BRIDGER PHOTONICS

Bridger Photonics:

Emissions Reduction Made Easy

Our Competitive Advantage

Gas Mapping LiDAR™ is an advanced airborne methane detection technology that has been developed by Bridger Photonics over the past 15 years.

It utilizes **Light Detection and Ranging** (LiDAR) technology to accurately locate and quantify methane emissions from oil and gas operations.

It is Proprietary and Patented Technology. It is only in use by Bridger. It is what makes us special and our data unique.

Bridger's Gas Mapping LiDAR

Proprietary LiDAR Technology
30+Patents

BRIDGER PHOTONICS

1) Data Collection

Fixed Wing

100+ Sites a Day / 115 miles of Pipe
Consistent Terrain

Rotary Wing

12 Square Miles a Day / 75+ Sites
Urban Areas or Inconsistent Terrain

Drone

Offshore / LNG Terminals / Distribution
Dense or Isolated Assets
Coming in 25'

Optimized Flight Planning for Comprehensive Coverage

2) Data Processing

Detection Processing

- Emitter localization to within 6Ft
- Plume and site imagery
- Emitter flux, height, persistence
- Equipment identification
- Emission Quantification
- Auditable coverage

Bridger AI Platform

- Accurate facility identification & emission processing
- Improved turn-around time

Emissions Analytics

- Summary analytics
- Tops down averages
- Quarter over Quarter emissions

Detection Sensitivity Flexibility 1-15 kg/hr

3) Data Delivery

Deliverable Reports

- High-Threshold Alerts- same day
- Preliminary reports- 24 hrs.
- Full reports processed- 5-7 days
- File types- .pdf/.kmz/.xlsx/.jpeg
- EPA Advanced Tech Approval

Programmatic Data Delivery

- Bridger API via Snowflake
- Direct Sharepoint integration via your data aggregators

Customer Dashboards

Coming in 25'

- Data visualization platform
- Facility and Equipment insights
- Super emitter insights
- Benchmarking

Secure, Reliable, and Consistent Data Delivery

4) Data Enablement

- LDAR Work Order Management
- Reconciliation Platforms
- Enterprise Systems
- OGMP Veritas Certified Gas
- EPA Reporting

Maximize Data Re-Use and Value

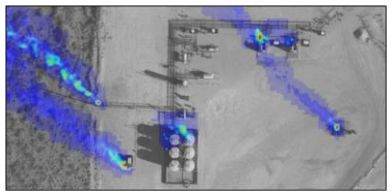
How our Clients use GML Data

Regulatory Compliance

Efficiently comply with requirements and plan for upcoming regulation changes.

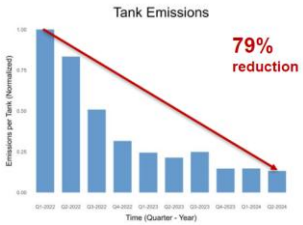
LDAR

Streamline repairs with knowledge of leak emission rates and plume maps that direct crews right to the source.



Strategic Decision Making

Utilize insights from GML data to make strategic operational decisions and track reductions.



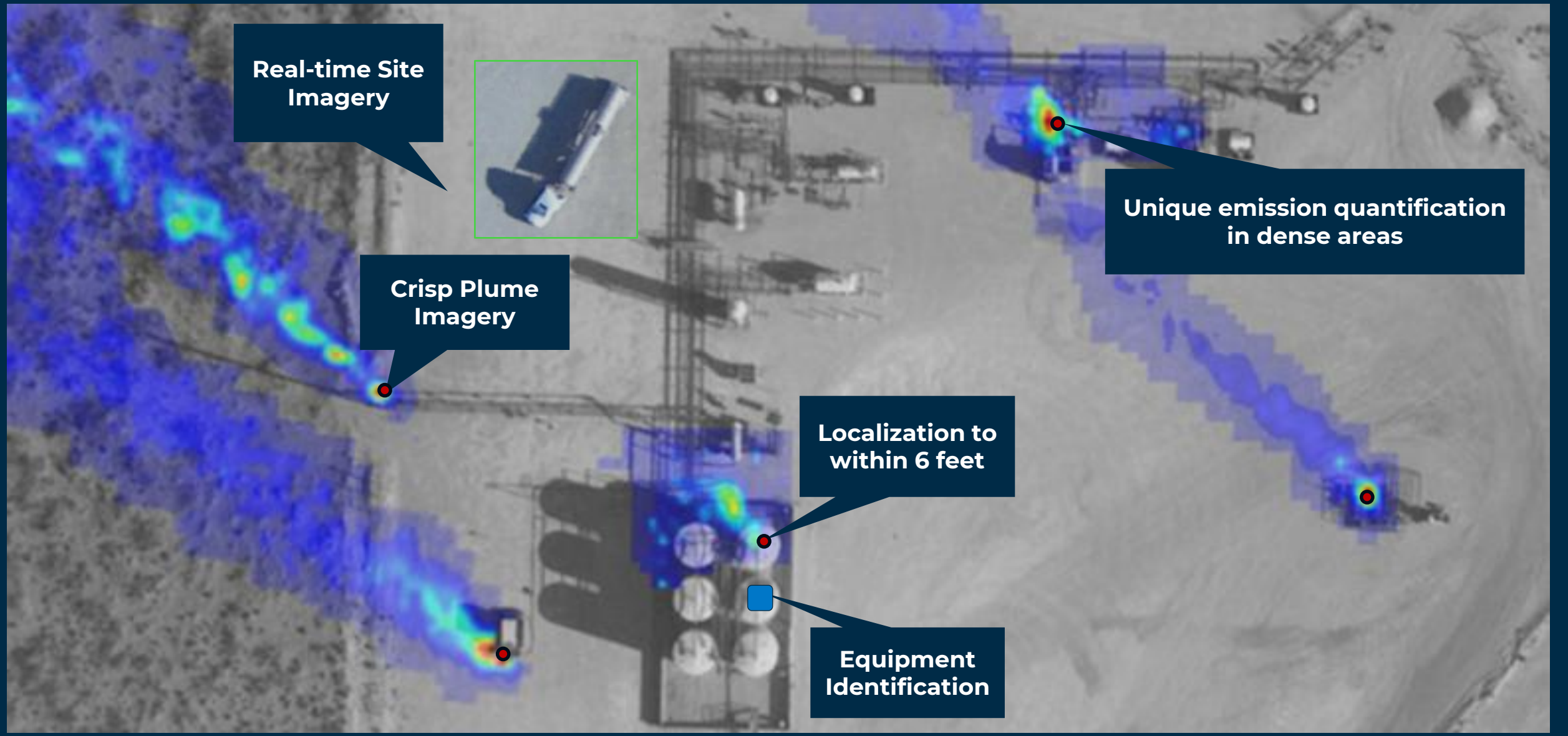
Certification

Use GML scans to meet monitoring requirements for gas differentiation initiatives.

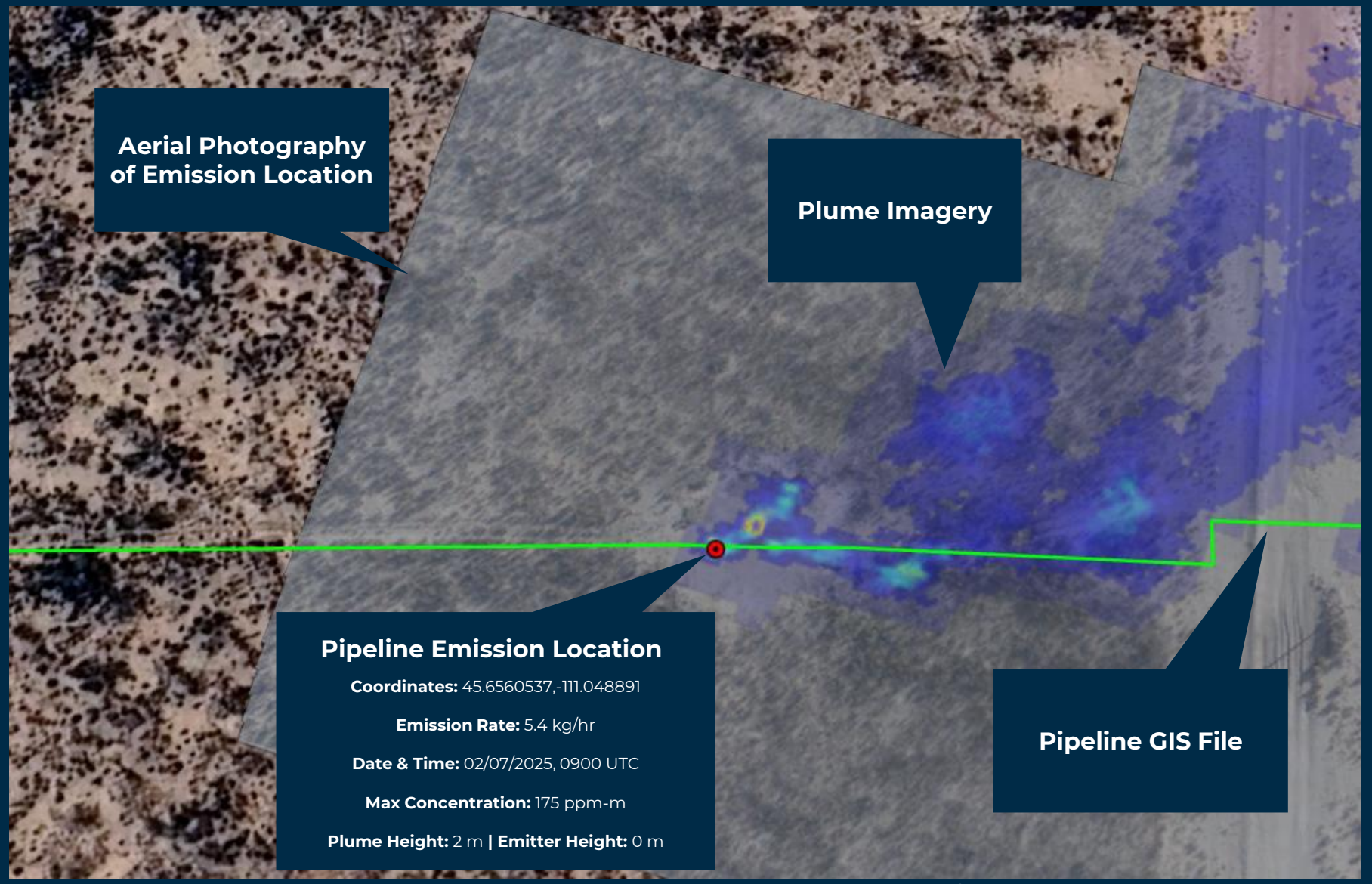
Reporting Frameworks

Incorporate accurate measurement-based inputs into reporting frameworks.

Bridger Data in Action

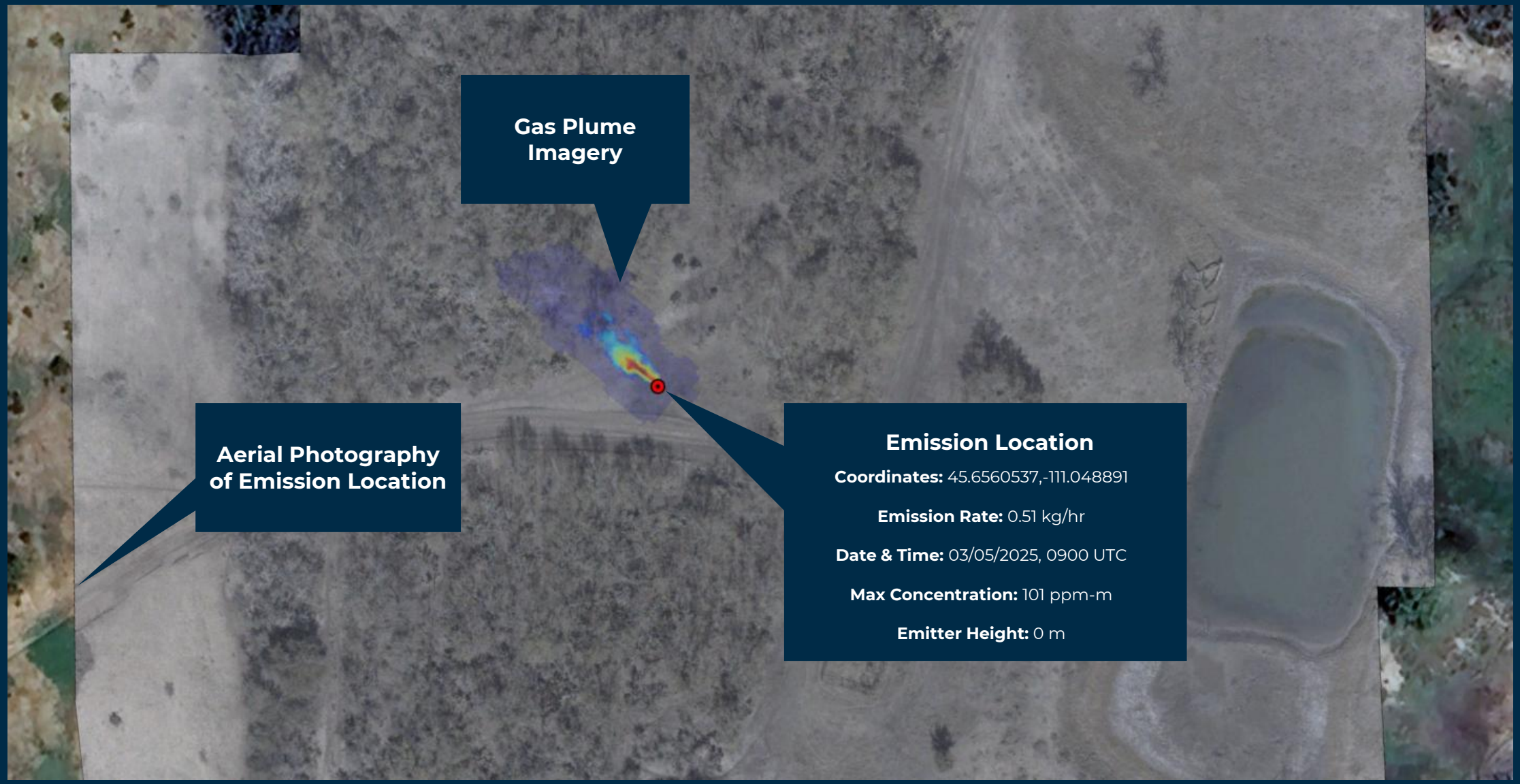


Bridger Data In Action - Pipeline



*Anonymized Example for Illustrative Purposes only

Bridger Data In Action – Orphan Well



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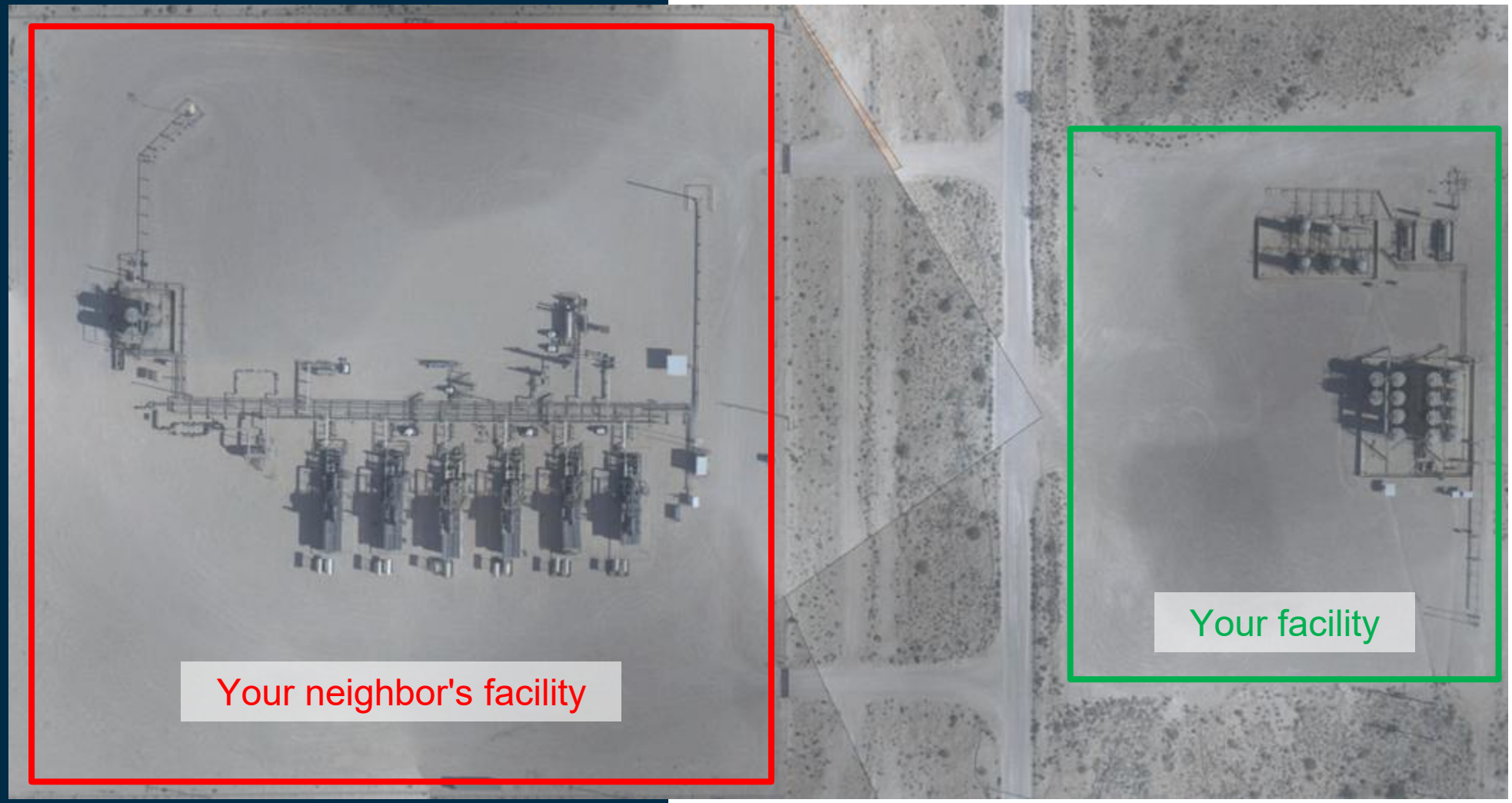
EMISSIONS GRANULARITY

The Secret Sauce



EMISSIONS GRANULARITY

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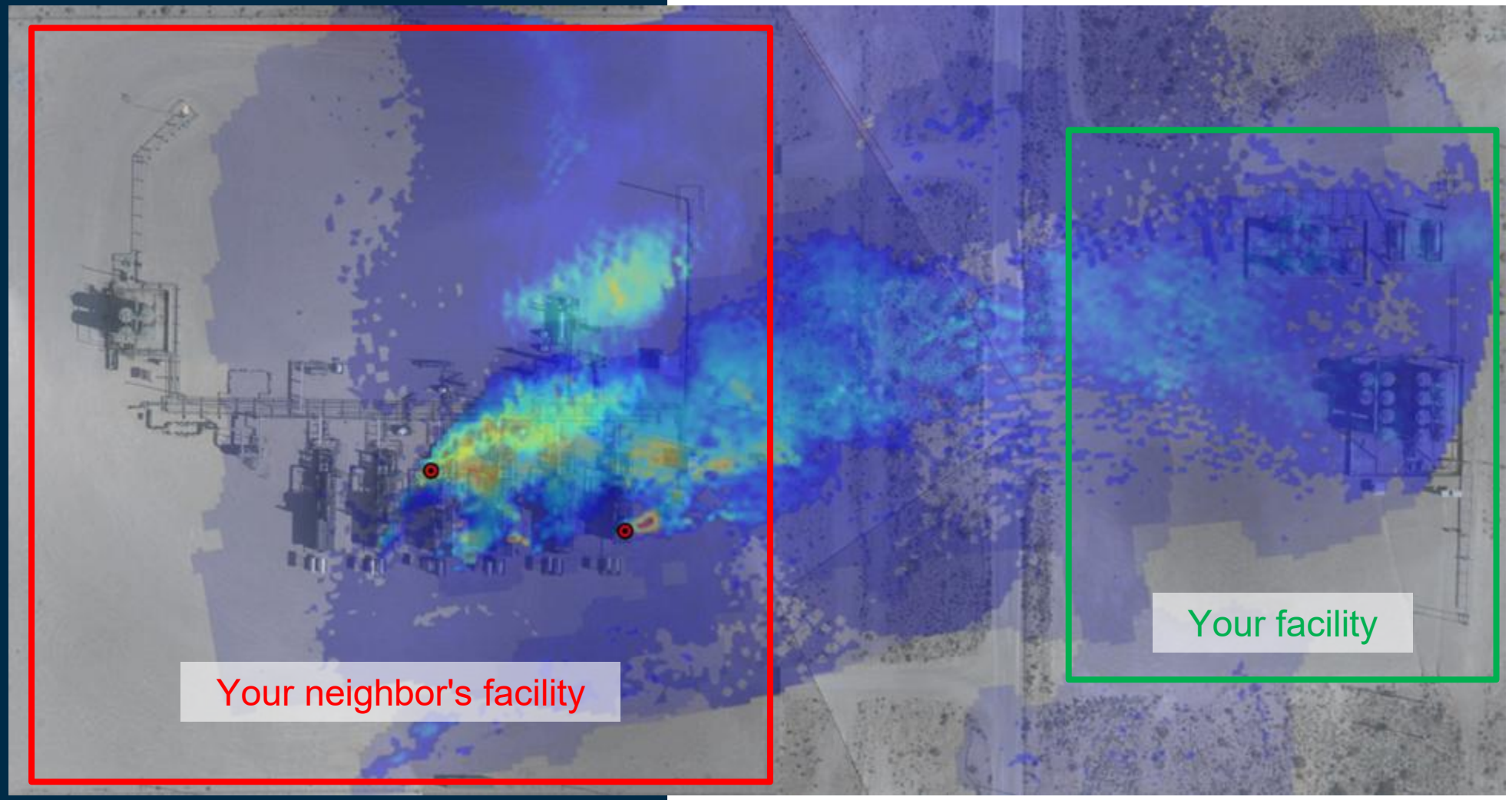
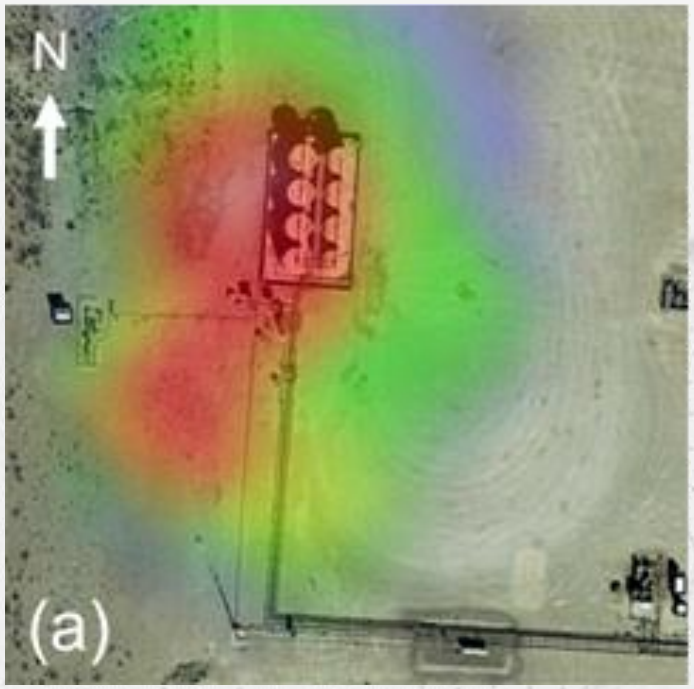


Bridger Resolution Protects you by understanding what Emissions are really yours

The Secret Sauce

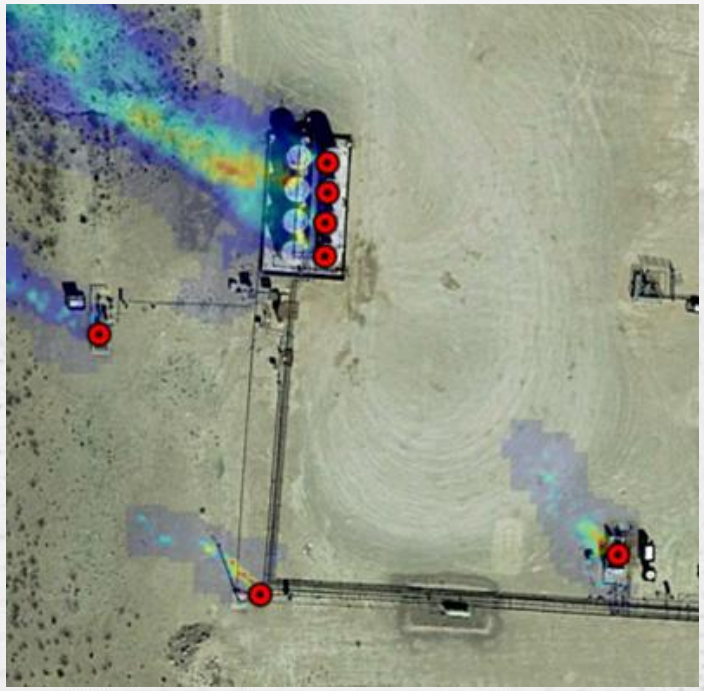
What They See



100 kg/hr emission

Appears to be an Other Large Release Event

What We See



Tanks – 67 kg/hr
Flare – 18 kg/hr
Separator – 12 kg/hr
VRU – 7 kg/hr

Sources below Other Large Release Event threshold

Key Features and Benefits

HIGH PRECISION DETECTION

Pinpoint Accuracy: Our Gas Mapping LiDAR™ offers unmatched precision in detecting methane emissions, allowing you to identify and address leaks with exceptional accuracy. Enjoy the peace of mind that comes with knowing the exact location of your emissions, minimizing wasted time and resources.

COMPREHENSIVE COVERAGE

Scalable Solution: Bridger Photonics can scan hundreds of sites and miles of pipeline accurately in a single day. Our technology is not dependent on sunlight or weather conditions, allowing us to operate reliably year-round. This scalability ensures that you can monitor your entire operation efficiently and effectively.

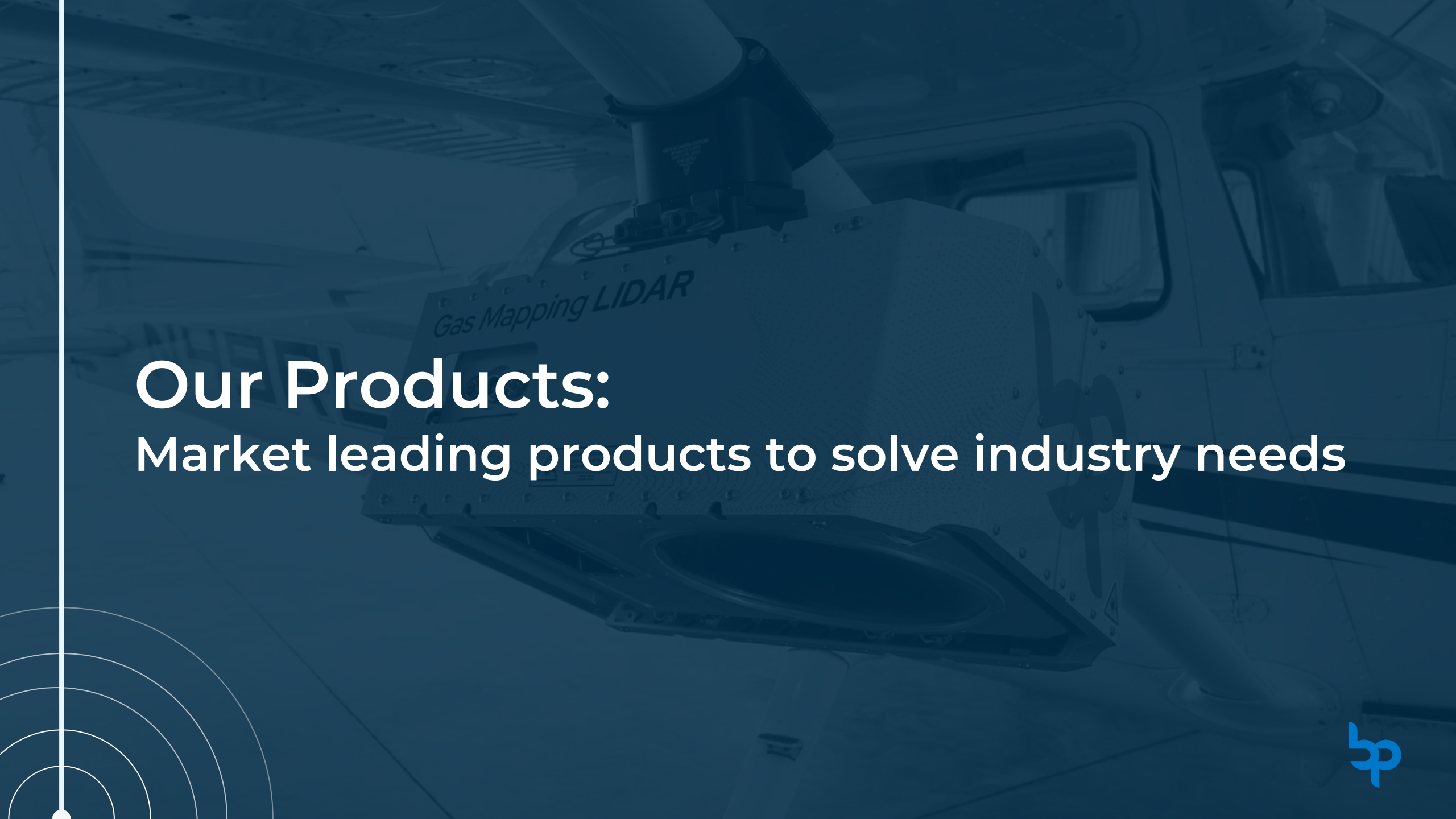
ENVIRONMENTAL IMPACT

Emissions Reduction: By providing actionable data, our technology supports significant methane emissions reductions. Our detailed, site- and equipment-level data allows you to prioritize repairs and optimize your emissions management strategy, leading to a cleaner, more sustainable operation.

COMPLIANCE & REPORTING NEEDS

Regulatory Compliance: Bridger Photonics' Gas Mapping LiDAR™ can help operators with compliance from PHMSA to EPA Regulations soon.

Bridger can also help operators address OGMP 2.0 reporting requirements as well as other certification framework requirements.



Our Products:

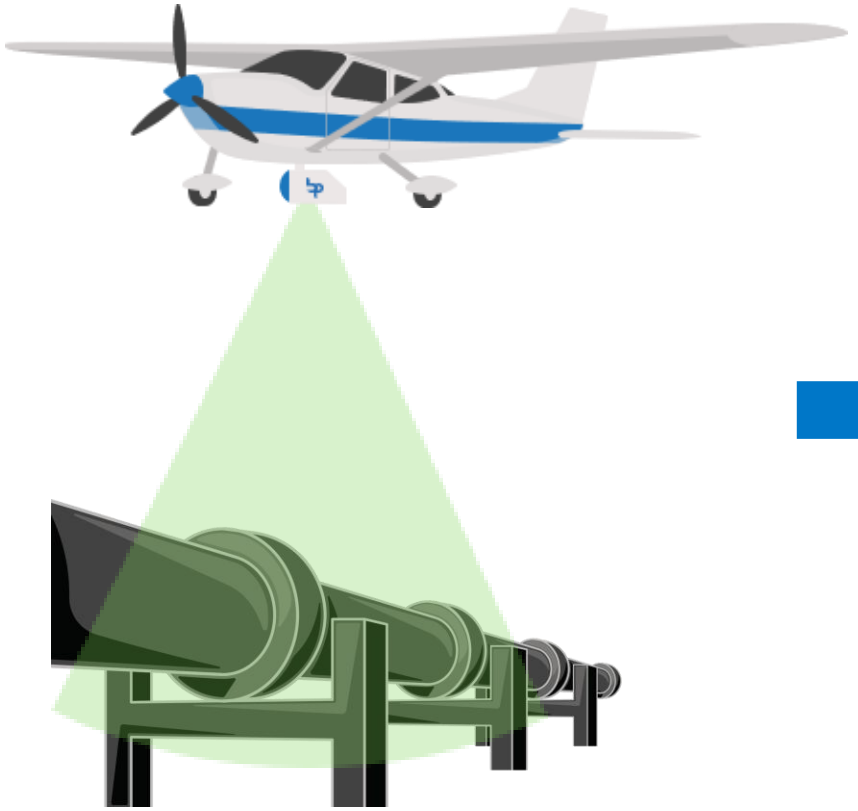
Market leading products to solve industry needs

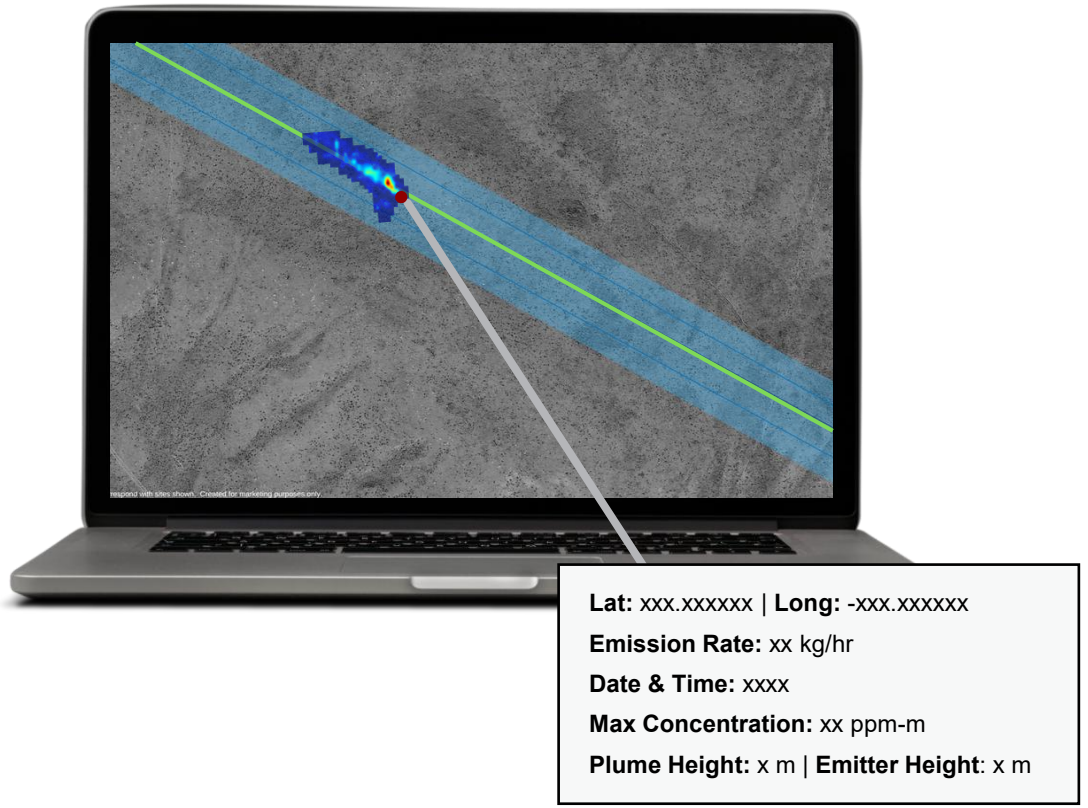
Emissions Reductions Made Simple

1 **Efficiently scan for methane emissions**

2 **Provide actionable data for emissions mitigation**

Simplifying Methane Management in Midstream

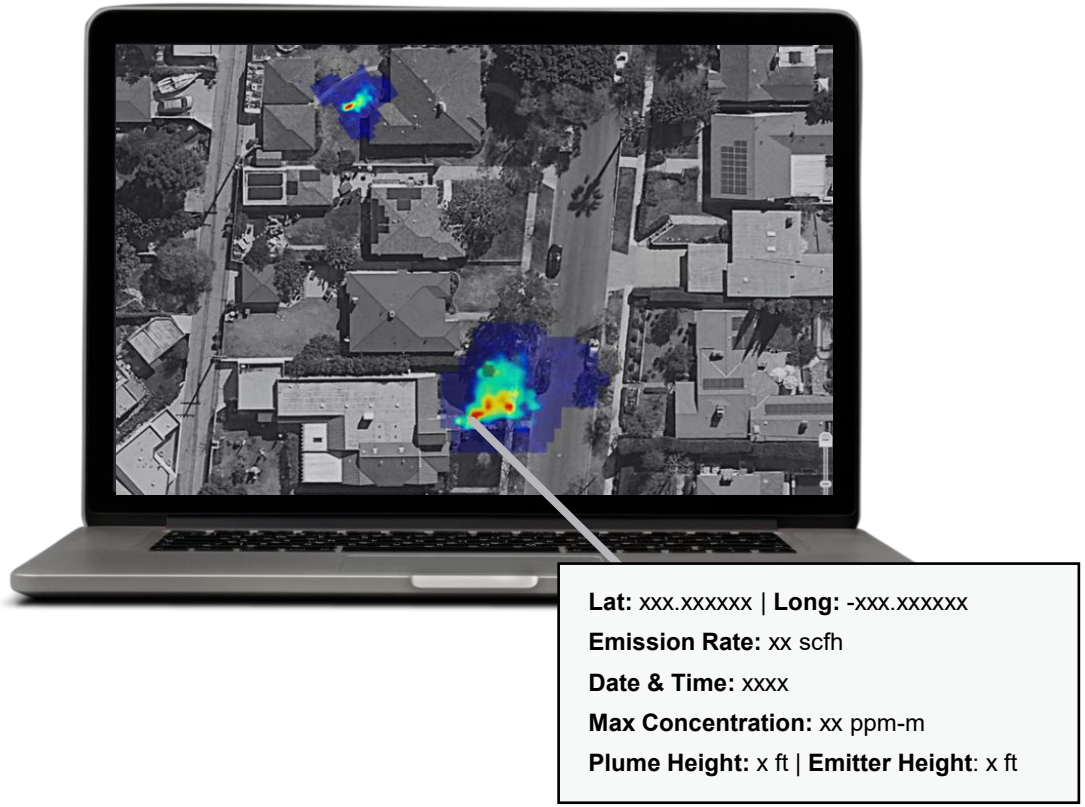




1 **Efficiently scan for methane leaks along pipelines and storage facilities**

2 **Provide actionable data for midstream emissions mitigation**

Simplifying Emissions Reductions for Distribution Networks



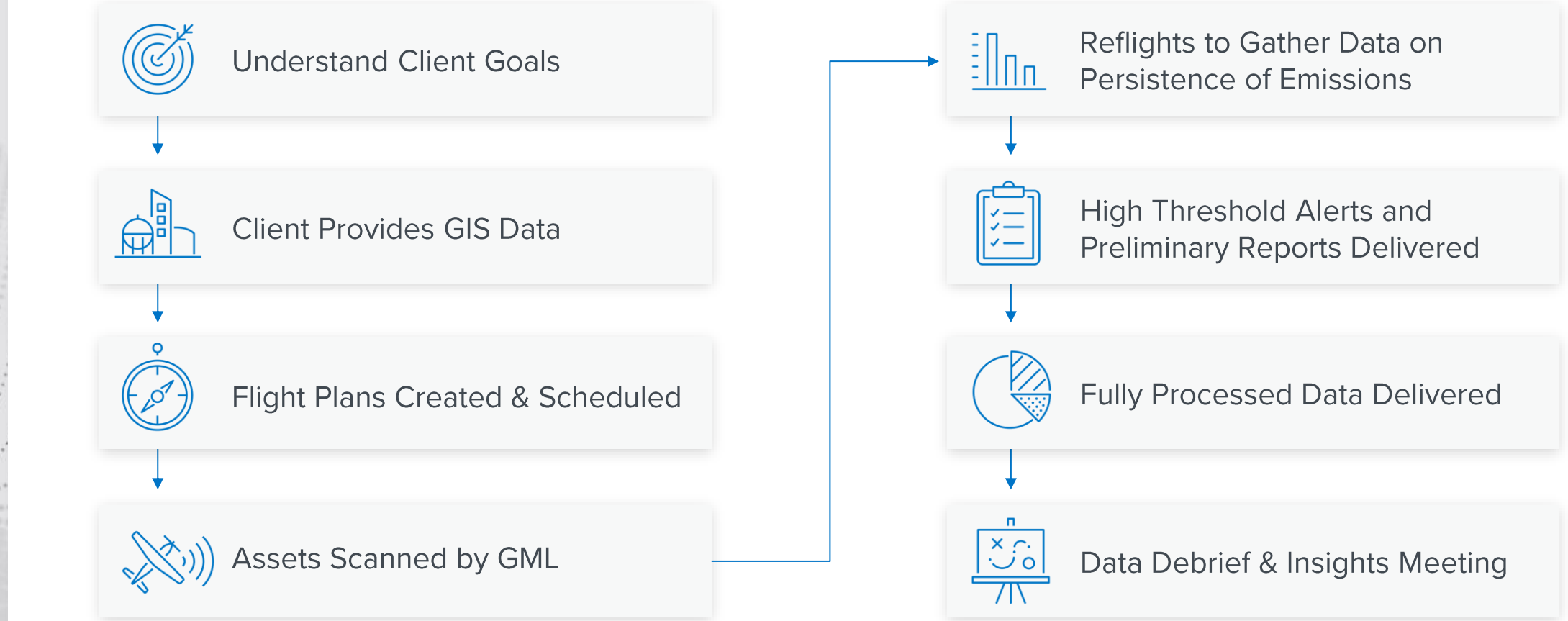
1 **Efficiently scan for methane emissions across distribution networks**

2 **Provide actionable data for distribution network emissions mitigation**

Our Process:

A guided approach to success

Step-by-Step Process



Your Dedicated Support Team

Ben Panepucci
Rotary Wing Operations Manager

Matt Jones
Business Development Manager

Lance Ratterman, MA, TS/SCI
Processing/Planning Operations Manager

Best-In-Class Performance

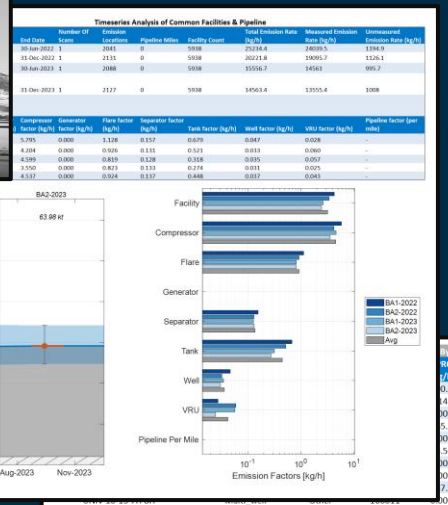
- Our technology exceeds the detection sensitivity standards we expect in PHMSA's final leak detection rule and received EPA approval for OOOO regulations.

- We back up our technology performance claims by submitting our technology to rigorous blinded testing by expert third parties. There are numerous peer-reviewed reports on our detection sensitivity capabilities and quantification accuracy.

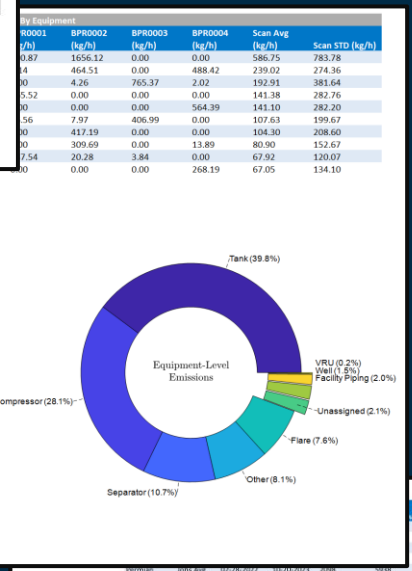
A few of the many peer-reviewed studies about Bridger's capabilities.

Emission Analytics Report

BRIDGER PHOTONICS

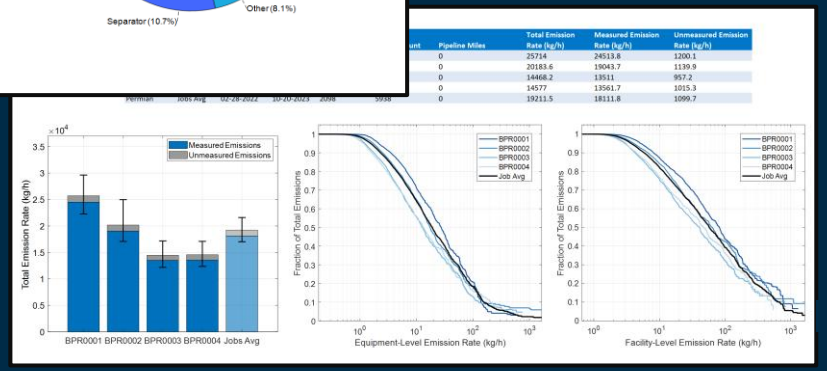


Time Series Analysis & Benchmarking



Equipment Summary & Tracking

Facility Summary & Tracking



Scan Summary

- Benchmarking
- Total emission estimate
- Observed emissions
- Undetected small emissions
- Source attribution
- Facility aggregation
- Emission factors
- Emissions intensity
- Well-characterized uncertainty

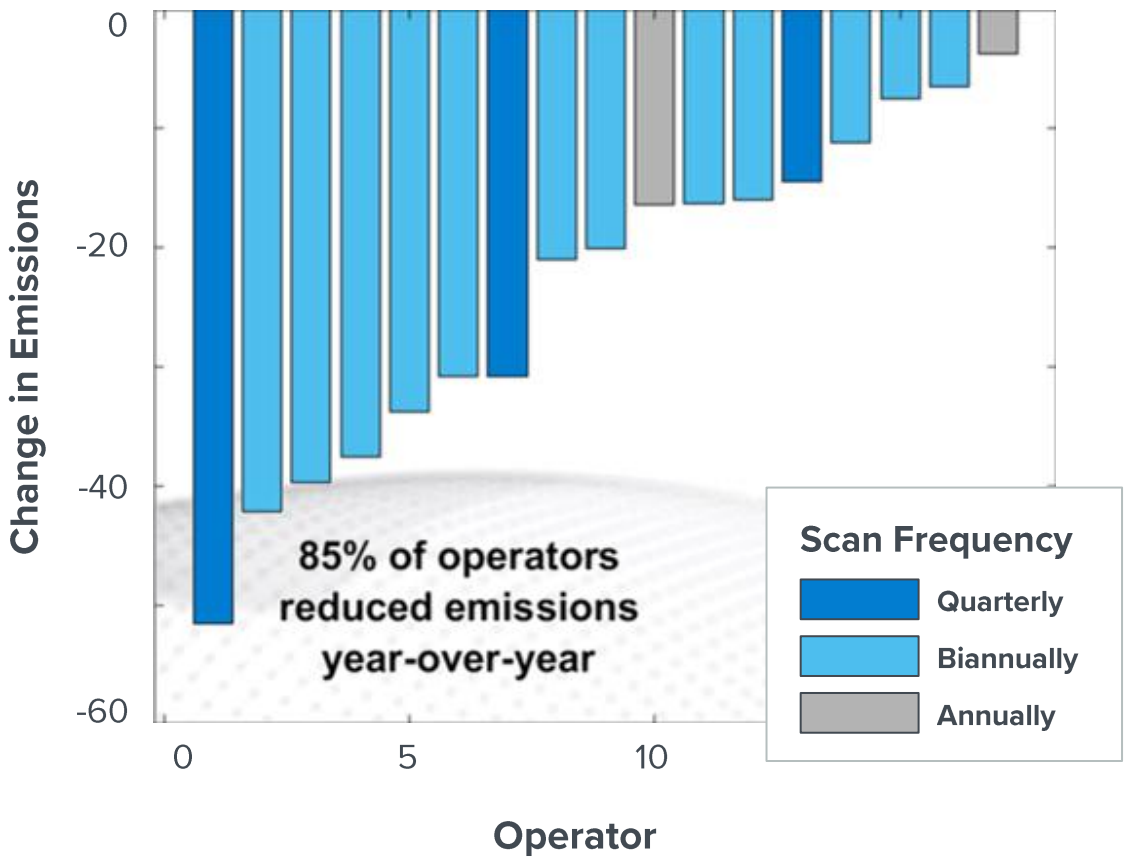
Our Impact:

Real and definitive impact to your operations

CLIENTS

Proven Emissions Reduction

The Facts:



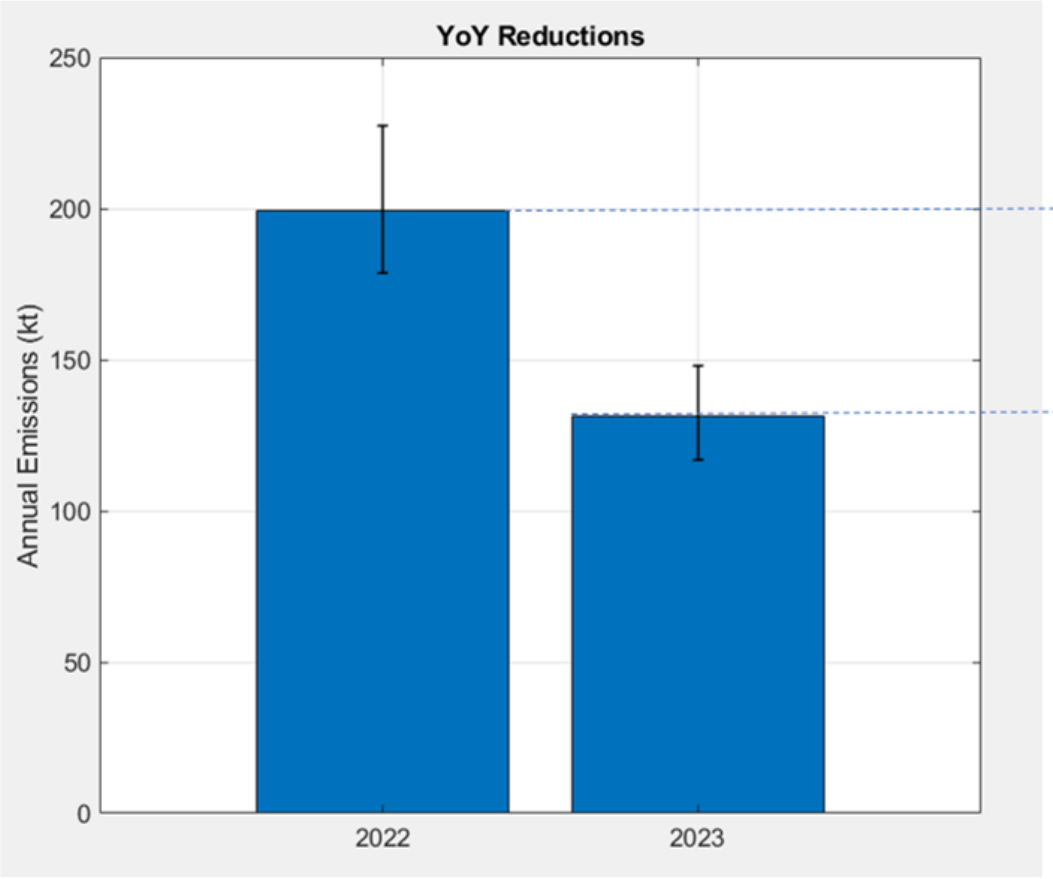
20 of Our Largest Clients:

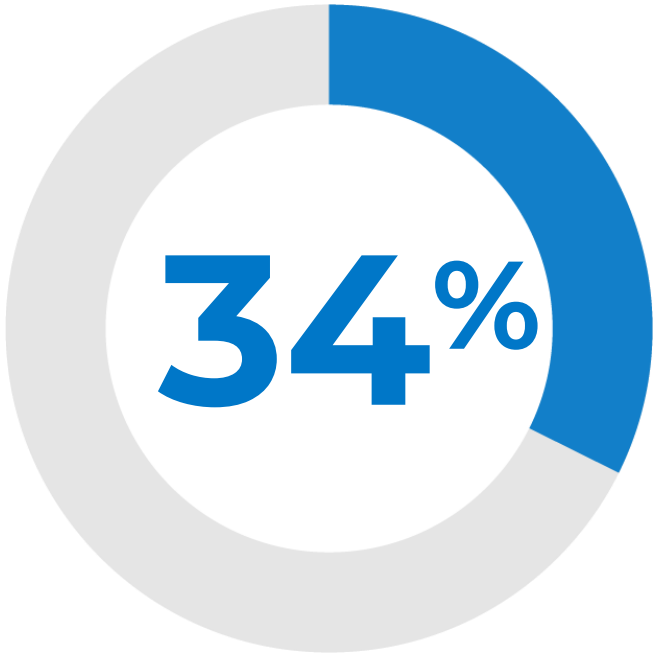
18%

YoY Reduction in Aggregate emissions (average)

PERMIAN BASIN

Proven Emissions Reductions





YoY Emissions Reductions in the Permian Basin

- 5,938 facilities from 3 Bridger clients
- Average reductions observed:
  - *34% [18%, 37%] @ 95% CI*

PROTECT YOURSELF

Super Emitter Risk Reduction

The Long-tail/Fat-tail

- Super emitters are large but rare

"Tuck the Tail" Success

- **Systematic** risk reduction via aggregate reduction
- Use data to determine the most common sites and root causes of super-emitters for you ("heavy tail")
- Just scanning more often **won't** reduce the probability of occurrence

20 of Our Largest Clients:

YoY Reduction in Super Emitter Occurrence (median)

Diversified Energy

Over
20,000
miles of
Gathering Systems Flown

"The quality of the data that is provided to us by Bridger is unsurpassed and reliable. And the folks in the field, when they went to verify where emission points were found could trust that the data was 100% accurate."

- Paul Espenan, Senior Vice President EHS&R at Diversified Energy

Challenge

- Diversified Energy Company has a stated 2040 net zero goal.
- Emissions reductions from its natural gas production and distribution assets are necessary in order to achieve net zero.
- The company must meet stringent environmental goals and comply with regulatory requirements while managing a vast and growing asset base.
- Remote sites that are difficult to access in rugged terrain pose significant challenges for locating and repairing issues, often requiring several days of foot patrols.

Solution

- To tackle this challenge, Diversified Energy engaged Bridger Photonics in a multi-year project utilizing aerial LiDAR scans of Diversified's production and distribution assets.
- This approach allows for accurate detection, pinpointing, and quantification of methane emissions across Diversified's operations, where Bridger's aerial scans efficiently cover large areas and identify emissions that can be difficult to detect by conventional methods.
- Remote sites are quickly surveyed using Bridger's LiDAR technology, minimizing foot patrol efforts and improving efficiency and timeliness of repairs.

Results

- The collaboration between Diversified Energy and Bridger Photonics led to significant improvements in methane emissions management. The partnership resulted in a faster response and remediation of leaks.
- Diversified confirmed the effectiveness of Bridger's technology during field trials and committed $9 million over three years to expand the aerial scanning program.
- The enhanced detection capabilities and strategic investment in aerial LiDAR data demonstrate the company's leadership in environmental stewardship and its commitment to achieving net-zero emissions by 2040.

SoCalGas

REDUCED EMISSIONS
Robust geo-spatial pinpointing of methane sources with complete emissions quantification.

IMPROVED SAFETY
Actionable data for prioritized repairs, better-prepared crews, and improved safety for communities.

INCREASED EFFICIENCY
Efficient scanning creates accurate plume imagery for quick action.

Challenge

SoCalGas had been monitoring its service area with foot patrols and was consistently exceeding its regulatory requirements. SoCalGas sought out the best available aerial technology to aid in their commitment to reaching net-zero emissions by 2045.

Solution

SoCalGas began testing Bridger Photonics' aerial Gas Mapping LiDAR in 2019. After conducting several controlled releases using double-blind tests, the company found that aerial LiDAR added a more robust LDAR option to target emissions reductions and to better navigate the complexities of methane detection within a densely populated area.

Results

SoCalGas implemented regular scans using Bridger Photonics' aerial Gas Mapping LiDAR technology systematically across their infrastructure. The program has continued since 2021.

SoCalGas reported in 2021 that they reduced fugitive methane emissions by 37%—surpassing California's 2025 methane emissions reduction goals of 20% ahead of schedule. In fact, the company is nearing 2030 emissions reduction goal of 40% years ahead of the allotted time frame.

Chevron

Targeted Chevron's U.S.
ONSHORE FACILITIES

950
total sites

99%
survey coverage per site

Chevron trialed eight emerging technologies using a technology evaluation framework. Here's why they chose Bridger's aerial LiDAR technology:

Leak Location Specificity

Technologies provide varying levels of location specificity for methane emission sources, from the several-kilometer scale down to the component level. Solutions like aerial lidar that can identify pieces of equipment for follow-up were found to be more useful than approaches with only site-level information.

The Data Delivery Timeline

Having timely data available can improve follow-up activities. The utility of screening data decreases as more time passes after initial detection. Aerial lidar results are typically available within a few days, while some trialed technologies took up to a few months to deliver data.

Reduced Windshield Time

Road safety is a priority for Chevron. Using aircraft reduces vehicle traffic compared to other solutions that require driving to sites.

What Our Clients Say

BRIDGER PHOTONICS

Chevron

It's a gamechanger. It can find leaks that are 10 times smaller than other commercial providers are capable of spotting.

- Bruce Niemeyer, Chevron's Americas president of Exploration and Production, on their work with Bridger Photonics

TOURMALINE

...Gas Mapping LiDARTM excels in sensitivity, capturing more emissions and providing robust data products for methane leak detection in the natural gas value chain.

- Tourmaline 2022 Sustainability Report

PIONEER NATURAL RESOURCES

...using a higher sensitivity technology allows us to find smaller sources of methane and understand the full picture of our methane emissions.

- Pioneer Natural Resources 2021 Sustainability Report

Why Bridger Photonics is the Clear Choice

Sensitivity – The only Aerial tech with an auditable sensitivity down to 3 kg/hr at a 90% POD. Allowing you to choose a sensitivity that fits your regulatory requirements and emissions reduction goals.

Long-term Stability – Founded in 2006, Bridger is a proven leader. In a space flooded with start-ups and increasing lay-offs, Bridger continues to grow, innovate, and provide best in class data at a rapid pace.

Industry Partner – Vested in partnering and improving public relations for the entire Natural Gas Value Chain. Bridger will never weaponize or use your data against you. Fear mongering is not our style.

Scientific Integrity – Bridger is an innovative and global leader in the methane detection space. Rigorously tested and certified by scientific and industry leaders.

Company Overview:

Emissions Reduction Made Easy

Who is Bridger Photonics?

- Global market leader for aerial methane detection technology
- Executing innovative methane reduction work with the world's best operators
- Most extensively tested and validated measurement system on the market today
- Largest global emissions database, allowing for unmatched opportunities for AI and ML to drive insights
- 30+ patents and patents pending on technology
- Headquartered in Bozeman, MT

Our Mission

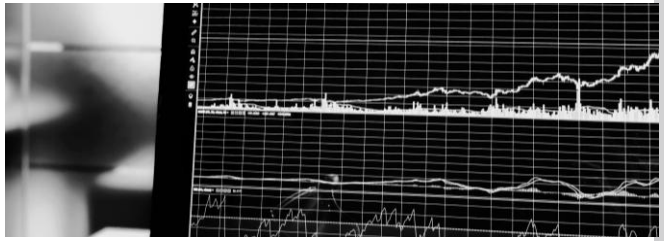
Enable clean, safe, and streamlined oil & gas operations by providing actionable data for strategic methane emissions reduction.

Our Vision

Make Emissions Reduction Simple.

Your Stable Methane Reduction Partner

Growing, Reliable, and Investing in the Future



2006 →

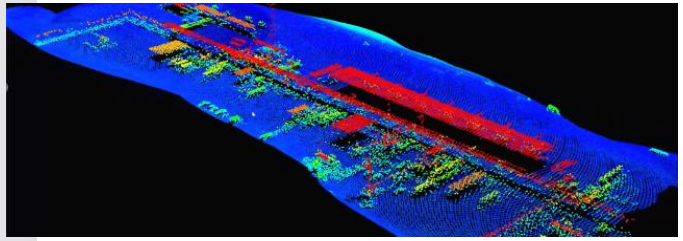
Three grad school friends join and start Bridger Photonics.

MONTANA STATE UNIVERSITY

2011 →

Ranked as Inc. Magazine fastest-growing privately held U.S. company in the engineering sector.

Inc.



2015 →

Awarded a grant DOE's Advanced Research Projects Agency-Energy (ARPA-E).

arpa·e

2019 →

Gas Mapping LiDAR launched commercially.

Gas Mapping ***LiDAR***

Today →

Scanning for the entire natural gas value chain throughout North America for hundreds of entities.

Future

Continued international expansion, growing product offerings, and increased coverage throughout the value chain.