



# Kairos Aerospace Releases Findings of Permian Basin-Wide H1 2022 Methane Survey

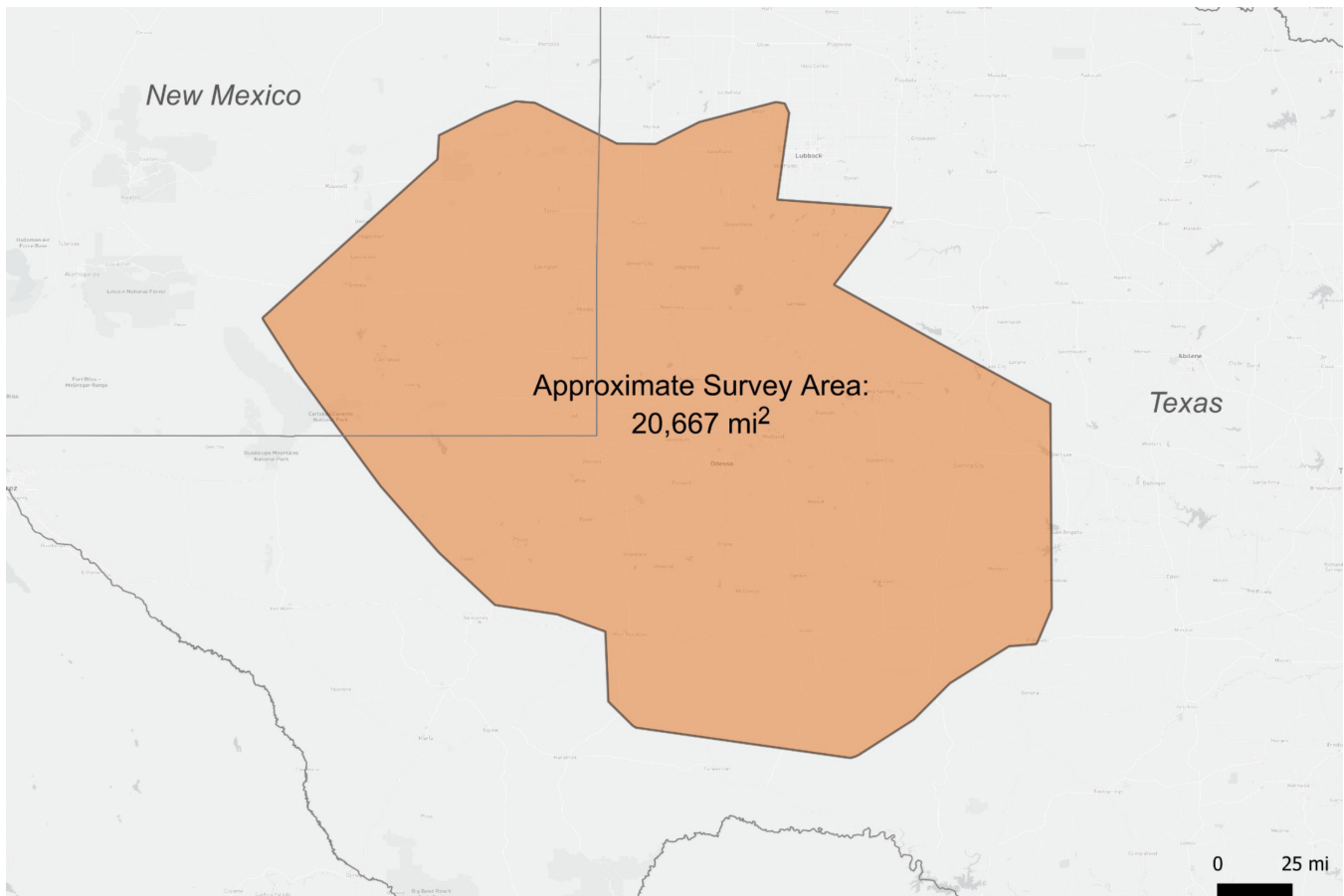
Kairos customers recoup \$33.5 million in gas revenue by repairing methane leaks, preventing over 16.5 BCF in methane emissions, or an equivalent of 1.9 million gas vehicles taken off the road. Results are mixed by sector: the midstream shows significant improvement, while emission rates in the upstream sector increase.

Since 2020, Kairos has completed aerial methane detection surveys of upstream and midstream oil and gas assets across 18 different basins in five countries. In total, Kairos has surveyed around 130,000 square miles of oil and gas basins with its proprietary aerial methane detection technology. The broad scope of Kairos' surveys has yielded tremendous amounts of data, along with a wealth of data-driven insights concerning methane emissions from oil and gas fields.

Let's take a closer look at a couple of highlights coming out of Kairos' surveys of one key basin: the Greater Permian Basin.

## Permian Basin Methane Surveys by Kairos

Kairos has conducted five surveys of the Permian Basin since 2020. In the Spring 2022 survey, Kairos covered around 20,667 square miles of the basin. In the first half of the year, Kairos' methane detection flights covered over 130,000 active wells representing at least 4.8 million BOE of average daily oil and gas production according to Enverus Drilling Info asset and production data. The survey also covered over 85,000 miles of natural gas gathering lines. Many of these assets were covered more than once during the Spring 2022 survey, with some areas covered as frequently as twice per month.



Kairos has seen significant growth in terms of both geographic area and oil and gas production covered since 2020. Compared to the second half of last year, we surveyed 40% more area and 139% more production as our footprint has grown.

## Permian Basin Emissions Profile: Spring 2022

In the first half of 2022, Kairos detected over **2,150 emissions**, totaling more than **650,750 MCF/day** of methane emissions in the Permian Basin.

Midstream assets (pipelines, compressor stations, and gas plants) accounted for approximately 47% of emission sources, while upstream assets (well pads, including both “simple” well pads with a single

wellhead and “complex” well pads with multiple wellheads or other equipment like storage batteries) accounted for about 52% of sources. But the balance shifts when you look at the volume of emissions instead of the number of sources: Midstream assets accounted for over 50% of emissions by volume, while upstream assets accounted for around 46%.

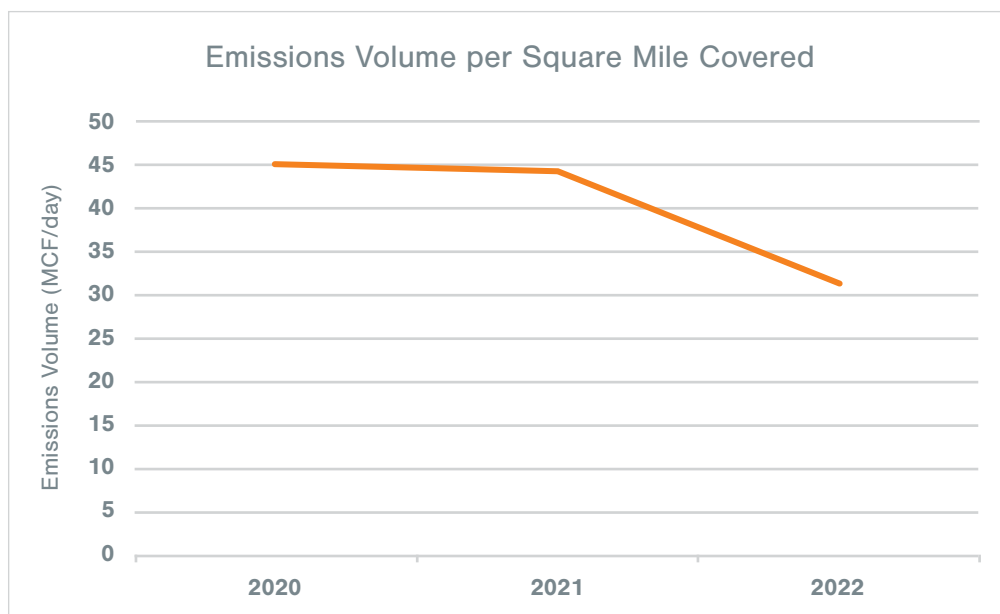
In other words, the average detection of midstream emissions was larger than the average emission detected from an upstream facility. This difference is driven by emissions from compressors and gas plants which, at 422 MCF/day and 535 MCF/day averages, respectively, exceeded the overall average for all assets (302 MCF/day).

Setting aside emissions from midstream facilities, the average rate per source from pipelines and well pads was about the same, with both segments averaging around 260-270 MCF/day per source.

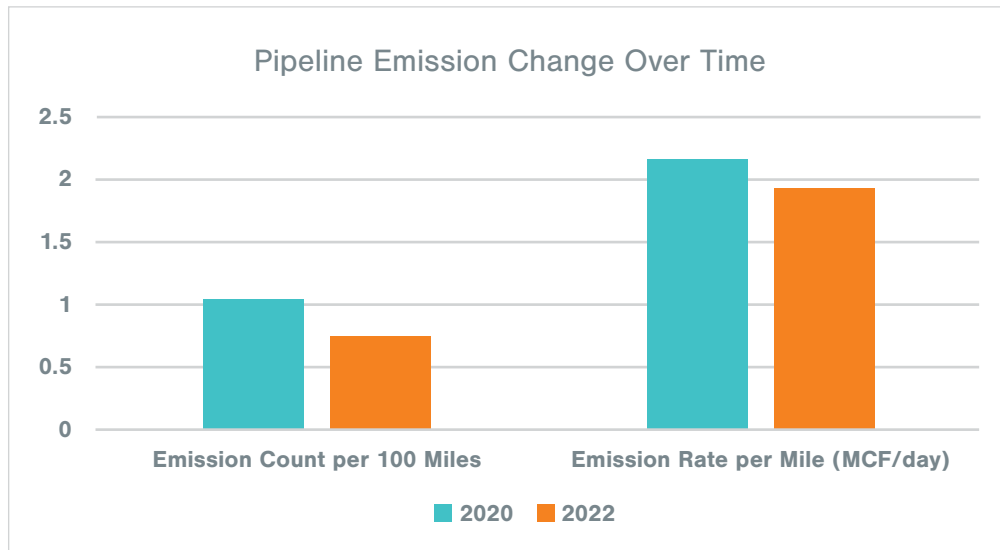
### What’s Changed in the Permian since 2020?

The world has seen a lot of changes since January 2020... but how have Permian Basin methane emissions changed, if at all?

Both the number and the total volume of emissions detected were higher in the first half of 2022 than in any prior survey—but Kairos also covered significantly more square miles than in any prior survey. The good news is, per square mile covered, Kairos actually saw a **30% decrease in total emissions** by volume from the first half of 2020 to the first half of 2022.

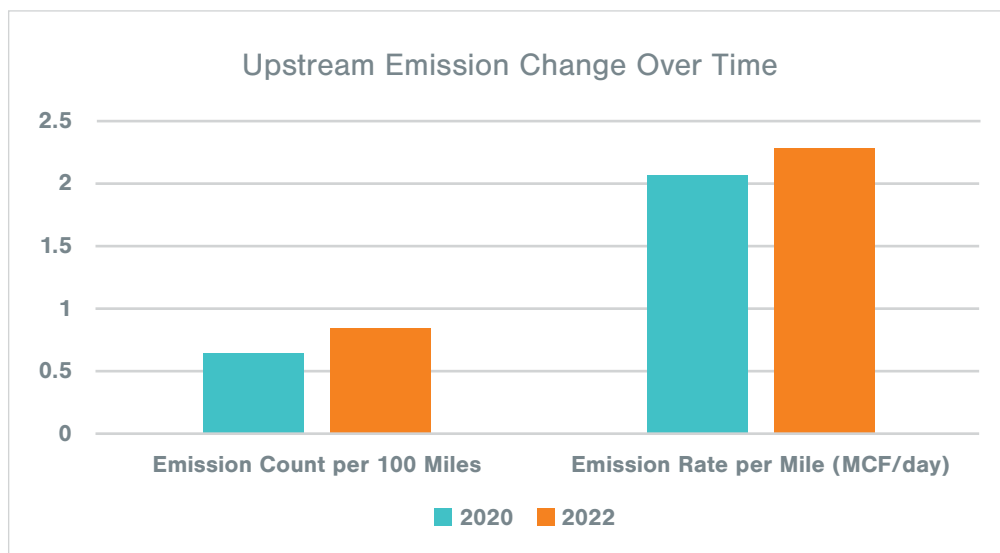


In particular, the emissions profile from pipeline **assets appears** to have **improved**. Per 100 miles of natural gas pipeline covered, the number of pipeline emissions dropped by 28% from 2020 to 2022. And the average emission rate per mile also decreased by almost 11%.



One contributing factor to these declining pipeline emissions may be the systemic improvements undertaken by Kairos’ large midstream customers in response to emissions reports from earlier surveys.

The emissions Kairos detected from upstream assets, by contrast, were both more frequent and, on average, larger in the most recent survey than in any prior Permian survey. The number of emission sources per 100 wells surveyed increased by almost 32% from 2020 to 2022, and the average emission rate per surveyed well increased by 12%.



While we can draw some comparisons between the results of different surveys, another key insight is that survey-to-survey trends are neither perfect nor permanent. Survey-to-survey fluctuations in emissions profiles are common, so the spike in upstream emissions in the last survey could be followed by a precipitous decline in the second half of 2022.

## Impact & Cost Savings

One metric that has consistently increased over the past two-and-a-half years is the impact of Kairos' surveys. Kairos' Spring 2022 Permian survey has led to our customers avoiding over 16.5 BCF of methane emissions. That's the same as preventing over 8.8 million metric tons of CO2 emissions, or taking more than 1.9 million cars off the road.

Meanwhile, Kairos customers in the Permian may have recouped as much as \$33.5 million in revenue from gas saved from the emissions they abated in the first half of 2022 based on Kairos' emissions reports.

<sup>1</sup> Assumes an estimated \$6.74 revenue per MCF saved for upstream customers and \$1.25 in revenue per MCF saved for midstream customers