ORPHANED WELLS PROGRAM ANNUAL REPORT TO CONGRESS

November 2024

Bipartisan Infrastructure Law Section 40601
Prepared by the Orphaned Wells Program Office

Orphaned Wells Program Office
Policy and Environmental Management
Office of Policy, Management and Budget

U.S. Department of the Interior
Washington, D.C.

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VISION STATEMENT

Transform a legacy of environmental pollution into a legacy of environmental stewardship by serving as a collaborative and empowering resource for states, Tribes, federal agencies, and the broader orphaned wells community, working to identify, plug, remediate, and restore orphaned oil and gas wells and well sites.

MISSION STATEMENT

Fulfill the orphaned wells requirements of the Bipartisan Infrastructure Law and Secretary's Order 3409 by facilitating the effective, accountable, and efficient implementation of the state, Tribal, and federal assistance programs to reduce methane emissions, prevent groundwater and surface water contamination, eliminate health and safety hazards, create good paying jobs and benefit historically disadvantaged communities.

Cover page photo: U.S. Geological Survey (USGS) scientist Karl Haase taking a methane reading from an orphaned well in Toole County, MT. Photo credit: Nick Gianoutsos (USGS).

Orphaned Wells Program Annual Report to Congress
Fiscal Year 2024

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List of Abbreviations and Acronyms

AAAS	*American Association for the Advancement of Sciences*
BIL	*Bipartisan Infrastructure Law*
BLM	*Bureau of Land Management*
BSEE	*Bureau of Safety and Environmental Enforcement*
CEJST	*Climate and Economic Justice Screening Tool*
CO2	*Carbon Dioxide*
Department	*U.S. Department of the Interior*
EMIS	*Environmental Management Information System*
EPA	*U.S. Environmental Protection Agency*
FWS	*U.S. Fish and Wildlife Services*
FY	*Fiscal Year*
g/h	*Grams Per Hour*
GDP	*Gross Domestic Product*
IIJA	*Infrastructure Investment and Jobs Act*
IOGCC	*Interstate Oil and Gas Compact Commission*
NAS	*National Academy of Sciences*
NPS	*National Park Service*
OWPO	*Orphaned Wells Program Office*
SO	*Secretary's Order*
Template	*Orphaned Well Data Reporting Template*
USFS	*Department of Agriculture U.S. Forest Service*
USGS	*U.S. Geological Survey*

Orphaned Wells Program Annual Report to Congress
Fiscal Year 2024

Message from the Director - The U.S. Department of the Interior's Orphaned Wells Program Office (OWPO) is proud to submit the Annual Report to Congress, as required by Section 40601(f) of the Infrastructure Investment and Jobs Act, commonly known as the Bipartisan Infrastructure Law (BIL). This report highlights the accomplishments made possible through Bipartisan Infrastructure Law funds distributed to states, Tribes, and our federal partners – the Bureau of Land Management (BLM), Bureau of Safety and Environmental Enforcement (BSEE), U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), and the U.S. Department of Agriculture Forest Service.

In FY 2024, the orphaned wells program reached a significant milestone – the distribution of over $1 billion in funding to states, Tribes, and our federal partners in the Department of the Interior and the Department of Agriculture. This historic investment supported orphaned well plugging and well site reclamation, resulting in methane mitigation, the prevention of groundwater and surface water contamination, habitat restoration, the creation of good-paying jobs, and supported revitalization efforts of economically disadvantaged communities. Approximately 44 percent of the orphaned wells plugged by states and federal partners through FY 2024 were located in disadvantaged communities, as identified by the Climate and Economic Justice Screening Tool, demonstrating the program's commitment to achieving the goals of the Justice40 Initiative.

This fiscal year, we capitalized on opportunities to share the incredible impacts of this once-in-a-generation investment in cleaning up legacy pollution through StoryMaps such as *Orphaned Oil and Gas Wells 101*, *Plugging Away,* and *Methane Emissions from Orphaned Wells*. We've taken the opportunity to think strategically about the program to maximize the BIL's economic impact in our newly published Strategic Plan for FY 2025 – FY 2030 and we've spurred the scientific community to expand knowledge and understanding of the orphaned wells problem by sponsoring events such as the National Academy of Sciences hosted *Practices and Standards for Plugging Orphaned and Abandoned Hydrocarbon Wells* workshop.

Importantly, we've continued to work together with key stakeholders such as the Interstate Oil and Gas Compact Commission to transform a legacy of environmental pollution into a legacy of environmental stewardship. The report showcases the accomplishments of all our partners during this fiscal year to inventory, plug, and restore orphaned wells and well sites and highlights the more than $2.1 billion in new funding opportunities the OWPO made available this fiscal year. Thank you for your interest in this exciting new program that is reducing the harmful impacts of orphaned wells nationwide through funding made possible under the Bipartisan Infrastructure Law.

Kimbra Davis
Director, Orphaned Wells Program Office
U.S. Department of the Interior

Orphaned Wells Program FY 2024 At-a-Glance

~$56M

Distributed in FY 2024 for Well Plugging, Remediation and Restoration on Federal Lands

~$29M

Awarded for Tribal Implementation and Development Grants in FY 2024

~$527M

Awarded to States in FY 2024 for Initial, Formula, and Performance Grants

9,636 wells*

Plugged and Abandoned on State, Private, and Federal Land

558 habitat acres**

Restored on State and Private Lands

155,000 metric tons***

Estimated Annual Methane Emissions Reduction
(Expressed as a Carbon Dioxide Equivalent)

***Notes.** * The cumulative counts of wells plugged on state, private, and federal land is as reported by states and federal agencies as of September 30, 2024.*

*** The cumulative acreage of habitat restored on state and private lands is as of September 30, 2024.*

**** The cumulative estimated methane emissions reduction data, expressed in carbon dioxide equivalent, is based on state and federal reporting as of June 30, 2024.*

Section 1: Orphaned Wells Program Overview

Background

The Infrastructure Investment and Jobs Act (Public Law 117-58), signed into law on November 15, 2021, and commonly known as the Bipartisan Infrastructure Law (BIL), is a historic investment in our Nation's infrastructure. Section 40601, "Orphaned Well Site Plugging, Remediation, and Restoration," in Title VI, "Methane Reduction Infrastructure," confronts the potent atmospheric pollution that orphaned oil and gas wells emit, while also accounting for the legacy impact that orphaned wells have on their surrounding environment. Under the Bipartisan Infrastructure Law, orphaned wells on federal land are defined as wells that are not used for an authorized purpose and for which no operator can be located or the operator of which is unable to plug the well and remediate and reclaim the well site.[1] States may have a different definition for orphaned wells on state and private lands.

Analysis conducted by the Environmental Defense Fund estimates that 14 million people in the United States live within one mile of an orphaned well.[2] Figure 1 is an example of how these orphaned oil and gas wells can be located adjacent to occupied residences, posing a direct threat to human health and the environment because of deteriorating infrastructure, methane and other gaseous emissions, and oil leaks.[3]

Figure 1. Before (left) and after (right) an orphaned well was plugged next to a private residence in Kentucky.

[1] Orphaned Wells Program Office: Definition List.

[2] Environmental Defense Fund (07/11/2023): Landmark study reveals that millions of Americans live less than a mile from an orphaned oil and gas well.

[3] Photos provided by the Kentucky Division of Oil and Gas within the KY Energy and Environment Cabinet. Pre and post plugging on private land in Kentucky.

Section 40601 of the BIL provides $4.677 billion in orphaned well site plugging, remediation, and restoration funding allocated across the following programs:

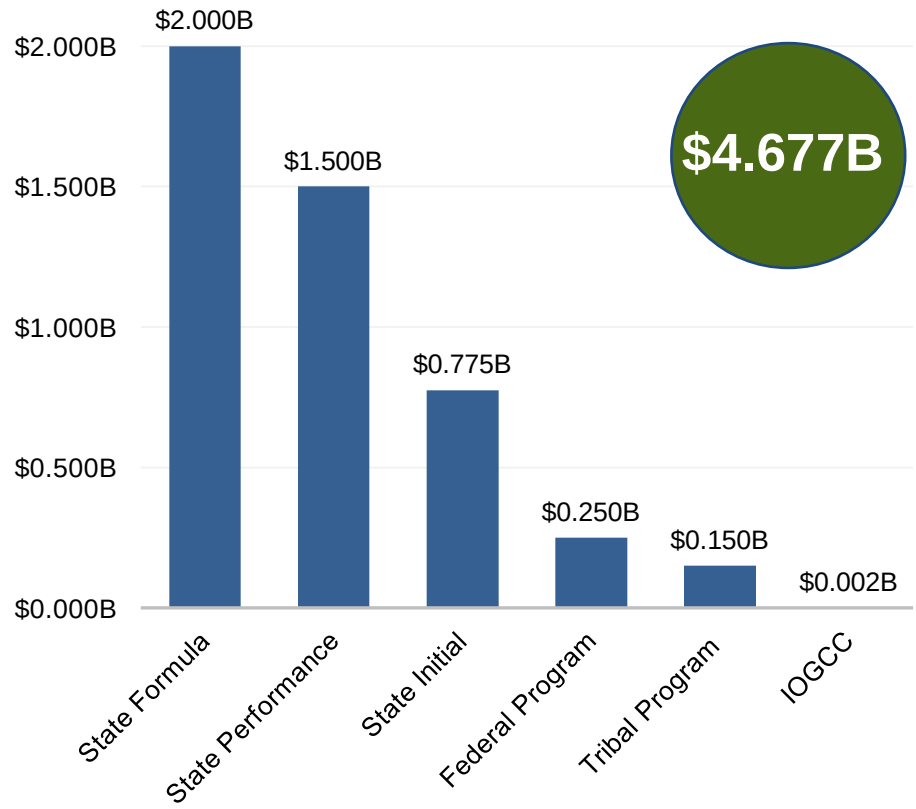
- Federal Program - $250 million for wells on federal land and waters;
- State Program - $4.275 billion for wells on state and private lands; and
- Tribal Program - $150 million for wells on Tribal lands.

Funding under these programs may be used by federal, state, and Tribal fund recipients to conduct a variety of activities, including the following:

- Plug orphaned wells;
- Identify and prioritize orphaned wells and well sites;
- Measure air emissions and groundwater contamination from wells;
- Identify and address disproportionate burdens on disadvantaged communities;
- Remediate and reclaim orphaned well sites and contaminated soil; and
- Restore native species and adjacent land.

In addition to the $4.675 million in program funding listed above, the BIL authorizes $2 million in appropriated funds for the Interstate Oil and Gas Compact Commission (IOGCC) to carry out responsibilities outlined in Section 40601. Figure 2 summarizes the $4.677 billion of appropriated BIL funds allocated by program area.

Figure 2. BIL funds allocated by program.



The distribution of FY 2024 Bipartisan Infrastructure Law funding, along with a discussion of wells plugged and other activities conducted to date, is detailed in this report in **Section 2: Federal Orphaned Wells Program**, **Section 3: State Orphaned Wells Program**, and **Section 4: Tribal Orphaned Wells Program**.

Section 5: Well Inventories discusses inventories of orphaned wells and wells at risk of becoming orphaned**. Section 6: Methane Emissions** addresses the work to advance the goals of the Biden-Harris Administration's Methane Action Plan and progress made on programmatic methane emission reductions. **Section 7: Economic Opportunities** discusses the economic benefits from orphaned wells plugging and **Section 8: Future Planning** presents an outlook of the Orphaned Wells Program activities for the coming years.

Section 40601(f) of the BIL requires the Department to annually submit to Congress a report describing, among other elements, the programs established, and the funds distributed.

Distribution of FY 2024 Bipartisan Infrastructure Law Funds

Through Fiscal Year 2024, the Department has announced approximately $2.1 billion in BIL funds for state, federal, and Tribal program participants for inventorying and plugging orphaned wells, including remediation and restoration work. Of this announced amount, in Fiscal Year 2024, the Department obligated $609.6 million in BIL funds to state, federal, and Tribal program participants This brings the cumulative funding obligated to approximately $1.3 billion of the $4.677 billion appropriated for the Orphaned Wells Program. Table 1 shows the cumulative breakdown by program area.

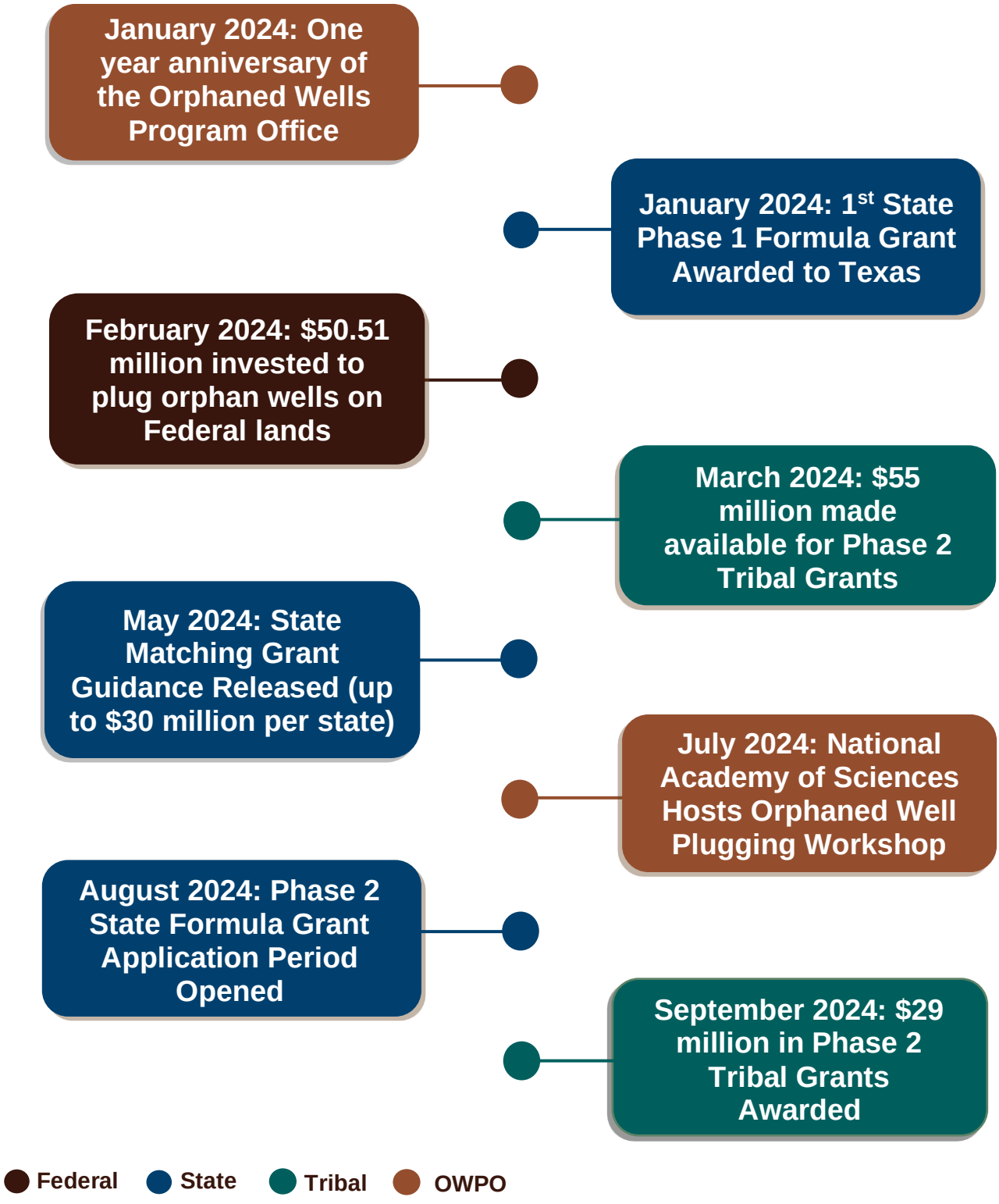
$609.6 million *obligated in FY 2024 for orphaned well plugging, remediation, and reclamation.*

Table 1. BIL funds Announced and Obligated through FY 2024 (in billions).

BIL Orphaned Wells Program	Total BIL Program Funding Available	BIL Program Funding Announced through September 2024	BIL Program Funding Obligated through September 2024
Federal Program	$0.250	$0.148	$0.148
State Program	$4.275	$1.912	$1.087
Tribal Program	$0.150	$0.068	$0.068
IOGCC Funding	$0.002	$0.000	$0.000
TOTAL	**$4.677**	**$2.128**	**$1.303**

The following page lists significant fiscal year 2024 Orphaned Wells Program milestones.

Significant Fiscal Year 2024 Orphaned Wells Program Milestones



Section 2: Federal Orphaned Wells Program

In Fiscal Year 2024, the Federal Orphaned Wells Program distributed $55.66 million to the following Department of the Interior and Department of Agriculture bureaus to plug, reclaim, and remediate 123 orphaned oil and gas wells, remove legacy oilfield equipment, and conduct inventory efforts to identify and characterize additional orphaned wells:

- *Bureau of Land Management (BLM),*
- *Bureau of Safety and Environmental Enforcement (BSEE),*
- *U.S. Fish and Wildlife Service (FWS),*
- *National Park Service (NPS), and*
- *U.S. Forest Service (USFS).*

***$148.3 million** in Federal Program funding distributed to date (FY 2022 - FY 2024) for orphaned well inventory, plugging, and remediation.*

In February 2024, the Department announced $50.51 million for the bureaus, and between March and June, $5.15 million in supplemental funding was distributed to BLM and BSEE due to unforeseen costs associated with changes in contractor pricing and unanticipated site conditions.

The FY 2024 federal projects are located across 19 states on 28 national park units, 11 national wildlife refuge units, 2 offshore oilfield locations in the Gulf of Mexico, and 5 national forests with a total project funding of about $53.27 million (an additional $2.39 million was used for administrative funding to support federal projects). Figure 3 is a pie chart showing the distribution of FY 2024 BIL funds to federal partners.

Figure 3. The distribution of FY 2024 BIL funds to federal partners.

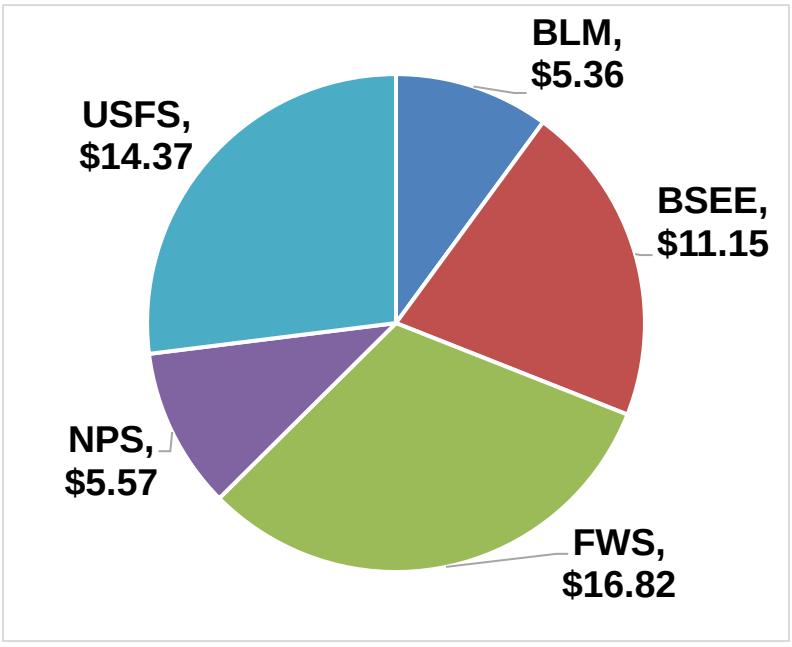
$53.27 million in Federal Project Funding

123 wells to be plugged (with FY 2024 funding)

27 Federal projects funded in FY 2024

2 offshore well sites funded in FY 2024

FY 2024 Federal Project Funding by Bureau (Millions)



Federal Program Funding and Activities

The Bipartisan infrastructure Law allocated $250 million to the Federal Orphaned Wells Program. Portions of this amount are allocated to the Orphaned Wells Program Office as administrative funding (3.0%) and the Office of the Inspector General for oversight purposes (0.5%), which leaves $241.3 million for the Federal Program. The program was designed to distribute project funding in roughly equal proportions over about five years. This approach allows the program to fund the highest priority projects each year and account for new information, such as the discovery of additional orphaned wells during inventory efforts or increases to estimated well plugging contract costs.

***199 orphaned wells** plugged as of September 30, 2024, on federal land under the Federal Program.*

Bipartisan Infrastructure Law Success Story – Gulf of Mexico, Matagorda Island, Texas

An important part of BSEE's responsibilities is ensuring that infrastructure used in exploration, development, and production activities is properly decommissioned to provide for the long-term protection of offshore resources and the environment. In 2023, BSEE awarded contracts for the decommissioning of nine orphaned wells and platform safety repairs in the Matagorda Island lease area, which lies in federal waters approximately 12 miles off the Texas coast. Figure 4 shows the orphaned well platform before "make safe" operations and Figure 5 shows the same platform after BSEE completed "make safe" operations. Using Bipartisan Infrastructure Law funding, the Matagorda Island project is tackling the most urgent offshore decommissioning needs to minimize the risk of environmental pollution and safety incidents. In September 2024, BSEE advanced to the active pipeline decommissioning phase of the Matagorda Island area project.

Figure 5. Orphaned well at Matagorda Island (April 2024).

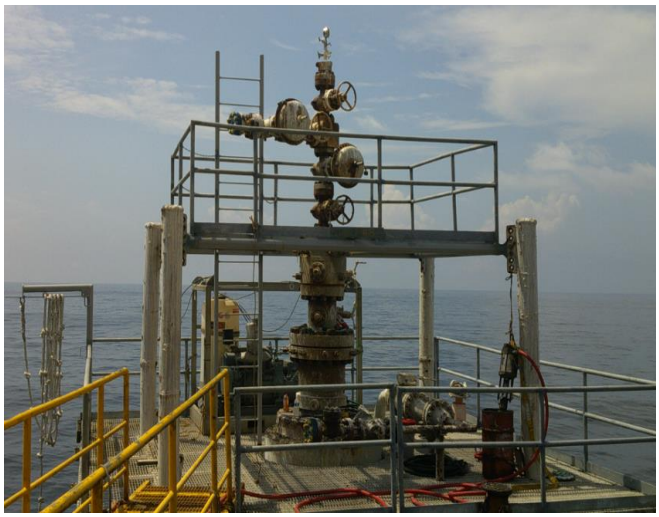
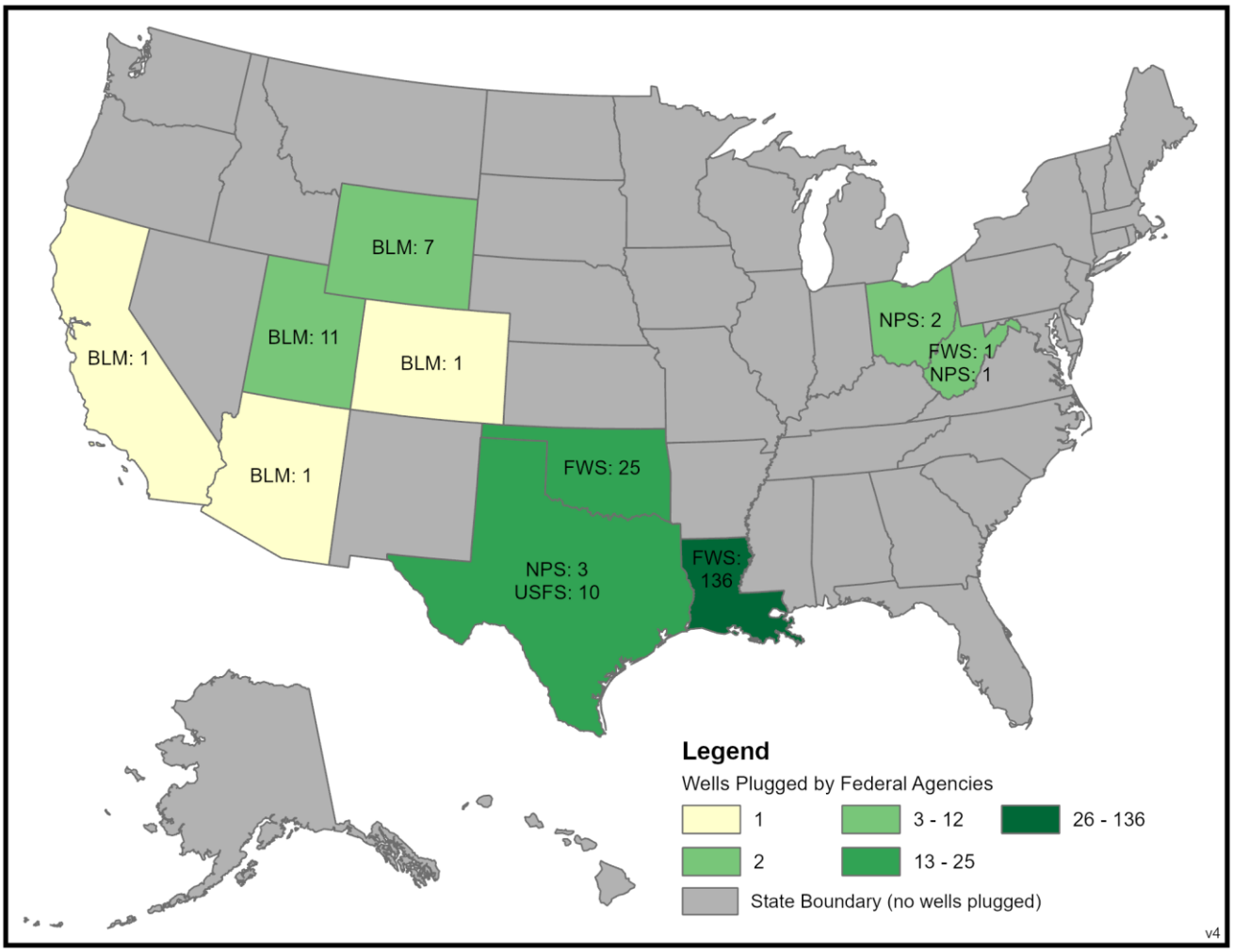


Figure 4. Orphaned well at Matagorda Island (June 2024).

As of September 30, 2024, the OWPO's federal partners reported plugging 199 orphaned wells, 85 of those wells were plugged during FY 2024. A map of total Federal wells plugged is displayed in Figure 6. Funding distributed from FY 2022 through FY 2024 is designed to plug a total of 599 orphaned wells (269 wells with funding allocated in FY 2022, 207 wells with funding allocated in FY 2023, and 123 wells with funding allocated in FY 2024).

Figure 6. Map of the cumulative 199 wells plugged on public lands and waters under the Federal Program.



In addition to plugging orphaned wells, Federal Program funding is used for other associated activities, such as reclamation, remediation, site preparation, and inventory. There is a vast number of undocumented orphaned wells across the nation, and funding to conduct well inventory allows federal agencies to further document environmental hazards on public lands and ensure continued stewardship.

Monitoring Progress

The OWPO Federal Program staff conduct site visits to monitor the on-the-ground progress of funded projects (Figure 7). Site visits involve coordination with each agency's land managers and their partners to observe orphaned wells activities as they occur in real time. In addition to site visits, OWPO ensures quarterly updates to the program's database, the Environmental Management Information System's Orphaned Wells Module (EMIS-OWM). This system stores important data associated with these orphaned wells projects, including the number of wells plugged, amount of methane emissions reduced (in grams per hour), and impacts to the surrounding environment.

OWPO conducts randomized monitoring reviews for all bureaus to ensure that funding is being spent as intended and allowed. This information includes adhering to established well-plugging procedures and standards and providing comprehensive records of the work completed. This process helps ensure that federal agencies comply with their individual land management or land use plans as well as all applicable local, state, and federal laws and regulations.

Figure 7. OWPO and federal partners at Atchafalaya National Wildlife Refuge (NWR).

Note: In May 2024, the Department's BIL Implementation team and OWPO staff traveled to Atchafalaya NWR in Lacombe, Louisiana. This project plugged and reclaimed seven orphaned well sites between May and June of 2024.

Bipartisan Infrastructure Law Success Story – National Park Service Well Inventory

The National Park Service is pursuing significant inventory efforts with BIL funds. There are approximately 1,800 oil and gas wells located in nearly 50 national parks. An estimated 364 of the wells are operating, while the remaining wells are inactive, plugged, abandoned, or orphaned. Since 2022, the National Park Service has initiated 45 BIL-funded projects for well plugging, site reclamation and infrastructure removal activities in national parks. These activities have mitigated environmental hazards and improved public health and safety by reducing the release of methane gas into the atmosphere as well as removing safety hazards associated with abandoned and orphaned wells.

Figure 8. The "Mudget #1 Well" in Lake Meredith National Recreation Area.

Photo taken in October 2022 during a NPS inventory and inspection trip. The NPS received BIL funds to plug the well in FY 2023 and anticipates plugging the well in FY 2025.

Federal Partner FY 2024 Accomplishments

During FY 2024, the federal partners realized significant results that contributed to the overall success of the Orphaned Wells Program. Highlights of the FY 2024 accomplishments are included in Table 2 for each of the federal partners that received Federal Orphaned Wells Program funding.

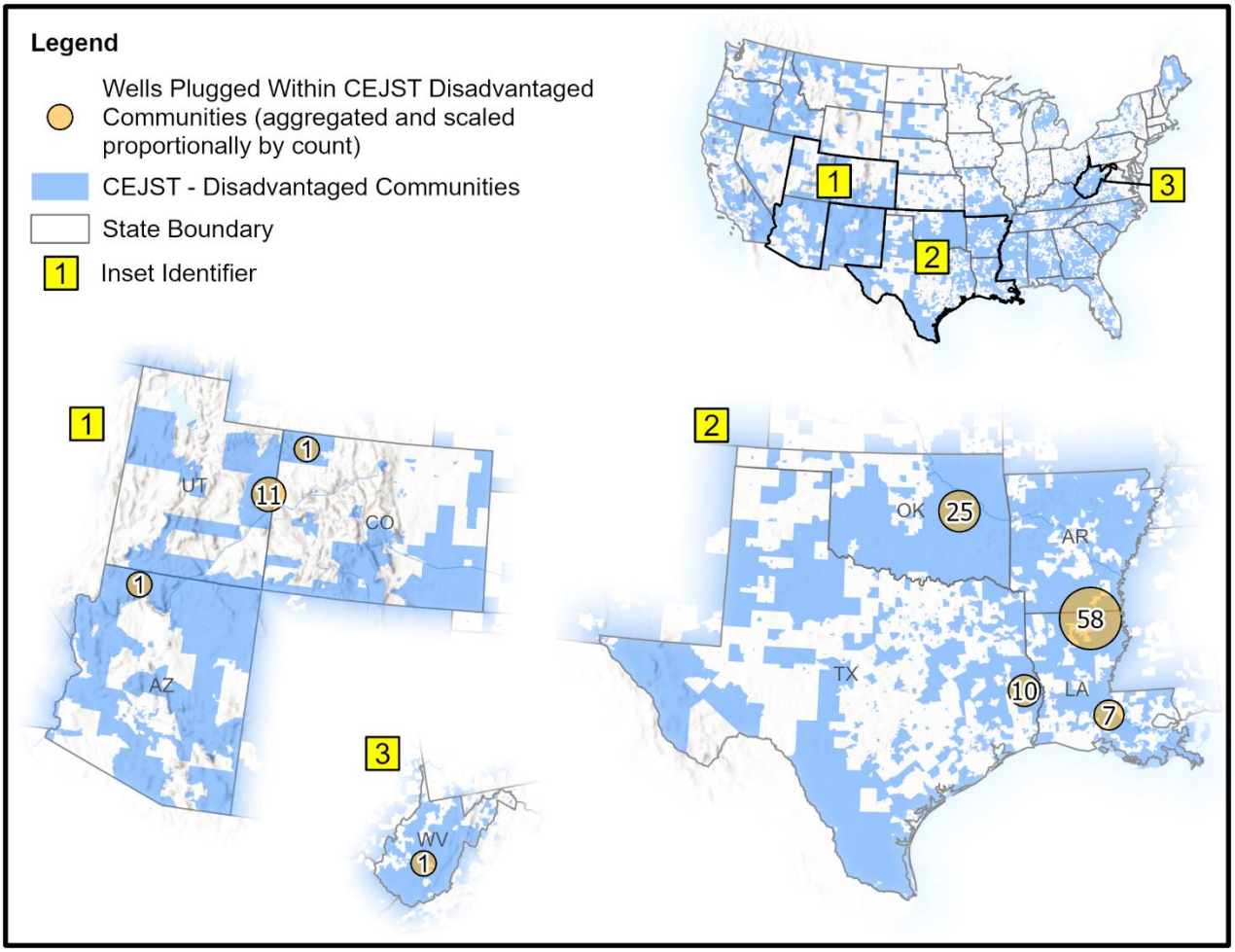
Table 2. Highlights of FY 2024 federal partner accomplishments.

Federal Partner	FY 2024 Accomplishments
National Park Service	• Plugged 6 wells • Completed 7 total projects • Inspected 307 well sites • Identified and Inspected 15 orphaned wells • Completed extensive plugging and reclamation projects in Big Thicket National Preserve, Texas
Bureau of Safety and Environmental Enforcement	• Temporarily plugged 6 orphaned wells • Completed make safe repairs on Matagorda Island Area Project • Awarded a five-year contract for on-site pipeline decommissioning activities
Bureau of Land Management	• Plugged and reclaimed 9 wells: 1 in Colorado, 1 in Arizona, and 7 in Wyoming

Federal Partner	FY 2024 Accomplishments
Fish and Wildlife Service	• Plugged 59 wells • Completed 4 projects in Louisiana and Oklahoma • Assessed 226 newly identified orphaned wells on refuge lands • Established agreement with Texas Railroad Commission to plug orphaned wells on refuges in Texas
U.S. Forest Service	• Plugged 10 wells • Entered a cost share agreement with Pennsylvania Department of Environmental Protection to plug 18 wells in the Allegheny National Forest • Entered into an agreement with the Texas Railroad Commission to address orphaned wells on federal public lands

Of the 199 orphaned wells plugged on federal lands as of September 30, 2024, 114 of them (57 percent) are within disadvantaged communities, as identified by the Climate and Economic Justice Screening Tool (CEJST). The distribution of wells plugged by federal partners within CEJEST disadvantaged communities are mapped in Figure 9.

Figure 9. Map of the 114 orphaned wells plugged by federal partners within CEJST disadvantaged communities.



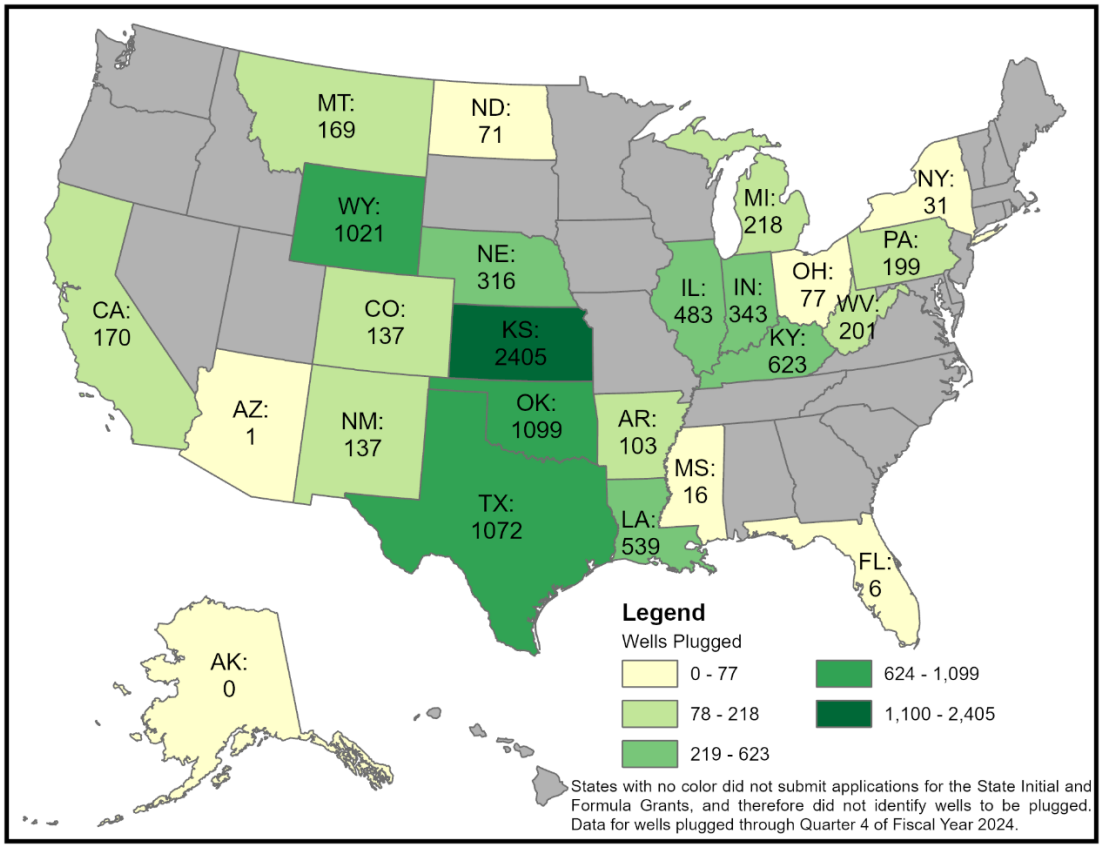
Section 3: State Orphaned Wells Program

The Bipartisan Infrastructure Law creates three types of grants under the State Orphaned Wells Program: Initial Grants, Formula Grants, and Performance Grants. States may utilize grant funding, on state and private lands, for any of the purposes described under Section 40601(c)(2)(A) of the BIL, including:

1) To plug, remediate and reclaim orphaned wells;
2) To identify and characterize undocumented orphaned wells;
3) To measure and track emissions of methane and contamination of groundwater or surface water associated with orphaned wells; and
4) To identify and address any disproportionate burden of adverse human health or environmental effects of orphaned wells on disadvantaged communities.

As of September 30, 2024, the State Orphaned Wells Program has awarded 45 grants totaling over $1 billion across Initial, Formula and Performance grants, and with this BIL funding, 9,437 wells have been plugged by states (see Figure 10).[4]

Figure 10. Map of orphaned wells plugged by states using initial and formula grant funds between October 1, 2023, and September 30, 2024.

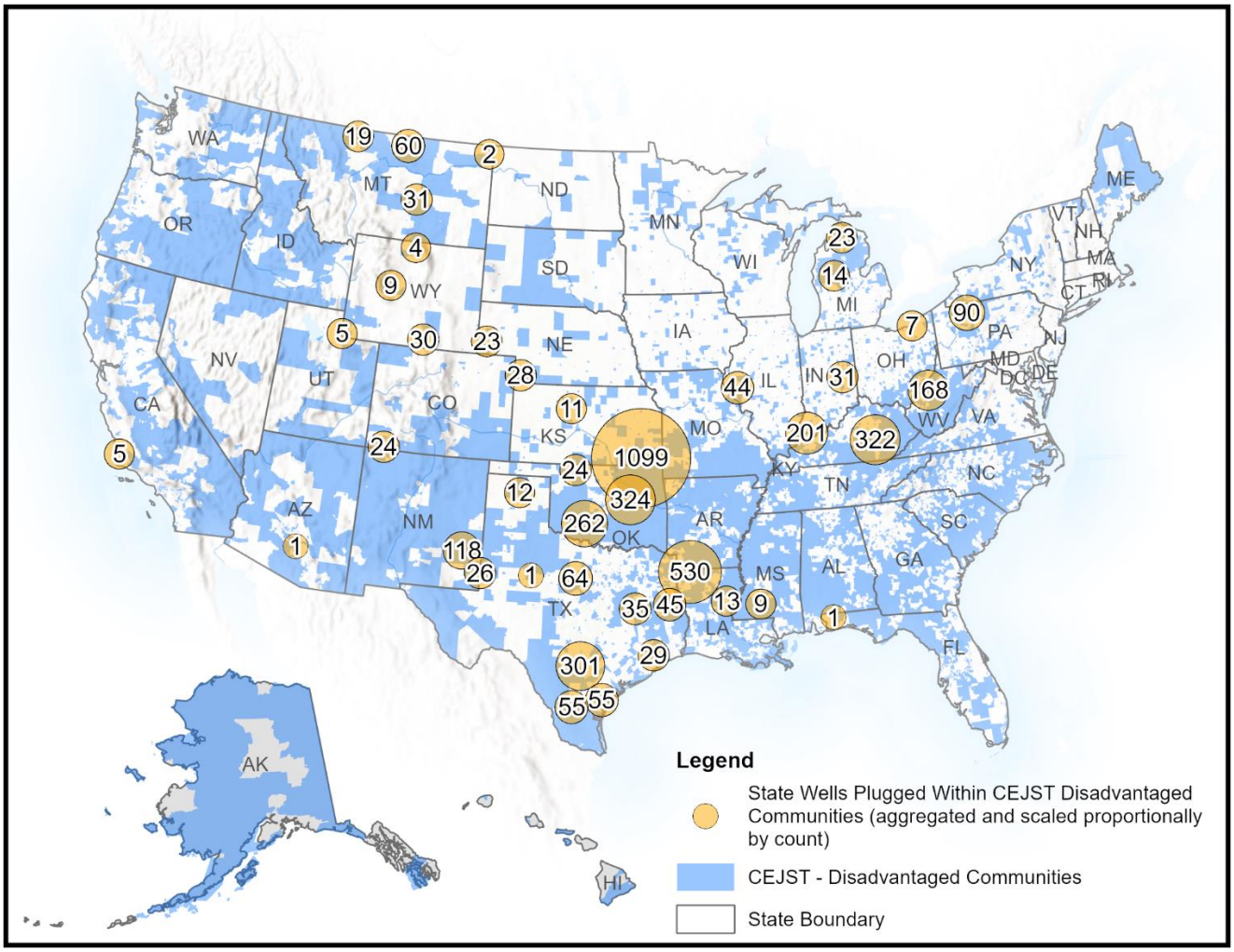


[4] This data is self-reported by states and subject to OWPO verification. The map includes OK wells plugged through June 30, 2024.

Environmental Justice

The Department's orphaned wells program advances the Biden-Harris administration's ambitious environmental justice goals through the Justice40 Initiative, which sets a goal to deliver 40 percent of the overall benefits of certain federal investments to disadvantaged communities that have been marginalized by underinvestment and overburdened by pollution. Orphaned well plugging and remediation contributes to the Department's Environmental Justice strategy to meet the needs of communities with environmental justice concerns by reducing disparate environmental burdens and increasing access to environmental benefits that help make communities safe, vibrant, and healthy places in which to live, work, learn, and recreate. Investments for states from the BIL for orphaned wells plugging benefit disadvantaged communities by reducing water contamination, remediating soil, restoring habitat, and reducing harmful methane emissions caused by leaking oil and gas well infrastructure. Using the CEJST published by the White House Council on Environmental Quality, as of September 30, 2024, 44 percent of the 9,437 wells plugged with Bipartisan Infrastructure Law funds by states are in disadvantaged communities (See Figure 11).

Figure 11. Map of orphaned wells plugged by states between October 1, 2023, and September 30, 2024, within CEJST disadvantaged communities.



State Initial Grants

The Department has awarded $565 million in State Initial grants to state orphaned well programs in 25 states. Twenty-two states have received large-scale Initial grants of $25 million with three states receiving small-scale Initial grants up to $5 million. Eligible states that have not yet received an initial grant may still apply for a small-scale grant. The Initial grants allow states to strengthen existing well-plugging programs, help build capacity to expand or initiate well-plugging activities or apply for a future Formula or Performance grant.

State initial grant recipients have reported through quarterly and 15-month reviews that the awarded grant funds have directly contributed to the plugging of nearly 9,000 wells on state and private lands. For the initial grant work, State Orphaned Well Program staff have conducted twelve state site visits to ensure that grant recipients conduct operations in accordance with all applicable laws, statutes, regulations, policies, and approved terms and conditions.

Grant recipients are required to submit performance, financial, and data reports on specific intervals detailing their progress in orphaned well activities funded by the BIL. These reports provide the Department with important data, including the states' orphaned well inventory, the number of wells plugged, acres of habitat restored, and other performance metrics.

Figure 12. Habitat restoration work in Meigs County, Ohio.

Bipartisan Infrastructure Law Success Story – Habitat Restoration in Meigs County, Ohio

Through the BIL funding, Ohio has taken efforts to rehabilitate endangered species, specifically Little Brown Bats, which are valuable for agriculture and beneficial to farmers. Re-establishment of the endangered species' habitat located in the vicinity of orphaned oil and gas wells is being addressed by the state. The state has utilized grant funding to minimize effects and re-establish Little Brown Bat habitat near orphaned oil and gas wells adjacent to an organic farm in Meigs County, Ohio.

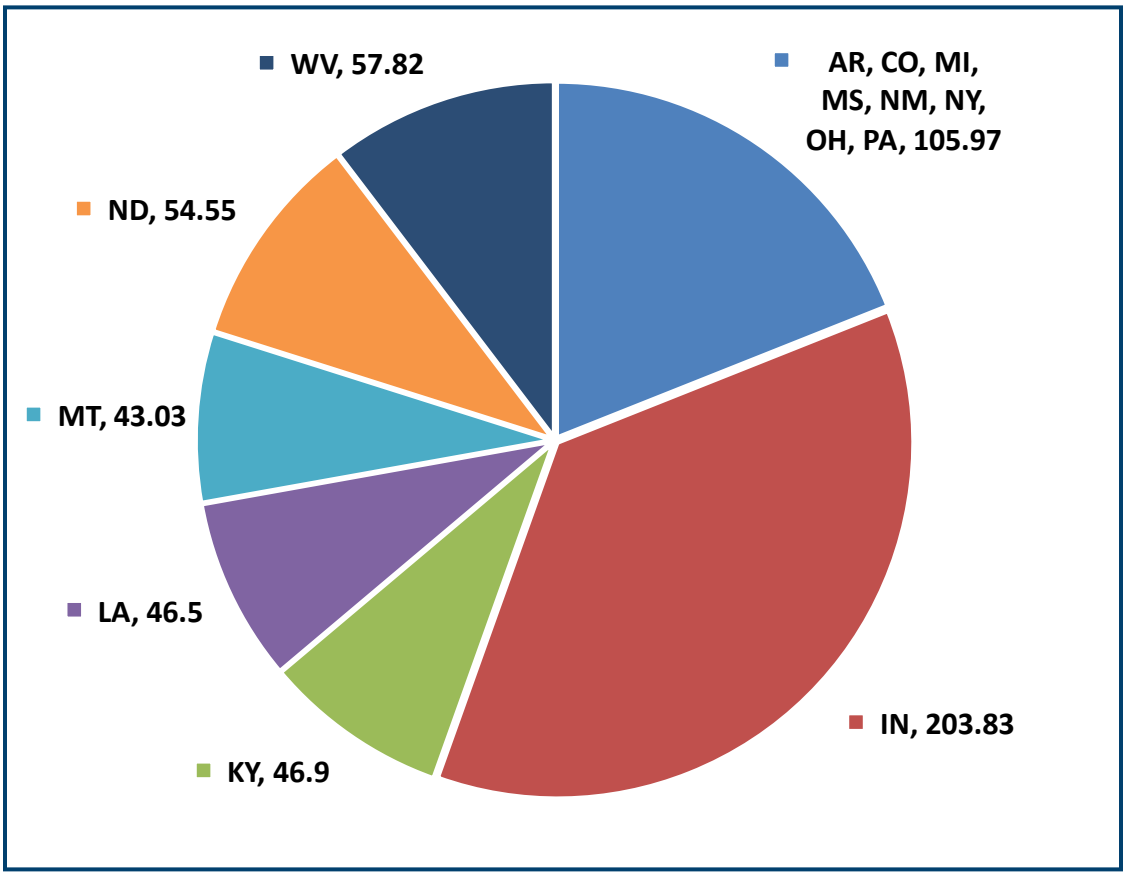
Figure 13. Little Brown Bat.

State Habitat Restoration

***558 habitat acres** have been restored following the plugging and abandonment of 1,885 wells on state and private lands.*

Habitat restoration is a marker of the final stages of orphaned well plugging and restoration. Accordingly, there is often a significant lag time between well plugging and abandonment and habitat restoration. Of the wells plugged on federal, state, and private lands using Bipartisan Infrastructure Law funds to date, only a small portion reached the habitat restoration phase, and, as such, the picture of eventual habitat restoration is incomplete. As of September 30, 2024, 558 habitat acres have been restored following the plugging and abandonment of 1,885 wells on state and private lands (see Figure 14). The remaining wells plugged either do not require habitat restoration, have not reached this phase, or the state has yet to report on habitat restoration efforts. This data remains a priority for the OWPO, and a metric for acres of habitat restored is included in the data reporting templates provided to federal bureaus, states, and Tribes. It is important to note that acreage of "habitat restored" as reported by the states to the OWPO every quarter is not the only, or necessarily best metric to measure and communicate the improving land condition and health actively occurring due to BIL-funded activities across the country.

Figure 14. Acreage of habitat restored by states using BIL orphaned wells program grant funding through FY 2024.



Bipartisan Infrastructure Law Success Story – Habitat Restoration in Bottineau County, North Dakota

Figure 15. The beginning of the reclamation process at the Rice State 3H site in Bottineau County, ND; June 2023.

The North Dakota Department of Mineral Resources is using a portion of the BIL funding the state has received from the Department to reclaim farmland impacted by orphaned oil and gas wells and infrastructure across the state. North Dakota received a $25 million Initial Grant in August 2022 and a $25 million Phase 1 Formula Grant in May 2024. As of September 30, 2024, ND has plugged 71 orphaned wells and restored nearly 55 acres of habitat associated with 53 orphaned wells with BIL funds.

The Rice State 3H well site was on private property in Bottineau County, North Dakota. According to the state, the site consisted of a well drilled in the late 1980s and a flowline. The site had been orphaned for three years. The North Dakota Department of Mineral Resources used Initial Grant funding for this reclamation project. Work at the site began in June 2023 and was completed in September 2023. Approximately 0.6 acres of land was restored to its original condition and returned to the landowner to be farmed. Photos were provided to the Department of the Interior by the North Dakota Department of Mineral Resources.

Figure 16. The Rice State 3H site ready to be returned to the landowner; September 2023.

State Formula Grants

Under the Bipartisan Infrastructure Law, 26 states are eligible to collectively receive up to $1.93 billion in Formula Grant funding from the Department across multiple annual phases. Table 3 shows total State Formula Grant eligibility by state and breaks down the eligibility for Phase 1 and Phase 2, including the Phase 1 grants awarded in FY 2024.

Table 3. State Formula Grant award eligibility, including Phase 1 awards.

State	Total Formula Grant Eligibility	Phase 1 Eligibility	Phase 1 **Awards** (as of 9/30/2024)	Phase 2 Eligibility
Alabama	$1,681,430	$1,681,430	--	$1,681,430
Alaska	$28,336,497	$25,000,000	$25,000,000	$3,336,497
Arizona	$4,871,791	$4,871,791	$4,871,791	$0
Arkansas	$5,589,721	$5,589,721	$5,589,721	$0
California	$140,870,510	$35,217,628	$35,217,628	$52,826,441
Colorado	$54,064,506	$25,000,000	$25,000,000	$29,064,506
Illinois	$36,875,485	$25,000,000	$25,000,000	$11,875,485
Indiana	$14,076,668	$14,076,668	$14,076,668	$0
Kansas	$33,666,697	$25,000,000	--	$33,666,697
Kentucky	$78,980,737	$25,000,000	$25,000,000	$35,000,000
Louisiana	$86,449,520	$25,000,000	$25,000,000	$35,000,000
Michigan	$5,873,295	$5,873,295	$5,873,295	$0
Mississippi	$6,830,345	$6,830,345	$6,830,345	$0
Missouri	$26,925,384	$25,000,000	$5,123,494	$21,801,890
Montana	$5,139,423	$5,139,423	--	$5,139,423
Nebraska	$4,151,076	$4,151,076	--	$4,151,076
New Mexico	$72,260,163	$25,000,000	$25,000,000	$35,000,000
New York	$44,672,162	$25,000,000	$25,000,000	$19,672,162
North Dakota	$55,266,234	$25,000,000	$25,000,000	$30,266,234
Ohio	$231,028,206	$57,757,052	$57,757,052	$86,635,577
Oklahoma	$205,226,972	$51,306,743	--	$102,613,486
Pennsylvania	$305,625,896	$76,406,474	$76,406,474	$114,609,711
Texas	$318,695,029	$79,673,757	$79,673,757	$119,510,636
Utah	$5,229,389	$5,229,389	--	$5,229,389
West Virginia	$116,932,226	$29,233,057	$29,233,057	$43,849,585
Wyoming	$40,680,639	$25,000,000	--	$35,000,000
Total	**$1,930,000,000**	**$658,037,849**	**$520,635,282**	**$825,930,225**

Note: -- Indicates the state had not received a Phase 1 award as of 9/30/2024.

Phase 1 State Formula Grants

The Department issued Phase 1 State Formula Grant Guidance (Phase 1 Guidance) on July 7, 2023, and announced the availability of $658 million in BIL funds for 26 states. The Phase 1 Guidance outlined the application process for states to receive Phase 1 Formula grants and specified the requirements for carrying out activities. The Phase 1 Formula Grants will strengthen states' well-plugging programs and provide substantial financial resources over several years to plug, remediate, and reclaim thousands of orphaned wells on state and private lands.

Under Phase 1 of the Formula Grant program, states could apply for a grant of up to $25 million or up to 25 percent of the state's total formula eligibility, whichever was greater, without exceeding their total eligibility. States eligible to receive more than $25 million in total Formula Grant funding can submit additional Formula grant applications in future phases until they have been awarded their full eligible amount. Once a state receives a Formula grant, it has five years from the date of receipt to obligate the funds for authorized activities and purposes.

The funding available in Phase 1 represented 34 percent of the $1.93 billion in total Formula grant eligibility. The Phase 1 application window closed on December 31, 2023, and the Department began awarding Phase 1 Formula Grants in January 2024. Through the end of FY 2024, $520 million in Phase 1 Formula Grant funding has been awarded to 19 states. With this funding, states will continue to plug orphaned wells, reclaim affected sites, and develop comprehensive orphaned well programs.

Bipartisan Infrastructure Law Success Story – Texas

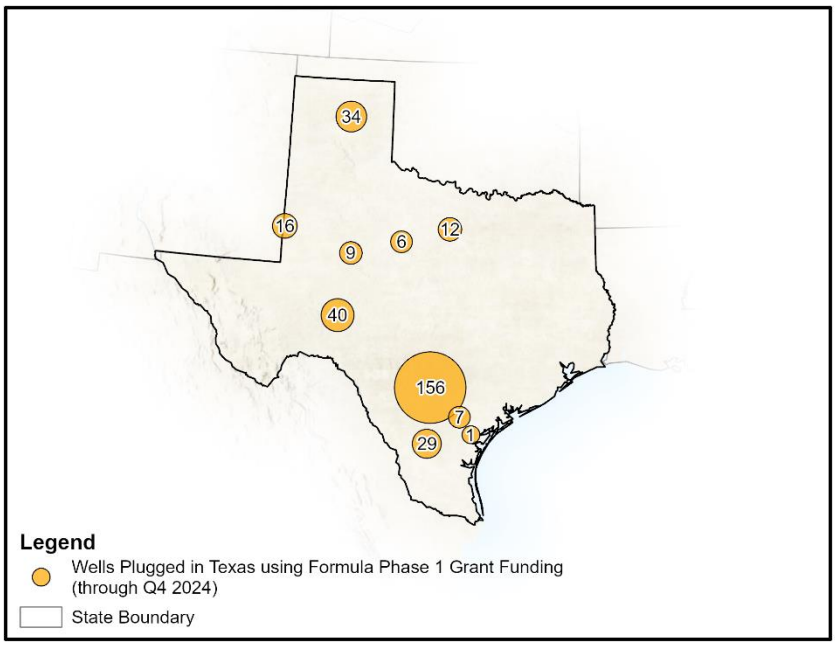


Figure 17. Map of wells plugged by the State of Texas using Phase 1 Formula Grant funds as of September 30, 2024.

On January 12, 2024, Texas became the first state to receive a Phase 1 Formula Grant from the Department when it was awarded $79.67 million. Through a collaborative partnership with the OWPO, the Railroad Commission of Texas (RRC) has been at the forefront of plugging wells with Formula Grant funding under the Bipartisan Infrastructure Law. Since January 2024, the RRC has plugged 310 orphaned wells with Phase 1 Formula funds (see Figure 17), bringing the total number of wells plugged with BIL funds in Texas to 1,072.

Phase 2 State Formula Grants

On August 14, 2024, the Department issued Phase 2 State Formula Grant Guidance (Phase 2 Guidance). The application window closes on December 13, 2024. The Phase 2 Guidance allows States to apply for a grant of up to $35 million, or 50 percent of the State's total remaining eligible formula grant amount, whichever of the two is greater. This means that States that have $35 million or less in remaining Formula Grant funding eligibility after Phase 1 are permitted to apply for all their remaining funds during Phase 2. States eligible to receive more than $35 million in total Formula Grant funds may apply for their remaining Formula

Grant funds in subsequent phases. The Department will continue to offer States maximum flexibility by providing up to six annual Formula Grant application windows.

The OWPO, in partnership with the Interior Business Center and in coordination with the Interstate Oil and Gas Compact Commission, conducted a webinar on the Formula Phase 2 guidance to provide states with an overview of the requirements and eligibility for funding.

As was required under Phase 1 Formula Grants, recipients of Phase 2 Formula Grants are required to:

- Measure methane emissions pre- and post-plugging from orphaned wells plugged with formula grants;
- Screen for groundwater and surface water impacts caused by orphaned wells; and
- Include in their well prioritization approaches orphaned wells creating burdens for nearby disadvantaged communities.

Bipartisan Infrastructure Law Success Story – Katalla, Alaska

Figure 18. Cable Tool Rig at Katalla Wellsite Chilkat 25.

Katalla, located about 50 miles southeast of Cordova, Alaska, was once a bustling oil town with a peak population of over 5,000 residents. Established at the center of Alaska's first oil field in 1902, Katalla played a significant role in the early oil industry. However, the town's fortunes declined due to a series of events, including the destruction of its refinery by fire on Christmas Eve 1933. This refinery, which had by that point produced 6.5 million gallons of oil, was never rebuilt. Today, Katalla is a ghost town, accessible only by helicopter or boat. The Alaska Oil and Gas Conservation Commission (AOGCC) aims to use some of its $25 million Initial grant received in 2022 and $25 million Formula Phase 1 Grant received in June 2024 to plug the numerous orphaned oil wells in this remote and historic area.

Figure 19. Signs of physical hazards in Katalla – bear tracks.

In Alaska, the cost to plug each orphaned well can reach up to $3.5 million due to complex and unique challenges (Figure 16) compared to projects in the lower 48 states. Tackling high-cost, high-priority sites in Katalla not only furthers the program's environmental and safety goals but also establishes a crucial benchmark for assessing the success of orphaned well plugging and remediation efforts across diverse geographic climates, geological conditions, and topographies nationwide.

Department of the Interior State Site Visits and Funding Announcements

In 2024, the "Investing in America" tour highlighted ongoing efforts nationwide to remediate the impacts of orphaned oil and gas wells with Bipartisan Infrastructure Law funding. This included visits to states using initial grant funds and visit to states to announce Phase 1 Formula Grant awards.

Bipartisan Infrastructure Law Team Visits Deuel County, Nebraska

Through the Bipartisan Infrastructure Law funding, Nebraska is restoring farmland impacted by orphaned wells and abandoned oil and gas equipment. As of September 30, 2024, Nebraska reported plugging 316 wells with its $25 million Initial grant. In August 2024, members of the Department's Bipartisan Infrastructure Law team traveled to Nebraska to meet with officials from the Nebraska Oil and Gas Conservation Commission, view well plugging operations, and speak with landowners that were positively impacted by the work happening on the ground.

Figure 20. Well plugging in Deuel County, Nebraska.

During the visit, the Department met with Dave Carlson, a fifth-generation rancher in Deuel County, who had 17 orphaned wells on his ranch plugged with funding from the state's Initial grant. The ranch was purchased in the late 1980s, and Mr. Carlson farms wheat, corn, hay, and runs a cow-calf operation. Now that the wells are plugged, they no longer pose safety and environmental risks to the farm, his ranch, or to the local community.

Figure 21. Department staff meet with Nebraska officials and a local farmer who had wells on his property cleaned up with BIL funds.

Bipartisan Infrastructure Law Team Visits Erie County, New York

Using Bipartisan Infrastructure Law funding, New York is plugging orphaned wells in urban, suburban, and rural communities across the state. New York received a $25 million Initial grant in August 2022, and in October 2023, Interior Department Infrastructure Coordinator Winnie Stachelberg traveled to Erie County, NY, to participate in a press conference with New York State officials to announce the start of the well-plugging program and view the first well plugged by the New York Department of Environmental Conservation (DEC) with BIL funds.

Figure 22. Infrastructure Coordinator Stachelberg speaks during an October 2023 orphaned well press event in NY.

During the visit, Department officials and staff also witnessed active plugging operations at the “Burg J 1” orphaned gas well in the town of Alden. The well was reported to the DEC in 2021 from landowners who were concerned about brine from the well leaking into their front yard. A DEC inspection determined the well was leaking over 1,000 grams per hour of gas, as well as brine, and was located within 200 feet of the residence. Plugging operations were completed and the methane emissions were eliminated in November 2023. Final site reclamation was approved in December 2023.

Figure 23. (Left) Interior Department and NY State officials at the Burg J 1 well in October 2023. (Right) Burg J 1 well plugging underway.

In September 2024, Infrastructure Coordinator Stachelberg returned to the state to again meet with New York DEC officials, view well sites plugged and remediated with Initial grant funds, view sites that will be cleaned-up with formula grant funds, and speak with landowners positively impacted by the work happening on the ground. During the visit, DEC and Interior Department officials visited the site of the Burg J 1 gas well that was plugged using BIL funds in late 2023.

Figure 24. The front lawn of a home in Alden, NY, 10 months after the Burg J 1 orphaned gas well was plugged.

The property owners were thrilled with the plugging and restoration work and thankful that the polluting well leaking brine and gas no longer posed a threat. As of September 30, 2024, the State reported that it plugged 31 orphaned wells.

Secretary Haaland Announces Phase 1 Formula Grants in Michigan and California

Figure 25. Secretary Haaland speaks with EGLE's Oil, Gas, and Minerals Division Director Adam Wygant at the Laborers' Wayne Training. Photo credit: EGLE.

In 2024, Secretary Deb Haaland visited several states to announce new funding under the Bipartisan Infrastructure Law for orphaned well plugging and remediation.

In August 2022, the Interior Department awarded the Michigan Department of Environment, Great Lakes, and Energy (EGLE) a $25 million BIL Initial grant, and the state reported that it plugged nearly half of its approximately 450 documented orphaned wells with this funding. In March 2024, Secretary Haaland traveled to Michigan, where she announced the state was receiving a $5.87 million Phase 1 Formula Grant from the Department and held an orphaned well roundtable at the Laborers' Wayne Training Center. As part of its Phase 1 award, Michigan will measure methane emissions from orphaned wells the state plugs, screen for groundwater and surface water impacts, and prioritize cleaning up wells near overburdened, low-income, and Tribal communities. During the roundtable discussion, Secretary Haaland spoke with state officials, labor leaders, and contractors about the significance of the BIL's historic investment in orphaned well clean-up and the importance of growing the well plugging and remediation workforce in Michigan and across the country.

In August 2022, the Interior Department awarded the California Geologic Energy Management Division (CalGEM) of the Department of Conservation a $25 million BIL Initial grant, and the state has plugged 170 orphaned wells with this funding. In May 2024, Secretary Haaland traveled to Los Angeles, California, where she held a press conference with LA Mayor Karen Bass and Natural Resources Agency Deputy Secretary for Energy Le-Quyen Nguyen, where she announced the State was receiving a $35.2 million Phase 1 Formula Grant from the Interior Department. With this new funding, California expects to plug and remediate 206 high-risk orphaned oil and gas wells that threaten communities and decommission 47 attendant production facilities with approximately 70,000 feet of associated pipelines.

Figure 26. Secretary Haaland announces CA's $35 million Phase 1 Formula Grant alongside LA Mayor Karen Bass and CA Natural Resources Agency Deputy Secretary for Energy Le-Quyen Nguyen.

Figure 27. Secretary Haaland during an orphaned well discussion with California stakeholders.

During the visit, Secretary Haaland also received a briefing from CalGEM on how the state was using its Initial orphaned well grant and the state's plan for its Phase 1 formula grant. The briefing allowed various orphaned well stakeholders, including labor groups and environmental justice advocates, to provide their perspectives on well plugging and remediation work happening across California.

Acting Deputy Secretary Laura Daniel-Davis Visits California and New Mexico

In March 2024, Acting Deputy Secretary Laura Daniel-Davis visited Santa Barbara, California, to visit several orphaned well sites being cleaned-up with Bipartisan Infrastructure Law funding and meet with officials and staff from the California Geologic Energy Management Division. The Acting Deputy Secretary received a briefing from CalGEM on the state's use of the $25 million Initial grant California received in 2022, discussed the hazards and impacts of orphaned wells on local communities, and visited several orphaned well sites in the Cat Canyon oil field. As of September 30th, California has plugged 170 wells with Bipartisan Infrastructure Law funding.

Figure 28. Acting Deputy Secretary Laura Daniel Davis speaks with CalGEM staff and contractors during an orphaned well site visit.

Figure 29. Acting Deputy Secretary Laura Daniel Davis meets with officials from New Mexico's Energy, Mineral and Natural Resources Department during a May 2024 visit to announce the State's $25 million Phase 1 Formula Grant.

In May 2024, the Acting Deputy Secretary visited Albuquerque, New Mexico, where she announced the state was receiving a $25 million Phase 1 Formula Grant under President Biden's Investing in America agenda to plug approximately 117 orphaned wells, remediate four sites and complete surface restoration of 33 locations with the grant funding. During the visit, the Acting Deputy Secretary met with representatives from New Mexico's Energy, Minerals and Natural Resources Department to hear about their work cleaning up legacy pollution across the state. As of September 30th, New Mexico has plugged 137 wells and conducted extensive surface remediation and restoration of orphaned well sites using Initial grant funds.

Bipartisan Infrastructure Law Success Story – Navajo County, Arizona

Through the BIL, locating undocumented orphaned oil and gas wells and tackling legacy pollution associated with orphaned oil and gas wells is being addressed by the State of Arizona. The state has utilized grant funding during its first phase to locate undocumented orphaned oil and gas wells in Navajo County. Undocumented orphaned oil and gas wells can potentially release methane, a known greenhouse gas and petroleum contaminants into the environment. To inventory these undocumented orphaned wells, technology such as drones fitted with iron detecting sensors are utilized to locate wells for plugging prioritization, based on potential releases of methane and petroleum contaminants to the environment and effects on communities.

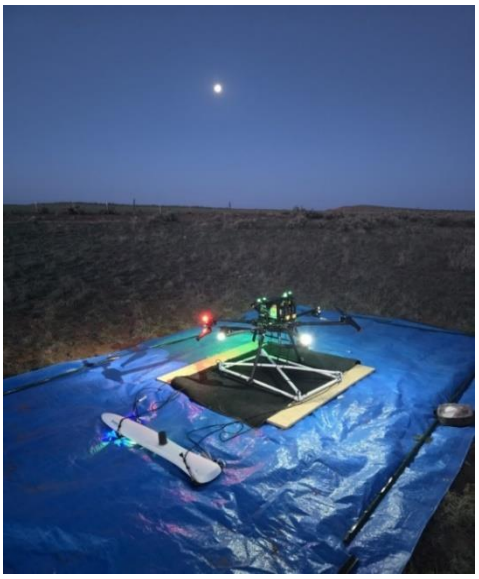


Figure 30. Drone usage in Navajo County, AZ.

The use of drones is anticipated to locate 120 orphaned oil and gas wells for plugging and abandonment. The plugging and remediation cleanup efforts will help ensure communities and environmental receptors are not affected by on-going releases. Reduction in methane emissions is also anticipated following subsequent phases of the project.

Performance Grants – Matching and Regulatory Improvement Grants

The BIL appropriated $1.5 billion for State Performance Grants. Like Formula Grants, Performance Grants may be used on state and private land for activities specified in Section 40601(c)(2) of the BIL.

There are two categories of performance grants: Matching and Regulatory Improvement grants. Matching Grants encourage increased state orphaned-well spending above past spending levels by awarding a state a grant equal to what it spends in a given fiscal year above its 2010-2019 average. Only states that receive an Initial Grant are eligible to receive a Matching Grant, and a state may receive no more than 1 Matching Grant per fiscal year. A state may receive up to a total of $30 million in Matching Grants from the Department. The OWPO released Final Matching Grant guidance for states in May 2024, and has awarded one Matching Grant so far: in June 2024, West Virginia received a $1.9 million grant.

Regulatory Improvement Grants (RIGs) encourage regulatory improvements or reward states that have already made improvements. States are eligible for two types of RIGs:

- Plugging Standards Grants: Intended to incentivize states to implement standards and procedures designed to ensure that wells located in the state are plugged in an effective manner.
- Program Improvement Grants: Intended to incentivize states to implement other improvements to state programs designed to reduce future orphaned well burdens.

The OWPO released draft RIG guidance for public comment on October 1, 2024, and it's anticipated that final RIG guidance will be released in the first quarter of FY 2025. Under the draft RIG guidance, states are eligible to receive a Plugging Standards RIG of up to $20 million and a Program Improvement RIG of up to $20 million, for a total of $40 million per state. By incentivizing states to improve their standards, procedures, and orphaned well programs, these grants will help to better protect the environment and help prevent the creation of new orphaned wells.

Between Matching Grants and RIGs, states are eligible to receive up to $70 million in Performance Grants under the Bipartisan Infrastructure Law.

Section 4: Tribal Orphaned Wells Program

The Bipartisan Infrastructure Law provides $150 million for well plugging, remediation, and reclamation on Tribal land. Tribes may use this available amount for any of the purposes described under Section 40601(d)(2)(A) of the BIL, including to:

- Plug, remediate, or reclaim orphaned wells on Tribal land;
- Restore soil and habitat in the degraded area and decommission or remove associated infrastructure;
- Identify and characterize additional undocumented wells on Tribal land; and
- Develop or administer a Tribal program to carry out plugging, remediation, and reclamation activities.

Figure 31. Navajo Nation orphaned well.

"Tribal land" is defined as any land or interest in land owned by a Tribe, the title to which is:

1) Held in trust by the United States;

2) Subject to a restriction against alienation under Federal law. This includes plugging, abandonment, and reclamation of wells drilled into minerals that are held in trust or restricted status for a Tribe, even if the surface estate is not; and remediation of surface that is held in trust or restricted status for a Tribe, even if the minerals are not. Lands owned by individual Indians in trust or restricted status are not eligible.

As part of a multi-year funding strategy designed to allow Tribes to build capacity and move toward implementation in successive years, the Department made $50 million available during an initial funding opportunity (Phase 1) and invited Tribes to apply for three types of project funding under the FY 2023 Technical Guidance, published in November 2022:

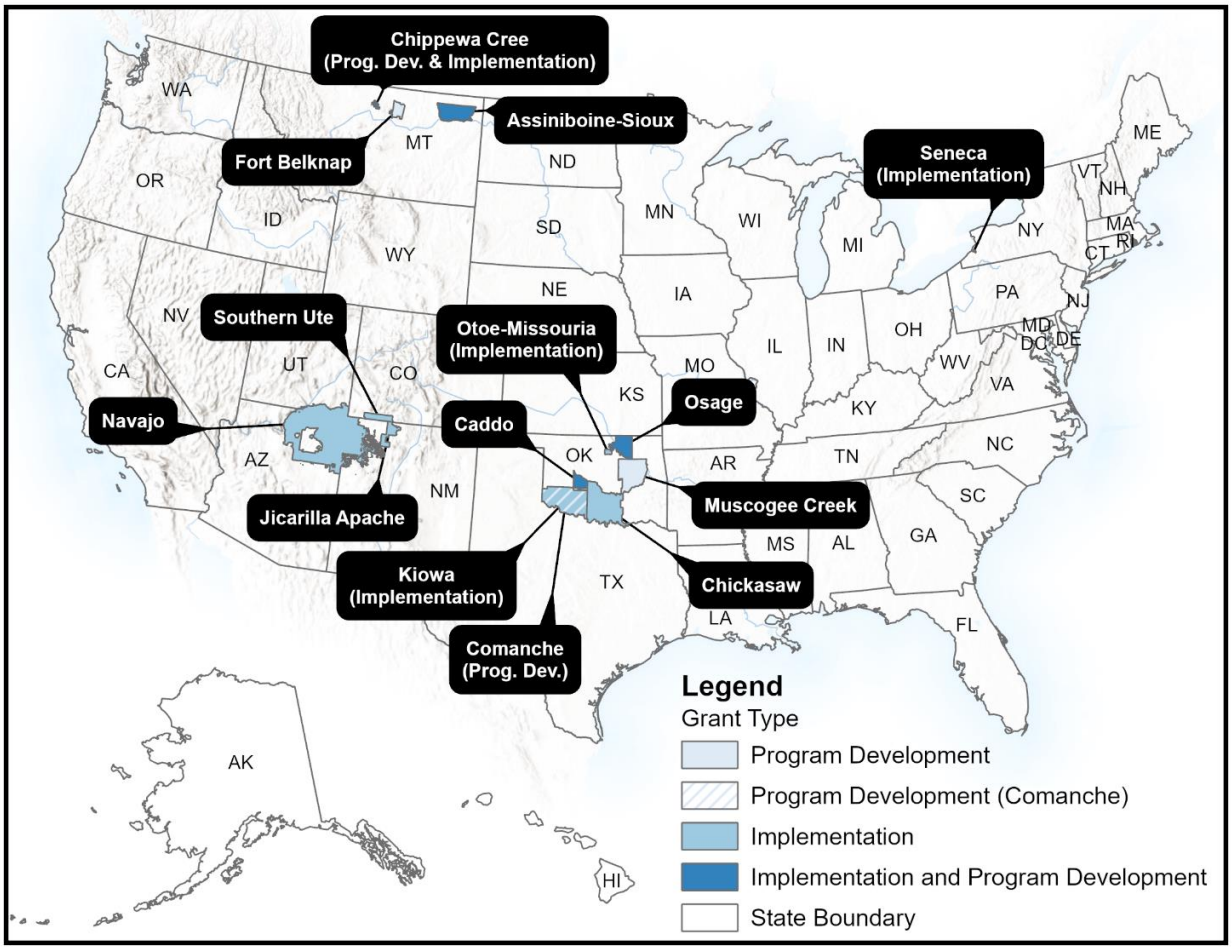
1) **Tribal Program Development Grants** to fund activities to develop and administer a Tribal program to carry out plugging, remediation, and reclamation activities for orphaned wells on Tribal land, including identification and assessment, training, and other capacity-building activities.

2) **Tribal Implementation Grants** to fund plugging, remediation, and reclamation activities.

3) **In Lieu of Grant assistance** through which a Tribe may request that the Secretary administer and carry out plugging, remediation, and reclamation activities related to eligible orphaned wells on behalf of a Tribe.

Grant proposals from eligible applicants, totaling $122 million, far exceeded the Phase 1 allotted funding, requiring a funding allocation strategy for an equitable, transparent, and sustainable approach to making partial awards. Under the Phase 1 opportunity, the Department awarded nearly $40 million in grants to ten Tribes, including over $34 million in Implementation Grants to support plugging, remediation, and reclamation activities for known orphaned wells on Tribal lands, as well as over $4.9 million for Program Development Grants to support capacity-building activities and assist Tribes in identifying, locating, inventorying, and assessing potentially orphaned wells on Tribal lands. This phase also provided $805,000 for in-lieu of grant funding to the Bureau of Indian Affairs to provide direct services to mitigate orphaned wells on a Tribe's behalf. Phase 1 funding supported plugging activities for 414 wells and assessment of an additional 559 wells, as well as capacity-building activities to assist Tribes in the identification and assessment of orphaned wells. Figure 32 contains a map of Phase 1 and Phase 2 Tribal Grants awarded in FY 2023 and FY 2024.

Figure 32. Map of Tribal Program grants awarded in FY 2023 and FY 2024.



Bipartisan Infrastructure Law Success Story – Fort Belknap Indian Community

In FY 2023, the Fort Belknap Indian Community received a Phase 1 $1 million Program Development Grant to research, assess, and inventory orphaned wells on the Fort Belknap Indian Reservation. The Program Development grant also provided the Tribe with the ability to build up administrative and technical capacity to be able to move into the implementation phase of plugging and remediating orphaned wells on their land. Since the time Fort Belknap was awarded their Phase 1 grant, the Tribe was able to identify 33 orphaned wells that have been left abandoned and either unplugged or plugged improperly and have resulted in risk to the surrounding environment. The Tribe also identified a potential for 16 more orphan wells that have been discovered through archived record and data research. This initial success has placed the Tribe in a position to apply for a Tribal Implementation grant in future years, where the funding will be focused on properly plugging these abandoned wells and remediating the surrounding soil, thereby protecting vital ground and surface water from contamination from these otherwise unidentified legacy pollution sources.

Figure 33. Fort Belknap well Gros #1.

Phase 2 Funding Opportunity

Following the Phase 1 opportunity, the Department evaluated the entire award cycle and proposed revisions to application requirements and guidance to streamline processes and better serve Tribes. After soliciting Tribal feedback during a series of “listening sessions” in January and February 2024, the Department invited Tribes to apply for an estimated $55 million of funding available during the Phase 2 award cycle under separate guidance published in March 2024. The Department invited Tribes to weekly virtual office hours, including brief structured presentations and open question-and-answer sessions, during the grant application period. The Department provided optional workplan and budget templates to assist Tribes in developing and submitting grant proposals. The Department continues to accept requests for in-lieu-of-grant assistance for review and award on a rolling basis through December 31, 2024.

Phase 2 grant proposals, totaling $120.4 million, also exceeded the allotted funding and the remaining Tribal allocation, necessitating an allocation strategy of partial awards for Implementation Grant proposals. Seven Tribes submitted requests to address unmet needs and six new applicants applied for grant funding to support both capacity-building and plugging and abandonment, remediation, and reclamation activities at orphaned well sites on Tribal land. The Department awarded approximately $29 million in Phase 2 grants during FY 2024

and continues to assist Phase 2 Tribal applicants in completing application requirements (See Table 4).

Table 4. Phase 2 Tribal Grant awards through FY 2024.

Tribe or Nation	Type of Tribal Grant	Planned Activities with Funds	Total Grant Amount
Caddo Nation of Oklahoma	Program Development and Implementation Grants	Assess up to 20 wells; identify undocumented wells; plug wells and remediate well sites	$3,707,129
Navajo Nation	Implementation Grant	Identify and assess undocumented wells; plug and remediate 19 wells; conduct post-plugging inspections	$4,970,911
Osage Nation	Program Development Grant	Develop remediation plans; map boundaries of contaminated areas; prioritize well sites	$1,000,000
Osage Nation	Implementation Grant	Conduct plugging and remediation work at up to 91 orphaned well sites	$10,059,548
Seneca Nation of Indians	Implementation Grant	Fund plugging of up to 25 orphaned wells in the Tribe's Allegany Territory	$2,500,000
Chickasaw Nation	Implementation Grant	Evaluate ten well sites; compile and analyze data; develop plugging standards and guidelines; continue site visits and train Tribal staff	$499,993
Chippewa Cree Tribe of the Rocky Boy Reservation	Implementation Grant	Plug, remediate, and reclaim 17 orphaned well sites	$2,006,533
Comanche Nation	Program Development Grant	Establish program to evaluate 23 documented and approximately 250 potentially documented orphaned wells; further Tribal training efforts	$1,000,000
Jicarilla Apache Nation	Implementation Grant	Evaluate and prioritize wells; plug, remediate, reclaim up to 19 orphaned well sites and adjacent lands	$3,162,500
Total Phase 2 Tribal Grants Through Fiscal Year 2024			**$28,906,614**

Native nations are often disproportionately burdened by environmental pollution. The Department works directly with Tribes to ensure that their voices are integrated into decision-making processes and to provide Tribal Nations with the greatest possible autonomy to address the needs and priorities of their people.

Tribal Consultation & Engagement

The OWPO also provided technical assistance to Tribal grant recipients by engaging in early collaboration to understand the technical needs of each Tribal grant recipient. During FY 2024, the OWPO coordinated environmental compliance reviews for Phase 1 Tribal grants. This included coordinating a program authorization for recipients to initiate National Historic Preservation Act Section 106 reviews (through a letter of intention to the Advisory Council on Historic Preservation and then through formal notification to the recipients), as well as reviews of no effect/no further review projects. To date, OWPO has issued Authorizations to Proceed for 8 of the 12 Phase 1 grants. Environmental reviews for the remaining 4 projects are underway.

Bipartisan Infrastructure Law Success Story – Navajo Nation

In Fiscal Year 2024, the Department visited Navajo Nation to gain a better understanding on the needs and impacts of addressing orphaned well sites on Tribal land. During the site visit Department staff had the opportunity to view the many complex issues that the Navajo Nation is facing when correctly remediating this legacy pollution left behind from orphaned wells. The Navajo Nation has discovered through their comprehensive inventory and assessment phase many wells that have been incorrectly plugged, some of which were actively leaking potentially hazardous liquids into the surrounding environment. Many of these discoveries required emergency plugging actions and resulted in extensive and expensive contaminated soil remediation projects. In Figure 31, well “Utah09” has a well head that was not visible at ground surface under a bubbling spring. The well caused the formation of an unnatural warm spring which formed a tributary to Montezuma Creek. Without OWPO Tribal Grant program awards, many of these actively leaking wells would have continued to go undiscovered.

Figure 34. Navajo Nation Utah09 well.

Section 5: Well Inventories

The extent of orphaned wells across the United States is not fully known. While many states, federal agencies, and organizations have developed estimates of orphaned well inventories, a comprehensive national inventory does not exist. The process of inventorying wells relies on the categorization of a well as orphaned, abandoned, idled, or an alternative category. These categorizations vary between states and federal agencies as the definition of "orphaned" is not uniform. The uncertainty of the estimated number of total documented and undocumented orphaned wells highlights the challenge that the OWPO faces in administering financial assistance to support plugging, remediating, and reclaiming orphaned wells.

141,959 *documented orphaned wells reported by states to the IOGCC.*

As the Department reported to Congress in March 2022, the Interior Department's most recent inventory of orphaned wells has identified nearly 16,000 wells on federal lands.[5] In Fiscal Year 2025, the OWPO will coordinate with the federal partners to update the estimated inventory of orphaned wells on federal lands. The Bureau of Land Management is currently working with the Bureau of Indian Affairs to create an independent inventory of orphaned wells on Tribal lands, and the OWPO plans to report additional information on this effort in FY 2025.

With regard to state orphaned well inventories:

- Data from the U.S. Geological Survey published in 2022 sets the documented orphaned well inventory at 117,672 wells across 27 states. The USGS is currently updating this dataset and expects to release a new orphaned well inventory in FY 2025.

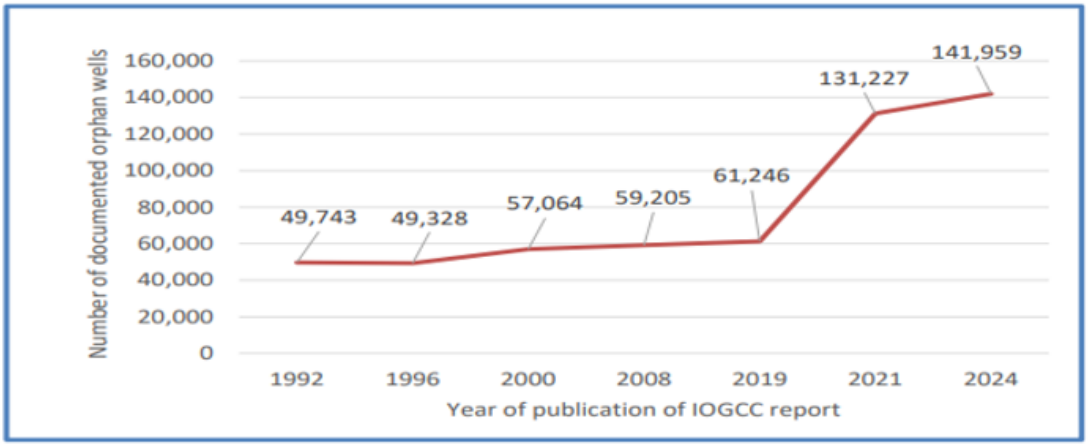
- Based on data submitted by states to the Department in December 2021 in response to the State Formula Grant notices of intent requirement, 26 states reported having 126,806 documented orphaned wells. The Orphaned Wells Program used this inventory in the FY 2023 Report to Congress.

- In July 2024, the Interstate Oil and Gas Compact Commission released the Idle and Orphan Oil and Gas Wells: State and Provincial Regulatory Strategies report, which contained an update to state-reported orphaned well data.[6] According to the IOGCC, the 29 responding states reported a total of 141,959 documented orphan wells as of December 31, 2023 (see Figure 35). While the states continue to plug orphan wells, according to the IOGCC, the number of documented orphaned wells increased by approximately 54 percent since 2020.

[5] Testimony of Steve Feldgus, Ph.D., before the House Subcommittee on Energy and Mineral Resources. March 31, 2022. https://www.blm.gov/sites/default/files/docs/2022-04/DOI%20Testimony_Benefits%20of%20the%20Legacy%20Pollution%20Clean-Up%20Programs%20in%20the%20Bipartisan%20Infrastructure%20Law.pdf

[6] https://oklahoma.gov/content/dam/ok/en/iogcc/documents/publications/Orphan%20Wells%20Revised.pdf

Figure 35. Trend in IOGCC published documented orphaned wells.



Undocumented Orphaned Wells

There is a data gap between the number of documented and undocumented orphaned wells that creates a challenge to well inventory efforts. Undocumented orphaned wells (UOWs) are wells that lack an operator of record (orphaned well) and do not exist in regulators' inventories. As with orphaned wells, UOWs provide uncontrolled pathways for methane and other substances to migrate upwards towards the surface where they can interact with groundwater and enter the atmosphere. The presence of UOWs is a major geotechnical hazard when developing subsurface resources (oil & gas, geothermal, carbon capture utilization and storage, etc.).

The Bipartisan Infrastructure Law directed the U.S. Department of Energy (DOE) to collaborate with the IOGCC and the Department of the Interior to develop a program focused on reducing the impact of undocumented orphaned wells. The BIL allocated $30 million dollars to this effort to help communities reduce methane emissions and eliminate other environmental impacts. The focus of the DOE's Undocumented Orphaned Wells Program (UOWP) is to establish a consortium of National Labs dedicated to developing techniques, technologies and best practices for the identification and characterization of undocumented orphan wells, and to share the results of this work with federal, state, and Tribal partners.

Bipartisan Infrastructure Law Success Story – CATALOG[7]

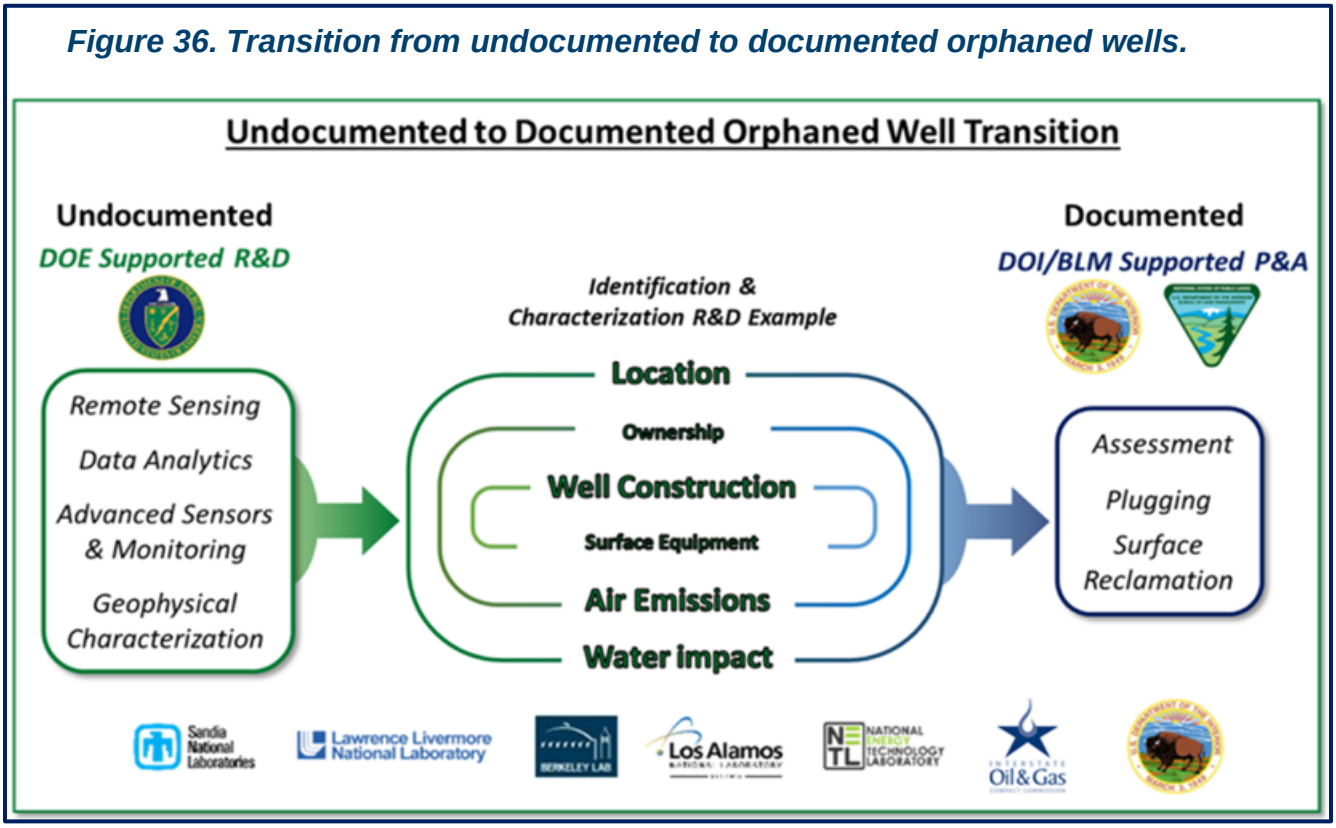
In September 2022, the Consortium Advancing Technology for Assessment of Lost Oil & Gas Wells (CATALOG) was initiated and consisted of six work packages covering several topics: Methane Detection and Quantification; Well Identification; Sensor Fusion and Data Integration with Machine Learning; Characterization; Integration and Best Practices; and Data Management. Five National Labs are collaborators: Los Alamos National Lab, Sandia National Lab, Lawrence Livermore National Lab, Lawrence Berkeley National Lab, and the National Energy Technology Laboratory.

CATALOG is currently deploying field teams across the county in collaboration with federal, state, and Tribal partners to identify and characterize UOWs. CATALOG is integrating drones,

[7] *Details of the UOWP activities, including the 2023 Annual Year End Report, can be found on the CATALOG website at https://catalog.energy.gov*

artificial intelligence, and sensing technologies to provide a broad set of tools to address the grand challenge of UOWs. Best practices are being shared with stakeholders for use in orphaned wells programs. The transition between the DOE's work on undocumented orphaned wells and the work of the Orphaned Wells Program Office is highlighted in Figure 36.

Figure 36. Transition from undocumented to documented orphaned wells.



Plugged Orphaned Wells Inventory

The Orphaned Wells Program Office developed a standard set of data to be collected through the reporting efforts for the federal, state, and Tribal programs. Critical quantitative and qualitative data are collected as part of this reporting, including well identification and type, surface and mineral managing entities, latitude and longitude, pre-and post-plugging methane measurements, habitat restoration, surface water, groundwater and soil contamination impacts, and community impacts. This information assists the program in evaluating the effects of orphaned wells and provides a complete picture of each well's circumstances. Portions of the data reported to the Department by states are available to the public through dashboards and other products located on the OWPO's webpage.[8] The OWPO will continue to make data, success stories, and other products that showcase the outcomes of BIL funding available to the public and stakeholders.

Data reporting format and frequency vary by program, but all recommended and required reporting addresses statutory reporting requirements and advances efforts to build the inventory for orphaned wells plugged with BIL funding. State and Tribal grant recipients are

[8] https://www.doi.gov/maps-data; https://edit.doi.gov/orphaned-wells-program-office-stories

required to track and report data for all actions taken using BIL grant funding and a reporting template is available to standardize data collection.

To facilitate data collection and create greater data accessibility, the Orphaned Wells Program engaged with the USGS to create a database for state reported data. Once optimized this database will store the state reported data and make it available through standard and customized reports. Early in FY 2025, the OWPO will publish a dashboard that makes the plugged orphaned wells inventory data publicly available and accessible. Efforts are underway to evaluate using the state database for the collection of Tribal reported data as well.

For the Federal Orphaned Wells Program, a database was created in the Orphaned Wells Module of the Office of Environmental Policy and Compliance's Environmental Management Information System (EMIS-OWM). This database serves as the official system of record for the Federal Program, allowing for geographic information system analysis of field-collected data to track program metrics, evaluate progress, and provide accurate information for program reporting.

Bipartisan Infrastructure Law Success Story – Lee County, Kentucky

Lee County, Kentucky, has the highest number of documented orphaned wells in the state, with approximately 1,400 scattered across the area. The scale and complexity of addressing these historic environmental and safety issues are evident in orphaned well N-18293.

Figure 37. Orphaned Well N-18293 in Lee County, Kentucky.

This well, an enigmatic (see Figure 37) remnant of the past, lacks crucial documentation—such as records, tags, or depth information—since it was drilled before stricter regulations on oil and gas wells were established nationwide. Nearby, large grain silos, once central to the region's agricultural activities, are being repurposed into short-term lodging for vacationers and rock-climbing enthusiasts visiting the nearby Red River Gorge in the Daniel Boone National Forest. This contrast highlights the region’s shift from its industrial past to a new focus on recreation. The BIL funded efforts to plug this and other orphaned wells in Lee County are crucial for ensuring environmental safety, supporting land use transitions, and fostering sustainable development in areas navigating economic changes.

Wells at Risk of Becoming Orphaned

Understanding which wells across the country are at risk of becoming orphaned is critical to preventing future orphaned wells and limiting potential taxpayer liability. The Orphaned Wells Program continues to explore methods to identify and evaluate if a well is at significant risk of becoming orphaned, including through its partnership with the USGS.

In many cases, idled wells can be used as a proxy for wells at risk of becoming orphaned. Section 40601(b)(3) of the Bipartisan Infrastructure Law requires the Director of the Bureau of Land Management to periodically review and reduce the inventory of idled wells on federal land. On federal land, an idled well is defined as a well "that has been nonoperational for not fewer than 4 years and for which there is no anticipated beneficial future use." There are currently thousands of oil and gas wells on federal land that are not producing energy and can pose health and safety risks to communities and wildlife and financial risks to the American taxpayer.

As of September 30, 2024, BLM is actively managing 10,038 idled wells. During FY 2024, about 1,633 wells were removed from the idled well list as they were either plugged or returned to production. During that same period, 1,988 wells were added to the list as those wells became nonoperational for 4 years. In total, in FY 2024, the BLM witnessed the plugging of 1,326 wells.

BLM is taking steps to reduce idled wells though the "Onshore Oil & Gas Leasing Rule." Finalized in April 2024, this rule requires that operators of currently nonoperational wells help BLM reduce its inventory of idled wells through improved identification, tracking, and proactive management. As a final safeguard against orphaned wells, in the recent updates to the oil and gas regulations, the BLM increased minimum bonding rates to ensure that if the BLM must rely on a bond to reclaim wells, the funds are more likely to be adequate. For an individual lease, the minimum bond amount is $150,000. And for a statewide bond, the minimum bond amount is $500,000.

The efforts by BLM on idled wells and the partnership with USGS on identification and description of abandoned wells will facilitate a review of national wells that are at risk of becoming orphaned. As an inventory continues to be developed, the Orphaned Wells Program will leverage knowledge of abandoned and idled wells along with collected data to analyze wells at risk of becoming orphaned.

Section 6: Methane Emissions

Emissions from Unplugged Orphaned Wells

Without proper maintenance, orphaned wells and other abandoned oil and natural gas infrastructure can lead to significant methane emissions. As unmaintained wellbores, wellheads, pipes, and casings age, corrode, and deteriorate, infrastructure intended to isolate oil, gas, and other substances can allow harmful gases, such as methane, hydrogen sulfide and produced waters to escape into the surrounding environment. These emissions occur when there is a source of methane, such as a geologic formation, and a leaking wellbore acting as a pathway for the gas to travel from the source to the environment (Figure 38[9]). The gas may escape directly into the atmosphere and soils or contaminate groundwater resources that the public may rely on for drinking water.

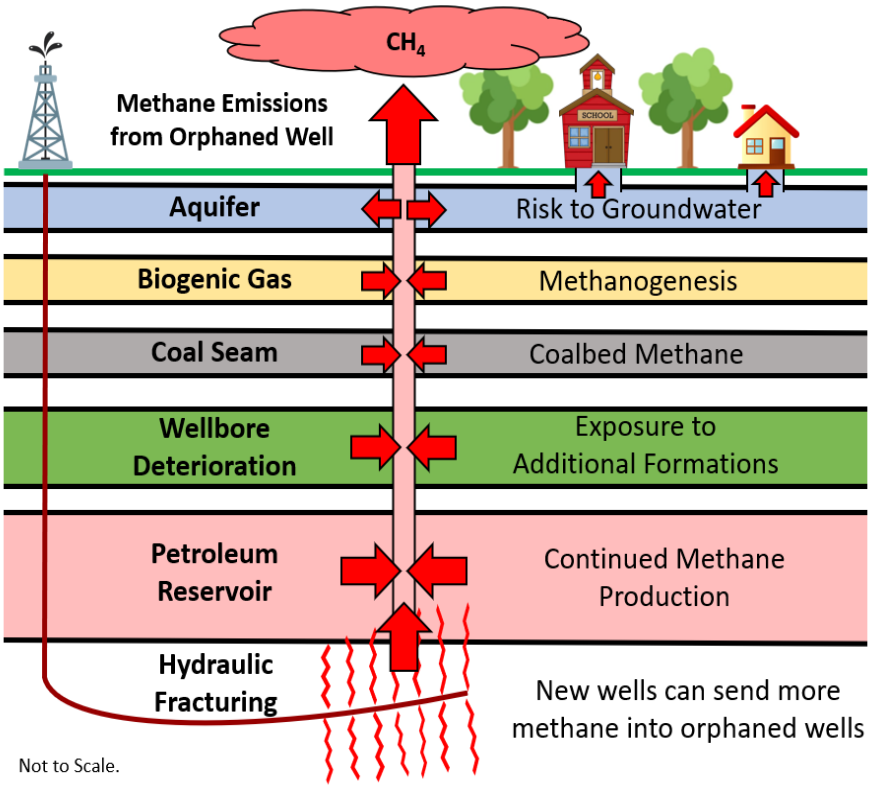


Figure 38. Depiction of various subsurface methane sources and pathways that can lead to surface emissions.

Multiple studies have measured methane emissions from both orphaned and abandoned wells[10] in the United States over the last decade, but these studies have only measured emissions from approximately 1,125 of these wells.[11] This is a small subset of the tens of thousands of documented orphaned wells and millions of abandoned wells nationwide. A 2021 study of abandoned wells found an average methane emission rate of 11 grams per hour per well and estimated that 10 percent of abandoned wells were responsible for 96 percent of emissions.[12] A 2023 study of approximately 123,000 documented orphaned wells in the U.S.

[9] Modified after Gianoutsos, Nicholas J., Haase, Karl B., and Justin E. Birdwell. "Geologic sources and well integrity impact methane emissions from orphaned and abandoned oil and gas wells." *Science of The Total Environment.* Elsevier. Feb. 20, 2024. https://www.sciencedirect.com/science/article/pii/S0048969723082141

[10] Abandoned wells are often defined as unplugged wells that are no longer economically viable but have a responsible party liable for the plugging and site restoration. Orphaned wells are generally a subset of abandoned wells for which no operator can be found or determined. The distinction between these two categories is less relevant for the purpose of discussing methane emissions from unplugged oil and gas wells.

[11] Gianoutsos, Nicholas J., Haase, Karl B., and Justin E. Birdwell. "Geologic sources and well integrity impact methane emissions from orphaned and abandoned oil and gas wells."

[12] Williams, James P., Regehr, Amara, and Mary Kang. "Methane Emissions from Abandoned Oil and Gas Wells

found methane emissions from these wells to be 5-6 percent of total methane emissions from all abandoned wells in the United States.[13] The current body of data suggests the majority of orphaned and abandoned wells emit no or relatively small quantities of methane, but that a small percentage of wells can be significant sources of emissions. For instance, some individual unplugged wells have been measured emitting 76,000 grams of methane per hour.[14] Over the course of a year, this rate is equivalent to the greenhouse gas emissions from over 4,000 gas-powered cars.

Methane Measurement Guidelines

States receiving Formula and Performance Grants under the Bipartisan Infrastructure Law are required to detect for leaks and, if detected, measure and quantify the methane emissions at orphaned wells before plugging and verify the lack of gaseous emissions after plugging. Tribes receiving Bipartisan Infrastructure Law funds to plug orphaned wells on Tribal lands and the five federal bureaus receiving funds to plug and remediate wells across U.S. public lands and waters are also required to detect and measure methane emissions from wells. It is critical to measure methane emissions from a well before and after plugging to help identify and prioritize high-polluting wells as well as ensure that plugging operations succeed and methane is no longer leaking. Quantifying the amount of methane leaking from a well is also valuable to help demonstrate the amount of harmful methane reduced as a result of work funded by the Bipartisan Infrastructure Law.

Figure 39. A DOE employee measures methane from an orphaned well in Texas. Photo taken by the USFS.

Entities plugging orphaned wells with BIL funding must measure and report methane emissions in accordance with the methane measurement guidelines published by the Department in April 2022 and updated in July 2023. Under the BIL, the most common approach to measuring methane emissions from orphaned wells is following a two-part process. First, a qualified measurement specialist determines if the amount of methane leaking from the well is higher than naturally occurring background levels. If it is, the qualified measurement specialist measures the flow rate (grams per hour) from the well. Once the well is plugged, a qualified individual will measure the well again to ensure it is no longer leaking methane.

in Canada and the United States." *Environmental Science & Technology*. 2021. https://pubs.acs.org/doi/10.1021/acs.est.0c04265

[13] Boutot, Jade, Peltz, Ada, and Mary Kang. "Documented Orphaned Oil and Gas Wells Across the United States." *Environmental Science & Technology*. Sept. 2022. https://doi.org/10.1021/acs.est.2c03268

[14] Riddick, Stuart N., Mbua, Mercy, et al. "Methane emissions from abandoned oil and gas wells in Colorado." *Science of The Total Environment*. April 20, 2024. https://www.sciencedirect.com/science/article/abs/pii/S004896972401129X

Methane Emission Reductions

Funding from the Bipartisan Infrastructure Law provides a tremendous opportunity to better understand how much methane orphaned wells emit, what factors may influence emission rates, and how states and other entities can identify potential high-emitting wells for plugging.

*Methane is **80 times** more potent of a greenhouse gas than carbon dioxide.*

Of the 9,002 orphaned wells reported plugged by states and federal bureaus with Bipartisan Infrastructure Law funds through June 30, 2024, methane detection tests were made at 1,446 of these wells before plugging, and **about a quarter of these wells produced detectable quantities of methane.** Approximately 85 percent of these wells were found to be leaking less than 1 gram of methane per hour, and approximately 90 percent were leaking less than 10 grams of methane per hour. Methane testing and measurements were not completed at all 9,002 of the plugged wells since it is not a requirement for states using initial grant funding. The wells with detectable quantities of measured methane averaged around 296 grams/hour (g/h), while the average across the entire dataset of the 1,446 wells was around 70 g/h.

Figure 40. Using equipment to conduct a methane detection test at a well in Nebraska.

Even though many wells may be emitting no methane or small amounts of methane at a specific point in time, that does not mean the wells may not begin emitting larger amounts of methane in the future. As subsurface oil and gas casing and well infrastructure erode over time, deterioration and other factors can lead to increased methane emissions from the well.[15]

As has been discussed, the true number of orphaned wells in the United States is unknown, but there are over 141,000 documented orphaned wells on state and private land [16], and over 16,000 more on federal land.[17] The IOGCC estimates there may be an additional 250,000-740,000 undocumented orphaned wells.[18] Together, all documented and

[15] Gianoutsos, Nicholas J., Haase, Karl B., and Justin E. Birdwell. "Geologic sources and well integrity impact methane emissions from orphaned and abandoned oil and gas wells." *Science of The Total Environment.* Elsevier. Feb. 20, 2024.
[16] "Idle and Orphan Oil and Gas Wells: State and Provincial Regulatory Strategies-Supplemental Information on Orphan Well Plugging and Site Restoration." *Interstate Oil & Gas Compact Commission.* 2024. https://oklahoma.gov/content/dam/ok/en/iogcc/documents/publications/Orphan%20Wells%20Revised.pdf
[17] Statement of Dr. Steve Feldgus before the House Subcommittee on Energy and Mineral Resources. "Benefits of the Legacy Pollution Clean-Up Programs in the Bipartisan Infrastructure Law. March 31, 2022. https://www.doi.gov/ocl/pollution-clean-programs
[18] "Idle and Orphan Oil and Gas Wells: State and Provincial Regulatory Strategies-Supplemental Information on Orphan Well Plugging and Site Restoration." *Interstate Oil & Gas Compact Commission.* 2024.

Figure 41. Using equipment to conduct a methane detection test at an orphaned well in a National Wildlife Refuge.

undocumented orphaned wells may emit nearly 63 million grams of methane per hour into the atmosphere, **the equivalent of over 3.6 million gasoline-powered passenger cars driven per year.**

As previously discussed, over 9,000 orphaned wells were plugged by states and federal agencies with Bipartisan Infrastructure Law funds through June 30, 2024. Based on the measurements collected from states and federal agencies, the OWPO estimates that this work has prevented methane emissions of an estimated 5.5 billion grams of methane per year. This is equal to approximately 155,000 metric tons of carbon dioxide equivalent emissions per year or removing nearly 37,000 gasoline-powered passenger cars from the road for a year.

The total damage of methane emissions from orphaned wells has been calculated by the Environmental Protection Agency (EPA) at approximately $4,140 per metric ton, factoring in the damage that methane emissions cause to human health, the economy, and the environment.[19] Using the EPA's value for the cost of methane, the total socioeconomic cost of the methane emitting from *remaining* unplugged documented and undocumented orphaned wells in the United States is estimated to be between $1 and $2.3 billion every year.

Federal Program Methane Measurements

As of June 30, 2024, federal bureaus reported pre-plugging methane measurements for 186 wells, of which methane was detected at 52 wells, or approximately 28 percent. At these wells, methane emission rates range from less than 1 gram per hour to 1,566 grams per hour, with an average across all 186 wells of 15.59 grams/hour. All the wells with reported pre-plugging methane measurements have reported undetectable levels of methane after plugging.

Among the federal agencies, the Bureau of Land Management reported pre-plugging methane measurements on 13 wells, of which 8 wells were emitting detectable levels of methane.

[19] Adjusted to 2024 dollars from McDuffie EE, Sarofim MC, Raich W, Jackson M, Roman H, Seltzer K, Henderson BH, Shindell DT, Collins M, Anderton J, Barr S, Fann N. "The Social Cost of Ozone-Related Mortality Impacts From Methane Emissions." Earths Future. September 2023. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10631284/
"Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review." *Environmental Protection Agency.* November 2023. https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf

Emission rates ranged from less than 1 g/h to 369 g/h with an average of 82 g/h. Post-plugging, BLM reported that 100 percent of those wells had no detectable methane emissions.

The U.S. Fish and Wildlife Service reported pre-plugging methane measurements on 160 wells, of which 36 wells were emitting detectable levels of methane on federal lands across four counties in Oklahoma and Louisiana. 100 percent of the wells had no detectable methane emissions post plugging.

The U.S. Forest Service reported pre-plugging methane measurements on 10 wells, 70 percent of which were emitting detectable levels of methane. 100 percent of the wells had no detectable methane emissions post plugging.

Bipartisan Infrastructure Law Success Story – Gauley River National Recreation Area

For wells with detectable pre-plugging levels of methane, the National Park Service reported the wells emitted an average of 833 grams/hour. In FY 2024, the National Park Service detected and plugged the Mower Lumber #1, a high-emitting orphaned gas well in the Gauley River National Recreation Area (NRA) that had been polluting the area for decades. Before being plugged with BIL funds, the well was measured as emitting 1,556 grams of methane per hour, the equivalent of 423,000 pounds of coal burned each year. In a collaborative effort between the NPS and the state of West Virginia, the well was successfully plugged, with no detectable methane emission post plugging, and the wellsite and access road were reclaimed and reseeded. Monitoring by the NPS will ensure that the area returns to its natural state.

Figure 42. Mower Lumber #1 wellsite, Gauley River NRA, West Virginia – Before & After Plugging.

State Grant Program Methane Measurements

Through June 30, 2024, states had plugged 8,813 wells with Bipartisan Infrastructure Law funds. Pre-plugging methane measurements were reported in 1,260 wells, of which methane was detected at 290 wells, or approximately 23 percent. For the state-plugged orphaned wells

where methane was detected, methane emissions ranged from less than 1 g/h to 33,153 g/h, with an average of 339.5 g/h. The average across the entire state dataset of the 1,260 wells was around 78 g/h. Table 5 provides details of methane measurement data reported by states with pre-plugging methane measurements. Post-plugging measurements were reported for 922 wells that also had pre-plugging measurements, showing greater than 99.9 percent effectiveness in methane reduction.

Table 5. Summary of state reported plugged well methane emissions data.

State	Wells Reported Plugged Through 6/30/24	Wells with Reported Pre-plugging Methane Measurements	Sum of Reported Pre-plugging Methane Emissions (g)	Average Reported Pre-plugging Methane Emissions (g/h)
California	169	154	7,722.70	50.15
Colorado	167	121	53,995.40	446.24
Florida	5	5	0.00	0.00
Louisiana	539	507	6,119.36	12.07
Michigan	233	44	3,660.50	83.19
Mississippi	16	16	0.00	0.00
Montana	147	1	6,500.00	6,500.00
New Mexico	137	137	18,116.28	132.24
New York	29	18	2,330.28	129.46
Pennsylvania	179	144	0.00	0.00
Texas	849	112	0.00	0.00
West Virginia	201	1	14.41	14.41
Total	**2,671**	**1,260**	**98,458.93**	
Average				**78.14**

Section 7: Economic Opportunities

As reported in last year's Report to Congress, the total FY 2022 and FY 2023 obligations for the Bipartisan Infrastructure Law's Orphaned Wells Program were $647.6 million. The activities funded by these obligations were estimated to support 6,443 jobs in FY22 and 780 jobs in FY23 and contribute $934.5 million to the economy over the two-year period. In FY 2024, BIL Orphaned Wells Program obligations were $609.6 million. The activities funded by these obligations were estimated to support 6,110 jobs and contribute $861.3 million to the economy.

The annual data, generated by models developed by the Department's Office of Policy Analysis, are summarized in Table 6.

Table 6. Jobs supported and Gross Domestic Product (GDP) contributions from BIL Orphaned Wells Program funding by Fiscal Year.

BIL Orphaned Wells Program	FY 2022		
	Obligations	Jobs Supported	Contributions to GDP
Federal Program	$19,825,000	208	$28,999,258
State Grants	$560,000,000	6,225	$807,204,218
Tribal Grants	$0	0	$0
FY 2022 SUBTOTAL	**$579,825,000**	**6,433**	**$836,203,476**
BIL Orphaned Wells Program	**FY 2023**		
	Obligations	**Jobs Supported**	**Contributions to GDP**
Federal Program	$28,419,216	313	$40,576,749
State Grants	$0	0	$0
Tribal Grants	$39,381,000	467	$57,710,612
FY 2023 SUBTOTAL	**$67,800,216**	**780**	**$98,287,361**
BIL Orphaned Wells Program	**FY 2024**		
	Obligations	**Jobs Supported**	**Contributions to GDP**
Federal Program	$53,269,847	492	$74,300,000
State Grants	$527,425,127	5,287	$744,500,000
Tribal Grants	$28,906,614	331	$42,500,000
FY 2024 SUBTOTAL	**$609,601,588**	**6,110**	**$861,300,000**

The economic contributions were estimated using IMPLAN, an economic analysis software application designed to estimate the impacts or "ripple" effects of a given economic activity. The FY 2024 dollar value reflects FY 2024 programmatic obligations from the Department of the Interior to states and Tribes, as well as allocations from the Department of the Interior's OWPO to Department bureaus and USDA. As with last year's report, expenditures are equivalent to obligations as reported in the Department's financial system. This approach ensures that the economic contribution methodology is consistent across the Department's Bipartisan Infrastructure Law programs.

Supporting workers and growing the workforce involved in well plugging, remediation, and restoration activities across the country is central to the Department's efforts to implement Section 40601 of the Bipartisan Infrastructure Law. The historic investment in orphaned well clean-up has catalyzed numerous workforce initiatives, as has the administration of these funds; for instance, the Department included language in the Phase 2 State Formula Grant Guidance and State Matching Grant Guidance encouraging states to incorporate strong labor standards and use a well-trained project workforce for plugging, remediation and reclamation of wells. And with states ramping up well-plugging and remediation efforts this year because of investments from the BIL, workers are benefiting as companies expand to take on new projects.

- California released its *State Oil and Gas Well Abandonment Expenditure Plan* in October 2023, which includes a commitment that the state will "develop a procurement process for projects involving the plugging and abandonment of wells and remediation of oil and gas leases that requires contractors performing the work to use project labor agreements."[20] According to this state, this will "ensure that contractors selected to carry out state abandonment work enter into a project labor agreement that expressly requires each contractor and subcontractor performing the work to use a skilled and trained workforce."

- According to Luke J. Plants, CEO of Plants and Goodwin, Inc., which is an Appalachian-based company providing plug and abandonment services across the region:

> *"Thanks to BIL funds, my business has established a robust training program that includes a comprehensive six-month apprenticeship for new hires. Our equipment now meets or exceeds industry standards, creating a safer working environment and ensuring that well-plugging is performed to a high standard, maximizing value for the American public. With our current headcount of 135, we've expanded our workforce by 40% as a direct result of this funding. BIL projects have also stimulated local economies by increasing demand for lodging, food services, and contract materials. Moreover, the predictability of future funding opportunities through the BIL has given business owners the confidence to invest in additional fixed assets, further stimulating*

[20] "State Oil and Gas Well Abandonment Expenditure Plan." *California Department of Conservation, Geologic Energy Management Division.* October 2023. https://www.conservation.ca.gov/calgem/Documents/state_abandonment_expenditure_final.pdf

American manufacturing. None of these positive economic effects would have been possible without federal stimulus support."

Figure 43. Secretary Haaland speaks with state officials and labor leaders during an orphaned well roundtable at the Operating Engineers 324 Stationary Career Center in Detroit, Michigan, in July 2024.

- In August 2024, Pennsylvania Governor Josh Shapiro and the United Mine Workers of America (UMWA) announced a new registered apprenticeship program to train workers to plug oil and gas wells.[21] This is believed to be the first-ever registered apprenticeship program for UMWA and will be run out of their Ruff Creek Training Center in Greene County, Pennsylvania. The program is officially registered with the Pennsylvania Department of Labor and Industry, and will train workers on safety, well capping techniques, cement properties and skills, and land remediation.

As orphaned well plugging and remediation projects expand nationwide and investments continue to reach communities, the Department's Orphaned Wells Program will center workers and the creation of good jobs at the heart of its efforts.

[21] "Shapiro Administration Announces First-In-PA Registered Apprenticeship Program to Plug Abandoned Oil and Gas Wells." August 26, 2024. https://www.media.pa.gov/pages/dep_details.aspx?newsid=1927

Section 8: Future Planning

Strategic Planning

To support the established vision and mission and ensured continued and long-term success, in FY 2024, the OWPO developed and published a Strategic Plan.[22] This plan aligns with the Department's Strategic Plan and identifies clear programmatic goals and objectives. To accomplish these goals, division level action items were developed to guide priorities and activities in FY 2025 and beyond. The Strategic Plan provides a clear path for achieving the aims of Section 40601 of the Bipartisan Infrastructure Law and sets the stage for program accomplishments going forward.

In addition to the overarching Strategic Plan, the OWPO developed a Data Strategic Plan. Given the amount of orphaned well data available in disparate locations and the influx of new quarterly programmatic data, a thoughtful and informed plan was necessary to capitalize on the valuable information. The Data Strategic Plan will help unlock the full potential of data in support of the broader goals of the Bipartisan Infrastructure Law and enable the OWPO to transform a legacy of environmental pollution into a legacy of environmental stewardship.

National Academies of Sciences (NAS) Workshop

In September 2023, the OWPO finalized a contract with the National Academies of Sciences, Engineering, and Medicine (NAS) to carry out a series of tasks and provide the Department with research support and technical expertise related to well plugging policies, practices, standards, and procedures. The engagement with the NAS is to advance all ongoing BIL-funded orphaned well activities, with a focus on the development and administration of the Regulatory Improvement grants.

Figure 44. A panel discussion during the July 2024 NAS workshop in Washington D.C.

The first OWPO-directed task carried out by the NAS was to convene a workshop to discuss existing practices for plugging orphaned and/or abandoned hydrocarbon wells, including current best practices around well-plugging technologies, standards, and procedures. The NAS formed a five-person planning committee comprised of relevant subject matter experts who oversaw organizing and administering the workshop. The workshop was held on July 18 and 19, 2024. Over the course of two days, the workshop covered six sessions ranging from a discussion of state plugging procedures,

[22] Orphaned Wells Program Office: Strategic Plan for Fiscal Years 2025-2030. https://www.doi.gov/sites/default/files/documents/2024-10/owpo-strategic-plan-final-20241015.pdf

environmental risks, remediation, and advancements in plugging materials. The two-day workshop was open to the public and the video recording and the official proceedings, which detail and summarize the presentations and discussions that took place during the workshop, are available on the NAS website.[23]

In support of the workshop and to provide the OWPO and the broader stakeholder community with valuable background material, the NAS commissioned a white paper compiling current state well plugging practices and discussing statutory and regulatory standards, methods, and design of plugging plans and requirements for well-plugging activities. In addition, the OWPO commissioned the NAS to convene an ad hoc committee of subject matter experts and produce a consensus study report providing the OWPO advice on regulatory, technical, scientific, and economic considerations for plugging and remediating orphaned and abandoned oil and gas wells. The committee's first public planning meeting is scheduled to take place in the first quarter of FY 2025 and the final consensus study is expected to be completed in FY 2026.

Interstate Oil & Gas Compact Commission Consultation

Consistent with Section 40601 of the Bipartisan Infrastructure Law, the Department consulted with the IOGCC regularly throughout FY 2024 to carry out the Department's responsibilities for the federal, state, and Tribal programs. Consulting activities include representatives of the OWPO attending bi-weekly meetings with the IOGCC staff and participating in webinars and collaborative events.

Representatives from the Department attended the IOGCC Annual Conference in October 2023 and the Annual Business Meeting in May 2024. While attending these events, the Department engaged with state officials and staff, provided updates on the Orphaned Wells Program, and discussed opportunities and challenges associated with implementing Section 40601 of the BIL.

In January 2024, the OWPO facilitated a Community of Practice webinar on methane detection and measurement between states and federal agencies. Federal agency representatives from the Departments of the Interior, Agriculture and Energy presented on how their agencies measure methane from orphaned wells using BIL funds and shared lessons learned based on experience over the last several years.

In June 2024, the OWPO conducted a training webinar for states on environmental compliance requirements included in the terms and conditions of the Phase 1 Formula Grants. During the training, which was recorded and is available on the IOGCC website, the OWPO staff covered topics including delegated roles and responsibilities, developing workplans, and the consultation process. The OWPO also answered questions about compliance with the environmental requirements.

[23] https://www.nationalacademies.org/event/42861_07-2024_practices-and-standards-for-plugging-orphaned-and-abandoned-hydrocarbon-wells-a-workshop

American Association for the Advancement of Science (AAAS)

In September 2024, the OWPO finalized a contract with the American Association for the Advancement of Sciences (AAAS) Center for Scientific Evidence in Public Issues (EPI) to assist the OWPO in obtaining information and evidence to assist in informing policy, as well as technical and operational decisions. The AAAS EPI center is an initiative designed to deliver clear, concise, and actionable scientific evidence to policymakers and other decision-makers. This partnership's objective is to support and facilitate information sharing, learning, and discussion between experts and stakeholders critical to the OWPO's mission. The AAAS will deliver findings, summaries, and reports on what comes from facilitated convenings, such as the benefits of plugging to health and safety, as well as other areas where there has not been a considerable amount of research or focus but where increased examination may provide value to the OWPO and those that are recipients of Bipartisan Infrastructure Law funding.

In September 2021, the AAAS EPI Center formed a working group comprised of an interdisciplinary network of experts to share evidence and approaches to addressing orphaned and improperly abandoned oil and gas wells and identify opportunities to share expertise to help inform policy decisions.[24] Since then, the working group has met virtually every quarter, and with the OWPO's backing, will continue to meet quarterly through FY 2025. Over the last several years, the working group has and will continue to share information with peers across disciplines and sectors, leverage current knowledge, explore best practices or novel solutions, and identify existing data gaps and uncertainties in designing policy-relevant research questions.

Orphaned Wells Program Outlook

The benefits from funds distributed and the associated wells plugged, methane emissions reduced, and legacy pollution remediated will continue through 2030 and beyond. The Orphaned Wells Program Office will continue to address legacy pollution and community revitalization as plugging, remediation, and restoration activities progress through the federal, state, and Tribal programs described in this report. In FY 2025, the Department projects continued collaboration with federal agencies, states, and Tribes, building on the successes achieved in the first three years of Bipartisan Infrastructure Law Section 40601 implementation.

As documented and undocumented orphaned well data is improved through the current and future efforts described in this report, the total number of orphaned wells in need of plugging and remediation nationwide will be better documented and inventoried. This will allow the Department to assess the ability of BIL Section 40601 funds to address the pervasive issue of orphaned oil and gas wells and identify what future solutions and funding may be required to continue mitigating the impacts of orphaned wells on public health and the environment.

Additional program information is available and will be updated regularly on the Department's Orphaned Wells Program website, https://www.doi.gov/orphanedwells.

[24] *AAAS EPI Center Working Group on Orphaned Wells.* https://www.aaas.org/page/orphaned-and-abandoned-wells-working-group