

# **GIA**<sup>®</sup> *eXploring S.r.l.*

Laboratory of geotechnical site investigations

## Geotechnical Environment Hydrogeology

The **GIAexploring S.r.l.** was born from the will to share their professional experiences and ability of its members, to operate in the field of geological surveys alongside professionals, organizations and businesses in resolving problems of geologic - environmental nature. Our company offers you as a partner, consultant or service provider to all those who need to interact directly with the geological and environmental components of territory and require a service of high quality on site. It aims to offer, interventions for large-scale and for circumscribed limited areas, the following services:

- GEOLOGICAL SURVEYS ■**
- GEOPHYSICAL SURVEYS ■**
- ENVIRONMENTAL SURVEYS ■**
- MONITORING ■**
- HYDRO GEOLOGICAL INVESTIGATIONS ■**



## ■ GEOLOGICAL SURVEYS

The field of geological surveys continually assumes greater importance in response to the need to realize works more and more challenging in different contexts. It is therefore fundamental a correct programming and execution of survey campaigns and of evidence in site, in able to provide designers with a set of knowledge for the precise modeling of the subsoil, necessary to the dimensioning the structures and the choice of operational methodologies for the realization of 'operates. This sector has always represented one of the most important activities of the **GIAexploring S.r.l.** Today the geognostical sector has been enriched by professional experts and qualified in the latest technology, qualifying in studies of more complex and collaboration with universities and prestigious organizations.

- Continuous log drilling and destruction of nucleus
  - > Use of corers: simple T1, double T2 and T6S, environmental
  - > Hole tests: SPT standard penetration test, permeability tests, field Vane tests, Vane Test
  - > Disturbed and undisturbed sampling type: Shelby, Osterberg, Denison
- Static penetration tests:
  - > Cone penetration test with Begeman point (CPT)
  - > Cone penetration test with electric point (CPTE)
  - > CPTu - Piezocone Penetrometer
- Dynamic penetration tests:
  - > Dynamic probing super heavy (DPSH-Euro code 7)
  - > Dynamic probing super heavy (SCPT AGI-1977)
- Penetrometer tests with plate Marchetti (DMT-SDMT)
- Menard type pressure meter tests (MPM)
- Determination of density at site
- Load tests on plate

ACTIVITIES

## ■ GEOPHYSICAL SURVEYS

The **GIAexploring S.r.l.** in recent years, has decided to expand its major area of work also in geophysics, through the acquisition of specific equipment. In particular, also in relation to legislation on construction (Ministerial Decree of 14/01/2008), our company is equipped with advanced geophysical instruments.

Geophysical surveys have the main purposes of:

- reconstruct the geometry of the buried individual seism stratum;
- characterize dynamically for low level deformation, lithostratigraphic units present in the areas of investigation with the calculation of the elastic-dynamic modules and Poisson's ratio.
- Determine the profile of stiffness SITE by direct measurement of the speed of propagation of the waves of comprehension P (VP) and shear S (Vs).

Other types of geophysical surveys, such as geoelectric and georadar prospecting may on occasion supplement the seismic methodologies to better define the morphology buried, the relationship between cover and substrate, any cuts (faults, fractures).

The **GIAexploring S.r.l.** is able to run:

- Seismic-refraction:
  - > Seismic surface in P and S
  - > Seismic reflection high-resolution
  - > Seismic surveys in hole-Down-Hole and Cross-Hole
  - > Tomography seismic
- Georadar surveys:
  - > Surveys of the subsoil
  - > Georadar investigations on concrete and masonry
  - > Georadar surveys of road and tunnel works under construction or down for maintenance
- Electrical soundings:
  - > Polls electric vertical (SEV) and polar
  - > Tomography with electricity



ACTIVITIES

## ENVIRONMENTAL INVESTIGATIONS

In addition geotechnical investigation in the strict sense, another area that is crucial and increasingly topical, is that of environmental research and monitoring of pollutants. The survey methods are those provided by the L.D. N.152/2006 environmental standards.

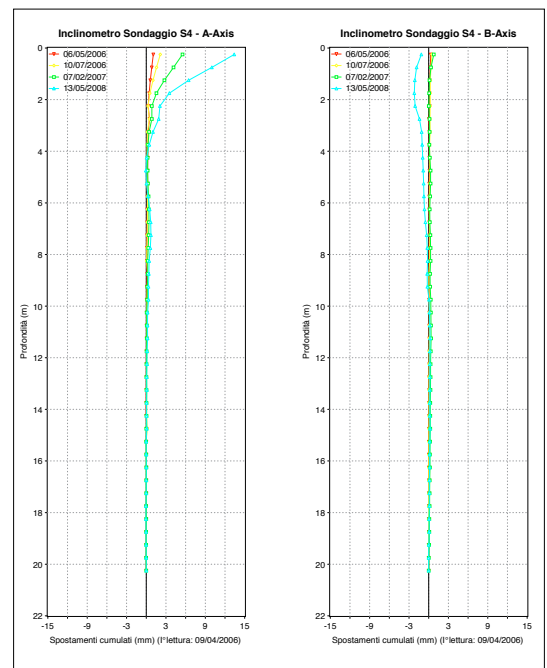
- Continuous core drilling using environmental corers
- Soil sampling for laboratory tests
- Installation of piezometers and sampling of groundwater
- Environmental monitoring of the atmosphere and water
- Determination of areas of pollution through the execution of electrical tomographic profiles



## MONITORING

The geotechnical and structural monitoring services that the company offers include a wide range of measurements, which are useful for urban planning, design and infrastructure interventions on buildings and slopes, as well as necessary for the proper evaluation of geomorphological and geotechnical issues in place.

- Inclinometer measures
- Monitoring of cracking state of the structures
- Measurement of changes in inclination of walls and walls of artifacts
- Topographic
- Piezometric measurements
- Installation, commissioning and reading extensometers
- Inclinometers fixed probes
- Piezometers electronic in perforation holes
- Strain gauge measures
- Settling tests
- Underwater camera for video inspection in the hole with High Definition



## HYDROGEOLOGICAL INVESTIGATIONS

Hydrogeology is a very broad field of study that usually requires interdisciplinary studies with other areas related to the environment and geology in general. Evaluating the potential of an aquifer, the preservation of a source or the estimated volumes quantity of water to work well for drinking purposes are the main issues analyzed of hydrogeology. In detail know the performance of the circulation of deep and shallow water allows you to determine all the elements that are of primary importance in assessing the vulnerability of the area (hydrological risk) and to prevent environmental damage in critical areas where human activity leads to the use irrational water resource management.

- Hydrogeological tests in drilling hole:
  - > Pumping tests with central hole and piezometers arranged radially
  - > Lugeon tests
  - > Lefranc tests
- Pumping tests in existing wells
- Measures flow of waterways and aqueducts





**Geologist Camillo Giamberardino** ■  
**Engineer Angelo Giamberardino** ■  
**Architect Rosanna Giamberardino** ■

*Registered Office*

Via Cerrani, 27 - 66010 Pretoro - Ch  
tel. 0039 0871898023 - fax 0039 0871898908  
VAT and tax code no.02199370699  
info@giaexploring.it - giaexploring@pcert.postecert.it

[www.giaexploring.it](http://www.giaexploring.it)



## ACCREDITATIONS AND CERTIFICATIONS

**GIaexploring S.r.l.** with the Presidential Decree of the Board of Public Works n.7979 of 09/09/2010 has received ministerial approval for the implementation and certification of geological investigations on site in accordance with the provisions of Presidential Decree 380 06062001 which, in Article 59 paragraph 3, states that "The activity of the laboratory is a public utility service."

Arrangement of '4.11 2010, the company is registered with the environmental managers for category 9 registration number AQ4002.

The company has a quality management system complies with the UNI-EN ISO 9001: 2008 for the sector number 35. PROVISION OF SERVICES FOR THE CHARACTERIZATION OF SOIL AND ROCK BY GEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS.

Certified by Giordano Spa institute (credited ACCREDIA).

Ministry of Infrastructure and transport of Public Works  
Ministry of Environment and Protection of territory and Sea



*Ministero delle Infrastrutture e dei Trasporti  
Consiglio Superiore dei Lavori Pubblici*



*Ministero dell'Ambiente  
e della Tutela del Territorio e del Mare*



SISTEMA DI QUALITÀ CERTIFICATO