OFFICE OF INSPECTOR GENERAL

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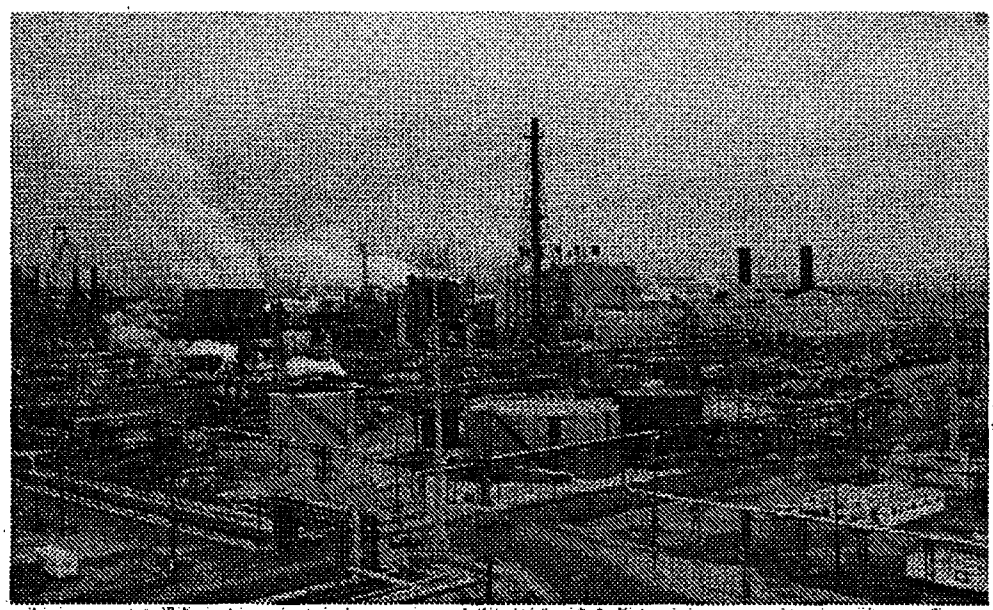
Evaluation Report

EPA Needs to Improve Tracking of National Petroleum Refinery Compliance Program Progress and Impacts

Report No. 2004-P-00021

June 22, 2004



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Abbreviations

CO	Carbon Monoxide
EPA	Environmental Protection Agency
FCCU	Fluidized Catalytic Cracking Unit
GAO	General Accounting Office
H_2S	Hydrogen Sulfide
ICIS	Integrated Compliance Information System
LDAR	Leak Detection and Repair
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
NO_x	Nitrogen Oxide
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
OMB	Office of Management and Budget
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
PART	Program Assessment Rating Tool
SO_2	Sulfur Dioxide
VOCs	Volatile Organic Compounds

Cover photo: Image of petroleum refinery provided by EPA staff.

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

THE INSPECTOR GENERAL

June 22, 2004

MEMORANDUM

SUBJECT: EPA Needs to Improve Tracking of National Petroleum Refinery Compliance Program Progress and Impacts
Report No. 2004-P-00021

TO: Thomas V. Skinner
Acting Assistant Administrator
Office of Enforcement and Compliance Assurance

Attached is our final evaluation report regarding the Environmental Protection Agency's (EPA's) national refinery compliance program. This report contains findings that describe problems and lessons learned from the national petroleum refinery compliance program and corrective actions the Office of Inspector General (OIG) recommends. This report represents our opinion, and findings in this report do not necessarily represent the final EPA position. EPA managers will make final determinations on matters in the report in accordance with established procedures.

Action Required

As the Action Official, EPA Manual 2750 requires you to provide this Office with a written response within 90 days of the final report date. The response should address all recommendations. For the corrective actions planned but not completed by the response date, please describe ongoing actions and provide a timetable for completion. If you disagree with a recommendation, please provide alternative actions for addressing the findings reported. Our team would like to work with your staff in developing the corrective action plan. Please ask your staff to contact Jeff Hart, Assignment Manager, at (303) 312-6169 for arrangements.

We appreciate the efforts of EPA officials in working with us to develop this report. If you or your staff have any questions regarding this report, please contact me at (202) 566-0847 or Kwai Chan, Assistant Inspector General for Program Evaluation, at (202) 566-0827.

Nikki L. Tinsley

Executive Summary

The Environmental Protection Agency's (EPA's) Office of Enforcement and Compliance Assurance (OECA) selected the petroleum refinery industry as a national enforcement priority in 1996 because refineries had the highest inspection-to-enforcement ratio of the 29 industry sectors ranked by EPA.

The 145 operating petroleum refineries in the United States span 9 of EPA's 10 regions and 33 States. Petroleum refineries account for significant releases of pollution into the environment. In 2001, refineries released over 35,000 tons of toxic air pollutants, with 75 percent released to the air, 24 percent to the water, and 1 percent to the land. These pollutants seriously impact human health and the environment, and include pollutants known or suspected to cause cancer or other serious human health effects.

Results in Brief

EPA and the U.S. Department of Justice have developed and implemented an integrated refinery compliance strategy that addresses the most important noncompliance problems. EPA's national refinery compliance program began in 1996, and over the last 8 years EPA implemented a succession of tools and strategies as its refinery program evolved and as EPA identified specific compliance problems. EPA's integrated strategy includes compliance assistance, inspections, enforcement, and compliance incentives. As of March 2004, the program resulted in refineries agreeing to invest more than $1.9 billion in pollution control technologies, pay civil penalties of $36.8 million, and implement supplemental environmental projects valued at approximately $25 million. Further, EPA projects the national refinery compliance program will result in annual reductions of approximately 44,000 tons of nitrogen oxide, 95,000 tons of sulfur dioxide, and significant amounts of other pollutants.

However, OECA's performance measurement and reporting approach for the national petroleum refinery program has not provided useful and reliable information necessary to effectively implement, manage, evaluate, and continuously improve program results. OECA has not established and communicated clear goals, systematically monitored refinery program progress, reported actual outcomes, or tracked progress toward achievement of consent decree goals. In addition, during consent decree implementation, EPA delays may have delayed emissions reductions and compromised compliance. OECA must resolve planning issues and delays, and begin to measure outcomes, to ensure timely emissions reductions and to optimally protect human health and the environment, especially for people living in the vicinity of refineries.

EPA learned several important lessons that it should apply throughout its refinery program and consider for other enforcement and compliance assurance programs. EPA effectively demonstrated some of these lessons learned in the refinery program, such as focusing on specific enforcement concerns, becoming knowledgeable about the industry, and encouraging EPA regional and headquarters staff to effectively work together. Other lessons learned that EPA needs to improve upon include the need to clearly communicate roles and responsibilities, meaningfully engage stakeholders throughout the process, and diligently oversee consent decree compliance.

Recommendations

We made various recommendations to OECA related to the development of clear overall refinery program goals. We also made recommendations to OECA to improve refinery consent decree implementation and tracking, and to ensure better measurement and reporting of refinery program outcomes.

Agency Comments and OIG Evaluation

In its April 2, 2004, comments on the draft report, OECA stated that the report will help EPA as it continues to implement the refinery program and other new programs or initiatives. OECA also stated that the report had several significant shortcomings. OECA agreed with 10 recommendations, disagreed with 5, and partially agreed with 3. We made changes to the report as we determined appropriate. We include a summary of EPA's chapter-specific comments and our evaluation of those comments at the end of each chapter. We also provide as Appendix G the Agency's memorandum summarizing its overall comments, including its comments on the recommendations. Appendix H contains our evaluation of those comments. OECA also provided us with detailed comments as an attachment to its summary memorandum. We have posted this attachment and our evaluation of OECA's comments on our web site at http://www.epa.gov/oig/publications.htm.

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Preface

Purpose of Evaluation

Enforcement and compliance assistance practices have seen considerable innovation in recent years. The Environmental Protection Agency's (EPA's) Office of Enforcement and Compliance Assurance (OECA) adopted a problem-based approach to addressing environmental problems. This strategic approach includes: (1) giving up-front consideration to which combination of tools to use (e.g., enforcement, compliance assistance) when addressing particular environmental problems; and (2) encouraging up-front development of measures to assess progress and outcomes. According to an internal OECA evaluation, prior to using its problem-based approach, OECA implemented integrated strategies on an ad-hoc basis with limited measurable results.

The Office of Inspector General (OIG) has planned a series of environmental enforcement evaluations with the overall objective of answering the following question: *What impact have the enforcement and compliance assurance actions, activities, and policies of EPA and its partners had on the regulated community's compliance with environmental requirements and on protecting human health and the environment?* At OECA's request, we agreed to first pilot-test our overall evaluation approach on a single priority area. In consultation with OECA, we selected the petroleum refinery priority area for this pilot evaluation and developed objectives that would demonstrate the feasibility of our overall evaluation approach as well as provide meaningful insight on EPA's refinery program. Our specific objectives were to answer the following questions:

1. What is the nature and extent of the regulated petroleum refinery universe?

2. To what extent have EPA (OECA, other program offices, and EPA regions), the U.S. Department of Justice, and EPA's partners (States and Tribes) developed an integrated strategy (that considers compliance assistance, compliance incentives, inspections, and enforcement actions) to address priority noncompliance problems at petroleum refineries?

3. Does the performance measurement and reporting approach for petroleum refineries provide the information necessary to effectively implement, manage, evaluate, and improve OECA's petroleum refinery program?

4. Did EPA effectively implement and manage the petroleum refinery program?

5. What lessons can be learned from OECA's petroleum refinery program?

We address questions 1 and 2 in Chapter 1, questions 3 and 4 in Chapter 2, and question 5 in Chapter 3.

Scope and Methodology

We conducted our evaluation of EPA's refinery program between June 2003 and March 2004. We performed our evaluation in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States.

Our evaluation focused on OECA's enforcement and compliance assurance activities at petroleum refineries from fiscal years 1996 through 2004. To answer our five objectives, we interviewed staff and collected and analyzed data from OECA, EPA's National Enforcement Investigations Center, EPA regions, States, industry, environmental groups, and the U.S. Department of Justice.

See Appendix A for a detailed description of our scope and methodology, including details on prior reviews.

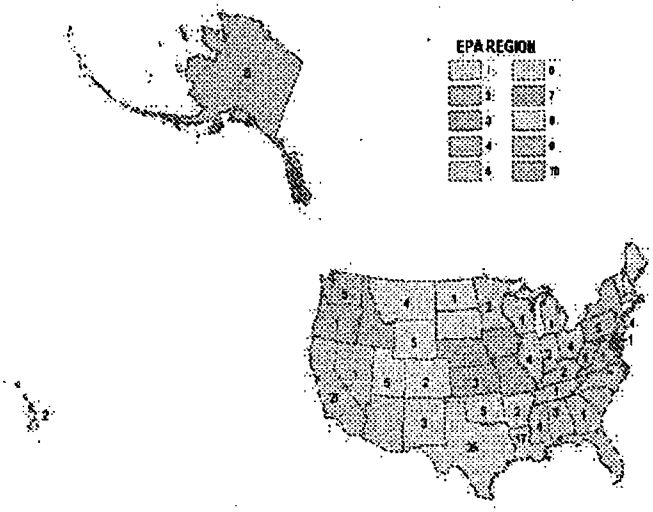
Chapter 1
EPA's National Refinery Compliance Program Evolved to Become Fully Integrated

EPA and the U.S. Department of Justice have developed and implemented an integrated refinery compliance strategy that addresses the most important noncompliance problems. Petroleum refineries account for significant releases of pollution into the environment. EPA's national refinery compliance program began in 1996, and over the last 8 years EPA has implemented a succession of tools and strategies as its refinery program evolved and as EPA identified specific compliance problems. EPA's integrated strategy includes compliance assistance, inspections, enforcement, and compliance incentives. As of March 2004, the program has resulted in refineries agreeing to invest more than $1.9 billion in pollution control technologies, pay civil penalties of $36.8 million, and implement supplemental environmental projects valued at approximately $25 million. Further, EPA projects the national refinery compliance program will result in annual reductions of approximately 44,000 tons of nitrogen oxide (NO_x), 95,000 tons of sulfur dioxide (SO_2), and significant amounts of other pollutants.

Background

Petroleum represents the single largest source of energy for the United States. Petroleum refineries span 9 of EPA's 10 regions and 33 States (there are no refineries on tribal lands). See Figure 1.1.

Figure 1.1: Location and Number of Refineries by State and EPA Region



Map developed by EPA Region 8

Fifty-seven corporations oversaw 145 petroleum refineries operating in those 33 States as of January 1, 2003. These refineries processed a total of 16.5 million barrels of crude oil each calendar day. See Appendix B for a complete listing of U.S. petroleum refinery companies and key information on each.

Petroleum refineries account for significant releases of pollution into the environment. The Clean Air Act, Clean Water Act, and Resource Conservation and Recovery Act regulate the majority of releases at petroleum refineries. In 2001, refineries released over 35,000 tons of toxic air pollutants according to EPA's most current Sector Facility Indexing Project data, with 75 percent released to the air, 24 percent to the water, and 1 percent to the land. In 1999, according to the most current data from EPA's AirData system, refineries released approximately 243,000 tons of NO_x, 396,000 tons of SO_2, and 412,000 tons of other common air pollutants (also known as "criteria air pollutants").

Petroleum refining is the physical, thermal, and chemical separation of crude oil into its major components, which are further processed into a variety of finished petroleum products. Appendix C illustrates the complexity of the petroleum refining process, potential releases and release points, and the major applicable environmental regulations. For example, according to one refinery expert, an average petroleum refinery processing 120,000 barrels of crude daily can have 100,000 connection points. Each connection point is a possible leaking emissions source. The fluidized catalytic cracking units (FCCUs) and heaters and boilers represent the largest refinery emitters. FCCUs use heat, pressure, and a catalyst to break larger hydrocarbon molecules into smaller ones. FCCUs can emit several thousand tons of NO_x and SO_2 per year.

Petroleum refinery emissions seriously impact human health and the environment. In 2000, OECA reported that 45 percent of all refineries at that time were within 3 miles of population centers containing 25,000 or more people, and 26 percent were within 3 miles of population centers containing 50,000 or more people. Appendix D provides a summary of the human health and environmental effects of the following common air pollutants released at refineries: volatile organic compounds (VOCs); SO_2; NO_x; particulate matter (PM); carbon monoxide (CO); hydrogen sulfide (H_2S); and toxic air pollutants. Toxic air pollutants include pollutants known or suspected to cause cancer or other serious human health effects.

Refinery Program Uses an Integrated Strategy

OECA's current refinery program incorporates various tools and strategies as part of an integrated effort to address the most important compliance problems. Using research, investigations, and national EPA experts, EPA identified four priority areas that addressed the most important noncompliance areas in the industry.

EPA also used compliance assistance and incentives to educate the industry and address noncompliance.

Identifying Priority Areas

During the initial stages of the program, OECA and regional officials used multiple sources of information to identify refinery priority areas. These sources included inspections, formal EPA information requests to refineries, and industry trade journals. OECA and regional officials shared with each other the results of these initial research efforts and began to focus (or target) investigations on the noncompliance areas indicated by their research. EPA's national experts continued gaining experience regarding compliance issues within the refinery industry, and helped select the four Clean Air Act priority areas that became the refinery program's focal point. State, refinery industry, and environmental interest groups generally agreed that these four priority areas represented the most important noncompliance problems at petroleum refineries:

1. New Source Review (NSR) / Prevention of Significant Deterioration (PSD)
2. Flaring / New Source Performance Standards (NSPS)[1]
3. Leak Detection and Repair (LDAR)
4. Benzene Waste National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Figure 1.2 briefly describes the primary problems, related regulations, and solutions EPA and the refineries agreed to implement for each priority area. The agreement between EPA and refiners resulted in consent decrees that primarily focused on these four priority areas.

[1] The refinery program addressed two different flaring programs: the elimination of acid gas flaring; and the reduction of hydrocarbon flaring. The NSPS priority focused on ensuring that companies complied with NSPS at their recovery plants, flares, and fuel gas combustion devices.

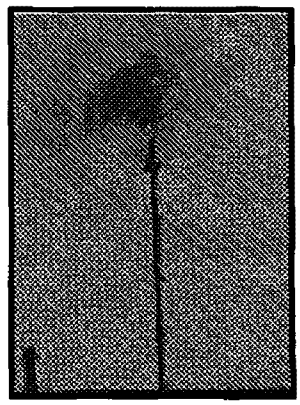
Figure 1.2: Problems, Related Regulations, and Solutions for Priority Areas

Flaring/NSPS

Problem: Refineries used flares for routine purposes instead of only to vent dangerous gases as required by the Clean Air Act. Also, EPA identified problems with NSPS compliance at sulfur recovery plants and fuel gas combustion devices.

Regulation: CAA Section 111. 40 CFR Part 60, Subparts A and J.

Solution: Consent decrees require facilities to: identify root causes of each flaring incident; implement plans to address root causes such as installing new equipment, revising operating procedures, or providing training; comply at all times for all sulfur recovery units within the plant; install new sulfur recovery units and tail gas controls devices to ensure compliance with emissions standards and good air pollution control practice obligations.



LDAR

Problem: EPA found that fugitive emissions, or refinery leaks, were two to ten times higher than reported by the facility. If uncorrected, facilities continued to release fugitive emissions of VOCs and other hazardous air pollutants. The cumulative effect of fugitive emissions posed significant health and environmental risks.

Regulation: CAA Section 112. 40 CFR Part 61, Subpart J; Part 63, Subparts H and CC; and Part 60 Subparts VV, GGG, and QQQ.

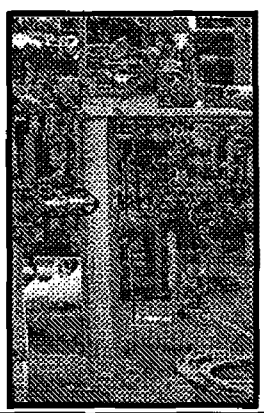
Solution: Consent decrees require facilities to identify VOC leaks at an earlier stage than that required by regulations and make repairs before emissions become significant. Other solutions include more frequent monitoring, lower leak rate goals refinery-wide, and use of innovative monitoring technologies for monitoring VOCs. As an "enhanced" program, the LDAR program includes requirements that bring a company beyond compliance with applicable regulations.

NSR/PSD

Problem: Relatively few refineries obtained pre-construction and operating permits for physical construction that increased their capacity and emissions. Capacity increases and modifications should have triggered NSR permitting and pollution control requirements. Investigations focused on physical modifications to FCCUs.

Regulation: Parts C and D of Subchapter I of CAA. 40 CFR Parts 51 and 52.

Solution: Consent decrees require petroleum refineries to install continuous emissions monitoring equipment so that facilities, EPA, and States can access real-time emissions data. More importantly, consent decrees also require facilities to install and implement a suite of controls to reduce NO_x, SO_2, and PM emissions.



Benzene Waste/NESHAP

Problem: Investigations showed that refineries did not account for or control benzene in all waste streams (e.g., groundwater and process sewers). Short-term exposure to benzene can cause temporary nervous system disorders, immune system depression, and anemia, while long-term exposure can cause chromosome aberrations and cancer.

Regulation: CAA Section 112 (d). 40 CFR Part 61, Subpart FF.

Solution: Consent decrees require increased monitoring, regular laboratory and program audits, quarterly benzene balances, and replacement of carbon emission filters as soon as monitoring detects any benzene emissions above background levels. As an "enhanced" program, the benzene waste/NESHAP priority includes requirements that bring a company beyond compliance with applicable regulations.

Compliance Assistance and Incentives Provided in Various Forms

OECA conducted various compliance assistance and incentive activities including:

- Making presentations at industry conferences describing noncompliance issues.
- Developing and disseminating *Enforcement Alert* newsletters on each of the four refinery priority areas.

Definition of Compliance Assistance

Activities, tools, or technical assistance that help the regulated community understand and comply with environmental regulations or help other compliance assistance providers aid the regulated community.

Definition of Compliance Incentive

Policies and programs that eliminate, reduce, or waive penalties under certain conditions.

- Developing two compliance assistance guidance documents; one to help increase understanding of the Refining Maximum Achievable Control Technology Standard, and another to improve understanding of regulations covering benzene waste and transfer operations.
- Developing the slotted guidepole initiative that provided a compliance incentive for refinery companies to install controls within specific time frames to address emissions from petroleum storage tanks. If companies complied with their schedules for installing acceptable controls, EPA would eliminate penalties.

Four Basic Phases Noted in National Refinery Compliance Program

EPA's national refinery compliance program began in 1996 and evolved as EPA learned more about the noncompliance issues and applied a variety of tools and strategies to address those issues. While OECA did not specifically outline a phased program or develop a comprehensive master plan, in reviewing the strategy, it appeared that four phases emerged. We used these phases to facilitate our description of the refinery program. In many instances, activities overlapped as one phase continued while a new phase began. Appendix E provides a detailed time line of the refinery program's evolution.

Phase I: Refineries Become a National Enforcement Priority

EPA had long conducted inspections and taken enforcement actions in the refinery industry. OECA began to focus significant attention on refinery compliance concerns in 1996 when refineries became an enforcement priority due to the industry's high rate of noncompliance and pollutant releases. OECA reported in 1996 that the refining sector had the highest inspection-to-enforcement ratio of the 29 industry sectors ranked by EPA. In 1996, when compared to 496 other sectors, OECA ranked refineries number one for releases of VOCs, number two for SO_2, number three for NO_2 (a particular type of NO_X), number four for PM_{10}

(a particular type of PM), and number five for CO releases. In its 1996/1997 Memorandum of Agreement guidance, OECA ranked petroleum refineries number one for noncompliance and identified petroleum refining as one of three national enforcement priorities. The Memorandum of Agreement guidance generally sets forth the Agency's enforcement and compliance assurance priorities and activities for a 2-year period. Designation as an OECA enforcement priority meant that an industry received special emphasis. OECA maintained refineries as a national priority and began working with regional officials to explore ways to address compliance issues.

Phase II: Program Uses Investigations to Identify Significant Compliance Problems

Although EPA identified refineries as a national priority, OECA officials said they did not see significant improvement in the regional approach to addressing compliance issues during 1996 and 1997. According to a senior OECA official, after 2 years of typical regional inspections of the refinery industry, the inspections did not identify significant national problems. However, OECA obtained anecdotal information from OECA's National Enforcement Investigations Center and regional investigations regarding problems at refineries. OECA determined that it needed a more comprehensive approach to help assess the extent of compliance problems identified in a few regions. OECA began coordinating with the National Enforcement Investigations Center and regional staff who were developing expertise regarding compliance issues at refineries. The anecdotal information caused OECA to shift its focus from routine Clean Air Act inspections that broadly assessed refinery compliance using checklists, to more targeted, resource-intensive investigations. These investigations focused on assessing emissions released from certain industrial processes as opposed to compliance with specific statutory requirements, and identified problems not found during typical inspections. OECA officials stated that this phase of the refinery program was extremely successful at developing new targeting and investigative tools.

Phase III: Program Shifts to Pursue Global Settlements

In 2000, OECA shifted the refinery program focus to pursue voluntary global settlements with refinery companies that resulted in consent decrees.[2] OECA and regional officials coordinated with the U.S. Department of Justice who took the lead on all of the global settlement negotiations. OECA referred to these settlements as "global" because they applied to all facilities owned by one company. OECA's approach presented corporate officials with the option of avoiding possible investigation and litigation. OECA's strategy included

[2] OECA found success with global settlements in other industries. However, OECA officials stated that their prior experience related to a much narrower set of issues and on a much smaller scale than what they achieved under the national refinery compliance program.

coordinating with interested States and local authorities. States that signed consent decrees had their own legal claims against the settling refineries and received a share of the penalties paid by companies. Along with EPA and the U.S. Department of Justice, 18 States or local authorities have signed consent decrees as of May 21, 2004. Beginning in 2002, OECA began to shift its emphasis from pursuing new negotiations to concluding on-going investigations and negotiations, since over 80 percent of the domestic refining capacity universe had entered into global consent decrees, was in negotiations with EPA, and/or was under active investigation. As part of the shift in emphasis, OECA planned for regions and States to assume larger roles with new investigations and negotiations.

Phase IV: Consent Decree Implementation Initiated

Implementation of refinery consent decrees began a new and additional phase. The first two consent decrees entered the implementation phase in early 2001. The consent decrees span 8 to 10 years and require coordination and communication among OECA, EPA regions, States, and industry. While the signing of a consent decree ends the settlement process for that company, it begins a new process of oversight and interaction by and between the parties. As of 2004, OECA continues to conduct negotiations, assist regions in assuming a larger role with the refinery program, and work with refiners to implement consent decrees.

Settlements Projected to Result in Significant Emissions Reductions

By March 2004, OECA had entered into 11 global settlements or consent decrees covering 42 of the 145 refineries. As shown in Table 1.1 below, the settlements covered 39 percent of total U.S. petroleum refining capacity.[3]

[3] Table 1.1 represents the settlements on the date of their entry by the Court. Since that date, companies may have sold some of their refineries and, while those refineries remain subject to the global settlements, they may be owned by separate refining entities. Consequently, this table may not easily reconcile with the information in Appendix B.

Table 1.1: Refinery Companies in Global Settlements

Company	Date Company Signed Settlement with OECA	Number of Refineries	Production Capacity (barrels per cal. day)	Total U.S. Production Capacity
Koch Petroleum Group	December 2000	2	524,980	3%
BP Exploration and Oil, Co.	January 2001	8	1,501,500	9%
Motiva Enterprises LLC/ Equilon Enterprises/Deer Park Refining (Shell)	March 2001	9	1,682,150	10%
Marathon Ashland Petroleum LLC	May 2001	7	935,000	6%
Navajo Refining Company and Montana Refining Company	December 2001	2	65,000	0.4%
Conoco, Inc.	December 2001	4	566,000	3.4%
Lion Oil	March 2003	1	63,000	0.3%
Chevron USA Inc.	October 2003	5	909,000	5.5%
CHS Inc. (Cenex)	October 2003	1	55,000	0.4%
Coastal Eagle Point Oil Co.	October 2003	1	142,287	0.9%
Ergon Refining Inc.	October 2003	2	42,400	0.3%
Total Refineries under Decrees (Listed Above)		**42**	**6,486,317**	**39%**
Total Refineries Not under Decrees		**103**	**10,271,053**	**61%**
TOTALS		**145**	**16,757,370**	**100%**

Based on settling companies' estimates, once companies fully implement the consent decrees, they will achieve annual reductions of atmospheric emissions of approximately 44,000 tons of NO_X and 95,000 tons of SO_2, as well as reductions in benzene, VOCs, and PM. The settling companies agreed to invest more than $1.9 billion in pollution control technologies and pay civil penalties of $36.8 million (OECA based penalties on violations related to the four priority areas). These refineries also agreed to implement supplemental environmental projects valued at approximately $25 million.

A key aspect of OECA's global settlements with refinery companies included EPA's "release" or "covenant not-to-sue." As part of the consent decrees, EPA provided companies a release from liability for any past regulatory violations (those that pre-dated the consent decree) associated with the four priority areas.[4]

[4] In legal terms, OECA officials stated that, under the consent decrees, a company typically receives a covenant not-to-sue. The covenant not-to-sue directly related to the scope of injunctive relief. Where a company agreed to implement a comprehensive program of injunctive relief that will bring it beyond compliance with all aspects of the NSPS and benzene leak detection regulations, EPA and the U.S. Department of Justice extended a covenant not-to-sue regarding all aspects of that company's pre-consent decree compliance with those regulations. In contrast, under a consent decree, a company receives a covenant not-to-sue for NSR/PSD and NSPS for *only* those emission units specifically addressed by the consent decree.

The global settlements also relieved OECA from having to conduct resource-intensive investigations at each refinery a company owned. According to OECA, a refinery-by-refinery, issue-by-issue approach, in which EPA conducted an individual inspection or investigation at each and every refinery followed by information requests, notices of violation, negotiations and/or litigation, could take many years and require resources beyond EPA's means.

The refinery consent decrees require each company to take various actions over the next several years. These actions include implementing air pollution controls as well as developing policies and procedures that go beyond compliance with existing regulations. As shown in Table 1.2, both the LDAR and benzene priority areas require companies to incorporate "enhanced" practices beyond regulatory requirements. In addition, OECA and the companies agreed to test and use innovative technologies.

Table 1.2: Examples of Consent Decree Requirements

Priority Area	Requirements in Consent Decrees
NSR/PSD	• Install controls and Continuous Emissions Monitoring Systems to reduce and measure SO_2, NOx, PM, and CO from FCCUs, heaters, and boilers.
Flaring/NSPS	• Implement program to investigate the cause of flaring incidents. • Conduct root cause analyses and take corrective actions. • Requires NSPS compliance at refinery's flares, sulfur recovery plants, and fuel gas combustion devices. • Install new sulfur recovery units and tail gas control devices to ensure compliance with emissions standards and good air pollution control practices.
LDAR	• Implement enhanced monitoring program. • Train all refinery LDAR personnel annually. • Train all other refinery operations and maintenance personnel on aspects of LDAR relevant to the employee's duties. • Monitor valves more frequently than regulations require.
Benzene	• Train all employees who draw benzene waste samples. • Establish standard operating procedures for all control equipment used to comply with the benzene waste NESHAP. • Train all equipment operators on procedures. • Audit all laboratories that perform analyses of benzene waste NESHAP samples.

Conclusion

EPA and its partners developed and implemented an integrated strategy that included compliance assistance, compliance incentives, inspections, and enforcement actions. EPA staff implemented a succession of tools and strategies as the program evolved. OECA's integrated strategy addresses the most important noncompliance problems at petroleum refineries. A significant phase and turning

point in the refinery program's evolution came with the negotiation of voluntary global settlements. These settlements resulted in consent decrees between OECA and refinery companies owning multiple facilities.

Agency Comments and OIG Evaluation

OECA stated that the background discussion in this chapter was vague and, at times, did not demonstrate an understanding of the refinery program. OECA stated that the background information implied that they directed the refinery program at all pollutants from refineries. In our opinion, the background information in this chapter provides a broad overview of the refinery industry, including some of the major processes, releases, and health and environmental impacts caused by refining. It describes the refinery industry as a whole and puts in perspective why EPA decided to monitor and address noncompliance within this industry. This chapter also describes how the refinery program focuses on four priority areas under the Clean Air Act and how the refinery program could reduce specific pollutants through companies' effectively implementing consent decrees.

Chapter 2
EPA Has Not Yet Demonstrated Environmental and Human Health Impacts of the Refinery Program

OECA's performance measurement and reporting approach for the national petroleum refinery program has not provided useful and reliable information necessary to effectively implement, manage, evaluate, and continuously improve program implementation and results. OECA has not established and communicated clear goals, systematically monitored refinery program progress, reported actual outcomes, or tracked progress toward achievement of consent decree goals. In addition, during consent decree implementation, EPA delays may have delayed emissions reductions and compromised compliance. OECA must resolve planning issues and delays, and begin to measure outcomes to ensure timely emissions reductions and to optimally protect human health and the environment, especially for people living in the vicinity of refineries.

Program Lacked Clear Goals, Performance Measurement, and Outcome Reporting

OECA has not established clear program goals, performance measures, or a reporting system to track progress. Clear goals, performance measures, and a reporting system are essential to ensure that program managers have a systematic approach for gathering performance information for effective decision making. OECA has not clearly and precisely defined official program goals, used performance measures to manage the refinery program, or reported actual environmental outcomes.

Clear Goals, Performance Measures, and Reporting Essential

Clear program goals, performance measures, and a reporting system to track progress are all essential to effectively implement, manage, evaluate, and improve any program. Government programs need a systematic approach for gathering performance data and reporting progress toward goals to ensure that program managers and Congress have performance information for decision making.

The Office of Management and Budget's (OMB's) fiscal 2004 budget proposal for EPA stated that one of EPA's top two challenges included, "Tracking and demonstrating programs' effectiveness in achieving public health and ecosystem protection goals." To help improve program and funding decisions, OMB evaluated 11 EPA programs, including the civil enforcement program (which includes the refinery program), using OMB's Program Assessment Rating Tool (PART). OMB developed the PART to provide a consistent approach to

evaluating Federal programs during budget formulation. OMB found that the absence of outcome-based performance data and, in some cases, any data, hindered the Agency in evaluating the impacts of its programs on the environment and public health. OMB recommended that EPA establish performance measures focused on outcomes and efficiencies.

EPA agreed on the need to focus on program results and to use such data in decision-making, but EPA appealed OMB's PART evaluation results. The Deputy EPA Administrator said in a November 6, 2002, memo that, "One of my goals as we implement the President's Management Agenda is to ... continuously improve the results orientation of our programs and inform our decision-making with high-quality information on program performance." However, the Deputy Administrator also concluded that the PART instrument and process needed dramatic overhaul to have any real value.[5]

EPA faces a challenge in the next few years to improve the linkage between its program results and budget resources, which includes developing program measures. We found OMB's findings and observations concerning EPA's civil enforcement program generally consistent with what we specifically found concerning the refinery program.

In fiscal 2004, OECA began moving toward a more performance-based approach to program management as described in its December 18, 2002, *Recommendations for Improving OECA Planning, Priority Setting, and Performance Measurement.* The Assistant Administrator for OECA decided that OECA should develop a performance-based approach for national priorities such as the refinery program. OECA's *Recommendations* document stated that strategies "... should always include ... a goal or set of goals and performance measures that allow progress to be assessed...," and "these elements should be in place before the implementation period ... begins."

Program Goals Not Clearly Defined

OECA has not clearly and precisely defined official program goals, or ensured that everyone working on the refinery program in EPA headquarters and regional offices and State offices have the same understanding of the goals. Different OECA officials referred to different goals and measures for the refinery program at different times. Table 2.1 summarizes various goals we identified for OECA's refinery program.

[5] We did not assess the PART tool or OMB's application of the tool.

Table 2.1: Various Refinery Program Goals

Goal	Source
• Develop innovative approaches to achieve increased compliance within the industry sector priorities	Fiscal Year 1996/1997 OECA Memorandum of Agreement guidance (National Priority Sector)
• Reduce emissions from refineries • Bring the refineries into long-term compliance (with the issues investigated) • Ensure more consistent interpretations and enforcement of regulations	Fiscal Year 1998 OECA Accomplishments Report (Refinery Strategy)
• Obtain significantly reduced emissions/ discharges/releases by 20 percent • Obtain substantially improved compliance rates by 50 percent	OECA National Sector Strategies document - not dated (National Sector Strategy)
• Significantly improve the industry compliance rate and reduce the total emissions that resulted from noncompliance	Fiscal Year 2001 OECA Accomplishments Report (Refinery Strategy)
• Address 100 percent of refineries either through consent decrees or other enforcement actions	2003 and 2004 interviews with senior OECA managers

OECA managers and staff did not agree on program goals. Throughout our evaluation, they cited multiple goals listed in Table 2.1, and did not formally assess their progress toward meeting any of these goals. For example:

- OECA officials said Memorandum of Agreement documentation served as updates to the strategy. However, during our field work, OECA officials said that either the Memorandum of Agreement documents contained inaccurate information or that they were not familiar with that information.

- While some managers stated that the 50-percent and 20-percent goals were the official program goals, other OECA managers disagreed.

- While some managers stated that EPA had met the 50-percent and 20-percent goals, officials could not provide specific data to support their conclusion.

Two OECA senior executives told us that establishing and tracking an overall program goal for the refinery program, or any other program, would require additional resources. Both said that it was more important to use their limited resources to take additional enforcement actions (e.g., seek additional consent decrees) than it was to measure progress toward program goals. We believe that without clear and well-defined program goals, it was difficult for OECA to identify appropriate performance measures and track progress.

Performance Measures Not Used to Manage Program

Although OECA developed some performance measures, it has not used them to manage the refinery program. For example, while one early OECA strategy document included nine goal areas and more than 50 separate output or activity measures, OECA did not track or communicate progress toward these goals. Performance information should feed back into the management of the refinery program, but OECA could not take advantage of such feedback because OECA lacked a formal system for capturing this information. OECA agreed and intends to use appropriate performance measures and outcomes as part of the fiscal 2005 priority planning process.

In lieu of performance measures to manage the program, OECA officials held national meetings and scheduled monthly conference calls with regional staff to review program progress and discuss regional commitments to support the strategy. In addition, OECA and regional staff formed issue-specific work groups to develop investigative tools, discuss issues, and devise solutions. Senior OECA officials stated that they also tracked program-related activities through regular telephone and electronic mail communications and "status of activities" charts. However, an OECA official acknowledged that OECA had not tracked or disseminated data for most of the activity or output measures OECA established.

Reporting Systems Not Focused on Environmental Outcomes

Refinery program reporting focused on projected rather than actual environmental outcomes. OECA reported program results in two ways:

- **Press Releases.** OECA used press releases to communicate the signing of consent decrees to the public. Press releases reported the projected emissions reductions at full implementation of consent decrees (consent decrees lasted 8 to 10 years) and the dollars companies agreed to pay in penalties as a result of consent decrees. OECA management did not plan to issue press releases or other reports to the public detailing the actual measured outcomes of consent decree implementation because OECA management did not believe the press would be interested.

- **Reporting to Congress.** EPA used the Integrated Compliance Information System (ICIS) to report EPA enforcement program results to Congress under the Government Performance and Results Act. For refinery consent decrees, OECA input data into ICIS representing (1) the projected annual emissions reductions that would be realized once implementation was complete, (2) the dollar amount of penalties generated, and (3) the dollar value of required supplemental environmental projects. According to OECA, ICIS reporting was not designed to capture, and did not capture, information about environmental outcomes from the consent decrees, such as demonstrated environmental and human health benefits.

EPA used three systems to collect information on consent decree implementation:

- Company data collection through consent decree reports.
- Monthly conference calls between EPA managers and staff working on consent decree implementation (described above).
- Contractor-developed consent decree tracking system (described in detail later in this chapter).

However, EPA did not use these systems to demonstrate progress toward meeting consent decree goals. Consent decrees required companies to provide quarterly reports that included actual emissions data related to NSR and PSD issues – the most significant sources of refinery emissions reductions in consent decrees. OECA used the information to set some emissions limits that consent decrees did not specify. However, OECA did not use this information to monitor, verify, or report progress toward achieving consent decree goals.

OECA Has Not Tracked Progress Toward Consent Decree Goals

OECA should closely and regularly track actual emissions reductions and progress toward consent decree goals for three reasons: (1) refineries have a history of noncompliance (described in Chapter 1); (2) refineries emit toxic chemicals that affect human health and the environment (see Appendix D); and (3) some information used to develop consent decree emissions limits were based on estimates – facility estimates, pollution control equipment estimates, or both.

OECA officials do not plan to regularly verify or monitor actual refinery emissions. A national OECA refinery expert said OECA would use emissions data to assess progress at 4 years into consent decrees and at the conclusion of the decrees. However, two monitoring events over 8 years will not provide OECA with information about company or overall refinery program progress toward predicted emissions reductions, and would limit OECA's ability to modify and improve existing consent decrees or ongoing negotiations.

Through consent decrees, EPA sets compliance schedules and emissions reduction goals for companies. OECA officials said company self-certification processes assured them that companies remained on their compliance schedules. Consent decrees require companies to demonstrate that they reach emissions reductions goals by the fourth year of consent decree implementation. However, during our evaluation, EPA could not demonstrate progress toward meeting emissions reductions goals in any priority area, as shown in Table 2.2, because EPA did not analyze information about company progress toward emissions reductions. Table 2.2 shows compliance status as "on a compliance schedule per consent decree requirements" and emissions status as "currently unknown" because OECA lacked data that demonstrated compliance or emissions status at the time of our evaluation.

Table 2.2: Current Status of Compliance and Emissions Reductions in the Priority Areas

Priority Area	Current Compliance Status	Progress Toward Emissions Reductions	Potential Measurement Data/Sources	Issues Associated with Measures
NSR/PSD	On a compliance schedule per consent decree requirements	Currently unknown	Monitoring data reported to OECA on a quarterly basis; 4- and 8-year assessments	OECA is not assessing emissions reductions in this area on an ongoing basis. OECA could use actual monitoring data to establish limits and analyze catalyst tests, but companies need not demonstrate emissions reductions until the fourth year of a consent decree.
Flaring/ NSPS	Reaching compliance	Currently unknown; although National technical lead for flaring documented a decline in flaring events from 1998 through early 2004.	Flaring Root Cause Analyses	Companies do not measure the constituents of flare emissions. Companies provide OECA root cause analysis reports for each flaring incident that OECA can then use to measure the number of flaring incidents. From the reports, OECA can estimate the pollution resulting from the flaring event.
LDAR Benzene	On a compliance schedule per consent decree requirements	Currently unknown	State Inspections, company monitoring data, AP-42[6] and other estimated data	Many States were not advised to track the area and others were not tracking due to implementation delays. OECA must rely on company-developed sampling and monitoring plans, and 4-year company-supplied audits.

OECA indicated that OECA and States share responsibility for ensuring consent decree implementation and verifying refinery emissions. However, an OECA executive acknowledged that headquarters had not provided guidance to States or EPA regions indicating that inspections should take the four priority noncompliance areas into account. EPA and State staff did not generally include the priority noncompliance areas in typical Clean Air Act inspections. These factors left little assurance that EPA or States would verify self-reported company progress under consent decrees.

Late and Absent EPA Responses to Consent Decree Documents May Have Delayed Program Outcomes

Refinery program outcomes will depend on successful consent decree implementation. Late and absent EPA responses to company consent decree documents may have delayed company implementation of projects designed to reduce emissions and compromised compliance. EPA delays developed as soon

[6] AP-42 estimates are emission factors used to estimate emissions from a source when more reliable emissions data are not available. The emission factors used to develop AP-42 estimates are known to have limited accuracy.

as the implementation phase began, and persisted because OECA did not effectively plan how it would manage and monitor consent decree implementation. OECA took steps that reduced but did not eliminate the delays, and did not take steps to address the delays in a timely fashion.

Program Outcomes Depend on Implementation

OECA needs to accurately track hundreds of consent decree milestones to ensure that companies comply with consent decree requirements and that expected emissions reductions actually occur. Appendix F provides a detailed flow chart of the consent decree process. As depicted in the flow chart, after a company signs a consent decree and the court enters the decree, the implementation phase of the consent decree begins. After any necessary EPA review and approval, the company is expected to take the required actions that should result in reduced emissions and improved environmental conditions.

OECA's plan for monitoring consent decree implementation called for EPA's written responses to the hundreds of refinery documents and reports required by the consent decrees. Table 2.3 shows the types of company reports required by consent decrees and identifies those reports requiring EPA responses.

Table 2.3: Examples of Consent Decree-required Company Reports and Required EPA Responses

Priority Area(s)	Type of Company Report Required	EPA Response Required?
NSR/PSD	Reports on intended design of major pollution control equipment	Yes
	Reports on testing and optimizing pollution controls	
Flaring/ NSPS	Root cause analysis reports for illegal acid gas flaring incidents	Yes
Flaring/ NSPS and any other violations	Stipulated penalties for consent decree violations (particularly flaring)	Yes
Benzene	Reports on implementing pollution abatement procedures and policies	Yes
	Sampling reports	No
LDAR/ Benzene	Audit reports	No
All	Progress reports and quarterly reports	No

Late EPA Responses Delayed Implementation Activities and Compromised Compliance

We found that EPA issues the majority of its responses either late or not at all. Late and absent EPA responses delayed company implementation of projects

designed to reduce emissions and compromised company compliance with consent decrees. Figure 2.1 shows the timeliness of responses EPA issued and reports provided by companies (these data were only available for July and October 2003). Figure 2.2 shows the number of required EPA responses and the number of responses EPA issued for July 2003, October 2003, and January 2004.

Figure 2.1: Timeliness of EPA Responses and Company Reports Mandated by Consent Decrees for July 2003 and October 2003

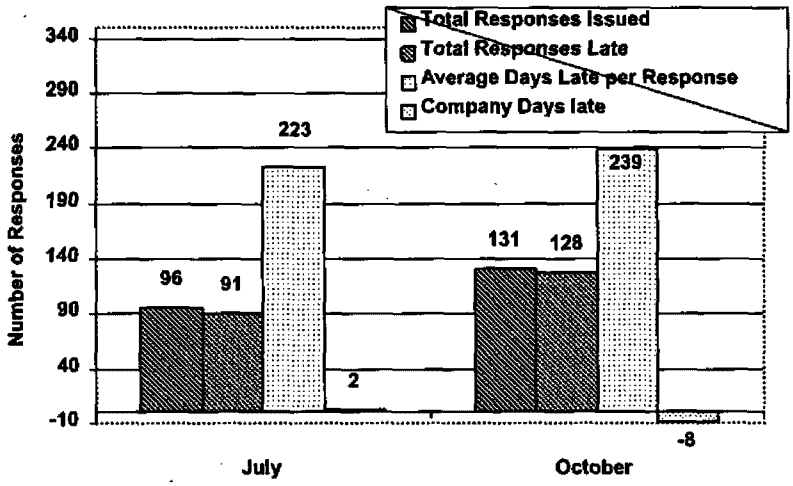
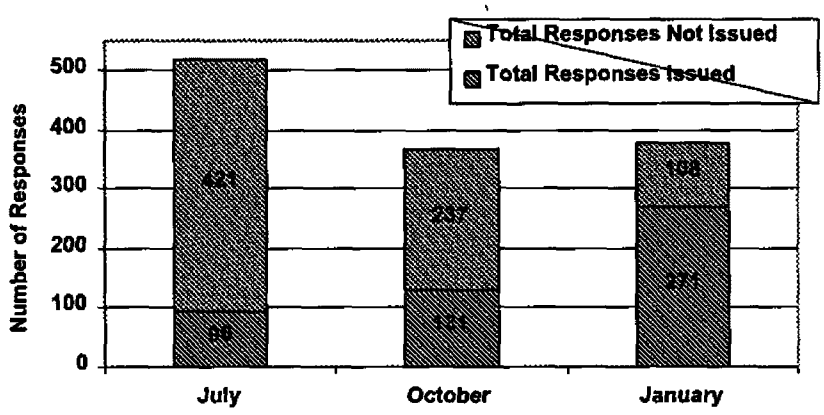


Figure 2.2: Number of EPA Responses Issued Compared with Number of EPA Responses Not Issued per Consent Decree Requirements in July 2003, October 2003, and January 2004

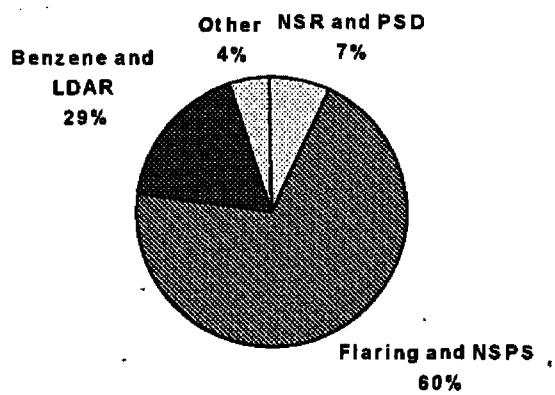


We reviewed information from nine consent decrees well into implementation to determine the extent and potential impacts of EPA response delays. We reviewed information as of July 2003, October 2003, and January 2004. On average, the consent decrees in our analysis required companies to submit a total of 2,191 reports (or 243 reports per company) requiring 421 EPA responses (or approximately 47 responses per company) over the 8-year terms of their consent decrees.

On average, late EPA responses delayed consent decree implementation by nearly 8 months between July 2003 and January 2004. In some cases, companies proceeded with consent decree actions while awaiting EPA approval. In other cases, companies awaited EPA responses before taking actions. OECA management said they kept abreast of implementation activities through regular conference calls with consent decree implementers.

Figure 2.3 demonstrates that most late and absent EPA responses related to flaring/NSPS incidents (60 percent) and benzene handling or LDAR requirements (29 percent).

Figure 2.3: Required EPA Responses by Priority Area



To date, consent decree implementation is not complete and we did not discover any instances where response delays affected emissions reductions during the course of our evaluation. However, regional staff, State staff, and refinery company staff told us that EPA response delays might affect some company actions under consent decrees. For example:

- **Acid Gas Flaring**: In one consent decree, as of January 2004, EPA responded to 22 of 23 acid gas flaring reports an average of 273 days (9 months) late. OECA staff acknowledged that problems could arise if EPA did not respond to a company's acid gas flaring root cause analysis report. If a company did not correctly identify a root cause and EPA did

not respond in a timely fashion, companies might take inadequate corrective actions, and unnecessary emissions may have resulted.

- **NO_x Control:** One EPA consent decree press release stated that the decree would reduce the company's NO_x and SO_2 emissions by 50,000 tons each year. As of January 2004, EPA issued its response to 5 of 13 NO_x control plans. For the three responses EPA issued that listed a company report date, EPA waited approximately 174 days (about 6 months) between receiving the company report and issuing a response. As of January 14, 2004 (the date we last received the data), EPA had not approved the company's eight other plans. As a result, EPA had waited at least 478 days (approximately 16 months) between receiving the company reports and responding to them. These delays could have resulted in continued emissions of tons of NO_x to the surrounding community.

Late and absent EPA responses may have compromised company compliance with consent decrees. EPA company leads said that, in most cases, companies continued along their implementation schedules even if OECA did not issue required responses to reports. In other cases, companies may have awaited EPA responses before taking consent decree actions. Delays in EPA responses caused one company to express concerns about remaining in compliance. The company questioned its compliance status in a July 31, 2003, quarterly report to EPA stating: "It is critical that [the company] receive responses from the EPA . . . to ensure compliance [with] . . . the consent decree . . . [The company] is still awaiting EPA's comments."

Tracking Problems Developed and Persisted

Delays developed as soon as the implementation phase began and companies began submitting reports to EPA. EPA responded late to refinery documents and reports 95 percent of the time as of July 2003, and 98 percent as of October 2003. Because OECA eliminated tracking for due dates between October 2003 and January 2004, we could not determine timeliness for company reports or EPA responses after October 2003.

OECA quickly found that it did not have the resources to efficiently address all of the company reports arriving at EPA headquarters, particularly since several consent decrees had similar implementation schedules. In the face of the growing document delays, OECA introduced an implementation plan and hired a contractor to help with implementation tracking in January 2002. The implementation plan outlined responsibilities for EPA headquarters, regional staff, national technical leads, company leads, and external contractors, as shown in Table 2.4.

Table 2.4: Key Roles and Responsibilities for Consent Decree Implementation

Actor	Role/Responsibilities
EPA Company Lead (1 Lead per consent decree)	Each consent decree has a lead staff member who ensures timely review of deliverables and implementation of all consent decree requirements.
EPA National Expert (4 National Experts)	Each priority area covered by consent decree has a national expert (also known as national technical lead) who ensures national consistency across all refinery consent decrees. EPA national experts also provide support to regional staff on specific priority areas.
EPA Regional Staff (number of staff varies by region)	Regional staff responsible for consent decree implementation review all company submissions directly involving their priority area and/or refinery, recommend any necessary action, and coordinate with affected States as appropriate.
Contractor	Tracking contractor tracks consent decree deliverables and EPA's responses to deliverables. A separate analysis contractor provides support in evaluating control technology performance and setting appropriate emissions limits under NSR/PSD regulations.
OECA	OECA's Air Enforcement Division makes determinations, issues approvals, transmits comments, establishes emissions limits, and assesses stipulated penalties based on consultations with appropriate company leads, national experts, and regional staff.

The contractor developed an archive, a list of required deliverables, and a document tracking system in close coordination with the EPA company leads by late 2002. Meanwhile, the delays had grown as national technical leads attempted to approve each individual EPA response, and OECA reported that its success with obtaining settlements in the refinery sector had created a significant resource drain. Company leads in EPA regions developed and maintained their own, personal tracking systems and did not use the contractor's system to track implementation.

OECA Took Steps to Address Problems But Did Not Eliminate Them

During our evaluation, OECA recognized that the document tracking delays caused implementation problems and took steps that reduced but did not eliminate the delays. OECA and regional EPA staff cited the requirement that four national technical leads review each response and the Air Enforcement Division Director's required approval as the reasons for delays.

OECA attempted to address the delays by training implementers, reallocating staff, and making changes to consent decree design and implementation requirements. For example, in a more recent consent decree, EPA required just 5 company reports and no EPA responses, compared with an average of 243 company reports and 47 EPA responses for the 9 consent decrees in our analysis.

OECA managers told us they disagreed with the contractor's interpretation of which items in consent decrees required an EPA response; OECA managers determined that the contractor-developed system included hundreds of items that did not require tracking. Between July and October 2003, OECA eliminated requirements for 149 EPA responses, and eliminated tracking of the timeliness of both company reports and EPA responses from the tracking system. On the January 7, 2004, company lead conference call, OECA management and company leads agreed to use the contractor's system as the principal tool for managing and tracking consent decree implementation. Because OECA eliminated tracking of timeliness, we could not determine the impact the changes had on EPA response time. Also, OECA could not use the tracking system to determine the timeliness of company reports or EPA responses.

OECA did not accurately assess the resources required for consent decree implementation. EPA planning guidance stresses assessing the skills and number of personnel needed to implement programs. More accurate planning that accounted for the specific monitoring and management requirements of each signed consent decree could have enabled OECA to avoid the document tracking delays, delays in EPA responses, and confusion about compliance. OECA management and national technical leads familiar with the four priority areas when they negotiated consent decrees should have more accurately assessed the resources required to monitor and implement the steps outlined in consent decrees. Identifying resource needs during the planning phase would have highlighted resource limitations and EPA could have corrected problems before they caused delays in implementing the program.

Conclusion

OECA did not clearly and precisely define official program goals and measures, or ensure the goals were consistently shared and clearly understood. Because refineries emit toxic chemicals, they should be closely and regularly monitored for compliance. Although OECA officials used informal methods to track program progress, OECA would benefit from using more formal mechanisms to track and measure progress toward consent decree and overall refinery program goals. Implementation problems developed because OECA officials did not establish an accurate, detailed resource plan. Serious delays developed and persisted because OECA did not provide sufficient guidance to the contractor charged with developing the implementation tracking system, and OECA did not reallocate its own resources to provide for implementation tracking. The ultimate success of the refinery program depends on effective management of consent decree implementation.

Recommendations

To correct issues related to goals, performance measures, and reporting, we recommend that the Acting Assistant Administrator for Enforcement and Compliance Assurance:

2-1. Develop clear overall refinery program goals that allow for future assessment or measurement and include timetables for accomplishment.

2-2. Instruct OECA refinery program managers to develop clear goals specifically for the refinery program's implementation phase.

2-3. Ensure that all goals and performance measures are understood by everyone involved in the national petroleum refinery program, including all EPA and State staff involved in some portion of consent decree implementation, and hold staff accountable for progress in performance agreements.

2-4. Instruct OECA refinery program managers to develop reliable performance measures to assess their progress toward meeting national program goals. Specifically, managers should fully implement OECA's performance-based approach to program management as described in its December 18, 2002, *Recommendations for Improving OECA Planning, Priority Setting and Performance Measurement*, which specifies development of plans and reliable performance measures, to the remaining phases of the petroleum refinery program.

2-5. Instruct OECA refinery program managers to gather, analyze, and report relevant program data to support overall OECA organizational decision making and daily program decision making.

To ensure the accurate measurement and reporting of refinery program outcomes, we recommend that the Acting Assistant Administrator for Enforcement and Compliance Assurance:

2-6. Instruct OECA managers to verify emissions reductions predicted in consent decrees on a quarterly basis. Verification might include establishing a detailed monitoring system, which could contribute to refinery program performance measurement.

To improve refinery consent decree implementation, we recommend that the Acting Assistant Administrator for Enforcement and Compliance Assurance:

2-7. Instruct its consent decree tracking contractor to resume tracking both company due dates for reports and EPA response due dates so that OECA and outside parties can easily track company and EPA responsiveness.

2-8. Revise and circulate a comprehensive tracking plan and system that outlines specific roles and responsibilities for OECA staff, EPA regions, State and local air pollution control agencies, and companies.

2-9. Provide additional training at the regional level, and hold regional experts accountable for reviewing and responding to company reports. Require national technical leads to spot-check responses from regional experts to ensure national consistency.

2-10. Develop a formal feedback system to ensure that OECA's workforce and managers have a common understanding of implementation responsibilities, a common perspective on the status of implementation, and the ability to expeditiously address implementation issues.

To avoid similar issues in other enforcement and compliance initiatives, we recommend that the Acting Assistant Administrator for Enforcement and Compliance Assurance:

2-11. Ensure frequent and open communication between partners (States, regions) and headquarters about responsibilities for executing portions of strategies to quickly eliminate misconceptions or confusion.

2-12. As discussed with OECA managers, include consent decree implementation in OECA priorities and strategic plans, allocating staff and resources to implementation until OECA completely implements all consent decrees.

2-13. Develop a plan for allocating negotiation and implementation resources. Use resource planning in new initiatives to determine the predicted workload associated with the initiative; allocate training, education, and development resources; and provide for office-wide reevaluation of the resource plan.

Agency Comments and OIG Evaluation

OECA agreed with 9 of our 13 recommendations above, and disagreed with 4.

OECA disagreed with recommendation 2-6 because OECA officials believed that quarterly monitoring was too frequent and did not take resource limitations into account. OECA stated that these resources are better utilized if devoted to addressing compliance issues in other industry sectors, and that verifying emissions reductions twice over the life of a consent decree (once in the fourth year, and once at the conclusion) would provide EPA with sufficient assurance that consent decrees led to environmental results. Because we do not believe that two monitoring events over the life of a consent decree provide sufficient assurance of results, we continue to recommend that OECA track available data

on its singular outcome measure for the program – change in tons of air emissions – on a quarterly basis.

OECA disagreed with recommendation 2-7 because OECA does not see the necessity of further revising the tracking system at this time. OECA said it has made substantial progress in reducing the delays, indicating that the current approach is having the desired result. We believe that the recommendation to track company report due dates and EPA response due dates in addition to company report receipt dates and EPA response issuance dates is crucial to maintaining accountability for both companies and EPA in consent decree implementation. To avoid similar delays in the future, OECA should track companies' and EPA's timeliness and identify and address problems as they arise.

OECA disagreed with recommendation 2-8 because OECA does not see the necessity of creating a new tracking plan and system when EPA already has a comprehensive consent decree tracking protocol implemented through its contractor. Despite OECA's current tracking plan and system, we found that some EPA and State staff were still unclear about their roles and responsibilities. We recommend that OECA revise as appropriate and circulate its existing tracking plan and system that outline roles and responsibilities to all appropriate stakeholders.

OECA disagreed with recommendation 2-10 because, in light of the small staffing level and their overlapping responsibilities, they did not believe a formal feedback system was necessary. Should the number of staff substantially increase in the future, they said they would consider a feedback system at that time. Despite OECA's monthly conference calls, our evaluation demonstrated management's lack of awareness of some issues we raised in our evaluation. We recommend that OECA develop a formal feedback system so that all staff and managers working on the program can rely on a common system for making suggestions and raising issues separate from their day-to-day interactions.

Our official draft report contained discussion about using a logic model to tie program activities to outcomes, and a recommendation to use the logic model developed in the course of the evaluation for current and future program development. OECA disagreed with the draft report recommendation and specifically stated that several of the short-term, intermediate, and long-term outcome measures in our logic model were not appropriate benchmarks for judging the effectiveness of a compliance and enforcement program. We chose to delete this recommendation because a logic model is only one of several possible means that OECA may employ to achieve the ends we advocate in recommendations 2-1, 2-2 and 2-3 – that is, the agreement on and communication of program goals.

Chapter 3
Refinery Program Lessons Learned

EPA's refinery program received mixed reviews from States, industry, and environmental groups, ranging from positive to very negative. For example, two companies with consent decrees viewed their relationship with OECA as more collaborative, but a major industry professional association believed EPA's refinery program severely damaged the Agency's relationship with the industry. Most of the stakeholders are taking a wait-and-see approach, believing the program's success depends on how well EPA maintains a level playing field within industry, and how well companies implement consent decrees. Representatives from environmental groups added that, in addition to effective implementation of consent decrees, they wanted EPA to make program results available to the public, particularly to those communities directly impacted by refineries.

EPA learned several important lessons that it should apply throughout its refinery program as well as consider for other enforcement and compliance assurance programs. Overall, EPA has effectively used some tools for the refinery program, but needs to make improvements in other areas. For example, EPA effectively focused on specific enforcement concerns and became knowledgeable about the industry, but EPA needs to clearly communicate roles and responsibilities. In addition, EPA needs to meaningfully engage stakeholders throughout the process, and diligently oversee consent decree compliance.

Refinery Program Offered Lessons Learned

OECA, regional, State, and industry officials described lessons they learned from the refinery program that OECA could apply to other industries.

Lesson Learned	***Become Knowledgeable about the Industry and its Technical Processes***

Each industry has its own characteristics that impact the effectiveness of enforcement and compliance assurance programs. OECA learned an important lesson through obtaining an understanding of petroleum refinery processes. According to one former senior OECA official, the industry did not generally view EPA as credible or very knowledgeable, and believed that EPA staff could be easily misled or overwhelmed by technical details.

A significant tactic of the refinery program involved pulling together EPA staff with knowledge about the refinery industry. These staff attended training on the refinery process, reviewed trade journals, and met with industry officials to learn

about refineries. In addition, OECA identified four national technical leads for the priority areas and ensured national consistency in investigations and negotiations. EPA regional and OECA staff emphasized that technical expertise made them credible to the industry and helped immensely during negotiations. Representatives from companies that signed consent decrees with OECA also said EPA's industry knowledge increased the program's effectiveness. OECA officials stated that the marshaling of in-house, cross-regional expertise to investigate refineries was one of the more remarkable elements of the refinery program.

Lesson Learned	***Build the Program with Regional and Headquarters Staff Working Together***

The refinery program demonstrated that a single program with experts from headquarters and regional offices working together operated more effectively than having each region and headquarters working alone. EPA regional officials believed the refinery program's strategy to pull together staff with expertise to lead the program regardless of geographic location served as a model for other enforcement programs. One regional EPA official believed the refinery program's approach prevented the 10 regions from conducting their own programs or having OECA dictate the entire program. While OECA coordinated the effort, officials said regional as well as OECA staff drove the program and contributed to its success in identifying and addressing priority areas.

Lesson Learned	***Designate a Senior EPA Executive to Champion the Program***

Representatives from one company that signed a consent decree stated that EPA obtained success with settlements because the refinery program had a senior EPA executive who championed the program. Industry representatives said that having a senior OECA executive who had specific knowledge about the issues, had decision-making authority, talked with them about the program, and even participated in negotiations, made a positive impact in how they reacted. However, the senior OECA official who had championed the program from its inception left EPA in February 2002. Some industry and EPA staff believed that the departure of this former OECA executive slowed the program's progress in obtaining additional settlements. One OECA official believed the slow progress related more to difficult and contentious negotiations rather than the departure of the prior senior executive. OECA replaced the prior official with another executive, but limited resources and other priorities prevented the new executive from taking a similar role with the refinery program. OECA officials stated that resources often limited the extent to which a senior executive could become actively involved in the day-to-day activities of a single national enforcement program.

Lesson Learned	*Meaningfully Engage Stakeholders Throughout the Process*

As described in Chapters 1 and 2, OECA engaged various stakeholders throughout the program, including the U.S. Department of Justice and the States. Stakeholders' were involved in settlement negotiations and negotiating final consent decrees. However, some State officials said they wanted more participation in the process. For example, officials from one State believed they needed to aggressively try to participate in the negotiations or discussions would take place without them. Officials from another State complained about the lack of adequate time to comment on proposed negotiation decisions. The officials said lack of adequate time gave the appearance that their reviews were irrelevant and would have no impact on the final EPA decision. Other State and local officials commented that OECA did not:

- Keep the State informed on the status of negotiations.
- Keep the State involved during the negotiations or decision making process.
- Adequately describe the benefits of participation to local officials.
- Adequately describe the increased workload necessary to successfully implement and monitor consent decrees.

On the other hand, one OECA official said that many States did not want to participate in the refinery program despite OECA's efforts to include them in negotiations.

One group of stakeholders – the companies that signed consent decrees with OECA – formed a "consenters" group to facilitate a relationship with OECA and minimize the uncertainty around consent decree implementation. The group also formed to facilitate compliance, learn from each other (when appropriate and within anti-trust limitations), and reduce learning curves in implementing consent decree provisions. OECA officials and a representative from a company in the consenters' group said the group provided an effective means to communicate and discuss issues among similarly situated companies.

Lesson Learned	*Clearly Communicate Roles and Responsibilities*

Clear communication is a critical component of any program. OECA's *Framework for a Problem-Based Approach to Integrated Strategies*, dated November 2002, emphasized the importance of communication and clearly defining stakeholders' roles and responsibilities. While OECA effectively communicated its four priority areas to the industry, the public, and other stakeholders through various means (e.g., *Enforcement Alert* newsletters), OECA did not effectively communicate other aspects of its program (particularly environmental outcomes) as discussed in Chapter 2. OECA's *Framework* document encourages the development of a communications plan for internal and

external stakeholders to ensure that OECA keeps stakeholders informed of the program's progress as well as roles and responsibilities.

Lesson Learned	*Focus on the End Result and Establish Incentives for Industry to Participate*

OECA and regional officials believed their focus on emissions reductions rather than individual facility violations led to the refinery program's success. EPA's refinery program strategy included identifying and focusing on four priority areas under the Clean Air Act that represented the most significant compliance problems within the industry. OECA directed its pursuit of global settlements at obtaining industry's agreement on implementing controls and practices that are expected to achieve significant emissions reductions in these four priority areas. As part of its push to achieve significant emissions reductions, EPA encouraged and, in some instances, required refineries to develop and install new emission control technologies. OECA officials stated that the refinery program pushed the use of the most advanced emissions control technologies available.

OECA negotiated with refinery companies and offered an incentive in the form of relief from past liabilities in order to persuade the industry to sign consent decrees. OECA worked with the industry's desire to obtain a level of certainty regarding regulatory risks with EPA's desire to significantly reduce emissions. The industry saw many complex regulations on the horizon and viewed participating in consent decrees as "good business" to limit liability and obtain a level of certainty regarding regulatory risks. As a result, EPA obtained consent decrees that included implementing controls expected to reduce emissions as well as requirements to go beyond compliance with regulations.

Lesson Learned	*Diligently Oversee Compliance with Negotiated Settlements and Consent Decrees and Take Action When Provisions Are Not Met*

As discussed in Chapters 1 and 2, the implementation of refinery consent decrees represents one of the essential pieces of the refinery program. Without effective implementation, the refinery program may not result in anticipated emissions reductions and increased industry compliance. OECA officials expressed concern over the significant amount of resources required by headquarters, regional, and State offices to implement consent decrees while at the same time continuing other enforcement-related activities in other industries. While it will require careful priority-setting and resource allocation, OECA, regions, and States should ensure implementation of consent decree provisions and take appropriate enforcement action when necessary.

Conclusions

OECA's refinery program resulted in several important lessons learned. OECA and regional officials spent considerable time at the start of the program learning

about the industry and developing expertise in the four areas on which the strategy focused. Officials continued to gain industry knowledge throughout the refinery program. As an on-going program, however, the refinery program could continue to benefit from evaluating where it might apply some of the lessons learned. For example, OECA should improve communication with stakeholders, particularly given the feedback States and regional staff provided on the refinery program. In addition, OECA should designate a senior EPA executive to champion the consent decree implementation phase.

Recommendations

We recommend that the Acting Assistant Administrator for Enforcement and Compliance Assurance:

3-1. Disseminate the lessons learned from the refinery program to EPA staff to benefit other compliance efforts, obtain additional feedback from stakeholders – including States, industry, and environmental groups – on other lessons learned, and update relevant OECA guidance documents such as OECA's *Framework for a Problem-Based Approach to Integrated Strategies* or other appropriate documents for on-going and future industry-specific enforcement programs.

3-2. Designate a senior OECA executive to assume the role of champion for the refinery program to ensure (a) that refiners enter into consent decrees or face appropriate alternative enforcement actions, and (b) that consent decrees are effectively implemented.

3-3. Consider, on a case-by-case basis, designating a senior OECA executive to assume the role of champion for each of the other enforcement priority areas. EPA and industry officials should recognize the champion as knowledgeable and as having the authority to make decisions related to the priority area.

3-4. Develop a communications plan for refinery consent decree implementation. The plan should clearly describe the roles and responsibilities of all stakeholders, including refinery priority area experts and regional and State officials.

Agency Comments and OIG Evaluation

OECA agreed in part with the first three recommendations in this chapter and fully agreed with the last recommendation.

OECA concurred in part with recommendation 3-1. OECA disagreed that it needed to revise the *Framework for a Problem-Based Approach to Integrated Strategies* to reflect lessons learned from the refinery program. We view the

lessons learned from the refinery program as significant and believe OECA should reflect them in a written document (either combined with lessons learned from other initiatives or by itself) and distributed to stakeholders. We revised the recommendation so that OECA can determine the appropriate document – either the *Framework* document or another guidance document – to capture the lessons learned and communicate them to stakeholders.

OECA also concurred in part with recommendation 3-2. OECA agreed that a senior enforcement official needed to manage national enforcement priorities and OECA designated a senior official responsible for managing the refinery program. OECA disagreed, however, that a senior OECA official needed to ensure that EPA settle or litigate against all refiners in the industry. OECA officials stated that after the refinery program reaches its goal of 50 percent increased compliance and 20 percent decreased emissions, the program would return to the "core" enforcement program, with primary enforcement and compliance assurance program responsibility devolving to States and EPA regional offices. We continue to recommend that while the refinery program remains as a national priority, a senior OECA official maintain responsibility and accountability for the program.

For recommendation 3-3, OECA stated that it would make the determination of whether any particular priority area requires an OECA-designated "champion" on a case-by-case basis as appropriate in light of all relevant facts and circumstances. We agree, and revised this recommendation accordingly.

Details on Scope and Methodology

We conducted our evaluation of EPA's national petroleum refinery program between June 2003 and March 2004. We performed our evaluation in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States.

We began our evaluation of the petroleum refinery program at the request of OECA senior managers and after we conducted extensive preliminary research on EPA's enforcement and compliance assurance program. We began our general preliminary research on EPA's enforcement and compliance assurance program in February 2002 to obtain information on EPA's traditional and alternative approaches to enforcement and compliance assistance. Our preliminary research included interviewing officials in EPA's OECA, Office of Research and Development, Office of Environmental Information, and Office of the Chief Financial Officer. We interviewed these officials to obtain information on EPA activities related to enforcement and compliance assistance strategies. We reviewed a variety of documentation describing integrated strategies, compliance assistance grants, Memorandum of Agreement priorities, Government Performance and Results Act reporting, and enforcement and compliance assistance databases (Enforcement and Compliance History Online, Sector Facility Indexing Project, and Integrated Data for Enforcement Analysis System).

We also interviewed officials at non-EPA organizations. We met with officials at the General Accounting Office (GAO), the National Academy of Public Administration, and the Environmental Council of the States to obtain information on prior reviews they performed on enforcement and compliance assistance programs, and to obtain their perspectives on significant concerns and issues related to enforcement and compliance assistance. In addition, we reviewed reports they issued on enforcement and compliance assistance issues.

We used the results of our initial preliminary research to develop objectives for four separate evaluations of the enforcement and compliance assurance program. These four evaluations became part of OIG's March 2003 *Multi-Year Plan Fiscal 2003 - 2005.*

In December 2002, we had held an entrance conference with OECA to begin one of the four evaluations in the *Multi-Year Plan.* We designed the first evaluation to describe the regulated universe, the compliance status of OECA's priorities, and the enforcement and compliance assurance strategies EPA and its partners applied to each of the priorities. However, OECA senior managers said they found the scope of the evaluation too broad and thought it would not provide meaningful results. After discussions with OECA senior management, we agreed to first conduct a pilot evaluation of one of the priorities. The pilot evaluation would review the strategies and measures for one priority area and test our approach to answering the objectives in all four evaluations.

From February through May 2003, we performed additional research on OECA's priorities to determine which priority to include in the pilot evaluation and to develop the specific evaluation objectives. We met with OECA staff to determine the status of each priority and to obtain a brief

background on the issues prompting OECA to identify them as priorities. As a result of additional research and analysis, we selected the petroleum refinery program as our pilot issue. In addition to its status as an OECA national enforcement priority, OECA also had listed the petroleum refinery as a separate priority industry sector for several years.

Nature and Extent of Petroleum Refinery Industry and Strategies Used

To understand the nature and extent of the petroleum refinery universe and what strategies EPA and its partners developed to address compliance at refineries, we interviewed and collected documents from OECA staff, EPA's National Enforcement Investigations Center, regions, States, industry, environmental groups, and the U.S. Department of Justice.

We interviewed OECA, National Enforcement Investigations Center, and regional staff to determine the compliance problems in the industry, the specific strategies and approaches used to address the problems, and the industry's current compliance status. We interviewed officials in EPA regions 5, 6, 8, and 9 and State officials in Louisiana, Oklahoma, New Mexico, Minnesota, Delaware, Texas, Arkansas, and Colorado. We also interviewed officials in the Northwest Air Pollution Authority. We asked the regions, States, and local air authority to provide their perspectives on the effectiveness of EPA's strategy to address refinery compliance problems, their level of participation in the strategy, and suggestions for improving the refinery strategy and other enforcement and compliance strategies. We based our selection of regions on whether they had a significant number of refineries within their region. We based our selection of States on whether the State participated in a consent decree as part of EPA's strategy, the number of refineries in the State, and recommendations from EPA officials and outside organizations.

We met with two petroleum refinery industry groups – the American Petroleum Institute and the National Petrochemical and Refiners Association – and asked for their perspectives on the effectiveness of EPA's refinery strategy and their members' view of the strategy. In addition, we spoke with representatives from two companies and a representative from the consenters group[7] to obtain reasons why refineries did or did not enter into settlement agreements with EPA. We chose not to interview officials of refineries that had not entered into agreements with EPA because we did not want to interfere with their ongoing negotiations with OECA.

We reviewed documentation on the petroleum refinery industry to better understand the industry, its compliance issues, and impact on the environment. These documents included the following:

- EPA Office of Compliance Sector Notebook Project - Profile of the Petroleum Refining Industry, September 1995
- Sector Facility Indexing Project
- Scientific literature on the petroleum refining industry

[7] The consenters group consists of representatives from petroleum refinery companies that already signed consent decrees with EPA.

We also reviewed and analyzed documentation on EPA's refinery strategy, justification for its approach and priority, and compliance assistance efforts. These documents included:

- Memorandum of Agreement Guidance for fiscals 1996 through 2004
- *Enforcement Alert* Newsletters
- Internal documents describing the refinery strategy, goals, and performance measures

We attended the Refining Process Services Inc.'s *Basics of Petroleum Refining for Non-Technical Personnel* training to help us better understand the petroleum refining process. We also toured three refineries – in Denver, Colorado; Whiting, Indiana; and Texas City, Texas – to observe refineries with various capacities and emissions issues. We also met with officials at each of these refineries to obtain feedback on how they viewed EPA's refinery strategy and the consent decree process.

Goals, Performance Measures, and Reporting Approach for Petroleum Refineries

To evaluate the performance measurement and reporting approach for petroleum refineries and whether the approach allowed EPA to effectively implement, manage, and improve its strategies for refineries, we interviewed a variety of individuals and analyzed supporting documentation. These individuals helped plan, implement, track, and/or manage EPA's strategies for the petroleum refinery industry. These individuals included staff in OECA's Office of Regulatory Enforcement, Office of Compliance, and OECA refinery issue experts in Headquarters, Region 5, and the National Enforcement Investigations Center. We interviewed these individuals to obtain information on OECA's process to identify priorities, establish goals and performance measures, and report accomplishments. We also interviewed them to determine whether they tracked their progress in achieving the refinery goals and how they determined baselines for pollutant emissions and reductions. In addition, we interviewed the prior Director of the Office of Regulatory Enforcement to determine the refinery program's initial goals and objectives. We also interviewed outside EPA experts to discuss environmental performance measurement.

We reviewed documentation on the refinery strategy goals, performance measures, and accomplishment reports. We evaluated how EPA established baselines for its measures and how it measured emissions reductions. Our documentation review included the following:

- Case Conclusion Data Sheet - Training Booklet, November 2000
- OECA's *Framework for a Problem-Based Approach to Integrated Strategies*
- 11 Global Consent Decrees
- Headquarters and Region 6 Consent Decree Implementation Tracking Databases
- OECA's Accomplishment Reports for fiscals 1996 - 2002

In our interviews with OECA and regional officials, we obtained information on whether they agreed on the refinery strategy goals and objectives and whether OECA met those goals. In addition, we obtained information from States and local authority officials on other measures that OECA could or should use to determine compliance and achievement of refinery strategy goals.

To determine how well OECA managed its consent decree implementation, we analyzed OECA's consent decree tracking information. We retrieved nine company spreadsheets from EPA's contractor on July 31, 2003, October 16, 2003, and January 14, 2004. The company spreadsheets depicted the due dates and deliverables outlined in the consent decrees. From the spreadsheets, we calculated the number of responses EPA had not issued and the timeliness of both company reports and EPA responses. By comparing data from July, October, and January, we determined that company spreadsheet contents changed between the reporting dates; therefore, we assessed the nature of changes that occurred, including comparing the number of company reports and EPA responses required, the types of reports and EPA responses required, and the fields tracked by the spreadsheets (for example, EPA eliminated using tables that tracked the timeliness of company reports and EPA responses between October 2003 and January 2004).

To obtain and document lessons learned that EPA could apply in other industries or that OECA could make to improve the petroleum refining program, we interviewed staff at OECA, EPA's National Enforcement Investigations Center, regions, States, industry, environmental groups, and the U.S. Department of Justice.

Prior Audit and Evaluation Work

In our research, we found no previous audit or evaluation reports evaluating EPA's petroleum refinery compliance program. However, we identified EPA OIG and GAO reports listed below with findings on performance measurement, monitoring, and tracking:

> **EPA OIG: *Compliance with Enforcement Instruments*, Audit Report No. 2001-P-00006, March 29, 2001.**
>
> We found that OECA's performance measures were not sufficient to determine the program's actual accomplishments. Consequently, we determined Congress had less useful performance data upon which to base its decision making. We also found that EPA regions did not always adequately monitor compliance with enforcement instruments (e.g., consent decrees) nor did they always consider further enforcement actions. We attributed ineffective monitoring primarily to the lack of: (1) guidance detailing how or when to monitor enforcement instruments, and (2) emphasis OECA placed on monitoring. Consequently, OECA risked continued violations that would contribute to human and environmental health impacts, thus decreasing EPA's deterrence effect. In response, OECA concurred that it and the regions can and should improve tracking and enforcing compliance with requirements in enforcement instruments. At that time, we concluded that OECA had begun to take the steps necessary for OIG to close out the report.
>
> **GAO: Environmental Protection: *Wider Use of Advanced Technologies Can Improve Emissions Monitoring*, Report No. GAO-01-313, June 22, 2001.**
>
> GAO found considerable variation in the compliance monitoring performed by stationary air pollution sources. As a result, regulators and regulated entities lacked certainty about whether air pollution sources maintained continuous compliance with the Clean Air Act.

GAO recommended that EPA encourage wider use of advanced air monitoring technologies. GAO also cited equipment manufacturers and regulators as stating that, without regulatory requirements, manufacturers had little incentive to bring new monitoring technologies to market. OECA responded that it had coordinated efforts to explore ways to increase the application of advanced monitoring technologies with EPA's Office of Air and Radiation and industry while minimizing the perception that cooperation with OECA would lead to greater enforcement actions. OECA guaranteed that they would not punish the industry for their willingness to advance the science of monitoring except in the most egregious cases.

GAO: Air Pollution: *EPA Should Improve Oversight of Emissions Reporting by Large Facilities*, Report No. GAO-01-46, April 6, 2001.

GAO reported that EPA performed limited oversight of States' efforts to verify large facilities' emissions reports. GAO recommended that EPA improve its oversight of States' review of emissions reports by evaluating the adequacy of these reviews and, if necessary, strengthening them. In response, EPA stated that it offered tools and encouragement for States to improve facility emissions estimates, but EPA had no basis to impose a requirement on State or local permitting authorities to quality assure annual emissions data.

Appendix B

Key Information on U.S. Petroleum Refineries

The refinery corporations are listed in order of refining capacity as of January 1, 2003. The corporations highlighted have signed consent decrees as of March 2004 that apply to at least some of their refineries. The consent decrees covered each refinery the company owned and operated on the date of consent decree entry by the court. Since that date, companies may have sold, bought, or closed one or more refineries, however, the consent decree follows a refinery regardless of these actions. As a result, the "number of refineries under consent decrees" may not align with January 1, 2003 data for "number of refineries" owned by a company as depicted in the table.

Corporation	No. of Refineries	No. of Refineries under Consent Decrees	Capacity (barrels per calendar day)	Percent of Total Capacity
Conoco Phillips Co. (known as Conoco, Inc. when consent decree signed)	16[1]	4	2,276,900	13.59
Exxon Mobil Corp	6		1,808,000	10.79
British Petroleum PLC (known as BP Exploration and Oil, Co. when consent decree signed)	6	8	1,501,500	8.96
Valero Energy Corp	12		1,247,362	7.44
Chevron Texaco (known as Chevron U.S.A. Inc. when consent decree signed)	7[2]	5	1,079,000	6.44
Marathon Oil Corp (known as Marathon Ashland Petroleum LLC when consent decree signed)	7	7	935,000	5.58
Motiva Enterprises LLC	4	4	879,700	5.25
Sunoco Inc.	4		730,000	4.36
PDV America Inc. (includes Citgo Refining)	5		698,300	4.17
Royal Dutch Shell GP (includes four refineries known as Equilon Enterprises LLC when consent decree signed)	6[3]	4	603,750	3.60
Tesoro Petro Corp[4]	6		562,500	3.36
Koch Industries Inc. (known as Koch Petroleum Group when consent decree signed)	2	2	524,980	3.13

[1] Conoco purchased 12 of its 16 refineries after it entered into a consent decree with EPA.

[2] Two Chevron Texaco refineries not covered by the consent decree are asphalt refineries rather than petroleum refineries.

[3] Two Royal Dutch Shell GP refineries not covered by the consent decree are operated by Shell Chemical, a separate business unit from its fuels refineries.

[4] Tesoro purchased two refineries from BP, both of which are covered by BP's consent decree.

Corporation	No. of Refineries	No. of Refineries under Consent Decrees	Capacity (barrels per calendar day)	Percent of Total Capacity
Blackstone Group LP	2		416,500	2.49
The Williams Co. (Premcor)[5]	2		377,928	2.26
Deer Park Refining Limited Partnership (known as Deer Park Refining Limited Partnership (Shell) when consent decree signed)	1	1	333,700	1.99
Lyondell Petrochemical Co.	1		270,200	1.61
Chalmette Refining LLC	1		182,500	1.09
TotalFinaElf SA	1		175,068	1.04
El Paso Corp (includes Coastal Eagle Point Oil Co. that signed consent decree)	2	1	158,787	0.95
Crown Central Petro Corp	2		155,000	0.92
Orion Refining Corp[6]	1		155,000	0.92
Sinclair Oil Corp	3		152,195	0.91
Frontier Oil Corp	2		149,000	0.89
Cenex Harvest States COOP (includes Cenex, also known as CHS Inc., when consent decree signed)	2	1	136,200	0.81
Murphy Oil Corp[7]	2		128,000	0.76
Farmland Industries Inc.[8]	1		112,000	0.67
Ergon Inc. (includes Lion Oil Company, Ergon West Virginia Inc., and Ergon Refining Inc. that all signed consent decrees)	3	3	105,400	0.63
Giant Industries Inc.	3		96,200	0.57
Calumet Lubricants Co. LP	3		67,520	0.40
Holly Corp (includes Navajo Refining Company and Montana Refinery Company that signed consent decrees)	2	2	65,000	0.39
United Refining	1		65,000	0.39
Petro Star Inc.	2		62,550	0.37
Alon USA Energy Inc	1		58,500	0.35
Gary Williams Co.	1		52,500	0.31
Paramount Acquisition Corp	1		50,000	0.30
Placid Refining Co.	1		48,500	0.29
Time Oil Co.	1		44,350	0.26
Hunt Consolidated Inc.	1		33,500	0.20
Transworld Oil USA Inc.	1		29,400	0.18

[5] EPA took enforcement action against Premcor under the refinery program and entered into a limited, non-global settlement. EPA reached similar limited, non-global settlements with Murphy, Farmland, Frontier, Pennzoil, Crown, and NCRA (owned by Cenex Harvest States COOP).

[6] A consent decree with the State of Louisiana (patterned after EPA's settlements) covers Orion's refinery.

[7] EPA took an enforcement action against Murphy Oil for operations at one of its refineries that included elements similar to the global refinery consent decrees.

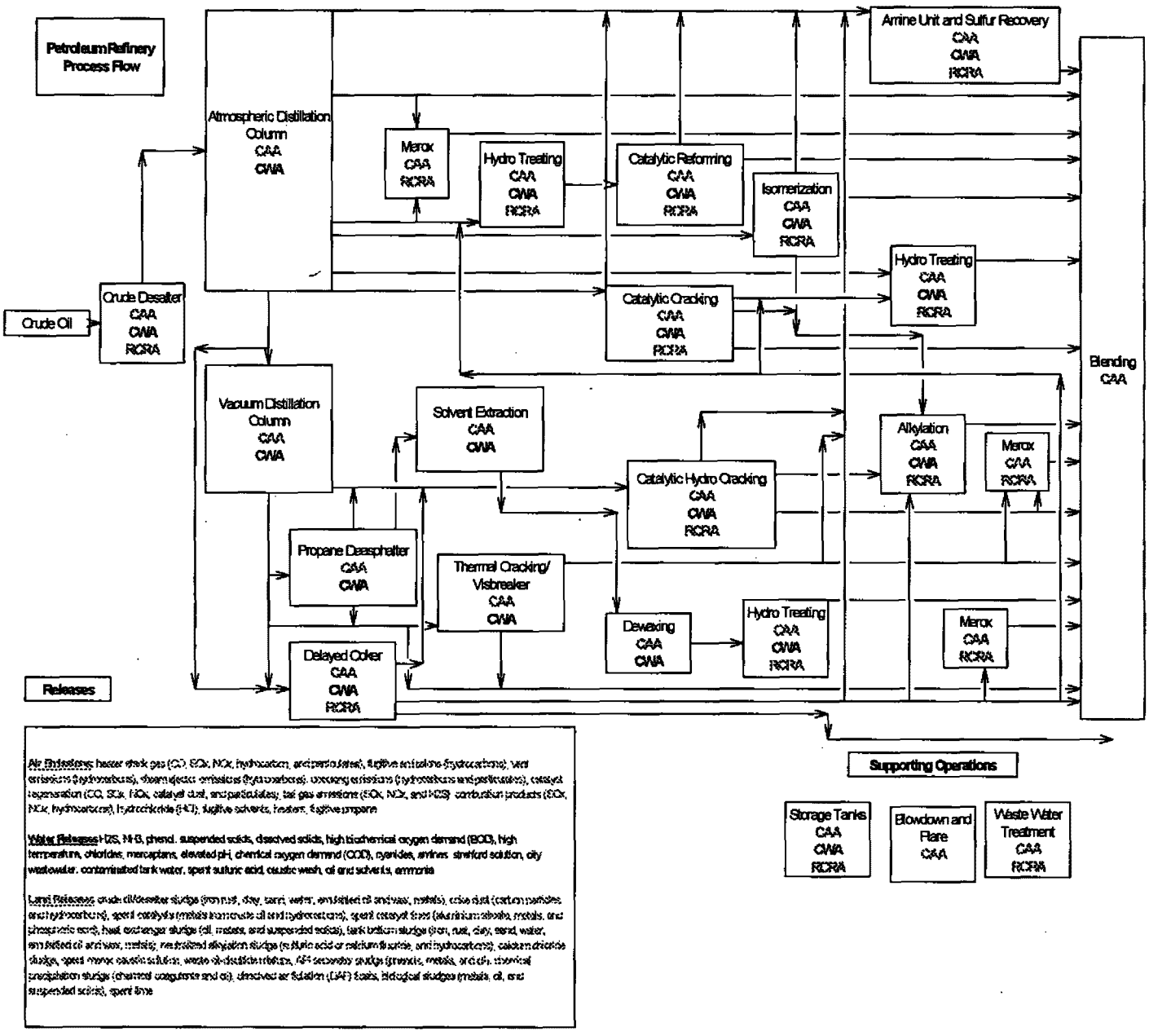
[8] Farmland recently resolved its liability with EPA through a consent decree patterned after the global refinery consent decrees.

Corporation	No. of Refineries	No. of Refineries under Consent Decrees	Capacity (barrels per calendar day)	Percent of Total Capacity
Apex Oil Co. Inc.	1		26,000	0.16
Kern Oil & Refining Co.	1		24,700	0.15
San Joaquin Refining Co. Inc.	1		24,300	0.15
Flying J Inc.	1		24,000	0.14
Countrymark COOP Inc.	1		23,000	0.14
Southland Oil Corp	2		16,800	0.10
Silver Eagle Refining	2		14,000	0.08
Wyoming Refining Co.	1		12,500	0.07
Age Refining & Marketing	1		10,200	0.06
American Refining Group Inc.	1		10,000	0.06
Greka Energy	1		9,500	0.06
World Oil Co.	1		8,500	0.05
Cross Oil & Refining Co. Inc.	1		6,800	0.04
Somerset Refinery Inc.	1		5,500	0.03
Young Refining Corp	1		5,400	0.03
Foreland Refining Corp	1		5,000	0.03
Oil Holding Inc.	1		2,800	0.02
Dow Chemical USA	1		880	0.01
TOTALS	**145**	**42**	**16,757,370**	**100**

Appendix C

Petroleum Refining Process Flow Chart

This flow chart illustrates the petroleum refinery process, potential releases, potential release points, and the major applicable environmental regulations.



Appendix D

Refinery Releases and Effects

This table provides a summary of the human health and environmental effects of the following common air pollutants released at refineries: volatile organic compounds (VOCs); sulfur dioxide (SO_2); nitrogen oxide (NO_x); particulate matter (PM); carbon monoxide (CO); hydrogen sulfide (H_2S); and toxic air pollutants. Toxic air pollutants include pollutants known or suspected to cause cancer or other serious human health effects and include refinery releases such as benzene and toluene. EPA does not consider SO_2, NO_x, PM, CO, and H_2S toxic air pollutants, but EPA lists pollutants such as benzene as both VOCs and toxic air pollutants.

	Releases	VOCs	SO_2	NO_x	PM	CO	H_2S	Toxic Air Pollutants
Human Health Effects	Reacts with other chemicals to create PM that can cause respiratory illness, aggravation of heart conditions and asthma, permanent lung damage, and premature death.		✓	✓	✓			
	Aggravates respiratory conditions.						✓	
	Reacts with other chemicals leading to ground-level ozone and smog, which can trigger respiratory problems.	✓		✓				
	Can cause health problems such as cancer.	✓						✓
	Can cause reproductive, neurological, developmental, respiratory, immune system, and other health problems.							✓
	Reacts with common organic chemicals forming toxins that may cause bio-mutations.			✓				
	Affects cardiovascular system and can cause problems within the central nervous system.				✓		✓	
Environmental Effects	Causes visible impairments that may migrate to sensitive areas such as National Parks.	✓	✓	✓	✓	✓		
	Contributes to formation of acid rain, which damages crops, trees, and buildings; and increases acidity in soils, lakes, and streams.		✓	✓			✓	
	Contributes to the formation of ground-level ozone, which harms vegetation.	✓				✓		
	Contributes to global warming, which leads to rising sea levels and other adverse changes to plant and animal habitat.			✓				
	Causes environmental hazards, including concentration of toxic chemicals (e.g., mercury) up the food chain.							✓
	Settles on ground and water, acidifying streams and lakes, damaging forests and farm crops, and depleting soil nutrients.		✓		✓			

Appendix E

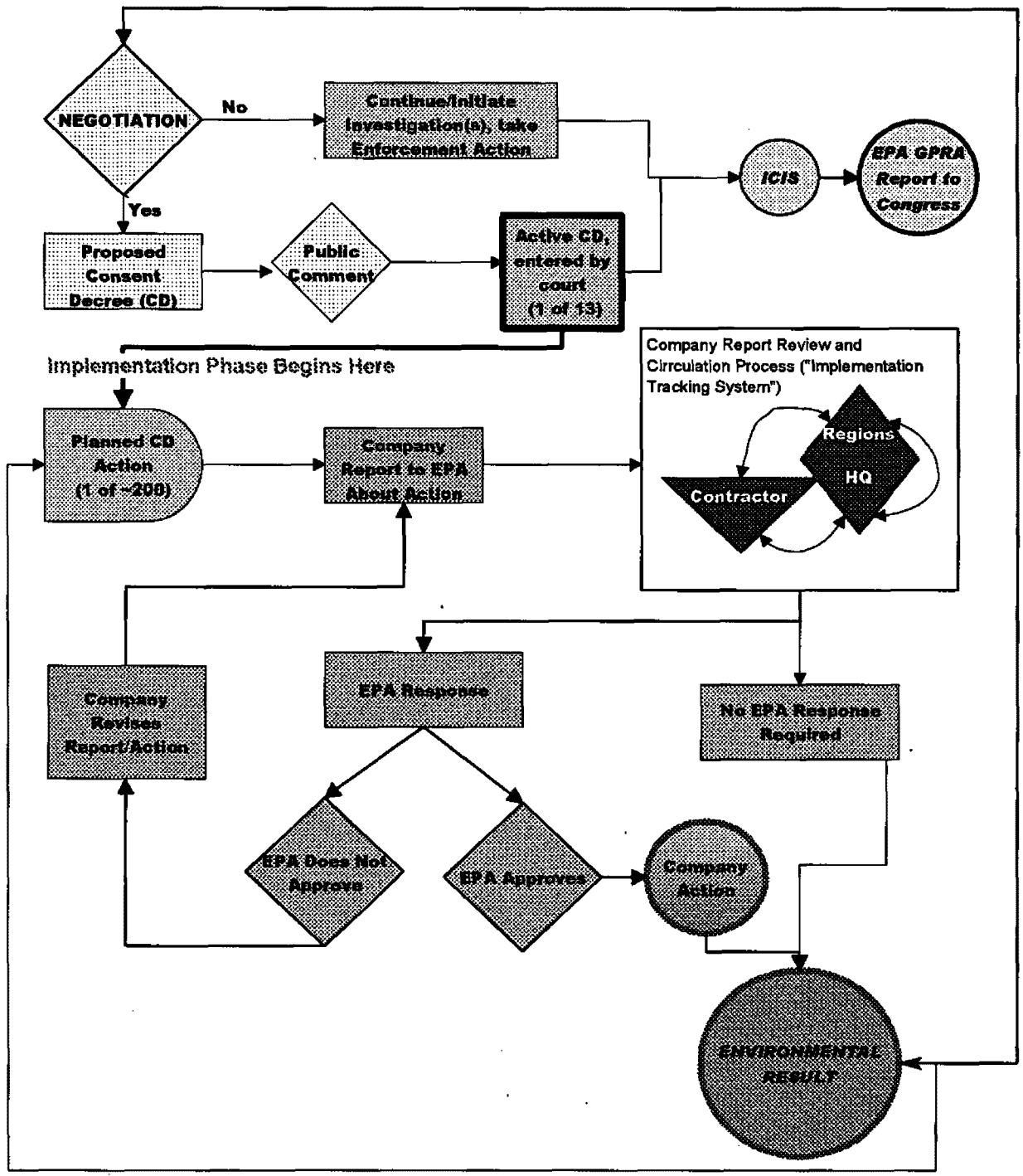
National Refinery Program Time Line

Date		Event
1995	June	Petroleum refining identified as national enforcement priority in OECA's fiscal 1996/1997 Memorandum of Agreement Guidance. OECA required each Region to develop compliance/enforcement strategies for the refinery enforcement priority.
	September	OECA issued the *Profile of the Petroleum Refining Industry* sector notebook.
1996	1996	OECA officials made presentations at the National Petrochemical and Refiners Association conference on the results of LDAR and benzene inspections.
1997	Late 1997	OECA forms the national refinery workgroup with an initial conference structured to discuss refinery issues and regional initiation of their own enforcement actions. The workgroup, comprised of OECA and regional staff, focused on investigations/ enforcement at petroleum refineries.
	Late 1997	OECA officials share environmental and enforcement concerns with the refinery industry, State/local officials, community groups, and environmental advocates. Based on publicly available information, OECA became aware that refinery capacity had increased substantially but relatively few refineries had applied for NSR permits.
1998	Early 1998	First annual meeting of the Refinery Compliance and Enforcement Workgroup. The workgroup sets up three sub-workgroups to focus on four priority issues: ✓ NSR/PSD ✓ Flaring ✓ LDAR ✓ Benzene Waste The workgroup held monthly conference calls and annual meetings from 1998 through 2000 that emphasized: (1) sharing expertise among the regions, (2) training, (3) developing policy, and (4) encouraging and coordinating focused investigation and enforcement efforts on the priority areas.
	April	Began full-scale implementation of the national strategy, including investigations.
	November	EPA officials made presentations at the National Petrochemical and Refiners Association annual meeting to present enforcement priority areas to refinery industry.
1999	January	OECA issued an *Enforcement Alert* on complying with NSR and PSD.
	February	National meetings of EPA workgroup and senior enforcement managers to review investigation progress.
	October	OECA issued an *Enforcement Alert* on LDAR (fugitive emissions).
	November	EPA officials presented preliminary investigation results to the National Petrochemical and Refiners Association's annual environmental meeting.

Date		Event
2000	February	National meeting of senior enforcement managers to review progress and discuss targeting major companies for national investigations on priority areas.
	Early 2000	BP and Koch Industries separately approach OECA to explore the possibility of voluntary settlements of violations of the Clean Air Act. OECA decided to pursue global settlements with refineries by approaching corporate officials and presenting them with the option to resolve all issues of widespread compliance/enforcement concern to EPA.
	March	OECA held meetings with BP and Koch to kick-off global settlement negotiations.
	May	OECA issued an *Enforcement Alert* that announced EPA's compliance assistance program developed with American Petroleum Institute on slotted guidepoles.
	June	Kick-off meeting held with Motiva, Equilon, and Shell Deer Park.
	July 25	OECA announces "Agreements in Principle" for BP and Koch settlements.
	August	Kick-off meeting held with Marathon Ashland Petroleum.
	October	OECA issued an *Enforcement Alert* on flaring.
	December 22	Koch settlement filed with the court.[1]
2001	January 18	BP settlement filed with the court.
	March 21	Motiva, Equilon, and Shell Deer Park settlements filed with the court (25 percent of industry now under consent decrees; additional 25 percent in similar global settlement negotiations).
	May 11	Marathon Ashland Petroleum settlement filed with the court.
	Mid-2001	Consenters Committee formed by refinery companies that had entered into global consent decrees with EPA.
	December 20	Conoco, Navajo Refining, and Montana Refining settlements each filed with the court (30 percent of industry now under consent decrees; additional 30 percent in similar global settlement negotiations).
2002	January 24	Murphy Oil Settlement filed with the court for one of its refineries. Settlement included elements patterned after the global settlements.
2003	March 11	Lion Oil settlement filed with the court.
	October 1	Coastal Eagle Point Oil Company (CEPOC), CHS Inc. (Cenex), and Ergon Refining settlements filed with the court.
	October 16	Chevron settlement filed with the court (40 percent of industry now under consent decrees; additional 40 percent in similar global settlement negotiations).

[1] A consent decree is filed with the court and then is subject to a 30-day public comment period. After the comments are addressed, the consent decree is entered by the court and becomes effective. The time line includes the date that the consent decrees were filed with the court and open to public comment. It does not include the date the consent decrees were entered into court.

Consent Decree Process Flow Chart



developed by EPA OIG 02/2004

EPA Comments on the Official Draft Report

Apr. 2, 2004

MEMORANDUM

SUBJECT: The Office of Enforcement and Compliance Assurance's Agency Response to the Draft "Evaluation Report: Opportunities Exist to Improve and Replicate EPA's National Petroleum Refinery Compliance Program," dated March 5, 2004

FROM: Phyllis Harris /s/
Acting Assistant Administrator
Office of Enforcement and Compliance Assurance

TO: Jeffrey K. Harris
Director
Program Evaluation, Cross-Media Issues
Office of Inspector General

Introduction

Today, on behalf of the Office of Enforcement and Compliance Assurance's (OECA), and as the designated "Action Official," I am forwarding to you our consolidated "Agency Response" (Response) regarding the Office of Inspector General's (OIG) draft "Evaluation Report: Opportunities Exist to Improve and Replicate EPA's National Petroleum Refinery Compliance Program," dated March 5, 2004 (Evaluation Report). OECA has actively solicited comments from Regions 5, 6, 8, and 9. Accordingly, the attached Response represents the consolidated comments of OECA and those Regions that have provided comments.

In accordance with the instructions provided in your March 5, 2004 memorandum, the Response addresses the factual accuracy of the draft Evaluation Report. Consistent with those instructions, the Response also specifically indicates whether OECA concurs with each of the recommendations proposed by the OIG. Further, to the extent that action has already been initiated or planned to address issues identified in the draft Evaluation Report, the Response specifically identifies those actions that have been initiated or planned. Finally, your March 5, 2004 memorandum expressly states that the "final report will include an assessment of [the] comments" made in the Response. Consequently, I am specifically requesting that this memorandum and the attached Response be attached to, and be made a part of, the final version of the draft Evaluation Report.

It is OECA's view that the final report should remain confidential in its entirety. The draft Evaluation Report and Response are a road map of OECA's internal deliberations regarding how, when, and under what circumstances it will deploy its array of enforcement tools to secure compliance. Because targeting, settlement, and litigation under the Refinery Petroleum Initiative (Initiative) remains extremely active and planning is currently underway for further implementation during the fiscal year 2005 through 2007 time frame, it is our view that disclosure of such deliberative product is not appropriate at this time. Moreover, from a practical perspective, the publication of this report will make it far more difficult for EPA to reach agreement with other refiners. At a minimum, the publication of this draft Evaluation Report will offer potential settlers and their counsel arguments that they can advance in negotiations and, more significantly, litigation that the conduct of the Initiative is inconsistent with the comments made in the draft Evaluation Report and therefore unfair.

The Evaluation Report expresses the views of the OIG only. As summarized in this memorandum and noted in greater detail in the attached Agency response, OIG's Report does not represent the views of OECA regarding the Initiative.

General Comments

It is apparent from the face of the draft Evaluation Report that it is the product of a considerable amount of work and effort. Moreover, as indicated in the attached Response, there are observations, recommendations and lessons learned made in the draft Evaluation Report that will be helpful to EPA as it moves forward in the Initiative and as it develops and implements new initiatives.

However, as outlined below in this memorandum, and with more specificity in the attached Response, it is OECA's view that the draft Evaluation Report has several significant shortcomings. We highlight those shortcomings below:

The draft Evaluation Report contains errors, omissions and misstatements. To assist you in the preparation of the final report we have highlighted those errors, omissions and mis-statements in the attached Response by reference to the page, chapter and sentence in which they appear. In addition, we have provided you with the specific comments that explain the bases for our view that the identified sections of the draft Evaluation Report should be corrected.

The draft Evaluation Report does not place the petroleum refining priority in its proper historical context. The draft Evaluation Report does not reflect an understanding of the many challenges that OECA identified and overcame as it established and sustained priority attention on this industrial sector and its multi-media problems. Rather, the draft Evaluation Report gives the impression that sector-based and multi-media analysis and targeting, environmental baseline and results measurement, and national planning and accountability processes were fully mature in the mid-1990's when the first work on the Initiative commenced. To the contrary, many of these features were in their early or conceptual stages of development when the petroleum refining sector first appeared on OECA's radar screen. The OECA reorganization in 1994 marked a nearly complete overhaul of EPA's compliance and enforcement business model, and to not put this report in that context is a big shortcoming.

The draft Evaluation Report is unbalanced and does little to highlight the Initiative's successes. The Petroleum Refinery Initiative is one of the most successful enforcement initiatives ever undertaken by EPA. Since approximately January 2000, the date that EPA began to formally engage petroleum refining companies in global settlement discussions regarding their Clean Air Act noncompliance, EPA has obtained settlements with 11 petroleum refiners representing almost 40% of the nation's domestic refining capacity and covering 42 separate refineries for each of the major four substantive areas related to Clean Air Act compliance. The settlements contain substantial "beyond compliance" requirements, and taken together, represent a breadth and depth of coverage not previously realized in the enforcement program.

The draft Evaluation Report does not demonstrate an appreciation for the complexity of the issues EPA has successfully addressed under the Initiative and its unprecedented scope. Prior to development of the Initiative, EPA had largely approached enforcement on a facility-by-facility, issue-by-issue basis. The Initiative represents a radical departure from this practice. There are few industries as complex as the petroleum refining industry and there are few regulatory programs as complex as the Clean Air Act. Notwithstanding this complexity, under the Initiative, EPA successfully embraced the global consent decree as a mechanism to secure permanent, consistent compliance with the Clean Air Act on a company-wide basis. Yet, the draft Evaluation Report only mentions this in passing. Moreover, the substantive discussion does not appear to recognize or fully appreciate this complexity as a factor in the development of OECA's consent decree implementation strategy.

The draft Evaluation Report fails to account for the evolution of the Initiative. For example, the OIG in the draft Evaluation Report appears to fault OECA for having an "absence of strategic direction" for the petroleum refining priority. The OIG asserts that this is so because some strategy documents do not have dates or a signature. We do not agree that from these facts the OIG can conclude that OECA management did not have an idea of what it wanted to accomplish strategically in this sector. As identified with further specificity in our comments, the Initiative strategy did evolve over time as EPA learned more about the sector based on its experience in the field. EPA learned, for example, that noncompliance in this sector was much more significant and widespread than our original analysis suggested. The documents that OIG should look to determine whether OECA had a strategic direction for this priority include not only the petroleum refining sector strategy, but also the MOA guidance documents, the individual regional MOAs which were agreed upon at the highest management levels in OECA and the regions, and the MOA updates. Similarly, EPA learned, and continues to learn, from its experience as the consent decree implementation phase of the Initiative continues to evolve. Many of those lessons learned have already been incorporated into the consent decree implementation process and have resulted in a significant improvement in responding to consent decree deliverables.

The OIG fails to recognize the severe resource constraints under which the Initiative operates, and the innovative approach EPA employed to overcome these resource constraints. First, the OIG in the draft Evaluation Report criticizes the level of resources committed to the Initiative. However, the OIG fails to consider the total level of resources available to OECA's air enforcement program overall (covering the Refinery Initiative as well as

all other air enforcement activities). Because this is nowhere taken into account, the critique of the resource levels supporting the Initiative is wholly without context. Had the OIG included this in the assessment, the leveraging benefits of the "global consent decree" approach would have become apparent.

Second, as a corollary proposition, and perhaps more importantly, the draft Evaluation Report nowhere acknowledges or considers the level of resources that would have been required to secure company-wide compliance and "beyond compliance" commitments had the innovative "global" settlement approach not been used. A refinery-by-refinery, issue-by-issue approach in which and individual inspection(s) or investigation(s) is conducted at each and every refinery followed by information request(s), notice(s) of violation, negotiations and/or litigation would take many years from the inception of the investigation to a final resolution. The resources that the Agency would have needed to expend under those circumstances to obtain company-wide compliance under the New Source Review, new source performance standards, benzene waste, and leak detection and repair programs would have been beyond our means. By way of illustration, during the fiscal year 2001 and 2002 timeframe, EPA conducted inspections or investigations at 7 facilities for compliance with new source performance standards and leak detection and repair program requirements. On just these two areas, EPA inspectors spent, on average, approximately 366 hours (with a high of 702) at each facility. Had EPA addressed the refinery non-compliance issues in such a piecemeal fashion, using the high end of this range (which is conservative since those investigations covered a narrower set of compliance issues), we estimate that EPA would have expended nearly 15 full-time equivalents or 29,400 hours to inspect each of the 42 refineries now covered by global consent decrees. This level of resources is unavailable to OECA to devote solely to compliance in a single industry, without compromising efforts elsewhere.

Additionally, under the refinery-by-refinery, issue-by-issue approach, the scope of injunctive relief at each separate facility would typically be limited to correcting those violations identified during the inspection or investigation. By leveraging activities at fewer facilities to support a company-wide settlement on a broad range of emissions issues using the global approach, EPA extended its reach and effectiveness far more efficiently than it otherwise would have. Rather than recognize OECA's approach in the Initiative as a creative solution in the face of limited resources that was developed and spearheaded by those charged with accomplishing results, the draft Evaluation Report overlooks this almost completely.

Conclusion

In an era of shrinking resources, it is OECA's view that the OIG unfairly criticizes a creative and innovative approach to extending the reach of OECA's air enforcement program's efforts to address the difficult compliance challenges presented by the petroleum refining industry. The draft Evaluation Report lacks balance, overemphasizing shortcomings and failing to provide a robust discussion of accomplishments. Moreover, the OIG vastly underestimates the complexity of refinery operations and of the controls necessary to reduce emissions, as well as of the resource implications of the evaluation's various recommendations. It also consistently understates (or simply fails to give credit for) the "beyond compliance" aspects of the consent

decrees and of the benefits of a "global" approach to settlement. Finally, the draft Evaluation Report does not display a real understanding of the enforcement program as a whole, nor of how the Initiative fits within that larger context. As a result, and without any basis for comparison, the draft Evaluation Report draws unsupported and unsupportable conclusions regarding the Initiative, the accomplishments achieved to date under the Initiative, and how those accomplishments compare to other enforcement efforts.

Attachments

Responses to Proposed Recommendations

Chapter 3

Recommendations 3-1, "Develop clear overall refinery program goals that allow for future assessment or measurement and include timetables for accomplishment"; 3-2, "Instruct OECA refinery program managers to develop clear goals specifically for the refinery program's implementation phase"; and 3-3, "Ensure that all goals and performance measures are understood and shared by everyone involved in the national petroleum refinery program, including all EPA and State staff involved in some portion of consent decree implementation."

[This comment now refers to Recommendations 2-1, 2-2, and 2-3.]

Concur. As discussed in detail in the preceding comments, OECA believes that the refinery program's goals have been clearly articulated since the national strategy was initiated in 1998, and that as the program evolved they were further reflected in MOAs, etc. in the following years. As a general matter, OECA agrees with these recommendations and will continue to develop and articulate appropriate goals and performance measures.

Following the identification of refineries as an enforcement priority for FY96/97, OECA soon recognized the need for a comprehensive national strategy. It then developed a flexible, integrated strategy (including sub-strategies) to address issues of widespread compliance and enforcement concern at petroleum refineries. The resulting 1998 strategy was developed in close consultation and coordination with the Regions, the Office of Compliance and the Office of Regulatory Enforcement's media-specific enforcement divisions. It has remained largely unchanged since then, with a focus on targeted investigations of "marquee" issues at petroleum refineries and the goal of 50% improved compliance and 20% reduced emissions. The national petroleum strategy and its implementation were regularly discussed at the staff level and periodically reviewed by senior management in meetings, during conference calls and through the MOA process. Periodic progress updates have also been and will continue to be circulated to OECA management and the regions, but the extent to which specific individuals clearly understand the national strategy, including its sub-strategies, goals and objectives, may depend on the level of their direct involvement in these processes and communications.

Recommendation 3-4, "Instruct OECA refinery program managers to use existing EPA, OECA, and outside guidance to develop reliable performance measures to assess their progress toward meeting national program goals. Specifically, managers should fully implement OECA's performance-based approach to program management as described in its December 18, 2002, Recommendations for Improving OECA Planning, Priority Setting and Performance Measurement, which specifies development of plans and reliable performance measures, to the remaining phases of the petroleum refinery program."

[This comment now refers to Recommendation 2-4.]

Concur. OECA has already begun to implement this recommendation (planned for prior to the Evaluation), as priority planning process consistent with existing OECA guidance for FY 2005 has already been initiated.

Recommendation 3-5, "Validate and build upon the refinery program logic model we developed during the evaluation, and consider developing similar program logic models for other OECA programs to develop a clear consensus on program goals and how a program is intended to work."

[This recommendation was eliminated from the final draft.]

Non-concur. OECA does not agree that several of the short-term, intermediate and long-term outcome measures in this logic model are appropriate benchmarks for judging the effectiveness of a compliance and enforcement program. These goals – such as "increased flexibility for refineries to expand or upgrade operations" – are not realistic or likely to be obtained in an adversarial enforcement context. The absence of recommendations for how OECA would benchmark the "before" conditions and measure changes over time for these ultimate outcomes means that there is no basis for OECA to determine whether these measures are feasible. However, OECA does agree that it should use appropriate performance measures and outcomes to measure performance under the Initiative, and intends to do so as part of the FY 2005 priority planning process.

Recommendation 3-6, "Instruct OECA managers to verify emissions reductions predicted in consent decrees on a quarterly basis. Verification might include establishing a detailed monitoring system, which could contribute to refinery program performance measurement."

[This comment now refers to Recommendation 2-6.]

Non-concur. As noted in the detailed comments on this issue, OECA does not believe that this is an appropriate or effective use of resources. Furthermore, the recommendation fundamentally misconceives the timing of reductions under the decrees, which does not happen immediately upon lodging or entry of the decree (as is apparently assumed), with regular reductions on a steady quarterly basis. In part because these facilities are operating under court order, and are required to submit reports and certify regarding their compliance with consent decree requirements (punishable by contempt and/or criminal sanction), there are sufficient indicia of reliability such that quarterly oversight of emissions reductions is not necessary. Significantly, the recommendation does not take into account the resource implications of this level of monitoring – both with respect to those available for the Initiative (failing to recognize that this work would need to be performed and/or reviewed by the same group of national experts responsible for all other aspects of the Initiative), as well as those available to the air enforcement program and OECA as a whole. Even if OECA agreed that this level of monitoring is appropriate, it is not clear how this would be accomplished within the current resource levels and in light of other priority activities. On balance, these resources are better utilized if devoted to addressing compliance issues in other industry sectors. Notwithstanding the foregoing, OECA agrees that it is important to track emissions reductions under the consent decrees, as appropriate given the consent decree milestone dates.

Recommendation 3-7, "Instruct OECA refinery program managers to gather, analyze, and report relevant program data to support overall OECA organizational decision making, and daily program decision making."

[This comment now refers to Recommendation 2-5.]

Concur. As with Recommendations 3-1 through 3-4, OECA agrees with the principle embodied in this recommendation, and will take steps to implement appropriate data gathering and analysis to support program decisionmaking. However, in light of activities identified in response to Recommendations 3-1 through 3-4, this recommendation appears redundant and unnecessary.

Recommendation 4-1, "Instruct its consent decree tracking contractor to resume tracking both company due dates for reports and EPA response due dates so that OECA and outside parties can easily track company and EPA responsiveness."

[This comment now refers to Recommendation 2-7.]

Non-concur. As discussed in the detailed comments above, OECA does not agree that it is necessary to further revise the tracking system at this time; this recommendation has been overtaken by events. During the time that OIG was conducting its investigation, OECA itself identified some deficiencies with its tracking system, and appropriate revisions were made (note that due dates for reports and EPA responses continue to be tracked under each consent decree's Master Inventory). The critical issue is not simply tracking, but responding to those reports requiring an EPA response. Changes have already been made to address this. For example, in January 2004, Matrix and Region 6 tracking systems were compared and verified for accuracy and usefulness, and a single system was selected for implementation nationally, and access provided to all parties responsible for consent decree implementation – including companies. In addition, changes to requirements for company submittals have been made to subsequent consent decrees to better manage the process. Furthermore, substantial progress has been made to reduce the backlog, indicating that the current approach is having the desired result.

Chapter 4

Recommendation 4-2, "Create a comprehensive tracking plan and system that outlines specific responsibilities for OECA staff, EPA Regions, State and local air pollution control agencies, and companies."

[This comment now refers to Recommendation 2-8.]

Non-concur. OECA does not agree that this recommendation is necessary. Sixteen states are parties to global refinery consent decrees and currently receive copies of all consent decree submissions that relate to each refinery within their states. OECA staff, EPA Regions and state/local authorities who are parties to the consent decrees are and continue to be reflected in the consent decree implementation plan. Specific tracking tools (*e.g.*, Master Inventories and Activity Lists) are circulated on a monthly basis to all necessary participants. As discussed

above, EPA has a comprehensive consent decree tracking protocol that is being implemented through our contractor. Subject to claims of privilege and confidentiality, OECA does not object to any interested non-party, including other states and local authorities, requesting tracking information from Matrix at its own expense.

Recommendation 4-3, "Provide additional training at the regional level, and empower regional experts to review and respond to company reports. Allow national technical leads to spot-check responses from regional experts to ensure national consistency."

[This comment now refers to Recommendation 2-9.]

Concur. OECA agrees with this recommendation, and has provided (and will continue to provide) appropriate training as needed.

Recommendation 4-4, "Develop a formal feedback system to ensure that OECA's workforce and managers have a common understanding of implementation responsibilities, a common perspective on the status of implementation, and the ability to expeditiously address implementation issues."

[This comment now refers to Recommendation 2-10.]

Non-concur. As explained in the detailed comments, in light of the small staffing level and their overlapping responsibilities, a formal feedback system is not necessary. Should the number of staff substantially increase in the future, a feedback system may be appropriate at that time.

Recommendation 4-5, "Ensure frequent and open communication between partners (States, regions) and headquarters about responsibilities for executing portions of strategies so that misconceptions or confusion can quickly be eliminated."

[This comment now refers to Recommendation 2-11.]

Concur. OECA will continue to communicate with Initiative partners.

Recommendation 4-6, "As discussed with OECA managers, include consent decree implementation in OECA priorities and strategic plans, allocating staff and resources to implementation until OECA completely implements all consent decrees."

[This comment now refers to Recommendation 2-12.]

Concur. OECA agrees with the principles underlying these recommendations, and efforts have already begun for FY05 implementation on these matters. OECA will continue to allocate adequate resources to the Initiative whether it is identified as a national priority or part of the core program.

Recommendation 4-7, "Develop a plan for allocating negotiation and implementation resources. Use resource planning in new initiatives to determine the predicted workload associated with the initiative; allocate training, education, and development resources; and provide for office-wide reevaluation of the resource plan."

[This comment now refers to Recommendation 2-13.]

Concur. This recommendation has been overtaken by events (priority planning for FY05), and implementation and other resources will be allocated in concert with other OECA priorities and core programs requirements. Office-wide (and Region-wide) reevaluations are considered as part of regular planning processes.

Chapter 5

Recommendation 5-1, "Disseminate the lessons learned from the refinery program to OECA staff to benefit other compliance efforts, obtain additional feedback from stakeholders – including States, industry, and environmental groups – on other lessons learned, and update OECA's "Framework for a Problem-Based Approach to Integrated Strategies" for on-going and future industry-specific enforcement programs."

Concur in part, non-concur in part. OECA does not agree that revisions to the recently-issued *Framework for Problem-Based Approach to Integrated Strategies* (November 2002) *("Framework")* are needed to reflect lessons learned from the Initiative. Rather, the lessons learned from EPA's Refinery Initiative have informed and continue to inform the Agency's evolving problem-based approach to solving environmental compliance problems. For example, OECA is currently engaged with the Regions in developing performance-based strategies for each of the national priorities selected for FY05-07. As part of that effort, EPA is reviewing and refining, where appropriate, the goals and the strategies for the refinery initiative. In developing these performance-based strategies, OECA and the Regions will be guided by the recently-issued guidance, *Template for Developing a Performance-Based Strategy for National Compliance and Enforcement Priorities* (Final Draft February 18, 2004) as well as the *Framework*. As EPA gains more experience in the development and implementation of such strategies, we will refine guidance on the use of such strategies where needed.

Recommendation 5-2, "Designate a senior OECA executive to assume the role of champion for the refinery program to ensure (a) that all refiners enter into consent decrees or face appropriate alternative enforcement actions, and (b) consent decrees are effectively implemented."

Concur in part, non-concur in part. As noted above in the comments on the "Conclusion" section, OECA does not agree that there is no "champion" for the Initiative. However, OECA agrees with the need for national enforcement priorities to be managed by a senior enforcement official (*e.g.*, Division Directors or their Associates), working on a team with other senior managers from EPA headquarters, regions and DOJ. Since 2002, the senior enforcement official responsible for managing the refinery initiative has and continues to be the Associate Director of ORE's Air Enforcement Division, who is now serving as the Acting Director of the Air Enforcement Division. OECA agrees that the Air Enforcement Division Director is responsible

for ensuring that (a) refineries enter into consent decrees or face appropriate enforcement action, and (b) consent decrees are effectively implemented. OECA does not agree that it is necessary for EPA to settle with or litigate against **all** refiners in the industry under the Initiative. The goal of the Initiative is and has been to increase compliance by 50% and decrease emissions from refineries by 20%. The "100%" goal suggested by OIG miscomprehends the purpose of a "priority." Even after this is no longer a priority, further work in this area would be undertaken through the "core" program guidance, including the potential for multi-regional priorities, as well as the potential for State efforts. OECA's work in an area is not just be driven by a coverage number, but by whether there continues to be an appropriate federal role. OECA designates a set of national priority criteria (*i.e.*, significant environmental benefit, pattern of noncompliance, appropriate federal role), and following the return of refineries to the "core" program certain refineries may be better handled by States or as part of a multi-regional priority. OIG's suggestion of "all" refineries lacks the context of taking into account all of our regulatory partners, and that certain types of facilities are best addressed at different levels.

Recommendation 5-3, "Consider designating a senior OECA executive to assume the role of champion for each of the other enforcement priority areas. EPA and industry officials should recognize the champion as knowledgeable and as having the authority to make decisions related to the priority area."

Concur in part, non-concur in part. The determination of whether any particular initiative or priority area requires an OECA-designated "champion," and at what level, will be made on a case-by-case basis as is appropriate in light of all relevant facts and circumstances. For those areas that have been selected as national enforcement priorities for FY 2005, senior OECA and regional management have been named as "champions for the purpose of developing performance-based strategies for each priority area. In addition, the OECA Planning Council, which meets monthly, will regularly assess progress implementing, and results achieved through the priority performance-based strategies. In order to ensure that adequate progress is being made towards achieving priority goals the Planning Council will modify performance-based strategies as needed, and make recommendations to the OECA Assistant Administrator for flexibly deploying resources to address workforce gaps.

Recommendation 5-4, "Develop a communications plan for refinery consent decree implementation. The plan should clearly describe the roles and responsibilities of all stakeholders, including refinery priority area experts and regional and State officials."

Concur. OECA is already in the process of priority planning for FY 2005 (begun prior to the Evaluation), which will result in a revised performance-based strategy for the refinery sector. The performance-based strategy for FY 2005 will outline the path forward in (a) completing the refinery sector as a national priority and (b) ensuring that refineries governed by federal consent decrees comply with the terms and conditions of their consent decrees.

OIG Evaluation of EPA Comments

On April 2, 2004, OECA provided us with a memorandum summarizing its overall comments, including its comments on the recommendations. We included the full text of OECA's summary memorandum as Appendix G. In this Appendix, we highlight and evaluate specific comments from OECA's summary memorandum. We organized this Appendix along the same lines OECA used in its summary memorandum. OECA also provided us with detailed comments as an attachment to its memorandum. We have posted this attachment and our evaluation of OECA's comments on our web site at http://www.epa.gov/oig/publications.htm. We modified the text as we determined appropriate based on OECA's detailed comments.

OECA stated that the report will help to EPA as it continues to implement the refinery program and other initiatives. OECA also stated that the report had several significant shortcomings. OECA stated that the report unfairly criticized a creative and innovative approach to address the difficult compliance challenges presented by the petroleum refining industry.

OECA agreed with 10 of the 18 recommendations in our official draft report, partially agreed with 3, and disagreed with 5. We included a summary of OECA's chapter-specific comments and our evaluation of those comments at the end of each chapter.

We made various changes to the report as we determined appropriate based on OECA's comments. We also eliminated some unnecessary detail, and combined the information previously in draft report Chapters 1 and 2 into a single chapter (now Chapter 1), and Chapters 3 and 4 into a single chapter (now Chapter 2) to clarify our message. We renamed draft report Chapter 5 as Chapter 3. In addition, we eliminated a recommendation concerning the use of a logic model because the logic model is only one of several possible means that OECA may employ to achieve the ends we advocate.

Report Confidentiality

OECA requested that the final report remain confidential in its entirety because the report findings may adversely impact current and future negotiations with the refinery industry. We asked OECA to identify specific enforcement sensitive portions of the report, or portions where the release would damage negotiations; OECA did not do so. We believe the report provides an accurate evaluation of the refinery program at a point in time and makes recommendations that can improve program implementation and results.

Errors, Omissions, and Misstatements

OECA stated that the draft report contained errors, omissions, and misstatements. Where the Agency clearly identified specific errors, omissions, or misstatements, and where we either already had specific evidence supporting the Agency's suggested changes or where the Agency

provided specific evidence supporting different facts as part of its written comments, we made appropriate changes to the report.

Historical Context

OECA stated that the draft report did not place the petroleum refining priority in its proper historical context, did not reflect an understanding of the many challenges that OECA overcame, and gave the impression that all necessary management systems had fully matured when the program began. OECA also stated that we should mention the 1994 OECA reorganization, which marked a nearly complete overhaul of EPA's compliance and enforcement business model.

We believe the report places the petroleum refining priority in its proper historical context given our evaluation scope and objectives. We understand the challenges that OECA overcame and believe the report reflects that fact. For example, in Chapter 1 of the report, we describe how EPA shifted from routine Clean Air Act inspections to more targeted, resource-intensive investigations that focused on carefully assessing emissions released as a result of refinery processes. We also believe that OECA could have done a better job planning and implementing the program whether or not its various management processes had fully matured in 1996 when the refinery program began. Further, we did not state in the report that any of these processes had fully matured, although we believe they should have matured sooner than they did.

Balance

OECA stated the draft report was unbalanced and did little to highlight the program's successes. OECA stated that the settlements with refiners contain substantial "beyond compliance" requirements and, taken together, represent a breadth and depth of coverage not previously realized in the enforcement program.

We believe the report is well balanced and adequately highlights the program's success. For example, we recognize in Chapter 1 that EPA obtained settlements with 11 petroleum refiners representing 39 percent of the nation's domestic refining capacity and covering 42 separate refineries and the settlements address each of the four priority areas under the refinery program. Chapter 1 also recognizes that the settlements contain "beyond compliance" requirements and describes OECA's compliance assistance and incentives developed as part of the refinery program. In Chapter 3, we describe the lessons learned from the refinery program, such as focusing on specific enforcement concerns, pulling together EPA staff with knowledge about the industry, using in-house experts, focusing on the end result, and encouraging and requiring the development of new emissions control technologies.

Complexity of the Issues

OECA stated that the draft report did not demonstrate an appreciation for the complexity of the issues EPA successfully addressed and the refinery program's unprecedented scope.

We believe the report demonstrates a keen appreciation for the complexity of the issues EPA addressed. Without becoming too technical, the report provides sufficient and succinct background on the complexity of the industry and the compliance issues addressed under the refinery program and in the global consent decrees. For example, Chapter 1 references Appendix C that illustrates the complexity of the petroleum refining process, explains why OECA used EPA national experts in investigating compliance, and summarizes the four priority areas addressed under the refinery program and the consent decree requirements for each priority area. Readers should not interpret our succinct descriptions of the four priority areas to mean that we did not appreciate or understand their complexities. In addition, in Chapter 3, we describe how refinery program staff applied technical expertise to gain knowledge of the industry and compliance issues, and to obtain credibility with the industry on its technical aspects. We cannot comment on the "unprecedented" scope of the refinery program because we did not compare it to all other enforcement programs conducted by EPA.

Program Evolution

OECA stated that the draft report did not account for the program's evolution. Our official draft report referred to an "absence of strategic direction" for the refinery program and OECA stated that, "We do not agree that from these facts that OIG can conclude that OECA management did not have an idea of what it wanted to accomplish strategically in this sector." OECA stated that the strategy evolved over time as EPA learned more about the sector based on its experience in the field. As evidence of its strategic direction, OECA suggested that we look at Memorandum of Agreement guidance documents, the individual regional Memorandum of Agreements agreed upon at the highest management levels in OECA and the regions, and Memorandum of Agreement updates. Similarly, OECA stated that EPA learned, and continues to learn, from its experience as the consent decree implementation phase continues to evolve. OECA stated that it has already incorporated many lessons learned into the consent decree implementation process, resulting in significant improvement in responding to consent decree deliverables.

We believe the report appropriately communicates that the strategy evolved over time as EPA learned more about the refinery sector. The report recognizes that OECA learned from implementation experiences and took steps to address its challenges. Chapter 1 clearly describes the evolution of the refinery program from inspections to investigations, through global settlements and consent decree implementation.

Although we do not believe the report conveyed that OECA "did not have an idea of what it wanted to accomplish strategically in this sector," we believe EPA could have done a better job of communicating and documenting its goals and strategy. We discuss these issues in greater detail in Chapter 2.

To determine whether OECA had a strategic direction for this priority, we looked at not only the petroleum refining sector strategy documents, but also the Memorandum of Agreement guidance documents and updates OECA referred to in its comments. As we describe in Chapter 2, some OECA officials told us the information in the Memorandum of Agreement documents was not entirely accurate or they were not familiar with the information. Based upon meetings with

senior OECA officials, we concluded that not all managers and staff used or even considered the Memorandum of Agreement documents for planning and managing the refinery program.

Resource Constraints

OECA stated that we did not recognize the severe resource constraints under which the refinery program operates and the innovative approach EPA employed to overcome these constraints. OECA stated that we did not consider the total level of resources available to OECA's air enforcement program and, had we done so, we would have realized that OECA leveraged benefits through its "global consent decree" approach. OECA stated that by leveraging activities at fewer facilities to support company-wide settlements on a broad range of emission issues, EPA extended its reach and effectiveness far more efficiently than it otherwise would have. OECA stated it applied a creative solution in the face of limited resources.

We fully recognize the resource constraints under which this and all EPA programs operate, and we believe the report accurately describes the approach EPA employed to overcome resource constraints. We did not evaluate the amount of resources EPA chose to devote to the refinery program compared to the total amount of resources OECA made available to its overall air enforcement program or to other OECA programs. While we originally planned to conduct evaluations of OECA's entire suite of enforcement priorities, OECA persuaded us to first pilot our approach in a single priority area. In consultation with OECA, we chose the refinery sector for our pilot. We also consulted numerous times with senior OECA officials over several months at the beginning of this evaluation in determining the evaluation's scope and objectives. Throughout our extensive consultations, OECA staff never suggested that we include among our objectives a comparison of resources devoted to various other enforcement programs such as OECA suggested in its comments.

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EPA's Detailed Comments on Official Draft Refinery Compliance Program Evaluation Report and Office of Inspector General Response

On April 2, 2004, EPA's Office of Enforcement and Compliance Assurance (OECA) provided our office – the Office of Inspector General (OIG) – with a memorandum summarizing its overall comments, including its comments on the recommendations, to our official draft report on EPA's National Petroleum Refinery Compliance Program, dated March 5, 2004. We include the full text of OECA's summary memorandum as Appendix G in our final report, *EPA Needs to Improve Tracking of National Petroleum Refinery Compliance Program Progress and Impacts*, Report No. 2004-P-00021, June 22, 2004. In Appendix H of that report, we provide our summary response.

OECA also provided us detailed comments as an attachment to its summary memorandum. We have included in this document OECA's detailed comments and our response to selected comments. OECA's comments are in black while our responses are in blue. We only responded to comments not specifically addressed in our evaluation of OECA's summary memorandum, or where we determined we needed to provide more details regarding our position on a particular issue. In this document, we do not include our response to OECA's comments on the report recommendations; we include our evaluation of those comments at the end of each chapter of the final report.

We made various changes to the official draft report as we determined appropriate based on OECA's comments. We also eliminated some unnecessary detail, and combined the information previously in draft report Chapters 1 and 2 into a single chapter (now Chapter 1), and Chapters 3 and 4 into a single chapter (now Chapter 2) to clarify our message. Chapter 5 became Chapter 3. As a result of reorganizing the report, the page identifiers used in OECA's April 2, 2004, comments to the draft report will not match the page numbers in the final report.

OECA Summary Memorandum Comments and OIG Evaluation

OECA stated that the report will help EPA as it continues to implement the national refinery program and other initiatives. OECA also stated that the report had several significant shortcomings. OECA stated that the report unfairly criticized a creative and innovative approach to address the difficult compliance challenges presented by the petroleum refining industry.

Report Confidentiality

OECA requested that the final report remain confidential in its entirety because the report findings may adversely impact current and future negotiations with the refinery industry. We asked OECA to identify specific enforcement-sensitive portions of the report, or portions where the release would damage negotiations; OECA did not do so. We believe the report provides an

accurate evaluation of the national refinery program at a point in time and makes recommendations that can improve program implementation and results.

Errors, Omissions, and Misstatements

OECA stated that the draft report contained errors, omissions, and misstatements. Where the Agency clearly identified specific errors, omissions, or misstatements, and where we either already had specific evidence supporting the Agency's suggested changes or where the Agency provided specific evidence supporting different facts as part of its written comments, we made appropriate changes to the report.

Historical Context

OECA stated the draft report did not place the petroleum refining priority in its proper historical context, did not reflect an understanding of the many challenges that OECA overcame, and gave the impression that all necessary management systems had fully matured when the program began. OECA also stated that we should mention the 1994 OECA reorganization, which marked a nearly complete overhaul of EPA's compliance and enforcement business model.

We believe the report places the petroleum refining priority in its proper historical context given our evaluation scope and objectives. We understand the challenges that OECA overcame and believe the report reflects that fact. For example, in Chapter 1, we describe how EPA shifted from routine Clean Air Act inspections to more targeted, resource-intensive investigations that focused on carefully assessing emissions released. We also believe that OECA could have done a better job planning and implementing the program, whether or not its various management processes had fully matured in 1996 when the national refinery program began. Further, we did not state in the report that any of these management processes had fully matured, although we believe they should have matured sooner than they did.

Balance

OECA stated the draft report was unbalanced and did little to highlight the program's successes. OECA stated that the settlements with refiners contain substantial "beyond compliance" requirements and, taken together, represent a breadth and depth of coverage not previously realized in the enforcement program.

We believe the report is well balanced and adequately highlights the program's success. For example, we recognize in Chapter 1 that EPA obtained settlements with 11 petroleum refiners representing 39 percent of the nation's domestic refining capacity and covering 42 separate refineries. In addition, these settlements address each of the four priority areas under the national refinery program. Chapter 1 also recognizes that the settlements contain "beyond compliance" requirements and describes OECA's compliance assistance and incentives developed as part of the national refinery program. In Chapter 3, we describe the lessons learned from the refinery program, such as focusing on specific enforcement concerns, pulling together EPA staff with knowledge about the industry, using in-house experts, focusing on the end result, and encouraging and requiring the development of new emissions control technologies.

Complexity of the Issues

OECA stated that the draft report did not demonstrate an appreciation for the complexity of the issues EPA successfully addressed and the national refinery program's unprecedented scope.

We believe the report demonstrates a keen appreciation for the complexity of issues EPA addressed. Without becoming too technical, the report provides sufficient and succinct background on the complexity of the industry and the compliance issues addressed under the refinery program and in the global consent decrees. For example, Chapter 1 references Appendix C that illustrates the complexity of the petroleum refining process, explains why OECA used EPA national experts in investigating compliance, and summarizes the four priority areas addressed under the refinery program and the consent decree requirements for each priority area. Readers should not interpret our succinct descriptions of the four priority areas to mean that we did not appreciate or understand their complexities. In addition, in Chapter 3, we describe how refinery program staff applied technical expertise to gain knowledge of the industry and compliance issues, and to obtain credibility with the industry on its technical aspects. We cannot comment on the "unprecedented" scope of the refinery program because we did not compare it to all other enforcement programs conducted by EPA.

Program Evolution

OECA stated that the draft report did not account for the program's evolution. Our official draft report referred to an "absence of strategic direction" for the refinery program, and OECA stated that, "We do not agree that from these facts that OIG can conclude that OECA management did not have an idea of what it wanted to accomplish strategically in this sector." OECA stated that the strategy evolved over time as EPA learned more about the sector based on its experience in the field. As evidence of its strategic direction, OECA suggested that we look at Memorandum of Agreement guidance documents, the individual regional Memorandum of Agreements agreed upon at the highest management levels in OECA and the regions, and Memorandum of Agreement updates. Similarly, OECA stated that EPA learned, and continues to learn, from its experience as the consent decree implementation phase continues to evolve. OECA stated that it has already incorporated many lessons learned into the consent decree implementation process, resulting in significant improvement in responding to consent decree deliverables.

We believe the report appropriately communicates that the strategy evolved over time as EPA learned more about the refinery sector. The report recognizes that OECA learned from implementation experiences and took steps to address its challenges. Chapter 1 clearly describes the evolution of the refinery program from inspections to investigations, through global settlements and consent decree implementation.

Although we do not believe the report conveyed that OECA "did not have an idea of what it wanted to accomplish strategically in this sector," we believe EPA could have done a better job of communicating and documenting its goals and strategy. We discuss these issues in greater detail in Chapter 2.

To determine whether OECA had a strategic direction for this priority, we looked at not only the petroleum refining sector strategy documents, but also the Memorandum of Agreement guidance documents and updates OECA referred to in its comments. As we describe in Chapter 2, some OECA officials told us the information in the Memorandum of Agreement documents was not entirely accurate or they were not familiar with the information. Based upon meetings with senior OECA officials, we concluded that not all managers and staff used or even considered the Memorandum of Agreement documents for planning and managing the refinery program.

Resource Constraints

OECA stated that we did not recognize the severe resource constraints under which the refinery program operates and the innovative approach EPA employed to overcome these constraints. OECA stated that we did not consider the total level of resources available to OECA's air enforcement program and, had we done so, we would have realized that OECA leveraged benefits through its "global consent decree" approach. OECA stated that by leveraging activities at fewer facilities to support company-wide settlements on a broad range of emission issues, EPA extended its reach and effectiveness far more efficiently than it otherwise would have. OECA stated it applied a creative solution in the face of limited resources.

We fully recognize the resource constraints under which this and all EPA programs operate, and we believe the report accurately describes the approach EPA employed to overcome resource constraints. We did not evaluate the amount of resources EPA chose to devote to the refinery program compared to the total amount of resources OECA made available to its overall air enforcement program or to other OECA programs. While we originally planned to conduct evaluations of OECA's entire suite of enforcement priorities, OECA persuaded us to first pilot our approach in a single priority area. In consultation with OECA, we chose the refinery sector for our pilot. We also consulted numerous times with senior OECA officials over several months at the beginning of this evaluation in determining the evaluation's scope and objectives. Throughout our extensive consultations, OECA staff never suggested that we include among our objectives a comparison of resources devoted to various other enforcement programs, as OECA suggested in its comments.

OECA Detailed Comments and OIG Response

Executive Summary

Page i, Introduction:

The statement in the first sentence of the Evaluation Report (Evaluation) that "the petroleum refinery industry . . . ranked number one for noncompliance among hundreds of industries" is inaccurate. The correct statement is that the refinery sector ranked first among "the 29 industry sectors tracked by EPA in 1996 (*i.e.*, inspection-to-enforcement ratio)."

OIG Response: We modified the text as we determined appropriate.

Page i, Question 1:

The phrase "toxic air pollutants are known to cause cancer" is an overstatement and inaccurate. This should be revised to correctly state: "Toxic air pollutants include pollutants that are known or suspected to cause cancer or other serious human health effects."

OIG Response: We modified the text as we determined appropriate.

Page i, Question 2:

The statement, "OECA's early planning documents indicate an absence of strategic direction [because] three of the four documents OECA provided describing its strategy were undated, unsigned, and without any evidence they were formally approved" is, as noted below (and in more detail in the specific responses on each chapter), simply incorrect. A fundamental error of the Evaluation is its failure to understand the larger MOA/priority planning process used by OECA and Regions (and States), and how the Initiative fit within that larger context. In addition, OIG has established no causal connection between an undated document and a "lack" of strategic direction. This sentence should therefore be deleted and replaced with the following:

> "OECA's first planning document lacked strategic direction for identified national priorities, including petroleum refineries (MOA Guidance for FY96/97). Its second planning document corrected this deficiency and called for the development of a national petroleum refinery strategy in close coordination and consultation with affected EPA Regions (*see, e.g.*, MOA Guidance for FY98/99). The resulting Petroleum Refining Sector Strategy was approved by the Director of OECA's Office of Regulatory Enforcement, distributed to and discussed with senior OECA and Regional management at a Washington meeting to review each national strategy that had been developed."

The fourth sentence, which states "Nonetheless, an integrated strategy emerged that included compliance assistance, inspections, enforcement, and compliance incentives that addressed the most important or priority noncompliance problems" inaccurately infers that the development of an integrated strategy for the petroleum refining sector was accidental or

unplanned for. The development of an integrated strategy was deliberate and planned. For accuracy, this sentence should be deleted and replaced with the following:

> "This integrated strategy developed for the refinery sector included compliance assistance, inspections, enforcement, and compliance incentives that addressed the most important or priority noncompliance problems."

The final sentence, "OECA considers the program highly successful because, as of March 2004, OECA projected the program would result in annual reductions of about 44,000 tons of NO_x, 95,000 tons of SO_2, and significant amounts of other pollutants," is problematic and/or erroneous for a number of reasons. First is its use of the past tense, which is a problem repeated throughout the Report. This tends to suggest that the Initiative is completed (it is not), and that the listed emission reductions have already been achieved by facilities currently subject to consent decrees (implementation is at an early stage and is ongoing). Additionally, it confuses matters that have already been done with those that are still to be done under the Initiative, thereby inaccurately conveying the status of the Initiative and limiting the usefulness of the OIG's Evaluation. This sentence should be replaced with the following:

> "The National Petroleum Initiative is highly successful because, as of March 2004, and based on the companies' estimates of emissions reductions they will achieve under the terms of the settlements, OECA projects that the program will result in annual reductions of about 44,000 tons of NO_x, 95,000 tons of SO_2, and significant amounts of other pollutants."

Additionally, OIG's summary lacks historical perspective. OECA recommends that the following be added:

> "To date, the National Petroleum Refinery Initiative is one of the most successful enforcement initiatives undertaken by EPA. Since approximately January 2000, the date that EPA began to formally engage petroleum refining companies regarding their Clean Air Act non-compliance, EPA has obtained settlements with 11 petroleum refiners representing almost 40% of the nation's domestic refining capacity and covering 42 separate refineries for each of the major four substantive areas related to Clean Air Act compliance. As of this date, OECA reports that it is engaged in similar settlement discussions with refiners representing an additional 40% of the domestic refining industry."

OIG Response: We deleted reference to "an absence of strategic direction." We also deleted the entire discussion on OECA's undated, unsigned, and not formally approved strategy documents. We believe OECA's documentation problems demonstrate how OECA's performance measurement and reporting approach for the national refinery program has not provided useful and reliable information necessary to effectively implement, manage, evaluate, and continuously improve program implementation and results. Specifically, OECA has not established clear program goals, performance measures, or a reporting system to track progress. OECA's lack of undated, unsigned, and not formally approved documents further support our conclusion that OECA lacked reliable and useful information to manage the national refinery program. We discussed with EPA officials at the exit conference how documentation that is not signed, dated,

or approved by senior officials may not be effectively used as a management tool. We decided Chapter 2 of the report adequately describes significant management problems and we do not need to include the documentation problem as another example.

We cannot comment on the national refinery program as "one of the most successful enforcement initiatives undertaken by EPA" because we did not compare the program to all other enforcement programs conducted by EPA. Further, OECA did not provide evidence to support the national refinery program as one of its most successful initiatives.

Where appropriate, we modified the past tense in the report and made it clear that the national refinery compliance program operates as an on-going program. In addition, we modified other text as we determined appropriate.

Pages i-ii, Question 3:

The assertion that OECA's measurement and reporting approach for the national program "did not provide useful and reliable information to effectively implement, manage, evaluate, and improve the program" is not borne out by the facts. OECA tracked and reported what it believed was necessary to implement the focused approach for the refinery program. Specific targets were set in the sector strategy and then negotiated with the Regions for their final MOA commitments. The progress of investigations in the areas of focus (LDAR, PSD/NSR, benzene, flaring and sulfur recovery units) was, in fact, tracked on a near-real time basis through monthly conference calls and periodic reports.

The first sentence should therefore be revised to read as follows:

> "OECA's performance measurement and reporting approach for the national petroleum refinery program provided useful and reliable information necessary to effectively implement, manage, evaluate, and improve the program."

In addition, the statements that "OECA did not clearly and precisely define official program goals and measures" and that "performance measurement and reporting systems were ineffective for monitoring or reporting refinery program performance" are likewise unsupported by the facts. OIG has erred in its assessment by inaccurately or inadequately taking the MOA process into account and has failed to comprehend a major portion of the enforcement and compliance program as a result. Under the MOAs, the Regions were required to provide end-of year reports, which were to detail their accomplishments. Where reports were insufficient from a quality standpoint, and where it could be determined that Regions did not meet their negotiated goals, those were addressed in the subsequent MOA cycle. This dynamic is overlooked in the Evaluation. Additionally, the draft Evaluation appears to be overly focused on the specific numbers (such as pollution reduction estimates) in the strategy, but apparently confuses this with the goal to improve compliance for the four major areas that the Evaluation recognizes were developed by OECA working closely with the Regions (*see* page 11).

Accordingly, to state in the response to Question 3 of the Executive Summary that "OECA did not have a consensus on what the program goals were" inaccurately implies that

there was not then and is not now a general agreement as to what these goals are and were, and what problems were the most significant to address.

The balance of this paragraph should be revised to read as follows:

"OECA established a variety of output or activity-related measures, and established an outcome-related measure for projected tons of emissions reduced. Although performance was regularly tracked and reported, existing EPA performance measurement and reporting systems were not used for monitoring or reporting refinery program performance. In fiscal 2004, OECA began moving toward a more performance-based approach for all its activities, including enforcement initiatives. We made various recommendations to OECA related to developing and communicating clear refinery program goals and timetables that allow for future assessment or measurement and made various other recommendations to ensure OECA refinery program managers develop clear goals and gather needed data."

OIG Response: We disagree that we did not base our conclusion regarding OECA's measurement and reporting approach on facts. As described in Chapter 2 of our report, OECA's performance measurement and reporting approach for the national refinery program has not provided useful and reliable information necessary to effectively implement, manage, evaluate, and continuously improve program implementation and results. Specifically, OECA has not established and communicated clear goals, systematically monitored refinery program progress, reported actual outcomes, or tracked progress toward achievement of consent decree goals. Although OECA officials used informal methods to track program progress, OECA would benefit from using more formal mechanisms to measure progress toward consent decree and overall refinery program goals.

We also disagree with OECA that we did not factually support our conclusion that OECA did not clearly and precisely define official program goals and measures. As described in Chapter 2 of our report, EPA did not generally agree on the national refinery program goals, and OECA officials referred to different goals and measures for the refinery program at different times.

We modified the text as we determined appropriate.

Page ii, Question 4:

The second sentence, which states that "[d]uring implementation, tracking problems developed and persisted," incorrectly conveys that the tracking of reports and submissions was the objective. In fact, the objective was responding in a timely manner to those company submittals that required an Agency response. The sentence should be corrected to state as follows: "During implementation, response delays developed and persisted."

There is no evidence to support the statement in the third sentence that actions on the part of refineries that were necessary to reduce emissions were in fact delayed by a late EPA response. Therefore, for accuracy the sentence should be substituted with the following:

"Although these delays caused some delays in beginning sampling or paying stipulated penalties, they did not delay company actions necessary to reduce emissions."

The fourth and fifth sentences, which together state that there was a lack of prior planning and that OECA only recently took steps to address tracking and implementation, are inaccurate. These sentences should be deleted and substituted with the following:

> "OECA developed, in close consultation and coordination with affected Regions, a comprehensive plan for consent decree implementation, provided training opportunities for regional personnel to implement their consent decree responsibilities under that plan, and identified consent decree implementation as a priority resource concern in subsequent MOA Guidance. *See* FY2003 MOA Guidance Update, p. 5 (June 2002); FY 2004/2005 MOA Guidance (June 2003); and FY 2004 MOA Guidance Update, p. 16 (July 2004). OECA has taken numerous steps to address and resolve issues associated with tracking of implementation of consent decrees. This effort has, *inter alia,* manifested itself in the dramatic increase in the number of EPA responses issued in response to company submittals since the beginning of 2003."

OIG Response: We modified the text as we determined appropriate.

Page ii, Question 5:

The "lessons learned" and recommendations identified by OIG following question 5 should be modified to reflect the comments EPA provides by way of response in the remainder of this document. In this respect, the Evaluation should affirmatively acknowledge that the recitation of "lessons learned" by OIG were, in fact, previously identified by OECA independent of the Evaluation (*e.g.*, having a "champion" for work in priority areas, identifying enforcement concerns within an industry, etc.).

OIG Response: We obtained information on the lessons learned described in Chapter 3 of the report from EPA, State, and industry officials, not only OECA officials. While some OECA officials may be aware of the lessons learned, other EPA staff, outside organizations, industry, and the public may not. We believe lessons learned are useful if they are shared among the many stakeholders and acted upon. We believe that if OECA already has awareness of the lessons learned described in the report, it should have a head start in addressing those areas that need improvement.

We modified the text as we determined appropriate.

Preface

The Preface – in particular the first paragraph – suggests that OECA relies solely on a "one size fits all" approach in its strategic planning efforts. OECA does not agree. A cursory review of OECA's MOAs and priority planning materials demonstrates that OECA employs a wide range of approaches to address the diverse compliance issues presented by the numerous and varied environmental enforcement programs administered by OECA.

Significantly, the statement that OECA's prior uses of an integrated strategy to address environmental problems have been "ad hoc" and with "limited measurable results" is taken directly from OECA's *Interim Draft of the Guide to Implementing Integrated Strategies Framework* (June 2003 at p.2). That this is drawn from OECA's own Evaluation of integrated strategies is nowhere attributed or cited in the draft Evaluation. We emphasize this point because the above-referenced statements are taken out of context and used selectively. When viewed in its proper context, OECA's own critique can be understood as part of a series of pilots for developing problem-based integrated strategies during FY03 and FY04. After those pilots are completed, OECA's Office of Compliance plans to re-evaluate and revise the Framework. It is unhelpful for OIG to now use this recently-developed and still evolving Framework to evaluate the adequacy of and process for developing an integrated strategy that was begun well prior to this time (the Initiative's roots trace from 1996); a more useful evaluation would have relied on observations and critiques that OECA had not itself already identified.

OIG Response: We modified the text as we determined appropriate.

Page 1, Question 2:

The parenthetical in this question states that "compliance assistance, compliance incentives, inspections and enforcement actions" are necessarily included in an integrated strategy. However, this is not accurate. The point of a "problem solving" approach and the use of an integrated strategy is not to use *all* of the tools, but to first define the environmental and compliance problem, and then to select which tool or combination of tools is most appropriate to address that problem. As phrased, the question is symptomatic of OIG's erroneous "one size fits all" perception of OECA's enforcement process noted above.

OIG Response: We modified the text as we determined appropriate.

Chapter 1

The discussion in the "Petroleum Refining Process, Products, and Releases" section is both vague and, at times, miscomprehends the Initiative. These errors are detailed in the following comments.

OIG Response: We disagree with OECA that the section is vague and mis-comprehends the national refinery compliance program. The section provides background information on refineries, including their products and releases. It provides the context for understanding the refining process and its related pollutants.

Page 4, 2nd Paragraph:

The fourth sentence of OIG's summary of the refining sector cites refinery emissions of 412,000 tons of "common air pollutants." However, the purpose for citing this data is both unclear and unexplained, and it has no apparent connection for purposes of evaluating the Initiative. The Initiative was plainly directed to reducing nitrogen oxides (NOx), sulfur dioxide (SO^2), particulate matter (principally from fluidized catalytic cracking units and heaters and boilers), fugitive benzene, and fugitive volatile organic compounds. It is not now (nor ever was)

intended to address the entire suite of pollutants (*e.g.*, ethylene) or other "common air pollutants" whose source may be petroleum refineries, as apparently suggested by OIG.

The footnote reference further compounds this mistake by implying that the "refinery program" was directed to reducing emissions of all pollutants identified in the AirData system (as noted above, it was not), that all such pollutant reductions are measurable (*e.g.*, fugitive emissions from multiple flanges, valves, and pipes are, by definition, not directly measurable), and that it would be meaningful to measure such pollutant reductions at this point in the implementation of the consent decrees. With respect to this last point, the statement in the footnote that it is not possible to estimate the extent that the Initiative "has actually reduced" emissions (due to a lack of more current data in the AirData system) likewise indicates a misunderstanding of the Initiative. Because this is written in the past tense, it suggests that the Initiative is largely completed and emissions benefits are already realized. However, during the course of OIG's investigation we pointed out on multiple occasions that many critical parts of consent decree implementation are at their earliest stages, and that many emissions benefits that will accrue under the decrees in the future have yet to be realized. These statements should be corrected to reflect the both the purpose of the Initiative and its ongoing status.

Additionally, the statement in the second to last sentence of this paragraph that "EPA develops regulations and OECA ensures compliance with these regulations alongside other Federal agencies, States, and local authorities," seems to suggest that OECA is not part of EPA. Moreover, it does not at all acknowledge the role of the Regions, nor of the role of the Department of Justice in litigation matters. It should be revised to state that "OAQPS develops regulations, and OECA, together with the Regions and the Department of Justice, ensure compliance."

OIG Response: We modified the text as we determined appropriate.

Page 4, 3rd Paragraph:

The opening sentence of this paragraph states that because of "the complexity of the petroleum refining process . . . OECA used experts in investigating refinery compliance." This sentence repeats some of the problems already noted. First, this section of the report (as well as many other portions) is written in the past tense, implying that OECA's investigatory efforts regarding refinery compliance have ceased. In fact, EPA's investigation of refinery compliance is active and ongoing. Second, the reference to OECA's use of "experts" implies that outside experts were hired to investigate refineries. In fact, EPA (OECA, NEIC and Regions) is fortunate to have a top-notch national team of refinery experts in its employ. One of the remarkable elements of this Initiative, given its breadth, is the marshaling of in-house, cross-regional expertise to investigate refineries. The text should be clear that EPA has used and continues to use considerable in-house expertise (and made consistent with Chapter 2's discussion of EPA's use of in-house experts). This Evaluation should also identify how EPA developed its in-house "experts" – by enforcing PSD/NSR in the Pulp and Paper industry, conducting numerous BWN and LDAR inspections, taking enforcement actions on NSPS compliance at sulfur recovery plants and against flaring, all at a time when those activities were not encouraged. The draft Evaluation tends to understate (or undervalue) the depth of knowledge and range of experience required to become expert in this field.

Note that these vague and overbroad characterizations also illustrate some of the internal inconsistencies in the report. While the discussion in this section implies that the Initiative was directed at all pollutants from refineries, the discussion in Chapter 2 notes the focus on certain priority areas for enforcement. Similarly, while Chapter 2 elsewhere notes in passing that work to implement changes at refineries required under the decrees is at an early stage, the basic misunderstanding that Initiative is largely completed and emissions reductions have already been realized is repeated in later chapters. These will need to be made consistent.

The second column (SO_2) of the last row on "Environmental Effects" should be checked – SO_2, in the form of acid rain, "travels and settles on ground and water, causing acidic streams and lakes, " etc.

OIG Response: We modified the text as we determined appropriate. We disagree that the draft report Chapter 1 had vague and broad characterizations. The information presented in the chapter provides background on the various types of pollutants refineries generally emit and did not imply that the "refinery program was directed to reducing emissions of all pollutants." The report also describes the specific pollutants the national refinery compliance program addressed.

Chapter 2

Page 7, 1st Paragraph:

The reference in the third sentence, concerning OECA's use of "undated" planning documents as "indicat[ing] an absence of strategic direction," is misleading. It should be revised as follows, to more accurately reflect both the process and the outcome:

> "While OECA's decision to implement a succession of tools and strategies evolved and was shared with the Regions, some of the early planning documents memorializing the use of the tools and the implementation of those strategies did not bear the imprimatur of formal approval, there is no evidence suggesting otherwise. To the extent that OECA's early planning documents did not indicate a strategic direction, this deficiency was corrected with the development of the Petroleum Refining Sector Strategy in 1998, reflecting an integrated approach (*e.g.*, compliance assistance, focused investigations, enforcement and (later) compliance incentives) to address the most important or priority noncompliance problems under the Clean Air Act."

In any event, it is largely irrelevant whether the documents cited in the draft Evaluation were signed or dated because, as explicitly acknowledged by OIG, an integrated strategy was, in fact, developed for the Initiative. In addition, the following should be added as a footnote to the third sentence:

> "This strategy was reflected in four documents: Petroleum Refining Sector Strategy (undated but issued simultaneously with its identified component sub-strategies) and Petroleum Refining Sector Strategy Components (April 6, 1998); revised metrics for Petroleum Refining Sector Strategy Components (undated but issued in mid-to-late 1998 as part of the NPMS pilot); and Petroleum Refining Sector 2000/2001 Strategy: executive

summary, components and outputs/outcomes (undated but issued in mid-to-late 1999 as part of the FY2000/2001 MOA process). Although we have no reason to believe otherwise, OECA was unable to provide documentary evidence as to when these documents were approved."

These revisions more accurately reflects what actually occurred, and is more consistent with the second and fourth sentences of this paragraph, as well as with the "Conclusion" section of Chapter 2.

The fifth sentence, "OECA considers the program highly successful because, as of March 2004, OECA projected the program would result in annual reductions of about 44,000 tons of NOx, 95,000 tons of SO_2, and significant amounts of other pollutants," is written in the past tense and implies that the Initiative is completed and emissions reductions already achieved; as such it does not accurately reflect the current status. It should be revised as follows:

"The National Petroleum Initiative is highly successful because, as of March 2004, and based on the companies' estimates of emissions reductions they will achieve under the terms of the settlements, OECA projects the program will result in annual reductions of about 44,000 tons of NOx, 95,000 tons of SO_2, and significant amounts of other pollutants."

For the same reason, footnote 3 should be revised to state that OECA *expects* (not "expected") that projected refinery emissions reductions will increase as the percentage of refineries covered by consent decrees *increases* (not "increase").

OIG Response: We modified the text as we determined appropriate. As stated previously, in the final report we deleted the entire discussion on OECA's undated, unsigned, and unapproved strategy documents because it served as just one example of the problems we found with OECA's measurement and reporting approach. We discussed with OECA officials at the exit conference the importance of having dated, signed, and formally approved documentation in order to use these documents as management tools. Chapter 2 adequately discusses the management and reporting problems without the additional example of inadequate documentation.

Page 7, 1st Paragraph under "Evolution of Refinery Program":

The misleading reference to the use of "undated" planning documents (noted above) is repeated in the fourth sentence, and for accuracy and consistency should be revised in accordance with the above comment.

The sixth sentence, "In addition, as the program evolved and OECA and regional staff developed and implemented a variety of tools and strategies (that later included compliance incentives), OECA did not update or modify its written strategy documents," should clarify the fact that the written strategy documents were not updated or modified "after issuance of the Petroleum Refining Sector 2000/2001 Strategy in late 1999." It is apparent from this statement that OIG has not accounted for the role of the MOA in OECA's priority planning.

The seventh sentence, which states "In retrospect, it was easy to see that an integrated program evolved despite the lack of updated and modified planning documents," is incorrect and should be deleted. In early 2000, OECA was heavily engaged in implementing the integrated strategy. It would be factually wrong to suggest that the 1998 or 2000 strategies were not integrated. Moreover, the development of an integrated strategy was not accidental, as inferred by the last two sentences of this paragraph, but was reflected in the inclusion of the global strategy component in OECA's post-2000 priority planning documents – *see* MOA Guidance for FY2002/2003 (June 2001), FY2003 (June 2002), FY 2004/2005 (June 2003) and FY 2004 (July 2004).

In addition, the following should be added to the end of this paragraph:

> "The National Petroleum Refinery Initiative is one of the most successful enforcement initiatives undertaken by EPA. Since approximately January 2000, the date that EPA began to formally engage petroleum refining companies regarding their Clean Air Act non-compliance, EPA has obtained settlements with 11 petroleum refiners representing almost 40% of the nation's domestic refining capacity and covering 42 separate refineries for each of the major four substantive areas related to Clean Air Act compliance. The settlements contain substantial "beyond compliance" requirements, and altogether represents a breadth and depth of coverage not previously realized in the enforcement program."

OIG Response: We disagree that we did not account for the role of the Memorandum of Agreement in OECA's priority planning. We reviewed the Memorandum of Agreement as well as other strategy documents. We discussed with OECA officials the priority planning process and the information in the Memorandum of Agreement documents. While OECA has stated that the Memorandum of Agreement was used to help plan activities, our evaluation found that OECA officials did not use the Memorandum of Agreement documents to manage the refinery program, were not familiar with the information in the documents, or believed the information was not entirely accurate.

We disagree with OECA's suggested revised paragraph. As stated previously, we cannot comment on whether the national refinery compliance program serves as "one of the most successful enforcement initiatives undertaken by EPA," since we did not compare the program to all other enforcement programs conducted by EPA.

We modified the text as we determined appropriate.

Pages 7-8, under "Evolution of Refinery Program":

The basic argument in this discussion seems to be that because many documents do not have dates, there is an absence of strategic direction. If this is intended to suggest that there was no documented management approval of the overall strategy, the draft Evaluation is incorrect, as those exist and were provided as part of the Evaluation; OECA did not, however, document each iteration of the evolving strategy. If the discussion in this section of the report is intended to infer that OECA did not have an idea of what was to be accomplished strategically, the fact of the strategy itself is evidence of the strategic direction for the refinery program. It is important

to understand (and apparently overlooked by the Evaluation) that the strategy evolved over time, from OECA's initial hypothesis to what was learned with field experience, which then informed refinements over time of what the Initiative could and should accomplish. There is little to no recognition of or credit given in the Evaluation to OECA's flexibility in incorporating "lessons learned" as the strategy evolved; to have done otherwise (*i.e.*, to establish a rigid strategy and set of goals at the outset, and then fail to adjust those based on field experience) would have been grossly inappropriate and discourage innovation. The MOAs reflect that experience and basically serve as updates to the strategy. MOAs were agreed upon at the highest levels in OECA. The four documents cited in the Evaluation reflect various stages and show revisions over time as a result of field experience. However, the strategy cannot be looked at separately but must be looked at in conjunction with the MOAs and MOA updates. While the Evaluation recognizes the MOA process, it fails to make the connection between the MOA and sector strategy processes.

OIG Response: As stated previously, we have deleted the discussion on undated documentation from the final report. However, as discussed previously, our evaluation found that some senior OECA officials lacked familiarity with the information in the Memorandum of Agreement documents and others believed the documents contained inaccurate information. The various OECA officials responsible for managing and implementing the refinery program did not clearly connect the Memorandum of Agreement and sector strategy processes. In Chapter 2, we mention the problems with the Memorandum of Agreement documentation as part of OECA not effectively managing the refinery program.

Page 8, 1st Paragraph under "Phase I":

The last sentence states that "[i]n 1996, when compared to 496 other industries, OECA ranked refineries number one for releases of VOCs, ..." This should be revised to reflect that OECA's actual analysis was not done on an industry-by-industry basis, as inferred by this statement, but on a sector-by-sector (3-digit SIC code) basis. It is correct to state that the refinery sector ranked first among the 29 industry sectors ranked by EPA in1996 (*see* comment Page i, Introduction).

OIG Response: We modified the text as we determined appropriate.

Table 2.1 and accompanying text (pages 8-10):

Table 2.1 and the accompanying text describe the Initiative as comprised of "four distinct Phases." This is incorrect and should be revised. These phases are not, and have never been, distinct. Refineries continue to be a national priority and compliance assistance continues, while EPA's enforcement staff negotiates global settlements, prepares matters for litigation, and implements the entered consent decrees. What are identified as the second through fourth phases are steps taken to implement the priority. Furthermore, the refinery work is still ongoing, with continuing investigations, efforts to pursue global settlements or litigation with additional companies (as appropriate), and consent decree implementation. As drafted, this section suggests that earlier "phases" have been completed. That this work is still ongoing needs to be acknowledged in the report. More remarkably, it is from the same narrow but expert pool of

personnel that EPA draws upon to perform the work associated with each of these overlapping phases.

As previously described to OIG representatives during the Evaluation, it is more accurate to describe the national strategy as being comprised of four overlapping phases: a focus on compliance assistance; a focus on investigations; a focus on global settlements; and a focus on results and implementation. The compliance assistance phase involves considerable work, and its importance cannot be overstated. It ensured national consistency on new source performance standards (NSPS) applicability issues, included the issuance of, *e.g.*, *Enforcement Alerts*, *Federal Register* notices and the Storage Tank Emission Reduction Partnership Program (developed in cooperation with the American Petroleum Institute), and established the detailed approaches and legal theories that were later pursued in the investigations.

The investigative phase, or what OIG characterizes as Phase II, was ongoing simultaneously with the compliance assistance phase. At that time, investigations by the Regions were producing enforcement results and identifying common refinery problems. These investigations were also creating, within the industry, an understanding that there was willingness by EPA to pursue violations of the Clean Air Act. Consequently, this phase of the Initiative began with "on the ground" inspectors sharing knowledge and identifying common problems; their results and expertise were then brought to management attention. The draft Evaluation misreads this evolution by mischaracterizing the Initiative as having been created solely "top down," whereas the Initiative was in fact also a "bottom up" effort.

OIG Response: We modified the text as we determined appropriate, including clarifying that activities under one phase overlapped with activities in other phases.

Page 8, 2nd Paragraph under "Phase I":

It is unclear what is intended by the fourth sentence: "As one of OECA's national priorities, OECA expected regional office support, including the development of strategies to address enforcement priorities." For clarity, it should be revised to state the following: "As one of OECA's national priorities, the Regions were expected to develop their own strategies and approaches to address enforcement priorities."

The fifth sentence, "[i]n late 1997, OECA established a refinery compliance and enforcement workgroup comprised of OECA and regional staff, to serve as a focal point for sharing experiences, tools, and concerns, and to help develop strategies," is inaccurate, misplaced and (as revised below) should appear in either Phase II (Focus on Compliance Assistance) or Phase III (Focused Investigations, between the second and third sentence of that paragraph):

> "In early 1998, OECA established a refinery compliance and enforcement workgroup comprised of OECA and regional staff, to serve as a focal point for sharing experiences, tools, and concerns, and to develop a national petroleum refining sector strategy."

OIG Response: We modified the text as we determined appropriate.

Page 9, last sentence of "Phase I":

The statement that the "designation of refineries as a national priority did not result in increased refinery compliance" reflects a basic misunderstanding of the enforcement and compliance program, as well as of the priority setting process. At the time that this sector was designated as a priority (circa 1995), OECA did not believe that mere designation of refineries as a national priority, in and of itself, would result in increased refinery compliance. The complexity of the noncompliance problems and expense of the solutions required investment of considerable time, energy and resources to define and understand them; it is therefore unrealistic to expect a substantial increase in compliance rates by 1997, as suggested by this discussion. This expectation is also at odds with one of the Evaluation's recommendations (and is one of many internal inconsistencies in the draft Evaluation) that OECA to spend time to "become knowledgeable about the industry and its technical processes" at the outset of an Initiative. (*See* page 41, Lesson Learned #2.)

Moreover, the expectation is that initially, by designating refineries as a national priority and placing closer scrutiny on compliance issues in the sector, the number of facilities detected to be in noncompliance would tend to increase, not decrease. What the Evaluation fails to consider is that it takes time for these facilities to return to compliance (as discussed in more detail elsewhere in these comments). Therefore the last sentence in the Phase I discussion is not meaningful, and should be deleted.

OIG Response: We disagree with OECA's statement that we misunderstand the enforcement and compliance program and the priority planning process. We understand that designating the refinery sector as a priority would not, in and of itself, result in increased refinery compliance. We clarified the statement to better explain why EPA moved from Phase 1 (designation as a national priority) to Phase 2 (using investigations to identify compliance problems).

Page 9, 1st Paragraph under "Phase II":

The first sentence, "[a]lthough EPA identified refineries as a national priority in the Agency's 1996/1997 Memorandum of Agreement Guidance, OECA officials said they did not see significant improvement during 1996 and 1997" poorly conveys OECA's experience. A better and more accurate way to characterize the introductory sentence of this section is that "OECA officials did not see significant improvement *in the approach to addressing compliance issues* in 1996 and 1997."

The second sentence states, "[d]ue to the lack of regional progress, OECA began in 1998 to take a more comprehensive approach." However, as drafted this sentence is inaccurate and unfairly criticizes the Regions for a lack of progress, and infers that there were no gains during this time. In fact, NSPS and new source review (NSR) compliance issues were already proceeding in cases such as Clark (later Premcor) Blue Island, Illinois; Clark, Hartford, Illinois; Murphy Oil, Superior, Wisconsin; and Shell, and Wood River, Illinois, among others. It was in part the experience and insights gained in these efforts that indicated the need for a more comprehensive approach. The sentence should therefore be revised as follows: "Because of the breadth of the refinery sector and the complexity of the technical issues, OECA began in 1998 to take a more comprehensive approach."

OIG Response: We modified the text as we determined appropriate.

Page 9, 2nd Paragraph under "Phase II":

The statement that "the focused investigations only laid the groundwork for the global refinery settlements that would follow" in the last sentence of this paragraph erroneously suggests that there is a direct cause and effect relationship between the investigations and global settlements. While there is certainly an associative relationship, as described below, it is not as direct as suggested by this discussion. Moreover, the level of effort to implement (*e.g.*, developing new targeting and investigative tools) and the success achieved in this on-going phase is nowhere mentioned or acknowledged. This is an example of how the draft Evaluation consistently understates the magnitude and challenges of the Initiative and of its accomplishments.

OIG Response: We disagree that the report understates the magnitude and challenges of the refinery program and its accomplishments. We believe the report adequately describes the refinery program's challenges and accomplishments, as well as areas needing improvement. We modified the text as we determined appropriate.

Page 9, 1st Paragraph under "Phase III":

The discussion in this paragraph, that EPA decided to pursue global settlements with refinery companies at the same time that two refiners approached EPA to settle noncompliance concerns, is not accurate. In early 2000, OECA began to pursue national investigations of selected refining companies; it was not until after EPA was approached by some of the companies that OECA decided to pursue a global settlement approach. As noted in the Report, OECA had found success with this type of approach in other industries, but it should be recognized that OECA's prior experience related to a much narrower set of issues and on a much smaller scale than attempted under the Initiative.

The second sentence incorrectly implies that it was coincidental that "two of the largest refining companies approached EPA" at or about the time that EPA decided to pursue global settlements. The two refiners approached EPA because they understood that EPA was about to focus its investigations on certain, unnamed refining companies by issuing each of those companies information requests under Section 114 of the Clean Air Act. At least some of the companies approached EPA in an attempt to stop the issuance of those requests.

OIG Response: We modified the text as we determined appropriate.

Page 9, 2nd Paragraph under "Phase III":

The third sentence indicates that OECA took the lead on all targeted investigations; however, this is not true. OECA coordinated its national experts and supported these investigations, but it was not until OECA initiated national investigations against approximately six refiners in early-to-mid 2000 that OECA took the lead and, even then, only on these national

investigations. Moreover, the Department of Justice was and continues to be the lead in all negotiations.

The fourth sentence, stating that the "strategy presented corporate officials with the option of settling out of court," erroneously suggests a cause-and-effect relationship between the initiation of an investigation and achieving a global settlement. For accuracy, this sentence should be revised to state: "OECA's approach presented corporate officials with the option of avoiding possible investigation and litigation at one (or more) refineries on one (or more) issues by pro-actively addressing all issues of concern at all its refineries."

The fifth sentence incorrectly states that in the absence of a settlement, OECA would otherwise continue to investigate all issues at all refineries. This sentence should be revised as follows: "OECA would continue conducting investigations and taking enforcement actions as necessary."

OIG defines a "global" settlement as one that "applie[s] to all facilities owned by one company." This is incomplete and, therefore, inaccurate. The definition of "global" settlements should be revised to reflect that they cover each of the four substantive areas of Clean Air Act regulatory compliance that implicate petroleum refinery operations, and cover each of the facilities owned by the refiner.

OIG Response: We modified the text as we determined appropriate.

Page 10, carryover paragraph, under "Phase III":

This paragraph notes that "[s]tates that signed the consent decrees received a portion of the penalties paid by the company." However, this is incomplete and reflects a lack of understanding about State-Federal authorities. For clarity and accuracy, the next to last sentence should be revised to reflect that States that received a share of penalties had their own legal claims against the settling refineries.

OIG Response: We modified the text as we determined appropriate.

Page 10, 1st Paragraph under "III":

The first sentence of this paragraph begins, "[i]n fiscal year 2003, OECA shifted its emphasis from pursuing negotiations with additional refinery companies to conclude on-going investigations . . . ." For accuracy, the first sentence should be modified as follows: "Beginning in fiscal year 2002, OECA began to shift its emphasis from pursuing negotiations with additional refining companies to conclude on-going investigations and negotiations because 80 percent of the domestic refining capacity universe had entered into global consent decrees, was in negotiation with EPA, and/or under active investigation."

OIG Response: We modified the text as we determined appropriate.

Page 10, 1st Paragraph of "Phase IV":

The mischaracterization that the four phases are "distinct" (noted above) is also evident in this paragraph. The first sentence should be modified as follows: "The implementation of refinery consent decrees began a new *and additional* phase of the refinery program."

The third sentence states that there is a new process of "oversight, technical assistance, and enforcement of provisions." This is not necessarily accurate or universally true. For example, consent decree enforcement is only necessary where terms of a decree have not been complied with. Moreover, the sentence as drafted by OIG fails to account for a major aspect of the post-settlement process, which is a process of regular interaction and dealings among the parties. To correct this error, it should be revised to state: "While the signing of a consent decree ends the settlement process for that company, it begins a new process of oversight and interaction by and between the parties."

The last sentence of this paragraph erroneously suggests that inspections will occur "when the consent decrees and the current refinery program ended [sic]." The OIG misperceives both the Initiative and the enforcement program generally. This sentence should therefore be deleted, and the next to last sentence should be revised to read as follows:

> "The implementation process continues at least until OECA ensures that companies have effectively implemented all consent decrees; concurrently with this process, EPA regions and States continue to inspect, monitor and take enforcement actions at these refineries and other industrial facilities as resources and other priorities allow."

OIG Response: We modified the text as we determined appropriate.

Page 10, last Paragraph:

The last sentence of this paragraph, which carries over to Page 11 and states that OECA used "compliance incentives to obtain the industry's interest in negotiating consent decrees and achieving compliance," is not accurate. In fact, it is not clear what OIG considers to be a "compliance incentive" in this context. The common understanding of a "compliance incentive" is not something that spurs interest in a settlement, but something that promotes voluntary compliance by regulated entities without the need for an enforcement response (*e.g.*, NOV, administrative or civil judicial complaint, etc.). It would appear that OIG in its draft Evaluation has confused a "compliance incentive" (*see, e.g.*, the listing of compliance incentives at www.epa.gov/compliance/incentives/index.html) with the incentive of a covenant-not-to-sue obtained in settlement. This sentence should be revised accordingly.

OIG Response: We modified the text as we determined appropriate.

Page 11, List of non-compliance problems:

The list of non-compliance problems identified on page 11 ("New Source Review (NSR)/Prevention of Significant Deterioration (PSD); Flaring Incidents in Violation of New Source Performance Standards (NSPS); Leak Detection and Repair (LDAR); Benzene Waste

National Emission Standards for Hazardous Air Pollutants (NESHAP)"), and the accompanying text is too narrow and therefore tends to understate the magnitude of the compliance issues associated with those areas. This is a problem repeated throughout the Report. Furthermore, the Report's discussions of these issues fail to identify that a major portion of each of the consent decrees addresses refinery non-compliance with the "new source performance standards for sulfur recovery plants and fuel gas combustion devices." In fact, with the exception of the installation of controls to meet NSR requirements at fluidized catalytic cracking units and heaters and boilers, compliance with these obligations represents the largest capital investment towards compliance made by a company under the consent decree. The requirements for company compliance in these areas are plainly set forth in each of the eleven refinery consent decrees on a refinery-by-refinery basis, and should be included in this Evaluation.

In addition, the Report states that "inspections" and "formal EPA information requests" shaped the investigations during the initial stages of the program. However, as drafted OIG's characterization omits a crucial factor: the experience and expertise of those that used these tools during the initial stages. Research informed our targeting decisions, particularly for NSR/PSD, but it was the experience of EPA's in-house expertise that informed the selection of the priority areas, or "marquee issues": Ken Garing for LDAR and benzene; Patric McCoy for NSPS and flaring; and Pat Foley and others on NSR/PSD.

OIG Response: We modified the text as we determined appropriate.

Page 12, Figure 2.1:

"Flaring" Box: This box should be re-labeled as "New Source Performance Standards." The box should include bullets for compliance at flares, sulfur recovery plants, and fuel gas combustion devices. Also, the "Solution" bullet is far too narrow and understates the compliance issues, which indicates a lack of appreciation for the innovative and extensive nature of the work required under the decrees. While the flaring protocol requires a company to identify the root cause of a flaring incident and to "outline plans" to EPA that addresses that root cause, it also requires that the plans be fully implemented and that the conditions giving rise to the flaring incident (*i.e.*, the root cause) be addressed either through capital investment (installation of new equipment) or institutional controls (revise standard operating procedure, training, etc.). This is an example of the sort of "beyond compliance" measures obtained under the Initiative that are overlooked, or simply not understood, throughout the report. In addition, consent decrees require compliance at all times for all sulfur recovery units within the plant. New sulfur recovery units and tail gas control devices are installed to ensure compliance with emission standard and good air pollution control practice obligations. As drafted, the "solution" suggests that analysis and planning – but no implementation or controls – are required for flaring.

"LDAR" Box: Similarly, the LDAR box fails to clearly identify the program as "enhanced" – *i.e.*, bringing a company beyond compliance with the applicable regulations.

"Benzene" Box: As above, the benzene box fails to clearly identify the program as "enhanced" – *i.e.*, bringing a company beyond compliance with the applicable regulations. In

addition, the parenthetical in the "problem" bullet identifies only two types, out of myriad of potential types of waste streams. That parenthetical should use the signal "*e.g.,*" to denote that the two identified wastestreams are only examples.

"NSR/PSD" Box: The text in this box appears to emphasize monitoring of unit performance as the most significant gain achieved under the NSR/PSD elements of the consent decrees. While the significance of real time monitoring cannot be overstated, far and away the most significant aspect of the companies' agreements to comply with NSR/PSD is the suite of controls to be installed and implemented to reduce sulfur dioxide, nitrogen oxide, and particulate matter emissions. This is not clearly conveyed by the statement that "new emission controls" are required under the decrees, and therefore this should be revised to emphasize the controls aspect of the NSR/PSD programs that the companies have committed to implement.

OIG Response: We modified the text as we determined appropriate.

Page 13, 6th Paragraph:

The first sentence, which recites that "some" OECA officials characterized the compliance assistance efforts as effective in getting the refinery industry's attention, while "other" OECA officials said they did not see significant improvement, should be revised to note that both OECA and Regional officials did not see significant improvement as a result of compliance assistant efforts with this sector. This is consistent with the experience of the earlier failure of the Common Sense Initiative to encourage better levels of performance with this industry, and tends to support the conclusion that it was the initiation of a concerted enforcement effort that got this industry's attention. (*See* comment, page 8 Table 2.1.) The contrast between this and the majority of the industry's positive attitude and good faith negotiations exhibited within the Initiative stands in stark contrast.

OIG Response: We modified the text as we determined appropriate.

Page 14, 1st Paragraph:

The discussion in this paragraph, concerning a "release" provided in settlement, and "certainty" provided for "future potential liability" obtained under the consent decrees (mischaracterized as "compliance incentives," repeating an earlier error – *see* comment page 10, last paragraph), represents a fundamental misunderstanding both of enforcement in general, as well as of what motivates companies to negotiate with the United States to resolve potential liabilities. In particular, this paragraph mischaracterizes the nature and scope of the "covenant not-to-sue" (inaccurately called a "release" in the report) granted by the United States. Specifically:

- Companies typically negotiate with the United States to avoid a potential federal civil, judicial enforcement action(s). The *quid pro quo* for reaching agreement with the United States is not a "release" but rather a "covenant" by the United States not to pursue the company in a separate administrative or judicial proceeding for the activities giving rise to the consent decree – *i.e.,* the original violations that pre-date the consent decree.

- While it is true that it is unlikely that the United States would pursue a company for activities addressed by a consent decree, the United States always expressly reserves its statutory right to do so. Consequently, the United States has never agreed in the refinery consent decrees to resolve the "future potential liability" of a company provided that it "remained in compliance with [its] consent decree requirements" as stated in the Report.

- Finally, it is important to emphasize that the breadth of the United States' covenant not-to-sue is directly related to the scope of the injunctive relief. Thus, as here, where a company agrees to implement a comprehensive program of injunctive relief that brings it well beyond compliance with all aspects of the NSPS and benzene leak detection regulations, the United States will extend a covenant not-to-sue regarding all aspects of that company's pre-consent decree compliance with those regulations. To the contrary, however, under the consent decrees a company receives a covenant not-to-sue for NSR/PSD and new source performance standards for *only* those emission units that are specifically addressed by the consent decree.

OIG Response: We disagree with OECA that we misunderstand enforcement in general and what motivates companies to negotiate with the United States to resolve potential liabilities. We appreciate OECA providing us with the legal definition and description of "covenant not-to-sue," and have included it as a footnote in the report. We believe that our use of the term "release" still accurately describes this aspect of the national refinery program and is the same term that OECA officials used in discussions with us and in OECA's 1998 documented draft national strategy.

Page 14, Table 2.2:

This table, listing the names companies and number of refineries under "global" settlements, is not accurate. It does not reflect the purchase and sale of refineries that are covered by global settlements to other refiners. For example, BP Exploration has sold three of its refineries, and while those refineries remain subject to the global settlements they are owned by separate refining entities. Consequently, this table cannot be reconciled with the information contained in Appendix B. This could be addressed by a new heading or footnote that indicates that the information in Table 2.2 represents the settlements on the date of their entry by the Court.

OIG Response: We modified the text as we determined appropriate.

Page 15, Table 2.3:

This table, describing "examples of consent decree requirements," needs to be revised for consistency, accuracy and completeness. For consistency with earlier comments, the entry on "flaring" should be re-labeled as "New Source Performance Standards." For accuracy and completeness, the box should note that the program relates to NSPS compliance at a refinery's flares, sulfur recovery plants, and fuel gas combustion devices. In addition, the box should be expanded to include the control at and emissions monitoring of sulfur recovery plants.

The description of "flaring" in this table – and, in fact, throughout the report – is under-representative. As a threshold matter, what is covered by "flaring" is not at all described. For accuracy, the "Flaring" box should be relabeled "NSPS SRP/ Flaring." Further, the general discussion of "flaring" throughout the draft Evaluation fails to recognize that there are two different flaring programs: the elimination of acid gas flaring; and the reduction (quasi-voluntary) of hydrocarbon flaring. In addition, the NSPS component of this effort that are devoted to ensuring that companies are NSPS at their sulfur recovery plants, flares, and fuel gas combustion devices. The success of this effort is nowhere mentioned. Under the entered consent decrees there are now 43 sulfur recovery plants subject to NSPS Subpart J. The 43 sulfur recovery plants contain a total of 99 Claus trains. Seven new Claus trains have or will be installed under the consent decrees and 22 tail gas control units have or will be installed under the decrees.

OIG Response: We modified the text as we determined appropriate.

Page 15, 3rd Paragraph:

The discussion in this paragraph concerning "the roles, responsibilities, and processes for implementation of consent decrees," displays a lack of understanding about the fundamentals of the enforcement process. Contrary to the assertion made in the fourth sentence that "[a]fter a company signs a consent decree, the implementation phase of the consent decree begins," the implementation phase of a consent decree does not in fact begin at company signature. The implementation phase begins either on the date of consent decree lodging or entry depending on the specific language of the consent decree. Typically, the vast majority of consent decree obligations run from the date of entry of the consent decree. Similarly, the statement in the third sentence that "unsuccessful negotiations result in enforcement actions" is simply wrong. It is more accurate to state that in the event that negotiations break down, EPA would resume its investigation, marshal its evidence and take whatever enforcement followup is appropriate in light of the relevant facts and circumstances.

OIG Response: We modified the text as we determined appropriate.

Page 16, 1st Paragraph (carryover from Page 15):

The fifth sentence provides, "[e]ach consent decree describes whether a company report or action requires EPA review and approval." This is not accurate. For clarity and to avoid confusion, this sentence should be revised to read as follows: "Each consent decree describes whether a company report or action requires a formal EPA approval."

OIG Response: We modified the text as we determined appropriate.

Page 16, 1st Paragraph under "Conclusion":

The conclusion that OIG attempts to draw here regarding the absence of updated documents, that "[a]lthough OECA staff did not update its written strategy documents as the

program evolved, the refinery program resulted in an integrated strategy," is both unsupported and unsupportable. OIG misconceives some fundamental aspects of the overall OECA priority planning process, and of how the Initiative fits into that process. While OECA did not continue to produce written strategy documents signed by upper management, it should be recognized that these strategies were pulled into the OECA MOAs, and at that point OECA used the MOAs to manage the program. The MOA commitments and measures are approved at the upper management level.

OIG Response: As described earlier, we deleted the discussion on the undated, unsigned, and unapproved strategy documents. We disagree with OECA that we misconceived some fundamental aspects of the priority planning process and how the national refinery program fits into that process. As described in earlier sections, we reviewed the Memorandum of Agreement documents and discussed the information in the documents with OECA officials. Despite OECA's assertion that they used the Memorandum of Agreement documents to manage the program, OECA officials told us that they were not familiar with the information in the documents or that the information was not entirely accurate.

Chapter 3

As a general matter, Chapter 3 continues to focus on the strategy document, and ignores the fact that OECA used the MOAs to manage the refinery program. This failure to comprehend the larger process leads to several erroneous conclusions, and internal inconsistencies in the Evaluation, noted more specifically below. (*See, e.g.*, comments at page 17, 1st Paragraph; Page 20, 1st Paragraph under "Clear Program Goals"; Page 21, Table 3.1.)

This chapter reflects a fundamental misunderstanding and lack of appreciation for the scope, innovation and good management practices (*e.g.*, application of quality management principles, demonstrated flexibility in adjusting to new challenges and information, lessons learned, etc.) employed in the Initiative. OIG assumes that only senior management can make appropriate, informed judgements that must be formally approved and documented, and misses the fact that the expert, multi-Regional team charged with implementation was also empowered to make adjustments to the strategy.

The draft Evaluation does not recognize or properly appreciate that the Initiative has been a laboratory and driver for OECA innovation and has helped to stimulate demand for more advanced emission control technologies at refineries. Examples of some of these include:

- Among the first integrated strategies developed – and, more significantly, that it was applied to an entire industry sector on a nationwide basis, and that it addressed multiple compliance issues simultaneously;
- The Initiative was a driver for implementing the National Performance Measures Study, resulting in improved, better defined initiative outputs and outcomes;
- One of the first CAP-type program with identified, pre-approved compliance technologies;
- Represents one of the most significant uses of cross-Regional, in-house national experts (a model for future national workforce planning efforts);

- The Initiative's push for "beyond compliance" by settling companies has served as a driver for the development of newer and better pollution control technologies;
- The use of an innovative information collection process and related reporting mechanism that has enabled near real-time tracking of performance (*e.g.*, monthly conference calls and regular status updates with the "consenter's group");
- The use of electronic reporting by affected companies; and
- The first internet-based consent decree tracking tool ("Navajo pilot" by Region 6).

While not an exhaustive list, these and other elements of the Initiative, many attempted for the first time or for the first time on this scale, are either unrecognized in the draft Evaluation, or are noted only in passing. As a result, the draft is unbalanced in its assessment, discounting or overlooking the Initiative's scope, accomplishments and innovative use of new approaches.

OIG Response: We disagree that we ignored the Memorandum of Agreement documents. As stated previously, we evaluated Memorandum of Agreement documents for fiscals 1996 through 2004 and discussed the information with OECA officials. During our discussions, we learned that OECA officials did not use the Memorandum of Agreement documents to manage the refinery program. In addition, we asked OECA staff and management for any and all documentation of strategy planning, goal-setting and measurement. OECA officials never mentioned Memorandum of Agreement documents in those discussions, mentioned them briefly in passing, or referred to them as "inaccurate".

We disagree with OECA that the chapter reflected a misunderstanding and lack of appreciation for the scope, innovation, and good management practices used in the program. We also disagree with OECA that we assumed only senior management could make appropriate, informed judgments. We believe that because OECA led the refinery program, senior OECA officials maintain responsibility and accountability for ensuring that decisions regarding the strategy are documented and clearly understood.

We disagree that the report is unbalanced and discounts the refinery program's scope, accomplishments, and innovative use of new approaches. We describe the strategy's accomplishments in the report, including some that OECA officials included in the list above. However, we also reported areas needing improvement that OECA should address to ensure timely emissions reductions and to optimally protect human health and the environment.

Page 17, 1st Paragraph:

In Chapter 2, the Evaluation recognizes that OECA worked with the Regions to develop the Refinery strategy and its goals. However, the very first paragraph of Chapter 3 states that OECA did not "precisely define official program goals and measures, or ensure the goals were clearly and consistently shared with everyone working on the refinery program . . . ." These two statements are inconsistent and cannot be reconciled. As discussed earlier, the strategy was developed with the Regions and had Regional "buy-in." Once the sector strategies were integrated into the MOA process, the MOA was the document where revisions to the strategy and goals were made.

OIG Response: We disagree. OECA did not clearly and precisely define official program goals, or ensure everyone working on the national refinery program had the same understanding of the goals. We believe that despite OECA's claim in its response that it used the Memorandum of Agreement documents to manage the program, our evaluation disclosed the opposite and that staff referred to different goals for the refinery program.

Pages 18-19, under "Performance-Based Program Management":

The discussion in this section assumes that the Initiative was solely a "top down" priority. This is not correct. As noted earlier (*see* comment page 8, Table 2.1), the evolution of the Initiative was both "top down" and "bottom up." OIG therefore fails in its Evaluation to take into account the evolution of OECA's learning and understanding of refinery operations that was developed during the early years of the Initiative, and the effect of liability exposure and litigation risk (which directly bears on the identification of goals and objectives). In this discussion, OIG appears to believe that achievable outcomes at refineries were known in advance, and that injunctive relief is simply a "cut and paste" from one uniquely designed and operated refinery to the next (another example of a lack of appreciation for and understanding of both the enforcement process and the complexity of refineries and their associated compliance issues).

OIG Response: We disagree. We included this section to give OECA credit for moving toward developing a performance-based strategy in fiscal 2004 designed to address many of the issues we raised. We believe that OECA can develop outcomes at the beginning of a program and modify them as necessary. As described in the report, OECA needed to develop clear goals for the national refinery program, related performance measures, and measurable outputs and outcomes. OECA's comments to the official draft report contradict an internal OECA December 18, 2002, report, *Recommendations for Improving OECA Planning, Priority Setting, and Performance Measurement*. The report recommended that strategies should include a goal or set of goals and performance measures that allow progress to be assessed and these elements should be in place before the implementation period begins.

Page 19, 3rd Paragraph:

As discussed above, the statement in the second sentence that "OECA did not establish consensus on outcome-related goals necessary to adequately assess the progress of the national refinery program" is incorrect. The Petroleum Refining Sector Strategy established outcome-related goals and output measures for assessing progress under each of our marquee issues. Identified output measures were used by the Regions to establish their MOA commitments in 1998-2000; these measures were then used by OECA to track performance under each marquee issue: NSR/PSD investigations (Petroleum Refining Sector Strategy Component 2, Output 1 and 2); NSPS/flaring investigations (Petroleum Refining Sector Strategy Component 3, Output 1 and 2); LDAR investigations (Petroleum Refining Sector Strategy Component 4, Output 1, 2, 3 and 4); and benzene investigations (Petroleum Refining Sector Strategy Component 5, Output 1). Information on each investigation was regularly collected, routinely shared, and informally reported to enable near real-time tracking of Regional activities in support of the strategy. This information also informed the providing of feedback on the conduct of these investigations (*e.g.*,

problems, solutions and lessons learned by and between the team and its designated national expert).

The strategy's overall goals of 20% reduced emissions and 50% improved compliance were to be measured against a 1997 baseline, using a 2000 accomplishments period (AIRS and SNC data). However, it was soon recognized that the effort needed to perform effective investigations to support reaching these goals would necessarily extend beyond 2000 and that the level of major noncompliance (*e.g.*, the NSR/PSD violations that are only determinable through extensive file reviews and investigations) found was not adequately captured by SNC data (which is largely based on traditional inspection activity). Therefore, information collection and reporting was tailored to track: referrals; probable referrals (*i.e.*, preliminary indications of major noncompliance); active investigations (*i.e.*, initiated but no preliminary indications determined) and inconclusive investigations. (Note that the fact that an investigation is inconclusive does not mean the facility is in compliance, only that major not noncompliance was not determined. In many instances, significant (but not major) noncompliance was found and addressed by the Regions under "inconclusive" investigations. OECA used this information as the principal tool for tracking Regional progress under their MOA commitments through 2001/2002 because year-end reporting by the Regions failed to provide this information.)

Page 20, 1st Paragraph under "Clear Program Goals":

As an initial matter, this section contemplates that OECA can micro-manage decision-making by each Region and State, as exhibited by statements such as OECA's inability to "ensure that everyone working on the refinery program in EPA headquarters offices, EPA regional offices, and State offices" was working toward the same goals. This assumption fails to take into account uniquely local issues and perspectives that almost certainly impact refinery compliance, as well as the widely divergent views that the Regions and States have regarding the best approach for addressing refinery compliance. The MOA and priority setting process (consistently misunderstood or overlooked by OIG in the report) is intended to help address these considerations.

This discussion and critique in this section (that OECA did not clearly and precisely define official program goals, or ensure that everyone working on the refinery program had the same understanding of the goals) misses the mark by failing to understand the role of the MOA/priority planning process, and how that work is executed. Every individual need not have an understanding of each goal, provided that they understand goals that apply to their work. EPA Headquarters and the Regions refer to the MOA language, as the implementation of the strategy was accomplished primarily through the MOA process. Accordingly, this paragraph is incorrect and should be revised. OECA established clearly defined program goals (20% reduced emissions and 50% improved compliance) in 1998 and restated these goals for FY2000/2001. The strategy remained unchanged and subsequent MOA guidance referred to it.

OIG suggests consideration of a logic model (Appendix F) as a design for the refinery program. In discussions with OIG staff, OECA's Office of Compliance staff did not agree that several of the short-term, intermediate and long-term outcome measures are appropriate benchmarks for judging the effectiveness of a compliance and enforcement program. Goals such as increasing flexibility for refineries to expand or upgrade operations, enhancing the

environmental ethic in companies, improving the relationship/trust with the regulated community, while perhaps laudable in theory, are not realistically likely to be obtained in an adversarial enforcement context. Curiously, recommendations for how OECA would benchmark the "before" conditions and measure changes over time for these ultimate outcomes are not addressed in OIG's draft report. Absent any guidance from OIG, the suggestion is not practical and there is no basis for OECA to determine whether these measures are feasible.

OIG Response: We disagree with OECA that it established clearly defined goals. As described in our report, different OECA officials referred to different goals and measures for the refinery program. Some OECA officials were not aware of the information when we discussed the Memorandum of Agreement documents with them. Specifically, two top OECA officials responsible for managing the refinery program were not familiar with the "20 percent reduced emissions and 50 percent improved compliance" goals. These senior executives described entirely different goals for the refinery program.

We deleted the logic model from our report since it represented just one of several possible means that OECA may employ to achieve the ends we advocate in the report's recommendations – that is, the agreement on and communication of program goals.

Page 21, Table 3.1:

This table, listing different articulations of refinery priority goals, creates unnecessary confusion. As arrayed in the table, the entries create an impression that OECA's objectives routinely shifted over time. However, the goals as paraphrased in the table not put in context, which obscures their meaning. The first row relates to the initial designation of refineries as a priority in FY96 and FY97 (*i.e.*, reflecting planning done in 1995), which was prior to the development of the integrated strategy, notes that the effort at that time was focused on developing compliance strategies for the sector. Based on the experience gained during this time, the problems and compliance challenges were better understood than when the sector was initially designated a priority, and resulted in a more robust Refinery Strategy starting in FY98. This included the development of goals and the use of an integrated strategy (noted in the second and third rows of the table). The fourth row, taken from OECA's 2001 *Accomplishments Report,* is simply irrelevant, and indicates that OIG has failed to grasp some very elemental aspects of OECA's program. *Accomplishments Reports* are written for an external (general public) audience, and are not used for internal OECA planning, although the *Accomplishment Report* expresses the same themes of reduced emissions and improved compliance. OIG's mixing of these separate documents prepared for different purposes and for different audiences indicates a lack of understanding of OECA's program.

Missing from the table entirely are references to OECA's documents that *were* relied on for planning, specifically MOA language from the 1999 MOA update, and all subsequent versions of the MOA. This is necessary to properly understand the goal for each MOA cycle as the petroleum refining priority progressed. OECA adapted the goals and strategies as more was learned, including what was working and what was not. The table therefore inaccurately conveys program goals by inappropriately mixing references to planning and non-planning documents, and omitting other planning documents entirely. The table should be deleted.

OIG Response: We disagree that the table should be deleted. The table provides a good illustration of the different goals for the national refinery program. As we reviewed strategy documentation (including the Memorandum of Agreement documents) and discussed refinery program goals with OECA and regional staff, we found that the program had various goals over the course of the last 8 years. The descriptions of the goals varied by those we interviewed as well as the various documents we reviewed. The table portrays what we found during our evaluation – confusion over the goals, various descriptions of the goals, and a change in the goals as the program evolved. While we understand that a program's goals may change over time, at any one point in time, everyone involved should have the same understanding of the goals. We found that was not the case. We believe the refinery program should have clearly defined goals.

Pages 20-21, "Clear Program Goals":

The last sentence of the second paragraph, "[i]n addition, the document has milestones for fiscal years 1998 and 1999 and OECA did not update it with current objectives, measures, and time frames," is incorrect. As discussed above, OECA updated its national strategy in calendar year 1999 to clarify that the 50% improved compliance goal was for "targeted [a.k.a. marquee] issues."

The third paragraph erroneously equates the 2004 logic model with the Petroleum Refining Sector Strategy. The strategy identified two long-term outcome measures: reduced emissions and improved compliance. Other identified, logical outcomes reflected in Appendix F have not yet been identified in the strategy or MOA Guidance, and related metrics/measures have yet to be identified by OECA. In other words, to the extent that the draft Evaluation is intended to assist in this and future Initiatives, the draft Evaluation misses the mark.

With respect to the fourth paragraph on Page 21 concerning the use of company baseline emissions data, OECA does not question the wisdom of using company baseline information to measure success and progress under the consent decrees, provided that the baseline emissions data is determined using accurate and precise emission measurement methods and techniques. EPA and the refining companies have not relied, and should not rely, on emissions inventories as a basis for establishing the baseline by which to track consent decree performance.

OIG Response: As discussed earlier, we deleted the logic model.

Page 22, 1st Paragraph under "Existing Measurement and Reporting Systems Were Ineffective":

The first sentence states that "EPA performance measurement and reporting systems were ineffective for monitoring or reporting refinery program performance," and as a result criticizes OECA as being unable to "assure anyone, including itself, that companies complied with regulations or with specific consent decree requirements . . . ." This is an erroneous conclusion, without an accurate premise. The draft Evaluation errs by not acknowledging that existing EPA systems were not, in fact, used for monitoring activities under the Initiative. Instead, OECA created tools specifically tailored for managing performance by the Regions and

implementation of the Initiative on a near real-time basis. Rather than state that the existing systems were "ineffective," it is more accurate to state that they were "not used."

OECA also strongly disagrees with the statement in the second sentence that "EPA could not assure anyone, including itself, that companies complied with regulations or with specific consent decree requirements in three of the four priority areas." This sentence should be struck from the final report because it is not only inaccurate, but misconceives the enforcement and consent decree process, the obligations of refineries to comply with applicable regulatory requirements, with or without a consent decree, and suffers from the same "past tense" perspective noted earlier. In particular:

- The terms of the consent decrees do not require that a company comply with applicable regulations as a matter of consent decree enforceability. That companies are required to comply with applicable regulations is required by the regulations themselves, and refining companies obligation vis-a-vis applicable regulations is the same as any other entity, notwithstanding the fact that the refining company is the subject of a consent decree;

- Under the terms of the consent decrees refining companies are repeatedly certifying compliance with the consent decree obligations. This provides the requisite assurance, particularly in light of the serious consequences for providing false information (fraud), that obligations are being met;

- The use of the past tense implies that the obligations and actions required under the consent decrees are already in place, whereas they are in fact at an early stage; and

- Under the terms of the consent decrees, it is the company's obligation to notify EPA when it is unable to meet a consent decree schedule or requirement. Therefore, it is perfectly reasonable for EPA to assume that the refining companies are meeting their consent decree obligations. In fact, there are several instances where a refiner failed to meet a consent decree obligation in which it notified EPA and the non-compliance was addressed.

Nevertheless, OECA does review reports and is in regular communication with each company regarding its compliance with its consent decree.

The third sentence of this paragraph, stating that "EPA was also unable to verify emissions reductions in any priority area," is likewise inaccurate and misconceives the nature, timing and impact of obligations under the decrees. On a number of occasions during its investigation, OECA advised OIG's representatives that benzene and LDAR emissions reductions under the consent decrees are difficult to quantify (*i.e.*, verification is by means other than direct monitoring, as implied by the Report). This sentence (like many others in the Report) is also written in the past tense, inaccurately suggesting that controls still to be installed under the long-term schedules under the decrees have already been implemented. In particular:

- First, emissions reductions under the benzene and leak detection programs

address refinery-wide fugitive emissions from thousands of emission points throughout the refinery, making it difficult to directly measure emissions reductions. This is not a shortcoming of the Initiative or of the obligations under the consent decrees to better control these emissions, as implied by the Report, but inherent in the nature of refineries themselves.

- Second, to date, it is too early in the consent decree implementation process to begin to measure consent decree emission benefits from NSR/PSD controlled units because the vast majority of the dates by which a company is required to install and the required controls has yet to pass. As those controls come on line, EPA will be assessing the performance of the controls and the company's emissions from those units.

- Finally, the nature of flares and flaring incidents make it difficult (if not impossible) to measure directly emissions from flares either qualitatively or quantitatively. Nonetheless, the consent decrees require defendants to report each flaring incident, identify the pollutants flared, and the amount of that pollutant that was released. This is another example of where the report fails to acknowledge an important "beyond compliance" requirement of the consent decrees, that are not otherwise required by the regulations.

OIG Response: We modified the text as we determined appropriate. In particular, we modified the report to delete the discussion on the systems that OECA did not use, clarify the systems that OECA did use, and identify the areas needing improvement in these systems.

We do not imply that consent decrees require compliance any more than the typical regulatory structure requires compliance. However, the refinery program evolved because EPA found that companies knowingly did not comply with regulations. Therefore, we maintain that verifying compliance with refinery consent decrees should remain one of EPA's top priorities. Given the characteristics and history of the refining industry, OECA should provide the Agency, Congress, the public, and other refiners with a high degree of assurance that companies are complying with consent decree obligations. We believe that self-reporting in this sector does not provide sufficient assurance that facilities are in compliance.

Page 22, 2nd paragraph, Table 3.2:

There are several aspects of this table that need to be revised to ensure its accuracy. Specifically,

NSR/PSD Priority Area, "Current Compliance Status" column: The entry should be revised to read: "In compliance and/or on a compliance schedule." In addition, given the scope, complexity, and multiple timetables across all facilities and consent decrees, it is not possible to generalize regarding the compliance status of 11 consent decrees as it relates to 42 separate refineries. The entry in this column should be modified to reflect the fact that dates for consent decree control obligations in many instances have yet to pass. The sentence should be modified to state as follows: "Many consent decree obligations are outstanding, including a number that are not yet required to be implemented under the terms of the consent decrees."

NSR/PSD Priority Area, "Emissions Status" column: The reference that emissions status of the subject units is "unknown" is not accurate. To the extent that a unit has not had consent decree controls installed, its emissions status is reflected by its reported baseline, quarterly emissions reports, and reporting under Title V (where applicable). To the extent that this column is intended to reflect performance of the controls required by the consent decrees, as noted above, in many instances the dates for installation of controls has yet to pass and therefore there is no relevant data or information to report. This column should accurately reflect the foregoing.

NSR/PSD Priority Area, "Issues Associated with Measures" column: This comment does not accurately reflect how compliance with NSR/PSD requirements is measured. As noted above, certification regarding compliance with applicable consent decree requirements occurs on a regular basis. Under the terms of the consent decrees, the refiners submit regular reports regarding the status of compliance-related activities, including their compliance with consent decree requirements related to installation of fluidized catalytic cracking unit controls and controls for heaters and boilers. Beyond the regular reports, the consent decree also requires the settling refineries to notify EPA when they anticipate they will be unable to meet a consent decree requirement or if they have in fact failed to meet a consent decree requirement. Consequently, OECA is verifying compliance with consent decree requirements on almost a real time basis. It is not clear in the report (nor is it at all discussed) the basis for the conclusion that overall consent decree compliance is assessed only once every four years. This statement is incorrect. It should be noted that a common element of the heater and boiler compliance program is to report interim compliance in the fourth year of that eight year program.

Flaring Priority Area, "Current Compliance Status" column: As discussed earlier, this issue should more properly be identified as "NSPS/Flaring" to capture the work required to ensure new source performance standards compliance at sulfur recovery plants and fuel gas combustion devices. This entry should be revised to read: "In compliance and/or on a compliance schedule."

Flaring Priority Area, "Emissions Status" column: As noted in the comments on the first paragraph of this page (above), the nature of flares and flaring incidents make it difficult if not impossible to directly measure emissions from flares either qualitatively or quantitatively. Nonetheless, the consent decree requires that a company report every flaring incident, identify the pollutants flared, and the amount of that pollutant that was released. The settling refiners regularly report this information to EPA. OIG representatives were advised as part of the investigation that OECA is currently engaged in a project to assess flare performance time at individual refineries, company-wide, and across the industry. It is also important to understand the nature of the noncompliance concern with flaring (improper use on a "routine" basis, as opposed an allowed "episodic" basis only), and the beyond compliance nature of the actions required under the decrees. Furthermore, this column also exhibits some of the internal inconsistency noted earlier – it is not possible to reconcile the "unknown" reference in this column with the statement in the "Issues Associated with Measures" column that "[f]rom the reports, OECA can estimate the pollution resulting from the flaring event." In addition, since "5-year flaring histories" from each company are submitted under the decrees, this entry should be revised accordingly.

LDAR and Benzene Priority Areas: The statements under this heading tend to treat States as a monolith, whereas individual States have shown varying degrees of interest in these areas. To the extent that a State is a consent decree signatory it receives the same reports as EPA, and it can assess performance of the consent decree requirements. Moreover, it should be noted that many States may not have either a benzene or leak detection program; therefore, these States cannot be used to assess refinery performance in these areas. Both of these important considerations are overlooked in this discussion. It should be noted further that since entry of the consent decrees, and notwithstanding EPA's active solicitation of the States to join EPA in the consent decree process, OECA has received few, if any, reports from the States inquiring about refinery compliance in these areas. Finally, it should be noted that it is perfectly appropriate for EPA to rely on company-developed sampling and monitoring plans to assess compliance under the consent decrees. This is a time-tested and reliable approach, which forms the basis for monitoring compliance and assessing performance under many environmental programs, including the underlying benzene and leak detection programs.

LDAR and Benzene Priority Areas "Current Compliance Status" column: Under the terms of the consent decrees, these refineries are "in compliance and/or on a compliance schedule." These entries should be revised accordingly.

LDAR and Benzene Priority Areas "Emissions Status": As discussed above, emission status is generally irrelevant. Accordingly, these entries should be revised to read: "N/A."

LDAR and Benzene Priority Areas "Potential Measurement": This entry should be revised to read "AP-42, inspections and company monitoring data."

OIG Response: We modified the text as we determined appropriate.

We disagree with OECA that the report inaccurately references NSR/PSD emission status as "unknown". Our interviews with a national EPA expert and senior OECA management confirmed that some company baselines provided to EPA were inaccurate, some were based on AP-42 estimates (emission factors used to estimate emissions that are known to have limited accuracy), and some were considered accurate. We have modified the column heading to "Progress Toward Emission Reductions," but maintain our conclusion that emissions status is currently unknown.

We disagree with OECA about the accuracy of comments we have in the NSR/PSD "Issues Associated with Measures" column. Interviews with the national EPA expert in this area and with senior OECA managers provided the information that OECA would verify compliance with NSR/PSD requirements in the fourth year and at the conclusion of the consent decree; thus, once every four years. In interviews with the national EPA expert and senior OECA managers, we requested information about monitoring plans for NSR/PSD emissions under consent decrees. We were repeatedly told that "there was no plan" to verify reductions on any schedule other than once every four years.

We disagree with OECA that the LDAR and benzene priority areas discussed in the table "treats States as a monolith." We intended the table to serve as a summary of current compliance achievements in each of the priority areas. We chose not to discuss specific details but rather

summarize general compliance information. A senior OECA manager told us that States that did not actively participate in the consent decree process were not advised to focus on compliance in these areas in state inspections.

We disagree with OECA that the LDAR and benzene "Emissions Status" column is generally irrelevant and should read "N/A." OECA chose emissions from leaks and benzene emissions as priority areas because they found that facilities emitted significantly higher amounts of pollutants in these areas than reported by facilities.

Page 23, "ICIS Data Did Not Accurately Report Results":

> The Report begins the discussion of ICIS data with a conclusion:
>
> "ICIS data did not serve as an accurate reporting mechanism for three reasons: (1) OECA included projected rather than actual emissions reductions, so ICIS data did not measure results; (2) OECA could not document that they input emissions reduction data timely, and (3) OECA used an inaccurate (straight-line) method for estimating annual emissions reductions for multi-year consent decrees. Therefore, OECA may have taken credit in ICIS for refinery emissions reductions and other accomplishments that had not yet occurred or been verified."

However, this conclusion, and the entire Section that precedes it, demonstrates a fundamental misunderstanding of reporting under ICIS.

OIG criticizes ICIS data for not listing actual emission reductions and for its use of a straight-line projection of emission reductions over time, rather than some other (presumably more accurate) method. This criticism misunderstands the purpose of ICIS. This database is not intended as the repository for emission inventory information from regulated sources. That function is met by EPA's NET, NTI and TRI databases. ICIS serves a wholly different function. Due to ICIS's requirement to document enforcement information soon after the conclusion of cases, knowledge of the actual emission reductions that will be achieved in the future, especially for technology-forcing initiatives such as the Refinery Initiative, are necessarily prospective. Furthermore, it is unclear what benefit would be gained by increasing the resolution of such a prospective prediction of emission reductions by using anything more complex than a straight-line model. Once emission control equipment is installed at a facility, the resulting reduction in emissions will be reflected in NET, NTI and TRI.

Additionally, the draft Evaluation criticizes OECA because it may have taken credit in ICIS for emissions reductions that have yet to occur. As noted above, this is not the purpose of the ICIS database. During the Evaluation OECA stated to OIG investigators that the estimates were of what the annual emission reduction would be at full implementation of the consent decrees. After full implementation of the consent decrees, such annual reductions would continue for the life of the emission units from which these reductions are being made. OECA focused its resources more on achieving results than on frequently measuring emission reductions for purposes of entry into ICIS. It should be noted that for the foregoing reasons, OECA's estimate of the annual emissions reductions grossly underestimates the overall emissions reduction caused by the consent decrees.

OECA acknowledges that certain consent decree data and information should have been entered at or about the date of lodging of the consent decrees. When OECA management became aware that certain consent decree data had not been entered in a timely fashion it immediately directed OECA and Regional staff to make the appropriate entries. All consent decrees are now entered in ICIS upon their lodging. While OECA agrees that it is appropriate to note that some entries were not made in a timely fashion, we recommend that the Evaluation Report note also that OECA has taken steps to ensure that the consent decrees are entered into ICIS in a timely fashion, as was the case with the five most recent consent decrees.

The fourth paragraph of this section, stating that OECA "should have determined annual projected reductions by claiming the reductions in the year OECA estimated the reductions would actually occur," is inaccurate and should be modified. OECA's estimates of emissions reductions from the consent decrees reflects an estimate on a tons per year basis of the emissions reductions that are realized once the consent decree is fully implemented. Given the breadth of the consent decrees, the complexity of the programs covered by the consent decrees, and the large number of emissions units at which the emissions are expected to occur, any other method of estimating emissions reductions (*e.g.*, annualized to reflect consent decree obligations in a specific calendar year) would be exceedingly difficult and require a large amount of OECA's limited resources. The suggestion for a more resource-intensive approach is unrealistic given the available resources and add little to ensuring overall compliance objectives (both with respect to the Initiative as well as the program overall). In any event, OIG's discussion misconceives the purpose of ICIS, which is not to track emissions data on a per-year basis.

The fourth sentence of the last paragraph of this section, which states that "the vast majority of the reductions would occur in the latter years of the decrees," is not accurate. The rule of thumb that OECA followed in negotiating the consent decrees is that two-thirds of the emissions reductions from the installation of controls would be realized in the first four years of the consent decrees. The consent decree with BP is an example of this practice.

OIG Response: We modified the text as we determined appropriate.

We disagree that the ICIS section demonstrates a fundamental misunderstanding of reporting under ICIS. We modified the discussion of ICIS in the report to better clarify how OECA used ICIS. Specifically, we describe that, according to OECA, ICIS reporting was not designed to capture, and did not capture, information about environmental outcomes from the consent decrees, such as demonstrated environmental and human health benefits.

We believe OECA's comment that we were inaccurate in our statement, "the vast majority of the reductions would occur in the latter years of the decrees," contradicts other statements in OECA's response in which they indicate it is too early for OECA to demonstrate consent decree emissions reductions. To use OECA's example, if BP realized two-thirds of the emissions reductions in the first four years, OECA could begin demonstrating initial emissions reductions at BP facilities in January 2001.

Pages 23-24 under "SNC Rates Did Not Provide Useful Information":

The draft Report discusses the use of SNC rates as a measure of whether the Initiative is

productive, concluding that SNC rates did not indicate increased compliance in the refinery sector. OIG's underlying assumption is that a successful initiative will lower SNC rates. As noted elsewhere in OECA's comments, this is not a valid assumption. OIG's unfounded reliance on SNC rates reveals another misunderstanding of the enforcement program; OIG's failure to acknowledge why OECA does not rely on SNC rates to determine whether the Initiative is successful likewise indicates OIG's lack of understanding.

First, EPA chose the refining sector in part because of the very high relative SNC rates (compared to other sectors). By focusing on this sector, EPA's efforts served to uncover additional problems that had not been identified previously – thus raising SNC rates even higher. This result indicates that the targeting and selection of this sector was a success (*i.e.*, that the decision to target refineries was valid and uncovered extensive noncompliance) and that additional attention would reveal more compliance problems. OECA believes that, as a result of the targeting work done prior to identifying a sector as a priority, any priority sector will see an increase in SNC rates.

In addition (and as noted elsewhere), while SNC rates might be expected to drop in the long term, under the Clean Air Act, facilities operating under long-term consent decrees remain in SNC (or "High Priority Violation") status until all conditions of the consent decrees are met, all penalties paid, and any supplemental environmental projects are completed. Because of the extensive nature of the injunctive relief obtained by EPA in the consent decrees, which will take many years to fully implement, a decrease in the SNC rate will not happen in the short term. Because OIG misunderstands this, the reliance on SNC rates as a measure of the Initiative's success is misplaced and erroneous.

OIG Response: We disagree with OECA that we relied on Significant Non-Compliance rates and that we had an underlying assumption that a successful refinery program will lower Significant Non-Compliance rates. Since OECA initially used Significant Non-Compliance rates to identify refineries as a priority, we believed it was important to explain why Significant Non-Compliance rates could not be used as a measure of increased compliance. We recognize OECA does not rely on Significant Non-Compliance rates to determine the refinery program's success. Nevertheless, we deleted this section from the report to eliminate any confusion.

Page 24, Table 3.3 and accompanying text:

While OIG is correct that Clean Air Act SNC rates as reported in EPA databases does not yield useful information for consent decree tracking (and, as noted above, it was not used for such under the Initiative), the conclusion drawn by OIG in the draft Evaluation that compliance *worsened* under the Initiative because SNC rates increased between 1998 and 2003 is incorrect. As noted earlier, the increased attention and focus on compliance issues would be expected to better identify noncompliance, which would lead to an expected initial increase in SNC rates. These rates will go down over time, as the obligations under consent decrees are fulfilled: A function of the SNC reporting criteria is that a facility remains listed until a consent decree is terminated. Accordingly, global refinery consent decrees affecting 42 refineries are likely to remain identified as a SNC until well into the next decade, even where they are otherwise in compliance with their obligations under the consent decrees. Put simply, SNC rates cannot (and are not) used to assess consent decree compliance; the draft Evaluation errs by doing so.

As discussed above, OECA developed tools tailored to its investigative activities under the Initiative by identifying and tracking "major" noncompliance with one of our four marquee issues: failure to obtain a permit and install BACT controls (NSR/PSD); failure to include entire units and hundreds of components in routine monitoring (LDAR); statistically significant disparities between company reported and EPA determined leak rates (LDAR); identification of refineries that erroneously thought they were exempt from control requirements or in compliance with their selected compliance option (benzene). Other marquee issue violations may exist and are then pursued at a refinery; these actions are part of the Regions' core activities but are not tracked under the Initiative.

OIG Response: As described previously, we deleted the section on Significant Non-Compliance rates in the report. We initially sought to demonstrate how we attempted to independently assess the impact of the refinery program throughout the course of our evaluation. We looked to the systems used by OECA to document results to Congress and prioritize work, including Significant Non-Compliance rates. However, we deleted the section on Significant Non-Compliance rates from the report to eliminate any confusion on their use for determining compliance in the refinery industry.

Pages 24-25, Carryover Paragraph:

The first sentence of this paragraph, that the "consent decree tracking system did not provide accurate, reliable information about refinery company performance," should be deleted because it is incorrect. The paragraph should begin with the second sentence, and the third sentence should be modified to read:

> "In addition to the consent decree tracking system, EPA used standard consent decree monitoring techniques to assess companies' performance under the consent decrees, including review of a companies certification of compliance reports submitted to EPA and regular communications with the refining companies regarding its performance."

The last two sentences of this paragraph discussing consent decree tracking from 2001 through 2003 are in error and reflect a misunderstanding of what was required to implement global refinery consent decrees. They should be deleted and the following substituted:

"EPA entered into four global refinery consent decrees in mid-2001. A large volume of materials was submitted by the settling companies. By way of response by the Regions and Headquarters, a plan for implementing consent decrees was developed, discussed and approved in early 2002. A contractor was retained to assist in managing the flow of information and aggressive actions were taken under that plan immediately thereafter. Within 12 months of entering into the first global settlement, OECA had a functioning system for monitoring and managing consent decree implementation. OECA has provided training for regional consent decree implementers and has since conducted monthly conference calls to identify and promptly resolve implementation problems with its contractor and identified company leads (*i.e.*, individuals responsible for ensuring that a company complies with its consent decree and that EPA takes timely action on all approval requests). Despite these and other efforts identified in Chapter 4, EPA response delays persisted as more consent decrees were entered into and the

volume of materials submitted increased significantly."

OIG Response: We disagree with OECA's suggested revisions. We believe we have accurately described the history of consent decree monitoring issues.

Page 25, "Quarterly Reports":

The first sentence of this paragraph, that companies "routinely provide actual emissions data related to NSR and PSD compliance," is misleading and/or inaccurate. This sentence should be deleted.

The third sentence, asserting that "OECA did not use available consent decree quarterly reports to monitor, verify, or report consent decree progress," is also incorrect. Company leads routinely monitor all quarterly reports and identify (if necessary) whether the company is encountering compliance difficulties. Since these reports are submitted under certifications with attached criminal penalties (5-year felonies under 18 U.S.C. § 1001) and potential civil sanctions (contempt of court), it is both appropriate and reasonable to generally accept the accuracy of the companies' representations. Thus, this sentence should be revised to read: "OECA *used* available quarterly reports to monitor, verify and report consent decree progress."

The use and utility of quarterly reports appears misunderstood, as reflected by the simplistic conclusion stated in the last sentence of this paragraph.

In addition, the criticism of OECA for failing to plan to regularly verify or monitor actual refinery emissions reflects a misunderstanding of the intent of the Initiative. EPA intended that consent decree requirements would become an integral part of the compliance requirements for the affected facilities, with most requirements actually being included in state-issued permits. As such, it would be the permitting authority's responsibility to verify and monitor emissions. OECA believes that it would have been inappropriate to assume this co-regulator's responsibility.

OIG Response: We disagree that our criticism of OECA not planning to regularly verify or monitor actual emissions reflects a misunderstanding. We assessed whether OECA used emissions data required by consent decrees to track emissions reductions on an on-going basis – that is, through development and use of an emissions database or other system that could log emissions data as it was generated by, or received from, facilities. We found that, even though an EPA national refinery expert and an OECA official indicated that quarterly reports include emissions statements, EPA did not use quarterly reports to monitor, verify, and report consent decree progress.

We believe that as long as the refinery program remains a national program, OECA maintains responsibility for tracking emissions reductions. To date, OECA has only projected emissions reductions and, until OECA can verify actual emissions reductions, we do not believe EPA can determine whether the refinery program has achieved reduced emissions.

"Informal Methods" Page 25, 1st Paragraph:

The second sentence of the first paragraph, stating that "OECA did not use [activity or output measures] for monitoring and managing the program" may accurately reflect the understanding of an OECA official, but as discussed in considerable detail above, it is incorrect.

The discussion in the third paragraph concerning the lack of a formal "feedback system" for "capturing" performance information under decrees to "feed back into the consent decree negotiation process," reflects a lack of basic familiarity with some important aspects of the Initiative. Since (as noted several times above) the same national experts that ensure national consistency in consent decree implementation are also the lead EPA consent decree negotiators, there is no need for a separate formal feedback loop. Therefore it is inaccurate to conclude that performance information did not "feed back into the consent decree negotiation" process. A formal feedback system may have been appropriate if the Initiative had relied on separate groups of people for these functions, however. In this case, there is no reason to do so.

OIG Response: We modified the text as we determined appropriate.

Page 26, 1st Paragraph:

For the reasons discussed above (*see, e.g.*, comments for Page 22, 2nd paragraph), the first sentence's assertion that "OECA has not verified emissions reductions from consent decree implementation" is inaccurate and should be struck or modified to reflect the fact that it is not yet possible to verify emissions reductions from consent decree implementation. The second sentence's suggestion to verify consent decree compliance should be modified to reflect that OECA intends to develop a system to capture emissions reductions achieved through implementation of the consent decrees. The third sentence (noting the importance of verifying that actual emissions match projected estimates) implies that companies may have overstated their anticipated emission reductions; this is not true. In light of the severe consequences for making false or misleading statements to the public, including the investment community under SEC requirements, their estimates are probably low and their actual emission reductions are likely to be somewhat higher than projected.

OIG Response: We disagree. Whether OECA finds estimates too high or too low is immaterial to the statement; rather the statement demonstrates that, for a number of reasons, OECA should not consider or report estimates as "pounds of pollutants reduced" by the program. Rather, only actual, verified emissions data compared against actual, verified baselines will provide accurate information about pollutants reduced under consent decrees.

Page 26, 2nd and 3rd Paragraphs:

The discussion in these paragraphs that OECA did not have accurate baseline emissions data and therefore relied on data of questionable reliability does not accurately characterize the OECA manager's statements regarding a company's baseline information. What the manager stated was that EPA cannot rely on emissions inventory data provided by a company to a State for the purpose of assessing a fee to determine that company's baseline emissions to decide what control measures a company might implement under a consent decree. The OECA manager stated that this was because emissions inventory information is not as accurate as desired as it is frequently based on, *inter alia*, emissions factors (which do not directly measure emissions from

process units) and infrequent stack tests. For that reason, the OECA manager stated that OECA demanded from a company, and received at the earliest stages of negotiations, the company's best baseline information. That OECA manager further stated that OECA reviewed the baseline information to determine what methods of measurement were used as a predicate for the baseline. Where OECA determined that the baseline information was reliable, it was used as a basis for negotiations. In this respect, the Evaluation Report mistakenly characterizes data from "stack tests" as not "actual monitoring data." This is incorrect as stack tests reflect "actual monitoring data"; estimates, however, are admittedly less reliable for making informed decisions based on individual unit emissions. Where OECA determined that the baseline information was not reliable, OECA demanded that a more representative baseline be developed. In several instances, EPA even required the development of better baseline information as a term and condition of the consent decrees, where the structure of the consent decree so allowed. These paragraphs should be revised accordingly.

As noted above, the verification of actual emissions reductions is the responsibility of state and local permitting officials, not OECA. The report quotes a 2001 General Accounting Office (GAO) report that found fault with EPA's oversight of state and local agencies in this area. However, the GAO report only provides impetus for enhanced oversight of state and local programs; nowhere does GAO suggest that EPA's enforcement and compliance staff supplant these state and local efforts.

OIG Response: We disagree with OECA that our discussion in the report regarding baseline emissions data does not accurately characterize the OECA manager's statements regarding a company's baseline information. We did not derive our statement on baseline emissions data solely from conversations with one individual. Other OECA staff and managers also discussed the inaccuracies of baseline data provided by companies.

We also disagree that State and local permitting officials maintain sole responsibility for verifying actual emissions reductions. EPA identified reduced emissions as a primary goal of the refinery program and, as long as the refinery program remains a national EPA priority, then OECA should retain accountability for the program achieving projected reduced emissions.

Page 26, 4th Paragraph:

The first sentence's assertion that "OECA also used manufacturers' estimates to predict emissions reductions" is incorrect – manufacturers' estimates were not used to predict emission or establish emission limits. Rather, they were used by OECA "to inform its decision-making and negotiating positions." The second sentence should be modified to read "*Preliminarily,* during consent decree implementation, OECA found that some new technologies performed well and delivered the predicted reductions, while others did not." This discussion does not acknowledge that OECA has yet to reach any definitive decisions on the relative merits of the control technologies identified in the consent decrees.

OIG Response: We modified the text as we determined appropriate.

Page 26, 5th Paragraph:

While the statement in the first sentence that "States were responsible for monitoring refinery emissions using existing inspection programs to look for facility violations of consent decree provisions" may accurately reflect what an individual OECA official said, it is incorrect. OECA, as well as those states that have joined in these consent decrees, have a shared responsibility for ensuring consent decree implementation. As to this paragraph's conclusion, it is important to note that MOA Guidance has repeatedly emphasized the importance of the states to the refinery initiative and identified expectations of the Regions in dealing with their states. *See e.g.*, MOA Guidance for FY 2002/2003, FY2003 and FY2004.

OIG Response: We modified the text as we determined appropriate.

Page 27, "Conclusion":

Since this section repeats the same or similar statements commented on earlier and for the same reasons above-identified, this section should be rewritten entirely.

The suggestion that EPA should more regularly and more closely monitor consent decrees for compliance is misplaced. As discussed elsewhere in the comments to the draft Evaluation, this suggestion neither accounts for the resources available to OECA as a whole nor shows an appreciation for the large amount of work accomplished by the small group responsible for work under each of the overlapping phases of the Initiative. It also fails to appreciate the innovative "certification" approach used under the consent decrees as an assurance of certainty and accuracy of the actions taken by refineries operating under decrees in order to maximize available resources. Because the Evaluation does not take these factors into consideration, the suggestion would functionally require OECA to divert resources from addressing significant environmental issues in other industrial sectors. The draft Evaluation fails to recognize this reality.

The suggestion in the third paragraph of this section displays a basic misunderstanding of OECA's role and function. The report criticizes OECA for not establishing a process for tracking trends in human health and environmental outputs and outcomes. This is not OECA's function, and this achievement was never intended to be a goal of the Refinery Initiative. Enforcement initiatives derive their justification from a fundamental tenet that compliance with environmental laws and regulations will protect human health and the environment. The responsibility for establishing rules that are sufficiently protective, and for tracking trends and environmental outcomes and outputs, falls upon the states and the EPA program offices, such as the Office of Air and Radiation. OECA never intended to usurp that role.

OIG Response: As discussed with senior OECA officials, we understand that OECA is experiencing resource strain and has multiple responsibilities. However, the objective for this evaluation (as recommended by senior OECA management) was to evaluate the impact of the petroleum refinery program alone, and offer suggestions for improving the program. Resource strain does not diminish the importance of verifying the actual impacts (human health and environmental improvements) achieved by the program.

We disagree that our report displays a basic misunderstanding of OECA's role and function. Our report does not suggest usurping State or other EPA program responsibilities. However,

since we believe the overall goal for all EPA programs is protection of human health and the environment, all program activities, outputs, and outcomes should align with that goal and eventually demonstrate success at protecting human health and the environment.

Page 28, "Recommendations":

3-1 (Develop clear overall refinery program goals that allow for future assessment or measurement and include timetables for accomplishment); 3-2 (Instruct OECA refinery program managers to develop clear goals specifically for the refinery program's implementation phase); and 3-3 (Ensure that all goals and performance measures are understood and shared by everyone involved in the national petroleum refinery program, including all EPA and State staff involved in some portion of consent decree implementation). Concur. As discussed in detail in the preceding comments, OECA believes that the refinery program's goals have been clearly articulated since the national strategy was initiated in 1998, and that as the program evolved they were further reflected in MOAs, etc. in the following years. As a general matter, OECA agrees with these recommendations and will continue to develop and articulate appropriate goals and performance measures.

Following the identification of refineries as an enforcement priority for FY96/97, OECA soon recognized the need for a comprehensive national strategy. It then developed a flexible, integrated strategy (including sub-strategies) to address issues of widespread compliance and enforcement concern at petroleum refineries. The resulting 1998 strategy was developed in close consultation and coordination with the Regions, the Office of Compliance and the Office of Regulatory Enforcement's media-specific enforcement divisions. It has remained largely unchanged since then, with a focus on targeted investigations of "marquee" issues at petroleum refineries and the goal of 50% improved compliance and 20% reduced emissions. The national petroleum strategy and its implementation were regularly discussed at the staff level and periodically reviewed by senior management in meetings, during conference calls and through the MOA process. Periodic progress updates have also been and will continue to be circulated to OECA management and the regions, but the extent to which specific individuals clearly understand the national strategy, including its sub-strategies, goals and objectives, may depend on the level of their direct involvement in these processes and communications.

3-4 (Instruct OECA refinery program managers to use existing EPA, OECA, and outside guidance to develop reliable performance measures to assess their progress toward meeting national program goals. Specifically, managers should fully implement OECA's performance-based approach to program management as described in its December 18, 2002, *Recommendations for Improving OECA Planning, Priority Setting and Performance Measurement*, which specifies development of plans and reliable performance measures, to the remaining phases of the petroleum refinery program): Concur. OECA has already begun to implement this recommendation (planned for prior to the Evaluation), as priority planning process consistent with existing OECA guidance for FY 2005 has already been initiated.

3-5 (Validate and build upon the refinery program logic model we developed during the evaluation, and consider developing similar program logic models for other OECA programs to develop a clear consensus on program goals and how a program is intended to work.): Non-concur. OECA does not agree that several of the short-term, intermediate and long-term

outcome measures in this logic model are appropriate benchmarks for judging the effectiveness of a compliance and enforcement program. These goals – such as "increased flexibility for refineries to expand or upgrade operations" – are not realistic or likely to be obtained in an adversarial enforcement context. The absence of recommendations for how OECA would benchmark the "before" conditions and measure changes over time for these ultimate outcomes means that there is no basis for OECA to determine whether these measures are feasible. However, OECA does agree that it should use appropriate performance measures and outcomes to measure performance under the Initiative, and intends to do so as part of the FY 2005 priority planning process.

3-6 (Instruct OECA managers to verify emissions reductions predicted in consent decrees on a quarterly basis. Verification might include establishing a detailed monitoring system, which could contribute to refinery program performance measurement.): Non-concur. As noted in the detailed comments on this issue, OECA does not believe that this is an appropriate or effective use of resources. Furthermore, the recommendation fundamentally misconceives the timing of reductions under the decrees, which does not happen immediately upon lodging or entry of the decree (as is apparently assumed), with regular reductions on a steady quarterly basis. In part because these facilities are operating under court order, and are required to submit reports and certify regarding their compliance with consent decree requirements (punishable by contempt and/or criminal sanction), there are sufficient indicia of reliability such that quarterly oversight of emissions reductions is not necessary. Significantly, the recommendation does not take into account the resource implications of this level of monitoring – both with respect to those available for the Initiative (failing to recognize that this work would need to be performed and/or reviewed by the same group of national experts responsible for all other aspects of the Initiative), as well as those available to the air enforcement program and OECA as a whole. Even if OECA agreed that this level of monitoring is appropriate, it is not clear how this would be accomplished within the current resource levels and in light of other priority activities. On balance, these resources are better utilized if devoted to addressing compliance issues in other industry sectors. Notwithstanding the foregoing, OECA agrees that it is important to track emissions reductions under the consent decrees, as appropriate given the consent decree milestone dates.

3-7 (Instruct OECA refinery program managers to gather, analyze, and report relevant program data to support overall OECA organizational decision making, and daily program decision making): Concur. As with Recommendations 3-1 through 3-4, OECA agrees with the principle embodied in this recommendation, and will take steps to implement appropriate data gathering and analysis to support program decisionmaking. However, in light of activities identified in response to Recommendations 3-1 through 3-4, this recommendation appears redundant and unnecessary.

Chapter 4

Page 29, 1st Paragraph:

For accuracy, the first sentence's statement, that "tracking problems developed and persisted," should be modified as follows: "During early refinery consent decree implementation, tracking problems developed and were addressed." By early-to-mid 2002 OECA had a fully functioning tracking system.

The second sentence states: "Tracking problems occurred because OECA did not effectively plan how it would manage and monitor consent decree implementation, and because OECA did not address implementation problems in a timely fashion." This is incorrect; more importantly, it misconceives the importance of reporting requiring a response under the consent decrees, and should be corrected. The issue is not "tracking" it is "responding." Company leads, national experts and Regional personnel always knew what was submitted and what required an EPA response. The plans for consent decree implementation identified roles, responsibilities and expectations for action by the Regions; the process of monthly conference calls ensured that all implementation issues were identified promptly and resolved (if possible). Although identified as a national priority in MOA Guidance for FY2003 (June 2002) and FY2004 (July 2003), the unfortunate reality is that most Regions failed to make adequate resources available for consent decree implementation. From the outset, OECA has aggressively attacked this problem.

A critical omission throughout the draft report is a general lack of appreciation for the innovative and highly successful leveraging employed by OECA that allowed compliance issues to be addressed company-wide, vastly extending the effectiveness of the limited resources available for the effort. Therefore, in order to provide the context that is critically necessary to fully understand and appreciate both the efforts and accomplishments of the Initiative, the following should be added to the beginning of the first paragraph:

> "Negotiation and resolution of refiners' potential liability under the Clean Air Act proved to be an effective strategy for addressing refinery compliance issues on a company-wide basis, and without expending the considerable resources that would have been necessary to undertake and complete an exhaustive investigation of each individual refinery, and all associated follow up actions. EPA achieved considerable success early in the global settlement phase of the strategy. By May 2001, EPA had negotiated and lodged consent decrees with four separate refiners. As discussed in Chapter 2, these consent decrees had a sweeping scope covering Clean Air Act compliance in the four priority areas at 26 individual refineries. EPA did not anticipate its success. Consequently, EPA did not move as quickly as it should have to develop and implement a strategy to ensure oversight of the refiners of implementation of their consent decrees. Nonetheless, an implementation strategy did develop."

OIG's statement in the last sentence, that "OECA must resolve remaining problems to ensure timely emissions reductions," overlooks actions already taken, and therefore should be deleted and replaced with the following:

> "OECA has taken numerous steps to address and resolve issues associated with responding to consent decree deliverables. This effort has, *inter alia*, manifested itself in the significant increase in the number of EPA responses issued in response to company submittals since the beginning of 2003 fiscal year. At bottom, the implementation of refinery global settlements requires considerable resources. Because of competing priorities, EPA has not been able to devote the resources it needs to ensure that timely responses are made to companies' submittals."

OIG Response: We disagree with OECA that it had a fully functioning tracking system by early-to-mid 2002. January 2004 was three years into implementation of the first consent decrees. This was nearly half-way through implementation for companies that signed consent decrees in 2000 and 2001, though it may have been early in implementation for other consent decrees. For this reason, we believe it may mislead readers to use the term "early refinery consent decree implementation". As of January 2004, OECA had still not issued 108 responses required by consent decrees, or 28 percent of required responses. Responses were missing for all companies except one and covered all priority areas. OECA worked with the contractor to redefine the tracking and response problems, but we did not find that OECA "addressed" the tracking problem in an efficient, clearly explained, and written fashion. Rather, OECA worked with the contractor on a case-by-case basis (as indicated in e-mails) to redefine which items required an EPA response. In the report, we acknowledge OECA's efforts to alleviate both the document backlog (response problem) and the tracking system deficiencies. OECA managers and an employee of the contractor told us that the contractor-developed tracking system was not operational until late 2002. Further, the same managers and contractor staff told us that OECA officials disagreed with how the contractor developed the system, and that implementers did not directly use the system for this reason, thus the system was not "fully functional."

We disagree that we incorrectly describe the tracking problems. We found implementation problems with both OECA's responses and with tracking. Two OECA managers detailed problems related to development and use of the contractor tracking product. One OECA manager told us that company leads, national experts, and Regional personnel always knew what was submitted and what required an EPA response. However, problems related to development and use of the contractor tracking product still existed, and OECA should apply lessons learned from the system's development to modifying the product.

We disagree with OECA's suggested revised paragraph regarding the actions OECA has taken to address and resolve issues associated with responding to consent decree deliverables. We believe our report describes the most significant steps OECA took to resolve the problems and accurately describes the difficulty in determining the degree of improvement.

Page 29, 2nd Paragraph:

For accuracy, the third sentence, erroneously asserting that "[d]uring the first 3 to 4 years of consent decree implementation, companies installed emissions monitoring equipment," etc., should be modified to reflect the fact that refinery implementation has been ongoing for a period of "2 to 3 years," and not "3 to 4 years" as currently drafted. The Koch settlement was the first settlement that was completed and it was not entered by the Court until April 1, 2001. In addition, it is the emission *monitors*, and not the *controls*, that are to be tested and calibrated during this time. As noted above, comparatively, the bulk of compliance dates for installing controls required by the consent decrees have not been reached as of the date of this report. On the other hand, the consent decrees do require the companies to install emissions monitoring devices at the earliest stages of consent decree implementation.

OIG Response: We disagree. The third sentence refers generally to the activities that consent decrees required of companies in the first three to four years of implementation, not to the current state of implementation for any one consent decree.

Page 29, 3rd Paragraph:

With respect to OECA's plan for monitoring consent decree implementation (the topic of this paragraph), some context is important to understand the approach taken. The model for company submittals and EPA responses followed in the refinery consent decrees is identical to the model followed in crafting consent decrees generally. That is, where an issue cannot finally be resolved through negotiations either because an event has yet to occur (*e.g.*, a company-required audit) or because the level of emissions reduction to be achieved can not be agreed upon (*e.g.*, emissions levels from a particular emissions unit given a particular innovative control technology), a protocol is established and set forth in the consent decree by which the company must prepare and submit the results addressing that particular issue. EPA always endeavors to resolve the most contentious issues as part of the consent decree, while universally requiring consent decree reporting of the most significant issues. Significantly, what distinguishes the global refinery settlements from the typical consent decree are their breadth and complexity. There are few industries as complex as the petroleum refining industry and there are few statutes as complex as the Clean Air Act. The global consent decrees address both on a company-wide basis. Yet the discussion of the consent decrees in the Evaluation only notes this in passing, but the substantive discussion does not appear to recognize or fully appreciate this complexity as a factor in the development of OECA's consent decree implementation strategy.

Although the focus of the discussion is understandably on NSR/PSD controls, each of the other marquee issues was similarly engaged in this process. The fourth sentence should therefore be revised to read: "Through this process, companies in consent decrees and EPA national technical leads and other EPA staff collaborated to ensure that companies took actions that would lead to the emissions reductions and improved environmental performance projected by consent decrees."

OIG Response: We modified the text as we determined appropriate.

Page 30, Table 4.1:

As currently drafted, Table 4.1's summation of consent decree-required reports oversimplifies the nature and extent of the reporting. Therefore, the heading of Table 4.1 should be modified to reflect that the table is for illustrative purposes only and does not provide either an exhaustive or specific list of the reports that are required by the consent decrees.

Root cause reports are not for "illegal" acid gas flaring incidents but for "all" major acid gas flaring incidents. Flaring is an accepted and appropriate activity to avoid catastrophic events; whether OECA considers them legal or not is highly dependent on the circumstances and a legal theory for requiring actions upstream of certain "affected facilities," as defined under the new source performance standards. OIG's report appears to assume that all flaring is illegal; this is inaccurate and reflects OIG's misunderstanding of the "flaring" rules.

For accuracy, the table should be revised to reflect that EPA does not receive reports on "installing" control equipment but on "the intended design of" such control equipment.

The only report on abatement procedures concerns benzene EOL sampling; the table should be revised to delete reference to LDAR and Flaring.

OIG Response: We modified the text as we determined appropriate.

Page 30, 2nd Paragraph under "Tracking Problems":

The draft Evaluation does not accurately reflect that backlogs did not exist until companies began submitting reports that required an EPA response. Although only a handful of such reports were submitted in 2001, the volume of other submissions was substantial and growing. A major driver for the consent decree implementation plan was to manage this process, paper and decision-making. It is incorrect to suggest that response backlogs developed in early-to-mid 2001; backlogs only started to grow in early 2002.

The statement in the fourth sentence, that there were 26 full-time equivalents devoted to refinery implementation tasks, is not accurate, and the basis for this estimate is neither explained nor understood. While there may have been 26 *people* nationwide that provided input into the refinery consent decree implementation process from time-to-time, only the two staff members at EPA headquarters and the three national technical leads (who were not one of the two staff members) and perhaps an additional one or two individuals could be considered to be devoted exclusively to the Refinery Initiative work. Moreover, it is important to emphasize that these 5 people spent a considerable amount of time devoted to other tasks, including negotiating consent decrees and developing cases. As measured against the volume of work, the accomplishments achieved (the global agreements) by this small group is laudatory; this, however, is not recognized in the draft report. In fact, as drafted, the report tends to suggest that the Refinery Initiative was the *only* air enforcement work undertaken during this time. The report thus fails to recognize or appreciate the Initiative work was – and continues to be – undertaken along with major air enforcement efforts in other areas.

Additionally, contrary to the Report's erroneous statement otherwise, the national technical leads did not "officially approve" EPA responses to company submittals. Under the language of the consent decrees only the Air Enforcement Division Director, or his delegate, could "officially approve" EPA responses. The national technical leads' primary function was to ensure consistency amongst and between the regions in responding to substantive technical issues.

A significant oversight in the draft Evaluation is the absence of any mention of the importance of national consistency for the implementation of these uniquely large, complex, and comprehensive consent decrees. Companies took a leap of faith to join with EPA in these global settlements and are expending nearly $2 billion in capital and will be spending several hundred million dollars of year in operating and other expenses. The success of the program demanded that our decisions be consistent and apply uniformly to all refineries owned by all the consenting companies. The OIG Evaluation seems to place a premium on tracking and related activities, and devalues (or ignores) the critical importance of national consistency for both OECA and the

settling companies.

OIG Response: We modified the text as we determined appropriate.

We disagree that the 26 full-time equivalents (FTEs) is not accurate. We derived the FTE information directly from an OECA-developed document entitled *Petroleum Refinery Initiative FTEs*, dated January 22, 2004, which we asked OECA to compile. The document shows 16.65 FTEs for 1998, 22.2 for 1999, 25.35 for 2000, 25.25 for 2001, 26.85 for 2002, and 26.15 for 2003. This provides an average of 24 FTEs over the period 1998 through 2003.

The report acknowledges refinery program accomplishments, but we believe that the program's accomplishments will only be fully realized when the emissions reductions and other associated environmental benefits (outcomes) can be demonstrated at the facility or community levels.

We believe it is generally expected that a "global" program will be implemented consistently. We do not feel it necessary to emphasize this point. OECA correctly asserts that we placed a premium on tracking and monitoring the implementation and results of consent decrees. As previously stated, while reaching global settlements has been an accomplishment, EPA needs to assure Congress and the public that these settlements achieve emissions reductions and other environmental benefits predicted in consent decrees.

Page 31, 1st Paragraph:

The report does not adequately address the cause of the backlog, nor of the steps already taken to address it. The backlog of responses to company submittals was a function of three structural issues: First, the consent decrees required that company reports be delivered to the region in which the particular refinery was located; Second, the consent decree implementation plan put the onus on the regions to develop responses to company submittals in consultation with the national technical leads, and; Third, the consent decrees required that the Air Enforcement Division's Division Director approve each of EPA's responses, including those prepared in the regional offices. The effect of these three factors was to create a bottleneck that OECA acknowledges delayed responses to company submittals. However, the Evaluation fails to acknowledge the steps OECA has taken, and continues to take, to address these issues, specifically:

- First, in parallel with retaining a contractor to track consent decree deliverables, OECA collected and delivered the company submittals that had been transmitted to the various regional offices and headquarters; verified that all such deliverables were accounted for; and forwarded those deliverables to OECA's contractor to catalogue and enter into a consent decree tracking system;

- Second, OECA conducted negotiations with each of the refiners to modify the refiner's consent decree reporting obligations to ensure that documents were in both electronic and hard copy formats and delivered to the regional and EPA headquarters offices as well as to EPA's contractor;

- Third, OECA working with the contractor developed an electronic early notice system to

notify those regions and national technical leads of a company submittal that required its review;

- Fourth, OECA retained a contractor to provide technical support to the national leads in evaluating and preparing responses to technically complex reports;

- Fifth, OECA organized and conducted national meetings to train regional staff, address overarching technical issues, and to encourage, organize and coordinate responses by and amongst the regional offices; and

- Sixth, OECA actively coordinated with the Regions to ensure there were adequate staff resources in place to respond to company reports.

Taken together, all of these steps resulted in significant improvement in EPA's response time and a marked improvement in the number of reports issued by EPA. Nonetheless, the task of responding to company submittals is an important issue that requires constant attention. This paragraph should be revised to read as follows:

> "Also in January 2002 and as identified in the implementation plan for consent decrees, OECA hired a contractor to serve as EPA's consent decree archive and to develop electronic databases for managing the process, its paper and decision-making. OECA provided the contractor with the consent decrees and all documents received to date. It then tasked the contractor with developing a document archive and tracking system that cataloged all required company reports, all received company reports and all required EPA responses. The contractor developed an archive, a list of required deliverables and a document tracking system by late 2002, in close coordination with the several company leads. Some company leads in EPA regions had developed and continued to use their own, personal tracking to satisfy their responsibilities; others used the contractor-developed tracking system."

In addition, to further improve response time, EPA continues to take additional steps to further improve the process, including: Eliminating, for future consent decrees, the requirement that the Air Enforcement Division Director's approval be obtained for EPA responses that address leak detection, benzene, and flaring related issues; evaluating the consent decree reporting obligations to eliminate unnecessary reports and approvals; better defining the universe of submittals that require review by the national experts; and working with the Regions and the States to identify greater efficiencies in the implementation phase. The report should be revised to reflect these measures.

OIG Response: We modified the text as we determined appropriate. While we acknowledge some of the steps EPA has taken to address the backlog, we also identify additional steps needed to correct tracking delays.

Page 31, footnote 11:

The footnote is vague as drafted, and is therefore potentially misleading. Specifically, it

is not clear from the footnote the bases for the conclusion that one consent decree required 585 reports to be submitted. It is also not clear from the footnote whether each (or how many) of the reports that are included within the 585 are those requiring an EPA response.

OIG Response: We modified the text as we determined appropriate.

Figure 4.2 Page 32:

The text of the report indicates that 149 items were erroneously identified as requiring a response in July 2003. These erroneous reports should be removed from the totals: 272 "responses missing." This is probably still an overstatement. Had OIG afforded OECA additional time to prepare this Response, we would be able to provide additional feedback.

OIG Response: We disagree. We analyzed tracking information available to OECA managers and consent decree implementers at three points in time. Because the contractor provided information about the 149 items in July, we believe it is important to characterize the backlog at that time.

Page 32-33, Carryover Paragraph:

This discussion (and the Evaluation in general) does not acknowledge that OECA managers recognized the issue of potential for a backlog as early as April 2002, when it specifically brought on board a manager to oversee refinery-related matters. However, because of resource constraints and sheer volume of deliverables, it was not until September 2002 that EPA's contractor was in a position to meaningfully track consent decree deliverables, and it was shortly after that time that EPA redoubled its efforts to aggressively address the backlog. By failing to acknowledge this, the report implies that no action was taken to attempt to address the backlog until much later. In fact, the data represented in Figures 4.1 and 4.2 both show a significant improvement by EPA in addressing the backlog of deliverables.

In addition, the fourth sentence is in error to the extent that it suggests that it was not until July 2003 that it was "agreed that a backlog existed." The fact of a backlog was recognized and steps were taken in early 2002 to address it by making the Regions responsible for drafting initial responses and by providing training to the Regions that spring to ensure that they could fulfill their responsibilities.

OIG Response: We disagree. The report acknowledges that OECA managers recognized the potential for a backlog and took steps to reduce but not eliminate the backlog.

Page 33:

The draft Report does not reflect the multiple, iterative aspects of our on-going efforts to improve response and tracking of company reports requiring an EPA response, resulting in a mischaracterization of those efforts.

Based upon their knowledge of the specific terms and requirements of their assigned consent decrees, company leads had managed consent decree implementation by using

contractor-supplied Master Inventories that reflect multiple data elements, including when a company report is due, when it was submitted, whether an EPA response is required, when an EPA response is due (under self-imposed deadlines) and when EPA issued its response. As earlier described to OIG, EPA created a new database to better track reports requiring an EPA response in the second half of 2003.

An initial Activity List was created by EPA's contractor in July by sorting the Master Inventories by whether an EPA response is required and whether a response had been issued. This initial list was thereafter refined because some action items did not, in fact, require an EPA response and because others required only one EPA response to multiple company submissions (e.g., although a flaring incident report may result in multiple follow up and completion reports, only one EPA response is required for an incident). Refined/revised Activity Lists were vetted with the company leads on January 7 and February 4, 2004. The format, accuracy and completeness of these lists were confirmed, and it was then agreed that Activity Lists would be used as the principle tool for tracking and managing items requiring an EPA response.

EPA's contractor issues both a comprehensive Master Inventory and a more limited Activity List to each company lead every month:

- Master Inventories enable company leads to determine whether a company report was timely submitted and an EPA response was timely issued.

- Activity Lists enable company leads to quickly identify all reports requiring an EPA response by issue (*e.g.*, NSR/PSD and Flaring), when they were received and whether "new" items have been added.

These reports enable company leads to ensure compliance (*e.g.*, timely company submissions) and to engage in triage and focus on those action items most in need of a prompt response because of their potential importance to future company actions or their being exceedingly "late."

EPA has recognized and continues to recognize that it should respond to all company submissions in a timely and appropriate manner. EPA has aggressively addressed its consent decree implementation responsibilities. Despite these efforts, however, backlogs continued to increase through 2002 (*e.g.*, an analysis of current databases indicates that EPA had responded to only 103 of 237 (43%) company submissions requiring a response as of December 31, 2002). EPA has and is focused on working off the backlog and anticipates reducing its response time through continuing, concerted action. Indeed, an analysis of current databases indicates that EPA had responded to 261 of 354 (74%) submissions requiring a response as of December 31, 2003. Although improvements have been made, additional improvement is needed.

OIG Response: We modified the text as we determined appropriate.

Page 34, 1st paragraph:

The first sentence's assertion that "[l]ate and absent EPA responses delayed company implementation of projects designed to reduce emissions" is factually unsupported. OECA is

unaware of any instance in which a delay in a required response delayed emissions reductions.

The fourth sentence of this paragraph, asserting that "[a]bsent EPA responses also compromised company compliance with consent decrees," likewise needs to be corrected. An "absent EPA response" cannot compromise a defendant's compliance with a consent decree in that its obligation to comply is wholly independent of an EPA response – that is, compliance is required regardless of that response.

OIG Response: We disagree that we did not factually support our statement on how late and absent EPA responses delayed project implementation. We discussed this point with OECA managers and regional staff. We believe all action items included in consent decrees are intended to work toward emissions reductions and other environmental benefits. We determined that, although we found no examples of response delays affecting emissions reductions, in some cases, response delays caused companies to delay implementation of a consent decree action that would subsequently lead to an emissions reduction. OECA should recognize that responding to company reports in a timely fashion would help ensure timely emissions reductions and other environmental benefits from consent decrees, and that the potential impact of delayed responses could include delayed emissions reductions.

Page 34, 2nd Paragraph:

The second sentence's discussion of late responses to reports on "flaring incidents (60 percent), benzene handling, or LDAR requirements (29 percent); a small proportion (7 percent) related to NSR and PSD requirements" should be revised to recognize that these delays are in components of the "beyond compliance" or "enhanced program" and to specify their generally limited nature. They do not deal with regulatory compliance. For example, with respect to flaring (and noting the two separate flaring programs covered by the Initiative), the overwhelming majority of the flaring reports with delayed responses from EPA are hydrocarbon flaring, which is a "beyond compliance" component (*see* comment, page 15 Table 2.3). The acid gas flaring program, by comparison, has the "stick" of stipulated penalties and therefore the response to those letters is much more critical. EPA is effectively current on responding to the (more critical) acid gas flaring reports. In this respect, in terms of allocation of scarce enforcement resources, the "Consenter" refiners are correcting the hydrocarbon flaring problems without Agency input. Therefore, for accuracy the sentence should be revised as follows:

> "Figure 4.3 demonstrates that most late and absent EPA responses related to flaring incidents (beyond compliance - 60%), benzene quarterly sampling plans (beyond compliance -20+%), LDAR database specifications (beyond compliance - 5%); and a small proportion (7 percent) related to NSR and PSD requirements, and 4 percent related to non-priority areas."

OIG Response: We disagree. Consent decrees are legal agreements between companies and EPA, and all actions agreed to in the decrees thus become "requirements" of the consent decree. We believe that adding a discussion in this report section about elements in consent decrees that are beyond compliance would be confusing and irrelevant.

Page 34, Figure 4.3:

This chart on "EPA responses by Priority Area" is lacking needed detail. In particular, it should reflect the universe of reports considered in developing the percentages. In addition, the figure should also separate benzene reports from LDAR reports, and acid gas and sour water stripper gas flaring reports from hydrocarbon flaring reports. This lack of specificity detracts from the usefulness of the data represented.

OIG Response: We disagree that the chart on "EPA Responses by Priority Area" lacks needed detail. We intended this chart to demonstrate that the majority of required EPA responses related to flaring and NSPS. The level of specificity contained within the contractor tracking reports we obtained did not allow for accurate parsing of types of flaring reports. In some cases, the item delineated a particular type of flare, while in others the item just listed "flaring incident". We separated the responses out in this way so that each of the three national EPA experts' areas was contained within one portion of the chart.

Page 35:

Acid Gas Flaring – The discussion in this section attempts to draw a conclusion that a late response is the cause of a facility's failure to correct the "root cause" of a flaring incident. There is no demonstrated causal link. Under the terms of the consent decree, refiners are required to identify the root cause of a flaring incident and implement corrective action to address the root cause, independent of EPA's response. In fact, the purpose of a flaring incident report is for the facility to identify the results of the Evaluation, and the corrective action undertaken or to be undertaken. While EPA should respond in a timely fashion to a flaring incident report, and prior to September 2002 EPA had not acquitted itself well in that area, there is no causal or associated link between a refiner failing to correctly identify and correct the root cause and EPA's late response. OECA is not aware of any instances where mis-identification of a cause for flaring led to subsequent flaring events. This paragraph should be revised accordingly.

NOx control – OIG suggests that, during the time that EPA's response was pending, the refineries would have installed control equipment. The implication is that, had the EPA response been timely, the public would not have been exposed to excess emissions. This suggestion is clearly erroneous. Almost without exception, no NOx controls were slated to come online during the time that EPA responses were pending, thus EPA delays in responding cannot be construed as somehow leading to delayed compliance. This paragraph further fails to account for the quality of the refiner's report or the reasonableness of the NOx plan proposed. Many of the proposed NOx control plans are being actively evaluated, and are the subject of ongoing negotiations with the companies in an attempt to avoid dispute resolution and potential court proceedings regarding the reasonableness of the limits proposed. In EPA's view, many of the plans provided by the refiners, and the limits proposed therein, were inadequate, unreasonable, or both. The discussion in this paragraph tends to suggest that a timely approval of a report that has not been determined to be adequate is preferable to efforts to craft one that is adequate.

Reporting Consent Decree Outcomes – OIG suggests that delayed Case Conclusion Data Sheets led to inaccurate characterization of yearly emission reductions associated with consent decrees. However, as stated above, the tracking of such emission reductions is not the function

of OECA databases, so delays in entry had no effect on the appropriate characterization of emission reductions from the initiative

OIG Response: We modified the text as we determined appropriate for the discussion on acid gas flaring. We did not intend to indicate any relationship between facilities' not correcting root causes and EPA's late responses, rather, this shows one of three "examples of potential impacts." OECA staff told us that mis-identification and, moreover, delayed EPA responses could impact flaring incidents in this way. We are not aware of any instances where this has occurred, but it is a potential effect of delayed EPA responses that OECA acknowledged, and an example of how EPA response time could impact program outcomes.

We believe that had EPA timely responded, the companies could have timely proceeded with properly developed action plans and may have begun installing pollution control equipment. More timely EPA review and approval would minimize the possibility and the amount of time that refineries might expose the public to excess emissions. We recognize the importance of the quality of refiners' reports. However, we believe that 478 days (approximately 16 months) between receiving a company report and issuing a response pushes the limit of reasonableness.

Pages 35-36:

The Report alleges that the inadequacy of the tracking process instigated by EPA led to delays in company compliance with their consent decrees. However, while it would have been problematic for OECA to immediately document company compliance with the consent decrees, on substantive consent decree requirements no delays would have occurred. The stakes were so high for both the companies and EPA on these requirements that frequent communications and meetings between the parties ensured that significant compliance deadlines were met as scheduled.

The discussion on these pages also seems to assume that, under the decrees, it is EPA's obligation to demonstrate a facility's state of compliance. However, this is incorrect. As noted above, the consent decree reporting requirements obligate a company to identify when it is in non-compliance with a consent decree requirement. In light of the consequences for noncompliance (and the incentive to identify non-compliance), absent such a notice it is both reasonable and logical to assume that a company is, in fact, in compliance. EPA justifiably relies on this assumption, because the refinery consent decrees, like all other consent decrees, provide incentives to a defendant in the form of stipulated penalties to both comply with significant consent decree milestones or requirements and report that it has done so or not (as the case may be).

It is important to note that in many instances – with the exception of NSR/PSD related requirements – it was the Region's (not OECA's) responsibility to formulate and draft responses and to track compliance. The tracking contractor was retained to provide the Regions with a tool for doing so. A substantial portion of the delay in failing to respond to a company submittal occurred well prior to the delivery of a draft response to the national leads or headquarters

OIG Response: We disagree that EPA can assume a refinery's compliance just because they are under a consent decree. The refinery program began because: (1) EPA identified disparities

between refinery operations as reported to EPA through the NSR/PSD permitting process and actual refinery operations; and (2) EPA identified refineries as number one for noncompliance among 29 industry sectors ranked by EPA in 1996. While we acknowledge that companies bear responsibility for reporting violations under consent decrees, the industry's history of non-disclosure and noncompliance warrant EPA oversight of company self-reporting and additional scrutiny of refinery emissions.

Page 36, "Better Planning" discussion:

The Report suggests that more accurate planning would have enabled OECA to avoid the document backlog. However, the reason for the backlog was not insufficient planning, but rather insufficient staff. OECA deliberately expended its scarce resources in pursuing further consent decrees from other refineries, rather than tracking existing agreements, thereby ensuring additional emission reductions. This decision affected consent decree document processing, but it had a minimal effect on the timing and success of the emission reductions required by the consent decrees, because companies were aware of the severe legal consequences of failure to comply with consent decree requirements.

The first paragraph of this discussion states that monitoring the implementation of consent decrees is a very common activity for OECA, and therefore OECA should have known what would be involved and should have been able to plan accordingly. However, the scope and complexity of refinery consent decrees far exceeded that of any other agreements OECA reached in the past, so past agreements would have provided no basis for accurate planning of resource needs in the refinery initiative.

An important contextual point to recognize in the discussion of bottlenecks, notwithstanding OECA's experience with consent decrees, is that the scope of the refinery consent decrees is unprecedented (a factor not adequately taken into account by OIG). In addition, while OECA could have taken steps to prepare for consent decree implementation sooner, at the time no one could have or should have anticipated the success we achieved in the period of time in which it was achieved. These should be recognized as factors (not excuses) that should be acknowledged as part of the Evaluation (in this discussion as well as elsewhere in the report) for the Evaluation to be both fair and balanced.

By late 2001 OECA recognized that additional resources were needed for consent decree implementation, as reflected in the Attachment 1 to the consent decree implementation plan. The national experts also recognized this need, as reflected in the plan's requirement that the Regions (not the national experts) prepare the initial draft response. Moreover, this resource need was repeatedly and continuously identified thereafter. *See* FY2003 MOA Guidance (June 2002) and FY2004 MOA Guidance (July 2003). In other words, the fact that an increased workload under the consent decrees was coming was recognized. Resource choices forced decisions on the aspects of implementation that were the most critical – a factor not fully accounted for in the draft Evaluation. (Note also that there have been no requests from States regarding consent decree tracking needs, etc., and prior to review of this report OECA is unaware of any such request.)

It is important to recognize that the most substantial portion of the delay in responding to company submittals occurred at the Regions well prior to the delivery of the Region-prepared draft responses to either the national technical leads or EPA headquarters staff. This is not to say that there were no delays attributable to the national technical lead or EPA headquarters; there was. OECA recognizes that efficiencies need to be achieved all around, and we are continuously striving to do so. As noted above, the early success of the global approach was unexpected and its scale was without precedent. The failure of OIG to acknowledge this success, coupled with the overly-critical view of the implementation difficulties that were directly attributable to this success, is indicative of the lack of balance in OIG's Evaluation.

The statement at the bottom of Page 36 and carrying over to Page 37 that OECA did not begin to address delays until "late 2003" is inaccurate and should be corrected, as that effort had been ongoing for more than one year. In fact, that conclusion conflicts with earlier statements in the report, including when OECA began its efforts with its tracking contractor (*see* page 31). It should be revised as follows: "Delays in responding to company reports became acute in mid-2002 and persisted into 2004. OECA developed a plan for consent decree implementation in January 2002 and began addressing anticipated delays in early 2002, but Regional resource limitations precluded its plan from being implemented fully, resulting in growing backlogs. More recently, OECA is using contractors to assist in the work assigned to the Regions under that plan and anticipates eliminating its backlog by mid-year."

OIG Response: We modified the text as we determined appropriate.

We disagree that insufficient staff caused the backlog. OECA knew how many staff it had available for consent decree negotiations and consent decree implementation, and, as noted above, OECA made active decisions to devote staff to negotiations at the expense of implementation. Better planning for staff utilization to successfully accomplish both consent decree negotiations and consent decree implementation could have alleviated the document backlog and associated delays.

We disagree with OECA that past agreements provided no basis for accurate planning of resource needs in the refinery initiative since the scope and complexity of refinery consent decrees exceeded that of any other agreements. In our opinion, the national and regional EPA experts involved in negotiation had the necessary subject area expertise to at least roughly estimate the time required of EPA to implement individual consent decree actions, and OECA management could have developed time and resource requirements for each consent decree using those estimates.

Page 37:

Training for Implementers – Training by national leads and implementers occurred, well prior to 2003 – specifically, in the spring of 2002. This should be corrected for accuracy.

Revisions to Tracking System – This discussion is incomplete as it does not acknowledge OECA managers' assessment of backlogs, which occurred on an ongoing basis, and did not begin in "late 2003" as indicated in the report, but much earlier. It is also relevant (but not recognized in the report) that OECA had been working with the contractor prior to the

OIG Evaluation to better tailor the tracking system to reflect consent decree requirements that required an EPA response.

In fairness it should be noted that during late 2003, OECA had received preliminary feedback from IG investigators regarding the tracking system, had acknowledged the difficulties, and set out to correct perceived and actual deficiencies. This work was not occurring in a vacuum.

OIG Response: We disagree that the discussion on revisions related to the tracking system is incomplete. The report accurately summarizes the events related to the tracking system, including OECA's steps to address continuing problems. We made other changes to the text as we determined appropriate.

Page 38, 1st Paragraph:

The conclusion of this paragraph, that "OECA eliminated tracking of the timeliness of both company reports and EPA responses from the tracking system," is incorrect. OECA's contractor maintains three databases and generates three reports for each consent decree: (1) a Deliverables Tracking Table that identifies when deliverables will be due (a planning document that is no longer used); (2) a Master Inventory that includes all data fields, including when a report is due from a defendant, when it is received and when an EPA response is due (the principal tool for company leads ensuring that a company is in consent decree compliance); and (3) an Activity List of open action items that informs all team members of what is open and needs attention, including the highlighting of all "new" action items (*i.e.*, those received, archived and inventoried since the last Activity List). The Report should be revised accordingly.

OIG Response: We disagree. The master inventory lists that OECA and the contractor provided to us listed company report submittal dates and EPA response dates. The lists did not include company report due dates or EPA response due dates.

Conclusion and Recommendations

4-1 (Instruct its consent decree tracking contractor to resume tracking both company due dates for reports and EPA response due dates so that OECA and outside parties can easily track company and EPA responsiveness): Non-concur. As discussed in the detailed comments above, OECA does not agree that it is necessary to further revise the tracking system at this time; this recommendation has been overtaken by events. During the time that OIG was conducting its investigation, OECA itself identified some deficiencies with its tracking system, and appropriate revisions were made (note that due dates for reports and EPA responses continue to be tracked under each consent decree's Master Inventory). The critical issue is not simply tracking, but responding to those reports requiring an EPA response. Changes have already been made to address this. For example, in January 2004, Matrix and Region 6 tracking systems were compared and verified for accuracy and usefulness, and a single system was selected for implementation nationally, and access provided to all parties responsible for consent decree implementation – including companies. In addition, changes to requirements for company submittals have been made to subsequent consent decrees to better manage the process.

Furthermore, substantial progress has been made to reduce the backlog, indicating that the current approach is having the desired result.

4-2 (Create a comprehensive tracking plan and system that outlines specific responsibilities for OECA staff, EPA Regions, State and local air pollution control agencies, and companies): Non-concur. OECA does not agree that this recommendation is necessary. Sixteen states are parties to global refinery consent decrees and currently receive copies of all consent decree submissions that relate to each refinery within their states. OECA staff, EPA Regions and state/local authorities who are parties to the consent decrees are and continue to be reflected in the consent decree implementation plan. Specific tracking tools (*e.g.*, Master Inventories and Activity Lists) are circulated on a monthly basis to all necessary participants. As discussed above, EPA has a comprehensive consent decree tracking protocol that is being implemented through our contractor. Subject to claims of privilege and confidentiality, OECA does not object to any interested non-party, including other states and local authorities, requesting tracking information from Matrix at its own expense.

4-3 (Provide additional training at the regional level, and empower regional experts to review and respond to company reports. Allow national technical leads to spot-check responses from regional experts to ensure national consistency): Concur. OECA agrees with this recommendation, and has provided (and will continue to provide) appropriate training as needed.

4-4 (Develop a formal feedback system to ensure that OECA's workforce and managers have a common understanding of implementation responsibilities, a common perspective on the status of implementation, and the ability to expeditiously address implementation issues): Non-concur. As explained in the detailed comments, in light of the small staffing level and their overlapping responsibilities, a formal feedback system is not necessary. Should the number of staff substantially increase in the future, a feedback system may be appropriate at that time.

4-5 (Ensure frequent and open communication between partners (States, regions) and headquarters about responsibilities for executing portions of strategies so that misconceptions or confusion can quickly be eliminated): Concur. OECA will continue to communicate with Initiative partners.

4-6 (As discussed with OECA managers, include consent decree implementation in OECA priorities and strategic plans, allocating staff and resources to implementation until OECA completely implements all consent decrees.): Concur. OECA agrees with the principles underlying these recommendations, and efforts have already begun for FY05 implementation on these matters. OECA will continue to allocate adequate resources to the Initiative whether it is identified as a national priority or part of the core program.

4-7 (Develop a plan for allocating negotiation and implementation resources. Use resource planning in new initiatives to determine the predicted workload associated with the initiative; allocate training, education, and development resources; and provide for office-wide reevaluation of the resource plan): Concur. This recommendation has been overtaken by events (priority planning for FY05), and implementation and other resources will be allocated in concert with other OECA priorities and core programs requirements. Office-wide (and Region-

wide) reevaluations are considered as part of regular planning processes.

Chapter 5

Page 41, 1st Paragraph:

The Evaluation states that the refinery initiative received "mixed reviews" from the various stakeholders ranging from "positive to very negative." While we understand the value of soliciting such views from stakeholders and would encourage that OIG solicit views in the future, we question the necessity of highlighting the views of one "major industry professional association," which has been openly hostile to the Refinery Initiative since its inception. It is important, to ensure balance, to identify that as the position of the industry group. It should also be considered that an industry group's adverse comment could be legitimately considered an indicator of the success of the Initiative.

OIG Response: We do not believe we need to modify the paragraph. We obtained views from various stakeholders and accurately state that their comments ranged from very positive to very negative without disclosing from which specific stakeholder those comments came.

Page 41, 1st Lesson Learned (Identify Enforcement Concerns within an Industry):

A major lesson learned that is not otherwise captured is the importance of developing issue-specific strategies and investigative techniques. Identifying an issue as major started this process, it did not end it. Accordingly, the second sentence should be revised to add new language at the end: "Focusing on specific enforcement concerns allowed OECA to direct its limited resources to address an industry's most significant compliance problems *through the development and use of new tools and cost-effective investigative methods.*

OIG Response: We have combined this lesson learned with another lesson. We modified the text as we determined appropriate.

Page 42, 3rd Lesson Learned (Build the Program as a Whole with Regional and Headquarters Staff):

This section wholly discounts the role of the Department of Justice in these cases (a persistent shortcoming of the Evaluation as a whole). The pace of negotiations is frequently influenced by Justice Department attorneys who themselves have competing demands for their time. Ignoring the role of the lead negotiator in the draft Evaluation is a significant omission (and an additional indication of a basic lack of understanding of the enforcement process).

OIG Response: We did not discount the role of the U.S. Department of Justice (DOJ) in the refinery cases. We disagree that we lack understanding of the enforcement process because we did not include DOJ in this lesson learned. This lesson learned highlights the unique working relationship between EPA regional and headquarters staff on the national refinery program. Stakeholders did not describe DOJ as part of that unique relationship. Further, when we obtained information from DOJ staff on their roles and responsibilities regarding the national refinery program, they stated that they had a similar role to that in prior enforcement cases. In

addition, they stated that their coordination and collaboration with EPA was typical of other similar initiatives.

Page 42, 4th Lesson Learned (Designation of a "Champion"):

The discussion of this "lesson" fails to recognize that there is a senior manager "champion" for the Initiative (the Air Enforcement Division Director), and fails to appreciate what goes into the choice of which particular manager is appropriate in a given set of circumstances. Note also that the end of the second sentence should be revised to read as follows: "Industry representatives said that having a senior OECA executive who had specific knowledge about the issues, had decision-making authority, talked with them about the program, and even participated in negotiations, made a positive *impact* in how they reacted."

This recommendation also fails to understand both the history of the Initiative and who served as the "champion" during a given period of time, and why. Beginning in January 2000, the Director of ORE oversaw the enforcement-related elements of the Initiative. The Director of ORE assumed these responsibilities because the Director of the Air Enforcement Division was fully engaged in the ongoing Utility Initiative. Since February 2002, the enforcement phase of the Initiative has been championed by the Acting Associate Air Division Director, now the Acting Director of the Air Enforcement Division. At all critical times there has been an appropriately designated "champion," taking all relevant factors and circumstances into account.

OIG Response: We disagree that we did not appreciate what goes into the choice of a "champion". This lesson describes the views of EPA and industry stakeholders on how an effective "champion" can benefit a priority such as the national refinery program. We believe an effective "champion" represents more than a title assigned to a senior manager, but rather an individual who keeps the priority moving toward its goal.

Page 44, 7th Lesson Learned (Focus on End Result):

As written, the importance of certainty is identified only with respect to regulatory compliance/risks. From a company perspective, this certainty is much more for other purposes, primarily capital planning. Accordingly, it is suggested that the final sentence be revised as follows: "The industry saw many complex regulations on the horizon and viewed participating in consent decrees as 'good business' to *provide certainty and to inform their capital planning processes.*"

OIG Response: We have combined this lesson learned with another lesson. We modified the text as we determined appropriate.

Page 44, 8th Lesson Learned (Diligent Oversight of Consent Decrees):

The statement that oversight of the consent decrees is the "last piece" of the refinery program is incorrect. The unstated assumption is that all refineries will eventually voluntarily sign up to install specific control devices, etc., after a couple of rounds of discussion, and that the process is largely a "cookie cutter" operation. The settlement process is far from a "cookie

cutter" operation. The last piece of the refinery program is the inevitable litigation with the outlying companies that refuse to settle.

A principal reason why the global settlement process has been so successful is that it recognizes that reduced emissions and improved practices are of benefit to the company as they demonstrate their commitment to the surrounding community. Thus, the second sentence should be revised as follows: "Without effective implementation, anticipated emission reductions and increased industry compliance may not be realized."

The third sentence's statement that "OECA, regions, and States should ensure implementation of consent decree provisions and, if not, take appropriate enforcement action" misses the mark on what consent decree implementation, as under the global refinery consent decrees, requires. It is not checking the checker but to take positive action for implementing the decrees (*i.e.*, issue approvals and otherwise take action). Thus, "to oversee the consent decree implementation" should be replaced with "to implement the consent decrees."

OIG Response: We modified the text as we determined appropriate.

Page 45, Conclusions:

The tone and tenor of the conclusion is symptomatic of OIG's failure to grasp what was accomplished (and what is still being accomplished) by the Initiative, and particularly the unbalanced view exhibited throughout the report. For example, the first and third sentences tend to suggest (and, more importantly, do not recognize) the dynamic nature of the Initiative, nor do they properly credit OECA for having already incorporated into the Initiative the lessons learned in it is early stages. Similarly, the second sentence gives passing reference to the need for an effective enforcement program "despite limited resources." However, this cannot be squared with the unrealistic resource implications of many of OIG's recommendations (particularly in the absence of any consideration of OECA's overall resources program-wide). The fourth sentence repeats a mistake – that there is no senior OECA "champion" for the Initiative – that was pointed out to OIG investigators on numerous prior occasions. The last two sentences also repeat a misperception that is both noted several times in the detailed comments above as well as pointed out to OIG during the investigation, that the Initiative is still ongoing, that implementation under the decrees is at an early stage, and that much of the new control equipment (such as FCCUs) which will result in significant emission reductions is not yet required to be installed. What OIG fails to appreciate is that the changes to refinery operations and controls under the decrees require significant capital expenditures, and will be taking place over a period of years under long-term implementation schedules (*i.e.*, emissions reductions are still to be realized in future years). Because OIG's characterization is written in the past tense, it infers that the Initiative is completed, controls installed and emission reductions already realized.

OIG Response: We disagree that we did not grasp what the refinery program accomplished and that the report is unbalanced. We believe the report adequately describes the refinery program's accomplishments as well as areas for improvement. We modified the conclusion to acknowledge that OECA incorporated some of the lessons learned. However, OECA has not effectively incorporated other lessons learned into its refinery program, such as effective

communication among stakeholders. We kept our recommendation that OECA develop a communications plan for the consent decree implementation phase of the program.

We believe OECA's designation of the Air Enforcement Division Director as the "champion" for the refinery program represents an important first step in ensuring the success of the refinery program. However, the lesson learned goes beyond just assigning a label to a senior official. The lesson includes that the senior official ensures the achievement of program goals and the communication of results to all stakeholders.

Recommendations

5-1 (Disseminate the lessons learned from the refinery program to OECA staff to benefit other compliance efforts, obtain additional feedback from stakeholders – including States, industry, and environmental groups – on other lessons learned, and update OECA's *Framework for a Problem-Based Approach to Integrated Strategies* for on-going and future industry-specific enforcement programs): Concur in part, non-concur in part. OECA does not agree that revisions to the recently-issued *Framework for Problem-Based Approach to Integrated Strategies* (November 2002) *("Framework")* are needed to reflect lessons learned from the Initiative. Rather, the lessons learned from EPA's Refinery Initiative have informed and continue to inform the Agency's evolving problem-based approach to solving environmental compliance problems. For example, OECA is currently engaged with the Regions in developing performance-based strategies for each of the national priorities selected for FY05-07. As part of that effort, EPA is reviewing and refining, where appropriate, the goals and the strategies for the refinery initiative. In developing these performance-based strategies, OECA and the Regions will be guided by the recently-issued guidance, *Template for Developing a Performance-Based Strategy for National Compliance and Enforcement Priorities* (Final Draft February 18, 2004) as well as the *Framework*. As EPA gains more experience in the development and implementation of such strategies, we will refine guidance on the use of such strategies where needed.

5-2 (Designate a senior OECA executive to assume the role of champion for the refinery program to ensure (a) that all refiners enter into consent decrees or face appropriate alternative enforcement actions, and (b) consent decrees are effectively implemented): Concur in part, non-concur in part. As noted above in the comments on the "Conclusion" section, OECA does not agree that there is no "champion" for the Initiative. However, OECA agrees with the need for national enforcement priorities to be managed by a senior enforcement official (*e.g.*, Division Directors or their Associates), working on a team with other senior managers from EPA headquarters, regions and DOJ. Since 2002, the senior enforcement official responsible for managing the refinery initiative has and continues to be the Associate Director of ORE's Air Enforcement Division, who is now serving as the Acting Director of the Air Enforcement Division. OECA agrees that the Air Enforcement Division Director is responsible for ensuring that (a) refineries enter into consent decrees or face appropriate enforcement action, and (b) consent decrees are effectively implemented. OECA does not agree that it is necessary for EPA to settle with or litigate against **all** refiners in the industry under the Initiative. The goal of the Initiative is and has been to increase compliance by 50% and decrease emissions from refineries by 20%. The "100%" goal suggested by OIG miscomprehends the purpose of a "priority." Even after this is no longer a priority, further work in this area would be undertaken through the "core" program guidance, including the potential for multi-regional priorities, as well as the

potential for State efforts. OECA's work in an area is not just be driven by a coverage number, but by whether there continues to be an appropriate federal role. OECA designates a set of national priority criteria (*i.e.*, significant environmental benefit, pattern of noncompliance, appropriate federal role), and following the return of refineries to the "core" program certain refineries may be better handled by States or as part of a multi-regional priority. OIG's suggestion of "all" refineries lacks the context of taking into account all of our regulatory partners, and that certain types of facilities are best addressed at different levels.

5-3 (Consider designating a senior OECA executive to assume the role of champion for each of the other enforcement priority areas. EPA and industry officials should recognize the champion as knowledgeable and as having the authority to make decisions related to the priority area): Concur in part, non-concur in part. The determination of whether any particular initiative or priority area requires an OECA-designated "champion," and at what level, will be made on a case-by-case basis as is appropriate in light of all relevant facts and circumstances. For those areas that have been selected as national enforcement priorities for FY 2005, senior OECA and regional management have been named as "champions" for the purpose of developing performance-based strategies for each priority area. OECA anticipates that EPA senior enforcement management will also name a lead manager to be responsible for the implementation of each performance-based strategy.

5-4 (Develop a communications plan for refinery consent decree implementation. The plan should clearly describe the roles and responsibilities of all stakeholders, including refinery priority area experts and regional and State officials): Concur. OECA is already in the process of priority planning for FY 2005 (begun prior to the Evaluation), which will result in a revised performance-based strategy for the refinery sector. The performance-based strategy for FY 2005 will outline the path forward in (a) completing the refinery sector as a national priority and (b) ensuring that refineries governed by federal consent decrees comply with the terms and conditions of their consent decrees.

Appendix A

Page 50, 1st Paragraph:

The statement at the end of this paragraph is incorrect. EPA did not eliminate tracking the timeliness of company reports and EPA responses between October 2003 and January 2004. They remain on both the Deliverables Tracking Chart (a forward-looking planning document) and the Master Inventory (a comprehensive tracking tool). They were only deleted from the Activity Lists, an extract from the Master Inventory that identifies outstanding action items.

OIG Response: We disagree. EPA eliminated using tables that tracked the timeliness of company reports and EPA responses between October 2003 and January 2004.

Appendix B

Pages 53-54:

The information relayed in the table must be footnoted or explained to better reflect that each of the 11 consent decrees covered each of the refiner's petroleum refineries owned and operated by that refiner on the date of consent decree entry. Thus, EPA recommends the Table be modified to add footnotes or endnotes, or corrected, as follows:

ConocoPhillips – The table should reflect that 12 of its 16 refineries were purchased after Conoco resolved its liability to the United States under its global settlement.

ExxonMobil – This should not be highlighted as there is no consent decree at this time.

ChevronTexaco – The table should reflect that the two refineries not covered by its global settlement with the United States are asphalt, not petroleum, refineries.

Royal Dutch Shell GP -- The table should reflect that the two refineries not covered by a global settlement are operated by Shell Chemical, a separate business unit from its fuels refineries.

Citgo – This is omitted from the table, but should be included.

Tesoro – The table should reflect that Tesoro purchased two refineries from BP, both of which are covered by BP's global settlement with the United States.

El Paso – The table should be corrected to reflect that El Paso (which should be identified as Coastal Eagle Point Refining) has only one refinery, not two.

Orion – The table should reflect that this refinery is covered by a global settlement (patterned after the United States' settlements) with the State of Louisiana.

Murphy, Farmland, Premcor, Pennzoil, Crown, Frontier, and NCRA – (1) The table should reflect that each of these refiners were the subject of individual enforcement action under the Initiative and entered into limited, non-global settlements. (2) The table should reflect that the United States pursued an enforcement action against Murphy to judgment for operations at one of its refineries and that the relief obtained there includes elements patterned after the global settlements. (3) The table should reflect that Farmland, a company in bankruptcy, has recently resolved its liability with the United States through a consent decree that is patterned after the global settlements.

OIG Response: We modified the text as we determined appropriate.

Appendix C

No comment

Appendix D

Pages 57-58:

For the April, 1998 entry, it is not clear what is meant by the sentence "Implementation phase of the national refinery program began." Additionally, the table is difficult to reconcile with Table 2.1 "Major Phases of Refinery Program." The table puts undue emphasis on the dates that the consent decrees are lodged. Few obligations arise on the date the decree is lodged, as the terms of the settlement have no legal force unless and until the decree is *entered* by the court. Therefore, at a minimum the Table should reflect the date of both lodging and entry.

For clarity and accuracy:

- Early 1998 should indicate that monthly calls and annual meetings occurred from 1998 "through" 2000.
- February 1999 should refer to national meetings "to review investigation progress."
- February 2000 should identify that meeting was to "review progress" and to discuss national investigations.
- Early 2000 should indicate that corporate officials given the option "to resolve all issues of widespread compliance/enforcement concern to EPA." It is not accurate to suggest that they were then under threat of enforcement.
- December 20, 2001 should parenthetically indicate, as indicated in the March 21, 2001 entry that "(30 percent of industry then under consent decree; additional 30 percent in similar global settlement negotiations)."
- October 16, 2003 should parenthetically indicate, as indicated in the March 21, 2001 entry that "(40 percent of industry then under consent decree; additional 40 percent in similar global settlement negotiations)."

OIG Response: We modified the text as we determined appropriate.

Appendix E

Page 59:

The "Consent Decree Process Flow Chart" should reflect that it is the date of entry, not lodging, that a consent decree becomes a live legal document for purposes of the Court. It is also the date from which the vast majority of the refiner's consent decree obligations flow.

For accuracy and to conform the chart to reality, the following changes should be made:

- Negotiation should be replaced with "Global Consent Decree Opportunity"; based on a willingness to pursue or reject that opportunity, the chart branches.
- Lawsuit/Other Enforcement Action should be replaced with "Continue/Initiate Investigation(s) and Take Enforcement Action"; most global consent decrees were not based on mature investigations. If the opportunity had been rejected, we would have been required to complete the investigations and, only if noncompliance then found, would we be able to file a lawsuit or take other enforcement action.

- Company Report to EPA on Action should delete "on Action;" most reports are after the fact; some are to approve future action.
- No EPA Response Required leads directly to Environmental Result and does not result in Company Action (except in the unusual case).
- Environmental Result has no required return loop. However, if one is to be reflected, it should not be to "Negotiation" but to "Planned Consent Decree Action" (*e.g.*, approval of catalyst leads to optimization study that results in proposed catalyst addition rates for the demonstration period that (when approved by EPA) leads to. . ., etc.).

OIG Response: We modified the text as we determined appropriate.

Appendix F

Page 61:

"National Refinery Program Logic Model – Outputs and Later Activities"

> "$ of Penalties" is referenced under the heading of "Measures" but it is unclear what it is intended to measure. If it is intended as a qualitative assessment of the success of the initiative, then we would recommend that amount and scope of injunctive relief and the amount of supplemental environmental projects also be included under the "Measures" heading.

"National Refinery Program Logic Model – "Short Term Outcomes and Later Activities," "Intermediate Outcomes," and "Long-term Outcomes"

> We recommend that the three boxes be combined to create two boxes – "Immediate Outcomes" and "Long-term Outcomes." Many of the outcomes identified as "short-term" could also be considered "intermediate" and "long-term" outcomes (*e.g.*, effective monitoring, improved relations). We also recommend and that the "logic" model expressly state that outcomes identified as immediate are listed because they are first realized immediately after entry of the consent decrees, although they are very likely to translate to long-term outcomes as well.
>
> The "measures" associated with the "short-term," "intermediate," and "long-term" outcomes are not well-defined, well-considered, well-understood or measurable. For example, "accuracy of [emissions] inventories" is not, and can not be, a measure of success of consent decree programs. That the States do a poor job of ensuring accurate emissions inventories or that the Clean Air Act does not require universally verifiable methods of measuring emissions from each and every emission unit are matters well beyond the scope of the Initiative and the consent decrees. Likewise, the "measures" of improved "enforcement credibility," "improvement of relations," and "enhanced ethic" are not susceptible to measurement.

For accuracy and completeness and as described above, the following Measures should be revised as indicated:

- Outputs and Later Activities - add "# of referrals and probably referrals"
- Outputs and Later Activities - revise to read "% of Refining Capacity under Global Consent Decrees; in Global Consent Decree Negotiations; under Non-Global Consent Decrees; in Litigation; and Under Investigation."
- Short Term Outcomes and Later Activities - revise Extent of Monitoring & Accuracy of Inventories to read "# of CEMs installed and stack tests required under consent decrees and %of Refining Capacity and Revised NOx and SO_2 Baselines."
- Improvement of Relations should be replaced with "# of state parties to consent decrees and # of states participating in joint marquee issue investigations."

Intermediate Outcomes - include the following measures:

- "# of WGS, SCRs, SNCRs and ULNBs installed under consent decrees" and "# of FCCUs utilizing catalyst additive control technologies."
- "# of refineries implementing enhanced LDAR program"; "# of refineries implementing enhanced benzene program"; and "# or refineries implementing enhanced NSPS/flaring program (*e.g.*, root cause failure analyses)."
- "# of Consenters Group meetings to which EPA is invited" and "# of consent decree amendments approved by EPA."

Long Term Outcomes - Include the following compliance measure:

- "# of refineries found to be in major violation of LDAR, benzene, NSPS/flaring and/or NSR/PSD requirements" and "# of refineries under global consent decrees thereafter determined to be in major violation of LDAR, benzene, NSPS/flaring and/or NSR/PSD requirements."

OIG Response: We have deleted the logic model appendix from the report.