

From: [Ken Eklund](#)
To: [Coffin Butte Landfill Appeals](#)
Subject: Explainer 4 of 12: Six Narratives about Avoiding Compliance at Coffin Butte Landfill
Date: Monday, October 20, 2025 4:12:35 PM
Attachments: [Explainer - avoiding compliance at Coffin Butte 1.pdf](#)

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Dear Chair Wyse and Commissioners Malone and Shepherd:

I've developed a set of "explainers" first for myself, to try to make sense of these complex subjects (and to get all the things learned into one place) and to pass this info along to others. And now I'm sending them along to you.

The one attached here is about "compliance-avoidance" at Coffin Butte Landfill – it looks at six ways that Republic is skirting existing regulations so as to stymie attempts to characterize its air quality impacts and greenhouse gas emissions.

I hope you find it useful –

Ken Eklund

#explainer

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Six Narratives About Avoiding Compliance At Coffin Butte Landfill: An Explainer

Ken Eklund
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Benton County resident
VNEQS

October 16, 2025

Dear Chair Wyse and Commissioners Malone and Shepherd:

Using publicly available data about Coffin Butte Landfill, I have assembled six narratives that show how present controls at the dump are failing to protect the county community from landfill gas pollution. I have assembled this data over the course of the three years that I have been a member of Benton County's Disposal Site Advisory Committee (DSAC).

As you know, by state law Benton County government is required to host an advisory committee that listens to community concerns about Coffin Butte Landfill. The community is increasingly concerned about landfill gas releases that can be smelled many miles from the landfill, and which are increasing in number, severity, and duration. These concerns have led to an ongoing EPA investigation of the landfill, and this testimony includes data from that EPA investigation; the investigation is producing enforcement action. The landfill has also begun being surveyed by Carbon Mapper, a non-profit organization pioneering the use of new technologies to track landfill gas emissions, and this testimony includes data from Carbon Mapper as well.

Coffin Butte Landfill is owned and operated by Republic Services, Inc., and as you know Benton County government receives an annual franchise fee from Republic Services.

NARRATIVE #1: THE "SELF-MONITORING" LOOPHOLE.

Presently, state regulations require Republic Services to

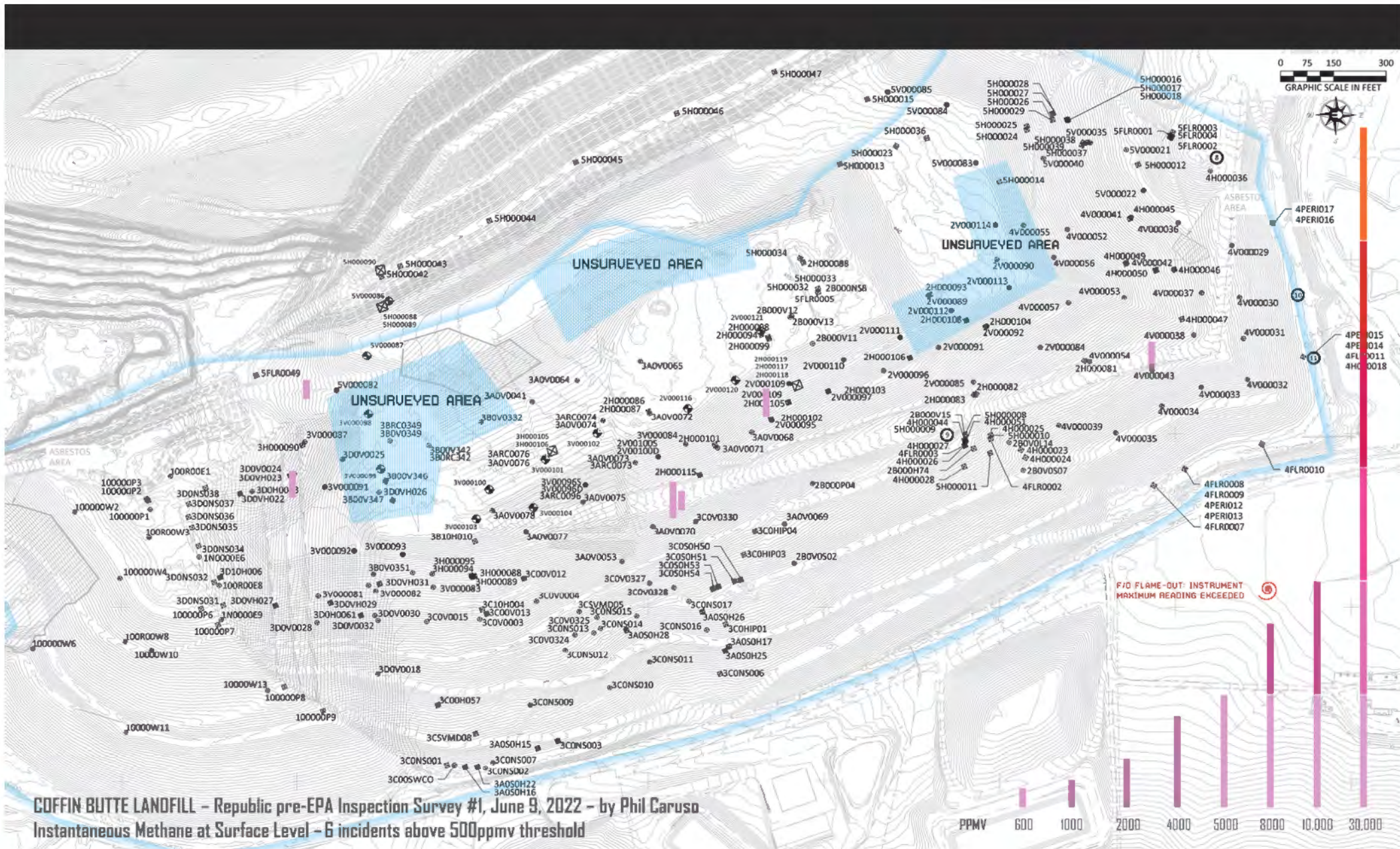
conduct a quarterly surface emissions monitoring (SEM) regimen for Coffin Butte Landfill. In practical terms, this means that a technician walks over the surface of the landfill while holding a methane-detecting wand close to the landfill's surface. The presence of methane indicates the presence of landfill gas (landfill gas at Coffin Butte is about 53% methane). The technician logs any incident where the detector finds from 100-499 ppmv methane, and marks any location where the detector finds 500 ppmv or more, as this level is the threshold for an air quality violation and Republic is obligated to undertake remedial action.

(That obligation continues until (a) a retest shows that the methane levels have been reduced below the threshold, or (b) Republic has sunk an entirely new well to try to reduce the leak.)

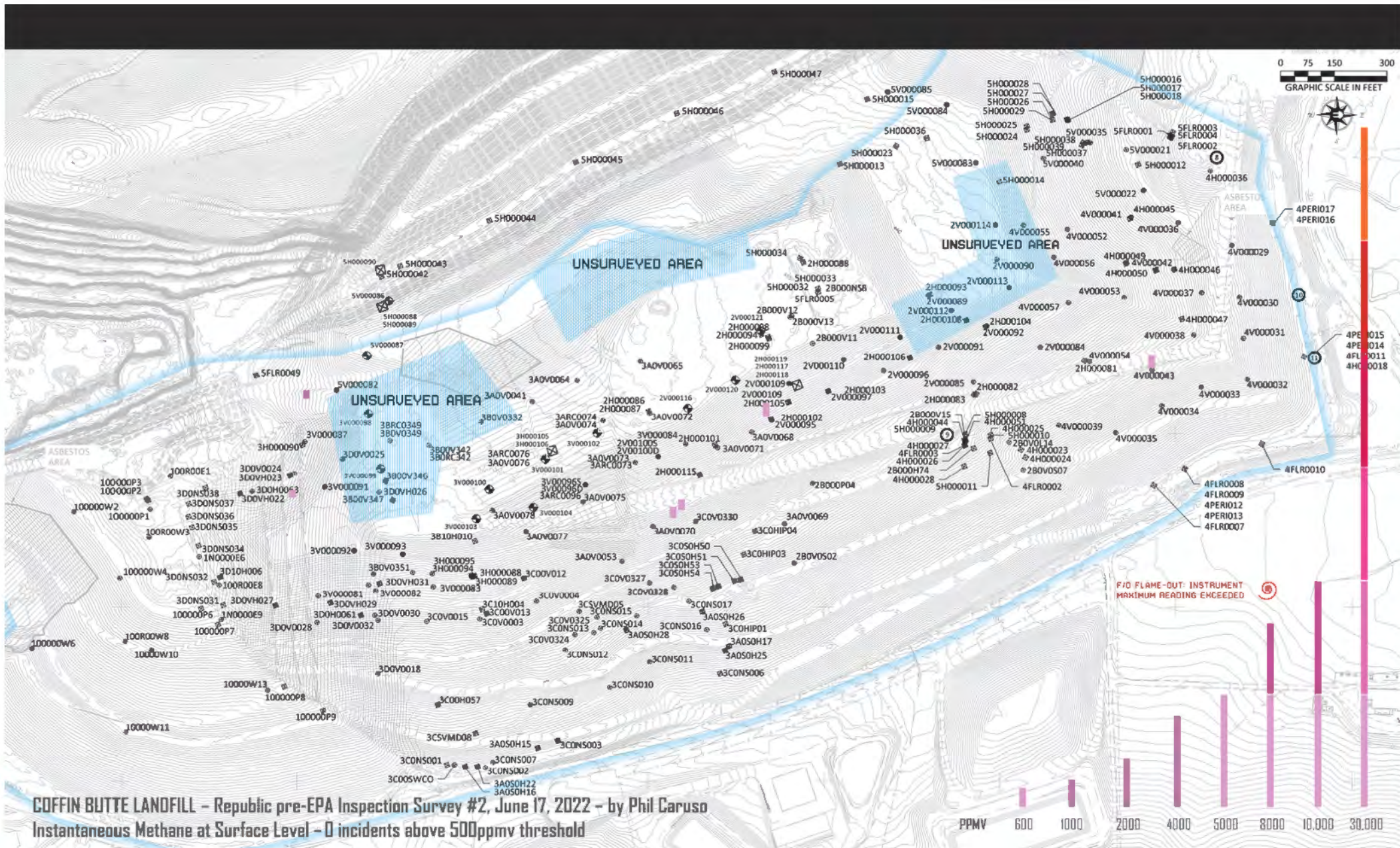
As you can imagine, the SEM is laborious; at Coffin Butte Landfill, a person must traverse over about a hundred acres; the process typically takes several days to complete if done according to prescribed protocol. The regimen also depends on conscientious adherence to protocol.

In July of 2022, community complaints led the EPA to schedule its own inspection of Coffin Butte Landfill. Republic Services performed a first pass of its quarterly surface emissions monitoring fourteen days in advance of the EPA inspection, and then performed a second pass six days before the EPA visit. These two passes were performed by Phil Caruso, a Republic employee, and I have displayed their results in the following graphics, **Narrative 1a** and **Narrative 1b**. The data for these graphs was released by Republic to the Disposal Site Advisory Committee in September 2022.

NARRATIVE 1a: Republic 2Q SEM Survey, pass 1, June 9, 2022



NARRATIVE 1b: Republic 2Q SEM Survey, pass 2, June 17, 2022



As you can see, Republic's surface emissions monitoring found very few incidents where landfill gas was leaking out of Coffin Butte Landfill above the DEQ-prescribed threshold of 500 ppmv methane, and these incidents showed very low leakage levels: there were 6 incidents in all (the small pink bars) and the highest registered 1350 ppmv. According to Republic, almost the entire surface of Coffin Butte Landfill was monitored, with the exception of the three unsurveyed areas marked in light blue, and all the incidents were remedied on June 17.

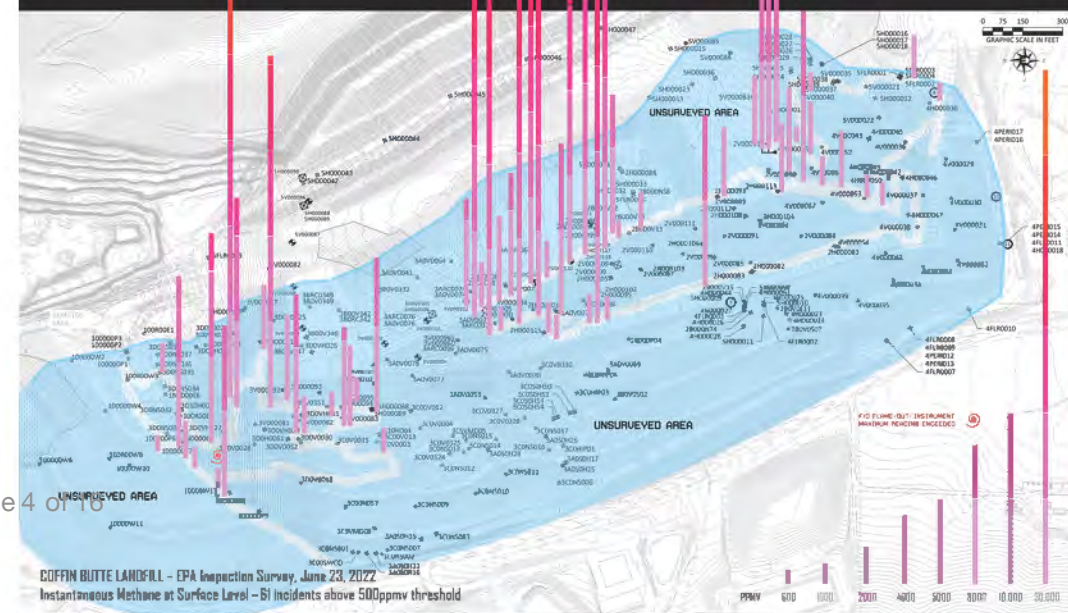
On June 23, EPA Inspector Daniel Heins arrived. He met with Republic personnel, who declared that Coffin Butte Landfill's gas collection system was functioning normally. Heins then undertook his own Surface Emissions Monitoring using the same protocol as Republic. The results of his survey are shown at right, as **Narrative 1c**. The three Narrative graphics use the same scale.

Although Inspector Heins only walked over a small percentage of Coffin Butte Landfill, he discovered 61 air quality violations, many of which registered very high leakage levels: three incidents "flamed out" his detector (flameouts occur at levels 30,000 ppmv and above), one measured 40,000 ppmv and one registered 70,000 ppmv. These violations indicate leaks above the lower explosive limit of methane, i.e., leaks where the flammable methane could be ignited, leading to a landfill fire.

Republic's technician Caruso accompanied Inspector Heins on the EPA survey, and Heins recounted in his report that while Caruso did not dispute any of the survey findings, Caruso maintained that he (Caruso) could follow DEQ protocol and not find them. An example:

When Daniel Heins was monitoring at leachate cleanouts, Phil Caruso stated that he does not monitor at these and that they are not fully penetrating the cover. Daniel Heins responded that it was likely

NARRATIVE 1c: EPA SEM Survey, June 23, 2022



that many of these ultimately did penetrate the cover, especially in areas of thinner intermediate cover, and that regardless he recommended checking these as they were proving to be repeated sources of extremely elevated emissions, many over an order of magnitude above the surface methane standard. Phil Caruso stated that he was not required to monitor these.

Daniel Heins and Phil Caruso had a similar discussion at the valve box dug into the cover with a reading of 4% methane (flag #37), with Phil Caruso stating that this was not a penetration and thus he did not have to monitor this.

Heins reported that many incidents were clusters of violations at multiple points or broad areas where gas levels exceeded the threshold. He also recorded multiple incidents where readings were still well above the 500 ppmv threshold even multiple feet in the air or with multiple feet lateral distance from the emission source, indicating “substantial landfill gas plumes” being generated.

The EPA inspection has made evident that ODEQ’s existing “self-monitoring” approach to SEM regulation is gravely flawed. That approach produced Republic’s 2Q SEM report, which asserted there were no violations by June 17. The boots-on-the-ground reality, however, is the actuality indicated by the EPA inspection, in which there were many large leaks generating multiple plumes of landfill gas. These plumes drifted from Coffin Butte Landfill into surrounding neighborhoods, homes, businesses, schools and recreation areas, as community complaints attest. These plumes drift around my house, and I live over four miles from the landfill. LU-24-027 would bring landfilling about a half-mile closer.

NARRATIVE #2: THE “EXEMPT AREA” LOOPHOLE.

As we saw in the Narrative 1a and Narrative 1b graphics, DEQ regulations allow the landfill owner to designate certain areas as exempt from surface emissions monitoring – the intention is, to be responsive in its requirements to conditions on the landfill that may pose an obstacle or a hazard to the person conducting the SEM. I’ve created a graphic that shows Republic's exempt “unsurveyed” areas in June 2022, and it follows as **Narrative 2a**.

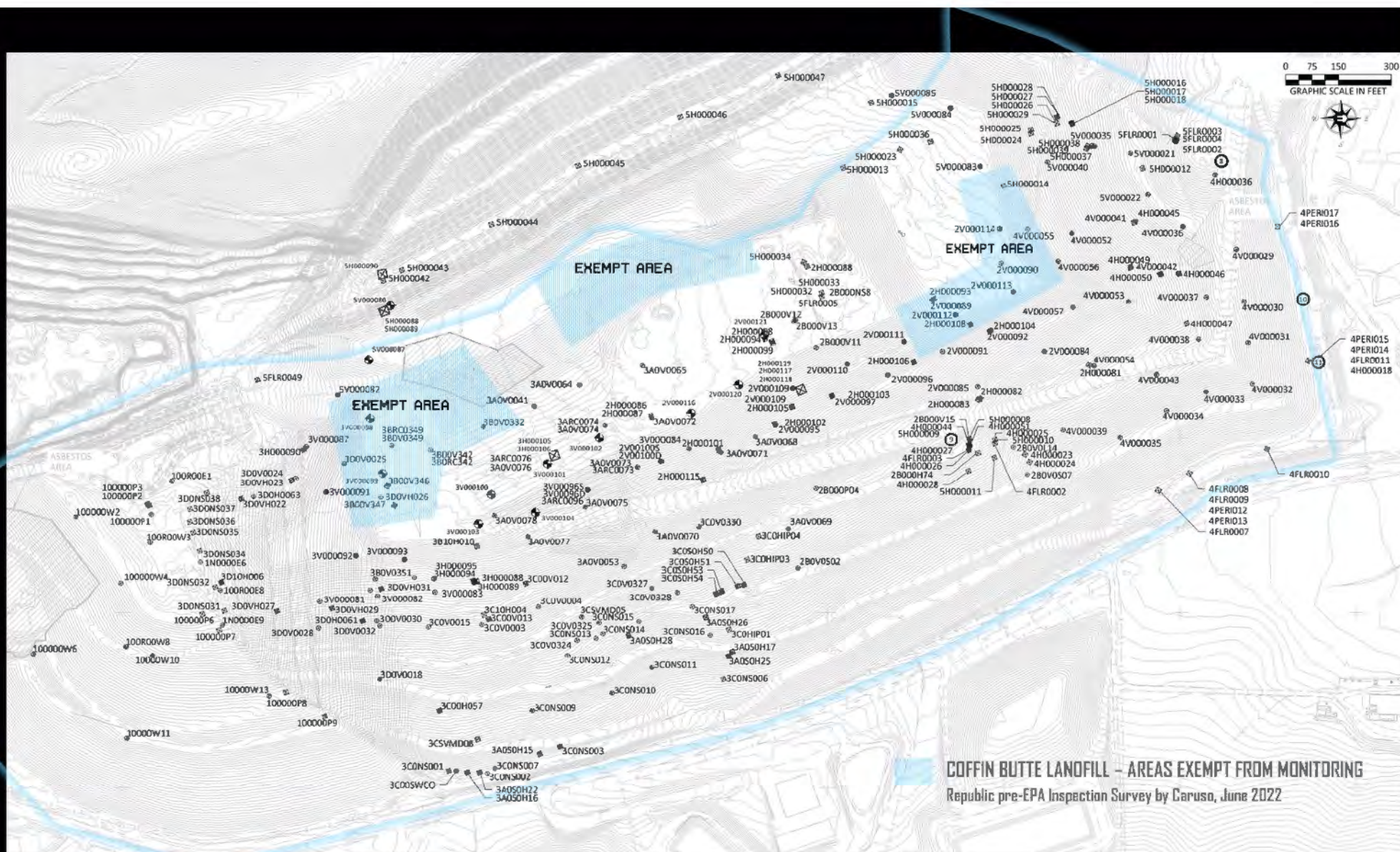
I’ll then fast-forward two years, to July 2024, and create a similar graphic that shows the area of the landfill’s surface that Republic has now designated to be exempt; that graphic follows as **Narrative 2b**.

The graphics show that in two years, the amount of area that Republic has designated as exempt has jumped from around 10% to around 60%. No rationale for the large amount of exempt area appears in Republic’s 2Q 2024 SEM report.

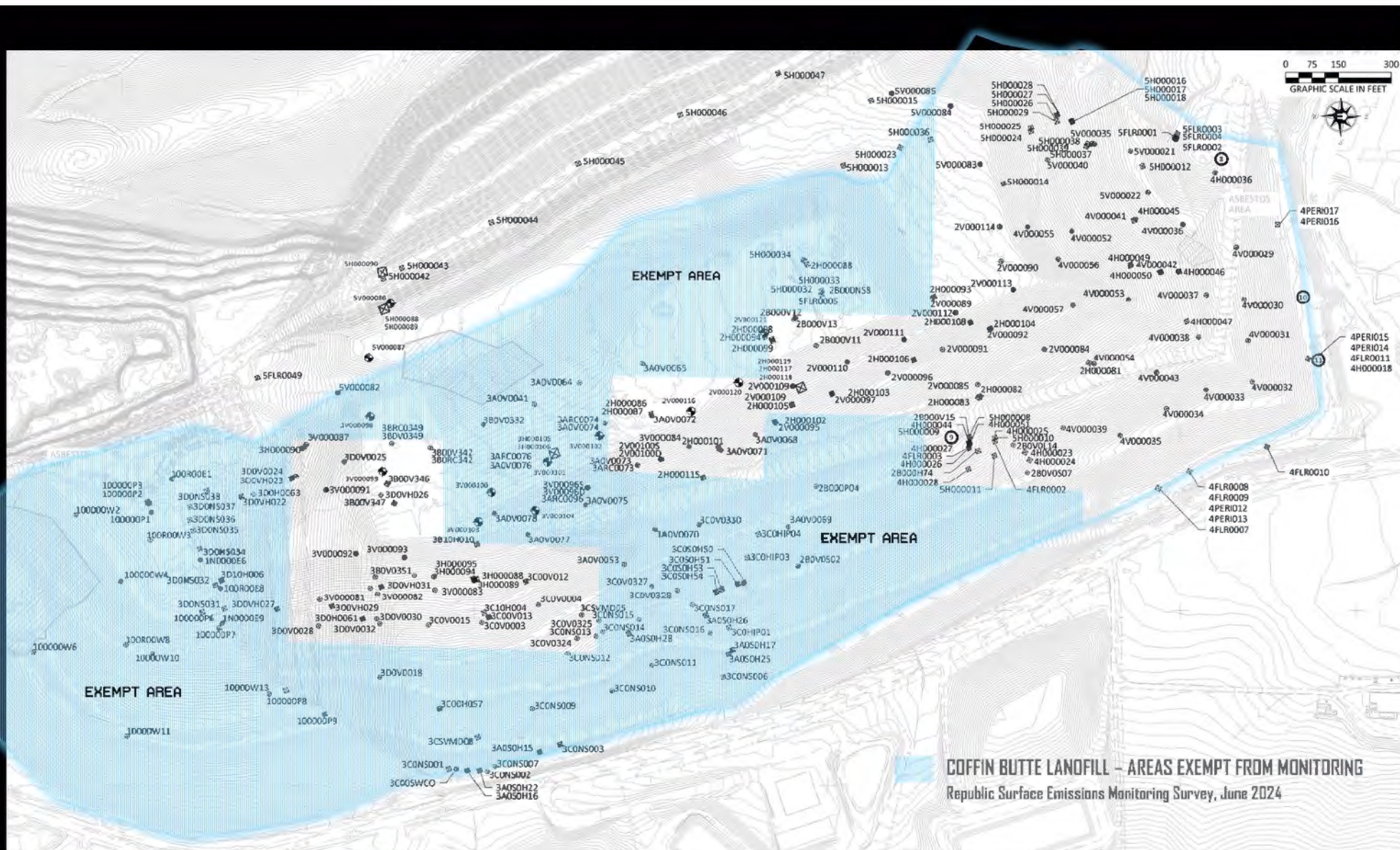
The concern is that, similar to the surface emissions monitoring loophole, a less-than-conscientious landfill owner can exploit the “exempt” designation as a loophole to prevent SEM from happening in problem areas (or more generally as a way to save money), and that Oregon DEQ has no effective countermeasure to prevent this abuse. The end effect is unregistered and uncontrolled releases of landfill gas into the atmosphere and areas around the landfill.

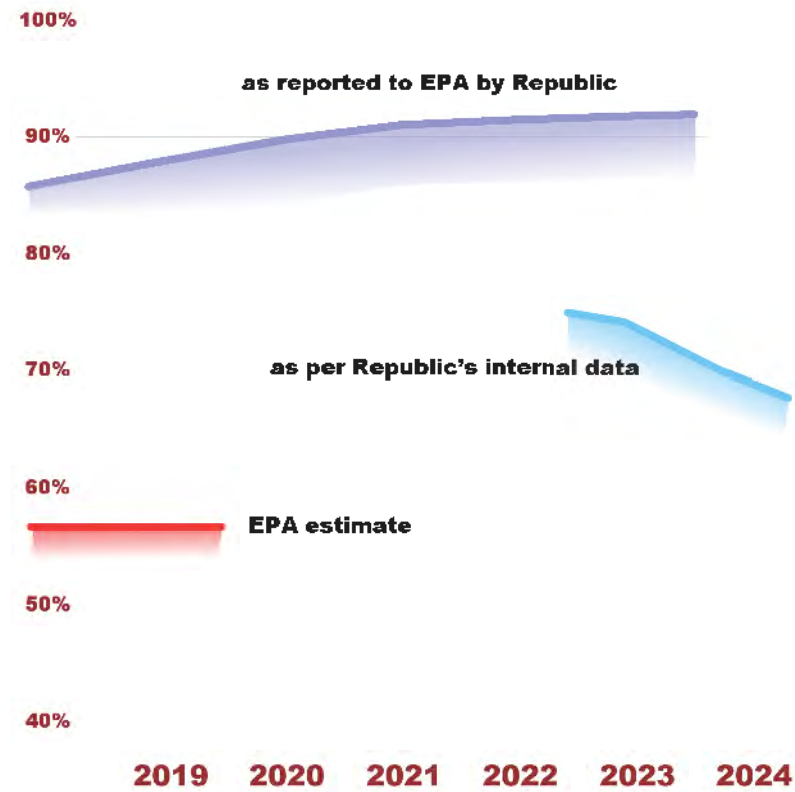
In September 2024, Coffin Butte Landfill and several other Oregon landfills received an enforcement notice from the EPA about this loophole: “the EPA observed during recent inspections that areas that are not dangerous are improperly excluded from monitoring.” As documented in other testimony, Beyond Toxics did an in-depth analysis of this loophole at Coffin Butte, and now DEQ has announced an investigation.

NARRATIVE 2a: Republic-designated areas exempt from monitoring, June 2022



NARRATIVE 2b: Republic-designated areas exempt from monitoring, June 2024



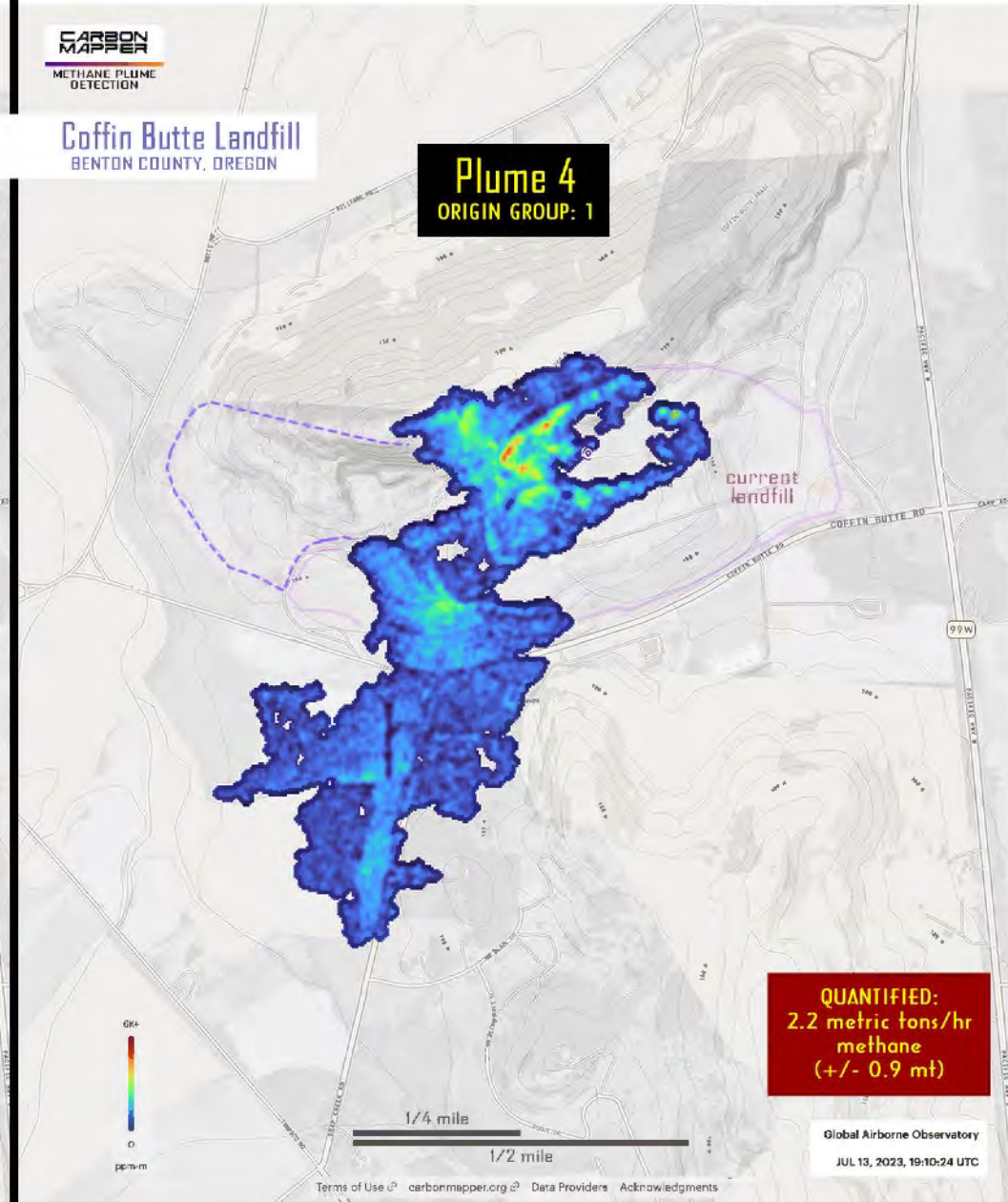
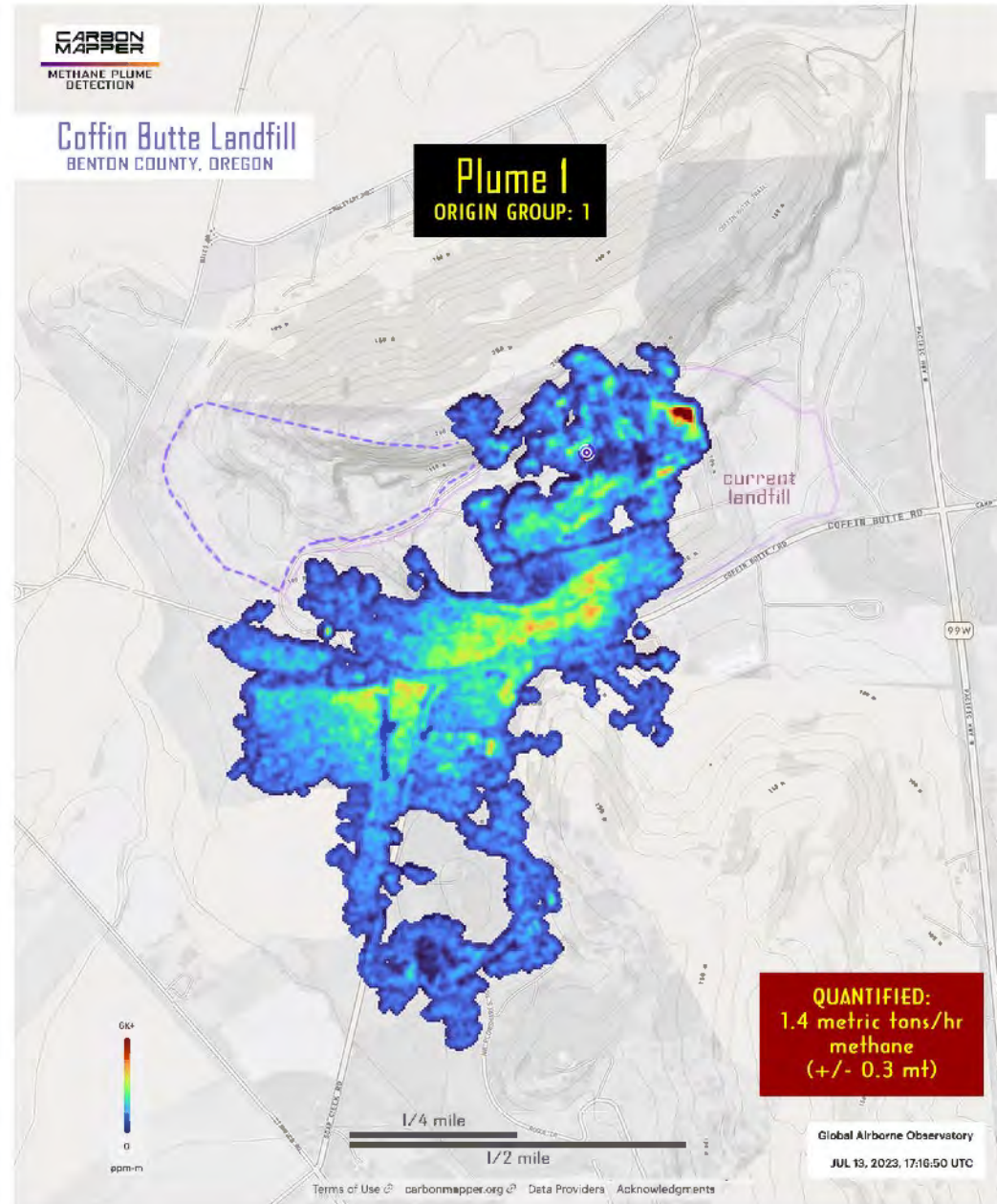


**ANNUAL
LANDFILL GAS
COLLECTION
EFFICIENCY**

for Coffin Butte Landfill

NARRATIVE 3a

NARRATIVE 3b: representative landfill gas plumes, Coffin Butte Landfill



NARRATIVE #3: LANDFILL GAS COLLECTION EFFICIENCY.

Without using the advanced detection technology that's now available, it's difficult to estimate how efficient a landfill's gas collection actually is. The **Narrative 3a** graphic lays out how variable these past estimates have been for Coffin Butte Landfill. To the EPA, Republic Services will state that Coffin Butte's system is collecting 92% of the landfill gas the landfill produces, but to Benton County's Disposal Site Advisory Committee, Republic will state that actual efficiency was 74% in 2023 and 70% in 2024, based on Republic's internal modeling. Meanwhile, the EPA in 2019 stated that Coffin Butte Landfill's gas collection efficiency was 57%.

This wide disparity in gas collection efficiency has serious consequences, especially in regard to enabling both local governments and the State of Oregon to prioritize their efforts to reduce greenhouse gas emissions. These governments currently use unrealistically low assessments for Coffin Butte Landfill emissions, for example, even as evidence mounts that those assessments are generally way too low for landfill greenhouse gas emissions, and are too low even by Republic Services' own data. It's difficult to sustain the idea that Coffin Butte Landfill's gas collection efficiencies are high when organizations such as Carbon Mapper produce images of landfill gas plumes extending miles into neighborhoods (**Narrative 3b**), but that's the idea that Benton County government and the State of Oregon are currently sustaining. The most recent set of images show plumes almost 3 miles long and a mile wide.

To meet its Burden of Proof for mitigation of landfill gas leaks, Republic Services must deliver evidence to you, Commissioners, that it understands what's going on with those leaks, and it must also deliver a compelling narrative that it can and will take action on them. It has done none of these things.

NARRATIVE #4: THE "OUT OF BOUNDARY" LOOPHOLE.

In graphic **Narrative 3b** we saw two examples of landfill gas plumes imaged by Carbon Mapper, using an airborne methane detector. Let's look at four more plume images at Coffin Butte Landfill, in the graphics **Narrative 4a** and **Narrative 4b**.

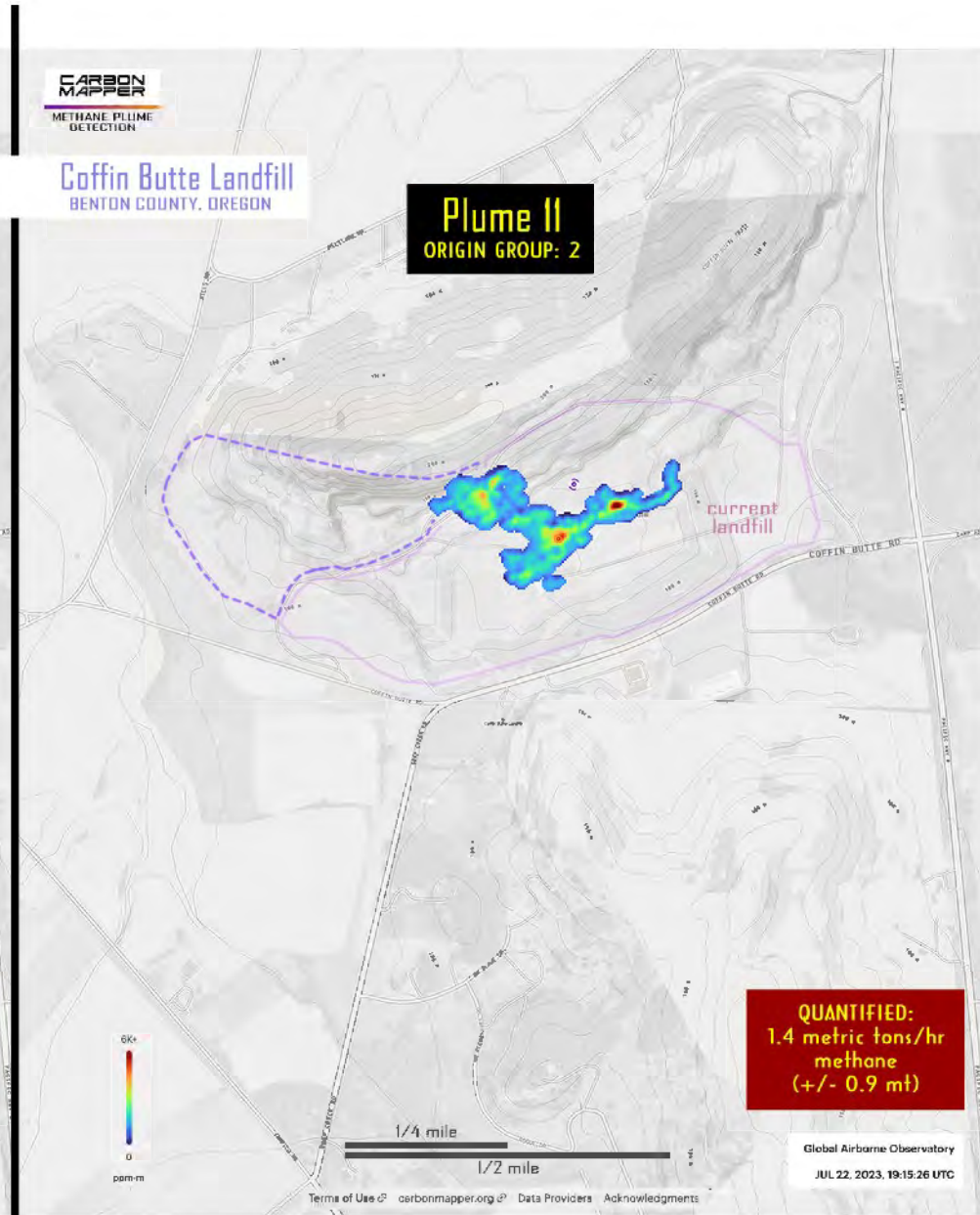
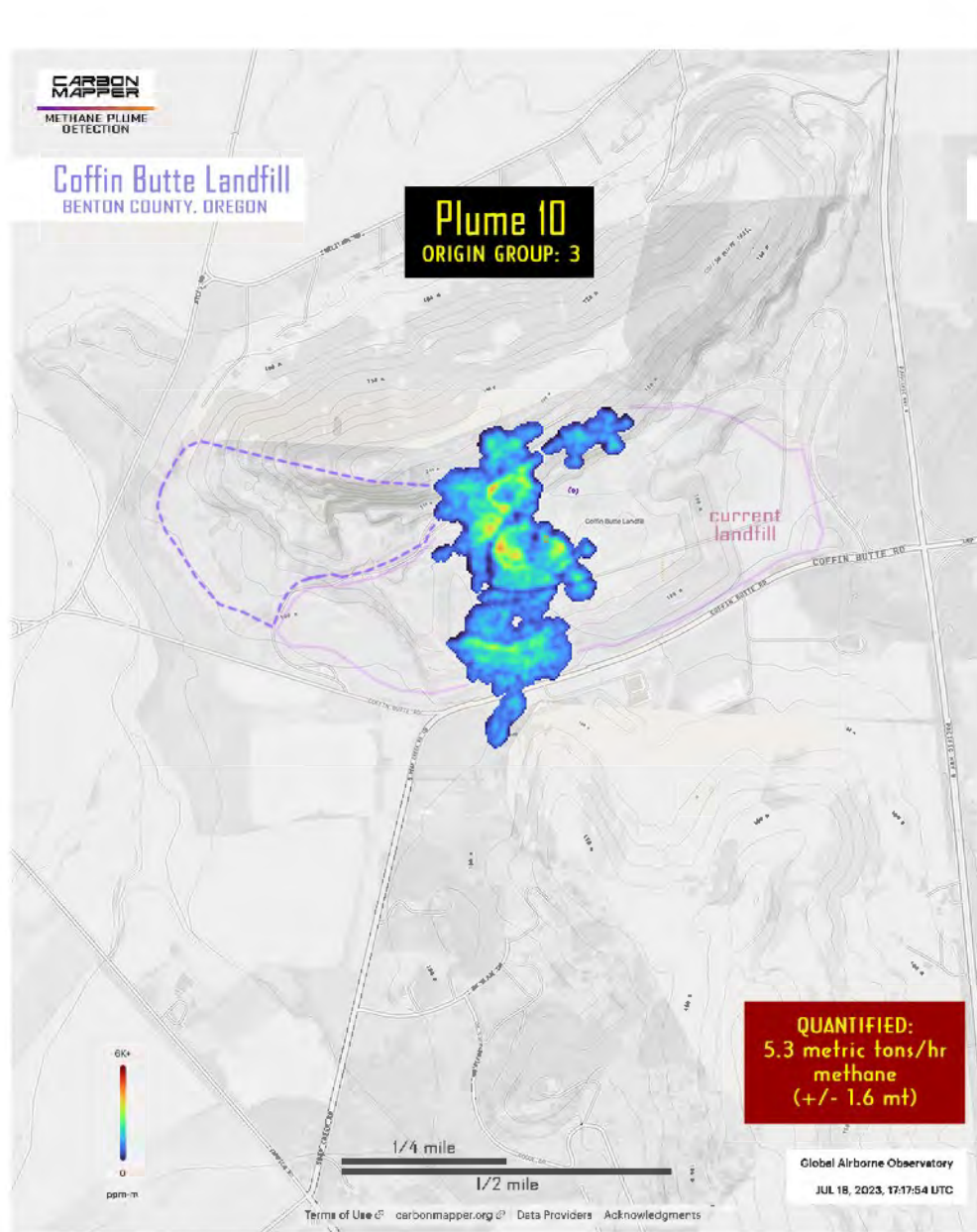
All of these show significant releases of landfill gas. Carbon Mapper has published quantifications of emissions rates for point sources at the time they were imaged, and those rates when available are displayed in the red boxes. The rate for Plume 10, 5.3 metric tons of methane per hour, is a notably high number; I have not been able to find a rate anywhere near that high for any landfill in the western United States.

With the exception of Plume 11, all of the point sources of these plumes, and most of the others imaged and source-pointed by Carbon Mapper, fall outside the "waste mass" surface emissions monitoring boundary for Coffin Butte Landfill, as shown in the graphic **Narrative 4c**. As such, they are not subject to monitoring, detection, reporting, or remediation in the landfill's quarterly surface emissions monitoring.

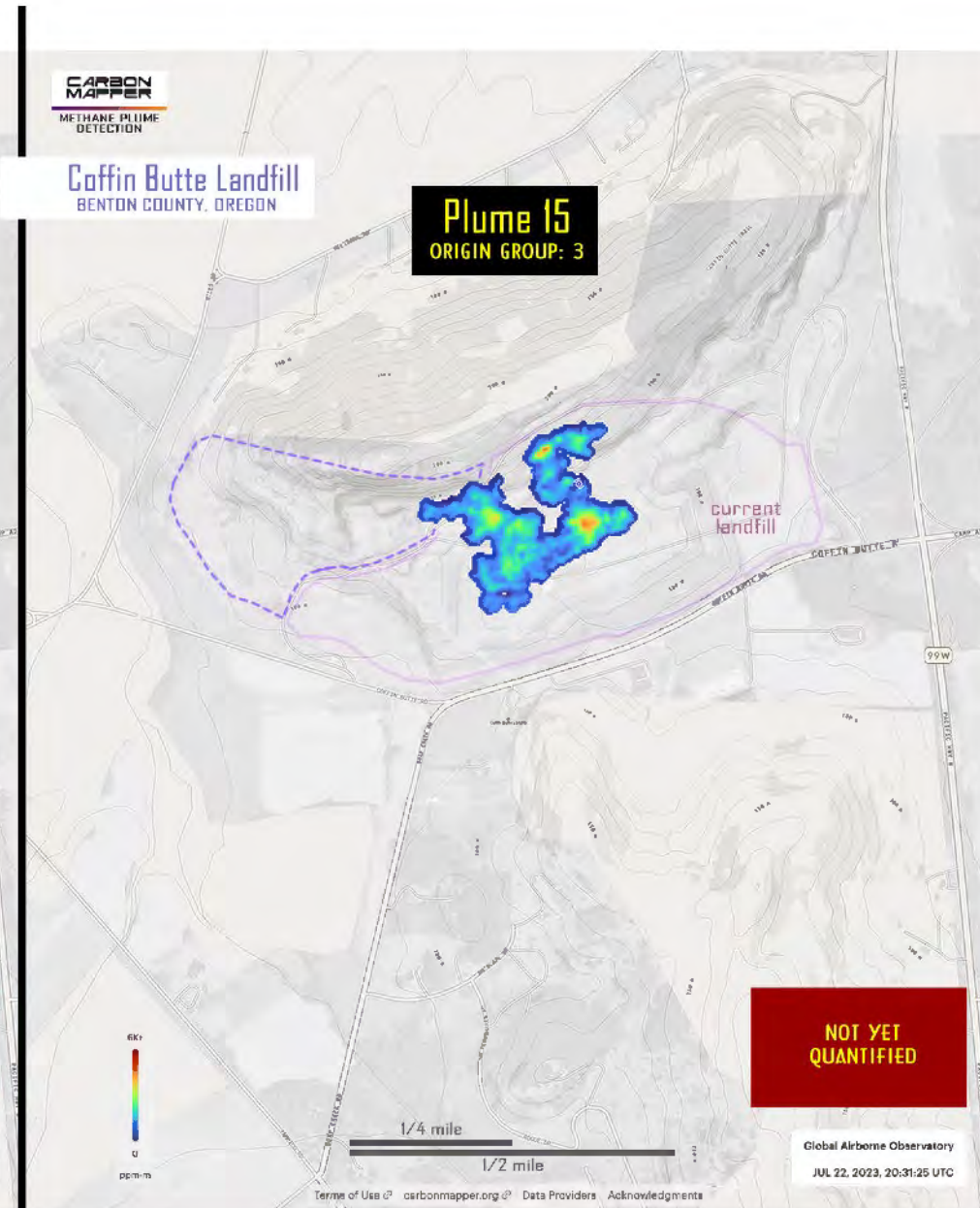
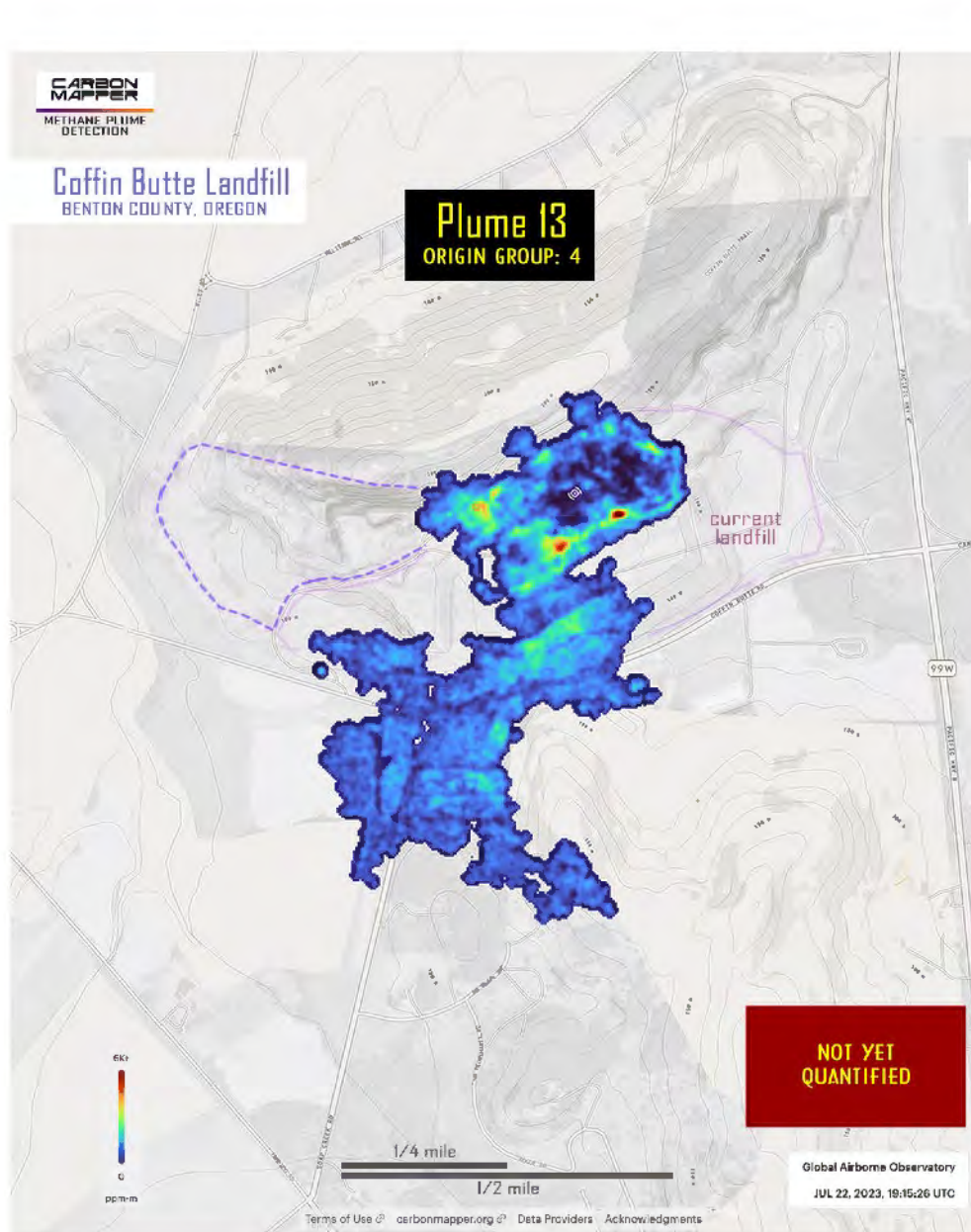
(Note that the one point-source group inside the boundary, Group 2, is in an area that Republic Services declared exempt from monitoring – see Narrative #2, which applies.)

Using the "out of boundary" loophole, a landfill can escape the consequences of excessive gas emissions if its landfill gas vents outside its monitoring boundary. It's well-known that methane readily travels through soil and fractured rock. Currently, there is no regulatory mechanism I know of in place to ever detect or remediate out-of-boundary point leaks such as these. These leaks may create continuous plumes of landfill gas for months or years.

NARRATIVE 4a: representative landfill gas plumes, Coffin Butte Landfill



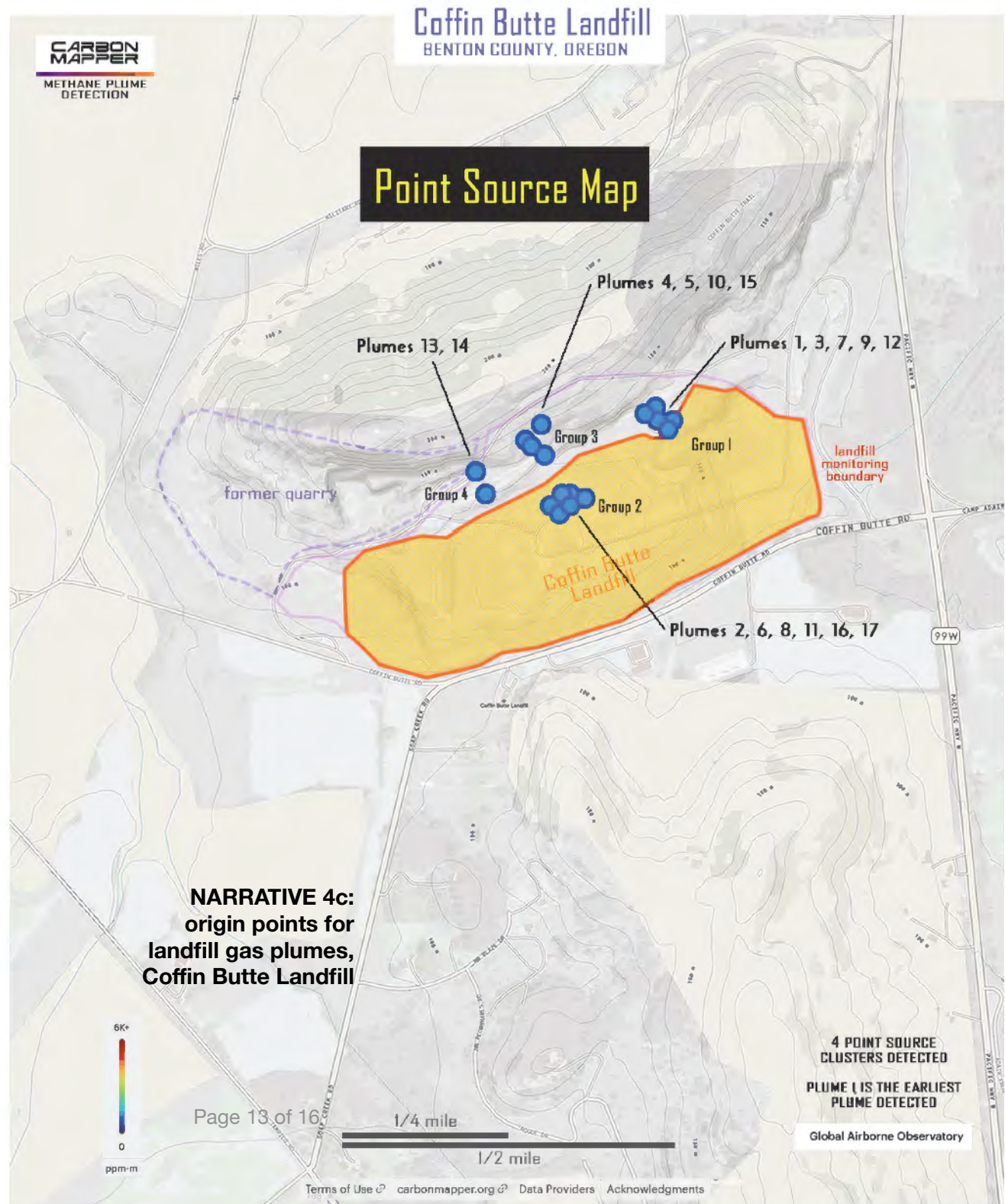
NARRATIVE 4b: representative landfill gas plumes, Coffin Butte Landfill



During the EPA's 2022 inspection, EPA inspector Daniel Heins recorded:

Phil Caruso [Republic Services] stated that he would not have monitored the Cell 5 leachate riser that Daniel Heins measured multiple exceedances at, as it was outside of the waste mass [boundary].

LU-24-027 would create what is essentially a "mirror landfill" to the south of the existing one. This new landfill would also abut a ridge of fractured basalt, and open the same "out of boundary" loopholes and blind spots that allow landfill gas to escape unchallenged.



NARRATIVE #5: THE ENDURING SYSTEMIC BLINDNESS OF CURRENT PROTOCOLS.

On June 21, 2024, the EPA staged an unannounced follow-up inspection of Coffin Butte Landfill. As in the first EPA inspection, the landfill operators reported the gas collection system was operating normally. As in the first EPA inspection, the surface emissions monitoring conducted by the EPA inspectors traversed only a small area of the landfill's surface. The inspection uncovered 41 incidents in which readings exceeded the threshold of 500 ppmv of methane. One of these incidents was a landfill gas well *with no cap*; methane was detected here at the level of 118,265 ppmv before the instrument flamed out – *237 times* the threshold level.

So: a team of inspectors began to traverse a landfill and in less than an hour found 20 leaks, culminating in the discovery of an uncapped well venting landfill gas straight into the atmosphere. This result raises serious questions about the condition of a landfill in between self-inspections. Were there other uncapped wells? How long had that well been uncapped? Did previous self-monitoring miss it? If so, for how long? (Months? Years?) Did remediation fix the condition completely? Or at all? If capped again, did the gas find a new avenue to escape? And so on.

Currently, officially, these questions go entirely unanswered. Unofficially however, we have third-party data from greenhouse gas monitoring organizations such as Carbon Mapper. These give us reliable data to show that current protocols do not describe the boots-on-the-ground reality.

NARRATIVE #6: EMPOWERING COMMUNITY MONITORING.

The information contained in this testimony has been acquired only through an extraordinary effort by concerned members of the Oregon public. It has required extensive research, FOIA filings, consulting with experts, extensive public records

requests at the state and local level, extensive communication with Republic Services, and huge contributions from the public.*

This level of effort, however, pales in comparison with the gravity of the problem before us. The harms of unmonitored, uncontrolled releases of landfill gas – in terms of their air quality and health impacts, and especially regarding the climate damage of their greenhouse gases – leave us with no choice but to persevere.

CONCLUSION

The current protocols for monitoring and enforcing responsible landfill management are demonstrably broken. Landfill operators can and do make use of any of a number of loopholes and workarounds to avoid taking measures that would protect air quality, increase energy efficiency, and lessen climate damage. There is no counterargument to images of plumes of landfill gas almost three miles long and a mile wide streaming off a landfill – especially when, in order to be visible in that image, that gas is at EPA super-emission levels.

The case for denying the landfill expansion can be simply stated: every time that an entity not Republic Services/not paid by Republic Services has pointed a methane detector at Coffin Butte Landfill, that methane detector has returned readings of uncontrolled landfill gas being emitted (a) at super-emissions levels or (b) from multiple sources or (c) both. Every. Time. For almost three years now. Expanding landfilling operations would increase that business-as-usual pollution both in duration and in scale.

To protect the public's health and to protect Oregon communities and the global climate from toxic landfill gas leaks, please deny LU-24-927, the application to expand Coffin Butte Landfill.

* All errors are mine

NARRATIVES OF COMPLIANCE AVOIDANCE AND THE LAND USE CRITERIA

Commissioners, your citations for this are BCC 53.215(1) and (2): The Applicant's inability to control leaks of landfill gas constitutes SERIOUS INTERFERENCE with adjacent land uses and with the character of the area, and this interference would only increase in both scale and duration if landfilling were to be expanded.

As the Narratives make plain, current landfilling has created a burden for regulatory agencies and the public, who have to gather data and monitor the dump's operations using obsolete protocols while the dump's operators are actively trying to use loopholes to prevent data-gathering and monitoring. Expanding landfill operations would just increase the imbalance of the situation, to the detriment of the public, which would be AN UNDUE BURDEN on the regulatory agencies and on the public itself.

Commissioners, since the Applicant cannot or will not follow regulations and control its leaks of landfill gas, you must deny LU-24-027. The very existence of Conditions of Approval related to odor and other impacts are testimony admitting to serious interference and harmful impacts that expanded landfilling would have on neighbors' land uses and on the character of the area.

Please deny the application to expand Coffin Butte Landfill.
Respectfully submitted,

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NOTES

Link to the 2024 Inspection Report by EPA Enforcement in the record:

https://www.bentoncountyor.gov/wp-content/uploads/LU-24-027/BoardOfCommissioners/Written%20Testimony/BOC1_T0010_08192025_Email_EKLUND_Ken.pdf

Read all the Explainers! Because I'm doing my best to pass on what I've learned in a clear, concise, readable narrative form.

Performance-testing the landfill gas flare: ODEQ's struggle to obtain compliance from Republic

DEQ made a rule in late 2021 and Coffin Butte Landfill complied with it in late 2024. Why did it take so long, and what about that Class 1 Notice of Violation from DEQ?

Explainer - DEQ gas flare compliance.pdf ○

EPA Enforcement: a timeline and explainer

The EPA is investigating Coffin Butte Landfill – why? Is it serious? How did that start and what's happening with it?

Explainer - Coffin Butte and EPA Enforcement.pdf ○

Climate Damage and the Land Use Criteria

Evidence shows that Coffin Butte Landfill is large-scale producer of greenhouse gas emissions. How do the impacts from that relate to the land use criteria for LU-24-027?

Explainer - Climate Damage and land use criteria.pdf ○

Gas Wells At Coffin Butte: Why So Many?

Republic asserts that all those gas wells is a sign of environmental commitment. What's the true reason?

Explainer - Why so many landfill gas wells at Coffin Butte.pdf ○

Elevated Temperatures, Subsurface Landfill Fires

The way that Coffin Butte Landfill is operated puts the community at risk for this dire outcome.

Explainer - elevated temperatures at Coffin Butte.pdf ○

Avoiding Compliance: six narratives

How Republic avoids monitoring at Coffin Butte Landfill: the paper trails.

Explainer - avoiding compliance at Coffin Butte 1.pdf ✓

How to Find Things in the LU-24-027 Public Record

It's not easy, but here are some tips that may help.

Explainer - How to find things in Public Record.pdf ○

Carbon Mapper and landfill gas: an explainer

An award-winning, innovative third-party source sharing data with us about the landfill's performance.

Explainer - Carbon Mapper and methane detection.pdf ○