HYDRUS WORKS LLC

OPTIMIZING NITROGEN CONSUMPTION

FIELD SURVEY IDENTIFIED $1.1 MILLION IN ANNUAL NITROGEN LOSS ACROSS 205 LEAK POINTS AT A GULF COAST REFINERY

ULTRASONIC LEAK SURVEY UNCOVERED THE ROOT CAUSE OF RISING NITROGEN COSTS — AND FLAMMABLE GAS LEAKS THE CLIENT DIDN'T KNOW THEY HAD.

A refinery processing roughly 350,000 barrels of crude oil per day saw its nitrogen costs climb sharply over a six-month period. With more than 1,500 employees relying on the facility's utility systems, the site needed to understand where the losses were coming from before committing to a fix.

CHALLENGE

The client had no visibility into where nitrogen was escaping across the facility. Rising costs pointed to a system-wide issue, but without field data, the source, or sources, of the loss couldn't be identified or prioritized.

SOLUTION

Hydrus Works performed a comprehensive nitrogen leak survey using ultrasonic detection equipment across the facility. The survey went beyond nitrogen alone, also flagging combustible gas leaks in flare gas, hydrogen, and natural gas lines.

Each leak was logged with its size, location, tag number, and CFM loss, then compiled into a detailed report quantifying dollar loss per year, giving the client a prioritized, field-verified punch list rather than a generic estimate.

RESULTS

The survey gave the client a clear, quantified picture of nitrogen loss across the facility and a path to fix it.

- Identified 205 total nitrogen leaks across the facility
- Quantified 534 CFM in total nitrogen loss
- Estimated over $1 million in annual dollar loss from nitrogen leaks alone
- Surfaced additional combustible gas leaks (flare gas, hydrogen, natural gas) posing separate safety and cost risk
- Delivered a repair-ready report enabling the client to reduce nitrogen use and cut costs

Field-verified leak survey identified over $1 million in annual nitrogen loss and uncovered combustible gas leaks, giving the client a clear, prioritized path to reduce costs and improve site safety.

Hydrus Works recommended the client adopt this survey as an annual preventative maintenance practice to catch losses before they compound.