



August Seismic Event Determination

The BC Oil and Gas Commission (Commission) has determined a Magnitude 4.6 seismic event on Aug. 17, 2015 in northeast B.C. was caused by fluid injection during hydraulic fracturing from an operator in the area. The investigation included a review of operational and seismological data, including all active oil and gas operations within the 10-kilometre radius of the epicentre determined by Natural Resources Canada (NRCan). A Magnitude 4.6 event generally will cause brief shaking felt at the surface, but is not a risk to public or environmental safety.

The event occurred at 1:15 p.m. Pacific Standard Time. It was first reported to the Commission by NRCan at 1:50 p.m. The operator at a nearby wellsite immediately suspended operations and reported the event at 2:03 p.m. After collecting available data and discussing with the operator, a mitigation plan was approved by the Commission at 3:45 p.m. There were no reports of injury or damage at the surface. Felt reports indicate intensity was weak to light on the [Modified Mercalli Scale](#).

Factors leading to this determination include:

- The absence of seismic events before and after hydraulic fracturing operations. Hydraulic fracture operations were ongoing from Aug. 11 to Sept. 2, 2015.
- The epicentre of the event was located to within one kilometre of the operator's wellbore (A-99-J/94-B-16) using detailed data from a dense array and the Canadian National Seismograph Network.
- At the time of the event, the fracturing operation at this wellbore was being completed.
- Based on "felt" reports, ground motion appears to have been strongest in the vicinity of the this wellbore.

The Commission has taken a leadership role in the detection and mitigation of induced seismicity associated with unconventional gas development. Commission studies in [2012](#) and [2014](#), available online, led to enhancements such as increased seismic monitoring in northeast B.C. and stricter requirements around hydraulic fracturing. Stronger mitigation measures are now in place, through updates to the [Drilling and Production Regulation](#), including the requirement that operations are shut down if seismic activity reaches Magnitude 4.0 or greater.

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