



# Onshore Seismic Facts

**Acquiring** seismic data is an important part of the exploration process. These activities are regulated by the Nova Scotia Onshore Petroleum Geophysical Exploration Regulations under the Petroleum Resources Act, as well as by legislation and regulations from other government Departments. Since 2000, there have been 19 seismic surveys completed in Nova Scotia, 2 of those in Cape Breton - River Denys and Boularderie Island.

## What is a seismic survey?

Seismic surveying involves drilling a shot hole about ten metres deep and filling it with dynamite and gravel. This directs the energy into the ground and allows nearby above-ground sensors to capture the information. This data provides information about the subsurface geology and enables companies to pinpoint the best locations for potential oil and/or natural gas.



## How is the public/property owner protected?

To protect the public and property owners, companies are required to adhere to a stringent and highly regulated process. Below are some of the conditions that must be in place before companies are allowed to conduct seismic surveys:

Property owners must give their approval for companies to access their land

All seismic work has setback distances from water wells and other surface structures

Companies must obtain approvals from the N.S. departments of Energy, Environment, Labour & Workforce Development, Natural Resources and Transportation and Infrastructure Renewal

Company must ensure a security deposit is in place with the government prior to work commencing

Activities are monitored throughout the program, while all regulators ensure compliance to the regulations

After completion of program, security deposit is released only if the regulators and landowners are satisfied. Landowners sign off at the end of the program.

## **What are the economic benefits of oil and gas exploration?**

Exploration for natural gas and oil can result in significant investments in local economies through the purchase of goods and services and employment of local workers. Workers as diverse as welders, truckers, surveyors, and engineers can be employed and businesses like restaurants and accommodations can benefit from these exploration activities. Typically, these investments are small in the early exploration stage but increase in later stages. Stealth Ventures, for instance, has spent an estimated \$15 million searching for natural gas from coal in the Springhill area.

## **How do we protect the environment?**

Protecting the environment is a vital part of any onshore project. The Department of Environment enforces strict environmental standards and closely monitors these types of activities. Minimum setback distances from water wells and surface structures are required under the legislation before seismic work can begin. Approval from the federal government may be required for any in-stream activities that may disrupt fish habitat.

## **How does a company obtain permission to do seismic work in Nova Scotia?**

To do any seismic activity in Nova Scotia, a company must have an active exploration agreement over a block of land. Companies apply through a competitive bidding process to explore certain areas of Nova Scotia. The successful bidder is then granted rights to explore in those areas for a limited period of time. Before any work can be done, permits and approvals must be obtained from the various regulators for any activity done under those exploration agreements. This includes separate approvals for both seismic and drilling activities.

