Nova Analytical Systems

CASE STUDY: GAS MONITORING FOR LANDFILL

Transforming Compliance and Efficiency for a New Hampshire Municipality

THE CHALLENGE

A small but expanding municipality in New Hampshire faced increasing challenges at its local landfill as the town grew and regional regulations became more stringent. The landfill, previously managed with regular inspections and a dedicated public works department, relied on manual gas monitoring methods that were becoming outdated. Technicians were required to check gas levels daily, regardless of harsh winter conditions or humid summer heat, using handheld devices and recording oxygen levels on clipboards. This approach, while sufficient in the past, was no longer adequate for modern compliance and operational needs.

OBJECTIVE

Recognizing the need for continuous and reliable data, the town council approved funding for a significant upgrade. The Environmental Compliance Officer reached out to Nova Analytical Systems for a solution tailored to the landfill's requirements. The brief was clear: the system needed to operate reliably in extreme weather, function autonomously, and be user-friendly for the team.

Nova Analytical Systems recommended the Nova Model 910C-M-N4-CW Continuous Landfill Gas Analyzer, a robust, all-weather monitoring system designed for long-term landfill operation.

FEATURES

The system offered several key features:

- Continuous oxygen monitoring (0–25% range) with a long-life electrochemical sensor
- Automatic moisture removal via a built-in sample chiller and condensate pump
- An environmental management package (CW) with cabinet heaters and air conditioning
- A smart control package, including programmable auto-calibration, flow monitoring, and fault detection
- The DuraNova digital platform with a full-colour touchscreen interface
- Remote interface capabilities for connection and troubleshooting via VPN or TeamViewer
- A built-in sample system with a sample pump, PTFE liquid block, and stainless-steel tubing
- MODBUS TCP/IP output and 4-20mA analog output for integration with existing SCADA or reporting systems.
- A NEMA 4 enclosure, waterproof, insulated, and IP66-rated for year-round use (it is recommended that analyzers installed outdoors be situated under shelter from direct sun and wind)

FROM MANUAL CHECKS TO HANDS ON MONITORING

Installation was completed within a few days. Once operational, the Nova 910 began drawing samples at 1 L/min, logging continuous oxygen data, and automatically controlling moisture and temperature within the unit. This eliminated issues such as fogged sensors or frozen lines. The system's programmable calibration intervals and smart fault alerts reduced the need for daily field visits, as maintenance cycles were handled automatically, and technicians were only alerted when necessary.

RESULTS

Since deployment, the results have been significant:

- The unit operated reliably through both severe winter storms and summer heatwaves
- Oxygen monitoring became fully continuous, with logged data for compliance
- Field staff could be reassigned to higher-priority maintenance tasks
- Compliance reporting time was halved
- Manual daily checks were reduced by 95%

CONCLUSION

The New Hampshire municipality now benefits from improved data quality, reduced paperwork, and greater operational efficiency. The Nova 910-C-M-N4-CW has provided a smarter, all-weather solution for continuous landfill gas monitoring, delivering peace of mind for both staff and auditors.