

Some insights on Induced Seismicity in the Duvernay East Shale Basin

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Summary

Vesta Energy has been operationally active in the Duvernay of the East Shale Basin since 2014.

On Mar. 4, 2019, a 4.1 M_L induced seismicity event occurred in the vicinity of Vesta's hydraulic fracture operations. This event triggered a concerted effort by Vesta Energy to understand and successfully manage the induced seismicity of the Duvernay East Shale Basin.

At the time, Vesta Energy was operating with a Traffic Light Protocol (TLP) which initiated Yellow Light mitigation at 2.0 M_L and Red Light was initiated at 4.0 M_L . The first 10 days of operations did not see seismicity events exceed the Yellow Light 2.0 M_L mitigation milestone.

Since March 2018, Vesta Energy has been operating a passive surface seismic array to monitor induced seismicity related to their hydraulic fracture operations. The resultant 2-year induced seismicity catalogue's next largest event was 2.8 M_L and therefore the 4.1 M_L induced seismicity event on Mar.4, 2019 was a very anomalous event.

This talk will provide an interim up-date of Vesta Energy's ongoing effort to understand and successfully manage the induced seismicity of the Duvernay East Shale Basin.

