



GSI

GEOSERVICES AND SUBSURFACE INVESTIGATION

About us



We provide Geoscience services focusing on subsurface surveys, especially Geophysical Engineering.

Our team of highly experienced professionals helps you to meet your requirements on time and in a professional way.

Our Mission

Our mission is to empower project owners and engineers to work with unshakeable confidence. We believe the most resilient infrastructure is built on intelligence, not just soil.

By partnering with GSI, you aren't just avoiding costly delays, or safety failures; you are engineering with foresight. Let's ensure your next project starts with facts, not surprises.

Our Vision

To be the global leader in geoscience services and innovative geoscience technology.

Our team

At GSI, our strength lies in our people. The organization is driven by a distinguished team of industry experts and supported by a dynamic pool of highly skilled geophysicists and professionals.

GSI combines deep technical knowledge with practical expertise to deliver exceptional results.

Our leadership team, profiled below, represents the pinnacle of innovation and strategic guidance within our respective fields.

Dr. Mohannad Omar AboBakr

CEO & founder



Dr. Mohannad Omar is a geophysical consultant with more than 20 years of experience. He holds a PhD in Earth Sciences from Cairo University. He is dedicated to spreading the culture of geophysical engineering to provide innovative solutions for complex subsurface challenges.

His work is uniquely framed by a dual perspective: that of a scientist dedicated to precision and innovation, and that of an entrepreneur, having earned an International Professional Diploma in Entrepreneurship from Missouri State University.

This combination drives his approach as the founder of GSI, where he focused on transforming cutting-edge geoscientific analysis into strategic value and scalable ventures. Mohannad is passionate about bridging the gap between deep geoscience expertise and forward-thinking business strategy to advance our industry.

Dr. Ahmed Mohsen Hassan Metwally

Projects Manager



Dr. Ahmed is a leading expert in applied geophysics, blending deep academic knowledge with over 15 years of diverse field experience. As a University Lecturer since 2010, he has a unique ability to translate complex geophysical concepts into actionable strategies. Beyond his extensive work in applied geosciences, Dr. Ahmed is recognized for his technical proficiency. His deep understanding of geology and geophysical engineering positioning him as a key asset for complex geophysical surveys and advanced data processing and interpretation that allow GSI to deliver precise, and cutting-edge solutions.

Available geophysical methods

GPR (Ground Penetrating Radar)

transducer Radar waves were transmitted and received by a control unit operating a transducer / antenna that pulled along the ground. A time section simultaneously displayed on a chart recorder. Effective depth of penetration ranges from about 0.5 meter in moist clay to 50 meters or more in dry granular sediments and rocks and governed by ground electrical properties.

Electrical Resistivity Survey

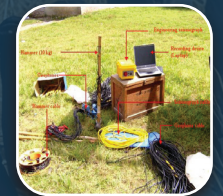
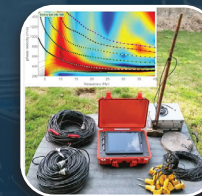
Two modes of operation are common, namely VES and ERT.

Vertical Electrical Sounding (VES) To study the electrical properties of the soil and to evaluate groundwater potential at sites using the Schlumberger array. By measuring resistivity variations with depth, the VES method successfully delineated the underlying aquifer geometry and recommended optimal drilling depths for borehole construction.

Electrical Resistivity Tomography (ERT) was deployed along multiple transects. Using a multi-electrode system, ERT generated detailed 2D subsurface images that clearly delineated the lateral extent and vertical distribution of the conductivity

Seismic Refraction Survey

(MASW) surveys is a comprehensive approach to conducting seismic refraction and Multichannel Analysis of Surface Waves to provide a complete geotechnical report including soil profile, Bearing capacity, etc... for foundation recommendations.



Services

Engineering services

- Mapping landfill boundaries and thickness.
- Profiling depths to bedrock, groundwater, and overburden strata.
- Sinkhole detection and delineation.
- Detecting weathered and fractured bedrock.
- Detecting buried utilities.
- Detecting rebar, pipes, and conduits within concrete.
- Site characterization.
- Identifying void locations and depths beneath asphalt and concrete.
- Dynamic properties.
- Locating voids created by pipe installation or leaks.
- Soil mechanics.
- Verifying pavement and sub-base thicknesses along highways and railroads.

Environmental services - Environmental impact assessment

- Delineating lagoons, trenches, and excavations.
- Characterizing landfill materials and disposal extent.
- Evaluating continuity and depth of clay strata.
- Profiling depths to bedrock, groundwater, and overburden strata.
- Temperature testing.
- Detecting contaminant plumes and estimating migration directions.
- Detecting underground tanks, drums, and unexploded ordnance (UXO).

Under ground water survey services

- Underground water exploration.
- Measuring saturated overburden thickness, water table.
- Determining the underground water reservoir properties.
- Evaluating the reservoir electrical and hydraulic characteristics

Archeological survey services

- Detecting the buried cavities.
- Locating the underground objects.
- Imaging the underground rooms and tunnels.
- Monuments discovery .
- Nondestructive surveying for the historical places

Mining services

- Minerals exploration.
- Locating the subsurface ore deposits.
- Identifying void locations and mining tunnels.
- Detection of the underground minerals (gold, iron, ... etc.).

Petroleum Services

- Seismic data processing.
- Seismic inversion.
- Well log interpretation.
- Formation evaluation.
- Petro-physical analysis.

Geological studies

- Locating bedrock fractures and faults.
- Delineating sinkholes in karst terrain.
- Delineating geologic contacts and lithological changes.



Our Projects

Sanitary Landfill Project
in Sadat City

Sanitary Landfill Project in
El Nubaria City

Sanitary Landfill Project
in 6th of October City

Locating Torture Tunnels at
the Sukari Mine

New Sohag City Project

Groundwater Project in
Siwa Oasis Extending
to Reclaim One Million
Feddans

Discovery of a Mass Tomb
in Collaboration with the
Faculty of Archaeology,
Cairo University, Saqqara

Mansouria tunnel
Project

Determining the
Locations of the Health
and Electrical Services
Network at Terminal 2,
Cairo Airport

Determining the Locations
of the Water and Electricity
Services Network of the
Andalusian Hospital in 6th
of October City

Determining the
Rock Sequence and
Groundwater Level at the
North Bourg Al-Arab Area

Locating Water and Electricity
utilities Networks for the
Reconstruction of the Total
Fuel Station in Damietta

Locating Water and Electricity
utilities Service Networks
near the Ring Road – Fifth
Settlement (El Sabaa Group)

Our Clients and Partners



PMW Engineering & Consulting



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