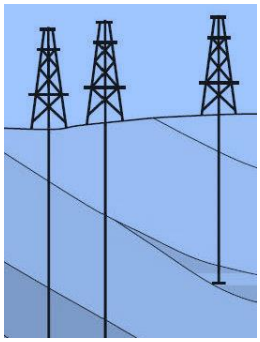
Conventional versus Unconventional Oil and Gas



Conventional Resources are concentrations of oil or gas that occur in discrete accumulations or pools. Rock formations hosting these pools traditionally have high porosity and permeability and are found below impermeable rock formations. These impervious layers form barriers to hydrocarbon migration resulting in oil and gas being trapped below them. Conventional oil and gas pools are developed using vertical well bores and using minimal stimulation.

Conventional oil and gas pools fall into several categories based on the mechanism responsible for the trapping or pooling of the hydrocarbon:

1. Structural traps whereby broad folds and/or faults lead to concentrations of hydrocarbons;
2. Dome-like structures related to diapiric rise of underlying sediments;
3. Stratigraphic traps where a change in the rock type creates a barrier; and
4. Multiple combinations of the previous processes.

Prior to 2006, conventional oil and gas pools were the primary exploration targets in Western Canada.

British Columbia has abundant conventional oil and natural gas resources, all production of which currently takes place in the Northeastern B.C. Basin. In 2007, the annual production of natural gas in British Columbia was 1.1 Tcf, with 9.3 MmBbls of oil produced in the province. The total sales value of oil and gas production was $6.9 billion. The Geoscience Branch of the Ministry of Energy, Mines, and Petroleum Resources (MEMPR) produces information about the current hydrocarbon reserves in BC.

Resource potential also exists in other areas where there has been activity in the past. These areas include the Interior basins, offshore basins, Southeastern B.C. Basin, and Vancouver Island. Information is being gathered about these areas to know more about the potential of the resources and to encourage interest in developing those resources.

Unconventional Resources are oil or gas-bearing units where the permeability and porosity are so low that the resource cannot be extracted economically through a vertical well bore and instead requires a horizontal well bore followed by multistage hydraulic fracturing to achieve economic production.

Unconventional resources fall into two broad categories:

1. A widespread, low-permeability and -porosity gas- or oil-charged horizon. If the horizon is composed primarily of shale, it is a “shale gas” or “shale oil” resource; and,
2. Low-permeability and -porosity portions of an oil or gas pool that cannot be developed through conventional drilling and completion processes

Currently, virtually all wells being completed in the province are classified as unconventional. This is because the exploration industry can develop these widespread resources economically through the application of horizontal drilling and multi-stage hydraulic fracturing.

- Read more about unconventional oil & gas in B.C.

The following graphic illustrates structural differences between conventional and unconventional wells.