

July 2, 2009

4900-4575-59240-09

Mr. James Nichols, P.Eng. Production Engineer Canadian Natural Resources Limited 2500, 855 – 2nd Street SW Calgary, AB T2P 4J8

Dear Mr. Nichols:

## RE: PRESSURE MAINTENANCE WATERFLOOD APPROVAL, AMENDMENT #6 INGA FIELD - INGA "A" UNIT #1

Commission staff have reviewed the application, dated June 9, 2009, requesting approval to convert the well **CNRL Unit Inga 6-19-88-23 (WA #1982)** to water injection service.

Attached is Approval # 68-09-003 (Amendment #6) for the application, granted under Section 100 of the <u>Petroleum and Natural Gas Act</u>.

The well 6-19 last produced in 1998, with high water-cut, following cumulative oil production of  $334 \ 10^3 \ m^3$ . We concur that conversion of this suspended well to water injection service should provide pressure support to the producing wells, resulting in incremental oil recovery from Inga Unit #1. Accordingly, approval is hereby granted to convert the well 6-19-88-23 W6M to water injection service.

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

Sincerely,

Richard Slocomb, P.Eng. Supervisor, Reservoir Engineering Resource Conservation

## APPROVAL 68-09-003 (AMENDMENT #6)

## THE PROVINCE OF BRITISH COLUMBIA <u>PETROLEUM AND NATURAL GAS ACT</u> OIL AND GAS COMMISSION

IN THE MATTER of a pressure maintenance scheme of Canadian Natural Resources Limited (CNRL) for waterflood recovery of oil by water injection into Inga field – Inga "A" Unit #1.

The approval granted pursuant to Section 100 (formerly Section 117) of the Petroleum and Natural Gas Act, 1996 is hereby amended as follows:

The pressure maintenance scheme of CNRL for waterflood recovery of oil from the Inga - Inga Unit #1 as last approved dated October 10, 2005 is hereby amended, subject to the terms herein contained:

1. The Unit #1 area of the pressure maintenance scheme consists of:

Twp 87-Rge 23 W6M: N/2 Sec 32 and Sec 33 Twp 88-Rge 23 W6M: Sec 4-8, S /2 & NW/4 Sec 9, S/2 Sec 16, Sec 17-19, S/2 Sec 20 and S/2 Sec 30 Twp 88-Rge 24 W6M: N/2 Sec 1, Sec 12, 13, N/2 Sec 23, Sec 24 - 26, Frac Sec 35 and Frac Sec 36 94-A-12 Block J: Frac units 5-8, units 15-18 and 27.

- 2. The project daily oil allowable is 1151.5 m<sup>3</sup>.
- 3. Water may be injected into the Inga Unit #1 through the wells located at 16-32 and 16-33-87-23 W6M, 6-6, 16-6, 13-7, 6-8, 6-9, 6-16, 6-18, 14-18, 6-19, 6-20 and 6-30-88-23 W6M, 6-13, 16-24 and 1-36-88-24 W6M and d-27-J/94-A-12.
- 4. The injection pressure measured at the sandface must not exceed the formation fracture pressure.
- 5. All associated gas will be conserved.
- 6. An oil well may be drilled anywhere within the project area provided that it is not nearer than 100 m to the sides of the project area.
- 7. The operations of the pressure maintenance scheme will be subject to periodic review and modification to the approval may be ordered, if deemed appropriate.

Richard Slocomb Supervisor, Reservoir Engineering Resource Conservation

DATED AT the City of Victoria, in the Province of British Columbia, this 3<sup>rd</sup> day of July, 2009.