

April 12<sup>th</sup>, 2023

7000-4800-59240-07

Quang-Hoa Hong, P. Eng  
Exploitation Engineer  
Canadian Natural Resources Limited  
2500, 855 – 2<sup>nd</sup> St SW  
Calgary, AB T2P 4J8

Dear Mr. Hong:

**RE: PRESSURE MAINTENANCE WATERFLOOD ORDER 96-09-007 AMENDMENT #6  
OTHER THAN NORMAL SPACING ORDER AMENDMENT #6  
PEEJAY WEST FIELD – HALFWAY ‘A’ POOL**

Canadian Natural Resources Limited (CNRL) applied for Concurrent Production project approval for the subject pool on December 3<sup>rd</sup>, 2021. Concurrent Production order 22-07-001 was approved December 20<sup>th</sup>, 2022, in the northern area of the pool, while the pressure maintenance waterflood approval remains in place in the southern area of the pool. This amendment deletes the northern NTS units from the approved area, as per Order condition 1. Additionally, order condition 2d) allows for reservoir pressure testing of “proxy wells in [the injection well’s] area of influence, as approved by the Regulator” as an alternative to testing the injection well, and conditions 2e) and 2f) require measurement and recording of tubing and casing pressure, respectively, to validate compliance with injection pressure and wellbore integrity requirements.

The discovery well, CNRL et al W Peejay d-54-G/94-A-15 (WA 956), was drilled in February of 1962, followed by an additional well the next month. One well was drilled in 1982 and subsequently ten more wells were drilled between 1992 and 2001, with the final well, CNRL W Peejay c-53-G/94-A-15 (WA 28819) drilled in 2013 to act as an observation well for the gas cap. The pool originally had a concurrent production approval (96-07-004), granted in May of 1996, later replaced by a pressure maintenance waterflood approval (96-09-007), granted in January of 1997. The latest amendment to the waterflood approval was in December of 2019 to update the approval conditions to current requirements.

The following Orders are attached;

- 1) Order 96-09-007 Amendment #6 designating Pressure Maintenance Waterflood within the Peejay West field – Halfway “A” pool, as a Special Project under section 75 of the *Oil and Gas Activities Act*, and
- 2) Order 96-09-007 Amendment #6 - OTN approving Other Than Normal Spacing under section 65.1 of the *Petroleum and Natural Gas Act* for the subject area and formation.

Should you have any questions, please contact Logan Gray at (250) 419-4465 or the undersigned at (250) 419-4430.

Sincerely,



Ron Stefik, P.L.Eng  
Supervisor, Reservoir Engineering  
Energy Regulator

Attachments



**ORDER 96-09-007 – Amendment #6**

1. Under Section 75 (1) (a) of the *Oil and Gas Activities Act*, the Regulator designates by Order the development and production of petroleum and natural gas from a pool using pressure maintenance waterflood enhance recovery scheme within the Peejay West field – Halfway ‘A’ pool following area;

NTS            94-A-15            Block G - Units 22, 23, 32, 33, 42-44, S/2 of 53, and 54

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:

- a) The project unadjusted daily oil allowable (UDOA) is 80m<sup>3</sup>.
- b) All associated produced gas must be conserved.
- c) Water may be injected into the well CNRL W Peejay b-43-G/94-A-15 (WA 8394), interval 1,185.0 – 1,194.5 mKB
  - i) Inject only through tubing with a packer set as near as is practical above the injection interval.
  - ii) Not exceed an injection pressure, measured at the wellhead of 6,150 kPa or the pressure required to fracture the formation, whichever is lesser.
- d) Every second year a reservoir pressure must be obtained from the injection well in condition (c), or from a proxy well in its area of influence, as approved by the Regulator, and submitted to the Regulator within 60 days via e-submission
- e) Continually measure and record the wellhead tubing pressures electronically for the injection well in condition (c).
- f) Wellhead casing pressure for the injection well in condition (c) must be measured and recorded a minimum of once daily.
- g) Not exceed an average pool pressure of 9,878 kPa measured at 490.0 meters subsea.
- h) Cease injection for the injection well in condition (c) and notify the Regulator at [Reservoir@bc-er.ca](mailto:Reservoir@bc-er.ca) immediately if there are any indications that hydraulic isolation is lost in the injection wellbore or formation.
- i) Include the monthly injected volume, injection hours and the maximum injection pressure value for the injection well in condition (c) via Petrinex.
- j) Injection must cease upon termination of production from the pool.

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Ron Stefik, P.L.Eng.  
Supervisor, Reservoir Engineering  
Energy Regulator

DATED AT the City of Victoria, in the Province of British Columbia, this 12<sup>th</sup> day of April 2023.



**ORDER 96-09-007 – Amendment #6**

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Advisory Guidance for Order 96-09-007 – Amendment #6

- I. A production packer must be set above the injection interval and the space between the tubing and casing filled with corrosion and frost inhibiting fluids, as per section 16(2) of the Drilling and Production Regulation.
- II. Annual packer isolation tests are required to be conducted and the associated report must be submitted to the Regulator within 30 days of test completion, as per section 16(3) of the Drilling and Production Regulation.
- III. Injected fluids must be metered and the injection pressure measured at the wellhead, as per section 74 of the Drilling and Production Regulation.
- IV. A monthly injection statement must be submitted to Petrinex not later than the 20<sup>th</sup> day of the month following the reported month, as per section 75 of the Drilling and Production Regulation.
- V. Seismic events must be reported and injection operations suspended as per section 21.1 of the Drilling and Production Regulation.



**ORDER 96-09-007 OTN - AMENDMENT #6**

- 1 Under Section 65.1(2) of the *Petroleum and Natural Gas Act*, Other Than Normal Spacing within the Peejay West – Halfway “A” pool is hereby approved within the following area;  
NTS        94-A-15        Block G - Units 22, 23, 32, 33, 42-44, S/2 of 53, and 54
- 2 Under section 65.1(3) of the *Petroleum and Natural Gas Act*, I specify the following:
  - a) the target area for an oil well completed within the project area is not nearer than 100 m to the sides of the Other Than Normal Spacing area,
  - b) an oil well completed outside the specified target area may be subject to an off-target production penalty,
  - c) oil wells drilled within the specified project area are not subject to spacing requirements.

A handwritten signature in blue ink, appearing to read 'R. Stefik', is positioned above a horizontal line.

Ron Stefik, P.L.Eng  
Supervisor, Reservoir Engineering  
Energy Regulator

DATED AT the City of Victoria, in the Province of British Columbia, this 12<sup>th</sup> day of April 2023.