

## Supporting Every Stage of the Geoscience and Mining Life Cycle

X-ray Fluorescence (XRF) | X-ray Diffraction (XRD) | Microscopy | Nondestructive Testing (NDT) Technology

### Geological Surveys and Academia: Earth Sciences and Mineral Processing Research

- Field work
- Teaching
- Lab and research activities

### Mining

- Grade control and litho-geochemistry—real-time geochemistry and mineralogy
- Use NDT technology, like phased array, eddy current, and remote visual inspection, to inspect fixed and heavy mobile plant equipment

### Onsite and Commercial Laboratories

- Inexpensive, near real-time multi-element geochemistry
- Easily collect quantitative mineralogy
- Optical mineralogy/petrology of host rock materials

### Environmental Remediation and Mine Closure

- Soil, rock, and dust monitoring; site remediation; contamination mapping; waste and tailing classification, including acid-mine drainage (AMD)
- Mineralogical phase ID of waste and tails materials

### Exploration Greenfields and Brownfields

- Optimize exploration budgets and fast track projects with real-time data in the field
- Rapidly delineate mineralogical controls
- Optical mineralogy/petrology of host rock materials

### Mineral Processing and Extractive Metallurgy

- Fast analysis to optimize process, recovery, and extraction
- Near real-time process control
- Optical mineralogy/petrology of host rock materials

### Plant Maintenance Fixed and Mobile Equipment

- Alloy PMI, weld testing, and oil/lubricant wear analysis
- Corrosion ID and classification
- Measure the thickness of conveyor belts and other wear surfaces
- Use remote video to visually inspect hard-to-reach places
- Use microscopes to view welds at high magnification