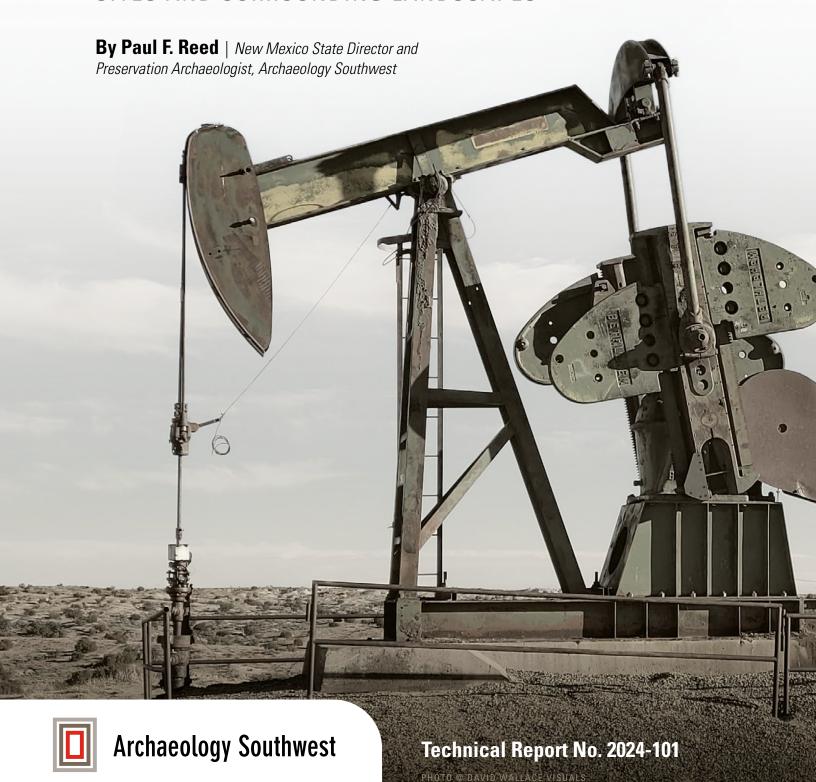
Orphaned and Abandoned Oil-Gas Wells in the Southwest

IMPLICATIONS FOR PROTECTING SACRED AND CULTURAL SITES AND SURROUNDING LANDSCAPES



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Introduction

Over the last 170 years of oil and gas production in the US, it is estimated that more than 12 million holes of varying depths have been drilled, including dry holes, producing wells, and orphaned or abandoned locations (Kusnetz 2011).

Abandoned wells are those with no recent production, injection, or other uses. Abandoned wells that have not been properly plugged and fully reclaimed are a huge environmental problem, as they can be sources of groundwater contamination, air pollution, human health hazards, and greenhouse gas emissions. Recent estimates by the Environmental Defense Fund (EDF) put the total number of abandoned wells between 500,000 and several million (EDF 2023). A US Environmental Protection Agency (EPA) report from 2021 (pp. 3–111) puts that number even higher—an estimated 3.4 million abandoned wells, the large majority of which have not been accurately documented or mapped.

Abandoned wells that have not been properly plugged and fully reclaimed are a huge environmental problem

Orphaned wells are a subset of abandoned wells, defined as those that are, "unplugged, non-producing [oil or gas] wells for which the operator is unknown, unavailable, or insolvent, leaving no responsible party to plug the well and restore the well site other than government agencies and the general public" (Boutot et al. 2022: 14228). Orphaned wells are therefore particularly harmful, as they not only significantly impact local communities, public lands, waters, wildlife, and cultural and historical resources, but also because they require significant funding to clean up—costs which should be borne by the oil and gas companies that drill the wells in the first place, but which ultimately fall to taxpayers.

The oldest known orphaned well is more than 100 years old (Boutot et al. 2022: 14232). Thirty US states have documented orphaned wells, as of 2022, and it is likely that others will be found in additional states through time (Figure 1). The distribution of known and documented orphaned wells extends across the country, with many in eastern states such as Ohio, Pennsylvania, Kentucky, West Virginia, and New York as well as in western states where abundant land values and resources have been put at risk. While recent data from the US Geological Survey set the number of documented orphaned wells at 117,672, there are very likely more orphaned wells that are yet to be identified and even more idled wells[1] that are at risk of becoming orphaned in the future. Researchers at the Los Alamos National Laboratory in New Mexico recently initiated a new study that aims to ultimately identify and characterize the nation's hundreds of thousands of undocumented orphaned wells and identify their full environmental impact.

In 2021, President Biden signed the Infrastructure Investment and Jobs Act (Public Law 117-58). This law, informally known as the Bipartisan Infrastructure Law, has included \$4.7 billion for orphaned well site plugging, remediation and restoration activities on federal, Tribal, state and private lands. This historic investment is aimed at "reducing methane and other greenhouse gas emissions from orphaned wells, helping to clean up water contamination, restoring native habitat, creating good-paying union jobs, and benefit[ing] disproportionately impacted communities" (DOI 2022b).

The allocation of this funding has been critical for protecting communities, wildlife, and lands and waters across the country from the existing orphaned well crisis.

Yet, unfortunately, orphaned wells are still being created and the problem is only getting worse. To protect irreplaceable sacred and cultural sites and prevent taxpayers from continuing to have to bear the burden of protecting the nation's frontline communities from the threat of orphaned wells on public lands in the future, fundamental changes to the federal bonding system—such as those recently proposed by the Biden administration and that have been championed in Congress—are desperately needed.

The present report focuses on the impact of orphaned and abandoned wells to sacred and cultural sites in sensitive areas such as the Greater Chaco Landscape and Bears Ears National Monument, as well as the impact to the frontline communities living in these areas. It also identifies what is needed to mitigate the current crisis, prevent the creation of additional orphaned

117,672: the number of orphaned wells documented by the USGS in 2022

and abandoned wells in the future, and address the root cause of the longstanding problem. Finally, this report summarizes the common-sense policy solutions that have been proposed in recent legislation and as part of the Bureau of Land Management's (BLM's) current rulemaking process to update the federal onshore oil and gas program, which would increase bonding requirements to hold oil and gas companies responsible for cleaning up the wells they drill on public lands. These changes to the federal bonding system are critical in order to protect cultural resources and sensitive landscapes from the continued threat of orphaned and abandoned wells in the future.

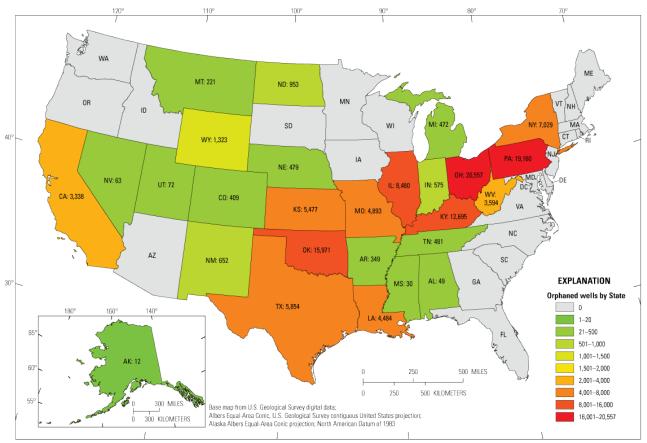


Figure 1: Map of documented orphan well sites by state. MAP: MERRILL ET AL. 2023 (DATA FROM USGS 2023)

The Impact of Orphaned and Abandoned Wells on Environmental and Human Health

The impact of orphaned and abandoned wells on environmental and human health are serious and well-documented. Orphaned wells can leach many ground and surface water contaminants, including methane, hydrogen sulfide, arsenic, benzene, toluene, ethylbenzene, and xylene (Khan 2023). If an orphaned well was produced by hydraulic fracturing or fracking, then an even-more-toxic mix of chemicals (largely undisclosed by industry) may be present and contaminating nearby water supplies.

A recent study (Hicks 2020) tracked water pollution in long stretches of the Ohio River through six states and ultimately concluded that the biggest source of contamination was the many orphaned wells located in the area. This contamination now threatens the primary water supply for at least 3 million people who depend on the Ohio River.

In addition, both actively producing and abandoned wells produce a number of air pollutants, including greenhouse gases methane and carbon dioxide, and a variety of volatile organic compounds (VOCs), including air benzene, xylene, and hydrogen sulfide (DOI 2022a; Groom 2020; Gross 2023; Turrentine 2021). The implications for human health and safety from the leaking of these gases and liquids from orphaned and

The implications for human health and safety from the leaking of these gases and liquids from orphaned and abandoned wells can be truly catastrophic

abandoned wells can be truly catastrophic. Methane, for example, is an odorless gas that can seep into nearby buildings (a home, school, or office, for example) and can pose major health hazards when it becomes concentrated in enclosed spaces, causing weakness, nausea, vomiting, and convulsions. Even more troubling, however, is that recent research has found that current environmental and health monitoring data are not extensive or widespread enough to evaluate the full range of potential and actual impacts to human health from orphaned oil-gas wells (Turrentine 2021).



Abandoned well in San Juan County, New Mexico. PHOTO: PAUL REED

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Risks to Cultural Sites and Landscapes in the Southwest

The Southwest is characterized by an extensive network of landscapes that host many important and irreplaceable sacred and cultural sites. Despite this rich heritage, oil and gas development has dominated the region for decades, destroying archaeological sites, turning sacred spaces and cultural landscapes into industrial zones, and disproportionately impacting communities of color, including Tribal communities. BLM has historically defaulted to opening federal public lands to oil and gas leasing (The Wilderness Society 2016), which in the Southwest has led to extremely sensitive landscapes being put at significant risk of degradation. Even worse, this harmful legacy of development can be observed today in the many orphaned and abandoned wells that drillers have left behind in proximity to a number of important cultural sites and landscapes throughout the Southwest. In a recent 2021 report, the National Parks Conservation Association (NPCA) identified nearly 32,000 orphaned wells within 30 miles of National Parks in the USA. Looking specifically at New Mexico, NPCA identified a total of 2,269 orphaned wells, 431 of which are within 30 miles of National Parks. More than 200 of these wells are in proximity to Chaco Culture National Historical Park and Aztec Ruins National Monument. In southeast Utah, the NPCA study showed hundreds of orphaned well sites near National Parks.

THE LANDS BETWEEN, SOUTHWEST UTAH

Building on the NPCA report, this report highlights two high-profile examples of orphaned and abandoned wells threatening important cultural sites and landscapes in the Southwest.

In southeast Utah, just east of the Bears Ears National Monument and west of the Canyon

of the Ancients National Monument in southwest Colorado, there are approximately 350,000 acres of mostly BLM-managed lands known colloquially as the Lands Between (Bears Ears Partnership 2023). The Lands Between is one of the ancestral and spiritual homes of the Hopi, Zuni, Acoma, Laguna, Rio Grande Pueblos, Nuche (Ute), Diné (Navajo), Paiute, and other Indigenous peoples. This area preserves a history of human occupation dating back for 10,000 years and contains a very high density of sacred, cultural, and historic sites and local heritage landscapes.

50,000: the number of sacred, cultural, archaeological and historic sites estimated within the Lands Between

The Lands Between were recognized early on (e.g., Prudden in 1903, Edgar Hewett in 1904) as being one of the most significant areas in the northern Southwest. In fact, Hewett called for the immediate preservation of the "Bluff District," which includes Bears Ears and the Lands Between in the report he submitted to Congress in the lead-up to the creation of the Antiquities Act in 1906 (Wintch 2021:1).

The Lands Between area is estimated to contain perhaps 50,000 sacred, cultural, archaeological, and historic sites. Of these, probably 12,000 are habitation sites used by ancestral Puebloan, Nuche (Ute), Diné (Navajo), Paiute, and other Indigenous peoples. Among this latter group, are five Chacoan-related great house communities with hundreds of affiliated sites.

In addition to the residential sites of Native peoples, examination of the Lands Between reveals a stunning, visual array of rock imagery and inscriptions. The area contains tens of thousands of petroglyph and pictograph images on stone. These images constitute a "living gallery of Indigenous signs, stories and murals imbued with the breath of life for all of humanity" (Wintch 2021: 4).

Unfortunately, over the years, oil and gas companies have drilled dozens of oil and gas wells in the area, including several within the boundaries of or in close proximity to the Alkali Ridge National Historic Landmark, Hovenweep National Monument, and several other culturally sensitive areas. Although many of these wells have not produced oil or gas in years, they have not been properly plugged nor reclaimed by the companies that operate them. As a result, decaying pumpjacks,

tanks, and other industrial infrastructure and equipment have been found scattered across the Lands Between region. Of added concern, at least three of the wells drilled on federal lands in this region have been officially declared "orphaned," putting taxpayers on the hook for cleaning them up to ensure reclamation of the surrounding land-scape and protection of its immense cultural resources from further degradation (Taxpayers for Common Sense 2021).

Finally, in spite of the significant number of wells in the area that have been abandoned for years—an indication of its poor development potential—under the Trump administration the BLM sold over 40,000 acres of new leases within the region from 2017–2019,





Above: Abandoned oil and gas infrastructure on federal public lands near Hovenweep National Monument. PHOTO: JON MULLEN **Above right:** Pueblo site in Montezuma Canyon, Southeast Utah. PHOTO: PAUL REED

not only threatening proper management of the lands for their valuable cultural resources but also increasing the likelihood of even more abandoned wells littering the landscape in the future.

Data from the NPCA 2021 study reveals hundreds of orphaned or abandoned wells in proximity to the Lands Between sacred landscape (Figure 2).

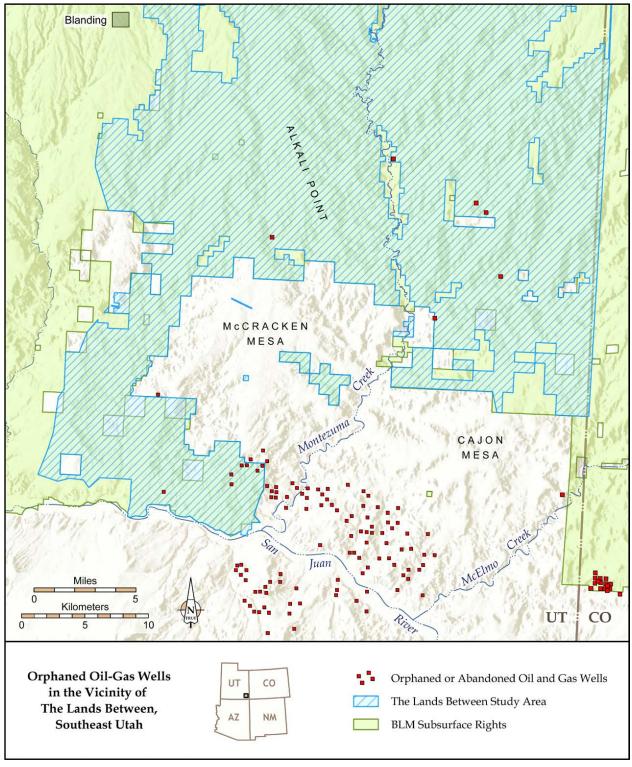


Figure 2: Orphaned and abandoned oil and gas wells in the vicinity of the Lands Between, Southeast Utah. MAP: ARCHAEOLOGY SOUTHWEST. DATA SOURCES: NPCA 2021, BLM LANDSCAPE APPROACH DATA PORTAL 2021.

GREATER CHACO LANDSCAPE, NORTHWEST NEW MEXICO

The lands surrounding Chaco Culture National Historical Park (CCNHP) have seen considerable oil and gas activity over the last 100 years. Despite the withdrawal of federal lands and minerals from future oil and gas development in 10-mile protection zones around the Park by Interior

Secretary Haaland in June, 2023, orphaned and abandoned wells continue to pose a significant risk to sacred and cultural sites and landscapes in the region. The NPCA 2021 study identified hundreds of orphaned wells within 30 miles of Chaco Culture National Historical Park (Figure 3). In addition, a number of inactive, unmitigated wells at serious risk of becoming orphaned are located on federal lands within 10 miles of CCNHP (Gardner 2021).

Pueblo voices have persistently called for federal lands in the area to be spared from further drilling

For years, the All Pueblo Council of Governors (APCG) has raised concerns over the impact of oil and gas drilling on the traditional cultural properties and sacred sites associated with

Chaco Canyon (APCG 2014), and Pueblo voices have persistently called for federal lands in the area to be spared from further drilling and for meaningful government-to-government consultation in the federal government's management of Chaco Canyon.

That destruction from wells developed on the lands surrounding Chaco Canyon can still occur even long after operations cease underscores the risk posed by the landscape's long history of leasing and drilling. Abandoned and inactive wells can contaminate drinking water and leak



Horses grazing near oil and gas infrastructure near Chaco Canyon, Northwest New Mexico. PHOTO: JON MULLEN

toxic methane into the air (Aldern et al. 2021). These wells also pose a significant threat to the region's Tribal communities, many of which are already facing disproportionate impacts from oil and gas emissions (Conant 2021). The lands around Chaco Canyon should never have been offered for oil and gas leasing in the first place, and now the legacy of this mistake can be seen across the Greater Chaco Landscape as these inactive wells have been left to decay with only the hope of taxpayer funding to clean them up.

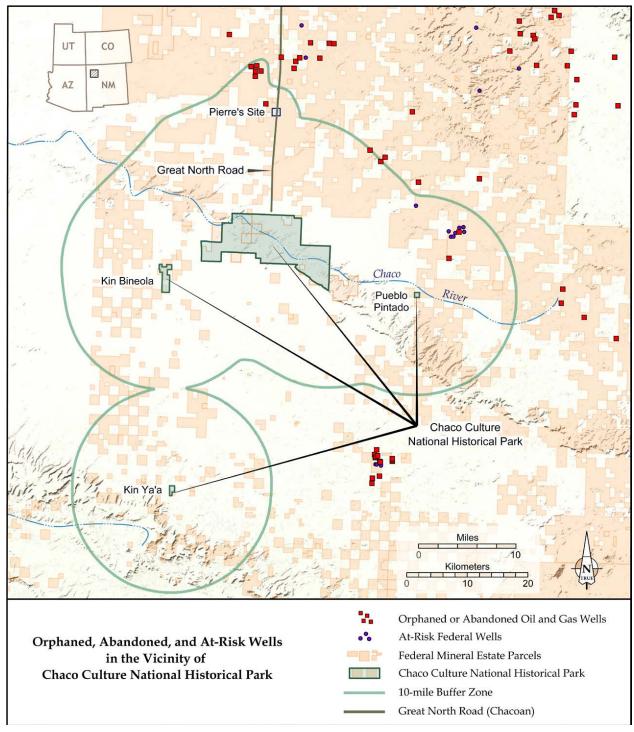


Figure 3: Orphaned, abandoned, and at-risk oil and gas wells in the vicinity of the Greater Chaco Landscape, Northwest New Mexico. MAP SOURCE: ARCHAEOLOGY SOUTHWEST. DATA SOURCES: NPCA 2021, WESTERN ECOSYSTEMS TECHNOLOGY INC 2021, BLM NAVIGATOR 2022

In fact, within 5 miles of the Pierre's Site Area of Critical Environmental Concern (ACEC) and within 2 miles of the Great North Road ACEC is a federally permitted well operated by

Dugan Production Corporation that is of great concern. Both of these places are integral components of the Greater Chaco cultural landscape that surrounds Chaco Culture National Historic Park and are part of the Chaco Culture World Heritage Site—the only such site BLM has some form of jurisdiction over. But at least one well in close proximity to these sites has been allowed to languish without having produced any oil or gas for nearly seven years,[2] posing significant threat to this extremely sensitive and important region since wells that have been out of production but have not been reclaimed are at a much higher risk of becoming orphaned

Abandoned and inactive wells can contaminate drinking water and leak toxic methane into the air

(Boomhower et al. 2019). Now, every day that goes by without this well being properly plugged means that the Pierre's Site and Great North Road ACECs—as well as the whole of the Greater Chaco Landscape—face even greater risk of continuing to bear the brunt of its destructive legacy.



An active oil well near the ancient Puebloan Pierre's Community, Northwest New Mexico. PHOTO: PAUL REED



Native American Tribal Concerns with Orphaned Wells

Tribal leaders in the Southwest have significant concerns with the problem of orphaned and abandoned wells in proximity to sacred cultural sites such as Chaco Canyon and the Lands Between. Clark Tenakhungva, former Vice-Chairman of the Hopi Tribe of Arizona, has expressed these concerns:

"The past and current practice of oil and gas extraction has endangered former Vicelife and land, and brought continuous contamination to the first peoples of America. Orphaned wells have impacted many areas, without thought to the consequences to the land and our people. Life and land are sacred and no amount of money will ever repair life or land once it is destroyed."

and our people."

—CLARK TENAKHUNGVA,
former Vice-Chairman of the Hopi Tribe of Arizona

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Governor J. Michael Chavarria of the Pueblo of Santa Clara has said this:

"The impact of orphaned or abandoned oil and gas wells on sacred sites and cultural landscapes in New Mexico, especially in the Greater Chaco region, is a pressing concern. It highlights the need for collaboration and consultation with Indigenous communities in the development and implementation of regulations or remediation practices related to these sites. By involving our communities, our perspectives and voices can be taken into account, and our rights to cultural heritage and self-determination can be respected.

It's important to acknowledge the Ancestral Puebloan ties to the region and ensure that these sites are protected for future generations.

desecration

The preservation of sacred and cultural sites in New Mexico, particularly in Greater Chaco, is of utmost importance to Indigenous communities. The potential and actual impacts of orphaned or abandoned oil and gas wells on these sites is a matter of deep concern. These sites are not only spiritually and historically significant, but they are also a vital part of Indigenous culture and heritage. Any damage or desecration caused by such activities is a violation of Indigenous rights and a threat to cultural heritage. In light of this, Indigenous people urge for stricter regulations, effective monitoring, and responsible remediation practices. It is crucial to ensure the protection and preservation of these sacred and culturally significant sites and cultural landscapes for present and future generations."

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desecration caused by

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 violation of Indigenous
 rights and a threat to
 cultural heritage

—GOVERNOR J. MICHAEL CHAVARRIA

oF the Pueblo of Santa Clara



Identifying the Root Cause of the Orphaned Well Problem on Federal Lands

As discussed above, orphaned and abandoned oil and gas wells are a significant problem, with perhaps as many as 3.4 million scattered across more than 30 US states. With US oil production having continued at a high level in 2023 and being

duction having continued at a high level in 2023 and being predicted to climb in 2024 as well, it is clear that the creation of new orphaned wells is an ongoing problem, in large part because of the high numbers of recent bankruptcies in oil and gas producers.

In 2020, due to the COVID-19 pandemic and other causes, more than 100 oil and gas companies went bankrupt (OGV Energy 2021; Resnick-Ault and Nair 2020). Resnick-Ault and Nair (2020) report that many companies went heavily into debt to finance oil and gas operations, leaving them vulnerable to bankruptcy if their drilled wells are not big producers. This "rolling of the dice" with the hope of hitting it big is a common problem in the oil and gas industry. On federal public lands in particular, the combination of historically very low costs for bidding on federal oil and gas leases and minimal bonding requirements—which have remained unchanged for decades—has encouraged such speculation, all to the detriment of public lands. Fortunately, the US Government is looking to change its leasing approach, as discussed below.

Before drilling on public lands, companies are required by law to put down bonds that are meant to ensure "complete and timely" plugging and reclamation of the companies' well sites[3]. In 2019, the Government Accountability Office (GAO) examined BLM's oil and gas bonding practices and found that the average value of the bonds that BLM held for all wells on federal public lands was \$2,122, dramatically below the estimated cost for reclaiming a single well, which ranges from \$20,000 to \$145,000 and can easily amount to even more. In fact, GAO's analysis found that 84 percent of the bonds BLM held at the time of the report were inadequate for reflecting potential reclamation costs for all of the wells they covered, even under the low- cost scenario of \$20,000. GAO reported that this discrepancy has been allowed to occur because BLM most often requires that companies put up only the minimum bonding amount, and those rates were first set in the 1950s and 1960s and have never been updated. Unsurprisingly, GAO concluded in its report that, "Bonds held by BLM have not provided sufficient financial assurance to prevent orphaned oil and gas wells."

3.4 million:

estimated number
of orphaned and
abandoned oil and gas
wells scattered across
30 states





Top: An abandoned well located on federal public land, approximately 900 ft from Navajo Nation reservation boundaries. **Bottom:** A well that has been left out of production with deteriorating equipment present onsite, located on federal mineral estate approximately 2 miles from the Counselor Chapter House and residential housing. PHOTOS: EARTHWORKS

Preventing Future Orphaned Wells on Federal Public Lands: Administrative and Legislative Solutions

In 2023, in response to the longstanding issues with the federal onshore oil and gas program that had been extensively documented by GAO and other reports, including regarding the federal bonding system, the Department of the Interior (DOI) initiated a process to reform the onshore oil and gas leasing program.

A complete review of the new regulations is beyond the scope of this report. However, the proposed rule offers several important changes aimed at addressing the problem of orphaned and abandoned wells on federal public lands, including increasing the minimum bond amount for an individual lease to \$150,000 and the minimum bond amount for all leases across a single state to \$500,000, and eliminating the nationwide bonding option. BLM

This proposed rule aims to prevent that burden from falling on the taxpayers in future years

has proposed these changes after determining that the existing minimum bond amounts "no longer provide an adequate incentive for companies to meet their reclamation obligations, nor [do they] cover the potential costs to reclaim a well should this obligation not be met." In the preamble to the proposed rule, BLM acknowledges the significant funding that DOI has made available in the past two years from the Bipartisan Infrastructure Law to fund the clean-up of orphaned oil and gas wells on federal, state and private lands. BLM then goes on to state that, "This proposed rule aims to prevent that burden from falling on the taxpayers in future years."

Once the rule is finalized, there should be many fewer wells left orphaned or abandoned on public lands without sufficient bonds in place to clean them up, as the new regulatory bonding levels will more closely reflect the actual costs of reclamation, effectively providing a more robust mechanism whereby oil and gas companies can be held accountable for adequately plugging and fully reclaiming their federal well sites. Importantly, BLM's proposed rule also includes a phase-in process for existing wells to be covered at the new minimum bonding levels, lessening the risk that wells that have already been drilled will be able to be abandoned without clean-up in the future.

Statutory updates to the federal bonding system have also been proposed in Congress. In 2021, Senator Michael Bennet (D-CO) introduced legislation that would, in part, ensure the increased minimum bonding amounts that have since been included in BLM's proposed oil and gas rule are written into law. As mentioned earlier, under the Mineral Leasing Act oil and gas operators are supposed to put up bonds necessary for guaranteeing the "complete" and "timely" plugging and reclamation of their well sites. A lack of more specific requirements in the law, however, has resulted in operators putting up insufficient bonds for decades. Senator Bennet's bill presents a crucial legislative fix to addressing the orphaned and abandoned well crisis for the long-term, by ensuring that oil and gas companies are held responsible for adequately plugging and fully reclaiming the wells they drill on federal public lands.

Legislation to strengthen federal bonding requirements has also been introduced in the House in recent years—including by Rep. Teresa Leger Fernández (D-NM), Rep. Katie Porter (D-CA), and former Rep. Alan Lowenthal (D-CA)—and was included in the early version of the Inflation Reduction Act.

Addressing the Issue of Public Lands with Important Cultural Resources Being Made Available for Leasing in the First Place: Additional Reform Provisions Included in BLM's Proposed Oil & Gas Rule

The Interior Department's proposed new approach to oil and gas bonding on federal public lands is essential for ensuring that lands that have already been leased in sensitive landscapes with high cultural value won't continue to be further degraded even after development operations have ceased. However, it is also important to recognize the issue of such lands having been made available for oil and gas leasing in the first place, when they instead should be better managed and protected for the rich cultural resources they offer and hold to surrounding communities.

That is why it is so important that the Interior Department's proposed oil and gas leasing rule also takes steps to better ensure leasing is carried out only

on public lands where development will not put other values and resources at risk of undue harm. BLM's decision to codify the agency's use of leasing preference criteria to inform leasing decisions on public lands will help direct leasing away from lands where oil and gas development has historically been prioritized above all other uses.

This proposed reform is important as it prioritizes, for the first time, protection of values such as cultural resources, wildlife, and recreation as BLM carries out the leasing process. In addition to the prioritization of oil and gas leasing away from wildlife habitat and recreation areas, this change will have great potential to protect sensitive cultural areas throughout the Southwest, many of which have historically been made available for reckless development, from expanded oil and gas leasing in the future. The APCG and individual Tribes have long advocated for reform action such as this to be made to the federal onshore leasing process (Archaeology Southwest 2020). As BLM looks to finalize the proposed rule, the agency should ensure that, in applying the preference criteria, any negative effects on cultural resources are considered throughout the leasing process, and any areas overlapping lands where the underlying resource



PHOTO: JON MULLEN

management plan does not provide adequate protections for Indigenous cultural sites—as determined through robust and ongoing consultation with impacted Tribes—are not ultimately made available for lease.

Another important Federal program to address this issue is the Orphaned Wells Program Office established by Interior Secretary Deb Haaland in January 2023, as part of the Bipartisan

Infrastructure Law (https://www.doi.gov/pressreleases/secretary-haaland-establishes-orphaned-wells-program-office-implement-historic). This Federal program will provide \$4.7 billion investment, divided into three programs:

- \$4.3 billion to be used to plug orphaned wells on state and private lands;
- \$250 million to cap orphaned wells on public lands, including in national parks, national forests, and wildlife refuges; and
- **\$150 million** to cap orphaned wells on Tribal lands.

Conclusions

As we consider the nature and extent of the orphaned and abandoned well crisis in the US, it is clear that the problem is immense and has broad implications as it impacts sacred cultural sites and landscapes, climate change, water and air quality, and human health. The most recent estimate of there being 3.4 million orphaned wells littered across the nation signals the severity of this catastrophe. As several studies have shown, this problem is not merely in the past—newly abandoned or orphaned wells are being created every single year. As we look at threats to sacred sites and cultural landscapes, it is clear that orphaned wells and

abandoned infrastructure pose a significant threat to already-sensitive landscapes that have borne the brunt of oil and gas leasing and development for decades. Recent Federal action has begun to help address these problems but much work remains.

Newly abandoned or orphaned wells are being created every single year

The good news is that both administrative and legislative actions are currently being taken to fix this problem for good. BLM's proposed oil and gas rule and bills that have previously been introduced in Congress take aim at ensuring that oil and gas com-

introduced in Congress take aim at ensuring that oil and gas companies are held responsible for cleaning up their well sites on public lands. Furthermore, in 2023, the US Department of Interior created a new Orphaned Wells Program Office, funded with nearly \$5 billion for rehabilitation and clean-up work. Landscapes rich with sacred and cultural history never should have been made available for irresponsible oil and gas leasing and development in the first place, and these long-overdue updates to the federal bonding system are essential for protecting these important areas from continuing to be further threatened in the future.

ACKNOWLEDGMENTS

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END NOTES

- 1. Under the Infrastructure Investment and Jobs Act, an "idled well" is defined as a well "that has been non-operational for not fewer than 4 years and for which there is no anticipated future beneficial use."
- 2. Well API # 30-045-30635, State of NM Oil Conservation Division.
- 3. 30 U.S.C. § 226(g).

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