

Continuous VOC Monitoring for Emissions Location and Sample Acquisition



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Weight	Base unit: 6.75 lbs
Dimensions	D x W x H (6" x 8" x 16")
Mounting	Attached mounting flanges <i>Tripod accessory available</i>
Runtime	2-3 days battery backup
Temp Range	-20°C to 50°C
Data Storage	Data backup and diagnostic info

Cellular (4G IoT Modem Included)
Local RF Out (LoRaWAN Optional)

18-24V Power and TTL Comm

PID Element (2ppm FS, 10.6eV)



Ultrasonic Weather Station: Wind Speed, Direction, Humidity, Temperature, and Pressure

Illuminated Power Button

Locking Option

NEMA 4X Polycarbonate

Auxiliary Port
(Canister and Sorption Tube)

- Community areas adjacent to industrial sites (chemical, oil/gas, etc)
- Real-time data for odors and hazardous air pollutants



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Goal: SPOD in secure location, downwind, close to source

Limitations

- Proximity to source not always achievable
- Security and accessibility of installation area
- Permission of property owners
 - Local government agreements
 - Private landowner permission
 - Industry permission/agreements
- Potential for tampering and vandalism
- Local terrain and predominant wind patterns

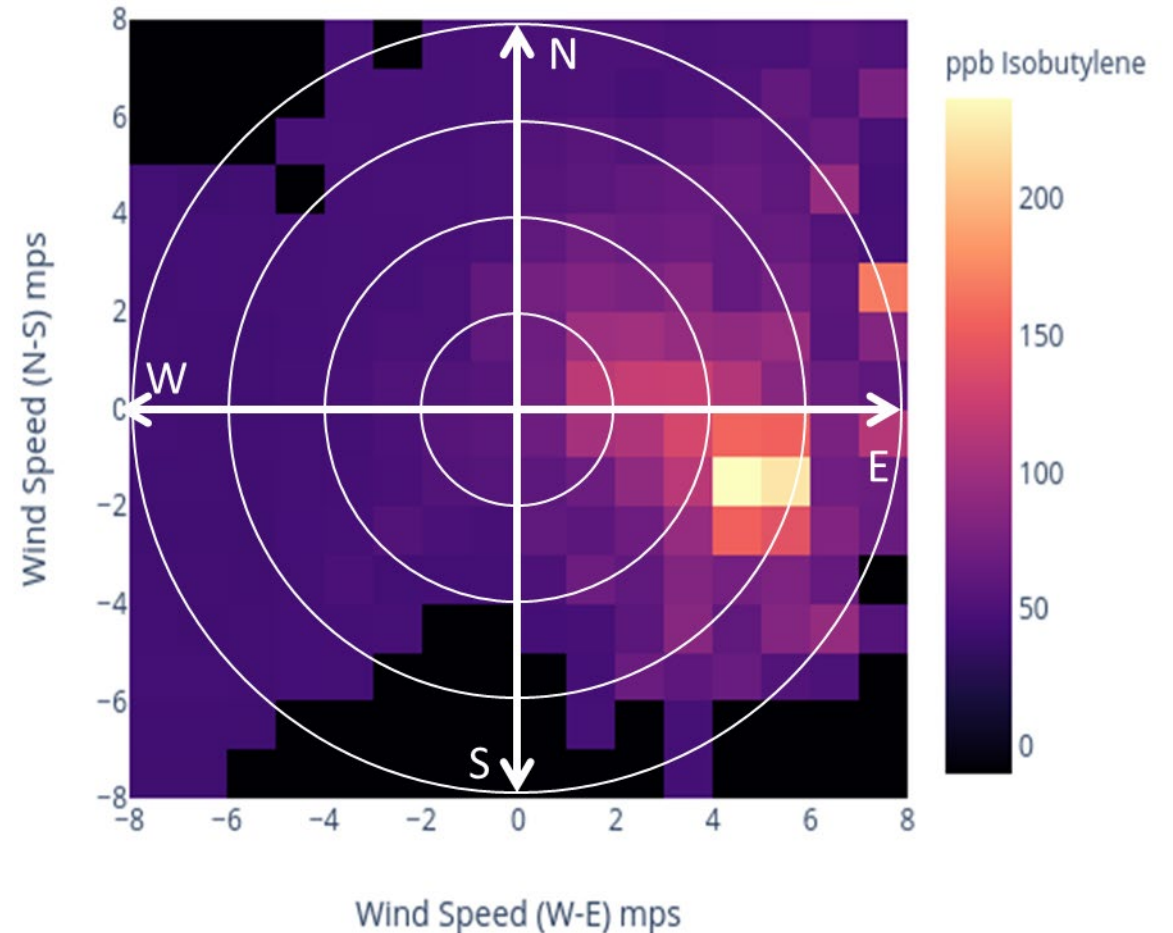
SITE: Residence(s) located several hundred feet to west of sound wall of oil/gas pad

COMPLAINT: Significant petroleum odors reported with easterly winds

RESPONSE:

- Site visit, try to catch emission event... **NOT SUCCESSFUL**
- Leave canister with resident to collect... **NOT SUCCESSFUL**
- Deploy SPOD between residence and sound wall to conduct continuous emissions monitoring for 1 week period... **CONFIRMED**

VOC Measurement Versus Wind Conditions



Canister Valve Controller



Valve + Canister



Sorption Tube Pump



Thermal Desorption Tube



Concentration Threshold

Concentration Threshold: Adjustable
Threshold Duration: (sec) Adjustable

Wind Speed and Direction

Minimum Wind Speed: (m/s) Adjustable
Wind Direction Range: (°) Adjustable

Combination Concentration and Wind

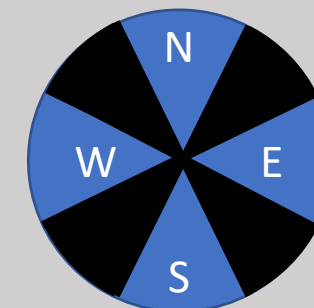
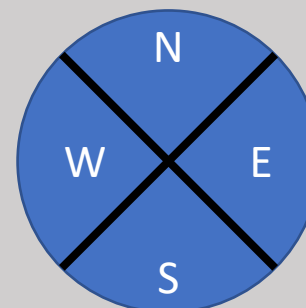
Wind Speed Ranges: (m/s) Adjustable



Concentration Threshold: (PPB) Adjustable
Threshold Duration: (seconds) Adjustable
Wind Direction Range: (°) Adjustable

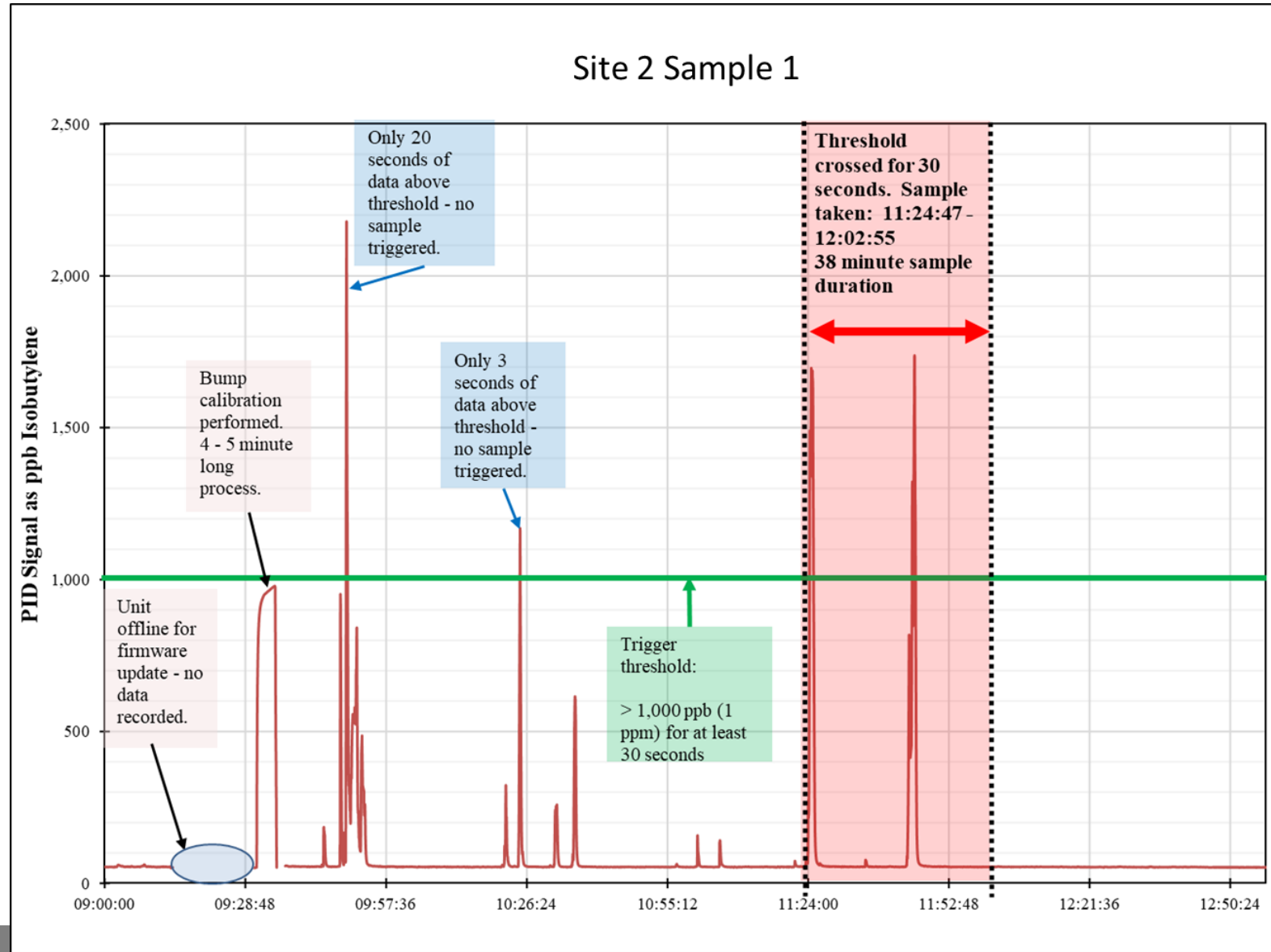
Quadrant Sampling

4 Wind Direction Quadrants: Adjustable

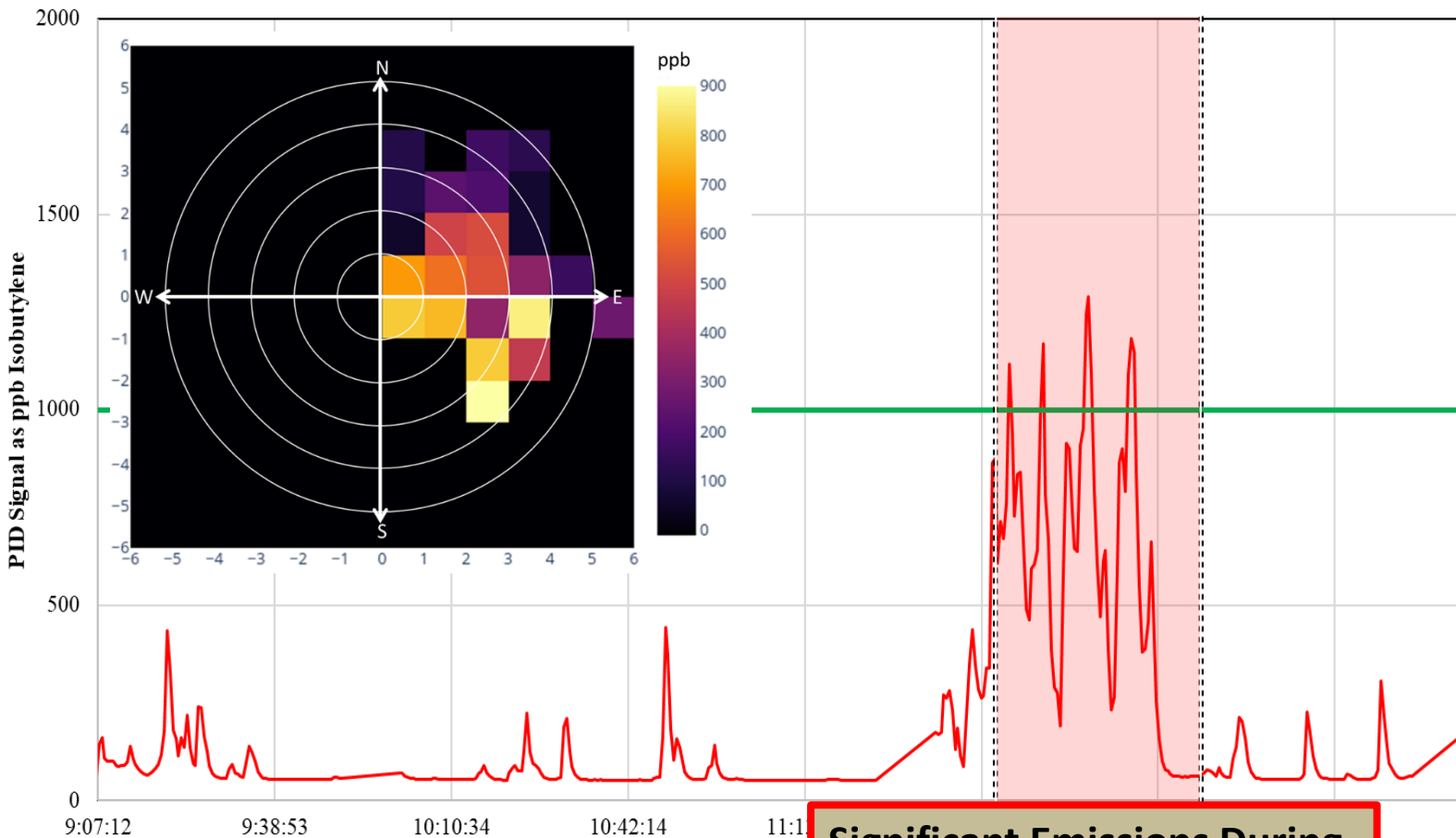


- Install canister on SPOD
- Bump test with 1000 ppb cal gas to ensure accurate PID response
- Focus on capturing large emission > 1000 ppb for 30 seconds

Limited Emissions During Canister Sample

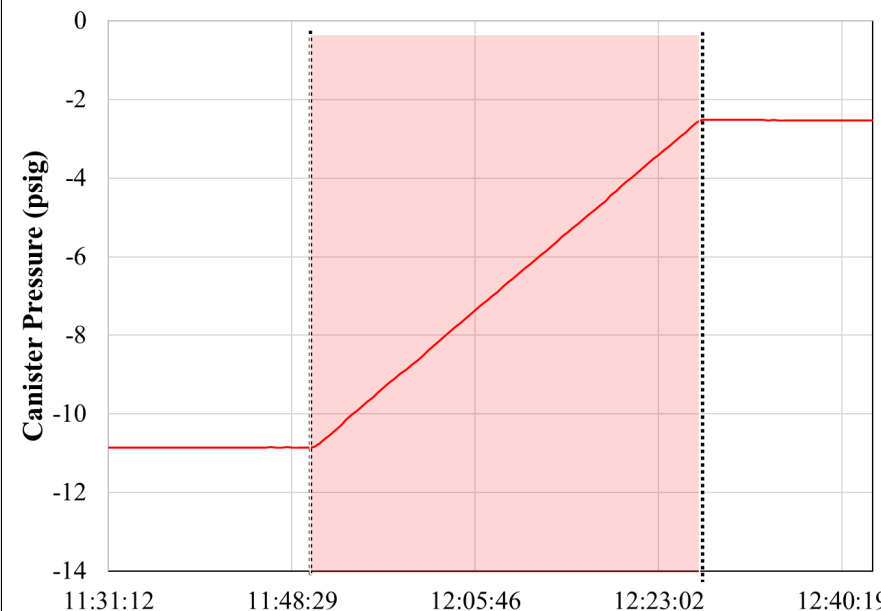


Site 2 Sample 2



Significant Emissions During Canister Sample

Canister Pressure Monitoring

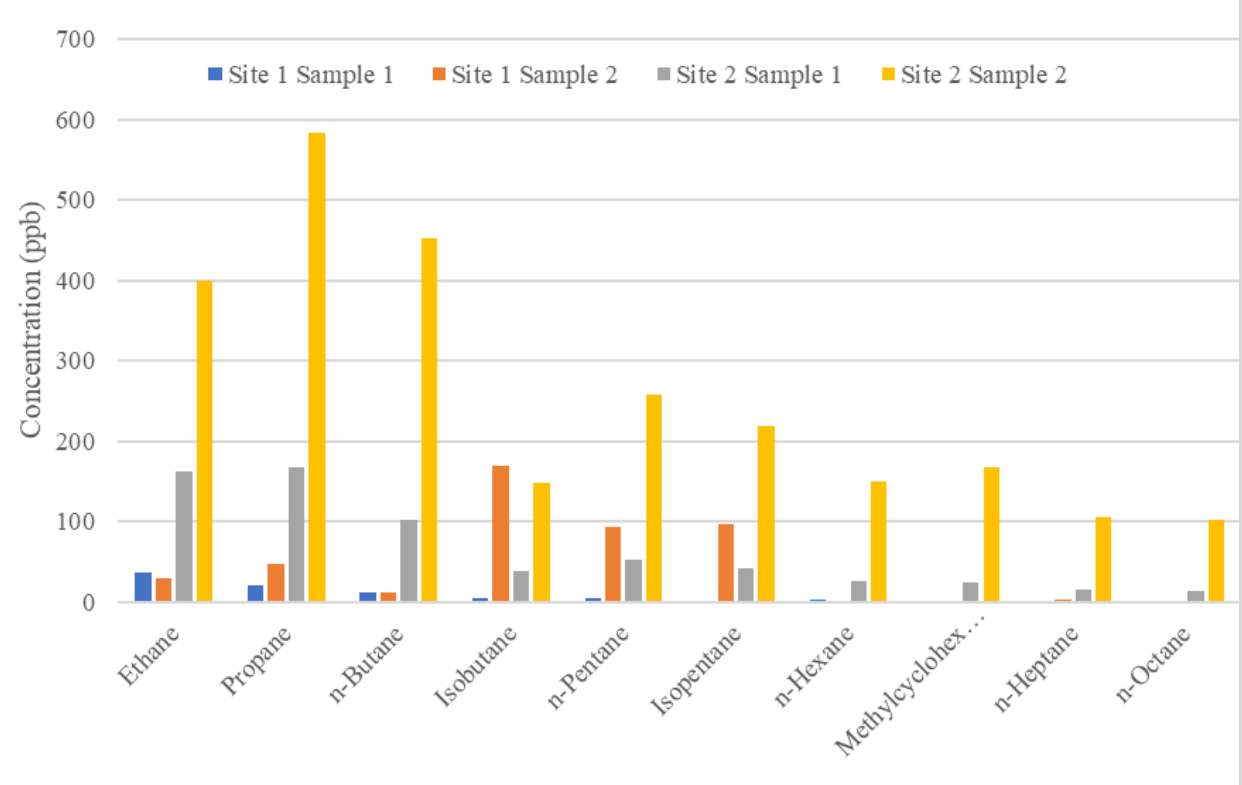


- **Continuous pressure monitoring option tracks canister pressure before, during, and after sampling**

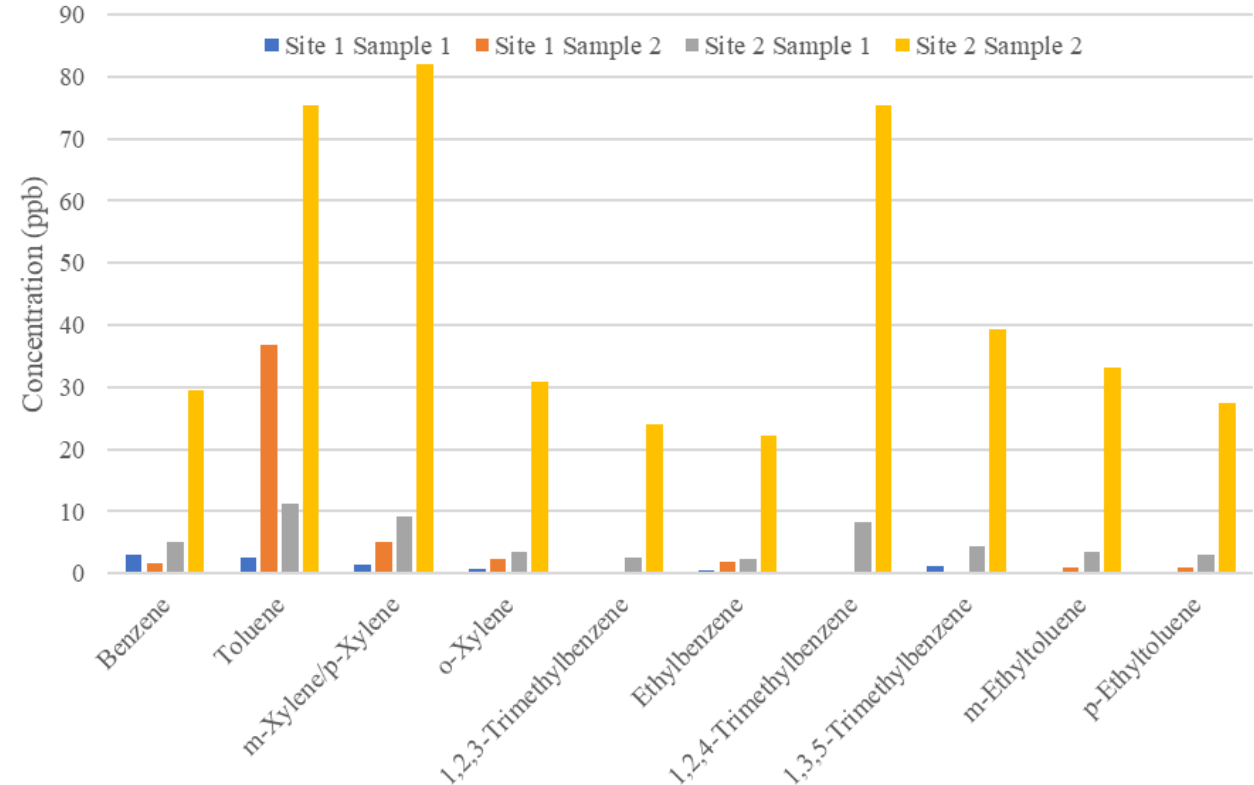
Canister Analysis Summary

	Site 2 Sample 1	Site 2 Sample 2
Total Non-methane Organic Compounds (TNMOC) ppb	1000	5150
Speciated Non-methane Organic Compounds (SNMOC) ppb	826	3830

Alkane Top 10 List



Aromatics Top 10 List

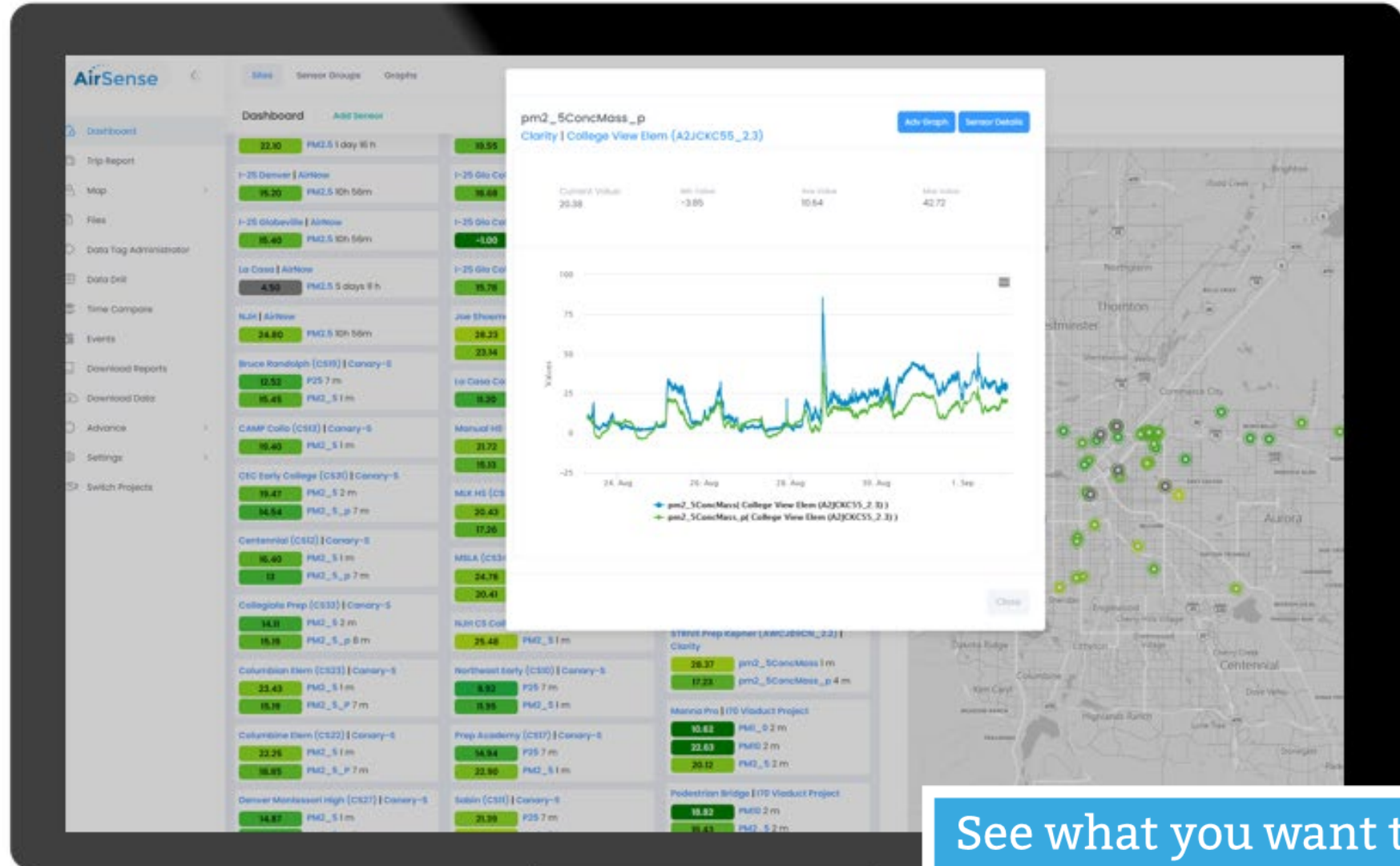


- **Control of ozone and hydrocarbons via oil and gas emissions**
- Baseline emissions monitoring before, during, and after pre-production activities are complete

- Monitoring plan creation
- Deployment and maintenance services
- Data visualization and alerts
- Automated data report generation



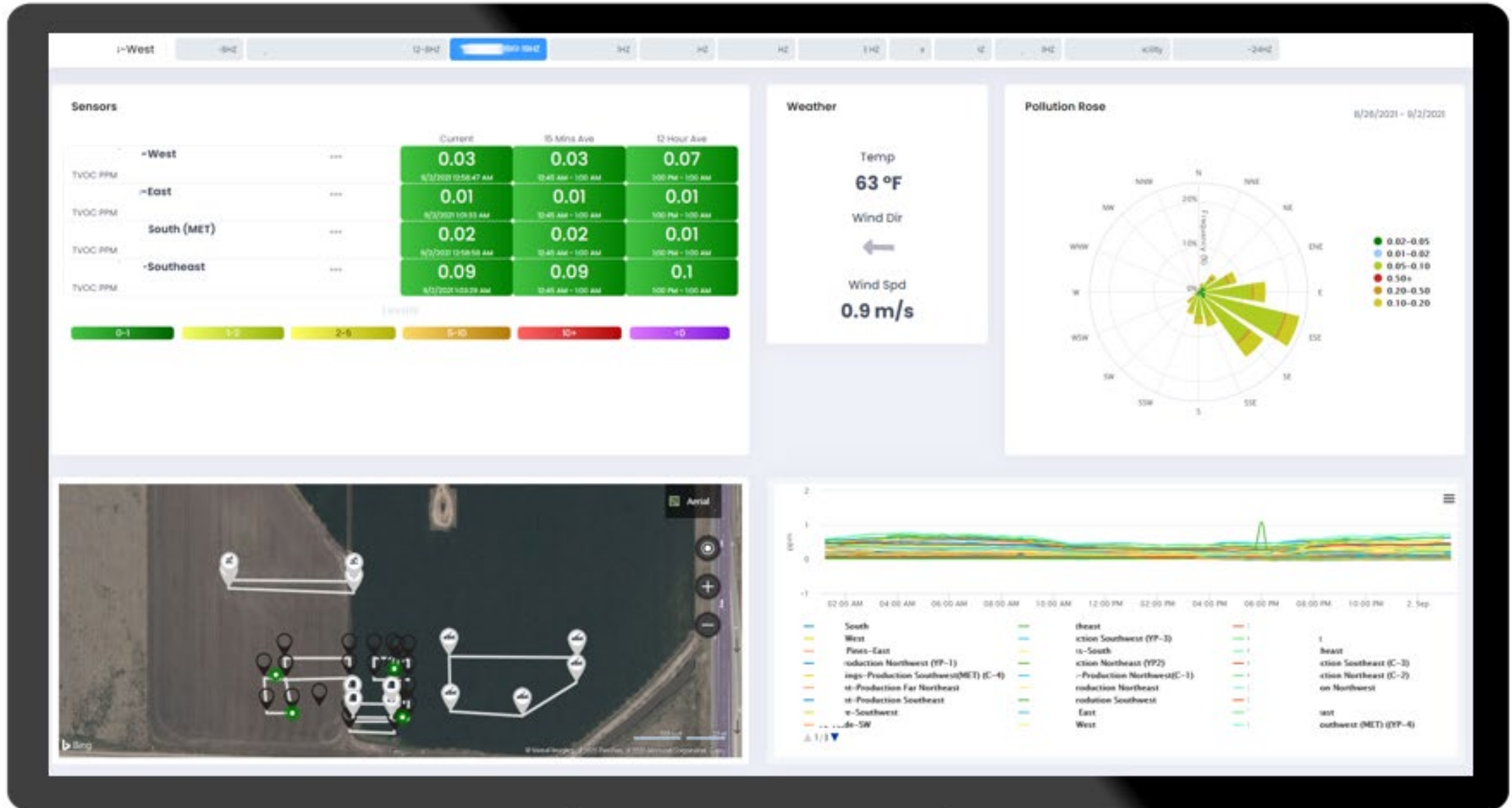
Customized Views and Data Dashboard



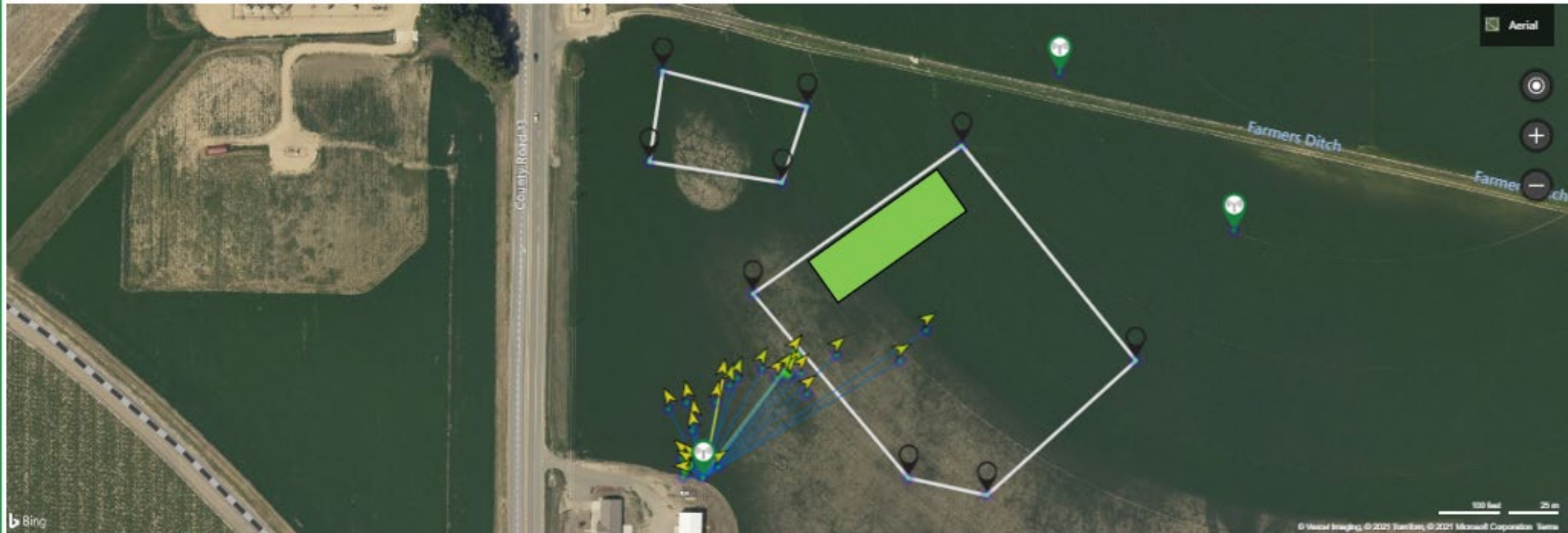
See what you want to see to
make **real time decisions**



Custom Sensor Groups → Rapid Installation Overview



Emission Location Prediction and Alerts



Leak was confirmed on a temporary tank within prediction area by an on-site OGI inspection.





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Questions?

Please reach out to jmelby@gasleaksensors.com