



ORPHAN WELL PRIORITIZATION METHODOLOGY

Summary of Comments, Questions, and Responses

Public Comment Period from September 15 - October 14, 2022

OVERVIEW

The California Department of Conservation Geologic Energy Management Division (CalGEM) developed a methodology to screen, rank, and prioritize California's more than 5,300 orphan, deserted, and potentially deserted wells to be permanently plugged and sealed. A draft of the orphan well screening methodology was released for public comment on September 15, 2022. CalGEM presented the draft to the public during a September 15 meeting of the Methane Task Force, and also held a public workshop to solicit feedback on the draft on October 6, 2022. The public comment period was open through Friday, October 14, 2022. Through this engagement, CalGEM received a total of forty-five verbal and written comments. CalGEM evaluated all comments received, made modifications to the screening methodology where feasible and appropriate based on those comments, and has finalized the screening methodology.

CalGEM's final orphan well screening methodology consists of two phases:

Phase one of the screening process is an initial technical screening that aims to provide a first-order prioritization of the thousands of likely orphan wells statewide. It is not intended to be the sole determining factor of which wells will be addressed through state abandonment, but rather to provide a systematic way to narrow the population of wells under consideration based on additional evaluation. Part 1 involves the use of a point system to assign point values to each well based on specific characteristics related to factors that can increase the risk these wells potentially pose to California communities and the environment, such as downhole safety, well integrity, proximity to communities including sensitive and disadvantaged communities, and leakage and other known hazards and issues of concern.

Phase two consists of a secondary screening that will incorporate local government and public feedback on the results of the Phase 1 provisional ranking and prioritization of the well inventory, and consider practical factors to ensure efficient allocation of resources to plug and abandon wells. Engagement with local governments and the public on their local priorities, as well as practical considerations such as location, access, and reservoir characteristics (e.g., presence of sour gas in a reservoir) and

consideration of geographic balance, is proposed in order to inform the identification of projects for state abandonment.

The methodology was developed in preparation for California's expanded state abandonment operations which will be supported by significant new federal funding, as well as state funding allocated in the 2022-2023 California State Budget, which together, offers an unprecedented investment in tackling the climate change, public health, and environmental risks posed by orphan and deserted wells.

Below is a summary of the public comments received during the CalGEM public engagement outreach sessions on the proposed Orphan Well Screening Methodology.

CalGEM encourages the public, community partners, California Native American tribes, and other interested parties to get involved in future public forums that will be scheduled as new information becomes available and additional input is needed.

CalGEM will also be providing updates via:

- The CalGEM Orphan Well Screening Methodology webpage:
<https://www.conservation.ca.gov/calgem/Pages/Orphan-Well-Screening-Methodology.aspx>
- The State Oil and Gas Well Plug and Abandonments webpage:
<https://www.conservation.ca.gov/calgem/Pages/State-Abandonments.aspx>

Interested individuals may also sign up to receive regular email updates about the State Plug and Abandonment process by requesting to be added to the listserv at CalGEMOrphanWells@conservation.ca.gov.

ACRONYMS & COMMON TERMS USED IN THIS DOCUMENT

BFW	Base of Fresh Water
CalEnviroScreen	A database of population exposure information maintained by the CalEPA Office of Environmental Health Hazard Assessment
CalEPA	California Environmental Protection Agency
CalGEM	Department of Conservation, California Geologic Energy Management Division
Department	Department of Conservation
Likely or Potentially Orphan or Deserted	Wells that have been classified as “likely” or “potentially” orphan or deserted but for whom a final determination of orphan has not yet been made
GIS Mapping Application	Geographic Information Systems maps that provide multiple scenarios based on different screening methods
the Methodology	Draft Orphan Well Screening Methodology, referring to the screening method that is being used to inform prioritization of individual wells for plug and abandonment using available state and federal funds, including Phases 1 and 2.
P&A Order	Plug and Abandonment Order issued by CalGEM to an operator requiring plugging and abandonment at the operator's expense
USDW	Underground Source of Drinking Water as defined by the U.S. Environmental Protection Agency & CalGEM regulation
WellSTAR	CalGEM's database of record, the Well Statewide Tracking and Reporting System is used by operators and the Department to track data related to wells and facilities and is accessible to the public

SUMMARY OF COMMENTS, QUESTIONS, AND RESPONSES

CQ = Comment and questions received and summarized

- Department response

ELEMENTS OF THE SCREENING METHOD

Many commenters provided detailed recommendations for specific elements of the screening system as described in the summaries below. Wherever possible and appropriate, CalGEM has incorporated these elements into the method with a focus on public health and safety, protection of the environment, and a reduction in climate change impacts. Specific comments and questions received include:

- Q:** Regarding the initial technical screening process, particularly the downhole and other hazards, are these risk factors based on CalGEM experience, industry-wide knowledge, data, or something else?
- The risk factors used for this screening were developed using CalGEM staff technical expertise regarding the risks associated with well operations and the ways in which those risks translate into potential harm for California communities, using currently available data. They include a focus on those aspects of a well and well location that most affect public health and safety as well as the potential impacts on the non-human environment.
- Q:** What will be done in cases where the information on the downhole variables isn't available?
- Where information on downhole conditions is not available, default values for that factor are assigned to the well, as not having information about the well is a risk factor itself. For example, a well that has not demonstrated the existence or lack thereof of freshwater or Underground Source of Drinking Water (USDW) will be assigned a level of points commensurate with points that would be assigned had Base of Fresh Water (BFW) and USDW both been present.
- Q.** How will CalGEM account for the inaccuracies of well locations?
- Inaccuracies in well location are often a challenge and must be addressed differently depending on the circumstance. Where a well location is generally known, a magnetometer can be used to locate the well casing.

Sometimes, local governments have additional information about location, and the Department will work with local governments to gather information to locate wells needing plug and abandonment work.

C: The approach to this screening process is practical and sound as the screening criteria are appropriately based on technical data. Each category identifies a well's location, condition, and other important risk factors. We offer that it is of great importance that the risk factors considered be based on technically sound analysis and that the five-tier risk scoring system is a sound approach to identifying those orphan wells that are highest priority in the abandonment ranking process. Surface and downhole studies, fluid level, mechanical integrity, and other technical criteria, as well as proximity to sensitive receptors, all provide clear criteria by which to develop a planned approach to the safe abandonment of these orphan wells.

- CalGEM appreciates support of the proposed method for screening of wells.

C: 3,200 ft setback. Prioritize plug and abandonment of wells within the 3200-foot buffer zone, and focus on metrics that consider proximity, vulnerability factors and well integrity.

- CalGEM shares concerns about the risks wells may pose to nearby communities. Several comments received requested that wells located within 3200 feet of sensitive receptors be prioritized. The draft screening method released in September 2022 aimed to prioritize wells located in proximity to communities, and in proximity to vulnerable communities. At the time, CalGEM did not have finalized data on likely orphan wells located within 3,200 feet of a sensitive receptor. In order to prioritize wells located near people and vulnerable populations, the September draft scenarios prioritized wells located in a CalEnviroScreen disadvantaged community, and for wells considered "critical wells," which are wells located within 300 feet of buildings intended for human occupancy, other infrastructure, and environmentally sensitive areas (critical wells, as defined in California Code of Regulations, title 14, section 1720 (a)).

Since its September release, CalGEM has worked diligently to finalize data on orphan wells within 3,200 feet of residences, schools, and health care facilities. As such, CalGEM has updated its method to add an additional criterion for if a well is known to be located within 3,200 feet of residences, schools, or health care facilities, or not. Orphan, deserted, and likely orphan

wells located within 3,200 feet of these sites are assigned more points, to elevate these wells in the prioritization.

C: Climate change and public health should be prioritized.

- CalGEM agrees. Public health and safety is the driving priority for this effort, as evidenced by the focus in the methodology on prioritizing wells that have a history of leaks, well integrity concerns, and are located near communities, and especially vulnerable communities, within the screening criteria. CalGEM has updated its method to prioritize wells that have a history of leaks, and as such, may be at increased risk of leaking methane—a potent greenhouse gas. In addition, every well plugged is one less well that can potentially leak methane.

C: Community recommendations for the screening system and cost estimates should be adopted.

- CalGEM has considered and will continue to consider recommendations and requests from the public, local governments, local communities, and other commenters who have an interest in the screening system and related cost estimates. With this understanding, the next phase of prioritizing wells will involve active solicitation from local governments and communities on specific wells and fields within their jurisdiction.

C: Disadvantaged communities including communities of color and low-income communities within a half mile should be prioritized. Census tracts and CalEnviroScreen data are insufficient to identify those specific communities most at risk. The factor of disadvantaged community also should not be separated from well condition, as well condition affects the health of the community and its level of risk.

- While we recognize CalEnviroScreen does not include proximity specifically to oil and gas operations as a potential hazard, it is a helpful tool to help identify California communities most affected by many sources of pollution, taking into account environmental, health, and socioeconomic indicators. CalGEM agrees that both the location of wells near disadvantaged communities and the well condition should be considered, and as such, has finalized a method that that prioritizing wells based on both factors, among others.

C: Financial risk of orphan wells must be taken into account.

- Orphan wells are those wells for which there is no responsible, solvent operator to maintain, repair, or plug and abandon them. Orphan wells can pose a threat to public health, safety, and the environment by leaking oil, emitting greenhouse gases, and posing physical hazards. All orphan wells are a financial liability to the state because there is no operator to cover the cost of plug and abandonment. As this applies to all wells that are ultimately determined to be orphaned, there is no specific analysis regarding financial risk that would add meaning to the screening criteria.

C: Fluid Level Test Criteria. The proximity of private water supply wells should be included in the scoring. Private wells may be contaminated by leaking oil wells, including those that may have undergone Enhanced Oil Recovery (EOR) operations. It is critical that potential exposure pathways through consumption of contaminated water from private wells be eliminated. If possible, oil and gas wells used for EOR should be an additional scoring element.

- CalGEM agrees that wells that may have integrity issues must be prioritized. Wells used for enhanced oil recovery are more highly regulated and monitored, with more stringent testing requirements than regular producer wells, and as such, are not necessarily at higher risk of having integrity issues. As such, technical staff believe that the inclusion of the several factors that describe the characteristics of a well, taken together, provide a technically defensible prediction of risk of well integrity. By focusing the analysis on the condition of the well, the analysis aims to assess potential risk to surrounding communities and water sources—regardless of whether it is a private water supply, aquifer, or even soil. In addition, by including criteria that prioritize wells near communities, impacts to people, including impacts to their private water supplies, should largely be captured.

C: Fluid Level Test Criteria – Ranking. Ranking criteria for fluid level results should mirror CalGEM's regulations. "If the operator has not demonstrated the location of the base of a USDW, then it shall be presumed that the fluid is above the base of a USDW." If there is a missing BFW/USDW value, or if it is unknown if the fluid level is above BFW or USDW, then the score should be 2, not 0.5 or 1.

- This recommendation has been incorporated into the screening method as recommended so that the lack of information about a BFW or USDW will result

in an assumption that one or both are present and that the fluid level is above their strata location.

- C:** Geologic criteria should be broadened to include all geologic conditions including fluid transport phenomena through geologic media with high transmission soils and rocks prioritized over impervious media.
- Geologic hazard is one of many criteria within the initial technical screening however, with limited resources CalGEM cannot analyze data (electric logs) for all wells within the inventory list. While CalGEM agrees that geologic media may affect the gas transport capability to move upward to other formation(s) or above ground, the screening criteria was not changed because of this comment, as CalGEM does not have ready-to-use geologic media data for most of the wells within the well prioritization inventory list.
- C:** Groundwater Impacts. The screening system should include stronger elements for incorporation of groundwater impacts, including for aquifers that are not exempt. A focus on toxic chemicals that are leaching into water should also be incorporated into the screening system.
- CalGEM agrees we should prioritize wells that may be located near sources of potential beneficial use aquifers and wells for which there is evidence of increased risk of contamination. As such, CalGEM is assigning points to wells located where we know there is base of fresh water present, and for wells for which there is evidence of damage or fluid level tests indicate increased risk of potential to leak, and create contamination, or if we do not have any fluid level test results (since have no data increases risk itself).
- C:** Leak rate appears to be an important element that is missing from the prioritization screening criteria.
- To capture leaks, a new criterion called "historical well leaks" is being added to the Scenario 2 screening methodology, to create the final method. This criterion will add points to any well for which CalGEM has data on historical leaks or that are located within a lease in which a leak was detected. CalGEM requires the operator to repair or directly contracts for the repair of any well with uncontrolled fluid emissions such as a leak. However, leaks can be an indicator of equipment being in a state of disrepair, increasing risk. The initially proposed Scenario 2 did not include this metric.
- C:** Local Government Criteria. Local governments suggest that the following criteria should also be included in the screening methodology: known history of previous

incidents with that well or other similar wells clustered nearby; location criterion should include population density and not just distance.

- CalGEM agrees with prioritizing wells with a known history of previous incidents with those wells or field, and as such, has included it as a critical consideration in the secondary screening that will take place in Phase 2 in order to capture circumstantial information that is challenging to consider for all wells statewide. To assist in obtaining this information, CalGEM is conducting outreach to local governments to learn more about local priorities, and to ensure we are aware of historic incidents that may have occurred. CalGEM also agrees population density can be meaningful to help maximize benefits but can also skew toward prioritizing orphan wells in urban areas over rural communities. For this reason, CalGEM did not include it as a criterion in the statewide screening method, but will be working to balance maximizing risk reduction with ensuring many California communities can benefit across the state from state abandonments.

C: Methane Emissions. Screening criteria should be focused on the priority of methane emissions reduction. Will result in faster action on climate change. Include 1) increased point values for a failed mechanical integrity test, 2) identification and inclusion of wells with high gravity oil, and 3) additional criteria for inclusion of wells that have been identified as leaking through methane monitoring such as drone overflights.

- CalGEM agrees that the screening method should prioritize potential for methane emissions reductions. As such, CalGEM has updated its method to prioritize wells for which there is historical information of leaks, including being located in a lease in which a leak was detected. These wells may be at higher risk of leaking methane—a potent greenhouse gas. CalGEM agrees the screening method should prioritize wells that have failed mechanical integrity test, and as such, has assigned a 5 point in the final method to wells with failed casing integrity tests and 2.5 points to wells with overdue casing integrity tests. Since leaks can occur for wells regardless of gravity, CalGEM did not included gravity of oil as a risk factor in the screening method.

C: Offshore wells should be prioritized as the surf is spreading crude oil from the well into the environment.

- The final screening method prioritizes those wells that are considered critical and environmentally sensitive under definitions in statute and the California

Code of Regulations. Offshore wells are both critical and environmentally sensitive and are therefore prioritized.

C: Park and Schools. Wells near parks and schools should be prioritized for plug and abandonment. Residential Neighborhoods. Wells near residential neighborhoods should be prioritized for plug and abandonment.

- CalGEM agrees and has updated its method to prioritize wells located near sensitive sites, such as residences, education resources, including schools and parks, and health care facilities.

C: Point Spread. The point spread should be broader so that more nuance is provided within the initial classification. A tie-breaker should also be developed to ensure that there is a transparent way of understanding how tie scores will be resolved.

- The points are limited for each category because there are a large number of categories for consideration. The purpose of the initial technical screening methodology is to help start to identify a smaller pool of wells on which CalGEM can focus its additional evaluation. As such, the screening tool used in Phase 1 is one of many factors that will be taken into consideration when ultimately identifying proposed state abandonment projects. CalGEM plans to issue a draft Expenditure Plan in 2023 with proposed state abandonment projects for public comment. This proposal will attempt to balance results from the screening tool method of Phase 1, with other considerations, such as local concerns, well accessibility, geographic equity across the state, and ensuring project funds benefit disadvantaged communities, as part of Phase 2 when proposing a first group of potential state abandonment projects.

C: Sweet or sour, gas content and type should be taken into consideration when applying the screening criteria.

- Gas type is not always available in current data records and is therefore not specifically included in the screening criteria. However, the presence of sour gas, that is gas that includes large amounts of hydrogen sulfide (H₂S), is a hazard that would be incorporated into the secondary screening Phase 2 when data is known.

C: Weighting of Criteria. Higher prioritization for wells that are at highest risk-of-upset and/or have potential to affect a greater population within its immediate radius of influence. In that context, may have a preference for Scenario 3, Well Condition weighted scale, followed by Scenario 2, Proximity to Communities and

Sensitive Environments. As applied, screening criteria are consistent with local government priorities.

- CalGEM agrees of the need to prioritize wells at higher risk of failure and near people. CalGEM's final method builds off of Scenario 2 in the September draft, but makes important modifications based on public feedback, including prioritizing wells within 3,200 feet of residences, schools, and health care facilities, wells with a history of leaks into the final methodology, and wells that are accessible or likely accessible.

C: Wellsite Accessibility. Accessible sites should be awarded more points than inaccessible sites so as to create the greatest efficiencies in use of dollars and time.

- This recommendation was incorporated into the final screening method by assigning higher points to accessible wells. As part of this update, wells that have been formally determined to be inaccessible based on field inspections were assigned negative points to ensure they are deprioritized over wells for which state abandonments can be carried out. If any potential hazards arise from an inaccessible well, CalGEM will inspect and address those wells directly, as needed, using its authorities to respond to and address hazardous situations.

C: Work Already Begun. CalGEM ought to first complete, above all other criteria, the abandonment of all wells on leases that it has started. Specifically, pursuant to CalGEM's Order to plug and abandon all of HVI Cat Canyon, Inc.'s wells, only some wells on leases have been contracted to DrillTek for abandonment. The remaining ~38 wells yet to be contracted ought to be given "super" priority to close out the leases and not leave them partially abandoned.

- CalGEM is actively overseeing a contract with DrillTek to perform state abandonments on 171 HVI Cat Canyon wells in Santa Barbara County. CalGEM is also working to pursue an additional contract for the remaining 38 wells in that area abandoned by HVI Cat Canyon. CalGEM anticipates issuing a request for bid for this work in Spring 2023.

FUNDING

Funding sources are always an issue of concern when identifying wells for plug and abandonment. In our current case, funds from dedicated Federal infrastructure grants as well as state funds provided by industry and from the general fund are being made

available for this purpose. Some commenters were concerned about how these funds are to be spent, including:

- C:** Water Infrastructure. The monies that California will receive for infrastructure should go to water reclamation, water capture, and water storage as our most pressing need.
- Thank you for your concerns about California's water issues. While the federal funds California received for orphan well state abandonments must be used to plug and abandon or remediate orphan oil and gas wells, these activities protect California's groundwater resources in addition to minimizing risks to human health from leaking chemicals. In addition, the US EPA awarded approximately \$805 million to California from the Bipartisan Infrastructure Law for water infrastructure improvements. For more information about this funding, please contact the State Water Resources Control Board.
- C:** No such thing as an orphan well. Remaining wells without operators are still improvements for/of subsurface property owners throughout the State and are known by all County Assessors as "Subsurface Property Improvements" OWNERS, same as underground storage tanks (USTs) for surface property owners.
- Orphan wells are those wells for which there is no responsible, solvent operator to maintain, repair, or plug and abandon them. CalGEM declares a well as orphan after it has determined that there is no solvent operator responsible for the well. The statutory definition of operator may include a company that had owned the well, and also with limitations, mineral interest owners, among others (Public Resources Code, sections 3009 and 3237 subdivision (c)). Current law does not allow CalGEM to assign liability to surface property owners as described by commenter.
- C:** Sales Profits. CalGEM should sell the high value properties it has taken ownership of in the plug and abandonment process to incentive additional cleanup activities by motivated property owners and provide additional funding for Department efforts.
- CalGEM does not take ownership of orphan wells as a result of state abandonment. The Department does not have the authority to profit from the sale of lands that hold deserted and/or orphaned wells. Legislative action would be needed to effectuate this purpose.

IDLE WELLS

By regulatory definition, an idle well is a well that has not produced or been active for at least 24 months. Operators of idle wells are required to maintain their wells in a safe condition; however, if no viable operator exists, the well is often not maintained.

C: Inspection & Monitoring. The Department should step up the inspection and monitoring of idle wells.

- Idle well statutory and regulatory requirements have only been in place for a few short years, and we are still beginning to see the impact from idle well fees, idle well management plans, and the requirement to do engineering studies for long-term idle wells. In addition, Notice to Operators 2022-5 issued October 26, 2022, outlines additional requirements for notice and witnessing so that state personnel may witness more well work, including well work for idle wells.

C: P&A Idle Wells. The Department should order the plug and abandonment of all idle wells.

- The Legislature designated the approach to idle wells via statute when it created the idle well management requirements. CalGEM's responsibility is in carrying out the statutes regarding idle well management. Legislation would be needed to enact this recommendation.

PLUG AND ABANDONMENT ORDERS

The State Oil and Gas Supervisor has the discretionary authority to issue an order to an operator requiring them to plug and abandon a well in multiple situations, including where the well has become "deserted" by lack of regulatory compliance and failure to pay required fees, file reports, and documentation. These orders are NOT the equivalent of a prioritization under the screening criteria.

C: Abandonment standards should include perforations of all casings/screens to bore rock followed by pressurized injection of cement (x2 hydrostatic pressures for 24 hours) and then placing 250-foot cement plugs, at the tops of every 1000 feet of casing, and for bottom of hole with cement/mud slurry in-between plugs.

- Standards for abandonment are created by the legislature in the form of statute and by CalGEM in the form of regulation. The current standards for plugging and abandonment can be found in the California Code of

Regulations, title 14, sections 1723.1-6, consistent with the requirements of Public Resources Code section 3208. Where needed, CalGEM has broad authority to impose special requirements that include adding perforating and squeeze-cementing, and cement plugs in intervals when warranted by the well condition (California Code of Regulations, title 14, § 1723.8).

C: Appeals. Ensure appeals processes do not delay necessary leak detection and clean up.

- Immediate hazards to the public can be acted upon as needed to protect public health and safety. CalGEM has authority under Public Resources Code section 3226 to undertake actions deemed necessary to protect life, health, property, or natural resources, which it has used to contract for repairs, plug and abandon wells, and addressing leaks. The appeals process is governed by statute. Public Resources Code sections 3350-3356 sets forth the appeal process that is required to appeal an administrative order issued by CalGEM.

C: Criteria for Immediate P&A. The Department should create and enforce criteria for immediate closure based on public health and safety.

- These criteria already exist within Public Resources Code 3106, 3224, and 3226 as well as California Code of Regulations, title 14, sections 1714 and 1777.

C/Q: Wells Underlying Buildings. Is there any way to ensure that old wells located under buildings are sealed? Violation of current law to build on top of a still active oil field and failure of local entities such as governments and for-profit corporations to follow legal requirements. Problems are never acknowledged or punished so are allowed to continue deliberately harming people.

- Local land use decisions are controlled by local governments and are not the purview of CalGEM. Typically, the local planning agency or building department permits or oversees construction, including determining whether or not to allow construction over or near wells. CalGEM recommends that structures not be placed over wells, even for wells plugged and abandoned to the most stringent standards. CalGEM also recommends that construction not impede access to wells, including wells outside the property being developed. Although CalGEM does not normally *prevent* construction that might limit access to wells, if construction does impede or prevent access to any well, or the recommendations of CalGEM are not followed, state law dictates that the developer, property owner, and/or local jurisdiction will incur

the liability necessary to access the well, which may include removal of permanent structures, and perform necessary well repairs including plugging and abandoning of well(s) to current standards.

PUBLIC DISCLOSURE

Transparency is a key goal for the Department. Comments in this category generally make overarching recommendations about the process rather than specifics of the screening criteria.

C: Communication Recommendations. 1) include “climate change” in the rationale in the Executive Summary; 2) create a table of the criteria for each Scenario for easy comparison; 3) use these opportunities to educate people on the realities – P&A won’t solve all the problems with oil and gas wells.

- CalGEM agrees and has updated the Executive Summary to emphasize that addressing climate pollutants is a direct benefit of plugging and abandonment orphan wells.
- A table of the criteria for the final method has been included in the final screening method document.
- CalGEM recognizes there are larger impacts associated with oil and gas in the state but addressing legacy infrastructure is an important part of protecting California communities. CalGEM has a variety of opportunities to provide the public with additional information on other efforts, including the Methane Task Force, which highlights work being performed across state agencies to address methane from oil and gas operations.

C: Data Inconsistencies. Multiple commenters point out that wells on the currently “likely” list have existing operators and should not be considered abandoned. Commenters also note inconsistencies in data reporting, for example in WellSTAR HVI Cat Canyon has approximately 465 wells but the list provided for this effort includes more than 700 wells. Commenters also question the inclusion of some offshore and platform wells on the list.

- The initial list of wells was constructed using evidence CalGEM had of potential desertion. As such, it likely does contain wells with existing operators. For those wells, CalGEM must still go through the process to declare a well deserted and orphaned. CalGEM will be undertaking this process before state abandonments are conducted. New operators may take over some of these wells and CalGEM reviews the submitted transfer paperwork, if approved WellSTAR is updated with the new operator name. In addition, the

list represents a snapshot in time and will not reflect recent transfers. CalGEM acknowledges that there are still some data inconsistencies between older paper records and WellSTAR which are being corrected well by well and the list is and will be updated annually.

- C:** Legislative Reports. Complete overdue mandated reports to release important updated data to the community.
- CalGEM continues to work diligently to provide the Legislature and the public legislatively mandated reports. Available reports can be found here: https://www.conservation.ca.gov/calgem/pubs_stats/Pages/legislative_reports.aspx
- C:** Modeling. The Department should conduct modeling of the different scenarios related to well screening and release that modeling to the public. This should include information regarding analysis of idle wells and the potential for leaks from idle wells.
- All screening tool results have been released to the public. Please visit <https://cadoc.maps.arcgis.com/apps/webappviewer/index.html?id=b65ba00d139845f9810f7c96f2e09c30>
- C:** Offshore wells in Santa Barbara County appear to be misclassified. The County is taking steps to reabandon the wells, but they should not be considered orphaned and should be removed from CalGEM's list.
- The initial list of wells includes many wells that may not be orphaned but which are still likely to be eligible for funds. The Department of Interior has indicated that federal funds may be used for re-abandonments, and as such CalGEM recommends maintaining wells that may require re-abandonment as part of the screening. Once the initial screening has taken place, CalGEM will work directly with local governments, including Santa Barbara, and their communities to determine how to prioritize these wells.
- C:** Transparency of Orphan Well Remediation is needed. Current activities related to remediation of orphan wells that may be idle and leaking hazardous gases are not well publicized, and the public is unable to tell if hazardous wells are being addressed in their communities.
- Currently, CalGEM is overseeing the largest state abandonment in California history, focused on 171 wells previously owned by HVI Cat Canyon, Inc.

Updates on this effort can be found here:

<https://www.conservation.ca.gov/calgem/Pages/CatCanyon.aspx>

- In addition, CalGEM intends to release a draft Expenditure Plan for public comment in Spring 2023. This will identify proposed projects for state abandonment, and CalGEM will be seeking input from the public. Through this process, CalGEM aims to provide transparency into the process.

WORK SUPPLEMENTAL TO THE SCREENING SYSTEM

In addition to comments on the orphan well prioritization methodology, commenters also provided feedback on issues related to the orphan well state abandonment. Comments include:

- C:** Capacity of the Department to address the plug and abandonment of wells at the necessary pace is a big concern. CalGEM should ensure sufficient staffing and resources to achieve these goals, which will only become more urgent over time.
- Recognizing the priority of this program, CalGEM has created a dedicated team of staff to carry out its new statewide orphan well abandonment program. As CalGEM continues to build this program, it will evaluate additional staffing modifications that may be needed to ensure the program is carried about effectively.
- C:** Effective Spending. Reforms are needed to ensure effective spending of state and federal dollars, that taxpayers are not ultimately charged to clean up the industry's damage, and that cleanup is done by qualified and protected labor.
- The use of General Fund monies in the 2022/2023 State Budget to address California's orphan well problem was a one-time allocation proposed by the Governor and concurred with by the Legislature to be able to move swiftly to address these hazards.
 - State contracting standards apply to all contracts that will be generated as a part of the well screening and prioritization process including the need to pay prevailing wage.
- C:** Field sampling should include ambient air sampling for methane, volatile organic compounds, hydrogen sulfide, combustible gases, and Naturally Occurring Radioactive Materials (NORM) and Technologically Enhanced Radioactive Materials (TENORM). Measurements for these potential contaminants would help evaluate potential health exposures and impacts to communities, allowing

CalGEM to focus on the wells causing higher levels of current contaminant release. During the field sampling, observations for visual or other evidence of surface contamination from hydrocarbons; saline solutions; arsenic, chromium, and other applicable metals; NORM; or other products should be recorded. This will aid CalGEM in identifying sites that require further investigation and remediation.

- The Department does not have the resources to do field sampling for all wells that are currently considered for prioritization. A resource-heavy effort to sample every well would also likely not alter the outcomes significantly. Under Senate Bill 1137, there would be new requirements for leak detection and response, which will include requisite sampling of any leaks as feasible. In underground gas storage operations, such sampling will be required for all substances that could be emitted from a well. During the plug and abandonment process, some sampling will take place as part of site remediation to ensure that all contaminants have been identified and remediated.

Q: Locating old orphan wells. Why isn't CalGEM using old aerial photos and seeking casings with magnetometers to ensure that all old wells are located and plugged?

- These are excellent suggestions that we will take onboard to further locate more likely orphan and deserted old wells. CalGEM staff have been using records from cities, counties, operators (oil companies), and CalGEM's records to locate these wells. So far, the State has documented over 17,000 wells that have been idle for over 15 years and over 5,000 wells that are likely orphan, deserted, or potentially deserted wells.

C: Leaks. Regulatory standards for and responses to leaks should be strengthened. Community leak reporting should be encouraged and provided for.

- CalGEM's regulations require that operators maintain production facilities in good condition, in a manner to prevent leakage and to repair leaking equipment. If CalGEM observes or detects leaks from equipment or wells, CalGEM will notify the operator through a Notice of Violation or other correspondence to take corrective action and promptly address the leak. Depending on the constituent or level detected, CalGEM also reports all leaks to CalOES (California Governor's Office of Emergency Services) who then notifies other essential agencies. The Methane Task Force that was formed in Fall 2022 will continue to address methane leaks and leak response.

C: Operator Viability. The transfer of wells to less viable operators over time will just increase the problem of leaks and hazards as well as the number of likely orphan wells.

- The requirements governing transfers of wells between operators is in Public Resources Code sections 3201-3202. CalGEM does not currently have authority to prevent transfers that comply with those requirements. Legislative action would be needed to give the Department the ability to act to prevent transfers.

Q: Well Classification. Many of the wells listed as “likely” orphan are incorrectly categorized. What are the criteria that are used to classify a well as likely orphan?

- A finding that a well is an orphan well requires a determination that there are no financial resources held by a legally responsible current or prior operator that can be made available to CalGEM for the purpose of plugging and abandoning a well. This determination is a process that takes some time. To identify potential wells that should be included in the well screening, CalGEM looked not only at wells that were declared orphan but also wells that may be declared to be orphan wells after completing financial review, or wells that are deserted but a determination of orphan has not yet been made. Once a well has been determined to be an orphan well, CalGEM can use funds to plug and abandon that well.

In addition, the Department received various comments regarding permitting of new operations, Senate Bill 1137, bonding, ideas for the Legislature, and other issues that do not directly pertain to the screening criteria or orphan well state abandonments.