

# ALTOMAXX



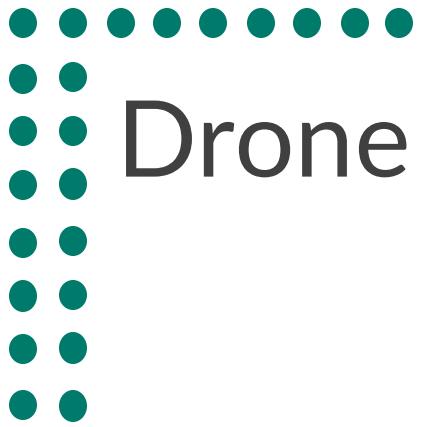
**Drones in the Environment**  
Real Time Water Monitoring  
Workshop



# ALTO<sup>MAXX</sup>

AltoMaxx Technologies was founded as a drone service provider in 2018, offering data acquisition, integrated solutions, and capacity building to an international client-base. Since then, AltoMaxx has emerged as an industry leader, driving the drone industry forward with its team of world-class technical experts, dedication to continuous improvement, and unwavering commitment to its clients.





# Drone Benefits



## Time

The unmatched mobility of a drone means surveys can be completed several factors faster than a ground-based crew



## Data

A drone's unique vantage point offers more useful data across the visual spectrum, and easy access to 3D modelling.



## Autonomy

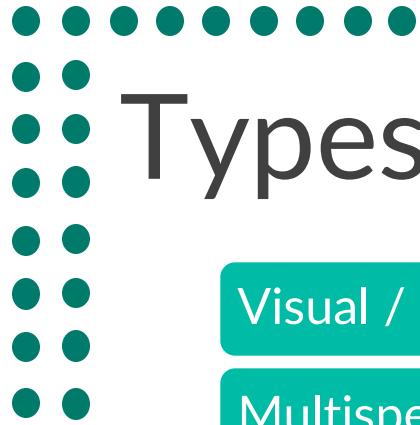
Autonomous and repeatable GPS flight plans allow for centimeter level accuracy for easy data comparison over time.



## Safety

Removing the operator from the survey field reduces exposure to weather conditions, unstable terrain, & other safety risks.





# Types of Data

Visual / Thermal

Multispectral

LiDAR / Photogrammetry

Bathymetric

Ground Penetrating Radar

Magnetometry

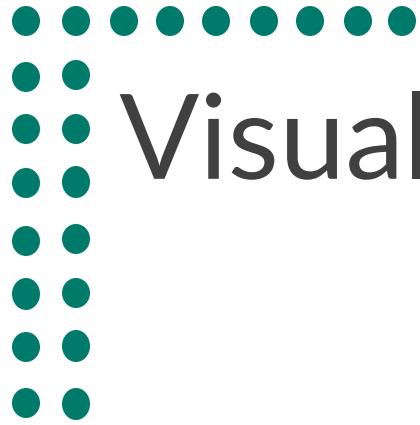
Fugitive Emissions

# Visual

A drone platform provides easy access to points of interest while capturing high-quality visual data



The H2oT Camera has up to 23x optical zoom and 200x digital zoom, making it a great tool for inspections.

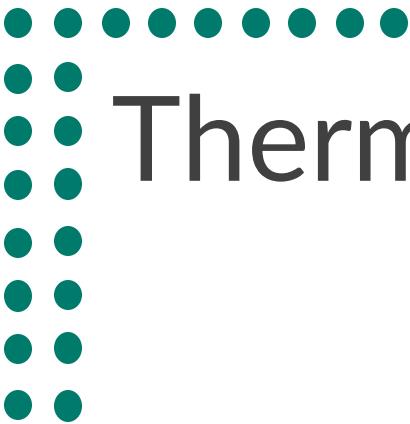


## Documenting the reach and location of cyanobacteria

Water Resources Management Division Department  
of Environment and Conservation Government of  
Newfoundland and Labrador

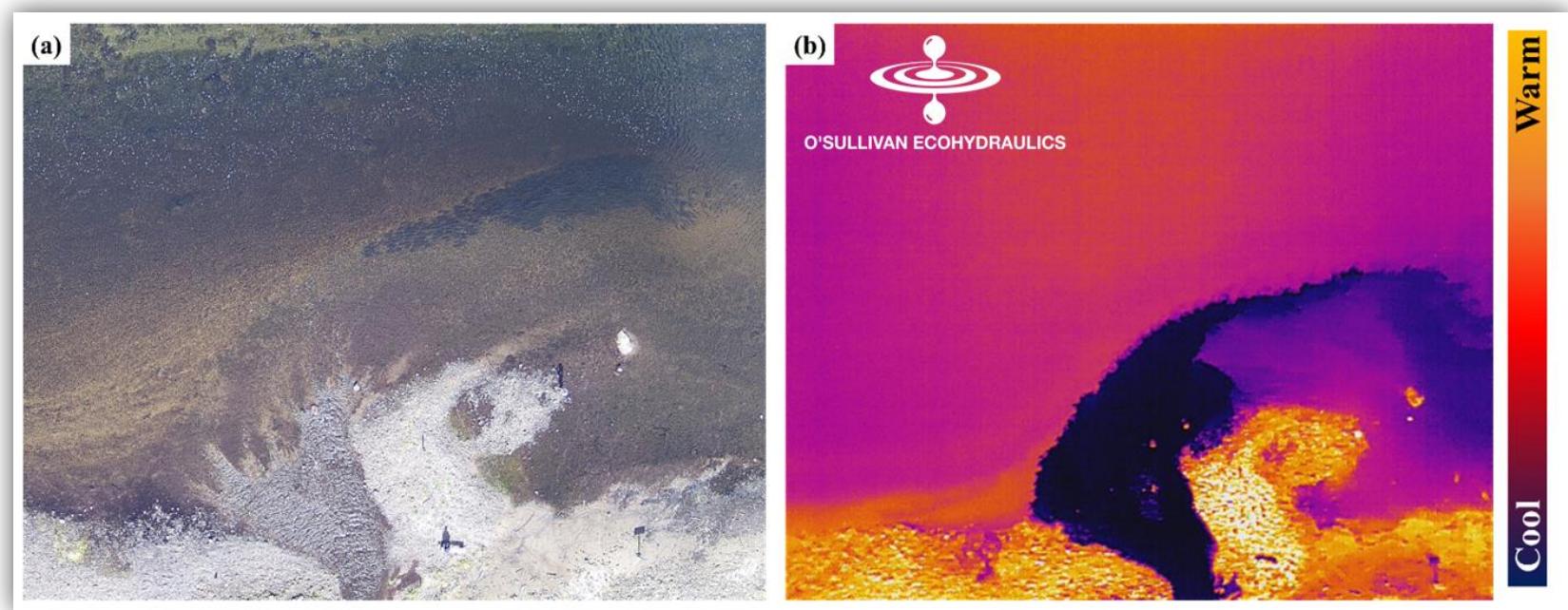


Monitoring coastline erosion over  
several years



# Thermal

Acting simultaneously with an RGB spectrum camera, these cameras can capture thermal anomalies invisible to the naked eye.

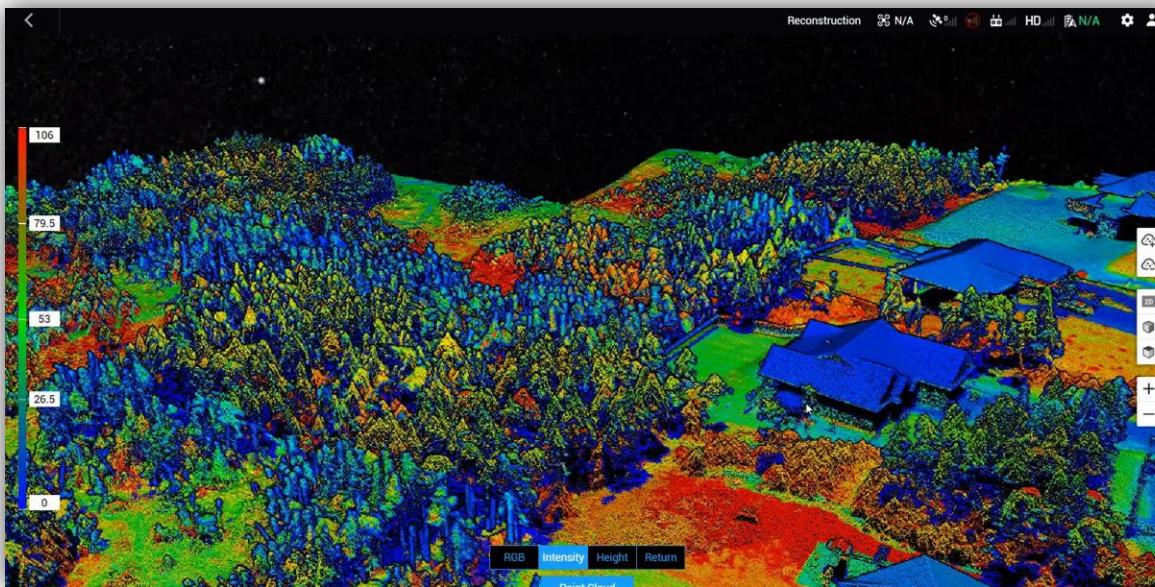


Project to increase thermal refuge for freshwater fish.



# LiDAR / Photogrammetry

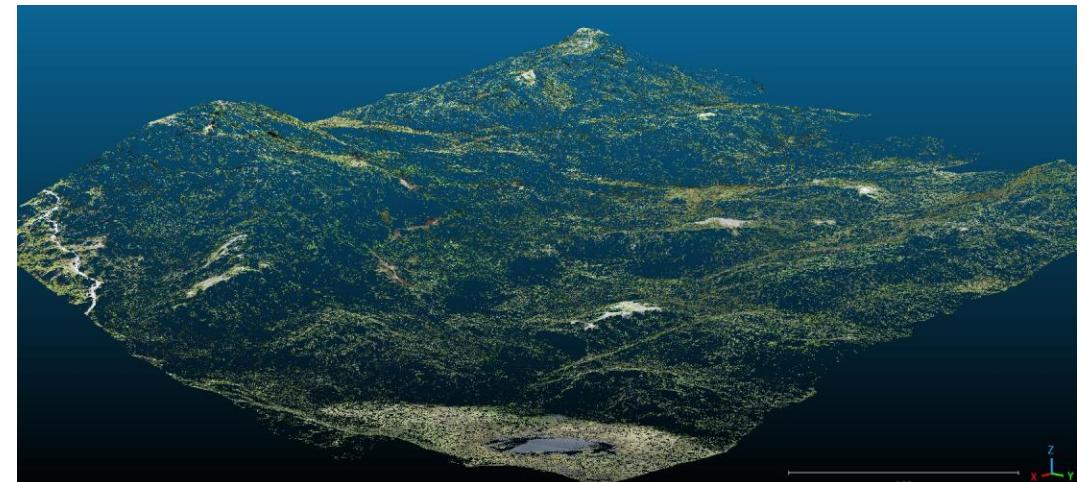
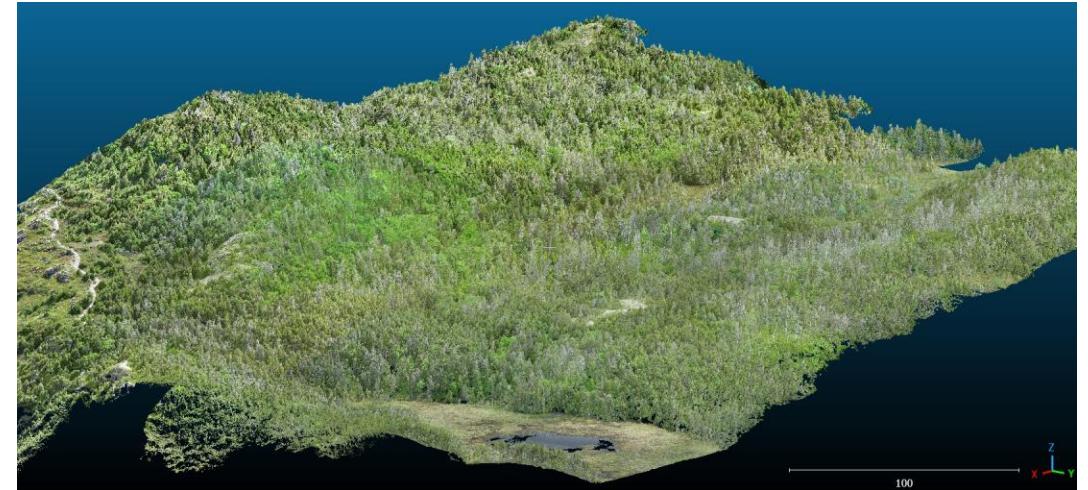
Laser and Photography based methods of creating 3D models or digital twins.





# LiDAR / Photogrammetry

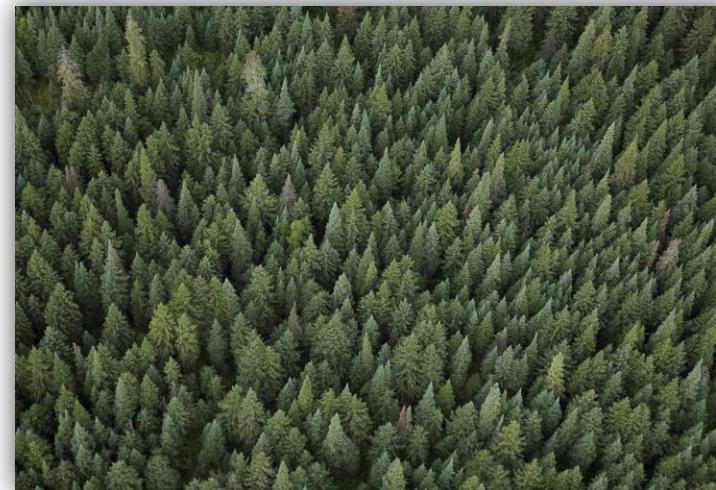
LiDAR is capable of penetrating dense foliage and modelling the terrain below





# Multispectral

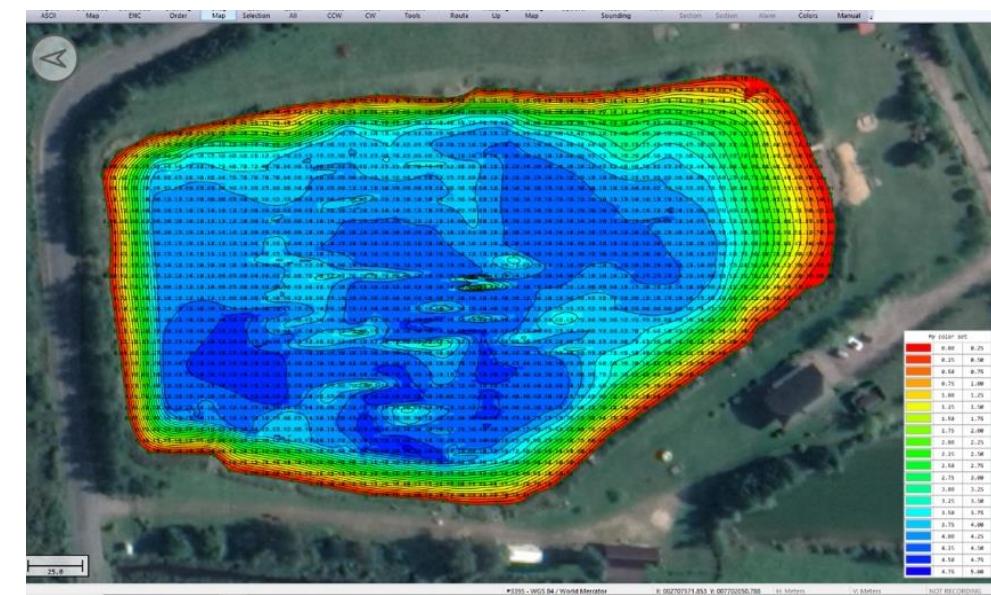
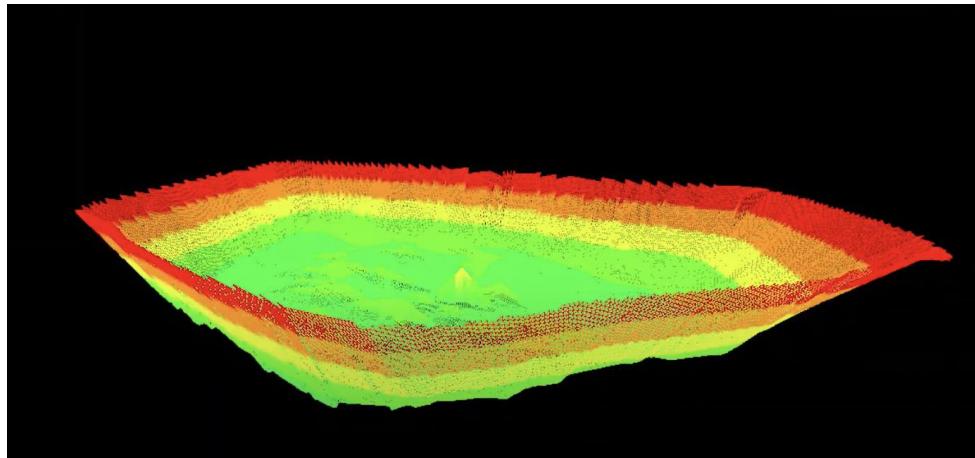
- Monitor the vegetative stress of farms and forest
- Identify soil composition





# Bathymetry

Dual-frequency echosounder for mapping the underwater terrain of both coastal and inland bodies of water





# Applications

- Mapping water depths and sediments before dredging and cleaning in shallow or seaweed ponds, lakes, rivers, and canals
- River and lake bottom profiling for environmental monitoring
- Flood inundation mapping
- Underwater inspections for engineering works (bridge or pipeline crossings)





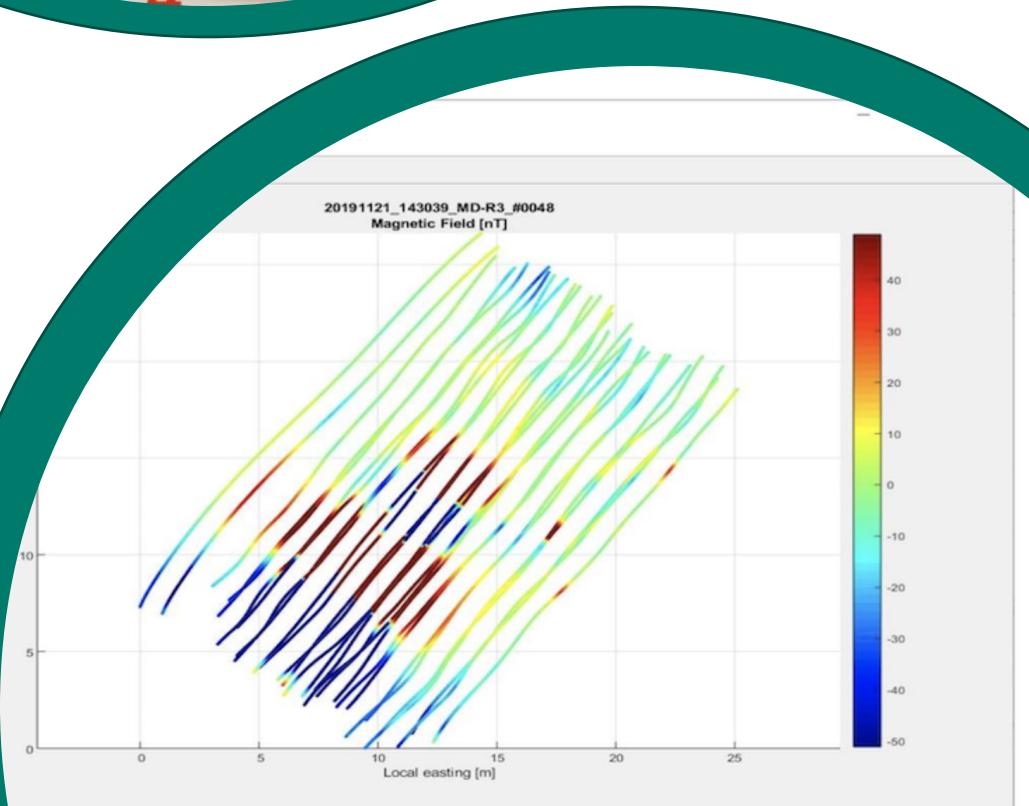
# Magnetometry





# APPLICATIONS

- Searching for UXO (unexploded ordnance)
- Locating buried infrastructure (metal pipes and shielded cables)
- Archaeology
- Surveying for any metal objects such as oil drums underground



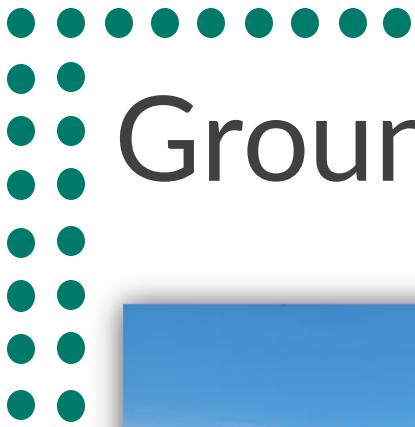


# Ground Penetrating Radar

Downward facing radar system ideal for:

- Buried object detection
- Geophysical surveys
- Ice thickness measurement
- Non-destructive testing
- Infrastructure mapping



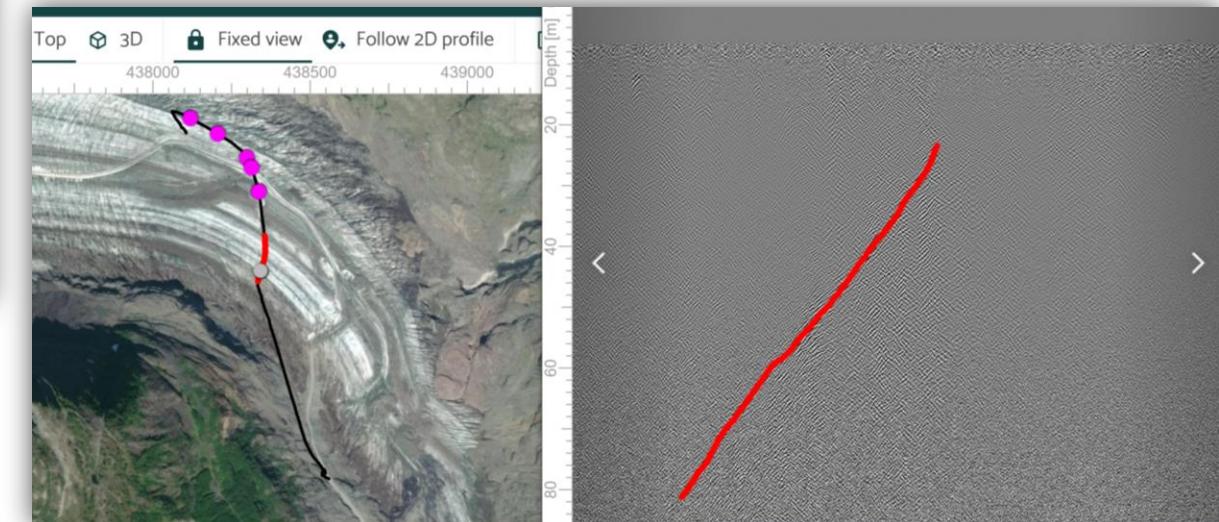


# Ground Penetrating Radar



GPR project at a mining facility in British Columbia

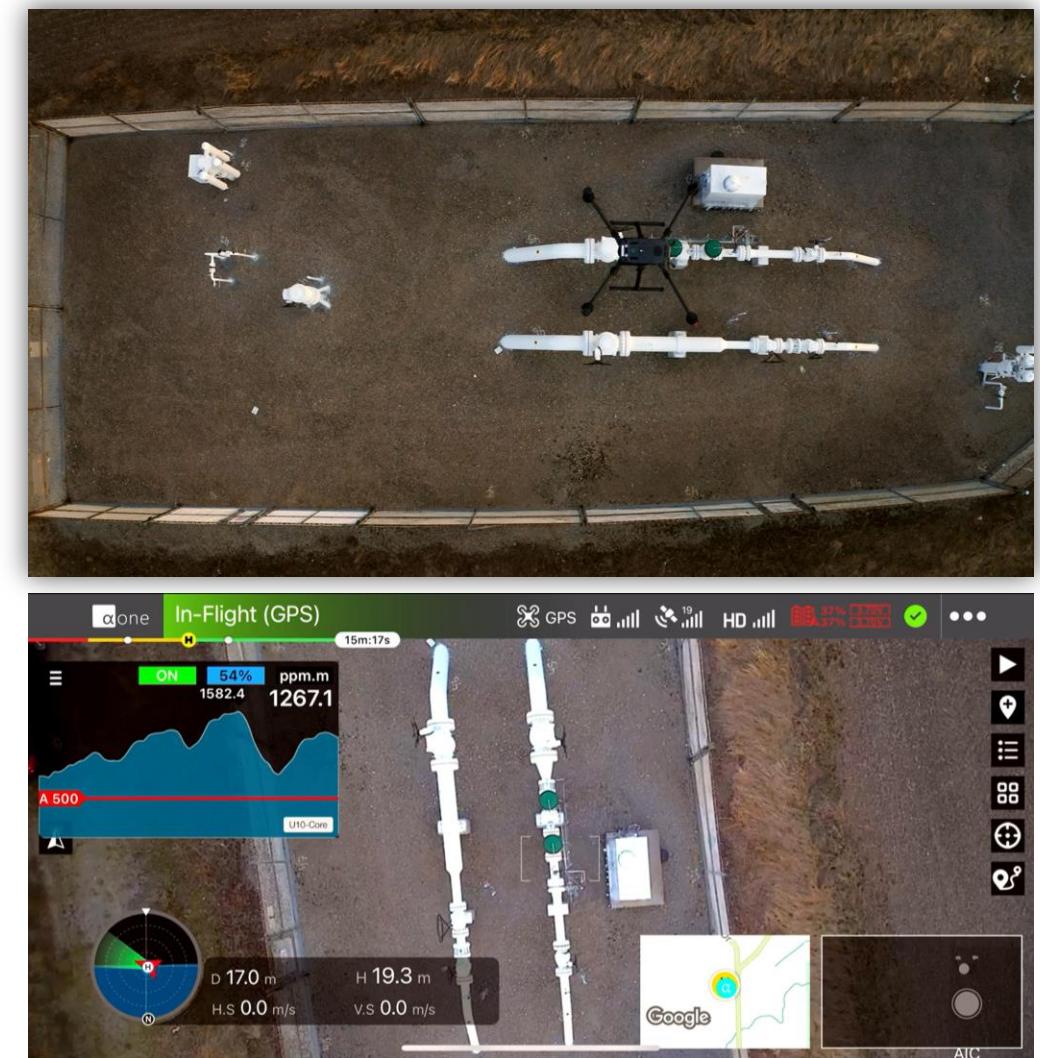
Results from GPR data: Purple dots = Known reflection

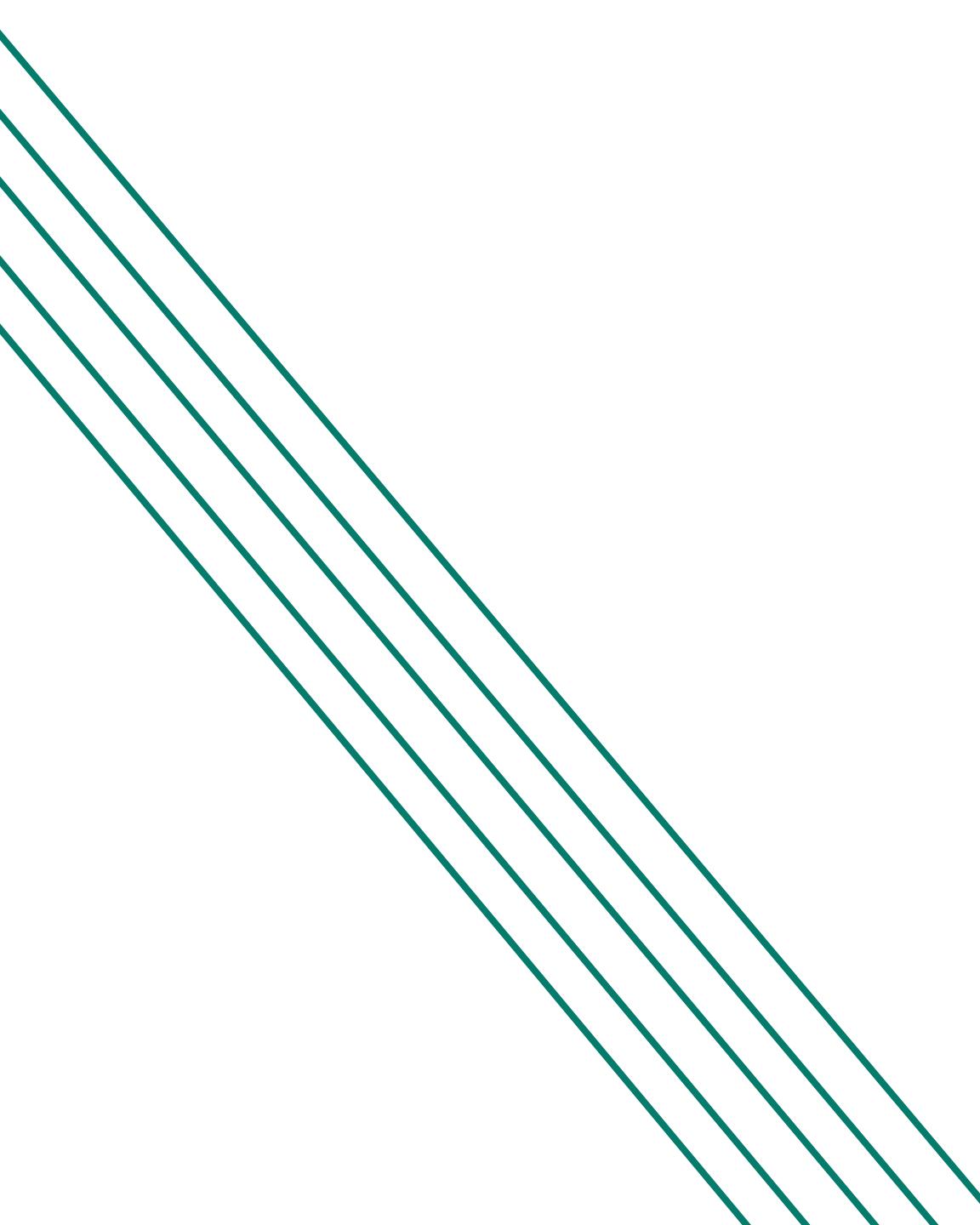




# Fugitive Emissions

Drone-based methane sensor for detecting and quantifying harmful emissions released into the air





Questions?

