



FRACTRACKER

A L L I A N C E

Oil and Gas Fugitive Emissions from Combustors in the South Coast Air District

Requirements for California Air Resources Board (CARB)-approved emissions reduction technology and infrastructure cannot be a replacement for stringent monitoring and inspections. The existing work of grassroots organizations, including Redeemer Community Partnership, STAND-LA, PSR-LA and research groups like FracTracker Alliance, has monitored the compliance of drill sites in the Los Angeles Basin, and has shown [the failures of engineering protections when sites are not regularly and thoroughly inspected](#).¹ This work includes the filmed documentation of many California Air Resources Board-approved burners observed to be operating poorly, inefficiently combusting methane and other volatile organic compounds (VOCs) that were still observable at concentrated levels in the exhaust streams. This is not an issue limited to southern California, as [other geographies such as Colorado are also addressing the issue](#), as required by recent rulings of the U.S. Environmental Protection Agency.²

The implementation of the [California Air Resources Board \(CARB\) Oil and Gas Methane Regulation](#) in 2018 was the first time that regulators even considered that oil and gas operators should not be directly venting toxic and carcinogenic VOCs from wash and crude tanks. The elimination of venting was the most important regulatory intervention for reducing community exposures to hydrocarbon emissions. Operators were no longer able to completely disregard the uncontrolled release of pollutants and subsequent degradation of local airsheds, due to the establishment of actionable limits to methane concentrations in fugitive emissions. While the rule applies to all fugitive emissions and leaks, tank venting was by far the most widespread source of fugitive emissions, present at nearly every wellsite without existing evaporative emissions control systems (EVAP).

The various California air districts have taken a range of different approaches to the implementation of the CARB methane regulation. While the Yolo-Solano Air Quality Management District, with natural gas fields in the northern San Joaquin Valley, has largely ignored the rule altogether, districts such as the San Joaquin Valley Air Pollution Control District, Ventura County, and Santa Barbara County have all stepped up inspections and have all issued violations for tank emissions. The South Coast Air Quality Management District has taken a leadership position, utilizing existing [local rule 1148.1](#) to require operators to install EVAP

¹<https://www.fractracker.org/2022/08/fractracker-finds-widespread-hydrocarbon-emissions-from-active-idle-oil-and-gas-wells-and-infrastructure-in-california/>

²<https://biologicaldiversity.org/w/news/press-releases/epa-rejects-air-pollution-permits-for-oil-gas-wells-in-colorado-2024-02-01/>

systems and require the use of CARB-certified combustors to ensure the destruction of methane and other VOCs into carbon dioxide prior to being released into the atmosphere.³

Since the implementation of the methane rule, FracTracker has conducted dozens of thermographic inspections of oil and gas facilities in the LA Basin using Forward Looking Infrared (FLIR) optical gas imaging (OGI) cameras. Inspections were completed in collaboration with grassroots organizations by the FracTracker Alliance Western Program Director, a certified thermographer. The installation of EVAP systems and combustors drastically reduced the documented volumes of fugitive emissions, as compared to on-site OGI inspections conducted prior to the installation of combustors.

While the concentrations and volumes of VOCs emitted from tank venting were vastly reduced, the combustion units themselves were observed to be a new source of methane and VOC releases. The exhaust streams of multiple units had observable concentrations of hydrocarbons.

[Example 1: Warren E&P Field](#)

[Example 2: Murphy Drill Site](#)

[Example 3: Deist Tank Farm](#)

[Example 4: Rosecrans Field](#)

Industry and regulators alike often stress the perspective that oil and gas extraction operations can occur in populated areas without degrading the environmental health of communities, if proper engineering protections are in place and best practices followed. Such organizations point to a variety of engineering protections such as EVAP systems and low-NOx burners that, when functioning properly, can prevent leaks from key components of wellhead infrastructure and efficiently combust waste gas. They say that with these engineering standards, hydrocarbons can be extracted from even urban residential environments without harming communities.

This perspective is patently false. Engineering protections alone are not effective, because oil and gas wellheads are incredibly leak-prone. The many opportunities for large leaks and the combination of many small undetectable leaks provide ample exposure pathways to degrade local and regional air quality with a cocktail of harmful volatile organic compounds. Wellhead infrastructure includes a variety of pipelines, connected by gasketed flanges and valves, all operating under high pressure. Leaks form regularly, and while they are often easily fixed by replacing equipment or just retorquing bolts, they cannot be addressed if they are not identified.

In lieu of eliminating oil and gas extraction operations in communities or requiring all associated gas be collected and refined, FracTracker Alliance urges the South Coast Air District to establish a robust inspection program that increases the oversight of exhaust streams from combustors. In addition to on-site inspections by SCAQMD staff using OGI cameras and methane sniffers, concentrations of methane and VOCs in the inflow and exhaust streams of combustion units should be measured to ensure the units are performing at the maximum possible efficiency. Additionally, these units should be sampled regularly, at least monthly, to ensure the operational efficiency remains within regulatory parameters.

³ <https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1148-1.pdf>