee environmental programs not delegated to states and tribes.

Targeting

Our compliance monitoring program often entails making a targeted effort to reduce significant noncompliance (SNC) in high-priority areas (i.e., those areas posing the most significant public health and environmental risks). Priority areas, which focus on environmental and noncompliance problems, might be based on a geographic location, an industry sector, or a specific set of statutory requirements. In FY99, in working to reduce SNC and recognizing that government resources are finite, we continued to make great strides toward targeting high-priority areas, mainly industry sectors and environmental media, and completing baseline data assessments in major databases needed to measure changes in key indicators of

compliance. As part of these targeting projects, EPA continues to improve cross-media analytical capabilities through the development and maintenance of the Integrated Data for Enforcement Analysis (IDEA) system.

EPA's efforts to provide regions with targeting tools are also yielding results, as illustrated by investigations of compliance with New Source Review/Prevention of Significant Deterioration (NSR/PSD) requirements (described below) conducted by EPA's Mid-Atlantic Region, Region 3.

Investigations and Inspections

In FY99, EPA increased its emphasis on complex investigations in addition to compliance inspections to uncover serious environmental problems. A summary of these investigations is presented in exhibit 20. The investigations conducted revealed a number of different types of serious environmental violations, including, but not limited to: failure to obtain a permit; failure to install, operate, or maintain pollution control equipment; failure to determine the type of hazardous waste and failure to manage properly; illegal storage of hazardous waste; and discharge of oil in harmful quantities. Nationwide, EPA conducted 21,847 inspections in FY99. These inspection results are discussed on page 9 and shown in exhibits 16–18.

An **investigation** is a more complex assessment of a facility's compliance than an inspection. While inspections typically assess facility compliance broadly, investigations generally focus on certain aspects of a facility's operations or on a predetermined set of compliance concerns, and do so in substantially more depth than an inspection. Investigations involve considerably more time (more than 1 day) and resources to complete.

- **Uncovering Permit Violations Using NSR/PSD Investigations**

  NSR/PSD, a preconstruction review and permitting program ensures that major and modified major Clean Air Act (CAA) sources apply state-of-the art equipment to minimize impacts on air quality. Because routine inspections sometimes do not identify plant modifications, Region 3 piloted an investigation approach that incorporates upfront facility capacity and permit reviews. The region developed criteria to identify facilities where plant modifications are likely to have occurred and then selected certain industries at which to undertake a more in-depth review. These investigations, while resource intensive, are yielding impressive results. Region 3 investigated eight pulp mills and found significant violations at seven of them. Requiring the installation of control devices at these plants will result in large reductions in air emissions. Based on Region 3's results, most EPA regions are now using these investigative tools and strategies.

- **Using Reconnaissance to Identify and Address Environmental Concerns in EPA New England**

  Through its Reconnaissance (Recon) projects, EPA's New England region, Region 1, is using a nontraditional, innovative approach to identify and address environmental concerns. A Recon project is founded upon the concepts of

EPA's New England region, Region 1, received a Best Practice Award in FY99 for its Recon project, an innovative compliance monitoring approach.

community-based and ecosystem-based environmental protection. The Recon approach, which is to assemble a small, highly experienced team to perform a short-term, intensive, and extensive multimedia environmental investigation of a specific ecological or geographic area, enables the region to strategically take a holistic approach (enforcement/compliance, assistance, and outreach) to environmental protection in that study area.

Recon Approach is also being used in EPA's Northwest Region, Region 10, to analyze enviromental problems in an industrial district in Seattle.

In FY99, Region 1 continued activities based on the Providence Recon. The Providence Recon, whose study area consisted of Providence, Rhode Island and five surrounding communities, was conducted by EPA Region 1 from mid-June through September 1998. The goals of the Providence Recon project were to:

- locate point sources along 14 miles of the Woonasquatucket River in the study area;
- identify compliance, deterrence, and assistance opportunities in the study area; and
- focus our limited resources to appropriate areas to maximize ecosystem protection.

A key reason for the success of the Recon approach is the input and information provided by local stakeholders.

As part of this Recon project, Region 1 met with Occupational Safety and Health Administration (OSHA) and state environmental staff to review files; conferred and reviewed files at the Narragansett Bay Commission; located potential non-notifying companies for all media through various sources; conducted field reconnaissance on the river to locate pipes; performed drive-bys in six communities; reviewed EPA databases and additional state databases and files for over 2,500 facilities; and prepared a report summarizing the findings of the project.

Since the Recon and through FY99, the New England Region has conducted inspections (both single and multimedia) at over 50 facilities as a result of the information provided in the Recon report. Of the 14 referrals made to the Commission, four required pretreatment permits from them and one facility was issued a notice of violation by the Commission for discharging without a permit. The global positioning system locational information has been shared with the Rhode Island Department of Environmental Management and community/environmental groups within the Urban Rivers Team.

Protecting the Environment and Your Health Through Compliance Monitoring Activities

Reducing Emissions Through Leak Detection and Repair Monitoring

In FY99, EPA's National Environmental Investigations Center (NEIC) conducted investigations to detect fugitive emissions from valves, pumps, flanges,

compressors, pressure relief valves, and other piping components at a number of petroleum refineries. The monitoring showed that the number of leaking valves and components is up to 10 times greater than had been reported by certain refineries. We believe this great disparity may be attributable to refineries not monitoring in the manner prescribed in the federal regulations. Where appropriate, these leaks are being addressed through enforcement actions.

Controlling Potential Particulate Emissions Through the Wood Heater Program

To control particulate emissions, the manufacture and sale of new residential wood heaters is regulated by EPA. Each new wood heater model line must be certified and meet stringent rules designed to ensure continuous compliance. In FY99, 26 new wood heaters were certified for sale in the United States; seven rule-exemption requests were received and processed; 11 wood heater design changes were approved; and 28 model line certificates were issued. Also during FY99, enforcement actions were taken against eight manufacturers/retailers for violations ranging from the illegal manufacture and sale of wood heaters to the late renewal of the required "certificate of compliance." Civil penalties totaling $15,846 were assessed.

Protecting the Environment Through the RCRA Hazardous Waste Import-Export Program

In FY99, the Resource Conservation and Recovery Act (RCRA) Import-Export Program exercised control over a very substantial volume of import and export notices, totaling 1,539, with an average of more than five wastestreams each. The Program, after reviewing records, identified and referred for appropriate enforcement action five additional instances of apparent failure to notify wastes for export prior to shipping, failure to fully document the departure of shipments from the United States, or other violations.

Evaluating Waste Prevention Using the RCRA 6002 Inspection Guidance

As directed under the 1998 Executive Order 13101, EPA's Federal Facilities Enforcement Office developed and issued the RCRA 6002 inspection guidance for use by EPA regional and state inspectors in determining federal facility compliance with the buy-recycled program, established under Section 6002 of RCRA. Through the end of FY99, approximately 15 inspections had been conducted using this guidance.

The informative publication, "International Trade in Hazardous Waste: An Overview," EPA 305-K-98-001, November 1998, is now available on the Internet at http://www.epa.gov/oeca/ore/rcra/110098.pdf

Citizen Complaints

Citizen complaints are defined as any phone call, letter, or e-mail from individuals regarding violations of environmental laws or regulations received by or referred to the enforcement and compliance assurance program. (The definition does not include regional responses to citizen lawsuits filed by individuals or groups.)

Examples of the various types of citizen complaints received include:

- potential air violations (e.g., idling truck, industrial park smoke stack emissions);
- suspicious dumping activity;
- witnessing a truck dump bags of trash down a vacant lot embankment;
- frequent oil and fuel spills at a bus company lot abutting a stream;
- a circuit board assembly business operated out of a residence;
- an industrial company in close proximity to a pond; and
- potential mobile source violations (emission control device tampering and warranty problems).

In response to the citizen complaints received in FY99, 47% were referred to state or local agencies; 3% were referred to other federal agencies; 7% resulted in compliance inspections; and less than 1% resulted in on-site visits (not compliance inspections). Additional data on citizen complaints received in FY99 are found on page 10 and shown in exhibit 19.

EPA's Northeast Region, Region 2, received a Best Practice Award in FY99 for its Citizen Complaint Tracking System, an innovative compliance monitoring approach.

A System to Track Citizen Complaints

In FY99, EPA's Northeast Region, Region 2, implemented a Citizen Complaint Tracking System. Citizen complaints can be a source of information that otherwise might never come to the attention of EPA, particularly if the activity being complained about cannot be linked to a specific facility (e.g., midnight dumping) or originates at a facility that has never bothered to notify us of its activities and is therefore not subject to regular inspections and oversight. Our response to these complaints has a major impact on the public's opinion of us, and also influences whether or not the public sees a purpose in continuing to bring such matters to our attention.

Accurately tracking citizen complaints is important, not only to ensure appropriate response, but also to document for Congress the outcome of our activities in this area, be accountable to the public for our actions, report our activities, and measure the results of those activities.

Leading by Example

Since EPA's Northeast Region, Region 2, conducted this pilot of its Citizen Complaint Tracking System, several other EPA regions have developed similar tracking systems.

For these reasons, Region 2 implemented a Citizen Complaint Tracking System. The one-page form and instructions have been made available electronically to all enforcement staff. Once completed, the forms are forwarded to the Enforcement Coordinator for storage in an electronic table for quarterly reporting and follow-up. Through centralized tracking, the region can verify that appropriate follow-up has been completed. The system also provides a mechanism to randomly review a sample of the complaints for consistent handling, adequate response, and customer satisfaction. By listing the range of basic options for response, the system provides a reminder to the person receiving the complaint of the various state and local environmental partners who might provide a response to issues outside EPA's responsibility.

Data Assessments and Enhancements

Federal data systems are the foundation of most national planning, targeting, measures, and evaluation efforts. National databases include information from both EPA and states delegated to enforce national laws. The focus of these databases is maintaining an accurate compliance and enforcement record for regulated facilities, but these systems are also sometimes related to information such as pollutant releases, and geographic and demographic conditions. National data records include whether compliance monitoring activity has occurred, whether violations were found or self-disclosed, whether enforcement actions have been taken, and whether penalties were assessed. This information allows EPA and other interested users to examine trends and patterns relating to compliance monitoring and enforcement. EPA continually evaluates and improves its environmental databases to ensure the data accurately reflect our enforcement and compliance assistance efforts and the status of the regulated community's compliance. EPA takes data quality very seriously, and continually works with state and local agencies to make sure the national systems are properly fed with data.

Beyond the many enhancements made to internal systems, EPA has also been working toward improving public access to these systems. In FY99, EPA continued to develop a complete baseline data assessment for multiple industries through the Sector Facility Indexing Project (SFIP). The SFIP measures key environmental indicators for more than 640 industrial facilities in five industrial sectors and provides public access to a wealth of environmental information. The result is a collection of facility-level profiles that provide information on compliance and inspection histories, chemical releases and spills, demographic characteristics of surrounding areas, and facility production trends.

For environmental statutes, our traditional databases on permits and enforcement actions provide compliance rate data. In FY99, we enhanced the Clean Air Act database, the Air Facility Subsystem (AFS) of the Aerometric Information Retrieval System (AIRS), to better identify high-priority violations. We also improved DOCKET, the official EPA database for tracking and reporting information on federal civil judicial and administrative enforcement cases under all environmental statutes. Enhancements to DOCKET resulted in added information on self-audits conducted by facilities and improved quality of information on enforcement action outcomes. In addition to these efforts, we made various improvements to 12 other national enforcement and compliance data systems and responded to over 1,000 user support requests relating to enforcement and compliance data systems.

3.B. Protecting the Environment Through Enforcement

Federal laws that protect our environment are of little value unless they are fairly and effectively enforced. EPA's program serves important values through enforcement actions that reduce pollution, uphold the public's right to know, benefit local counties through supplemental environmental projects, and promote efficient resolution of serious violations. Last but not least, enforcement establishes the "bottom line" for the entire regulated community by reassuring those who spend time and money to comply with the law that they won't be undercut by unscrupulous competitors. This deterrent effect is critical to motivating respect for environmental laws.

EPA has broad authority to investigate instances of noncompliance, and most federal environmental laws make a range of enforcement responses available. The type of response is tailored to the seriousness and circumstances of the violation. For minor, short-term violations, particularly those that are quickly corrected and have caused no harm, an informal response, such as a phone call or letter, may be appropriate. EPA gives priority to taking enforcement actions that reduce the greatest risks to human health or the environment and produce maximum environmental benefit.

Our enforcement program also acts swiftly to address conditions that may present an imminent and substantial endangerment to human health or the environment. We have the authority under most major environmental laws to commence a civil case in federal court [in coordination with the Department of Justice (DOJ)] or issue an administrative order in situations where there may be a threat of imminent and substantial endangerment to human health or the environment.

Increasing Effectiveness of Civil Enforcement

In FY99, our civil enforcement program continued to improve its effectiveness:

- **Deter violations by recovering economic benefit.** EPA seeks to recover the economic benefit a violator gains by not complying with the environmental requirements. For example, if a facility postponed the building or operating of a required pollution control system, the penalty would include any financial gain the facility realized from the postponement.

- **Measure environmental results.** EPA has been measuring the impact of enforcement actions through estimating their pollutant reductions and other benefits achieved since the formation of OECA in 1994.

Encourage supplemental environmental projects (SEPs). To obtain the greatest possible environmental benefits, we reduce penalties in exchange for pollution prevention or control projects that go beyond minimum legal requirements. These SEPs often return tangible benefits to local communities in the form of wetlands enhancement, reduced levels of lead or other contaminants, and better response to emergencies.

- **Develop and implement fair and consistent enforcement policies** that deter noncompliance and require the timely correction of violations.
- **Provide notice to the regulated community and public** of the most serious violations and how to avoid them.
- For the Superfund and oil spill programs, **recover the government's costs** for environmental response actions and **implement the site remediation provisions** of the laws.

Environmental Results

Environmental results achieved in FY99 are discussed in Part 2. (see pages 4–15).

Improving the Environment Through Enforcement Actions

The following are examples of FY99 enforcement actions that led to environmental improvements in large part by addressing high-risk violations that are priority areas for the enforcement and compliance assurance program.

- **Cleaning Up Our Air.** In the largest settlement in Clean Air Act (CAA) enforcement history, seven heavy-duty diesel engine manufacturers will spend more than $1 billion to settle charges that they illegally released millions of tons of nitrous oxide (NOx) pollution into the air. The settlement resolved charges that these companies violated the CAA by selling an estimated 1.3 million engines equipped with "defeat devices" — software that allowed engines to meet EPA emission standards during testing but disabled the emission control system during normal highway driving. As part of the settlement, the companies will pay an $83.4 million civil penalty, the largest in environmental enforcement history, and undertake SEPs costing $109.5 million to lower NOx emissions.

This year EPA prevented 75 million tons of harmful nitrogen oxide emissions from entering the atmosphere by the year 2025.

Curbing Air Pollution Through the Coal-Fired Power Plant Enforcement Initiative. This initiative, primarily targeted at coal-fired power plants, refineries, and pulp/paper companies, is part of a larger enforcement priority to address CAA violations of New Source Review (NSR) and Prevention of Significant Deterioration (PSD) requirements. At issue with the power plants is the definition of "routine maintenance." EPA maintains that 50-year-old power generating facilities have undergone major updates that increase their capacity and emissions, necessitating required permits and controls. The companies maintain that these actions were routine maintenance that do not rise to the level of "modifications" for which permits and controls are required. With DOJ, we have filed enforcement actions against eight power companies involving 32 different facilities located in 10 different states (Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Mississippi, Ohio, Tennessee, and West Virginia). One of these companies is the Tennessee Valley Authority, a federally owned utility.

Over the next 10 years, this agreement will eliminate 124 million gallons of sewage/ storm water discharges each year from combined sewer overflows.

Using Innovative Efforts to Protect New Hampshire's Merrimack River. An innovative agreement between EPA, the City of Manchester, and the New Hampshire Department of Environmental Services will address the city's long-standing combined sewer overflow problem, which results in millions of gallons of sewage/storm water being discharged into the Merrimack River each year and subsequent frequent violations of water quality standards for bacteria. The agreement, which includes a 10-year, $52.4 million plan to remove the majority of sewer overflows into the river, also includes environmental and public health projects, such as storm water management, erosion control, restoration of urban ponds, environmental education, wetlands protection, and a $500,000 program to reduce childhood asthma and lead poisoning.

- **Reducing Air Pollution From the Petroleum Refinery Sector.** Since 1996, the petroleum refining sector has been a priority because of the magnitude of its air pollution problems and its continued high record of significant noncompliance. While there are relatively few facilities (158 petroleum refineries), each tends to be large, handling on average over 100,000 barrels of crude oil per day. The vast majority of refinery onsite Toxics Release Inventory (TRI) releases are air emissions (>75%). In a comparison to 492 other industry categories included in EPA's AIRS database, this sector ranked first in emissions of volatile organic compounds (VOCs), second for sulfur dioxide, third in nitrogen dioxide emissions, fourth for PM_{10}, and sixth for carbon monoxide. TRI releases reported averaged 502,403 pounds released per facility, and over 84 million pounds for the sector as a whole.

Reducing Air Pollution

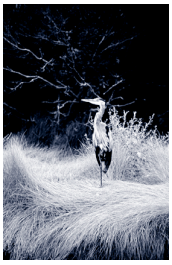
In FY99, EPA took a multimedia action against Shell Oil Company at their Wood River, IL, facility, requiring a $1.5 million penalty, approximately $6.3 million to correct the violations, and over $2.8 million for SEPs. In part, the action will reduce air emissions of sulfur dioxide by 7,700 tons per year (tpy), nitrogen oxide by 940 tpy, and particulate matter by 260 tpy.

As part of a more strategic approach to correcting pollution problems in the petroleum refining industry, EPA continues to shift from inspections towards more targeted, and more resource-intensive investigations, focusing on air pollution problems and new Resource Conservation and Recovery Act (RCRA) requirements. As a result of the initial investigations, the number of civil cases referred to the Department of Justice has increased in FY99. Additionally, as a result of the investigations initiated in FY98 and FY99, indications are that the numbers and environmental significance of referrals will continue to increase in FY2000.

In FY99, there were 623 inspections at petroleum refineries, 8 referrals, 2 administrative penalty orders, and $10.7 million in assessed penalties. Additional enforcement data are shown in exhibit 26.

Exhibit 24. FY97-99 Federal Enforcement Data for Petroleum Refineries

Actions	FY97	FY98	FY99
Injunctive relief (value of activities to return company to compliance)	$8.1 million	$6.6 million	$4.4 million
Number of compliance actions required	38	28	5
Number of SEPs (Value)	7 ($2.7 million)	8 ($14.8 million)	2 ($11.1 million)



Limiting Destruction of Wetlands, Creeks, and Streams. A misapplication by developers of a 1998 court ruling ("Tulloch" decision) is accelerating wetlands loss. This missapplication may be due to an overly broad reading of the decision. As a result some developers may be accelerating wetland loss through illegal discharges. Estimates from just June 1998 to March 1999 indicate nearly 30,000 acres of precious wetlands across the nation have been ditched, drained, or channelized. In light of this rapid, large-scale destruction of wetlands, creeks, and streams, EPA has been increasing enforcement of Section 404 and other Clean Water Act (CWA) requirements (especially those relating to storm water) in an attempt to limit these losses.

Under the 1998 "Tulloch" decision, the D.C. Circuit Court found that EPA and U.S. Army Corps of Engineers, by asserting jurisdiction over "any" redeposit of dredged material, had exceeded their statutory authority under the CWA. Despite this decision, the D.C Circuit Court acknowledged that some redeposits of dredged materials into waters of the U.S. still constitute a discharge of dredged material and, therefore, require a permit. Such

redeposits may include mechanized land clearing, sloppy disposal practices alongside a ditch, removal from a streambed, and redeposit after mineral extraction.

FMC's SEP will reduce approximately 436 tons of particulate matter per year in emissions of dust and soot at the facility.

- **Removing Threats from Hazardous Wastes and Toxic Gases.** The FMC Corporation, Inc. (FMC) will spend a total of approximately $170 million to settle charges that it repeatedly violated the hazardous waste law at its phosphorus production facility in Pocatello, Idaho. The charges against FMC involved mismanagement of ignitable and reactive phosphorus wastes in surface ponds. The pond sediments burn vigorously and persistently when exposed to the air, and the wastes in these ponds generate phosphine and hydrogen cyanide, highly toxic gases that can cause serious health and environmental problems. It is also believed that migratory bird deaths in the area may be attributable to phosphine poisoning.

  FMC will close previously used surface ponds and construct a $40 million waste treatment plant to deactivate the phosphorus-bearing wastes. Costs associated with all the injunctive relief required under the settlement are expected to exceed $90 million. FMC also has committed to over a dozen SEPs with a capital cost of $63 million, which will significantly improve air quality in the Pocatello region. As a final SEP, FMC will conduct a $1.65 million public health assessment and education program to investigate the effects of contaminants generated by FMC on human health and the environment, particularly within nearby tribal lands.

Enforcement actions in New York City will reduce the risk of waterborne disease in surface water systems by requiring filtration.

- **Reducing Risks of Contaminants in Drinking Water.** In FY99, a consent decree was entered requiring filtration of New York City's Croton Water Supply to reduce the risk of cryptosporidium and other contaminants for the nearly one million residents it serves, including the elderly and young. Required under the Safe Drinking Water Act, filtering drinking water substantially reduces the risk of waterborne disease in surface water systems, which are more susceptible to potential contamination from human and animal wastes and from microbial contaminants.

  In this decree, the city agreed to filter the Croton Water Supply, completing the filtration plant by March 1, 2007. The decree also provides for $5 million in SEPs and $1 million in cash penalties. New York City will monitor the quality and safety of its Croton Water Supply until the filtration system is in full operation, and will implement watershed protection measures, including purchasing land and replacing faulty septic tanks with sewers and preventing storm water runoff from contaminating the watershed.

Settlement actions have resulted in the restoration of 400 acres of wetlands, bull trout habitat, and other natural resources.

- **Repairing Damage from Mine Waste Contamination.** The Atlantic Richfield Company (ARCO) will spend $260 million — including a $1.8 million penalty — to clean up and restore natural resource damages caused by mine waste contamination in the Clark Fork River Basin. As part of the two settlements reached with the State of Montana and the Confederated Salish and Kootenai Tribes of the Flathead Nation, ARCO will pay $80 million for the cleanup of the Silver Bow Creek and $20 million to restore wetlands, bull trout habitat, and other natural resources. ARCO has committed to perform additional restoration to create, restore, or enhance 400 acres of wetlands, primarily in the Anaconda area, which is estimated to cost $3.4 million.
- **Stopping Water Pollution.** On July 21, 1999, Royal Caribbean Cruises Lines, Ltd., pled guilty to 21 violations of federal law and was fined $18 million for violating the CWA and the Oil Pollution Act (OPA) by dumping waste oil and hazardous chemicals into the ocean and for making false statements to the U.S. Coast Guard. Royal Caribbean will institute a five-year environmental compliance plan.
- **Reducing Threats from Lead Contamination.** On December 4, 1998, Burlington Northern Santa Fe Railroad Company (BNSF) pleaded guilty and was sentenced for criminal violations of the CWA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These violations stemmed from railcar cleaning operations that resulted in the unpermitted discharge of lead cyanide into waters of the United States and the significant accumulation (approximately 40,000 tons) of lead-contaminated materials at the site. Lead is a highly toxic chemical element that is a known cause of significant neurological and bone diseases. BNSF was ordered to pay a fine and restitution of $10 million and spend another $9 million for site remediation.

CERCLA Enforcement Accomplishments

In FY99, impressive results were achieved by the Superfund enforcement program, including:

- **Securing Potentially Responsible Party (PRP) Commitments.** In FY99, the Superfund enforcement program secured PRP commitments exceeding $780 million, including settlements for more than $550 million in future response work and settlements for over $230 million in past costs. Since Superfund's inception in 1980, the total value of private party commitments (future and past) is approximately $16.2 billion ($13.5 billion in response settlements and $2.7 billion in cost recovery settlements).

Cleaning Up the Avtex Fibers Superfund Site

FMC Corporation will clean up the 440-acre Avtex Fibers Superfund site in Front Royal, VA, a project estimated at $63 million under the consent decree. The Avtex facility, which manufactured synthetic fibers for 49 years, was operated by FMC from 1963 until 1976. The last owner, Avtex Fibers-Front Royal, closed the facility in 1989 after being cited for more than 2,000 violations of Virginia environmental laws, associated primarily with wastewater discharges into the Shenandoah River. In 1986, EPA listed the site on the National Priorities List and has itself been conducting cleanup work since. FMC, who will assume responsibility for site cleanup, will reimburse EPA $9.1 million for the past costs associated with the property.

- **Spurring PRP Actions.** In FY99, PRPs initiated over 80% of the remedial work at National Priority List (NPL) sites. PRP commitments for remedial design/remedial action response work exceeded $438 million. Remedial response settlements included 33 consent decrees referred to DOJ, 17 unilateral administrative orders (UAOs) with PRP compliance, and 3 other administrative orders on consent (AOCs) or consent agreements for response work.
- **Promoting Enforcement Fairness.** To promote enforcement fairness and resolve small party contributor's potential liability under Section 122(g) of CERCLA, the Superfund enforcement program concluded 38 *de minimis* settlements with over 3,700 parties in FY99. Through the end of FY99, EPA has achieved over 430 settlements with more than 21,000 small volume waste contributors.
- **Promoting Redevelopment of Contaminated Properties.** We have sought to protect prospective purchasers, lenders, and property owners from Superfund liability through prospective purchaser agreements. With these agreements, bona fide prospective purchasers were not held responsible for cleaning up sites where they did not contribute to or worsen contamination. In FY99, 24 prospective purchaser agreements were signed, bringing the total to over 100 agreements reached to date.
- **Offering Orphan Shares.** Over the past four years, we have offered to compensate viable settling parties approximately $175 million at 98 sites in recognition of the shares attributable to insolvent and defunct parties (i.e., "the orphan share"). In most cases where orphan shares were offered, settlement was reached with the viable parties.
- **Achieving Cost Recovery Settlements.** EPA achieved a total of 236 cost recovery settlements estimated at over $230 million and collected over $320 million in past costs. To date, the program has achieved approximately $2.7 billion in cost recovery settlements and collected over $2.4 billion in past costs.
- **Issuing Administrative Orders.** EPA signed a total of 166 AOCs, and issued 52 UAOs at CERCLA sites. In addition, the Agency resolved or referred 245 costs recovery cases. Of these cost recovery actions, there were 71 CERCLA §107 referrals to DOJ, 36 administrative settlements, 40 consent decrees, 7 bankruptcy referrals, and 91 decision documents to write-off past costs.

3.C. Promoting Compliance Through Assistance

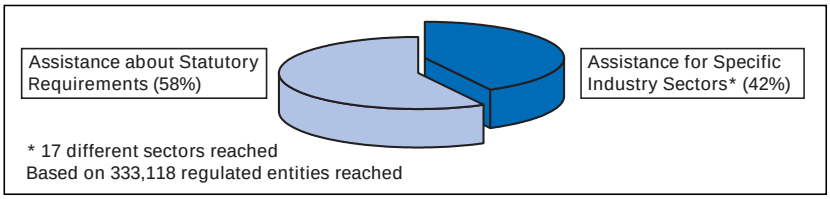
Environmental regulations can be complex, and companies, particularly small businesses, sometimes need assistance to help them comply. The key, as illustrated by EPA's compliance assistance activities in FY99, is to get the information on environmental requirements into the hands of all businesses—small, medium, and large—who want to comply.

In FY99, EPA continued to promote the regulated community's compliance with environmental requirements through our compliance assistance programs. EPA's collective compliance assistance efforts (on-site visits; compliance assistance hotlines; workshops/training and presentations at meetings; distribution of compliance assistance tools such as compliance checklists and guides) in FY99 reached 333,118 regulated entities[4]. As shown in exhibit 24, these regulated entities were reached through compliance assistance focused on industry sectors (42%) or specific statutory requirements (58%).

A majority of our compliance assistance efforts involved the distribution of compliance assistance tools (87% of entities reached) followed by workshops (10.5% of entities reached). Within the sector areas for which compliance assistance information is tracked, auto service and repair facilities received the highest amount of assistance (34%), followed by federal facilities (5.6%). Most of our statute-based compliance assistance was focused on the Emergency Planning and Community Right-to-Know Act (EPCRA) (71.9%) and the Clean Air Act (CAA) programs (13.7%).

In FY99, we continued to increase our role as a "wholesaler" of compliance assistance information. This wholesaler approach was described in EPA's 1999

Exhibit 25. FY99 Compliance Assistance National Totals (Percentage of Entities Reached)

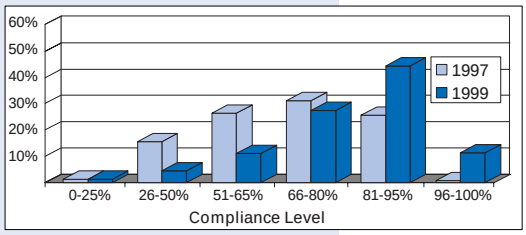


Source: RCATS

4. Regulated entities were counted based on each type of compliance assistance they received. Therefore, a regulated entity may be counted more than once.

Action Plan for Innovation (EPA 300-K-99-003). As a wholesaler, EPA will advance the practice of compliance assistance by developing tools and materials in a timely manner and then work with a network of state, tribal, and local compliance and technical assistance providers who deliver the assistance directly to the regulated community.

Exhibit 26. Trend in Compliance Levels for the Auto Service and Repair Industry



Courtesy of: Coordinating Committee for Automotive Repair

As one example of our wholesaler approach, we launched an ambitious effort to develop a compliance assistance "clearinghouse" in FY99. The clearinghouse will be a nationally accessible and searchable Web site that will give users access (via Web links) to compliance assistance tools and materials developed by EPA, states, trade associations, and other assistance providers. We hope to have the clearinghouse operational by September 2000.

Promoting Positive Change Through Compliance Assistance Centers

As explained on page 12, EPA operated nine sector-based Compliance Assistance Centers designed to help small businesses and small governmental entities understand and comply with their regulatory obligations in FY99. Three of these Centers received awards:

- CCAR-*Green*link® — the automotive service and repair center — has been selected to receive a Vision 2000 Model for Excellence Award by the Office of Small Business Advocacy for its work with "regulations that work for small business";

- ChemAlliance — the chemical manufacturers center — has been listed by the Dow Jones Business Directory as a "select site"; and
- The National Agriculture Compliance Assistance Center (Ag Center) has been selected by the editors of @gOnline, Successful Farming's online magazine, as a "high-ranking site."

In FY99, Headquarters continued its partnership with the Coordinating Committee for Automotive Repair (CCAR) in operating the *Green*Link® compliance center. The Center completed a second national survey of automotive shops around the nation, measuring the level of compliance at each shop. This compliance level (reported as a percentage) is based on the total number of activities identified as positive or correct divided by the total number of shop activities. The results of the survey indicate that compliance assistance activities can improve the level of compliance. This is the first time that a statistical study was done to measure the overall compliance of a sector's activities.

And the Surveys Say.....

Based on eight voluntary Internet surveys, approximately 70% (508 of 726 total respondents) of the companies and local governments that use the Centers said that they took one or more positive actions (e.g., changing the handling of waste, obtaining a permit, changing a production process, contacting a regulatory agency) as a result of that use. More than 75% of survey respondents indicated an environmental improvement (e.g., reduced air emissions, conserved water); over 50% thought they had a cost savings; and more than 80% rated the Centers as useful or very useful for understanding environmental regulations.

New survey statistics from CCAR-*Green*link®, presented in exhibit 26, show that compliance assistance projects are having a profound effect on the auto service and repair industry's level of compliance. This survey of 400 shops, compared to the 1997 baseline survey, indicates the level of compliance (as described above) improved. In FY99, 56% of the industry achieved a high level of compliance (defined here as compliance with 81-95% of requirements or with 96-100% of requirement) as compared to 26% in 1997, which is a two-fold improvement. CCAR-*Green*link® has also become an important compliance tool that many auto shops now rely on, with users increasing from 1,000 shops in FY97 to 21,000 shops in FY99.

Improving Compliance Through Access to Information

Compliance Assistance Centers

CCAR-*Green*Link®
1-888-GRN-LINK (476-5465)
http://www.ccar-greenlink.org

ChemAlliance
1-800-672-6048
http://www.chemalliance.org

Local Government Environmental Assistance Network (LGEAN)
1-877-TO-LGEAN (865-4326)
http://www.lgean.org

National Agriculture Compliance Assistance Center
1-888-663-2155
http://www.epa.gov/oeca/ag

National Metal Finishing Resource Center (NMFRC)
1-800-AT-NMFRC (286-6372)
http://www.nmfrc.org

Paints and Coatings Resource Center
http://www.paintcenter.org

Printed Wiring Board Resource Center (PWBRC)
http://www.pwbrc.org

Printers' National Environmental Assistance Center (PNEAC)
1-888-USPNEAC (877-6322)
http://www.pneac.org

Transportation Environmental Resource Center
1-888-459-0656
http://www.transource.org

In addition to these Centers, EPA continued to develop a wide variety of compliance assistance materials to promote compliance with environmental laws on an industry-by-industry basis. In FY99, we completed 10 sector guides and more than 30 other outreach documents for industries. These materials included:

- **Understanding Sectors.** We added three new sector notebooks covering the oil and gas extraction industry, the aerospace industry, and local government operations, bringing our total portfolio to thirty sector notebooks. Each notebook contains important sector information that help facilities recognize and resolve compliance problems, applicable federal regulations, compliance history, profiles of chemical releases, and pollution prevention opportunities. To date, over 450,000 notebooks have been distributed, and they remain one of EPA's most popular products. To view EPA's sector notebooks, visit http://www.epa.gov/oeca/sector.
- **Helping with Audit Protocols.** We developed four environmental audit protocol manuals to assist the regulated community in conducting

Assisting the regulated community with audit protocol manuals.

When compliance assistance was offered in EPA's Northeast Region, the result was an estimated reduction of 11.9 tons of perc emissions.

environmental audits. The audit protocols cover EPCRA, the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). To date, EPA has distributed approximately 7,500 audit protocols to industry and regulators. These audit protocols are available on the Internet at http://es.epa.gov/oeca/ccsmd/profile.html#audit.

- **Consolidating Environmental Resources for Tribes.** We developed a guidebook, the "Environmental Management Resources for Indian Tribes," which includes over 170 environmental resources specifically available to tribes for developing and strengthening their environmental programs. It also helps public sector entities understand their responsibilities, both as co-regulators and as regulated entities.

Getting Results Through Assistance

In addition to these compliance assistance materials, EPA successfully conducted many compliance assistance and outreach activities in FY99. These are described below.

Promoting Compliance with Environmental Management Reviews

Environmental Management Reviews (EMRs) focus on the system of policies and procedures a facility consistently uses to address environmental issues and maintain compliance with environmental regulations. In FY99, we conducted 22 on-site EMRs at federal facilities, specifically examining each facility's structure, environmental commitment, internal and external communications, formality of environmental programs, staff training and development, program evaluation and reporting, and environmental planning and risk management. Information from these reviews allowed us to identify common strengths and areas of improvement needed in Environmental Management Systems (EMSs) at federal facilities.

Improving Environmental Practices of Printers

In FY99, EPA's New England Region, Region 1, sent its *Fit To Print* compliance assistance guide to over 1,400 printers. Of those responding to an evaluation of the guide, 70% said that they had undertaken improved environmental practices (e.g., equipment changes/ modifications, material substitution, recycling, training, institution of environmental management policies or procedures, improved disposal methods) as a result of the guide. These facilities also said they applied for appropriate permits or identification numbers or filed reports to comply with federal, state, or local environmental regulations.

Improving the Environment by Assisting Auto Service and Repair Shops

Region 1's New England Environmental Assistance Team surveyed over 14,000 recipients of their auto service and repair assistance. Of those responding, 76% said they improved environmental practices as a result of the assistance they received.

Reaching Out to Dry Cleaners Results in Perchloroethylene Reductions

EPA's Northeast Region, Region 2, in coordination with New York State agencies, focused compliance assistance efforts on dry cleaners in New York and New Jersey. Their outreach efforts included on-site visits; distribution of easy-to-understand guides to Clean Air Act requirements; development of a Web site for compliance assistance information; and eight seminars on equipment maintenance and new technologies conducted for approximately 500 owners/operators.

Increasing EPCRA Compliance Among Metal Plating and Coating Sectors

For its Metal Finisher Initiative, EPA's Great Lakes Region, Region 5, gave over 3,500 facilities EPCRA fact sheets, special color-coded Emergency and Hazardous Chemical Inventory forms, and a copy of the Extremely Hazardous Substance List to help them determine whether they needed to comply. In working with its state partners, the region brought 252 of its 4,800 metal plating and coating facilities into compliance with EPCRA.

Consolidating Compliance Information for Storm Water Permit Holders

Region 6, EPA's Southwestern Region, delivered compliance help to 1,300 state, municipal, private and federal storm water permit holders, by: (1) creating a Web site which contains comprehensive storm water guidance, permit information, regulations, databases, and contacts; (2) speaking at conference and trade association meetings; and (3) mailing 6,000 assistance letters to the construction industry.

Increasing Compliance Through Seminars

Region 6 held a series of seminars for the industries on the Texas/Mexico Border, as well as for maritime industries. As a result, 95% of evaluated survey respondents (total of 20 respondents) felt they were more aware and knowledgeable about environmental requirements and opportunities; 50% implemented procedures to improve environmental practices; and 35% reduced wastes.

Improving Practices Through Workshops

In FY99, EPA's Region 7 office in Kansas City offered a series of EPCRA/ Toxic Release Inventory (TRI) workshops. When evaluated, 58% of the 132 respondents felt the workshops helped them to determine if their facility was subject to reporting requirements of EPCRA; and 52% believed the workshop information helped them to improve their records management and their completion of the TRI Form R.

Improving Understanding of Environmental Enforcement Through NETI Training

NETI promotes capacity building by training federal, state, local, and tribal lawyers, inspectors, civil and criminal investigators, and technical experts in the enforcement of the nation's environmental laws. Information about NETI can be found at our web site: http://www.epa.gov/oeca/neti or by calling 1-800-EPA-NETI.

The National Enforcement Training Institute (NETI) and its partners trained 8,421 environmental enforcement professionals in FY99. Training state, local, and tribal personnel remained a strong focus of NETI's efforts, as 4,767 students (57%) were trained from these organizations. A total of 3,334 federal employees received training (40%), and international and other students numbered 320 (3%). NETI and its partners offered at least 86 different courses and 262 presentations in FY99. One partner, the Criminal Investigation Division, provided training and community outreach presentations to more than 10,800 persons nationwide in FY99. The four Regional Environmental Enforcement Associations and the National Association of Attorneys General also received EPA funding to support their training efforts.

NETI debuted a new type of training course this year, "Enforcement Teamwork: Regulations to Resolutions," which provides an overview of the basic procedures and issues surrounding all aspects of the enforcement program, focusing on teamwork, case development, field work, and case resolutions. To strengthen the teamwork concept, this week-long course was designed for a residential setting. Twenty-five federal, state and local government employees attended the pilot course, which was held at the U.S. Fish and Wildlife Service's National Conservation Training Center in Shepherdstown, WV.

In addition, the Environmental Enforcement Curricula were released this year. NETI developed curricula for five major categories of environmental enforcement professionals — attorneys, technical experts, inspectors, civil investigators, and criminal investigators. The curricula were developed as a tool for NETI to use in assessing training needs and should also be useful to environmental professionals who are in the process of developing their own career development plans. These curricula provide suggested skills and training for federal, state, local, and tribal employees. The curriculum describes each discipline generally, identifies other position requirements, if any, and lists the knowledge, skills, and abilities necessary to achieve competency in that discipline. The complete curricula are available via the Internet at http://www.epa.gov/oeca/neti.

3.D. Bringing Companies Into Compliance With Incentives

Encouraging Self-Disclosure Through EPA's Audit Program

EPA developed the Audit Policy [*Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations,* 60 Fed. Reg. 66706 (Dec. 22, 1995)] to encourage voluntary auditing and self-disclosure of environmental violations and to provide a uniform enforcement response toward such disclosures. The Audit Policy provides incentives for companies to develop environmental audit and compliance management systems to detect, disclose, and correct environmental violations. When companies voluntarily discover and promptly disclose environmental violations to us (and meet other specified conditions of the policy), we will waive or substantially reduce gravity-based civil penalties by 75% or, in most cases, by 100%. For those meeting the policy's conditions, where applicable, we will not recommend the companies for criminal prosecution.

The Audit Policy is proving to be an effective approach for companies to improve environmental compliance.

Disclosure activity has increased every year since the effective date of the policy. In FY99, EPA obtained self-disclosures under the Audit Policy from 260 companies reporting violations in approximately 1,000 of their facilities (see exhibit 20). A total of 700 of these disclosures resulted from targeted self-audit initiatives. Some of these companies are large multi-state corporations like GTE and American Airlines.

Improving Compliance Through Voluntary Corporate-Wide Auditing Agreements

Use of corporate-wide auditing agreements is expanding. During the past 18 months, EPA has negotiated corporate-wide auditing agreements with companies to audit and correct violations of Clean Air Act (CAA), New Source Review (NSR) Standards at 40 facilities (see sidebar "Making the Air Cleaner Through a Voluntary Agreement"); emergency notification and spill prevention requirements at 17 telecommunication companies; CAA federal fuel standards at a major airline; and Toxic Substances Control Act (TSCA) violations at two major chemical companies.

By using the Audit Policy to establish corporate-wide auditing agreements, large multi-state corporations disclosed violations at multiple facilities in FY99.

Corporate-wide auditing agreements are designed to address potentially high-volume disclosures and to provide the efficiency of a sole mechanism for analysis and settlement of similar or voluminous violations. These agreements are optimal for companies with facilities located in more than one EPA region to ensure that disclosures are processed on the same schedule and with one point of contact. We require that an auditing agreement be in writing and that the facilities to be audited are identified. Based on the breadth and complexity of the audit, EPA and the company can reach mutually acceptable terms regarding schedules for audit commencement and completion and disclosure and correction of violations. Additionally, the company and EPA can define, in advance, economic benefit for certain violation types (where applicable) and violations ineligible for relief. Such definitions provide advanced knowledge of potential statutory penalties for specific violation types.

For companies, corporate-wide auditing agreements provide the opportunity to evaluate corporate practices and environmental compliance without the stigma of an enforcement action, and removes the uncertainty and cost of litigation, attorneys' fees and sanctions for violations. An agreement provides companies with assurance that violations disclosed over an extended schedule will meet EPA's expectations for timely disclosure. This approach also can provide an opportunity for companies to design and implement practices that incorporate environmental compliance into corporate operations. Corporate auditing agreements provide EPA with an efficient and economical means of improving and ensuring environmental compliance.

EPA understands that, as with most enforcement actions, confidentiality is important to companies. When we enter into settlement discussions or a settlement agreement with a company as a result of an audit disclosure, we protect information disclosed by the company as set forth in our "Confidentiality and Information Received Under Agency's Self-Disclosure Policy" (1997).

Companies interested in an auditing agreement should contact the EPA regional office in which their facilities are located or, in the case of multi-regional facilities, contact the EPA Office of Regulatory Enforcement.

Making the Air Cleaner Through a Voluntary Agreement

Recently, EPA and a major manufacturer entered into a voluntary agreement under which the company will audit, disclose and correct any violation of CAA/NSR standards at 40 facilities. This is a landmark agreement due to the amount of resources committed to conduct the audit and correct violations and the potential environmental benefits that will result from the correction of any violations.

This corporate-wide agreement, which establishes a three-year commitment by the company to audit its facilities at a cost of more than $2 million, potentially involves the correction of CAA applicability determinations made years ago by a previous owner, highlighting the value of these agreements in the context of acquisitions. The audit itself involves a detailed review and analysis of whether any changes at the facilities triggered NSR requirements and air quality impact analysis/offsets. The agreement establishes a schedule for the audit, disclosures, and compliance and provides for a nationwide settlement at the audit's conclusion.

Corporate-Wide Auditing Results in Environmental Protection

The following examples illustrate the success of recent corporate-wide auditing agreements and programs and show how such agreements can be tailored to meet the needs of companies in specific auditing situations.

Eliminating Air Pollution Through the American Airlines Audit Settlement

In FY99, an audit settlement agreement between EPA and American Airlines (AMR Corporation) resolved violations discovered through a corporate audit of the company's facilities at 152 airports. Based on the audit, American Airlines reported numerous violations, occurring from October 1993 to July 1998, of federal diesel fuel regulations that prohibit the use of high-sulfur fuel in motor vehicles. Under the terms of the settlement, EPA cut total penalties by more than 90% for violations that the airline voluntarily disclosed and promptly corrected. The company also agreed to additional pollution reduction measures at Boston's Logan airport.

The violations disclosed and corrected by American Airlines alone will eliminate nearly 700 tons of air pollutants every year.

Reducing Environmental Threats from Industry-Wide Problems: An Agreement with the Telecommunications Industry

In 1998, EPA reached a settlement under the Audit Policy with GTE Corporation, resolving 600 violations of emergency notification and spill prevention requirements at 314 sites. As a result of this action, EPA contacted members of the telecommunications industry to heighten awareness of potential environmental requirements and the cost effective approach of using the Audit Policy. Response to our initial outreach efforts and subsequent self-disclosures indicated that GTE's compliance problems were indicative of an industry-wide problem. In FY99, EPA reached final settlements with 10 telecommunications companies that voluntarily disclosed and promptly corrected 1,300 environmental violations that occurred at more than 400 of their facilities nationwide. EPA waived over $4.2 million in gravity based penalties and collected $128,772 representing economic benefit gained from delayed compliance. The settlement included remedial actions for violations of EPCRA and/or CWA Spill Prevention Control and Countermeasures (SPCC) requirements to (1) properly notify local emergency planning committees of the presence of hazardous chemicals, and (2) prepare spill prevention plans to not only reduce the risk of environmental accidents, but also protect the safety of the personnel who respond if an accident occurs.

Using corporate-wide audit agreements, telecommunications companies corrected more than 2,000 violations of emergency notification and spill prevention requirements in FY99.

Reducing Toxic Releases Through Voluntary Corporate Auditing Agreements

During FY99, our Toxics and Pesticides Enforcement Division negotiated and entered into corporate-wide auditing agreements with two major chemical companies. These companies agreed to conduct a voluntary TSCA compliance review, thereby establishing the first pre-negotiated audit agreements in the absence of a civil action consent agreement with EPA. The agreements allow the companies to self-audit and promptly disclose and correct violations with the certainty of receiving 100% penalty mitigation — or a negotiated stipulated penalty amount.

This compliance audit program provides an incentive for pork producers to take the initiative to find and correct Clean Water Act violations and prevent discharges to waterways.

Reducing Water Pollution Through Compliance Audit Agreements with Pork Producers

Animal waste runoff from animal feeding operations is a major source of water pollution that can cause environmental and public health threats. In FY99, as part of President Clinton's Clean Water Action Plan to eliminate water pollution caused by contaminated runoff, EPA and the National Pork Producers Council developed a voluntary compliance audit program (CAP) to reduce these threats to waterways from pork-producing operations. Under this initiative, participating pork producers will have their operations voluntarily assessed for violations by certified independent inspectors. Producers who promptly disclose and correct any discovered violations from these audits will receive a much smaller civil penalty than they might otherwise be liable for under the law. The CAP, while providing an incentive for pork producers to find and correct CWA violations, does not compromise the ability of EPA or states to enforce the law.

Encouraging Compliance Through an Incentive Program

In FY99, EPA conducted a compliance incentive program aimed at encouraging the industrial organic chemical sector to take advantage of our Audit Policy and directing interested facilities to resources that may assist them in performing environmental audits. Approximately 1,000 facilities were invited to participate in the program in 1998. To participate, facilities were given 6 months to perform voluntary environmental audits of their operations, identify potential areas of noncompliance uncovered by the audit, and report these findings. In letters sent to the facilities, EPA explained that while the Audit Policy usually requires disclosure of violations within 10 days of discovery, disclosure in the 6-month period ending January 31, 1999, would be considered prompt under the incentive program. After the deadline, EPA and authorized states increased inspections in the sector.

Help From Audit Protocols

To help facilities conduct thorough audits, four separate compliance audit protocols for RCRA generators, RCRA treatment, storage and disposal facilities, EPCRA, and CERCLA were developed and distributed in FY99 to more than 2,000 participating facilities.

Under the incentive program, 19 companies disclosed violations at 51 different facilities. At 32 of these facilities, violations were identified under more than one media program. Ten companies disclosed violations at several of their plants. Due to the complexity of these multimedia, multi-regional disclosures, EPA is still working to resolve many of the disclosures received.

Voluntary Audit and Disclosure of TSCA Section 12(b) Export Notifications Initiative

In FY99, EPA launched the Voluntary Audit and Disclosure of TSCA Section 12(b) Export Notifications Initiative developed for chemical manufacturers that export chemicals regulated by TSCA. TSCA Section12(b) export notices alert foreign governments receiving imported chemicals from the United States of hazardous chemical substances or mixtures for which EPA has issued regulations. The notices generally inform the receiving country that EPA has issued a rule requiring testing of a particular chemical substance, or for which EPA has promulgated a regulation of a certain hazardous chemical substance, such as PCBs.

EPA, working in partnership with the Chemical Specialties Manufacturers Association and the Chemical Manufacturers Association, notified companies with no prior enforcement history of chemical export notifications under TSCA Section 12(b) that they were allowed to send EPA a notice of intent to audit for Section 12(b) violations. If companies audited and corrected their Section 12(b) violations by September 1, 1999, EPA would issue a Notice of Noncompliance in lieu of a civil penalty. Eighty companies submitted their intention to audit, and EPA issued 43 Notice of Noncompliance. Through their audits, the participating companies discovered 9,510 recent violations of exporting a toxic chemical without notifying EPA.

Appendix A:

Priority Industry Sectors

A sector-based approach allows EPA to think broadly about the nature of the compliance problems facing a particular industry, and to address those problems with the appropriate tool or mix of tools.

Automotive Service and Repair Sector

Sector Profile

The automotive service and repair sector comprises the largest number of conditionally exempt and small quantity generators of any industrial/commercial sector. The types of pollutants, as well as the widespread location and sheer numbers of these shops, led EPA to designate this sector as a priority in FY96.

Pollutant Profile

Pollutants generated include petroleum and ethyl-based liquids, halogenated and non-halogenated solvents, and chlorofluorocarbons (CFCs). Potential impacts to the environment and human health occur when these materials are mishandled, either during the repair process or in final disposal. Improper repair results in CFCs being emitted into the atmosphere, reducing the ozone layer that protects the earth from harmful ultraviolet radiation. Improper handling and disposal of petroleum, solvents, and ethyl liquids can contaminate water supplies and release VOCs into the atmosphere, contributing to ground level ozone.

Key Activities and Accomplishments

Compliance Assistance: In FY99, EPA reached 17,662 shop owners and managers using a variety of vehicles such as meetings and training, fact sheets, and on-site visits. In particular, several of the regional offices worked with various state, industry and educational institutions to contact automotive shop owners and managers, often targeting specific groups. For example, Region 1 focused on the automotive collision and body shop sector and worked with owners and managers to reduce volatile organic emissions. Region 2 worked with the Greater New York New Car Dealers Association to assist its members in understanding environmental regulations as they pertain to their shops. Region 4, the State of Georgia, and Georgia Tech completed outreach activities to rural automotive repair shops (see specifics on page 15).

Inspections and Enforcement: Over the past three years, regions and states have focused inspection and enforcement efforts on chlorofluorocarbon (CFC) and reformulated gas emissions, hazardous waste, underground storage tanks, and underground injection control Class V wells. In FY99, 1,749 inspections were conducted and 283 final orders were entered for a total assessed federal penalty of $883,431.

Strategic Approach: EPA estimates that approximately 500,000 shops service or repair automobiles and light trucks. While the industry is not subject to difficult technical requirements, the challenge has been getting shop owners to understand their responsibilities. Therefore, we work to provide compliance information to the shop owners through various communications channels so they can understand the basic requirements. Once this is achieved, shop owners are then provided with additional information identifying several compliance assistance providers within their state who can assist them with learning about how their state environmental programs operate.

Pollutant Profile

The majority of releases from coal-fired power plants are air emissions. In comparison to 496 other industry categories included in EPA's air database, this sector ranks first or second in emissions of nitrous oxide (NO_x), sulfur dioxide (SO_2), and particulate matter (PM). Since 1997, EPA was able to reduce 250 tons of NO_x, 1,400 tons of SO_2, 500 tons of PM, 20,000 lbs of copper, and more than 500 gallons of PCB pollution in the coal-fired power plant sector through settlements.

Coal-Fired Power Plants

Sector Profile

This sector, which consists of approximately 466 facilities, generates the most electricity in the utility industry, accounting for more than 75 percent of the net generation for fossil fuel energy sources.

Compliance Status: Since 1997, approximately 70% of coal-fired power plants have been inspected annually for compliance with either air, water, or hazardous waste laws. A total of 423 inspections were conducted in FY99. The number of facilities regulated under the Clean Air Act (CAA) in significant noncompliance (SNC) declined from 59 to 38 in the past year, while those under Clean Water Act (CWA) rose from 31 to 37. New facilities identified during FY99 as being in SNC included 15 (for CAA) and 46 (for CWA).

EPA made 17 civil referrals of coal-fired power plants in FY99, an increase of 13 from the previous year. Most referrals were violations of Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS), State Implementation Plans (SIPs), and other CAA regulations. All 17 sources in the referrals are located in Regions 3, 4, and 5. EPA initiated 13 administrative penalty order (APO) complaints and collected approximately $250 thousand in penalties for FY99. Settlements with coal-fired power plants in general generated $1.7 million in penalties during FY99. Since 1997, 73 civil actions (19 for FY99) have been settled in the sector, totaling more than $2.1 million in civil judicial and administrative penalties. Activities to return facilities to compliance were valued at $224.5 million with another $4.7 million invested in supplemental environmental projects (SEPs).

Key Activities and Accomplishments

Inspections and Enforcement: For the past two years, EPA Headquarters and Regions 3, 4, and 5 have been investigating the expansions in the power industry with the goal of having pollution controls (SO_x and NO_x) on the plants with the greatest amounts of pollution. We evaluated the compliance status of these power plants. As a result of the PSD/New Source Review (NSR) compliance initiative, EPA and DOJ recently filed lawsuits against seven of the nation's largest utility companies. In addition, EPA filed an administrative order against the Tennessee Valley Authority. The ongoing investigations of these facilities and other utility companies will continue into FY2000/2001.

Region 8 initiated comprehensive evaluations of CAA compliance at the 38 coal-fired power plants in the region. These evaluations include analysis of the most recent state inspection report and review of two years of quarterly excess emission summary data for each facility. The region will identify discrepancies between the utilities and states as to how they report excess emissions and monitoring downtime and follow-up with the appropriate enforcement responses.

Concentrated Animal Feeding Operations (CAFOs)

Sector Profile

Within the agricultural sector, animal feeding operations (AFOs) represent a large potential source of polluted runoff. AFOs are livestock-raising operations where animals, such as beef cattle, hogs, chickens, and turkeys, are kept and raised in confined places, resulting in a high concentration of pollutants on a small land area. AFOs are a priority under the President's *Clean Water Action Plan (February 1998)* and the *Unified National Strategy for Animal Feeding Operations (March 1999)* issued by USDA and EPA.

Of the 450,000 AFOs nationwide, approximately 12,500 of them are considered to be concentrated animal feeding operations (CAFOs) due to the large number of animals present at the facility (over 1,000 animal units) or the method of discharge from the facility. AFOs/CAFOs are distributed across the United States, with a heavier concentration in the mid-plains, eastern seaboard, and western coastal regions. In recent years, as the livestock industry has consolidated into fewer and larger operations (particularly for poultry and hogs and increasingly in the dairy industry), the effects of polluted runoff from AFOs/CAFOs on water quality have assumed increasing importance.

Pollutant Profile

AFOs/CAFOs can pose a number of risks to water quality and public health, mainly due to the amount of animal manure and wastewater generated and how this waste is subsequently managed. Manure and wastewater can contribute nutrients (e.g., nitrogen, phosphorus), sediment, pathogens, heavy metals, hormones, antibiotics, and ammonia to the environment. Excess nutrients can cause eutrophication in surface waters and can contaminate drinking water (from nitrates and pathogens). Environmental risks are posed by spills while handling manure, a breach of the storage system, or runoff from improperly applied/managed land application.

Compliance Status: CAFOs are "point sources" under the CWA, subject to the National Pollutant Discharge Elimination System (NPDES) permit requirements if they cause pollutants to be discharged to waters. Currently, the CAFO sector has many facilities operating outside the federal NPDES regulatory system. Though NPDES permitting of CAFOs is anticipated to increase with subsequent entry of permit information into the permit compliance system (PCS), few states or EPA regions today maintain an accurate inventory of CAFO facilities.

California Dairy Quality Assurance Program (CDQAP)

The CDQAP, a partnership among 30 entities including California's dairy industry; state, federal, regional agencies; and universities, is the first voluntary compliance program for dairies in California. In 1999, the Partnership began a dairy environmental stewardship certification program, requiring attendance of a 3-session course and passing an onsite evaluation. For these evaluations, the Partnership developed a compliance checklist covering federal/state water regulations, best management practices, and groundwater and nutrient application issues. Increased awareness of Region 9's ongoing dairy inspections and enforcement increased attendance at the CDQAP classes by twenty-fold.

Key Activities and Accomplishments

Compliance Assistance: The National Agriculture Compliance Assistance Center (Ag Center) developed and implemented an Interagency Agreement with the U.S. Department of Agriculture (USDA). The livestock portion of this Agreement focuses on environmental issues specific to livestock management, pursuant to which EPA is developing a national curriculum for livestock operators. In FY99, the Ag Center distributed more than 25,000 documents, many of which supported AFO listening sessions held across the country; expanded its Web site to include an "Animal" page and nutrient management information; and developed six species-specific fact sheets explaining permit requirements. Through a grant from EPA and Region 4, the Conference of Southern Counties Associations developed a compliance assistance document, *Animal Feeding Operations, the Role of Counties,* which was widely distributed.

Inspections and Enforcement: In 1999, we held seven CAFO Inspector Training Classes in several regions for approximately 180 regional and state inspectors. EPA regions conducted 339 compliance inspections. Additionally, under an EPA grant, the National Association of Attorney Generals (NAAG) held a CAFO workshop in Kansas City, which was attended by 30 states, NAAG staff, several EPA regions, and USDA.

Significant Cases: Ponderosa is a dairy CAFO in Nevada with 5,000 cows. In February 1998, a manager at the dairy opened a lagoon valve releasing manure wastewater to a saturated irrigation field. The valve, remaining open for two days, released approximately 1.7 million gallons across eight miles of federal lands and open roads in Nevada. The manure also crossed into California and the Amargosa River. EPA criminal investigators were given false information about how the spill occurred and who was responsible. Rockview Farms Inc., Ponderosa's owner, pled guilty to one felony violation for making false statements to federal investigators, and one misdemeanor CWA violation for discharging manure wastes without a permit. Rockview paid criminal penalties of $250,000; reimbursed the state $6,900 for its response and investigation costs; and donated $10,000 worth of investigative equipment. The Ponderosa manager pled guilty to one CWA count of negligently discharging CAFO wastes, paid a $5,000 fine, and was placed on a

three-year probation.

Strategic Approach: Under the *Unified National Strategy for Animal Feeding Operations*, USDA and EPA's goal is to minimize water pollution from confinement facilities and land application of manure through the development of Comprehensive Nutrient Management Plans (CNMPs). The national performance expectation is that all AFOs voluntarily should develop and implement CNMPs.

EPA's sector strategy, the *CAFO Compliance Implementation Plan (March 1998)*, calls for: (1) inspections of all CAFOs in priority water watersheds by 2001 and all others by 2003; (2) state or EPA regional development and implementation of state compliance/enforcement strategies; (3) development of a CAFO inventory; and (4) support of state and regional efforts to permit all CAFOs beginning in FY2000. These permits should include enforceable CNMPs.

Dry Cleaning

Sector Profile

Strategic Approach: This integrated approach is best illustrated through our work with the dry cleaning sector. Since first identified as a national priority by EPA in fiscal year 1995 (FY95), we have been successfully using a combination of approaches to improve the compliance of this sector. Activities have included educating the industry about regulatory requirements through compliance assistance, followed by inspections and enforcement actions, as needed.

EPA has focused on the dry cleaning sector (SIC 7215, 7216, 7218) because it presents various environmental threats and compliance concerns. For example, the cumulative environmental impact caused by potential releases of cleaning solvents to the ground, water, and air from facilities located in population centers can be significant. Dominated by "mom and pop" businesses and with a heavy concentration of owners/operators who do not speak English as their first language, these 25,000-35,000 facility owners may not fully understand and may not have the resources to obtain, read, and interpret the numerous environmental regulations that apply to them.

Dry cleaners, which are categorized as service industry establishments, are not required to report to the Toxic Release Inventory (TRI). Moreover, most were not traditionally tracked by EPA compliance and enforcement databases. Since this sector became a national priority, regions and states have made great strides in tracking dry cleaners in the EPA databases. The national EPA databases now reflect an increase from just over 980 cleaners in 1995 to over 11,000 cleaners in FY99.

Pollutant Profile

The most commonly used cleaning solvent in this sector is percholorethylene (perc). Approximately 85% of dry cleaners use perc, which dominates in commercial dry cleaning establishments, while petroleum solvents are used in the majority of industrial machines. Perc is a carcinogen that readily volatilizes in the air and can contaminate soil and water during the cleaning, purification, and waste disposal phases of dry cleaning, if improperly handled. Perc was found in 771 out of the 1,190 National Priorities List sites for the Superfund Program. The 1993 EPA air toxics standard for perc dry cleaners requires both existing and new facilities to use designated vapor control technologies and undertake leak detection and equipment repair to prevent fugitive emissions.

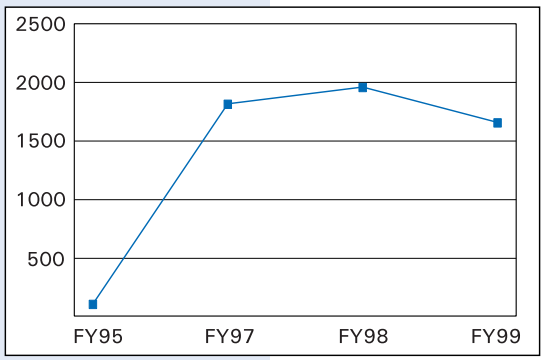
Key Activities and Accomplishments

Compliance Assistance: When EPA became aware of the environmental concerns of the dry cleaning industry, we worked closely with the industry, states and other stakeholders during the development of regulations and their implementation. This involved building partnerships with industry, developing mentoring programs, and creating compliance tools such as manuals, fact sheets, and videos to assist the industry and other regulators.

Several compliance tools have been developed to assist dry cleaners with implementing environmental requirements. Some tools are multimedia so that dry cleaners can get environmental regulatory information for air, hazardous waste, and water from one source. Information about tools developed by EPA for this sector is available on the Internet at http://es.epa.gov/oeca/ccsmd/cac/dryclean.html.

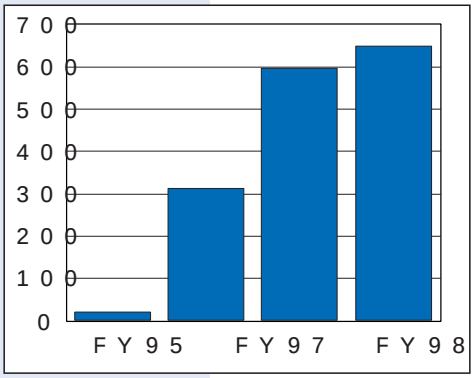
In addition to developing tools to assist cleaners and regulators with environmental requirements for cleaners, EPA offered training using a variety of techniques (e.g., satellite, videotapes, classrooms) and in different locations to accommodate the cleaners. Some compliance assistance providers also have supplied one-on-one training during their site visit to a cleaner. In FY99 alone, EPA regions responded to 50 hotline inquiries from dry cleaning establishments; held 12 workshops that reached over 500 entities; and conducted 299 on-site visits.

Exhibit A-1. Trends in Inspections Conducted at Dry Cleaners



Inspections and Enforcement: Following outreach and compliance assistance efforts, EPA increased its inspection and enforcement activities. As shown in exhibit A-1, the reported inspections of dry cleaners increased from 111 inspections in FY95 to just under 2,000 inspections in FY98. In FY99, more than 1,600 inspections were conducted.

Exhibit A-2. Summary of Inspected Dry Cleaners with 1 or More Violations



From FY95 to FY99, the distribution of inspections by media also changed. In FY95, inspections were primarily RCRA (78%), with few CAA (20%) and CWA (<1%) inspections. By FY99, CAA inspections increased from 20% to 72%, with smaller numbers of RCRA (27%) and CWA (over 1%) inspections. This increase in CAA inspections was due to the 1996 compliance date for the regulations setting national emission standards for hazardous air pollutants (NESHAP) for perc dry cleaning facilities.

From FY95 through FY99, the number of dry cleaners determined to have one or more violations has increased significantly (see exhibit A-2) as the number of inspections

conducted increased. In the cases where violations were found at dry cleaners and follow-up inspections were conducted, regions and states reported that the compliance rates typically improved. Generally, the regions reported high rates of compliance for the proper installation of control equipment (usually in the 80 to 90% range) and lower rates of compliance for recordkeeping and monitoring requirements.

From 1997 through 1999, 84 enforcement cases were filed. Most facilities (58%) had violations for recordkeeping, while 25% had violations for monitoring and sampling practices. While total penalty amounts were under $20,000 since most dry cleaners are small businesses with inability to pay issues (lower revenues, capital assets, etc.), the value of their activities taken to return to compliance was over $1.5 million dollars, with supplemental environmental projects totaling $40,992. One case in EPA's Mid-Atlantic Region, Region 3, against a dry cleaner resulted in a 15-ton reduction in perc. In another 1999 enforcement case, EPA issued a RCRA Section 7003 Imminent and Substantial Endangerment Order against a dry cleaner in Georgia for contaminating its facility and the city's water supply wells with perc and other pollutants. In addition to perc, other pollutants were trichloroethylene, 1,2-dichloroethylene, vinyl chloride and other breakdown products and/or additives such as ethene, methane, ethane, propane, propene, Freon 113, trimethylbenzene isomers, and the metals manganese and arsenic. This order, issued after a joint SDWA/RCRA investigation, requires the facility to characterize and clean up all contamination, while ensuring that the City has an adequate water supply from alternative wells.

Industrial Organics and Chemical Preparations

Sector Profile

In 1998, EPA identified the industrial organic (SIC Code 2869) and chemical preparation (SIC Code 2899) industries as national priorities because of the large number of facilities (3,387 across the nation); the high percentage (>60%) of small-sized facilities (<10 employees) needing compliance assistance; high levels of risk from Toxic Release Inventory (TRI) releases and chemical spills; and repeated incidents of noncompliance across statutes. While these facilities are located nationwide, most are located in Regions 2, 4, 5, 6, and 9, and are significantly represented in environmental justice communities.

Compliance Status: Both industries have varied and complex manufacturing processes subjecting them to most statutes. As shown in the publications *The Chemical Industry National Environmental Baseline Report 1990-1995* and the *EPA/CMA Root Cause Analysis Report: An Industry Perspective*, chemical facilities repeated similar types of violations across a number of statutes. Specific areas identified as persistent problems included failing to report under the Emergency Planning and Community Right-to-Know Act (EPCRA) and the CAA and exceeding permit limitations under the CWA.

Key Activities and Accomplishments

Compliance Assistance: The overall strategy for this sector emphasizes compliance assistance. In FY99, four workshops attended by representatives from 585 facilities were held; users of ChemAlliance (compliance assistance center) substantially increased; and over 7,000 copies of the EPCRA, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA) and treatment, storage, and disposal facility (TSDF) compliance audit protocols were distributed.

Inspections and Enforcement: Since 1997, the number of inspections has remained constant. There are about 3,887 facilities subject to the CAA, CWA, and RCRA in these sectors. Of these, about 25% of the inspections occur at industrial organic facilities and about 20% at chemical preparation facilities. Combining CAA, CWA and RCRA inspections, over 2,000 were conducted at industrial organic facilities and almost 1,000 inspections were conducted at chemical preparation facilities.

The number of new facilities identified as being in SNC since FY97 varies across the statutes. The CAA inspections yielded the most SNCs with 208 facilities, followed by the CWA at 147, and RCRA with 94. Since 1997, 124 cases have been settled (64 chemical preparation cases) with total penalties of $2,010,546, and another $1,134,370 assessed for activities required to return to compliance. In addition, SEPs were valued at $1,481,700. During the past three years, there have been 26 new cases initiated.

Significant Cases: Region 1 settled the third and final portion of a lengthy settlement with the major potentially responsible party (PRP) in the Parker Landfill Superfund Site case. This final round of agreements resulted in the PRP funding $7 million towards a $7.8 million total cleanup. The landfill, located in Lyndon, Vermont, occupies 25 acres containing a solid waste disposal area and three smaller industrial waste areas. Approved as a solid waste disposal area in 1971, it was used for the disposal of municipal solid waste and sometimes for industrial wastes. Industrial wastes disposed at the site included trichloroethane, sodium hydroxide, 1,1,1-trichloroethane, and acetone. Between 1972 and 1983, 1,333,300 gallons of liquid waste and 688,900 kilograms of liquid, semisolid, and solid industrial wastes were disposed of at the site.

Strategic Approach: Using a national approach and a mix of tools, we have reached thousands of these facilities. In 1998, EPA began these projects by encouraging disclosure of violations under the Audit Policy (see page 24), conducting inspections at facilities subject to new regulations, and developing several tools to assist facilities to understand and improve compliance. Below are highlights of these projects.

- **EPCRA 312 Project:** Under this national project EPA provided compliance assistance materials to 2,005 potentially regulated industrial organic facilities to encourage them to submit EPCRA 312 Tier II reporting forms to their Local Emergency Planning Committees (LEPCs) and State Emergency Response Commissions (SERCs). EPA also sought to increase the facilities' awareness of their regulatory obligations by providing compliance assistance material on the CAA 112(r) Risk Management Plan and information on how to obtain the *Process-based Self-assessment Tool for the Organic Chemical Industry* (EPA-305-B-97-002). This enormous outreach effort resulted in 1,573 facilities confirming receipt of the materials and 1,400 verifying their status as industrial organic manufacturing facilities.
- **CAA Hazardous Organic NESHAP (HON) Inspection Tool and Training:** EPA developed and delivered training in support of HON wastewater requirements. The training consisted of a day-long classroom session and a day-long field exercise. Approximately 200 state, local and regional personnel were trained at 12 satellite locations. The overall course rating was "excellent."
- **Universe Verification Project:** This purpose of this project was to try to identify the entire universe of industrial organic and chemical preparations manufacturers including those facilities with no EPA or state environmental record. This project allowed EPA and states to expand their presence in the regulated community and to improve national and local database information through a systematic verification process. Nearly 700 street-level observations, called "drive-bys," were completed by the end of FY99 on facilities with no EPA or state environmental record. The facility lists generated are being used to track this sector's compliance monitoring, assistance and enforcement status. Once facilities were confirmed as a chemical facility, EPA implemented activities to help the facilities improve compliance. Follow-up activities included single and multimedia inspections, compliance assistance, and enforcement.

  This project resulted in development of a unique facility identification methodology that could be applied to other industries. To capture and describe the various components of the facility identification methodology, EPA drafted a booklet for release in FY2000. This booklet describes the innovative techniques used to develop the methodology, the methodology's unique features, and its potential uses.
- **Root Cause Analysis Pilot Project:** EPA and the Chemical Manufacturers Association (CMA) completed the publication, *Root Cause Analysis Report: Industry Perspective*, to identify and evaluate the underlying causes of noncompliance with regulations. The project also evaluated individual recommendations for improving compliance, and the effect of environmental management systems on compliance. The report presents an overview of

Pollutant Profile

Several types of pollution result from the manufacture of coke, iron, and steel, the formation of metals into basic shapes, and the cleaning and scaling of metals. The coke-making and iron-making processes at integrated mills generate air emissions and volumes of quench water. The pollution produced during the steelmaking process varies depending on the process the steel mill uses. The basic oxygen furnace used by integrated mills generates control dust and sludge, a metal bearing waste. The electric arc furnace generates dust and sludge containing several heavy metals (e.g., lead and cadmium) along with slag, and gaseous and particulate matter. The forming, cleaning, and descaling processes produce wastewater sludge that may contain cadmium, chromium, and lead, oil and grease, spent liquor and wastewater containing metals (e.g., zinc, lead, cadmium, or chromium).

survey responses from 27 CMA facilities (which received 49 civil enforcement actions) about the root and contributing causes of the noncompliance that were identified in their federal civil judicial or administrative actions.

Iron and Steel Sector

Sector Profile

Of the 116 iron and steel mills operating in the United States, 25 are integrated mills and 91 are mini-mills. Eighty-five percent of the mills are located in Regions 3, 4, 5, and 6. Integrated steel mills, which are generally older than mini-mills, are large facilities that make steel from raw materials such as iron ore, scrap, limestone and coke. A fully-integrated steel mill consists of coke ovens, blast furnaces, and rolling and finishing mills. Historically, integrated mills were located based on their proximity to water (tremendous amounts of water are used in cooling and processing) and near the sources of raw materials, such as iron ore and coal. Alternatively, mini-mills use electric arc furnaces to melt scrap metal in order to make steel products. Because scrap metal is the primary raw material instead of molten iron, there are no coke-making or iron-making operations. Mini-mills are relatively new facilities, built during the last 20 years, and are located in areas where electricity and scrap metal are available at a reasonable cost. Mini-mills have narrow product lines and typically produce much less product per facility (less than 1 million tons of steel per year) than an integrated mill.

Key Activities and Accomplishments

Sector Analysis: In FY99, EPA completed a report called the *Summary of Environmental Compliance and Enforcement Data for Steel Mills*, which reviewed compliance and enforcement data for 34 integrated and mini-mills, as well as compliance and enforcement efforts carried out by EPA and state and local pollution control agency staff between 1990 and 1995. The data used for the report were extracted from existing federal, state and local compliance and enforcement files. This report is useful for stakeholders in understanding the industry and its associated processes, delineating problem areas and potentially, crafting innovative approaches to address recurrent problems.

Inspections and Enforcement: The average number of inspections per facility varies per media, however, on an average, mini-mills are inspected less frequently than integrated mills. Over the past three years, the air program inspected a higher percentage of mills (68% inspection rate for mini-mills and 73% for integrated mills) when compared to the water (50% for mini-mills and up to 77% for integrated mills) and RCRA programs (<50% inspection rate for both mini-mills and integrated mills).

EPA settled a total of 39 cases with steel mills between FY98 and FY99. Of those settled, 14 cases involved mini-mills and 25 involved integrated mills. These cases were distributed among the media programs: 11 were air-related; 9 were water-related; 9 were RCRA-related; 8 were Toxic Substances Control Act (TSCA)-related; and 2 were related to EPCRA and CERCLA. Fourteen of the settlements included injuctive relief with a total monetary value of $47,848,200. Of the 39 settled cases, 23 involved penalties, for a total value of $5,521,367.

Over the past two years, EPA also had a total of nine civil referrals to DOJ involving five integrated mills and four mini-mills. Administrative penalty orders totaled 18, nine each for mini-mills and integrated mills. The referrals and orders were also associated with different media. For referrals, CAA was most frequently cited, followed by RCRA; for orders, TSCA was most cited, followed by CAA and RCRA.

Over the past three years, the highest percentage of new SNCs for the sector was documented for mini-mills (56%). In FY99, 20 new SNCs were identified for mini-mills and eight for integrated facilities. Over the past three years, the SNC rate for mini-mills consistently increased, especially within the RCRA program, while the inspection rate decreased slightly. Over the past three years, the SNC rate for integrated mills has varied significantly. These patterns may be due to recurring problems at these mills, more focused inspections on specific problems, and/or increased scrutiny by the Agency.

Strategic Approach: In FY99, EPA initiated the implementation of the Iron and Steel Sector Strategy, which was developed jointly between Headquarters and the regions. The primary goal of the strategy is to reduce actual and potential emissions at both integrated and mini-mills by improving the overall sector compliance rates, reducing the occurrence of "media shifting," and remediating environmental harm. The strategy proposes a multitrack approach for addressing environmental and compliance management problems at integrated mills and mini-mills, and achieving the strategy goals.

Petroleum Refining Sector

Sector Profile

Petroleum refining is one of the leading manufacturing industries in the U.S. in terms of commercial transactions. Fuel products account for over 87% of the refining sector's output. Refineries also produce chemical feedstocks and finished nonfuel products (solvents, waxes, asphalt etc.). Refinery input is primarily crude oil. Currently, 158 refineries (150 with crude oil refining capacity) are operating across nine of the ten EPA regions, down from over 300 in the early 1980s. Facilities are concentrated along the Gulf Coast and near heavily industrialized areas of the east and west coasts. Sixty-five refineries are within three miles of population centers containing over 25,000 people and 37 are within three miles of centers containing 50,000 or more people.

Compliance Status: Refineries are routinely and regularly inspected, and many of the inspected facilities have had multiple enforcement actions taken against them. Roughly 82% of the refineries are inspected on an annual basis for air, roughly 52% for water, and 36% for RCRA. Over the last three years, the number of new SNCs increased for air while remaining approximately the same for water and RCRA.

For the 168 facilities tracked in the Sector Facility Indexing Project (SFIP), the number of inspected facilities in Significant Noncompliance (SNC) and the corresponding SNC rate for these facilities are shown by media in exhibit A-3.

Exhibit A-3. Number of Inspected Petroleum Refining Facilities* in Significant Noncompliance (SNC Rate)

	1997	1998	1999
CAA	77 (53%)	81 (60%)	74 (54%)
CWA	26 (24%)	28 (26%)	24 (22%)
RCRA	26 (39%)	18 (32%)	19 (32%)

* Based on 168 facilities tracked in the Sector Facility Indexing Project

Key Activities and Accomplishments

Inspections and Enforcement: The refining sector has been a priority sector for the national compliance and enforcement program since 1996. In FY99, there were 623 inspections at petroleum refineries, 8 referrals, 2 administrative penalty orders, and penalties assessed in the amount of $10.7 million.

Significant Cases:

- Multimedia action against Marathon Ashland Petroleum, LLC at their Catlettsburg, KY; Canton, OH; and St. Paul, MN facilities; including a $5.8 million penalty, $12 million to correct the violations, and $14 million to perform SEPs. In part, the action will reduce air emissions of sulfur dioxide and volatile organic compounds (VOCs) and hydrocarbon leaks into groundwater.
- Multimedia action against Shell Oil Company at their Wood River, IL facility, including a $1.5 million penalty, approximately $6.3 million to correct the violations, and over $2.8 million to perform SEPs. In part, the action will reduce air emissions of sulfur dioxide by 7,700 tons per year (tpy), nitrogen oxide by 940 tpy, and particulate matter by 260 tpy.
- Consent decree between EPA and BP Oil Company resolving violations at its Toledo, OH facility. The settlement includes a penalty of over $1.2 million. In addition, under the agreement, the company must report flaring incidents to EPA and take corrective action to reduce the likelihood of recurrence of such incidents.

Strategic Approach: A sector strategy was developed in FY98 that focuses our efforts on specific problems at refineries. The overall goals of the sector strategy are to: (1) reduce emissions from refineries; (2) bring refineries into long-term compliance (with the issues investigated); and (3) ensure more consistent interpretations and enforcement of regulations.

As part of a more strategic approach, EPA is concentrating on air pollution problems and new RCRA requirements, but continues to shift away from inspections towards more targeted, in-depth investigations. As a result of concluding some of the initial investigations, the number of referrals in FY99 increased. Current indications are that the number of referrals and the environmental significance of those referrals will continue to increase in 2000 as a result of the investigations initiated in FY98 and FY99.

EPA has attempted to make the compliance issues widely known to the refining sector so that they have an opportunity to take advantage of EPA's self-audit policy and correct any problems on their own. EPA has given presentations on the key compliance problems to industry at meetings (including meetings hosted by industry for industry). EPA has also issued Enforcement Alerts for NSR/PSD issues in general, and leak detection and repair and RCRA issues specifically at petroleum refineries. The following are key compliance problems in this sector:

- **New Source Review/Prevention of Significant Deterioration (NSR/PSD) Compliance and Permitting:** Although the average refinery size has increased, relatively few have applied for and obtained pre-construction and operating permits for physical expansions under the NSR/PSD program. Investigations are focusing on noncompliance with the permitting process, particularly for fluidized catalytic cracking units, the single largest air emission source at petroleum refineries.
- **Leak Detection and Repair:** Leak detection and repair requirements under various air regulations require facilities to identify equipment and components subject to monitoring, ensure that open-ended lines are capped, monitor the equipment for leaks, and then repair the leaks. However, monitoring by EPA typically identifies leak rates that are 2 to 10 times higher than rates identified by the company.
- **Refinery Fuel Gas Combustion Devices:** These devices represent a significant source of refinery emissions of sulfur dioxide. Controls under New Source Performance Standards (NSPS) Subpart J may be bypassed during non-emergency conditions, resulting in greatly increased emissions; modifications may have occurred, resulting in additional, newly affected facilities being subject to this subpart and its control requirements.
- **Benzene Waste:** Enforcement experience has found widespread refinery noncompliance and erroneous calculations of total annual benzene in waste streams, resulting in uncontrolled and unaccounted for benzene emissions. EPA has distributed a compliance guidance to refiners, and continues to conduct detailed investigations, including sampling, to determine refinery compliance.

- **Slotted Guide Poles:** Significant emissions reductions could be gained through installation of controls that reduce or eliminate vapors emitted to the atmosphere from the use of slotted guide poles in storage tanks.

Primary Nonferrous Metals Sector

Pollutant Profile

Air and water are impacted the most by these processes. Air pollutants include sulphur dioxide, flouride, and particulate matter containing lead, copper, zinc, arsenic, mercury, and cadmium. Water pollution results primarily from wastewater containing sulfuric acid and caustic waste. Other wastes requiring treatment, storage and/or disposal include spent aluminum potliners, waste slurry/sludge, slags and tailings, which are regulated by RCRA as hazardous waste.

Sector Profile

Most of the smelters and refineries in this sector are owned by fewer than 20 large companies and operate in every region except the upper northeast states. Of the 51 facilities in this sector, there are 23 aluminum, 21 copper, 3 lead, and 4 zinc facilities. The highest concentration of facilities is found in Regions 6, 9 and 10, accounting for over half of the facilities with 8, 12, and 9 facilities respectively.

Categorization as a "primary" nonferrous facility refers to the source material. Primary smelting and refining produces metals directly from source material that is more than 50% ore. Secondary smelting and refining produces metals from scrap and process waste. The pollution resulting from these operations varies depending upon the metal and the type of recovery technology used. The two metal recovery technologies generally used to produce refined metals are pyrometallurgical (which uses heat) and hydrometallurgical (which uses aqueous solutions).

Compliance Status: This sector has been identified as a national priority since FY96 because of the volume of pollutants discharged, released, or spilled at the facilities and their high rate of noncompliance. Some areas of the country are unable to meet national ambient air standards because of releases from these smelters, and some smelters are individually responsible for not meeting lead and sulfur dioxide standards in their region. In addition, over 40% of the facilities reported spills totaling 193,716 pounds over the past two years. Nearly 70% of the facilities that have been inspected (i.e., 132 facilities inspected) since FY96 were in noncompliance with at least one of their permits, and approximately 30% of inspected facilities were in SNC with one or more statutes.

Key Activities and Accomplishments

Inspections and Enforcement: Over 29 million pounds of TRI chemicals, including 1.3 million pounds of carcinogens, were released from all primary nonferrous metal facilities based on 1997 TRI data with the majority coming from the lead and copper facilities. Although small in total number of facilities (21), primary copper smelters and refineries also had the highest average pollutant release per facility according to the TRI data.

Since 1997, there have been 458 inspections for compliance with either air, water or hazardous waste laws at primary nonferrous metal facilities. Most inspections monitored compliance with the CAA, followed by CWA and RCRA inspections. EPA and the states concluded a total of 11 enforcement actions against facilities during the past three fiscal years with a total of just over $8.98 million in federal penalties and $14.79 million in SEPs. Four facilities, Alcoa and Reynolds in New York, Asarco in Nebraska and Kennecott in Colorado, are part of state or federal Superfund cleanups.

In FY99, 132 federal and state inspections were conducted for compliance with CAA, CWA, and RCRA. Seventy-four percent of the facilities were inspected for compliance with the CAA, 48% for CWA and 12 % for RCRA. Of the facilities inspected in FY99, the SNC rate was 32% with the CAA, 29% of facilities defined as major in the CWA, and 17% for RCRA. The percent of facilities in SNC with the CWA decreased by 6% since 1997, but increased by 4% for the CAA and 8% for RCRA.

Enforcement actions in FY99 include the settlement of an administrative complaint at the Big River Zinc facility in Illinois for RCRA and EPCRA violations which assessed federal penalties of $25,406, another $99,500 in SEPs, and $7,365 in injunctive relief actions. An estimated two tons of cadmium and lead will be reduced in the soil as a result of this action.

Significant Cases: Recent highlights include judicial settlements with ASARCO and its wholly-owned subsidiary, Encycle, for multimedia violations at its facilities in several regions. The 1998 Phase I settlement included a penalty of $3.39 million for numerous violations of the CWA and RCRA Subtitle C. The 1999 Phase II settlement includes payment of a civil penalty of $5.5 million, completion of numerous SEPs with a total projected cost of $14.7 million, and enhancement of the Environmental Management System to be used at all ASARCO facilities nationwide. Although amounts cannot be readily calculated, significant reductions of arsenic, cadmium, copper, lead, manganese, and zinc releases to the water and soil are anticipated as a result of this settlement.

Strategic Approach: In FY99, EPA began implementing a strategy for addressing this sector with the goal of improving the sector's compliance rates and reducing its total emissions, discharges and releases. The strategy's initial approach is to ensure that all primary smelters are accurately classified; the applicable regulatory provisions for each have been clearly identified; and timely enforcement action is pursued when significant violations remain unresolved. Five specific problem areas are identified as particular concerns in addressing the overall goals of greater compliance and reduced risk:

- *Proper Identification of Facilities*. Ensure accuracy of universe identification through SIC code verification efforts and TRI analysis. The universe is being tracked in the Sector Facility Indexing Project (SFIP).
- *Potential Misapplication of the Bevill Exclusion*. The goal of this activity is to ensure that all wastes not covered under Bevill are managed appropriately.
- *Permit Insufficiencies*. Regions and states will ensure that each facility has a complete permit, accurately reflecting the source's size, regulatory requirements, and activities.
- *High SNC Rate*. The strategy identifies a goal of decreasing SNCs in this sector from 30% to 10% nationwide.
- *Use of Imminent and Substantial Endangerment Authorities* to address risk. Identified actions include documenting ecological damage and human health risks and using imminent and substantial endangerment authorities as appropriate.

EPA also conducted a study of primary and secondary nonferrous metal facilities. The study focused on identifying surface water, RCRA, and air compliance problems, the processes involved, the types of enforcement actions taken by regulators, and probable causes for noncompliance. Findings will be used to identify and address specific environmental and/or compliance problems. By the end of FY99, 16 facilities in five states had been analyzed. Additional facilities remain to be analyzed, but the study should conclude in 2000.

Pulp Mills

Sector Profile

Currently, 244 pulp mills operate in the United States and, like most large manufacturing operations, are regulated under RCRA, CAA, and CWA. Mills are widely distributed in forested areas with the largest concentrations occurring in the southeast, northwest and northeast and north-central states.

Compliance Status: Though increased inspections are revealing mills in significant noncompliance, the case referrals to the DOJ and associated injunctive relief and penalties are resulting in thousands of tons of reductions annually in air pollution, namely, volatile organic compounds (VOCs), nitrogen oxides (ground-level ozone precursors), sulfur compounds (contribute to acid rain), and carbon monoxide and particulate matter. Beyond the emission reductions that are being made at the mills that are the subject of enforcement, EPA is fulfilling one of our strategic goals which is to establish a credible deterrent to illegal pollution and to encourage greater compliance with environmental laws.

Pollutant Profile

Pulp mills, which use large amounts of water in the pulp production process and very large combustion devices in the chemical recovery and steam/electric power production processes, contribute significantly to air and water pollution.

Key Activities and Accomplishments

Inspections and Enforcement: In FY99, many EPA regional offices conducted inspections at pulp mills and took enforcement actions to address violations of federal law. As a result, we settled nine civil judicial cases and one EPCRA case, and referred 10 civil judicial cases. Much of the activity occurred under the CAA in Regions 3, 5, and 6. These regions actively worked to raise compliance with the CAA in the pulp industry through enforcement actions. Enforcement of the CAA has continued to be our focus since FY97 data revealed that 32% of the 174 pulp mills inspected that year were in significant noncompliance (SNC). SNC rates have remained high among recently inspected facilities (37%) due to the additional, significant violations that EPA's in-depth investigations are revealing. Region 3, which has been the most active in this sector, is continuing their multi-year pulp mill investigation initiative. In addition to referring three CAA cases that address violations discovered during their investigations, the region worked to resolve the five cases referred to the DOJ in FY97 and FY98.

Appendix B:

Historical Enforcement Data

Exhibit B-1: Dollar Value of FY99 EPA Enforcement Actions by Statute

	Criminal Penalties Assessed	Civil Judicial Penalties Assessed	Administrative Penalties Assessed	$ Value of Injunctive Relief	$ Value of SEPs
CAA	$2,227,024	$104,625,294	$5,092,301	$1,110,783,266	$141,995,706
CERCLA	$12,715,144	$2,852,000	$2,000	$721,955,206	$12,600
CWA	$20,385,292	$7,416,728	$5,200,575	$577,486,331	$8,620,321
EPCRA	$0	$0	$3,802,384	$528,264	$4,151,296
FIFRA	$442,775	$1,300	$1,359,055	$393,910	$211,310
RCRA	$21,482,514	$24,522,800	$7,351,627	$200,467,307	$74,803,427
SDWA	$3,170,418	$1,793,577	$353,772	$811,483,657	$5,811,950
TSCA	$16,000	$0	$2,348,165	$1,125,792	$1,191,942
Title 18/MPRSA*	$1,113,707	$0	$0	$0	$0
Totals	**$61,552,874**	**$141,211,699**	**$25,509,879**	**$3,424,223,733**	**$236,798,552**

* Criminal cases with U.S. Code - Title 18 or other Violations.
Data comes from EPA criminal and civil dockets.
Source: OECA/OC/EPTDD/TEB

Exhibit B-2: National Totals, FY96-FY99 Enforcement Activity

EPA Regional Inspections				
	FY96	FY97	FY98	FY99
CAA Stationary	2,064	2,844	2,722	2,633
CAA Mobile Source	107	104	64	39
Asbestos	635	653	806	437
NPDES Minors	499	784	1,116	965
NPDES Majors	1,046	918	1,019	949
CWA 311	2,267	1,666	1,344	1,424
CWA 404	342	529	968	1,079
EPCRA 313	571	473	584	513
EPCRA non-313	689	438	804	521
FIFRA	116	207	264	259
RCRA	1,829	2,165	2,727	2,214
UST	579	1,421	1,253	1,482
SDWA	6,568	5,490	7,983	7,329
TSCA	898	1,014	1,537	2,003
TOTAL	**18,210**	**18,706**	**23,237**	**21,847**

Source: Program databases/IDEA, manual reports. There were also 113 GLP inspections and 363 data audits by HQ (OC/AED/LDIB). The FY99 CAA Stationary includes 1,227 CFC inspections. FY98 total includes 46 other inspections.

EPA Administrative Compliance Orders Issued				
	FY96	FY97	FY98	FY99
CAA	154	209	277	298
CERCLA	197	279	233	247
CWA	504	815	849	621
EPCRA	2	7	4	0
FIFRA	10	7	18	28
RCRA	35	44	49	50
SDWA	284	453	287	269
TSCA	0	4	4	3
TOTAL	**1,186**	**1,818**	**1,721**	**1,516**

Source: Docket
In addition, there were 51 HQ CAA Mobile Source NOVs with penalties.

EPA Administrative Penalty Order Complaints				
	FY96	FY97	FY98	FY99
CAA	88	126	156	193
CERCLA	37	26	1	0
CWA	153	329	389	436
EPCRA	196	293	233	285
FIFRA	73	174	187	274
RCRA	88	139	155	197
SDWA	57	45	65	64
TSCA	178	181	214	205
TOTAL	**870**	**1,313**	**1,400**	**1,654**

Source: Docket
FY97 CERCLA cases were for section 103.

EPA Administrative Penalty Settlements				
	FY96	FY97	FY98	FY99
CAA	103	139	127	154
CERCLA	39	33	3	1
CWA	169	205	324	365
EPCRA	184	366	259	244
FIFRA	107	161	173	223
RCRA	119	154	149	134
SDWA	76	44	43	40
TSCA	207	248	167	197
TOTAL	**1,004**	**1,350**	**1,245**	**1,358**

Source: Docket
FY97 CERCLA cases were for section 103.

EPA Field Citations				
	FY96	FY97	FY98	FY99
UST	115	240	194	311

Source: Docket

New EPA Civil Referrals to DOJ				
	FY96	FY97	FY98	FY99
CAA	70	89	113	109
CERCLA	127	154	138	148
CWA	48	98	81	87
EPCRA	9	11	11	12
FIFRA	3	4	4	0
RCRA	19	49	49	39
SDWA	17	13	15	5
TSCA	2	8	0	3
TOTAL	**295**	**426**	**411**	**403**

Source: Docket

EPA Civil Judicial Settlements				
	FY96	FY97	FY98	FY99
CAA	62	45	46	48
CERCLA	121	159	148	124
CWA	60	35	33	24
EPCRA	10	3	3	1
FIFRA	5	2	4	1
RCRA	22	18	14	11
SDWA	7	9	2	6
TSCA	5	3	3	0
TOTAL	**292**	**274**	**253**	**215**

Source: Docket

Exhibit B-3: EPA Criminal Enforcement Actions, FY84-FY99

	Referral to DOJ	Defendants Charged	Months Sentenced
FY84	31	36	6
FY85	40	40	78
FY86	41	98	279
FY87	41	66	456
FY88	59	97	278
FY89	60	95	325
FY90	65	100	745
FY91	83	104	963
FY92	107	150	1,135
FY93	140	161	892
FY94	220	250	1,188
FY95	256	245	888
FY96	262	221	1,116
FY97	278	322	2,351
FY98	266	350	2,075
FY99	241	322	2,500

Source: OECA/OC/EPTDD/TEB

Exhibit B-4: EPA Civil Referrals to the Department of Justice, FY75-FY99

	CAA	CWA	CERCLA	RCRA	TSCA/FIFRA/ EPCRA	TOTALS
FY75	5	20	0	0	0	**25**
FY76	15	67	0	0	0	**82**
FY77	50	93	0	0	0	**143**
FY78	123	137	2	0	0	**262**
FY79	149	81	5	4	3	**242**
FY80	100	56	10	43	1	**210**
FY81	66	37	2	12	1	**118**
FY82	36	45	20	9	2	**112**
FY83	69	56	28	5	7	**165**
FY84	82	95	41	19	14	**251**
FY85	116	93	35	13	19	**276**
FY86	115	119	41	43	24	**342**
FY87	122	92	54	23	13	**304**
FY88	86	123	114	29	20	**372**
FY89	92	94	153	16	9	**364**
FY90	102	87	157	18	11	**375**
FY91	86	94	164	34	15	**393**
FY92	92	77	137	40	15	**361**
FY93	80	84	129	30	15	**338**
FY94	141	97	144	35	13	**430**
FY95	37	54	102	14	7	**214**
FY96	70	65	127	19	14	**295**
FY97	89	111	154	49	23	**426**
FY98	113	96	138	49	15	**411**
FY99	109	92	148	39	15	**403**

Source: OECA/OC/EPTDD/TEB
FY98 CAA and National totals include 8 HQ Mobile Source referrals.
FY99 CAA/CWA totals include one HQ Mobile Source and one CWA HQ referral.

Exhibit B-5: EPA Administrative Actions by Statute*, FY75-FY99

	CAA	CWA/ SDWA	RCRA	CERCLA	FIFRA	TSCA	EPCRA	TOTALS
FY75	0	738	0	0	1,614	0	0	**2,352**
FY76	210	915	0	0	2,488	0	0	**3,613**
FY77	297	1,128	0	0	1,219	0	0	**2,644**
FY78	129	730	0	0	762	1	0	**1,622**
FY79	404	506	0	0	253	22	0	**1,185**
FY80	86	569	0	0	176	70	0	**901**
FY81	112	562	159	0	154	120	0	**1,107**
FY82	21	329	237	0	176	101	0	**864**
FY83	41	781	436	0	296	294	0	**1,848**
FY84	141	1,644	554	137	272	376	0	**3,124**
FY85	122	1,031	327	160	236	733	0	**2,609**
FY86	143	990	235	139	338	781	0	**2,626**
FY87	191	1,214	243	135	360	1,051	0	**3,194**
FY88	224	1,345	309	224	376	607	0	**3,085**
FY89	336	2,146	453	220	443	538	0	**4,136**
FY90	249	1,780	366	270	402	531	206	**3,804**
FY91	214	2,177	364	269	300	422	179	**3,925**
FY92	354	1,977	291	245	311	355	134	**3,667**
FY93	279	2,216	282	260	233	319	219	**3,808**
FY94	435	1,841	115	264	249	333	307	**3,544**
FY95	232	1,774	92	280	160	187	244	**2,969**
FY96	242	998	238	234	83	178	198	**2,171**
FY97	391	1,642	423	305	181	185	300	**3,427**
FY98	499	1,590	398	234	205	218	237	**3,381**
FY99	542	1,390	558	247	302	208	285	**3,532**

* Includes: Administrative Compliance orders issued, Administrative Penalty order complaints, Field Citations and HQ CAA Mobile Source NOVs with penalties.

Exhibit B-6. EPA APO Complaints Since FY91 by Statute

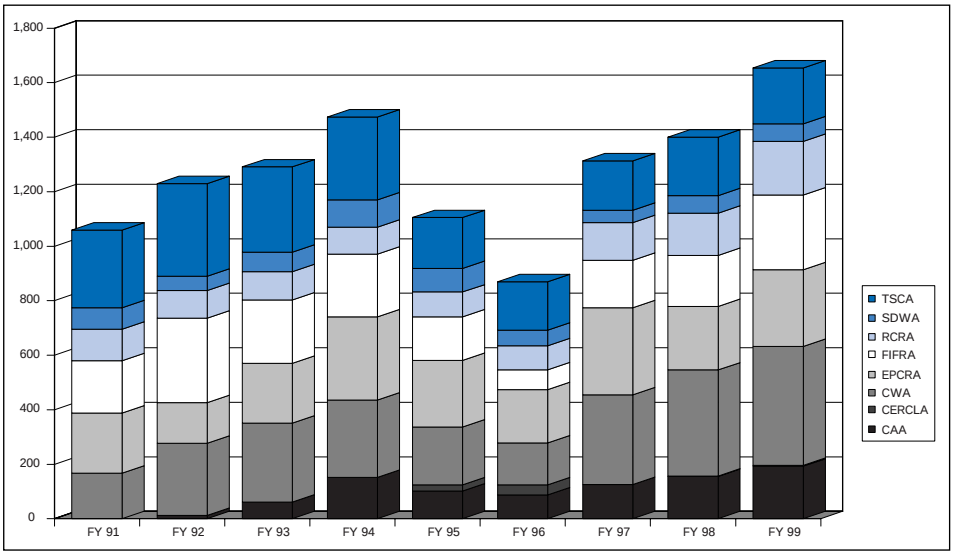


Exhibit B-7: State Environmental Agencies Formal Administrative Actions and Judicial Referrals, FY89-FY99

Administrative Actions											
Statute	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
FIFRA	6,698	4,145	3,245	3,095	4,172	3,528	2,486	2,333	1,101	1,163	1,272
SDWA/ CWA	3,100	3,298	3,180	2,748	3,960	4,063	4,231	4,598	7,051	6,960	3,602
CAA	1,139	1,312	1,687	1,411	2,005	2,050	1,833	1,534	1,919	2,410	2,036
RCRA	1,189	1,350	1,495	1,389	1,744	1,609	1,235	841	444	727	1,278
Totals	**12,126**	**10,105**	**9,607**	**8,643**	**11,881**	**11,250**	**9,785**	**9,306**	**10,515**	**11,260**	**8,188**
Judicial Referrals											
Statute	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
SDWA/ CWA	489	429	297	204	383	162	169	169	151	146	223
CAA	96	156	190	258	174	325	124	198	164	146	158
RCRA	129	64	57	112	133	91	104	66	64	60	126
Totals	**714**	**649**	**544**	**574**	**690**	**578**	**397**	**433**	**379**	**352**	**507**

Source: IDEA