

Quality Geophysics

Geophysical Applications

Pipeline Surveys

During the planning stage for new pipelines, it is advantageous to gather basic information about site soils and bedrock geology related to routes under consideration. Surface geophysical methods can provide rapid, non-intrusive screening methods for many projects.

Electromagnetic terrain conductivity (EM) surveys permit rapid collection of conductivity and susceptibility data to depths of several meters. Conductivity, the inverse of resistivity, permits the identification of shallow bedrock, faults, underground utilities, buried foundations and other subsurface features that may be impediments to

pipeline construction. This is a very efficient method of verifying the presence of buried metals while gathering other important design information. Towed behind an all terrain vehicle (ATV), or carried by an operator, EM surveys are rapidly conducted over the specific pipeline route without interruption. EM data is used without estimation or interpolation between widely spaced borings. Integrated with global positioning systems (GPS) an EM survey provide cost-effective site screening for most sites and subsurface conditions.



Detailing specific areas of potential concern, our geophysical personnel are capable of performing standard resistivity testing (following ASTM G-57). This data provides valuable information for cathodic protection design, necessary to protect your pipeline investment. For existing pipelines, independent holiday detection in existing pipelines can be performed to verify installation, or ongoing pipeline conditions.

Seismic refraction permits bulk measurements of shear and compression wave velocities at select locations along a pipeline corridor. Integrated with soil densities, the velocities can measure Poisson's ratio necessary to establish the pipe-soil system parameter E' . This approach provides much more reliable information than estimates based on soil modulus or secant modulus measurements. Qualified technical personnel are capable of performing surface geophysical surveys at a level and price that will meet your project needs and expectations.