

ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

**PETROBANK ENERGY AND RESOURCES LTD. AND
WEST STAR OIL & GAS LTD.
COMPULSORY POOLING
MORINVILLE FIELD**

**Decision 2002-077
Application No. 1259731**

DECISION

The Alberta Energy and Utilities Board has considered the findings and recommendations set out in the following examiner report, adopts the recommendation, and directs that Application No. 1259731 be approved.

DATED at Calgary, Alberta, on September 3, 2002.

ALBERTA ENERGY & UTILITIES BOARD

<Original signed by>

B. T. McManus, Q.C.
Acting Chairman

**EXAMINER REPORT RESPECTING
PETROBANK ENERGY AND RESOURCES LTD. AND
WEST STAR OIL & GAS LTD.
COMPULSORY POOLING
MORINVILLE FIELD**

**Decision 2002-077
Application No. 1259731**

1 RECOMMENDATION

The examiners have considered the evidence and recommend that

- the Alberta Energy and Utilities Board (EUB/Board), with the approval of the Lieutenant Governor in Council, issue an order under section 80 of the Oil and Gas Conservation Act (the Act) designating that all tracts within Section 12 of Township 54, Range 26, West of the 4th Meridian, (Section 12-54-26 W4M) (Section 12) be operated as a unit for the production of gas from the Belly River Group, the Ostracod Sandstone, and the Ellerslie Member, through the well to be drilled in Legal Subdivision (LSD) 4 of the section;
- the order allocate costs and revenues respecting the Belly River Group and the Ostracod Sandstone for each tract in Section 12 on a tract area basis, with an 18.75 per cent allocation to the tract comprised of LSDs 3 and 4 and the South halves of LSDs 5 and 6, and an 81.25 per cent allocation to the remainder of the section;
- the order allocate costs and revenues respecting the Ellerslie Member for each tract in Section 12 on a pool area basis as discussed in the report, with a 75 per cent allocation to the tract comprised of LSDs 3 and 4 and the South halves of LSDs 5 and 6, and a 25 per cent allocation to the remainder of the section;
- the order specify that a penalty of 200 per cent be applied to a tract's share of the actual costs of drilling the well to, and completing it in, the formations named in the order, if the tract owner does not pay its share of costs within 30 days of the later of the pooling order being issued, the tract owner receiving written notice of its share of costs, and the well commencing production; and
- the order designate Petrobank Energy and Resources Ltd. (Petrobank) as the operator of the well to be drilled in LSD 4.

2 INTRODUCTION

2.1 Application, Intervention, and Hearing

Petrobank, on behalf of itself and West Star Oil & Gas Ltd. (West Star), filed Application No. 1259731 under Section 80 of the Act for an order prescribing that all tracts within the drilling spacing unit comprised of Section 12 be operated as a unit for the production of gas from all formations from surface to the base of the Mannville Group, excepting the Upper Mannville, through a well to be drilled in LSD 4 of the section.

Dynamic Oil & Gas, Inc. (Dynamic), on behalf of itself, its partners Energy North Ltd. (Energy North) and Trioco Resources Inc. (Trioco), and the mineral owner Sisters of Charity (Grey Nuns), filed a submission opposing the application.

The application was considered at a public hearing commencing on July 10, 2002, by Board appointed examiners F. Rahnama, Ph.D. (Presiding Member), W. Elsner, P.Geol., and B. C. Hubbard, P.Eng.

The participants at the hearing and abbreviations used in this report are listed in the following table:

THOSE WHO APPEARED AT THE HEARING

Principals and Representatives (Abbreviations Used in Report)

Witnesses

Petrobank Energy and Resources Ltd. (Petrobank)	R. J. Baird, B.Sc., P.Geoph.
H. R. Hansford	E. Lyngberg, B.Sc., M.Sc.
J. Bright	J. Salvador

Dynamic Oil and Gas, Inc. (Dynamic)	J. R. Britton, P.Eng.
P. J. McGovern	D. K. Umbach
	J. White, Geol. I. T.

Alberta Energy and Utilities Board staff	
J. P. Mousseau, Board Counsel	
K. L. Bieber	
K. Fisher	

2.2 Background

Petrobank and West Star obtained leases for the Alberta Crown and freehold gas for the zones of interest in all of Section 12, except for LSDs 3 and 4 and the south halves of LSDs 5 and 6, where the gas rights owned by the Sisters of Charity (Grey Nuns) are leased by Dynamic and its partners Trioco and Energy North.

Petrobank and Dynamic used different terminology for the geological stratum of particular

interest in the application. Petrobank referenced the interval from 1163 to 1169 metres (m) in the well located in LSD 3 of Section 12 (the 3-12 well) as the Upper Ellerslie. Dynamic referred to the same zone in the 3-12 well as equivalent to the Basal Quartz B zone identified in a well located in LSD 6-1-54-26 W4M to the south of the Section 12. The examiners have chosen to refer to the sand involved as part of the Ellerslie Member to maintain a consistent terminology throughout the report.

Evidence was presented at the hearing that the interests in Section 12 associated with the Viking Formation and an interval identified between 1125 to 1135 m in a well located in LSD 12-12-54-26 W4M (the 0/12-12 well), which Petrobank identified as the Ostracod “lime”, had previously been pooled. Accordingly, the examiners did not include these two zones in their consideration of the application. However, the interests for an interval from 1135 to 1145 m in the 0/12-12 well, identified by Petrobank as the Ostracod Sandstone, have not been previously pooled among owners in Section 12, and the examiners considered this zone to be part of the application.

2.3 Preliminary Matters

At the commencement of the hearing, Dynamic indicated that it did not object to certain aspects of the application, but only as it applied to the Ellerslie Member. The intervener requested clarification as to whether matters related to the Ellerslie Member would be considered as a separate application. Petrobank’s position was that no formation could be excepted out of the Ellerslie Member and that accordingly it would like to proceed with the full application. The examiners decided to proceed with the application as filed. There was no further discussion on this matter at the hearing.

Dynamic objected to Petrobank filing a submission on July 5, 2002, on the basis that it did not comply with section 16 of the EUB *Rules of Practice*. Dynamic submitted that there was no information as to when the submission was prepared, who prepared it, what the qualifications were of the person who prepared the submission, or whether the submission was in support of the application. In addition, the submission was not filed by July 2, 2002, the date for submissions respecting the application as noted in the Notice of Hearing for the application. Petrobank submitted that Dynamic had a reasonable opportunity to learn of the evidence filed, as it was filed three clear days before the start of the hearing. Petrobank also argued that the material was identified as a response to Dynamic’s submission, it was prepared using Dynamic’s evidence, and was Petrobank’s interpretation of Dynamic’s evidence. The applicant also said that it intended to qualify the witnesses with respect to all the evidence in question. It concluded that the evidence was properly filed.

The examiners noted that the information involved would be useful in the consideration of the application, and were prepared to accept it, upon satisfactory qualification of the authors of the Petrobank submission at the hearing. In addition, the examiners were prepared to postpone the hearing to the afternoon or the next day to provide Dynamic more time to review the material. However, Dynamic agreed to proceed with the hearing without any postponement.

3 ISSUES

The examiners consider the issues respecting the application to be

- the need for a pooling order, and
- the provisions of a pooling order, if issued, and in particular, the basis for allocation and the specific allocation of costs and revenues for production taken from Ellerslie Member.

4 CONSIDERATION OF THE APPLICATION

4.1 Views of Petrobank

Petrobank said that it had been unsuccessful in its negotiations to obtain a voluntary pooling arrangement with Dynamic. It submitted that a compulsory pooling order was therefore required to allow it to drill and produce a well in Section 12 and thereby protect its interests.

The applicant submitted that its primary objective in drilling a well in LSD 4 would be to test for hydrocarbon potential in the Ostracod Sandstone and the Ellerslie Member. A secondary objective would be to test any unpooled hydrocarbon-bearing zones above the Ellerslie Member. On that basis, it requested that the pooling order apply at minimum to the Belly River Group, the Ostracod Sandstone, and the Ellerslie Member. Petrobank also requested that costs and revenues associated with production from all of the zones subject to the pooling order be allocated on a tract area basis.

Petrobank submitted that geological and geophysical information and analyses supported the allocation of costs and revenues respecting the Ellerslie Member on a tract area basis, rather than on a geological basis as argued by Dynamic. The applicant interpreted the Ellerslie Member underlying Section 12 as a series of stacked channel sands having variable thickness and unpredictable areal distribution. Petrobank argued that the log responses for the thin sands were inconclusive, and that there could be economic hydrocarbons in a number of the sands. The applicant concluded that production from the entire Ellerslie Member should therefore be allocated on an area basis.

The applicant acknowledged that none of the wells drilled in Section 12 had been completed in any Ellerslie sand. However, it interpreted gas pay in the Upper Ellerslie sand in the 3-12 well and it mapped an Upper Ellerslie pool as extending over only a portion of the section as shown on the attached figure. It further argued that there may be bypassed Ellerslie sand pay as little as 1 metre thick in other wells in the section, and it mapped potential pay for the entire Ellerslie Member over all of Section 12. It noted that the zone increased in thickness in a westerly direction across Section 12, giving a higher probability of encountering productive Ellerslie sands at the proposed well location in LSD 4.

Petrobank argued that the seismic data could not be used to map the Ellerslie sands as argued by Dynamic. In the applicant's view, the seismic wave forms presented by Dynamic and used to map the edges of the Upper Ellerslie pool underlying Section 12 were variable within the

anomaly interpreted by Dynamic and identical in character to other stratigraphically equivalent areas across the seismic line. Petrobank concluded therefore that there was nothing unique about the waveform that would identify an anomaly as interpreted by Dynamic.

With respect to other provisions of the proposed pooling order, Petrobank requested that it be named the operator of the well to be produced under the order. It also asked that the maximum penalty allowed under the Act be applied to a tract's share of the actual costs of drilling and completing the well if the tract owner does not pay its share of those costs within 30 days of the later of the pooling order being issued, the tract owner being given written notice of its share of the costs, and the well involved being placed on production.

4.2 Views of Dynamic

Dynamic acknowledged that the parties had been unsuccessful in resolving their different views on how the interests in Section 12 should be pooled, and it agreed that the issuance of a pooling order was therefore warranted.

Dynamic submitted that it had no objection to area-based pooling in Section 12 for any sand except the Upper Ellerslie, but that such pooling for that sand would be inequitable to Dynamic. It argued that interests for the Upper Ellerslie Sand in Section 12 should be pooled on a reserves basis, with a 90 per cent allocation to the tract held by Dynamic and its partners, and a 10 per cent allocation to the remainder of the section.

In support of its proposed allocation, Dynamic presented a net gas pay map that showed a pool in the Upper Ellerslie sand underlying only a portion of the southwest quarter of Section 12 as shown on the figure. It submitted that well log and drill stem test data showed that none of the wells in Section 12 had gas pay in any Ellerslie interval except the Upper Ellerslie sand, and in its interpretation, the Ellerslie Member encountered by the wells in LSDs 8, 10, 11, and 12 in Section 12 is wet. It considered the 3-12 well to be the only well with gas pay in the Upper Ellerslie sand. To construct the net gas pay map of the Upper Ellerslie sand, Dynamic used the 3-12 well as a seed well, drew the outline of the edges of the pool as interpreted from its two seismic lines shown on the figure as In-line 67 and X-Line 74, and contoured interpreted thicknesses of gas pay within the pool. Dynamic acknowledged that the seismic data was interpretive and that the pool edge could be extended to the northwest and southeast to depict a larger pool, or contracted to depict a smaller one, but it considered its interpretation to be a reasonable one.

Dynamic calculated from its net gas pay map that 89.7 per cent of the pool reserves underlie its tract while 10.3 per cent underlie Petrobank's tract. On that basis, it concluded that it would not be equitable to pool the Upper Ellerslie interest on a tract area basis, and that pooling should be on a reserves basis in proportion to the gas reserves underlying the two tracts.

Dynamic did not raise any concerns regarding other requested provisions of a pooling order, such as who should operate the proposed well, or the penalty provision requested by Petrobank.

4.3 Views of the Examiners

The examiners note that Petrobank and Dynamic have not been successful in attempts to reach a mutually acceptable pooling arrangement and conclude that there is a need for a pooling order. The examiners also note that the two parties agree that a pooling order is justified in this case.

The examiners note that there were no concerns raised with respect to the applicant's request that it be named the operator of the well to be subject to the pooling order, or to the requested penalty provision which is a normal provision of a pooling order. The examiners conclude that the order should include these provisions.

Furthermore, the examiners consider that only specific prospective zones should be subject to the order; according to Petrobank, these would include the Belly River Group, the Ostracod Sandstone, and the Ellerslie Member. The examiners note that Petrobank and Dynamic were in agreement that allocation of costs and revenues relating to production from the Belly River Group and Ostracod Sandstone should be on a tract area basis, and conclude that the order should reflect this allocation.

The examiners conclude that the only issue that Petrobank and Dynamic were not able to agree upon is an appropriate allocation of the costs and revenues related to production from the Ellerslie Member. In considering this matter, the examiners note Section 80(3) of the Act, which states that allocation of production under a pooling order "shall be on an area basis unless it can be shown to the Board that that basis is inequitable".

The examiners agree with the parties that the 3-12 well encountered gas pay in the Upper Ellerslie sand. The examiners also agree with Dynamic that log and drill stem test data available from the other wells drilled in Section 12 do not indicate gas pay in any additional Ellerslie interval. Further, the examiners agree with Dynamic that the Ellerslie Member is water-bearing in the wells located in LSDs 8, 10, 11, and 12 of Section 12. The examiners conclude that the only interval within the Ellerslie Member likely to contain producible gas reserves in Section 12 is the Upper Ellerslie and that these reserves do not appear to extend over the entire section. On that basis, it would be inequitable to pool on a tract area basis.

The examiners do not believe that a definitive reserves-based allocation based on a net pay isopach map is appropriate in this case since different but equally reasonable contouring can be achieved with the available data depending on the model and interpretation used. This was evident by the divergent net pay maps presented by Petrobank and Dynamic. Rather, the examiners consider that the method of allocation should recognize those portions of the section where there is a reasonable probability of gas reserves.

In considering the allocation issue relating to production from the Upper Ellerslie sand, the examiners relied primarily on existing well control in Section 12 to indicate the presence or absence of Ellerslie gas pay and thus the probable extent of a potential pool. The examiners noted the seismic information presented at the hearing but also noted that the pool edges as depicted by Dynamic were by its own admission interpretative and could be moved to the northwest and southeast. As indicated previously, the examiners are of the view that the 3-12 well is the only well in Section 12 with gas pay in the Ellerslie Member, and that the Ellerslie

Member is water-bearing in the wells in LSDs 8, 10, 11 and 12 of the section. In the absence of compelling evidence to suggest that a potential Ellerslie gas pool extends beyond the southwest quarter of the section, the examiners conclude that the area of the pool is likely to be limited to the southwest quarter of Section 12. The examiners believe that the most appropriate allocation of costs and revenues to each owner in the section would be proportional to each owner's area of the pool - in this case proportional to each owner's area within the southwest quarter of Section 12. The examiners therefore conclude that the allocation of costs and revenues under the pooling order for production from the Ellerslie Member should be 25 per cent for the Petrobank lands and 75 per cent for the Dynamic lands.

5 CONCLUSION

The examiners conclude from a review of the evidence that a pooling order with the provisions noted above should be issued to address the matters raised by the hearing participants.

DATED at Calgary, Alberta, on August 27, 2002.

<Original signed by>

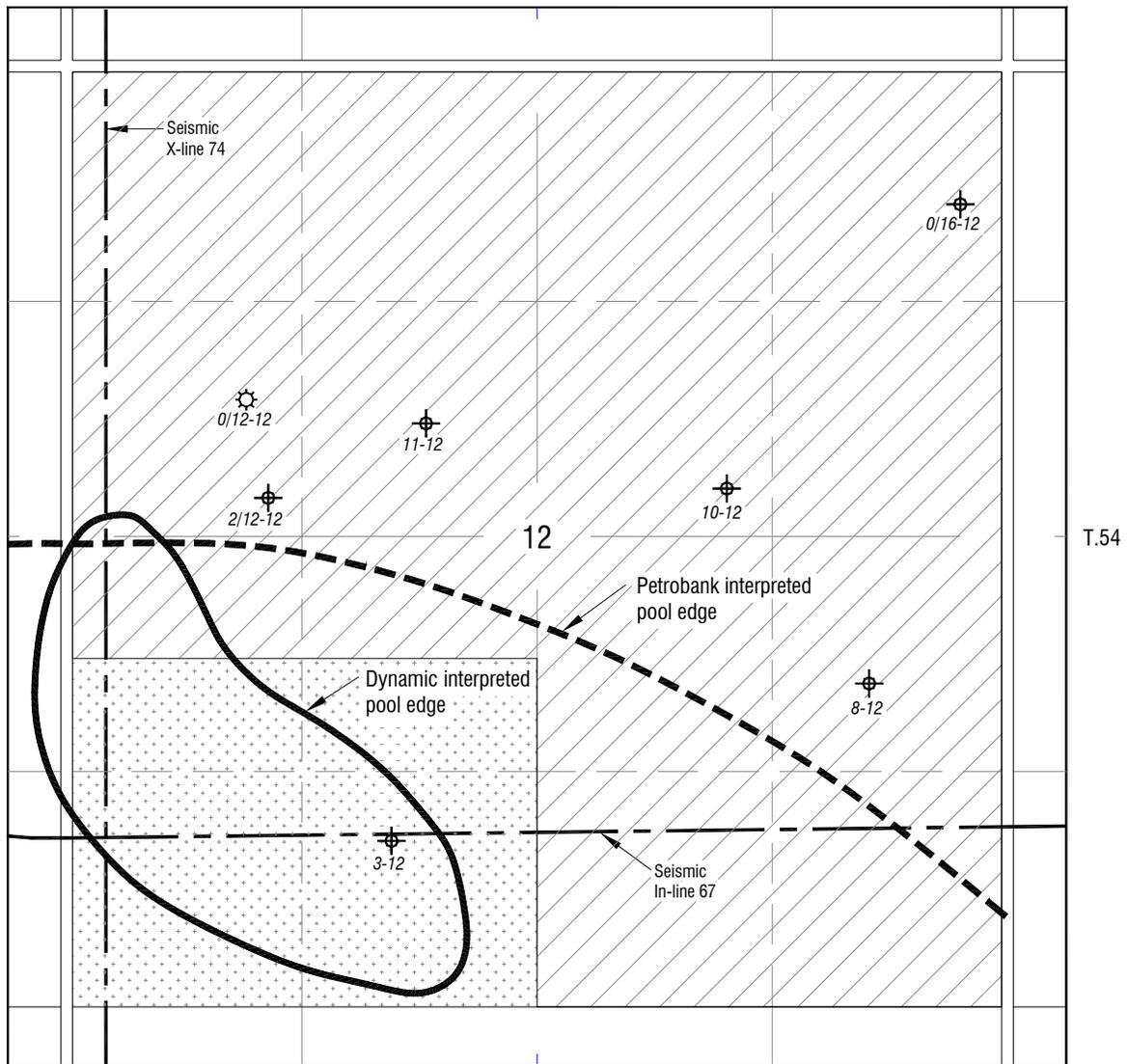
F. Rahnama, Ph.D.
Presiding Member

<Original signed by>

W. Elsner, P. Geol.

<Original signed by>

B. C. Hubbard, P. Eng.



Legend

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|---|--|
|  Flowing gas well |  Interests held by Petrobank and its partners |
|  Abandoned well |  Interests held by Dynamic and its partners |
|  Upper Ellerslie pool edge as interpreted by Petrobank |  Seismic lines |
|  Upper Ellerslie pool edge as interpreted by Dynamic | |

Overview of Application Area in the Morinville Field
 Application No. 1259731
 Petrobank Energy and Resources Ltd. and West Star Oil & Gas Ltd.

Decision 2002-077