The Big Take Americas Hot Garbage Problem BusinessWeek 2025 07 01

Businessweek The Big Take

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Bulldozers compact and cover trash at Chiquita Canyon Landfill in Los Angeles County. Source: Shutterstock

Beneath layers of waste, landfills around the US have been reaching scorching temperatures, and neighbors have been getting sick.

By Laura BlissRachael DottleJuly 1, 2025

Last year, Brandi Howse's annual mammogram returned a grim diagnosis: Stage 3 breast cancer. To save her life, she had her breasts removed, then her ovaries. She's free of the disease now and continues to take medication. It was all a particular shock, says Howse, who is 50, because her mammogram the year before had been clean. Several of her neighbors on Lincoln Avenue in Val Verde, California, have similar stories of cancers, autoimmune disorders or heart problems that seemed to come out of nowhere. She and her neighbors say they can't be sure of the cause, but given the number of people who are sick in their community of about 3,000, they have a guess.

Hidden behind a foothill about 500 yards from Howse's front door, on the northwest edge of Los Angeles County, sits Chiquita Canyon Landfill, one of America's largest repositories of municipal waste. While the landfill has often seemed on the verge of closure, it's grown by more than 200% over the quarter-century Howse has lived nearby. For a lot of those years, things seemed OK. The truck traffic could be annoying, pungent odors would sometimes waft into town. But that felt like more of a nuisance than a crisis until the spring of 2023, when a new level of smell settled in.

Part of the landfill has been topped with a plastic cover to limit smells and toxic gases escaping into the community.

**Chiquita Canyon Landfill**

The smell changes from day to day. Sometimes it's like rotten eggs in the sun. Other times it's more of a mysterious chemical sweetness. No matter what, it stinks. Like many of their

neighbors, Howse and her family gradually stopped using their yard or going outside much at all, but the stench has continued to haunt them inside too, even with windows shut and air filters running. And it's not just a matter of reeking garbage. By the summer, Howse says, she was taking pills to deal with an unrelenting headache. Her husband, Steven, who almost never got sick, was fighting chronic sinus problems. The youngest of their four kids, then 11, developed nosebleeds that gushed uncontrollably.

Howse and her husband considered selling, but on top of the financial barriers, they struggled with the ethics of putting another family in the same situation. "We kind of feel trapped," Brandi says.

The family filed a report with the local regulator, the South Coast Air Quality Management District. At that point, in mid-2023, their complaint was one of 900 or so. By the time Howse got her diagnosis in March 2024, that number had topped 9,500. Since then, the regulator has slapped Chiquita Canyon LLC, a subsidiary of Waste Connections Inc., with hundreds of air-quality and health-code violations and ordered it to fix the place up. Yet the smell has persisted with no simple solution, because what's driving it is something buried beneath the waste: a complex and dangerous chemical reaction whose very nature is in dispute. The state suspects garbage is smoldering underground as a result of the company's actions. But Waste Connections—like much of the waste industry—says that nothing is on fire and calls it something else, leaving locals like Howse not only physically ill but also feeling gaslit about what's happening in their backyards.

The Howses with the Chiquita Canyon Landfill in the background. Photographer: Philip Cheung for Bloomberg Businessweek

Here's the assessment from California's Environmental Protection Agency: In early 2022 a closed section in the landfill's northwest corner began overheating, eventually reaching temperatures above 200F (93C). That's nearly 40% hotter than the federal EPA's standard for landfill operations. As the waste slowly cooked, it belched out toxic gases, elevating nearby levels of hydrogen sulfide, carbon monoxide and benzene, which can damage DNA and cause leukemia after enough exposure. Large amounts of leachate (basically, trash juice) built up and bubbled, boiled and even shot into the air like geysers.

One such geyser appeared to gush from a landfill gas well that exceeded the legal limit for benzene, as did several other samples of leachate, according to CalEPA. Other officials cited Waste Connections for allowing the leachate to seep into waterways, an allegation the operator has disputed. Cracks and fissures have worn away at the landfill's surface, state regulators say, threatening to rupture storage tanks of toxic leachate, which the company also denies. Health

officials are investigating a possible cancer cluster because of the number of residents who've fallen ill. Pets have inexplicably dropped dead. Val Verde resident Erin Wakefield says she's arrived home more than once to whole swarms of insect carcasses strewn around her property. "This is so much bigger than a trash fire," she said at a press conference in April. "This is a state of emergency."

Leachate emanating from a gas well at Chiquita Canyon Landfill in November 2023. Source: South Coast AQMD

For about a year, Waste Connections went about business as usual, accepting trash deliveries from around LA and sucking methane out of the landfill to convert into sellable energy. After receiving several violations from air-quality officials, the company publicly acknowledged that something was wrong. (The company says it was already taking actions internally to understand and address the atypical conditions.) In an August 2023 statement on its website, it attributed the issue "to an abnormal biotic or abiotic process (also known as a landfill reaction) taking place within a portion of the Landfill waste mass." The company emphasized one claim in particular: "This reaction is not the result of a fire or other combustion." Waste Connections repeated this claim in a report the South Coast AQMD ordered it to produce that fall.

At the very least, though, the phrase "garbage fire," as in the online cliché for a bad situation, is an apt metaphor for the situation in Val Verde and towns like it. At least 10 other US landfills have overheated in similar fashion since 2006, and experts say there are likely far more that haven't been reported. Chronic headaches, nosebleeds and nausea are common near these sites. At one in Virginia, steaming chimneys of gas and leachate led locals to wear gas masks and tape shut their windows to survive what they called "the beast." At another, in St. Louis, responders once drafted evacuation plans for fear that the hot temperatures would spark a nuclear disaster at an adjoining landfill with buried radioactive waste near a community that now has dozens of cancer cases.

Benzene Emissions from Chiquita Canyon Landfill Have Surged

Source: South Coast Air Quality Management District

Note: Data not available for 2012 and 2013. 2022 is the latest available annual data reported.

For affected communities, part of the challenge is getting all parties to agree on what's driving these meltdowns, or even what to call them. Nobody has the full measure of what it looks like, exactly, in the depths of the Chiquita landfill, because most of what's happening is many feet below the surface of the garbage pile. And the range of chemical reactions that arguably constitute fire makes "fire" a slippery term.

In most cases, the industry's preferred phrase is "elevated temperature landfill," or ETLF, which operators say has nothing to do with fire. Regulators often use technical terms like "subsurface oxidations" or "smoldering events," what the less technically minded might call fires without the flames. The neighbors tend to just say fire. "The waste industry does not want to call it burning, even though it smells like burning," says Becky Evenden, a former chemical engineer who lives a few miles from Bristol Landfill in Virginia. "Even though you see smoke." The distinction isn't

trivial. Federal regulations explicitly forbid operators from running landfills in a way that starts fires. By classifying these ailing waste piles as something else, several scientists say, the industry points the finger away from their own management practices.

Waste Connections disputes that characterization and many of the claims in this article. "Chiquita uses the term 'ETLF' to be precise, not to obfuscate," a spokesperson for Waste Connections' Chiquita Canyon subsidiary said in a detailed statement that cited several academic publications and an industry white paper using the phrase. "Precision in how the event is understood and described is crucial to ensuring that the appropriate response and mitigation measures are taken." Waste Connections and other industry groups, as well as the EPA, say that the steps for stopping a landfill fire are different from those used to manage an ETLF. "There is no fire at CCL and it would greatly exacerbate conditions if Chiquita responded as if there were," the spokesperson said.

In recent years, the industry has pushed back on protections that advocates say are designed to prevent fires before they're too late to stop. The EPA has unraveled at least one rule described as critical by environmental engineers, and court battles have only occasionally yielded significant victim settlements. In the course of reporting this article, *Bloomberg Businessweek* found that regulatory responsibility for enforcing even the most basic landfill rules varies widely depending on the region and state. Much of the data that might predict subterranean reactions—fires or otherwise—remains buried in monthly operating logs or reports filed to a patchwork of agencies, with no centralized system to track it.

For many of the more than 2 million Americans who live within a mile of a landfill, what all of this means is that they're living within a mile of a potential time bomb, with little way to know when it might go off. Without better data and stronger efforts to understand and contain crises like the one at Chiquita Canyon, it's almost impossible to know, as Brandi Howse asks, "how much trouble are we in?"

Strap on a pair of goggles for a lesson in chemistry. In a municipal landfill, solid waste—full of food scraps, paper, metal and glass, plus errant bits of e-waste and other hazards—is dumped into a giant pit in layers several feet thick, which are then capped with soil. Bacteria eat away at the organic matter, mostly tooting out carbon dioxide so long as oxygen is available. This aerobic process also generates heat. Eventually, under ideal settings, the microorganisms will consume all the oxygen. They'll continue decomposing the waste and creating heat, but now they release methane and other gases. Such anaerobic decomposition is the best way known to break down waste and keep landfills fire-free.

However, methane is terrible for the planet, so to trap some of those emissions before they seep out, the EPA requires operators of large landfills to install gas collection systems, vertical and horizontal wells scaffolded between the layers of trash. In recent years, federal and state tax credits have incentivized operators to install systems for converting that collected gas into energy, a lucrative side business that brought the US waste industry $12 billion in revenue in 2023, according to one analysis. If the operators aren't careful, though, these systems can let in too much oxygen and upset the landfill's delicate chemical balance.

Pulling too hard on the **gas wells** to suck out **methane and other gas** can create a vacuum effect that draws in **air**, which reacts and heats up the waste and can set off spontaneous ignition below the surface, creating even hotter temperatures.

Think of the classic fire triangle: heat, oxygen and fuel. In landfill fires, garbage is the fuel, and while it's possible to set off certain types of hazardous waste without oxygen, a fire can't spread without it.

For decades, the waste management industry has known that "these 'hot spots' can become excellent candidates for subsurface fires with the addition of an air supply," as Robert Stearns, the co-founder of SCS Engineers, an industry consultant, and his colleague Galen Petoyan wrote in a 1984 paper published in the journal *Waste Management & Research*. With enough ventilation, these buried fires could emit large amounts of smoke, but under the right, super-low-oxygen conditions, you might never see any. Among other recommendations, Stearns and Petoyan urged landfill operators of the era to keep air out of their waste mass to stop any level of combustion.

If you weren't around in the early 1980s, keep in mind that the US was still getting used to the idea that burning garbage was bad. For most of the 20th century, open burning was largely how sanitation companies dealt with it, area residents be damned. This started to change after the passage of the Clean Air Act of 1970 and other EPA rules tightened standards around burning. A new generation of landfills sprang up, many of them shamefully near communities of color, including Chiquita Canyon in 1972. (Val Verde, founded as a resort town a half-century earlier by LA's Black business leaders, was once known as the Black Palm Springs.) But by the time Stearns and Petoyan published their paper, the industry was struggling to deal with unwanted waste fires.

For one example of how badly it could go, take PJP Landfill in New Jersey, where buried drums of hazardous waste spontaneously combusted and burned throughout the 1970s and '80s, sickening locals and periodically shutting down the nearby Pulaski Skyway. In 1985 the Jersey City Fire Department tried blasting water onto the billowing towers of smoke, but that only made things worse. "What they didn't realize was that by hitting the surface of the landfill with these high-powered jets, they were stirring it up," an environmental engineer who worked on the fire told the *Jersey City Times* years later. "They were thus allowing oxygen to get down to the deep fires. So, while the fire seemed to be squelched on the surface, only a few days later with the additional oxygen, the fires were back worse than ever."

Eventually the EPA declared PJP a Superfund site, and the New Jersey Department of Environmental Protection managed to stop the fire by removing the waste drums, capping the burn area and digging a trench around it to prevent it from spreading. This mitigation effort was estimated to cost $25 million—about $74 million today, adjusted for inflation—and took years to pull off.

Beneath layers of waste, landfills around the US have been reaching scorching temperatures, and neighbors have been getting sick. Bloomberg's Laura Bliss explains.

Initially the EPA's oversight of the waste industry focused on such postindustrial toxic dumps. But over time the agency also set rules to keep everyday garbage from polluting the environment, requiring operators of large municipal solid waste landfills to install liners and gas wells to trap leaks and emissions. The EPA also took steps to prevent landfills from spontaneously combusting: In the late 1990s, it established a maximum oxygen standard of 5%, limiting how much air was allowed to swirl around inside the waste in proportion to other gases, as well as a temperature standard of 131F. These standards could be exceeded only with the permission of regulators and as long as the operator took care to ensure the landfill didn't burn up.

Over the decades, the EPA has added more requirements, and operators have built landfills steadily bigger to improve their economies of scale: The average open landfill tracked by EPA's Landfill Methane Outreach Program has roughly doubled in size since the start of this century. That means there's more fuel if the conditions are right. "The larger the landfill, the larger potential reaction you're going to have, which has health implications for people who might be living nearby," says Navid Jafari, a geotechnical engineering professor at Texas A&M University.

**US Landfills Have Consolidated, Exploding in Size**

Landfill waste, in tons

Sources: EPA Landfill Methane Outreach Program, Waste Connections

Note: Includes only landfills with waste estimates available in both 2001 and 2024 through the EPA LMOP database. Chiquita Canyon Landfill estimates from Waste Connections reports.

Given the objections to putting a landfill someplace new, it's also been easier for local governments to keep cramming garbage into the existing sites rather than find alternatives. When the Howses moved to Val Verde in 1998, charmed by the rural town with a tiny grocery store, a couple of one-room churches and lots of hiking trails, part of what sold them was the belief that Chiquita Canyon would soon be closed. The landfill was a little ways past the end of its original permit, and their neighbors-to-be had been fighting a renewal. But experts were projecting a huge increase in garbage in Southern California, based on a booming economy and the public's slow adoption of recycling, and Chiquita was one of several LA-area landfills that got their extensions after all.

Sources: United States Geological Survey, Waste Connections, CalRecycle, Planet Labs

Chiquita's lifespan was extended yet again in 2017. By then, waste management had come a long way. In the landfill's early years, there were few restrictions about what people could put in their trash: "aerosol cans, electronics, whatever," recalls Tim Williams, who's lived in Val Verde on and off since 1959 and remembers watching workers bulldoze over the growing waste mound back in the '80s. But as at PJP in New Jersey, out of sight, out of mind isn't a foolproof strategy. "You have to imagine that's 53 years of stuff that's been buried," Williams says. "Just the thought of it scares me, what was created underneath those things."

In the fall of 2023, when the smell had been hanging over the Val Verde area for many months, the LA County Department of Public Health started digging into what exactly was behind Chiquita Canyon's plight. The county called in Todd Thalhamer, a senior waste management engineer at CalRecycle, a division of the state's environmental authority, who's fought trash fires in California for 33 years. Thalhamer also consults for other states throughout the US. CalRecycle declined to make him available for an interview, citing his involvement in ongoing regulatory actions with Chiquita Canyon. But in hundreds of pages of public records covering the past year and a half of his work, his analysis of the Chiquita mess comes through.

The fire triangle was on Thalhamer's mind as he visited the canyon, snapped photos using cameras and thermal imaging devices, inspected core samples of the landfill's roasted innards and reviewed eight years of Waste Connections' operating reports. He found that as far back as the mid-2010s, Waste Connections had routinely sought and received regulatory permission to operate gas wells at higher temperatures and at oxygen levels exceeding the EPA threshold. In its statement, Waste Connections said such requests are normal for the industry and that it has never sought to violate federal or state safety standards.

Three wells in particular (CV-109-55, CV-1418 and CV-1419) might be where the landfill's troubles began, Thalhamer wrote in one of his assessments. There, in February 2022, temperatures rapidly jumped, in one case from 101F to 140F in a matter of minutes. If you touched garbage that hot, you'd go to the hospital with a third-degree burn. Dozens of gas wells throughout the landfill were pulling in high levels of oxygen, and several PVC well casings showed signs of melting. Between then and April 2025, the heat continued to spread, eventually searing through 90 acres of garbage, or about 20% of Chiquita Canyon, according to state estimates that Waste Connections disputes.

Sources: Waste Connections, South Coast AQMD, CalRecycle, Planet Labs, USGS

As the months wore on, Waste Connections tried to remove some of the heat by pulling harder on their gas wells, but this only sucked more oxygen into the waste, according to Thalhamer's public testimony. "This gets into a little bit of a doom loop," he said at a South Coast AQMD hearing in June. In its statement, Waste Connections said removing gas is critical for controlling the reaction and limiting emissions and odors. The company added flares, drains and layers of soil to stanch the flow of gases and liquids; capped part of the landfill with a cover to seal in the fumes; and set up a community fund to pay for air filters and hotel rooms for neighbors.

In April 2024, the on-site biogas company that was turning Chiquita's methane into energy suspended its operations. In January 2025, the landfill stopped accepting garbage, with the operator stating that "due to the regulatory environment, maintaining ongoing operations at Chiquita is no longer economically viable." But none of these efforts would stop the entire landfill from being cooked, Thalhamer concluded. "The reaction area is expanding, and the current containment strategy has failed," he wrote in a March letter to LA County.

State officials say the landfill's deterioration is threatening one of its tank farms, a collection of containers storing millions of gallons of hazardous leachate that, if breached, could spill into local waterways. In April the California Department of Toxic Substances Control called Chiquita

an "imminent and substantial danger" and ordered Waste Connections to move the tanks or face steep fines. Regulators also ordered the company to dig a trench, essentially a fire break, to stop the reaction, but so far it hasn't been built. (In its statement, Waste Connections said it has moved some of its leachate tanks, that they aren't at risk of spilling, and that digging such a barrier would likely make things more dangerous.) At this point, the state says, Chiquita is expected to keep reacting for years to come.

Thalhamer's reports never quite call Chiquita Canyon by the F-word. Instead of "fire," he writes things like "heating/smoldering event" and "potential subsurface oxidation." But in the way a burning ember can start a flame, all of these terms describe different points on the fire spectrum. Timothy Stark, a professor of civil and environmental engineering at the University of Illinois at Urbana-Champaign, consulted for CalRecycle on Chiquita Canyon and has worked with Thalhamer to diagnose other ailing landfills. He says Chiquita is smoldering: "The oxygen went up, and that kicked off the spontaneous combustion." Guillermo Rein, a professor of fire science at Imperial College London who has no involvement with any of the aforementioned landfills, read reports from both CalRecycle and Waste Connections at *Businessweek*'s request and says he considers what's happening to be a barely smoldering, flameless fire.

Among its reasons for why what's happening at Chiquita is not a fire but rather an elevated temperature landfill, Waste Connections said in its statement that it has found no evidence of combustion and that the sheer volume of leachate saturating the landfill makes a fire impossible. It said far fewer than 90 acres have been affected and that the reaction "appears to have reached a state of equilibrium." Pointing to air sensor data, it also said Chiquita Canyon's emissions have improved. It stopped providing assistance payments to community members in February.

Some of the most prominent voices in waste have made similar arguments about ETLFs. In a 2022 blog post, SCS Engineers, the industry consultant, described ETLFs as a "new" and "curious" phenomenon first documented in 2006. That's when Ohio regulators investigated a spate of resident complaints about awful smells emanating from Countywide Landfill in East Sparta. The regulators found a familiar pattern of high temperatures—eventually surpassing 300F—spreading throughout the landfill, along with toxic emissions and what they described as fire-charred waste. A string of similar events followed: first in 2009, at the Rumpke Sanitary Landfill in Cincinnati, and then in 2011, at the Bridgeton Landfill outside St. Louis, where odors were so bad that nearby residents could barely leave their homes. (The latter incident also threatened to collide with an adjacent landfill packed with radioactive waste.) In 2011, Middle Point Landfill in Tennessee started baking. So did Stony Hollow Landfill in Ohio, in 2015, and American Landfill, also in Ohio, in 2016. In 2020, the overheating Bristol Landfill in Virginia started to generate aromas that locals have compared to rotten produce, feces and death.

When the Ohio Environmental Protection Agency investigated both Countywide and Rumpke, officials said they believed the landfills were experiencing underground fires. In the case of Countywide, they found the meltdown was sparked by a chemical reaction involving buried aluminum dross, a byproduct of smelting. But to call it a fire was incorrect, according to SCS Engineers. There was no way air could get down that deep, SCS wrote in its 2022 blog post, and

no air meant no fire. (SCS declined to comment for this article, citing its involvement in ongoing litigation at Chiquita Canyon.) The Environmental Research & Education Foundation, an industry-funded nonprofit that provides academic grants to universities across the US, has advanced similar arguments about ETLFs. Yet other landfill researchers say that the no-air explanation has been rebutted by data from several affected sites.

"Without oxygen, it's sort of obvious that no reaction can take place," says Patrick Foss-Smith, a fire engineer based in the UK who consulted for the landfill operator's insurance company on the Bridgeton event. Jafari, the Texas A&M professor, has published papers on landfill management with both Stark and Thalhamer, as well as with landfill operators, and says: "The terminology is a distraction." Even Thalhamer drew a pointed distinction between flames and smolders when he assessed Bridgeton's problems for the Missouri Department of Natural Resources. "While the first type of combustion is usually obvious," he wrote, "the second type of combustion can cause investigative errors or lead to creative terminology to avoid using the term fire."

In its statement, Waste Connections defended its use of the term ETLF for Chiquita Canyon, noting that some overheating events have been linked to reactive waste such as aluminum dross. It added that conditions at Chiquita "are entirely consistent with pyrolysis, which is not a fire." Not everyone would agree, though. Rein, the Imperial College London professor says pyrolysis, which is where heat breaks down material without oxygen, is an aspect of fire that precedes combustion.

Many neighbors of these roasting landfills have been outraged by the insistence on technicalities. "We hated the term 'subsurface reaction,' because we felt like it was denying the fact that we could smell burning," says Evenden, who lives near the "beast" of Bristol. "My eyes are burning, my skin is burning, I can't breathe. This is beyond, 'Oh, the trash smells.'" Dawn Chapman, who lives near the Bridgeton Landfill in Missouri, calls the industry's tactics gaslighting. "We know it's a fire, because we could see it come to the surface a couple of times," she says. "When they went in there to fill in an area or fix the well, smoke would come billowing out."

Yet waste operators have been effective at shaping the narrative, says Jane Williams, executive director of California Communities Against Toxics, an environmental justice nonprofit. Even the federal EPA, she notes, has adopted the ETLF terminology. In 2022 the agency published a tipsheet that grouped Countywide and Bridgeton among several other overheating US landfills and stressed: "ETLFs are NOT landfills that have experienced a fire." And remember the 5% oxygen standard, one of the key federal rules designed to prevent trash fires in the first place? In 2021 the EPA eliminated it after urging by landfill operators, who no longer need to ask for permission to pull in oxygen at levels known to be dangerously high. The agency didn't respond to *Businessweek*'s questions about this rule change, but said it's working to prevent landfill fires by increasing the number of batteries that are properly collected and recycled.

Williams says Chiquita Canyon is one of the longest-running chemical disasters in US history and one of several landfills ailing from blatant violations of industry safety standards. (She points to another California example: El Sobrante Landfill in Riverside County has been struggling to get a handle on broiling temperatures since last year. Waste Management Inc.,

which operates El Sobrante, said in a statement it is working with federal and state officials to address these conditions.) Meanwhile, thanks to vape pens, smartphones, electric toothbrushes and the like, fires at recycling and waste-sorting facilities have more than doubled since 2016, according to an industry tracker.

Williams predicts the US will have to deal with more garbage fires now that the EPA's oxygen rule is gone. "Landfills across the country are not complying with the regulations," Williams says. "States, you're the enforcement authority. You need to get your shit together and do something."

Cracking down on landfill emissions was a stated priority for the Biden administration, which aimed to release a draft of new methane rules in 2025. That process would have given Williams and other activists a chance to push for the return of the oxygen standard, among other fire safety provisions. Well, oops. Instead, in March, a Trump EPA memo stated that the agency's oversight of landfill emissions would "return to the core enforcement program." This announcement was part of a larger wave of dozens of deregulatory actions that weakened rules around air quality, power plant emissions, oil and gas development, and other heavy polluters. The EPA has also deleted existing data from its website, including maps that show the health costs to the disproportionately Black, Brown and low-income communities living near those sites. Joseph Goffman, who led the EPA's Office of Air and Radiation under Biden, says he regrets running out of time to update the landfill rules.

EPA Administrator Lee Zeldin, who's promised to focus on "real threats to water and air," recently pledged to expedite the agency's cleanup of West Lake Landfill outside St. Louis, a Superfund site that still holds nuclear waste left over from the Manhattan Project. Next door is Bridgeton Landfill, where sickening odors still flare up when gas wells go out of commission, according to Chapman, who lives nearby. EPA declined *Businessweek*'s request for an interview with Zeldin, and instead of addressing written questions, it referred *Businessweek* to a proposed rule on recycling of lithium-ion batteries and a series of primers on safe disposal of used batteries and e-cigarettes. Republic Services Inc., which operates Bridgeton, said in a statement that the landfill reaction is not a fire and has subsided.

Most advocates and lawmakers who aim to reduce the environmental harms of landfills are focused on methane, the potent planet-warming gas. Landfills are America's No. 3 source of methane, and EPA rules on trapping the gas fall badly short of what's needed to help limit global warming, researchers say. (Scientists have also found that the real landfill emissions numbers are 51% higher than the EPA estimates.) Over the past few years, Maryland, Michigan, Oregon and Washington have passed laws or regulations to tamp down on methane escaping from these sites. As part of sweeping reforms underway, California and Colorado are considering forcing operators to use drones, sensors and other 21st century monitoring tools rather than manual readings of gas wells.

Yet tighter standards on methane could prompt operators to overdraw wells, potentially letting in more oxygen. The irony that efforts to curb greenhouse gases may be helping to fuel local disasters isn't lost on environmental advocates, but they say society doesn't have to choose

between burning landfills and a burning planet: technological upgrades could also strengthen oversight of air and temperature levels and other fire-risk indicators. "This is a maddeningly easy problem to solve," says Katherine Blauvelt, a campaign director at the environmental lobbyist Industrious Labs. "We just need these commonsense fixes that are cheaper and easier than trying to put out a subsurface fire."

**Landfills With Gas Collection Systems More Likely to Experience Fires**

Source: Bloomberg analysis of National Fire Incident Reporting System and EPA LMOP

Note: Includes only landfills in the LMOP database with fire incidents to which a fire department responded between 2001 and 2023, according to NFIRS. Includes any incident at the landfill, either on the surface or otherwise. Landfill fires most commonly occur at the surface, where there's plenty of fuel and oxygen.

Among the new state methane laws, only a few include oxygen standards or mention the risk of fire associated with managing the pipes and wells that suck out the gas. And so far, none requires changing the basic needle-in-a-haystack approach to fire monitoring. But Pilar Schiavo, the California state assemblywoman who represents Val Verde, is working on a bill that would address the problem directly. Her Landfill Fire Safety Act would require operators to alert residents and enforcement agencies when subsurface temperatures exceed 146F for more than 60 consecutive days and to assess the impact on the health of the community. The act also stipulates fines of as much as $1 million per fiery week if the operator fails to address the problem. Those penalties would fund relocations and other assistance for neighbors sickened by the fumes.

While whipping support for the bill, Schiavo negotiated for the state budget to include tax breaks for any compensation the residents receive from relief funds or legal settlements. Two dozen mass torts representing about 7,000 individuals against Waste Connections are pending as well as the lawsuit from LA County, which has filed for injunctive relief for the landfill to relocate residents. Waste Connections declined to comment on the litigation.

Curiously, some of the opponents of Schiavo's bill have put their criticism in plain language, including the F-word. "We do not believe a single subterranean landfill fire should be the foundation for a blanket law applying to all landfills," Veronica Pardo, executive director of the Resource Recovery Coalition of California, an industry group that includes Waste Connections as a member, wrote in a letter against the bill, which passed an assembly vote and is awaiting a hearing in the state senate.

Schiavo has also been calling on Governor Gavin Newsom to declare a state of emergency for the communities around Chiquita Canyon, which could help fund the relocation of affected residents. In 2015 a gas leak in Aliso Canyon prompted SoCalGas to temporarily relocate about 8,000 households after Newsom's predecessor, Jerry Brown, issued an emergency order. So far,

Newsom has taken no such step. Out of sight, out of mind, Schiavo said at an April press conference: "It's an invisible fire underground, and so everybody's suffering is now invisible." Newsom's office referred *Businessweek*'s inquiries to CalEPA, which said it has been actively coordinating with local and federal responders on the incident since late 2023.

At the local level, though, agencies with limited resources have found themselves ill-equipped to spot a smoldering gun. At Chiquita Canyon, though studies have shown a link between respiratory and neurological symptoms and the kinds of emissions coming out of the landfill, an analysis from earlier this year by the Los Angeles Cancer Surveillance Program at the University of Southern California "did not result in detection of statistically significant excess in cancer incidence," the program's epidemiologists wrote in a letter to the county officials who'd called for the analysis. The letter, however, also noted that, given Val Verde's sparse population, the analysis had limited statistical power, reducing its ability to detect true risk. But also, the researchers used cancer data that ended in 2021, the year before Chiquita Canyon began to bake. A re-analysis using data from 2022 is underway, according to the California Department of Public Health.

This spring, Brandi Howse joined a vanful of Val Verde residents to speak in support of Schiavo's bill in Sacramento. Carrying signs and photos, the residents stood at a lectern on the lawn of the state Capitol and testified to the nightmare they've been living. One woman described having multiple pets die suddenly in her yard and home. Others spoke of late miscarriages, hand tremors, vision loss, chest pain and nosebleeds that last hours. Howse called for stronger oversight of landfills from all levels of government. "We just want everyone to be OK," she said, "and for nobody else to have to experience this ever again."

But as the years press on, the political gridlock and what she views as apathy toward her community's wellbeing have been almost as heartbreaking for Howse as the losses her family has suffered. The community's symptoms are real, and the odors are unmistakable. Still, Val Verde's fate seems to be in the hands of a company that's speaking a different language. "We kind of feel like a science experiment, you know what I mean?" Howse says. "Because we have no idea what's happening to us."

With assistance from Raeedah WahidEdited by Jeff MuskusYue Qiu

**Methodology**

Semi-annual landfill reports by Chiquita Canyon Landfill to regulatory agencies were used to track gas wells across the landfill that recorded temperatures above 131F. A kernel density estimation was used to generate the heatmaps, weighted by location and temperature.

To estimate fire incidents at landfills, NFIRS data was filtered to only incidents that occurred at sanitary landfills. Those incidents were matched up to landfills using the EPA LMOP database and duplicate incidents were removed.