



NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

Office of the Regulator of Oil and Gas Operations
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John Hawkins
Director Asset Management
Paramount Resources Ltd
Suite 2800, 421 – 7 AVE SW
CALGARY AB T2P 4K9

December 18, 2018

Dear John Hawkins:

**Information Request No. 1:
Paramount Resources Ltd. Application to
Abandon the Celibeta No.2 H-78 Well (WID 0156) (ACW-2018-010)**

On December 11, 2018, the Office of the Regulator of Oil and Gas Operations (OROGO) received a complete application from Paramount Resources Ltd. (Paramount) to Alter the Condition of a Well (ACW) for the abandonment of the Celibeta No. 2 H-78 well. In order to review Paramount's application, OROGO requires additional information, as set out in the attached Information Request No.1.

Please send your written responses and any associated correspondence to Mr. James Fulford, Chief Conservation Officer, OROGO, by email at oro.go@gov.nt.ca or through OROGO's secure file transfer site.

Please submit your response on or before 4:00 p.m. on January 14, 2019. If you are unable to respond within this timeframe or have any questions, please contact me at (867)767-9097 Ext: 78003 or by email at Pauline.dejong@gov.nt.ca.

Sincerely,

Pauline de Jong
Senior Advisor, Legislation and Policy

Attachment

Paramount Resources Ltd. (Paramount)
Application to Alter the Condition of a Well (ACW-2018-010)
Information Request No. 1

1.1 Interval and Groundwater Isolation

Preamble: Page 21 of the BGWP¹/Porous Interval Isolation and SCVF² Remediation Procedure, item #49, states that, depending on where the cement top is located and/or the noise/temp logging results, the following intervals for perforating and squeezing may be required:

- 720.5 to 721.5m KB to isolate the Jean Marie;
- 600 to 601m KB to isolate default BGWP;
- 457.8 to 458.8m KB to isolate Tetcho; and
- SCVF intervals identified by logging.

The program steps do not identify which of the zones are porous. All porous intervals and the BGWP must be isolated in the wellbore.

Request: Please submit an updated well program that identifies which intervals are porous and ensures all porous intervals and the BGWP will be isolated in the wellbore.

1.2 Wellhead Pressure, Risk of Comingling Formations and SCVF Repair Contingencies

Preamble: Based on the well history, the abandonment of the well bore may be complicated by various factors, including:

- The well currently has 1180kPa pressure at surface, indicating that both bottom hole bridge plugs set at 1112 mKB and 1154.6 mKB may be leaking or the intermediate casing or liner seal has been compromised;
- Most of the wellbore is open to surface behind the 177.8mm intermediate casing;
- The open hole interval 1156.4 mKB to 1254.3 mKB includes the Watt Mountain and Sulphur Point formations, which are segregated from the Slave Point perforations by a bridge plug set at 1154.6 mKB. Given the age of the bridge plug which cannot be pressure tested, and the limited information provided on the effectiveness of the cementing of the liner full length, the current and proposed abandoned wellbore configurations present a high risk for the comingling of these formations; and

¹ Base of Ground Water Protection

² Surface Casing Vent Flow

- The well has experienced intermittent surface casing vent flows. Previous well inspections have recorded surface vent flows, although the latest inspection in July 2018 showed no surface casing vent flow.

Given these factors, it is anticipated that the well abandonment may require additional procedural steps should the program not be able to be completed as planned.


Request: Please provide an updated program that identifies proposed contingency steps and rationale for well abandonment steps that address:

- The high risk for commingling of formations due to a possible bridge plug failure at 1154.6 mKB and/or inadequate cementing of the liner; and
- The possibility of additional perforations and cement squeezes needed to repair a surface vent flow and isolate all porous zones and the BGWP open behind the uncemented intermediate casing.

1.3 Well History

Preamble: Page 9 of the Well History references surface and production casing setting depths that do not correspond to the Celibeta No.2 H-78 well bore schematic on page 32. Additionally, the Well History states that the rig was released on August 25, 1960. When this is compared to the well data and wellbore configuration on page 12, the rig release date was March 24, 1960.

Request: Please verify casing depths and rig release dates and provide an updated well history.

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|  | | BUFFALO PARCEL COURIER SERVICES LTD., 1000 BUFFALO DRIVE, HAY RIVER, N.W.T. X0E 0R9 PHONE: EDMONTON (780) 455-9283 HAY RIVER (867) 874-3307 CALGARY (403) 271-3887 YELLOWKNIFE (867) 873-2084 GST # 100686785RT0001 TOLL FREE 1 800 465 3168 | | | | B 1360974 | | | | | | | |
| FROM DRUGO - JIISIFE STREET ADDRESS (P.O. BOX NOT ACCEPTABLE) 4" ILLIK NUTILLIKUR CITY YELLOWKNIFE PROVINCE NT POSTAL CODE X1A 3A9 TELEPHONE NUMBER (867) 767 9077 | | PICK-UP COURIER [Signature] | | TIME 2:30 PM | | YR 18 | | MO 12 | | DAY 10 | | CUSTOMER NO. | |
| TO HIRTAIINT - JIINIKIKINS STREET ADDRESS (P.O. BOX NOT ACCEPTABLE) 7" ILLIK NUTILLIKUR CITY YELLOWKNIFE PROVINCE NT POSTAL CODE X1A 3A9 TELEPHONE NUMBER (867) 767 9077 | | DESCRIPTION OF ITEMS | | SPECIAL INSTRUCTIONS No. PKGS (ENV) 10 WT. SUBJECT TO CORRECTION 1 Kg 1 Lbs DECLARED VALUE \$ INTERLINE/CUSTOMER REFERENCE No. | | COURIER TARIFF | | INTER-LINE ADVANCE | | DECLARED VALUE CHARGE | | OTHER | |
| SHIPPER X SIGNATURE [Signature] PLEASE PRINT NAME A. Schow | | CARRIAGE SUBJECT TO THE FOLLOWING CONDITIONS IN ADDITION TO THOSE ON BACK 1. CARRIER WILL NOT BE RESPONSIBLE FOR FAILURE TO PERFORM OR COSTS INCURRED FOR DELAYS IN SHIPPING. 2. UNLESS SPECIFICALLY AGREED IN WRITING CARRIER IS LIMITED TO RESTRICTED LIABILITY AS DESCRIBED ON REVERSE SIDE OF THIS BILL. WARNING - ALL DANGEROUS GOODS MUST BE DISCLOSED TO THE CARRIER - SEE REVERSE SIDE | | IMPORTANT SEE REVERSE | | PREPAID <input checked="" type="checkbox"/> COLLECT <input type="checkbox"/> | | BILL OF LADING FOR NON-NEGOTIABLE SHIPMENTS. | | TOTAL | | G.S.T. | |