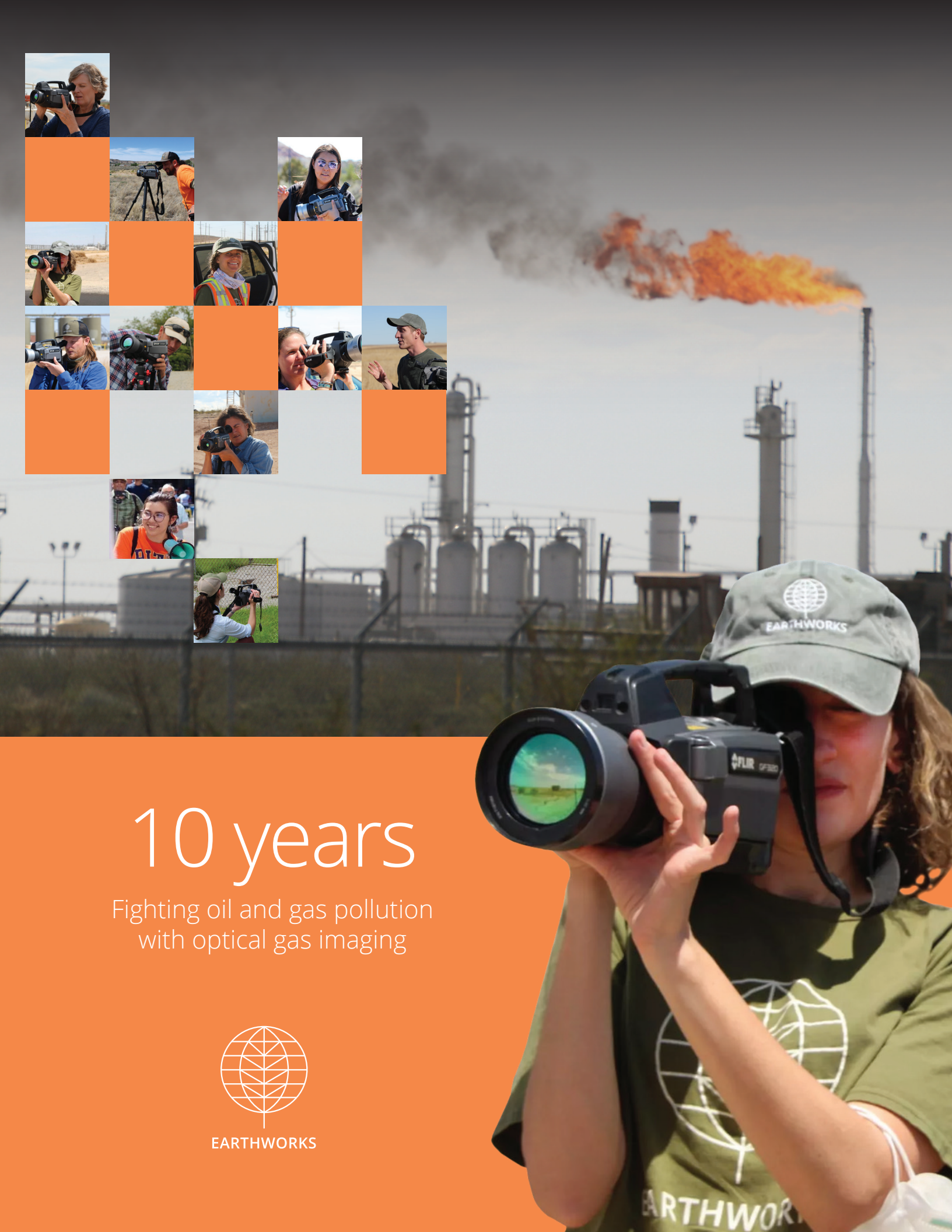
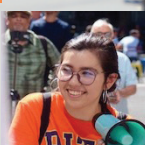
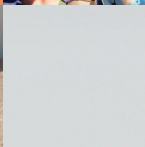
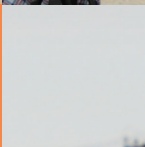
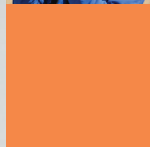
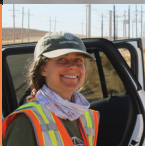




10 years

Fighting oil and gas pollution
with optical gas imaging



EARTHWORKS



Making oil and gas pollution visible

Seeing is believing

“What can we do for people living in the oil field?” asked an Earthworks board member in 2014. Texas organizer Sharon Wilson proposed a \$100,000 fund-raising campaign to purchase the organization’s first optical gas imaging (OGI) camera. We knew this would be a powerful tool in the hands of communities advocating a fossil fuel decline.

An early success in California

In October of 2015, methane was spewing from a blown out underground natural gas storage facility at the Aliso Canyon Oil Field in Los Angeles, California, near the community of Porter Ranch. 100,000 metric tons of methane and other toxic gasses were released over four months. The OGI footage collected by Earthworks was aired on MSNBC’s Rachel Maddow show and many other national outlets. Community groups continue to advocate for shutting down the Aliso Canyon facility.



What is Optical Gas Imaging?

The FLIR (Forward Looking InfraRed) GF320 OGI camera detects and records volatile organic compounds, carcinogens, and greenhouse gases. It is marketed as a tool for oil and gas operators and government regulators to maintain equipment and identify emissions, and the GF320 is the industry standard. Earthworks was the first advocacy organization with staff trained and certified to use it.



PHOTO: Porter Ranch California, a suburban neighborhood of Los Angeles.

10 years on the side of people

17.3 MILLION PEOPLE IN AMERICA LIVE WITHIN A HALF MILE RADIUS

of oil and gas extraction. People on the fence line of oil and gas often experience foul odors, nose bleeds, asthma, and other health problems. The oil companies assure them that everything is OK. State regulators say what the drillers are doing is legal. Over and over, people have said that Earthworks was the first organization to take their worries seriously. Over and over, we have aimed an OGI camera at a faulty valve or a leaky tank, and seen billowing plumes of climate-warming methane, with carcinogens such as benzene along for the ride.

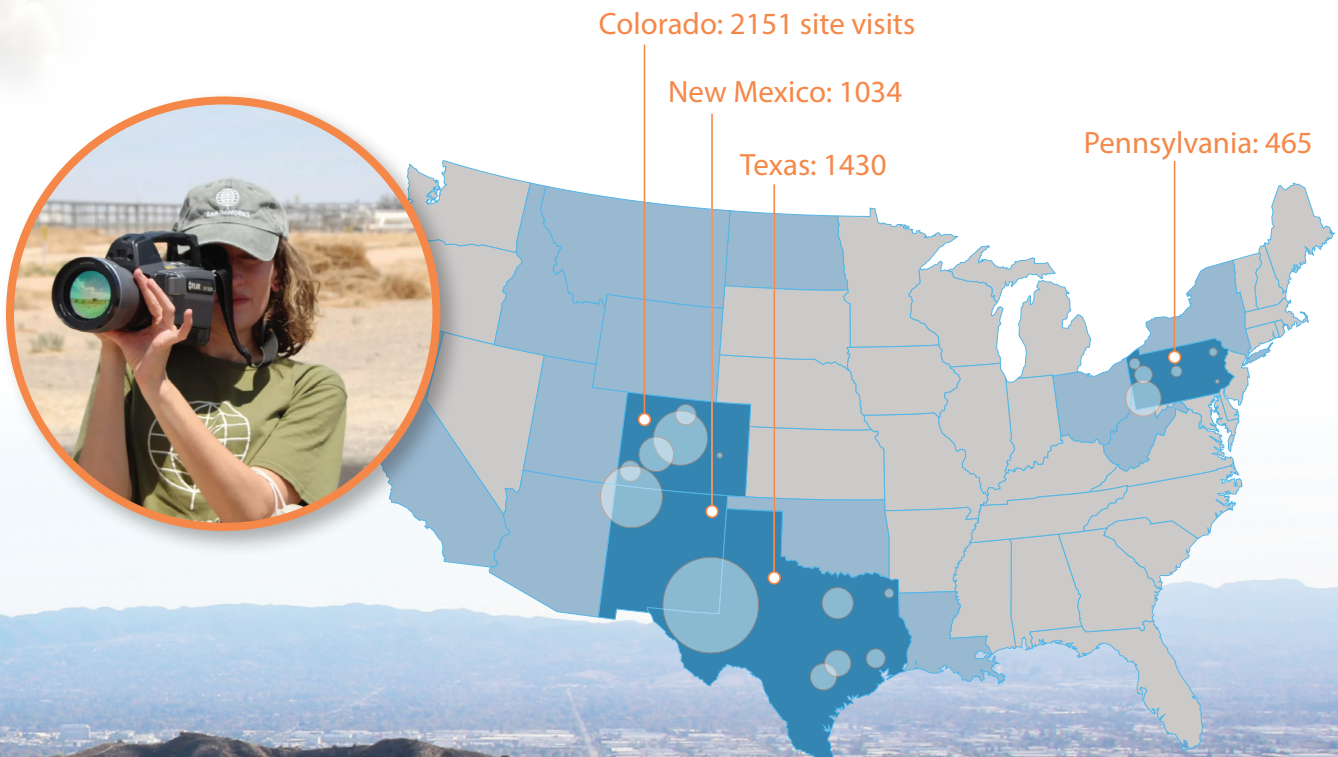
The oil and gas industry is a powerful foe, and the regulators are accustomed to yielding. But, working with allies and partners, Earthworks is changing the story, step by step. Our OGI efforts have taken us to 16 states. We have focused on the Navajo Nation and four states: Colorado, New Mexico, Texas, and Pennsylvania, where 60% of U.S. oil and methane gas is extracted. In 10 years we have made 6,266 site visits. The following pages tell some of what we have achieved.

With over 6,200 total site visits, 5,080 were in four key oil and gas producing states—Colorado, New Mexico, Texas and Pennsylvania.

“

I hope others look at this example and act swiftly because this is happening all over the country where oil and gas operations are located. We all should have the right to breathe clean air and the laws that are currently in place do not allow that and that is wrong.”

— Von Bortz, of Larimer County, Colorado, after his gas facility neighbor, Prospect Energy, was shut down



Building on our Successes

COLORADO — Von Bortz, a resident of Larimer County, Colorado, frequently smelled a sulfuric, rotten egg smell. He was dizzy, with severe headaches and nausea. Larimer is home to 370,000 people and 105 active drilling wells. Bortz learned that he was getting sick from toxic hydrogen sulfide pollution from the Prospect Energy company.

Bortz filed complaints, but local and state governments couldn't do anything. He shared his experiences with the

Coloradoan.

Operator replaces leaking tanks at oil site near Fort Collins, but concerns persist



See the oil storage site that prompted months of air quality complaints

Wochit

Earthworks team. Between 2021 and 2024, we made 64 separate surveys of local Prospect Energy sites with our camera, and filed 14 separate complaints to the state of Colorado.

Our evidence helped reporters produce stories in December, 2021 and February, 2022 in the Fort Collins *Coloradoan* and contributed to the adoption of stronger oil and gas regulations in Larimer County

Finally, in July 2024, Larimer County and the state of Colorado reached an agreement with Prospect Energy that settled outstanding fines and forced Prospect to close its sites, clean up its polluted equipment, and leave the state. It's a huge triumph for public health.

NEW MEXICO — In March 2019 New Mexico State Land Office Commissioner Stephanie Garcia

Richard toured oil and gas operations in New Mexico's Permian Basin with Earthworks. Her comment at the time was, "With the impacts of climate change knocking on our door, now is the time to act." In 2023 the State Land Office banned new oil and gas wells on state land within one mile of schools.



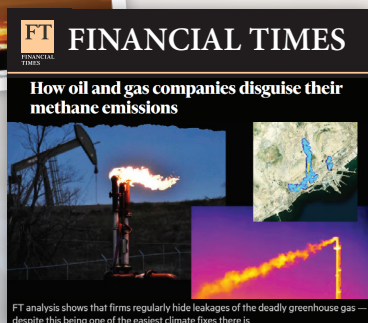
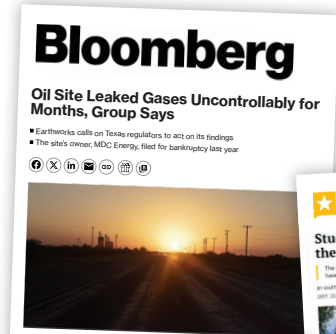
“ Tribal members will lead the way in making sure their ancestral land can be revered for all future generations.”

— New Mexico State Land Office Commissioner
Stephanie Garcia Richard

Northwest New Mexico.

PHOTO: Nathalie Eddy

TEXAS — Texas pursues a pro-industry agenda with disregard for public health. We have shone a light on that disregard by teaming up with dozens of news organizations at the local, state, national, and international levels to get the story out, including: *Financial Times*, *Bloomberg*, *The Texas Tribune*, *PBS NewsHour*, *The New York Times*, and *Spectrum News*.



PENNSYLVANIA — Melissa Ostroff, Pennsylvania Policy and Field Advocate at Earthworks, joined community members for a walk through Boyce Park in Allegheny County in 2022. The trails in this park were populated by runners, cyclists, and families with children taking a walk. She noted a strong sulfuric odor and eventually found the source: a low-producing oil well, "Methane and volatile organic compounds were gushing into the open air, like someone aiming a hose of carcinogenic pollution directly at a popular park trail."



The footage captured by Melissa's OGI camera was key to banning new drilling in parks in Allegheny County. A story about Melissa's work in the *Wall Street Journal* was instrumental in guiding the Biden administration's regulation of methane which will be difficult for President Trump to reverse.



Leaning into Evolving technology

AN EVER-INCREASING ARRAY of technologies are expanding what we know about oil and gas pollution and its impacts on communities and the climate. These tools are changing how we can monitor, measure, and mitigate pollutants like methane and volatile organic compounds — and some of these tools make it harder for the industry to hide pollution and greenwash lackluster efforts to reduce that pollution.

But, like any other set of tools, some are well-designed and well-deployed and others are simply greenwashing. With the help of OGI cameras, skilled staff thermographers, and our dedicated research team we are ground truthing the efficacy of some of these tools.

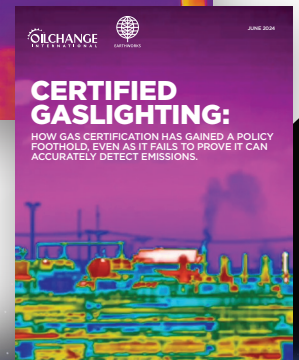
For example, in 2022, we began investigating the tech startup, Project Canary, their Canary X “continuous emissions monitors,” and their efforts to re-brand fossil gas as “responsibly sourced.” What we found was maddening, but unfortunately not surprising. In two different reports — *Certified Disaster* and *Certified Gaslighting* — we proved that Canary X monitors routinely failed to detect pollution. Project Canary’s scheme to “certify” fossil gas as “responsibly sourced” was just another example of greenwashing.

Following the release of our report, *Certified Disaster*, which exposes the failures of gas certifiers like Project Canary, Earthworks and allies petitioned the Department of Energy to focus on a rapid transition away from fossil fuels and stop efforts to develop a “certified gas” standard. In July 2023, the Biden administration halted its involvement in “certified” methane gas standards.

In August, the CEO of Project Canary resigned and the company announced a strategy shift. Our report also has potential in influencing the outcomes of the new EPA methane rules, and administrations in California and Colorado have told us the report was influential in their decisions.



With OGI cameras, skilled thermographers, and our research team, we are ground truthing and refuting industry’s claims.



A MORE PROMISING TOOL is the growing fleet of airplanes and satellites that can detect and quantify methane emissions. We recently combined OGI and satellite data in complaints made to regulatory agencies in both Pennsylvania and Colorado. Our complaints resulted in agency investigation, a notice of violation, and equipment repairs.

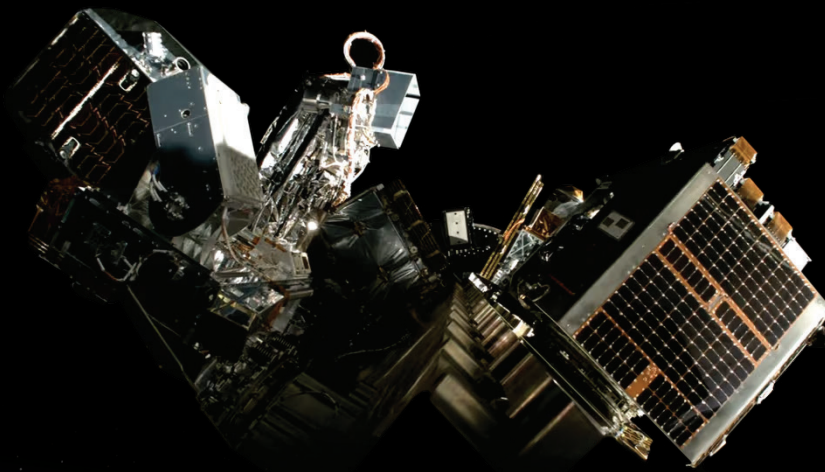
As part of our Data to Action project, we are working with partners to pair OGI and satellite data to:

- ➔ Bolster grassroots campaigns for local air quality protections and state enforcement in the U.S. and Latin America
- ➔ File complaints with regulatory agencies, spark investigations, and demand fixes
- ➔ Watchdog oil and gas companies' claims about clean operations
- ➔ Strengthen cooperation among local, national, and international movements to phase out fossil fuels

“

Satellite imagery and OGI technology together allow us tell visually compelling stories of pollution across the oil and gas supply chain.”

— Dakota Raynes, Ph.D.
Senior Manager of
Research, Policy, and
Data, Earthworks



Carbon Mapper's satellite can observe methane and CO₂ emitters across the globe. PHOTO: Carbon Mapper.

When governments retreat, We build community power

1

IN 2020, NINE YOUNG WOMEN, known as the “Warriors for the Amazon,” from Ecuador sued and won a landmark environmental human rights case against the government of Ecuador, known as the “Mecheros Case.” Mecheros are flares that burn and release the greenhouse gas methane, as well as other pollutants that are harmful to health, at oil and gas facilities. It was argued, and proven, in this case that this practice harmed the health of nearby residents, specifically women and children.



Earthworks' Patricia Rodriguez onsite in Ecuador.



In May 2025, Earthworks' OGI findings were used in a second case, challenging multinational energy company, ENAP, and the Ecuadorian government's failure to end flaring and implement the sentence. This victory is a powerful demonstration of how OGI evidence can strengthen community testimony and lend power to voices that have been previously ignored.

2

CULTIVANDO: A COLORADO COMMUNITY WINS WITH THE HELP OF OGI. In July 2024, the Commerce City, Colorado community discovered that Magellan Midstream had applied for permits to expand their Dupont oil storage terminal, located next to an elementary school and residential community. There was no consultation with the community or notice provided by Magellan or the state of Colorado. Staff at the school found out about the plan after they were contacted by local media for comment.

This neighborhood already receives more than its fair share of pollution, and is a considered a disproportionately impacted community by the state of Colorado, meaning it “experiences higher levels of health harm from pollution” than other Colorado communities.

Earthworks' responded to Cultivando, a powerhouse community health organization, and provided OGI images of pollution from the facility that were used at public meetings, in discussions with city and county officials, and in local news stories. And by September Magellan had withdrawn its permit applications.

This success is a testament to Cultivando's incredibly talented staff and the power residents can have to protect their communities, and to the power of Earthworks' optical gas imaging to counter industry claims.

Flaring in Ecuador.

PHOTO: SL-Photography/stock.adobe.com/

3

IN THE EASTERN AGENCY OF THE NAVAJO NATION, northwestern New Mexico, oil and gas extraction causes environmental damage. There is little accountability because the area's checkerboard land ownership — a jumble of tribal, federal, state, allotment, and private



Earthworks' Kendra Pinto onsite on the Navajo Nation.

lands — obscures regulatory authority in a largely remote region. When Kendra Pinto, a Navajo tribal member who lives in the Checkerboard region, got the chance in 2021 to learn to use the camera, she responded, "Yes! Teach me!"

After witnessing several events of plumes of methane next to local schools, she said, "We hold the operators and the regulatory agencies accountable, because air has no boundaries."

In September 2024, the Navajo Nation approved its first-ever Minor Source Program to limit methane pollution from oil and gas operators. Kendra and other activists are now mobilizing community support to ensure these rules remain strong and effective.

“

Whatever you say, whatever you do out there, we fully support you. You're speaking for us, too."

— Sam Sage, Community Service Coordinator for Counselor Chapter House, about Kendra's OGI work



Sam Sage in Earthworks' award-winning video, *No Man's Land*.

OGI infrared visuals—changing policy to Slow global warming

2014 | Earthworks launches new era with
OGI camera purchase

Seeing is Believing

2015 | In one year, Earthworks collects video evidence of oil and gas pollution across six states. The impact these images have on reporters and state regulators leads Earthworks to adopt a new slogan: *Seeing is Believing*.

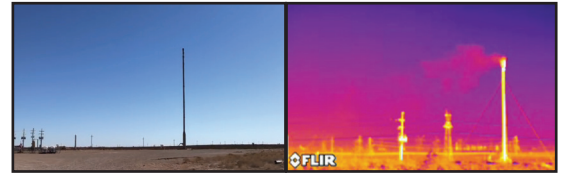
2016 | **Aliso Canyon blowout, the national stage and Obama Era Methane Rules**
Earthworks and the Environmental Defense Fund catch the nation's attention with Aliso Canyon footage, contributing to President Obama's enactment of national rules to cut emissions from new sources.

2017 | **A shift toward the states, industry attacks and Earthworks fights back**
Donald Trump's election delays the implementation of national methane rules. The oil and gas industry sets its sights on Earthworks, attacking the credibility of the same camera they use in the field. A grant from the MacArthur Foundation expanded our field team by four people and a third camera, and accelerated our impact on state regulations.

2019 | **New governors, news attention, and renewed commitment**
Education efforts by Earthworks and allies help focus new governors in Colorado, New Mexico, and Pennsylvania on making major commitments to addressing oil and gas methane emissions from their states. Earthworks helps reinvigorate the fight against methane pollution by taking members of congress on field tours in Colorado and New Mexico. Colorado passes landmark bill SB181, focusing regulators attention on community health, and enabling counties and cities to create their own rules.

AT RIGHT, TOP: Earthworks' Pete Dronkers demonstrates the OGI camera with U.S. Reps Alexandra Ocasio-Cortez and Joe Neguse.

BOTTOM: Secretary of Interior Deb Haaland and U.S. Rep Raúl Grijalva on a oil and gas field tour in New Mexico.



OGI images allowed us to record invisible pollution for the first time.

Newsweek

Methane Gas Crisis: How California's Porter Ranch Became a Ghost Town



Deregulated Natural Gas Flaring Causing Health and Environmental Impacts in Texas

Observer

Methane Sleuths Monitor Seeping Gases From Oil and Gas Drilling

The New York Times

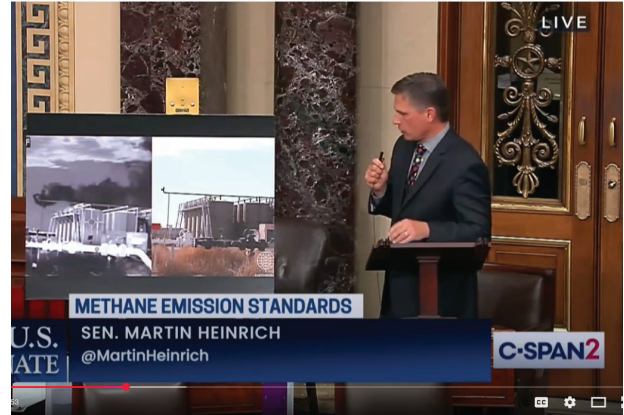
California's Gas Gusher is Stanchied, But Where are Tougher U.S. Rules on Leaks?



2021

A new hope and Earthworks on the floor of the Senate

On his first day in office, President Biden signs an executive order to rejoin the Paris Climate Agreement. Senator Martin Heinrich (D-NM) presents Earthworks OGI footage on the floor of the Senate, arguing for advancing federal action to tackle climate change. Earthworks expands our OGI work into the Navajo Nation and the Four Corners region.



Senator Martin Heinrich (D-NM) presents Earthworks' OGI footage on the floor of the Senate.

2022

International OGI

Earthworks hires an OGI camera operator to work in Latin America, and conducts investigations in Argentina, Brazil, Colombia, Ecuador, and Mexico.

2023

The EPA restores and strengthens the Obama-era rules to cut methane, instructing states to create their own regulations

Data to Action — demanding an end to oil and gas expansion worldwide

Earthworks goes to court to oppose an EPA rule that delays most oil and gas methane compliance deadlines. With satellites and new tools for documenting methane emissions, Earthworks is teaming up with allies to expose the persistent failures of industry and regulators and renewing demands to end oil and gas expansion around the globe.

2025



Earthworks is expanding investigations into Argentina, Brazil, Colombia, Ecuador, and Mexico.

Thank you! Help us write the next chapter in Earthworks activism.



Thank you for all your
generous help through the years!

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Geeta Aiyer
Cristina Bordes
Katherine Borgen
Diane Brinkmann
LP Brown Foundation
William C. Bullitt Foundation
Cathy Carlson
Cornell Douglas Foundation
Cornelia Fund of the Pittsburgh
Community Foundation
Denver Foundation
The Educational Foundation of America
Embrey Family Foundation
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Partnership Project
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Underdog Fund of the
Common Counsel Foundation
Women Donors Network

From the cover—

Meet our certified thermographers,
current and past, left to right.



Sharon Wilson



Josh Eisenfeld
Kendra Pinto



Melissa Ostroff
Mandy Sackett



Charlie Barrett; Pete Dronkers
Nathalie Eddy; Andrew Klooster



Patricia Rodriguez



Anais Peterson



Leann Leiter



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Contact Ann Corbett at 202-887-1872 x106 or
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