

MADE at the City of Calgary, in the
Province of Alberta, on

May 27, 2019

ALBERTA ENERGY REGULATOR

Effective immediately, pursuant to the *Oil and Gas Conservation Act* and section 11.104 of the *Oil and Gas Conservation Rules*, the Alberta Energy Regulator (AER) orders as follows:

- 1) Zones from surface to the top of the Duvernay Formation (collectively referred to as zone 1) within the area outlined in appendix A are subject to this order.
- 2) The Duvernay Formation (referred to as zone 2) within the area outlined in appendix B is subject to this order.
- 3) No hydraulic fracturing operations can occur in zone 1 within the area outlined in appendix A.
- 4) No hydraulic fracturing operations can occur in zone 2 within the area outlined in appendix B.
- 5) If hydraulic fracturing operations are occurring in zone 1 within the shaded area in appendix C (which is the area between the boundary of appendix A and the boundary of appendix B), the licensee must meet the following requirements:
 - a) Before beginning any hydraulic fracturing operations at a well (subject well), the licensee must assess the potential for induced seismicity that may occur as a result of or in connection with hydraulic fracturing.
 - b) The licensee must establish and be prepared to immediately implement a plan to monitor for, mitigate, and respond to induced seismicity that may occur from hydraulic fracturing operations.
 - c) The licensee must retain a copy of its induced seismicity response plan on site during hydraulic fracturing operations and submit the plan to the AER upon request.
 - d) Seismic monitoring conducted by or on behalf of the licensee pursuant to this order must be sufficient to detect a 1.0 M_L seismic event within 5 km of the subject well.
 - e) If a seismic event is recorded by or on behalf of the licensee, or by any other source, during hydraulic fracturing operations on the subject well that is of 1.0 M_L or greater within 5 km of the subject well, the licensee must implement its response plan in a manner that eliminates or reduces the magnitude of seismic events. The licensee must also immediately make a report to the Energy/Environmental Emergency and Operational Complaint Line (1-800-222-6514).
 - f) Where a licensee detects a seismic event of 2.5 M_L or greater, the licensee must immediately suspend hydraulic fracturing operations at the subject well and return the well to a safe state.
 - g) Hydraulic fracturing operations suspended under clause 5(f) of this order may only be recommenced with written consent of the AER.
 - h) The AER may permit resumption of hydraulic fracturing operations at the subject well if
 - i) the licensee presents a plan to the AER for modified operations aimed at eliminating future induced seismic events greater or equal to 2.5 M_L ,

- ii) the plan is acceptable to the AER, and
- iii) the licensee implements the plan as proposed.
- i) Passive seismic monitoring information and data generated, collected, or received by the licensee pursuant to this order must be submitted to the AER in real time. All passive seismic data must be shared publicly through the Incorporated Research Institutions for Seismology.

This order comes into force on May 27, 2019.

Made at the City of Calgary, in the Province of Alberta, on May 27, 2019.

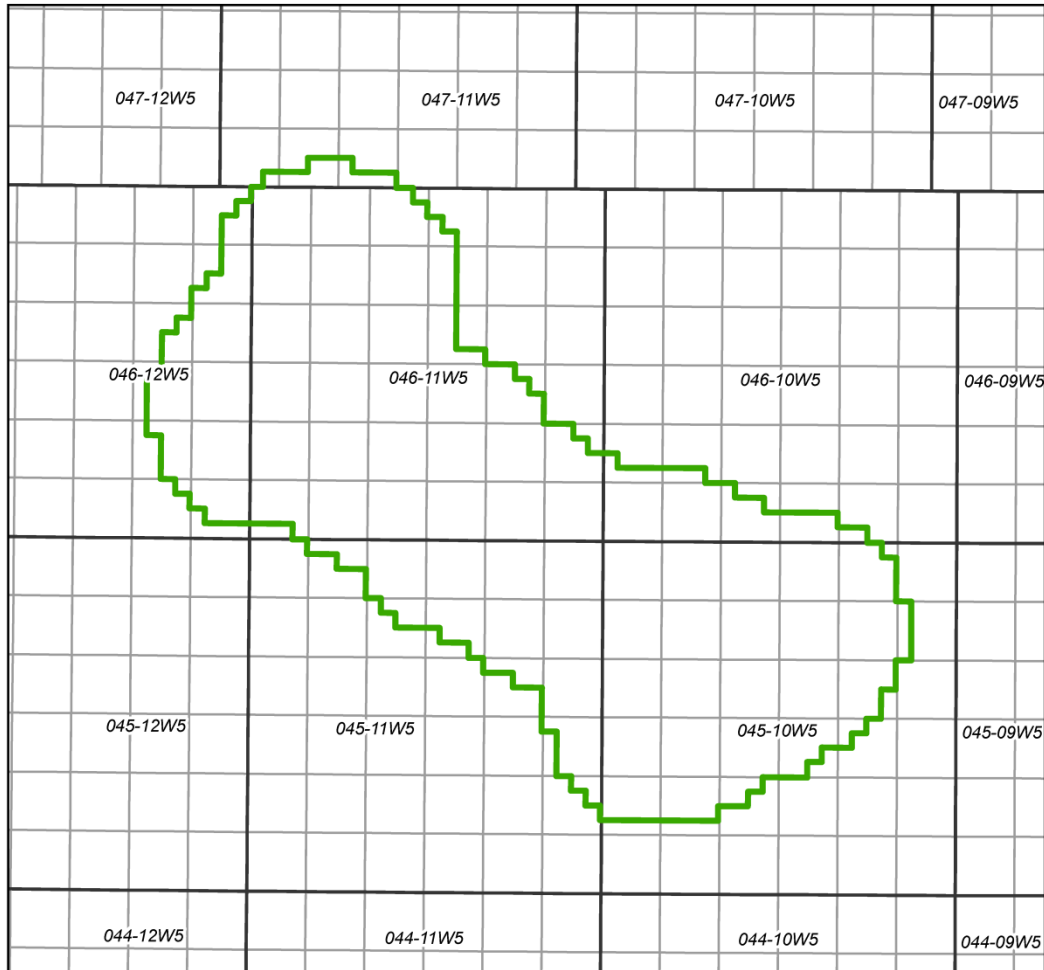
ALBERTA ENERGY REGULATOR

Bola Talabi
Vice President, Authorizations Branch


Helen Chang,
Chief Engineer, Operations Division

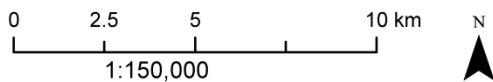
Jim Jenkins
Director, Data and Intelligence, Science and Evaluation Branch

Appendix A – Zone 1



Subsurface Order No. 6

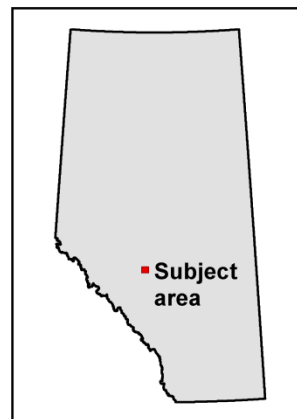
 Surface extent of Zone 1, from land surface to top of the Duvernay Formation



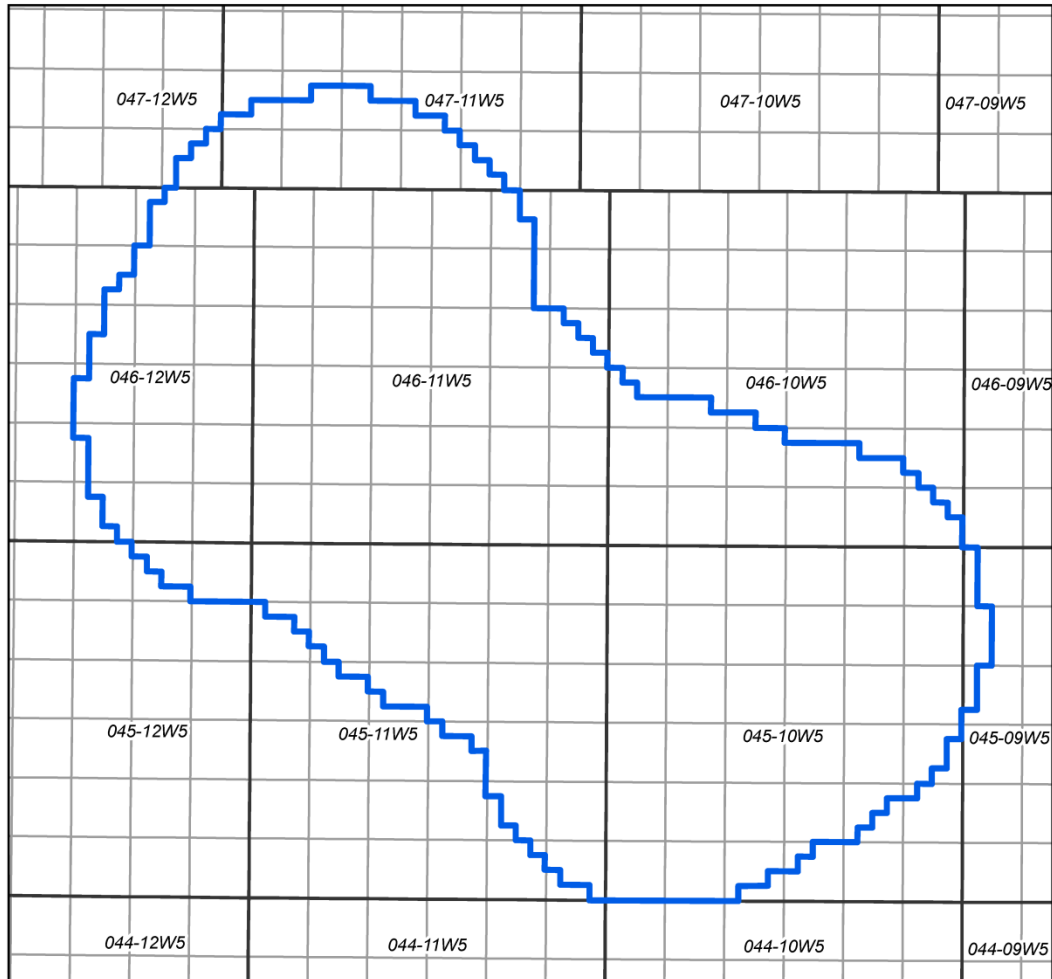
Projection and Datum: 10TM AEP Forest, NAD83

Data Date: March 11, 2019

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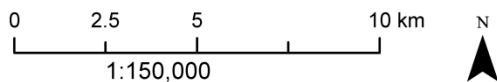
Appendix B – Zone 2



Subsurface Order No. 6



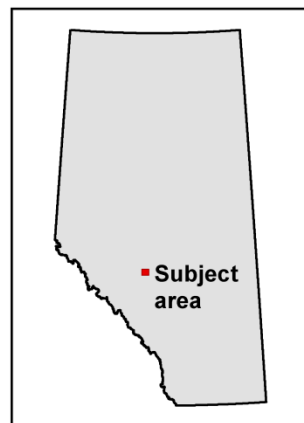
Surface extent of Zone 2, Duvernay Formation



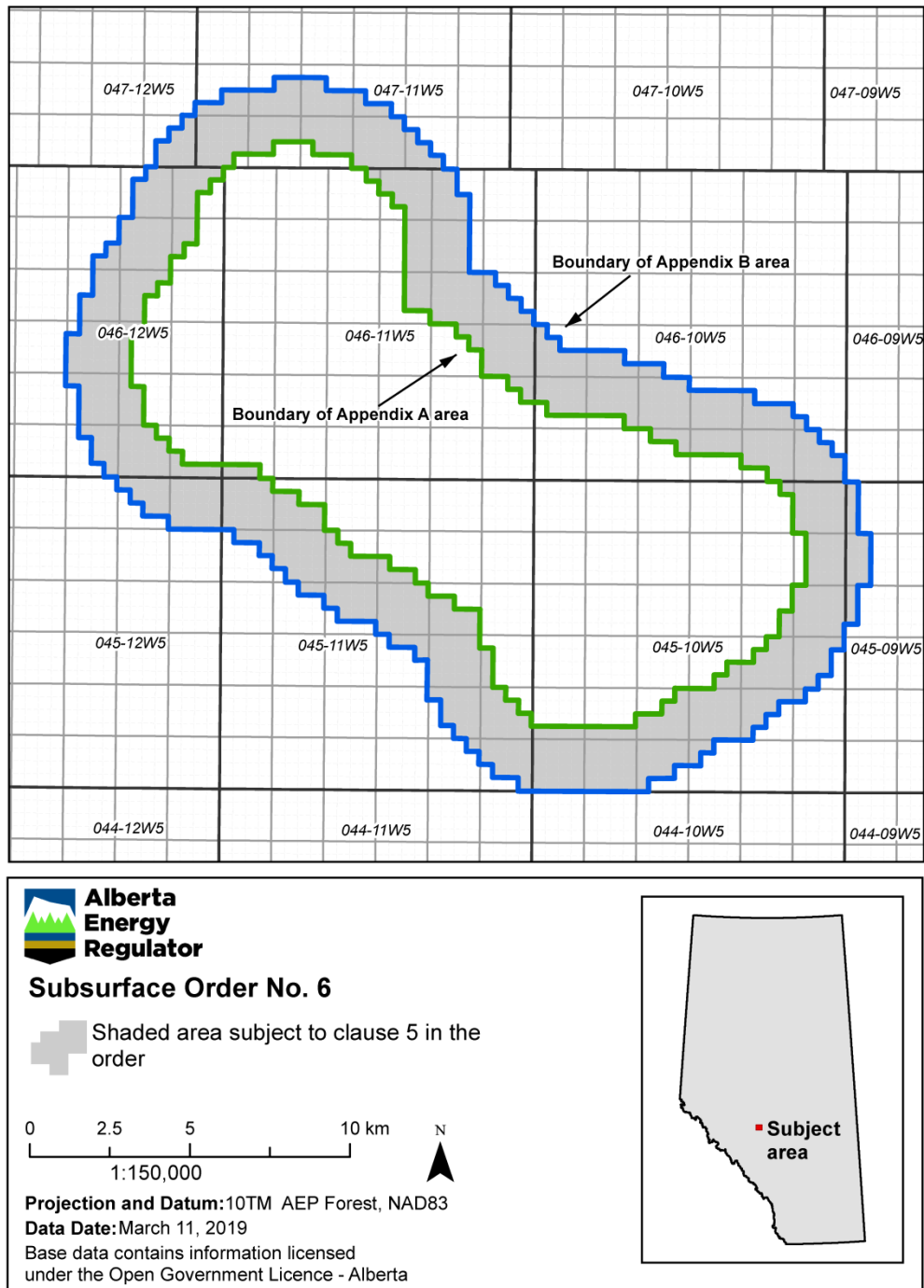
Projection and Datum: 10TM AEP Forest, NAD83

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Appendix C – Shaded Area Subject to Clause 5



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