

September 27, 2013

5860-4545-59240-09

Bill Meeuwissen, P.Eng.
Carmel Bay Exploration Ltd.
600, 435 - 4th Ave S.W.
CALGARY, AB T2P 3A8

Dear Mr. Meeuwissen:

**RE: SPECIAL PROJECT ORDER, PRESSURE MAINTENANCE GAS INJECTION
OTHER THAN NORMAL SPACING ORDER
AMENDMENT #2
MICA FIELD – MICA “A” OIL POOL**

The Oil and Gas Commission has reviewed your application, dated August 26, 2013, requesting to amend a pressure maintenance order for a portion of the subject oil pool.

A waterflood approval was issued February 9, 2012 for the subject pool and amended to gas injection May 10, 2013. No injection of water or gas has commenced to-date. Carmel Bay Exploration Ltd. intends to inject produced gas. Several analogous oil pools are being successfully operated as gas injection for improved oil recovery.

The designated injection well has been changed from 11-34-081-14 W6M (WA 3649) to A11-34-081-14W6M (WA 23409) as a result of this amendment. The 11-34 well was suspended due to channeling behind casing below Mica perms and poor injectivity. Zonal isolation, injectivity and cement bond over the perforated Mica interval has been confirmed in the A11-34 well.

Attached are;

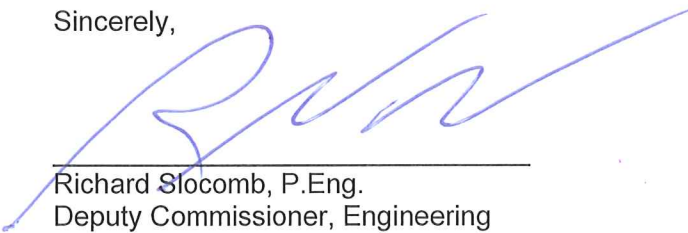
- 1) Order 12-09-001 Amendment #2 designating Pressure Maintenance Gas Injection, within the Mica field – Mica “A” pool, as a Special Project under section 75 of the *Oil and Gas Activities Act*, and
- 2) Order 12-09-001-OTN Amendment #2 approving Other Than Normal Spacing under section 65.1 of the *Petroleum and Natural Gas Act* for the subject formation and area.

Please note that, as per section 75 of the *Drilling and Production Regulation*, a record of the volume of gas injected must be included on a Monthly Injection/Disposal Statement (BC-S18), which must be submitted to the Commission no later than the 25th day of the month in which activity occurred. Gas re-injected into the pool will be credited to the GOR adjustment factor for calculation of the project daily oil allowable. Opportunity is identified for potential in-fill drilling and phased implementation of injection locations, including water injection, based on performance response.

Good Engineering Practice Approval # 01-06-003 is rescinded the effective date of Order 12-09-001 Amendment #2, stipulated under condition 2(f).

Should you have any questions, please contact Ron Stefik at (250) 419-4430.

Sincerely,



Richard Slocomb, P.Eng.
Deputy Commissioner, Engineering
Oil and Gas Commission

Attachments

IN THE MATTER of an application from Carmel Bay Exploration Ltd. to the Commission dated August 26, 2013 for the production of oil using pressure maintenance (gas injection).

ORDER 12-09-001 AMENDMENT #2

- 1 Under Section 75(1)(a) of the *Oil and Gas Activities Act*, the Mica field – Mica formation is designated as a special project for pressure maintenance for recovery of oil by gas injection within the following area;

DLS Twp 81 Rge 14 W6M N/2 Section 27, N/2 & SE/4 Section 33, Section 34,
SW/4 Section 35

DLS Twp 82 Rge 14 W6M SW/4 Section 3 and Section 4.

- 2 Under section 75(2) of the *Oil and Gas Activities Act*, I specify the following:
 - a) The project unadjusted daily oil allowable (UDOA) is 140 m³/d.
 - b) All associated produced gas must be conserved.
 - c) Gas may be injected into the Mica - Mica "A" pool through the well Carmel Bay Mica A11-34-081-14W6M (WA 23409).
 - d) The maximum wellhead gas injection pressure must not exceed 23,800 kPa.
 - e) The average pool reservoir pressure must not exceed 17,000 kPa.
 - f) The effective date of this Order shall be the date that gas injection commences into the well noted in condition (c) above, with the Commission notified in writing.
 - g) The permit holder must submit a Progress Report to the Commission for each 12 month period the project is in operation. The Progress Report must be filed within 60 days after the end of each period and must contain the following:
 - i) the daily average rate during each month of oil production for each producing well, and for the project as a whole
 - ii) the average gas-oil and water-oil rates during each month for each producing well, and for the project as a whole
 - iii) the monthly cumulative gas, oil and water production for each producing well, and for the project as a whole
 - iv) for each type of fluid being injected, the daily average rate of injection per operating day during each month into each injection well, and for the project as a whole
 - v) for each type of fluid being injected, the weighted average wellhead injection pressure during each month for each injection well, and for the project as a whole
 - vi) for each type of fluid being injected, the monthly cumulative volume of fluid injected to each injection well, and for the project as a whole

- vii) the current volumetrically weighted formation pressure for the project as a whole and a copy of the isobaric map from which this pressure was calculated
- viii) the date and type of any well treatment or workover which must be indicated, in the case of injection wells, on the report of the injected volume, and in the case of producing wells, on the report of the daily average oil production rate
- ix) calculations of the balance during each month between fluids injected into, and fluids withdrawn from, the part of the pool subject to the project and by individual patterns, where applicable
- x) an outline of the method actually in use for the quality control and treatment of fluid being injected, or, where there has been no change in the control or treatment from that outlined in a previous report, a statement to that effect.



Richard Slocomb, P.Eng.
Deputy Commissioner, Engineering
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 27th day of September 2013.

IN THE MATTER of Other Than Normal Spacing within the Mica field – Mica “A” pool as described in the application from Carmel Bay Exploration Ltd. to the Commission dated August 26, 2013.

ORDER 12-09-001-OTN AMENDMENT #2

- 1 Under Section 65.1(2) of the *Petroleum and Natural Gas Act*, Other Than Normal Spacing within the Mica field – Mica “A” pool is hereby approved within the following area;

DLS Twp 81 Rge 14 W6M N/2 Section 27, N/2 & SE/4 Section 33, Section 34,
SW/4 Section 35

DLS Twp 82 Rge 14 W6M SW/4 Section 3 and Section 4.

- 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.



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

DATED AT the City of Victoria, in the Province of British Columbia, this ^{27th} day of September 2013.