

Ontario Energy
Board

Commission de l'Énergie
de l'Ontario



EB-2006-0002
EB-2006-0003

IN THE MATTER OF the *Ontario Energy Board Act* 1998, S.O. 1998, c.15, Sch. B;

AND IN THE MATTER OF the *Oil, Gas and Salt Resources Act*, R.S.O. 1990, c. P.12;

AND IN THE MATTER OF an application by Enbridge Gas Distribution Inc. to the Ministry of Natural Resources for permits to drill two oil wells in a designated storage area in the Township of Moore, County of Lambton.

BEFORE: Paul Sommerville
Presiding Member

Paul Vlahos
Member

REPORT TO THE MINISTER OF NATURAL RESOURCES

January 30, 2006

Table of Contents

THE REFERENCE AND THE BOARD’S PROCESS.....	3
THE REFERENCE	3
THE BOARD’S PROCESS	3
THE APPLICATIONS.....	4
BACKGROUND	4
NEED FOR THE OIL WELLS	4
THE PROPOSED WELLS	4
IMPACT ON GAS STORAGE OPERATIONS	5
LAND MATTERS.....	6
ENVIRONMENTAL MATTERS	6
FINANCIAL AND RATE MAKING MATTERS	7
BOARD RECOMMENDATIONS	7
APPENDIX A – CONDITIONS OF APPROVAL	9

THE REFERENCE AND THE BOARD'S PROCESS

THE REFERENCE

On December 15, 2005, Enbridge Gas Distribution Inc. ("Enbridge" or the "Company"), applied to the Minister of Natural Resources (the "Minister") pursuant to subsection 10(1) of the *Oil, Gas and Salt Resources Act* R.S.O. 1990, c. P.12, for licences to do the following:

- drill a horizontal oil production well, Imperial Corunna #12H (horizontal #2) Moore 6-19-X ("IC-12-H#2"), in the Corunna Designated Storage Area, Township of Moore, County of Lambton; and
- drill a horizontal oil production well, Tecumseh Corunna #24H (horizontal #2) Moore 3-19-X ("TC-24-H#2"), in the Corunna Designated Storage Area, Township of Moore, County of Lambton.

Since the proposed wells are located within a designated gas storage area, the Minister, by letter dated January 5, 2006, referred the applications to the Ontario Energy Board (the "Board"), pursuant to subsection 40(1) of the *Ontario Energy Board Act* 1998, S.O. c 15, Sch B. (the "Act"). The Board assigned File No. EB-2006-0002 and EB-2006-0003 to IC-12-H#2 and TC-24-H#2, respectively.

THE BOARD'S PROCESS

By letter dated January 20, 2005, Enbridge requested that the Board consider the application without convening a hearing. Section 40(2) of the Act states that the Board "may hold a hearing before reporting to the Minister if the applicant does not have authority to store gas in the area or, in the Board's opinion, the special circumstances of the case require a hearing". Enbridge argued that the circumstances of the application did not require the Board to hold a hearing.

In this case Enbridge does have authority to store gas in the area and, in the Board's opinion, there are no special circumstances that require a hearing. The Board has considered the information submitted by Enbridge in support of its application and finds that a hearing is not required in the circumstances of this case.

In making this determination, the Board noted that a hearing was held in December, 2000 (EB-2000-0422) with respect to an application by Enbridge to drill three wells (the "previous drilling application"), in which no parties intervened. Enbridge's current application seeks approval of the Ministry of Natural Resources to re-enter two of the wells drilled as part of that previous drilling application. A third well, drilled in Enbridge's Seckerton Designated Storage Area, was also considered in the previous

drilling application, but is not at issue in this case. A complete record of the previous drilling application, together with all exhibits, is available for public inspection at the Board's offices

THE APPLICATION

BACKGROUND

The Company's evidence is that the Corunna reef is a typical Silurian Guelph pinnacle reef located in the southern extension of the Michigan basin reef trend. As with other typical pinnacle reefs, Corunna is composed of limestone and dolomite and is covered by a layer of impermeable anhydrite.

The Corunna reef consists of a gas zone and an underlying oil zone. The Corunna reef has a total thickness of approximately 370 feet, of which the upper 265 feet is the gas cap and the lower 105 feet is the oil zone. The first well was drilled into the Corunna reef in 1950. Oil and gas were produced from the Corunna reef until 1964, at which time gas production ceased and the Corunna reef was converted to gas storage. Since that time, oil production has continued coincident with gas storage operations.

NEED FOR THE OIL WELLS

Enbridge submitted that the two wells were put on production by May 2001 and have produced very little oil due to low permeability reservoir rock. The original wells were drilled properly but failed to encounter the high porosity oil zones at the depths predicted. It is the Company's position that more of the remaining oil reserves can be accessed by drilling horizontal wells down in the oil zone, below the gas-oil contact, and into areas the Company believes to have higher levels of remaining recoverable reserves.

THE PROPOSED WELLS

The Company proposes to re-enter the Imperial Corunna # 12H well and the Tecumseh Corunna # 24H well in the Corunna Designated Gas Storage Area and to install a new horizontal well in each well.

For each well the Company proposes to re-enter the existing vertical section and drill a second horizontal well bore below and away from the existing horizontal well. The Company noted that drilling in this manner allows it to avoid the gas storage zone and provide access to a high porosity oil zone near the base of the reef which is considerably below the gas-oil contact zone.

Based on information gathered through drilling, storage operations and oil production over the last 40 years, including data obtained through drill cuttings, well logs and short term well tests, the Company has determined the subsurface location of the gas-oil contact and the vertical boundaries of the oil bearing formation.

The Company noted that horizontal drilling is a proven technique and horizontal wells are commonly used to recover additional reserves in many older producing pools similar to the Corunna pool.

The Company pointed out that by drilling horizontally across the oil zone a greater amount of the reef reservoir can be accessed by one well compared to the amount of the reservoir accessed by a vertical well. Also, by drilling low in the oil zone, the recovery mechanism benefits from the force of gravity as oil will drain down into the wellbore.

The wells will be operated concurrently with the gas storage operations in the same manner as the seven existing oil wells within the Corunna pool. Oil and associated gas will be produced from the oil zones of each pool and collected through the existing production gathering system into central locations. The oil will be treated and transported to the refinery terminal via existing pipelines. The associated gas will be separated from the oil and re-injected back into the pools.

IMPACT ON GAS STORAGE OPERATIONS

The Company submitted that the drilling will not adversely impact the gas storage zone and the oil production will not effect the gas storage operations for the following reasons:

- the vertical portions of the oil wells already exist and were not drilled through the gas storage zone of the formation; and
- the horizontal portions of the wells will enter the oil bearing portions of the formation from the side and proceed laterally below the gas-oil contact so that the gas zone will not be exposed to drilling fluids.

The Company noted that oil production has occurred concurrently with gas storage in these pools for over 35 years without any adverse impact on the operation, integrity or long term economic viability of the gas storage facilities. While there is no reason to suspect that an adverse impact would occur in the future, if a leak were to occur in these new wells, the Company stated that the leak would be repaired, or if repairs were not feasible the well would be plugged and abandoned to seal off the leak and maintain the integrity of the reservoir for continued gas storage and oil production.

The Company also noted that there are no known faults, or other fractures, which could compromise the operations of the gas storage assets and that there is no possibility of communication with another formation in the designated gas storage area. The Company also noted that the two previous horizontal wells were drilled successfully.

Oil production will be limited to approximately six months from January to July of each year when the pressures of the pools are at the lowest. Gas produced with oil is collected and re-injected into the reef. When storage operating pressures are higher, more gas is dissolved in the oil than the gas re-injection facilities can process. During these periods, typically in the summer and fall, oil production is shut in.

By further depleting these oil reserves; Enbridge anticipates that the gas storage operations may be slightly enhanced since the reduced volume of oil in the formation will increase the volume available for gas storage.

LAND MATTERS

Both well sites, IC-12-H#2 and TC-24-H#2, are on lands owned by the Company. However, parties with a participating economic interest in the Corunna oil producing unit are considered to be directly affected by the application. All directly affected landowners in the Corunna Production Unit were notified of the application and will share in increased royalty payments as a result of the additional production from these wells. The company stated that it did not receive comments from any landowners in response to the notification letters.

The Company indicated that notification of these landowners was consistent with the notification requirements directed by the Board in the previous drilling application. The Company indicated that the drilling operation involves considerably less material and equipment staging than the previous drilling program. Further, it is expected that drilling will take approximately one week per well as opposed to three weeks for the previous operation.

ENVIRONMENTAL MATTERS

The Company has not performed a detailed Environmental Analysis or Assessment in relation to this drilling application. However, based on the submission from the Company that this drilling program is much less disruptive than the previous drilling which took place in 2000, and having reviewed the *Environmental Post Drilling Report EB-2000-0422* which Enbridge filed with the Board, the Board is of the view that a detailed analysis is not required in this case. Further, Enbridge indicated that it would follow the relevant Provincial Operating Standards and that all lands in the immediate area of the well will be restored to its original condition.

Roads

Permanent access roads were constructed in association with the previous drilling activity.

Drilling

The Company will use a rotary drilling rig and directional drilling techniques. In addition, pitless drilling using surface fluid tanks to minimize any surface contamination. All drill cuttings will be collected, solidified, tested and taken to an approved landfill site.

Drill Sites

At the drill sites, all topsoil will be removed and conserved. Geotextile will be layed below a bed of granular fill to support the drilling equipment. The Company has indicated that all land in the immediate area of the well will be restored to its original condition and that any contaminated soil would be tested and removed as required.

FINANCIAL AND RATE MAKING MATTERS

Enbridge confirmed that all activities related to the oil wells are non-utility activities and that all of the drilling and producing costs and risks will be borne by the Company's shareholders and there will be no impact on the utility's customers. The Company also stated that no investment in gas storage assets will be required. The Company will recover natural gas as a by-product of oil production and this recovered gas will be re-injected into the storage formation.

The Company stated that ratepayers may marginally benefit from increased capacity of the gas storage portion of the formation, and there will be no charge to the regulated utility for this incremental gas storage space.

BOARD RECOMMENDATIONS

The Board finds that on the strength of the filed material and Enbridge's stature as a responsible and competent oil producer and gas storage operator, there are no outstanding matters that need to be addressed. The Board therefore recommends that the Minister of Natural Resources issue licences to Enbridge Gas Distribution Inc. to drill the following oil wells, subject to the conditions attached as Appendix A:

- a horizontal oil production well, Imperial Corunna #12 (horizontal #2) Moore 6-19-X, in the Corunna Designated Gas Storage Area, Township of Moore, County of Lambton; and
- a horizontal oil production well, Tecumseh Corunna #24H (horizontal #2) Moore 3-19-X, in the Corunna Designated Gas Storage Area, Township of Moore, County of Lambton.

DATED at Toronto, January 30, 2006.

Original signed by

Paul Sommerville
Presiding Member

Original signed by

Paul Vlahos
Member

APPENDIX A – CONDITIONS OF APPROVAL

EB-2006-0002

EB-2006-0003

APPLICATIONS FOR OIL WELL DRILLING LICENSES IN THE CORUNNA DESIGNATED STORAGE AREAS

Conditions of Approval

1. Authorization for the issuance of the oil well licences in the Corunna Unit is limited to twelve (12) months from the date of the Board's Report to the Minister of Natural Resources.
2. Enbridge Gas Distribution Inc. shall offer to pay to the landowners or tenant farmers fair, just and equitable compensation for any damages, including present and future crop damage, arising from the proposed oil well drilling.
3. Enbridge Gas Distribution Inc. shall ensure that drilling and the movement of drilling equipment are carried out in compliance with all procedures, specifications and plans submitted to the Board in the proceeding, and as follows:
 - a. Enbridge Gas Distribution Inc. shall make reasonable efforts to keep the landowners and tenant farmers, or their designated representatives, fully informed of its drilling operations and minimize inconvenience to them;
 - b. drilling activities shall be coordinated so as to minimize disruption of land use, in particular agricultural use;
 - c. Enbridge Gas Distribution Inc. shall, subject to the affected landowners', tenant farmers' or their designated representatives' approval, construct permanent or temporary all-weather access roads to the well sites before commencing drilling operations;
 - d. if the wells are drilled on ground that is not entirely frozen or on land that is drained or farmed, Enbridge Gas Distribution Inc. shall, subject to the recommendation by an independent tile consultant and subject to the landowners' approval, construct upstream and downstream drainage headers adjacent to the drilling area and adjacent to access roads that cross existing systematic drainage tiles prior to the delivery of heavy equipment so that continual drainage will be maintained;
 - e. Enbridge Gas Distribution Inc. shall make reasonable efforts to contact and discuss the stripping of top-soil with the landowners and tenant farmers, or their designated representatives, before any site preparation work is undertaken and prior to moving equipment onto the property;

- f. should disagreement occur concerning tile drainage repairs, Enbridge Gas Distribution Inc. shall engage an independent tile drainage consultant to examine and report on the necessary tile repairs in the vicinity of the well site and along the route of the access road. Tile repairs shall be made as soon as practicable so that disruption of farming and other land uses is minimized. Repairs to, or replacement of tile, shall occur for any type of damage to the tile or wherever soil compaction has occurred, not just where drains have been severed;
 - g. holding tank shall be removed and the well site shall be cleared of drilling debris and gravel as soon as practicable after well drilling, casing, cementing and testing have been completed;
 - h. care shall be taken to ensure that no drilling debris, gravel or drilling fluids mix with topsoil or subsoil during drilling operations;
 - i. if construction occurs when the ground is not entirely frozen, the entire wellsite working areas shall be protected with a geotextile material, a granular pad or a comparable alternate method to be agreed upon with the landowner.
- 4. Enbridge Gas Distribution Inc. shall designate one of its employees as project manager who will be responsible for the fulfillment of these conditions and shall provide the employee's name to the Board, the Ministry of Natural Resources and all appropriate landowners. At least one week prior to construction, the Board, the Ministry of Natural Resources and all appropriate landowners shall be informed of the date that construction is to commence.
- 5. An environmental post-drilling report shall be filed with the Board and the Ministry of Natural Resources within fifteen months of the date on which all the proposed wells are put into service.
- 6. The Board's designated representative for the purpose of these Conditions of Approval shall be the Manager, Facilities.