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## Nine New Monitoring Stations Improve Detection of Oil and Gas-related Seismic Events

The BC Oil and Gas Commission (Commission) is adding nine seismic stations to the regional monitoring array to improve the detection of induced seismicity triggered by oil and gas activity.

Through a partnership with Natural Resources Canada (NRCan), and with direct input from the Canadian Association of Petroleum Producers (CAPP), all of the additional nine new monitoring stations will be placed within the Montney trend, where the majority of new development is taking place. Installation will begin this fall.

The Commission's share of the project is \$150,000, which will be used to purchase accelerometers, telemetry equipment and to fund station deployment costs. NRCan is supplying the broadband sensors, technical expertise and assistance with deployment. Further deployment assistance will be provided by McGill University. The new stations will increase seismic event location accuracy and lower the detection threshold. Additional benefits of the monitoring array project include:

- Aggregation of seismic data on a dedicated server.
- Improved ground motion prediction models.
- Automated, near-real time seismic event locating.
- Automated event notification.
- Shake map generation.
- Increased public transparency.

The addition of nine new monitoring stations brings the total number of monitoring stations in northeast B.C. to 20. Fifteen of the stations will provide high resolution oversight of seismic activity in the Montney trend. The remaining five seismic stations are located in the Fort Nelson area. All stations contribute to seismic oversight of northeast B.C.

Induced seismicity refers to seismic events caused by human actions, such as those that might occur in mining and oil and gas activities. The Commission has taken a leadership role in the detection and mitigation of induced seismicity associated with unconventional gas development in North America and globally.

Commission studies in [2012](#) and [2014](#) led to regulatory and oversight enhancements, such as the introduction of seismic monitoring stations and mitigation measures which require the immediate suspension of operations if a magnitude 4.0 or greater event is recorded.

Additional permit conditions as of June 1, [2016](#) and updated Jan. 1, [2018](#), require the presence of ground motion monitoring during hydraulic fracturing activities for areas where previous seismic activity occurred, as well as reporting of events.

Further, in [May, 2018](#), the Commission issued a Special Project Order requiring companies within the Kiskatinaw Seismic Monitoring and Mitigation Area to undertake numerous measures prior to, during and following hydraulic fracturing operations. Some of those measures include:

- Submit a seismic monitoring and mitigation plan that includes a pre-assessment of seismic hazard and a seismic monitoring and mitigation outline.
- Deploy an accelerometer within three km of the common drilling pad.
- Have access to a seismic array providing real-time seismicity readings.

A greater understanding of seismic activity in northeast B.C. allows the Commission to better address public safety and quality of life issues facing residents and those affected by oil and gas activities.

**See Map attached**

**Should you have any questions regarding this Information Bulletin, please contact:**

#### **Technical Inquiries**

Stuart Venables  
Senior Petroleum Geologist  
BC Oil and Gas Commission  
250-419-4472  
[Stuart.Venables@BCOGC.CA](mailto:Stuart.Venables@BCOGC.CA)

#### **Media Inquiries**

Lannea Parfitt  
Manager, Communications  
BC Oil and Gas Commission  
250-980-6081  
[Lannea.Parfitt@BCOGC.CA](mailto:Lannea.Parfitt@BCOGC.CA)

One of the nine new seismic stations being deployed in the northeast beginning this fall.



### Seismic Monitoring Stations in the Montney Trend

