

November 1, 2016

4900-4575-32640-60

Florin Hategan, P.Eng
Exploitation Engineer
Canadian Natural Resources Ltd.
Suite 2500, 885-2 Street SW
Calgary, Alberta T2P 4J8

Dear Mr. Hategan:

**RE: OBSERVATION WELL STATUS – NOT GRANTED
CNRL ET AL INGA 16-30-087-23, WA 02658
INGA FIELD – INGA “A” POOL**

BC Oil and Gas Commission (Commission) staff have reviewed the application dated October 25, 2016 from Canadian Natural Resources Ltd. seeking approval of observation well status for CNRL et al Inga 16-30-087-23 (WA 02658).

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 1970 and the Inga formation was perforated and fractured for the purpose of oil production. The well was an active oil producer from March 1970 until June 1970. In January 1973 the well became a water injector. The well injected water into the pool from January 1973 to May 2012. At this time the Commission’s records show the well has been inactive for 52 months.

Canadian Natural Resources Ltd. is requesting use of this well to “measure reservoir pressure in the Inga Sand formation to monitor fluid movement from water flood operations.”

The Inga field, Inga “A” pool production history indicates the pool is very mature. As of August 2016, the pool has produced 6,871.2 10^3m^3 of oil. The production rate for August 2016 was 7.9 m^3/d with four wells contributing to production. The pool has limited remaining reserves and the active wells have low productivity. Water injection rates have dropped significantly since 2015 with no water injection occurring over the last three months.

The lack of injection and low productivity in the pool indicate that there is little fluid movement occurring from waterflood operations at this time. Therefore, observation status is **not granted** for CNRL et al Inga 16-30-087-23 (WA 02658).

The Commission will consider a subsequent request for observation should pool productivity increase and Canadian Natural Resources Ltd. can provide robust rationale for observation of the pool.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'R Stefik', written over a horizontal line.

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