

# SPECTRAL EVOLUTION

## Core logging with an oreXpress and EZ-ID

The oreXpress is a field portable spectrometer designed for mineral exploration. When equipped with optional EZ-ID mineral identification software, the oreXpress offers an affordable alternative to manual core logging or expensive, fully-automated core logging systems.

Core logging is critical to successful exploration and production. In the core shack, a geologist has the opportunity to closely examine and record areas of interest, alterations, and other changes that can indicate mineralization. With the oreXpress, the geologist can scan at user-defined intervals and log spectra for core. The oreXpress contact probe fits easily into core trays. Scanning takes seconds and a single user can scan as much as 400 meters in a day.

NIR spectroscopy provides a fast, accurate, and easy-to-use method for identifying minerals without sample preparation or harming the sample. Instead of waiting for assays to come back from a lab, a geologist working in a core shack with an oreXpress and easy EZ-ID can create a virtual digital core library and produce an alteration map that can be used with 3D mine modelling software and can provide a roadmap for additional drilling.

Mapping alteration minerals with an oreXpress includes identifying minerals in the visible and near infrared bands (VNIR) 400-1100nm, such as ferric and ferrous oxides, silicates, sulfides and sulfates, and rare earth bearing minerals. In the short wave infrared (SWIR) from 1100-2500nm, OH bearing minerals can be identified including clays, micas, chlorites, talc, epidote, amphiboles, sulfates, and carbonates. The spectra of target core samples are compared in EZ-ID to more than 2600 spectra from the USGS, Spectral International SpecMIN library and GeoSPEC mineral spectral libraries for the closest, most confident match. Users can specify various wavelengths as regions of interest and highlight them to fine tune the best match. The software is especially useful in identifying clays in mixtures.

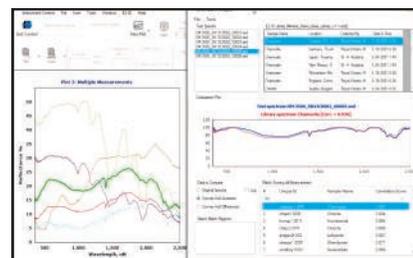
Spectra along with all associated metadata are saved as ASCII files to be exported as a batch into an Excel spreadsheet or to be imported into 3rd part software for continued analysis. For example, files from the oreXpress are easily imported into TSG, where spectral data can be combined with geochemical data to compare the presence of ore related to mineralogy and alteration.

Data from core logging in digital form can be stored as a virtual core library—archived for current and potentially future use in additional brownfield exploration efforts. Drilling can become a more efficient process with critical data available as an alteration map. The cost of an oreXpress and EZ-ID can easily be justified by not drilling one unnecessary hole thanks to accurate and complete data from a core archive. In addition to the oreXpress, higher resolution spectrometers are available: the oreXplorer and oreXpert.

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*Fast, accurate and efficient core logging is critical to mining exploration and economic production.*



*EZ-ID software identifies minerals in real-time by matching your target spectra against a known spectral library such as the USGS, SpecMIN or GeoSPEC library.*

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