

# Jerome in Mining Industry

**Toxic Gas Analysis and Safety Monitoring:** Alongside material flow management, safety is a top priority in mining, especially concerning the presence of toxic gases such as hydrogen sulfide (H<sub>2</sub>S), and mercury vapor. AMETEK's Jerome Toxic Gas Analyzers are used to monitor these gases in real-time, helping mining operators detect dangerous concentrations before they pose a threat to workers. Continuous monitoring of methane and H<sub>2</sub>S, particularly in coal and mineral mines, is crucial to prevent explosions or exposure-related illnesses.

- **Mercury Detection in Mining:** Mercury is a significant environmental concern in the mining industry, particularly in gold mining, where mercury is often used in small-scale artisanal mining to amalgamate gold. In larger operations, mercury can be released into the environment through ore processing, posing serious health risks to both workers and nearby communities. Mercury contamination also poses a threat to water sources, ecosystems, and food chains.
  - **Mercury in Gold Mining:** In artisanal and small-scale gold mining, mercury is commonly used to bind with gold particles during extraction. This process, however, leads to mercury vapor emissions when the mercury-gold amalgam is heated, releasing toxic fumes into the environment. AMETEK's toxic gas analyzers can be used to monitor mercury vapor concentrations during these operations, ensuring worker safety and compliance with environmental regulations.
  - **Mercury Detection in Ore Processing:** In large-scale mining operations, mercury can also be released as a byproduct of ore processing, particularly in gold and silver mining. AMETEK's advanced mercury analyzers provide highly sensitive detection of mercury, enabling mining companies to monitor and control mercury emissions both in the air and in water discharge. These instruments help prevent the release of mercury into the environment, which can have devastating effects on local ecosystems and communities.
  - **Environmental Monitoring and Compliance:** Regulatory bodies often require mining companies to monitor mercury levels to comply with environmental standards, such as those set by the Environmental Protection Agency (EPA) and the Minamata Convention on Mercury. AMETEK Brookfield's mercury detection instruments provide accurate, real-time data on mercury emissions, enabling mining companies to take corrective actions and report compliance with international environmental protocols.
- **Environmental Compliance and Mitigation:** The combination of mercury detection and toxic gas analysis helps mining companies meet stringent environmental regulations while minimizing the health impacts on workers and surrounding communities. AMETEK's technologies contribute to reducing the environmental footprint of mining operations, helping operators manage pollutants and protect water sources from contamination, particularly in regions where mercury use is prevalent.

**Optimizing Safety, Environmental Compliance, and Sustainability:** AMETEK Brookfield's comprehensive solutions for slurry management, tailings control, toxic gas analysis, and mercury detection play an essential role in improving mining efficiency and safety while addressing critical environmental concerns. The ability to detect and manage hazardous substances like mercury not only ensures worker protection but also helps companies adhere to international environmental standards, reducing the negative impacts of mining on ecosystems and public health.