

# Gas Mapping LiDAR™

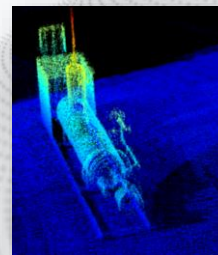
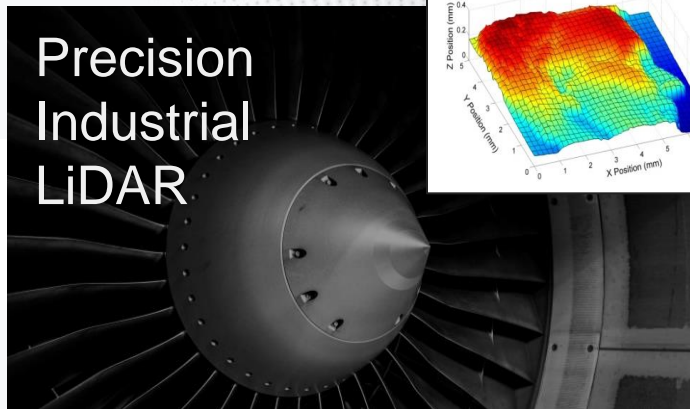


next-gen methane leak detection and quantification

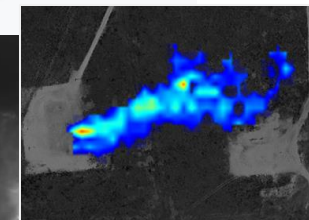
# About Us

Founded in 2006

We develop advanced laser sensors and analytics to solve impactful industrial challenges



Gas Mapping LiDAR™







**GAS MAPPING LiDAR™**

# Emissions Reduction Made Simple.

Gas Mapping LiDAR™ sensitively images, pinpoints, and quantifies your methane emissions from the air.

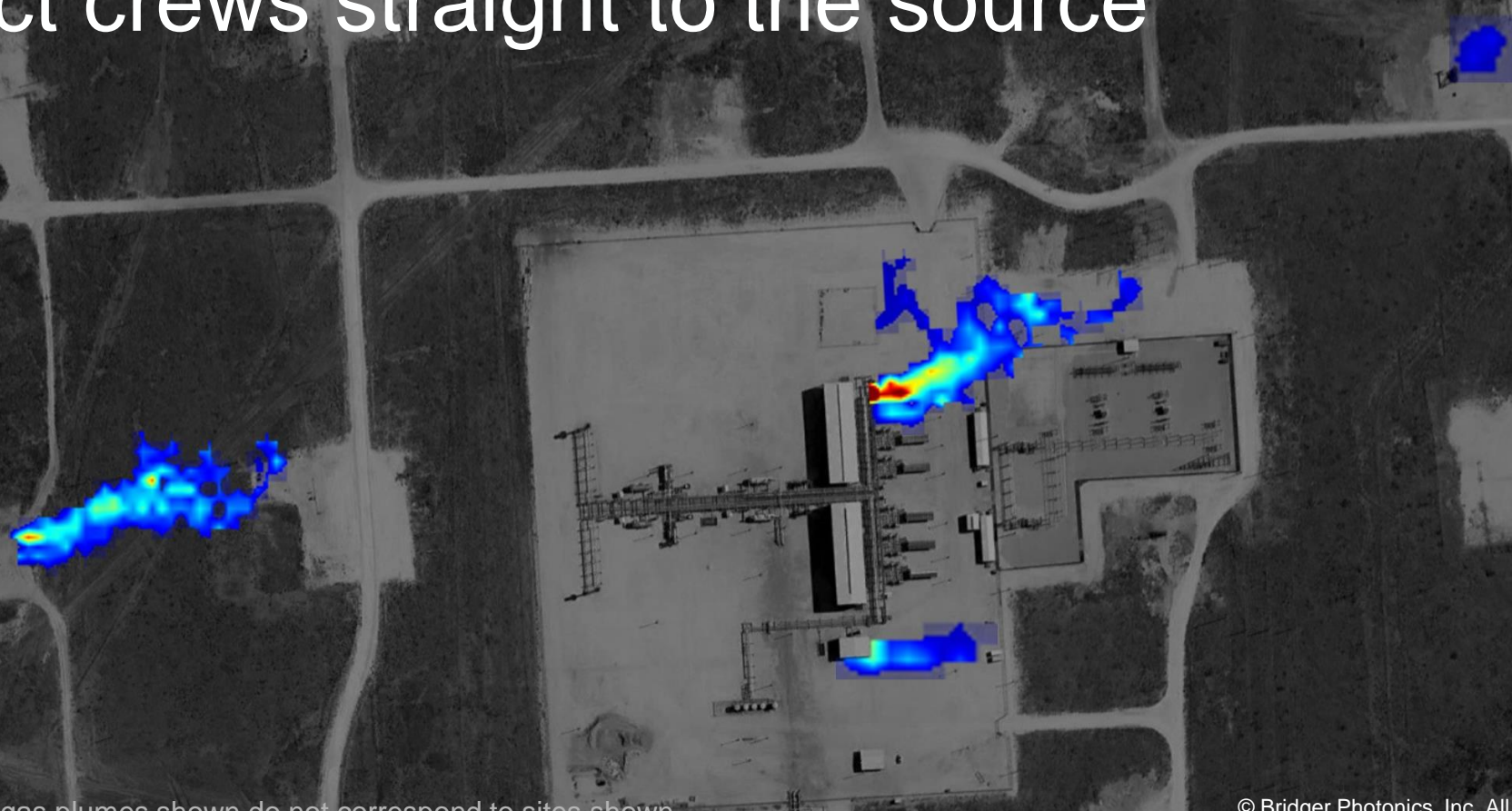




# Improve Efficiency

Save 60% - 90% of site visits

Direct crews straight to the source



# Reduce Emissions

We detect  
more than

90%

of emissions  
in typical production basins

We find roughly

50:50

Fugitive : Process



# Increase Safety

## Prevent Accidents

- Reduce field crew exposure to on-site hazards
- Reduce “windshield time”
- Provide advance awareness for you and your crews



# Simplify Compliance

## US



First-ever  
submission of  
OOOOa AMEL



Compliant

## Canada



**Alberta  
Energy  
Regulator**

First-ever  
submissions of  
Directive 060 Alt-FEMPs



**CANADIAN STANDARDS  
ASSOCIATION**

Compliant

# Example Data Products

Image redacted.  
Contact us for details  
on our data products.



ArcGIS



**Work  
Order**



To protect client confidentiality, gas plumes shown do not correspond to sites shown



GAS MAPPING LiDAR™

# Transmission Sector

Know what you cover, prevent accidents,  
and direct crews straight to the source.



# Technology Landscape

## Permian Basin 2000-Site Emissions Distribution

- Satellite solar IR: 10-20%
- Aircraft solar IR: 30-40%
- Gas Mapping LiDAR: >90%
  
- Assumption: 9 mph wind speed (avg wind speed in Midland, TX is 11 mph) \*\*\*\*

Image redacted.  
Contact us for details  
on emissions distributions.

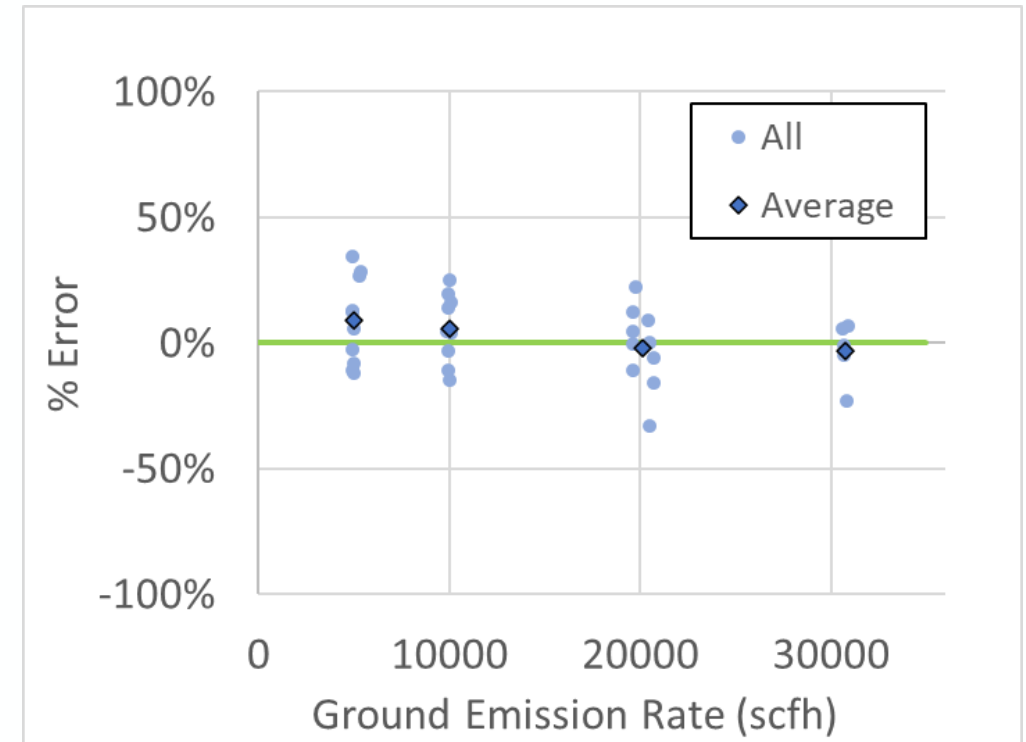
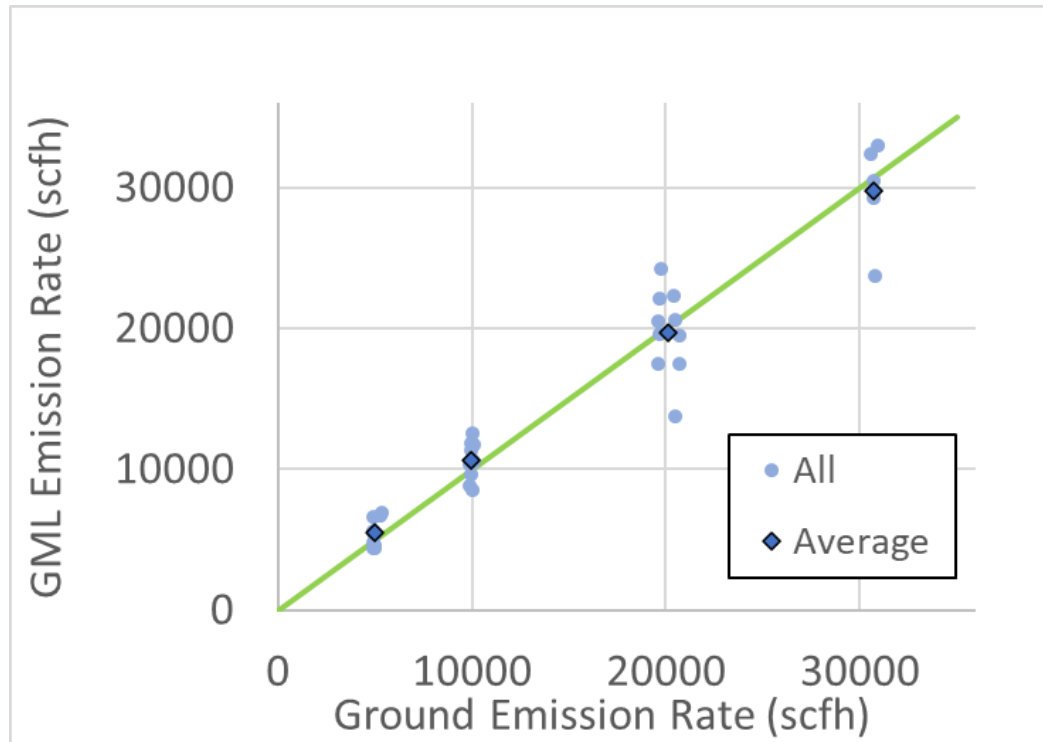
\* <https://directory.eoportal.org/web/eoportal/satellite-missions/g/ghgsat-c1-c2>  
\*\* Sherwin, et al. *Elementa* **9**, 00063 (2021)  
\*\*\* Johnson, et al. *Remote Sensing of Environment* **259**, 112418 (2021)  
\*\*\*\* <https://weatherspark.com/y/4333/Average-Weather-in-Midland-Texas-United-States-Year-Round#:~:text=The%20average%20hourly%20wind%20speed,than%2011.0%20miles%20per%20hour.>

# Quantification (Ideal Conditions)

Correlation:  $r = 0.97$

Bias = +3%

Uncertainty =  $\pm 15\%$





# Case Study

Fully blind testing by Dr. Matt Johnson's group at Carleton University  
Johnson, et al. Remote Sensing of Environment 259, 112418 (2021).

We quantified emission  
rates with uncertainty of

**±31%**

which is as good as ground crews  
with infrared cameras

We detected all  
emissions over

**100** scfh

scfh which is equivalent  
to 2.0 kg/hr

# Thank you!

For any questions or feedback,  
please contact:

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