

# **IDLE AND ORPHAN OIL AND GAS WELLS:**

## **State and Provincial Regulatory Strategies**

Supplemental Information on  
State Prioritization Systems for Orphan Wells



2023



## **ABOUT IOGCC**

The Interstate Oil and Gas Compact Commission (IOGCC) is a multi-state government agency that champions the conservation and efficient recovery and storage of domestic oil and natural gas resources while protecting human health and safety and the environment. IOGCC provides member states and international affiliates with a clear and unified voice and serves as a primary authority on issues surrounding these vital resources.

## **ACKNOWLEDGMENTS**

IOGCC prepared this supplementary report to provide additional information on a key element of state orphan well programs. IOGCC thanks the states for providing the information for this report and for responding to follow-up questions. Harold “Hal” Fitch of H.R. Fitch Consulting served as the lead author, and IOGCC Executive Director Lori Wrotenbery and Executive Project Manager Amy Childers assisted in compiling, organizing, and editing the report.

## **DISCLAIMER**

IOGCC’s member states provided the information for this report. The authors edited some of the information for clarity and consistency while endeavoring to preserve the meaning and intent.

Should you have a question about the contents of this report, feel free to contact IOGCC for assistance. Please note, however, that a question regarding information from a specific state may be referred to sources within the state.

## INTRODUCTION

This report supplements information published by the Interstate Oil and Gas Compact Commission (IOGCC) in the report titled *Idle and Orphan Oil and Gas Wells: State and Provincial Regulatory Strategies*. IOGCC last updated that report in 2021. The 2021 report compiles and summarizes the results of a survey of member states and provinces. One of the questions in the survey addressed state and provincial processes for prioritizing orphan wells for plugging.

Shortly before publication of IOGCC's 2021 report, Congress passed, and the President signed, the bipartisan Infrastructure Investment and Jobs Act (IIJA). The law included grant funding for state programs to plug orphan oil and gas wells on state and private lands. Among the application requirements for the grants is a description of the processes used to prioritize orphan wells. In 2022, states submitted initial grant applications to the U.S. Department of the Interior, which administers the grants.

This supplemental report incorporates information from the initial grant applications. IOGCC extracted information from those submittals and made follow-up inquiries to provide the updated summary of state prioritization systems in this report.

## SUMMARY

This report covers thirty-one states. Twenty-four submitted initial grant applications, and most of the remaining seven responded to follow-up requests from IOGCC for updates.

The State Prioritization Systems section of this report describes the prioritization system of each state. The state descriptions of their prioritization systems vary in terminology and degree of detail. For instance, some states consider potential impacts to water resources generally, while others consider water resources by category, such as ground water, surface water, or drinking water. Some states consider leaks generally, while others categorize them by substance, such as petroleum, methane, hydrogen sulfide, and carbon dioxide. Some states consider "well condition" or the equivalent generally, while others categorize this factor by well age, depth, construction, and status.

**Figure 1** summarizes the prioritization factors reported by the states.

**Figure 1. Prioritization Factors Reported by States**

| <b>Prioritization Factor</b>           | <b>Number of States</b> |
|--|-------------------------|
| Water resource impacts                 | 21                      |
| Leaks and spills                       | 18                      |
| Well depth, age, and/or condition      | 18                      |
| Threat to public health and safety     | 16                      |
| Threat to environment                  | 13                      |
| Proximity to people                    | 13                      |
| Impacts to other land use              | 11                      |
| Budgetary and technical considerations | 8                       |
| Environmental justice                  | 5                       |
| Impact to soils                        | 3                       |
| Other                                  | 14                      |

The prioritization factors counted as “other” in **Figure 1** include wildlife, navigation hazards, geologic hazards, naturally occurring radioactive materials, wetlands, sensitive receptors, other mineral resources, communities, and other external inputs. They also include factors the states described as “other” without specification.

Note that the number of states that use a given factor may be larger than shown in **Figure 1** because some states provide more general descriptions. They may incorporate several factors in their prioritization systems without listing them specifically. Also, many states consider the severity of impact or potential impact from a factor, not just the presence of the factor, in assessing risks. And many states use proximity to other wells that need to be plugged as a prioritization factor. Fifteen states reported using a scoring tool to assign a numerical score for plugging prioritization.

Readers may wish to contact a state directly to obtain more detail on prioritization processes.

# STATE PRIORITIZATION SYSTEMS

## ALABAMA

### Regulatory Agency

#### State Oil and Gas Board of Alabama

PO Box 869999

Tuscaloosa, AL 35486-6999

[ogb.state.al.us](http://ogb.state.al.us)

### Prioritization Process

Currently Alabama does not have a formalized system to prioritize orphan wells for plugging, since it has not been needed due to the low number of abandoned wells in the past. However, the safety of the public and ground water is of highest concern, and high priority is given to any well that poses a risk to either one. Risk factors increase when H<sub>2</sub>S or CO<sub>2</sub> gas is present or a potential hazard. They also increase with the depth and age of a well, and with a well's proximity to people and usable aquifers. The utmost priority is given to any emergency, so that it may be resolved immediately. In normal operations, wells are also prioritized according to the amount of bond and plugging fund money available to plug a well and restore a site.

Alabama is a member state of the Ground Water Protection Council (GWPC) and partner in its Risk Based Data Management System (RBDMS) project, which is currently developing an orphan well management module that can be integrated into a state's main RBDMS database system. This new module includes applications to assist in the prioritization and tracking of orphan wells through the plugging and site remediation process. It is customizable so that any number of objective priorities can be built into a formalized prioritization system. Given the increasing number of abandoned wells in recent years, Alabama is considering acquiring this module to manage them effectively.

## ALASKA

### Regulatory Agency

#### Alaska Oil and Gas Conservation Commission (AOGCC)

333 West Seventh Avenue, Suite 100

Anchorage, Alaska 99501-3572

[www.aogcc.alaska.gov](http://www.aogcc.alaska.gov)

### Prioritization Process

AOGCC will work in conjunction with other state agencies to prioritize and rank orphan wells. Considerations in this process include criteria such as:

- Current well condition.
- Methane emissions risk (current and future).
- Groundwater and surface water contamination risk (current and future).
- Remoteness.
- Proximity to population.

- Accessibility by general public.
- Public health and safety risk.
- Ease of plugging. Technical and economic.
- Availability of equipment and personnel to perform the work in the required timeframes.
- Grouping of wells to reduce mobilization/demobilization charges.
- Ease of remediation. Different levels of remediation acceptable?
- Other land use priorities.
- Budgetary restraints.
- AOGCC priorities.
- Alaska Department of Environmental Conservation priorities.
- Alaska Department of Natural Resources priorities.

## **ARIZONA**

### **Regulatory Agency**

#### **Arizona Department of Environmental Quality (ADEQ)**

Arizona Oil and Gas Conservation Commission

1110 West Washington Street

Phoenix, AZ 85007

### **Prioritization Process**

ADEQ will conduct pre-plugging environmental testing on all known orphaned wells sites for possible contamination. This sampling will identify sites of high environmental priority and ensure sites are properly ranked for plugging and remediation work.

ADEQ will use a quantitative risk assessment tool to rank and prioritize sites. The data collected throughout the site analysis portion of this project may include well type, proximity to drinking water wells and municipalities, environmental justice percentile, well depths, well ages, contamination types, aquifers, and other variables to be determined. This data will generate risk scores for creation of a ranked list that will be used to determine priority of well plugging and site restoration activity.

## **ARKANSAS**

### **Regulatory Agency**

#### **Arkansas Oil and Gas Commission**

500 Woodlane Street  
Little Rock, AR 72201  
[aogc.state.ar.us](http://aogc.state.ar.us)

### **Prioritization Process**

Leaking wells, and those where the well site creates an imminent danger to the health or safety of the public are prioritized first.

In its IJA initial grant application, Arkansas proposed a plugging project in an abandoned oil field with a large number of unplugged legacy wells in an area with a predominately minority population.

## **CALIFORNIA**

### **Regulatory Agency**

#### **California Geologic Energy Management (CalGEM)**

715 P Street, MS 1803  
Sacramento, CA 95814  
[conservation.ca.gov/calgem](http://conservation.ca.gov/calgem)

### **Prioritization Process**

In February 2023, CalGEM finalized a well screening and prioritization methodology, based on technical analysis and public feedback, to rank and prioritize wells for state plugging and abandonment that may pose the greatest risk to public health, safety, and the environment, while also taking into consideration the concerns of the local jurisdictions and communities, and economic efficiencies associated with the ordering of well abandonments.

CalGEM’s methodology consists of two phases:

(1) An initial screening of the wells based on risk factors for which data is available that indicate the well may pose a greater risk to people or the environment—either due to their location near communities, vulnerable communities, and environmental assets, including vulnerable communities and sensitive environments, or due to the physical nature of the well itself (many of these risk factors are informed by the regulatory criteria found in California Code of Regulations, Title 14, section 1772.4 (“Section 1772.4”)); and (2) a secondary screening that incorporates local government and public feedback on the provisional ranking and prioritization of the well inventory and considers practical factors to ensure efficient allocation of resources to plug and abandon wells.

More information on the methodology and development process can be found here:  
<https://www.conservation.ca.gov/calgem/Pages/Orphan-Well-Screening-Methodology.aspx>.



The initial technical screening is intended to evaluate the potential risk the well may pose to public health, safety, and the environment. The technical criteria included in the evaluation cover four key categories: surface study, downhole study, other potential hazards, and impacts to the community. Each category identifies the specific attributes and variables associated with a well that can speak to its location, condition, and other important factors.

In order to compare the wells across the criteria, CalGEM created a composite relative risk score by assigning a risk score for each factor. The points are aggregated to establish an overall score for each well that correlates to the potential risk the well may pose. The higher the score, the greater the potential risk; the wells with the highest aggregate score will be prioritized for plugging and abandonment.

CalGEM considered the following factors:

- Wellhead location.
- Wells within 3,200 feet of a residence, school, or health-care facility.
- Wells with a history of leaks.
- Geologic hazards.
- Well head pressure.
- Well accessibility.
- Jurisdiction.
- Damage and junk.
- Freshwater.
- Underground Source of Drinking Water (USDW).
- Key test results.
- Age of the well.
- Number of years idle.
- Impact on disadvantaged communities.

Wells with the highest score have been identified as likely being of highest relative risk to public health, safety and environment and a higher priority for consideration for plugging and abandonment.

Following the completion of the initial technical screening, CalGEM conducted a secondary screening to incorporate local government and public feedback on the provisional ranking and prioritization of the well inventory and considered practical factors to ensure efficient allocation of resources to plug and abandon wells. CalGEM was particularly interested in learning about the following:

- Local concern.
- Impacts on communities.
- Future development plans.

Other criteria considered during the secondary screening were:

- Accessibility.
- Well proximity.

Following the consideration of feedback and other factors listed above, CalGEM updated its prioritized list of wells.

# **COLORADO**

## **Regulatory Agency**

### **Colorado Oil and Gas Conservation Commission (COGCC)**

1120 Lincoln Street, Suite 801

Denver, CO 80203-2136

(303) 894-2100

[cogcc.state.co.us](http://cogcc.state.co.us)

## **Prioritization Process**

COGCC's Orphaned Well Program staff step through the following process to prioritize orphaned sites:

1. Using the inspection priority-based model in the Colorado Oil and Gas Information System (COGIS), projects are given a numerical score between 1-5 for the following categories: Population Density/Urbanization, Environmental Factors, and Years in Service. A GIS-based query is also used to determine if the site is located in a Disproportionately Impacted Community.
2. Engineering factors are given a numerical score between 0-3, where zero equals no known hazard and three is the highest potential hazard. For the condition of a well, factors considered are Venting or Leaking Well, Bradenhead Pressure, Mechanical Integrity Test, and Surface Equipment. If known, the spud date of the well or construction date for the site, the working depth of the well and the length of offline flowlines are also recorded.
3. Environmental factors are the count of all reported spills or releases from the well or location. The number of unreported spills that are apparent on field inspection reports are also included in this count. Total pit surface area is measured and recorded in square feet. Then the Spill or Release Magnitude is given a numerical score between 0-5, where zero equals no active spill and five is a continuous flow.
4. The Reclamation section of the scoring process begins with assigning a score between 0 and 3 for the following categories: Stormwater, Weeds, and Wildlife/Livestock/Vegetation Impacts. For these categories zero equals none present, and three is applied to sites where sediment is migrating offsite to a drainage with significant slope erosion, the site is overrun with any type of weeds (noxious or otherwise), or the existing disturbance is  $\leq 5$  acres. Anticipated future land use is noted and the actual disturbance is recorded in acres.
5. The final factors used for the prioritization are: site access and complexity of the project, the calendar year the project was added to the priority list, notes of any complaints or requests received from federal, state, or local government agencies, a tribe, or the surface owner, and any stop-gap measures that could be performed as a temporary measure to mitigate threats to the public, the environment, or wildlife resources.
6. Once the prioritization form has been completed, the site raw score is normalized to a
7. 0- 100 scale. A priority score less than 45 is considered a low priority, a score of 45 to 64 is medium, and a priority score greater than or equal to 65 is ranked with a high priority.

## **FLORIDA**

### **Regulatory Agency**

#### **Florida Department of Environmental Protection (FDEP)**

Water Resource Management  
3900 Commonwealth Boulevard  
Tallahassee, FL 32399-3000

### **Prioritization Process**

Florida proposes to prepare a report prioritizing those wells to be plugged, focusing on old, orphaned wells, long abandoned fields, and those wells whose condition, fugitive emissions, or geographic setting may contribute to potential public health, safety, or environmental risks.

In 1991, the Florida Legislature enacted Chapter 91-144, Laws of Florida authorizing the former Department of Natural Resources (duties since incorporated in the FDEP) to develop and implement a program to assess the P&A procedures for permitted wells abandoned between 1943 and 1974. As part of this assessment, environmental risks to Florida's fresh ground water were to be identified and actions recommended. The results are compiled as a series of reports that serve as our present guide, together with our statutes and rules. The proposed work under the IJA initial rant would include updating the existing process to measure and consider how methane emissions would be included in an updated assessment and prioritization of oil and gas remediation work.

We would update the existing process as described above to incorporate measurement and potential harm from potential hydrogen sulfide (H<sub>2</sub>S) and methane (CH<sub>4</sub>) emissions.

## **IDAHO**

### **Regulatory Agency**

#### **Idaho Department of Lands**

300 North 6<sup>th</sup> Street, Suite 103  
Boise, ID 83702  
[ogcc.idaho.gov](http://ogcc.idaho.gov)

### **Prioritization Process**

Idaho does not have a prioritization process; it has no documented orphan wells and no evidence of undocumented orphan wells.

## **ILLINOIS**

### **Regulatory Agency**

**Illinois Department of Natural Resources**  
Office of Oil and Gas Resource Management  
One Natural Resources Way  
Springfield, IL 62702-1271  
[illinois.gov](http://illinois.gov)

### **Prioritization Process**

Well(s) that are leaking produced fluids, oil, and saltwater are given highest priority. The higher the amount leaked, the higher the priority (i.e., barrels of fluid per day/hour). The location of the well(s) is also a consideration in establishing priority. If the location is on the bank or in the proximity of a blue line waterway and danger of erosion exists that will put the well(s) in the blue line water way, priority is given to this well. Additionally, if conditions exist that could be a hazard to the public and/or wildlife, this, too, is taken into consideration in establishing priorities.

In its IIJA initial grant application, Illinois proposes a budget that includes costs for ranking orphaned wells based on factors including public health and safety, potential environmental harm, and other land use priorities.

## **INDIANA**

### **Regulatory Agency**

**Indiana Department of Natural Resources**  
402 West Washington Street  
Indianapolis, IN 46204  
[in.gov/dnr](http://in.gov/dnr)

### **Prioritization Process**

Indiana has a goal of properly plugging, remediating, and reclaiming as many orphan oil and gas related wells as possible. Wells that are leaking methane, oil, saltwater, and other gases will be plugged to stop any air, soil, surface, or groundwater pollution.

Identifying these problems well will be the first step.

# KANSAS

## Regulatory Agency

### Kansas Corporation Commission (KCC)

266 North Main Street, Suite 220

Wichita, KS 67202-1513

[kcc.ks.gov](http://kcc.ks.gov)

## Prioritization Process

KCC staff uses the following system to prioritize abandoned wells:

### Priority I

Wells within the Priority I grouping have been subdivided on the basis of resources impacted and by the location or condition of the individual abandoned well. Impacts are categorized as: surface waters (SW), groundwater (GW), or public safety issues. The listing below provides definitions for Priority Action Levels within the Priority I inventory. In general, Level “A” wells present the most serious and imminent threats to the environment or public safety while the threats presented by Level “C” wells are less serious and imminent.

#### Priority I Action Levels

### Level A

- |                |  |
|----------------|--|
| Surface Water. | Wells actively discharging oil or brine into surface waters with significant ongoing impacts to surface water. Wells may be located within a sensitive groundwater area as designated in Commission regulations. Includes wells with moderate to high volumes of discharge impacting public water supplies or sole source water supplies.  |
| Groundwater.   | Wells creating significant ongoing or potential impacts to groundwater supplies through water quality degradation or loss of water supplies through downward drainage. Wells may be located within a designated sensitive groundwater area. Emphasis is placed upon impacts to groundwater supplies used for public water supplies or sole source supplies and cases of active subsidence caused by downward drainage. |
| Public Safety. | Wells creating an ongoing or current threat to public safety. Includes wells with active gas flows with danger of ignition or open large diameter wellbores or casings in urban or suburban settings.  |

### Level B

- |                |  |
|----------------|--|
| Surface Water. | Wells intermittently to actively discharging oil or brine into surface waters with ongoing impacts to surface water. Wells may be located within a designated sensitive groundwater area. Includes wells with low to moderate volumes of discharge impacting water resources outside of public water supplies when alternative water supplies are available. |
|----------------|--|

- Groundwater. Wells creating ongoing or potential impacts to groundwater supplies through water quality degradation or loss of water supplies through downward drainage. Wells may be located within a designated sensitive groundwater area. Includes wells with impacts to groundwater supplies outside of public water supply areas and cases of strong potential for subsidence.
- Public Safety. Wells creating a current or ongoing threat or potential danger to public safety. Includes wells with active gas flows with danger of ignition and/or open large diameter wellbores or casings located in rural, low population areas.

### **Level C**

- Surface Water. Wells located outside designated sensitive groundwater areas, which are intermittently discharging oil and/or brine or have potential for discharge into surface waters.
- Groundwater. Wells located outside designated sensitive groundwater areas, which have potential impacts to groundwater supplies or loss of water resources through downward drainage.
- Public Safety. Wells creating a potential danger to public safety. Includes secured gas wells in populated areas.

### **Priority II**

Wells within the Priority II group are relatively modern in terms of construction and do not pose either an ongoing or potential threat to public safety or the environment. These wells have adequate surface pipe to protect shallow freshwater aquifers and are generally located in environmentally non-sensitive areas. These wells fall within the lowest priority ranking for authorization of plugging with Abandoned Oil and Gas Well/Remediation Fund monies. These wells are documented and added to the inventory. Periodic inspections determine if well conditions have changed to a sufficient degree to warrant upgrading to Priority I status.

Due to the nature of needing “shovel ready” projects for the IJA initial grant, KCC staff chose wells that fall primarily within the Priority IB, IC, and Priority II rankings listed above. KCC staff will still pursue the plugging of any Priority IA wells that arise using existing state funds and will identify further any Priority IB wells that were not included in the projects selected for plugging with IJA initial grant funds.

## **KENTUCKY**

### **Regulatory Agency**

#### **Kentucky Division of Oil and Gas**

300 Sower Boulevard

Frankfort, KY 40601

[eec.ky.gov/Natural-Resources/Oil-and-Gas/Pages/default.aspx](http://eec.ky.gov/Natural-Resources/Oil-and-Gas/Pages/default.aspx)

### **Prioritization Process**

Kentucky considers orphan wells that create an immediate or potential threat to public safety and the environment as the highest priorities. The Division applies a Scoring Matrix to prioritize sites based upon factors that include leaking gases or fluids, active or immediate risk to surface streams, potential risk to groundwater resources, proximity to residences or communities, downhole well integrity concerns, elevated downhole pressures, deterioration of wellhead structure, and depth or age of the well.

Field inspectors conduct a site investigation and assessment of the well, which includes research into the geography, geology, wellhead construction, producing formations, and potential for environmental or natural resources impacts. To assist in assessment, Kentucky uses gas detectors, MicroR Meters, pressure gauges, and other technology to pinpoint gas leaks, detect dangers such as hydrogen sulfide gas, assess the presence of TENORM, and prioritize plugging urgencies at the site. That information is input into an overall site prioritization with highest rankings assigned to public safety and harmful environmental resource impacts.

## **LOUISIANA**

### **Regulatory Agency**

#### **Louisiana Department of Natural Resources**

PO Box 94396

Baton Rouge, LA 70804-9396

[dnr.louisiana.gov](http://dnr.louisiana.gov)

### **Prioritization Process**

The Louisiana Orphaned Well Program has a prioritization scoring system in place. Wells are ranked upon initial inspection and on a regular basis (water locations annually; land locations every three years). Below is a copy of the current prioritization worksheet used to rank orphaned well sites. The priority scoring system has developed over time. The funding and knowledge gained from this IJJA initial grant project has given the state an opportunity to integrate new components, including methane emission measurement in the prioritization process.

State law directs orphan well prioritization based on a process approved by the Louisiana Oilfield Site Restoration Commission.

## Orphaned Well Plugging Prioritizing System 2022

updated 5/22

INSPECTION DATE: \_\_\_\_\_

SN: \_\_\_\_\_

| No. | Factors  | Score | Well Sc |
|-----|--|-------|---------|
| 1a  | Leaking well - natural gas - within 300' of a public building or residence                       | 32    |         |
| 1b  | Leaking well - natural gas   | 14    |         |
| 1c  | Leaking well - water or oil > 1bbl/day   | 30    |         |
| 1d  | Leaking well - water or oil < 1bbl/day   | 10    |         |
| 1e  | Leaking Tanks - water or oil   | 10    |         |
| 2a  | Hazard to navigation -well submerged or at surface   | 28    |         |
| 2b  | Hazard to navigation - well in navigable waterway (boat hazard)                                  | 20    |         |
| 2c  | Well in any other body of water  | 12    |         |
| 3   | H2S possible or present  | 2     |         |
| 4a  | Well not leaking but under pressure  | 8     |         |
| 4b  | Well not leaking but pressure status unknown   | 6     |         |
| 5   | No wellhead or wellhead damaged  | 4     |         |
| 6   | No production casing/open hole   | 2     |         |
| 7   | Production site/pit contaminated   | 3     |         |
| 8a  | Within 300' of public water supply (aquifer, well, or surface water)                             | 8     |         |
| 8b  | Within 300' of public building/facility used by public on a recurring basis, or a residence      | 7     |         |
| 8c  | Within 300' of surface water or wetland  | 7     |         |
| 8d  | Within 1200' of residential or urban development   | 3     |         |
| 8e  | Within 1200' of surface water or wetlands  | 3     |         |
| 8f  | On land actively managed for crops or forage (pasture)   | 1     |         |
| 9   | Potential Economic Development   | 6     |         |
| 10  | Public Concern   | 7     |         |
| 11a | Dale of orphaning/Age of disrepair (well orphaned more than 14 years before inspection date)     | 4     |         |
| 11b | Date of orphaning/Age of disrepair (well orphaned between 14 and 9 years before inspection date) | 3     |         |
| 11c | Date of orphaning/Age of disrepair (well orphaned between 8 and 3 years before inspection date)  | 2     |         |
|     | Post P&A Inspection  | 0     |         |
|     | Orphan Site Closed   | 0     |         |

Score: \_\_\_\_\_

Priority: \_\_\_\_\_

| Priority Table        |            |
|-----------------------|------------|
| Priority              | Score      |
| Priority 1 - Urgent   | >30        |
| Priority 2 - High     | >19        |
| Priority 3 - Moderate | >10        |
| Priority 4 - Low      | 10 & Under |

Instructions:

1. Assign the appropriate factors to a site.
2. For factors with more than one option in a Category.  
e.g., 4a and 4b, assign only one option.
3. Total all the assigned factors scores for the site.
4. Use the total score and the priority table to set the site priority.

By: \_\_\_\_\_

Date: \_\_\_\_\_



## **MICHIGAN**

### **Regulatory Agency**

#### **Michigan Department of Environment, Great Lakes, and Energy (EGLE)**

Oil, Gas, and Minerals Division

PO Box 30256

Lansing, MI 48909-7756

[michigan.gov/egle](http://michigan.gov/egle)

### **Prioritization Process**

Orphan well plugging and flowline, infrastructure, and facility decommissioning projects are prioritized through a multi-component scoring system to rank projects based on public health and safety risk, potential for or known environmental contamination, land use, and use of Environmental Justice screening to evaluate disadvantaged communities and any disproportionate burden of human health on low-income communities, communities of color, and Tribal and Indigenous communities.

The existing multi-component risk-based scoring and prioritization process is used to establish the order that wells should be plugged. Economic efficiencies will be capitalized on when possible, such as grouping wells together based on proximity to one another.

All wells are scored (prioritized) using a Well Assessment Program, developed by the EGLE. The program was recently revised to include a scoring process for environmental justice factors. This system also factors in air emissions; soil, groundwater, and surface water contamination; potential for future contamination; sensitivity of drinking water supplies; degree to which groundwater is protected by geology; age of the well; presence of hydrogen sulfide gas; occurrence of technologically enhanced naturally occurring radioactive material (TENORM); potential for public exposure to contaminants; and the environmental sensitivity of the area. If a well is actively leaking and poses an imminent threat to the public health or environment, it will take priority over all other wells. Similarly, more consideration is given to a well if the Environmental Justice percentile score is high.

## **MISSISSIPPI**

### **Regulatory Agency**

#### **Mississippi Oil and Gas Board (MSOGB)**

500 Greymont Avenue, Suite E

Jackson, MS 39202

[ogb.state.ms.us](http://ogb.state.ms.us)

### **Prioritization Process**

There are roughly 12,750 wells in the MSOGB database with a Plugged and Abandoned status, that have no active operator and were plugged prior to current plugging standards. In the 90's plugging operations began to incorporate a plug at the USDW (groundwater) depth but those before may not have those in place.

Wells that were plugged before 1975 also are at risk for high methane emissions and soil and water impacts because of the methods used then have caused known environmental issues in the past.

## **MISSOURI**

### **Regulatory Agency**

**Missouri Department of Natural Resources**

PO Box 250

Rolla, MO 65402

[dnr.mo.gov](http://dnr.mo.gov)

### **Prioritization Process**

Missouri's current process for determining well plugging priority is based on forfeiture of Financial Assurance Instruments and the potential for a well to contaminate groundwater or cause other damage.

The Department is in the process of developing an ArcGIS Online application for tracking oil and gas well inspections and assessments for internal and external users. This application will collect location, proximity to sensitive geographic features like wetlands and surface waters, well integrity, and site hazards associated with the abandoned well. Each category as well as the criteria within will be given a weight priority to quickly assess the highest plugging priorities.

## **MONTANA**

### **Regulatory Agency**

**Montana Department of Natural Resources and Conservation**

Board of Oil and Gas Conservation

1539 11<sup>th</sup> Avenue

Helena, MT 59601-1601

[dnrc.mt.gov](http://dnrc.mt.gov)

### **Prioritization Process**

A risk-based ranking is applied which will be used in prioritizing the required work among all potential projects under consideration. Ranking factors include public health and safety, existing or potential environmental threats, and potential disruption to surface use.

Location considerations during the ranking process include proximity to residences, public gathering points, public or private water supply wells or wetlands, and surface use. Criteria for well status include the presence of hydrogen sulfide gas or leaking fluids including both liquids or hydrocarbon gases, wellhead pressure, and whether well construction parameters are known or unknown.

The ranking process has evolved over several decades and includes input from the public and legislative committees that have oversight responsibility for the Board's plugging expenditures.

Actual and potential methane emissions are considered in the orphaned well ranking system through consideration of leaking fluids and wellhead pressures. Recently, numeric monitoring of

actual methane and equivalent carbon dioxide emissions has been undertaken by a private entity and the Board continues to review its ranking criteria and rule requirements based upon these studies.

Actual or potential contamination of groundwater are also evaluated under the current ranking and review criteria.

## **NEBRASKA**

### **Regulatory Agency**

**Nebraska Oil and Gas Conservation Commission (NOGCC)**

PO Box 399

Sidney, NE 69162

[nogcc.ne.gov](http://nogcc.ne.gov)

### **Prioritization Process**

NOGCC will rank orphaned wells based on factors including public health and safety, potential environmental harm, and other land use priorities.

NOGCC uses GWPC's RBDMS data management system to manage our agency's information technology. We will adopt the RBDMS Plugging Application with Nebraska specific customization; this software will manage well plugging prioritization, packaging, bidding, and accounting.

## **NEVADA**

### **Regulatory Agency**

**Nevada Division of Minerals**

Commission on Mineral Resources

400 West King Street, Suite 106

Carson City, NV 89703-4212

[minerals.nv.gov](http://minerals.nv.gov)

### **Prioritization Process**

To date, the limited and infrequent orphan wells on private land have not required a prioritization for plugging. Having said that, if the situation arises, prioritization would be based on the following factors (in descending order of importance):

1. Cooperation of landowner for access and potential assistance.
2. Well age.
3. Well construction and depth.
4. Proximity to water resources (surface, and subsurface for nearby water wells).
5. Sufficient bonding, and other funds, to properly P&A.

## **NEW MEXICO**

### **Regulatory Agency**

**New Mexico Energy, Minerals and Natural Resources Department (EMNRD)**

Oil Conservation Division (OCD)

1220 South Street Francis Drive

Santa Fe, NM 87505

[emnrd.state.nm.us](http://emnrd.state.nm.us)

### **Prioritization Process**

The current prioritization process for both plugging and surface restoration is to identify orphaned facilities that present high-level concerns such as active or historic leaks, proximity to occupied structures, risks to surface or groundwater, proximity to water supply wells or wetlands, known or suspected well integrity issues, lack of well control at the surface, elevated downhole pressures, the age of the well, proximity to agricultural areas, the possible presence of hydrogen sulfide or naturally occurring radioactive materials, the presence of threatened or endangered species, public complaints, and cost efficiencies.

There are currently more than 30 unique factors which are considered when prioritizing OCD's efforts. The presence of an active leak will place a well or associated facility at the top of OCD's prioritization. Increased weight is also given to wells located in areas with high proximity to human activity (e.g., proximity to homes and businesses or locations within municipal boundaries), proximity to supplies of usable water, or known well integrity concerns. Each unique factor is given a score number and by summing all the criteria that apply to the well or site, it will be given an overall score. The higher the score, the higher the priority.

While overall score determines where the OCD may initiate plugging, OCD always considers proximity of orphaned wells and facilities to one another to manage mobilization and demobilization costs. For example, we may target an area based on scores assigned to individual wells, but once there we endeavor to plug all the wells in the vicinity to maximize the fund directed to plugging by realizing some cost savings with respect to mobilization and demobilization.

In sum, OCD prioritizes plugging and remediation activities first by first ranking wells that pose a possible risk of harm to public health and the environment, and secondly according to plugging schedules that maximize administrative efficiency and provide for plugging of all eligible wells in given area.

## **NEW YORK**

### **Regulatory Agency**

#### **New York State Department of Environmental Conservation**

Division of Mineral Resources

625 Broadway, 3<sup>rd</sup> Floor

Albany, NY 12233-6500

[Oil and Gas - NYS Dept. of Environmental Conservation](#)

### **Prioritization Process**

New York uses a scoring methodology based on the one developed by IOGCC that assigns numeric values for each well based on certain characteristics and the well's condition. The scoring rubric incorporates location and condition criteria such as proximity to sensitive receptors such as occupied buildings or wetlands and whether it is leaking fluids or gases. Component scores are summed for a total score for each well. Higher scoring wells are then prioritized for plugging projects. To increase efficiency in both bidding and execution, projects are developed by grouping wells in geographic proximity to each other.

## **NORTH DAKOTA**

### **Regulatory Agency**

#### **North Dakota Industrial Commission**

Department of Mineral Resources

600 East Boulevard Avenue, Department 405

Bismarck, ND 58505-0840

[dmr.nd.gov](http://dmr.nd.gov)

### **Prioritization Process**

Factors in the prioritization process: public health and safety, potential environmental risk, land use, geography, weather, time of year and cost.

## **OHIO**

### **Regulatory Agency**

#### **Ohio Department of Natural Resources**

Division of Oil and Gas Resources Management

2045 Morse Road, Building F

Columbus, OH 43229-6693

[ohiodnr.gov](http://ohiodnr.gov)

### **Prioritization Process**

The Ohio Revised Code 1509.071 requires the Chief of the Division of Oil and Gas Resources Management to prioritize the plugging of wells in accordance with a scoring matrix. The matrix is required to include a classification system that categorizes wells.

Ohio has four classifications for orphan wells, which are Class 1 Emergency, Class 2 Distressed – High Priority, Class 3 Moderate - Medium Priority, Class 4 Maintenance – Low Priority. These classifications are termed in ORC 1509.071. These classifications are based on human health and safety and environmental factors, which include if a well is leaking, proximity to a dwelling, proximity to surface and drinking waters, future access restrictions, potential well cave ins, presence of hydrogen sulfide or other dangerous gases, stray gas migration, and technologically enhanced naturally occurring radioactive material. Once a well is classified based on risk, other factors are used to develop a matrix score. Many factors, which include public health and safety, the environment, and the years in the program are used with weighted formulas to develop a numeric matrix score that goes along with the well classification.

## **OKLAHOMA**

### **Regulatory Agency**

#### **Oklahoma Corporation Commission (OCC)**

Oil and Gas Conservation Division

PO Box 52000

Oklahoma City, OK 73152-2000

[Oklahoma.gov/occ](http://Oklahoma.gov/occ)

### **Prioritization Process**

The OCC uses a numbering system to prioritize the plugging of orphaned wells. The numbering system ranges from Category 1 through Category 5. Category 1 wells are emergency cases that constitute an imminent threat to public health and safety. Category 1 cases require an emergency hearing at the OCC and a signed letter by Oklahoma's Governor in accordance with 52 O.S. § 310 and 74 O.S. § 85.41A(A)(2). After receiving the signed Governor's letter, the well will typically be plugged with monies from the OCC's Plugging Fund within five days. Category 2 cases consist of emergencies where the wells are causing environmental pollution, Category 3 cases involve wells presenting potential dangers to personal property, Category 4 cases pertain to instances where the wells do not pose immediate dangers to the environment or personal property, and Category 5 cases involve wells which represent the least significant risk of harm to the environment or personal property. Category 2 through Category 5 wells are plugged via the standard State funds plugging process in accordance with 52 O.S. § 309 et seq.

Regarding surface reclamation, pursuant to the Oklahoma Energy Education and Marketing Act in 52 O.S. § 288.1 et seq., one of the purposes of the Oklahoma Energy Resources Board is to cause remediation of historical oilfield environmental problems. The OCC refers orphaned well sites and other abandoned sites to the Oklahoma Energy Resources Board for consideration and approval by the Oklahoma Energy Resources Board for purposes of remediation. The OERB conducts a four-phase modified environmental site assessment on referred orphaned well sites and other abandoned sites.

## **PENNSYLVANIA**

### **Regulatory Agency**

#### **Pennsylvania Department of Environmental Protection (DEP)**

Office of Oil and Gas Management

PO Box 8765

Harrisburg, PA 17105-8765

(717) 772-2199

[dep.pa.gov](http://dep.pa.gov)

### **Prioritization Process**

As part of the contract development, approximately 50 wells with the highest score as determined through field investigations and risk score determinations were selected as priority wells to be plugged and were established as individual projects. Priority wells were identified by using an Abandoned and Orphaned Well Workbook developed by the PADEP (attached). Additional orphan wells, identified within an approximately half-mile radius of the priority well, were then added to each individual project. The goal was to produce projects containing roughly eight to 12 proximally located wells which have been determined to be the most cost-efficient sized contracts based on DEP's historic cost tracking data. The workbook will be updated in consideration of Environmental Justice Areas upon receipt of final DOI Formula Grant Guidance.

PADEP Abandoned Well Scoring Workbook

**ABANDONED WELL INVESTIGATION**

|   |  |                |   |                      |   |
|---|--|----------------|---|----------------------|---|
| API#:   |  | GPS Latitude:  |   | Scoring Date:        |   |
| Farm Name:  |  | GPS Longitude: |   | Well Type:           | - |
| Well #:   |  | County:        | - | Well Classification: | - |
| DEP Inspector:  |  | Municipality:  |   |                      |   |
| Has a deed search been conducted?   |  |                |   | -                    |   |
| Is this investigation the result of a complaint or stray gas investigation?   |  |                |   | -                    |   |
| Additional information about complaint/stray gas incident                     |  |                |   |                      |   |
|   |  |                |   |                      |   |
| Reported well depth (ft):   |  |                |   |                      |   |
| Describe any casing and tubing observed or reported:                          |  |                |   |                      |   |
|   |  |                |   |                      |   |
| Describe the condition of the well, including any oil, gas, brine discharge:  |  |                |   |                      |   |
|   |  |                |   |                      |   |
| Describe on site equipment (tanks, pipelines, meter houses, water well, etc): |  |                |   |                      |   |
|   |  |                |   |                      |   |
| Other Comments:   |  |                |   |                      |   |
|   |  |                |   |                      |   |
| Last Known Operator:  |  |                |   |                      |   |
|   |  |                |   |                      |   |
| Current Surface Owner:  |  |                |   |                      |   |
| Name:   |  |                |   |                      |   |
| Address:  |  |                |   |                      |   |
| City:   |  |                |   |                      |   |
| State:  |  |                |   |                      |   |
| Zip:  |  |                |   |                      |   |
| Phone Number:   |  |                |   |                      |   |



PADEP Abandoned Well Scoring Workbook

**ABANDONED WELL INVESTIGATION**

|   |    |                       |   |
|---|----|-----------------------|---|
| <b>Human Receptors</b>  |    | <i>Choose Up To 5</i> |   |
| Gas in occupied structure with similar isotopic signature or believed to be associated with well*       | 50 |                       | - |
| Oil/brine in occupied structure believed to be associated with well*                                    | 50 |                       | - |
| Soil gas within 200 feet of structure believed to be associated with well                               | 25 |                       | - |
| Gas in water supply   | 25 |                       | - |
| Oil/brine in water supply   | 15 |                       | - |
|   |    |                       | 0 |
| <b>Ecological Receptors</b>   |    | <i>Choose Up to 2</i> |   |
| Liquids (oil/brine) to stream or wetland from well  | 25 |                       | - |
| Oil/brine seep (discharge not from wellbore)  | 10 |                       | - |
|   |    |                       | 0 |
| <b>Well Site Hazards</b>  |    | <i>Choose Up to 4</i> |   |
| Any ambient H <sub>2</sub> S detection  | 25 |                       | - |
| Any ambient LEL readings ≥ 10%  | 25 |                       | - |
| Sustained ambient LEL <10%  | 10 |                       | - |
| Unstable equipment, open pits, E&S issues/washouts  | 10 |                       | - |
| Evidence of historical liquid spills not associated with well integrity breach                          | 5  |                       | - |
|   |    |                       | 0 |
| <b>Well Integrity</b>   |    | <i>Choose Up to 4</i> |   |
| Gas present outside surface casing/present in stream or liquid flow to surface                          | 25 |                       | - |
| Measurable annular flow of gas  | 15 |                       | - |
| Wellhead pressure observed  | 10 |                       | - |
| Severe corrosion (pitting) on well component that possibly contains pressure or fluids                  | 10 |                       | - |
|   |    |                       | 0 |
| <b>Coal/Mining Status</b>   |    | <i>Choose Up To 1</i> |   |
| Well within active underground mine (sealed or undergoing mining .i.e., longwall district) <sup>1</sup> | 25 |                       | - |
| Within abandoned mined area   | 25 |                       | - |
| Permitted but not yet mined (intact coal/rock) <sup>1</sup>   | 10 |                       | - |
| Workable coal present but not permitted   | 5  |                       | - |
|   |    |                       | 0 |
| <b>Setback/Surrounding Area</b>   |    | <i>Choose Up to 4</i> |   |
| Well within 200 feet of occupied building or water supply well  | 10 |                       | - |
| Well located in known gas migration area but not believed to be source                                  | 5  |                       | - |
| Well within 100 feet of stream  | 5  |                       | - |
| Well within 300 feet of any wetland >1 acre in size   | 5  |                       | - |
|   |    |                       | 0 |
|   |    | <b>Final Score</b>    | 0 |
| <sup>1</sup> Determine if situation justifies an emergency remediation or plugging contract             |    |                       |   |
| <sup>1</sup> Notify the Coal Operator upon confirmation of well location.                               |    |                       |   |

## **SOUTH DAKOTA**

### **Regulatory Agency**

#### **Department of Agriculture and Natural Resources**

2050 West Main, Suite One

Rapid City, SD 57702

[danr.sd.gov](http://danr.sd.gov)

### **Prioritization Process**

Since 2012, South Dakota has only had a few dozen orphaned wells, and we plugged or re-permitted all of them between 2020 and 2022.

## **TENNESSEE**

### **Regulatory Agency**

#### **Department of Environment and Conservation**

Division of Mineral and Geologic Resources

3711 Middlebrook Pike

Knoxville, TN 37921

[tn.gov/environment](http://tn.gov/environment)

### **Prioritization Process**

Prioritization Process: If a forfeited well becomes a problem, then it can be plugged as quickly as possible. Well locations are reviewed to see the biggest need to move forward.

## **TEXAS**

### **Regulatory Agency**

#### **Railroad Commission of Texas**

Oil and Gas Division

PO Box 12967

Austin, TX 78711

[rrc.state.tx.us](http://rrc.state.tx.us)

### **Prioritization Process**

The Railroad Commission uses a priority methodology to rank wells for plugging to ensure that those wells posing the greatest threat to public safety and the environment are plugged first. The priority system includes four factors relating to the threat a wellbore poses to public safety and the environment:

- Well completion.
- Wellbore conditions.
- Well location with respect to sensitive areas.
- Unique environmental, safety, or economic concern.

The following table lists the factors used in this prioritization system. The sum of all factors provides a total weight, which determines a well's plugging priority. Wells receive a priority of 1, 2H, 2, 3, or 4, where 1 is the highest priority. The priority system assigns leaking wells the highest priority (an automatic priority 1) and assigns an automatic priority 2 if the well fails a fluid level test.

Table: Well Plugging Priority System

| FACTOR   |   | Weight |
|----------|---|--------|
| <b>1</b> | <b>Well Completion</b>  |        |
| <b>A</b> | Unknown (no well records)   | 15     |
| <b>B</b> | No surface casing or set above base of deepest usable quality water                                 | 10     |
| <b>C</b> | Additional casing string not adequately cemented to isolate usable quality water                    | 5      |
| <b>D</b> | Injection or Disposal Well  | 10     |
| <b>E</b> | Well penetrates salt/corrosive water bearing formation or abnormally pressured formation            | 5      |
| <b>F</b> | Well in H <sub>2</sub> S Field  | 5      |
| <b>G</b> | Age: Well drilled $\geq$ 25 years ago   | 5      |
|          | <b>Total: (40 points max)</b>   |        |
| <b>2</b> | <b>Wellbore Conditions</b>  |        |
| <b>A</b> | Well is pressured up at the surface (tubing or prod casing)   | 10     |
| <b>B</b> | Bradenhead pressure exists *  | 5      |
|          | <b>Auto 2H if UQW*** not protected and fluid at BH is not UQW</b>                                   |        |
| <b>C</b> | Measured fluid level  |        |
| <b>D</b> | Fluid level at or above the base of deepest usable quality water.                                   | 50     |
| <b>E</b> | Fluid level less than 250' below base of deepest usable quality water (NA if 2D applies)            | 15     |
| <b>F</b> | MIT Failure   | 5      |
| <b>G</b> | H-15 (MIT) never performed or test > 5 years old (NA if F applies)                                  | 3      |
| <b>H</b> | Inadequate wellhead control/integrity   | 5      |
|          | <b>Total: (75 points max)</b>   |        |
| <b>3</b> | <b>Well location with respect to sensitive areas:</b>   |        |
| <b>A</b> | H <sub>2</sub> S well with public area ROE** <b>Automatic Priority 2H</b>                           |        |
| <b>B</b> | In Marine Environment   | 10     |
| <b>C</b> | Within 100' or river, lake, creek, or domestic use fresh water well (NA if B applies)               | 5      |
| <b>D</b> | Between 100' and 1/4 mile of river, lake, creek, or domestic use fresh water well (NA if C applies) | 3      |
| <b>E</b> | Located within agricultural area.   | 2      |
| <b>F</b> | Well located in known sensitive wildlife area.  | 3      |
| <b>G</b> | Well located within city or town site limits.   | 10     |
|          | <b>Total (20 points max)</b>  |        |
| <b>4</b> | <b>Unique environmental, Safety, or Economic Concern</b>  |        |
| <b>A</b> | Adjacent to active water flood or disposal well at or above completion interval.                    | 5      |
| <b>B</b> | Logistics (poor roads, encroaching public, etc.)  | 5      |
| <b>C</b> | Well contains junk.   | 5      |
| <b>D</b> | P-5 Delinquent > 5 years  | 5      |
| <b>E</b> | Other (attach explanation)  | 1-20   |
|          | <b>Total: (20 points max)</b>   |        |

**Total Weight**

|  |
|--|
| <b>Priority 1 = Leaking Well [ based upon definition]</b>                              |
| <b>Priority 2H = Higher Risk well [based on definition and/or total weight of 75+]</b> |
| <b>Priority 2 = Total Weight of 50-75</b>  |
| <b>Priority 3 = Total Weight of 25-49</b>  |
| <b>Priority 4 = Total Weight &lt; 25</b>   |

\*BH pressure is sustained.

\*\*2H if public areas could be impacted based on 16 Texas Administrative Code §3.36 [Statewide Rule 36] definition.

Undetected/continuous leak possible.

\*\*\* UQW = usable-quality water

## **UTAH**

### **Regulatory Agency**

#### **Utah Department of Natural Resources**

PO Box 145801

Salt Lake City, UT 84114-5801

[naturalresources.utah.gov](http://naturalresources.utah.gov)

### **Prioritization Process**

We are now using GWPC's Orphan Well Priority App. We helped develop and test this app. It is based on the method we have used through the years for prioritization. It is just being released for use in our state and is expected to be available through GWPC in other states soon. It evaluates factors including proximity to water sources, population, and known areas of concern (casing issues, injection zones, cement tops, and age of well) to prioritize each well.

## **VIRGINIA**

### **Regulatory Agency**

#### **Department of Mines, Minerals and Energy**

Division of Gas and Oil

3405 Mountain Empire Road

Big Stone Gap, VA 24219

[Energy.virginia.gov](http://Energy.virginia.gov)

### **Prioritization Process**

Prioritization is based on an assessment of risk to public safety and environmental impact.

## **WEST VIRGINIA**

### **Regulatory Agency**

#### **West Virginia Department of Environmental Protection**

Office of Oil and Gas

601 57<sup>th</sup> Street,

Southeast Charleston, WV 25304

[dep.wv.gov](http://dep.wv.gov)

### **Prioritization Process**

The Office of Oil and Gas prioritizes spending for wells deemed to be an immediate or potential threat to human health and safety, the environment, or proximate resource development. To that end, the abandoned well plugging program uses a ranking prioritization system to classify abandoned wells based on their determined threat level, as described in Section 6.3 of Title 35, Series 6 of West Virginia's Code of State Rules. Based on objective criteria evaluated by field inspectors, abandoned wells are classified as Class 1-3.

## **WYOMING**

### **Regulatory Agency**

**Wyoming Oil and Gas Conservation Commission (WOGCC)**

PO Box 2640

Casper, WY 82602

[wogcc.wyo.gov](http://wogcc.wyo.gov)

### **Prioritization Process**

WOGCC rules and regulations contain a requirement for the agency to prioritize plugging of orphan wells based on an "assessment of the well's potential to adversely impact public health, public safety, surface or ground waters, surface use, or other mineral resources." In prioritizing wells and creating orphan well projects, the agency also groups wells based on geographic area. If a well is on the priority list for plugging, additional wells in the geographic area are placed in the project in an effort to most efficiently and effectively use funding available for the orphan well program. WOGCC inspection staff conduct on-site inspections of each orphan well to assess the well per the quoted requirements of agency rules.