



April 6, 2000

7600-7400-59240-16
OGC-000112

Mr. Garnet Giroux
North Group Operations Engineer
Canadian Hunter Exploration Ltd.
2800 605 5th Ave SW
Calgary AB T2P 3H5

Dear Mr. Giroux:

**Re: Application for Acid Gas and Water Injection
Canhunter et al Ring d-49-B/94-H-16; WA 10503
Debolt Formation**

This refers to your application dated February 8, 2000 requesting approval to concurrently inject acid gas and water into the Debolt formation.

Approval # 97-16-003 to inject acid gas only was granted on January 12, 1998 by the Ministry of Employment and Investment. Technical review of the injection data indicates that the well has been successfully injecting acid gas since February 1998. The proposal by Canadian Hunter Exploration Ltd. for concurrently injecting acid gas and water is considered appropriate. In view of this, the original approval is hereby amended to reflect this.

Please find Approval 97-16-003 (Amendment #1) for the application, granted under section 100 of the Petroleum and Natural Gas Act.

Sincerely,

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

Attachment

**Approval Letters to Industry
GEP, SWD, CONCURRENT PROD,
PRESSURE MAINTENANCE,
WATERFLOOD, ETC.**

Copy 10

- | | |
|--------------------------|----------------------|
| <input type="checkbox"/> | Wellfile (originals) |
| <input type="checkbox"/> | 59240 |
| <input type="checkbox"/> | Daily |
| <input type="checkbox"/> | Resource Revenue |
| <input type="checkbox"/> | S. Chicorelli |
| <input type="checkbox"/> | R. Stefik |
| <input type="checkbox"/> | G. Farr |
| <input type="checkbox"/> | P. Attariwala |
| <input type="checkbox"/> | C. Gibson |
| <input type="checkbox"/> | D. Krezanoski |

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APPROVAL 97-16-003 (Amendment #1)

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

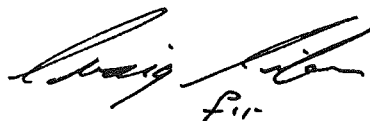
IN THE MATTER of a proposal (the Project) by Canadian Hunter Exploration Ltd. (CHEL) to inject acid gas into the Debolt Formation in the well Canhunter et al Ring d-49-B/94-H-16 (the well).

The approval granted pursuant to section 100 of the Petroleum and Natural Gas Act, R.S.B.C. 1996, c.361 by the Ministry of Employment and Investment on January 12, 1998 is hereby amended as follows:

The Project of CHEL for injection of acid gas into the Debolt Formation in the well, as such proposal is described in an application dated April 30, 1997 and supplemented with an additional application dated February 8, 2000 to concurrently dispose of acid gas and water is hereby approved, subject to terms and conditions herein contained:

1. Acid gas and water shall be injected only in the well.
2. The wellhead injection pressure must not exceed 8, 000 kilopascals gauge.
3. The sandface injection pressure must not exceed 9, 000 kilopascals gauge.
4. Acid gas injection rate must not exceed $22.5 \times 10^3 \text{ m}^3/\text{d}$ expressed at 101.325 kilopascals absolute and 15 degrees Celsius.
5. The cumulative volume of acid gas injected must not exceed $82.0 \times 10^6 \text{ m}^3$ expressed at 101.325 kilopascals absolute and 15 degrees Celsius.
6. Water injection rate must not exceed $250 \text{ m}^3/\text{d}$.
7. CHEL must monitor the casing, conduct annular packer isolation tests and implement appropriate corrosion protection measures to maintain the hydraulic isolation of the injection zone.
8. CHEL must monitor the acid gas concentration in the offsetting producing wells for increases in the acid gas content.
9. The Wellhead Emergency Shut-Off Device and Subsurface Safety Valve must be installed to operate "fail-safe". The Wellhead Emergency Shut-Off Device must be linked to hydrogen sulphide detectors at the wellhead.
10. A barricade must be installed around the wellhead to withstand vehicle collision.
11. All injection operations must be immediately suspended if any injection equipment, monitoring equipment or safety devices considered necessary for safe operation should fail.

12. CHEL must submit a progress report to the Commission for each 6-month period the Project is in operation, determined from the first day of injection. This requirement may be amended at the request of the operator after the Project has been in operation for a period of three (3) years. The progress report is due within 60 days after the end of each period and must contain:
 - a) details of any workover or treatment program done on the well with reasons for the workover and results of the workovers,
 - b) a discussion of any changes in injection equipment and operations,
 - c) a general review of the operation of the Project including identification of problems, remedial action taken and results of the remedial action on project performance,
 - d) a discussion of the overall performance of the Project,
 - e) an evaluation of all monitoring done during the reporting period including corrosion protection, fluid analyses, logs and any other data collected,
 - f) a table showing monthly volumes of injected acid gas and water, corresponding maximum wellhead injection pressures, maximum daily injection rates, average wellhead temperatures and hours on injection,
 - g) the volume-weighted average composition and formation volume factor for the injected acid gas,
 - h) a plot showing monthly injection volume and average pressure versus time on an on-going basis, and
 - i) a table showing tonnes of sulphur and carbon dioxide disposed on a monthly and cumulative basis.
 - j) a table showing volume of water disposed on a cumulative basis.
13. The operations of the Project will be subject to periodic review by the Commission. The Manager, Reservoir Engineering and Geology or the Manager, Operations Engineering, may issue general guidelines regarding the operations of the Project.
14. This approval may be modified or rescinded for noncompliance of the conditions or unsafe operations.



Bou van Oort, Director
Engineering and Geology Branch
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 6th day of April, 2000.