

April 2, 2020

8300-4800-59240-09

Michael Reinhart, P.Eng.
Production Engineer
Cona Resources Ltd.
1900, 222 – 3rd Ave SW
Calgary, AB T2P 0B4

Dear Michael Reinhart:

**RE: PRESSURE MAINTENANCE WATERFLOOD ORDER 68-09-002 AMENDMENT #2
WEASEL FIELD – HALFWAY UNIT #1**

The Commission is presently reviewing and amending waterflood approvals to conform to current requirements. The continued operation of a pressure maintenance waterflood in the Weasel field – Halfway formation by Cona Resources Ltd. requires this review.

The discovery well, Cona et al Weasel d-35-B/94-H-2 (WA 1601), was drilled in April of 1965 and began production in the same month. Approval for waterflood was granted in June of 1968 and injection began in the same month into the injection well WA 1655. In March of 1970, approval was granted for gas conservation via injection into the well CNRL et al Weasel d-77-B/94-H-2 (WA 1906). 52.6 e⁶m³ of gas was injected until injection ceased in October of 1972. The twenty-four wells in the pool include: five active oil production wells, two active injection wells, and the remainder are suspended or abandoned.

The following Orders are attached;

- 1) Order 68-09-002 Amendment #2 designating Pressure Maintenance Waterflood within the Weasel field – Halfway formation, as a Special Project under section 75 of the *Oil and Gas Activities Act*, and
- 2) Order 68-09-002 Amendment #2 - OTN approving Other Than Normal Spacing under section 65.1 of the *Petroleum and Natural Gas Act* for the subject area and formation.

This amended approval includes a maximum wellhead injection pressure (MWHIP), an ultimate pool pressure limit, restriction of injection for the purpose of oil recovery, and a requirement for annual reservoir pressure tests on the injectors. The ultimate reservoir pressure has been limited to the initial pool pressure. Only the two active injectors (WA 1655 and WA 1897) are approved for injection in the Order as all other injectors have not reported injection volumes in over six years.

Please note that, as per section 75 of the *Drilling and Production Regulation*, a record of the volume of water injected and the MWHIP must be included on a Monthly Injection statement to the Commission via Petrinex not later than 20th day of the month following the reported month.

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

Sincerely,



Ron Stefik, EngL
Supervisor, Reservoir Engineering
Oil and Gas Commission

Attachments

ORDER 68-09-002 – Amendment #2

1. Under Section 75 (1) (a) of the *Oil and Gas Activities Act*, the Commission designates by Order the development and production of petroleum and natural gas from a pool using pressure maintenance waterflood enhanced recovery scheme within the Weasel field – Halfway Unit #1 following area;

NTS 94-H-2: Block B – units 24-27, 33-36, 44-47, 56, 57, 67, 77

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 (UDOAA) is 405.4 m³.
- b) All associated produced gas must be conserved.
- c) Water may be injected into the well:

Cona et al Weasel d-45-B/94-H-2 (WA 1655), interval 1,155.1-1,160.6 mKB

Cona et al Weasel d-47-B/94-H-2 (WA 1897), interval 1,180.1-1,182.0 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 6,650 kPag for the wells listed in c), or the pressure required to fracture the formation, whichever is lesser.
- d) A reservoir pressure must be obtained from at least one of the injectors listed in c) during each calendar year in which injection occurs and submitted to the Commission within 60 days of completion of the test.
 - e) Not exceed an average pool pressure of 9,050 kPaa measured at 420.0 meters subsea.
 - f) Cease injection for the injectors listed in c) and notify the Commission immediately at Reservoir@bcogc.ca if there are any indications that hydraulic isolation is lost in the wellbore or formation
 - g) Include the monthly injected volume, injection hours, and the maximum injection pressure value for the injectors listed in c) via Petrinex.
 - h) Injection must cease upon termination of production from the pool.

Advisory Guidance for 68-09-002 – Amendment #2

- 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 completed and submitted, 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 20th 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.



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

DATED AT the City of Victoria, in the Province of British Columbia, this 2nd day of April 2020.



ORDER 68-09-002 – Amendment #2 – OTN

1 Under Section 65.1(2) of the *Petroleum and Natural Gas Act*, Other Than Normal Spacing within the Weasel field – Halfway Unit #1 formation is hereby approved within the following area;

NTS 94-H-2: Block B – units 24-27, 33-36, 44-47, 56, 57, 67, 77

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'.

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

DATED AT the City of Victoria, in the Province of British Columbia, this 2nd day of April 2020.