



NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

Office of the Regulator of Oil and Gas Operations

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Ryan Munro, P.Eng.
Manager, Abandonment Engineering
Canadian Natural Resources Ltd.
Suite 2100, 8800 – 2 ST SW
CALGARY AB T2P 4J8

August 21, 2023

Dear Ryan Munro:

Decision: ACW-2019-011-CNRL-P-16-WID1976 Variation 9

On August 15, 2023, the Office of the Regulator of Oil and Gas Operations received an application from Canadian Natural Resources Limited (CNRL) to vary ACW-2019-011-CNRL-P-16-WID1976 variation 8. CNRL is requesting additional steps in the well abandonment program to evaluate the intermediate casing vent flow remediation.

The Regulator designated under section 121 of the *Oil and Gas Operations Act* (OGOA) may issue an Operations Authorization under section 10(1) of that act, subject to any Well Approvals that the Regulator may require under section 10(4) of OGOA. The Regulator may vary the terms of an Operations Authorization under section 10(6) of OGOA, including the terms of a Well Approval. On August 2, 2020, the Commissioner in Executive Council designated me as the Regulator under section 121 of OGOA.

I have reviewed CNRL's description of its proposed activity and find that the application demonstrates that this activity will be conducted safely, without waste and without pollution, in compliance with the *Oil and Gas Drilling and Production Regulations*. Therefore, CNRL's application for a variation is approved, subject to the terms contained in the attached Well Approval.

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Canadian Natural Resources Ltd. must post a copy of the attached Well Approval in a clearly visible location at the work site.

Sincerely,



Pauline de Jong
Regulator

Encl. ACW-2019-011-CNRL-P-16-WID1976 variation 9

- c. James Ireland, CNRL
- Dale Duffy, CNRL
- Jason Tymo, CNRL
- Terran Bernhard, CNRL

WELL APPROVAL

Subject to the terms listed below, well approval **ACW-2019-011-CNRL-P-16-WID1976 variation #9** is granted under Section 10 of the *Oil and Gas Operations Act* and Part 2 of the *Oil and Gas Drilling and Production Regulations* to

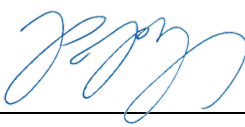
Company Name	Operating Licence #
Canadian Natural Resources Limited	NWT-OL-2014-001
Responsible Officer	Operations Authorization #
Ryan Munro, Manager, Abandonment Engineering	OA-2018-005-CNRL

for

Well Name and Well ID#	
Liard P-16 (WID1976)	
Type of Work	Region
Abandonment	Dehcho

This approval, originally issued on May 13, 2020, has been varied by the Regulator or its delegate under Section 10(6) of the *Oil and Gas Operations Act*.

This approval expires on **November 1, 2023**.

Issued at	Issued on
Yellowknife, Northwest Territories	August 21, 2023
Issued by	Signature
Pauline de Jong, Regulator	

Additional Terms

1. Canadian Natural Resources Limited shall cause the approved work and activities to be conducted in accordance with the requirements of the *Oil and Gas Operations Act* and the *Oil and Gas Drilling and Production Regulations*, as well as any other acts or legislation as may apply.
2. Canadian Natural Resources Limited shall cause the approved work and activities to be conducted in accordance with any guidelines and/or interpretation notes issued by the Regulator under section 18 of the *Oil and Gas Operations Act*.
3. Canadian Natural Resources Limited is granted an exception from section 6A, Downhole Abandonment Requirements of the *Well Suspension and Abandonment Guidelines and Interpretation Notes* to allow for the setting of a permanent bridge plug at a depth of 2890 mKB in order to abandon the Nahanni zone as noted in Step 33 of the approved abandonment program.
4. Canadian Natural Resources Limited shall cause the approved work and activities to be conducted in accordance with the specifications, standards and other information referred to in its application received February 28, 2020, request for variation received August 15, 2023, and subsequent submissions.
5. Canadian Natural Resources Limited shall request approval from the Regulator prior to undertaking any change to or deviation from the authorized work or activities, including but not limited to key personnel, the safety plan, the environmental protection plan, contingency plans, and the approved abandonment program.
6. Canadian Natural Resources Limited may use a coiled tubing unit to meet the requirements of the *Safety Bulletin: Shallow Wellbore Plugs* (OROGO-SB-01 – attached) as an engineering control to mitigate the risks associated with shallow wellbore plugs. All other requirements of OROGO-SB-01 apply, with adjustments as needed to reflect the use of a coiled tubing unit.
7. Canadian Natural Resources Limited shall provide all staff and contractors for this program with its Emergency Response Plan and the OROGO 24-hour Incident Reporting phone number (867-445-8551) prior to commencing any work or activity.
8. Canadian Natural Resources Limited shall notify OROGO at least 10 days prior to the start of well abandonment operations.
9. Canadian Natural Resources Limited shall submit to OROGO certificates and inspection documents for any service rig, well control and associated equipment (including boilers) at least 10 days prior to the rig commencing work.
10. Canadian Natural Resources Limited shall submit to OROGO an updated operator contact list for this program prior to any work or activity.

11. Canadian Natural Resources Limited shall submit to OROGO a completed Change of Well Status form 30 days after the service rig release date or when the operation has been successfully completed.
12. Pursuant to section 67 of the *Oil and Gas Drilling and Production Regulations*, Canadian Natural Resources Limited is approved to conduct controlled flaring utilizing separator packages and/or flare stacks as part of well kill operations at a maximum daily flow rate of 30×10^3 m³/day and maximum daily duration of 4.0 hours per day. CNRL is also approved to conduct controlled venting of sweet gas as part of well kill operations at a maximum daily flow rate of 900 m³/day and maximum daily duration of 4.0 hours per day. CNRL shall include the volume and composition of any amount of flared and/or vented gas in its daily report to OROGO. Flaring and/or venting of any volume, daily volume rate and/or duration greater than the approved maximum daily flow shall be reported to OROGO as an incident under section 75 of the *Oil and Gas Drilling and Production Regulations*.
13. Canadian Natural Resources Limited shall submit to OROGO the results of the caliper and temperature logging proposed in its request for variation received August 3, 2023. Canadian Natural Resources Limited shall also submit its proposed remediation steps to the Regulator for approval before proceeding.
14. Canadian Natural Resources Limited shall notify OROGO of the results of the packer run proposed in its request for variation received August 15, 2023, along with the proposed remediation intervals.