



GEOLOGY OF UNCONVENTIONAL OIL AND GAS

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The CSPG Ambassador Program and CSUR jointly present “Geology of Unconventional Oil and Gas”, which aims to provide a solid understanding of the unconventional oil and gas sector in Canada, built on a geoscience perspective.

We will take you on a brief journey through the history of the oil and gas industry to provide perspective on the impact that unconventional hydrocarbons have had in recent years, both on the business and on the science we do in support. We define unconventional resources and review the geological fundamentals of unconventional reservoirs – including shales, “tight” formations, and coals. Understanding the abundance and distribution of these potential reservoirs shows us that the worldwide supply picture for hydrocarbon resources has been fundamentally changed in the past ten years.

And while the geoscience principles and practices we have known for decades are useful in the development of unconventional oil and gas, many new disciplines and collaborations come into play – a much broader range of geoscience and engineering skills are now required.

Development of unconventional reservoirs is possible because we can now drill long horizontal wells and stimulate reservoirs with multiple hydraulic fractures. We will review the principles and practices of horizontal drilling and hydraulic fracking, and will talk about how industry undertakes these operations at a time when society is concerned about impacts on health, safety, and environment. Returning to our geoscience perspective, it’s important to realize that geoscience skills and applications are critical not only for resource identification and exploitation, but for addressing public concerns about water resources, induced seismicity, and other environmental impacts of unconventional oil and gas development.