



U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

# EPA Needs to Demonstrate Whether It Has Achieved the Goals It Set Under the National Petroleum Refinery Initiative

Report No. 14-P-0184

April 15, 2014



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**Report Contributors:**

Kathlene Butler  
Allison Dutton  
Dan Engelberg

Julie Hamann  
Fredrick Light  
Danielle Tesch

**Abbreviations**

ACS	Annual Commitment System
CAA	Clean Air Act
CEMS	Continuous Emissions Monitoring System
DOJ	U.S. Department of Justice
EPA	U.S. Environmental Protection Agency
FY	Fiscal year
GPRA	Government Performance and Results Act
NEI	National Enforcement Initiative
NEIC	National Enforcement Investigation Center
NO <sub>x</sub>	Nitrogen oxides
NPRI	National Petroleum Refinery Initiative
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
SO <sub>2</sub>	Sulfur dioxide

**Cover photo:** A petroleum refinery has multiple connection points that represent a potential source of emissions leaking into the environment. (EPA photo)

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# At a Glance

## Why We Did This Review

The objective of this evaluation was to determine to what extent the U.S. Environmental Protection Agency's (EPA's) enforcement actions led to sustained compliance under the National Petroleum Refinery Initiative (NPRI, or the initiative). The EPA selected the petroleum refinery sector as one of its National Enforcement Initiatives (NEIs) in 1996. The EPA intended that its NPRI strategy's companywide consent decrees, or legally binding agreements, would lead to improved compliance and reduced harmful air pollutants or emissions as companies changed environmental management practices and reduced their emissions. The EPA officially concluded the NPRI in 2007, when 80 percent of the refining facilities were under a consent decree.

## This report addresses the following EPA theme:

- *Addressing climate change and improving air quality.*

For further information, contact our public affairs office at (202) 566-2391.

The full report is at:  
[www.epa.gov/oig/reports/2014/20140415-14-P-0184.pdf](http://www.epa.gov/oig/reports/2014/20140415-14-P-0184.pdf)

## ***EPA Needs to Demonstrate Whether It Has Achieved the Goals It Set Under the National Petroleum Refinery Initiative***

### What We Found

Under the NPRI, the EPA planned to increase compliance and reduce emissions within the petroleum refinery industry. However, the EPA did not determine whether the NPRI achieved the compliance goal it set. In 2006, the EPA assessed whether companies under consent decree were making progress toward the established emission-reduction goal it set. However, since that time, the EPA has not analyzed the available facility data to determine whether the initiative achieved the established emissions-reduction goal. Work on the NPRI has declined since 2007, as the EPA has reduced resources dedicated to the initiative. The EPA did not place the same attention on monitoring initiative outcomes as it did on negotiating consent decrees.

**By determining the outcomes of the NPRI, the EPA can strengthen the likelihood of success for future initiatives and sustain the desired benefits.**

The EPA has replicated this enforcement model in other NEI sectors, such as the stormwater initiative. The EPA needs to know whether this enforcement approach produced the intended outcomes. By making this determination, the EPA can strengthen the likelihood of success for future initiatives, and achieve and sustain the desired reductions in risk to human health and the environment.

### Recommendations and Planned Corrective Actions

We recommend that the EPA's Assistant Administrator for Enforcement and Compliance Assurance develop and implement a plan to assess whether the NPRI led to sustained improvement in compliance and sustained reductions in pollution among refineries. We also recommend that the EPA report the results of its efforts to the public.

The EPA agreed with our recommendations. The EPA responded that the agency planned to post company-reported emission data to the public website as consent decrees are completed. The EPA agreed to guide future NEIs to include periodic evaluation. We agreed with the EPA's proposed corrective actions. Three recommendations are resolved with corrective actions underway and one recommendation is closed with corrective actions completed.

### Noteworthy Achievements

The NPRI achieved broad industry coverage by addressing compliance problems on a companywide basis as opposed to a facility-by-facility approach. The companywide strategy used a proactive approach to solving compliance problems by focusing on technology-based solutions to prevent noncompliance.



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

THE INSPECTOR GENERAL

April 15, 2014

**MEMORANDUM**

**SUBJECT:** EPA Needs to Demonstrate Whether It Has Achieved the Goals It Set Under the National Petroleum Refinery Initiative  
Report No. 14-P-0184

**FROM:** Arthur A. Elkins Jr. 

**TO:** Cynthia Giles, Assistant Administrator  
Office of Enforcement and Compliance Assurance

This is our report on the subject evaluation conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

**Action Required**

All recommendations are agreed to and resolved. Therefore, no final response to this report is needed. If you wish to provide a final response to this report, it should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification. We will post this report to our website at <http://www.epa.gov/oig>.

If you or your staff have any questions regarding this report, please contact the Assistant Inspector General for Program Evaluation, Carolyn Copper, at (202) 566-0829 or [copper.carolyn@epa.gov](mailto:copper.carolyn@epa.gov); or the Director for Water Evaluations, Dan Engelberg, at (202) 566-0830 or [engelberg.dan@epa.gov](mailto:engelberg.dan@epa.gov).

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# Chapter 1

## Introduction

### Purpose

The objective of this evaluation was to determine the extent to which the U.S. Environmental Protection Agency's (EPA's) enforcement actions under the National Petroleum Refinery Initiative (NPRI, or the initiative) led to sustained compliance.

This is one of the EPA OIG's products associated with climate change.

### Background

Sustained compliance with environmental laws protects human health and the environment. The principal goal of the EPA's enforcement activities is to bring about a level of compliance that achieves the human health and environmental benefits expected from environmental laws. The EPA's 2013 budget directed about one-tenth of its annual budget to promoting compliance with environmental laws (\$830 million in fiscal year 2013).

The EPA strives to achieve sustained compliance in its programs by focusing on three types of enforcement activities:

1. **Compliance assistance**—Activities designed to assist the regulated community with understanding and complying with regulations.
2. **Compliance monitoring**—Activities designed to assess the compliance status of the regulated community through inspections and other activities.
3. **Enforcement actions**—Legal actions taken by the EPA designed to bring polluters back into compliance with the law.

The EPA believes these three components, together with enhanced coordination of EPA and state actions, will lead to sustained improvement in compliance with federal environmental laws.

#### ***EPA Focuses National Resources on Important Compliance and Pollution Problems***

The EPA operates a national enforcement program consisting of two major components: its “core” program and its National Enforcement Initiatives (NEIs).<sup>1</sup> The EPA's core enforcement program forms the bulk of the enforcement activity

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<sup>1</sup> Prior to February 2010, the EPA referred to national enforcement initiatives as “National Enforcement Priorities.”

for the Office of Enforcement and Compliance Assurance (OECA) and the EPA's 10 regions. Core enforcement responsibilities include the EPA's enforcement of major environmental statutes like the Clean Air Act (CAA), Clean Water Act, Resource Conservation and Recovery Act, and other environmental statutes.

Because the EPA's enforcement responsibilities cover millions of regulated sites and many statutes, the OECA and the agency's regions use the NEIs to focus on the most serious air, water, waste and chemical hazards. Through the NEIs, the OECA directs resources to nationally significant enforcement issues, like stormwater runoff, mineral processing, air toxics and petroleum refineries. The OECA forms national teams to direct work and monitor progress toward achieving the goals in individual industry sectors selected as initiatives. The EPA regions also expend about one-third of their enforcement resources to implement and monitor the progress of the initiatives (as evidenced by the full-time equivalent positions assigned to these areas). Once the goals for individual sectors are achieved, the EPA transitions the work back into the core enforcement program.

### ***Government Programs Should Be Monitored and Evaluated***

The Government Performance and Results Act (GPRA) Modernization Act of 2010 requires performance assessments of government programs so Congress can review agency performance. To guide agencies in assessing their performance, GPRA requires agencies to set goals, measure performance against those goals, and report publicly on their progress toward achieving those goals.

The OECA includes compliance monitoring as one of its essential tools for achieving improved compliance. In addition, the EPA's congressional budget justification for fiscal year (FY) 2013 stated that providing information about the NEIs to the public is a key challenge for the agency. In the budget justification, the EPA wrote that the agency needs to provide meaningful information to the public about the progress being made under the NEIs to address priority environmental risks and compliance problems.

In 2007, the OECA developed a strategic approach<sup>2</sup> for achieving improved compliance and better protection of human health and the environment. The guide reflects GPRA requirements by instructing that initiatives include measures and evaluation strategies to determine how well the measures and strategies help to achieve the EPA's goals. The OECA uses this approach when developing strategic plans for the individual national enforcement initiatives.

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<sup>2</sup> EPA 305-R-07-001, *Guide for Addressing Environmental Problems: Using an Integrated Strategic Approach*, March 2007. This guide builds on a previously developed framework included as the guide's attachment A, "Framework for a Problem-Based Approach to Integrated Strategies."



## ***Refineries Present Widespread Compliance Challenges and Emit Harmful Pollutants***

Petroleum refineries account for significant releases of pollutants into the environment during the complicated industrial process that refines crude oil into petroleum products. Refineries emit 75 percent of their pollutants into the air. These pollutants contribute to smog, acid rain, climate change, and bioaccumulation in mammals and fish eaten by humans. These pollutants also contribute to cardiovascular and respiratory disease, and cancer in humans.

When the EPA was developing the initiative in 1996, the Toxics Release Inventory showed refineries released over 66 million pounds of toxic pollutants known or suspected to cause cancer or other serious human health effects. In the EPA's most recent Toxics Release Inventory report from 2011 (released in January 2013), refineries reported releasing over 56 million pounds of toxic pollutants. Approximately 58 percent of these releases were to air through fugitive air emissions or through stack air emissions. On average, the population within 3 miles of active petroleum refineries is approximately 40 percent minority, which is one of several considerations when determining environmental justice concerns.

Between 1994 and 1995, the EPA conducted nationwide inspections of 109 petroleum refineries. The inspection results identified widespread CAA compliance challenges, with violations in 70 percent of refineries. Through inspections and additional research, the EPA identified four major areas where refineries did not comply with the law:

1. Emissions from major refining units that were incorrectly permitted as “minor” sources, were unpermitted, or did not have Best Available Control Technology installed (New Source Review/Prevention of Significant Deterioration requirements for fluidized catalytic cracking units, heaters and boilers).
2. Fugitive emissions associated with leaks from refinery equipment, e.g., valves, pumps and connectors (New Source Performance Standards for leak detection and repair).
3. Uncontrolled and unreported benzene waste (National Emission Standards for Hazardous Air Pollutants).
4. Use of flaring for routine purposes instead of on an emergency basis, and indications that some emissions during emergency events were in excess of applicable limits (New Source Performance Standards Subparts A & J).



## ***NPRI Was Established to Address Industrywide Compliance Problems and to Reduce Pollution***

The EPA developed plans and devoted resources to improve compliance across the refining sector in the four major areas identified by the agency. To achieve a sustainable change in compliance within the petroleum refinery industry, the EPA developed a strategy that would address the industry as a whole. In 1996, the EPA selected the petroleum refinery sector as one of the agency's first national enforcement initiatives (at the time called National Enforcement Priorities).

The EPA's overall goal for the NPRI was to bring U.S. refineries into long-term sustained compliance with the CAA. The EPA believed the actions required by consent decrees would lead to improved compliance and reduced emissions.

Because a single company may operate many individual refineries, the EPA negotiated with companies instead of facilities under the NPRI. This enabled the agency to cover all of a company's facilities in one negotiation. The negotiations resulted in legally enforceable consent decrees, which established companywide and facility-specific compliance expectations and reporting requirements. For example, the companies agreed to change environmental management practices, reduce their emissions, and provide the EPA with regular certified progress reports for all company facilities. The certified progress reports provided the EPA with information about refinery performance, emissions and progress toward completing consent decree requirements. The consent decrees also included requirements that a company's refineries must demonstrate they have paid all stipulated penalties and achieved compliance with the established emissions limits for 12 consecutive months. Once companies complete all consent decree requirements, they may request termination of the decree by the federal court.

The EPA's *Petroleum Refining Performance-Based Strategy* identified four goals and measures for the NPRI (see table 1). In 2007, after the EPA achieved its goal to cover 80 percent of the industry capacity with consent decrees (see Goal 1 listed in table 1), the agency returned enforcement of the petroleum refinery sector back to the EPA's core enforcement program. Appendix A shows a timeline of the petroleum refinery sector's inclusion as an initiative.

**Table 1: Goals, baseline data and milestones for the NPRI**

Goal No.	Goal text	Baseline data	Goal
1	80% of the domestic refining capacity addressed through settlement, by filed civil action against a refinery, or referred to the U.S. Department of Justice for filing.	Total domestic capacity of the refinery sector (2004): 142 refineries produced 17.4 billion barrels per day.	13.9 billion barrels per day.
2	50% improvement in compliance over the 1995 baseline.	Baseline noncompliance rate (FYs 1994–1995): of 156 facilities inspected, 109, or 70%, of the facilities were not in compliance.	55 of the 109 facilities not in compliance brought back into compliance.
3	20% reduction in emissions of SO <sub>2</sub> and NO <sub>x</sub> from the 1995 baseline.	Emissions data (FY 1995): NO <sub>x</sub> (380,641 short tons/year); SO <sub>2</sub> (648,155 short tons/year).	205,759 short tons of NO <sub>x</sub> and SO <sub>2</sub> combined per year.
4	100% of consent decree deliverables to the EPA requiring a response, with 75% responded to by the agency within 90 days.	Receipt date of all deliverables requiring a response.	(Same as goal text).

Source: OIG summary of the OECA's *Petroleum Refining Performance-Based Strategy*.

NO<sub>x</sub>: Nitrogen oxides

SO<sub>2</sub>: Sulfur dioxide

The NPRI helped the EPA coordinate enforcement resources nationwide. The EPA marshaled resources from the OECA, the EPA regions and the National Enforcement Investigation Center (NEIC)<sup>3</sup> to conduct research and to negotiate with companies. The EPA established expectations for regional participation, increased resource availability for the NPRI, and promoted the NPRI's cooperative approach throughout the petroleum refinery sector. This approach enabled the EPA to use a regional expert where the person would be the most useful. For example, Region 5 air enforcement personnel traveled to Region 6 to aid in negotiations.

## Noteworthy Achievements

The NPRI achieved broad industry coverage by addressing compliance problems on a companywide basis, as opposed to the traditional facility-by-facility approach. By the end of January 2011, the EPA established consent decrees covering 28 refining companies (105 refineries) that accounted for 90 percent of

<sup>3</sup> The NEIC is the environmental forensic center for the EPA's enforcement programs. The NEIC is accredited for field sampling, field measurements and monitoring, and laboratory measurement. The NEIC has a unique role in conducting complex criminal and civil enforcement investigations, and applied research and development to support science for enforcement. The demands of specific environmental enforcement cases require nonstandard methodologies. In response to these needs, the NEIC conducts and develops new methodologies and innovative investigative strategies.

the national industrial capacity. Currently, only 30 operating refineries are not parties in an NPRI consent decree.<sup>4</sup>

As an enforcement tool, the NPRI consent decrees furthered the objectives of the CAA by requiring the refinery industry to develop pollutant controls more stringent than the existing CAA requirements. In Chapter 2, we discuss the importance of monitoring and evaluating the outcomes of the consent decrees after they have been signed. By committing to install the technology controls required by the NPRI consent decrees, participating companies made ambitious commitments to reduce annual refinery emissions. For example, the EPA estimated that companies under consent decree would cumulatively reduce pollution by 93,000 tons of NO<sub>x</sub> and 256,000 tons of SO<sub>2</sub> annually.<sup>5</sup> If achieved, this would represent a 24 percent reduction in NO<sub>x</sub> and a 39 percent reduction in SO<sub>2</sub> emissions annually from levels in FY 1995. The estimated annual reduction in NO<sub>x</sub> is equivalent to the amount emitted by approximately 89 million cars driving about 13,500 miles per year on average.<sup>6</sup>

The NPRI consent decrees employ a proactive approach to solving compliance problems by focusing on technology-based solutions to prevent noncompliance, reduce facility reporting burden, and enhance the EPA's ability to manage compliance over this complex industry. The EPA's enforcement efforts under this NEI drove improvements to existing control technologies and developments of new technologies in the petroleum refineries sector. For example:

- Consent decrees require companies to install continuous emissions monitoring systems (CEMS) on major emission sources. Once facilities install CEMS, they can monitor actual data internally and report the data to the EPA. The EPA can use the CEMS data to establish equipment-specific and facility-specific emission limits. Facilities can also use CEMS data to ensure they are in compliance with the terms of the consent decree.
- The more recent consent decrees also require fence-line monitoring. These monitors provide near real-time reports of emission data on public websites, thereby potentially enhancing transparency. The agency further believes providing actual emission data to communities living close to refining facilities will serve as a deterrent to serious noncompliance.
- Since 2010, consent decrees have required companies to install low-leak valves when replacing existing valves at refineries. These valves virtually

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<sup>4</sup> The EPA posts the consent decrees on its website at <http://www2.epa.gov/enforcement/petroleum-refinery-national-case-results>.

<sup>5</sup> In the United States, the terms ton and short ton (used in the EPA's goals for the NPRI) are interchangeable and are equivalent to 2,000 pounds.

<sup>6</sup> This calculation uses the EPA's 1999 Tier 2 tailpipe emissions standard of 0.07 grams of NO<sub>x</sub> pollutants emitted per car, per mile driven.

eliminate pollutant leaks and reduce the need for the EPA to re-inspect the facility for compliance with leak-detection protocols.

These technology-based compliance and monitoring tools enable facilities to provide easily accessible emissions data, and increase the human health protection for communities close to refining facilities.

## Scope and Methodology

We conducted this evaluation in accordance with generally accepted government auditing standards. Those standards require that we plan and perform our work to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our evaluation objectives. We conducted our evaluation from January 2012 through September 2013 (this assignment was suspended between March 2012 and July 2012 to address other OIG priorities).

We selected the NPRI because it was an early national enforcement initiative, and the EPA had moved the refinery program back to the core enforcement program. As such, evaluating this NPRI would allow us to evaluate results from one of the initiatives. OECA staff and managers agreed that evaluating the NPRI offered an opportunity to evaluate the outcomes of an initiative.

To answer our objective, we reviewed documents, surveyed the EPA regions, conducted interviews, and analyzed evidence of compliance from the EPA's enforcement data and results. Specifically, we reviewed background documents related to the EPA's development and management of the NPRI. We requested information about refinery compliance with consent decrees from the EPA's nine regions where refineries are located (Regions 2 through 10). We interviewed EPA enforcement officials in headquarters and eight of the nine EPA regions with refineries.<sup>7</sup> We also interviewed experts at the NEIC who conduct many of the inspections at refinery facilities. We did not speak with state officials for this review because states generally did not participate in consent decree follow-up inspections.

### ***Prior Audit Coverage***

#### ***EPA OIG Report No. 08-P-0278, EPA Has Initiated Strategic Planning for Priority Enforcement Areas, but Key Elements Still Needed,***

**September 25, 2008:** The OIG reviewed the EPA's strategies for the air toxics, combined sewer overflow and mineral processing industry initiatives within the NEI. The OIG reported that the OECA had instituted a strategic planning process for these industry initiatives. Each strategy contained an overall goal, a problem

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<sup>7</sup> We did not interview enforcement officials in Region 7 because the consent decrees in this region were not signed before 2007. Region 7 consent decrees were signed in 2009 and 2012.

statement, a description of the status of the priority area, and anticipated environmental benefits. The EPA also described the facilities the agency would address, the tools the EPA would use, and the OECA headquarters and regional responsibilities. However, each of the strategic plans lacked key elements to monitor progress and accomplishments. In some cases, the plans lacked detailed exit plans (i.e., plans to move the industry initiatives back to the core enforcement program). The OIG recommended that the OECA develop a policy requiring strategy documents for industry initiatives and have these documents include a full range of performance measures, exit plans and information about the role of states. The OECA reported that it addressed this recommendation by developing a template for performance-based strategies for future enforcement initiatives. The OECA certified that it completed the other recommendation in December 2009.

**EPA OIG Report No. 2004-P-00021, *EPA Needs to Improve Tracking of National Petroleum Refinery Compliance Program Progress and Impacts*, June 22, 2004:** The OIG reported that the OECA's performance measurement and reporting approach for the NPRI did not provide useful and reliable information. The EPA needed this information to effectively implement, manage, evaluate and continuously improve program results. In addition, the OECA had not established and communicated clear goals, systematically monitored refinery program progress, reported actual outcomes, or tracked progress toward achieving consent decree goals. This report included 17 recommendations for improvement. Among them, the OIG recommended that the OECA improve refinery consent decree implementation and tracking, as well as ensure better measurement and reporting of refinery program outcomes. On March 19, 2009, the OECA certified that it had completed all corrective actions for the report. The OECA reported that it fulfilled six recommendations through its 2004 National Program Managers Guidance, which the OECA said included the goals developed as part of the *Petroleum Refining Performance Based Strategy* (table 1).

## Chapter 2

# EPA Needs to Determine Whether the NPRI Led to Sustained Compliance and Pollution Reduction

Though evidence of improvements exists, the EPA has not demonstrated whether the NPRI resulted in sustained compliance or continued emission reductions in the petroleum-refining sector. Consent decrees represented the first step toward improving compliance and reducing harmful emissions in the refinery sector, and the EPA set compliance improvement and pollution reduction goals for the NPRI. However, the EPA has not measured progress toward achieving the compliance goal it set for the NPRI, and, since 2006, the EPA has not evaluated progress toward achieving the emissions goal. When the EPA returned the NPRI to the agency's core enforcement program in 2007, the EPA reduced the amount of resources for the initiative, which hampered its ability to oversee consent decree implementation. The EPA needs to determine whether the NPRI achieved its desired goals of addressing challenging compliance and emissions problems. By making this determination, the EPA can strengthen the likelihood of success for future national enforcement initiatives, and achieve and sustain the desired reductions in risk to human health and the environment.

### **EPA Has Not Measured Progress Toward Achieving the NPRI Compliance Goal, But Has Conducted Periodic Follow-Up Inspections**

The EPA began the NPRI in 1996 after identifying a sectorwide CAA noncompliance rate of 70 percent in 1995. The EPA set a compliance goal for the NPRI that companies subject to NPRI consent decrees would achieve a 50 percent improvement in compliance over the 1995 baseline. The 1995 baseline was based on inspections of 156 refineries from August 1994 through August 1995. Therefore, to determine whether sector compliance improved from the baseline as a result of the NPRI, the EPA would need to conduct a round of inspections similar to those conducted in 1994 and 1995. However, the EPA has not deployed the resources to develop and implement such a protocol.

Instead, the EPA conducted periodic consent decree follow-up inspections. Although the follow-up inspections did not allow the agency to determine whether the NPRI led to sustained compliance improvements industrywide, they provided the EPA with important information about compliance with consent decree requirements at particular facilities. However, due to differences in the number of refineries in each region and in resource availability to conduct inspections, the EPA did not conduct follow-up inspections at facilities consistently. Because the EPA regions prioritized other activities over NPRI monitoring and evaluation, more than half of the facilities under consent decree had not received follow-up inspections. In fact, between 2003 and 2012, Region 6 and the OECA conducted consent decree follow-up inspections at only 19 of the

35 consent decree facilities in Region 6. This is notable because Region 6 contains more refineries—and more refineries under consent decree—than any other region.

Moreover, some of the nation's largest refineries went without any consent decree follow-up inspection by the EPA. Although other types of federal or state inspections<sup>8</sup> may have occurred, data provided by the EPA's regional enforcement personnel show that neither the OECA nor Region 6 conducted consent decree follow-up inspections at the following facilities:

- Marathon Garyville, Louisiana, Refinery (490,000 barrels per day). Consent decree signed 2001.
- ExxonMobil Beaumont, Texas, Refinery (344,500 barrels per day). Consent decree signed 2005.

EPA officials said that although Region 6 has many more refineries, the region is still using its staff to negotiate consent decrees with new companies. Generally, EPA officials said that they prioritized consent decree follow-up inspections based on the length of time a refinery has been subject to a consent decree, whether the refinery has received other types of inspections, the results of any other inspections, and input from regions on where to inspect. They also conducted some random follow-up inspections.

## **EPA Made a One-Time Assessment of Facility Emissions Data, But Has Not Assessed Progress Toward Meeting the NPRI Emission Goal Since 2006**

When signing consent decrees, the EPA estimated the emission reductions that would occur when companies completed all consent decree actions. On the EPA's website, the EPA reported that companies that were parties to consent decrees would cumulatively reduce pollution by 205,759 short tons of NO<sub>x</sub> and SO<sub>2</sub> combined per year. So that the EPA could track emissions, the consent decrees required facilities to submit certified progress reports that included emission data. In 2011, the EPA published a progress report on the NPRI that included a one-time analysis of the emissions data self-reported by companies under consent decree as of 2006.<sup>9</sup> However, since that time, the EPA has not monitored the progress that companies have made toward achieving the emission goals set in the agency's NPRI strategy.

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<sup>8</sup> For example, under individual state Compliance Monitoring Strategies, major sources like these facilities are required to be inspected on a periodic basis (between 2 to 5 years); such inspections include compliance with consent decree requirements as reflected in CAA Title V permits, among other applicable permits.

<sup>9</sup> The OIG did not assess the accuracy of self-reports as part of this evaluation.



The analysis of the 2006 emissions data showed that overall emissions from these companies declined by almost 50 percent.<sup>10</sup> However, facility-specific analysis showed mixed results. Data from some facilities demonstrated that some would likely meet or exceed anticipated emission-reduction goals. Emissions reported by other facilities had increased since signing the consent decrees.

The 2006 assessment also did not show the progress made by all facilities under the consent decree at the time. Many additional facilities signed consent decrees with the EPA after the 2006 analysis. OECA officials also said that the 2006 analysis likely did not include some of the estimated emission reductions due to the lag between finalizing more recent decrees and the installation of controls that would achieve the emission reductions. For example, to reduce flaring emissions, the implementation schedule for the 2005 ConocoPhillips settlement required major equipment to be installed periodically through 2012 at some facilities, which is after the 2006 emissions analysis was completed. The EPA said this meant projected emissions reductions for the ConocoPhillips refinery may not occur until 2015.

Enforcement officials said that resource constraints prevented them from repeating the effort to estimate progress toward achieving emissions reductions after the 2006 analysis. For example, due to a lack of funding, OECA officials indicated they could not continue tracking pollution reductions in a manner similar to their 2006 analysis based on emissions data. The OECA officials said they do not have the budget to support the \$36,000 that it would cost to update the analysis of 2006 emission data.

## **EPA Has Not Established a Clear Process for Verifying Compliance for Consent Decree Termination**

EPA has not established a clear process for verifying compliance in advance of consent decree termination. The court makes the final determination about consent decree termination, and consent decrees require companies to certify completion of all consent decree requirements under penalty of perjury or contempt. However, the EPA verifies whether the company has, in fact, completed all requirements.

An OECA official was not confident that the regions could verify compliance with all consent decree requirements. OECA officials in charge of the NPRI believed the process was clear, while enforcement personnel in five of the seven regions we spoke with said they were not sure how the process would occur, or that they would like additional guidance from OECA on termination.

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<sup>10</sup> In response to a 2004 OIG report recommendation, the OECA hired a contractor to verify predicted emission reductions using facility progress self-reports. The OECA presents the results of the contractor's analysis in *EPA Enforcement: National Petroleum Refinery Initiative*, February 11, 2011, draft (subject to revision). As of the date of this report, this analysis was available at <http://www2.epa.gov/enforcement/results-petroleum-refinery-national-initiative>.

## **EPA Reduced Its Resource Commitment to the NPRI, Which Limited Its Monitoring Ability**

The OECA and EPA regional enforcement officials identified reduced resources as a cause for not monitoring emission and compliance goals for the refinery initiative. The EPA reduced the resources devoted to the NPRI even though the work required to ensure the initiative resulted in the intended outcomes continued and expanded. When the EPA concluded the NPRI in 2007, no consent decrees had been terminated. In 2007, the EPA's 20 companywide consent decrees covered 92 refineries. Moreover, after the NPRI ended, the EPA continued to negotiate and sign consent decrees with additional refineries, eventually reaching 32 decrees covering 116 facilities by the end of 2012 (see appendix A). Each of the 32 consent decrees included hundreds of activities, reports and results to monitor and evaluate, and most decrees were designed to last for 10 or more years.

Despite the continued and increasing oversight requirement, the OECA concluded the NPRI in 2007 and shifted resources to work on other priorities. Enforcement officials in the OECA and the regions told us the EPA focused fewer resources and attention on overseeing the NPRI than the agency did on achieving industry coverage. The OECA officials said that spending additional time on this sector would be less productive than devoting those resources to a new priority area.

Regional personnel said that adequately monitoring implementation required a resource commitment at least as large as the resources used to negotiate the consent decrees. However, the regions shifted resources to work on other priorities. Region officials told us and OECA officials agreed that the absence of an Annual Commitment System (ACS)<sup>11</sup> goal for the regions is an impediment to regions investing significant resources to oversee refinery compliance. The absence of an ACS goal concerning NPRI follow-up means that regions are more likely to focus on other work associated with ACS goals than on providing oversight of refineries.

The low number of EPA staff with technical expertise in the refinery sector has also hampered oversight. Regulating the petroleum refinery process is complex and requires technical knowledge of not only the refinery process but also the complicated regulatory requirements under the CAA. The OECA does not have a succession plan in place for refinery staff (including inspectors) leaving the agency. Headquarters and region officials associated with the NPRI were concerned that the EPA might not attract and retain qualified experts for the EPA's refinery program. In 2012, the OECA had one inspector responsible for ensuring the refineries comply with the New Source Review/Prevention of Significant Deterioration consent decree components. In addition, only a few

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<sup>11</sup> The ACS is a performance module located within the EPA's Budget Automation System used to track annual headquarters and regional performance commitment information and results.

engineers are qualified to conduct leak detection and repair and benzene inspections. Regions also had very limited resources. For example, Region 9 had one staff person responsible for overseeing consent decree compliance for 15 refineries and negotiating with companies not yet under a consent decree.

Officials from the OECA indicated that they would like to evaluate the impact of the NPRI on compliance and emissions. However, they told us they cannot do this due to resource constraints. With the EPA's current budgetary constraints, the agency must make difficult decisions regarding resource allocation to maximize the environmental and human health results achieved from its work. However, without devoting resources to determining the outcomes of its programs, the EPA cannot demonstrate whether the resources it commits have, in fact, led to the intended and predicted environmental and human health outcomes.

## **Conclusion**

Since beginning the NPRI, the EPA has adopted a similar consent decree approach in other industry sectors selected as initiatives. For example, the EPA based its stormwater and mineral processing initiatives on establishing consent decrees with companies. Consent decrees in these sectors also target major compliance issues and establish improved environmental management practices. Establishing a demonstrated performance-based system within the NPRI would therefore provide a model for how to accomplish this in other sectors.

To ensure it is operating an effective, results-based program, the EPA should be assessing the success and outcomes of the NPRI before the multi-year consent decrees have come to a close. Doing so enables the EPA and the regulated industry to demonstrate success where it has occurred, identify lessons learned, modify the approach to improve success rates, and enhance future enforcement initiatives as needed.

The EPA's progress in signing consent decrees with companies representing over 90 percent of the national refinery capacity is an important achievement. The EPA's 2006 evaluation of company-reported emission reduction results assessed whether many facilities were making improvements. To sustain environmental results and achievements and provide lessons for future enforcement initiatives, the EPA needs to provide resources to regularly monitor and evaluate the outcomes of the consent decrees.

By not taking action to assess the outcomes of the NPRI, the EPA misses opportunities to design improved strategies that can be applied in other contexts, and the agency risks falling short in being able to demonstrate that the NPRI achieved its intended goals.

## Recommendations

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

1. Develop and implement a plan to determine whether consent decrees signed as part of the NPRI are leading to promised improvements in compliance and sustained reductions in pollution. The plan should establish procedures for verifying company completion of consent decree requirements for termination, including company assessments of facility pollution reductions and comparisons with estimated reductions.
2. Incorporate requirements that ease the resource burden on the EPA to monitor refinery progress (e.g., CEMS and fence-line monitoring) into future consent decrees or amendments to existing consent decrees under the NPRI.
3. Inform the public about the extent to which the NPRI resulted in sustained compliance improvement at facilities and reductions in emissions agreed to in consent decrees, as highlighted as a key challenge for OECA in the EPA's congressional budget justification.
4. Ensure that plans for future NEIs include an evaluation component that demonstrates the extent to which the NEI strategy achieves the goal(s) for the NEI identified by the EPA.

## Agency Comments and OIG Evaluation

We received comments on the draft report from the Assistant Administrator for Enforcement and Compliance Assurance (appendix B). The agency largely agreed with our recommendations and, in many cases, said actions it has already underway achieve the purpose of the recommendations. In its response, the OECA proposed additional corrective actions and estimated completion dates. After subsequent communication with the OECA, we believe the proposed actions are responsive (appendix C); three recommendations are resolved with corrective actions underway and one recommendation is considered complete.

In response to recommendation 1, the OECA will issue a memorandum to the regions reminding them of the requirements for termination and to work with the Office of Civil Enforcement for confirmation that all termination requirements have been met. The OECA said it is working with refiners seeking termination to develop graphs of actual annual emission reductions achieved under the consent decree at the time of termination. Additionally, the agency said it has long planned to pull together and disseminate consent decree-specific emission reduction data once a consent decree is terminated, thereby supplementing the 2006 Progress Report (recommendation 3).

The agency agreed with recommendation 2, saying it has begun implementing lessons learned from the NPRI to address the resource burden from consent decree implementation and oversight, including the January 2013 guidance issued to the EPA's enforcement personnel. In its response, the OECA mentioned its "Next Generation Compliance" paradigm, which takes advantage of new information and monitoring technologies to enable the EPA, states and tribes to get better compliance results.<sup>12</sup> OECA also said it has a workgroup currently exploring ways to use advanced monitoring, e-reporting, public transparency, third-party verification and other tools in enforcement settlements. The agency completed corrective actions and the recommendation is closed.

Finally, the agency agreed that it is important to evaluate the success of its NEIs periodically (recommendation 4). The agency said that the level of information about sources, as well as meaningful information about pollution loading and the effectiveness of preventative measures, will vary by NEI sector. In the subsequent communication, the agency proposed minor revisions to the recommendation language (appendix C), which we accepted and incorporated into the final report.

The agency's response also included some technical comments, which were incorporated into the final report as appropriate.

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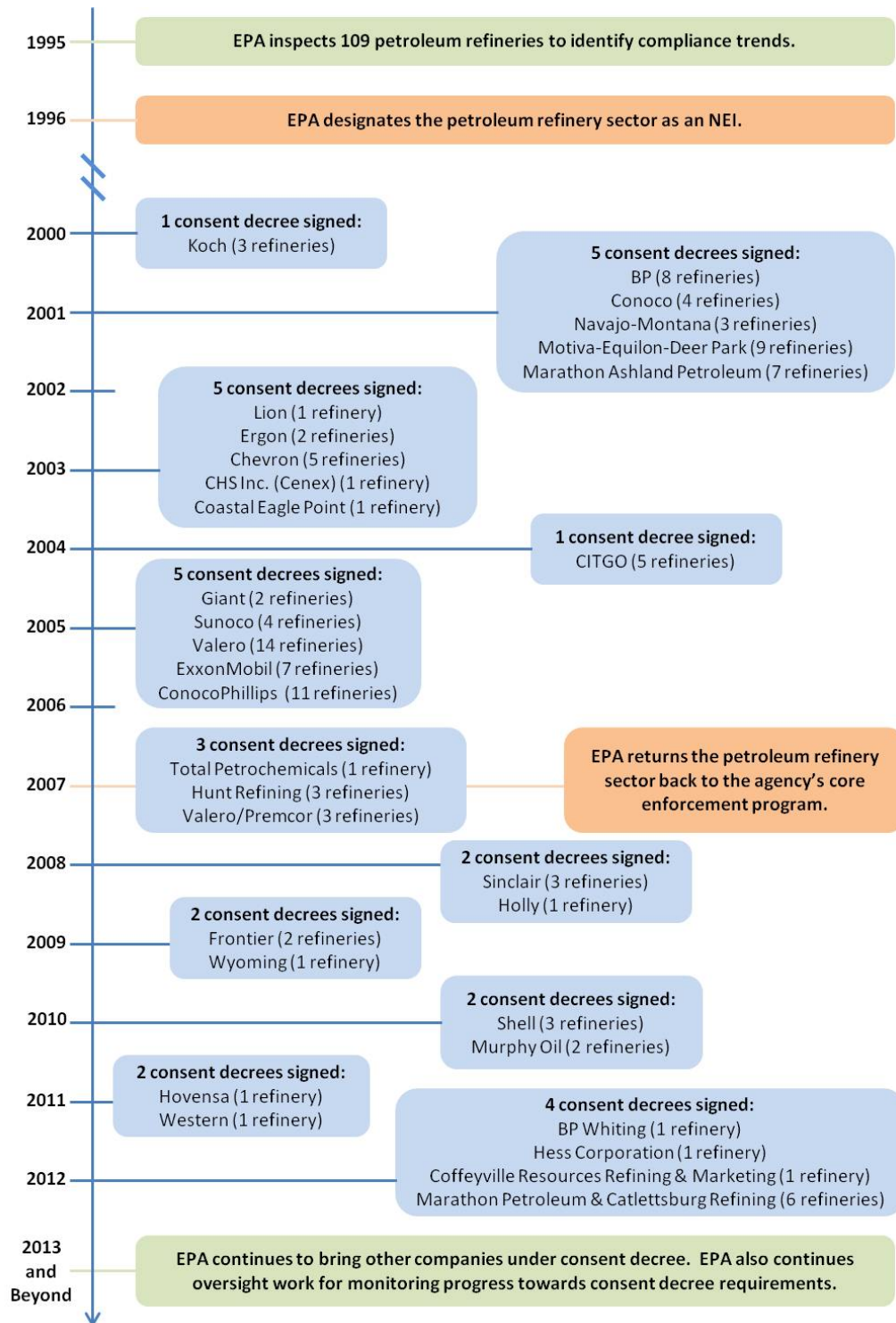
<sup>12</sup> For more information on Next Generation Compliance, see OECA's FY 2014 National Program Managers Guidance, at <http://www2.epa.gov/planandbudget/national-program-manager-guidances>.

## **Status of Recommendations and Potential Monetary Benefits**

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in \$000s)	
Rec. No.	Page No.	Subject	Status <sup>1</sup>	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
1	14	Develop and implement a plan to determine whether consent decrees signed as part of the NPRI are leading to promised improvements in compliance and sustained reductions in pollution. The plan should establish procedures for verifying company completion of consent decree requirements for termination, including company assessments of facility pollution reductions and comparisons with estimated reductions.	O	Assistant Administrator for Enforcement and Compliance Assurance	5/30/14		
2	14	Incorporate requirements that ease the resource burden on the EPA to monitor refinery progress (e.g., CEMS and fence-line monitoring) into future consent decrees or amendments to existing consent decrees under the NPRI.	C	Assistant Administrator for Enforcement and Compliance Assurance	11/19/13		
3	14	Inform the public about the extent to which the NPRI resulted in sustained compliance improvement at facilities and reductions in emissions agreed to in consent decrees, as highlighted as a key challenge for OECA in the EPA's congressional budget justification.	O	Assistant Administrator for Enforcement and Compliance Assurance	5/30/14		
4	14	Ensure that plans for future NEIs include an evaluation component that demonstrates the extent to which the NEI strategy achieves the goal(s) for the NEI identified by the EPA.	O	Assistant Administrator for Enforcement and Compliance Assurance	4/30/14		

<sup>1</sup> O = Recommendation is open with agreed-to corrective actions pending.  
 C = Recommendation is closed with all agreed-to actions completed.  
 U = Recommendation is unresolved with resolution efforts in progress.

## Timeline for the NPRI



Source: OIG analysis and summary.



## ***Agency Comments on Draft Report***

November 19, 2013

### **MEMORANDUM**

**SUBJECT:** Response to the Office of Inspector General Draft Report: “Determining the Outcomes of the National Petroleum Refinery Initiative May Identify Opportunities to Strengthen Future National Enforcement Initiatives,” dated September 23, 2013, Report No. OPE- 2012-3065

**FROM:** Cynthia Giles  
Assistant Administrator

**TO:** Carolyn Copper  
Assistant Inspector General  
Office of Program Evaluation

Thank you for the opportunity to respond to the draft findings and recommendations presented in the Office of Inspector General (OIG) Draft Report, “Determining the Outcomes of the National Petroleum Refinery Initiative May Identify Opportunities to Strengthen Future National Enforcement Initiatives” (Draft Report). The Office of Enforcement and Compliance Assurance (OECA)’s response starts with a summary, a response to the recommendations, followed by more detailed comments on the Draft Report. As you will see, we largely agree with the recommendations, and in many cases we think that the actions already underway achieve the purpose of the recommendations. For those Draft Report recommendations with which OECA agrees, we propose corrective actions and estimated completion dates (below and in attached corrective action plan) or, as applicable, that OECA continue to undertake actions consistent with the recommendation.

### **Summary**

As a threshold matter, we agree with the Draft Report’s discussion of the importance of assessing the effectiveness of the Agency’s National Enforcement Initiatives (NEIs). As discussed in more detail below, we believe that the available data strongly supports that the National Petroleum Refinery (NPRI) has not only met but exceeded our goals for this work in reducing pollution that affects communities across the country. We are also mindful in our work to implement the current NEIs that we are operating in a time of constrained (and declining) budgets, and as a result we must seek ways to utilize the resources available to the enforcement program in the most efficient and effective way to monitor progress by those under consent decrees, and to design approaches that are cost effective. In this respect, while we do not have the funding and

resources available to us to be able to undertake the additional evaluation of refinery emission reductions in the way suggested in the Draft Report, we believe that the approach we are using will be just as effective and achievable at less cost.

## **Response to Recommendations**

The Draft Report's recommendations are generally workable, and as described in more detail below OECA is already undertaking actions that are consistent with several of the recommendations.

**Recommendation #1:** "Develop and implement a plan to determine whether consent decrees signed as part of the NPRI are leading to promised improvements in compliance and sustained reductions in pollution. The plan should establish procedures for verifying company completion of consent decree requirements for termination, including company assessments of facility pollution reductions and comparisons with estimated reductions."

OECA Response: The NPRI consent decrees already contain legally-binding provisions for termination, and these will be an effective vehicle for verifying that the requirements of the consent decree are met before the CD is terminated. These provisions include a certification of completion of CD requirements by a refiner seeking termination (under penalty of perjury or other sanction by the court), and confirmation that all required emission controls have been installed, payment of all civil and stipulated penalties by a refiner, completion of and compliance with all required injunctive relief required (including any Supplemental Environmental Projects), receipt of all final permits incorporating the emission limits and standards established under the CD, and operation in compliance with the emission limits established in the CD for at least one year preceding termination. Because we are monitoring compliance with the consent decrees, and will also be verifying compliance in connection with termination of the consent decrees, a separate plan to accomplish these objectives is not necessary.

We agree that effective monitoring and termination are important, and OECA has already begun working with refiners preparing for termination in a manner similar to this recommendation. EPA, in conjunction with the U.S. Department of Justice and (as applicable) state co-plaintiffs, follows the prescribed requirements for consent decree termination when evaluating whether a defendant has met its legal obligations under the consent decree, which includes installation of all required controls, receipt of final permits, operation in compliance with the consent decree, etc. (all as specified in the consent decree). As part of this process, EPA, DOJ and applicable state co-plaintiffs, at the time of termination, will confirm through consent-decree required certified completion reports and independent verification that all major obligations have been satisfied.

While achieving the total emission reductions that were estimated at the time settlement is not a legally-required component of termination, as discussed further in the detailed comments, the data indicates that emission benefits of NPRI settlements will be greater than the initial estimates. In addition, EPA is working with refiners seeking termination to develop graphs of annual emission reductions actually achieved under the consent decree at the time of termination.

However, if all legally required conditions are satisfied, EPA and DOJ cannot legally condition the United States' consent to termination on such emissions reductions comparisons or data.

**Proposed Correction Action:** Within 45 days, OECA will issue a memorandum to the regions to remind them of the requirements for termination as provided in refinery consent decrees, and in particular to work with OCE for confirmation that all necessary requirements for termination have been met. In addition, OECA will continue to work with refiners at the time of termination of their consent decree to develop graphs of annual emission reductions obtained under their consent decree at the time of termination.

**Recommendation #2:** “Incorporate requirements that ease the resource burden on the EPA to monitor refinery progress (*e.g.*, CEMS and fence-line monitoring) into future consent decrees or amendments to existing consent decrees under the NPRI.”

**OECA Response:** OECA agrees with this recommendation and has already begun implementing lessons learned from the NPRI to address the resource burden from consent decree implementation and oversight. Lessons learned from oversight of both NPRI and non-NPRI consent decrees have been documented and disseminated in guidance issued to EPA enforcement personnel. *See* “Guidance on Streamlining Oversight in Civil Settlements” (OECA Jan. 10, 2013), at <http://intranet.epa.gov/oeca/occe/io/documents/finalstreamliningmemo11013.pdf>. In addition, CEMS and self-reporting of compliance have always been routinely required for all major emission sources covered in NPRI consent decrees. Further, several recent settlements have included provisions for fence-line monitoring. Provisions such as fenceline monitoring do not necessarily reduce the burden on EPA of monitoring compliance with consent decrees, but they do help to inform the community and to create pressure for the facility to comply; this is an important part of our “Next Gen” approaches to drive better performance. In addition, OECA currently has a headquarters/regional workgroup exploring ways to employ advanced monitoring, e-reporting, public transparency, third-party verification and other tools in enforcement settlements. These tools could both enhance compliance with consent decrees and streamline EPA oversight of consent decrees.

Because OECA is already implementing actions consistent with this recommendation for NPRI consent decrees and has issued guidance applicable to all consent decrees, no further corrective action is needed.

**Recommendation #3:** “Inform the public about the extent to which the NPRI resulted in sustained compliance improvement at facilities and reductions in emissions agreed to in consent decrees, as highlighted as a key challenge for OECA in EPA’s congressional budget justification.”

**OECA Response:** OECA agrees with this recommendation and, as noted in the response to Recommendation #1, OECA has long planned to pull together and disseminate consent decree-specific emission reduction data once all of an individual consent decree’s requirements have been completed. This would supplement the initial summary of emission reductions achieved by settling refiners through 2005, and posted to EPA’s website. *See* “EPA Enforcement: National

Petroleum Refinery Initiative” at <http://www2.epa.gov/enforcement/results-petroleum-refinery-national-initiative>.

Proposed Corrective Action: As provided in the proposed corrective action for Recommendation #1, OECA will continue to work with refiners at the time of termination of their consent decree to develop graphs of annual emission reductions obtained under a consent decree at the time of termination.

**Recommendation #4:** “Ensure that plans for future industry initiatives of the NEI [National Enforcement Initiative] include a monitoring and evaluation component that demonstrates the extent to which the NEI strategy leads to improvement in compliance and human-health risks identified by the EPA.”

OECA Response: OECA agrees that it is important to evaluate the success of our NEIs based on the goals set for the NEI from the outset, and, as noted below, we are already making substantial efforts in doing this. We agree that we need to both learn from our experiences in implementing the NEIs, and be transparent about what we have achieved through the NEIs.

We are concerned, however, with this recommendation as written, and propose that it be modified. First, it would be better to clarify the recommendation to focus on assuring that, for future NEIs, OECA assesses whether our NEI effort has achieved the goal(s) stated in the NEI strategy. We note that the level of information we have about the sources covered by NEIs varies, so the extent to which we can set meaningful numeric goals will also vary by subject. Meaningful information about pollution loading or the effect of preventive measures outlined in an NEI will also vary. For clearly defined universes with reasonably good emissions information, like the Refinery initiative, more specific information is available. Many other NEIs will not have that level of detail, and obtaining it can be prohibitively expensive or even impossible. Our experience with the current round of NEIs has helped us to understand the challenges of measuring some of these outcomes, and this is a topic where we continue to learn.

Second, the means for collecting the information upon which to evaluate NEI success will not always come through a government monitoring effort. For example, compliance data might be available through self-reported information, as with NPDES discharge monitoring reports, or may be obtained through consent decree-required reporting. (Note also that EPA must assure that we do not run afoul of the Paperwork Reduction Act when collecting information on the impact of our NEI efforts.) Inspections are not the only way to determine emissions or compliance, nor are they likely to be the most cost effective in many instances; in a time of increasingly limited inspection resources, we need to be sure that we use inspectors where they can make the most difference.

Therefore, we suggest revising this recommendation to provide as follows: “Ensure that plans for future National Enforcement Initiatives include an evaluation component that demonstrates the extent to which the NEI strategy has achieved the goal(s) for the NEI identified by the EPA.”

Proposed Corrective Action: By April 30, 2014, the OECA Office of Compliance will produce guidance that requires the strategies for future National Enforcement Initiatives to include an

evaluation component for determining, where feasible, the extent to which the Initiative achieved the goals established in the strategy.

## Comments on the Report

### 1. Summary Page

The first paragraph of the Summary (under the “What We Found” heading) states as follows:

“The U.S. Environmental Protection Agency does not have evidence to show that the agency’s National Petroleum Refinery Initiative has resulted in emission reductions or sustained compliance.”

This is an incorrect statement. EPA does have information and evidence of emission reductions resulting from each refinery’s compliance with an NPRI consent decree, as detailed in periodic (quarterly or semi-annually) consent decree implementation progress reports. These periodic progress reports were made available as part of the OIG’s evaluation.

As discussed in more detail below, it appears that the discussion in the Draft Report is referring to a 2006 “Results of the Petroleum Refinery National Initiative” report (the “2006 progress report”) that was prepared by OCE. As part of that progress report, the emission reduction data from individual progress reports were aggregated to produce year-by-year charts showing reductions in emissions of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>) for the settlements that had been reached at that time. Because this was an expensive and time-intensive effort that required significant contractor resources (which we appreciate is acknowledged later in the Draft Report), and because OCE’s extramural funding levels have declined by nearly half since FY2008, a comprehensive update to the 2006 progress report is not an affordable option.

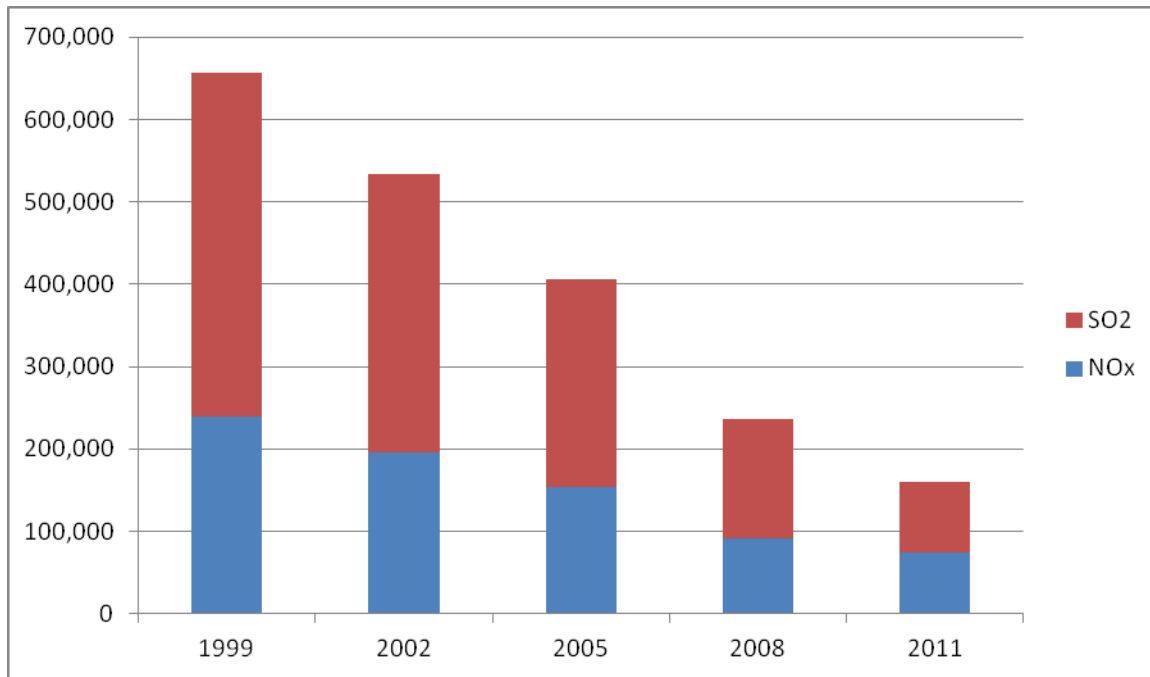
Therefore, instead of diverting these declining resources away from oversight of existing consent decrees and prosecution of new cases, OCE determined to aggregate this information and make it public in conjunction with the completion (termination) of an individual refiner’s consent decree to show the full extent of reductions achieved under the consent decree. Thus, it is not correct to state that EPA does not have this information under the NPRI consent decrees; instead, for cost reasons, we have deferred pulling this information together in a manner similar to the 2006 progress report until the completion of a refiner’s obligations under its consent decree.

In addition, data reported by the petroleum refining sector to EPA’s National Emissions Inventory (NEI)<sup>1</sup> demonstrates a significant and steady decline in emissions in this sector since 1999, as shown in the following chart (in tons per year)<sup>2</sup>:

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<sup>1</sup> The NEI is a comprehensive and detailed estimate of air emissions of both criteria and hazardous air pollutants from all air emissions sources. The NEI is prepared every three years by the Office of Air and Radiation, and the data is made publicly available on EPA’s website. See generally <http://www.epa.gov/ttn/chief/eiinformation.html>.

<sup>2</sup> The first NPRI settlements were reached in 2000 and 2001, so as compared to 1999 NEI data, the emissions reductions from these first settlements would begin to show up in the NEI data for 2002. The 1999, 2002 and 2005 NEI data for emissions of SO<sub>2</sub> and NO<sub>x</sub> shown in the chart is that reported to SIC code 2911 (petroleum refining); 2008 and 2011 NEI data for the same pollutants is that for the “industrial processes-petroleum refining” sector.



Accordingly, the Agency has evidence indicating that sources in this sector that are required to implement NPRI consent decrees have been steadily and dramatically reducing their emissions over this period of time.<sup>3</sup>

**OIG Response:** We agree that the EPA collected evidence of emissions reductions in its 2006 effort. However, the agency has not continued to measure emission reductions resulting from the NPRI. To evaluate the outcome of this multi-decade project, the EPA needs to regularly evaluate the program in the aggregate so that it can make modifications along the way to improve its environmental outcomes. We also agree that the EPA collected evidence of compliance with the consent decrees. However, this evidence has not demonstrated that facilities under consent decrees are, in fact, complying with the elements for which the consent decrees were signed. We understand the EPA's reticence to diverting resources away from other refinery work to monitor the success of this effort, but maintain that to follow Office of Management and Budget guidance on operating government programs the EPA needs to demonstrate that the resources put into this program have resulted in environmental improvements.

The first, second and third paragraphs of the Summary Page go on to state:

<sup>3</sup> In addition, one of the NPRI goals was to obtain consent decree commitments that were estimated to reduce NOx and SO<sub>2</sub> emissions by 20% over pre-NPRI levels. NEI data indicates that emissions in this sector have declined by approximately 75% since 1999, a far greater reduction outcome than OECA had set as a goal for the initiative. In this respect, while enforcement is not claimed as the only reason for this decline in emissions, NEI data does illustrate that emissions were in fact declining as expected as the NPRI consent decrees were implemented. It is also worth noting that nearly the entire sector is covered by NPRI consent decrees – 80% by FY05 and currently over 90% – and no new federal regulations, such as new NSPS standards, were promulgated during this time period that would account for this level of reductions.

“One of the goals of the NPRI was to increase compliance by 50 percent over its baseline level. The EPA needs to determine whether the NPRI achieved the intended compliance and emission outcomes. . . . Without analyzing the available data, however, the EPA cannot determine whether the NPRI actually achieved established goals. . . . [T]o assess the success of this strategy, the EPA must determine whether the strategy achieved compliance, coverage, and emission-reduction goals, and reduced the environmental and human-health risks associated with noncompliance.”

The NPRI was concluded as an initiative and returned to the “core” program upon meeting each of the four goals specified for completion as part of NPRI’s overall strategy. The Draft Report briefly summarizes two of these goals – the compliance improvement and emission reduction goals – in Chapter 1 (on page 5), but the summary somewhat mis-states the goals. Specifically, these two goals were set for the NPRI as follows:

- *Compliance Improvement Goal:* This goal was defined by the Strategy as a 50% improvement in compliance over the 1995 baseline (which showed that 109 of the 156 facilities then in operation in the petroleum refining industry were in violation during the period from August 1994 through August 1995, or a 70% noncompliance rate in the industry). Thus, to improve compliance by 50%, the Strategy specified that 55 refineries needed to be under consent decrees that would address past noncompliance by the end of FY2005. Principally due to the successful achievement of settlements with 3 large refiners in 2005 (ConocoPhillips, Valero and ExxonMobil, covering 32 refineries), a total of 87 refineries – or 55.7% – were under consent decrees by the end of that fiscal year. Thus, the compliance goal as specified by the Strategy was not only achieved, but was exceeded.

**OIG Response:** We agree that these consent decrees constitute an important accomplishment. However, as a matter of evaluating the outcomes of the NPRI as an environmental program, having a facility under consent decree does not necessarily mean that the facility is in compliance. The agency’s interpretation is that a facility under consent decree is considered “in compliance.” We do not see the consent decree as the end of the line. When the EPA has returned to do on-site inspections, including consent decree follow-up inspections, it has found issues with consent decree requirements or new compliance issues at the facilities under consent decree.

- *Emission Reduction Goal:* This goal – a 20% reduction in NO<sub>x</sub> and SO<sub>2</sub> combined – was defined as securing commitments in enforceable consent decrees for new controls and management practices that would be estimated to achieve a 20% reduction from 1995 emission levels, or just over 200,000 tons per year of SO<sub>2</sub> and NO<sub>x</sub>. By the end of FY05, settlements had secured commitments for an estimated reduction of 250,000 tons per year, once all controls were implemented. Thus, the reduction goal as specified in the Strategy was also not only achieved, but was exceeded by 50,000 tons per year.

Therefore, the evidence supports the view that the NPRI did successfully achieve the goals established for this Strategy.



Based on the discussion elsewhere in the Draft Report, it appears that the Report is focusing on whether the expected emission reductions that were estimated at the time of settlement will be realized upon full implementation of the controls and requirements of each consent decree.<sup>4</sup> As noted below in the discussion of the “Noteworthy Achievements” of the NPRI (on Page 5 of the Draft Report), the total emission reductions that are estimated at the time of settlement for all NPRI consent decrees is 349,00 tons (93,000 tons of NO<sub>x</sub> and 256,000 of SO<sub>2</sub>). NEI data for this sector indicates that reductions in line with these initial estimates are in fact being achieved, with a reduction of approximately 495,000 tons overall between 1999 and 2011 (more than 165,000 tons of NO<sub>x</sub> and 332,000 tons of SO<sub>2</sub>).

**OIG Response:** During the course of our evaluation, EPA staff informed us that National Emissions Inventory data was not an accurate source for emissions data for the NPRI. These data are generally based on estimates made by facilities using emission factors and do not account for differences in production. As part of the consent decree requirements, facilities are required to regularly submit emissions data to the EPA. We believe it makes sense to use the data submitted by refineries for the purpose of calculating actual reductions.

EPA agrees that compliance with the terms of the NPRI consent decrees and the achievement of these reductions are important objectives, and accordingly the successful implementation of and compliance with consent decree-prescribed controls to reduce emissions is required prior to termination of a refiner’s consent decree. As noted above, providing a demonstration of the emissions benefits of refiner’s work to implement its obligations under its consent decree is one of the planned components of consent decree termination.

## 2. Chapter One

Page 1: The discussion under “Background” is an unduly narrow characterization of the work EPA does to increase compliance and reduce unlawful pollution. We suggest that this section be revised to read as follows:

“Assuring compliance with environmental laws is an integral part of EPA’s Strategic Plan (available at <http://www2.epa.gov/planandbudget>) to protect human health and the environment. The EPA’s 2013 budget directs about one-tenth of its annual budget to promoting compliance with environmental laws (\$830 million in fiscal year 2013).

EPA employs a broad range of tools and approaches to assure and increase regulatory compliance. EPA brings civil or criminal enforcement actions to address violations or require regulated entities to clean up pollution. The Agency monitors compliance to assure regulated entities obey applicable laws and regulations. It empowers communities and the public through transparency and accountability by disclosing compliance and performance information on regulated entities and government. It also empowers communities by providing analytical tools that better display critical information, and provide users with enhanced analytical and targeting capabilities. EPA helps builds our

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<sup>4</sup> In this respect, it should be understood that these reductions are estimates only, and not enforceable requirements for a specific tons-per-year reduction.

state and tribal partners' compliance and enforcement capacity and oversees their performance. EPA also helps businesses, federal facilities, local governments and tribes meet environmental regulatory requirements through compliance assistance.

Robust enforcement is critically important for addressing violations and promoting deterrence. However, enforcement alone will not be enough to achieve compliance results that protect public health and the environment and ensure that businesses that comply with the law are not disadvantaged relative to companies that do not play by the rules. Therefore, EPA also is investing in a new paradigm called "Next Generation Compliance" to improve compliance and reduce pollution. Next Generation Compliance takes advantage of new information and monitoring technologies to enable EPA, states, and tribes to get better compliance results and tackle today's compliance challenges. It includes:

- Designing more effective regulations and permits that are easier to implement and produce higher compliance and improved environmental outcomes.
- Using advanced emissions/pollutant detection technology so regulated entities, government, and the public can more easily see and respond to pollutant discharges, environmental conditions, and noncompliance.
- Requiring electronic reporting by regulated entities to generate more accurate, complete and timely information on pollution sources, pollution, and compliance.
- Making the information we have today more accessible, and making new information obtained from advanced emissions monitoring and electronic reporting publicly available to expand transparency and improve the performance of government and regulated entities.
- Developing and using innovative enforcement approaches to achieve more widespread compliance and to help to increase the effectiveness of our compliance work, such as making greater use of targeted deterrence approaches, and self- and third-party certification tools.<sup>5</sup>

Page 3: The third paragraph under the heading "Refineries Present Widespread Compliance Challenges and Emit Harmful Pollutants" somewhat incorrectly summarizes the four "marquee issue" areas of focus under the NPRI. The Draft Report states:

"Through inspections and additional research, the EPA identified four major areas where refineries did not comply with the law:

1. Emissions from new or updated major refining units without a permit.
2. Fugitive emissions from refinery leaks.
3. Uncontrolled and unreported benzene waste.

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<sup>5</sup> See "OECA's FY2014 National Program Manager (NPM) Guidance" (June 23, 2013), at 10-11, available at <http://www2.epa.gov/sites/production/files/documents/fy14oecanpmpguidance.pdf>.

4. Use of flaring for routine purposes instead of for only venting dangerous gases.” Both for clarity and accuracy, this should be revised to more accurately identify the marquee issue areas. Specifically:

“Through inspections and research, EPA identified the four most significant sources of noncompliant emissions from refineries:

1. New Source Review/Prevention of Significant Deterioration (NSR/PSD) requirements for FCCUs, heaters and boilers.
2. New Source Performance Standards (NSPS) Leak Detection and Repair requirements Leaks from refinery equipment, such as valves, pumps, and connectors.
3. National Emission Standards for Hazardous Air Pollutants requirements for management of benzene wastes at refineries.
4. Uncontrolled and routine flaring (NSPS Subparts A&J).”

This revision, especially with respect to #1 and #4, is recommended because the largest sources of refinery emissions covered by NPRI consent decrees are not always “unpermitted” – instead, most were likely improperly permitted (*e.g.*, incorrectly permitted as “minor” sources for NSR/PSD purposes, did not have controls that represented required Best Available Control Technology, etc.), in addition to being unpermitted. With respect to flaring, the issue addressed by the NPRI is not whether flares should be used “only [for] venting dangerous gases” – by definition and design, flares are only used for this purpose. Instead, the NPRI focused on whether flares were being used routinely instead of on an emergency basis, and when used whether flares were emitting at levels in excess of applicable limits.

Page 5: The discussion under the heading “Noteworthy Achievements” should be revised for technical accuracy. Specifically, the second paragraph, third sentence states:

“For example, companies cumulatively pledged to reduce pollution by 93,000 tons of NO<sub>x</sub> and 256,000 tons of SO<sub>2</sub> annually” (emphasis added).

As noted in the discussion of the “Summary Page” above, the NPRI consent decrees specify a variety of enforceable control equipment, new (lower) emission levels, and improved management practices covering the four marquee issues; however, the consent decrees do not specify certain levels of emission reductions as enforceable requirements.<sup>6</sup> As discussed above, the cumulative emission reductions cited are estimates (not enforceable “pledges”) of the expected emissions benefits from these controls.

Page 6: The listed bullet points could benefit from some technical corrections, as follows:

First bullet: This bullet point states that “many” companies have agreed to install low-leaking valves as part of their enhanced LDAR program. In fact, this is a relatively recent development, first agreed to as part of the settlement with Murphy Oil (2010), and included in refinery settlements reached since that time. This technology did not

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<sup>6</sup> There is a limited exception for a specified reduction in NO<sub>x</sub> emissions, in tons per year, from refinery heaters and boilers. *See, e.g.*, Chevron (2003), ¶33; Citgo (2004) ¶54; Sinclair (2008), ¶42; Murphy (2010), ¶31.

previously exist, but is an example of the “technology-forcing” impact of the NPRI, in which EPA’s enforcement efforts have effectively driven improvements to existing control technologies and the development of new technologies in this industrial sector. (Other examples under the NPRI include the development of more effective pollutant-reducing catalyst additives for use in FCCUs and, more recently, the use of cutting-edge infrared imaging technologies for flare “efficiency” controls, as in the Marathon and BP Whiting settlements in 2012 and the Shell Deer Park settlement in 2013.)

Second bullet: This bullet point states that “most” consent decrees require installation of continuous emission monitors (CEMS). In fact, all consent decrees require installation of CEMS on major emission sources (*e.g.*, FCCUs, large heaters, etc.).

Third bullet: This bullet point states that “some” consent decrees include requirements for fence-line monitoring of emissions. Solely for purposes of clarification, this is a recent development (similar to the discussion of low-leaking valves, above) that was first agreed to in the Murphy Oil settlement in 2010, and included in several other settlements agreed to since that time.

With respect to each of these technical corrections to the points on Page 6, it is important to underscore that OECA agrees with Draft Report’s conclusion that these kinds of provisions increase transparency (in the case of fence-line monitoring) and enhance EPA’s ability to manage compliance in this complex industry by enabling EPA, facilities, and the public to more readily access emission data as well as provide protections for those living near these facilities.

### 3. Chapter Two

Pages 9-10: We do not think the evidence supports the statements on Page 9 that “EPA has not demonstrated whether the NPRI resulted in sustained compliance or emission reductions in the petroleum-refining sector,” or that “since 2006, the EPA has not evaluated progress toward achieving these outcomes through the consent decrees,” or similar statements elsewhere on pages 9 and 10. Even though OECA does not have the funds to do a formal update of the 2006 progress report, we do have the means to measure success by aggregating data demonstrating emission reductions obtained as the result of the completion of consent decree commitments: These can be handled on a refiner-specific basis as part of the consent decree-termination process. To date, one settlement (the 2003 Coastal Eagle Point settlement) has been terminated in its entirety,<sup>7</sup> and others are nearing termination in the next several years. OECA has determined that the use of its (declining) resources is better put toward ensuring that prior to termination all consent decree requirements are completed and the expected emission reduction benefits are realized, rather than putting those resources toward a general updating of the 2006

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<sup>7</sup> For business reasons, the Coastal refinery was shut down and dismantled in 2010. Accordingly, there are no further emissions from refinery operations at this facility.

progress report.<sup>8</sup> Finally, and perhaps most importantly, EPA’s NEI data demonstrates the significant decrease in emissions in this sector during the term of the NPRI, and the record of enforcement of NPRI consent decree requirements likewise demonstrates that OECA’s oversight has been successfully achieving compliance and obtaining expected emission benefits.

Throughout the report, including on Pages 9-10, the content and tone suggest that relying on self-reported data is a somehow questionable practice. Our experience is that self-reporting is a very important and powerful tool in the compliance arsenal. Increased use of well structured self-reporting strategies will be an important part of our strategy to increase compliance while we are reducing the size of our staff. It is not the case that inspections are the only, or even sometimes the best, way to accurately gauge compliance or the success of pollution reduction efforts, and to the extent that the Draft Report suggests otherwise we strongly recommend you reconsider. Technological innovation is making new approaches to compliance and pollution verification possible, and we hope that the OIG will be updating its reviews and recommendations, just as we are updating our practices, to reflect the power of these new approaches. It is important to recognize and seize opportunities presented by new technologies at any time, but especially so in a time of declining resources, and not adhere to prior practices when new approaches promise better and more efficient results. One example of the use of self-reporting in the context of this initiative is demonstrated by the September 2013 enforcement action involving the Total (2007) NPRI consent decree. In that action, the \$8.75 million penalty obtained for consent decree noncompliance, plus additional injunctive relief, was based primarily on EPA’s review of required company reporting. See “Texas Refinery Will Pay \$8.75 Million for Failing to Comply with Enforcement Settlement to Resolve Air Violations,” at <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/c07d422e06400be685257bec005fa181!opendocument> (press release); <http://www2.epa.gov/sites/production/files/2013-10/documents/1stamendtotal-cd.pdf> (consent decree amendment requiring corrective action to address noncompliance); and <http://www2.epa.gov/sites/production/files/2013-10/documents/total-stipulationandorder.pdf> (order requiring payment of penalties).

**OIG Response:** We did not evaluate the veracity of self-reported data and have made that clear in the final report. However, we found instances where the EPA inspectors found violations during follow-up inspections at refineries. We concluded that although self-reports are an essential part of compliance and enforcement, continuing, periodic EPA inspections play an important role as well.

The Draft Report also ignores the variety of inspections that EPA does, as well as important work done by the states. Within this sector, EPA has conducted some type of consent decree compliance inspections at refineries every year nationwide, in addition to inspections at refineries not yet under consent decree. Second, and as illustrated in more detail below, EPA relies on and works in conjunction with its state partners (many of whom are consent decree co-

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<sup>8</sup> One of the four interlocking consent decrees covering the Shell family of refineries (Motiva, Shell Deer Park and Equilon) covers only the requirements applicable to refinery heaters and boilers. While several of the refineries subject to this consent decree have been sold to other refiners, Shell has completed its obligations under the Heaters and Boilers consent decree at the refineries it still owns, which has been terminated as it applies to Shell. Consistent with OECA’s plans for termination, when available EPA will post graphs showing emissions reductions obtained under this consent decree at <http://www2.epa.gov/enforcement/motiva-enterprises-llc-refinery-settlement>.

plaintiffs) for inspections and oversight at refineries. The Agency relies on a number of tools and partners to confirm compliance with applicable requirements at refineries; an on-site inspection is just one of these tools, but is not the sole method of reliably ensuring compliance or obtaining compliance information from a regulated facility. In addition, EPA is building on such self-reporting as part of its “Next Generation Compliance” goal to achieve greater compliance and reduce pollution using advances in monitoring and information technologies, e-reporting and other measures. *See, e.g.*, “Enforcement Goals: Next Generation Compliance” at <http://www2.epa.gov/enforcement/enforcement-goals>; *see also* “Next Generation Compliance” at <http://www.epa.gov/compliance/data/systems/icis/vmeeting/vmeeting6a-panel.pdf>. In addition, the suggestion that EPA should deploy its inspection resources “to determine whether compliance changed under consent decrees” (regardless of risk) would have the unfortunate effect of diverting inspection resources away from higher-risk and higher-priority facilities. While EPA would agree that conducting routine compliance inspections at all covered refineries on a regular basis would be likely to yield a statistically significant analysis and evaluation of whether refiners’ compliance changed under consent decrees, this is not feasible in light of current and expected future resource constraints, and is also not the intent or purpose of compliance inspections.

This section also states that “between 2003 and 2012, Region 6 and the OECA conducted inspections at only 19 of the 35 consent decree facilities in Region 6.” This tends to suggest that each refinery under consent decree should have been inspected by EPA during this time. However, this overlooks several important facts and methods used by EPA to assure compliance:

1. Throughout the 2003 to 2012 time period, negotiations covering all these refineries were either underway or had recently been completed (*i.e.*, the number of consent decree-covered refineries is not static during this period). In 2003, for example, only 14 refineries were under an NPRI consent decree. In 2005, settlements were reached with refiners covering an additional 19 refineries. Another 5 refineries were covered under consent decrees reached between 2007 and 2012. On-site inspections by EPA were conducted at more than half of these refineries during this time period, which is consistent with a risk-based approach to inspections<sup>9</sup> and the use of other tools for determining consent decree compliance.
2. EPA is not the sole inspection or enforcement authority, as states also play a significant role in addition to EPA. The Draft Report incorrectly cites Marathon’s Garyville LA and ExxonMobil’s Beaumont TX refineries as two that had not been inspected. Under the applicable state Compliance Monitoring Strategy (CMS), as major sources these facilities are required to be inspected on a periodic basis (between 2 to 5 years); such inspections include compliance with consent decree requirements as reflected in Title V permits, among other applicable permits. Consistent with these CMS requirements, and as

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<sup>9</sup> Because the installation of major controls under NPRI consent decrees are typically large, multi-year construction projects, a consent decree-compliance inspection conducted shortly after a settlement is reached, and before major implementation work has begun, would not be a wise use of inspection resources, and progress at these stages can be more efficiently tracked through review of required implementation reporting. Instead, and consistent with the risk-based approach to the use of inspection resources, on-site compliance inspections are more commonly employed to determine compliance with major consent decree milestones (which may be some years after settlement).

documented in EPA's "Enforcement & Compliance History Online" Database (ECHO), Texas has conducted several hundred Partial Compliance Evaluation (PCEs),<sup>10</sup> Title V compliance reviews and on-site inspections at the Beaumont refinery, and EPA has conducted an additional 20 PCEs during this time (*see* <http://www.epa-echo.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=4824500018>). Similarly, Louisiana has conducted nearly 90 PCEs, Title V compliance reviews and on-site inspections at the Garyville refinery, and EPA has conducted an additional 15 PCEs as well (*see* <http://www.epa-echo.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=2209500013>).

**OIG Response:** After reviewing information for these two refineries we still maintain that our statement is correct. These refineries have not received a compliance-based inspection from the EPA. For example, according to the agency's analysis of 2006 emission data, the Beaumont Exxon refinery had milestones for hard limits for SO<sub>2</sub> to be established toward the end of 2005. Additionally, there was a milestone for "hardware limits effective" for NO<sub>x</sub> in 2009. We would expect a compliance-based inspection by the EPA to check these milestones.

3. The regular course of dealing between EPA and refiners under consent decrees also results in actions to address noncompliance, without the need for formal inspections or the use of other enforcement tools. For example, disclosures by ExxonMobil of violations at its Beaumont refinery (and other refineries) resulted in the assessment of stipulated penalties and commitments for additional injunctive relief in 2008 (*see* <http://www2.epa.gov/sites/production/files/documents/exxonmobil-stipulation-agree1208.pdf> and <http://www2.epa.gov/sites/production/files/documents/3rdmod-exxonmobil1208-cd.pdf>). In addition, refiners anticipating a compliance issue have been encouraged by EPA work out a resolution with the Agency in advance, without the need for more formal processes (such as a Notice of Violation or other enforcement followup); the outcome of these prophylactic efforts to address the anticipated compliance problem also typically results in consent decree modifications that yield additional emission reductions (*see, e.g.,* <http://www2.epa.gov/enforcement/second-amendment-consent-decree-sinclair-tulsa-refining-company-sinclair-wyoming>).
4. As noted above in the example of the Total consent decree, required consent decree self-reporting is also used to assure compliance.

In other words, the Draft Report tends to focus on on-site compliance inspections as the principal or only means of reliably ensuring compliance; however, the Draft Report should recognize that such inspections are not the sole method of compliance oversight at consent decree-covered refineries, and that EPA uses a number of effective tools to perform this oversight function.

Pages 10-11: The Draft Report's discussion of EPA's 2006 progress report states:

"Company-specific analysis showed mixed results. Data from some companies demonstrated the companies would likely meet or exceed anticipated emission-reduction goals. Emission data from other companies had increased since signing the consent decrees."

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<sup>10</sup> See "Inspections and Evaluations," at <http://www.epa.gov/compliance/monitoring/inspections>.



The basis for the draft report's statement above is not clear. As a threshold matter, the consent decrees for which emissions reductions had been achieved at the time of the 2006 progress report were still in the early stages of implementation (because of the extent and complexity of consent decree requirements, most implementation schedules run for in excess of 10-12 years or more); several covered in the 2006 progress report were in only the first or second year of implementation (*i.e.*, a significant amount of work still remained to be done in later years under these consent decrees). Even at this early stage of implementation under the 7 settlements that had been reached at that time, overall emissions from covered refineries were reduced by nearly 50% from pre-settlement levels.<sup>11</sup> In two instances, as noted in the Draft Report, some emissions had increased from pre-settlement levels (Coastal – FCCU NO<sub>x</sub>, and CHS – FCCU SO<sub>2</sub>), which is of limited relevance given that the dates for installation of equipment and controls to lower emissions from these units were still in the future at the time of the 2006 progress report. *See* Coastal consent decree ¶15 (FCCU NO<sub>x</sub> controls required by 2008 or 2010, depending on control technology selected); CHS consent decree ¶33 (FCCU SO<sub>2</sub> controls required by the end of 2007 or 2009, depending on the control technology selected). Nevertheless, overall emissions from all refineries under settlement at that time were cumulatively lower than their pre-settlement levels. This data does not seem to support a “mixed results” conclusion – it shows immediate, if not yet complete, progress in achieving expected emission reductions.

The achievement of nearly half of the estimated emission reductions from these early settlements by the initial stages of implementation also demonstrates the inaccuracy of the Draft Report's statement at the top of Page 10 that “EPA's press releases may have overstated the successes of the agency's NPRI strategy.” To the contrary, it tends to suggest that EPA's estimates were conservative and likely understated the emission benefits of these consent decrees. Although the Draft Report's discussion of EPA's emission reduction estimates is focused on settlements reached through 2005, data and information available since that time supports the conclusion that these estimates are conservative and likely understate total reductions, rather than to overstate them. As noted above, NEI data from the 1999 to 2011 time period shows a reduction in emissions from this sector that exceeds EPA's *total* emission reduction estimates for *all* NPRI settlements, including those reached at the end of or after the 1999-2011 timeframe<sup>12</sup> (that is, once the emission reductions from these more recent settlements are accounted for, total emission reductions in this sector will be even greater than EPA's initial estimates from the settlements).

The following paragraph from the Draft Report also appears to acknowledge the likelihood that estimates at the time of settlement would tend to understate actual reductions:

“However, the 2006 emissions analysis did not show the progress made by all facilities under the consent decree at the time. . . . The OECA officials also said that the 2006

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<sup>11</sup> Emissions of SO<sub>2</sub>, NO<sub>x</sub>, PM and CO were approximately 360,000 tons per year in 1997; by 2005 these emissions were approximately 190,000 tons per year. *See* <http://www2.epa.gov/sites/production/files/documents/refineryinitiative-powerpoint021111.pdf> (slide 28).

<sup>12</sup> Settlements reached at the end of or after this period include Shell Chemical and Murphy (2010); Hovensa and Western (2011); Coffeyville (2012); and Big West and Countrymark (2013).



analysis likely missed some emission reductions due to the lag between the finalization of the decree and the installation of controls at the refineries. For example, the implementation schedule for the 2005 ConocoPhillips settlement requires major equipment to reduce flaring emissions to be installed periodically through 2012 at some facilities.”

Accordingly, we suggest that the Draft Report should be revised to reflect this discussion. In addition, a minor revision to the second full paragraph on Page 11 is needed for accuracy. As noted, the 2006 progress report did not include emissions reductions for every settlement that had been reached through 2005, as the Citgo, ConocoPhillips, Sunoco, Valero and ExxonMobil settlements had been reached late in the year. However, rather than “missing” emission reductions from those settlements, those consent decrees were too early in their implementation schedules to quantify or report emission reductions that had been achieved at that time (a suggested revision would be that “the 2006 analysis *did not include* some emission reductions due to the lag between the finalization of the *most recent settlements at that time* and the installation of controls at the refineries *covered by those newer decrees*.”).

Page 11: The Draft Report includes the following statement in the second full paragraph:

“An agency official stressed that achieving emission reductions was more important than achieving compliance with consent decree requirements. However, enforcement officials said that due to resource constraints, they discontinued this effort after the 2006 contractor’s analysis.”

There are two concerns with the quoted passage.

- The first sentence is not an accurate statement of OECA’s objective or intent with respect to refinery settlements. While achieving consent decree-required emission reductions is one of the objectives of the NPRI, the suggestion that this objective is “more important” than consent decree compliance does not follow, as the two are necessarily linked – compliance with emission reduction requirements in NPRI consent decrees is necessary to achieve the bargained-for emission benefits. We suggest this internally inconsistent statement is either a misunderstanding or an erroneous attribution.<sup>13</sup>
- The second sentence appears to suggest that “this effort” (to ensure the achievement of emission reductions) was “discontinued” after 2006 is not correct. EPA has continued to oversee and enforce existing consent decrees to ensure compliance with those requirements,<sup>14</sup> as well as to continue to bring other refiners that had not settled as of

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<sup>13</sup> In this respect, context is important. As noted earlier in the comments on Page 10, EPA has encouraged refiners anticipating a compliance problem with their consent decree to discuss such issues with EPA in advance. These joint efforts typically result in consent decree amendments addressing the prospective problem and obtaining additional emission reductions. See, e.g., 4th Amendment to the Motiva “Heaters and Boilers” consent decree (2005).

<sup>14</sup> Oversight and enforcement of NPRI consent decrees includes the following modifications to consent decree requirements that provide *additional* emission benefits, over and above those contained in the original settlement agreement: BP (3 amendments plus one new consent decree for the Whiting, Indiana refinery); ConocoPhillips (4

2006 under NPRI consent decrees.<sup>15</sup> What OECA decided not to continue after 2006 was to regularly update the 2006 progress report; this is unrelated to the continuing efforts to obtain additional emission reductions in this sector. The discontinued updating of the 2006 progress report due to budgetary considerations is unrelated to the issue of efforts to oversee and enforce implementation of the NPRI consent decrees.

Page 11: The second full paragraph concludes with the following statement regarding the decision to discontinue updating the 2006 progress report:

“[W]e believe it [discontinuing the updating effort] does not provide interim information that would allow for mid-course corrections if facilities are not meeting requirements.”

As noted above, the 2006 progress report and EPA’s continuing efforts to ensure compliance with NPRI consent decrees are unrelated. In fact, the evidence demonstrates the opposite – that the Agency is taking action to make such “mid-course corrections” on a consent decree-specific basis in appropriate circumstances for those refiners that are not meeting their enforceable obligations, as noted above. In addition, and perhaps more importantly, aggregated annual data on total emission reductions cannot be used to identify noncompliance with any specific consent decree requirement; only consent decree oversight activities can confirm compliance (see discussion above).

Page 11: The last paragraph in this section states as follows:

“By taking these steps [to update the 2006 progress report], the OECA could better determine the success of the NPRI, and modify the NPRI by determining what factors prevented facilities from realizing the projected emission reductions. Because the EPA has not used these data to track whether emission reductions were occurring, it is unclear whether the companies implementing consent decrees are making the progress promised.”

OECA fully agrees that the 2006 progress report was a valuable effort to show the overall progress made up that time, which is why it was initially undertaken. If resources allowed, updating the report would also be interesting, although, as noted above, we already know from the NEI data for this sector that there have been significant reductions in emissions since 1999. However, for all the reasons described above, we think there is a way to verify compliance and to evaluate the overall effectiveness of the initiative in a much more cost effective manner through the already required consent decree termination process.

Page 12: The Draft Report suggests that there is not a process for conducting terminations of the consent decrees. In fact, the consent decrees each contain a full section specifying the legal

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amendments); ExxonMobil (4 amendments); Flint Hills (Koch) (2 amendments); Marathon (2 amendments); Total (1 amendment); Sinclair (4 amendments); and Sunoco (3 amendments).

<sup>15</sup> New NPRI consent decrees agreed-to after 2006 include Total, Hunt, Valero/Premcor, Sinclair, Holly, Frontier, Wyoming Refining, Shell Chemical, Murphy Oil, Hovensa, Western, Hess, Coffeyville, Countrymark, and Big West.

requirements for termination. A separate process is not necessary. The termination process as specified in NPRI consent decrees includes requirements for certifications of completion of all consent decree requirements by refiners (under penalty of perjury or contempt), payment of stipulated penalties, and a requirement for full compliance with the consent decree for the year prior to termination, among other requirements. In addition, EPA – and, where applicable, the state co-plaintiff(s) – independently verify a refiner’s compliance with these provisions. It is not clear whether the Draft Report is suggesting new or different requirements for termination, but of course the provisions of the consent decree govern, and new provisions cannot now be added. If what the OIG is saying is that some personnel were not familiar with the consent decree requirements for termination, this may reflect that some regions have not yet had a consent decree eligible for termination and so had not as yet refamiliarized themselves with those requirements. OECA is working directly with those regions affected by terminations as they come due. However, we agree that a reminder about consent decree termination provisions would be useful and we are intending to issue a memorandum to the regions refreshing their understanding of these provisions.

Page 13: The third full paragraph expresses concerns regarding EPA’s ability to oversee NPRI consent decrees because the Agency is currently understaffed with sufficient technical expertise in this sector, concerns regarding the Agency’s ability to attract and retain qualified experts in this area, and concerns stemming from the very limited resources available in both Headquarters and in Regions. OECA agrees that declining staffing levels and extramural resources for the enforcement program is a serious constraint, both for enforcement in this sector as well as overall. We are doing the best we can with what we have available to us for oversight and enforcement of these consent decrees, and in response to declining resources we have shifted strategies to reduce the resource burden and to focus on key enforcement and oversight needs to assure compliance and reduction of emissions, which necessarily results in cutting back on work that consumes extramural resources but is not essential to achieving compliance or emissions reductions.<sup>16</sup>

Page 14: The first paragraph under “Conclusion” states as follows:

“The EPA should be assessing the success and outcomes of the NPRI. Doing so enables the EPA and the regulated industry to demonstrate success where it has occurred, identify lessons learned, modify this enforcement approach to improve success rates, and enhance future enforcement initiatives as needed. Noncompliance and pollution at refineries particularly affect communities located close to refineries. Noncompliance could lead to emergencies and upsets at facilities, which could endanger refinery workers and communities.”

OECA entirely agrees but would add that we think we are doing this already. We agree that the work already done in this sector is very important for protecting communities from harmful

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<sup>16</sup> Other efforts to reduce the NPRI resource burden include streamline (where possible) consent decree reporting requirements, mandated “review and approval” requirements, etc. See “Guidance on Streamlining Oversight in Civil Settlements” (OECA Jan. 10, 2013) <http://intranet.epa.gov/oeca/oc/eio/documents/finalstreamliningmemo11013.pdf>.

pollution, and as you know we are continuing to focus on this sector for other emissions, as evidenced by our recent cases addressing hazardous emissions from flaring. We have learned many things from our work in this sector that we are applying elsewhere. For example, the efficiencies realized from a “global” approach for addressing environmental compliance on a company-wide basis (where possible), as opposed to employing a unit-by-unit/facility-by-facility approach, has been extended into other efforts. On the other hand, the costly and time-consuming “test and set” approach to establishing emission limits, which was employed extensively in early NPRI consent decrees, is now generally avoided in favor of setting “hard” or numeric limits in later consent decrees, and “test and set” is used only where absolutely necessary.<sup>17</sup> As noted above, other lessons learned from the NPRI have been incorporated into guidance for all consent decrees.<sup>18</sup>

Finally, OECA agrees that upset events and excess emissions can have an adverse impact on local communities – one of the reasons for the selection of the NPRI was the significant environmental justice impact and proximity of refineries to overburdened communities. However, for accuracy and completeness the Draft Report should recognize that “upsets” or emissions from the malfunction of emission sources may not be violations of applicable EPA regulations. *See, e.g.*, 40 C.F.R. § 60.102a(h).

### **Contact Information**

If you have any questions or concerns regarding this response, please contact the OECA Audit Liaison, Gwendolyn Spriggs, at 202-564-2439.

### Attachment

cc: Lawrence Starfield, OECA  
Susan Shinkman, OECA/OCE  
Pam Mazakas, OECA/OCE  
John Fogarty, OECA/OCE  
Phillip Brooks, OECA/OCE  
Lauren Kabler, OECA/OCE  
Gwendolyn Spriggs, OECA/OAP

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<sup>17</sup> Compare the 2001 BP consent decree at ¶¶14.A-14.F, pages 14-23 (extensive, multi-year provisions for establishing FCCU limits) with the 2013 Big West consent decree at ¶12, page 14 and ¶23, page 16 (immediately effective limits with no lengthy process).

<sup>18</sup> See “Guidance on Streamlining Oversight in Civil Settlements” (OECA Jan. 10, 2013), <http://intranet.epa.gov/oeca/oc/eio/documents/finalstreamliningmemo11013.pdf>.

### Corrective Action Plan

Determining the Outcomes of the National Petroleum Refinery Initiative May Identify Opportunities to Strengthen Future National Enforcement Initiatives dated Report No. OPE-2012-3065, September 23, 2013

<b>Recommendation</b>	<b>Corrective Action</b>	<b>Target Date</b>
<p><b>1.</b> Develop and implement a plan to determine whether consent decrees signed as part of the NPRI are leading to promised improvements in compliance and sustained reductions in pollution. The plan should establish procedures for verifying company completion of consent decree requirements for termination, including company assessments of facility pollution reductions and comparisons with estimated reductions</p>	<p>OECA will issue a memorandum to the regions to remind them of the requirements for termination as provided in refinery consent decrees, and in particular to work with OCE for confirmation that all necessary requirements for termination have been met. In addition, OECA will continue to work with refiners at the time of termination of their consent decree to develop graphs of annual emission reductions obtained under a consent decree at the time of termination.</p>	<p>45 days from the date of a final report.</p>
<p><b>2.</b> Incorporate requirements that ease the resource burden on the EPA to monitor refinery progress (<i>e.g.</i>, CEMS and fence-line monitoring) into future consent decrees or amendments to existing consent decrees under the NPRI.</p>	<p>Consent decrees include requirements and guidance issued in January 2013 to enforcement personnel for incorporating resource-burden requirements into consent decrees.</p>	<p>OECA considers this corrective action complete.</p>
<p><b>3.</b> Inform the public about the extent to which the NPRI resulted in sustained compliance improvement at facilities and reductions in emissions agreed to in consent decrees, as highlighted as a key challenge for OECA in EPA's congressional budget justification.</p>	<p>OECA will continue to work with refiners at the time of termination of their consent decree to develop graphs of annual emission reductions obtained under a consent decree at the time of termination.</p>	<p>45 days from date of a final report (included as part of proposed corrective action for Recommendation #1).</p>
<p><b>4.</b> Ensure that plans for future industry initiatives of the NEI include a monitoring and evaluation component that demonstrates the extent to which the NEI strategy leads to improvement in compliance and human-health risks identified by the EPA.*</p>	<p>OECA will produce guidance that requires the strategies for future National Enforcement Initiatives to include an evaluation component for determining, where feasible, the extent to which the Initiative achieved the goals established in the strategy.</p>	<p>April 30, 2014</p>

\* Text of this recommendation subject to change pending approval by the OIG of EPA's proposed alternative text.

## ***OIG Response to the Agency's Revised Corrective Action Plan***

<b>OIG recommendation</b>	<b>EPA response and corrective action</b>	<b>Completion date</b>	<b>OIG assessment of EPA response and corrective action</b>
<p><b>1.</b> Develop and implement a plan to determine whether consent decrees signed as part of the NPRI are leading to promised improvements in compliance and sustained reductions in pollution. The plan should establish procedures for verifying company completion of consent decree requirements for termination, including company assessments of facility pollution reductions and comparisons with estimated reductions.</p>	<p>“OECA will issue a memorandum to the regions to remind them of the requirements for termination as provided in refinery consent decrees, and in particular to work with OCE for confirmation that all necessary requirements for termination have been met. In addition, OECA will continue to work with refiners at the time of termination of their consent decree to develop graphs of annual emission reductions obtained under a consent decree at the time of termination.”</p>	<p>45 days from the date of a final report.</p>	<p>We agree with the EPA’s proposed actions. This recommendation is resolved.</p>
<p><b>2.</b> Incorporate requirements that ease the resource burden on the EPA to monitor refinery progress (e.g., CEMS and fence-line monitoring) into future consent decrees or amendments to existing consent decrees under the NPRI.</p>	<p>“Consent decrees include requirements and guidance issued in January 2013 to enforcement personnel for incorporating resource-burden requirements into consent decrees.”</p>	<p>OECA considers this corrective action complete.</p>	<p>After reviewing the January 2013 guidance issued to enforcement personnel, we agree this corrective action is complete. This recommendation is resolved.</p>

OIG recommendation	EPA response and corrective action	Completion date	OIG assessment of EPA response and corrective action
<p>3. Inform the public about the extent to which the NPRI resulted in sustained compliance improvement at facilities and reductions in emissions agreed to in consent decrees, as highlighted as a key challenge for OECA in the EPA's congressional budget justification.</p>	<p>“As provided in the proposed corrective action for Recommendation #1, OECA will continue to work with refiners at the time of termination of their consent decree to develop graphs of annual emission reductions obtained under a consent decree and OECA will post this information on EPA's public website.”</p> <p>NOTE: In a subsequent communication, the EPA clarified that it has long planned to pull together and post on the EPA's website consent decree-specific emission reduction data once all of an individual consent decree's requirements have been completed. This would supplement the initial summary of emission reductions achieved by settling refiners through 2005, and posted to the EPA's website.</p>	<p>45 days from date of a final report (included as part of proposed corrective action for Recommendation #1).</p>	<p>We agree with the EPA's proposed actions. This recommendation is resolved.</p>

OIG recommendation	EPA response and corrective action	Completion date	OIG assessment of EPA response and corrective action
<p>4. Ensure that plans for future NEIs include an evaluation component that demonstrates the extent to which the NEI strategy achieves the goal(s) for the NEI identified by the EPA.</p>	<p>“OECA will produce guidance that requires the strategies for future National Enforcement Initiatives to include an evaluation component for determining, where feasible, the extent to which the Initiative achieved the goals established in the strategy.”</p> <p>NOTE: In a subsequent communication, the EPA clarified its corrective action by saying it will produce guidance that requires the strategies for future NEIs to include an evaluation component for periodically determining, where feasible, the extent to which the initiative is achieving the goals established in the strategy. When appropriate and practicable, the strategies will employ outcome measures to examine the success of the initiative.</p>	<p>April 30, 2014</p>	<p>We agree with the EPA’s proposed actions. This recommendation is resolved.</p>



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