METHANE CAPTURE & EMISSION REDUCTION

Customer Case Study

Landfill Group uses LoCI system at RNG project to increase methane capture by 32% and generate $3.8M in revenue per year at an assumed $25/MMBTU

Customer Problem

At the Hamm Sanitary Landfill in Lawrence, KS, Landfill Group's Renewable Power Producers (RPP) project aimed to capture as much gas within pipeline specifications as possible for upgrading to renewable natural gas. Yet, rapidly changing weather conditions severely impacted their landfill gas capture. During periods of rapidly rising barometric pressure — often experienced during cold fronts in the winter months — the landfill would see significant rises in nitrogen and oxygen concentrations in the gas from increased air intrusion. Controlling for the changes in gas quality proved difficult with manual well tuning, resulting in more time spent unable to meet pipeline requirements. When gas quality improved during periods of rapidly falling pressure, the operator was unable to effectively increase gas collection and capitalize on the improved quality while relying on manual tuning, especially during inclement weather conditions.

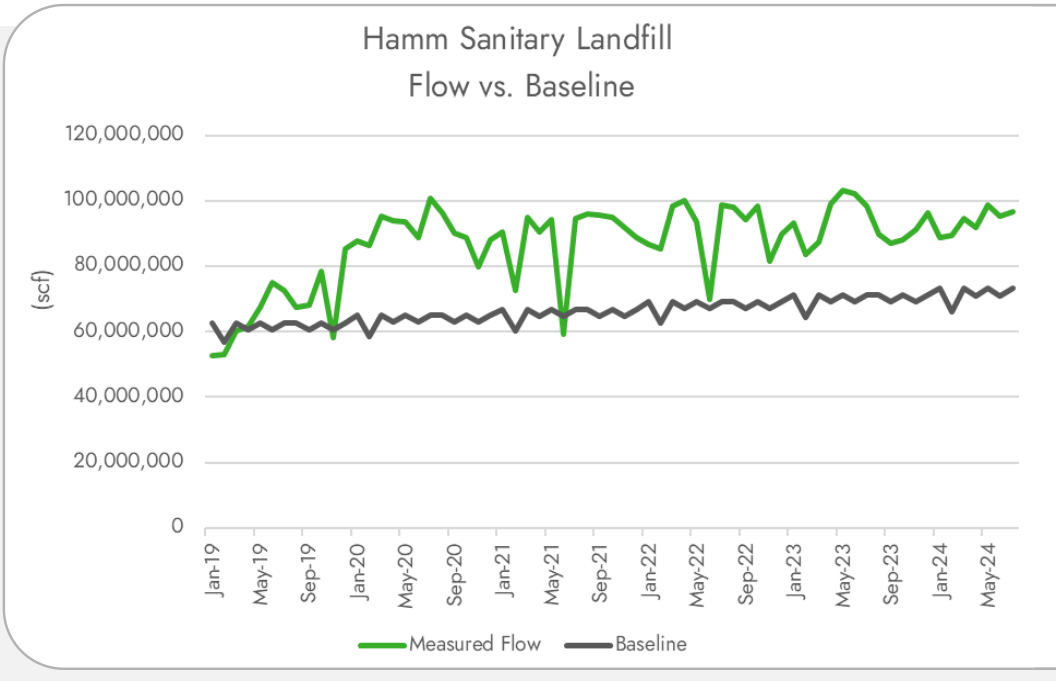
LoCI Solution

LoCI installed its real-time data and control system across the landfill, leveraging a combination of Controller and Sentry measurement devices. As the landfill expanded and the number of collection wells grew, the operations team added LoCI devices to maintain near 100% coverage on the wellfield. LoCI's system automatically tuned the collection system 24/7/365, accounting for barometric changes throughout the day and night. LoCI's WellWatcher® platform displayed real-time data to support landfill and plant operations, offering actionable insights to enhance troubleshooting across the gas collection system.

Results:

Increased RNG Revenue & Project ROI

The LoCI system led to impactful, positive outcomes for the RPP project at Hamm Sanitary Landfill. Over the six-year relationship with Landfill Group, LoCI generated sustained and consistent results across the company's project portfolio, which continues today.



Results

Higher Quality Gas & Increased Capture Through Automated Tuning

Using LoCI's system, RPP saw a **32% average increase in methane capture** over four years of operations, compared to its 2017–2018 pre-LoCI baseline, when operations relied on manual tuning — significant results, calculated based on ACR's *Landfill Gas Destruction and Beneficial Use Projects* methodology. With the LoCI system supporting the landfill and plant operations teams, the project generated a **614,633 MMBTU incremental increase in methane captured** over four years, or an estimated **$3.8M increase in revenue per year** at an assumed $25/MMBTU.

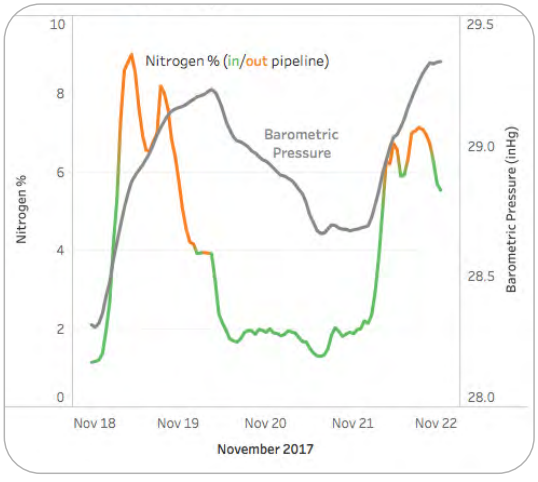
Faster Troubleshooting with Real-Time Insights

With automated valve adjustments and real-time alerts, the on-site team no longer had to rely solely on manual tuning and walking the landfill to identify problems, including leaks. LoCI's system enabled RPP to capture more gas within specifications, even with frequently changing conditions in the gas collection system and wellfield, while minimizing safety risks for its teams.

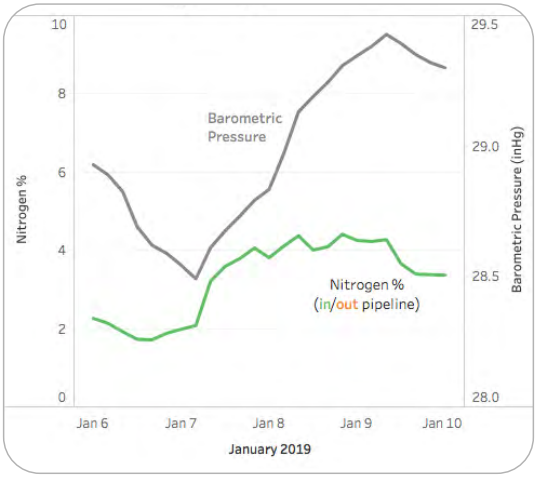
Increased Plant Uptime

LoCI drastically improved plant uptime from the start of the project, quickly demonstrating the benefits in shifting from manual tuning to automated tuning. The project operator reduced downtime at the plant by 95% compared to the same six-month period the year prior (October 2018–March 2019) — from an average 73 hours per month to less than six hours per month. In addition, gas that met pipeline requirements and was delivered to the plant increased by 15–20%.

Without LoCI Controls



With LoCI Controls



The graphs above show a representative cold front passing over Lawrence, KS during the winter months, comparing nitrogen concentration in the landfill gas collected before and after leveraging the LoCI system. With real-time data from LoCI, the gas captured consistently met pipeline specifications — as seen by the green line on the right.

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