



March 4, 2014

2920-4800-32640-02

Bruce Nociar  
Artek Exploration Ltd.  
1000, 700 – 4<sup>th</sup> Ave SW  
Calgary AB T2P 3J4

Dear Mr. Nociar:

**RE: INJECTIVITY TEST SPECIAL PROJECT  
ARTEK ET AL HZ CACHE 12-36-87-23W6; WA# 27127  
HALFWAY FORMATION**

Oil and Gas Commission staff have reviewed your application, dated January 10, 2014, requesting approval to conduct a 5,000 m<sup>3</sup> water injectivity test into the Halfway formation of the subject well. Also received was a request dated January 15, 2014 for full disposal approval in this subject well.

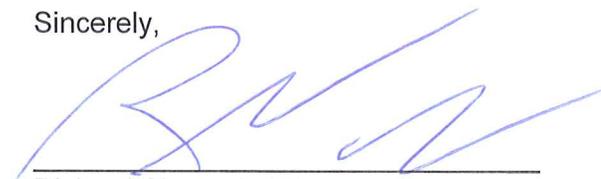
The horizontal well Artek et al Hz Cache 12-36-87-23 (Well Permit 27127) was rig released August 14, 2011, completed to a depth of 2523.0 mKB in the Doig "CC" pool and produced oil and gas from September 2011 to April 2012. The Doig was uneconomic to produce and was suspended. The Halfway disposal interval top is at 1657mKB TVD. A step-rate injectivity test up to 500 m<sup>3</sup> was performed, including collection of an initial reservoir pressure. The injection pressures were high during the pre-frac injection test and as a result, a fracture treatment was deemed necessary and was conducted. Artek will now proceed with further injectivity tests up to 5,000 m<sup>3</sup> of water to determine if this location will suit their disposal needs.

Attached please find Order 2014-02-003, designating an area in the Cache Creek field – Halfway formation a Special Project under section 75 of the *Oil and Gas Activities Act*, for the temporary operation and use of a storage reservoir for the disposal of produced water and well stimulation flowback fluid up to a maximum volume of 5,000 m<sup>3</sup>. This Order includes a number of detailed operational conditions, including: continuous wellhead measurements, a maximum wellhead injection pressure, ultimate reservoir pressure limit and reporting requirements. Additional general information regarding disposal wells is available on the Commission's website at <http://www.bcogc.ca/industry-zone/documentation/Subsurface-Disposal>.

Disposal wells are subject to regular field inspection and audit. Contravention of a condition of this Order may be subject to enforcement under section 62 of OGAA, or suspension or cancellation of the Order under section 75(2)(b).

Should you have any questions, please contact Michelle Gaucher at (250) 419-4482 or Ron Stefik at (250) 419-4430.

Sincerely,



Richard Slocomb, P.Eng.  
Deputy Commissioner, Engineering  
Oil and Gas Commission

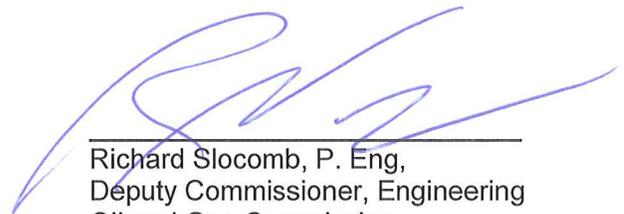
Attachment

**ORDER 14-02-003**

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 temporary disposal of produced water, including flowback from fracturing operations into the Halfway formation – Cache Creek field as a special project in the following area:

DLS Twp 87 Rge 23 W6M Section 36 - Lsds 3, 4, 5 and 6.

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 Artek et al Hz Cache 12-36-87-23 (Well Permit # 27127) Halfway formation.
  - b) Inject a total volume of not more than 5,000 m<sup>3</sup>.
  - c) Not exceed an injection pressure, measured at the wellhead on the subject well, of 13,800 kPag or the pressure required to fracture the formation, whichever is lesser.
  - d) Inject only through tubing with a packer set as near as is practical above the injection interval.
  - 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) Report the disposal volumes on the monthly disposal statement.
  - j) Cease injection upon reaching a maximum formation pressure of 17,100 kPaa.
  - k) Not conduct a hydraulic fracture stimulation on any formation in the subject well without prior Commission approval.



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Richard Slocomb, P. Eng,  
Deputy Commissioner, Engineering  
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 4<sup>th</sup> day of March 2014.

Advisory Guidance for Order 14-02-003

- I. A production packer must be set above the injection interval and the space between the tubing and casing (including the space between the 3 packers) 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.