

Mining industry



- ◆ Application: Belt conveyor
- ◆ Problem: Failing mounted bearings due to contamination
- ◆ Solution: OPTIFY™ Performance Sensors

A major metallurgical coal producer in the United States plays a vital role in supplying material to manufacture high-strength steel used in infrastructure and a wide variety of industrial applications worldwide.

To move material efficiently and maintain continuous production, its underground coal mining operation relies on a network of belt conveyors to move coal from extraction points to processing areas. Once the belt conveyors are completely assembled on the surface and installed underground, large sections of conveyors go unmonitored due to confined and hazardous spaces that are difficult for workers to access.

Even minor issues can quickly escalate when left undetected, turning simple maintenance into lengthy underground conveyor repairs. Environmental debris was accumulating without notice and contaminating mounted bearings and gearboxes. The contamination was causing components to fail on average every 6 months—resulting in significant unplanned downtime with lost production costs of \$20,000 per hour.

By implementing OPTIFY Performance Sensors on its mounted bearings and gearboxes, the facility is empowered with continuous condition monitoring of conveyor equipment to pinpoint required maintenance before failures occur—preventing unplanned downtime and resulting in an **average annual savings of**

\$181,073



Proven reliability and performance

The condition monitoring solution for maximum uptime in the harshest environments



A critical belt conveyor used for transporting material from the underground mine to the surface.



An OPTIFY Performance Sensor installed on a mounted bearing, attached to a belt conveyor inside the underground mine.

The test

To help monitor components remotely, the maintenance team deployed 350 OPTIFY Performance Sensors on mounted bearings, gearboxes, and other driven equipment in phases with connected gateways for facility-wide coverage.

The results

Since implementing the Dodge® sensors over 3 years ago, the team has been alerted to developing issues with mounted bearings and gearboxes that are addressed during planned maintenance events. By pinpointing problems and mitigating equipment failure with the condition monitoring solution, the facility has prevented unplanned downtime and saved over \$180,000 annually.

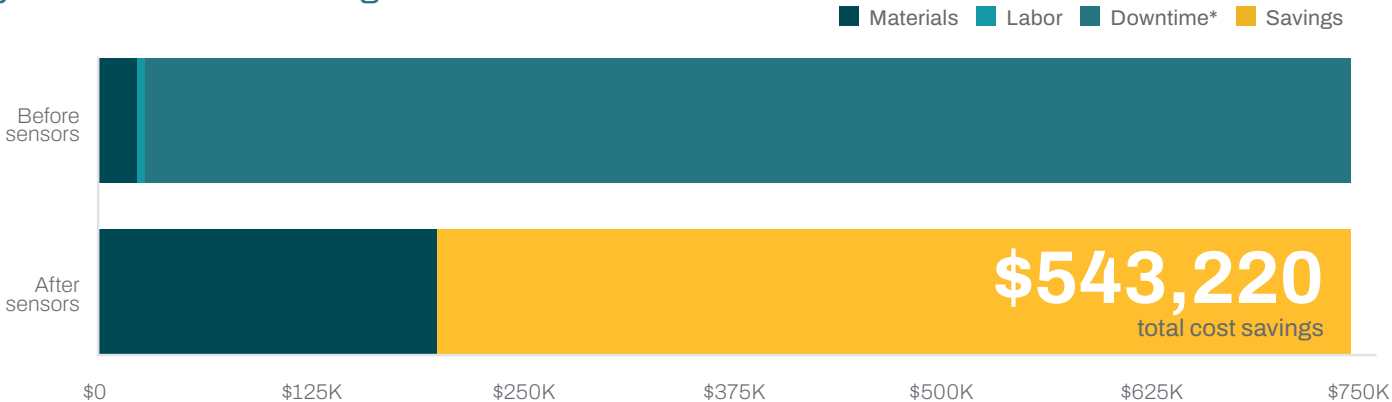
The why

OPTIFY Performance Sensors continuously monitor vibration, temperature, and other operating indicators on critical rotating equipment to detect developing mechanical issues.

This real-time visibility allows maintenance teams to address problems before they escalate into failures, enabling planned repairs during scheduled maintenance windows instead of costly emergency shutdowns.

For demanding applications like underground mining, the OPTIFY platform and connected solutions provide the insight needed to shift from reactive maintenance to a predictive approach that protects equipment and maximizes uptime.

3-year documented savings



*Downtime after integrating OPTIFY Performance Sensors was planned, not impacting production