



**SEMIBEL**

ENERGIES

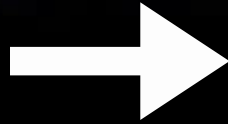
Who we are



What we do



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## Who we are

SEMIBEL specializes in geophysical groundwater services, emphasizing logging techniques to provide vital data for various groundwater applications like environmental, municipal, agricultural, and mining projects. Their extensive expertise in logging instrumentation allows them to offer detailed groundwater characterization without drilling extra wells. They can acquire non-invasive measurements through the GMR surface-based tool or via small boreholes with Javelin logging tools, compatible with geoprobe systems. SEMIBEL's team of expert engineers and geophysicists interprets these measurements, offering actionable insights. Additionally, they offer a comprehensive range of conventional surface and borehole geophysical services. SEMIBEL, a small, veteran-owned business based in Tamil Nadu, excels in delivering cutting-edge logging tools for global groundwater detection and hydrogeologic analysis, serving various industries such as groundwater resources, environmental remediation, mining, geotechnical, and construction.

# What we do

## 3D and 4D Seismic services

3D and 4D seismic surveys are advanced geophysical techniques used to explore subsurface structures and monitor changes in oil and gas reservoirs or geological formations. A 3D survey creates a detailed three-dimensional image of the subsurface, providing valuable information for resource exploration and reservoir management. In contrast, a 4D survey, also known as time-lapse seismic, adds the element of time, allowing for the monitoring of reservoir changes over multiple periods. These surveys employ arrays of sensors to record seismic waves, enabling geoscientists and engineers to make informed decisions in industries such as oil and gas, environmental monitoring, and geological research.

# Logging services

## Resistivity log

A resistivity log is a geophysical well-logging method that measures a formation's electrical resistance. It provides crucial data on lithology, porosity, fluid content, and hydrocarbon potential. Resistivity logs are used in oil exploration and geology, with measurements typically recorded in ohm-meters and plotted logarithmically. Various tools and methods are applied for specific geological insights.

## SP log

The Spontaneous Potential (SP) log is a geophysical well-logging technique used to measure naturally occurring electrical potentials in boreholes. It's primarily utilized for delineating formation boundaries, detecting permeable beds, and identifying hydrocarbon zones. SP logs are based on variations in the electrical potential caused by variations in formation properties.

## Gamma Ray log

A gamma-ray log is a well-logging technique that measures natural gamma radiation emissions from subsurface rock formations. It helps identify lithology, stratigraphy, and shale content. Gamma-ray logs are widely used in the oil and gas industry for correlation and geological interpretation, with gamma-ray counts recorded in API units.

## Caliper log

A caliper log is a well-logging method used to measure the diameter or the variation in borehole size. It provides data on borehole stability, casing requirements, and can identify washouts or collapses. Caliper logs are essential for wellbore integrity and safety in drilling operations and are measured in inches or millimeters.

## Neutron log

A neutron log is a well-logging technique that measures subsurface hydrogen content by bombarding formations with neutrons. It provides insights into porosity, lithology, and fluid content. Neutron logs are valuable in the oil and gas industry for reservoir characterization, with measurements typically recorded in counts per second, aiding in identifying hydrocarbon reservoirs.

## Density log

A density log is a well-logging method used to measure the bulk density of subsurface rock formations. It offers information on lithology, porosity, and fluid saturation. Density logs are essential for reservoir evaluation in the oil and gas industry, with measurements recorded in grams per cubic centimeter ( $\text{g/cm}^3$ ) or similar units.

## Sonic log

A sonic log is a well-logging technique that measures the speed of sound waves in subsurface formations. It provides crucial data on lithology, porosity, and rock mechanical properties. Sonic logs are used in the oil and gas industry for assessing reservoir quality and rock integrity. These logs are measured in microseconds per foot or similar units, aiding in the characterization of geologic formations and hydrocarbon reservoirs.

## NMR log

Nuclear Magnetic Resonance (NMR) logging is a geophysical technique used in well logging to assess the properties of subsurface rocks and fluids. It relies on the interaction of hydrogen nuclei with a magnetic field to provide data on porosity, permeability, fluid type, and pore size distribution. NMR logs are crucial in the oil and gas industry for reservoir characterization and optimization, as well as in groundwater and environmental studies.

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