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California's Roadmap to Protect Communities and Public Health from Oil and Gas Drilling

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A public health expert panel report gives Californians a critical new tool in the years-long fight for setbacks from oil and gas drilling.

Looking back at the California Legislature's 2024 session now that the new year is quickly approaching, it remains clear that the state still has a long way to go to protect public health from oil and gas production. One place we can start is by implementing the recommendations in a landmark report released over the summer by a state-commissioned public health expert panel. The report gives Californians a critical new tool in the years-long fight for setbacks from oil and gas drilling, concluding that proximity to oil and gas production increases the likelihood of adverse health outcomes, and those outcomes get worse where the density of wells is greater (https://www.conservation.ca.gov/calgem/Documents/Public%20Health%20Panel%20Final%20Report_20240621.pdf). The report is the culmination of years of review and analysis by a diverse and qualified panel of scientific experts working with California's Geologic Energy Management Division (CalGEM), the state's oil and gas regulatory agency.

At over 500 pages, “Public Health Dimensions of Upstream Oil and Gas Development in California”^{*} is a first of its kind report. It analyzes the best available peer-reviewed science and publicly available data on the harms to people near drilling activity and provides findings and recommendations to address those harms. Over three million Californians (or 8% of the state’s population) currently live within one kilometer (or 3,200 ft.) of an active well, and most are people of color and low-income people who are disproportionately impacted by the associated health harms.

The report gives California — and states across the country — a huge green light to implement strong oil and gas setbacks and other public health protections that move drilling away from communities. Now that California has started to implement Senate Bill 1137

(https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1137) — a historic law passed in 2022 that establishes the strongest-in-the-nation setbacks of 3,200 feet between drilling activity and sensitive locations across the state — the report’s recommendations are an especially timely roadmap for CalGEM and other decision makers like the California Air Resources Board that are responsible for implementing SB 1137 and protecting people from oil and gas pollution.

As we head into 2025, we highlight some of the expert panel’s most important findings and recommendations in the report that should guide these agencies’ work in the new year:

The scientific evidence conclusively supports a minimum 3,200-foot setback.

The report adds to the growing body of scientific literature supporting a minimum 3,200-foot setback between oil and gas drilling and places where people live, work, and play. These findings further reinforce the critical protections enshrined in SB 1137, while identifying room for improvement via future legislation. For example, the report highlights the need for an additional setback between oil and gas wells and potential sources of drinking water.

Critically, the report also builds the case for setbacks *greater* than 3,200 feet to protect human health in communities with higher oil and gas well or infrastructure density, higher oil and gas production volumes, the presence of other environmental hazards and socioeconomic stressors, or where particularly vulnerable groups like children, pregnant people, the elderly, and those suffering from chronic illness are present. Exemptions and exceptions must be avoided because they “will likely diminish health protections for communities and other sensitive receptors.”

Strong setbacks are necessary considering the expert panel’s “high level of certainty” that there is a causal relationship between close proximity to oil and gas development and negative health impacts, particularly adverse perinatal and respiratory outcomes like reduced fetal growth, preterm birth, asthma, and reduced lung function. The report also discusses research estimating that in 2025, nearly 100 premature deaths in California will be attributed to oil and gas pollution.

Stronger methane leak detection and repair is necessary to reduce air and climate pollution.

Although setbacks are one of the most effective measures to reduce public health harms from drilling — second only to phasing out drilling entirely — additional controls are needed to address impacts to regional air pollution levels and greenhouse gas emissions. Engineering mitigation controls can further reduce or eliminate these emissions and specific hazards at well sites, particularly via leak detection and response measures.

Oil and gas drilling produces air pollutants known as volatile organic compounds (VOCs). These VOCs include both the greenhouse gas methane and toxic air contaminants. Currently the state exempts “heavy oil” development facilities and small producers across California from emissions control and leak detection and repair requirements. The report recommends stronger measures to reduce the release of VOCs from oil and gas development, such as removing these exemptions and requiring certain components to comply with zero-emissions

standards. It also recommends improved air quality monitoring and leak detection that is more specifically tailored to the variety of extraction processes and equipment that produce VOCs.

Earthjustice and our partners advocated for removal of the heavy oil facility exemption in our [comments to the U.S. Environmental Protection Agency on California's State Implementation Plan for ozone](https://earthjustice.org/document/comments-on-proposal-to-approve-california-sip-revisions-06-03-24) (<https://earthjustice.org/document/comments-on-proposal-to-approve-california-sip-revisions-06-03-24>).

Oil and gas development produces significant amounts of contaminated water that must be better monitored and managed.

Wastewater from oil and gas activities (or “produced water”) contains compounds that are known to be hazardous to human health. The volume of produced water has been increasing in California for decades. Much of this water is disposed via dangerous unlined ponds that impact groundwater that is currently or could be used for drinking or agricultural irrigation in California. While the report notes that drinking water wells close to oil and gas activities generally pose greater health risks, the state lacks publicly available data on which chemicals are found in produced water and comprehensive reporting on where produced water has been stored, disposed of, or spilled. The report recommends not only stronger regulations prohibiting the disposal of this toxic sludge in unlined produced-water ponds that are prone to contaminating fresh water, but also better access to information about where the oil and gas industry has been disposing of this mess. SB 1137 will help close the contamination-data gap by enabling frontline communities to force operators to perform water quality sampling before doing work in health protection zones, and mandating that sampling results be publicly available.

The oil and gas industry's use of chemicals must be better documented, reported, and restricted.

The use of dangerous chemicals in oil and gas production is ubiquitous in California. However, publicly available data on these chemicals is lacking, even as many are associated with human health risks. The report recommends the restriction of chemicals with the greatest health risks and the adoption of more consistent disclosure requirements across all oil and gas development in California. Communities should also be notified about chemical additives used in all oil and gas development activities, not just a select few like fracking, which has now been banned in the state.

Idle wells and legacy infrastructure pose ongoing health risks that require testing and cleanup.

Idle, deserted, and abandoned oil and gas wells, corroded pipelines, and other legacy oil and gas infrastructure pose potential near and long-term health risks that are poorly characterized because of limited data and reporting. Some of the risks associated with these sites include leaking oil, gas, produced water, radioactive material, asbestos, polychlorinated biphenyls (PCBs), pipeline chemicals, heavy metals, and other hazardous materials. CalGEM has approximately 126,000 plugged and abandoned oil and gas wells in California on record. However, recent assessments found that the number of abandoned wells is under-reported by 17% or more. A number of these wells may need to be "re-abandoned" due to early 20th Century abandonment practices that are insufficient to properly plug the wells. Additionally, there are an estimated 2,500 to 5,000 unplugged idle-deserted wells in the state, with no solvent operators. Due to the lack of information, the report recommends that CalGEM develop a thorough inventory of these wells and infrastructure, sites with idle-deserted or abandoned infrastructure in areas slated for redevelopment should be required to undergo environmental testing, operators must be required to clean up contamination, and

CalGEM should conduct additional studies to assess emissions from idle wells, which are known to be super emitters of methane (<https://earthjustice.org/document/letter-ca-reforms-idle-orphan-wells>).

CalGEM commissioned the expert panel to provide the data and recommendations in this report as part of the agency's ongoing efforts to implement oil and gas setbacks in California. These efforts began in 2019 in response to a directive by Governor Newsom for CalGEM to safeguard public health and the environment in its oversight of oil and gas production (<https://www.conservation.ca.gov/index/Pages/News/California-Establishes-Moratorium-on-High-Pressure-Extraction.aspx>). As CalGEM now looks ahead to expeditiously implementing SB 1137, the report's conclusions and recommendations are more important than ever.

- Notably, the expert panel's public health report concentrates on "upstream" oil and gas development in California, or the phases in which companies explore and extract oil and gas from the ground. This report does not address later phases of development like the transportation of that oil and gas after it is drilled or the processes in which it is refined, redistributed, and burned, which undoubtedly have additional significant environmental impacts.

For more background, see "In the Shadow of Big Oil: Neighborhood Drilling in California" (<https://earthjustice.org/feature/buffer-zones-oil-drilling-california-neighborhoods>)."

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Children play at Arvin's "Garden in the Sun" playground. There are several oil wells near the park.
(Tara Pixley for Earthjustice)

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