



EGS was initially established in 1974 to provide expert services in both land and marine geophysics. We have now gained over 35 years of experience in providing the complete range of terrestrial geophysics techniques. EGS is ideally experienced to help our Clients meet the challenges of local geology and geomorphology on the development of the urban environment, or the exploitation of minerals in the rural or remote environments.

EGS range of capabilities includes the following specialist geophysical techniques:

- Land Seismic Surveys (Shallow Seismic / Singlehole Seismic / Crosshole Tomography)
- MicroGravity Surveys
- Electrical Resistivity and Electrical Resistivity Imaging
- Ground Penetrating Radar Survey
- Borehole Televiwer Survey (BHTV)
- Electromagnetic Surveys including Broadband Electromagnetic Survey (BEM)
- Magnetic Surveys
- Thermal Resistivity Measurement
- Vibration Monitoring

The EGS Group

Australia, Hong Kong, Indonesia, Kazakhstan, Malaysia, Philippines, Singapore, United Arab Emirates, United Kingdom, United States, Vietnam

TERRESTRIAL SERVICES

SHALLOW SEISMIC AND BOREHOLE SEISMIC

Seismic methods can determine the distance to significant seismic interfaces, i.e. those that can be correlated to changes in soil/rock layers, discontinuities, ground water and low velocity zones. Seismic waves are measured by seismograph connected to a layout of surface or downhole geophones.

These techniques are mainly used for:

- Engineering projects such as investigations and constructability assessments for major infrastructure, construction, tunnel, highways and major buildings.
- Hydrogeology and groundwater exploration
- Detection of cavities, shafts and addits
- Ground particle velocities

Information derived from these technique includes:

Geological Features	Depth to Bedrock
	Location of Faults and Fracture Zones
	Lithological Determinations
	Location & Shape of Buried Valleys
	Fault Displacement
	Stratigraphy
Geotechnical Information	Elastic Moduli
	Porosity
	Density
	Ripability
	Elastic Wave Velocity



MICRO GRAVITY SURVEY

This technique has been used extensively by EGS on major project developments in challenging geological and geotechnical terrains in the urban and rural environments.

This technique is mainly used for:

- Detection of Subsurface Cavities
- Regional Geological Studies (i.e. investigation of bedrock level and fault zones)
- Engineering Applications (i.e. extent of disturbed ground and weathered rock)
- Archeological Applications



ELECTRICAL RESISTIVITY SURVEYS

Both surface resistivity survey (1D traversing and sounding and 2D imaging) and borehole resistivity survey are available.

This technique is mainly used for:

- Engineering Site Investigations (i.e. subsurface collapse features or conductive layer investigation for subway construction, power station)
- Environmental Investigation (i.e. closed landfill, potential polluted area, leakage migration or contaminant plume mapping)
- Groundwater Survey (i.e. detection of saline groundwater or groundwater potential)
- Archeological Investigation (i.e. location of buried objects)

BROADBAND ELECTROMAGNETIC (BEM) SURVEYS

A special and effective technology for condition assessment of any ferrous pipelines (cast iron, mild steel, wrought iron, ductile iron). Sensitive to all forms of corrosion and erosion experienced in ferrous pipelines; can be applied to coated, lined or painted pipes without need to destroy the protective layer.

BOREHOLE TELEVIEWER SURVEYS

Borehole Televier (BHTV) provides an acoustic "image" of the borehole wall by scanning it with narrow pulsed acoustic beam from rotating transducer while the tool is pulled up the hole. This allow the following information to be provided:

1. the location of discontinuities and cavities in the rock mass relative to ground level
2. The width, dip and dip direction of detected discontinuities.

This technique is mainly used for:

- Fracture Investigation of Bedrock
- Geological Structural Investigations
- Stress Analysis for hydrofracturing
- Borehole Breakout / Ovalisation Analysis
- Thin Beds Evaluation
- Rock Texture & Quality



EM SURVEYS - GROUND CONDUCTIVITY

This is a non-destructive method of earth conductivity, with an effective depth of exploration about six meters, making it ideal for geotechnical and groundwater contaminant surveys.

EGS owns the Geonics EM31-MK2 meter. Important advantages of the EM31-MK2 over conventional resistivity methods are the speed with which surveys can be conducted, the precision with which small changes in conductivity can be measured and the continuous readout and data collection while traversing the survey area.

This technique is mainly used for:

- Landfill Survey
- Saltwater Intrusion Study
- Location of Ore Bodies
- Groundwater Investigations
- Mapping of Subsurface Voids
- Contaminant Plume Mapping



GROUND PENETRATING RADAR (GPR)

GPR is an electromagnetic geophysical method which measures contrasting values in dielectric characteristics to map say geological strata, cavities and buried pipelines/utilities.

EGS can provide the full range of GPR Surveys thanks to its extensive pool of equipment:

Model	5100D	3101D	5103	3207A
Central Frequency (MHz)	1500	900	400	100
Survey Depth (m)	0-0.5	0-1.0	0-3	0-15
Dimensions (cm)	17.5×11.0×3.8	33×18×8	30×30×20	96×56×25
Resolution	5-7 cm	10-20 cm	15-25 cm	~ 1 m
Applications	Concrete inspection and evaluation, Concrete structure, Highway inspection, Tendon & Rebar profile, Void detection	Concrete inspection and evaluation, Void detection, Highway inspection, Utility detection and mapping	Shallow ground inspection, Cavity and void survey, Utility detection and mapping	Geotechnical ground investigation, Environmental investigation, Buried objects, Cavity survey, disused tunnel survey

LAND GEOPHYSICS

MAGNETIC SURVEYS

EGS can undertake surface and borehole magnetic surveys with its current pool of equipment.

This technique is mainly used for:

- Detection of Underground Pipes
- Detection of Buried Infill
- Detection of Ferrous Objects
- Detection of Buried Containers
- Landfill Investigation
- Mineral Exploration

THERMAL RESISTIVITY

Thermal resistivity measurements can be carried out on rock cores recovered from marine and land site investigations.

Thermal resistivity data are mainly required in the design of infrastructure projects such as tunnel, subway, power station and dam where heat exchange is important.

VIBRATION MONITORING

Both seismic vibration and sound vibration can be collected; tri-axial geophone and standalone microphone are available.

These techniques are mainly used for:

- Vibration Background Survey
- Construction Site Monitoring
- Blasting / Sound Monitoring
- Environmental Study

Information derived from these technique are as follow:

- Peak Particule Velocity & Frequency
- Acceleration
- Peak Vector Sum
- Peak Sound Level



The Global Force with a Personal Touch

Our offices throughout the World



Visit our website for more information:

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EGS is present in the following countries:

*Australia, Hong Kong, Indonesia, Kazakhstan,
Malaysia, Philippines, Singapore, United
Arab Emirates,*

United Kingdom, United States, Vietnam