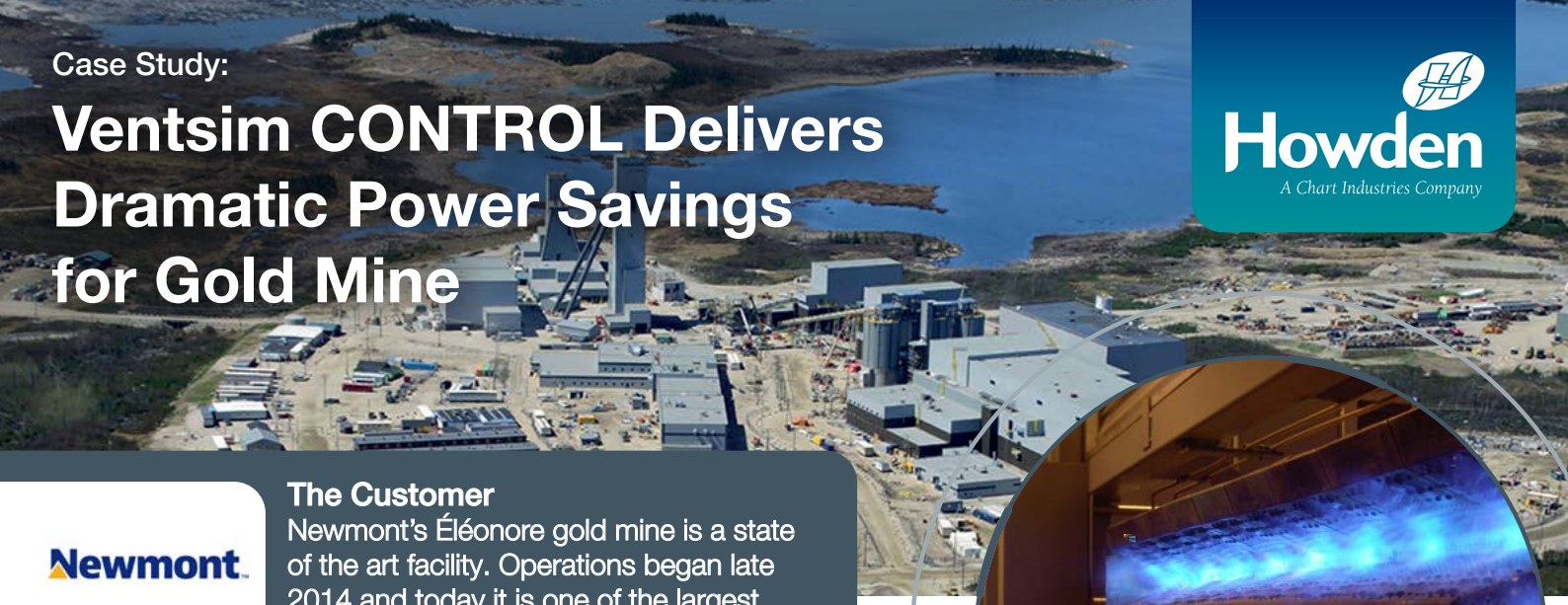
Case Study:

Ventsim CONTROL Delivers Dramatic Power Savings for Gold Mine

Howden
A Chart Industries Company



The Customer

Newmont

Newmont's Éléonore gold mine is a state of the art facility. Operations began late 2014 and today it is one of the largest gold mines in Quebec, Canada.

The Challenge

The mine has a fresh air demand of more than 900 kcfm (425 m3/s). The principal ventilation system consists of two Howden Alphair 12300-AMF-6600 exhaust axial fans with a nominal power of 2,000 HP (1,471 KWh) each, configured in parallel. The exploration shaft has two Howden Alphair 11200-AMF-6600 main intake fans with a nominal power of 750 HP (551.62 KWh), again configured in parallel. Lastly, there are over 140 underground auxiliary and booster fans operated in conjunction with seven dampers and air regulators, and a propane fuelled heating system. The challenge was to provide an overarching automated control system maximising safety and ventilation efficiency, whilst reducing energy demands and costs.

The Solution

Ventsim experts automated Éléonore's ventilation, covering all main fans, auxiliary fans, and airflow regulators. 30 Ventilation Monitoring Stations (VMS) were installed underground, communicating with Ventsim CONTROL, tracking air quality. Each VMS had a flow sensor and three gas sensors, to detect CO, NOx and C3H8 levels. A third party mine-wide RFID tag tracking system, coupled with 254 zone-based Access Points reported vehicle and personnel locations. The RFID tags enhanced safety, managed movement, and through integration with Ventsim CONTROL enabled full VOD automation.

The Results

Ventsim CONTROL and the fitted hardware, ensures safe and efficient supply of fresh air to individual work zones, eliminating unnecessary continuous mine-wide ventilation. Energy-saving analyses revealed 43% reduction in mine heating costs, 56% decrease in underground ventilation electricity costs, and an impressive 73% drop in surface ventilation electricity costs, which are all expected to increase favourably as the mine reaches capacity. Ventsim CONTROL will accommodate the mine's growth as it continues to deliver significant gains across production, sustainability, and safety.

KEY ADVANTAGES

$ - SAVINGS

56% ↓ - underground ventilation
73% ↓ - surface ventilation
TOTAL SAVINGS - $5.2M

AUTOMATION

Removed need for human intervention and manual time consuming control.

SAFETY

Accurate ventilation control decision making based on real time data.

VENTSIM®

Ventsim CONTROL is a world-class intelligent ventilation software that communicates to hardware devices, monitoring remotely, controlling and automating airflow, heating, and cooling systems. It improves safety, production, and significantly lowers mine ventilation costs. **Try it today!**

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