



NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

Office of the Regulator of Oil and Gas Operations

P.O. Box 1320, Yellowknife, NT X1A 2L9

Tel: 867-767-9097 • Fax: 867-920-0798 • Web: www.orogo.gov.nt.ca

Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

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

July 6, 2022

Dear Ryan Munro:

Decision: ACW-2019-015-CNRL-M-35-WID1989 Variation 3

On December 17, 2020, I issued ACW-2019-015-CNRL-M-35-WID1989 variation 2 for the abandonment of the SW Arrowhead M-35 (WID 1989) well. On December 2, 2021, I issued a decision accepting the recommendation of the Office of the Chief Public Health Officer to defer well abandonment work to the 2022/23 field season.

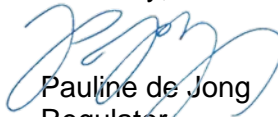
As a result of this deferral, I am varying ACW-2019-015-CNRL-M-35-WID1989 variation 2 to extend the expiry date to November 1, 2023.

I am also adding a term to ACW-2019-015-CNRL-M-35-WID1989 variation 2 capturing the pre-abandonment gas migration testing required under the *Well Suspension and Abandonment Guidelines and Interpretation Notes*.

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.

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-2019-015-CNRL-M-35-WID1989 variation 3

c. James Ireland, Well Abandonment Engineer, CNRL
Arly Castillo, Regulatory Coordinator, CNRL

WELL APPROVAL

Subject to the terms listed below, a well approval 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	Company Operating Licence #
Canadian Natural Resources Limited	NWT-OL-2014-001
Responsible Officer and Title	
Ryan Munro, Manager, Abandonment Engineering	


to proceed with the works and activities described in its February 25, 2020 application and subsequent submissions for

Type of Work	Settlement Area or Region
Well abandonment	Dehcho
Scope of Work	
Abandonment of the S.W. Arrowhead M-35 Well (WID 1989)	

This approval, originally issued on May 13, 2020, is granted under Operations Authorization OA-2018-005-CNRL and has been varied by the Regulator or its delegate under Section 10 of the *Oil and Gas Operations Act*. It may be further so varied.

This approval expires on November 1, 2023.

Dated at Yellowknife, Northwest Territories on July 6, 2022.

Name of Regulator / Delegate	Signature of Regulator / Delegate
Ms. Pauline de Jong	
Title	
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 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 25, 2020 and subsequent submissions.
4. 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.
5. 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.
6. Canadian Natural Resources Limited shall notify OROGO at least 10 days prior to the start of well abandonment operations.
7. 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.
8. Canadian Natural Resources Limited shall submit to OROGO an updated operator contact list for this program prior to any work or activity.
9. 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.

10. 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*.
11. Canadian Natural Resources Limited shall complete pre-abandonment gas migration (GM) testing between July and September 2022, as described in section 4A of the *Well Suspension and Abandonment Guidelines and Interpretation Notes*. Canadian Natural Resources Limited shall notify OROGO at least 10 days prior to conducting GM testing and include a description of the proposed gas detection equipment and methodology for approval. If testing indicates the presence of GM, Canadian Natural Resources Limited must notify OROGO as soon as possible and provide an anticipated timeframe to submit analytical results for collected gas samples. Canadian Natural Resources Limited shall submit a completed Well Inspection Form along with the detailed GM testing results to the Regulator within 30 days of conducting the testing.