

December 23, 2014

4485-7700/2700-59070-20

Derek Brandschwei, P.Eng.
Area Engineer - NEBC
Pengrowth Energy Corporation
2100, 222 – 3rd Avenue SW
Calgary, AB T2P 0B4

Dear Mr. Brandschwei:

**RE: COMMINGLED PRODUCTION SPECIAL PROJECT
PENGROWTH SLAVE d-10-I/94-H-11; WA #2225**

The Oil and Gas Commission (Commission) has reviewed your application dated November 26, 2014 requesting approval to commingle gas production from the Bluesky/Gething with the Banff 'A' pool in the subject well. The Commission has designated the zones under application to be part of the Gutah field – Banff 'A' and Gething 'A' pools.

The subject well was spudded on December 11, 1967 as a deep test well, reaching a total depth of 2971.8 mKB. The well encountered 8.1m of pay within the Banff formation and was deemed the discovery well for the Banff 'A' pool. Gas production began in May 2006, with current cumulative production of 21.6 e6m3. Daily production is approximately 3.6 e3m3. A surface casing vent flow has been traced through carbon isotope analysis to the Gething formation at 944.2 mKB, flow rate of 0.181 e3m3/d. A buildup performed on the surface casing indicated a stabilized shut in pressure of 2,611 kPa. In order to avoid excessive pressure at the surface casing shoe (196.9 mKB), the vent flow will be produced to the sales line.

The Gething 'A' gas will produce up the surface casing vent while the Banff gas will produce through the tubing. The flow streams will mix at surface. Commingling requirements have been met as follows: source and depth have been confirmed, Pengrowth owns mineral rights down to the base of the Banff-Exshaw, surface casing covers to 196.9m KB, the flow is sweet from both zones and cross-flow is not a concern. Commission facility amendment approval is required before tie-in.

The Commission notes this well is off-target to the north and east boundaries of the gas target area measured from the north-east corner of unit 10 block I/94-H-11, with off-setting Open Crown rights. However, the gas production rate, being below the off-target penalized daily gas allowable, is not subject to restriction.

Attached please find Order 14-20-001 designating an area in the Gutah field within the subject formations a Special Project under section 75 of the *Oil and Gas Activities Act* for Commingled Production. Special equipment requirements for production of the surface casing vent are included in the Order. For the purpose of production reporting, a well completion event Unique Well Identifier (UWI) must be established for the Gething zone at 944.2 mKB. Please submit a form BC-11 for the zone which notes this commingled production Approval Order 14-20-001. As well, a commingle Notification form, which can be found on the OGC website (<http://www.bcogc.ca/industry-zone/documentation/Commingling>) must be submitted as indicated on the form.

Should you have any questions, please contact Ron Stefik at (250) 419-4430 or Michelle Gaucher at (250) 419-4482.

Sincerely,



Ron Stefik, Eng.L.
Supervisor, Reservoir Engineering
Oil and Gas Commission

Attachment


IN THE MATTER of an application from Pengrowth Energy Corporation to the Oil and Gas Commission dated November 26, 2014 for Commingled Production approval.

ORDER 14-20-001

- 1 Under Section 75(1)(a) of the *Oil and Gas Activities Act*, the Commission designates the commingling of production from the Gutah field – Banff ‘A’ and Gething ‘A’ pools as a special project for the optimum recovery of natural gas by commingling production within the following area;

NTS 94-H-11 Block G - Unit 91
 Block H - Unit 100
 Block I - Unit 10
 Block J - Unit 1.

- 2 Under section 75(2) of the *Oil and Gas Activities Act*, the special project designation in this Order is subject to the following conditions:
- a) Production from the Gething ‘A’ may flow through the surface casing vent with the Banff flowing through tubing; commingled at surface through the well PENGROWTH SLAVE d-10-I/94-H-11 (WA # 2225).
 - b) Install a check valve between the surface casing vent and the production line to prevent flow from the production line into the surface casing vent.
 - c) Install a pressure relief valve on the surface casing vent to avoid excessive pressure at the surface casing shoe in case that the flow line is shut down.
 - d) Notify the Drilling and Production department any time the flow line is shut in.
 - e) Gas, condensate and water production from the commingled well must be allocated on the Ministry of Finance BC-S1, BC-S2 and BC-08 forms on the basis of Gething ‘A’ 4% and Banff ‘A’ 96%. The allocation factors may be amended to reflect results of any future tests.



Ron Stefik, Eng. L.
Supervisor, Reservoir Engineering
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 23rd day of December, 2014.