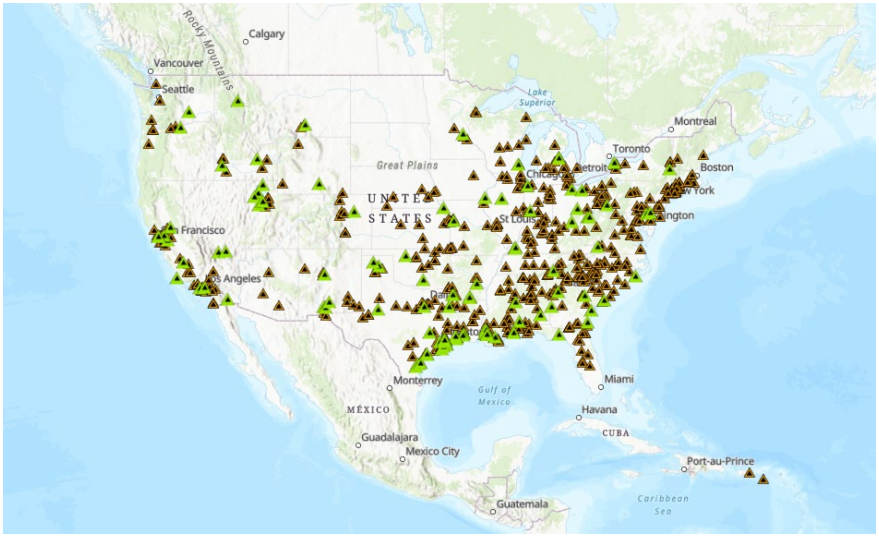
U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Cleaning up and revitalizing land

EPA Does Not Consistently Monitor Hazardous Waste Units Closed with Waste in Place or Track and Report on Facilities That Fall Under the Two Responsible Programs

Report No. 21-P-0114 **March 29, 2021**



Report Contributors:

Steve Hanna
Kate Robinson
Jonathan Morrand
Brenda Vazquez-Fuentes
Tina Lovingood

Abbreviations

CEI	Compliance Evaluation Inspection
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	U.S. Environmental Protection Agency
Fed. Reg.	Federal Register
GME	Groundwater Monitoring Evaluation
NPL	National Priorities List
OAM	Operation-and-Maintenance Inspection
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
RCRA	Resource Conservation and Recovery Act
SEMS	Superfund Enterprise Management System
TSDF	Treatment, Storage, or Disposal Facility
U.S.C.	United States Code

Cover Photo: Map of hazardous waste facilities with units closed with waste in place. Green represents operating facilities, and red represents nonoperating facilities. (OIG data from RCRAInfo mapped by EPA technical staff) (EPA OIG image)

U.S. Environmental Protection Agency
Office of Inspector General

21-P-0114
March 29, 2021

At a Glance

EPA Does Not Consistently Monitor Hazardous Waste Units Closed with Waste in Place or Track and Report on Facilities That Fall Under the Two Responsible Programs

Why We Did This Audit

We audited the U.S. Environmental Protection Agency's oversight of hazardous waste units closed with waste in place to verify the continued protection of human health and the environment.

The Resource Conservation and Recovery Act and corresponding RCRA regulations establish requirements pertaining to hazardous waste treatment, storage, or disposal facilities, or TSDFs. TSDFs treat, store, or dispose of hazardous waste in management units, such as landfills. When a RCRA unit stops accepting waste, the TSDF must clean close or close and maintain the unit with waste in place in accordance with RCRA regulations. RCRA and EPA policies call for each permitted TSDF, including RCRA units, to be inspected at least once every two to three years, depending on its operational status.

This report addresses the following:

- *Cleaning up and revitalizing land.*
- *Partnering with states and other stakeholders.*

This report addresses a top EPA management challenge:

- *Overseeing states implementing EPA programs.*
- *Communicating risks.*
- *Integrating and leading environmental justice.*

Address inquiries to our public affairs office at (202) 566-2391 or OIG_WEBCOMMENTS@epa.gov.

List of OIG reports.

What We Found

The EPA did not consistently verify the continued protection of human health and the environment at TSDFs with RCRA units that were closed with hazardous waste in place. Specifically, almost half (339 of 687, or 49.3 percent) of TSDFs with RCRA units closed with waste in place were not inspected at the frequency set by EPA policy.

The EPA's inspection frequency of TSDFs with RCRA units closed with waste in place does not meet the EPA's statutory requirement or policy.

EPA regional oversight of TSDF inspections by authorized states is also inconsistent. Five of the ten EPA regions incorporate inspection commitments in their annual state RCRA grant negotiations to verify that their authorized states are complying with the inspection policy. Two regions have similar processes in place, but their processes do not include all their states, and three regions do not have any process in place to verify compliance. Because of the lack of inspections, a hazardous waste leak from a compromised unit could go undetected for years, with dire human health and environmental consequences. For example, a leak that is not expeditiously detected could contaminate groundwater, resulting in a loss of drinking water supply, high cleanup costs, and human exposure to contaminants.

During our evaluation of units closed with waste in place, we observed some issues with interactions between the RCRA and Superfund programs. EPA oversight of RCRA units referred to the Superfund program and those deferred back to the RCRA program is incomplete. The lack of procedures and the use of differing facility identification numbers in the two programs have hindered the EPA's tracking of facilities transferred between the two programs. As a result, it is uncertain whether either program is appropriately managing RCRA units and protecting human and environmental health.

Fifty-six RCRA Corrective Action facilities that were closed with waste in place are also managed by the Superfund program. Ineffective EPA oversight of these sites resulted in 42 possible conflicting and 126 double-counted accomplishment milestones. Because these milestones are used to communicate site status to the public, communities could be confused or misled as to the cleanup status of the sites.

Recommendations and Planned Corrective Actions

We recommend that the assistant administrator for Land and Emergency Management develop controls to improve oversight of RCRA units with waste in place. Three of the six recommendations are resolved with corrective actions pending, and resolution efforts are in progress for the other three.

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

THE INSPECTOR GENERAL

March 29, 2021

MEMORANDUM

SUBJECT: EPA Does Not Consistently Monitor Hazardous Waste Units Closed with Waste in Place or Track and Report on Facilities That Fall Under the Two Responsible Programs
Report No. 21-P-0114

FROM: Sean W. O'Donnell

TO: Barry Breen, Acting Assistant Administrator
Office of Land and Emergency Management

Lawrence E. Starfield, Acting Assistant Administrator
Office of Enforcement and Compliance Assurance

This is our report on the subject audit conducted by the Office of Inspector General of the U.S. Environmental Protection Agency. The project number for this audit was OA&E-FY19-0323. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The Office of Land and Emergency Management and the Office of Enforcement and Compliance Assurance are responsible for the issues discussed in this report.

We make six recommendations in this report. In accordance with EPA Manual 2750, your offices provided acceptable planned corrective actions and estimated milestone dates in response to Recommendations 1, 3, and 4. These recommendations are resolved.

Action Required

Recommendations 2, 5, and 6 are unresolved. The resolution process, as described in the EPA's Audit Management Procedures, begins immediately with the issuance of this report. Furthermore, we request a written response to the final report within 60 days of this memorandum. Your response will be posted on the OIG's 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 along with corresponding justification.

We will post this report to our website at www.epa.gov/oig.

Table of Contents

Chapters

—continued—

Appendices

Chapter 1
Introduction

Purpose

We audited the U.S. Environmental Protection Agency's oversight of hazardous waste units closed with waste in place to verify the continued protection of human health and the environment.

Top Management Challenge

This audit addresses the following top management challenges for the Agency, as identified in OIG Report No. 21-N-0231, *EPA's FYs 2020–2021 Top Management Challenges*, issued July 21, 2020:

- Overseeing states, territories, and tribes implementing EPA programs.
- Communicating risks to allow the public to make informed decisions about its health and the environment.
- Integrating and leading environmental justice across the Agency and government.

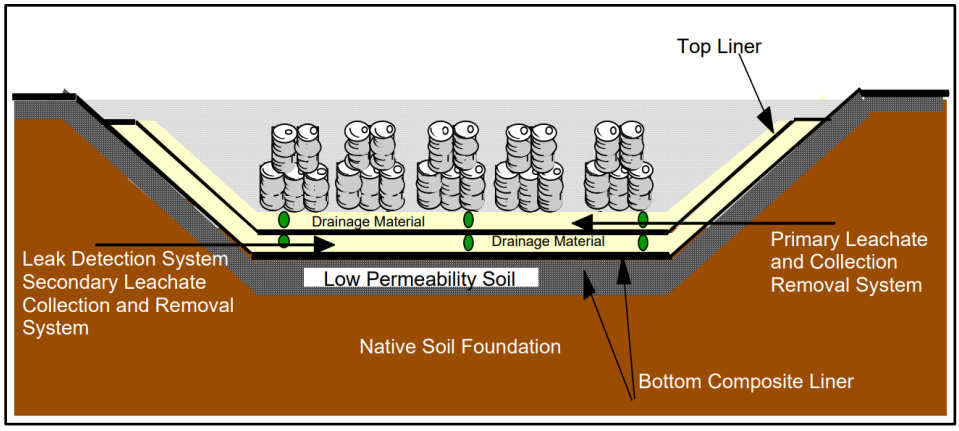
Background

The EPA regulates the management and disposal of hazardous waste using the authority granted by the Resource Conservation and Recovery Act, Subtitle C. In general terms, *hazardous waste* is waste with properties that make it dangerous or potentially harmful to human health or the environment. RCRA authorizes the EPA to develop regulations to effect the safe management of hazardous waste in or on land. RCRA defines *land disposal* as the placement of hazardous waste in a variety of units, such as landfills, waste piles, and land treatment facilities. We refer to these land disposal units as *RCRA units* in this report. A hazardous waste-management facility receives hazardous waste for treatment, storage, or disposal. These facilities are referred to as *treatment, storage, or disposal facilities*, or TSDFs.

Before they can accept hazardous waste, TSDFs must apply for and receive a RCRA permit from the EPA or a state or territory authorized by the EPA to issue RCRA permits. Permitted TSDFs must meet stringent requirements for RCRA units, including the use of double liners, collection of leachate, and detection of leaks for landfill units (Figure 1). A TSDF may have multiple RCRA units.

Hazardous waste may include a broad range of constituents, including chemicals known to be human carcinogens. For example, one chemical disposed at TSDFs is trichloroethylene, a widely used industrial chemical and a known human carcinogen. If RCRA units are not properly maintained or if their covers or liners fail over time, the hazardous waste stored within the units can leak into the environment, contaminating groundwater and drinking water sources. Preventing contaminants like trichloroethylene from leaking into the groundwater reduces the health risks associated with poor drinking water quality.

Figure 1: Cross-section of a RCRA hazardous waste landfill



Source: EPA Training Module Introduction to Land Disposal Units, September 2005. (EPA image)

EPA's Strategic Plan and RCRA Program

In its *FY 2018–2022 U.S. EPA Strategic Plan*, the EPA addresses its plans to regulate hazardous waste under Objective 1.3:

> EPA will update and improve the efficiency of the RCRA hazardous waste regulations to meet the needs of today's business and industry to ensure protective standards for managing hazardous waste. To prevent future environmental contamination and to protect the health of the estimated 20 million people living within a mile of a hazardous waste management facility, EPA will support states to issue, update, or maintain RCRA permits for the approximately 20,000 hazardous waste units (such as incinerators and landfills) at these facilities.

The *FY 2018–2022 U.S. EPA Strategic Plan* also states, under Objective 3.3, that over the next five years, the EPA will "[a]ssess the impact of pollution (e.g., health impact assessments) on such vulnerable groups as children, tribes, environmental justice communities, and other susceptible populations."

The EPA defines *environmental justice* as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies." The EPA recognizes that RCRA standards are critical in protecting environmental justice communities and that communities near RCRA facilities have greater proportions of minority and economically disadvantaged residents relative to the U.S. average. In the *EPA's FYs 2020–2021 Top Management Challenges*, the OIG identified "Integrating and Leading Environmental Justice Across the Agency and Government" as one of the EPA's eight categories of challenges.

According to the EPA's RCRA Overview webpage, the EPA developed its hazardous waste program to ensure "that hazardous waste is managed safely from the moment it is generated to its final disposal (cradle-to-grave)." The EPA has authorized 48 states to implement RCRA and to serve as *permitting authorities*, meaning that these states can approve and issue the required permits for TSDFs under their purview. The EPA implements RCRA in Iowa and Alaska. The EPA retains oversight responsibility and enforcement authority for state-implemented programs. It provides financial assistance, through annual RCRA grants, to authorized state programs to implement RCRA. States and regions negotiate commitments to be included in the grants.

Closure of RCRA Units

When a RCRA unit stops receiving waste, it must be cleaned, closed, monitored, and maintained in accordance with the closure and postclosure care requirements outlined in RCRA and corresponding regulations. All TSDFs, regardless of their operational status, and the RCRA units within these TSDFs are subject to RCRA's closure and postclosure care requirements. The EPA defines an *operating TSDF* as a facility that currently has an operating treatment, storage, or disposal unit. In other words, operating TSDFs are still accepting waste and are, thus, according to the EPA, "subject to the full RCRA Subtitle C requirements and are one of the highest priorities to the RCRA Enforcement program." *Nonoperating TSDFs* may have units in closure or postclosure care, but they have no units receiving waste.

TSDFs that contain RCRA units that have stopped receiving waste can use one of two options to close the units: clean closure or postclosure care. Clean closure requires the TSDF owners to remove all wastes from the unit and to remove or decontaminate all equipment, structures, and surrounding soils. If the TSDF cannot achieve the clean closure of a RCRA unit, it must undertake *postclosure care*, which involves:

- Stabilizing the waste and leaving it in place.
- Removing free liquids.
- Placing caps or covers on top of waste.

Postclosure care is typically undertaken for units that cannot achieve clean closure standards, such as landfills, land treatment units, or surface impoundments. A RCRA unit that is undergoing postclosure care is commonly referred to as a *unit closed with waste in place*.

TSDFs obtain permits for postclosure care and comply with postclosure care standards established by the EPA. For example, postclosure care requires TSDFs to take certain precautions for a set period—typically 30 years—after a RCRA unit is closed with waste in place. These precautions include monitoring groundwater to verify that no hazardous waste is being released to the

environment. In addition, TSDFs must provide financial assurance for the estimated costs of postclosure care. At the end of the postclosure care period, which can be either shortened or extended by the appropriate permitting authority as needed, the financial assurance requirement also ends.

The EPA developed guidance to assist regulators in evaluating conditions at RCRA TSDFs approaching the end of postclosure care. The 2016 memorandum, *Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA,* emphasizes the importance of EPA oversight of RCRA units closed with waste in place:

> Because many hazardous wastes degrade slowly or do not degrade under containment in these units, the continued presence of hazardous waste in the unit (i.e., any case other than clean closure) indicates the potential for unacceptable impacts on human health and the environment in the future if post-closure care is not maintained.

RCRA Information

EPA and state permitting authorities document and track RCRA units in the EPA's RCRAInfo information system. According to RCRAInfo system documentation:

> RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The system enables cradle-to-grave waste tracking of many types of information regarding the regulated universe of RCRA hazardous waste handlers. RCRAInfo characterizes facility status, regulated activities, and compliance histories[,] in addition to capturing detailed data on the generation of hazardous waste from large quantity generators and on waste management practices from treatment, storage, and disposal facilities.

A combination of legal and operating status codes identifies the status of RCRA units in the EPA's RCRAInfo database. The legal codes refer to the permit status of a unit, such as permitted, permit terminated, or postclosure permitted. The operating status codes include designations, such as operating, clean closed, or closed with waste in place. In addition, operating status codes indicate whether a unit is being addressed in the RCRA Corrective Action Program or has been referred for cleanup to the EPA's Comprehensive Environmental Response, Compensation, and Liability Act hazardous waste cleanup program, known as Superfund. When the legal or operating status of a unit changes, the new status and date of change are entered into RCRAInfo. Staff in authorized states update

all RCRA data for their states, including legal and operating status, permitting, enforcement, and inspection information.

Why Monitoring RCRA Units Closed with Waste in Place Is Critical

CASE STUDY: Former FMC Corporation Elemental Phosphorous Plant in Pocatello, Idaho

The FMC facility has eight RCRA units closed with waste in place, all of which are surface impoundments, also referred to as ponds, used to manage a slurry of waste containing elemental phosphorous. According to the EPA:

> The RCRA ponds were closed in 2004 and 2005 under the RCRA Consent Decree, in accordance with EPA approved RCRA closure plans. While most of the facility has been demolished, the eight RCRA ponds are closed RCRA regulated units with waste remaining in place, which requires ongoing monitoring under a RCRA post-closure plan. The RCRA Ponds were capped by one of two types of cover systems following the removal of water in accordance with the EPA-approved closure plans, the RCRA engineered cap or the RCRA double cap, depending on the type of pond construction.

In 2006, excess phosphine gas was detected emanating from one of the ponds and, later, at hazardous levels at some of the other ponds. The EPA concluded that the postclosure plans did not provide adequate protection. As a result:

> [The] EPA is reviewing and developing amendments to the existing post-closure plans to make sure that the new FMC post-closure plan contains all applicable ongoing RCRA requirements to ensure the long term protection of human health and the environment, including ongoing gas management at all of the RCRA Ponds for as long as that is needed.

The RCRA ponds were closed under EPA-approved RCRA closure plans in accordance with the 1998 consent decree. Since 2006, it has been necessary to extract and treat phosphine gas being generated at levels posing unacceptable risk to human health and the environment by the waste left in place in the RCRA ponds. At the time of this report, the management of phosphine at the RCRA ponds was governed by an enforcement document that will remain in place until adequate gas management requirements are in effect under an amended RCRA postclosure plan for all remaining RCRA regulated units, including the eight RCRA ponds.

The EPA has concluded that "There can be no reuse of the RCRA pond area because there is waste left in place in the ponds."

—EPA's "Hazardous Waste Cleanup: FMC RCRA Ponds, Pocatello, Idaho" webpage

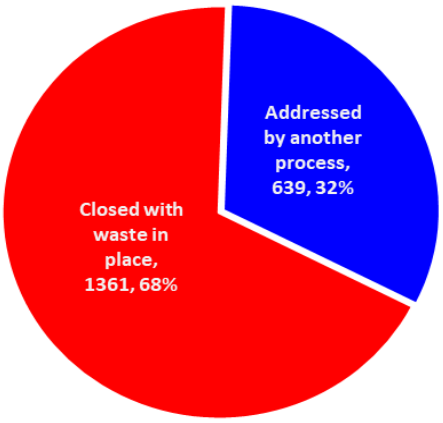
Two Thousand RCRA Units Have Been Closed with Waste in Place

The RCRAInfo information system identifies RCRA units closed with waste in place by the operating status code "CP." As of July 30, 2019, RCRAInfo had classified a total of 2,000 RCRA units with this operating status code since 1978 (Figure 2). Of these 2,000 RCRA units, 1,361 (68 percent) remain in CP status while 639 (32 percent) have been changed to another operating status, such as:

- AE—Under an alternate enforceable document for postclosure care, such as a consent order or other enforceable document.
- CA—Referred to the RCRA Corrective Action Program.
- SF—Referred to the Superfund.

Of the 1,361 units still with waste in place, 345 (25 percent) are at operating TSDFs, and 1,016 (75 percent) are at nonoperating TSDFs. RCRA units that remain classified as CP have been closed with waste in place for an average of 25.25 years.

Figure 2: Status of RCRA units classified as closed with waste in place



Source: OIG analysis of RCRAInfo data. (EPA OIG image)

Inspection Requirements

RCRA mandates that each TSDF for which a permit is required under Section 3005 of RCRA, 42 U.S.C. § 6925, be inspected at least once every two years and that federally owned or operated TSDFs be inspected annually. Furthermore, the Office of Enforcement and Compliance Assurance, known as OECA, published its *Compliance Monitoring Strategy for the Resource Conservation and Recovery Act (RCRA) Subtitle C Program* in September 2015. OECA's *Compliance Monitoring Strategy* addresses the types and frequencies of inspections for TSDFs. The *Compliance Monitoring Strategy* acknowledges that RCRA requires "thorough" inspections of TSDFs and that thorough inspections are typically compliance evaluation inspections, or CEIs. A CEI is "primarily an on-site evaluation of the compliance status of the site with regard to all applicable

Superfund Program

"The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment."

National Priorities List

"The National Priorities List (NPL) is the list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation."

RCRA Corrective Action Program

"Corrective action is a requirement under the Resource Conservation and Recovery Act (RCRA). Facilities that treat, store, or dispose of hazardous wastes are to investigate and clean up hazardous releases into soil, groundwater, surface water, and air. In 1984, Congress passed the Hazardous and Solid Waste Amendments, which granted EPA expanded authority to require corrective action at permitted and nonpermitted treatment, storage, and disposal facilities (TSDFs)."

Sources:
EPA Superfund program overview
EPA National Priorities List
RCRA Corrective Action Program

RCRA Regulations and Permits (with the exception of groundwater monitoring and financial assurance requirements)."

The *Compliance Monitoring Strategy* distinguishes between inspections of operating TSDFs and nonoperating TSDFs:

> At TSDFs that are no longer receiving waste but have land-based units that preclude clean closure of the site, many of the normal CEI [compliance evaluation inspection] inspection items for TSDFs are not applicable (e.g., manifests, contingency plans, personnel training, and waste storage requirements).

For nonoperating TSDFs, the *Compliance Monitoring Strategy* says that a groundwater monitoring evaluation, or GME, or operation-and-maintenance inspection, or OAM, may be more appropriate than a CEI. OECA considers a GME appropriate for new or newly regulated land-disposal facilities, while an OAM is appropriate after the permitting authority determines that the groundwater-monitoring system is adequately designed and installed.

In addition, although Section 3007(e) requires inspection every two years of each TSDF for which a permit is required under Section 3005, the *Compliance Monitoring Strategy* institutes a policy of inspection at nonoperating facilities every three years. Specifically, the *Compliance Monitoring Strategy* states, "Regions and states are expected to inspect at least every three (3) years TSDFs that are no longer in the operating universe but still have compliance requirements." Compliance requirements at nonoperating TSDFs are commonly established via permits issued pursuant to regulations implementing Section 3005.

We asked OECA what its basis was for the three-year inspection frequency for nonoperating TSDFs, which appears to be inconsistent with the statutory requirement to inspect every two years. OECA's response stated:

> EPA decided as early as 1989 to separate TSDFs into two universes—operating and nonoperating. The 3-year inspection frequency for TSDFs in the Post-Closure phase—and therefore no longer operating—provides a common-sense policy for balancing limited inspection resources and risk. The policy allows for the reduced inspection frequency at TSDFs only if a post-closure care plan has been submitted to and approved by an authorized state or EPA region and if a Post-Closure permit has been issued.

Given that OECA's response did not directly address the apparent deviation from the statutory two-year inspection frequency requirement, we sought further clarification. In response, after consulting with the EPA's Office of General Counsel and the RCRA program office, OECA stated:

> OECA's 3-year inspection policy for closed TSDFs with a post-closure permit is consistent with RCRA § 3007(e), 42 U.S.C. § 6927(e), because, although EPA has the authority to issue a post-closure permit, it is not required by statute. Therefore, closed TSDFs are not TSDFs that require a permit under 3005 and are not subject to the 2-year deadline.

In addition, the EPA directed us to a past rule in which the Agency had asserted a similar interpretation. The Agency noted that the preamble to a proposed rule stated that:

> EPA has always interpreted sections 3004(a) and 3005 of RCRA to authorize—but not compel—the issuance of permits to implement post-closure care requirements at facilities that have ceased operating.[1]

The EPA maintained this interpretation in the final rule issued subsequently.[2] The OIG accepts this long-held interpretation for the purpose of this audit.

Scope and Methodology

We conducted our work from August 2019 to February 2021. 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 upon our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based upon our audit objectives.

As detailed in Appendix A, we assessed the internal controls necessary to satisfy our audit objectives.[3] In particular, we assessed the internal control components and underlying principles—as outlined in the U.S. Government Accountability Office's GAO-14-704G, *Standards for Internal Control in the Federal Government*, also called the Green Book—significant to our audit objectives. Any internal control deficiencies we found are discussed in this report. Because it was limited to the internal control components and underlying principles deemed significant to our audit objectives, our audit may not have disclosed all internal control deficiencies that may have existed at the time of the audit.

[1] "Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities; Post-Closure Permit Requirement; Closure Process; State Corrective Action Enforcement Authority," 59 Fed. Reg. 55778, 55782 (November 8, 1994).
[2] "Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities; Post-Closure Permit Requirement; Closure Process," 63 Fed. Reg. 56710, 56717-18 (October 22, 1998).
[3] An entity designs, implements, and operates internal controls to achieve its objectives related to operations, reporting, and compliance. The U.S. Government Accountability Office sets internal control standards for federal entities in GAO-14-704G, *Standards for Internal Control in the Federal Government*, also known as the Green Book, issued September 10, 2014.

We evaluated internal controls to determine the:

- Manner in which the EPA monitors the inspection frequency of TSDFs with RCRA units closed with waste in place to determine adherence to the inspection policy.

- Logical consistency of RCRAInfo data entries.

- Manner in which mechanisms in place to verify RCRA referrals to Superfund and Superfund deferrals to RCRA are addressed.

- Existence or nonexistence of an EPA mechanism to crosswalk nonidentical RCRA and Superfund site identifications. A *crosswalk* identifies facilities that exist in both the RCRA and Superfund program information systems, but with different identification numbers.

- Steps the EPA has taken to verify the milestones between sites on the RCRA Corrective Action Program and the *Superfund National Priorities List* do not double-count accomplishments or present conflicting results to the public.

To address our objectives, we reviewed relevant materials pertaining to the process and procedures used to track and monitor RCRA units closed with waste in place. We interviewed key staff within the EPA's Office of Land and Emergency Management's Office of Resource Conservation and Recovery. We conducted interviews with or distributed questions to managers of all regional offices. We requested copies of CEI reports performed by EPA regional staff since January 1, 2018, to examine groundwater monitoring results. We reviewed the inspection requirements in OECA's *Compliance Monitoring Strategy.* We surveyed each region regarding its policies and practices for RCRA units closed with waste in place.

We reviewed nationwide RCRA data for RCRA units closed with waste in place, and we used RCRAInfo to identify and analyze the operational status of RCRA units.

We distributed site-specific questions about TSDFs with RCRA units closed with waste in place that had not been inspected to EPA Regions 3, 4, 8, 9, and 10. We distributed general questions about the process for inspecting TSDFs with RCRA units closed with waste in place to the remaining EPA regions.

To assess the three-year inspection frequency of nonoperating RCRA units closed with waste in place, we used RCRAInfo to identify the TSDFs of those RCRA units, excluding those that have been addressed by another process, that had not been inspected since January 1, 2015. We considered a facility uninspected if RCRAInfo did not document a CEI, GME, or OAM.

To analyze the environmental justice impact, we used the demographic results provided by EPA staff from the EPA's environmental justice mapping and screening tool, known as EJSCREEN. This tool:

- Looks at the proximity of a community to EPA-regulated sites. For RCRA TSDFs, EJSCREEN looks at TSDFs within five kilometers of the community. Therefore, we obtained data on demographics within five kilometers of the TSDFs with units closed with waste in place. Demographic data were available for 97 percent of those TSDFs.

- Produces a demographic index that is an average of the percentage of people who are low income and the percentage of people who are minorities.

Responsible Offices

The Office of Land and Emergency Management provides policy, guidance, and direction for the Agency's emergency response and waste programs. Within the Office of Land and Emergency Management, the Office of Resource Conservation and Recovery implements RCRA. OECA's Office of Site Remediation Enforcement manages the enforcement of the EPA's national hazardous waste cleanup programs. OECA's Office of Compliance provides policy, guidance, and direction for the Agency's compliance monitoring programs.

Prior Reports

OIG report, *Superfund Sites Deferred to RCRA*, Report No. E1SFF8-11-0006-9100116, issued on March 31, 1999, relates to the findings of our audit. The report identified the lack of a crosswalk between RCRA and Superfund information systems.

OIG Report No. 15-P-0169, *Some Safeguards in Place for Long-Term Care of Disposed Hazardous Waste, But Challenges Remain*, issued on June 17, 2015, relates to the objective and findings of our audit. The report made three recommendations to finalize and issue guidance on adjusting the postclosure care period and to provide information on the benefits of implementing controls afforded through environmental covenant statutes. The EPA agreed with the recommendations and reported that it took agreed-to corrective actions.

OIG Report No. 16-P-0104, *EPA Has Not Met Statutory Requirements for Hazardous Waste Treatment, Storage and Disposal Facility Inspections, but Inspection Rates Are High*, issued March 11, 2016, also relates to the objective and findings of our audit. The report made one recommendation: that OECA implement management controls to ensure that operating TSDFs are inspected as required. The EPA agreed with the recommendation and reported that it took agreed-to corrective actions.

Chapter 2
RCRA Units Closed with Waste in Place Are Not Inspected Consistent with the RCRA Statute or EPA Policy

The EPA does not consistently verify the continued protection of human health and the environment at TSDFs with RCRA units closed with waste in place. Specifically, the EPA does not inspect TSDFs at the frequency required by the RCRA statute for operating TSDFs or the frequency set by OECA's *Compliance Monitoring Strategy* for nonoperating postclosure TSDFs. The RCRA statute requires inspections every two years at operating TSDFs, but in contrast, the EPA's *Compliance Monitoring Strategy* sets the policy of inspections at least once every three years at nonoperating postclosure TSDFs. However, almost half (339 of 687, or 49.3 percent) of the TSDFs that have RCRA units closed with waste in place were not inspected by the permitting authority at the applicable frequency. The TSDFs not timely inspected include five operating TSDFs not inspected every two years, as required by the RCRA statute, and 334 nonoperating TSDFs not inspected every three years.

In addition, EPA regional oversight of TSDF inspections was inconsistent. Five of the ten EPA regions incorporate commitments in their state RCRA grant processes to ensure that all their state permitting authorities comply with the inspection policy. Two regions have similar processes in place, but the processes do not apply to all states within those regions. Three regions do not have any process in place to verify compliance. Because the inspections are not being conducted at the frequency set by policy, leaks from RCRA units in uninspected TSDFs may not be detected in a timely manner. Undetected contamination of groundwater from a unit could result in loss of drinking water supply, high cleanup costs, and human exposure to contaminants.

About Half of TSDFs with RCRA Units Closed with Waste in Place Not Inspected Within the Policy Time Frame

We analyzed the inspection frequency at TSDFs with RCRA units closed with waste in place. As discussed in Chapter 1:

- Operating TSDFs are subject to the RCRA statutory two-year inspection frequency. OECA's *Compliance Monitoring Strategy* states that compliance evaluation inspections are generally expected for operating TSDFs.

- OECA policy states that nonoperating TSDFs with units closed with waste in place are subject to the three-year inspection frequency outlined in

OECA's *Compliance Monitoring Strategy*. OECA's *Compliance Monitoring Strategy* states that GMEs should be conducted at any new or newly regulated land disposal facility. Once the adequacy of the groundwater monitoring system is established, an OAM may become the appropriate inspection for groundwater monitoring for nonoperating TSDFs.

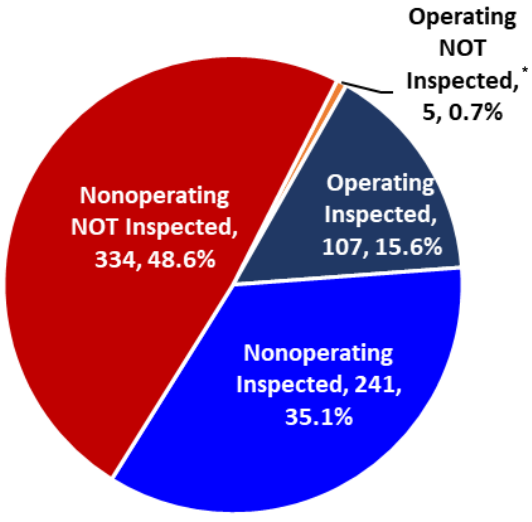
A total of 687 TSDFs manage the RCRA units classified by RCRAInfo as closed with waste in place that have not been addressed by another process. Of these 687 TSDFs, 112 are operating TSDFs that, under RCRA, should be inspected at least every two years. The other 575 TSDFs are nonoperating and, according to OECA policy, should be inspected at least every three years. We found that since January 1, 2015:

- About 96 percent (107 of 112) of the operating TSDFs that manage RCRA units closed with waste in place received a compliance evaluation inspection every two years.

- In contrast, 58 percent (334 of 575) of nonoperating TSDFs that manage RCRA units closed with waste in place had not received a GME or an OAM within three years.

As a result, roughly 50 percent (339 of 687) of nonoperating TSDFs that have RCRA units closed with waste in place were not inspected at the frequency set by policy (Figure 3).

Figure 3: Inspection of TSDFs*



Source: OIG analysis of RCRAInfo data. (EPA OIG image)

*Inspected refers to whether the TSDF was inspected at the applicable frequency, which is every two years for operating TSDFs and every three years for those that are not operating.

EJSCREEN Demographic Index of Communities Around TSDFs with Units Closed with Waste in Place Is Close to National Average

Our analysis of EJSCREEN data for communities surrounding TSDF with units closed with waste in place found:

- A total of 22.8 million people live within five kilometers, which is about three miles, of a TSDF with units closed with waste in place. According to the U. S. Census Bureau, the 2019 U.S. population was 328.2 million, so about 7 percent of the population lives within five kilometers of a TSDF with units closed with waste in place.

- The demographic index for populations within five kilometers of TSDFs with units closed with waste in place is 39 percent of the population, which is slightly higher than the national average of 36 percent. The demographic index is an average of the percent of the population who are minority and low income. EJSCREEN defines *low income* as households with income less than or equal to twice the federal poverty level and *minority* as all people other than non-Hispanic white-alone individuals.

- The demographic index for inspected TSDFs with units closed with waste in place is 39 percent, and the index for uninspected TSDFs with units closed with waste in place is 40 percent, which suggests TSDFs with units closed with waste in place are being inspected without regard to the percent of the population that is minority and low income.[4]

EPA Regional Oversight of Inspections Varies

EPA regions do not consistently monitor state inspections of RCRA units closed with waste in place at nonoperating TSDFs. As a result, some TSDFs may not be inspected as required by RCRA or as set by the OECA's *Compliance Monitoring Strategy*. Lack of monitoring of the inspection frequency could result in delayed detection or nondetection of groundwater contamination and potential human exposure.

We asked all ten EPA regions about the mechanisms they use to try to comply with the applicable inspection frequency. Seven of the regions had some mechanism in place, while three regions had no mechanism in place. However, regardless of the mechanisms in place, according to RCRAInfo, all regions had TSDFs with units closed with waste in place that had not been inspected in the applicable time frame. Table 1 summarizes the responses we received.

[4] In its response to the draft report, the Agency expressed concerns that the environmental justice analysis suggests that Agency guidance has established the demographic index as a driver for inspection priority. That is not the intent; we merely wanted to include relevant information on environment justice in our analysis.

Table 1: Regional mechanisms used for three-year inspection policy at nonoperating TSDFs

Regional status	Details
Five regions monitor inspection frequency through state RCRA grants.	State commitments to inspect are included in RCRA grant commitments for all states in these regions.
Two regions monitor inspection frequency through state RCRA grants for some, but not all, of their states.	State commitments to inspect included in RCRA grant work plans for some states but not for all.
Three regions have no mechanisms in place to monitor inspection frequency.	Two of these regions were unaware of the three-year inspection policy. The third region stated that it did not monitor the inspections of TSDFs with RCRA units closed with waste in place because its inspection priorities were prioritized based upon multiple inspection criteria, such as national compliance initiatives and state and local government priorities.

Source: OIG analysis of regional responses. (EPA OIG table)

We asked OECA whether it had any nationwide mechanism in place to track regional or state adherence with the three-year inspection policy. OECA responded:

> Adherence to the 3-year inspection policy for post-closure TSDFs is tracked at the regional level in the RCRA grant work plans. Headquarters and regions focus inspection resources on the highest risk TSDF and [large quantity generator] universes, while ensuring the overall program integrity is maintained.

We, therefore, conclude that adherence to the three-year inspection policy is not consistently implemented in EPA regions. EPA regions and authorized states could identify and track TSDFs that have not been inspected in accordance with the policy by identifying them in using regular reports from RCRAInfo. Because of a lack of compliance with the inspection policy, uninspected units could be leaking and causing groundwater contamination and potential human exposure without EPA knowledge.

Conclusions

EPA regions do not consistently verify that TSDFs with RCRA units closed with waste in place are inspected at the applicable frequency. Controls, such as reviews of RCRAInfo information on units closed with waste in place, are inconsistent. Implementation of controls would allow regions to readily verify that all TSDFs with units closed with waste in place are inspected at the applicable frequency. In the absence of frequent inspections, contamination from sites closed with waste in place could migrate and go unidentified in a timely manner, which increases the possibility of human health exposure and environmental contamination.

Recommendations

We recommend that the assistant administrator for Land and Emergency Management, in collaboration with the Office of Enforcement and Compliance Assurance:

1. Develop RCRAInfo reports for regular distribution to EPA regions that identify the inspection frequency status of nonoperating treatment, storage, or disposal facilities with respect to the time frames stated in the Office of Enforcement and Compliance Assurance's *Compliance Monitoring Strategy*.

We recommend that the assistant administrator for Enforcement and Compliance Assurance, in collaboration with the Office of Land and Emergency Management:

2. Establish mechanisms to ensure that all inspections are completed within the required time frame of two years for operating treatment, storage, or disposal facilities or the policy time frame of three years for nonoperating treatment, storage, or disposal facilities.

Agency Response and OIG Assessment

The acting assistant administrators for the Office of Land and Emergency Management and the Office of Enforcement and Compliance Assurance responded to our draft report. We included these responses, as well as our full analysis of these response, in Appendix C. The Agency proposed an acceptable modification to Recommendation 1 and provided an acceptable planned corrective action and estimated completion date. This recommendation is resolved with corrective action pending.

The Agency proposed an alternate to Recommendation 2 with a proposed corrective action and estimated completion date. We disagree with both the alternate Recommendation 2 and the proposed corrective action. Recommendation 2, therefore, remains unresolved. The proposed corrective action does not indicate how the Agency will track the completed inspections, nor does it say how the Agency will comply with the two-year inspection requirement, as outlined in the statute.

Chapter 3
Tracking Facilities Between RCRA and Superfund Programs Is Problematic

During our review of units closed with waste in place, we observed some issues with interactions between the RCRA and Superfund programs. EPA oversight of TSDFs that are referred to the Superfund program and then deferred back to the RCRA program is incomplete. The lack of procedures and the use of differing program identification numbers in the two programs hinder the EPA's ability to track facilities between the two programs. As a result, it is unclear whether either program is appropriately managing these units and protecting human health and the environment. EPA oversight of RCRA corrective action facilities also managed by the Superfund program was ineffective. It resulted in 42 possibly conflicting and 126 double-counted accomplishment milestones. Because these milestones are used to communicate site status to the public, communities living near these sites could be confused or misled as to the cleanup status of the sites and be hindered from being able to take necessary steps to protect themselves from dangerous environmental conditions.

Referrals of RCRA Units to Superfund and Deferrals Back to RCRA Are Not Tracked or Monitored

The RCRAInfo operating status code for RCRA units closed with waste in place that have been referred to the EPA's Superfund program is "SF." We identified 108 such units across 47 TSDFs. The Superfund program's Superfund Enterprise Management System, or SEMS, tracks these referred units by a facility identification number that may or may not be the same number as the RCRA identification. We readily identified most of the 108 units coded as SF in RCRAInfo in SEMS but had difficulty finding 26 of the units that have different identification numbers in SEMS and RCRAInfo. We also identified ten units that appear to have been incorrectly identified as SF, as they were referred to state Superfund programs, not the federal program. The EPA appears to have no process in place to verify that SF referrals in RCRAInfo have consistent information in SEMS and are being appropriately managed by the Superfund program.

The Superfund Enterprise Management System

SEMS is "the official repository for site and non-site specific Superfund data in support of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). It contains information on hazardous waste site assessment and remediation from 1983 to the present." The public can search Superfund data at the EPA's Search Superfund Site Information website.

Additionally, we noted that some sites listed in SEMS as "deferred to RCRA" were not found in RCRAInfo with an entry after the SEMS deferral date. To

analyze this issue further, we identified 23 Superfund deferrals to RCRA since 2010. Of those 23 deferrals, we could not locate four in RCRAInfo. Of the 19 sites we could locate in RCRAInfo, six had not been updated in RCRAInfo since before the SEMS deferral date. In other words, there was no indication in RCRAInfo that the RCRA program had appropriately managed these sites after their deferral from Superfund to RCRA. In total, we found that ten of the 23 sites we reviewed either could not be found in RCRAInfo or had no entries after the deferral dates.

Without confirmation of the RCRA deferrals returning to regulatory oversight by the RCRA program, the units do not appear to be tracked. As a result, there is no evidence that human health and the environment are being protected at these sites.

Our reconciliation of Superfund sites in RCRAInfo was challenged by the lack of a crosswalk of site identifications between the two systems that would correlate the identification numbers in both systems when they differ for the same facility. The EPA can develop such a crosswalk, as the Office of Mission Support maintains *Envirofacts*, a single point of access to query across multiple EPA information systems. Facilities in multiple systems may be identified by their Facility Registry System identification number, which the EPA assigns to facilities in multiple systems based on address criteria. We contacted the EPA's Office of Mission Support for assistance in developing a crosswalk, and it was able to provide a spreadsheet that identifies whether a RCRAInfo identification was available for all active SEMS sites in *Envirofacts*. The spreadsheet provided by the Office of Mission Support contains identifications for 4,083 SEMS sites that match RCRAInfo facilities. Of these, 2,172 have identical identifications in both systems, while the remainder have different identifications. We found that this spreadsheet was much more efficient in identifying facilities between SEMS and RCRAInfo than using *Envirofacts* to query one facility at a time.

The OIG has previously identified this inability to readily identify deferrals to the RCRA program from the Superfund program as a concern. The OIG's March 31, 1999 report, *Superfund Sites Deferred to RCRA*, said that "because there is no crosswalk between the two automated systems, Agency officials will have to manually search program files to ensure that all deferred sites are accounted for." More than 20 years later, the lack of a crosswalk between the two systems still exists. As a result, it is difficult for both the Superfund and RCRA programs to confirm that:

- Referrals from RCRAInfo to SEMS and deferrals from SEMS to RCRAInfo have occurred.
- Sites are being appropriately monitored for the continued protection of human health and the environment.

Environmental Indicator and Ready-for-Reuse Accomplishments Differ or May Be Double-Counted Between Programs and Result in Confusing Risk Communication Messages to the Public

The EPA's oversight of RCRA facilities undergoing corrective action that were also on the *Superfund National Priorities List* was ineffective. The *Superfund National Priorities List* is a list of the most serious sites identified for long-term cleanup. In our analysis, we identified 56 TSDFs, including 17 with RCRA units closed with waste in place, that were referred to the RCRA Corrective Action Program that were also on the *Superfund National Priorities List*.

Both the RCRA Corrective Action and the Superfund Programs track and publicly report on key accomplishments, including:

- Current human exposure under control.
- Contaminated groundwater migration under control.
- Determination of whether the site is ready for anticipated use.

One region informed us that it verifies that RCRA Corrective Action Program facilities are not also tracked as Superfund sites to ensure that the programs do not:

- Double-count accomplishments.
- Have different milestones for similar goals, which could create confusion for the public.

For the 56 duplicate RCRA Corrective Action and Superfund facilities, we compared the results for three environmental indicators that totaled 168 accomplishments for all 56 facilities. The three monitored indicators were:

- Human exposure under control.
- Groundwater releases under control.
- Sitewide ready for anticipated use.

Environmental Indicators

Current Human Exposure Is Under Control

Sites are assigned to this category when assessments for human exposures indicate there are no unacceptable human exposure pathways and the region has determined the site is under control for current conditions sitewide.

Contaminated Groundwater Migration Is Under Control

Indicates that all information on known and reasonably expected groundwater contamination has been reviewed and that the migration of contaminated groundwater is stabilized and there is no unacceptable discharge to surface water and monitoring will be conducted to confirm that affected groundwater remains in the original area of contamination.

Sitewide Ready for Anticipated Use

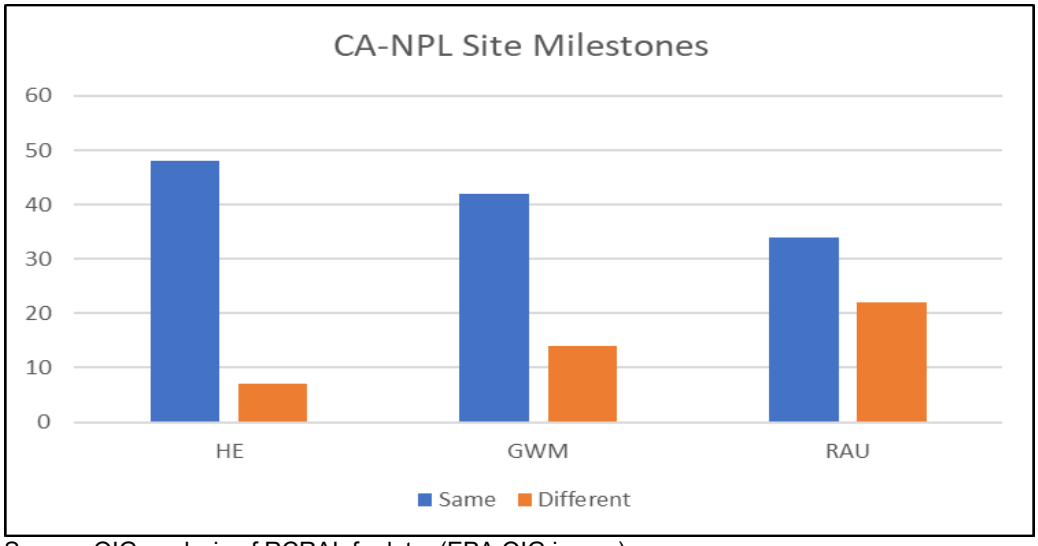
1. All cleanup goals in the Record(s) of Decision or other remedy decision documents have been achieved for media that may affect current and reasonably anticipated future land uses of the site, so that there are no unacceptable risks.
2. All institutional or other controls required in the Record(s) of Decision or other remedy decision documents have been put in place.

Sources:
EPA "Sitewide Ready for Anticipated Use" webpage.
EPA, Participant Manual, *RCRA Corrective Action Training Program: Getting to YES!*, November 2009.

We compared the results reported by each program for these three indicators. We found seven differences between the RCRA Corrective Action and Superfund designations for human exposure under control, 14 differences for groundwater exposure under control, and 21 differences for ready for anticipated use (Figure 4). In total, 42 of 168 (25 percent) differences between designations existed (Appendix B). The EPA uses these milestones to communicate site status, and because the indicators are used as a measure of risk communication, the results present public confusion about the state of these sites.

Further, the 126 milestones that are consistent between Corrective Action and Superfund Program sites could represent the EPA double-counting accomplishments. Because the EPA uses these milestones to communicate site status to the public, communities living near these sites could reach different conclusions about the contamination or cleanup status of a site when the accomplishments differ in the two programs.

Figure 4: Facilities and sites listed on both the Corrective Action Program and the *National Priorities List*



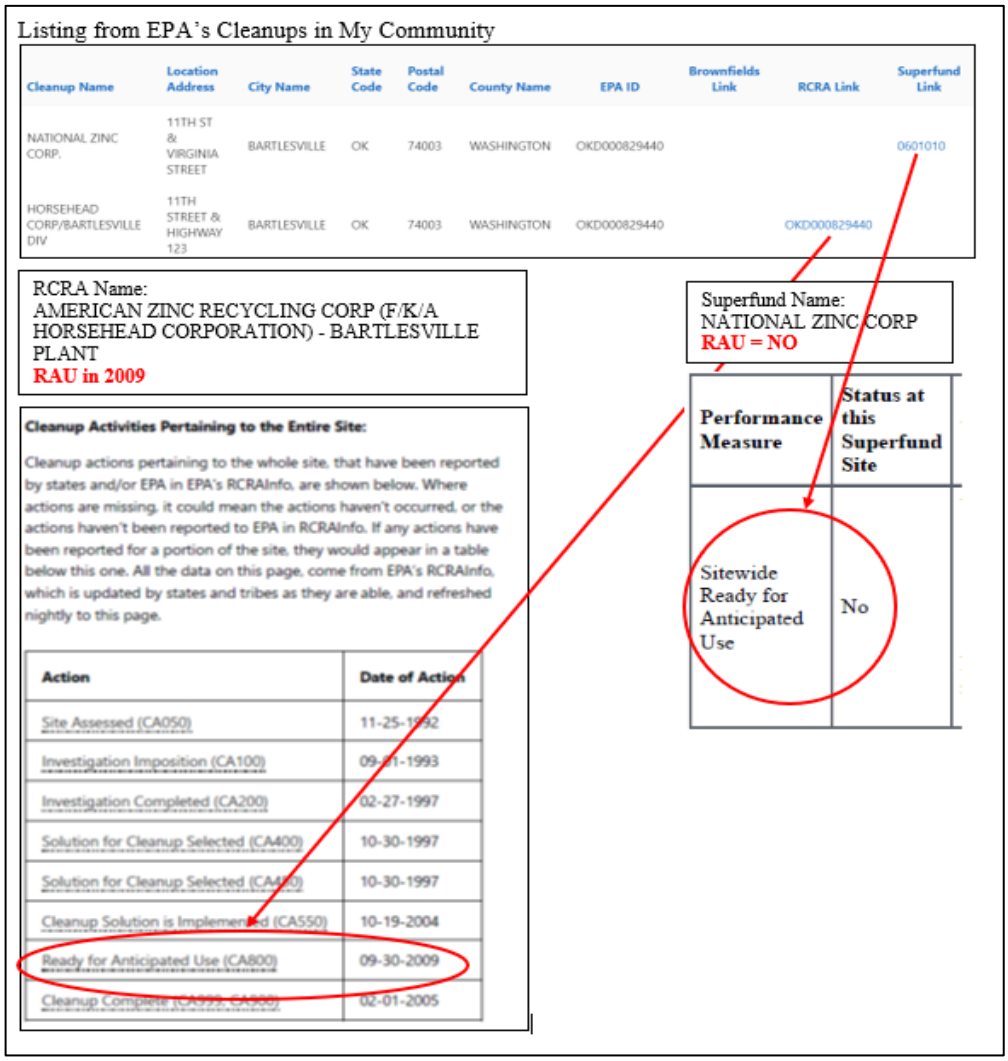
Source: OIG analysis of RCRAInfo data. (EPA OIG image)

One example of potential confusion caused by differing entries is the National Zinc Corporation Superfund site, which is also a RCRA Corrective Action facility with a different name with units closed with waste in place. The RCRA and Superfund information is listed in the EPA's *Cleanups in My Community* public query, but the Corrective Action information lists a ready-for-anticipated-use date in 2009 while the Superfund information indicates that the site is not ready for anticipated use (Figure 5).

There may be some legitimate explanations for facilities in both systems. For example, some Superfund sites indicate that all future cleanup activities will be performed under RCRA Corrective Action and the sites will be deleted from the *National Priorities List*, and one Corrective Action site indicates referral to the

Superfund program. Further, according to the EPA, RCRA Corrective Action and Superfund cleanups may occur at the same facility at the same time. However, in all cases, the indicators still appear to be counted in both systems. Other differences may also explain the presence of sites in both systems, such as a Corrective Action site located within a large Superfund site. Nonetheless, there should be clear acknowledgement in site information available to the public that the sites are in both programs to inform the public of possible overlaps.

Figure 5: Example of an EPA *Cleanups in My Community* public query



Source: EPA's *Cleanups in My Community*. (EPA OIG image)

Conclusions

The EPA lacks internal controls to address the following:

- RCRAInfo inconsistencies.
- Evidence of tracking of Superfund referrals to RCRA.

- Documentation of program identifications that are inconsistent between SEMS and RCRAInfo.

- Possible double-counting or inconsistent data for accomplishments of the RCRA Corrective Action program and the Superfund *National Priorities List*.

Because some of the EPA's identified accomplishments may be listed in error, the EPA's risk communication of the status of sites may lead the public to believe a site is ready for reuse when it is not and human health and the environment may not be protected at some sites.

Recommendations

We recommend that the assistant administrator for Land and Emergency Management:

3. Develop and implement controls to verify that the Resource Conservation and Recovery Act referrals to the Superfund program are added to Superfund Enterprise Management System for further Superfund program attention, as necessary.

4. Develop and implement controls to verify that the Superfund program deferrals to the Resource Conservation and Recovery Act are added to RCRAInfo for further Resource Conservation and Recovery Act attention, as necessary.

5. Develop and maintain a crosswalk of Superfund Enterprise Management System and corresponding RCRAInfo identification numbers.

6. Develop and implement controls to identify and eliminate overlap of environmental indicators between Resource Conservation and Recovery Act Corrective Action and Superfund Programs and include this information in public queries, such as *Cleanups in My Community*.

Agency Response and OIG Assessment

The acting assistant administrators for the Office of Land and Emergency Management and the Office of Enforcement and Compliance Assurance jointly responded to our draft report. We included this response, as well as our full analysis of this response, in Appendix C. The Agency agreed with Recommendations 3 and 4 and provided acceptable planned corrective actions and estimated completion dates. These recommendations are resolved with corrective actions pending.

The Agency agreed with Recommendation 5 and proposed a corrective action with an estimated completion date. We disagree with the proposed corrective action; this recommendation, therefore, remains unresolved. The proposed corrective action assumes that the crosswalk only applies to referrals and deferrals between the two programs. The purpose of the crosswalk is to allow identification of any site or facility in both programs. The Agency proposed an alternate to Recommendation 6 and provided a corrective action with an estimated completion date. We disagree with the alternate recommendation and the proposed corrective action; this recommendation, therefore, remains unresolved. While the Agency has proposed clarifications, it has not delineated how it will identify and eliminate the double-counting and the inconsistencies.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						
Rec. No.	**Page No.**	**Subject**	**Status[1]**	**Action Official**	**Planned Completion Date**	**Potential Monetary Benefits (in $000s)**
1	15	In collaboration with the Office of Enforcement and Compliance Assurance, develop RCRAInfo reports for regular distribution to EPA regions that identify the inspection frequency status of nonoperating treatment, storage, or disposal facilities with respect to the time frames stated in the Office of Enforcement and Compliance Assurance's *Compliance Monitoring Strategy*.	R	Assistant Administrator for Land and Emergency Management	12/31/21	
2	15	In collaboration with the Office of Land and Emergency Management, establish mechanisms to ensure that all inspections are completed within the required time frame of two years for operating treatment, storage, or disposal facilities or the policy time frame of three years for nonoperating treatment, storage, or disposal facilities.	U	Assistant Administrator for the Office of Enforcement and Compliance Assurance		
3	21	Develop and implement controls to verify that the Resource Conservation and Recovery Act referrals to the Superfund program are added to Superfund Enterprise Management System for further Superfund program attention, as necessary.	R	Assistant Administrator for Land and Emergency Management	3/31/22	
4	21	Develop and implement controls to verify that the Superfund program deferrals to the Resource Conservation and Recovery Act are added to RCRAInfo for further Resource Conservation and Recovery Act attention, as necessary.	R	Assistant Administrator for Land and Emergency Management	9/30/23	
5	21	Develop and maintain a crosswalk of Superfund Enterprise Management System and corresponding RCRAInfo identification numbers.	U	Assistant Administrator for Land and Emergency Management		
6	21	Develop and implement controls to identify and eliminate overlap of environmental indicators between Resource Conservation and Recovery Act Corrective Action and Superfund Programs and include this information in public queries, such as *Cleanups in My Community*.	U	Assistant Administrator for Land and Emergency Management		

[1] C = Corrective action completed.
R = Recommendation resolved with Corrective Action pending.
U = Recommendation unresolved with resolution efforts in progress.

Appendix A

Internal Control Assessment

Which internal control components are significant to the audit objective(s)?		Which internal control principles are significant to the audit objective(s)?	
	Control Environment The control environment is the foundation for an internal control system. It provides the discipline and structure to help an entity achieve its objectives.		1. The oversight body and management should demonstrate a commitment to integrity and ethical values.
			2. The oversight body should oversee the entity's internal control system.
			3. Management should establish an organizational structure, assign responsibilities, and delegate authority to achieve the entity's objectives.
			4. Management should demonstrate a commitment to recruit, develop, and retain competent individuals.
			5. Management should evaluate performance and hold individuals accountable for their internal control responsibilities.
	Risk Assessment Management assesses the risks facing the entity as it seeks to achieve its objectives. This assessment provides the basis for developing appropriate risk responses.		6. Management should define objectives clearly to enable the identification of risks and define risk tolerances.
			7. Management should identify, analyze, and respond to risks related to achieving the defined objectives.
			8. Management should consider the potential for fraud when identifying, analyzing, and responding to risks.
			9. Management should identify, analyze, and respond to significant changes that could impact the internal control system.
X	**Control Activities** The actions management establishes through policies and procedures to achieve objectives and respond to risks in the internal control system, which includes the entity's information system.	X	10. Management should design control activities to achieve objectives and respond to risks.
		X	11. Management should design the entity's information system and related control activities to achieve objectives and respond to risks.
		X	12. Management should implement control activities through policies.
	Information and Communication The quality information management and personnel communicate and use to support the internal control system.		13. Management should use quality information to achieve the entity's objectives.
			14. Management should internally communicate the necessary quality information to achieve the entity's objectives.
			15. Management should externally communicate the necessary quality information to achieve the entity's objectives.
X	**Monitoring** Activities management establishes and operates to assess the quality of performance over time and promptly resolve the findings of audits and other reviews.	X	16. Management should establish and operate monitoring activities to monitor the internal control system and evaluate the results.
			17. Management should remediate identified internal control deficiencies on a timely basis.

Source: Based on internal control components and principles outlined in GAO-14-704G, *Standards for Internal Control in the Federal Government*, which is also known as the "Green Book", issued September 10, 2014.

Appendix B

Sites on the Corrective Action Program and the National Priorities List

RCRA ID	Handler Name	SEMS ID	NPL Status	HE	GWM	RAU
DED980551667	AKZO CHEMICALS INC	DED980551667	Final NPL	Same	Same	Same
ALD008161176	AKZO NOBEL FUNCTIONAL CHEMICALS LLC	ALD008161176	Final NPL	Same	Same	Same
TXD008123168	ALCOA POINT COMFORT OPERATIONS	TXD008123168	Final NPL	Same	Same	Same
IL0210090049	ALLIANT TECHSYSTEMS INC	IL0210090049	Final NPL	Same	Same	Same
WV0170023691	ALLIANT TECHSYSTEMS OPERATIONS LLC, ABL OPERATIONS	WV0170023691	Final NPL	Same	Same	Same
OKD000829440	AMERICAN ZINC RECYCLING CORP (AZR)	OKD000829440	Proposed NPL	Same	Different	Different
ORD050955848	ATI MILLERSBURG	ORD050955848	Final NPL	Same	Different	Same
ALD001221902	BASF CORP	ALD001221902	Final NPL	Same	Same	Different
MND000686196	BRAINERD-TIE PLANT SITE - BURLINGTON NOR	MND000686196	Final NPL	Same	Same	Same
PRD090282757	CARIBE GENERAL ELECTRIC PRODUCT JUANA DI	PRD090282757	Deleted NPL	Same	Same	Different
IL1570024157	CHANUTE AIR FORCE BASE	IL1570024157	Proposed NPL	Different	Same	Same
NCD001810365	CLARIANT CORPORATION MT HOLLY EAST PLANT	NCD001810365	Deleted NPL	Same	Same	Different
ALD000828848	ERP COMPLIANT COKE, LLC BIRMINGHAM	ALN000410750	Proposed NPL	Different	Different	Different
NJD004362059	FISHER SCIENTIFIC CO LLC - FAIR LAWN PLANT	NJD980654107	Final NPL	Same	Same	Same
MND000686071	FLINT HILLS PINE BEND, LLC	MND000686071	Deleted NPL	Same	Same	Same
IDD070929518	FMC IDAHO LLC	IDD984666610	Final NPL	Same	Different	Same
IL8143609487	GENERAL DYNAMICS- OTS, A13	IL8143609487	Final NPL	Same	Different	Different
MSD990866329	GREENFIELD ENVIRONMENTAL MULTISTATE TRUST LLC FORMERLY TRONOX COLUMBUS	MSD990866329	Final NPL	Different	Different	Same
MSD007037278	GRENADA MANUFACTURING LLC	MSD007037278	Final NPL	Different	Different	Same
NJD002349058	HERCULES INC - FORMER GIBBSTOWN PLANT	NJD002349058	Final NPL	Different	Different	Same
IA7213820445	IOWA ARMY AMMUNITION PLANT	IA7213820445	Final NPL	Same	Different	Same
FL6170024412	JACKSONVILLE NAS	FL6170024412	Final NPL	Same	Different	Same
WA9214053465	JOINT BASE LEWIS MCCHORD	WA9214053465	Deleted NPL	Same	Different	Different
WID006073225	KOHLER CO	WID006073225	Final NPL	Same	Same	Different
SCD003353026	KOPPERS INC	SCD003353026	Deleted NPL	Same	Same	Same

RCRA ID	Handler Name	SEMS ID	NPL Status	HE	GWM	RAU
WVD004336749	KOPPERS INC.	WVD004336749	Deleted NPL	Same	Same	Different
OHD000720607	LEAR CORPORATION	OHD980794598	Final NPL	Same	Same	Different
ORD052221025	LOCKHEED MARTIN CORPORATION	ORD052221025	Deleted NPL	Same	Same	Different
TX7213821831	LONE STAR ARMY AMMUNITION PLANT	TX7213821831	Final NPL	Same	Same	Different
NC6170022580	MARINE CORPS BASE CAMP LEJEUNE	NC6170022580	Final NPL	Same	Same	Same
NJD043584101	MATLACK INC	NJD043584101	Final NPL	Same	Same	Same
NC1170027261	MCAB EAST - MCAS CHERRY POINT	NC1170027261	Final NPL	Same	Same	Same
TN0210020582	MILAN ARMY AMMUNITION PLANT	TN0210020582	Final NPL	Same	Same	Different
MTD006230346	MONTANA ENVIRONMENTAL TRUST GROUP LLC	MTD006230346	Final NPL	Same	Same	Different
FL5170022474	NAVFAC SOUTHERN DIVISION - CECIL FIELD	FL5170022474	Final NPL	Same	Same	Same
ALD008188708	OLIN CHLOR ALKALI PRODUCTS, INC. - MCINTOSH PLANT	ALD008188708	Final NPL	Same	Same	Same
PRD090398074	PFIZER PHARMACEUTICALS LLC-ARECIBO	PRD980301154	Final NPL	Same	Same	Different
KYD006370167	POLYONE CORPORATION AND GOODRICH CORPORATION	KYD006370167	Final NPL	Same	Same	Same
GAD001700699	PRAYON INC	GAD001700699	Deleted NPL	Same	Same	Different
PRD090370537	R C A DEL CARIBE INC	PRD090370537	Deleted NPL	Same	Same	Same
GA1570024330	ROBINS AIR FORCE BASE	GA1570024330	Final NPL	Same	Same	Different
CO7890010526	ROCKY FLATS SITE - US DOE	CO7890010526	Final NPL	Same	Same	Same
CO5210020769	ROCKY MOUNTAIN ARSENAL	CO5210020769	Final NPL	Same	Same	Same
OK1571724391	TINKER AIR FORCE BASE	OK1571724391	Final NPL	Same	Same	Different
UT3213820894	TOOELE ARMY DEPOT	UT3213820894	Final NPL	Same	Different	Different
PAD041421223	TYCO ELEC	PAD041421223	Deleted NPL	Same	Same	Different
TN1890090003	U.S. DOE, OAK RIDGE NATIONAL LABORATORY	TN1890090003	Final NPL	Same	Same	Same
WYD061112470	UNION PACIFIC RAILROAD LARAMIE TIMBER TREATING PLANT	WYD061112470	Deleted NPL	Same	Same	Same
CO7570090038	US AIR FORCE PLANT - PJKS	CO7570090038	Final NPL	Same	Same	Same
TX4890110527	US DEPARTMENT OF ENERGY PANTEX PLANT	TX4890110527	Final NPL	Same	Same	Different
WA1891406349	US DOE BPA ROSS COMPLEX	WA1891406349	Deleted NPL	Same	Different	Same
FL9170024567	US NAVAL AIR STATION PENSACOLA	FL9170024567	Final NPL	Same	Same	Same
MND051441731	VITASYN	MND051441731	Final NPL	Different	Same	Same

RCRA ID	Handler Name	SEMS ID	NPL Status	HE	GWM	RAU
WID000808568	W M W I - OMEGA HILLS LF	WID000808568	Deleted NPL	Same	Same	Same
WID990829475	WRR ENVIRONMENTAL SERVICES CO INC	WID990829475	Deleted NPL	Different	Different	Same
NJD002173276	WYETH HOLDINGS LLC	NJD002173276	Final NPL	Same	Same	Same

Source: OIG analysis of EPA data.

Note: Identical values are indicated as “Same” while differing values are identified as “Different.”

Agency Response to Draft Report

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

MEMORANDUM

SUBJECT: Response to Office of Inspector General Draft Project No. OA&E-FY19-0323 "EPA Does Not Consistently Monitor Hazardous Waste Units in Place or Consistently Track and Report on Facilities Between the Two Responsible Programs," dated February 4, 2021

FROM: Barry N. Breen, Acting Assistant Administrator
Office of Land and Emergency Management
BARRY BREEN Digitally signed by BARRY BREEN Date: 2021.03.11 17:32:08 -05'00'

Lawrence E. Starfield, Acting Assistant Administrator
Office of Enforcement and Compliance Assurance
LAWRENCE STARFIELD Digitally signed by LAWRENCE STARFIELD Date: 2021.03.11 16:30:01 -05'00'

TO: Sean W. O'Donnell
Inspector General

Thank you for the opportunity to respond to the issues and recommendations in the subject draft audit report (report). We also appreciate the prior engagement we have had with your staff, including the recent discussion on February 19th. Thank you for agreeing that the Assistant Administrator for OECA should be the lead action official for Recommendation #2. The following is a general response to the report, along with responses to each of the report recommendations. For the report recommendations, we have provided high-level intended corrective actions and estimated completion dates. For your consideration, we have included a Technical Comments Attachment to supplement this response in the form of redline/strikeout on the draft report.

OVERALL POSITION

We appreciate the Office of Inspector General's (OIG) attention to EPA's oversight of hazardous waste units closed with waste in place. Effective oversight of these units is essential for ensuring that environmental obligations are met, and human health and the environment are protected.

We wish to raise four points of emphasis. First, as the OIG notes in its report, the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) programs often work together to address cleanup of contaminated sites. At any one facility/site, each program may have different roles for

different areas, and roles and areas may change over time. Thus, what appear as potential inconsistencies in the respective data systems may in fact be valid and meaningful differences in cleanup status for different areas managed by the respective program. Nevertheless, the Office of Land and Emergency Management (OLEM) recognizes communication regarding these differences, particularly with the public, could be improved.

OIG Response 1: The report acknowledges that there may be legitimate reasons for facilities and sites to be in both systems.

Second, the report should clearly distinguish the difference between statutorily mandated inspections and inspections recommended through guidance. We agree that operating Treatment, Storage, and Disposal Facilities (TSDFs) are required by statute to be inspected every two years. As the data indicates, the agency's compliance rate for this requirement is 96%. The RCRA Compliance Monitoring Strategy (CMS) is a guidance document that does not establish new "requirements," but sets an inspection goal for non-operating TSDFs that have been closed with waste in place. As the three-year timeframe is established in a guidance document and not in a regulation, the recommendation should not imply that the three-year review frequency is mandatory. Clarifications are offered in the technical comments to address this point. We agree that OECA can improve its oversight of regions and states with respect to TSDFs that are closed and include units with waste in place. We have offered alternative language for Recommendation #2 that addresses the need for improved oversight of the CMS strategy.

OIG Response 2: We have modified text, as suggested here and in the technical comments, to clarify that the OECA *Compliance Monitoring Strategy* inspection goal is a policy, not a mandatory requirement.

Third, although the CMS suggests certain inspection types may be more appropriate than others depending on the circumstances, a variety of compliance monitoring tools can be utilized to assess closed TSDFs. We have completed our own analysis of the OIG dataset and believe the OIG did not include all on-site inspection types in its inspection analysis of TSDFs with RCRA units closed with waste in place. For instance, it does not appear that OIG included corrective action compliance evaluations or case development inspections. Our calculation indicates an inspection rate of more than 80% —- a much higher rate than the 49% rate the OIG calculated. OECA would appreciate the opportunity to discuss the data analysis in more detail with the OIG.

OIG Response 3: We will be pleased to meet with OECA and discuss the data and our analyses. We used GME and OAM inspections as the basis of our analysis of the three-year inspection rates for nonoperating postclosure TSDFs because these were referenced as appropriate in the OECA *Compliance Monitoring Strategy.* We also found that, based on our evaluation of multiple recent CEIs at nonoperating TSDFs with units closed with waste in place and existing policies at multiple regions, that CEIs at these TSDFs were large quantity generator inspections that did not look at the units closed with waste in place.

Fourth, we are concerned with the conclusions drawn on page 14 of the report with respect to inspections of closed facilities and environmental justice. EJSCREEN (based on 11

environmental indicators and six demographic indicators) is used as an initial step in identifying areas which may have potential environmental concerns. The screening-level results have significant limitations and are not intended or designed to provide a risk assessment. The report suggests that the agency should have used the demographic index (an amalgam of only two of the demographic indicators) to prioritize inspections. We do not believe it is appropriate to draw conclusions based on that analysis or to imply there is an agency shortcoming on this point.

OIG Response 4: The intent of the EJSCREEN analysis was not to imply that the demographic index should be used to prioritize inspections. It was included simply as a factual analysis of demographic information in EJSCREEN.

OLEM and OECA believe that the OIG's report and broader investigations have highlighted the need for improved program monitoring and use and understanding of the data in this area. To this end, we accept the OIG's recommendations in the draft report as described below and agree that actions undertaken in response to these recommendations will support ongoing efforts and strengthen overall program management.

RESPONSE TO REPORT RECOMMENDATIONS

Our offices indicate acceptance of the OIG recommendations, as qualified, in the table below.

Agreements

No.	OIG Recommendation	Qualifications/Comments for OIG Recommendation	High-Level Intended Corrective Action(s)	Estimated Completion by Quarter and FY
1	Develop RCRAInfo reports for regular distribution to EPA regions that identify non-operating treatment, storage, or disposal facilities that have not been inspected within 3 years, as required by the Office of Enforcement and Compliance Assurance *Compliance Monitoring Strategy*.	Suggest rephrasing Recommendation 1 to be: "Develop RCRAInfo reports for regular distribution to EPA regions that identify the inspection frequency status of non-operating treatment, storage, or disposal facilities within the timeframes as stated in the Office of Enforcement and	OLEM/ORCR, in collaboration with OECA, will develop in RCRAInfo and distribute to the EPA Regions a report that identifies the inspection frequency status of non-operating treatment, storage, or disposal facilities within the timeframes as stated in the Office of Enforcement and Compliance Assurance's *Compliance Monitoring Strategy*.	1st Quarter FY2022

		Compliance Assurance's *Compliance Monitoring Strategy*."		
2	Establish mechanisms to ensure that all required inspections are completed within the required time frame of 2 years for operating treatment, storage, or disposal facilities and 3 years for non-operating treatment, storage, or disposal facilities.	OECA submits alternative language for Recommendation 2: "Establish mechanisms to improve oversight of regional and state monitoring at closed facilities that include units with waste closed in place consistent with OECA's CMS guidance."	OLEM/ORCR, in collaboration with OECA, will develop in RCRAInfo and distribute to the EPA Regions a report that identifies the inspection frequency status of non-operating treatment, storage, or disposal facilities within the timeframes as stated in the Office of Enforcement and Compliance Assurance's *Compliance Monitoring Strategy*.	1st Quarter FY2022
3	Verify that the Resource Conservation and Recovery Act referrals to the Superfund program are added to Superfund Enterprise Management System for further Superfund program attention, as necessary.	OIG should correct error in the spelling of RCRA: "Conservancy" should be "Conservation."	OLEM/OSRTI will: (1) update the Superfund Program Implementation Manual (SPIM) as appropriate to include clearer timelines on updating the RCRAInfo identification number currently tracked in the Superfund Enterprise Management System (SEMS); (2) verify sites referred from RCRA to Superfund are added to SEMS for further Superfund program attention, as necessary; and (3) revise OSRTI-managed SEMS public search tools and publicly available SEMS computer reports to include the SEMS RCRAInfo identification number variable.	2nd Quarter FY2022

4	Verify that the Superfund program deferrals to the Resource Conservation and Recovery Act are added to RCRAInfo for further Resource Conservation and Recovery Act attention, as necessary.	OIG should correct two instances of error in the spelling of RCRA: "Conservancy" should be "Conservation."	OLEM/ORCR will (1) evaluate the existing policies and process for Superfund deferrals to RCRA; (2) identify gaps; and, (3) identify corrective measures, as needed, to meet program needs, such as identifying Superfund program deferrals to RCRA in RCRAInfo.	4th Quarter FY2023
5	Develop and maintain a crosswalk of Superfund Enterprise Management System and corresponding RCRAInfo identification numbers.	EPA assumes this recommendation would only apply to sites which have been referred/deferred from one program to the other.	Upon completion of corrective actions #3 and #4, OLEM will ensure a crosswalk of SEMS and RCRAInfo identification numbers can be achieved for referrals/deferrals between the two programs.	2nd Quarter FY2024
6	Implement controls to identify and eliminate overlap of environmental indicators between Resource Conservation and Recovery Act Corrective Action and Superfund programs and include this information in public queries such as *Cleanups in My Community*.	EPA assumes this recommendation would only apply to sites which have been referred/deferred from one program to the other. EPA recommends substituting "eliminate" with "clarify" in Recommendation 6 to read as follows: "Implement controls to identify and clarify overlap of environmental indicators…."	OLEM will standardize communications on the *Cleanups in My Community* webpage regarding the intersection of RCRA Corrective Action and Superfund cleanup programs, including environmental indicator designations at sites.	3rd Quarter FY2022

CONTACT INFORMATION

If you have any questions regarding this response, please contact Kecia Thornton (OLEM) at thornton.kecia@epa.gov or 202-566-1913 or Gwendolyn Spriggs (OECA) at spriggs.gwendolyn@epa.gov or 202-564-2439.

Attachment:

Technical Comments

Appendix D

Distribution

The Administrator
Associate Deputy Administrator
Assistant Deputy Administrator
Chief of Staff
Deputy Chief of Staff
Agency Follow-Up Official (the CFO)
Agency Follow-Up Coordinator
General Counsel
Associate Administrator for Congressional and Intergovernmental Relations
Associate Administrator for Public Affairs
Director, Office of Continuous Improvement, Office of the Chief Financial Officer
Assistant Administrator for Land and Emergency Management
Principal Deputy Assistant Administrator for Land and Emergency Management
Deputy Assistant Administrator for Land and Emergency Management
Assistant Administrator for Enforcement and Compliance Assurance
Principal Deputy Assistant Administrator for Enforcement and Compliance Assurance
Audit Follow-Up Coordinator, Office of the Administrator
Audit Follow-Up Coordinator, Office of Enforcement and Compliance Assurance
Audit Follow-Up Coordinator, Office of Land and Emergency Management