



U.S. ENVIRONMENTAL PROTECTION AGENCY

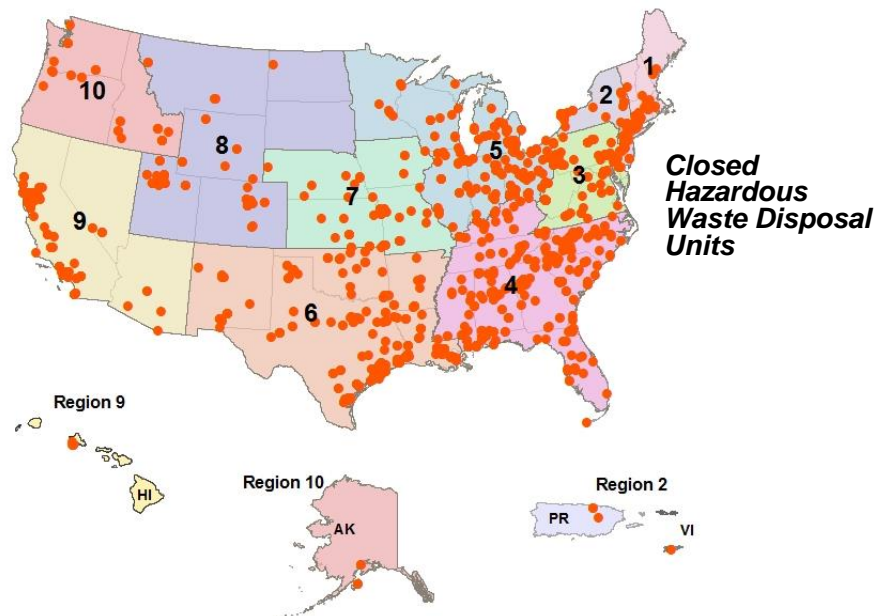
OFFICE OF INSPECTOR GENERAL

Cleaning Up Communities

Some Safeguards in Place for Long-Term Care of Disposed Hazardous Waste, But Challenges Remain

Report No. 15-P-0169

June 17, 2015



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Abbreviations

ASTSWMO	Association of State and Territorial Hazardous Waste Management Officials
EPA	U.S. Environmental Protection Agency
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
OSWER	Office of Solid Waste and Emergency Response
RCRA	Resource Conservation and Recovery Act
RCRAInfo	Resource Conservation and Recovery Act Information database
UECA	Uniform Environmental Covenant Act

Cover map: Hazardous waste disposal units assigned an operating status code of “closed with waste in place” in RCRAInfo as of October 9, 2014. Not all units have entered permitted post-closure care. Numbers and color groups indicate EPA regions. (Map graphic by the EPA OIG based on information in agency databases, RCRAInfo and Facility Registry Service)

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At a Glance

Why We Did This Review

We evaluated whether the U.S. Environmental Protection Agency (EPA) and authorized states have safeguards to control long-term risks of hazardous waste disposal beyond the 30-year post-closure care period.

The EPA regulates hazardous waste disposal under the Resource Conservation and Recovery Act (RCRA). Regulations require that owners maintain and monitor closed disposal units for a period that lasts 30 years. This is called the post-closure care period. The EPA authorized 48 states to implement the RCRA hazardous waste program within their state. Leaks from disposed waste could contaminate ground water, resulting in loss of water supply, high cleanup costs and potential health problems. Over 1,500 units are closed with waste in place across the nation.

This report addresses the following EPA goal or cross-agency strategy:

- *Cleaning up communities and advancing sustainable development.*

Send all inquiries to our public affairs office at (202) 566-2391 or visit www.epa.gov/oig.

The full report is at: www.epa.gov/oig/reports/2015/20150617-15-P-0169.pdf

Some Safeguards in Place for Long-Term Care of Disposed Hazardous Waste, But Challenges Remain

What We Found

Long-term risks at closed RCRA hazardous waste disposal units with waste left in place are partly addressed by legal and operational safeguards. For example, RCRA regulations require that the implementing authority—which in most cases is a state environmental director—make a site-specific determination on whether unacceptable risks remain at the end of the planned post-closure care period. In addition, RCRA provides a safeguard through corrective action and other enforcement authorities that the EPA and authorized states can use to address cleanup needs at facilities undergoing post-closure care.

States have exercised their authority, extending post-closure care and associated financial assurance when unacceptable risks remain. One state also ended post-closure care and established other long-term care arrangements under an environmental covenant. If long-term problems arise after post-closure care, the implementing authority may be able to address these problems using its RCRA enforcement authority.

The challenges to effective long-term care that remain include:

- The EPA has not finalized its guidance on criteria for determining whether human health and the environment will be protected if post-closure care ends. The EPA missed its commitment to issue the guidance in 2013. States have made decisions on adjusting the care period without benefit of national guidance on criteria that should be considered.
- Eighteen states do not have environmental covenant statutes that strengthen controls for long-term protection of land use.
- The EPA and state hazardous waste programs will have an increased workload as more units reach the end of their expected 30-year post-closure care periods.

Safe disposal of hazardous waste requires commitment to long-term care of closed disposal units.

For more information on hazardous waste disposal units and cleanups near you, visit the EPA's *Cleanups in My Community* website at <http://www2.epa.gov/cleanups/cleanups-my-community>.

Recommendations and Planned Agency Corrective Actions

We recommend that the EPA finalize the guidance on adjusting the post-closure care period, and provide information on the benefits of implementing controls afforded through environmental covenant statutes. The EPA agreed with all recommendations and provided acceptable corrective actions and completion dates.



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

THE INSPECTOR GENERAL

June 17, 2015

MEMORANDUM

SUBJECT: Some Safeguards in Place for Long-Term Care of Disposed Hazardous Waste,
But Challenges Remain
Report No. 15-P-0169

FROM: Arthur A. Elkins Jr.

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

TO: Mathy Stanislaus, Assistant Administrator
Office of Solid Waste and Emergency Response

Cynthia Giles, Assistant Administrator
Office of Enforcement and Compliance Assurance

Shawn Garvin, Regional Administrator
Region 3

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

The responsible offices include the Office of Resource Conservation and Recovery within the Office of Solid Waste and Emergency Response, the Office of Civil Enforcement and the Office of Site Remediation Enforcement within the Office of Enforcement and Compliance Assurance, and the Land and Chemicals Division within Region 3.

You are not required to provide a written response to this final report because you provided agreed-to corrective actions and planned completion dates for the report recommendations. The OIG may make periodic inquiries on your progress in implementing these corrective actions. Please update the EPA's Management Audit Tracking System as you complete planned corrective actions. Should you choose to provide a final response, we will post your response 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 along with corresponding justification.

We will post this report to our website at <http://www.epa.gov/oig>.

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Purpose

The U.S. Environmental Protection Agency (EPA) Office of Inspector General (OIG) evaluated whether the EPA and authorized states have safeguards to control public health, environmental and fiscal risks at Resource Conservation and Recovery Act¹ (RCRA) hazardous waste disposal units, closed with waste in place beyond the 30-year post-closure care period. For EPA headquarters, EPA Region 3 and states within Region 3, we addressed the following questions:

- Do public health, environmental and fiscal risks remain at the end of the post-closure care period at these disposal units?
- Do authorities have controls in place to mitigate risks remaining at the end of the post-closure care period?
- Has the EPA taken steps needed to ensure that authorities address risks appropriately as disposal units approach the end of post-closure care?

Background

The EPA regulates management and disposal of hazardous waste² using authority granted by RCRA. The EPA defines hazardous waste as waste that is dangerous or potentially harmful to human health or the environment. Discarded commercial products and by-products of manufacturing processes can be hazardous waste. Examples include pesticides, cleaning fluids, sludges from electroplating operations, and emission control dust from steel production. RCRA requires owners of hazardous waste disposal units to meet certain standards to prevent and detect releases to the environment. These units include hazardous waste landfills and surface impoundments. After a unit stops accepting waste, regulations require the owner to undertake closure operations that include covering the waste if it is to remain in place. Over 1,500 units are “closed with waste in place” across the nation (see map on cover).

Cleaning Up Communities

The EPA works to protect human health and the environment from risks posed by hazardous waste disposal under its strategic goal *Cleaning up communities and advancing sustainable development*.

RCRA regulations require that the owner maintain and monitor the disposal unit for a period that extends 30 years after closure operations have been completed and verified. This is called the post-closure care period. Owners must provide proof that they have sufficient funds to pay for this required care. This is called financial assurance. Insurance, letter of credit, trust fund, and surety bond are examples of financial assurance mechanisms. Regulations also require financial assurance for corrective action if problems with the disposal unit arise during post-closure care. Financial assurance mitigates financial risk posed by the waste in these disposal units during post-closure care.

¹ 42 U.S.C. 6901, et. seq.

² 40 C.F.R. Parts 264 and 265.



The EPA authorized 48 states to implement its RCRA hazardous waste program. The EPA retains oversight responsibility and enforcement authority for these state-implemented programs. The EPA implements the program in Iowa and Alaska.

RCRA regulations provide for the implementing authority, which in most cases is a state environmental director, to extend the post-closure care period for disposal units closed with waste in place if “the extended period is necessary to protect human health and the environment.” These regulations also include provisions allowing the 30-year period to be shortened if a reduced period is sufficient to protect human health and the environment.

The EPA and authorized states regulate post-closure care through RCRA permits and other types of enforceable documents. After completion of the established post-closure care period, the owner and a qualified professional engineer are required to certify to the implementing authority that post-closure care activities were performed in accordance with the approved post-closure plan.

RCRA regulations also require the

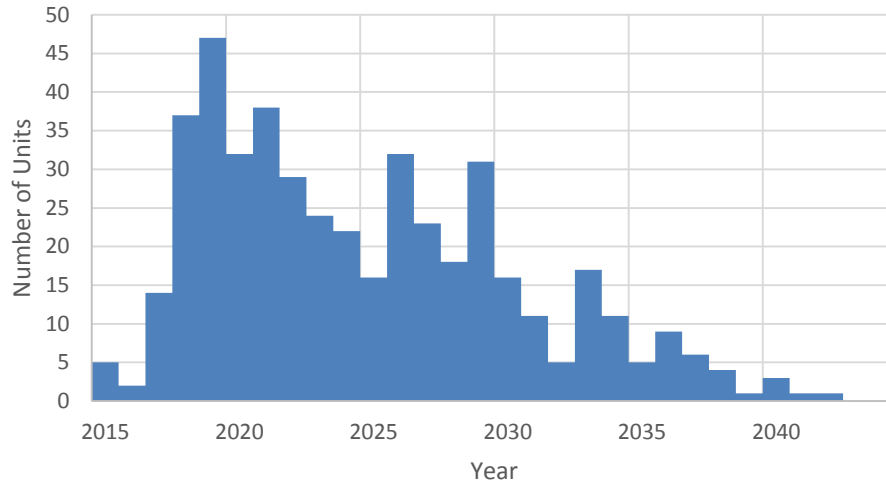
owner to provide data sufficient for the implementing authority to make an informed decision on whether the post-closure care period should be extended to protect human health and the environment.

RCRA regulations for post-closure care of hazardous waste disposal units were established 33 years ago. Thus, the first units that entered post-closure care have reached or are approaching the end of the 30-year post-closure care period (Figure 1). The implementing authority will need to make a site-specific decision to extend post-closure care or allow RCRA post-closure care to end for each unit.

Health Risks From Hazardous Waste Disposal

Over 1,500 hazardous waste disposal units across the nation are closed with waste in place (see map on cover). Waste includes such substances as trichloroethylene, also known as TCE, a widely used industrial chemical and a known human carcinogen. Another example is lead. Exposure to lead is known to cause learning disabilities in children; nerve, kidney, and liver problems; and pregnancy risks. Concentrations in drinking water of these and other substances are regulated by federal and state laws. Preventing contaminants from reaching the ground water is the best way to reduce the health risks associated with poor drinking water quality. Once hazardous chemicals are placed in disposal units, they can leak into the ground water, if they are not sufficiently stabilized and if the covers and liners do not function as intended over the long term.

Figure 1. Estimated number of units for which end of permitted post-closure care decisions will need to be made annually; 54 percent of these decisions would fall in the next 10 years.

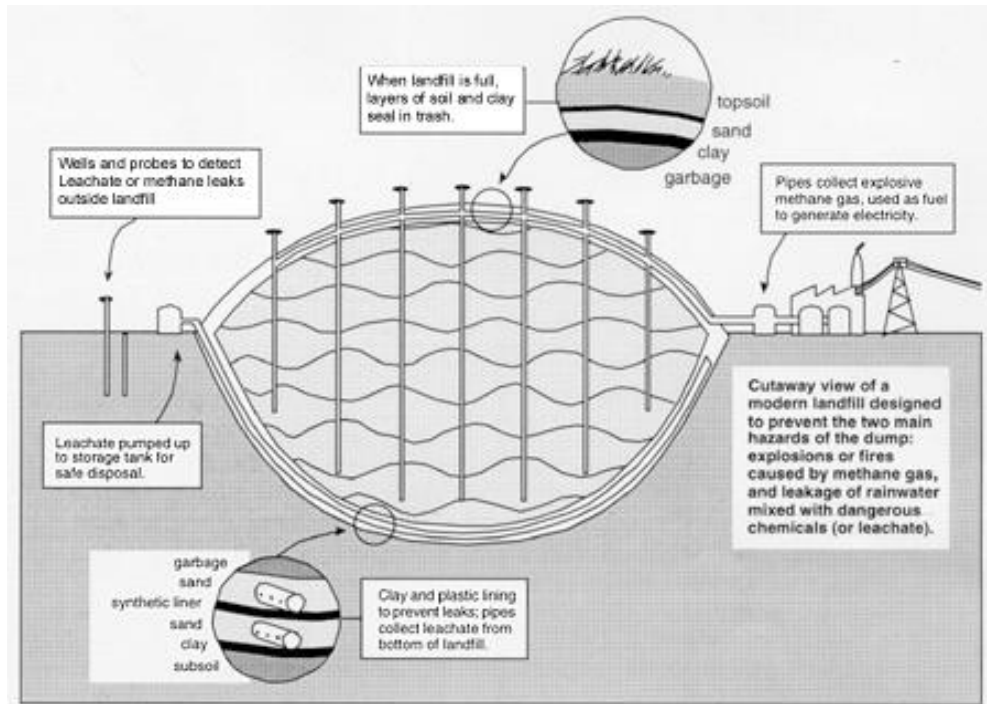


Source: OIG analysis of data from the RCRA Information database (RCRAInfo).

Note: Information presented is limited to units for which closure verification and post-closure care permit issuance were recorded in RCRAInfo.

RCRA regulations require that the disposal unit owner place a notation on the property deed that restricts future land use where wastes are left. This is an informational form of an institutional control. However, notices contained in deeds to be filed in the local land records by themselves generally are not designed to serve as enforceable restrictions on the future use of the property. An environmental covenant provides a mechanism for a state to perpetually restrict future land use. An environmental covenant also can require an owner to continue monitoring, maintaining and reporting on a unit beyond the RCRA post-closure care period. In 2003, the Uniform Law Commission³ approved a Uniform Environmental Covenant Act (UECA). The UECA, if enacted by a state, protects valid environmental covenants from being inadvertently extinguished by application of various common law doctrines, foreclosures and zoning changes. It also ensures that institutional controls are maintained and enforced and helps fulfill the dual purposes of such restrictions—the protection of human health and the economically viable reuse of the property. Under UECA, as part of work performed to close a hazardous waste disposal unit, the state and owner can agree to a covenant that is recorded on the land records and is legally and practically enforceable. According to the commission, 25 states and territories had adopted UECA as of August 2014. Another 10 states have adopted laws similar to UECA.

³ The Uniform Law Commission provides states with model acts in areas of the law where uniformity would add value to states. The commission is comprised of state commissioners and was established in 1892. For more information, see <http://www.uniformlaws.org>.



EPA graphic of an engineered waste disposal unit.

In 2010, at the annual meeting of the Association of State and Territorial Hazardous Waste Management Officials (ASTSWMO), state waste managers expressed concerns regarding ending post-closure care. In 2012, ASTSWMO issued a position paper stating that many states were grappling with how to address units approaching the end of the initial 30-year post-closure care period. Among other concerns, states had questions on what specific criteria should be used to make a determination that post-closure care should be extended or ended at the end of the initial 30-year period. ASTSWMO recommended that the EPA issue guidance on post-closure regulations and that this guidance address states' concerns.

Responsible Offices

The EPA offices having primary responsibility for the hazardous waste program and enforcement within the program are the Office of Resource Conservation and Recovery within the Office of Solid Waste and Emergency Response (OSWER) and the Office of Civil Enforcement and the Office of Site Remediation Enforcement within the Office of Enforcement and Compliance Assurance (OECA). RCRA grants the EPA Regional Administrators authority to issue hazardous waste permits and delegate their authority to the states.

Scope and Methodology

We performed our work from April 2014 to March 2015. 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 audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We interviewed personnel from the following offices and organizations on issues relevant to post-closure care:

- OSWER staff, including managers in the Office of Resource Conservation and Recovery.
- OECA staff, including managers in the Office of Civil Enforcement and Office of Site Remediation Enforcement.
- Hazardous waste disposal permitting, corrective action and enforcement staff and managers in EPA Region 3.
- Permitting staff at the Maryland Department of the Environment.
- Hazardous waste managers from four states in attendance at the 2014 Mid-Year Meeting of ASTSWMO, which focused on transitioning to long-term management.
- Counsel to the RCRA Corrective Action Project, an industry group that advocates for cleanup standards and procedures that achieve environmental benefits in a risk-based and cost-effective manner.
- Managers and staff at Waste Management Inc., which owns hazardous waste units, including two we discussed in depth—a closed unit in Virginia and an operating facility with multiple units in New York.

We reviewed reports and other documents related to end of post-closure care for hazardous waste disposal units closed with waste in place. Documents included:

- Relevant sections of RCRA; the Comprehensive Environmental Response, Compensation and Liability Act; and related regulations.
- The EPA's program and guidance documents, including documents on financial assurance and institutional controls; draft guidance on evaluating and adjusting the post-closure care period; and National Program Manager Guidance.
- The EPA's hazardous waste and financial assurance websites.
- ASTSWMO's 2012 position paper, *Post-Closure Care: Beyond 30 Years at RCRA Subtitle C Facilities*, and related presentations and reports.
- State policy and documents on ending post-closure care.
- Site-specific information on disposal units.

We examined permitting, corrective action and financial assurance information taken from the Resource Conservation and Recovery Act Information database (RCRAInfo) and provided by staff at EPA headquarters, EPA Region 3, and the Maryland Department of the Environment. Although we did not assess the overall reliability or validity of RCRAInfo data, we found some inconsistencies and incomplete data. Since April 2013, OSWER, regions and states addressed some, but not all, data quality problems in RCRAInfo. However, we believe that the available data are of sufficient quality to address our evaluation objectives.

The scope of our evaluation was limited to the EPA's actions at headquarters and EPA Region 3. We selected EPA Region 3 because of its proximity to EPA OIG evaluation staff, which minimized travel costs, and because the region had a moderate number of hazardous waste units compared to other regions. All states within EPA Region 3 are authorized to implement the RCRA hazardous waste program. The region provided us information on hazardous waste programs in all of its states.

We selected Maryland for further evaluation within EPA Region 3 because the state had a moderate number of units compared to the other states in the region and because Maryland's key hazardous waste manager provided input into drafting post-closure care guidance. This manager also served as the chairperson of ASTSWMO's Corrective Action and Permitting Task Force.

Some Safeguards in Place

Some legal and operational safeguards are in place for long-term care of closed RCRA hazardous waste disposal units with waste left in place, but challenges remain. Using authority granted by RCRA, states have extended post-closure care and associated financial assurance in cases where the states have identified that unacceptable risks continue. One state ended post-closure care at a site and established other long-term care arrangements under an environmental covenant, where unacceptable risks did not remain. RCRA provides an additional safeguard by making all units closed with waste in place subject to corrective action and other enforcement authorities while in post-closure care. The EPA and authorized states may be able to address long-term care problems, when they arise, under RCRA enforcement authority.

"[P]rotective management under long-term stewardship is necessary to ensure that communities and the environment are not exposed to hazards through leaks or other releases from waste management units."

EPA, 2014, RCRA's Critical Mission & the Path Forward

RCRA Provides Safeguards on the End of Post-Closure Care

RCRA requires the implementing authority, which is the state environmental director in all but two states, to make a site-specific determination on human

health and environmental risks from units in post-closure care. If unacceptable risks remain for a specific unit, post-closure care and its associated financial assurance are extended.

RCRA regulation grants the implementing authority—the delegated state or the EPA in the case of two states—permission to extend the post-closure care period. An extension is granted if “the extended period is necessary to protect human health and the environment.” If the implementing authority determines that there is no unacceptable risk to human health and the environment, there is no need for additional post-closure care. States are using this authority granted by RCRA, as shown in the following site-specific determinations:



Aerial view of a closed hazardous waste disposal unit in Bedford, Virginia. An environmental covenant specifies the long-term care requirements. (EPA graphic)

- In 2012, Maryland evaluated information on a disposal unit approaching the end of its 30-year post-closure care period. Maryland identified continuing risk and, using its authority under RCRA, required the owner to renew its post-closure care permit for another 10 years. Further, Maryland required the owner to maintain financial assurance to cover this extended care. The amount of financial assurance is to remain great enough to cover 10 years of care throughout the extended permit period.
- In 2013, Virginia terminated post-closure care on a disposal unit prior to the end of the 30-year post-closure care period. Virginia determined that the unit was protective of human health and the environment and modified the permit to reduce the post-closure care period to time served. Using authority from its environmental covenants statute, Virginia required the owner to annually certify the completion of monitoring, maintenance and security obligations. Virginia did not require the owner to maintain financial assurance to cover these obligations.

In both of these cases, we determined that the state used its authority, granted by RCRA, to obtain from the unit owner the information needed to make an informed decision to adjust the length of care based on whether unacceptable risks remained. The state then used tools available to provide safeguards for long-term care, in one case requiring continuation of permitted post-closure care, and in the other requiring an environmental covenant.

RCRA provides additional mechanisms for ensuring that units do not pose unacceptable risks. Corrective action is a statutory tool that expands the regulatory options available to the EPA and authorized states to address cleanup needs at facilities undergoing post-closure care. It ensures protection of human

health and the environment by requiring owners to investigate and clean up hazardous releases to soil, ground water, surface water and air. After the implementing authority releases a unit owner from post-closure care obligations, other RCRA enforcement authorities may be used to address long-term care problems when they arise. RCRA authorizes the EPA to order monitoring, testing, analysis and reporting of information for facilities that may present a substantial hazard to human health and the environment. RCRA also authorizes the EPA to order cleanup when conditions may present an imminent and substantial endangerment to human health and the environment.

States Use Their Authority to Mitigate Risks

Authorized states are using their authority to mitigate risks from units closed with waste in place by using RCRA permitting and other mechanisms to ensure that appropriate long-term care continues after the initial post-closure care period. Some states are providing a legal framework for these decisions by adopting an environmental covenant statute that allows for perpetual restriction of future land use.

RCRA regulations require that the implementing authority make a site-specific determination as to whether unacceptable risks remain. State actions to date show that some units will require post-closure care longer than 30 years. Authorized states have adhered to the intent of RCRA by extending post-closure care if risks remain and establishing safeguards when RCRA post-closure care ends. We found that states used a variety of approaches. For example:

- The Colorado Department of Public Health and the Environment issued a policy for ending post-closure care that includes a performance-based evaluation of relevant unit design and environmental factors. The evaluation is of each individual unit.
- The California Environmental Protection Agency reviewed the post-closure care period every 10 years at permit renewal and rolled over the financial assurance requirement for post-closure care to 30 years.
- The New York Department of Environmental Conservation required perpetual care of hazardous waste disposal units not meeting current RCRA standards for waste stabilization and engineering controls.
- The Maryland Department of the Environment required a new permit for post-closure care that extended care beyond 30 years after determining unacceptable risks remained.
- The Virginia Department of Environmental Quality required continued maintenance and institutional controls under an environmental covenant when determining a unit was stable enough to end post-closure care.

EPA Takes Steps to Support State Decisions

The EPA is taking steps to support states as they make decisions on adjusting the post-closure care period. OSWER drafted guidance that includes criteria to use

when making these decisions. We observed that EPA Region 3 provided additional safeguards during the post-closure care period through its joint implementation of the RCRA permitting and corrective action authorities. Corrective action taken during the post-closure care period would seek to manage risk to human health and the environment in the future.

The permitting branch of OSWER drafted guidance that sets forth a recommended process for preparing for and evaluating risks remaining at the end of the post-closure care period, and adjusting the period as needed. In 2010, state hazardous waste managers discussed their concerns regarding the risks of ending post-closure care at ASTSWMO's annual meeting. ASTSWMO surveyed states in 2011 on issues related to ending post-closure care and released a position paper in 2012. ASTSWMO reported that many states were grappling with how to make the determination to adjust the post-closure care period and recommended that the EPA issue guidance. OSWER issued its draft guidance and initiated its plan for gathering comments from states and interested stakeholders on April 30, 2015. In its response to our draft report, OSWER committed to finalizing the guidance by the end of 2015.

EPA Region 3 coordinates its post-closure care and corrective action activities. This provides an additional safeguard during the post-closure care period. For example, the region conducted additional inspections of all units in post-closure care as part of its effort to inspect all facilities subject to corrective action to ensure protection of human health and the environment. The region also started a Long-Term Stewardship Pilot in 2013 with the goal of assessing the long-term effectiveness of completed corrective action remedies with engineering and institutional controls in place. In this pilot, the region is conducting field inspections and record reviews to ensure that controls are maintained and operated in the manner intended, and the local community remains aware of the remedy in place. The pilot includes disposal units closed with waste in place that were addressed under corrective action. Our review of documents and interviews with staff shows that the region works well with its state partners to implement and oversee these programs. The region and the states have review and coordination processes in place to help ensure regulators will be aware if problems arise where post-closure care ends. For example, the region continues oversight of the unit where Virginia, in 2013, terminated the post-closure care permit and replaced it with a long-term care environmental covenant that requires monitoring and reporting.

Challenges to Long-Term Care

Although some legal and operational safeguards are in place or under development, we identified remaining challenges to the protection of human health and the environment through appropriate long-term care of hazardous waste disposal units closed with waste in place. RCRA regulations do not require periodic reviews once post-closure care ends. The EPA has not completed

guidance on criteria to use when determining whether the post-closure care period should be adjusted. Not all states have passed environmental covenant statutes needed to provide strong controls on future land use. Further, the EPA and state hazardous waste programs face an increased workload as more units reach the end of their expected 30-year post-closure periods. The challenges create risks to long-term protection of human health and the environment from the hazardous waste left in these units.

RCRA Does Not Require Reviews After Post-Closure Care Ends

Once the implementing authority allows post-closure care to end, RCRA regulations do not require periodic reviews of the conditions at the disposal unit. This drawback of RCRA is in contrast to the review process for certain Superfund sites that requires regions to evaluate every 5 years that the remedy remains protective of human health and the environment.

Guidance on Adjusting the Post-Closure Care Period Delayed

The EPA has delayed issuing guidance on evaluating and adjusting the post-closure care period. In the absence of EPA guidance, states made decisions on adjusting post-closure care without the benefit of national guidance on the criteria they should consider in making these decisions. A 2011 survey of state hazardous waste managers showed many saw a need for such guidance. The EPA reported in its June 2013 OSWER National Program Managers Guidance that it would finalize its guidance on evaluating and adjusting the post-closure care period by the end of fiscal year 2013. Experienced personnel retired and the EPA did not meet this commitment. The EPA informed us in November 2014 that completion of the draft continued to be delayed partly due to competing priorities within the agency for some of the key reviewers. The EPA issued the draft guidance for comment on April 30, 2015, and committed to finalizing the guidance by the end of 2015.

We reviewed April 2014 and December 2014 working drafts of the guidance. The latter draft included a clear statement on the regulatory requirement for financial assurance if the post-closure care period is extended. However, it provided little guidance on how states would implement this requirement. In response to a 2011 ASTSWMO survey, states identified continuation of financial assurance as one of the benefits of extending post-closure care rather than relying on other long-term care mechanisms. That anticipated benefit can be realized only if the financial assurance requirement is effectively implemented. In 2012, ASTSWMO expressed concern regarding financial assurance for extended post-closure care. We also heard state concerns in our interviews. The EPA told us that it does not anticipate developing guidance on financial assurance for extended post-closure care and that it has sufficient tools to provide timely support to regions and states in addressing financial assurance issues that do arise. However, the EPA said it will continue to monitor the needs of the states and the EPA in this area.

Some States Lack Environmental Covenant Statutes

According to the Uniform Law Commission, 18 states and territories have not adopted the UECA or a similar environmental covenant statute. Recorded notices in property records by themselves generally do not provide enforceable restrictions and can be overridden by common law doctrines or other real estate statutes.

Environmental covenants can strengthen institutional controls, such as deed restrictions, by allowing perpetual controls. If institutional controls are not maintained in the long-term, the land potentially could be used in a manner that is not compatible with the hazardous waste left in place. Homes and schools could be built on or near the unit and unacceptable exposures to hazardous waste could occur.

Sufficient Staff Are Needed to Meet Future Workload

The EPA and states face an increased workload as more hazardous waste units reach the end of their expected 30-year post-closure care periods. We estimated that in the next 10 years, 54 percent of the units in permitted post-closure care will reach the end of the period (Figure 1). This situation will result in an increase in work for an authorized state as it decides if units are safe enough to move out from under the oversight and monitoring provided by RCRA post-closure care. In addition, the EPA will need to provide proper oversight of this large number of state decisions to end or adjust post-closure care.

The EPA Region 3 office that oversees state hazardous waste programs lost two-thirds of its staff in fiscal years 2013 and 2014 through retirement and reassignment. Since October 2014, the office hired staff to replace half of those losses and restructured the way it conducts its permit and state hazardous waste program reviews. The office chief told us in January 2015 that, while he has fewer employees than 2 years ago, he believes he has sufficient staff to manage the permit workload. However, effective oversight and support are needed in areas outside permitting. For example, the region pointed out to us in December 2014 the importance of the RCRA compliance and enforcement programs in informing the end of post-closure decisions.

Regarding state staffing, some Region 3 states had staff shortages in their hazardous waste programs in fiscal year 2013. The region informed Delaware, Maryland and Pennsylvania that it was concerned that state annual grant commitments were not fulfilled timely or at all. The region's review letters sent to the states cited unfilled vacancies in one state, reduced staff levels in another, and staff and management changes in the third. A state's ability to provide sufficient qualified staff is a key element of the EPA authorizing it to implement a hazardous waste program.

"[I]t is critical that states and EPA maintain sufficient expertise and resources to process permits in a timely manner..."

EPA, 2014, RCRA's Critical Mission & the Path Forward

Conclusions

The regulating authorities need timely guidance and mechanisms, such as environmental covenants, to support good decisions on long-term care of disposal units closed with hazardous waste left in place. Authorities also need sufficient staff to address the volume of projected future work regarding long-term care decisions, including the decision to end post-closure care. A potential consequence of poor decision-making is that taxpayers will have to pay for long-term care or cleanup of units under either state or federal authorities if the owner is not able to address problems as they arise. Further, risks to human health and the environment could increase if hazardous waste leaks from the disposal unit over the long term. For example, contamination of ground water from a unit could result in loss of water supply, high cleanup costs and health problems.

Risks from Hazardous Waste Disposal

The EPA and states need to make decisions about long-term care of these units ending post-closure care. Consequences of poor decisions to end post-closure care are that risks potentially increase if hazardous waste leaks from units over the long term. Human health and the environment could be threatened. Taxpayers could have to pay for long-term care or cleanup.

Recommendations

We recommend that the Assistant Administrator for Solid Waste and Emergency Response:

1. Finalize and issue guidance on evaluating and adjusting the post-closure care period for RCRA hazardous waste disposal units closed with waste in place.

We also recommend that the Assistant Administrator for Solid Waste and Emergency Response and the Assistant Administrator for Enforcement and Compliance Assurance:

2. Identify states and territories that lack the UECA or a similar environmental covenant statute, and conduct outreach to the environmental protection programs in these states and territories to provide information on environmental covenants, including the benefits of implementing the controls afforded through UECA and similar statutes.

We further recommend that the Regional Administrator, EPA Region 3:

3. Determine whether Region 3 states have sufficient workforces to manage projected increases in workload associated with decisions to adjust RCRA post-closure care and related activities and take appropriate action.

Summary of Agency Response to Draft Report and OIG Evaluation

We received comments on the draft report on April 20, 2015. We met with OSWER and OECA to discuss their comments on May 4, 2015. On May 12, 2015, we received additional information from the agency.

The agency agreed with Recommendation 1 and took steps to resolve delays. The agency agreed to finalize the guidance by the end of 2015. Recommendation 1 is resolved and open with agreed-to actions pending.

The agency agreed with Recommendation 2, as modified based on the May 4, 2015, meeting. By the end of 2015, the agency agreed to (a) identify states and territories that lack the UECA or a similar environmental covenant statute, and (b) conduct outreach to states and territories. Recommendation 2 is resolved and open with agreed-to actions pending.

The agency agreed with Recommendation 3. The agency demonstrated that Region 3 determined that its states currently are staffed at appropriate levels to manage post-closure care determinations. The region stated it will “continue to place an emphasis on assessing state capacity necessary to implement effective [RCRA] programs.” The region credited this emphasis for successfully “bringing about needed staffing investments in areas identified as weaknesses in state programs.” The agency included the region’s analysis in its response to the draft report. Recommendation 3 is closed with all agreed-to actions completed.

Appendix A contains the agency’s response and our comments. The agency also provided technical comments (attachment 2 of the agency's response). We reviewed those comments and made revisions to the report where appropriate.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in \$000s)	
Rec. No.	Page No.	Subject	Status ¹	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
1	12	Finalize and issue guidance on evaluating and adjusting the post-closure care period for RCRA hazardous waste disposal units closed with waste in place.	O	Assistant Administrator for Solid Waste and Emergency Response	12/31/15		
2	12	Identify states and territories that lack the UECA or a similar environmental covenant statute, and conduct outreach to the environmental protection programs in these states and territories to provide information on environmental covenants, including the benefits of implementing the controls afforded through UECA and similar statutes.	O	Assistant Administrator for Solid Waste and Emergency Response and Assistant Administrator for Enforcement and Compliance Assurance	12/31/15		
3	12	Determine whether Region 3 states have sufficient workforces to manage projected increases in workload associated with decisions to adjust RCRA post-closure care and related activities and take appropriate action.	C	Regional Administrator, EPA Region 3	4/20/15		

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

Agency Response to Draft Report and OIG Evaluation

April 20, 2015

MEMORANDUM

SUBJECT: Response to Office of Inspector General Draft Report No. OPE-FY14-0034
“Some Safeguards in Place for Long-Term Care of Disposed Hazardous Waste,
But Challenges Remain,” dated March 20, 2015

FROM: Mathy Stanislaus
Assistant Administrator

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

Thank you for the opportunity to respond to the issues and recommendations in the subject audit draft report. Following is a summary of the Agency’s overall position, along with its position on each of the draft report recommendations. EPA’s Office of Enforcement and Compliance Assurance (OECA) and Region 3 have contributed to and concurred with this response. For those report recommendations with which the Agency agrees, we have provided high-level intended corrective actions and estimated completion dates to the extent we can. For those report recommendations that we do not think are appropriate or supported, we have explained our position, and proposed alternatives to your recommendations. For your consideration, we have included a Technical Comments Attachment to supplement this response.

AGENCY’S OVERALL POSITION

EPA agrees that it is important to safeguard the long-term protectiveness of human health and the environment from any remaining risks posed by land disposal units after they have closed. According to the RCRA regulations (40 CFR §§ 264.117 and 265.117), the post-closure care period is identified as being 30 years and begins after completion of closure of the hazardous waste management unit. The regulations’ identification of a 30-year post-closure care period does not reflect a determination by EPA that 30 years of post-closure care will necessarily be sufficient to eliminate potential threats to human health and the environment in every instance. The ultimate decision about the appropriate length of the post-closure care period to ensure long-term protectiveness needs to be made on a unit-specific basis, which is why the regulations also provide authority for a case-by-case review of the post-closure care period and establish arrangements to adjust its length.

The EPA is currently developing guidance that will outline criteria to assist states and EPA in determining whether to extend post-closure care based on the most currently available unit-specific information. The guidance will lend greater transparency and efficiency to the decision-making process. Although we have encountered delays in the development of the guidance, we have taken steps to resolve those delays and now have a path forward to issue draft guidance for public review and comment by mid-2015. We expect to finalize the guidance by the end of 2015.

Additionally, we recognize that financial assurance is a challenging area with respect to post-closure care, particularly in regards to costing out post-closure activities when the care period extends beyond 30 years. The regulations at 40 CFR parts 264 and 265 subpart H require owners and operators to maintain financial assurance during the post-closure care period. If the regulator decides to extend the post-closure care period, the owner or operator must amend the post-closure plan and the related cost estimates for the work entailed by the plan, and continue to demonstrate the necessary financial assurance.

EPA currently provides Regions and states support on financial assurance issues through several avenues. EPA hosts a monthly financial assurance conference call with Regions and states that provides a forum for regulators to discuss issues, including exploring financial assurance during post-closure care. In addition to the monthly conference call, the Agency provides access to contractor resources to assist in reviewing financial assurance documentation. The Agency also provides tools for cost estimation and an online resource called the Financial Responsibility Enforcement Tool (FRET) that provides a one-stop shop for state and EPA regulators to access financial assurance resources. Given these currently available tools, EPA believes that we are providing sufficient guidance for financial assurance related to post-closure; however, we will continue to monitor the needs of the states and EPA in this area.

To address some of the challenges of assuring the long-term protectiveness of institutional controls, the EPA supported the development of the Uniform Environmental Covenant Act (UECA) by the National Conference of Commissioners on Uniform State Laws (NCCUSL). NCCUSL developed UECA with the involvement of the key stakeholders (e.g., real estate, construction, natural gas, environmental groups). As a result, the model law balanced key interests. In addition, NCCUSL worked with state legislatures to adopt this act. By adopting this model law, states are adopting legislation that is widely supported by a variety of groups. EPA has done significant outreach to encourage state legislatures to adopt UECA and to educate regulators on the benefits of implementing the controls afforded through the law. These efforts more than likely contributed to the 35 states adopting UECA or similar statutes. However, EPA's primary concern with the draft report is language recommending that the Agency offer incentives to state legislatures to adopt the UECA. We are not able to offer incentives to state legislatures to adopt UECA or similar statutes and so request deleting this language from the recommendation (as reflected in Attachment 1). EPA has provided initial guidance on the implementation of institutional controls and UECA as part of RCRA corrective action and post-closure decisions in the 2007 memorandum "Ensuring Effective and Reliable Institutional Controls at RCRA Facilities."

OIG Response 1: The agency misinterpreted our draft recommendation to offer incentives to state environmental agencies around the issue of environmental covenants. We understand that the agency cannot offer incentives to state legislatures. We accepted the change in the recommendation offered by the agency.

On May 4, 2015, we discussed with OSWER and OECA officials and staff further changes to Recommendation 2. On May 12, 2015, OSWER and OECA officials confirmed that the agency agreed to Recommendation 2 as proposed in the May 4, 2015, meeting. By the end of 2015, the agency agreed to:

- a) Identify states and territories that lack the UECA or a similar environmental covenant statute.
- b) Conduct outreach to states and territories by:
 - i. Providing the list to ASTSWMO and engaging ASTSWMO on issues around adoption and use of UECA and similar environmental covenant statutes.
 - ii. Developing environmental covenant success stories.
 - iii. Presenting the success stories and benefits implementing the controls afforded through UECA and similar statutes at ASTSWMO's annual meeting and appropriate subcommittee meetings and through ongoing monthly conference calls conducted by OSWER's Office of Resource Conservation and Recovery with state environmental protection programs.

Recommendation 2 is resolved and open with agreed-to actions pending.

The Agency also would like to clarify that UECA is not the only mechanism to provide long-term controls beyond those provided by the RCRA post-closure regulations. States who have not adopted UECA might have equivalent state environmental covenant laws or other real property laws on easements and covenants that might provide protection. Given the existence of these mechanisms, the OIG's estimate may not accurately represent the number of states or territories that have UECA, UECA-equivalent laws, or protective real property laws. In 2012, OSWER also issued guidance entitled "Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites" to provide managers of contaminated sites, site attorneys, and other interested parties with information and recommendations for planning, implementing, maintaining, and enforcing institutional controls. It highlights some of the common issues that may be encountered and provides an overview of EPA's policy regarding the roles and responsibilities of the parties involved in the various life-cycle stages.

OIG Response 2: We agree that an environmental covenant is not the only mechanism to provide long-term controls beyond those provided by RCRA post-closure care regulations. We revised the report where appropriate.

Regarding the issue of authority to address problems that may arise once the post-closure period is terminated, the Agency would like to point out that a number of statements in the report seem to overstate the available RCRA authorities. We have provided technical comments to help clarify the more limited nature of authorities, in particular once the facility permit is terminated. For this reason, it is important that a decision to terminate a permit be well-considered.

OIG Response 3: We considered all technical comments the agency provided and made revisions as appropriate.

EPA agrees that with many units in post-closure care approaching the end of the initial 30-year post-closure care period there is potential for an increased workload on state and EPA regulators. The Agency believes that the post-closure guidance, mentioned above, will help reduce this workload by creating efficiencies in making unit-specific determinations regarding the length of the post-closure care period. Although more determinations may be needed, the guidance will enable the determinations to be made more easily, which will help counterbalance the increased workload.

OIG Response 4: We acknowledge the agency's position that the guidance will help reduce the workload associated with deciding to shorten, extend or end post-closure care. However, we believe that the accuracy of the agency's position is yet to be determined.

The draft report recommends EPA Region III determine that the states have sufficient resources to manage the projected workload associated with RCRA facilities whose 30-year post closure care periods are expiring in the coming ten or more years, and that the Region take appropriate action if it is determined that the resources are not sufficient. Region III has already conducted reviews of state capacity in this area and has taken action. This action has resulted in states investing more resources in the RCRA permitting program, putting them in position to address not only the post-closure care workload, but also other RCRA permitting responsibilities. Detailed information about EPA Region III's review is presented in Attachment 3.

EPA Region III believes that its states, and the Region, are currently staffed to appropriate levels to manage post-closure care determination workloads for the foreseeable future. The Region will continue to place an emphasis on assessing state capacity necessary to implement effective RCRA programs and has been successful in bringing about needed staffing investments in areas identified as weaknesses in state programs. EPA Region III and the Mid-Atlantic states have forged strong partnerships in the RCRA programs and will use the excellent working relationships to continue to plan for and jointly address program implementation challenges.

OIG Response 5: We acknowledge that Region 3 completed corrective action that meets the intent of Recommendation 3. The status of this recommendation is closed with all agreed-to action completed.

CONTACT INFORMATION

If you have any questions regarding this response, please contact Kecia Thornton, OSWER point of contact on (202) 566-1913, or Gwendolyn Spriggs, OECA point of contact on (202) 564-2439.

Attachments:

1. Chart of Agency's Response to Report Recommendations
2. Technical Comments
3. Region III Supplemental Information Regarding Reviews of State Capacity to Address Post-Closure Care Determinations

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

Shawn Garvin, Regional Administrator
Region 3

Barnes Johnson, Director
Office of Resource Conservation and Recovery

ATTACHMENT 1: AGENCY'S RESPONSE TO REPORT RECOMMENDATIONS

Agreements

No.	Recommendation	Action Official	High-Level Intended Corrective Action(s)	Estimated Completion by Quarter and FY
1	Finalize and issue guidance on evaluating and adjusting post-closure care period for RCRA hazardous waste disposal units closed with waste in place.	Assistant Administrator for Solid Waste and Emergency Response	Issue Draft guidance for review and comment. Issue Final Guidance.	3 rd Quarter FY 2015 1 st Quarter FY 2016
2	Identify and offer information on environmental covenants and incentives for adoption to environmental protection programs in states and territories that lack environmental covenant statutes.	Assistant Administrator for Solid Waste and Emergency Response and Assistant Administrator for Enforcement and Compliance Assurance	Continue to engage in outreach to (1) encourage state legislatures to adopt UECA, and (2) educate regulators on the benefits of implementing the controls afforded through UECA. Please note that EPA is not able to offer incentives to state legislatures to adopt UECA or similar statutes, and so requests deleting this language from the recommendation.	Ongoing
3	Determine whether Region 3 states have sufficient workforces to manage projected increases in workload associated with decisions to adjust RCRA post-closure care and related activities, and take appropriate action.	Regional Administrator, EPA Region 3	Region III has already conducted reviews of state capacity in this area and has taken action, which has resulted in states investing more resources in the RCRA permitting program putting them in position to address the post-closure care workload. (See Attachment 3.)	Complete

Disagreements

None.

ATTACHMENT 3:

REGION III SUPPLEMENTAL INFORMATION REGARDING REVIEWS OF STATE
CAPACITY TO ADDRESS POST-CLOSURE CARE DETERMINATIONS

This response addresses the third recommendation of the above referenced Office of Inspector General (OIG) draft report:

“We further recommend that the Regional Administrator, EPA Region 3:

3. Determine whether Region 3 states have sufficient workforces to manage projected increases in workload associated with decisions to adjust RCRA post-closure care and related activities and take appropriate action.”

Region III believes that our states, and the Region, are currently staffed to appropriate levels to manage post-closure care determination workloads for the foreseeable future. The Region will continue to place an emphasis on assessing state capacity necessary to implement effective Resource Conservation and Recovery Act (RCRA) programs and has been successful in bringing about needed staffing investments in areas identified as weaknesses in state programs. EPA Region III and the Mid-Atlantic states have forged strong partnerships in the RCRA programs and will use the excellent working relationships to continue to plan for and jointly address program implementation challenges.

EPA Region III conducts oversight of state implementation of the RCRA requirements on an on-going basis. The results of this oversight are documented at the middle and the end of the fiscal year after conducting detailed reviews of the state’s bi-annual grant progress reports and holding face-to-face meetings or conference calls with state managers and staff to discuss accomplishments, challenges and resource needs. State capacity to implement the program is an important part of these reviews.

The OIG third recommendation also suggests that EPA Region III determine that the states have sufficient resources to manage the projected workload associated with RCRA sites whose 30-year post-closure care periods are expiring in the coming ten or more years and that the Region take appropriate action if it is determined that the resources are not sufficient. The following information is presented to show that Region III has already conducted reviews of state capacity in this area and has taken action. This action has resulted in states investing more resources in the RCRA permitting program putting them in position to address not only the post-closure care workload, but also other RCRA permitting responsibilities.

- EPA Region III has a total of 21 facilities operating under post-closure care permits that will reach the 30 year milestone by 2025 (see Figure 1, below). The largest workload will be in 2024 with a total of seven facilities hitting the 30 year mark with five located in Virginia. Region III will work closely with Virginia for several years leading up to 2024 to ensure this workload will be managed. Between 2015 and 2025, five of the eleven

years have only one facility in the Region reaching the 30-year milestone, and in two of the years, no facilities will reach the 30-year milestone.

Post-closure care permits are not the only mechanism used in Region III to manage post-closure care requirements. In Figure 2 below, fourteen other facilities are conducting post-closure care under other mechanisms, the majority of which are through RCRA Corrective Action permits. This workload is typically managed by different parts of the state organizations, thus spreading out the post-closure care oversight to even more staff than just RCRA permit writers and EPA state program managers.

- The OIG report identified concerns about three states meeting their annual grant commitments citing staff resources as potential reasons for falling short of these commitments. Region III began citing state staff investment in the area of RCRA permitting prior to fiscal year 2013.
 - The Region held meetings with state senior level managers in Maryland to highlight these concerns because the RCRA permit renewal workload was going to increase in fiscal years 2015-2018. Maryland transferred a staff member from one program into the RCRA permitting section in the spring of 2014. They also hired a new employee into the RCRA permitting section during the winter of 2015 bringing the total to three permit writers. Maryland has three facilities in post-closure care whose 30 year period ends in the 10 year period from 2015 and 2025.
 - Delaware hired a new employee for RCRA corrective action and RCRA compliance/enforcement areas during fall of 2014. This alleviates the need for RCRA permit writing staff to help out in these other two areas.
 - PADEP presented their plans for catching up on the RCRA permit workload. As of mid-year 2015, PADEP has made significant progress in eliminating their backlog of permit renewals. It is worth noting that RCRA permits, if not renewed, are extended administratively and are still in full force and effect until renewed, so no facilities in PA or elsewhere in Region III were operating without an enforceable permit in place. Since the number of PADEP's post-closure permits reaching the 30-year milestone is very small, and the fact that many facilities' post-closure care requirements are documented in RCRA corrective action permits managed by EPA Region III, Region III does not anticipate that PA or EPA Region III will have any resource issues addressing post-closure care decision-making.

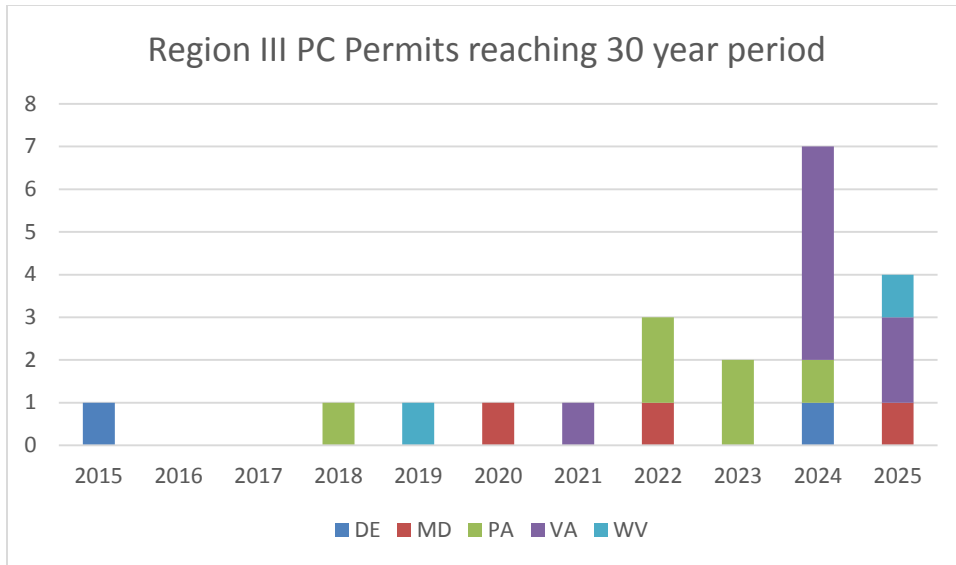


Figure 1. Region III facilities under post closure care permits that reach 30 year period by 2025.

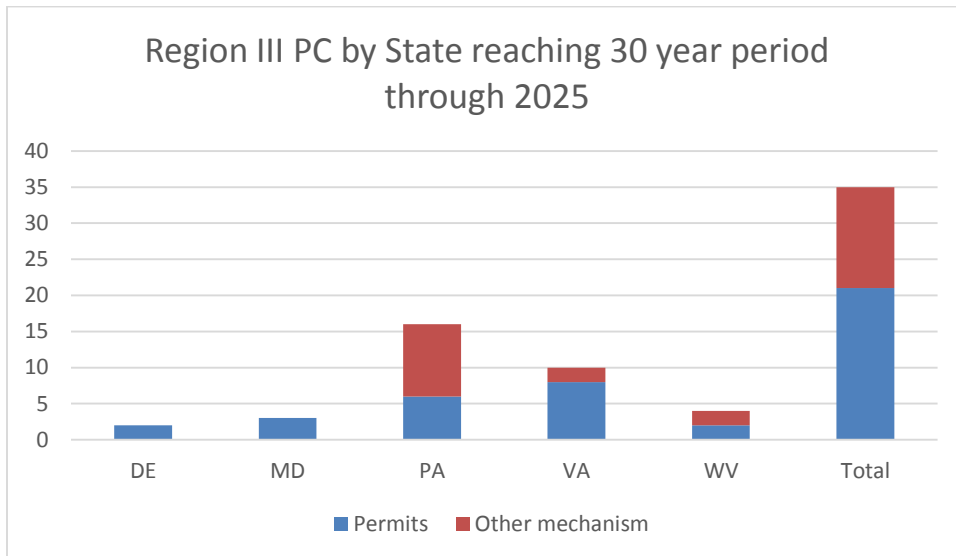


Figure 2. Region III facilities reaching the 30 year period under post-closure care permits or other mechanisms such as RCRA Corrective Action permits.

Distribution

Office of the Administrator
Assistant Administrator for Solid Waste and Emergency Response
Assistant Administrator for Enforcement and Compliance Assurance
Regional Administrator, Region 3
Agency Follow-Up Official (the CFO)
Agency Follow-Up Coordinator
General Counsel
Associate Administrator for Congressional and Intergovernmental Relations
Associate Administrator for Public Affairs
Principal Deputy Assistant Administrator, Office of Solid Waste and Emergency Response
Principal Deputy Assistant Administrator, Office of Enforcement and Compliance Assurance
Deputy Regional Administrator, Region 3
Director, Office of Resource Conservation and Recovery, Office of Solid Waste and
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