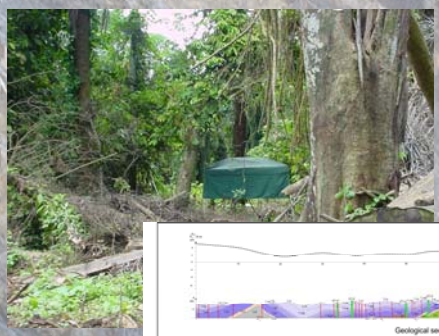
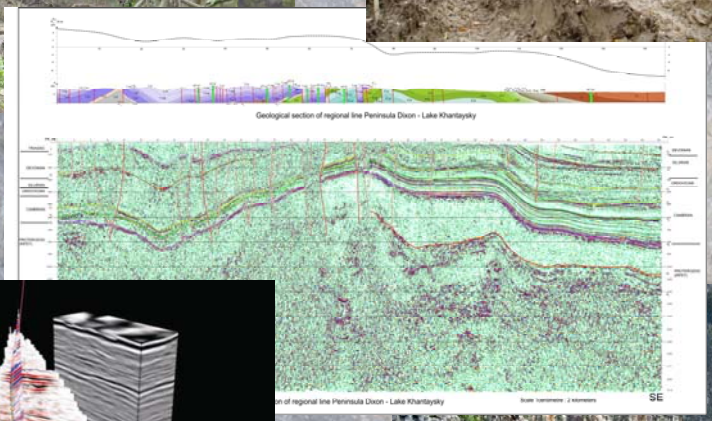
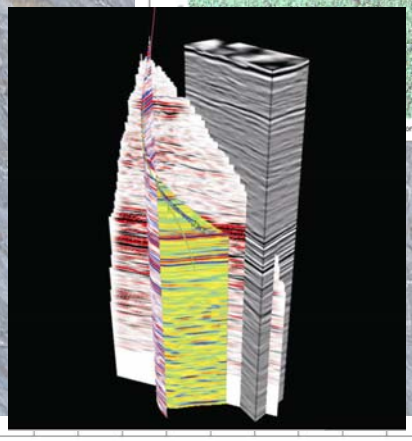
AOA Geophysics Inc.

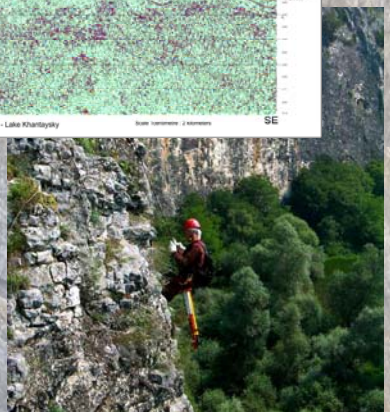
Capabilities and Qualifications Onshore Geophysical and Geological Engineering Investigation and Survey Services

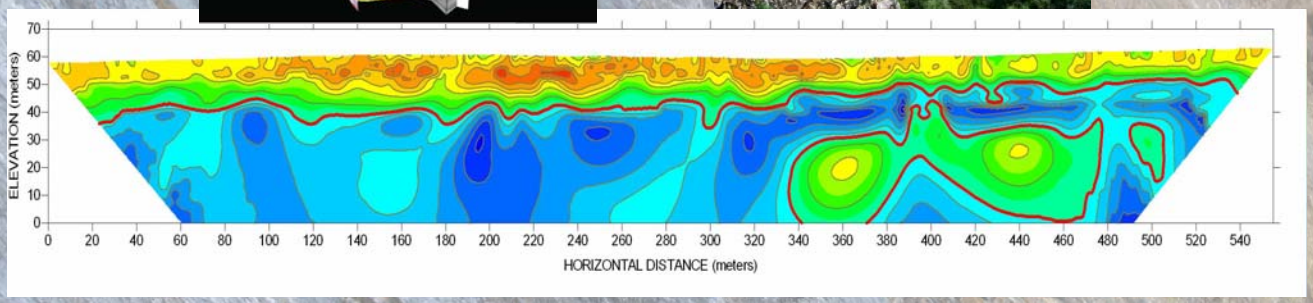
GEODOMISI Ltd.











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1.0 INTRODUCTION

The Geodomisi Ltd - AOA Geophysics Inc (AOA) is an innovative full-service geophysical and geoscience consulting and survey services organization specializing in the application of geophysics, geologic and hydrogeologic characterization, geo-engineering, and geo-environmental investigation methods, to the engineering, environmental, and petroleum exploration industries. In addition to these services, Geodomisi Ltd - AOA Geophysics Inc is also a reputable science and technology development group, providing clients with innovative and integrated ideas and survey techniques, custom instruments and equipment technology development, along with integrated data processing and GIS based geologic-geographic modeling.

2.0 GEODOMISI LTD - AOA GEOPHYSICS INC GEOSCIENCES GROUP MISSION

Understanding subsurface soil structure and site geology, and area hydrogeology, is often based on knowledge obtained from various types of geophysical and geoscientific information and investigation techniques. The same is true for locating buried objects such as utility lines and pipeline systems, contaminant materials, and the investigation of man-made structures such as roadways, buildings, and bridges.

One of the principal service missions at Geodomisi Ltd - AOA Geophysics Inc is to provide engineering, environmental, and petroleum exploration companies with a range of geophysical and geologic investigation services designed to achieve client objectives for almost any type of subsurface characterization or site investigation project. Whether the project calls for a simple single method of investigation, or requires the application of multiple survey methods to provide comprehensive site characterization, Geodomisi Ltd - AOA Geophysics Inc has diverse capabilities with the application of geophysics and geologic characterization techniques for petroleum exploration/exploitation, land environmental and engineering studies, shallow water marine geophysics, and project integrated geologic – GIS, ArcGIS, and GPS/DGPS surveying and mapping. Consulting programs are offered to clients that have requirements for specialized instruments and equipment, along with survey design and field operation planning for surveys in unique and difficult environments. Working with affiliate consultants and business partners,

Geodomisi Ltd - AOA Geophysics Inc can form dedicated teams to handle a variety of project tasks, including survey design and planning, systems and technology integration, field data acquisition, data processing, and geophysical/geologic mapping and modeling.

The company, its affiliate consultants, and strategic technology partners, have extensive geoscience and geophysical project experience throughout the United States and around the world. Combined technology resources can be made available to provide all the necessary geophysical equipment, geophysical personnel, environmental specialists, and geologic engineers required for almost any type of project.

2.1 SUMMARY OF GEOPHYSICAL SERVICES

Geodomisi Ltd - AOA Geophysics Inc geophysical services for engineering and environmental applications covers a broad range of onshore and shallow water marine investigation techniques. Depending on the survey objectives, types of information required, environmental and geologic conditions, Geodomisi Ltd - AOA Geophysics Inc can employ any single geophysical method for site specific objectives, or multiple survey methods to develop a comprehensive suite of geophysical and geologic information models.

Seismic methods include basic 2D and 3D P (compression) and S (shear) wave refraction and refraction tomography, high-resolution 2D and 3D P and S wave reflection surveys, multi-channel analysis of surface waves (MASW), Downhole and Crosshole Seismic Testing. Geodomisi Ltd - AOA Geophysics Inc also has special seismic survey capabilities for application to shallow oil and gas exploration using conventional 2D techniques, and 3D data acquisition and processing methods.

The Geodomisi Ltd - AOA Geophysics Inc Group offers a range of electromagnetic (EM), magnetic, and resistivity profiling survey capabilities designed for application to contaminant plume mapping, utility and pipeline locating, UST and buried materials investigations, landfill surveys, archaeological studies, tunnels and karst geologic investigations, hydrogeologic and groundwater studies, and many other site investigation applications. The geophysical methods include ground penetrating radar (GPR), electromagnetic (FEM and TEM) imaging, magnetometer surveying, radio frequency methods, 2D/3D seismic and electrical resistivity profiling, and micro-gravity methods.

For geologic and hydrogeologic studies that require the application of borehole geophysics, Geodomisi Ltd - AOA Geophysics Inc can provide a suite of borehole logging services. Borehole geophysical logging services, which include standard electric and natural gamma logging, induction logging, and full wave form sonic logging, are used independently, or in conjunction with other surface geophysical methods to define lithology, locate clay boundaries, characterize aquifer zones, quantify groundwater contaminants, and other geologic and geophysical characterization projects.

Where applicable, all geophysical surveys for geotechnical, engineering, and environmental projects are conducted according to ASTM standards or in accordance with accepted practice by the geophysical industry. Projects that require other multiple engineering and/or environmental services can incorporate services from one or several Geodomisi Ltd - AOA Geophysics Inc affiliate consultant groups and/or strategic business partners. Below is a list of the major geophysical survey methods and testing capabilities currently offered by Geodomisi Ltd - AOA Geophysics Inc. Additional information for these services is available upon request.

Listing of Geophysical Services and Applications

Seismic/Acoustic

- 2D and 3D High Resolution Land Seismic Surveys
- 2D and 3D Land Vertical Seismic Profiling (VSP)
- Shallow Seismic Refraction Surveys (conventional and tomography imaging)
- Crosshole Seismic for Soil and Rock Velocities and Young's Modulus
- Downhole Seismic for Determination of P and S Wave Velocity
- Multi-Channel Analysis of Surface Waves (MASW)
- Multi-Channel Crosshole Seismic Data Acquisition

Ground Penetrating Radar

- Non-Destructive Subsurface Exploration for Obstructions and Hazards
- Utility and Pipeline Surveys, and Location of Shallow Voids/Cavities
- Pavement Studies and Reinforcing Material Location
- Soil and Rock Structural Information
- Geologic and Hydrogeologic Stratigraphic Mapping and Near Surface Fracture/Fault Mapping
- Archeological surveys

Magnetic and Electromagnetic (FEM, TDEM)

- Magnetic Anomalies and Subsurface Contaminant Mapping
- Electromagnetic Conductivity and In-Phase Mapping
- Locating Buried Metal Objects
- Mapping Shallow Soil Stratigraphy
- Groundwater Investigations and Hydro-geologic Characterization Studies
- Unexploded Ordnance (UXO) Investigations

Borehole Logging

- Electric Logging (SP, Long/Short Normal, Single Point Resistance)
- Induction and Gamma Ray
- Caliper and Dipmeter
- Video Camera and Borehole Inclination
- Sonic Logging
- Flowmeter, Temperature, and Fluid Resistivity
- Acoustic and Optical Televiewer for fracture mapping and well casing inspections

Other Special Services/Methods

- Integrated Seismic and Electrical Resistivity Sounding and 2D/3D Profiling
- Gravity and Microgravity Surveys
- Magneto-Telluric Surveys
- Seismic Microzonation for Land Earthquake and Geohazards Studies

2.2 GEODOMISI LTD - AOA GEOPHYSICS INC PROFESSIONAL STAFF AND QUALIFICATIONS

Geodomisi Ltd - AOA Geophysics Inc is supported by (employees and consultants) qualified geophysicists, geoscientists, field management and technical personnel experienced with geophysical survey methods for petroleum exploration applications, geotechnical, geo-engineering, and environmental projects.

Geodomisi Ltd - AOA Geophysics Inc provides its clients with staff professionals having qualifications and experience to address all aspects of geophysical exploration. When needed, the staff can be supplemented with specialists from other consultant or sub-contractor resources, thus giving Geodomisi Ltd - AOA Geophysics Inc the necessary strength to efficiently perform a wide range of geophysical services, which include: various applied geophysical methods, survey planning, survey design, survey operations and data collection, data processing and interpretation. Geophysical teams assigned to projects can design, modify, and/or integrate instrumentation and survey equipment to meet client data objectives and environmental conditions, and the field personnel are all specialists with experience operating a variety of data recording instruments for operations in almost any type of environment. Working closely with the client(s), careful attention is given to survey design parameters, project planning and equipment selection, health, safety, and environmental (HSE) regulations that may affect geophysical operations and the quality of data.

2.3 SEISMIC SURVEY SERVICES AND METHODS

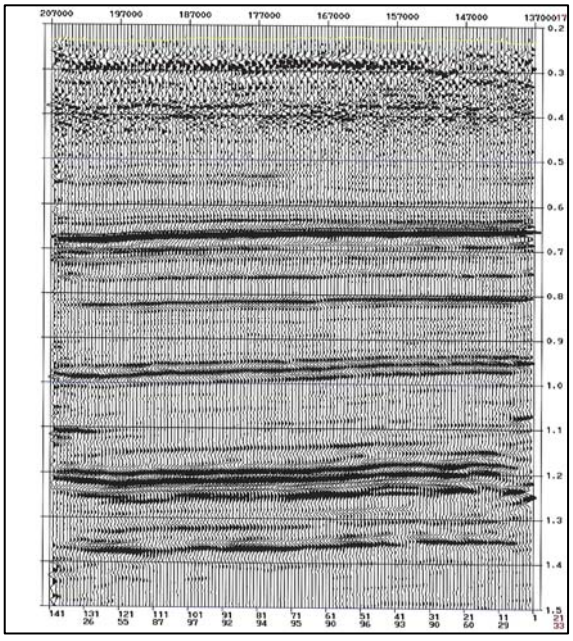
The petroleum and minerals exploration focus of Geodomisi Ltd - AOA Geophysics Inc is the application of high-resolution 2D and 3D reflection and refraction surveys for small and medium sized projects exploration projects. A specialized capability is the seismic projects planning, logistical management, and field operations in environmentally sensitive and challenging terrain regions. The Geodomisi Ltd - AOA Geophysics Inc Group can design, plan, and perform seismic data acquisition to delineate formation oil and gas deposits, coal bed methane (CBM) formations, coal seams, and other economic minerals in urban environments, mountainous terrain or desert areas, wetland and jungle regions, and other difficult environments. These seismic surveys are designed to minimize impact on the environment by using portable instruments, small seismic crews, and/or seismic sources that present little or no risk of disturbing sensitive wildlife habitats.

Geodomisi Ltd - AOA Geophysics Inc uses only the most modern seismic survey equipment, and also has the ability to customize and integrate equipment to enhance data quality and meet special field operations and environmental conditions. Prior to conducting the planned survey, all seismic equipment is tested to confirm performance according to manufacturer specifications. Initial QA/QC data may be acquired periodically to make sure the survey parameters will produce the desired results. In-field pre-processing analysis is often performed (e.g. refraction picks, generation of time-distance curves, velocity analysis, and/or brute stacks) to provide initial interpretation and field QA/QC analysis.

2.3.1 Accelerated Weight Drop (AWD) Operations

Where applicable, Geodomisi Ltd - AOA Geophysics Inc uses the Nitrogen Gas-Charged Accelerated Weight Drop (AWD) seismic energy source system to acquire seismic data where other conventional energy source systems cannot be used. These AWD systems are high powered, environmentally friendly impact seismic sources that can be used with almost any type of modern seismograph system, and can be used for a variety of 2D and 3D seismic programs. These seismic sources can work in many areas where explosive and vibratory seismic sources cannot, either because of regulations, or because of the risk of damage to underground pipes, utility lines, surface structures, and wildlife habitats. Survey applications using the AWD include shallow and deep refraction surveys, 2D and 3D seismic reflection surveys, Vertical Seismic Profiling (VSP), and downhole seismic or LVL surveys. On 3D seismic surveys requiring QC and (x,y,z) source location monitoring the AWD systems can be equipped with a high precision GPS/DGPS mobile receiver.

AWD 2700 truck mounted seismic energy source system designed for acquisition of deep seismic data in environmentally sensitive areas.



Geodomisi Ltd - AOA Geophysics Inc also employs the use of explosives for 2D and 3D seismic surveys in areas where permitted. Seismic surveys using explosives are performed and managed in accordance with the International Association of Geophysical Contractors (IAGC) Guidelines and Safety Programs, with site specific plans of execution guidelines developed by Geodomisi Ltd - AOA Geophysics Inc Geophysics to minimize drilling and seismic operation impact on the environment.

Lightweight ATV mounted AWD source systems are used for shallow refraction, shallow 2D/3D

seismic surveys, and for acquisition of near surface LVL data to acquire and evaluate refraction and reflection statics.

Shallow seismic reflection survey using light ATV mounted Accelerated Weight Drop in rugged terrain.

ATV 4X4 mounted Accelerated Weight Drop in rugged designed for shallow refraction and reflection surveys.

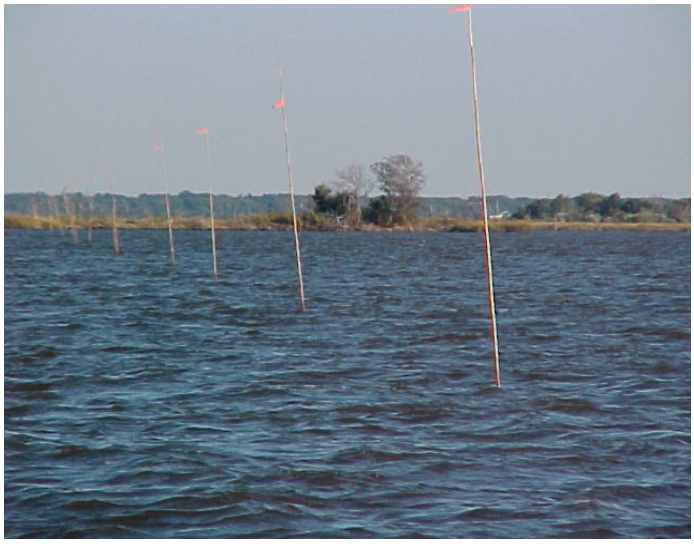
2.3.2 Seismic Survey Special Operations

Seismic surveys located in difficult terrain and regions that are environmentally sensitive require specialized seismic instruments, drilling and operations support equipment, and field logistics management. As each survey site is unique in terms of these requirements, Geodomisi Ltd - AOA Geophysics Inc emphasizes detailed advance project planning to develop operations plans that will minimize impact on the environment, and maximize seismic coverage and overall data quality.

Helicopter supported seismic operation to minimize the need for excavation to build access roads.

Hand–cutting of narrow seismic line for portable shothole drilling and layout of seismic equipment. Narrow survey line swaths minimize destruction of forested area.

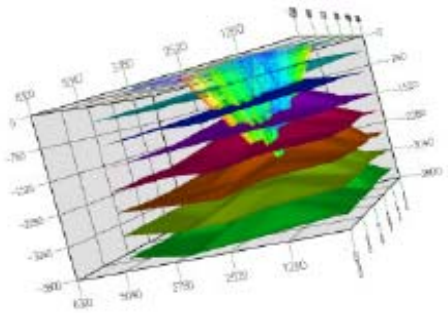
Shallow water shothole drilling using portable drill rig on barge for 3D seismic survey in environmentally sensitive transition zone.

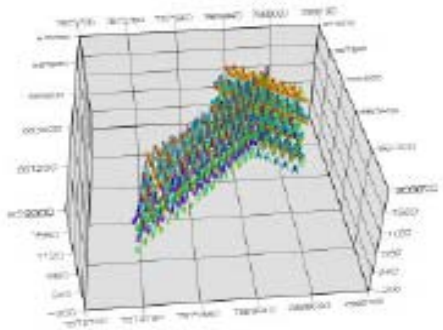


Surveyed stake position for layout of portable radio telemetry seismic system in marine transition zone region.

2.3.3 3D Seismic Survey Planning and Data Processing

For planning of 3D seismic surveys, Geodomisi Ltd - AOA Geophysics Inc uses the MESA Professional and Expert software program. Whether a seismic survey is basic or complex, the MESA program provides comprehensive survey design, parameters analysis, and predictive modeling that can make any acquisition program a success.





Major features include:

- Survey design and subsurface coverage analysis for 3D/3C and VSP surveys.
- Geologic modeling, ray tracing and illumination analysis.
- Chronological project tracking and crew production statistics.

Geodomisi Ltd - AOA Geophysics Inc in-house seismic data processing is performed using the GeoTomo Thrustline software on seismic survey projects over project areas with complex terrain and subsurface geology. Conventional 2D and 3D seismic data processing is outsourced to one of several reputable seismic data processing centers.

3.0 SEISMIC METHODS FOR ENGINEERING AND ENVIRONMENTAL APPLICATIONS

Seismic reflection, refraction, and refraction tomography surveys utilize seismic waves (compressional and/or shear) to map subsurface layering and structure ***(e.g. fault mapping, voids, bed thickness, depth, and stratigraphic continuity, bedrock mapping, continuous velocity studies).*** In the geo-engineering and environmental industries, where geologic targets are typically very shallow (ranges from 10 to 500+ meters), high-resolution seismic surveys are a common geophysical method when conditions are favorable. Recent improvements in survey techniques, seismic instrumentation, and data processing methods have helped to expand the application of land reflection/refraction surveys for near surface investigations. With some projects, Geodomisi Ltd - AOA Geophysics Inc will utilize other geophysical methods such as resistivity profiling, EM, and GPR, which are complimentary to seismic refraction and reflection data.

In processing, the results from combined methods can be integrated to develop very detailed 2D or 3D site geologic models.

3.1 Seismic Methods for Engineering Projects

Conventional Seismic Refraction

Seismic refraction survey methods that detect and measure refracted P and/or S waves are used to delineate depth to bedrock, overburden thickness, to define shallow soils and rock stratigraphy, and refraction velocity mapping to estimate earth rippability.

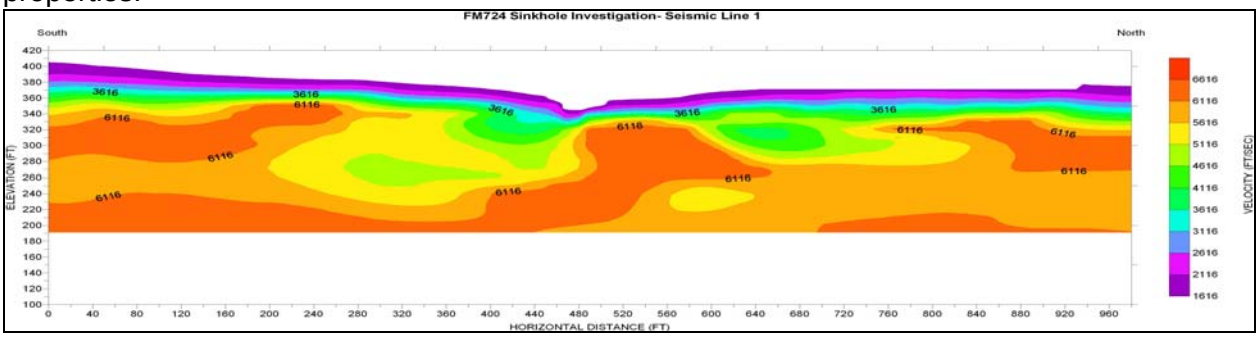
Applications include foundation studies, mining and excavation, engineering for tunneling projects, slope stability studies, geologic structure and stratigraphic mapping, and some environmental groundwater investigations. Depending on the survey objective and data requirements, Geodomisi Ltd - AOA Geophysics Inc conducts both P and S wave refraction, where the combination of P and S wave data can be used to identify low velocity shear zones.

Basic refraction data is processed using one, or a combination of, Delay-Time, Reciprocal, and Generalized Reciprocal Method (GRM) methods. These processing methods are generally sufficient for the more basic project applications. Geodomisi Ltd - AOA Geophysics Inc use a more advanced seismic refraction tomography processing technique whenever the survey is conducted over more complex geology structures, or whenever a higher degree of P and/or S wave vertical and horizontal velocity delineation data is required.

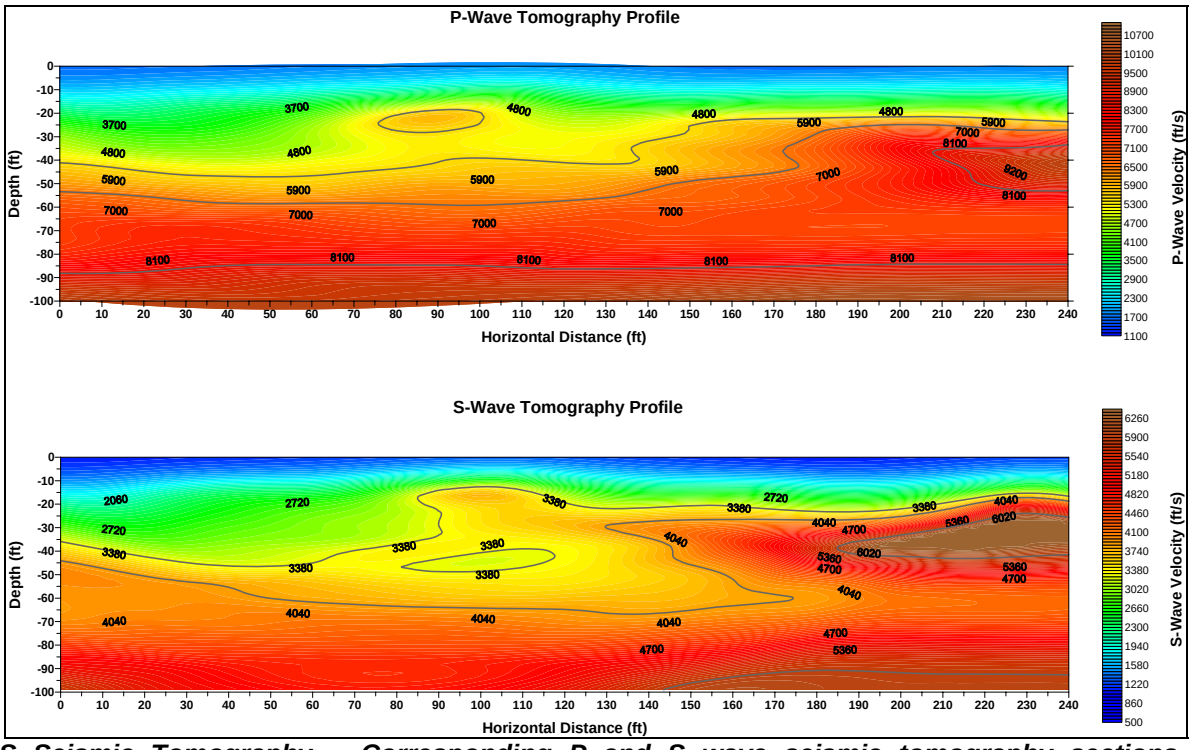
Seismic Refraction Tomography

Refraction tomography (P-Wave) is used to delineate stratigraphy, identify fracture zones in bedrock *(low velocity zones)*, and provide velocity profile for rippability studies.

The example section below represents a P-Wave refraction tomography section showing shallow rock stratigraphy and shallow channel subsidence zone below a known collapse sinkhole. Similar tomography studies can be performed using S-Wave refraction survey techniques to delineate aquifer formations for hydro-geologic studies, and provide P and S wave velocity information to determine vertical and horizontal variations of soil and rock elastic properties.



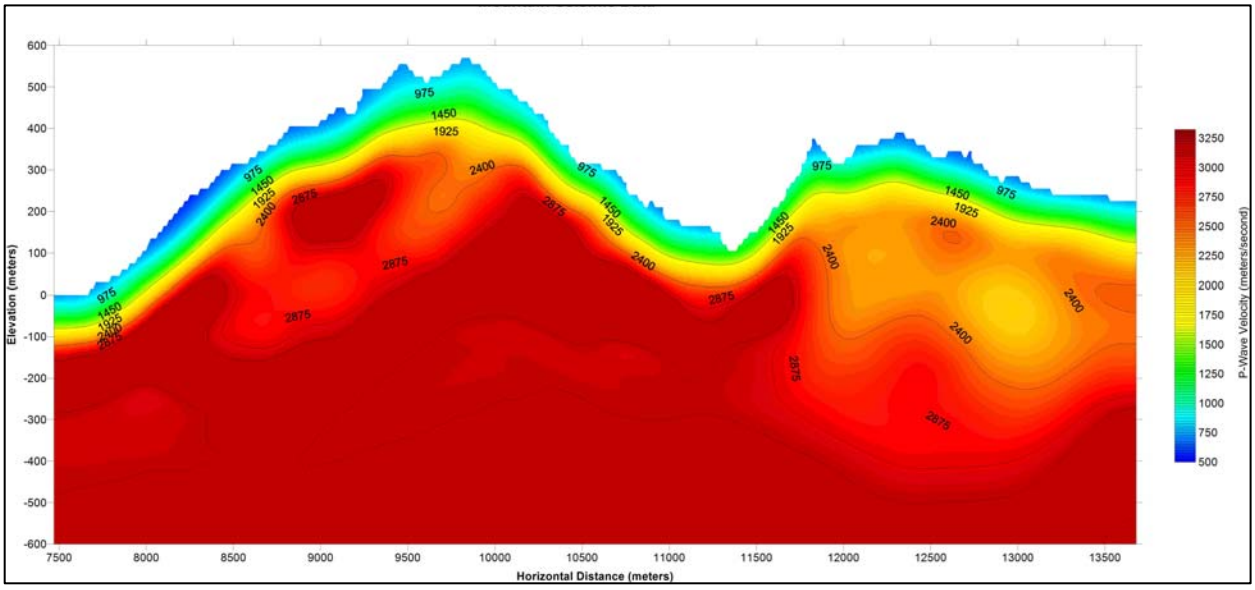
Seismic Refraction Tomography – 2D P-wave refraction tomography cross-section used to delineate collapse sinkhole and shallow geologic channel.



P-S Seismic Tomography – Corresponding P and S wave seismic tomography sections to delineate geologic structure, low P and S wave velocity zones indicating weak dissolution and weathering zones, and to derive continuous 2D distribution of soil and rock modulus using extracted P and S wave velocity data.

Seismic Reflection Tomography

Seismic reflection data is also used to generate contoured velocity versus depth tomography images of deeper geologic targets across rugged mountain terrain and in other regions with complex geologic structure.



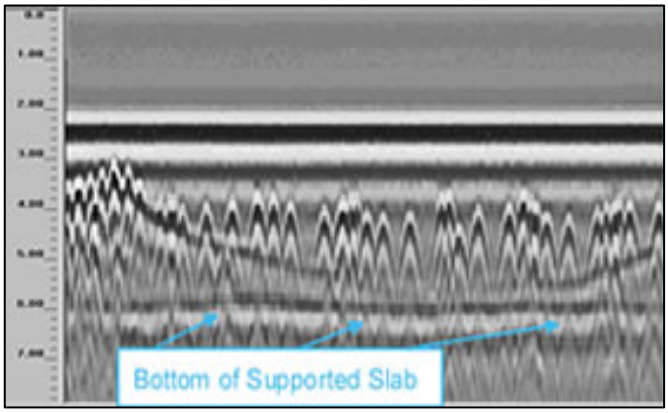
Seismic Reflection Tomography – Processed tomography image from Seismic reflection data to delineate geologic structure across mountainous terrain (depth: 600 – 1000 meters, horizontal distance: 6 kilometers)

3.2 Integrated Geophysical Methods

Geodomisi Ltd - AOA Geophysics Inc has developed an integrated geophysical survey, data processing, analysis and interpretation program for special geologic site characterization programs. Applications include, but are not limited to, earth foundation studies for large LNG facilities planning, power plant sites (nuclear and non-nuclear), dam site investigations, seismic microzonation for near surface geohazards studies, groundwater resource development projects, and shallow fault studies. The integrated geophysics programs typically consists of a combination of several methods, which may include P and S wave seismic refraction/reflection tomography, Multi-Channel Analysis of Seismic Waves (MASW), Refraction Seismic MicroTremor (ReMi), crosshole and/or downhole 3-component seismic testing, electromagnetic (EM) and magnetometer surveys, continuous electrical resistivity imaging (ERI), ground penetrating radar (GPR) and borehole geophysical logging. In many cases, the integrated geophysical studies are combined with geotechnical investigations to develop comprehensive site characterization and geologic model information that includes soil and rock sample core analysis. Geophysical methods are determined on the basis of project objectives, environmental conditions, economical, and field operations factors.

3.2.1 Ground Penetrating Radar (GPR)

Ground Penetrating Radar (GPR) is one of the most widely used non-invasive/non-destructive geophysical methods for shallow subsurface investigation. GPR applications to engineering and environmental problems are very broad, ranging from simple location of buried objects such as pipelines, utility lines, buried drums, voids, and fractures, to more complex surveys for delineation of soil profiles, mapping of rebar in concrete slabs, near surface structural and stratigraphic geology, hydrogeology, mapping groundwater contamination plumes, and sub-bottom profiling in lakes and rivers.

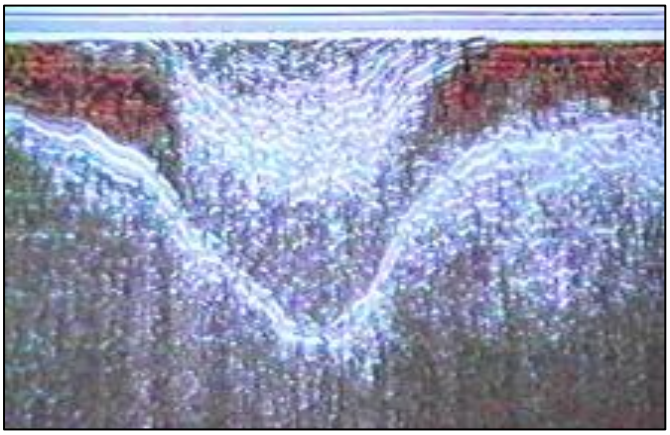


GPR Rebar Survey

High frequency (900 MHz – 1.5 GHz) Structure Scan radar antennas are used to map depth and spatial arrangement and uniformity of rebar in concrete structure. Identification of rebar in concrete is used to assess concrete integrity and to determine boring locations in areas where rebar is not present. Structure Scan can also be used to locate fractures and thickness of concrete.

Geodomisi Ltd - AOA Geophysics Inc employs several GPR survey methods depending on the type and depth of target. Continuous Profiling (monostatic mode) is the most frequently used method, where the targets are typically utility lines, shallow buried objects, voids under pavement, etc. For more complex deep targets, the Common Midpoint (CMP) and/or Wide Aperture Radar Mapping (WARM) survey method is employed using the monostatic and/or bistatic modes. Continuous profiling in the bistatic mode, where the receiver and transmitting antenna are separated at a fixed distance, is also used for deep stratigraphic and structural imaging.

As with the seismic methods, the Geodomisi Ltd - AOA Geophysics Inc geophysical staff specializes in tailoring the GPR survey to meet specific client objectives. Survey planning includes a thorough review of these objectives, along with an analysis of the site (e.g. soil conditions, target attributes, and surface obstacles). If available, geographical, geologic, and geophysical information is reviewed to determine if GPR is applicable. The success of a GPR survey depends on these factors, and the inherent limitations of ground penetrating radar. In addition to surface GPR, the Geodomisi Ltd - AOA Geophysics Inc Group can also perform borehole radar surveys for use in mining, hydrogeological, or rock mechanical investigations. It is also useful to investigate tunnels, dams, and other civil construction projects.



GPR for Geologic Site Characterization
Where applicable, GPR is used to identify the locations of natural and manmade trenches that can indicate possible subsidence zones. GPR profile information can be used to plan excavation or drilling work for core sample and borehole logging operations. For environmental studies, geologic features such as trenches and subsidence zones can be mapped as potential pathways for the migration of contaminants and groundwater.

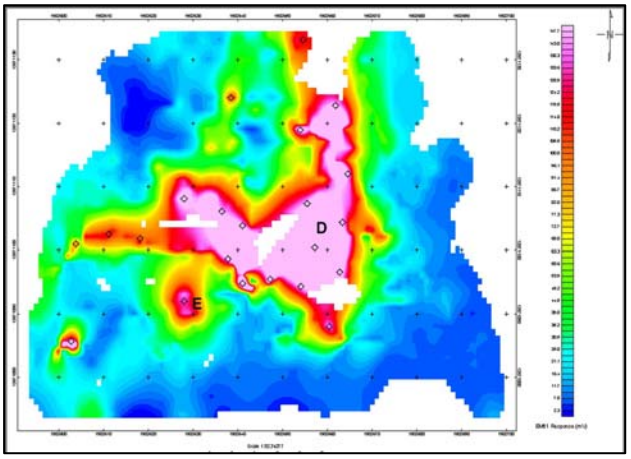
GPR instruments can incorporate high precision DGPS positioning data that can be recorded in real-time with the GPR field data for processing and presentation using Surfer 8 and/or GeoSoft Geosciences graphics programs for both 2D and 3D image presentations.

3.2.2 Electromagnetic (EM) Surveys

This method allows for quick and cost-effective mapping of the electrical resistivity variation of the ground across a site. It provides a useful tool for detecting lateral changes in geology (sand versus clay) and fluids (fresh versus saline or contaminated groundwater), as well as for detecting and mapping buried piping, underground storage tanks, foundations, and landfill

areas. This method is also useful as a monitoring tool, enabling repeat surveys over discrete time intervals to determine changes in the subsurface (e.g. plume movement) as a function of time. Geodomisi Ltd - AOA Geophysics Inc operates the Geonics EM-31MK2, EM61, and EM61-HH ground conductivity systems with supporting processing and graphics presentation software for analyzing data and generating site conductivity maps. For high accuracy location of utility lines, buried ordnance, and concentrations of native minerals, the Geometrics GTEM MetalMapper is also used.

The EM31/EM61 instruments are used to map the location of buried pipelines, or other large buried objects and geologic formations that exhibit higher/lower conductivity than the local native soils. The EM61 is a time-domain electromagnetic instrument (TDEM) that is typically used to detect UST/drums, contaminant plumes and mapping karst geology.



3.2.3 UXO-Landmine Field Operations

Geophysical Unexploded Ordnance (UXO) surveys primarily involve the use of magnetic (ie: Geometrics G858 magnetometers) and/or TDEM (ie: Geonics EM61-MKII) systems in conjunction with high precision real-time GPS/DGPS navigational instrumentation. The processing, analysis, and management of the geophysical UXO data include the utilization of standardized software (Geosoft Oasis Motaj and ESRI ArcGIS/ArcView) and other proprietary programs developed in-house.

Traditional methods for the identification and mapping of buried UXO use ground based Electromagnetic EM61, Cesium Vapor G858, and Gradiometer sensors. Equipment configurations include single sensor systems for surveying small areas, and multi-sensor systems that use hand and special non-magnetic vehicle towed arrays of electromagnetic, magnetometer, and Gradiometer instruments for mapping UXO locations over small to medium size areas. For economical reasons, it is not always practical to use the ground based UXO survey systems for survey coverage over sites that are larger than 100 acres (0.40 square kilometers). Larger area UXO sites are often surveyed using the hand towed multiple-sensor EM61 & Magnetometer arrays and the Multiple-Sensor Towed Array Detection System (MTADS), but at great expense because of the time required for data acquisition. For man-towed UXO detection systems, the typical survey coverage ranges for 3 to 5 acres per day (12K to 20K square meters). The MTADS vehicle towed system can achieve approximate area

coverage of about 15 to 25 acres per day (60K to 100K square meters).

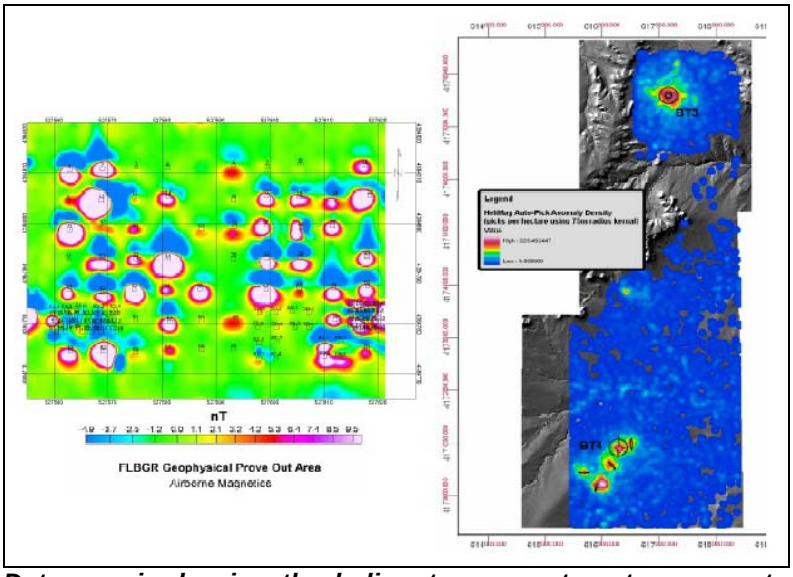
MTADS using Magnetometer Array

ATV Towed EM61 Array

New and innovative data collection and analysis methodologies based on deployment of an array total field magnetometer data from a helicopter platform have been developed and successfully tested for clearing large regional areas of buried UXO and land mines. Facilitated through cooperative research and development programs, the helicopter magnetometer technology is now proven and routinely used for creation of high resolution magnetic field anomaly maps.

Although the primary focus of the development work has been the site characterization of former and active military facilities contaminated with unexploded ordnance (UXO), its application to detection of buried landmines and other buried metallic debris has equal performance. For the UXO application and some landmine helicopter magnetometer surveys, the system is deployed at flight altitudes as low as 2 meters, to maximize probability and accuracy of detection of UXO and landmines. The systems integrate an array of seven Cesium Vapor Magnetometers, high precision RTK GPS, and altimeters, producing high-fidelity maps at a rate of approximately 200 hectares per day. Helicopter-based magnetometer technology is a low airborne technology that provides highly efficient digital geophysical mapping for UXO with detection and feature discrimination capabilities approaching ground-based methods.

Geodomisi Ltd - AOA Geophysics Inc, and its consultant partners, can provide a comprehensive and integrated suite of ground based and airborne UXO and landmine site characterization tools. Helicopter-based magnetic field mapping play a central role in the wide area assessment of large facilities by providing a high productivity reconnaissance mapping technology producing high-fidelity magnetic field anomaly maps. For sites that contain potentially active landmines, the airborne reconnaissance UXO surveys can be supplemented by ground EM61 and magnetic UXO surveys to isolate smaller munitions in selected local zones following clearance of detected landmines. All data are used to develop a comprehensive inventory and catalog of discovered UXO and landmines, which can be used for assessment of site reclamation and land use development projects.



Data acquired using the helicopter magnetometer array at a former military reservation. Left: airborne magnetometer data from a seeded test plot. Right: Airborne UXO survey results delineating bombing targets.

3.2.4 Borehole Geophysics

Geodomisi Ltd - AOA Geophysics Inc provides borehole seismic testing and logging services for geotechnical engineering and environmental investigation applications where subsurface information from borehole surveys is required. Borehole geophysics is the science of recording and analyzing measurements of soil and rock physical properties acquired from cased and uncased boreholes or test holes. The methods use probes, or logging sondes, that acquire continuous and/or point vertical data (short and long normal resistance, point resistance, spontaneous potential, natural gamma, etc…), as well as P and S wave crosshole and downhole seismic data, and full waveform sonic log data.

Systems used by Geodomisi Ltd - AOA Geophysics Inc include the portable the *Mt. Sopris* and *Century Geophysics Instruments, and the Robertson MicroLogger* digital systems for log acquisition of single point resistance, short/long normal resistivity, spontaneous potential, natural gamma, induction, gamma ray, caliper, video camera, borehole Inclination, full waveform sonic, flowmeter, temperature, fluid resistivity, acoustic and optical televiewer, dipmeter, and EM logs. For post log acquisition processing we use *Terrasciences and Viewlog* software to edit, analyze, and plot final, report-quality versions of the recorded logs.

Geodomisi Ltd - AOA Geophysics Inc can perform integrated surface and borehole logging surveys combining log information with GPR, EM, or seismic reflection and refraction surveys. Borehole P-S Velocity surveys can also be performed along with E-log measurements to provide correlated formation acoustic velocity and lithology profiles. Multiple logs are typically

acquired and grouped for analysis as a suite of geophysical logs to aid with hole to hole correlation and estimation of such properties as density, porosity, and composition ratios.

3.2.5 Crosshole and Downhole Seismic Testing

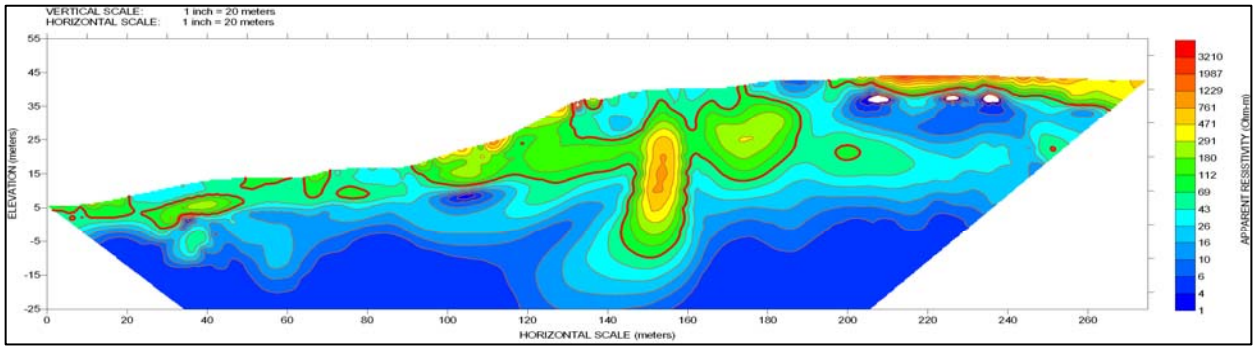
Borehole seismic surveys include single and multi-station P wave or P and S wave multi-component crosshole and downhole seismic methods. The basic crosshole and downhole seismic applications are used for determination of in-situ dynamic soil properties of geologic formations between boreholes as part of a geotechnical study, check shot velocity survey, and for calibration of travel-times on surface seismic reflection/refraction surveys. Geodomisi Ltd - AOA Geophysics Inc crosshole testing is performed in accordance with ASTM D4428 Guidelines.

Multi-station single and multi-component borehole systems are deployed for acquisition of full wave-form data for application to crosshole tomography surveys, surface to borehole VSP surveys and crosswell seismic continuity (guide wave) surveys for in-seam coal fracture mapping. Geodomisi Ltd - AOA Geophysics Inc consulting and technical services are provided for sensor design, systems integration, and installation of borehole seismic systems for permanent installation with long term acoustic monitoring, and removable multi-level/multi-component receiver arrays.

3.2.6 Resistivity sounding and profiling methods

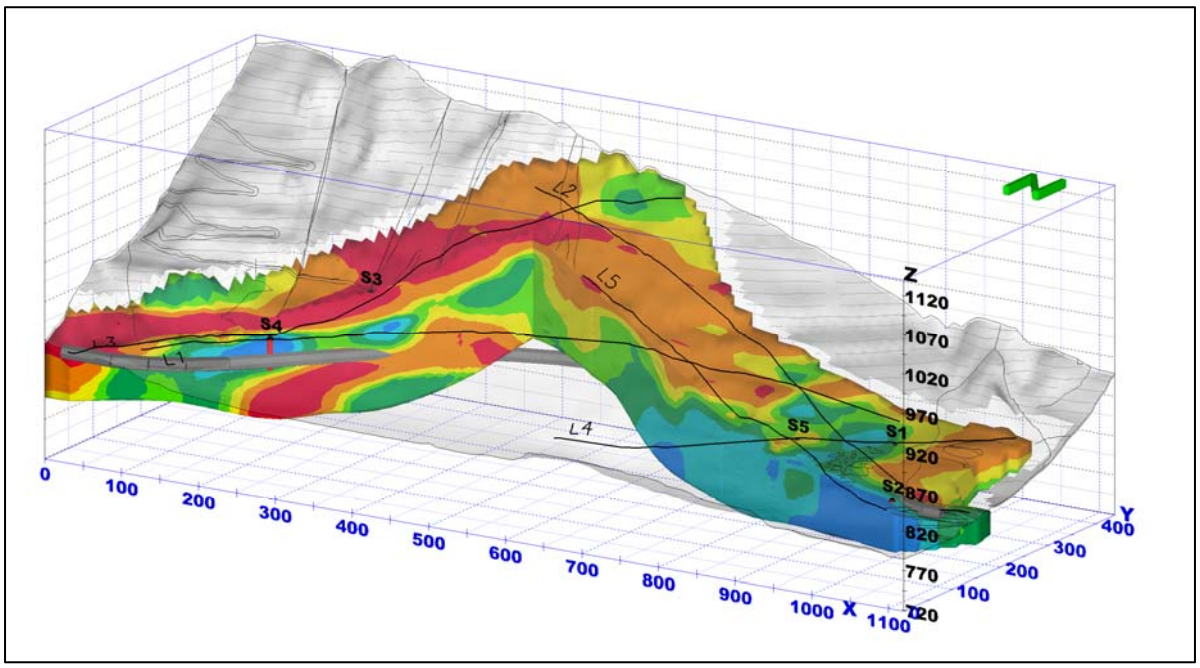
Geodomisi Ltd - AOA Geophysics Inc provides expert resistivity sounding and profiling surveys. Conventional sounding surveys are used to design subsurface cathodic protection systems, map shallow lithology, and sometimes included as part of a hydrogeologic study. Advanced applications for electrical resistivity profiling include mapping of soil and rock lithology, depth to bedrock, karst geology, groundwater aquifer formations, and other geologic features. Special applications include delineation of leak zones around dam sites, location of large shallow caverns, slope stability studies, and mapping of conductive and high resistivity soil contamination zones.

Electrical resistivity imaging measures the continuous horizontal and vertical distribution of apparent resistivity using a powerful multi-electrode resistivity profiling system. Geodomisi Ltd - AOA Geophysics Inc typically uses the Advance Geosciences Super Sting R8 with 28, 56, and up to 112 electrode stakes. In processing, Geodomisi Ltd - AOA Geophysics Inc uses the advanced 2D and 3D EarthImager program, an electrical resistivity inversion program designed to produce color coded resistivity inversion sections, where each color represents a change in subsurface resistivity. Anomalous features are indicated where a strong resistivity contrast occurs. A-priori modeling can be employed using local geologic information to refine the final resistivity inversion section.

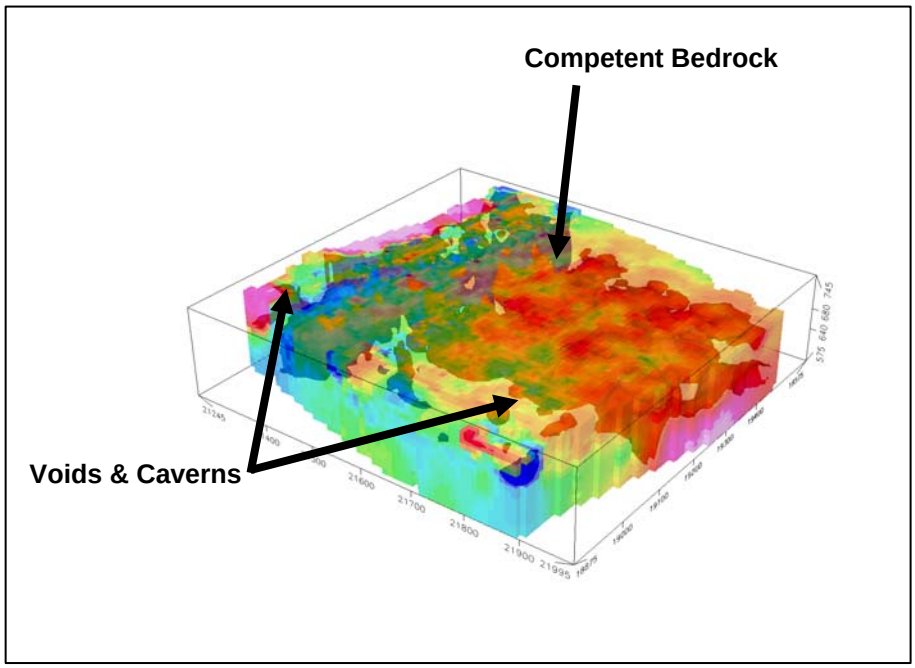


<u>Resistivity Profiling</u> – 2D resistivity inversion section profile for delineation of altered soil zones and depth to competent zones along a 200 meter slope. Zones indicating severely weathered soil and rock are indicated by the zones with higher resistivity. The section shows large arcuate features near the slope edge.

Other applications of electrical resistivity imaging include deep subsurface geologic characterization for tunnel alignment planning in mountainous terrain and for hydro-geologic investigations to develop water resources management plans. When combined with digital terrain models, the presentation of multi-line resistivity profiles can be geo-referenced to produce pseudo-3D visual models. Electrical resistivity data may also be acquired in conjunction with high-resolution seismic data to develop integrated comprehensive geologic site characterization models based on measured soil and rock electrical and acoustic properties.



Resistivity Profiling and 3D Imaging *– A multi-line electrical resistivity survey is used for a mountain tunnel alignment engineering project. The resistivity data is integrated with geo-referenced digital terrain data to produce a 3D image along a proposed tunnel alignment route.*



3D Resistivity Imaging *– Multi-line survey is used to generate 3D image of subsurface Karst geology to locate caverns and voids in carbonate rock.*

This Statement of Qualifications and Capabilities provides an overview of the major land geophysical and geologic survey and mapping services offered by Geodomisi Ltd - AOA Geophysics Inc. For additional technical information regarding any of the survey methods and services offered, please contact the following staff at Geodomisi Ltd - AOA Geophysics Inc offices.

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