Evaluation of the EPA's Implementation of the Underground Injection Control Class VI Well Program

July 28, 2025 | Report No. 25-E-0045

OFFICE OF INSPECTOR GENERAL
U.S. ENVIRONMENTAL PROTECTION AGENCY

Abbreviations

AoR	Area of Review
C.F.R.	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
FAR	Federal Acquisition Regulation
Fed. Reg.	Federal Register
FFRDC	Federally Funded Research and Development Center
FTE	Full-Time Equivalent
FY	Fiscal Year
IIJA	Infrastructure Investment and Jobs Act
OIG	Office of Inspector General
Pub. L.	Public Law
UIC	Underground Injection Control
U.S.C.	United States Code

Cover Image

An underground injection wellhead. (EPA image)

Are you aware of fraud, waste, or abuse in an EPA program?

EPA Inspector General Hotline
1200 Pennsylvania Avenue, NW (2431T)
Washington, D.C. 20460
(888) 546-8740
OIG.Hotline@epa.gov

Learn more about our OIG Hotline.

EPA Office of Inspector General
1200 Pennsylvania Avenue, NW (2410T)
Washington, D.C. 20460
(202) 566-2391
www.epaoig.gov

Subscribe to our Email Updates.
Follow us on X @EPAoig.
Send us your Project Suggestions.

25-E-0045
July 28, 2025

At a Glance

Evaluation of the EPA's Implementation of the Underground Injection Control Class VI Well Program

Why We Did This Evaluation

To accomplish this objective:

The U.S. Environmental Protection Agency Office of Inspector General conducted this evaluation to determine whether the EPA has used available resources, including funds appropriated by the Infrastructure Investment and Jobs Act, to improve the permitting of Class VI wells under its Underground Injection Control Program.

An injection well stores fluids, such as industrial liquid waste, in underground porous and permeable geologic formations. The EPA's Underground Injection Control Program regulates the construction, permitting, and operation of six classes of injection wells. This report focuses on the EPA's program for Class VI wells, which are used to inject carbon dioxide for the purpose of geologic sequestration. In addition to annual appropriations intended to improve Class VI permitting, Congress provided a supplemental $5 million each fiscal year from 2022 through 2026 via the Infrastructure Investment and Jobs Act.

To support this EPA mission-related effort:

- *Ensuring clean and safe water.*

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

List of OIG reports.

What We Found

The EPA met Congress's intent to spend annual and supplemental appropriations to grow Class VI Program expertise and capacity and improve Class VI permitting with one exception. It did not spend $1.2 million of fiscal year 2023 annual appropriations within the available time frame for their intended purpose: to support training for personnel who regulate Class VI wells. Otherwise, the Agency successfully used annual appropriations to, among other things, increase the number of staff focused on Class VI work, enhance its data and information management tools, and develop additional guidance for Class VI Program implementation. In addition, as of May 2024, the EPA had used about $10.5 million of the $14.7 million in supplemental Infrastructure Investment and Jobs Act funds appropriated through fiscal year 2024. It dedicated over 85 percent of these funds to obtain extramural support for regional Class VI permitting using contracts and interagency agreements.

Despite the additional resources available to increase its expertise and capacity, the EPA is not on track to issue all final Class VI permits within its 24-month goal, and it has not consistently determined whether permit applications were complete within 30 days of submission, as specified in 40 C.F.R. § 124.3(c). The Agency can also take steps to enhance public transparency for the Class VI permitting process. And finally, the EPA has not demonstrated that its interagency agreements with the U.S. Department of Energy's National Laboratories to support the Class VI Program comply with the Federal Acquisition Regulation and EPA policy. Consequently, we consider the entire $7,999,808 obligated for these interagency agreements to be questioned costs. In addition, the National Laboratories have not always submitted the required monthly status reports, which means the Agency cannot ensure that Class VI funds are being used for their intended purpose.

Permitting delays may deter the construction of Class VI wells, and a lack of transparency may prevent communities from accessing information about proposed and operational Class VI wells near them. Also, without compliant extramural support, the EPA cannot protect the millions of federal dollars spent on Class VI work from waste and abuse.

Recommendations and Planned Agency Corrective Actions

We recommend that the assistant administrator for Water (1) assess the Class VI permitting process and establish a plan to achieve the Agency's goals and deadlines; (2) develop a procedure to enhance public transparency; (3) assess whether the EPA's interagency agreements with the National Laboratories comply with the Federal Acquisition Regulation, as well as take any necessary actions to ensure compliance with federal regulation and EPA policy; and (4) ensure that the National Laboratories submit all monthly progress reports in accordance with the requirements of the interagency agreements. The Agency agreed with our recommendations and completed corrective actions to address Recommendations 2 and 4. The EPA's proposed corrective actions for Recommendations 1 and 3 do not meet the intent of our recommendations. Those two recommendations are unresolved with resolution efforts in progress.

OFFICE OF INSPECTOR GENERAL
U.S. ENVIRONMENTAL PROTECTION AGENCY

July 28, 2025

MEMORANDUM

SUBJECT: Evaluation of the EPA's Implementation of the Underground Injection Control Class VI Well Program
Report No. 25-E-0045

FROM: Nicole N. Murley, Acting Inspector General

TO: Peggy S. Browne, Acting Assistant Administrator
Office of Water

This is our report on the subject evaluation conducted by the U.S. Environmental Protection Agency Office of Inspector General. The project number for this evaluation was OSRE-FY24-0023. 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.

In accordance with EPA Manual 2750, your office completed acceptable corrective actions for Recommendations 2 and 4. A final response pertaining to these recommendations is not required; however, if your office submits a response, the response will be posted on the OIG's website, along with our memorandum commenting on the response.

Action Required

Recommendations 1 and 3 are unresolved. EPA Manual 2750 requires that recommendations be resolved promptly. Therefore, we request that the EPA provide us within 60 days its response concerning specific actions in process or alternative corrective actions proposed on the recommendations. This response will be posted on the OIG's website, along with our memorandum commenting on the response. The response should be provided as an Adobe PDF file that complies with the requirements of section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that your office does not want to be released to the public; if the response contains such data, your office should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at www.epaoig.gov.

Table of Contents

Chapters

-- continued --

Appendixes

Chapter 1
Introduction

Purpose

The U.S. Environmental Protection Agency Office of Inspector General initiated this evaluation to determine whether the EPA has used available resources, including funds appropriated by the Infrastructure Investment and Jobs Act, or IIJA, to improve the permitting of Class VI wells under its Underground Injection Control, or UIC, Program.

Background

An injection well is used to inject fluids underground into porous and permeable geologic formations. As stated on the EPA's website, wide use of injection wells began in the 1930s to dispose of the unwanted brine generated during oil production. By injecting this liquid waste into underground wells, petroleum companies were able to dispose of it in an economical manner and preserve surface waters, such as lakes, wetlands, and streams. In the 1950s, chemical companies began using deep injection wells for their industrial waste. Today, injection wells are found in all 50 states, territories, and tribal lands and are used by a variety of industries, including oil, pharmaceutical, and wastewater treatment. According to the EPA, an inventory that it developed in fiscal year 2022 showed that there were more than 800,000 injection wells in the United States. Injection wells are now used for a variety of purposes beyond disposing and storing industrial liquid waste, such as storing carbon dioxide and enhancing oil production.

Half of the U.S. population relies on groundwater for domestic uses, such as drinking and irrigation. In 1974, Congress established the Safe Drinking Water Act, which included requirements for the EPA to promulgate regulations to protect drinking water sources from contamination by underground injection.[1] To address those requirements, the EPA established its UIC Program through regulations promulgated in the 1980s. This program regulates the construction, operation, permitting, and closure of injection wells.

The EPA's UIC Program categorizes injection wells into one of six classes based on the type and depth of the injection activity, as well as its potential to endanger an underground source of drinking water. Each class of injection well has distinct requirements, rules, and regulations that well owners and operators must follow. For this evaluation, we focused on Class VI wells, which store injected carbon dioxide in deep rock formations. This carbon dioxide storage process is called geologic sequestration. Geologic sequestration can be used to reduce carbon dioxide emissions in the atmosphere.

[1] 42 U.S.C. § 300h-9.

Carbon dioxide injection and storage

Carbon dioxide can exist as a solid, liquid, or gas depending on the temperature and pressure of its environment. While carbon dioxide may be captured at a facility in a gaseous form, it is typically compressed into a supercritical fluid and injected underground for geologic sequestration. The intent is to permanently trap the carbon dioxide underground, either in its injected form or through geochemical transformation.

Class VI Wells

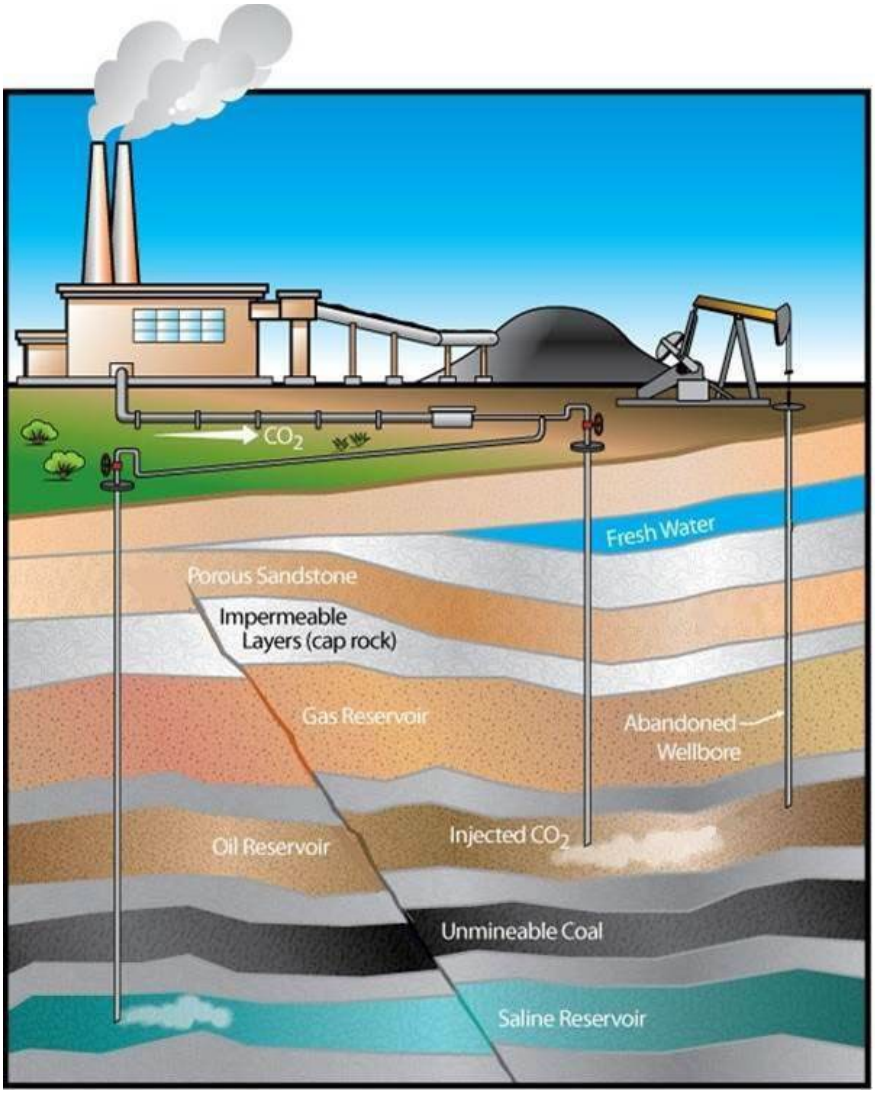
In 2010, the EPA finalized the regulations for Class VI wells and established its Class VI Program as part of its overall UIC Program.[2] These Class VI regulations address the following properties of carbon dioxide and Class VI wells, which present unique risks to underground sources of drinking water: the large volumes of carbon dioxide expected to be injected through the wells; the relative buoyancy of carbon dioxide in underground geologic formations; the mobility of carbon dioxide within subsurface formations; the corrosive properties of carbon dioxide in the presence of water, which can affect well materials; and the potential presence of impurities in the injected carbon dioxide stream.

All UIC well owners and operators must review and periodically reevaluate the areas surrounding their wells where underground sources of drinking water may be endangered by injection activity. This surrounding area is known as an area of review, or AoR. The Class VI regulations require owners and operators to delineate, or define the border of, the AoR using computational modeling. Because of the aforementioned properties of carbon dioxide and Class VI wells, AoRs for Class VI wells, according to the EPA, are typically larger than the AoRs for other UIC well classes.[3] Additionally, within their AoRs, Class VI well owners and operators are required to track, model, and predict carbon dioxide plume movement. These monitoring and post-injection site care requirements are based on estimates that many large-scale geologic sequestration projects may inject large volumes of carbon dioxide during their long lifespans. In some cases, monitoring requirements for a Class VI well may last more than 50 years after the well is plugged and closed. Figure 1 illustrates a cross-section schematic of a Class VI well.

[2] 40 C.F.R. parts 144–146; Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO_2) Geologic Sequestration Wells, 75 Fed. Reg. 77230 (Dec. 10, 2010).

[3] Compare 40 C.F.R. §§ 146.6 and 146.84.

Figure 1: Schematic of a Class VI well



Source: *EPA Report to Congress: Class VI Permitting*, October 2022. (EPA image)

Permitting Process for Class VI Wells

Before construction can begin on a Class VI well, the well owner must apply for a permit from the appropriate permitting authority, which would be either the EPA or a state, tribe, or territory that the EPA has granted primary enforcement authority to implement its own Class VI program. This primary enforcement authority is known as primacy.[4] As part of the Class VI permit application, applicants submit project plans that describe, among other things, the geologic conditions at the proposed site; the computational modeling techniques and parameters used to predict the subsurface flow of carbon dioxide and to delineate the well's AoR; the construction of the injection well; the testing and monitoring that is planned for the operation, injection, and post-injection phases; and the emergency

[4] For simplicity, we use the term "states" in the context of primacy programs to refer to states, tribes, and territories. For more information on primacy responsibilities, see the "Responsible Office" section.

response plans. In accordance with 40 C.F.R. § 146.82(a), applicants must submit information in support of their application, including maps, geologic cross sections, modeling data files, engineering schematics, and financial documents.

Computational modeling

According to the EPA, a computational model for a Class VI well is "a mathematical representation of the injection project and relevant features, including injection wells, site geology, and fluids present. For a GS [geologic sequestration] project, site specific geologic information is used as input to a computational code, creating a computational model that provides predictions of subsurface conditions, fluid flow, and carbon dioxide plume and pressure front movement at that site. The computational model includes all model input and predictions (i.e., outputs)." For simplicity, we use the term ***modeling*** hereafter in this report to refer to computational modeling.

In this report, we focus on the EPA as the permitting authority and the EPA's permitting process. Once the EPA receives a Class VI permit application, it performs the following:

- **Completeness Review**: The EPA determines whether the permit application contains all the required information and can be deemed administratively complete. Per 40 C.F.R. § 124.3, an initial completeness determination should be made within 30 days of an application's submission. If the EPA determines that an application is administratively complete, it sends a notification of that determination to the applicant. If the EPA determines that an application is incomplete, it sends the applicant a Notice of Deficiency that identifies the missing information. The applicant must then provide the missing information before the application can be deemed administratively complete. The date the EPA notifies the applicant that its application is administratively complete becomes the effective date of the Class VI permit application. The EPA has developed a series of templates to help applicants submit complete applications.
- **Technical Review**: Once the EPA determines that an application is administratively complete, it reviews all the application materials to evaluate the suitability of the proposed project, including the project's compliance with the Class VI regulations. The EPA initiates a dialogue with the applicant to understand the proposed project and ensure that the Class VI well would be constructed and operated in a manner that will not endanger underground sources of drinking water. If questions arise during the EPA's review process, the EPA may submit a formal Request for Additional Information to the applicant, who then must provide the requested information within 30 days unless the applicant requests an alternative timeline. See Appendix A for more information about the technical review of Class VI permit applications.
- **Preparation of the Draft Permit**: If the EPA determines that the permit application meets the requirements of the Class VI regulations and that the proposed project is suitable for carbon dioxide injection for geologic sequestration, its permit writers prepare a draft permit, specifying the conditions under which that Class VI well would operate. The permit includes the project plans submitted with the application as enforceable conditions.

- **Public Comment Period**: During this step of the permitting process, the public can review and provide comments on the draft permit. The public can also request that the EPA conduct a hearing on the draft permit.
- **Preparation of the Final Permit**: The EPA prepares the final Class VI permit, incorporating the feedback received during the public comment period, as appropriate. Additionally, the EPA prepares a document with responses to public comments received. The final permit authorizes the applicant to begin the project.

In its October 2022 report to Congress on Class VI permitting, the EPA conveyed its goal to complete the entire Class VI permitting process within 24 months after it deems an application to be administratively complete.[5] After the EPA issues the final Class VI permit and the well owner begins the project, the owner must submit the information stipulated in the final permit to the EPA at different stages of the project. For example, for the EPA to make a determination to issue an Authorization to Inject, which allows a well owner to begin carbon dioxide injection, the owner must submit the following information to the EPA for review: the results of required pre-operational testing, any updated information about the site geology, the final AoR, any needed amendments to the project plans, and information about the construction and testing of the well.

Growth in Class VI Permit Demand and Incentives for Geologic Sequestration

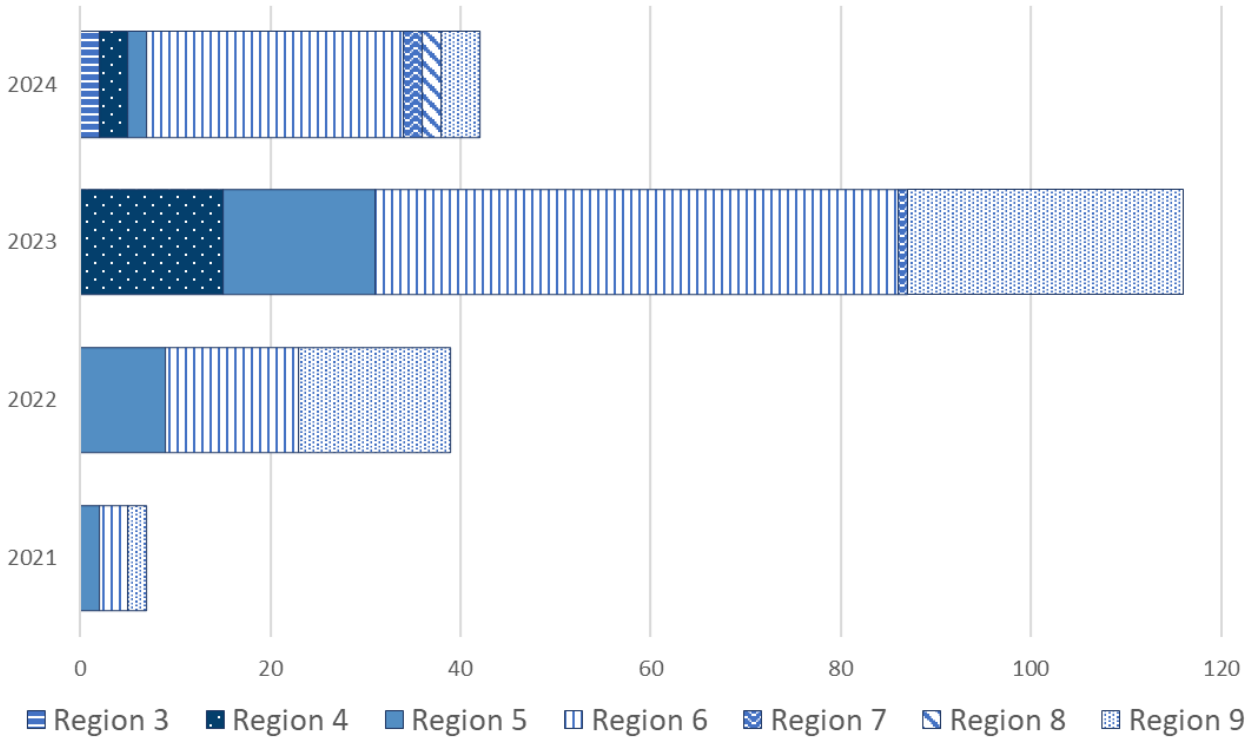
Demand for Class VI permits was initially low. Between the finalization of the Class VI regulations in 2010 and the end of 2020, the EPA received eight permit applications for Class VI wells.[6] Between May 2021 and July 2024, however, the EPA received Class VI permit applications for 205 wells.[7] These Class VI permit applications spanned 16 states and one tribe in seven different EPA regions. As shown in Figure 2, the bulk of these applications were submitted in FY 2023. That year, the EPA received permit applications for 116 Class VI wells, nearly triple the number of Class VI permit applications it received in FY 2022.

[5] EPA, EPA Report to Congress: Class VI Permitting (2022).

[6] As of June 2024, there were only two constructed and operable Class VI wells permitted by the EPA: both in Illinois and both permitted by Region 5, one in 2014 and one in 2015.

[7] This includes the applications for 55 Class VI wells in Louisiana. After the EPA granted Louisiana primacy for Class VI wells on January 5, 2024, the EPA transferred these applications to the state to complete the Class VI permitting process.

Figure 2: Number of Class VI permit applications, FYs 2021–2024



Source: OIG analysis of EPA Class VI permit data as of July 11, 2024. (EPA OIG image)

Notes: This chart includes applications for Class VI wells in Louisiana that the EPA received before it granted the state primacy in December 2023. The FY 2024 numbers include data through July 11, 2024, and do not represent the entire fiscal year. The final rule for West Virginia's Class VI primacy became effective March 28, 2025. According to EPA Region 3, the region transferred the Class VI applications received in 2024 to West Virginia on this date.

The growth in demand for Class VI wells coincided with Congress's expansion of tax credits in 2022 for carbon dioxide geologic sequestration in the Inflation Reduction Act.[8] Additionally, through the 2021 enactment of the IIJA, Congress supplemented both the funds available for the EPA's Class VI Program and the funds available for the development and implementation of state primacy programs. Specifically, the IIJA appropriated $5 million to the EPA each year from FY 2022 through FY 2026, for a total of $25 million, to improve Class VI permitting. These funds were authorized to be used directly by the EPA for its Class VI Program activities. The IIJA also provided the EPA with $50 million to distribute to states to develop and implement Class VI primacy programs.[9]

In addition to these supplemental appropriations, Congress provided funding to the EPA via its annual appropriations in anticipation of increases in Class VI permit applications. Congress expressed its intent for this funding in the explanatory statements accompanying three years of appropriations legislation

[8] The Energy Improvement and Extension Act of 2008, Division B of Pub. L. 110-343, added a credit for carbon dioxide geologic sequestration to the tax code. This tax credit was expanded and extended in the Bipartisan Budget Act of 2018, Pub. L. 115-123, and again in Pub. L. 117-169 (2022), commonly referred to as the Inflation Reduction Act.

[9] Because this money was intended to be distributed to states and not be used by the EPA, we considered it outside the scope of our objective.

beginning in FY 2021. In the explanatory statement for the Consolidated Appropriations Act, 2021, Pub. L. 116–260 (2020), Congress specified that it intended the EPA to use not less than $3 million of appropriated funding to help develop expertise and capacity at the Agency for its work with Class VI wells for geologic sequestration. The explanatory statements for both the Consolidated Appropriations Act, 2022, Pub. L. 117–103, and the Consolidated Appropriations Act, 2023, Pub. L. 117-328 (2022), also stated that Congress intended the EPA to use appropriated funding on developing expertise and capacity at the Agency related to Class VI work but increased the amount of funding provided for this purpose to $5 million each year. Further, in the explanatory statement for the Consolidated Appropriations Act, 2023, Congress expressed its intention that the EPA use an additional $1.2 million to develop training to improve Class VI permitting for Class VI regulators, including EPA personnel and the primacy states. Prior to FY 2021, Congress did not include specific guidance to the Agency on Class VI Program spending, leaving program funding decisions to the EPA's discretion. The Office of Ground Water and Drinking Water, which is within the EPA Office of Water, provided us with the overall drinking water program appropriations, and the EPA allocated $1.368 million in FY 2019 and $1.863 million in FY 2020 for UIC Class VI work.

Responsible Offices

The Office of Ground Water and Drinking Water's UIC Branch, within the Drinking Water Infrastructure Development Division, is responsible for managing the Agency's UIC Program, including providing a national perspective on Class VI wells and technical assistance to regional UIC programs. The UIC Branch, along with its counterparts in the EPA regions, also manages the annual and supplemental appropriations provided for UIC programs and activities, including the $75 million provided for Class VI work by the IIJA.

The EPA regions have UIC components that manage and implement certain aspects of the EPA's UIC Program. The EPA's regional offices hold meetings with Class VI applicants before and after they submit their permit applications, conduct permit application reviews, make permit issuance determinations, draft Class VI permits, facilitate public comment periods, conduct permit modifications as needed, and conduct enforcement activities. Additionally, the EPA's regional offices review state primacy applications and perform primacy program oversight activities for states in their respective regions. States may apply for and obtain primacy for all or part of the well classes in the EPA's UIC Program, and the EPA may likewise grant a state primacy for all or some of the well classes. Since the Class VI regulations were finalized in 2010, the EPA has approved Class VI primacy for four states: Louisiana, North Dakota, West Virginia, and Wyoming. As of February 2025, there were eight additional states in various phases of applying for Class VI primacy: Alabama, Alaska, Arizona, Colorado, Mississippi, Oklahoma, Texas, and Utah.

A state that has been granted Class VI primacy by the EPA is responsible for adopting, implementing, and enforcing state UIC program requirements that are at least as stringent as the associated federal

regulations. For states that have not been granted primacy for Class VI wells, the EPA conducts the Class VI Program implementation and enforcement activities. These activities include:

- Reviewing permit applications.
- Issuing and modifying permits.
- Reviewing and evaluating testing and monitoring results submitted by the Class VI well owner or operator.
- Ensuring compliance with Class VI requirements and permit conditions and taking enforcement action, as necessary.
- Issuing public notices and communicating with the public about permits.
- Mitigating contamination of underground sources of drinking water and supporting remediation efforts, as necessary.

Even if a state has been granted primacy, the EPA retains an oversight role, which includes reviewing results of certain monitoring and reporting requirements from primacy states and conducting periodic program evaluations.

Scope and Methodology

We conducted this evaluation from November 2023 to April 2025 in accordance with the *Quality Standards for Inspection and Evaluation* published in December 2020 by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we perform the evaluation to obtain sufficient and appropriate evidence to support our findings.

We evaluated the EPA as the permitting authority and the EPA's permitting process for the Class VI Program, as this program received IIJA funding and has experienced an increase in permit applications. We developed evaluation steps to obtain information in three main areas: (1) available resources for the Class VI Program; (2) the EPA's use of the available resources, including essential responsibilities of Class VI Program implementation and workloads at the EPA; and (3) Class VI Program performance compared to the program's stated goals. Chapter 2 describes findings related to the EPA's use of funding intended to improve Class VI Program capacity, Chapter 3 details findings related to the Class VI Program performance against program goals for timeliness and public transparency, and Chapter 4 describes the EPA's establishment and oversight of interagency agreements supporting the Class VI Program.

Contracts and interagency agreements

Contracts and interagency agreements are types of financial vehicles that the EPA uses to obtain extramural support. A ***contract*** is a mutually binding legal relationship obligating the seller to furnish supplies or services and the buyer to pay for them. An ***interagency agreement*** is a procedure by which an agency needing supplies or services obtains them from another agency.

To address each of our three evaluation areas, we reviewed Class VI well regulations and Agency guidance documents to identify UIC Program responsibilities and procedures, as well as appropriations acts, the IIJA, and EPA budget justifications to identify sources of funding, requirements for use of program resources, and areas of work within the UIC Program. We also identified UIC Program budget and staffing levels from FY 2019 through FY 2024. Additionally, we obtained and reviewed documents and requirements related to UIC and Class VI Program contracts and interagency agreements to assess how the EPA used available resources.

To assess deployed resources and processes in the EPA regions, regional workloads, and methods the regional offices use to measure program performance, we developed and issued a questionnaire for the regional UIC components in EPA Regions 3–10, which are the regions that had resources dedicated to implementing the Class VI Program at the time of our evaluation. We did not identify that Regions 1 or 2 had any Class VI Program work or resources. In addition to our questionnaire, we conducted follow-up meetings to obtain additional Class VI Program implementation details from Regions 5, 6, and 9. As of July 2024, these three regions held Class VI permit applications for 122, or approximately 84 percent, of the 145 Class VI well applications pending review at the EPA.

Additionally, we reviewed EPA publications discussing Class VI Program implementation to identify program goals and metrics, obtained and analyzed data from the EPA on its Class VI permitting process and timelines, and analyzed the implementation of the Agency's online tools designed to enhance transparency of the Class VI Program. We met with selected stakeholders external to the EPA to obtain additional perspectives on the EPA's Class VI Program performance and implementation. We also reviewed the prior oversight reports listed in Appendix B that relate broadly to the EPA's UIC Program. The EPA OIG has not conducted any prior audits or evaluations related specifically to the Class VI Program.

We did not assess the effectiveness of Class VI wells in sequestering carbon dioxide for geologic storage, the risks that geologic sequestration may present to underground sources of drinking water, or the overall effectiveness of geologic sequestration as a tool for reducing greenhouse gas emissions. We also did not assess the appropriateness of the Agency's 24-month goal for making final Class VI permit decisions. These topics were outside the scope of our objective.

Chapter 2
The EPA Acted to Improve Class VI Program Capacity but Did Not Spend All Congressionally Provided Funding Within the Specified Time Frame

The EPA met the congressional intent to spend annual appropriations to develop additional Class VI Program expertise and capacity, but the Agency did not use $1.2 million of the FY 2023 appropriated funding for its intended purpose of supporting Class VI regulator training within the specified time frame of availability. In addition to annual appropriations, Congress provided the EPA with a total of $25 million in supplemental IIJA funds from FY 2022 through FY 2026. As of May 2024, the Agency had used over 85 percent of the supplemental IIJA funds for extramural expenditures, such as contracts and interagency agreements. The Agency also took actions intended to increase Class VI Program expertise and capacity, such as increasing the number of full-time equivalents, or FTEs,[10] who are dedicated to Class VI work; using contract vehicles and interagency agreements to support regional permitting; developing and offering training opportunities; and developing guidance and data management tools.

The EPA Used Funds to Develop Class VI Program Expertise and Capacity but Did Not Use Funds to Support Class VI Regulator Training

With its FYs 2021, 2022, and 2023 annual appropriations, the Agency used funds to develop Class VI Program expertise and capacity consistent with congressional intent, as expressed in the explanatory statements accompanying the appropriations legislation. However, the EPA did not use $1.2 million of FY 2023 appropriated funds for their intended purpose of supporting Class VI regulator training within the specified time frame of availability. This regulator training was intended to be delivered to those that review Class VI permit applications and issue Class VI permits, such as the EPA and the states.

As part of their process to develop and pass appropriations legislation, the House and Senate typically produce a "committee print" containing both legislative text and an explanation of that text, which is referred to as an explanatory statement and which details how Congress intends those appropriated funds to be allocated. According to the Congressional Research Service, explanatory statement text "is usually considered the most authoritative source of congressional intent" regarding the legislation with which it is associated.[11] For example, the explanatory statement corresponding to the section of the Consolidated Appropriations Act, 2023, that appropriated funds to the EPA directly expressed that Congress had "approved" the statement and that the statement "indicates congressional intent."[12] Consequently,

[10] One FTE is equal to one employee working full time for a full year (52 weeks x 40 hours = 2,080 hours) or to the equivalent number of hours worked by several part-time or temporary employees.

[11] Cong. Rsch. Serv., Report No. R44124, Appropriations Report Language: Overview of Development and Components (2023).

[12] Comm. on Appropriations, U.S. House of Rep., 117th Cong., Explanatory Statement for Consolidated Appropriations Act, 2023 (2022).

although explanatory statements are not legislation and lack the force of law on their own, they nevertheless provide important insight into Congress's intended uses for the funds that it appropriates.

Table 1 outlines the Class VI Program spending guidance that Congress included in the explanatory statements for annual appropriated funds from FY 2019 through FY 2023, as well as Agency expenditures and obligations related to that guidance. As indicated in the last row of Table 1, Congress outlined its intent in the explanatory statement accompanying the Consolidated Appropriations Act, 2023, to "provide[] $1,200,000 to support Class VI regulator education and training programs in conjunction with States, or other eligible entities such as an association of States." The Act specified that these funds would be available for use through the end of FY 2024.

A ***commitment*** is when the Agency reserves funds for a specific purpose but has not yet obligated them.

An ***obligation*** of funds is a legal liability to disburse funds immediately or in the future.

An ***expenditure*** is a payment made to recipients of federal awards for expenses incurred, including goods or services provided to the EPA.

Table 1: EPA expenditures and obligations of annual appropriations for the Class VI Program, FYs 2019–2023, compared to the congressional intent for those appropriations

Fiscal year	Congressional intent for spending annual appropriations on Class VI Program	The EPA's Class VI Program expenditures and obligations ($)
2019	Not specified	1,368,000
2020	Not specified	1,863,000
2021	No less than $3,000,000 to develop expertise and capacity	4,356,900
2022	$5,000,000 to develop expertise and capacity	5,844,600
2023	$5,000,000 to develop expertise and capacity $1,200,000 to support Class VI regulator training	5,715,000 *0

Source: OIG summary of information identified in explanatory statements accompanying appropriations legislation and May 2024 budget data from the Office of Ground Water and Drinking Water. (EPA OIG table)

* According to a budget employee in the Office of Ground Water and Drinking Water, the EPA announced a cooperative agreement opportunity on April 26, 2024, that included $1.2 million to support Class VI regulator training and education. However, funds to be awarded for this announcement were not obligated before the end of FY 2024.

The Agency, however, did not use available FY 2023 funds for Class VI regulator training by the end of FY 2024. Instead, according to the Office of Ground Water and Drinking Water, it used this $1.2 million to "forward fund" annual office operations support and services through the EPA's working capital fund in September 2023.[13] According to the Office of Groundwater and Drinking Water, "[u]sing expiring funds to forward-fund the next fiscal year's Working Capital Fund … charges is a fiscally responsible and common practice." We note that the Agency used these funds for its working capital fund in September 2023, even though the period of availability for their intended use extended through September 2024.

[13] The working capital fund is a revolving fund authorized by law to finance a cycle of operations. It is a method of funding certain administrative services in a manner different than funding them through annual appropriations.

In November 2024, the Office of Groundwater and Drinking Water told us that it had obligated $1.2 million from its Environmental Programs and Management appropriations for FY 2024 to "refresh" the Class VI Program's cooperative agreement grant fund to support Class VI regulator training.

The EPA Has Used Supplemental IIJA Funding Primarily on Extramural Support for the Class VI Program

In addition to the annual appropriations specifically designated for Class VI work, Congress provided the EPA with a total of $25 million in supplemental IIJA funds from FY 2022 through FY 2026, or about $5 million in additional funds per year, for the permitting of Class VI wells. Therefore, the supplemental IIJA funds nearly double the annual funds available for the Class VI Program.

As shown in Table 2, as of May 2024, the Agency had committed, obligated, or expended approximately $10.5 million of the $14.7 million in IIJA Class VI funds appropriated through FY 2024. Of the $10.5 million in IIJA Class VI funds that the EPA used as of May 2024, it used more than $8.9 million, or about 85 percent, for extramural expenditures such as contract or interagency agreements. The EPA relies on contract and interagency support from the U.S. Department of Energy's National Laboratories to review the modeling used by Class VI permit applicants to define the AoR for proposed projects, which is discussed further in Chapter 4.

Table 2: Use of IIJA funds for Class VI work, FYs 2022–2024

Fiscal year	IIJA funds available for Class VI work ($)	IIJA Class VI funds used for FTEs and travel* ($)	IIJA Class VI funds used for extramural support* ($)	Total IIJA Class VI funds used* ($)	IIJA Class VI funds remaining ($)
2022	**4,920,000**	124,900	3,855,700	**3,980,600**	939,400
2023	**4,926,000**	743,700	4,143,000	**4,886,700**	39,300
2024†	**4,886,000**	637,900	992,100	**1,630,000**	3,256,000
TOTAL	**14,732,000**	**1,506,500**	**8,990,800**	**10,497,300**	**4,234,700**

Source: Office of Ground Water and Drinking Water. (EPA OIG table)

* Funds "used" includes funds committed, obligated, or expended. Therefore, the funds used in a fiscal year may not have been fully expended that fiscal year. For example, in FY 2023 the EPA obligated IIJA funds to an interagency agreement with performance periods extending into 2028, which means the funds used in FY 2023 for that agreement may not be fully expended until 2028.

† The FY 2024 numbers include data through May 2024 and do not represent the entire fiscal year.

The EPA Took Actions Intended to Increase Its Class VI Program Expertise and Capacity

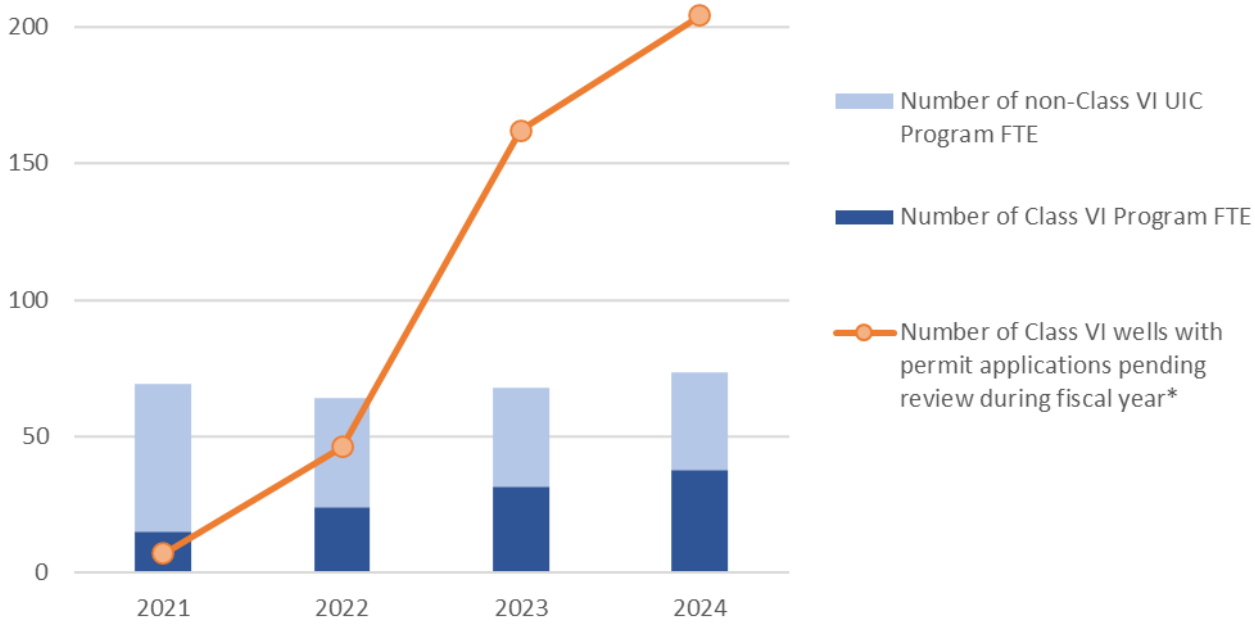
The EPA took several actions to increase its Class VI Program expertise and capacity using appropriated funds. Notably, the program has increased FTE allocations dedicated to Class VI work, prepared and expanded contract and interagency agreement vehicles, developed and offered training opportunities, enhanced data and information management tools, and developed additional guidance for both internal

and external use for Class VI Program implementation. The subsections below illustrate the EPA's efforts to enhance Class VI Program capacity and do not contain an exhaustive list of actions taken.

The EPA Increased FTEs for Class VI Work

The EPA dedicated most of the annual appropriations for the Class VI Program to increasing FTEs assigned to Class VI work. As shown in Figure 3, the Agency more than doubled the total number of FTEs dedicated to Class VI work from FY 2021 through FY 2024, with Class VI FTEs increasing from 15.25 FTEs to 37.7 FTEs, a 147 percent increase. These FTE increases corresponded with the significant increase in Class VI permits pending review at the EPA; however, the percentage increase in Class VI FTEs is an order of magnitude below the percentage increase in Class VI permit applications. Specifically, the number of Class VI permits pending review at the EPA grew over 2,800 percent from FY 2021 to FY 2024, compared to the 147 percent increase in Class VI FTEs over the same time frame. Also, despite the increase in FTEs for Class VI work, the total number of FTEs for the overall UIC Program grew by only 5.6 percent in that same period, from 69.35 FTEs to 73.28 FTEs. This means that while the EPA was expanding the number of Class VI FTEs, the number of FTEs available to perform other UIC Program work decreased. If the UIC Program needed to reallocate current Class VI FTEs to address the needs of other UIC Program areas, it could hinder the Agency's ability to manage the demands of Class VI permitting. In addition, as we discuss in more detail in Chapter 3, despite the increase in FTEs for Class VI work, the EPA is not meeting the Class VI Program's timeliness and transparency goals.

Figure 3: UIC and Class VI Program FTE compared to pending Class VI permits, FYs 2021–2024



Source: OIG analysis of UIC Class VI Permit Tracker data and FTE data. (EPA OIG image)

Note: The FY 2024 numbers include data through July 11, 2024, and do not represent the entire fiscal year.

* This chart includes applications for Class VI wells in Louisiana that the EPA received before it granted the state primacy in December 2023.

The EPA Increased Extramural Support for Class VI Work Through Contracts and Interagency Agreements

The EPA's UIC Branch has multiple contract and interagency vehicles in place to supplement program expertise and capacity. Based on information that we received from the EPA's regional UIC components, the EPA used contractor or interagency support to review the modeling and AoR delineation for every permit application for which the Agency initiated a technical review. These extramural support vehicles include:

- A contract with three task orders that provide support in the following areas: technical and analytical support for Class I, II, III, V, and VI permitting and permit application reviews; Geologic Sequestration Data Tool user and administrative support; drafting of documents for implementation and training development; technical assistance for permit implementation activities; special studies and technical reviews; and review of state applications for Class VI primacy. These task orders have a total value of $1,536,660.

> The EPA's ***Geologic Sequestration Data Tool*** is a centralized, web-based system that receives, stores, and manages Class VI data. Permit applicants and holders submit information to the Geologic Sequestration Data Tool during each phase of their projects, which permitting authorities can access to perform the needed technical reviews and evaluations.

- A contract with a task order to provide facilitation, communication, public engagement, stakeholder support, and technical analysis to support the implementation of the Class VI Program. This task order has a value of $1,591,606.
- Two interagency agreements with the Department of Energy and its National Laboratories for technical assistance in reviewing subsurface modeling and geologic site characterization information, as well as for building technical capacity related to Class VI permitting. These agreements, one of which took effect in 2021 and the other in 2023, are part of a federal technical assistance program with the Department of Energy. The 2021 agreement had a value of $999,904 and was paid for with annual appropriations. The 2023 agreement was initially funded at a value of $999,904 with supplemental IIJA appropriations but was modified with a cost amendment in June 2024 to add $6 million in additional funding, with a ceiling of up to $30 million contingent upon congressional appropriations. These two agreements combined have a value of $7,999,808, with the potential for the EPA to spend an additional $23,000,096, contingent upon congressional appropriations.

> The Department of Energy uses a network of ***National Laboratories*** to conduct research and development contributing to energy innovation, science discovery, nuclear security, and environmental cleanup, among other things. Of the 17 national laboratories, 16 of them are ***Federally Funded Research and Development Centers*** that are staffed and managed by private-sector organizations that have been awarded management-and-operating contracts by the Department of Energy.

- An interagency agreement with the Department of Energy's Pacific Northwest National Laboratory to support maintenance of the Geologic Sequestration Data Tool and data storage. This agreement has a value of $603,428.

EPA Regions Reported That Available Training Has Improved Their Class VI Program Capacities

Seven of the eight EPA regions that responded to our questionnaire indicated that the training made available to them had improved their Class VI Programs' capacity or performance. Examples of the training cited included:

- UIC training modules, including an eight-part Class VI implementation webinar series that covers all major aspects of the Class VI Program.
- Safe Drinking Water Act Class VI Inspector Training.
- Department of Energy Class VI training on modeling and carbon storage.
- Geologic Sequestration Data Tool tutorials.

The EPA Developed Information Management Tools and Program Guidance to Enhance Capacity

The UIC Program developed a suite of tools and program guidance to assist both the regional UIC components in implementing the Class VI Program and the Class VI well owners and operators in complying with Class VI regulations. Examples include a Class VI permit application completeness template, a list of computational tools and methods that may be used to address specific Class VI requirements, and a Class VI permit application outline. The EPA developed these materials to help permit applicants and permit writers to include all required information in the permit applications and to minimize Notices of Deficiency. The UIC Program also developed a permit application workflow planner and a resource support memorandum to assist the EPA and primacy states in planning and managing the permitting process.

Conclusions

The EPA generally met the intent expressed by Congress for using annual appropriations on its Class VI Program, but it did not use FY 2023 appropriations on Class VI regulator training within the specified time frame. In addition, using both annual and supplemental IIJA appropriations, the Agency has acted to increase Class VI Program expertise and capacity. However, as Class VI permit applications continue to increase, the EPA will need to address program demands to ensure that the Agency's capacity and expertise are sufficient.

Chapter 3
Additional EPA Action Is Needed to Meet Timeliness Goals and Enhance Public Transparency

The Agency is not on track to issue final permits within its 24-month goal for some Class VI permit applications under review. Similarly, the EPA has not consistently made initial completeness determinations on permit applications within the 30-day period specified in 40 C.F.R. § 124.3(c). The EPA cited several factors impacting its permit review timelines, including the technical complexity of permit applications, the need to request additional information from applicants, varying review processes, and resource challenges. Additionally, the EPA does not consistently share some information regarding the Class VI permitting process, even though public participation and transparency are important components of the Class VI regulatory framework. The EPA lacks procedures to identify what types of Class VI project information it should make available to the public, as well as how and when such information should be shared. Significant delays in Class VI permitting decisions may dissuade permit applicants from pursuing geologic sequestration projects, while a lack of transparency into the permitting process may hinder public participation and trust.

Timeliness of EPA Class VI Permit Reviews Is Impacted by Technical Complexity and Varying Regional Review Practices and Resources

Despite the actions taken by the EPA to enhance Class VI Program capacity and expertise, as discussed in Chapter 2, the Agency is not on track to issue final permits within its 24-month goal for some Class VI permit applications, and the Agency has not consistently made initial completeness determinations on Class VI permit applications within the 30-day period specified in 40 C.F.R. § 124.3(c). In addition to permit review challenges stemming from the complexities and completeness of information communicated in permit applications, some EPA regions told us that they did not have sufficient resources, such as budget, staff, and technical capacity, to issue final Class VI permits within the 24-month goal. Regional UIC components also reported varying permit application review practices for the completeness review, despite Agency guidance issued in December 2023 that aims to standardize completeness reviews across EPA regions.

The EPA's October 2022 report to Congress on Class VI permitting includes the Agency's agreement with recommendations from stakeholders representing industry, states, and nongovernmental organizations that its Class VI permitting process be streamlined to improve the efficiency of permitting timelines. Specifically, the Agency stated that it "anticipates that prospective owners or operators submitting complete Class VI applications will be issued permits in approximately two years." In December 2023 guidance to EPA regions, the Agency reiterated this "goal of making Class VI permit decisions within 24 months of the effective date of the permit application" and the expectation "that Regions will make every attempt to meet this target."

The EPA logs data about its Class VI permitting process in its UIC Class VI Permit Tracker. In December 2023, the tracker showed that 28, or approximately 18 percent, of the 157 Class VI permit applications the Agency had in process had estimated final permit decision milestone dates that exceeded the Agency's 24-month goal. Of the 36 applications with estimated final permit decisions in 2024, nearly 67 percent, or 24, of those decisions were expected to be rendered beyond the 24-month goal. The estimated final issuance dates for these 24 Class VI permits ranged from 30 to 374 days beyond the 24-month goal, with an average of 212 days past the goal. As of January 2025, two EPA regions made final decisions on six of these Class VI permit applications. Region 5 issued two final Class VI permits in January 2024 shortly after the date for the 24-month goal, both missing it by six days. Region 9 issued four final Class VI permits in December 2024, all of which exceeded the 24-month goal by nearly 13 months.[14]

There are several factors that may impact Class VI permit review timelines, such as the quality, quantity, and timeliness of the information submitted throughout the application process. In a December 2023 internal memorandum to EPA regional water division directors, the Drinking Water Infrastructure Development Division director stated, "Factors that will impact schedules but may be difficult for EPA to anticipate include the quality and quantity of site-specific data submitted by the applicant, the amount of time the applicant takes to respond to requests for additional information from EPA, and the number and complexity of public comments received on the draft permit." Similarly, in an August 2024 letter to members of Congress, the then-acting assistant administrator for Water said, "Ensuring applicants understand and address the UIC Class VI permit application requirements in [40 C.F.R. part 146, subpart H] and the technical complexity of UIC Class VI projects are major challenges in the timeline for permit reviews."

As we discuss in Chapter 1, if the EPA determines that the information submitted by applicants is insufficient, it may issue Requests for Additional Information as part of the "Technical Review" step. However, the Drinking Water Infrastructure Development Division director stated that issuing Requests for Additional Information can impact the overall permit review timeline. According to data on the EPA's UIC Class VI Permit Tracker website, the EPA made 93 separate Requests for Additional Information from applicants for the 163 Class VI well applications under review as of January 2025. On average, applicants took approximately 51 days to respond to each Request for Additional Information, with response times ranging from two to 278 days. The EPA needed to issue as many as ten separate Requests for Additional Information for some applications. Some EPA regions issued Requests for Additional Information more frequently, while some experienced longer than average applicant response times. For example, Region 5 issued 43 Requests for Additional Information for 29 Class VI well applications, with an average applicant response time of approximately 39 days per request. In contrast, Region 9 issued 29 Requests for Additional Information on 53 Class VI well applications, with an average applicant response time of approximately 65 days per request.

[14] For these four permits, the EPA awaited applicant responses to eight separate Requests for Additional Information for a total of 402 days.

While the EPA has developed and released templates and guidance to help standardize the Class VI permitting process, EPA regions use different approaches when forming technical review teams for Class VI permit applications and sending Requests for Additional Information to applicants. Some regions send several Requests for Additional Information as they review each part of a Class VI permit application, while other regions review many parts of an application before sending one consolidated Request for Additional Information with all their review comments. For example, a UIC Program staff member in Region 6 said that the region may send 60 to 100 comments in a single, consolidated Request for Additional Information.

As we described in the previous chapter, the EPA has contract and interagency vehicles to support the Class VI permitting process, and the regions with the most permit applications indicated that using these vehicles have improved their programs' capacity or performance. However, in response to our questionnaire, Regions 5, 6, and 9 identified that, even when considering the available contractor and interagency support, they did not have sufficient resources, such as budget, staff, or technical capacity, to take final action on pending Class VI permit applications within the Agency's 24-month goal. All other regions responding to our questionnaire indicated that their capacity to reach this goal depends on contractor and interagency support. One regional manager, who told us that projections for Class VI permitting process timelines are highly uncertain and variable, recommended that the Agency consider revising the 24-month goal to a range of 24 to 36 months depending on the complexity of the project.

The complexity of a project is another factor that may impact permit review timelines. In a letter to Congress in August 2024, the EPA noted that "the technical complexity of UIC Class VI projects [is a] major challenge[] in the timeline for permit reviews." The Agency relies on contract and interagency vehicles to review certain technical aspects of the applications, such as the AoR modeling included with Class VI permit applications. Regions 5, 6, and 9 told us that the regions lack computational modeling expertise.[15] Additionally, regional UIC components cited varying levels of expertise in different parts of the technical review step. For instance, a UIC Program staff member in Region 6 told us that the region needs additional expertise to aid in the financial assurance review of Class VI permit applications.

Another factor that impacts the overall Class VI permitting process timeline is whether the Agency makes an initial completeness determination within 30 days of receipt, as specified in 40 C.F.R. § 124.3(c). Although the EPA met this timeline for a majority of Class VI permit applications, it frequently took the Agency longer. For example, of the 138 Class VI permit applications under review at the EPA in May 2024, the EPA had made initial completeness determinations for 136 of them, with 40 percent of the determinations exceeding 30 days. One regional manager told us that there are different practices among EPA regions in how they conduct completeness reviews of Class VI permit applications. This regional manager said he believes that some regions simply ensure that all required materials are submitted, while other regions ask technical questions about the quality of information submitted.

[15] In response to our draft report, EPA Region 6 also noted that the regions lack computational modeling software.

In December 2023, the director of the Drinking Water Infrastructure Development Division issued guidance to regional Water Division directors outlining the Agency's Class VI permitting expectations. That guidance said that EPA regions were expected to use contractor support for all completeness reviews to help meet the 30-day time frame. A UIC Program employee told us that using contractors for completeness reviews would allow regional experts more time for Class VI technical reviews and permit writing. However, four of the six regions with experience reviewing Class VI permit applications indicated in response to our questionnaire that, as of February 2024, they were not using contractor support for completeness reviews, and the two other regions were only using contractors for completeness reviews of some applications.

The EPA Could Enhance Transparency to Improve Public Engagement

While the Agency includes steps in the Class VI permitting process to keep the public informed, it does not consistently make some information, such as administrative records or monitoring and testing results that can be used to assess compliance with permit requirements, readily accessible to the public. According to the EPA, public participation and transparency in the permitting process are important components of the Class VI regulatory framework. For instance, the EPA's Class VI website states that effective public engagement and transparency can help establish lines of communication between project developers and local stakeholders, as well as help build the trust that is essential to the long-term success of a Class VI project. If the Agency took steps to enhance the transparency of the Class VI Program, it could increase public participation and trust in the Class VI permitting process.

In its October 2022 report to Congress on Class VI permitting, the EPA said that it would increase the amount of Class VI permit information available to the public. To accomplish this, the EPA developed program tools designed to enhance public transparency in several Class VI Program areas, including:

- The UIC Class VI Permit Tracker. The initial version of the tracker was made available on the EPA's website in September 2023, and an enhanced version was released in April 2024. The tracker summarizes estimated and actual milestone dates for various phases of Class VI permit applications currently under review at the EPA.
- The UIC Class VI Data Repository. This repository, which was available on the EPA's website starting in April 2024, contains Class VI permitting materials. According to the EPA, these materials include permit applications with applicant narratives and attachments, final draft permits that are released for public comment, final permits, testing and monitoring reports, and permit violation notifications.

While these tools increase the amount of Class VI permit information available to the public, there are additional opportunities for the Agency to enhance transparency and public engagement, including making more information about Class VI permits and wells publicly available, understandable, and readily accessible to the affected community. For example, the Agency could ensure that it makes the results of monitoring and testing activities, which Class VI owners and operators must submit in

semiannual reports to the EPA, readily accessible to the public. These testing and monitoring activities are intended to identify any risks to underground sources of drinking water, and access to such information can provide surrounding communities with data about how Class VI wells may affect human health and the environment. However, as of October 2024, the Agency had not added any semiannual reports to the UIC Class VI Data Repository for one of the two EPA-permitted Class VI wells that had been constructed, and it had only added some reports to the repository for the other well. A UIC Program manager said that the operator of these wells, which were permitted by Region 5 in 2014 and 2015, has claimed that the monitoring reports for these wells are proprietary business information, and the Agency is currently going through a substantiation process associated with these reports. Until the EPA completes this process, the manager said that the Agency cannot post any monitoring reports for those two wells. One regional UIC Program manager also told us that company claims of confidential business information in Class VI permit applications, including some proposed well locations, has negatively impacted the region's ability to engage the public.

In its October 2022 report to Congress on Class VI permitting, the Agency stated its intent to increase public outreach, awareness, and transparency. However, we noted that in 2023, Region 5 stated that it would make the administrative record for two permits available for public review at the regional office,[16] which is in a different state from where the permitted wells and the communities are located. Therefore, this information may not be available in a location or format that is easily accessible to the affected community, thus potentially limiting the transparency of information used to support the EPA's permitting decisions. A UIC Program manager stated that the EPA regions make their own decisions on how to develop and maintain the administrative record for UIC permits, adding that the Class VI Program is currently engaging with regional offices to establish a consistent administrative record process. The manager noted that it would be easier to defend EPA permitting decisions if the administrative record process is implemented consistently across EPA regions for all Class VI permits.

The transparency of the Class VI Program is hindered when information related to permit application review and decision-making is not readily accessible to the public. Additionally, communities surrounding active Class VI well sites cannot always access monitoring and testing results, which, if made publicly available and understandable, could increase trust in the Agency's permitting program. The Agency needs to clarify and describe the actions that the EPA's regional offices should take to ensure the transparency of the Class VI permitting process.

Conclusions

Data provided by the EPA indicate that the Agency is not on track to issue all final Class VI permits within its stated 24-month goal. The Agency has emphasized that the technical complexity of Class VI permit application reviews impacts the timeline, stating that it must request additional details for many permit applications before it can sufficiently evaluate them. Some regions indicated that they need additional expertise in computational modeling and other aspects of the technical review. Further, some regions

[16] The administrative record includes the information used by the Agency to support its decision-making for the permit.

pointed to a lack of resources to reach the Agency's 24-month goal for final Class VI permitting decisions and noted regional differences in reviewing permit applications. Given the numerous factors impacting permitting timelines, an assessment of the permit review process may aid the Class VI Program in meeting its timeliness goals and requirements.

Additionally, the Agency could enhance public transparency regarding its Class VI Program. Developing procedures that identify the types of Class VI project information to make available to the public and that describe how and when such information should be shared would enhance public transparency, participation, and trust in the Class VI permitting process. In situations that prevent the Agency from sharing certain information about Class VI projects, such as when applicants claim that proprietary business information exists, the Agency could enhance transparency by clearly identifying when certain information is not available to the public.

Recommendations

We recommend that the assistant administrator for Water:

1. Assess the permitting process, including the EPA regional office resource needs and communication with permit applicants, to identify key factors contributing to delays, and establish a plan to address these key factors to achieve goals for Underground Injection Control Class VI permit review timelines. Doing so will aid in improving the efficiency of Underground Injection Control Class VI permitting.

2. Develop procedures that identify which types of Class VI project information will be available to the public, and describe how and when the EPA will share that information with the public. Doing so will enhance transparency of the Underground Injection Control Class VI permitting process.

Agency Response and OIG Assessment

The Agency's response to our draft report is in Appendix C. The EPA also provided technical comments, which we considered and incorporated as necessary.

The Agency agreed with Recommendation 1 and provided a list of seven completed corrective actions that it said satisfied the intent of the recommendation. Although the Agency's list of corrective action is commendable, it is unclear from the response what specific factors the Agency identified as having an impact on permit review timelines. Further, the corrective actions do not identify or address at least one factor that the Agency expressly identified during our fieldwork and in technical comments on our draft report: the time needed to request and receive additional information from permit applicants.

The Agency said that it established a "Class VI Tiger Team" to "identify and break through barriers and bottlenecks in processing permit applications," which may be an effective mechanism for conducting the assessment called for in our recommendation. However, when we asked the Office of Water to provide the results of any assessment conducted by the Class VI Tiger Team, the Agency provided no new information beyond that in its response to the draft report. Therefore, it is unclear what sort of

assessment the Agency or its Class VI Tiger Team has completed of the permitting process. For these reasons, Recommendation 1 remains unresolved.

The EPA also agreed with Recommendation 2 and developed a standard operating procedure for the Class VI Data Repository that describes not only the types of information to be made publicly available but also how and when such information should be shared using this tool. We consider the corrective actions for Recommendation 2 to be completed. However, we note that the Class VI Data Repository does not provide information about wells in states that have been granted Class VI primacy, despite the requirement for owners or operators of Class VI wells to submit all required reports in an electronic format to the EPA.[17] Therefore, as the EPA grants more states Class VI primacy, the EPA's Class VI Data Repository may not contain information about Class VI wells in those states, which would diminish the value of the repository as a transparent source of Class VI Program information for the public.

[17] 40 C.F.R § 146.91(e).

Chapter 4
The EPA Needs to Justify and Oversee Interagency Agreements Used to Support the Class VI Program

The UIC Branch did not prepare a market analysis to support the 2021 and 2023 interagency agreements with the Department of Energy and its National Laboratories. The Federal Acquisition Regulation, or FAR, specifies that Federally Funded Research and Development Centers, or FFRDCs, including most of the Department of Energy's National Laboratories, may not provide services to nonsponsoring agencies, such as the EPA, when such services are otherwise available in the private sector.[18] According to EPA policy, the EPA can only authorize an interagency agreement to acquire goods and services from an FFRDC when the Agency demonstrates, through a market analysis, that no private-sector provider exists. The UIC Branch provided no such demonstration in connection with the services that it requested from the Department of Energy's National Laboratories. Furthermore, we identified information indicating that at least some of these services were available in the private sector.

Additionally, the National Laboratories did not consistently fulfill one of the terms in both interagency agreements because they did not submit monthly progress reports describing the work completed with itemized invoicing information. Complete and accurate monthly progress reports are important so that the Agency can effectively implement and oversee its interagency agreements and ensure that the efforts undertaken and costs expended are in line with statutory and contractual obligations. Without proper oversight, federal dollars paid to extramural entities may be at risk of waste, fraud, and abuse.

Before Acquiring Services from the National Laboratories, the UIC Branch Did Not Demonstrate Service Unavailability in the Private Sector

Seven of the eight Department of Energy's National Laboratories that the EPA may acquire services from to support its Class VI Program are classified as FFRDCs under the FAR. These FFRDCs may perform work for federal agencies other than the Department of Energy when the requested work cannot otherwise be obtained from the private sector. According to EPA policy, to acquire services from an FFRDC, the EPA must demonstrate that no private-sector provider exists by conducting a market analysis showing that the FFRDC is the only source for the needed goods or services. For the interagency agreements that the EPA established with the Department of Energy, the Agency did not conduct a market analysis to demonstrate that the requested services were not available in the private sector. In fact, the Agency had an existing contract with a private-sector provider and had used it to conduct Class VI permit reviews.

FFRDCs are special types of government-owned, contractor-operated research centers that conduct research, development, and related activities in support of a federal agency's mission. According to the

[18] The FAR refers to both "the private sector" and "domestic private industry." We include both terms in our report but consider both terms to be synonymous.

Congressional Research Service, since FFRDCs are operated by contractors and not federal employees, many restrictions imposed on federal agencies in terms of pay, hiring, and other issues do not apply, in effect increasing the flexibility of the FFRDCs compared to the federal government.[19]

The Department of Energy is the sponsoring agency for the National Laboratories. According to FAR section 35.017(a)(2), an FFRDC may perform work for agencies other than its sponsoring agency "when the work is not otherwise available from the private sector." A UIC Program manager and a staff member familiar with the interagency agreements cited the unique technical expertise at the National Laboratories as the primary reason supporting the interagency agreements, but the UIC Program did not provide an analysis to either the Department of Energy or the EPA Office of Acquisition Solutions to demonstrate that similar services were not available from the private sector. This is inconsistent with the FAR section 17.503(e), which allows nonsponsoring agencies to obtain goods and services from FFRDCs but outlines several limitations, including that the "nonsponsoring agency shall provide to the sponsoring agency necessary documentation that the requested work would not place the FFRDC in direct competition with domestic private industry."[20] In addition, the EPA Office of Grants and Debarment, via a 2008 Interagency Agreement Policy Issuance,[21] provided internal guidance related to this topic:

> In certain cases, EPA may want to consider entering into IAs [interagency agreements] under the Economy Act where FFRDCs will provide goods and services to the Agency. OGC [EPA Office of General Counsel] has advised that these IAs are authorized only where the Agency can demonstrate, as required by 35.017 of the Federal Acquisition Regulation (FAR), that no private sector provider exists. To make this demonstration, program offices must perform a market analysis showing that the FFRDC is the only source for the needed goods or services.

Despite the Office of General Counsel's advice that the Agency demonstrate that no private-sector provider exists, when we asked whether a market analysis was prepared for the 2021 and 2023 interagency agreements, the UIC Program did not produce such an analysis. Instead, a UIC Program employee familiar with the interagency agreements told us that the Office of Acquisition Solutions "reviewed and approved the [Determination and Findings] for both agreements to ensure the agencies adhere to the requirements related to establishing and implementing an Interagency Agreement." No analyses of private-sector availability of services or the costs of such services were provided in the Determination and Findings documents for the interagency agreements.

---

[19] Cong. Rsch. Serv, Report No. R44629, Federally Funded Research and Development Centers (FFRDCs): Background and Issues for Congress (2020).

[20] FAR section 35.017-3(b)(1) similarly requires the nonsponsoring agency to provide required documentation to the sponsoring agency.

[21] EPA, Office of Grants and Debarment Interagency Agreement Policy Issuance, IPI-08-01, Non-Economy Act Interagency Agreements (IAs) and IAs with Federally Funded Research and Development Centers (2008).

We identified information that indicated certain services that the EPA sought to acquire from the National Laboratories were available in the private sector. The services in question are detailed in "Task 1" of the statements of work for the interagency agreements. Task 1 states, "The objective of this task is to provide technical assistance (e.g., evaluations of modeling and/or geologic site characterization) to EPA to support the review of Class VI permit applications." We identified the following evidence that indicates such services are available via a private-sector provider:

- UIC Program personnel said that the program has an existing contract with a private contractor that can provide modeling reviews. These personnel said that the Agency uses the Department of Energy's National Laboratories for geologic site characterization and modeling review support, while using contractor support for other aspects of technical reviews. However, these individuals also told us that existing contracts could be used for modeling reviews, as needed by the EPA. An employee in the Office of Acquisition Solutions who signed the 2021 Determination and Findings document reported not being aware that modeling or site characterization support was available to the UIC Program through an existing contract. And that employee remained unaware of the contract vehicles that could have facilitated these services, since the UIC Branch failed to disclose the extent of existing contracts to the Office of Acquisition Solutions.
- The administrative record for two Class VI permits in Region 5 showed that the modeling review for the permits was developed and prepared by a private contractor, not the Department of Energy's National Laboratories.
- Progress reports that a contractor prepared for the EPA for an existing contract show that the EPA previously used that contractor for modeling and geologic site characterization reviews, including during some months in 2023 and 2024 that overlapped with the Agency's interagency agreement with the Department of Energy's National Laboratories. A UIC Program employee familiar with that contract provided us with an example of a geologic site characterization review that the contractor performed for the EPA.
- The Class VI primacy application that the State of Louisiana submitted to the EPA said that the state anticipated using third-party contractor modelers during the permit review stages at the onset of primacy. Given that the state anticipated the need for contractor support for modeling in its Class VI primacy application, which the EPA explicitly acknowledged and approved in its January 5, 2024 final rule approving primacy,[22] it is reasonable to assume that private contractor support for these services is available.

Despite these examples, the EPA's Determination and Findings documents for the interagency agreements provided no indication of similar services being available in the private sector. In fact, the Determination and Findings document for the 2023 interagency agreement, which was funded with IIJA appropriations, states, "After a review of all internal and external contract options, it has been

[22] State of Louisiana Underground Injection Control Program; Class VI Primacy, 89 Fed. Reg. 703 (Jan. 5, 2024).

determined that no other vehicle fulfills this requirement."[23] In both the 2021 and 2023 Determination and Findings documents, the Agency cited the Department of Energy's "unique expertise and historical knowledge" as a factor supporting the use of the interagency agreement. The EPA also stated in both documents that using the Department of Energy and its National Laboratories to acquire the services "would be most convenient and cost effective."

Without a market analysis, the EPA was unable to demonstrate, as required by the FAR and EPA policy, whether the UIC services needed by the EPA could be provided via the private sector. Regardless of the Agency's preferences for, or any convenience or cost-effectiveness gained by, acquiring services from the National Laboratories, those services should not be obtained via interagency agreements with FFRDCs if they are otherwise available from the private sector. Because the EPA did not provide documentation of a market analysis to demonstrate compliance with sections 17.503 and 35.017-3 of the FAR, the entire $7,999,808 that the Agency has obligated for the interagency agreements with the Department of Energy and its National Laboratories is not supported by adequate documentation, and we are questioning these costs.[24] Given that we identified evidence that private-sector services were available for at least one task identified in the interagency agreements, there is a clear need for the Agency to conduct a market analysis to assess and justify its use of the National Laboratories to support Class VI permit reviews.

Missing or Inaccurate Monthly Progress Reports Weaken the EPA's Ability to Oversee Services Acquired via Interagency Agreements

The Department of Energy's National Laboratories have not satisfied the terms of the 2021 and 2023 Federal Technical Assistance Program interagency agreements with the UIC Program in that they have not always submitted monthly status reports that contain sufficient detail to support invoiced costs. Under the statements of work for both the 2021 and 2023 interagency agreements, each lab is required to submit progress reports. Specifically, the statement of work for the 2023 agreement provides that:

> The DOE [Department of Energy] National Laboratories shall submit monthly progress reports to EPA that contain enough information to ascertain that the scope of work is being carried out as described in this FTAP [Federal Technical Assistance Program]. The reports must contain itemized invoicing information, which includes a summary of completed and ongoing technical direction. This information must be submitted

[23] The "requirement" referred to in the Determination and Findings document is the requirement "for technical assistance related to secure geologic storage of carbon dioxide (CO2), including, but not limited to, the following activities related to evaluating UIC Class VI well permits: review of geologic site characterization and subsurface modeling to evaluate the Area of Review (AoR) around CO_2 injection wells, as well as technical capacity building related to Class VI permitting."

[24] Per the Inspector General Act of 1978, as amended, a "questioned cost" is one found to not comply with an applicable statute, regulation, or other applicable document governing the expenditure of funds; to not be supported by adequate documentation; or to be for an intended purpose that is unnecessary or unreasonable.

regardless of whether work under this FTAP has been completed by the labs during the specified invoicing period.

According to a UIC Program employee familiar with the interagency agreements, the project officer for the agreements is to review the progress reports to ensure that they reflect current invoicing expenditures. Monthly progress reports are used to track expenditures and work performed for each period of performance. Therefore, these progress reports represent a management control tool that facilitates oversight of the services being acquired through the interagency agreements.

The National Laboratories did not submit about 20 percent of the required progress reports from July 2022 through April 2024. For example, one National Laboratory did not submit any progress reports between September 2022 and January 2024 but still invoiced the EPA for $99,813.88 under the 2021 interagency agreement and $12,528.22 under the 2023 interagency agreement for those months. Additionally, another National Laboratory did not submit any progress reports from October 2023 through February 2024 but still invoiced the EPA for $43,203.49 of work for those months.

When the National Laboratories did submit progress reports, some lacked the level of detail called for in the interagency agreements. In other words, the information submitted either was not enough to ascertain that the work was performed as required under the agreements or did not contain itemized invoicing. In some months, progress reports simply included cost information, with little-to-no explanation of the work performed or the time used to complete the work. For example, Figure 4 shows the information included in a progress report submitted by one National Laboratory in September 2023.

Figure 4: September 2023 monthly progress report from a National Laboratory

FTAP – **[Lab Name 1 Removed by EPA OIG]** – September 2023 invoice

Month	Spending	Work Summary
September	$17,735.78	Completed and Submitted **[Facility Name Removed by EPA OIG]** Review with **[Lab Name 2 Removed by EPA OIG]** September 14th **[Lab Name 1 Removed by EPA OIG].**

Source: Monthly progress report from one National Laboratory in September 2023, provided by the EPA. (EPA OIG image of progress report with alterations)

Note: FTAP = Federal Technical Assistance Program.

In addition to missing and incomplete progress reports, not all progress reports contained information that was consistent with invoiced costs. For example, as shown in Table 3, progress reports from one National Laboratory from August 2023 through December 2023 showed total costs of just over $75,000. However, according to information provided by a UIC Program employee familiar with the interagency agreements, the lab invoiced nearly $108,000 in expenditures during that time.

Table 3: Reported versus invoiced costs for one National Laboratory

Date	Cost shown in progress report ($)	Invoiced expenditures ($)
August 2023	11,465.04	12,661.68
September 2023	—*	14,158.65
October 2023	25,990.00	26,091.17
November 2023	18,950.00	22,680.41
December 2023	18,950.00	32,381.67
TOTAL	**75,355.04**	**107,973.58**

Source: OIG analysis of monthly progress reports from a National Laboratory and invoiced totals provided by the UIC Program. (EPA OIG table)

* No report was provided.

Even if the labs do not properly submit progress reports, a UIC Program employee familiar with the interagency agreements indicated that it is possible to track lab activities and expenditures by obtaining information via verbal communications and additional written correspondence. Additionally, according to this employee, the project officer for the agreements can review and track the number of projects, deliverable dates, and invoicing to ensure that the project information and billing align with each other. The UIC Program employee familiar with the interagency agreements told us that the labs' Department of Energy point of contact sends them reminders to submit progress reports for the interagency agreements at the start of each month and that subsequent monthly reminders include requests to submit any missing information from previous months. Furthermore, according to this employee, the UIC Program has also reached out to the National Laboratories regarding missing or incorrect information in the progress reports. The employee said that the EPA is continuing to work with the labs to resolve any discrepancies identified and to improve their overall reporting efforts. Some of the efforts to improve reporting include:

- Redesigning the progress report template from a word-processing document to a spreadsheet format to facilitate ease of reporting.
- Modifying the 2023 interagency agreement, which the EPA pays for with IIJA funds, to create a full-time "Class VI Liaison" position at each of the six National Laboratories supporting the EPA. These positions would be funded by the EPA through the interagency agreement and dedicated to Class VI activities. According to the UIC Program employee familiar with the interagency agreements, these positions will allow for more effective communication between the labs, the EPA regional offices, and Class VI applicants. The liaisons will be responsible for compiling and overseeing the development of the monthly progress reports and their submission to the EPA.

Because the scope of our evaluation did not include a financial audit of the interagency agreements used by the UIC Program, we do not offer an opinion on the accuracy of the actual invoiced expenditures under these agreements. However, the missing, incomplete, and inconsistent progress reports that we identified do not meet the terms of the interagency agreements and represent an internal control weakness in the Agency's oversight of the work performed by the Department of Energy's National Laboratories and the services acquired by the EPA's UIC Program.

Conclusions

The EPA's UIC Program used contracts and interagency agreements to increase the Agency's capacity to review permit applications. However, the Agency did not demonstrate that the services it sought to acquire via its interagency agreements with the Department of Energy's National Laboratories were not available from the private sector. The FAR prohibits nonsponsoring federal agencies from acquiring services from FFRDCs, which include many of the Department of Energy's National Laboratories, when such services are otherwise available from the private sector. As stated in Agency policy, the Office of General Counsel has advised that the Agency demonstrate through a market analysis that the services requested from FFRDCs through an interagency agreement are not available from the private sector. The EPA needs to assess whether its 2021 and 2023 interagency agreements with the Department of Energy's National Laboratories comply with the FAR and Agency policy. Additionally, the UIC Program must ensure that the terms of its interagency agreements are being satisfied to prevent waste and abuse of federal dollars.

Recommendations

We recommend that the assistant administrator for Water:

3. To ensure consistency with Federal Acquisition Regulation sections 17.503 and 35.017 and EPA policy, prepare a market analysis or other documentation assessing the extent to which the services the EPA obtains in support of its Underground Injection Control Class VI Program through the Department of Energy's National Laboratories places Federally Funded Research and Development Centers in direct competition with domestic private industry. If the EPA determines that its use of Federally Funded Research and Development Centers places them in direct competition with domestic private industry, take action to ensure that the EPA obtains services for its Underground Injection Control Class VI Program consistent with the Federal Acquisition Regulation and EPA policy. Doing so will help ensure proper financial stewardship of the $7,999,808 obligated for the interagency agreements with the Department of Energy and its National Laboratories.

4. To ensure proper financial stewardship of Agency resources, notify the Department of Energy and its National Laboratories about the monthly progress report deliverables required by the statements of work under the Federal Technical Assistance Program interagency agreements for the Underground Injection Control Program and ensure that all required elements are included in the monthly progress reports submitted by the National Laboratories. Doing so will help ensure that the EPA can appropriately track expenditures and work performed under the EPA's interagency agreements with the Department of Energy and its National Laboratories.

Agency Response and OIG Assessment

The Agency's response to our draft report is in Appendix C. The EPA also provided technical comments, which we considered and incorporated as necessary.

The Agency agreed with Recommendation 3 and proposed to complete two corrective actions by September 30, 2025. The Agency's second proposed corrective action is contingent upon the results of its first proposed action. In the first proposed corrective action, the Agency said that it would ensure consistency with the FAR and EPA policy, but it did not explicitly commit to preparing a market analysis or demonstrating that it conducted market research, as required by EPA policy, of whether any private-sector providers offer the same services being requested from the FFRDCs. Instead, the Agency commits to take steps to demonstrate and document that the services the Department of Energy's National Laboratories provide in support of the Class VI Program cannot be obtained as conveniently or economically by contracting directly with a private source. Convenience and cost-effectiveness are identified in the Economy Act, 31 U.S.C. § 1535, as factors that may be used to justify an acquisition via an interagency agreement. However, since the EPA is acquiring services for its Class VI Program using the Department of Energy's long-term contracts with the National Laboratories, the FAR applies. The FAR and EPA policy identify additional criteria that must be met when obtaining services from FFRDCs. Specifically, and as noted previously:

- The FAR section 35.017(a)(2) states that an FFRDC may perform work for agencies other than its sponsoring agency under the Economy Act or other applicable statute "when the work is not otherwise available from the private sector."

- EPA policy states, "In certain cases, EPA may want to consider entering into IAs [interagency agreements] under the Economy Act where FFRDCs will provide goods and services to the Agency. OGC [EPA Office of General Counsel] has advised that these IAs are authorized only where the Agency can demonstrate, as required by 35.017 of the Federal Acquisition Regulation (FAR), that no private sector provider exists. To make this demonstration, program offices must perform a market analysis showing that the FFRDC is the only source for the needed goods or services."

Therefore, convenience or cost-effectiveness is not a controlling criterion in this circumstance. As we note in our report, "[r]egardless of the Agency's preferences for, or any convenience or cost-effectiveness gained by, acquiring services from the National Laboratories, those services should not be obtained via interagency agreements with FFRDCs if they are otherwise available from the private sector." As such, because the Agency's corrective actions do not include an explicit commitment to prepare the market analysis demonstration called for in EPA policy, Recommendation 3 remains unresolved.

The Agency agreed with Recommendation 4 and provided the March 5, 2025 letter that the Office of Water sent to the Department of Energy. The letter outlined that the EPA is requiring the National Laboratories to submit all the missing progress reports and to submit future progress reports in a timely manner. The corrective action for Recommendation 4 is completed.

Status of Recommendations and Potential Monetary Benefits

Rec. No.	Page No.	Recommendation	Status*	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
1	21	Assess the permitting process, including the EPA regional office resource needs and communication with permit applicants, to identify key factors contributing to delays, and establish a plan to address these key factors to achieve goals for Underground Injection Control Class VI permit review timelines. Doing so will aid in improving the efficiency of Underground Injection Control Class VI permitting.	U	Assistant Administrator for Water	—	—
2	21	Develop procedures that identify which types of Class VI project information will be available to the public, and describe how and when the EPA will share that information with the public. Doing so will enhance transparency of the Underground Injection Control Class VI permitting process.	C	Assistant Administrator for Water	4/21/25	—
3	29	To ensure consistency with Federal Acquisition Regulation sections 17.503 and 35.017 and EPA policy, prepare a market analysis or other documentation assessing the extent to which the services the EPA obtains in support of its Underground Injection Control Class VI Program through the Department of Energy's National Laboratories places Federally Funded Research and Development Centers in direct competition with domestic private industry. If the EPA determines that its use of Federally Funded Research and Development Centers places them in direct competition with domestic private industry, take action to ensure that the EPA obtains services for its Underground Injection Control Class VI Program consistent with the Federal Acquisition Regulation and EPA policy. Doing so will help ensure proper financial stewardship of the $7,999,808 obligated for the interagency agreements with the Department of Energy and its National Laboratories.	U	Assistant Administrator for Water	—	7,999
4	29	To ensure proper financial stewardship of Agency resources, notify the Department of Energy and its National Laboratories about the monthly progress report deliverables required by the statements of work under the Federal Technical Assistance Program interagency agreements for the Underground Injection Control Program and ensure that all required elements are included in the monthly progress reports submitted by the National Laboratories. Doing so will help ensure that the EPA can appropriately track expenditures and work performed under the EPA's interagency agreements with the Department of Energy and its National Laboratories.	C	Assistant Administrator for Water	3/5/25	—

* C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

Appendix A

Technical Review Components of Class VI Permit Applications

The EPA reviews various project plans and technical components of applications for Class VI permits during the technical review step of the permitting process. According to an internal EPA guidance document, *Workflow Planning for Class VI Permit Application*, the following activities, along with the Agency's citation to applicable regulations, are included in the Agency's Class VI permit application reviews:

- **Evaluate information about the geologic setting of the proposed site** [40 C.F.R. § 146.82(a)(2)-(3), (5)- (6)]: The purpose of this evaluation is to determine whether the Class VI well will be sited in an area with a suitable geologic system, consisting of an injection zone with sufficient capacity to receive the carbon dioxide to be injected and a confining zone without transmissive faults or fractures.[25] The permit application will include a narrative describing the regional geology, faults and fractures, the physical and chemical characteristics of the injection and confining zones, seismic history and risk, and hydrology or hydrogeology, as well as a description of how the available geologic information supports a determination that the site is suitable for geologic sequestration.

- **Review AoR modeling, proposed AoR delineation, and corrective action plan** [40 C.F.R. §§ 146.82(a)(4), (13); 146.84(b)]: The purpose of this review is to verify that the AoR delineation is based on sufficiently robust modeling and that the resulting AoR represents the area in which underground sources of drinking water may be endangered by the injection operation, as well as to ensure that all artificial penetrations that may allow fluid movement into underground sources of drinking water are identified and appropriately addressed.[26]

- **Review proposed injection well construction** [40 C.F.R. §§ 146.82(a)(11)- (12); 146.86]: The purpose of this review is to ensure that the injection well will be constructed in a manner that is appropriate for the planned operations, is compatible with the carbon dioxide stream and subsurface chemistry, and will maintain mechanical integrity throughout the duration of the geologic sequestration project.

- **Review injection depth waiver application**, if applicable [40 C.F.R. §§ 146.82(d); 146.95(a)]: The purpose of this review is to ensure that underground sources of drinking water above and below

[25] A ***confining zone*** means a geologic formation or group of formations arranged in layers overlying the injection zones that acts as a barrier to fluid movement. A ***transmissive fault or fracture*** is one that has sufficient permeability and vertical extent to allow fluids to move between geologic formations.

[26] ***Artificial penetrations*** include any manmade structures, such as wells or mines, that provide a flow path out of the injection zone.

the injection zone are protected from endangerment if the applicant requests to operate under an injection depth waiver.

- **Review proposed aquifer exemption expansion**, if applicable [40 C.F.R. §§ 144.7(d)(1); 146.4(d)]: The purpose of this review, which will be conducted if an applicant requests an aquifer exemption expansion, is to confirm that an appropriately sized area would be exempted so that the carbon dioxide plume and pressure front remain within that area and that the aquifer is not a current or future source of drinking water.[27]

- **Review proposed preoperational testing program** [40 C.F.R. §§ 146.82(a)(8); 146.87]: The purpose of this review is to confirm that appropriate testing will be performed to verify proper construction of the injection well and to characterize the injection and confining zones, including addressing any identified uncertainties.

- **Review proposed operating conditions** [40 C.F.R. §§ 146.82(a)(7), (9)- (10); 146.88]: The purpose of this review is to ensure that the planned injection rate, pressure, and volume are appropriate to the site geology and the well's construction.

- **Review proposed testing and monitoring plan** [40 C.F.R. §§ 146.82(a)(15); 146.89; 146.90]: The purpose of this review is to verify that the planned testing and monitoring of the substances injected, the injection well, and the geologic environment comprise a comprehensive strategy that is appropriate to planned operations, the well's construction, and site-specific geologic conditions, as well as to evaluate the performance of the project against modeled predictions.

- **Review proposed injection well plugging plan** [40 C.F.R. §§ 146.82(a)(16); 146.92]: The purpose of this review is to confirm that the injection well will be plugged using appropriate materials and procedures so that it will not serve as a conduit for fluid movement that could endanger underground sources of drinking water following cessation of injection.

- **Review financial responsibility cost estimates and instruments** [40 C.F.R. §§ 146.82(a)(14); 146.85(a)]: The purpose of this review is to ensure that adequate financial resources are available to carry out activities related to closing and remediating geologic sequestration sites without the use of taxpayer monies.

- **Review proposed emergency and remedial response plan** [40 C.F.R. §§ 146.82(a)(19); 146.94]: The purpose of this review is to verify that appropriate responses will be taken to protect underground sources of drinking water from endangerment if an emergency event should occur during the construction, operation, or post-injection phases of the project.

[27] A ***pressure front*** means the zone of elevated pressure that is created by the injection of carbon dioxide into the subsurface. The ***pressure front of a carbon dioxide plume*** refers to a zone with a pressure differential sufficient to cause the movement of fluids into an underground source of drinking water.

- **Review proposed post-injection site care and site closure plan** [40 C.F.R. §§ 146.82(a)(17)- (18); 146.93]: The purpose of this review is to ensure that planned post-injection phase monitoring strategies will ensure non-endangerment of underground sources of drinking water throughout the post-injection phase, as well as to ensure that the site will be properly closed.

Appendix B

Prior Reports

In July 2015, we issued OIG Report No. 15-P-0204, *Enhanced EPA Oversight and Action Can Further Protect Water Resources From the Potential Impacts of Hydraulic Fracturing*. Evidence showed that companies had used diesel fuels during hydraulic fracturing without EPA or state UIC Class II permits, and we determined that the EPA needed to improve oversight of permit issuance for hydraulic fracturing using diesel fuels. We issued three recommendations in that report, including that the assistant administrator for Water determine whether primacy states and tribes issued permits for the use of diesel fuels as required and that the assistant administrator for Enforcement and Compliance Assurance address any compliance issues related to issuing permits for hydraulic fracturing using diesel fuels. The Agency agreed with all recommendations and completed corrective actions that met the intent of the recommendations.

The Government Accountability Office has published several reports related to the UIC Program; however, none of these reports specifically addressed Class VI permitting or oversight. In February 2016, the Government Accountability Office issued GAO-16-281, *EPA Needs to Collect Information and Consistently Conduct Activities to Protect Underground Sources of Drinking Water*, which reported that the EPA had not collected the needed information or conducted consistent oversight to assess whether state- and EPA-managed UIC Class II programs were protecting underground sources of drinking water. According to the report, EPA officials said that they had few resources to oversee UIC Class II programs, but the Government Accountability Office found that the EPA had not conducted a workforce analysis to identify the resources needed for such oversight. The Government Accountability Office concluded that without conducting such an analysis, the EPA would not be able to identify the human capital or other resources needed to carry out oversight of the UIC Class II programs. The report issued four recommendations to the EPA, including a recommendation to conduct a workforce analysis to identify the resources needed to conduct effective program oversight. The EPA did not implement any corrective actions to address the recommendation for a workforce analysis.

In June 2014, the Government Accountability Office published report GAO-14-555, *EPA Program to Protect Underground Sources from Injection of Fluids Associated with Oil and Gas Production Needs Improvement*. The report described the Government Accountability Office's review of the EPA's oversight of the UIC Class II Program and recommended that the EPA review emerging risks and program safeguards; improve data collection and reporting; conduct a rulemaking to incorporate state program requirements and changes into federal regulations; evaluate and consider alternative processes for incorporating state program changes into federal regulations; and evaluate and revise, if necessary, the UIC Program guidance on effective oversight. The EPA agreed with all recommendations except one. While the EPA did not agree to conduct a rulemaking to incorporate state program requirements into federal regulations, it agreed to evaluate alternatives to rulemaking.

Agency Response to the Draft Report

OFFICE OF WATER
WASHINGTON, D.C. 20460

May 12, 2025

MEMORANDUM

SUBJECT: Response to Office of Inspector General Draft Report: *Evaluation of the EPA's Implementation of the Underground Injection Control Class VI Well Program*, Project No. OSRE-FY24-0023, April 4, 2025

FROM: Peggy S. Browne, Acting Assistant Administrator

Browne, Peggy
Digitally signed by Browne, Peggy
Date: 2025.05.12 09:20:19 -04'00'

TO: Nicole N. Murley, Acting Inspector General
Office of Inspector General

Thank you for the opportunity to review and respond to the Office of Inspector General's draft report titled, *Evaluation of the EPA's Implementation of the Underground Injection Control Class VI Well Program*, Project No. OSRE-FY24-0023, dated April 4, 2025. The following is a summary of the U.S. Environmental Protection Agency's overall position, followed by the agency's responses to draft report's recommendations. The EPA has also provided more detailed technical comments attached to this memorandum.

AGENCY'S OVERALL POSITION

The EPA is pleased that the OIG highlighted actions that the agency has taken to streamline the Class VI permitting process and increase Class VI Program expertise and capacity, such as (1) staff dedicated to Class VI work, (2) using contract vehicles and interagency agreements to support regional permitting, (3) developing and offering training opportunities, and (4) developing guidance and data management tools. However, we are concerned that the draft report mischaracterizes the agency's goal for issuing final permit decisions. The timeframe is dependent on several factors, including application quality and timeliness, and the draft report does not incorporate these factors into its analysis of final permit decision timelines.

We are also concerned that the draft report mischaracterizes the purpose and scope of the EPA's interagency agreements with the U.S. Department of Energy and the National Laboratories.

As detailed in the attached technical comments, the EPA identified several other inaccurate and misleading statements within the draft report that form the basis of the OIG's findings, conclusions, and recommendations which should be addressed.

As further highlighted below, the EPA agrees with all of the recommendations. Moreover, the agency has already completed corrective actions associated with recommendations 1, 2, and 4 that satisfy the intent of the OIG's recommendations.

AGENCY RESPONSE TO RECOMMENDATIONS

OIG Recommendation 1:
Assess the Underground Injection Control Class VI permitting process, including regional resource needs and communication with permit applicants, to identify key factors contributing to delays and establish a plan to achieve goals for Underground Injection Control Class VI permit review timelines.

EPA's Response to Recommendation 1 – Agree (Completed)
The EPA agrees with Recommendation 1 and has already completed actions that satisfy the intent of this recommendation. The Office of Water is committed to continuously improving internal processes to optimize the Underground Injection Control Class VI permitting process, which includes assessing regional resource needs and communication with permit applicants to identify and resolve key factors contributing to delays.

As part of this commitment, the EPA has established the "Class VI Tiger Team," a team of senior leaders in the Office of Water who work with Regional UIC program managers and leaders to identify and break through barriers and bottlenecks in processing permit applications (and primacy requests) under the Safe Drinking Water Act. Over this past year, the EPA planned and recently completed an extensive suite of resources that focused on key factors contributing to delays and in support of regional capacity-building. We consider this recommendation resolved with no additional corrective actions necessary.

Completed Corrective Actions:

1. Established the "Class VI Tiger Team." **Completion date:** March 27, 2025.

2. Established the "Ask a Scientist Area of Review Workshop Series" to build computational modeling capacity in the regions. Two workshops have been held to date (February and October 2024). Recordings of the trainings and PowerPoint slides are shared with the EPA regions and available for reference at any time by approved EPA users on the "Class VI Workgroup" Teams channel. **Completion date:** October 24, 2024.

3. Established Class VI modeling workgroup consisting of Regional and headquarters UIC staff with modeling expertise who meet to discuss modeling topics to build computational modeling capacity at the EPA. A kickoff meeting for this workgroup was held on February 14, 2025. This group serves as a resource and will meet on an ad-hoc basis as new topics or questions are identified by regional UIC staff. **Completion date:** February 14, 2025.

4. Established Liaison positions at the DOE National Laboratories. The EPA requested the Department of Energy's National Laboratories to identify liaisons to assist the EPA with technical questions associated with Class VI for the purpose of capacity-building.

Currently, five liaisons are part of this agreement. The first monthly liaison check-in meeting took place on April 16, 2025. **Completion Date:** April 16, 2025.

5. Developed Class VI technical evaluation checklists. These checklists, developed for regional permit reviewers, facilitate the evaluation of the technical components of the Class VI review. The Office of Water finalized and shared the full suite of Class VI checklists with the EPA regions on April 24, 2025. **Completion date:** April 24, 2025.

6. Developed administrative record resources. A newly available desk guide offers a general framework regarding what goes in the administrative record for a Class VI permit decision. The accompanying Index Template is an Excel template for the administrative record index for the draft and final permit. These resources are a continuation of the agency's efforts to provide support for the development of the administrative record for UIC permitting decisions. The Office of Water finalized and shared the administrative record resources with the EPA regions on April 16, 2025. **Completion date:** April 16, 2025.

7. Developed Class VI Resources Index. This is an EPA-internal database for all Class VI tools (e.g., trainings, checklists, reports, white papers, and guidance documents) developed to date. The index, which can be accessed by approved EPA users on the "Class VI Workgroup" Teams channel, contains descriptions of and links to Class VI tools housed across the EPA's websites, Teams/SharePoint, and other locations. The index will be updated as new tools are developed. The Office of Water finalized and shared the Class VI Resources Index with the regions on April 4, 2025. **Completion date:** April 4, 2025.

OIG Recommendation 2:

Develop a procedure to enhance transparency of the Class VI permitting process that identifies which types of Class VI project information will be available to the public and describe how and when the EPA will share that information with the public.

EPA Response to Recommendation 2 – Agree (Completed)

The EPA agrees with Recommendation 2 and has already completed actions that satisfy the intent of this recommendation. The EPA developed an internal Standard Operating Procedure document associated with the Class VI Data Repository[28] (an online, public-facing database containing Class VI project information). This SOP was shared with the EPA regions on December 30, 2024, and an updated version of the repository SOP was shared with the EPA regions on April 21, 2025. This SOP describes the types of Class VI information to be made publicly available, as well as how and when such information should be shared using these tools.

The OIG noted in its report that, "as of October 2024, the agency had only added some semiannual reports to the UIC Class VI Data Repository for one of the two EPA-permitted Class VI wells that had been constructed." The EPA agrees that information required by the permits should be publicly available, understandable, and readily accessible to the affected community. The EPA will continue to upload new reports as they become available for public posting.

[28] https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-carbon-dioxide#CurrentProjects

Because the EPA has developed procedures (i.e., SOPs) to enhance transparency, we consider this recommendation resolved with no additional corrective actions necessary.

Completed Corrective Action:
Developed a Standard Operating Procedure document for the Class VI Data Repository. **Completion date:** April 21, 2025.

OIG Recommendation 3:
Consistent with Federal Acquisition Regulation sections 17.503 and 35.017 and EPA policy, prepare a market analysis or other documentation assessing the extent to which the services the EPA obtains in support of its Underground Injection Control Class VI Program through the Department of Energy's National Laboratories places Federally Funded Research and Development Centers in direct competition with domestic private industry. If the EPA determines that its use of Federally Funded Research and Development Centers places them in direct competition with domestic private industry, take action to ensure that the EPA obtains services for its Underground Injection Control Class VI Program consistent with the Federal Acquisition Regulation and EPA policy.

EPA Response to Recommendation 3 – Agree
The EPA agrees with Recommendation 3 and, in support of the Contracting Officer approved Determination & Findings, will coordinate with the EPA's Office of Acquisition Solutions to take any necessary action to ensure that the EPA's documentation demonstrates support services consistent with the Federal Acquisition Regulation and EPA policy.

Planned Corrective Actions:

1. The Office of Water will work closely with the EPA's Office of Acquisition Solutions to ensure consistency with the Federal Acquisition Regulation and EPA policy, and that necessary steps and processes are taken to demonstrate and document that the services to support the UIC Class VI Program through the Department of Energy's National Laboratories cannot be obtained as conveniently or economically by contracting directly with a private source. **Expected Completion Date:** September 30, 2025.

2. If the EPA determines that its use of the Department of Energy's National Laboratories places them in direct competition with domestic private industry, the Office of Water will coordinate with the EPA's Office of Acquisition Solutions to take action to ensure that the EPA obtains these services consistent with the Federal Acquisition Regulation and EPA policy. **Expected Completion Date:** September 30, 2025.

OIG Recommendation 4:
Notify the Department of Energy and its National Laboratories about the monthly progress report deliverables required by the statements of work under the Federal Technical Assistance Program interagency agreements for the Underground Injection Control Program and ensure that all required elements of the progress reports are included in the monthly progress reports submitted by the National Laboratories.

EPA Response to Recommendation 4 – Agree (Completed)

The EPA agrees with Recommendation 4 and has already completed actions that satisfy the intent of this recommendation. In December 2022, the EPA identified the problem of missing progress reports and raised the issue with the Department of Energy. The EPA continues to communicate with the Department of Energy and the National Laboratories regarding the progress report submissions requirement, working with the Department of Energy to identify and put into place action items to resolve the issue. To date, all seven labs in scope for this agreement have submitted all progress reports. These progress reports contain information to ascertain that the scope of work that was carried out as described in the interagency agreement's statement of work.

Completed Corrective Actions:

1. Sent a letter to the Department of Energy reiterating the compliance requirement for monthly progress report submissions required by the statement of work. **Completion date:** March 5, 2025.

2. Developed progress report templates to facilitate standardization and ease of progress reporting. **Completion date:** March 5, 2025.

3. Established Class VI Liaison positions at the National Laboratories, responsible for ensuring timely and accurate progress report submissions (among other Class VI-related duties). The Liaisons meet with the EPA monthly to discuss progress report status and other elements of the interagency agreement. **Completion date:** April 16, 2025.

CONTACT INFORMATION

If you have any questions regarding this response or the technical comments, please have your staff contact the Office of Water's Audit Follow-Up Coordinator, Carla Hagerman, at Hagerman.Carla@epa.gov.

ATTACHMENT

Appendix D

Distribution

The Administrator
Deputy Administrator
Associate Deputy Administrator
Assistant Deputy Administrator
Chief of Staff, Office of the Administrator
Deputy Chief of Staff for Management, Office of the Administrator
Agency Follow-Up Official (the CFO)
Assistant Administrator for Water
Regional Administrators, Regions 1–10
Principal Deputy Assistant Administrator for Water
Agency Follow-Up Coordinator
General Counsel
Associate Administrator for Congressional and Intergovernmental Relations
Associate Administrator for Public Affairs
Deputy Assistant Administrator for Water
Deputy Regional Administrators, Regions 1–10
Senior Advisor, Office of Water
Chief of Staff, Office of Water
Director, Office of Continuous Improvement, Office of the Chief Financial Officer
Director, Office of Program Analysis, Regulatory, and Management Support, Office of Water
Director, Office of Ground Water and Drinking Water, Office of Water
Director, Office of Regional Operations
Associate Director, Office of Program Analysis, Regulatory, and Management Support, Office of Water
OIG Liaison, Office of Policy, Office of the Administrator
GAO Liaison, Office of Policy, Office of the Administrator
Audit Follow-Up Coordinator, Office of the Administrator
Audit Follow-Up Coordinator, Office of Water
Audit Follow-Up Coordinators, Regions 1–10

Whistleblower Protection

U.S. Environmental Protection Agency

The whistleblower protection coordinator's role is to educate Agency employees about prohibitions against retaliation for protected disclosures and the rights and remedies against retaliation. For more information, please visit the OIG's whistleblower protection webpage.

Contact us:

Congressional & Media Inquiries: OIG.PublicAffairs@epa.gov

EPA OIG Hotline: OIG.Hotline@epa.gov

Web: epaoig.gov

Follow us:

X: @epaoig

LinkedIn: linkedin.com/company/epa-oig

YouTube: youtube.com/epaoig

Instagram: @epa.ig.on.ig

www.epaoig.gov