

Case Study

Cloud-Based Monitoring Solution Powers Creation of Early Warning System at Major Coal Terminal

Ridley Coal runs a bulk handling terminal on the West Coast of Canada, which is a vital link in the energy supply chain between North America and Asia.



Project

Ridley Terminals Inc.

Location

North West Canada

Date

2013

Services

2 x AQM 60 Air Quality Monitoring Stations

Measurements

PM₁₀, CO, temperature, wind speed/direction and relative humidity

Sector

Mining



The customer



Ridley Terminals Inc. (RTI) owns and operates a world class marine bulk handling terminal, which provides continuous, high quality and high performance rail car unloading, product storage and vessel loading services.

RTI provides an export point for metallurgical and thermal coal, and petroleum coke from British Columbia, Alberta and the United States to Asia. The facility, located on Ridley Island in Prince Rupert, handles 12 million tonnes annually, expanding to 25 million tonnes annually by 2015. RTI operates seven days per week, 24 hours per day and is certified under the ISO 9001, ISO 14001, and OHSAS 18001 standards.

The problem

To help prevent coal dust pollution to neighbours, storage piles are regularly dampened with water from automatic spray heads and mobile water tanker trucks. All weather parameters that affect the propensity of dust particles to become airborne are continually monitored.

In addition, stockpiles of thermal coal can, given certain environmental conditions, be subject to spontaneous combustion. Coal fires can be hazardous to human health as well as releasing elevated particulate carbon monoxide gases into the air.



Like many industrial facility operators they looked into the procurement of air quality monitoring equipment. Ridley wanted something that would sound the alarm immediately, allowing them to implement mitigation strategies before emissions became a problem.

The solution

Aeroqual's local representative Environmental Analytical Systems won the project by putting forward the AQM 60 compact air quality monitoring station.



The two stations, located at different locations on and off the RTI site each contain a nephelometer for measuring PM_{10} particulates, a gas module for measuring carbon monoxide, fully integrated wind speed and wind direction sensors along with relative humidity and temperature sensors.

Both units are fitted with an IP cellular modem which pushes data from the instruments to a cloud-based data acquisition and reporting system that is accessed securely online by Ridley as well as their stakeholders. Data is viewed in real-time and then downloaded for reporting purposes.

This system allows for early warning of environmental changes that could result in the creation of dust and other environmental hazards. Alarms are sent to staff and management via SMS and e-mail. When an alarm is announced, the spray heads are turned on and the mobile water tanker trucks deployed.

A decorative blue line graphic that starts as a vertical line on the left, curves at a 90-degree angle to become a horizontal line extending to the right, framing the quote.

“Ridley Terminals’ priority was to measurably improve its environmental performance in the key area of air emissions.”

Ridley Coals Terminal

Evaluation

To date, the system is operating at over 99% uptime and requires only simple routine maintenance. This is despite the fact that Ridley Terminals operates in a remote location and has limited experience with air quality monitoring equipment.

The customer reports that some minor fine tuning of the reporting system is on-going, and they are receiving close support from Aeroqual and Environmental Analytical Systems throughout.