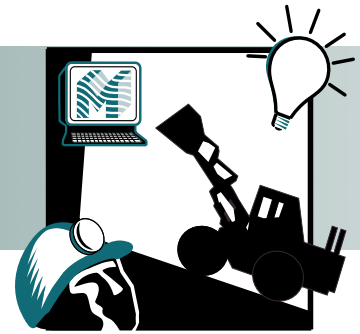


MINING

Project Fact Sheet



MAPPING WITH NATURAL INDUCED POLARIZATION

BENEFITS

- Eliminates need for gasoline-powered motor-generator sets to collect data in the field
- Saves energy from increased exploration depth and a reduction in drilling to characterize ore bodies
- Reduces the environmental impacts of drilling
- Increases safety due to reduced drilling
- Expands reserve base by allowing deeper deposits to be mined

APPLICATION

Mapping with natural induced polarization addresses industry's need for superior exploration and resource characterization.

NEW IMAGING SYSTEM REDUCES EXPLORATION DRILLING AND SAVES ENERGY

In exploration, mapping with natural induced polarization can save energy and reduce environmental costs through the use of new geophysical techniques. The new technique is called Natural Field Induced Polarization (NFIP). NFIP use natural-existing electromagnetic (EM) fields as the source to collect induced polarization (IP) data, which provides great depth of exploration and significant economic, energy, environmental and safety benefits.

The mining industry conducts numerous IP surveys worldwide to locate and characterize mineral resources. Currently, the mining industry uses controlled-source IP surveys that involve a dipole-dipole array of grounded electric transmitter and receiver dipoles, with dipole lengths of 100-1,000 feet. Conventional IP surveys use high power motor-generators to transmit electrical current into the earth through grounded electric dipoles. The process of installing current electrodes is slow and laborious under the best of circumstances, and can be very expensive. The NFIP is a non-invasive technique that, eliminates the need for current electrodes and motor-generator sets, and provides greater depth of exploration than controlled-source IP surveys.

The exploration drilling requirements and associated energy consumption are greatly reduced, because the exploration depth possible with the new imaging system is greatly increased. NFIP equipment is small, lightweight and battery-powered. It can be transported in a pickup truck or SUV. Reduced drilling requirements will save fuel required to power drill rigs and the trucks necessary to transport the heavy drilling equipment and supplies. Reduced drilling also decreases the environmental impacts of exploration and characterization.

NATURAL INDUCED POLARIZATION



MT-24 field setup for Natural IP.



Project Description

Objective: To develop and demonstrate the use of a new geophysical system to collect economically competitive induced polarization data using natural electromagnetic fields as the source. Applications of this method should reduce the need for drilling in resource exploration and characterization activities.

Progress and Milestones

This project includes the following milestones:

- Upgrade the system hardware and modify the system software to allow real time processing of remote reference data.
- Upgrade the data processing and interpretation software for reduction in noise interference.
- Conduct field survey over a known IP anomaly.
- Develop the resistivity and IP models and compare model results with conventional data.
- Complete reporting and technology transfer.

Commercialization Plan

At the end of the project, Electromagnetic Instruments, Inc. (EMI) will host a seminar for mining company exploration and resource assessment problems. EMI, upon successful demonstration of the technology, will:

- Publish the interpretation results of the project.
- Promote the technology in its commercial advertising.
- Publish the results in technical journals and make oral presentations at professional conferences.



PROJECT PARTNERS

Electromagnetic Instruments, Inc.
Richmond, CA

Placer Dome Exploration Inc.
Reno, NV

Kennecott Exploration Company
Salt Lake City, UT

Quantech Consultants Inc.
Reno, NV

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

Office of Industrial Technologies
Clearinghouse
Phone: (800) 862-2086
Fax: (360) 586-8303
clearinghouse@ee.doe.gov

Visit our home page at
www.oit.doe.gov/mining

Office of Industrial Technologies
Energy Efficiency
and Renewable Energy
U.S. Department of Energy
Washington, D.C. 20585



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