



OIL AND GAS COMMISSION

December 17, 1999

2400-4805-59240-07
OGC990564

Mr. Dick VanAppelen
Exploitation Engineer
Canadian Natural Resources Limited
2000, 425 - 1st St. SW
Calgary, AB T2P 3L8

CNRL PROJECT (05) (07) (09)

Dear Mr. VanAppelen:

**RE: APPLICATION FOR CONCURRENT PRODUCTION WITH
GOOD ENGINEERING PRACTICE (AMENDMENTS)
BUICK CREEK LOWER HALFWAY "C", "D" AND "I" POOLS**

(05) (07) (09)

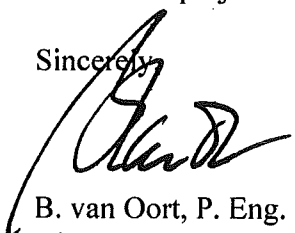
Attached are amendments to the Concurrent Production Approval with Good Engineering Practice (GEP) for the subject pools, as requested in your application dated November 30, 1999.

The Commission agrees with the conclusions presented in your application, specifically that the heterogeneous nature of the reservoir is not favourable for secondary recovery techniques. Infill horizontal drilling, as conducted by Canadian Natural Resources Limited, would appear to offer the greatest potential for maximizing oil recovery from the pools. The Approvals 94-06-005 (Amendment #4), 95-06-005 (Amendment #5) and 97-06-001 (Amendment #1) are hereby amended under section 97 of the Petroleum and Natural Gas Act.

These approvals are intended to allow operational flexibility in order to maximize oil recovery. Gascap pay has been mapped in these Lower Halfway pools. The Commission remains concerned that wells not be completed and allowed to produce free gas until the oil resource has been fully exploited. Therefore, as a condition of these approvals, individual well control and project daily gas production limits will remain in effect.

There are no equity issues at this time, however the approval conditions may be modified if oil wells outside the project area are completed in the subject pool by another operator.

Sincerely,



B. van Oort, P. Eng.
Director
Engineering and Geology Branch

Attachments

ENGINEERING AND GEOLOGY BRANCH

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APPROVAL 94-06-005 (AMENDMENT #4)

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


IN THE MATTER of a Concurrent Production scheme with Good Engineering Practice (GEP) of Canadian Natural Resources Limited (CNRL) for producing the Buick Creek Lower Halfway "C" oil pool without spacing and target restrictions, and without a project oil allowable.

NOW, THEREFORE, the Commission, pursuant to section 97 of the Petroleum and Natural Gas Act R.S.B.C. 1996, c.361 hereby approves an amendment to the Concurrent Production project of CNRL for drilling horizontal wells without spacing and target restrictions and for concurrent production of oil and gas without an oil allowable, as such scheme is described in:

an Application from CNRL to the Commission dated March 22, 1996, and November 30, 1999 and related submission.

This project is approved, subject to the conditions herein contained and, in particular:

1. The area of the scheme shall consist of units 74 -78, 84 - 88, 94 - 98 of Block I /94-A-11 and units 4 - 8, 14 - 17, 24 - 27 of Block A/94-A-14.
2. The daily oil allowable is waived.
3. Gas production from the project will be limited to $426.0 \times 10^3 \text{ m}^3/\text{d}$.
4. Any well producing at an oil rate of less than $4.0 \text{ m}^3/\text{d}$ must be shut-in if the GOR exceeds $1,800 \text{ m}^3/\text{m}^3$.
5. All gas production will be conserved.
6. The requirements of section 9 of the *Drilling and Production Regulation* are hereby waived, provided that oil wells within the scheme area are not completed nearer than 100 m to the sides of the approved area.
7. This approval may be modified or rescinded at a later date if deemed appropriate.



B. van Oort
Director
Engineering and Geology Branch

DATED AT the City of Victoria, in the Province of British Columbia, this 17 day of December, 1999.

APPROVAL 95-06-005 (AMENDMENT #5)

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


IN THE MATTER of a Concurrent Production scheme with Good Engineering Practice (GEP) of Canadian Natural Resources Limited (CNRL) for producing the Buick Creek Lower Halfway "D" oil pool without spacing and target restrictions, and without a project oil allowable.

NOW, THEREFORE, the Commission, pursuant to section 97 of the Petroleum and Natural Gas Act R.S.B.C. 1996, c.361 hereby approves an amendment to the Concurrent Production project of CNRL for drilling horizontal wells without spacing and target restrictions and for concurrent production of oil and gas without an oil allowable, as such scheme is described in:

an Application from CNRL to the Commission dated March 22, 1996, and November 30, 1999 and related submission.

This project is approved, subject to the conditions herein contained and, in particular:

1. The area of the scheme shall consist of units 92 - 94 of Block I /94-A-11 and units 2 - 5, 12 - 15, 22 - 25, 32 - 35, and 42 - 45 of Block A/94-A-14.
2. The daily oil allowable is waived.
3. Gas production from the project will be limited to $284.0 \times 10^3 \text{ m}^3/\text{d}$.
4. Any well producing at an oil rate of less than $4.0 \text{ m}^3/\text{d}$ must be shut-in if the GOR exceeds $1,800 \text{ m}^3/\text{m}^3$.
5. All gas production will be conserved.
6. The requirements of section 9 of the *Drilling and Production Regulation* are hereby waived, provided that oil wells within the scheme area are not completed nearer than 100 m to the sides of the approved area.
7. This approval may be modified or rescinded at a later date if deemed appropriate.



B. van Oort
Director
Engineering and Geology Branch

DATED AT the City of Victoria, in the Province of British Columbia, this 17 day of December, 1999.

APPROVAL 97-06-001 (AMENDMENT #1)

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

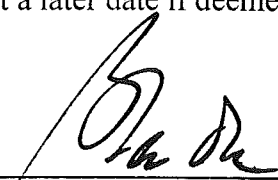
IN THE MATTER of a Concurrent Production scheme with Good Engineering Practice (GEP) of Canadian Natural Resources Limited (CNRL) for producing the Buick Creek Lower Halfway "I" oil pool without spacing and target restrictions, and without a project oil allowable.

NOW, THEREFORE, the Commission, pursuant to section 97 of the Petroleum and Natural Gas Act R.S.B.C. 1996, c.361 hereby approves an amendment to the Concurrent Production project of CNRL for drilling horizontal wells without spacing and target restrictions and for concurrent production of oil and gas without an oil allowable, as such scheme is described in:

an Application from CNRL to the Commission dated January 2, 1997, and November 30, 1999 and related submission.

This project is approved, subject to the conditions herein contained and, in particular:

1. The area of the scheme shall consist of units 43, 53, 54, 63 – 65, and 73 - 75 of Block A/94-A-14.
2. The daily oil allowable is waived.
3. Gas production from the project will be limited to $137.0 \times 10^3 \text{ m}^3/\text{d}$.
4. Any well producing at an oil rate of less than $4.0 \text{ m}^3/\text{d}$ must be shut-in if the GOR exceeds $1,800 \text{ m}^3/\text{m}^3$.
5. All gas production will be conserved.
6. The requirements of section 9 of the *Drilling and Production Regulation* are hereby waived, provided that oil wells within the scheme area are not completed nearer than 100 m to the sides of the approved area.
7. This approval may be modified or rescinded at a later date if deemed appropriate.



B. van Oort
Director
Engineering and Geology Branch

DATED AT the City of Victoria, in the Province of British Columbia, this 17 day of December, 1999.