

July 12, 2017

4700-8200-32640-60

Haseeb Hashmi
Exploitation Engineer
Canadian Natural Resources Limited
Suite 2500, 522 – 2 Street SW
Calgary, Alberta T2P 4J8

Dear Mr. Hashmi:

**RE: OBSERVATION WELL STATUS – NOT GRANTED
CNRL HELMET b-90-K/94-P-7 (WA 22588)
HELMET FIELD – JEAN MARIE “K” POOL**

BC Oil and Gas Commission (Commission) staff have reviewed the June 20, 2017 application from Canadian Natural Resources Limited (CNRL) seeking approval of observation well status for CNRL Helmet b-90-K/94-P-7 (WA 22588).

The Drilling and Production Regulation Part 1 defines an observation well as “a well or a portion of a well designated as an observation well under section 2 (7)”.

- 2 (7) An official may designate a well as an observation well if
- (a) the well is being used to monitor reservoir pressures or to obtain other formation information, and
 - (b) the well is not used to produce from, or inject or dispose of fluids into, a formation being monitored.

The subject well was drilled in 2007, targeting the Jean Marie formation for oil production. The Jean Marie formation was perforated and treated with acid but swabbing resulted in minimal hydrocarbon recovery and the well was not put on production. The Commission’s Petroleum Geology department has designated minimal pay thickness to this well due to the inferior reservoir quality when compared to the active oil producing wells in the pool (CNRL Helmet a-59-K/94-P-7, WA 12619, and CNRL HZ Helmet a-80-K/94-P-07, WA 15772). An acoustic well sounder test conducted on the well in November 2016 calculates the current bottom hole pressure to be at 5846 kPaa.

CNRL is requesting use of this well to monitor the Jean Marie formation pressure in the Helmet field to determine the reservoir boundary in the northern part of the Jean Marie “K” pool.

The initial pressure of the Jean Marie “K” pool was measured at 5453 kPaa in 2002. The lack of pressure depletion in the subject well, despite oil production from the Jean Marie “K” pool since 2002, indicates that the well is not in communication with the producing pool and is therefore not in a valid location for pressure observation. Observation designation is **not granted** for CNRL Helmet b-90-K/94-P-7 (WA 22588), Helmet field, Jean Marie “K.”

Should you have any questions, please contact Kathryn Archibald at (250) 419-4457 or the undersigned at (250) 419-4430.

Sincerely,



Ron Stefik, Eng. L.
Supervisor, Reservoir Engineering
Oil and Gas Commission