



U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF INSPECTOR GENERAL

*Catalyst for Improving the Environment*

## **Audit Report**

# **Agency-Wide Application of Region 7 NPDES Program Process Improvements Could Increase EPA Efficiency**

**Report No. 11-P-0315**

**July 6, 2011**

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## Abbreviations

ACS	Annual Commitment System
BPI	Business process improvement
CWA	Clean Water Act of 1972
ECOS	Environmental Council of the States
EPA	U.S. Environmental Protection Agency
FY	Fiscal year
ICIS-NPDES	Integrated Compliance Information System for the National Pollutant Discharge Elimination System
MOU	Memorandum of understanding
NEPPS	National Environmental Performance Partnership System
NPDES	National Pollutant Discharge Elimination System
NPM	National program manager
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
OP	Office of Policy
OW	Office of Water
PCS	Permit Compliance System
PQR	Permit Quality Review
SRF	State Review Framework

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# At a Glance

*Catalyst for Improving the Environment*

## Why We Did This Review

We conducted this audit to determine what improvements from the Region 7 Kaizen event for the National Pollutant Discharge Elimination System (NPDES) program can be applied on a wider scale, what barriers existed in the development and implementation of event results, and what lessons were learned from the event.

## Background

In August 2008, U.S. Environmental Protection Agency (EPA) headquarters, Region 7, and Region 7 states conducted a Kaizen (i.e., rapid process improvement) event to improve the effectiveness and efficiency of the NPDES program. The event resulted in redesigned processes for planning inspections and issuing permits that better address crucial technical issues and provide for greater collaboration between EPA and states.

**For further information, contact our Office of Congressional, Public Affairs and Management at (202) 566-2391.**

**The full report is at:**  
[www.epa.gov/oig/reports/2011/20110706-11-P-0315.pdf](http://www.epa.gov/oig/reports/2011/20110706-11-P-0315.pdf)

## **Agency-Wide Application of Region 7 NPDES Program Process Improvements Could Increase EPA Efficiency**

### **What We Found**

Although Region 7 NPDES Kaizen event participants continued to follow up on the commitments and action items identified, no single authority was responsible for tracking the process improvement outcomes. Also, EPA did not have a process to develop and track quantifiable results and outcomes from the event. Further, EPA encountered barriers involving scope, performance measures, implementation, and accountability when planning the Kaizen event. While EPA and states collaborated to create guidance for Kaizen events, such as the lean starter kit and primer, EPA did not, nor was it required to, use them to assure that barriers were overcome in the execution of the Region 7 event.

The EPA Administrator's January 2010 memorandum, "Our Top Priorities," as well as other recent EPA and state initiatives, discuss the need to improve internal operations and/or conduct more Kaizen events with the states to more efficiently protect the environment and public health. The Region 7 Kaizen event for the NPDES program identified three process improvements (resolution of technical issues and communication, permitting and enforcement oversight reviews of states, and annual strategic planning) and one implementation action (data collection and reporting) that can potentially be implemented in other regions. Agency-wide permitting process changes could result in better communication; time and cost savings in the states; and avoidance of duplicate inspections, reviews, and data reporting. Using lessons learned from the Region 7 Kaizen event can increase the potential benefits achieved in future process improvement efforts.

### **What We Recommend**

We recommend that the Deputy Administrator direct the Office of Water and Office of Enforcement and Compliance Assurance to identify process improvements from the Region 7 Kaizen event that can be applied elsewhere. We further recommend that the Deputy Administrator direct the Office of Policy to develop a national policy on how to plan, design, and implement business process improvement events; and direct the 10 regions to work with the Offices of Water, Enforcement and Compliance Assurance, and Policy to implement recommended process improvements. In replying to the draft report, the Deputy Administrator agreed with applying the results more widely but did not fully respond to our recommendations on developing national policy.



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

THE INSPECTOR GENERAL

July 6, 2011

**MEMORANDUM**

**SUBJECT:** Agency-Wide Application of Region 7 NPDES Program  
Process Improvements Could Increase EPA Efficiency  
Report No. 11-P-0315

**FROM:** Arthur A. Elkins, Jr.  
Inspector General

A handwritten signature in black ink, appearing to read "Arthur A. Elkins, Jr.", is written over the printed name and title.

**TO:** Bob Perciasepe  
Deputy Administrator

This is our report on the subject audit 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.

The estimated direct labor and travel costs for this report are \$346,100.

**Action Required**

In accordance with EPA Manual 2750, you are required to provide a written response to this report within 90 calendar days. You should include a corrective action plan for agreed-upon actions, including milestone dates. Your response will be posted on the OIG's public website, along with our memorandum commenting on your response. Your response 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. We have no objections to the further release of this report to the public. 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 Melissa Heist, Assistant Inspector General, at (202) 566-0899 or [heist.melissa@epa.gov](mailto:heist.melissa@epa.gov); or Richard Eyermann at (202) 566-0565 or [eyermann.richard@epa.gov](mailto:eyermann.richard@epa.gov).

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# Chapter 1

## Introduction

### Purpose

The U.S. Environmental Protection Agency (EPA) reported that from 1999 through 2009, the number of National Pollutant Discharge Elimination System (NPDES) permittees increased over 200 percent, from 372,700 to more than 950,000, due to court decisions and new regulations. Further, while expanding in number, permits have also become more complex. Because of the increased workload associated with these permits and the tightening of federal and state budgets, the states in Region 7 requested that EPA hold a Kaizen event to determine whether opportunities existed to improve NPDES program efficiency. We conducted an audit of the Kaizen event to determine:

- What improvements identified at the Region 7 event can be applied on a wider scale
- What barriers existed in the development and implementation of improvements identified from event results and what lessons can be learned from the event

### Background

Under the authority of the Clean Water Act (CWA) of 1972, the NPDES program controls water pollution by regulating point sources that discharge pollutants into U.S. waters. Point sources are discrete conveyances such as pipes or man-made ditches. Individual and general permits set technology-based and water-quality-based effluent limits to maintain environmental standards that ensure safe water. Facilities must obtain permits if their discharges go directly to surface waters. Most states are authorized to administer the program.

EPA, states, and stakeholders are committed to improving the way in which EPA protects the environment and public health. In March 2010, the EPA Administrator and the president of the Environmental Council of the States (ECOS) signed a memorandum of understanding (MOU). The MOU states that EPA and ECOS believe that they can better protect public health and the environment through the use of business process improvement (BPI) techniques such as Kaizen, value stream mapping, and other lean methods. The MOU lists BPI activities such as Kaizen events as methods to achieve process efficiencies necessary to cope with tight federal and state budgets.

Lean is a method that can enable work to be done more effectively and efficiently by identifying and eliminating waste in processes. Numerous government agencies, including EPA, are using lean to improve the quality, transparency, and speed of government. Kaizen, or rapid process improvement, often is considered to be the building block of all lean production methods. Kaizen focuses on eliminating waste, improving productivity, and achieving sustained, continual improvement in targeted activities and processes of an organization.

EPA's Office of Policy (OP) has a list of contractors who facilitate Kaizen events and are available as a resource to EPA offices wishing to conduct such events. In addition, EPA's *Lean in Government Starter Kit* and *Working Smart for Environmental Protection: Improving State Agency Processes with Lean and Six Sigma* (hereafter referred to as "the primer") are posted on the EPA website to assist EPA and its partners in planning, designing, and implementing Kaizen events. The lean starter kit was designed to assist interested government agencies in planning and implementing successful lean improvement events. The primer shares the implementation experiences and results of five states that used lean and similar BPI methods to improve the effectiveness and efficiency of agency processes. The EPA lean government website (<http://www.epa.gov/lean/leangovernment>) has other information and resources on lean government as well.

In August 2008, Region 7 and its states, with participation from EPA headquarters, conducted a Kaizen event to improve the effectiveness and efficiency of the NPDES program. The purpose of the event was to review the process for granting NPDES permits and redesign it to gain improvements and efficiencies. An additional reason that EPA conducted the Kaizen event was the recognition, both in EPA headquarters and Region 7, that improved communications were needed with respect to permits, inspections, and performance reviews. The states in Region 7 requested that EPA participate in this event; all states were involved and fully committed to the process.

The participants included the EPA Office of Water (OW), Office of Enforcement and Compliance Assurance (OECA), EPA Region 7, and the four Region 7 states (Iowa, Kansas, Missouri, and Nebraska). Region 7 reported the results in a case study that OP posted on its website. The case study showed that the event resulted in redesigned processes that clarified how to better address critical technical issues, plan and conduct inspections, issue permits, and improve collaboration among EPA headquarters and regions and the states. The anticipated improvements reported in the case study were:

- 82 percent decrease in processing time to resolve technical issues that delay permits (from 5.5 months to 1 month)
- 67 percent decrease in the number of steps for EPA to review a state wastewater program (from 39 steps to 13 steps)
- 68–75 percent decrease in processing time for EPA to review a state wastewater program (from 4–19 months to 1–6 months)

- Increased collaboration between EPA and states to improve planning and quickly address problems

While we found no evidence to verify these claims, we did note efficiencies in Region 7's program since the Kaizen event.

## Noteworthy Achievements

Region 7 has actively pursued efficiencies with its states by conducting numerous Kaizen events. EPA and states, through national program manager (NPM) guidance and the EPA-ECOS MOU, are advocating the importance of more efficiently protecting the environment and public health through lean process improvement approaches such as Kaizen.

## Scope and Methodology

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our review objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We conducted the audit from March 2010 to March 2011. We obtained an understanding of the NPDES program through review of the laws, regulations, guidance, and other documents. We reviewed the CWA, Code of Federal Regulations, and EPA's October 2009 CWA Action Plan to understand guidance and directives governing the NPDES program. We analyzed EPA guidance to obtain an understanding of BPI methods. We reviewed EPA's *Lean in Government Starter Kit* and *Working Smart for Environmental Protection: Improving State Agency Processes with Lean and Six Sigma* to understand Kaizen and other techniques used to increase efficiency in business operations. We reviewed the fiscal years (FYs) 2008 and 2009 Integrity Act Annual Assurance Letters for EPA's Office of the Administrator, OW, and Region 7 to determine whether they identified any weaknesses related to the NPDES program. The letters did not identify any such weaknesses.

We visited EPA's OW, OECA, OP, and Office of Congressional and Intergovernmental Relations; EPA Region 7 in Kansas City, Kansas; and ECOS in Washington, DC. We interviewed managers and/or permit writers in EPA and the states to gain an understanding of the NPDES program and the Region 7 Kaizen event conducted in August 2008. We interviewed managers in EPA Regions 1, 4, 6, and 10, and in Iowa, Kansas, Missouri, and Nebraska, to determine implementation status and lessons learned from the Kaizen event. We reviewed documentation from the Kaizen event, and from surveys, presentations, and action items, to determine event results.

# Chapter 2

## Region 7 Kaizen Event Identified Process Improvements That Should Be Transferred to Other Regions

Although Kaizen event participants continued to follow up on the commitments and action items identified at the event, no single authority was responsible for tracking outcomes of the process improvements. Also, EPA did not have a process to develop and track quantifiable results and outcomes from the event. The Region 7 August 2008 Kaizen event identified three process improvements and one related implementation action for the NPDES program that can be potentially implemented in other regions:<sup>1</sup>

- Resolution of technical issues and communication
- Permitting and enforcement oversight reviews of the states
- Annual strategic planning
- Data collection and reporting

Strategies involving both EPA and states, such as the EPA-ECOS MOU, recommend Kaizen events as one of the best methods to achieve program efficiencies and process improvements. However, the director of OW's Office of Wastewater Management, Water Permits Division, stated that benefits achieved from the Region 7 Kaizen event have not been similarly achieved elsewhere. If the lessons learned at this event could be implemented nationwide, the improved permitting process could result in better communication; time and cost savings in the states and EPA; and improved processes for inspections, reviews, and data reporting.

### EPA and States Emphasizing Process Improvement

For the past few years, EPA and state environmental agencies have used approaches such as Kaizen to improve government processes that will contribute to environmental progress. Recent EPA guidance includes the following:

- The EPA Administrator's January 2010 memorandum, "Our Top Priorities," listed "protecting America's waters" as one of seven areas for focus during the year and in the years ahead. The memorandum stated that achieving this and other goals would call for a focus on innovation and efficiency. As an example, the memorandum stated that the Agency will focus on improving EPA's internal operations, from performance

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<sup>1</sup> In May 2011, EPA provided the OIG the CWA Action Plan that covers wider implementation of process improvements. The OIG did not verify the actions in the plan.

measures to Agency processes, and that success will depend on supporting innovation and creativity.

- The purpose of the March 2010 MOU between EPA and ECOS was to sustain organizational commitment by the states and EPA to apply BPI techniques and thinking to areas of federal-state interaction in implementing the nation's environmental laws and regulations, to ensure better and more cost-effective use of EPA and state resources.
- The April 2010 EPA FY 2011 NPM guidance for the National Environmental Performance Partnership System (NEPPS) stated that the Agency needed to identify collaborations to improve state-EPA business processes and promote continuous improvement. EPA regions were asked to review the areas of federal-state interaction and use appropriate BPI techniques to identify collaborations to improve efficiency and eliminate waste. Appropriate BPI techniques were to include applying successful state-regional lean exercises, as appropriate.

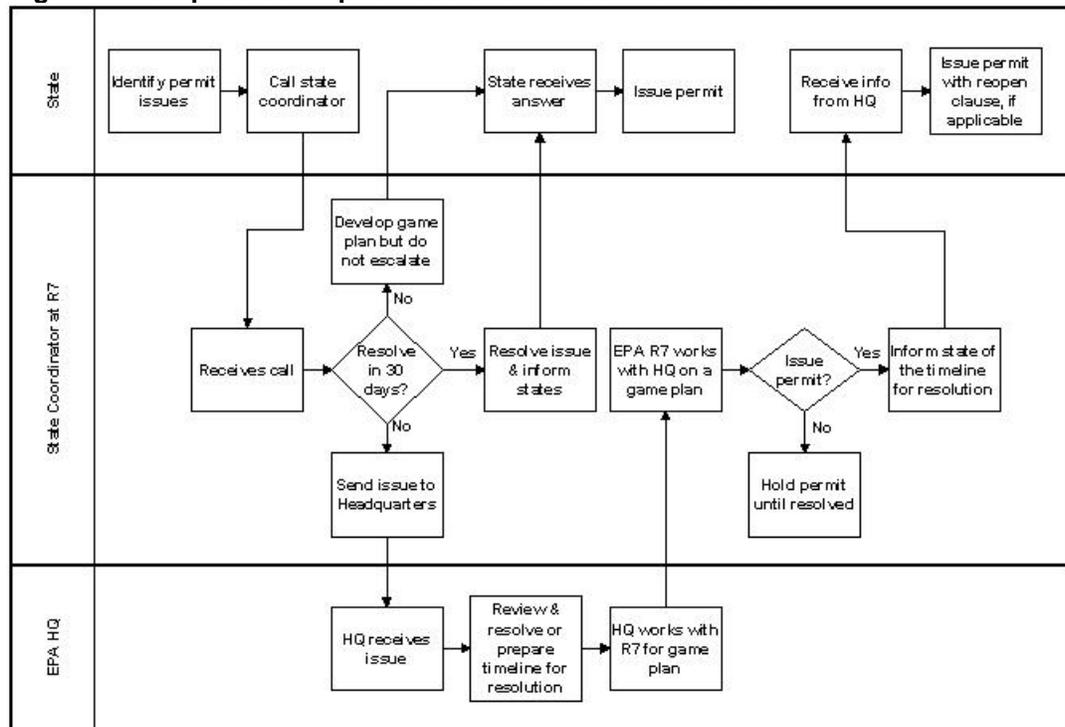
## **Region 7 Permitting and Oversight Review Improvements Not Applied Nationally**

The Region 7 Kaizen event resulted in NPDES process improvements in the areas of technical permit issue resolution and communication, and permitting and enforcement oversight reviews of the states. Although the Region 7 Kaizen event was not intended to be a national model at the time it was conducted, the process improvements identified at the event are planned to be implemented in other regions (see footnote 1). Implementing these process improvements could reduce the permits backlog and streamline the overall process. By not implementing these new processes beyond Region 7, other regions miss out on improvement opportunities.

### ***Resolution of Permit Technical Issues and Communication***

By developing a new process designed to end longstanding impasses on technical issues in the NPDES permitting program, the Kaizen event assisted Region 7 in resolving backlogged permits in its states, as illustrated in figure 1. The new process requires that if Region 7 files an objection to a permit on public notice, the respective state and Region 7 will resolve the issue within 30 days. If the issue cannot be resolved in that timeframe, it must be elevated to EPA headquarters for resolution.

**Figure 1: New process map for resolution of technical issues**



Source: Region 7 and four states' NPDES Kaizen Event Case Study.

Improved EPA-state communication and coordination has been one of the major improvements resulting from the event. For example, the states and Region 7 held productive workshops to discuss the issues of wet weather and lagoons. These workshops led to a reduction in permit backlog and, overall, a more cooperative approach to implementing the program, understanding the issues, and addressing issues that impede program implementation.

Region 7 staff stated that issues with NPDES permits should be resolved during the permit drafting process (steps 4–10 in figure 2, below) rather than waiting until the public notice phase (step 11 in figure 2). As shown in figure 2, Region 7 and the states now follow a revised process in which EPA coordinates and communicates with the states during the permit drafting process, instead of reviewing the permit after it had been placed on public notice. Unresolved issues are now being elevated to the headquarters level sooner.

**Figure 2: Steps in permitting process**

Permitting steps	Region review
1. Receive application from permittee.	
2. Review application for completeness and accuracy.	
3. Request additional information as necessary.	
4. Develop effluent limits.	
5. Develop water-quality-based effluent limits using application data and other sources.	← EPA and states now work together during these steps to resolve issues
6. Compare water quality-based effluent limits with technology-based effluent limits and choose the more stringent of the two as the effluent limits for the permit.	
7. Develop monitoring requirements for each pollutant.	
8. Develop special conditions.	
9. Develop standard conditions.	
10. Consider variances and other applicable regulations.	
11. Prepare the fact sheet summarizing the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit.	← Issues previously addressed during this step
12. Complete the review and issuance process.	
13. Issue the final permit.	
14. Ensure permit requirements are implemented.	

Source: *Water Permitting 101* (based predominately on 40 Code of Federal Regulations §124).

Despite the need to increase process efficiency Agency-wide, EPA has not implemented the Kaizen event results on a broader scale. The *Lean Starter Kit—How to Implement Successful Lean Events at Environmental Agencies* states that the best way to sustain and expand lean activity is to achieve results and share them throughout the Agency. After Region 7 presented the results of the event to regional branch chiefs, OW offered to conduct similar events in other regions. None were interested because they did not see quantifiable results, or because their processes already incorporated some or all of the concepts identified in Region 7.

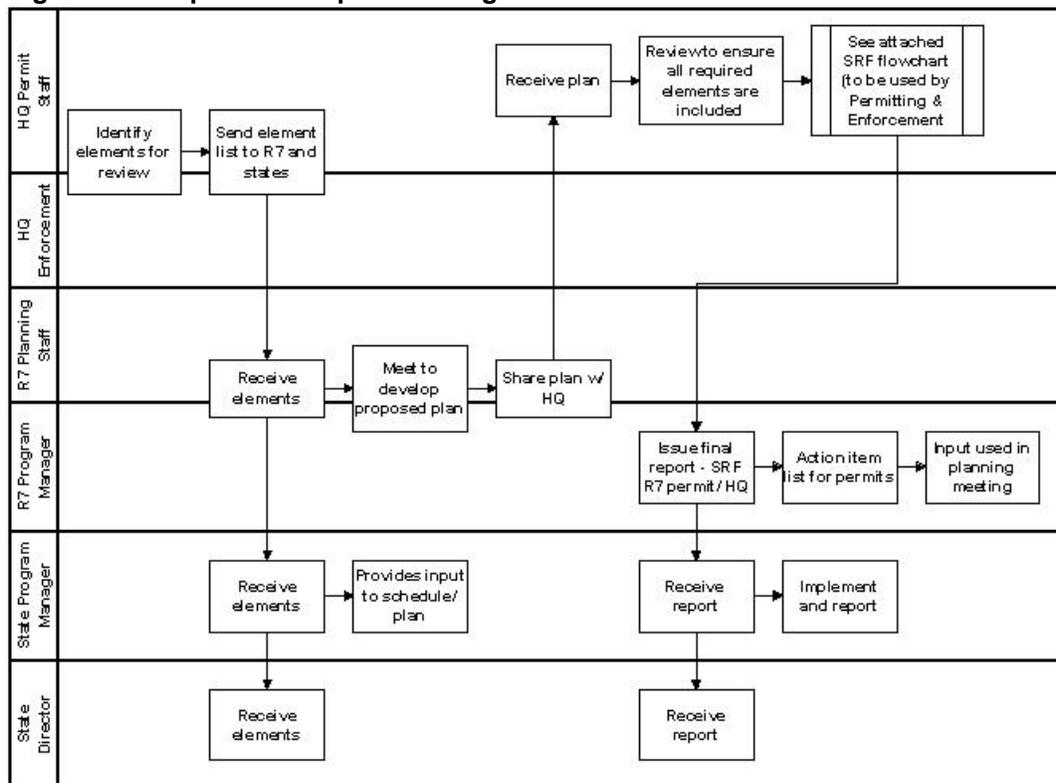
By using the new resolution of technical issues process, Region 7 and two of its states were able to resolve some backlogged permits. At the time of our field work, Missouri was issuing 54 wet weather permits, some of which had been backlogged for several years, and Nebraska had issued permits to 3 water treatment plants that had been backlogged for over 10 years. Other states with permitting authority could benefit from regional review of permits earlier in the process. Earlier regional review could result in state personnel spending less time on rewrites because problems are resolved as the draft permit is developed.

### ***Oversight Reviews of the States***

As shown in figure 3, during the Kaizen event, Region 7 identified combining regional permit and enforcement oversight reviews of its states as a process improvement. The combined reviews eliminated 1 week of time that states

devoted to the EPA reviews. Region 7 is also coordinating its state permit and enforcement reviews with EPA headquarters to reduce overlap and duplication.<sup>2</sup>

**Figure 3: New process map for oversight reviews**



Source: Region 7 and four states' NPDES Kaizen Event Case Study.

The CWA requires that EPA oversee authorized state programs to ensure adequate and consistent program operation and performance. EPA uses the State Review Framework (SRF) to review state programs, policies, files, and data. EPA's ongoing oversight activities are designed to evaluate both the ongoing state program and operations, and overall program planning and performance. The oversight of program administration focuses on individual permits and compliance activities. These activities include receiving and reviewing draft and proposed state permits, evaluating reports addressing compliance and enforcement activities, and participating in inspections.

Region 7 performs permit and enforcement oversight reviews of one of its states each year, so each Region 7 state is reviewed once every 4 years. The headquarters Permit Quality Review (PQR) is a combination of file reviews done by headquarters and during state site visits. Region 7 staff stated that headquarters normally performs reviews in two EPA regions each year and site visits are conducted in two states from each of the two regions.

<sup>2</sup> In May 2011, EPA provided the OIG the CWA Action Plan that covers national requirements for Permit Quality Review and State Review Framework reviews. The OIG did not verify the actions in the plan.

Since the Kaizen event, Region 7 had conducted combined permit and enforcement oversight reviews in Nebraska and Iowa. By performing enforcement and permitting reviews of a state concurrently, EPA saved Nebraska and Iowa a minimum of 1 week of employees' time in supporting the reviews. In Nebraska, it saved six employees 1 week of time because they were involved in both permitting and enforcement reviews. Instead of performing two separate reviews that took 1 week each, or a total of 2 weeks, both reviews were combined and done in 1 week.

Region 7 is planning coordinated permit and enforcement reviews in Missouri in 2011 using the permit program's PQR process/checklist and the enforcement program's SRF. The PQR process is an on-site evaluation of permit files and program operations. EPA and the states use the SRF to assess EPA and state performance in enforcing water permits and as oversight of state and EPA enforcement. Other EPA regions that perform dual or triple reviews could benefit from combining the review processes.

The OECA Office of Compliance director stated that during the event, participants realized that the states were being reviewed three different times:

- OW's Office of Wastewater Management conducted the PQR.
- Region 7 conducted the SRF for the enforcement program.
- Region 7 conducted its own reviews.

To increase efficiency, Region 7 conducted permitting reviews of states in conjunction with the enforcement review and utilized tools developed by OW for use in headquarters' periodic PQRs. In 2008, headquarters provided the regions with a checklist to be used in performing the PQR reviews. Region 7 used that checklist in the reviews of two of its states. The SRF process continued as it was, but was done concurrently with the PQR reviews.

Per its CWA action plan and FY 2011 NPM guidance, EPA plans to apply some of the process improvements on a national scale. On June 22, 2010, OW and OECA issued *Interim Guidance on Strengthening EPA and State Performance and Oversight* to start incorporating some of these improvements in the annual planning process. The OECA Office of Compliance director stated that the office anticipates that the CWA action plan will integrate the PQR and the SRF reviews in FY 2011.<sup>3</sup>

## **Region 7 Strategic Planning and Data Reporting Improvements Not Fully Implemented by Region 7 and EPA Headquarters**

Participants in the Region 7 Kaizen event identified process improvements in the areas of annual strategic planning and data reporting for the NPDES program. Even though these process improvements had potential to improve program

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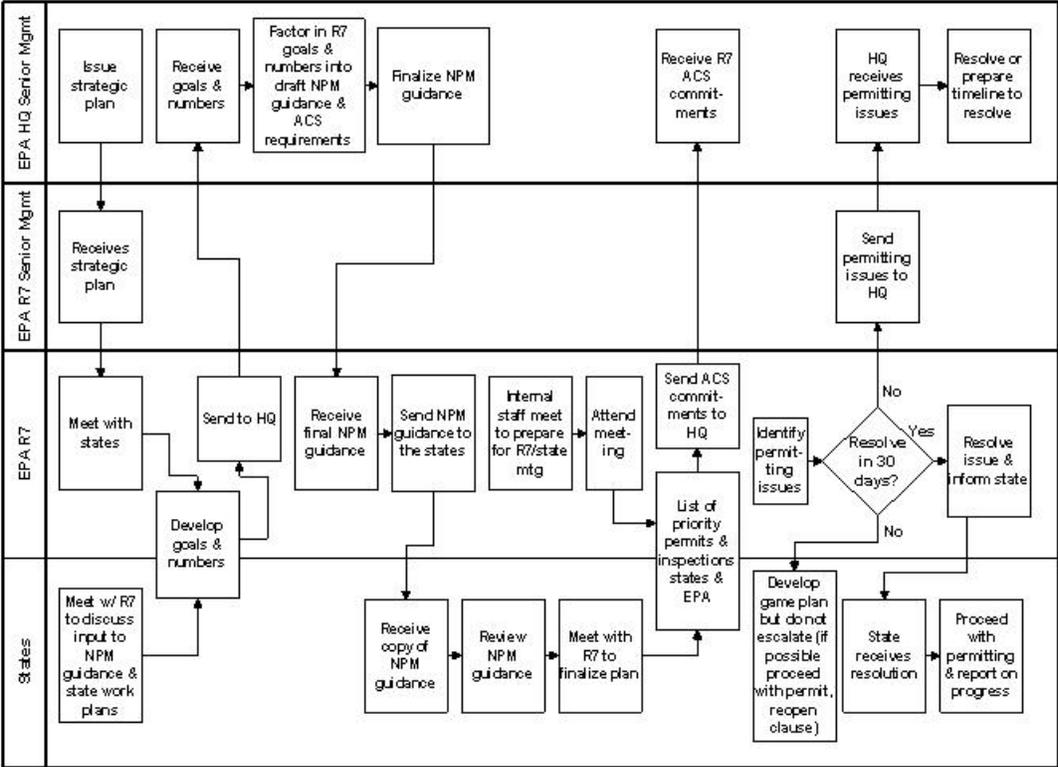
<sup>3</sup> Agency Comment 4 (appendix A) provided to the OIG in May 2011 stated, "The Director of OECA's Office of Compliance stated that the CWA Action Plan has committed EPA to initiate a process to integrate the PQR and the SRF reviews in FY 2011." The OIG did not verify the actions taken related to this commitment.

efficiencies, the OW, Office of Wastewater Management, Water Permits Division director explained that the improvements were neither fully implemented by Region 7 and EPA headquarters nor implemented on a nationwide scale. No single authority was responsible for ensuring that the improvements were implemented. Earlier planning and coordination of inspections could avoid duplicate inspections. Other regions could achieve similar benefits by implementing these new processes.

**Annual Strategic Planning**

The Region 7 Kaizen event mapped out improvements for the annual regional-state strategic planning process (figure 4). These improvements were designed to achieve broader coverage for inspections and reviews of facilities and permits for the NPDES program. The process called for early engagement and cooperation between Region 7 and its states to identify the list of permits and facilities to be inspected. Efficiencies can be gained through avoiding duplicate inspections and using saved resources to increase coverage and depth of inspections. Region 7 and its states were to work together to provide EPA headquarters the goals and numbers for incorporation into the FY 2011 NPM guidance and the Annual Commitment System (ACS) requirements. After reviewing the draft NPM guidance, the states and Region 7 were to develop a list of priority permits and inspections, and their ACS commitments.

**Figure 4: New process map for annual strategic planning**



Source: Region 7 and four states' NPDES Kaizen Event Case Study.

OECA's FY 2011 NPM guidance states that every region and state, working together, should conduct a CWA annual planning process that brings the different components of the regional and state NPDES programs (water quality standards and assessment, permitting, and enforcement) to the table together; identifies and discusses national, regional, and state priorities considering available resources at both the state and federal levels; and results in collaborative annual work plans.

Initially, implementing the concept of early collaboration on a compliance monitoring strategy was not possible due to planning timing differences between EPA and the states. However, plans for implementation have started. At least one Region 7 state, Missouri, provided input to the FY 2011 annual strategic plan.

Region 7 and its states could more efficiently identify permits and facilities to be inspected by avoiding duplicate reviews and using those saved resources to increase coverage and depth of reviews. This benefit of coordinated strategic planning would potentially be achievable in other regions/states.<sup>4</sup>

### ***Data Reporting***

The Region 7 Kaizen event identified 24 reports that states were required to provide EPA. In accordance with the EPA Burden Reduction Initiative, event participants identified four NPDES reports for elimination, one of which could be eliminated by combining it with another report. The four reports identified for elimination were the High Priority 10 Years Old and Older, Double Violations SSSR, Permits with Trades, and Action Items for SRF. However, a June 2009 survey of event participants indicated that the number of required state reports submitted to EPA after the event had not changed.

To address state concerns over escalating reporting requirements accompanied by decreases in federal funding, EPA and ECOS launched the Burden Reduction Initiative in October 2006. This initiative aims to reduce states' low-value, high-burden reporting requirements to conserve both states' and EPA's resources while maintaining a commitment to protect human health and the environment.

The Integrated Compliance Information System for the NPDES program (ICIS-NPDES) provides a single database enabling users to manage their programs by tracking permits, limits for pollutants, discharge monitoring data, and other program reports. ICIS-NPDES eases the reporting burden by expanding the options for electronic data reporting and improves data quality by ensuring that all information conforms to strict rules. In addition, dual reporting of some information is eliminated. EPA is engaged in transitioning states from the Permit Compliance System (PCS) to the more comprehensive ICIS-NPDES.

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<sup>4</sup> Agency Comment 4 (appendix A) provided to the OIG in May 2011 stated, "Regions now share inspection lists with states to avoid duplication and to work share." The OIG did not verify the actions taken.

EPA's FY 2010 Enforcement and Compliance Reporting Instructions directed states that report storm water inspections in PCS to also enter the data in ICIS-NPDES. ICIS-NPDES is expected to reduce the permit reporting burden in the states currently using PCS by saving time, labor, or effort in completing the NPDES reporting process. As of June 2009, 31 states and territories were solely using ICIS-NPDES. EPA plans to support the remaining 22 NPDES states' moves from PCS to ICIS-NPDES over the next few years.<sup>5</sup> EPA's Water Permits Division further advocated that states place copies of permits on the Internet as another way to reduce the burden associated with data and to increase the NPDES permit transparency.

Kaizen event participants did not appear to pursue report reduction as an event outcome because they saw the primary benefit of the Kaizen event to be "improved communication."<sup>6</sup> Even though Region 7 did not fully implement the data reporting process improvement, we believe the benefit of streamlining reporting through the Burden Reduction Initiative and fully implemented ICIS-NPDES should be considered for other regions and states.

## Conclusion

EPA intends to implement process improvements identified at the Region 7 Kaizen event nationwide. These BPIs include a reduction in the burden on states, an improved process for regions and headquarters on the resolution of technical permit issues, and a clear template in the form of a checklist for headquarters' PQR review and the enforcement program's SRF review of the states. The OW, Office of Wastewater Management, Water Permits Division director explained that EPA has shared the results of the event with NPDES branch chiefs nationwide and has incorporated the lessons learned from the Kaizen event in NPM guidance and the CWA Action Plan. In an era of increased responsibility and dwindling resources, EPA should utilize all available resources, such as those from OP, in planning, promoting, and implementing these events and other new innovative processes. EPA should ensure that efficiencies developed are shared with and used by other EPA regions where applicable.

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<sup>5</sup> Agency Comment 8 (appendix A) provided to the OIG in May 2011 included an update to status: "As of April 2011, ICIS-NPDES supports 34 states, all 10 EPA regions, all territories, the District of Columbia, and two tribes. EPA will continue to work with the remaining 16 states on their migration to ICIS-NPDES over the next two years." The OIG did not verify the updated status.

<sup>6</sup> Agency Comments 6 and 7 (appendix A) provided to the OIG in May 2011 provided reasons why Kaizen event participants did not pursue report reduction as an event outcome. First, elimination of many of the 24 reports would require additional resources. Second, using a single data system would require reaching consensus. Third, additional report reduction requires rule changes. The Agency also stated that "reporting process improvements and streamlining reporting through the Burden Reduction Initiative and providing a fully-implemented ICIS-NPDES is being considered for other regions and state." The OIG did not verify the reasons or consideration during the audit.

## Recommendations

We recommend that the Deputy Administrator:

1. Direct OW and OECA to identify Region 7 process improvements that can be applied elsewhere, considering the cost and benefit of implementation. These actions include:
  - a. Earlier resolution of technical issues and communication.
  - b. Combining permitting and enforcement oversight reviews of the states.
  - c. Implementing coordinated and integrated strategic planning nationwide for the NPDES program, including consideration of the new approaches under the CWA action plan.
  - d. Fully implementing Burden Reduction Initiatives identified during the event.
2. Direct OP to work with OW and OECA to develop methods for tracking and monitoring implementation of the processes identified in recommendation 1.
3. Direct the 10 regions to work with OW, OECA, and OP to implement all the recommended process improvements.

## Agency Comments and OIG Evaluation

While EPA concurred with the recommendations, the Deputy Administrator disagreed with some of the report language and, where appropriate, we revised the report to address these concerns. The complete Agency response is in appendix A.

The Deputy Administrator concurred with the recommendations and provided corrective action plans to address recommendations 1 through 3.

In responding to recommendation 1.a., the Deputy Administrator committed to working with other EPA regions to identify and implement specific permit issuance changes from the Region 7 Kaizen event that can be used to speed the resolution of technical and communication issues. The Deputy Administrator proposed implementation of the process improvements for the remaining recommendations through the CWA Action Plan.

Our review of the implementation plans for the CWA Action Plan concluded that EPA developed a complete and comprehensive plan to address recommendations 1 through 3. The implementation plan advocates more efficient reporting of data; improved communication among states, EPA, and regions; and combining, coordinating, and integrating planning and oversight of the NPDES permitting

and enforcement activities. The milestones and dates for proposing rules and training that will accomplish these efforts start in 2011 and go through 2012.

The implementation plan addresses training needs for EPA and states. In 2011, EPA will integrate policies on prioritizing EPA and state permitting and enforcement actions. Beginning in 2011, EPA will develop joint annual NPDES work plans, as well as streamline NPDES enforcement and permitting oversight activities that will be assisted through guidance and training in 2011. In 2012, integrated reviews will be piloted in selected states. In summary, the implementation plan for the CWA Action Plan is responsive to our first three recommendations.

## Chapter 3

### Barriers Encountered During the Region 7 Kaizen Event and Lessons Learned

The Region 7 Kaizen event encountered barriers to success involving scope, performance measures, implementation, and accountability. While EPA and states collaborated to create guidance for Kaizen events, such as the September 2006 *Lean in Government Starter Kit* and *Working Smart for Environmental Protection: Improving State Agency Processes with Lean and Six Sigma*, EPA did not, nor was it required to, use them to assure that barriers were overcome in the Region 7 event. The EPA Administrator's "Seven Priorities for EPA's Future," as well as other recent EPA and state initiatives, discuss the need to improve operations or conduct more Kaizen events with the states to more efficiently protect the environment and public health. EPA can improve the potential benefits achieved in future process improvement efforts by using lessons learned from the Region 7 Kaizen event.

#### **Business Process Improvements Should Be Sought Via Well-Planned Lean Events**

The 2011 NEPPS guidance, the March 2010 MOU between EPA and ECOS, and the EPA Administrator's January 2010 memorandum, "Our Top Priorities," emphasized that EPA should be more efficient. For example:

- The 2011 NEPPS goal 1, objective 3, states, "Identify collaborations to improve state-EPA business processes and promote continuous improvement (for example, by applying LEAN, Kaizen, Value Stream Mapping and Six Sigma techniques)."
- The EPA-ECOS MOU states, "ECOS and EPA believe we can better achieve the goal of protecting public health and the environment through the use of administrative/business process improvement techniques such as Kaizen, Six Sigma, Value Stream Mapping, and similar projects."
- The Administrator's memo states, "We will also focus on improving EPA's internal operations, from performance measures to agency processes."

EPA had multiple resources to assist in achieving BPIs at the Region 7 Kaizen event. The EPA lean starter kit and primer addressed the importance of scope, performance measures, implementation, and accountability to successful lean events. As shown in figure 5, the lean starter kit identified "unclear scope" (i.e.,

having a scope too large) as a common detriment to lean event success. Metrics should be quantified before, during, and after lean events, according to the lean starter kit. The primer explained that metrics are important because they focus attention on sustaining process improvement over time and ensure that what gets measured gets managed. The lean starter kit outlined the importance of selecting one person to serve as an overall implementation manager to track followup efforts. All of these characteristics are crucial to successful BPI events.

**Figure 5: Characteristics of less successful lean events**

- ✓ Unclear Scope: Event scale or scope was too large—it was too much to address in a 4- to 5-day event.
- ✓ Lack of Visible Management Commitment: If managers do not commit to and actively support improvements and process changes, it is easy to backslide to business as usual.
- ✓ Poor Event Facilitation or Support: Failure to adequately prepare for a lean event limits what can be accomplished; similarly, lack of a skilled facilitator can inhibit progress during a lean event.
- ✓ Inadequate Followup: Insufficient attention, resources, and accountability can prevent the new process from being successfully implemented in a reasonable timeframe.
- ✓ Strategic Misalignment: When multiple autonomous departments or agencies are involved in an event, conflicts can emerge due to differences in mission and strategic direction. This misalignment can undermine management support for followup and implementation activities.
- ✓ Unrealistic Expectations: Expectations for what the event could achieve were not realistic given the process type, complexity, or other factors.

Source: EPA, Lean in Government Starter Kit, Version 2.0, May 2009. Earlier versions of the starter kit, published before the Region 7 NPDES Kaizen event, cited similar characteristics.

## Barriers to the Region 7 NPDES Kaizen Event

We interviewed Region 7, OW, and OECA management to determine what barriers existed to the event and whether lessons could be learned from the event as future events are considered. The interviewees consistently identified scope, performance measures, implementation, and accountability as barriers that limited the success of the event.

### Scope

OECA, OW, and Region 7 management, as well as states, confirmed that the scope of the event in Region 7 was too big. The OECA Office of Compliance director stated that the event should have been more selective in scope, the personnel involved should have had upfront training in lean, and the goals and outcomes to be achieved should have been properly determined at the beginning of the event so that results would have been more beneficial.

An OP representative explained that for a large, complex process such as NPDES permitting and enforcement, a single event may not be sufficient to solve all problems. Many lean leader organizations first conduct a value stream map that provides a clear picture of the current process as well as a “future state” map that

defines the desired process. Followup Kaizen events can then be used to make improvements in targeted areas.

We concur with OECA and Region 7 that the scope of the Region 7 Kaizen event was too large. However, merely narrowing the scope of the event would not necessarily have produced an optimal outcome—mapping the whole process and considering the ideal state before mapping out specific improvements can be beneficial.

### ***Performance Measures***

“Demonstrating results” was another obstacle identified as a barrier to the event’s success. Also, EPA did not have a process to develop and track quantifiable results and outcomes from the event. The OW, Office of Wastewater Management, Water Permits Division director stated that measurable benefits were difficult to quantify due to the broad scope of the event. Without measurable results, it was difficult to quantify and apply the positive outcomes from the event to other EPA regions. The states and EPA identified improved communication, a nonmeasurable effect, as the main benefit of the event. Specifically, “improved communication” means more open relationships between EPA headquarters, regions, and states to raise issues as early as possible and resolve them timely. Specific achievements and positive aspects of improved communication resulting from the Region 7 Kaizen event include:

- Nebraska coordinated followup calls, meetings and action items from these events and results from them.
- Managers in multiple EPA offices made commitments to improve communication.
- OW and OECA issued the June 2010 *Interim Guidance to Strengthen Performance in the NPDES Program*.

The case study of the Region 7 Kaizen event that OP posted on its website identified anticipated improvements resulting from the event:

- 82 percent decrease in processing time to resolve technical issues that delay permits (from 5.5 months to 1 month)
- 67 percent decrease in the number of steps for EPA to review a state wastewater program (from 39 steps to 13 steps)
- 68–75 percent decrease in processing time for EPA to review a state wastewater program (from 4–19 months to 1–6 months)
- Increased collaboration between EPA and states to improve planning and quickly address problems

However, Region 7 management could not provide documentation of the basis on which these anticipated process improvements were projected, and could not document how these improvements were quantified in the event case study. EPA

personnel informed the OIG that the event facilitator calculated the case study results by comparing the old and new processes to develop percentage savings in measures such as time and labor. Region 7 described the percentages as “wishes for what might happen.” Headquarters OW officials also explained that the savings identified by the facilitator may not be valid because steps in the new flowcharted process actually involved multiple steps that were depicted as one.

### ***Implementation/Accountability***

The EPA lean starter kit states that one of the most essential steps to ensure effective followup is to identify an “implementation manager.” The implementation manager is responsible for ensuring that a clear and effective event followup process is established and conducted. Specific responsibilities of the implementation manager include:

- Schedule and run event followup meetings.
- Lead efforts to identify and remove obstacles to effective followup.
- Hold the team accountable for follow-through on actions.
- Ensure that progress is periodically evaluated and corrective actions are implemented.
- Ensure that postevent communication plans are executed.

Although EPA and the Region 7 states agreed that an individual from Nebraska should track action items from the event and subsequent meetings, and establish various points of contact for action items that came from the event and subsequent meetings, they did not appoint an implementation manager to be accountable for the outcomes of the event in its entirety. No manager had complete authority over all the parties needed to make the identified changes.<sup>7</sup> To oversee implementation, EPA should have established an implementation manager within the Agency, not from a state.

## **National Policy Needed for Business Process Improvement**

EPA does not have a national policy for conducting BPI events such as Kaizen, six sigma, and value stream mapping. Multiple resources are available to the Agency and its state partners to guide in planning, designing, and implementing BPI events. However, there is no national policy that integrates these resources or establishes requirements to use them.

The OW Office of Wastewater Management deputy director explained that EPA issued a CWA Action Plan in October 2009 that would implement, on a national level, some of the results of the Region 7 Kaizen event. However, the action plan makes no mention of the event. In June 2010, OW and OECA jointly issued *Interim Guidance to Strengthen Performance in the NPDES Program* to Regional

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<sup>7</sup> Agency Comment 1, 2 of 3 (appendix A) provided to the OIG in May 2011 stated, “The EPA and state managers made (and kept) commitments for follow-up actions.” The OIG did not verify that statement as part of the audit.

Administrators as the initial steps to be implemented under the CWA Action Plan. While this interim guidance focused on annual planning and joint work plans that were similar to some of the new processes that emerged from the Region 7 Kaizen event, other process improvements from the event were not included in the guidance.<sup>8</sup> In addition, the absence of a national policy for all EPA offices to use in planning, designing, and implementing BPI events such as Kaizen is an internal control deficiency that may pose a barrier to the success of future events.

## Conclusion

EPA may waste funds if the Agency does not apply lessons learned from the Region 7 Kaizen event. The emphasis within EPA and the states to conduct more events like the Region 7 Kaizen event is likely to result in increased expenditures for similar events. Understanding the obstacles encountered during and after the event will increase the likelihood that future events held by EPA and its partners will be successful.

The importance of protecting the environment and public health in conjunction with tight resources at the federal and state levels necessitates that EPA and the states use their resources efficiently. Congress, state legislatures, the regulated community, and the public are asking agencies to produce results with greater efficiency. In 2010, the EPA Administrator directed the Agency to be innovative and creative in improving EPA's operations, and ECOS reported that 32 states listed "business process improvements" as the highest-ranked strategy among states for coping with budget reductions. The EPA-ECOS MOU on BPI heightens the importance and need for conducting well-planned, -designed, and -implemented BPI events. Therefore, it is crucial that EPA provide a framework and direction to aid in successful implementation.

## Recommendations

We recommend that the Deputy Administrator:

4. Direct OP to develop a national policy on how to plan, design, and implement business process improvement events that includes:
  - a. Integration of the existing best practices identified in EPA resources, such as kits on lean, Kaizen, and value stream mapping, that will address methods for overcoming common barriers to business process improvement events.
  - b. Requirements on how to address barriers concerning scope, performance measures, accountability, and implementation.

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<sup>8</sup> Agency Miscellaneous Comments and Suggested Edits, #8 (appendix A) provided to the OIG in May 2011 stated that the Agency covered other process improvements from the event in other documents and processes. The OIG did not verify that statement as part of the audit.

5. Establish an overall office or steering committee for advocating and overseeing business process improvement events that involve multiple Assistant Administrators and regions.
6. Direct OP to work with other EPA offices to coordinate and carry out business process improvement events until OP finalizes the policy developed pursuant to recommendation 4.

## **Agency Comments and OIG Evaluation**

The Agency was less than fully responsive to recommendations 4 through 6. It is the OIG position that (1) OP should develop a national policy on how to plan, design, and implement BPI; and (2) the Agency should establish an overall office or steering committee for advocating and overseeing BPI. A national policy and responsible office are essential for achieving the full benefits of experiences and best practices in future events by avoiding scope problems and other barriers to success. Additional discussion with the Agency showed that the Agency intends to be more responsive to the intent of these recommendations in its action plan that the Agency is to provide within 90 days after OIG issues the final report.

# Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFIT (in \$000s)	
Rec. No.	Page No.	Subject	Status <sup>1</sup>	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
1	13	Direct OW and OECA to identify Region 7 process improvements that can be applied elsewhere, considering the cost and benefit of implementation. These actions include: <ul style="list-style-type: none"> <li>a. Earlier resolution of technical issues and communication.</li> <li>b. Combining permitting and enforcement oversight reviews of the states.</li> <li>c. Implementing coordinated and integrated strategic planning nationwide for the NPDES program, including consideration of the new approaches under the CWA action plan.</li> <li>d. Fully implementing Burden Reduction Initiatives identified during the event.</li> </ul>	O	Deputy Administrator			
2	13	Direct OP to work with OW and OECA to develop methods for tracking and monitoring implementation of the processes identified in recommendation 1.	O	Deputy Administrator			
3	13	Direct the 10 regions to work with OW, OECA, and OP to implement all the recommended process improvements.	O	Deputy Administrator			
4	19	Direct OP to develop a national policy on how to plan, design, and implement business process improvement events that includes: <ul style="list-style-type: none"> <li>a. Integration of the existing best practices identified in EPA resources, such as kits on lean, Kaizen, and value stream mapping, that will address methods for overcoming common barriers to business process improvement events.</li> <li>b. Requirements on how to address barriers concerning scope, performance measures, accountability, and implementation.</li> </ul>	U	Deputy Administrator			
5	20	Establish an overall office or steering committee for advocating and overseeing business process improvement events that involve multiple Assistant Administrators and regions.	U	Deputy Administrator			
6	20	Direct OP to work with other EPA offices to coordinate and carry out business process improvement events until OP finalizes the policy developed pursuant to recommendation 4.	U	Deputy Administrator			

<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 undecided with resolution efforts in progress

## ***EPA Response and OIG Evaluation***



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

DEPUTY ADMINISTRATOR

MAY 5, 2011

### **MEMORANDUM**

**SUBJECT:** U.S. Environmental Protection Agency's Comments on Office of Inspector General's Draft Audit Report "Agency-Wide Application of Region 7 Process Improvements for the NPDES Program Could Increase EPA Efficiency"

**FROM:** Bob Perciasepe /Signed/

**TO:** Melissa Heist  
Assistant Inspector General for Audit

Thank you for the opportunity to review the Office of Inspector General's draft audit report titled "Agency Wide Application of Region 7 Process Improvements for the NPDES Program Could Increase EPA Efficiency," Project No. OA-FY 10-00099, March 14, 2011. The U.S. Environmental Protection Agency believes that the Region 7 Kaizen process for the National Pollutant Discharge Elimination System was an important event. It focused the attention of the Office of Water and the Office of Enforcement and Compliance Assurance on areas of overlap in NPDES program implementation among EPA headquarters, regions and states. The event also highlighted ways in which the EPA could improve NPDES program efficiencies for all of the key players. As a result, many of the concepts discussed during the Region 7 Kaizen event have been incorporated into the Clean Water Act Action Plan. Much has already been accomplished, and we believe that we are currently taking concrete steps to address many of the report's recommendations through implementation of the CWA Action Plan.

The EPA supports the use of business-process-improvement techniques, including Lean and other methods to improve the administrative processes used to carry out our mission of protecting human health and the environment. Techniques such as Kaizen, Six Sigma and value stream mapping offer potential means for gaining efficiencies, enhancing outcomes and improving relationships. The EPA is still early in its experience and evolving our approach as we continue to learn how best to strategically deploy these tools and other methods to realize potential improvement benefits.

Attached to this memorandum are the EPA's detailed comments on the text of the audit report. This memorandum summarizes the EPA's responses to the six recommendations listed in the report. The EPA largely agrees with the intent behind the recommendations in the report. The EPA proposes to implement the first three recommendations largely through the CWA Action Plan process while the latter recommendations will be coordinated by the Office of Policy.

**Recommendation 1: Direct OW and OECA to identify Region 7 process improvements that can be applied elsewhere, considering the cost and benefit of implementation. These actions include:**

- a. Earlier resolution of technical issues and communication.
- b. Combining permitting and enforcement oversight reviews of the states.
- c. Implementing coordinated and integrated strategic planning for the NPDES program.
- d. Fully implementing Burden Reduction Initiatives identified during the event.

Informed by the Region 7 NPDES Kaizen event, OW and OECA worked to identify process improvements that can be applied agencywide, considering the cost and benefit of implementation. Admittedly, ongoing communications and the resolution of technical issues are subject to the dynamics of unique EPA-state relationships and can always be improved. Although a one-size-fits-all approach to these communications would likely not solve specific issues within regions and states, we do believe it is important for Region 7 to share its experiences and best practices with the other regions to ensure that everyone benefits from the Kaizen event. OW will work with the regional NPDES staff to share the successful methods Region 7 used to improve resolution of technical issues and communication and follow progress of any regions that implement these techniques based on Region 7's experience.

Sub-items 1.b. and 1.c. are already being accomplished under the CWA Action Plan. Currently, OW and OECA are working to integrate permitting and enforcement oversight reviews of the states on a nationwide level as part of the CWA Action Plan. In August 2010, the directors of the Office of Wastewater Management and the Office of Compliance jointly issued a memorandum to the regional water division directors and senior enforcement managers requesting participation in developing an integrated program oversight framework, including integrating enforcement and permitting program reviews. OW's Permit Quality Review effort is currently led by headquarters while OECA's State Review Framework process is primarily implemented by the regions, and the two processes operate on different schedules. Efforts to integrate the two review processes, including potential process revisions, schedule alignment, materials development and training are in the planning stages. OW and OECA currently plan to pilot an integrated review process during the second half of fiscal year 2012.

An annual planning process under the CWA Action Plan asks regions and states to develop joint NPDES permitting and enforcement work plans to ensure the strategic use of limited NPDES resources. An April 8, 2011, request to the regions to initiate joint planning for 2012 builds on a memorandum issued by the assistant administrators for Water and Enforcement and Compliance Assurance on June 22, 2010, titled "Interim Guidance to Strengthen Performance in the NPDES Program," which implemented this new practice. States and EPA regions are expected to work together to develop these joint work plans.

With respect to recommendation 1.d., the EPA believes that, under the auspices of the CWA Action Plan, work is already under way to reduce state reporting burdens for the NPDES program, such as the elimination of the annual noncompliance report in the soon-to-be-proposed NPDES Electronic Reporting Rule. This rulemaking effort also is included in the CWA Action Plan. The EPA notes that many of the other 24 "reports" referred to on page 11 of the audit report are not actually reports but are voluntary state data-quality checks, such as for the Quarterly Non-Compliance Report and the State Review Framework data-verification process.

In sum, the EPA proposes to implement the process improvements for areas 1.b-1.d through the new, integrated NPDES state oversight process and the electronic reporting rule, elements of the CWA Action Plan. For area 1.a, OW proposes to work with EPA regions to identify specific changes from the Region 7 Kaizen that other regions can use to speed resolution of technical or communications issues that arise in the context of permit issuance.

**OIG Evaluation of Agency Response to Recommendation 1:** Although the Agency concurred with OIG recommendation 1.a. and stated that it will work with other EPA regions to identify and implement specific permit issuance changes from the Region 7 Kaizen event, there is no stated avenue or deadline for this joint work. EPA must affirm clear deadlines and plans of implementation. The Agency proposes implementation of the process improvements for areas 1.b.–1.d. through the new, integrated NPDES state oversight process and the electronic reporting rule in the CWA Action Plan. To the extent that the new state oversight process and the CWA Action Plan incorporate the OIG recommendation, the Agency should pursue compliance through these avenues. Otherwise, the Agency should pursue specific methods of combining permitting and enforcement, implementing strategic planning, and implementing Burden Reduction Initiatives.

**Recommendation 2: Direct OP to work with OW and OECA to develop methods for tracking and monitoring implementation of the processes identified in recommendation 1.**

OECA is tracking the process improvement being implemented through the CWA Action Plan and proposes to use that tracking to implement recommendation 1. The EPA does not believe additional methods for tracking and monitoring are necessary to ensure implementation of these activities.

**OIG Evaluation of Agency Response to Recommendation 2:** The Agency provided alternative management action suggesting that tracking through the CWA Action Plan would be sufficient. The Agency does not believe additional methods for tracking and monitoring are necessary to ensure implementation of activities. The Agency’s proposed course of action is acceptable as long as there are clearly defined milestones, deadlines, and points of review and evaluation available within the CWA Action Plan and used as part of the water program.

**Recommendation 3: Direct the 10 regions to work with OW, OECA and OP to implement all the recommended process improvements.**

The process improvements identified by OW and OECA for implementation are included in the CWA Action Plan, which was requested and supported by Administrator Lisa P. Jackson and included regional participation in the development of its implementation plan. The EPA proposes that regional implementation of these process improvements occur through the CWA Action Plan.

**OIG Evaluation of Agency Response to Recommendation 3:** The Agency concurred with this recommendation but stated that process improvements identified by OW and OECA for implementation are included in the CWA Action Plan, and that regional implementation of these process improvements would occur through the Action Plan. The Agency’s proposed course of action is acceptable, as the CWA Action Plan appears to fulfill the requirements of the recommendation, providing there are clearly defined milestones and deadlines.

**Recommendation 4: Direct OP to develop a national policy on how to plan, design and implement business-process-improvement events that include:**

- a. Integration of the existing best practices identified in EPA resources, such as kits on Lean, Kaizen and value stream mapping that will address methods for overcoming common barriers to business-process-improvement events.
- b. Requirements on how to address barriers concerning scope, performance measures, accountability and implementation.

OP brings a continuous improvement orientation to assisting EPA offices interested in using Lean techniques to improve agency processes. Lessons learned from one event are often captured in new tools aimed at enhancing the effectiveness of future events. For example, the challenges encountered in implementing broadly scoped events have led to the development of a new “Scoping Guide” currently circulating for comment. A national policy that would convert the guidance contained in the current suite of tools into requirements for how to plan, design and implement business-process improvements is not appropriate at this time because the agency is still gaining experience. Rather, OP will continue to leverage the learning from each event, raise awareness of the potential benefits of business-process-improvement techniques and available tools, and develop additional tools as we evolve our approach. OP will consider the potential benefits of a tool that would integrate the best practices from across the existing guidance documents.

Another opportunity for the agency to identify business process improvements includes the EPA’s response to Executive Order 13563, a *Preliminary Plan for Periodic Retrospective Reviews of Existing Regulations*. EO 13563 and the EPA’s plan is an opportunity to take a fresh look at the agency’s approach for providing improved environmental quality to the American people and an opportunity to modernize our regulatory program. The initiatives and regulatory reviews described in the plan, one of which is NPDES permit updates, are intended to help us identify business process improvements and make our regulatory program more effective and less burdensome.

**OIG Evaluation of Agency Response to Recommendation 4:** The OIG agrees that OP facilitates process improvement and looks for ways to enhance those efforts. However, the Agency’s response did not address the recommendation that OP should develop a national policy on how to plan, design, and implement BPI events. Localized implementation of events causes other EPA entities to miss out on improvement opportunities. Without a national policy, EPA will continue to lose the benefits of experiences and best practices, and future events will be prone to scope problems and other barriers to success. Additional discussion with the Agency showed that the Agency intends to be more responsive to the intent of recommendations 4 through 6 in its action plan that it is to provide within 90 days after OIG issues the final report.

**Recommendation 5: Establish an overall office or a steering committee for advocating and overseeing business-process-improvement events that involve multiple assistant administrators and regions.**

Primary accountability for business-process-improvements must lie with those responsible for administering the particular process to be improved, which, as the audit points out, can sometimes involve multiple organizational units. The need for supplemental cross-agency support, coordination, communication and accountability and the most appropriate form it should take will evolve over time as the EPA gains experience. Deployment approaches used by other government agencies will be examined to gain insight into different options.

**OIG Evaluation of Agency Response to Recommendation 5:** The OIG agrees that accountability lies with those responsible for the process. However, the Agency’s response did not address establishing an office or steering committee for advocating and overseeing BPI events. Failure to establish an office or steering committee forgoes valuable lessons learned and is an internal control deficiency that may pose a barrier to the success of future events. The Administration and Congress want federal agencies to become more efficient, and EPA’s efforts on process improvement should be effectively coordinated to assure optimum results. Additional discussion with the Agency showed that the Agency intends to be more responsive to the intent of recommendations 4 through 6 in its action plan that it is to provide within 90 days after OIG issues the final report.

**Recommendation 6: Direct OP to work with other EPA offices to coordinate and carry out business-process-improvement events until OP finalizes the policy developed pursuant to recommendation 4.**

OP will continue to coordinate with and assist other EPA offices and states as they plan, implement and communicate business-process-improvement events through the provision of information, tools and services, such as identifying qualified Lean contractors, training, etc. OP will also help coordinate implementation of the business-process-improvement memorandum of understanding with the Environmental Council of the States and respond to identified needs on an ongoing basis.

**OIG Evaluation of Agency Response to Recommendation 6:** The OIG agrees with OP continuing to coordinate and assist with BPI events. However, the EPA response to recommendation 6 is less than fully responsive, because the Agency did not address development of policy in its response to recommendation 4. Additional discussion with the Agency showed that the Agency intends to be more responsive to the intent of recommendations 4 through 6 in its action plan that it is to provide within 90 days after OIG issues the final report.

Should you have any questions or concerns about this response, please contact Nena Shaw at (202) 564-5106 or [shaw.nena@epa.gov](mailto:shaw.nena@epa.gov).

Attachment

cc: Cynthia Giles  
Nancy Stoner  
Michael Goo  
Karl Brooks

**EPA Comments on Draft OIG Audit Report: *Agency-Wide Application of Region 7 Process Improvements for the NPDES Program Could Increase EPA Efficiency***

**Comment 1:** The report states that no one was responsible for tracking outcomes of the Kaizen event. EPA disagrees that no one was responsible for tracking the follow-up to the LEAN event. Cindy Miesbeck, the facilitator from Nebraska, was assigned responsibility for tracking progress and outcomes of the Region 7 Kaizen event process, with Art Spratlin from Region 7 as the lead manager responsible for ensuring follow-up. Each state, Region 7 and headquarters were all accountable for actions to implement identified improvements. The EPA and the states held conference calls and regularly scheduled meetings to discuss the issues and progress being made on the various assignments. This process continued under the Kaizen for approximately 15 months. Region 7, headquarters and other EPA regions did discuss the Region 7 Kaizen event and many of the proposed actions for consideration by other regions. The following are two portions of the report that the EPA suggests removing or updating to address this discrepancy:

- **At a Glance page, What We Found:** First sentence. “Although Kaizen event participants continued to follow up on the commitments and action items identified, no one was responsible for tracking outcomes of the Region 7 Kaizen event process improvements.
- **Chapter 2, page 4:** First two sentences. “Although Kaizen participants continued to follow up on the commitments and action items identified at the event, no one was responsible for tracking outcomes of the process improvements. Also, Region 7 and other EPA regions did not develop quantifiable results and outcomes from the event.”

**OIG Response to Agency Comment 1, 1 of 3:** We changed the report from “no one” to “no single authority.” Three separate sources stated that no single authority was responsible for tracking.

Additionally, the EPA suggests the following edits to more accurately reflect the tracking and follow-up task responsibilities:

- **Implementation/Accountability, page 16:** Second paragraph. Suggest the following edits. “Although EPA assigned *and the Region 7 states agreed that* an individual from Nebraska *should track* ~~to follow through on~~ action items from the event *and subsequent meetings*, and establish various points of contact for action items that came from the event *and subsequent meetings*, it did not appoint an implementation manager to be accountable for the outcomes of the event in its entirety. *No manager had complete authority over all the parties needed to make the identified changes. The EPA and state managers made (and kept) commitments for follow-up actions.* State employees had no authority to hold the EPA accountable for implementation activities *and EPA had no managerial authority over states.* To oversee ...”

**OIG Response to Agency Comment 1, 2 of 3:** The OIG agrees with first suggested edits and changed the report as suggested. The OIG added footnote 7 in the last paragraph of this section: “Agency Comment 1, 2 of 3 (appendix A) provided to the OIG in EPA’s May 6, 2011, comments stated, ‘The EPA and state managers made (and kept) commitments for follow-up actions.’ The OIG did not verify that statement as part of the audit.” Rather than making the change for this comment, the OIG removed the sentence “State employees . . . activities,” as that sentence is redundant with the sentence that was added at the Agency’s Comment 4.

- **Performance Measures, page 15:** First two bullets. Suggest the following edits. “Nebraska ~~attempted to~~ coordinated follow-up *calls, meetings and* action items from *these* events and results from *them*. Managers in multiple EPA offices *made* commitments to assisting **implement** ~~in~~ that effort.”

**Comment 2:** The report states, “Also, Region 7 and other EPA regions did not develop quantifiable results and outcomes from the event” (At a Glance page, What We Found: Second sentence). The focus of the Kaizen event was on Region 7, not other EPA regions. The purpose of the event was to review the current process that Region 7 and its states were using, and redesign it to gain improvements and efficiencies. An additional reason the EPA conducted the Kaizen event was that there was already recognition, both in EPA headquarters and in Region 7, that improvements in communication were needed around permits, inspections and performance reviews. The states in Region 7 requested the EPA's participation in this event; all states were involved and fully committed to the process. This should be added to the introduction.

**OIG Response to Agency Comment 1, 3 of 3, and Agency Comment 2:** The OIG agrees and changed the report as suggested.

**Comment 3:** The report includes statements that results and/or benefits were not quantifiable. Region 7 did quantify some expected benefits. These benefits are identified in the report on page 2. Based on the above evidence, the EPA disagrees with statements found in the following comments in the report and requests that these be revised to reflect the fact that some expected benefits were quantified:

- **Chapter 2, page 4:** First two sentences. “Although Kaizen participants continued to follow up on the commitments and action items identified at the event, no one was responsible for tracking outcomes of the process improvements. Also, Region 7 and other EPA regions did not develop quantifiable results and outcomes from the event.”
- **At a Glance page, What We Found:** Second sentence. Also, Region 7 and other EPA regions did not develop quantifiable results and outcomes from the event.”
- **Performance Measures, page 15:** First sentence. “Demonstrating results” was another obstacle identified as a barrier to the event’s success. The Director, Water Permits Division, Office of Wastewater Management stated that measurable benefits were not quantifiable due to the broad scope of the event.”

**OIG Response to Agency Comment 3:** During the audit, the OIG identified quantifiable results. Therefore, the OIG changed the report for clarity. Chapter 2, page 4; and At a Glance, What We Found: Also, *EPA Region 7* did not *have a process to* develop and track quantifiable results and outcomes from the event. Performance Measures, page 15: *Also, EPA did not have a process to develop and track quantifiable results and outcomes from the event.* The OW, Office of Wastewater Management, Water Permits Division director stated that measurable benefits were *difficult to quantify not quantifiable* due to the broad scope of the event.

**Comment 4:** Portions of the report discuss the potential for some process improvements identified in the Region 7 Kaizen event to be implemented in other EPA regions. Under the Administrator-endorsed Clean Water Act Action Plan effort, the EPA has already made process improvements to permitting and enforcement annual strategic planning in other regions nationally and is working to integrate oversight reviews of states. The EPA thinks this should be recognized in the report. Some details of these efforts are described in the response memorandum. The following are some portions of the report that could be updated to reflect EPA Headquarters efforts that were prompted by the Region 7 Kaizen event:

- **At a Glance page, What We Found:** Second paragraph. “The Region 7 August 2008 Kaizen event identified three process improvements - resolution of technical issues and communication, permitting and enforcement oversight reviews of states, and annual strategic planning - and one implementation action - data collection and reporting - for the NPDES program that can potentially be implemented in other regions.”

- **At a Glance page, What We Found:** Third paragraph. “Changes in the permitting process throughout the Agency could result in better communication; time and cost savings in the states; and avoidance of duplicate inspections, reviews, and data reporting.”
- **Purpose, page 1:** “We conducted an audit of the event to determine: What improvements identified at the Region 7 event can be applied on a wider scale.”
- **Region 7 Strategic Planning and Data Collection Improvements Not Fully Implemented by Region 7 and EPA Headquarters, page 9:** Second, third and fourth sentences. “Even though these process improvements had potential to improve program efficiencies, the headquarters Director, Water Permits Division, Office of Wastewater Management explained that they were neither fully implemented by Region 7 and EPA headquarters nor implemented on a nationwide scale. No one was responsible for ensuring that the improvements were implemented. Earlier planning and coordination of inspections could avoid duplicate inspections. Other regions could achieve similar benefits by implementing these new processes.”
- **Chapter 2, page 4:** Second paragraph, last sentence. “If the lessons learned at this event could be implemented nationwide, the improved permitting process could result in better communication; time and cost savings in the states and the EPA; and improved processes for inspections, reviews and data reporting.”

Additionally, the EPA suggests the following edits to more accurately reflect the EPA's efforts:

- **Region 7 Permitting and Oversight Review Improvements Not Applied Nationally, page 5:** Second sentence. Suggest the following edit. “Although the Region 7 Kaizen event was not intended to be a national model at the time it was conducted, the process improvements identified at the event ~~have the potential to be~~ *are being* implemented in other regions.”
- **Oversight reviews of the States, page 9:** First full paragraph. Suggest the following edit. At the end of the paragraph, add “The approach of combining the PQR and SRF reviews is being required nationally in the CWA Action Plan.”
- **Oversight reviews of the States, page 9:** Last paragraph. Suggest the following edit. “On June 22, 2010, OW and OECA issued *Interim Guidance on Strengthening EPA and State Performance and Oversight* to start incorporating some of these improvements *in the annual planning process*. The Director of OECA's Office of Compliance stated that the ~~office anticipates that the~~ CWA Action Plan *will has committed EPA to initiate a process* to integrate the PQR and the SRF reviews in FY 2011.”
- **Annual Strategic Planning, page 11:** Second paragraph. “Region 7 and its states could more efficiently identify permits and facilities to be inspected by avoiding duplicate reviews and using those saved resources to increase coverage and depth of reviews. This benefit of coordinated strategic planning would potentially be achievable in other regions/states.” Regions now share inspection lists with states to avoid duplication and to work share. This should be recognized in the report.

**OIG Response to Agency Comment 4:** The OIG changed the report as follows: (1) Added footnote 1 to the first paragraph of chapter 2: “In May 2011, EPA provided the OIG the CWA Action Plan that covers wider implementation of process improvements. The OIG did not verify the actions in the plan.” (2) 4th bullet: Changed “No one” to “No single authority.” See response part 1 of 3 to Agency Comment 1. (3) 6th bullet: Although the Region 7 Kaizen event was not intended to be a national model at the time it was conducted, the process improvements identified at the event *are planned have the potential* to be implemented in other regions (*see footnote 1*). (4) 7th bullet: Added footnote 2 to the first paragraph of this section: “In May 2011, EPA provided the OIG the CWA Action Plan that covers national requirements for PQR and SRF reviews. The OIG did not verify the actions in the plan.” (5) 8th bullet: Made first suggested change and added footnote 3 to the last paragraph of this section: “Agency Comment 4 (appendix A) provided to the OIG in May 2011 stated, ‘ The Director of OECA’s

Office of Compliance has committed EPA to initiate a process to integrate the PQR and the SRF reviews in FY 2011.’ The OIG did not verify the actions taken related to this commitment.” (6) 9th bullet: Added footnote 4 to the last paragraph of this section: “Agency Comment 4 (appendix A) provided to the OIG in May 2011 stated, ‘Regions now share inspection lists with states to avoid duplication and to work share.’ The OIG did not verify the actions taken.”

**Comment 5:** The report pairs data collection and reporting activities, whereas the EPA views these as two distinct activities. The focus of the discussion at the Kaizen event was on reporting activities, and, therefore, the EPA requests the removal of references to data collection in the report. The EPA suggests the following edits be made to the report to accurately portray the actions that were the subject of the effort:

- **Region 7 Strategic Planning and Data Collection Improvements Not Fully Implemented by Region 7 and EPA Headquarters, page 9:** Suggest the following edit. “Region 7 Strategic Planning and Data ~~Collection~~ **Reporting** Improvements Not Fully Implemented by Region 7 and EPA Headquarters”
- **Region 7 Strategic Planning and Data Collection Improvements Not Fully Implemented by Region 7 and EPA Headquarters, page 9:** First sentence. Suggest the following edit. “Participants in the Region 7 Kaizen event identified process improvements in the areas of annual strategic planning and data ~~collection~~ and reporting for the NPDES program.”
- **Region 7 Strategic Planning and Data Collection Improvements Not Fully Implemented by Region 7 and EPA Headquarters, page 9:** Suggest the following edit. “Region 7 Strategic Planning and Data ~~Collection~~ **Reporting** Improvements Not Fully Implemented by Region 7 and EPA Headquarters”
- **Region 7 Strategic Planning and Data Collection Improvements Not Fully Implemented by Region 7 and EPA Headquarters, page 9:** First sentence. Suggest the following edit. “Participants in the Region 7 Kaizen event identified process improvements in the areas of annual strategic planning and data ~~collection~~ and reporting for the NPDES program.”
- **Data Collection and Reporting, page 11:** Suggest the following edit: “Data ~~Collection~~ and Reporting”
- **Data Collection and Reporting, page 12:** Even though Region 7 did not *fully* implement the data ~~collection~~ and reporting process improvement, we believe the benefit of streamlining reporting through the Burden Reduction Initiative and fully implemented ICIS-NPDES should be considered for other regions and states.”

**OIG Response to Agency Comment 5:** The OIG agrees and changed the report as suggested.

**Comment 6:** In the Data Collection and Reporting section on page 11, the report states, “The Region 7 Kaizen event identified 24 reports that states were required to provide EPA. In accordance with the EPA Burden Reduction Initiative, event participants identified four NPDES reports for elimination, one of which could be eliminated by combining it with another report. However, a June 2009 survey of event participants indicated that the number of required state reports submitted to EPA after the event had not changed.” The EPA has talked to the key participants at the Kaizen event, and none of them can recall which four reports were identified for elimination nor can the EPA locate records which identify the reports. The EPA would like the OIG to identify which four NPDES reports were identified for elimination, if the OIG’s notes reveal that information. In addition, while it is true that the total number of required reports did not change between the Kaizen event and June 2009, that is largely because elimination of many of the 24 reports would require additional resources, reaching consensus by states to submit data into a single data system (e.g., ICIS) versus multiple data systems which is the current practice, as well as changes to EPA’s NPDES regulations in order to ensure consistency across states. As

noted below, ~~many of these~~ rule changes are being addressed in the NPDES Electronic Reporting rule. The discussion in the report should reflect this.

**OIG Response to Agency Comment 6:** The eliminated reports are High Priority (10 Years Old and Older), Double Violations (SSSR), Permits with Trades, Action Items for SRF. The OIG provided this information previously. Footnote 6 covers the remainder of this comment. See response to Agency Comment 7 below.

**Comment 7:** In the Data Collection and Reporting section, on page 12 the report states, “Kaizen event participants did not appear to pursue report reduction as an event outcome because they saw the primary benefit of the Kaizen event to be ‘improved communication.’ Even though Region 7 did not implement the data collection and reporting process improvement, we believe the benefit of streamlining reporting through the Burden Reduction Initiative and fully implemented ICIS-NPDES should be considered for other regions and states.”

The EPA disagrees with the underlined portions of the statement above. Kaizen event participants did not pursue report reduction as an event outcome, not because they saw the primary benefit of the Kaizen event to be improved communication, but because report reduction requires rule changes. The EPA used much of this information during discussions involving the Burden Reduction initiative and Electronic Reporting rule. Rule changes are being addressed in the NPDES Electronic Reporting Rule. In addition, reporting process improvements and streamlining reporting through the Burden Reduction Initiative and providing a fully-implemented ICIS-NPDES is being considered for other regions and state; the report should reflect this fact.

**OIG Response to Agency Comment 7:** The OIG added footnote 6 in the last paragraph of this section: “Agency Comments 6 and 7 (appendix A) provided to the OIG in May 2011 provided reasons why Kaizen event participants did not pursue report reduction as an event outcome. First, elimination of many of the 24 reports would require additional resources. Second, using a single data system would require reaching consensus. Third, additional report reduction requires rule changes. The Agency also stated that ‘reporting process improvements and streamlining reporting through the Burden Reduction Initiative and providing a fully-implemented ICIS-NPDES is being considered for other regions and state.’ The OIG did not verify the reasons or consideration during the audit.”

**Comment 8:** The information on use of ICIS-NPDES is not current in the report. The EPA suggests the following edits to accurately portray the current state of the transition to full implementation of ICIS-NPDES:

- **Data Collection and Reporting, page 11:** Fourth paragraph, third sentence. Suggest the following edit. “As of ~~June 2009~~ *April 2011, ICIS-NPDES supports 34 states, all 10 EPA regions, all territories, the District of Columbia, and two tribes. 31 states and territories were solely using ICIS-NPDES. EPA will continue to work with the remaining 16 states on their migration to ICIS-NPDES over the next two years. plans to support the remaining 22 NPDES states' moves from PCS to ICIS-NPDES over the next few years.*”

**OIG Response to Agency Comment 8:** The OIG added footnote 5 to the third paragraph of this section: “Agency Comment 8 (appendix A) provided to the OIG in May 2011 included an update to status: ‘As of April 2011, ICIS-NPDES supports 34 states, all 10 EPA regions, all territories, the District of Columbia, and two tribes. EPA will continue to work with the remaining 16 states on their migration to ICIS-NPDES over the next two years.’ The OIG did not verify the updated status.”

### Miscellaneous Comments and Suggested Edits:

1. **EPA and States Emphasizing Process Improvement, page 4 and 5:** The 2010 Administrator memo, MOU with ECOS and 2011 NPM Guidance are all from after the 2008 event and do not show that agencies have used events such as Kaizen for the past few years.
2. **Resolution of Permit Technical Issues and Communication, page 7:** First paragraph, last sentence. Suggest the following edit: add at the end of the sentence, "... or because their processes already incorporated some or all of the concepts identified in Region 7."
3. **Oversight reviews of the States, page 8:** Second paragraph, second sentence. Suggest the following edit: "The headquarters Permit Quality Review (PQR) is a combination of file reviews done ~~in~~ *by* headquarters and during state site visits."
4. **Oversight Reviews of the States, page 9:** Third full paragraph, first sentence. "To increase efficiency, OW had Region 7 complete the headquarters reviews along with the enforcement and regional reviews." OW did not direct Region 7 to conduct a headquarters review. The EPA suggests the following replacement for the above sentence: "To increase efficiency, Region 7 conducted permitting reviews of states in conjunction with the enforcement review and utilized tools developed by OW for use in headquarters' periodic Permit Quality Reviews."
5. **Recommendations, page 12:** Recommendation l.c. Suggest the following edit: Implementing coordinated and integrated strategic planning ~~nationwide~~ for the NPDES program, ~~including consideration of the new approaches under the CWA action plan.~~
6. **Chapter 3, page 13:** Second sentence. Suggest the following edit: "While EPA and states collaborated to create guidance for Kaizen events, such as the *September 2006 Lean in Government Starter Kit ...*"
7. **National Policy Needed for Business Process Improvement, page 16:** Second paragraph, first sentence. Suggest the following edit: change "OW" to "EPA."
8. **National Policy Needed for Business Process Improvement, page 16:** Second paragraph, fourth sentence. Suggest the following edits: "While this interim guidance ~~outlined steps for national implementation~~ *focused on annual planning and joint workplans* that were similar to some of the new processes that emerged from the Region 7 Kaizen event, other process improvements from the event *were dealt with in other documents and processes* ~~were not included in the guidance.~~"
9. **Funds at Risk for Future Business Process Improvement Events, page 17:** First paragraph. Suggest the following edit: at the end of the paragraph add, "However, increased resources will be needed to conduct additional Kaizen events whether related to NPDES or other programs."
10. **Recommendations, page 18:** Suggest the following edit for recommendation 5: "*Direct OP to establish an overall office or a steering committee for advocating and overseeing...*"

### OIG Response to Agency Miscellaneous Comments and Suggested Edits:

- #1: The report should remain unchanged. The OIG used the 2010 Administrator memo, MOU with ECOS, and 2011 NPM Guidance as criteria to support EPA's use of approaches such as Kaizen to improve government processes contributing to environmental progress.
- #2: Agree with slightly modified wording. Added "...because their processes incorporated some or all of the concepts identified in Region 7."
- #3, #4, #6 and #7: Agree and changed the report as suggested.
- #5: The report should remain unchanged. Nationalization of policy is a key OIG recommendation component.
- #8: Agree with the first edit and changed the report as suggested. For the second edit, added footnote 8. The Agency covered other process improvements from the event in other documents and processes.
- #9: The report should remain unchanged. Suggested edit adds information and introduces ideas not relevant to the scope of this section of the report.

#10: The report should remain unchanged. OP does not have the authority to establish an overall office or a steering committee that involves multiple program offices and regions.

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