BC Oil & Gas COMMISSION

May 31, 2010 1950-4060-32640-02

George Sperling
Production Manager North
ConocoPhillips Canada
P.O. Box 130, Station M
Calgary AB T2P 2H7

Dear Mr. Sperling:

RE: TEMPORARY NATURAL GAS INJECTION APPROVAL
SECTION 100, PETROLEUM AND NATURAL GAS ACT
COPL PENN WEST BOULDER a-61-K/93-O-8; WA# 6683

The Resource Conservation branch of the Commission has reviewed the application, dated May 11, 2010, requesting approval for temporary injection of sour natural gas into the well COPL Penn West Boulder a-61-K/93-O-8 (WA# 6683).

The injected gas stream will originate from the Pine River Gas Plant gathering system. This plant is scheduled for a 23 day maintenance shut-down; line pack gas would normally be flared. It is estimated that 72 mmcsf of gas will be conserved, over a 2 day injection period.

The proposed temporary injection well, a-61-K, is currently producing gas at a rate of 215 e^3m^3/d from the Boulder field, Pardonnet-Baldonnel "A" single well pool. Cumulative production since 1996 is over 89 Bcf, gas containing approximately 6% of each CO_2 and H_2S.

Attached is Approval 10-09-001 for the application, granted under Section 100(1c) of the Petroleum and Natural Gas Act. The Oil and Gas Commission letter dated May 19, 2010, from Ms. Mandy Nelson, states the conditions of approval for aspects concerning pipeline operations.

The injected gas volume, normally a loss to conservation, is exempt from injection metering, and is expected to be produced in due course as production volume from the subject well.

The Commission commends ConocoPhillips Canada for this initiative to conserve natural gas and reduce flaring.

Should you have any questions, please contact the undersigned at (250) 419-4421 or Ron Stefik at (250) 419-4430.

Sincerely,

Richard Slocomb, P. Eng.
Supervisor, Reservoir Engineering
Resource Conservation

Attachment

cc: Mandy Nelson, OGC
Doug Stangeland, Ministry of Finance

APPROVAL 10-09-001

THE PROVINCE OF BRITISH COLUMBIA
PETROLEUM AND NATURAL GAS ACT
OIL AND GAS COMMISSION

IN THE MATTER of a scheme for the temporary holding by ConocoPhillips Canada (ConocoPhillips) of natural gas from the Pine River Gas Plant gathering system by injection and re-production through a well completed in the Boulder field, Pardonnet-Baldonnel "A" single well pool.

NOW THEREFORE, the Commission, pursuant to Section 100 of the Petroleum and Natural Gas Act, R.S.B.C. 1996, c.361 orders as follows:

The scheme of ConocoPhillips by injection and production through a well as described in the application dated May 11, 2010 is hereby approved, subject to the following terms:

1. Natural gas may be injected and re-produced through the well COPL Penn West Boulder a-61-K/93-O-8 (WA# 6683).
2. Metering of the injected gas is not required.
3. The gas injection period shall not exceed 3 days, within the month of June 2010.
4. The injection pressure at the bottom-hole must not exceed the formation fracture pressure.
5. This scheme approval may be subject to review and modification, if deemed appropriate.
6. This operation is subject to any other related approvals that may be issued by the Oil and Gas Commission or the Ministry of Finance.

Richard Slocomb
Supervisor, Reservoir Engineering
Resource Conservation

DATED AT the City of Victoria, in the Province of British Columbia, this 31st day of May 2010.

BC Oil & Gas COMMISSION

MEMO

May 31, 2010

RE: TEMPORARY NATURAL GAS INJECTION APPROVAL
SECTION 100, PETROLEUM AND NATURAL GAS ACT
COPL PENN WEST BOULDER a-61-K/93-O-8; WA# 6683

This refers to an application by ConocoPhillips of May 11, 2010, to inject pack gas from the Pine River gas plant gathering system into a well using an existing compressor. Such gas would normally be flared at the time of plant maintenance turn-around (every 3 or 4 years). Injection period will likely be 2 days. It is assumed that all injected raw gas will be re-produced; both streams are sour.

The gathering system gas originates from numerous wells & interest owners in the area. Application documentation indicates that, since the gas would be flared (no value) no issue or concern was raise when this was proposed at an area operators meeting by the applicant.

The approval is enabled under Section 100 of the Petroleum and Natural Gas Act, action deemed to be "processing ...of natural gas'.

Approval of schemes

100 (1) A scheme for any of the following must not be proceeded with unless the commission, by order, approves the scheme on terms the commission specifies:

(a) the development or production of petroleum or natural gas, or both, from a field or pool or portion of a field or pool;

(b) the experimental application of oil field technology as defined by regulation;

(c) the processing, storage or disposal of natural gas;

(d) the gathering, storage and disposal of water produced from a field or pool.

(2) For the purposes of subsection (1), **"development or production"** includes the use of repressuring, recycling, pressure maintenance or any other enhanced recovery technique.

The word "**storage**" **has been purposefully omitted** from the approval and cover-letter. Gas storage requires a storage licence with a $5,000 fee (Section 2(a) of the Petroleum and Natural Gas General Regulation), making the timing and economics of this proposal even more marginal, and possibly ending the project.

Use of Section 100 for this unusual application has precedence from Approval # 05-09-002 to Anadarko Canada, using intersecting horizontal wells to transport natural gas under the Buckinghorse River valley.

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A video conference meeting was held with the applicant, OGC and Ministry of Finance Revenue. Revenue staff did not raise any concerns. Balancing injection & production volumes, and associated royalties impacts, remain the responsibility of Revenue; however no special royalty consideration or notation of injected volume is required. Well CE status is **not** to be changed to "injection" via BC-11 for limited period involved.

The injected gas volume is expected to be produced over the course of the life of the well. Cumulative well production is over 89 Bcf, with remaining reserves of ~ 22 Bcf. At current gas rate of 215 e^3m^3/d, injected gas would be re-produced in 9.4 days, and represent 0.06% of total well reserves. Flat life of remaining reserves is 8 years. The NPV of the injected gas, at well end-life, is nominal.

A volume of approximately 72 mmscf of sour gas will not be flared, and royalty will be eventually collected, a very positive outcome.

The applicant is to be commended. If successful, it is recommended this action should be made a policy of the Commission, where wells and facilities are available. An OGC Information Letter/Bulletin may be appropriate.

Ron Stefik
Sr. Technical Advisor, Reservoir Engineering