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

Mr. Daryl Stepanic
VP Technical Policy & Frontiers
ConocoPhillips Canada Resources Corp.
401 – 9TH AVE SW
PO BOX 30 STATION "M"
CALGARY AB T2P 2H7

MAY 11 2016

Dear Mr. Stepanic:

Re: Gas Migration

In its letter of April 18, 2016, ConocoPhillips Canada (CPC) requested an amendment to Condition 14 of ACW-2015-005, for the abandonment of Loon Creek 0-06 and ACW-2015-006, for the abandonment of Mirror Lake N-20 to allow well inspection and gas migration testing to be conducted earlier than originally scheduled, within five (5) months following completion of the downhole well abandonment operations.

I approve the request and amend Condition 14 of ACW-2015-005 and ACW-2015-006 as highlighted in bold below:

If the gas migration from the well is demonstrated, after testing, to have been addressed by the downhole well abandonment operations authorized by this ACW, ConocoPhillips shall:

- Proceed with cutting and capping the well consistent with its November 19, 2015 application and ensuring that the surface, intermediate and production casing strings are capped at surface with a steel plate that is fastened and installed in a manner as to prevent any potential for pressure to build up within the casings while restricting access to the casing strings at surface;
- Inspect the well, specifically for any evidence of gas migration, between **5 and 24 months following the completion of the downhole well abandonment operations**, at a time when a sampling program can effectively demonstrate that there is no presence of gas migration from the well bore;
- Notify OROGO no later than 60 days prior to each inspection by email at orogo@gov.nt.ca: and
- Submit inspection reports to OROGO by email at orogo@gov.nt.ca within 30 days after completion of inspection operations.

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Bureau de l'organisme de réglementation des opérations pétrolières et gazières
B.P. 1320, Yellowknife, TNO X1A 2L9
Tél : 867-767-9097 • Téléc : 867-920-0798 • Site web : www.orogo.gov.nt.ca
Adresse de messagerie : 4e étage, 5201 – 50e Avenue, Yellowknife TNO X1A 3S9

BUREAU DE L'ORGANISME DE RÉGLEMENTATION DES OPÉRATIONS PÉTROLIÈRES ET GAZIÈRES DES TN-O

If no gas migration is identified during the inspection conducted **between 5 and 24 months following the completion of the downhole well abandonment operations**, the wells will be considered abandoned and no further monitoring will be required.

If gas migration is identified, ConocoPhillips shall, within 3 months after completion of inspection operations, submit a plan for addressing these issues to OROGO by email at orogo@gov.nt.ca.

I have also reviewed the submission "Canol Gas Migration Testing Proposal- August 2016" based on the objectives outlined in Condition 14 of ACW-2015-004 and ACW-2015-006.

Alberta Energy Regulator (AER) Directive 020 is a suggested approach published by the AER but does not represent a regulatory standard for oil and gas operations under OROGO's jurisdiction. I request that CPC submit an updated Gas Migration Testing, Sampling and Analysis Program (program) that reflects current technology and sampling protocols. CPC's updated program report should be filed with OROGO no later than 30 days prior to commencement of field operations for the program. The report should include the following (but not necessarily be limited to) testing, sampling and analysis information:

- Identification of all testing and sampling equipment being utilized (including calibration/certifications);
- Detailed description of standard operating procedures and protocols for testing and sample collection;
- Summary of risks and limitations to sample preservation;
- Qualifications of personnel conducting testing, sampling and analysis; and
- Confirm use of PMD grid sample readings in the PPM range as the "threshold" for indicating the presence of gas migration.

You are welcome to contact Brian Heppelle, Senior Advisor, Technical, at (867) 767-9097 Ext. 78002 to further discuss testing, sampling and analysis performance and reporting objectives.

Sincerely,

James Fulford
Chief Conservation Officer

C. Ms. Kim Clarke, Senior Resevoir Engineer
ConocoPhillips Canada Resource Corp.