



February 15, 2018

7320-4100-32640-02

Ben Jones, CEO  
Canada Energy Partners  
343 Third St., Suite 412  
Baton Rouge, La. 70801

Dear Mr. Jones:

**RE: PRODUCED WATER DISPOSAL SPECIAL PROJECT (AMENDMENT #2)  
CE PORTAGE a-20-D/094-A-04; WA# 22031  
BALDONNEL FORMATION**

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Disposal operations at the subject well were suspended on March 16, 2017 with the issuance of General Order 2017-008. The Commission initiated a consideration of whether the permit for the subject well should be cancelled pursuant to section 26 of the *Oil and Gas Activities Act*. On December 4, 2017, the Commission decision maker decided not to cancel the permit, but recommended that any continued disposal activities be subject to certain identified operating and monitoring requirements.

Please find attached **Order 08-02-008 (Amendment #2)**, designating an area in the Portage field – Baldonnell formation a Special Project under section 75 of the *Oil and Gas Activities Act* (OGAA), for use of a storage reservoir for the disposal of produced water, including well stimulation flowback fluid. This **Order 08-02-008 (Amendment #2)** includes a number of detailed operational conditions including: seismic monitoring and reporting requirements as well as notification and performance criteria for suspending operations.

General Order 2017-008 remains in place until it is terminated by the official. Further, a site inspection by Commission operations inspectors is required prior to recommencing disposal operations. Arrangements for inspection can be made by sending an email to [C&E@bcogc.ca](mailto:C&E@bcogc.ca) at least 72 hours in advance of operations.

Should you have any questions, please contact Ron Stefik at (250) 419-4430 or the undersigned.

Sincerely,



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Richard Slocomb, P.Eng.  
Vice President, Reservoir, Field Engineering & Tech Svcs  
Oil and Gas Commission

Attachment

**ORDER 08-02-008 (Amendment #2)**

1. Under Section 75(1)(d) of the *Oil and Gas Activities Act*, the Oil and Gas Commission (Commission) designates the operation and use of a storage reservoir for the disposal of produced water, including flowback from fracturing operations, into the Baldonnel formation– Portage field as a special project in the following area:

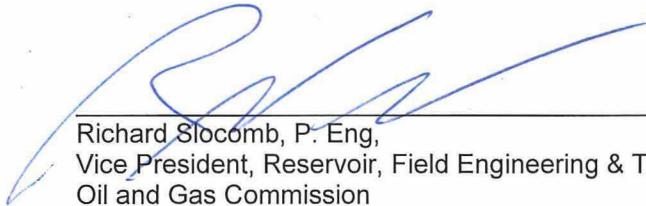
NTS 94-A-04 Block D – Unit 20.

2. Under section 75(2) of the *Oil and Gas Activities Act*, the special project designation in this Order is subject to the following conditions. The Permit Holder shall:
  - a) Inject produced water, including well flowback completion fluids, only into the well CE Portage a-20-D/094-A-04 (Well Permit # 22031), Baldonnel formation (1520.0 mKB to 1574.5 mKB).
  - b) Not exceed an injection pressure, measured at the wellhead on the subject well, of 6,200 kPag or the pressure required to fracture the formation, whichever is lesser.
  - c) Not exceed an injection rate, of 200 m<sup>3</sup>/d.
  - d) Inject only through tubing.
  - e) Continually measure and record the wellhead casing and tubing pressures.
  - f) Cease injection and notify the Commission immediately if hydraulic isolation is lost in the wellbore or formation.
  - g) Submit the annual packer isolation test report to the Commission within 30 days of the completion of the test.
  - h) Include the disposal operating hours and the maximum injection pressure values on the monthly disposal statement.
  - i) Cease injection upon reaching a maximum formation pressure of 18,000 kPaa, measured at mid-point of perfs (1547.3 mKB).
  - j) Conduct a reservoir pressure test on the Baldonnel formation with bottom-hole recorders in the subject well within 6 months of recommencement of disposal and then each 6 months thereafter, with a shut-in period of sufficient length to provide data for calculation of the reservoir pressure. Submit a report of the test within 60 days of the end of the test.
  - k) Perform a casing inspection log on the subject well and submit results to the Commission within 30 days of the completion of logging, at an interval of not more than every 10 years, commencing from the original date of initial disposal.
  - l) Perform a hydraulic isolation log on the subject well within 60 days of the date of recommencement of produced water disposal and submit results to the Commission within 30 days of the completion of logging, and thereafter at an interval of not more than every 5 years, commencing from the date of recommencement of disposal.
  - m) Not conduct hydraulic fracture stimulation on any formation in the subject well without prior Commission approval.
  - n) Before recommencing disposal operations, install and fully activate a real-time seismic monitoring program to record seismic events within a 5 km radius of the well; WA #22031, that:
    - i. is analyzed on a continuous basis;
    - ii. has a magnitude detection of 1.5Mw and greater;
    - iii. has hypocenter accuracy to within ±500 metres;

- o) Before recommending disposal operations, install and fully activate an accelerometer within 1 km of the wellsite able to record three components of ground acceleration with a minimum detectability of 0.005g and a dynamic range of +/- 2g.
- p) Report the results of seismicity monitoring in items n) and o), including date, time, location, magnitude, ground acceleration and depth of seismic events, to the Oil and Gas Commission (Commission) via email to [reservoir@bcogc.ca](mailto:reservoir@bcogc.ca):
  - i. at 1 month intervals commencing one month from the date that monitoring begins;
  - ii. immediately following an event of magnitude 2.5 ML or ground motion indicating 0.8%g has been recorded; and
  - iii. upon request.

The Commission may request full SEED data for any significant seismic event and will make any event equal to or exceeding local Magnitude 3.0 available in the public domain.

- q) Suspend injection upon receiving notification from BC Hydro that the average piezometric level reaches 5 feet above gallery level at the Peace Canyon dam or if a dam safety alert condition has been issued by BC Hydro for the Peace Canyon dam. Injection operations may continue only with Commission notification to resume.



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Richard Slocomb, P. Eng,  
Vice President, Reservoir, Field Engineering & Tech Svcs  
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 15<sup>th</sup> day of February 2018.

Advisory Guidance for Order 08-02-008 (Amendment #2)

- I. A production packer must be set above the injection interval and the space between the tubing and casing filled with corrosion inhibiting fluids, as per section 16(2) of the Drilling and Production Regulation.
- II. Annual packer isolation tests are required, as per section 16(3) of the Drilling and Production Regulation.
- III. Injected fluids must be metered, as per section 74 of the Drilling and Production Regulation.
- IV. A monthly disposal statement must be submitted to the Commission not later than the 25<sup>th</sup> day of the month following the reported month, as per section 75 of the Drilling and Production Regulation.