

Benefits to Safely Managing Orphaned Oil and Gas Wells

The COVID-19 pandemic and continued volatility in the oil and natural gas industry have raised concerns over how financially distressed companies may shut down or slow production from wells that are unlikely to return to economic viability. In some cases, companies may abandon such wells without proper plugging and site restoration.

State regulators, state and federal land managers, and tribal or indigenous authorities may be burdened with a growing number of orphaned wells and the associated impacts.

Orphaned wells can be found on federal, state, private, and/or tribal land in every oil and gas producing state in the United States. Although definitions may vary across jurisdictions, an “orphaned” well is generally considered to be any oil or gas well without a legally responsible party to conduct proper plugging and site restoration. These include modern wells associated with company bankruptcies and legacy wells abandoned prior to contemporary regulatory standards for plugging and for which there is no current responsible party. Some of these legacy wells date back to the late 1800s.

The number and exact location of many orphaned wells remains unknown. States use slightly different definitions for orphaned wells, which can further complicate estimates of the scale of the problem. As of 2018, the [Interstate Oil and Gas Compact Commission \(IOGCC\) reported](#) 56,600 documented orphaned wells, and 194,400 approved idle wells out of a total of 1.6 million unplugged wells throughout the United States. As of 2018, the states had already plugged over 63,000 orphaned wells. Estimates of undocumented orphaned wells range into the hundreds of thousands. Estimates of the cost to states to plug high-priority orphaned wells range from hundreds of millions to billions of dollars.

At a glance ...

States may be burdened with a growing number of orphaned wells. Locating, monitoring, and plugging orphaned wells and restoring well sites can avert costly impacts and reduce risks to the environment and human health.

When energy prices fall and production slows, more companies shut in wells and may sell those wells to companies unable to meet the financial obligations to properly operate or plug them. There are rarely adequate regulatory mechanisms or financial incentives for companies to properly plug wells and restore well sites. Financial assurance levels required of companies by regulators are often well below the cost to plug wells, which can range from several thousand to hundreds of thousands of dollars per well.

Impacts from orphaned wells have already occurred and must be addressed

Orphaned wells can serve as conduits for the migration or emission of large volumes of oil, other fluids, or natural gas, including methane, a potent greenhouse gas. These releases may harm people and the environment by contaminating groundwater, creating explosive conditions in buildings, and emitting hazardous air pollutants. Carefully managing oil and gas well inventories and plugging orphaned wells in a timely manner will yield environmental, human health, and economic benefits.

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Environmental benefits

Plugging orphaned wells can:

- Prevent contamination of water, air, and soil
- Prevent emissions of methane and other greenhouse gases, as well as a suite of contaminants known to be harmful to plants and wildlife
- Protect surface water bodies, aquifers, wetlands, and other sensitive ecosystems belowground

Human health benefits

Plugging orphaned wells can:

- Prevent contamination of water resources, including drinking water and resources that could serve as a source of drinking water in the future
- Prevent releases of explosive gases or harmful fluids to buildings or to the surface
- Prevent migration of oil, natural gas, and fluids from neighboring operational wells
- Prevent releases of gases, fluids, or other compounds that are potentially hazardous to human health including, but not limited to, volatile organic compounds, metals, particulate matter, naturally occurring radioactive materials, and other substances found in oil and natural gas

Economic benefits to plugging orphaned wells

- Funding to plug orphaned wells and restore well sites will create future investment opportunities and provide employment for oil and gas workers whose jobs are lost or threatened by the reduction in demand caused by the pandemic, global market disruptions, energy transitions, or other developments.
- Funding to plug orphaned wells in a timely manner will reduce the financial burden on state regulators, state and federal land managers, and tribal or indigenous authorities tasked with plugging orphaned wells and restoring well sites in the long term.

Addressing orphaned wells represents an opportunity for industry, researchers, regulators, land managers, advocates, and the public to find common cause to support communities and protect the environment, especially as the burden of orphaned oil and gas wells is likely to grow. Without sufficient funds, regulators and land managers will be unable to safely monitor and plug orphaned wells and restore associated sites.

State regulators, state and federal land managers, and tribal or indigenous authorities are already working to prioritize which wells pose the greatest risks to the environment and human health and locate and plug those wells first. Swift action on the part of federal decision-makers to fund the plugging of orphaned wells will yield environmental, climate, human health, and economic benefits for impacted communities.

FOR MORE INFORMATION

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