

Loud and Clear

What public regulatory complaints reveal about Texas' oversight of oil and gas pollution and whom it serves

OCTOBER 2020



EARTHWORKS



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Report available at earthworks.org/loudandclear-TX

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Earthworks is dedicated to protecting communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions.

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1

Introduction The Oil and Gas Pollution Threat

The oil and gas industry in Texas is releasing large volumes of greenhouse gases – despite the scientific consensus that current fossil fuel pollution must instead be greatly curtailed to prevent the most catastrophic effects of climate change.¹ This includes methane, which is 86 times more powerful than carbon dioxide over a 20-year time scale.²

At the same time, air quality is increasingly degraded in the communities living near oil and gas operations. The main reason is increased pollution from methane and volatile organic compounds (VOCs, including the highly toxic hydrogen sulfide found in Texas oil and gas) – all of which science associates with a range of health problems.³

Yet despite these trends, policymakers (and the general public) continue to assume that state and federal governments have both the will and the resources to adequately oversee a complex and increasingly polluting industry. Years of research and field experience by Earthworks have demonstrated that this is not the reality on the ground.⁴

Currently, state regulatory and enforcement agencies are:

- Inconsistent and insufficient in how they respond to the public
- Primarily focused on issuing permits quickly
- Underfunded and short-staffed
- Subject to the political influence of the oil and gas industry



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COMMUNITY EMPOWERMENT PROJECT
Loud and Clear — Public Complaints Reveal Lack of Oil and Gas Pollution Oversight
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Earthworks' Community Empowerment Project: Documenting Pollution to Protect People and the Planet

Earthworks started the Community Empowerment Project (CEP) because the oil and gas industry is putting people and the climate at risk – and agencies are failing in their responsibility to prevent that from happening.

Most air pollution from oil and gas operations is invisible, making it easy for companies and regulators to dismiss residents' concerns. CEP's certified thermographers use optical gas imaging (OGI) to make visible the pollution caused by intentional safety releases, equipment failures, and operator errors in oil and gas fields.

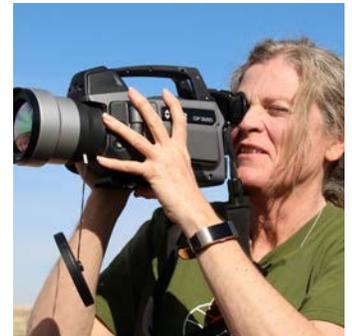
CEP staff then use that OGI evidence to file regulatory complaints with relevant state agencies and to document gaps in how they track and address oil and gas air pollution. It is a critical time to do so, with some states already committed to reducing oil and gas pollution and others moving in that direction. This report details findings of CEP's work in Texas from 2015-2020.

Nearly all state regulatory agencies have a complaint system. If properly designed and implemented, residents can notify regulators about problems at oil and gas sites – being critical “eyes and ears” while gaining needed assistance from public agencies.

For oil and gas regulatory regimes to be effective – in both combating pollution and protecting the public – complaint systems must be accessible, usable, responsive, and transparent.

Reduce pollution that harms health and the climate.

- Build trust in agencies mandated to both work with industry and serve the public.
- Respond to community concerns and experiences.
- Make government agencies more effective.
- Foster agency and operator accountability.



Seeing is Believing.

Earthworks uses Optical Gas Imaging to make invisible pollution visible.



Pollution viewed with the naked eye versus an OGI camera.

Apache Corporation, Cheyenne Central Processing Facility, Balmorhea, Reeves County.



2

The Complaint Process: Difficult to Navigate, Failing the Public

Complaints Accepted, but Tracking and Results Severely Limited

The Texas Railroad Commission (TRRC) is responsible for the permitting and oversight of oil and gas drilling and mechanical issues at the wellhead. However, through a memorandum of understanding, the Texas Commission on Environmental Quality (TCEQ) issues air permits for wells and oversees operations related to other emission sources and facilities (as well as some aspects of water and waste).⁵

TCEQ accepts complaints from residents via phone, email, or an online form to either the central agency office or regional offices. TCEQ states publicly that if the situation about which a complaint is submitted is “an immediate threat to public health or the environment,” the agency will respond within 24 hours” and after considering the expressed concerns, “conduct an investigation if appropriate.”⁶ However, TCEQ does not define what environmental events would constitute a threat that would trigger an immediate investigation.

Inspections occurred long after the incident that prompted the complaint – leaving problems unresolved and, in turn, communities continuously exposed to health-harming pollution.

As indicated in the table below, the agency can assign other priority levels to complaints that give inspectors up to 30 days, or even indefinitely, to respond. These timeframes seem to apply only to internal handling of the complaint; there are no publicly available guidelines or policies for how TCEQ determines which “urgency ranking” to assign or when or how staff will respond to complainants themselves.⁷ Many of Earthworks’ complaints were designated as 0 with “no specified response time.” As a result, related inspections occurred long after the incident that prompted the complaint – leaving problems unresolved and, in turn, communities continuously exposed to health-harming pollution.

TCEQ COMPLAINT INVESTIGATION RESPONSE TIMES	
Complaint Urgency Ranking	Response Time
0	Other specified response time
1	Immediate, within 24 hours of receipt
2	1 working day
3	5 working days
4	14 working days
5	30 calendar days
Refer to other agencies/tracking only	No specific response date



TCEQ asserts that upon receipt of a complaint, staff record all relevant information in a Consolidated Compliance and Enforcement Data System (CCEDS), along with records of subsequent actions taken.⁸ This information presumably forms the basis for the online complaint tracking system that TCEQ makes available to the public.⁹ Users can search information in the system by date, site or operator name, county, incident number, and agency program (e.g., air or water quality). TCEQ also assigns a “customer number” that can be used to search information, but those are not available to the public – instead, TCEQ defines operators as the agency’s primary “customer.”

The CCEDS database has other significant limitations that greatly diminish its usefulness for the public. Searching for specific events (for example, a pollution release near one’s home) requires an incident number, which TCEQ has to generate and provide to a complainant. Earthworks’ staff had to make repeated calls and emails to regional TCEQ offices to simply obtain some of the incident numbers related to our complaints. Residents with whom we worked reported having the same experience, as well as TCEQ not providing them with investigation reports as part of complaint response.

TCEQ makes a bit more information available for those complaints the agency has already closed, such as inspection dates, priority ranking assigned by TCEQ, and whether or not a violation was issued. A short description of the incident, relevant regulatory issues, and agency response may be available in those cases when TCEQ issued violations.

In short, there is simply no way for complainants to easily and consistently track a complaint from beginning to end and see what inspectors discovered, did, or didn’t do – information that is vital to holding regulators and operators accountable for harm.

In an indication of where the agency’s priorities lie, TCEQ, in contrast, provides oil and gas operators with extensive information to prepare for site inspections and offers direct assistance in maintaining regulatory compliance and resolving issues to avoid penalties.¹⁰

There is simply no way for complainants to easily and consistently track a complaint from beginning to end and see what inspectors discovered, did, or didn’t do – information that is vital to holding regulators and operators accountable for harm.



Public Information Requests Required to Obtain Information

TCEQ primarily considers complaints in response to problems that it defines as “nuisance conditions,” which are in turn based mostly on odors and reflect aspects that occur over a longer period of time (i.e., frequency, intensity, duration, and offensiveness).¹¹

The executive director has the option to use a citizen complaint in an enforcement action (in particular issuance of a Notice of Violation), but that process requires the public to pursue a more complicated method of submitting complaints. This is based on a state statute that allows a “private individual” to submit evidence documenting a possible violation.¹²

The statute authorizes the executive director to initiate an enforcement action based on submitted evidence if collection of the evidence follows TCEQ protocols – including a notarized affidavit and clear documentation (such as photos and videos).

Over the course of several years, Earthworks followed this procedure for nearly all of our submitted complaints. It was a time- and resource-intensive process that clearly would be burdensome and prohibitive for members of the public. TCEQ provides a website to which evidence can be uploaded, but it does not always work properly and if agency staff do not retrieve the files in a timely manner, the complainant has to upload them again.

To fully understand how TCEQ handled and addressed complaints, staff filed Public Information Requests (PIRs) and reviewed extensive documentation – another time-intensive process with long lag times between submission and resolution.

Even when TCEQ provided investigation reports in response to PIRs, the agency did not provide many of the documents referred to in the reports; obtaining those requires filing yet another type of PIR request. As Earthworks found, the PIR process can also be quite expensive since TCEQ charges administrative fees – yet another barrier for the public to contend with when trying to obtain information.



Earthworks made 619 visits to over 298 well sites, compressor stations, and other oil and gas facilities in the last five years in Texas.



Regulatory Response: Too Little, Too Late

Since 2015, Earthworks has made 63 trips to 25 Texas counties to film oil and gas pollution. We made 619 visits to 298 wells, compressor stations, and processing plants, and documented significant pollution problems at many of them.

During this time, Earthworks staff filed 141 complaints (136 with TCEQ and 5 with TRRC). In addition, Earthworks supported community members in filing their own complaints.

Only 17 (12%) of Earthworks' complaints resulted in actions intended to reduce pollution. Sixty complaints (43%) led to a response by regulators in the form of an operator contact or inspection, but did not result in the issuance of any violations.

Earthworks' research revealed that in many of the instances when TCEQ indicated that inspections took place, they occurred long after the incident that prompted the complaint. TCEQ's inconsistent, delayed response was clear in documentation that Earthworks obtained through PIRs (see box below). Due to a lack of direct communication by TCEQ, pursuing the PIR process was necessary to determine the outcome of complaints and to close them out.

Twenty-two complaints (16%) didn't lead to any actions by regulators. The results of the remainder (42, or 30%) are unclear, as they were filed more recently or could not be closed out at the time of writing, in part because of delays in TCEQ providing information (either directly to Earthworks or in the state complaints tracking system) on whether, when, and how the agency responded to complaints filed months previously.

Earthworks also filed a complaint with the National Institute for Occupational Safety and Health (NIOSH) based on photographs and OGI documentation of unsafe onsite activities by workers – an issue about which the Occupational Health and Safety Administration has conducted extensive research and issued alerts to industry.¹³ NIOSH indicated that the cases Earthworks described would be included in agency activities to investigate and assess chemical exposure risks for oil and gas workers, as well as to more widely disseminate information to operators on such risks and methods to reduce exposure.

RESULTS OF COMPLAINTS — FILED BY EARTHWORKS IN TEXAS AS OF JUNE 2020	
Closed — Action taken to reduce pollution	17
Closed — Other regulatory action taken	60
Closed — No action taken	22
Open Complaints	42
Total Complaints Filed by Earthworks	141



Earthworks uses the following three categories to track the regulator and operator responses to our complaints:

- 1 **Action taken is a regulator action specifically intended to reduce emissions** (i.e., the regulator requires an operator to replace or fix a piece of equipment).
- 2 **Other action is a regulator action** that, while not leading to pollution reductions, does potentially support more oversight (i.e., a regulator inspection or informing an operator of a problem).
- 3 **No action taken** means that agencies lost or ignored complaint submissions or otherwise declined to take action in response to a complaint.

These graphs show the types of responses Texas regulators had to Earthworks' complaints.



Most of Earthworks' complaints generated at least one type of response, although regulators could have more than one response to a complaint (for example, contacting an operator and requiring an equipment fix that reduced emissions).

More broadly, Earthworks' collection of OGI pollution evidence has highlighted conditions in Texas oil and gas regions for media and policymakers. The project has exposed harmful and potentially illegal practices (such as venting unwanted gas), as well as the impacts of the industry's rapid expansion on communities and the climate. The documentation also supported frontline residents concerned about being exposed to pollution and encouraged them to file complaints and demand that regulators respond.

Several years ago, an accident occurred at the Encana Corporation Patton Trust South Gathering Facility in Karnes City, Karnes County. This event caused severe health problems for a nearby family, who have continued to file complaints with TCEQ about odors and impacts. Earthworks has documented intense pollution releases from the facility on several occasions.



DUBIOUS INSPECTIONS AND TIME WARPS: What Public Information Requests reveal about TCEQ's complaint management



Because of TCEQ's lack of direct and timely complaint response, Earthworks filed formal Public Information Requests (PIRs) to obtain documentation on what the agency actually did to resolve identified pollution concerns. Of the 141 oil and gas complaints Earthworks has filed, 84 (over 60%) required formal PIRs to ascertain their fate months later.

This time-consuming and complicated process revealed important information about TCEQ's approach to complaints. We discovered significant inconsistencies and delays in TCEQ's response, to the point that field inspections became meaningless and a lack of operator accountability was inevitable. For example:

Earthworks visited **Energy Transfer Partners' Hoban Gin Compressor Station in Reeves County** numerous times in 2017-2018 and submitted three complaints with OGI video evidence of emitting tanks. In early 2019, Earthworks filed PIRs to obtain investigation

reports. TCEQ provided only one report, noting that a single site inspection was conducted – about 18 months after the first complaint was submitted, six months after the complaint TCEQ claimed to be responding to was submitted, and one month before Earthworks had even submitted the final complaint that TCEQ used as a basis for concluding its investigation.

Earthworks visited **Rosetta Resources' Man O' War Lease in Reeves County** several times in 2017 and submitted complaints with OGI evidence of venting and tank emissions that occurred on four occasions. After numerous attempts to get a response from TCEQ, Earthworks filed a PIR and received an investigation report about a year after filing the complaints. According to the report, it took TCEQ three months to assign Earthworks' complaint to an investigator and another three

months to conduct an investigation. Ultimately, TCEQ investigators visited the Man O' War site when it wasn't operating and the tank battery was shut down for repair – circumstances that made it easy for inspectors to conclude that “no violations or issues were noted.”

In 2017-2018, Earthworks visited the **Primexx Operating Arm-strong Lease in Reeves County** several times and submitted five complaints with OGI evidence of an unlit (i.e., malfunctioning and venting) flare stack. TCEQ's regional

office designated Earthworks' first complaint as Priority 4, which requires a 14-day response time. Yet according to documents received in response to Earthworks' PIR, TCEQ first con-

ducted an inspection nearly two months after the “priority” complaint was filed, and didn't conduct inspections in response to the other complaints.

Of the 141 oil and gas complaints Earthworks has filed, 84 (over 60%) required formal Public Information Requests to ascertain their fate months later.



Pollution viewed with the naked eye versus an OGI camera.

Energy Transfer Partners Hoban Gin Compressor Station, Pecos, Reeves County.



TCEQ Ignores its Own Complaint Response Mandates

In its introduction to the complaints tracking database, TCEQ assures users that, “If you file an environmental complaint with one of our regional offices, we will investigate the complaint according to established criteria for prioritizing, and will provide you with a report on the outcome of our investigation.”¹⁴ In response to Earthworks’ and residents’ complaints, however, TCEQ often didn’t follow this process.

Even submitting formal complaints in keeping with agency requirements for the more complicated “complaints with evidence” procedure (i.e., affidavits and OGI video and photo uploads, a process described above) did not result in a better agency response or regulatory enforcement actions.

In 2019, a TCEQ manager in the Midland office (to which many of Earthworks’ complaints are filed) informed Earthworks that we were “welcome to make complaints by email” and that such informal complaints would go “directly to our complaint coordinators who will review and assign the incident to an environmental investigator.”

However, when staff submitted complaints by email later in the year and still did not receive a response from TCEQ, the same manager contradicted himself and previous communication regarding procedures. He stated that the only option for filing complaints was the formal “complaint with evidence” procedure requiring affidavits and video uploads, and only then would TCEQ “open an investigation into these incidents.” In the meantime, it remains unclear whether and how regulators have addressed the problems – including severe pollution from unlit flares and venting tanks – that led to Earthworks’ complaint submissions and email exchange with TCEQ.



Earthworks visited Rosetta Resources’ Man O’War lease in Reeves County several times and filed complaints about venting and tank emissions. We also documented a worker being exposed to toxic gases.



At the end of 2019, Earthworks sent a letter to TCEQ, the Texas Governor’s and State Attorney General’s offices, and the US Environmental Protection Agency detailing the agency’s chronic failure to comply with its own policies regarding timelines for responding to public complaints and investigating situations that could pose risks to public health and safety.¹⁵ At the time of writing, neither TCEQ nor the other recipients have responded directly to the letter.

While Earthworks staff (trained professionals focused on this project) were able to pursue many filed complaints to a point of resolution, the process was time-consuming and results were often unclear – and certainly unsatisfactory from the perspective of impacted residents. This underscores the fact that frontline residents, without the benefit of dedicated resources and expertise, simply cannot rely on the public complaints system for resolution to the harm they experience.



On several occasions, Earthworks has documented large pollution releases from the Primexx Operating Armstrong Lease, Pecos, Reeves County. The flare stack should be lit and properly combusting gases, but it’s been left unlit to vent straight into the atmosphere. (See more about this issue on page 24.)



FLIR



USING TCEQ'S COMPLAINT SYSTEM IS LIKE, “having another job”

Earthworks assisted frontline residents in Texas in navigating the state's complaint system maze, encouraging them to stick with the process even though obtaining information requires repeated calls and emails to TCEQ on each and every complaint.

One resident remarked that going through the complaint process was “like having another job.”

While in some instances TCEQ responded to the resident complaints (e.g. by contacting operators and conducting basic inspections), the agency often does not take any action to reduce the pollution, odors, and other problems that the residents face every day alongside constant noise and traffic.

For one family in the Permian Basin, operations across the street from and surrounding their rural home caused constant disturbances, stress, and respiratory problems. Earthworks' OGI videos taken over the course of nearly two years revealed significant pollution plumes from open tanks and unlit

flares at nearby sites, including significant pollution plumes from open tank hatches and unlit flares.

Finally, after repeated complaints, TCEQ conducted an inspection and issued a violation to the operator for failing to close tank hatches and control emissions. However, just several weeks later, additional OGI taken by Earthworks revealed that the tank hatches were venting once again. In the meantime, the problems became so severe that the residents were forced to start sleeping at their business in town, and then, eventually, to move.

In the Eagle Ford Shale region, one family has filed repeated complaints to TCEQ about the oil and gas production facility near their home since 2015. Soon after an accident at the site released large volumes of pollution, the family began to experience nosebleeds, muscle pain, headaches, and respiratory problems –

symptoms that have continued as the facility has stepped up operations. Yet TCEQ had not provided the family with every investigation report associated with their complaints, despite direct requests – until Earthworks intervened on their behalf.

Another family in the Eagle Ford Shale kept detailed logs of the odors experienced, which were often linked to health symptoms.

This included smells related to known oil and gas pollutants, such as a “rotten egg” odor indicating the presence of hydrogen sulfide (H₂S), a highly toxic VOC. Even when TCEQ responded to the resident's complaints, the agency

concluded there weren't any problems at the sites surrounding their home. TCEQ even dismissed their odor logs simply because the wind direction tracked at the home did not match that at a weather station – which was 40 miles away.



Intense pollution problems from nearby operations forced Jim and Sue Franklin to leave their long-time rural home in West Texas.



Limited Oversight Capacity as Industry Surges

For decades, Texas has led fossil fuel development in the United States and is now the top state for both oil and natural gas production, as well as the location of much of the nation’s oil refining and petrochemical activity.¹⁶ By 2018, surging development in the Eagle Ford Shale, Barnett Shale, and Permian Basin pushed the United States into becoming the world’s leading oil producer – surpassing both Saudi Arabia and Russia.¹⁷ In 2019, Texas accounted for 41% of US crude oil production and 25% of marketed gas production.¹⁸

Despite production downturns in the wake of the Coronavirus and the oil and gas industry’s persistent financial instability, large producers continue to set their sights on Texas shale regions, in particular the Permian Basin (which straddles Texas and New Mexico).¹⁹ The Permian alone could potentially account for 39% of new U.S. oil and gas production by 2050.²⁰

The table below shows the small number of oil and gas inspectors charged with enforcing Texas’ large and growing number of active emission sources. As noted above, TCEQ and TRRC have different inspection protocols, regional districts, and areas of responsibility (air-related and well site issues, respectively).

However, the lack of publicly available, consistent data on regulatory systems and staff in Texas means that these numbers are not definitive and reflect Earthworks’ best estimates (as detailed in the endnotes). Earthworks’ staff were only able to piece together data on the number of inspectors and inspections conducted from public statements by TRRC. TCEQ does not appear to have corresponding data, except on a small subset of emission sources that the agency is mandated to oversee (i.e., those classified as “major” emissions sources and/or in areas with severe ozone pollution).

Given the difficulty that Earthworks’ researchers had in compiling these numbers, it would be even more challenging for Texans with time constraints to gain a clear picture of the capacity of their public agencies (TCEQ and TRRC) to oversee the state’s oil and gas industry.

Texas has long been the top state for oil and natural gas production, but staff and resources have not kept pace and regulators appear unable to oversee the industry or rein in pollution.

TEXAS’ LIMITED OIL AND GAS INDUSTRY INSPECTION CAPACITY				
	# Producing oil and gas wells and other emission sources in Texas	# Inspectors	Approximate ratio of emission sources to inspectors	# Inspections conducted annually
TCEQ	777 ²¹	Not available	Not available	Not available
TRRC	290,000 ²²	172 ²³	1,686	133,000 ²⁴

In contrast to the lack of information available to the public about state agency oversight, TCEQ provides substantial online resources for oil and gas operators about how the agency conducts the enforcement process.²⁵ Operators can view their compliance history and submit comments or requests for corrections online through a web-based platform.²⁶ Those records on regulatory compliance – and presumably lack thereof – aren’t accessible to the public, who in turn are unable to assess whether and how TCEQ holds operators accountable for non-compliance.



TCEQ also provides operators in a range of industries with an online portal, the State of Texas Environmental Electronic Reporting System (STEERS), through which operators can register and review permits and report other regulatory compliance information.²⁷ Operators also submit “excess emissions” reports (e.g., due to malfunctions, facility maintenance, and startup and shutdown activities), as required by state law.²⁸ The information is available to the public until TCEQ reviews it, at which point only operators with STEERS accounts have access to it. TCEQ presumably then makes some of the data accessible to the public (including through the emission event inventory discussed further below).

Every year, TCEQ prepares an annual enforcement action report that summarizes the agency's actions (such as number of inspections, violations and penalties issued, and complaints submitted) across all its regulatory programs. All data are summarized by region and made available to the public. However, the public has no access to information that can be used to connect TCEQ activities and enforcement actions to specific operators or facilities.²⁹



3

Texas' Pollution Reduction Measures: Small Efforts for Massive Development

Texas plays a starring role in the oil and gas industry's dramatic and devastating impact on climate and health. Yet in the face of such realities, elected officials still haven't set any statewide pollution reduction and climate goals that could be brought to bear to rein in emissions. Instead, Texas continues to actively promote a dramatic expansion of the oil and gas industry, and thus its ever-increasing pollution – while essentially ignoring the consequences both within, and far beyond, the state.

Leak Detection and Repair: Inconsistent and Minimal

Currently, many pollution sources at new and modified oil and gas operations in Texas are required to comply with federal rules to reduce emissions of VOCs and methane using Leak Detection and Repair (LDAR) protocols, as well as the installment of new control technologies.³⁰ However, widespread oil and gas pollution problems indicate that operators may not be complying with the rules.

At the same time, unlike several other leading oil and gas producing states, Texas has not taken on the challenge of reducing oil and gas pollution through state-specific rules, instead relying on a few limited, piecemeal measures. These are embedded in a complicated, multi-layered system of permitting for oil and gas wells and facilities that includes many exceptions and variations.

Texas plays a starring role in the oil and gas industry's dramatic and devastating impact on climate and health. Yet in the face of such realities, elected officials still haven't set any statewide pollution reduction and climate goals.

■ Lack of LDAR for widespread pollution sources.

Operators for some stationary emission sources emitting below 25 tons per year for certain pollutants can apply for a Permit by Rule (PBR).³¹ TCEQ has more than 100 PBRs related to air permitting, including for the oil and gas industry.³² PBRs are designed to benefit operators and regulators by simplifying and streamlining the permit application and review process.³³

PBRs for oil and gas handling and production facilities require operators to repair leaking components – but give them 60 days (or even until the next facility shutdown) to do so after the leak is found.³⁴ At the same time, operators are given the choice of whether to conduct LDAR in addition to weekly “physical” inspections.³⁵ Both the lack of clear LDAR requirements and long repair time are problematic from a health and climate perspective – particularly because TCEQ has carved out a specific exemption for operators with PBRs so they are not required to calculate, track, or report any greenhouse gases.³⁶

PBRs can also facilitate the release of large volumes of pollution. Texas law explicitly excludes large facilities classified as “major sources” under federal law from qualifying for PBRs.³⁷ Yet Texas also allows facilities that are part of these major sources to obtain PBRs as if they are stand-alone facilities.³⁸



This loophole allowing large air pollution sources to obtain PBRs for smaller facilities inside their fencelines effectively exempts many large polluters from more rigorous permit review aspects required for such sources under federal law, such as assessment of existing regional air quality and potential impacts on surrounding areas.³⁹

■ **A faulty “de minimis” assumption.**

TCEQ defines some pollution sources as “de minimis” (i.e., too small to merit regulation), which can be operated without a permit and don’t even have to be registered with the state prior to construction.⁴⁰ For the oil and gas sector, this category includes pipeline valves and equipment used to store “sweet” natural gas (i.e., gas that doesn’t contain hydrogen sulfide).⁴¹

TCEQ is assuming that these sources do not contribute to air pollution – a presumption that does not match reality because many small sources (such as valves and storage tanks) usually exist in a location and across a geographic area that, if leaking or otherwise poorly maintained, can have a considerable pollution load both in the short-term and over time.

■ **Big gaps in standard permits.**

Texas requires oil and gas operators holding standard permits for new and modified wells and facilities to inspect for leaks on a quarterly basis; this applies to production, conditioning, processing, and pipeline transfer sites.⁴² The rule focuses on VOCs and specifically excludes greenhouse gases.

According to the state’s standard permit, operators are required to use gas analyzers to measure emissions and to inspect for fluid leaks “based on sight, smell, or sound” (i.e., auditory, visual, and olfactory, or AVO, inspections). Notably, the standard permit does not require operators to use OGI, with which it is possible to scan an entire site or facility for leaks – a far more effective and comprehensive approach than operators just checking a set of known components with a gas analyzer. This significant monitoring gap would presumably be filled by federal LDAR requirements, if Texas operators follow them.



TCEQ requires operators to fix leaks detected that are above 10,000 parts per million by volume (ppmv) within 15 days, or if that's not "technically feasible," at least at the next scheduled facility shutdown.⁴³ This is a far higher threshold and longer time for leak repair than allowed in other established rules for oil and gas pollution control.

For example, California sets the lowest volume that defines a leak at 1,000 ppmv and requires repair within 5-14 days depending on the size of the leak. Colorado defines a leak as any volume detectable using OGI, or 500 ppmv with the US Environmental Protection Agency's Method 21, and requires repair within 5 days.⁴⁴ Federal LDAR rules require repair of leaks visible with OGI, or 500 ppmv using Method 21.⁴⁵

Texas' standard permits delineate allowable pollution thresholds by volume based on distance from a "receptor" (i.e., a home, workplace, or other location where people could be exposed to pollution). Operations less than 500 feet away from receptors have to control their pollution at lower levels (10 tpy) than those beyond that (25 tpy).⁴⁶

While distance is certainly one regulatory factor for reducing exposure to health-harming pollutants, judging potential harm in terms of *volume* of pollution mischaracterizes potential health impacts, since those are normally expressed as *concentration* of a pollutant. In addition, other factors need to be considered, such as wind direction and rate of the pollution release, to determine risk of exposure. Using only one factor – location – allows operators to pollute at higher levels without considering the likely impacts to health. Federal LDAR rules require repair of leaks visible with OGI, or 500 ppmv using Method 21.⁴⁷

Another issue with TCEQ's standard permit is that it allows operators to decrease the frequency of LDAR if they self-report a low percentage of leaks after two years of consecutive quarterly inspections – to just three times per year and then even further to once a year.⁴⁸ This "step down" provision is counterproductive because leaks can occur at any time and are more likely to occur if equipment is not fully inspected and maintained on a regular basis. In addition, even small leaks can release large volumes of emissions if left unrepaired, so basing the provision on the percentage of leaking components does not address the volume of emissions being released.



TEXAS REWARDS OIL AND GAS OPERATORS JUST FOR MINIMAL COMPLIANCE



TCEQ’s standard air pollution permit includes incentives for operators to conduct LDAR. That sounds good in theory – but in effect may be counterproductive to actually reducing oil and gas pollution.

Operators have the option of claiming emission reduction credits (ERCs) “when evaluating controlled fugitive emission estimates” during LDAR activities.⁴⁹ The level of credit ranges from 75-97% of the pollution that would presumably be controlled through LDAR, depending on the volume of emissions that specific sources are estimated to release and the size of the leak detected.⁵⁰

ERC programs are supposed to allow companies to use pollution reductions from certain operations to offset the pollution they will create through new activities, with the goal of limiting total pollution across an area so as to stay within federal air quality limits. TCEQ’s linking of ERCs to LDAR doesn’t necessarily do this; instead, it is tantamount to giving a student extra credit on an assignment just for turning it in because:

- LDAR is essential to maintaining equipment in a leak-free condition – the same conditions that operators promise to meet when they apply for permits.
- The stated purpose of TCEQ’s ERC program is to allow “participants to generate credits by creating permanent emission reductions.”⁵¹ Leaks can occur, reoccur, and worsen over time – that is, they never are completely eliminated. So stopping pollution from leaks and conducting LDAR to maintain equipment temporarily reduces emissions but does not necessarily lead to permanent reductions in emissions levels.
- The promise of ERCs may lead operators to self-report that they controlled higher levels of pollution from LDAR activities than might actually be the case. Since operators receive a higher percentage of offset emissions from the detection of small leaks, operators may also downplay the size of leaks detected.
- Obtaining ERCs creates an incentive to pollute, since then there would be a greater volume of emissions to control and, in turn, on which to base ERC requests. This could disproportionately impact communities already subject to high levels of pollution.



Tracking of Emissions: Limited, Incomplete, and Opaque

According to TCEQ, the volume of total emissions that all industries reported doubled from 2018 to 2019 – with the largest increases due to Permian Basin oil and gas development and a liquefied natural gas (LNG) terminal on the Gulf Coast that relies on extraction in Texas.⁵² Yet there is no indication that Texas officials have the will or intention to reduce oil and gas pollution over time, and if so, when they will start a process to do so.

Existing pollution reporting and tracking inventories can provide some information for regulators, policymakers, researchers, and the public on trends to determine a way forward. Unfortunately – and alarmingly given the state’s burgeoning oil and gas extraction, processing, and transportation activities – such data is severely limited in Texas, and the information that does exist is inadequate in significant ways.

■ EPA’s Greenhouse Gas Reporting Program (GHGRP).

Texas’ oil and gas operations with the largest volumes of pollution submit annual data on their estimated greenhouse gas emissions directly to the GHGRP.⁵³ This database is frequently used by state and federal regulators and policymakers to judge how much the oil and gas sector emits.

However, the GHGRP only covers sources permitted to release more than 25,000 metric tons of carbon dioxide equivalent (CO₂e) – the common measurement of total greenhouse gases – per year. This effectively excludes tens of thousands of wells, compressor stations, and other facilities in Texas that report lower volumes of emissions or are exempt from greenhouse gas reporting requirements entirely, but nonetheless collectively have a widespread, significant pollution impact.

■ TCEQ Point Source Emissions Inventory.

Operators of facilities classified as “major” emissions sources or that are located in areas that don’t meet (i.e., are in non-attainment for) federal air quality standards for ozone are required by law to report their pollution on an annual basis to the state.⁵⁴

TCEQ’s inventory covers chemical plants, refineries, electric utility plants, and other industrial sites; for the oil and gas sector, large processing plants and compressor stations are also included.⁵⁵ Members of the public can download annual data and search it by location, facility, or operator.

The inventory includes reports for VOCs and all regulated “criteria pollutants” with federally enforceable air quality standards (ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead).⁵⁶ It also requires operators to report federally listed hazardous air pollutants (HAPs), which can have acute health impacts.

However, notably absent from the point source inventory are greenhouse gases (i.e., carbon dioxide, methane, and nitrous oxide). In addition, TCEQ underestimates emissions from oil and gas wells classified as “area sources” (i.e., individual, dispersed sources) – effectively omitting large volumes of flared emissions.



In addition, as with emissions inventories in other states, TCEQ's inventory is based on self-reported estimates by operators. Companies can select from different emissions calculation methods, including company-run equipment tests and monitoring.⁵⁷ Previous research by Earthworks revealed a practice by operators of "mixing and matching" such methods for the purpose of staying below emissions thresholds in permits; it is possible that operators could do the same when self-reporting data to inventories.⁵⁸

■ **Air Emission Event Report Database.**

This TCEQ database is the result of emissions reporting requirements in Texas law.⁵⁹ It contains information on specific air emissions events, both those that are scheduled in advance (e.g., maintenance and shutdowns) and are unplanned (e.g., flare and equipment malfunctions).

The reporting requirements underpinning the database are based on the volume of pollution released (ranging from 1,000-5,000 pounds depending on the pollutant).⁶⁰ As a result, it appears that for the oil and gas sector, primarily large facilities (e.g., processing plants and compressor stations) are reporting emission events. Texas law specifically excludes greenhouse gases from emission event reporting requirements.⁶¹

The emission event reports are searchable by specific incident numbers or through broader searches based on timeframes, event types, and counties.⁶² It is possible for users to view the volumes of pollution released in each individual event. These include VOCs and criteria pollutants in pounds – but notably not greenhouse gases. In addition, there is no way to compare pollution volumes across multiple events or aggregate data (e.g., for an entire county or all events related to specific facilities).

Complete, current information is vital for frontline residents needing to know when and how they may have been exposed to excess emissions in their communities that could impact their health. Environmental health research confirms that large, episodic emission events can cause health impacts immediately, or in as little as 1-2 hours, in part because toxicity is determined by the concentration of the chemical and intensity of exposure.⁶³

While specific incident reports in the event database list the actions taken by operators to "correct the problem," they do not provide information on how TCEQ responded or whether any enforcement actions were taken for releases that should have been preventable. It is therefore impossible to know if the agency took steps to hold operators accountable for the unplanned pollution releases listed in the database



Underreported flaring and venting sends Texas gas up in flames and smoke

Across Texas, operators are releasing natural gas straight into the air because it's easier and cheaper than processing and selling it—although the practice is devastating for climate and health.

State regulators support flaring by fast-tracking drilling permits and granting nearly all operator requests to increase flaring, despite laws ostensibly limiting the practice.⁶⁴ A recent analysis found that gas flaring has become so extensive as to violate a state law that requires the Texas Railroad Commission to address oversupply of product; in 2018 the gas Texas operators wasted through flaring was worth nearly \$750 million.⁶⁵

Earthworks' field investigations have revealed an even more pernicious problem: the direct venting of VOCs and greenhouse gases from unlit flare stacks. The problem appears to be on the rise, possibly because it takes operators more work and resources to maintain and properly operate flares than to just let them vent for long periods of time.⁶⁶

Venting and flaring highlights big gaps in emissions reporting and tracking. A 2019 study in Texas compared emissions from flaring and venting in Texas RRC records with National Oceanic and Atmospheric Administration (NOAA) records from satellites.⁶⁷ Both data sets show a rapid increase in emissions from the practice in recent years, and the NOAA data indicate levels double those claimed by operators. The researchers attribute this in part to a regulatory loophole that allows operators to skip reporting pollution from certain production practices.⁶⁸

A market research company has also identified wide discrepancies in emission volumes from flaring between operator self-reported data and satellite measurements taken by federal agencies, concluding that operators may be deliberately under-reporting pollution from flaring so they can keep producing oil unhindered by regulations.⁶⁹

To put this problem in perspective, another analysis of reported versus measured flaring emissions concluded that twice as much natural gas is wasted in the Texas Permian Basin as industry claims, enough in fact to serve all the heating and cooking needs of the state's seven largest cities.⁷⁰



4

Looking Ahead and Recommendations

When it comes to reining in oil and gas pollution and addressing the industry's climate and health impacts, Texas' Governor and regulatory agencies are far behind the curve of even the limited progress occurring in many other states.

Significant reform will be needed in how both TCEQ and TRRC adhere to their legal mandates and oversee the industry – and in turn, decrease the impunity with which the Texas oil and gas industry currently acts and increase the degree to which it is held accountable.

In the meantime, there are specific steps that Texas regulators can take to be more responsive to the public and paint a clearer picture of the pollution the state is creating:

- 1 Adopt a public service lens when assessing complaint systems.** A complaint system should serve the impacted public. Currently Texas' system only does so if complainants invest considerable time and effort, or indirectly, if groups such as Earthworks make use of it in service of impacted communities. A properly functioning system would allow residents to use the complaint system themselves easily and without assistance.
- 2 Shift the burden of proof for problems underpinning complaints.** Filing complaints and assessing agency response in Texas demonstrates the need for a fundamental shift regarding to whom regulators are accountable, and where the "burden of proof" regarding impact lies. Contrary to the agencies' current attitude, if the problems residents are experiencing haven't been resolved, inspectors should continue to investigate until operators can demonstrate they're not causing harm.
- 3 Work directly with impacted community members.** Inspectors often "resolve" complaints by contacting operators to inquire whether there was an operational problem or not. All inspectors in all TCEQ regions should be required to follow up with residents directly and promptly, provide them with a complaint number so they can track their submissions, and consider their concerns as possible grounds for enforcement action. The people living daily with oil and gas impacts should be confident that regulators won't dismiss their experiences in favor of communication with industry.
- 4 Improve the publicly accessible tracking system for complaints.** Any resident should be able to easily obtain information about the oil and gas facilities that concern them, including the status of complaints they, or others, have filed about specific operations and concerns (e.g., persistent odors, noise, and onset of health symptoms).

The timeframe within which TCEQ has to respond to complainants (not just conduct a complaint investigation) should be made publicly available. Impacted residents should not be forced to make multiple calls, send numerous emails, file Public Information Requests, and constantly "connect the dots" among several sources of information.



5 Create a publicly accessible map of all complaints. Community members should be able to easily see where complaints have been filed, via a map that reflects data in the complaint tracking system. They should be able to identify the operators and facilities nearby that could be connected to the problems they're experiencing. This map could also include data layers such as well sites, violations and inspections.

6 Start a process to adopt statewide oil and gas pollution control rules. There is simply no excuse for the nation's top oil and gas producing state – particularly in the era of climate crisis – to continue to allow industry to operate without comprehensive rules to reduce emissions and a robust system to enforce those rules. States have a responsibility to safeguard their own residents, regardless of the changing status of federal rules.

Going forward, state rules should include, at minimum, coverage of all wells and facilities; no loosening of requirements through “step down” provisions, as is currently the case in Texas air permits; more frequent and timely LDAR protocols; and public notification of significant pollution events.

7 Rein in flaring and prohibit unlit flares. The prevalence of unlit flares in Texas raises the question of why operators seem unable to ensure proper operation of their equipment. Operators should be required to size, operate, and maintain their flares to ensure maximum combustion efficiency and minimal methane and VOC releases, and to install auto igniters and sensors to detect when a pilot flame is extinguished and shut off the flow of gas. Operators should consistently use OGI to assess combustion efficiency and emissions.

Texas operators frequently assert that they have to flare gas due to a lack of pipelines – but currently, TRRC is ignoring its legal mandate to take prompt action when the supply of oil and gas exceeds reasonable demand.⁷¹ TRRC should require operators to reduce production and stop issuing new extraction permits – both important steps as markets continue to face an oversupply of oil and gas.

8 Expand, update, and improve the state emission inventories. In light of the established, significant and increasing impacts of the oil and gas industry on climate and health, there is no excuse for Texas' inaction to comprehensively track and assess that pollution over time.

TCEQ should develop an emissions inventory for, or integrate into its existing one, well sites and associated equipment (i.e., “area sources”). Operators should be required to report greenhouse gases (i.e., carbon dioxide, methane, and nitrous oxide) and hazardous air pollutants to all emissions inventories. At the very least, the legislature should remove the provision in state statute that specifically excludes greenhouse gas reporting – a key step for a leading oil and gas producer in the era of climate crisis.

Given the significant – and not yet fully quantified – role of Texas' oil and gas industry in creating pollution that harms health and the climate, it is important for the public (including advocates and policymakers) to be able to comprehensively track both “normal” emissions and events that cause pollution above permitted levels (e.g., malfunctions and “blowdowns”).



State emissions inventories and the Air Emission Event Report database should be easily searchable by facility and operator so that the pollution being released (both type and volumes) can be clearly linked to specific companies and areas.

- 9 Expand field measurement projects to determine actual volumes of oil and gas pollution.** Operators should continue to be required to report data to state and federal inventories, but additional data are needed to obtain a full, accurate picture. Several studies demonstrate that measured emissions can be significantly higher than what operators report to inventories.⁷² Direct measurement should occur, at a minimum, near significant pollution sources, such as compressor stations, processing plants, and large well pads. TCEQ should then use the results to verify the accuracy of the data that operators self-report to the point source emissions inventory.
- 10 Expand and improve both greenhouse gas and VOC monitoring in oil and gas producing areas.** Accurate data is the only way to know the levels of health-harming pollution to which frontline residents are being exposed. Given the role of methane and ethane in forming ground-level ozone pollution, reducing oil and gas emissions will be key to Texas' ability to maintain compliance with federal air quality standards. Currently, there are only a few monitors in areas where the number of oil and gas wells and facilities are rapidly increasing, and such monitors are glaringly absent from West Texas.⁷³



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