

ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

**NYCAN ENERGY CORP. AND DIAZ RESOURCES LTD.
COMPULSORY POOLING
ENCHANT FIELD**

**Examiner Report 2000-5
Application No. 1052140**

1 RECOMMENDATION

The Alberta Energy and Utilities Board (EUB/Board) examiners have considered the evidence and recommend the following:

- The Board, with the approval of the Lieutenant Governor in Council, issue an order under Section 72 of the Oil and Gas Conservation Act (the Act) designating that all tracts within Section 14 of Township 12, Range 16, West of the 4th Meridian (Section 14) be operated as a unit for the production of gas from the Second White Speckled Shale through a well with the unique identifier of 00/05-14-012-16W4 (the 5-14 well).
- The order allocate the costs and revenues for each tract on a reserves basis, with a 45 per cent allocation to the southwest quarter of the section and a 55 per cent allocation to the remainder of the section.
- The order provide for the payment of the actual cost of recompleting the 5-14 well in the Second White Speckled Shale.
- The order specify that a penalty equal to two times the unpaid amount be applied against a tract owner's share of the actual costs of recompleting the well in the Second White Speckled Shale if that owner fails to pay such costs within 30 days of the later of the pooling order being issued, the owner being given notice in writing of its share of costs, or the well having commenced production.
- The order designate Rozsa Petroleum Ltd. (Rozsa) as the operator of the 5-14 well.

2 INTRODUCTION

2.1 Application, Intervention, and Hearing

Nycan Energy Corp. (Nycan), on behalf of itself and Diaz Resources Ltd. (Diaz), filed Application No. 1052140 under Section 72 of the Act for an order prescribing that all tracts within the drilling spacing unit comprising Section 14 be operated as a unit for the production of gas from the Second White Speckled Shale. The applicant initially requested that the proposed order apply to a well to be drilled in Legal Subdivision (LSD) 4 of the section but during the hearing requested that the order apply to a well to be drilled in LSD 2 (the 2-14 well).

Rozsa filed submissions respecting the application.

The application was considered at a public hearing on April 25, 2000, by Board-appointed examiners K. G. Sharp, P.Eng., F. Rahnama, Ph.D., and W. Elsner, P.Geol.

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

Nycan Energy Corp. (Nycan)
L. A. Cusano
D. Wood

A. G. Lye, P.Eng.,
of Al Lye & Associates Inc.
M. M. Kis, P.Geol.,
of Diaz Resources Ltd. (Diaz)
W. T. Radcliffe

Rozsa Petroleum Ltd. (Rozsa)
M. S. Forster

P. S. Boucher
R. D. Pryor, P.Eng.
H. B. Small, P.Eng.
M. A. Sztogryn

Alberta Energy and Utilities Board Staff
K. Fisher
B. Keeler
J. P. Mousseau

2.2 Background

Nycan and Diaz each hold an undivided 50 per cent interest in the Crown gas rights for the Second White Speckled Shale in the southeast quarter and north half of Section 14. Rozsa holds the Crown lease for the zone of interest in the southwest quarter of the section (see attached figure).

Two wells have been drilled into the Second White Speckled Shale in Section 14. These include the 5-14 well, licensed to Rozsa, and a well with the unique identifier of 00/13-14-012-16W4/0 (the 13-14 well), licensed to Pioneer Natural Resources Canada Inc.

The 5-14 well was drilled in 1992 and is currently classified by the EUB as an oil well producing from the Enchant Ellis Z Pool (Sawtooth Formation). Evidence provided at the hearing confirmed that the well was recompleted in December 1999 to allow gas production from the Second White Speckled Shale. A five-hour test subsequently conducted on the well in the same month resulted in a final gas flow rate from the Second White Speckled Shale of 18 thousand cubic metres (m³) per day, which is in the range of productivities of other wells in the area.

The 13-14 well was drilled in 1990 as a prospective Sawtooth producer; however, the well was abandoned shortly after being drilled. No test data for the Second White Speckled Shale for the well were provided in evidence at the hearing.

2.3 Preliminary Matters

At the start of the hearing, Rozsa confirmed that one working day prior to the hearing it had filed a competing pooling application proposing the production of gas from the Second White Speckled Shale through Rozsa's 5-14 well, rather than through a new well as proposed by Nycan and Diaz. Rozsa requested a ruling from the Board as to whether the alternative proposal could be considered without notice of hearing being issued. It indicated that it would be prepared to proceed without any adjournment of the current proceeding if the Board considered that it had jurisdiction to choose an alternative proposal over that specifically applied for by Nycan and Diaz.

Nycan submitted that the Rozsa application was not properly before the Board and that the only properly constituted application before the Board at the hearing related to the application filed by Nycan and Diaz.

The examiners considered that the Rozsa application could not be dealt with at the current hearing. However, the examiners were of the opinion that the Board has the authority to choose between any alternative proposals brought forward in evidence by either party pertaining to the Nycan and Diaz application. On that basis, the hearing proceeded as scheduled.

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, including
 - the basis for allocation and the specific allocation of costs and revenues under the pooling order,
 - which well should produce gas from the Second White Speckled Shale from the section,
 - who the operator of the producing well should be,
 - what drilling and completion costs should be shared by the tract owners,
 - what penalties, if any, should be applied if drilling and/or completion costs to be shared are not paid, and
 - when the penalties, if any, should be applied.

4 CONSIDERATION OF THE APPLICATION

4.1 Views of Nycan

Nycan submitted that it had been unsuccessful in numerous efforts to obtain a mutually satisfactory pooling arrangement with Rozsa both before and after the subject application had been filed. It therefore concluded that a pooling order was needed to allow for the drilling and production of a well in Section 14.

Nycan noted that Section 72(4) of the Act indicates that pooling shall be on an area basis unless it can be shown to the Board to be inequitable. The applicant argued that the geological interpretations of the pool underlying Section 14 presented by both Nycan and Rozsa were highly interpretive and therefore it could not be shown that pooling on an area basis was inequitable. On that basis, pooling should be on an area basis, with an allocation of 25 per cent to Rozsa's southwest quarter of the section and 75 per cent to the southeast quarter and north half of the section held by Nycan and Diaz.

Nycan submitted that if the Board finds pooling on an area basis inequitable, the Board ought to use Nycan's geological interpretation and allocate production on a reserves basis with an allocation of 29.8 per cent to the southwest quarter of Section 14 and 70.2 per cent to the remainder of the section.

The applicant interpreted the Second White Speckled Shale pool underlying Section 14 as comprised of thin, elongate northwest/southeast sandstone bars deposited in a marine shelf environment. Nycan presented a net pay map showing the pool as underlying all of the section except for a very small area near the 13-14 well. It interpreted the thickest part of the pool in Section 14 to be in the south half of the section, with the pay thinning to the north. Although it did not interpret any net pay for the 13-14 well, it noted that the well encountered some sand. Nycan indicated that because of the thin laminar shaley nature of the reservoir, analysis of the net pays was somewhat subjective and qualitative, with the values obtained being conservative. On the basis of its mapping, Nycan estimated the original gas in place for Section 14 to be 7.2 million (10⁶) m³ (255 million cubic feet [mmcf]).

Nycan initially requested a pooling order to allow for the drilling and production of a well in LSD 4 of the section, on Rozsa's tract rather than on its own lands, due to the presence of a coulee extending over portions of the south half of the section. However, it later determined that it could in fact drill on its own tract, and it subsequently obtained a surface lease and surveyed a well location in LSD 2. Nycan confirmed that LSD 2 was its preferred location and amended its application accordingly at the hearing. It anticipated that the well would have similar productivity as offsetting wells.

Nycan was opposed to the Rozsa proposal that the pooling order allow for the production of gas from the Second White Speckled Shale from the existing Rozsa 5-14 well rather than from a new well. It acknowledged that Rozsa had addressed a number of the concerns that Nycan raised respecting use of the 5-14 well:

- that if the well were used, it be operated as a single-zone gas producer rather than a dual gas and oil producer to avoid technical and operational difficulties,
- that Nycan and Diaz would share only in the costs of recompleting the well for gas production, and
- that Nycan and Diaz be fully indemnified against any and all liabilities attributable to the previous oil production.

However, Nycan was concerned that the 5-14 well was off target for gas production, rendering the well vulnerable to an application by other well operators in the pool for the imposition of an off target penalty. In its opinion, there was no way to effectively protect Nycan from a penalty.

Nycan also maintained that it wanted no restrictions on tying the 5-14 well into the Nycan/Diaz gathering system as opposed to the Rozsa system. In addition, Nycan wanted the Board to issue a rateable take order to alleviate its concern that the 5-14 well would not be produced in an equitable manner with offsetting Rozsa wells.

Nycan requested that it be named the operator of a new well drilled in the section. It also requested that if the pooling order were to allow for production of gas from the 5-14 well rather than a new well, it be named as the operator of that well on the basis that it and Diaz had the majority interest in the section. Once the gas production was completed and pooling was terminated, the operatorship of the well would be returned to Rozsa.

The applicant submitted that all of the costs of drilling and completing a new well in Section 14 should be shared among the tract owners. However, if the order were to allow for gas production from the 5-14 well rather than a new well, Nycan indicated (as noted above) that it and Diaz should share only in the costs of recompleting the well for gas production and not any drilling or Sawtooth completion costs.

Nycan requested that the maximum penalty allowed under the Act be applied to a tract owner's share of drilling and completion costs of a new well if those costs were not paid within the time frame specified in the pooling order. The applicant agreed that the penalty should be applied if a tract owner failed to pay its share of drilling and completion costs within 30 days of the later of the pooling order being issued, the tract owner being notified in writing of its share of costs, or the well commencing production.

4.2 Views of Rozsa

Rozsa acknowledged that the parties had been unsuccessful in negotiating a pooling arrangement. It did not oppose the issuance of a pooling order.

Rozsa submitted that it would be inequitable to pool on an area basis because the reserves underlying Section 14 vary under the tracts. Rozsa argued that the Board should use Rozsa's geological interpretation to allocate on a reserves basis, with a 63 per cent allocation to the southwest quarter of the section and 37 per cent to the remainder of the section.

In support of its proposed allocation, Rozsa presented mapping that showed the pool edge crossing at about the middle of the section, with reserves underlying the south half of the section, thinning northwards, and being thickest in the southwest quarter of the section. It indicated that it had accepted the marine bar model described by Nycan and that its use of regional trends to guide more detailed mapping produced a more accurate interpretation than Nycan's, which used fewer wells. In Rozsa's opinion, the analysis was not highly interpretational, as claimed by Nycan. Using its mapping, Rozsa estimated the original gas in place for Section 14 to be $3.6 \times 10^6 \text{ m}^3$ (127 mmcf).

Rozsa submitted that the pooling order should allow Second White Speckled Shale gas production from its existing 5-14 well, because it would be more economical and would avoid the unnecessary environmental impacts of drilling and tying in a new well. It argued that there are insufficient reserves underlying Section 14 to justify drilling a new well. It maintained that the 5-14 well was capable of production and would require a tie-in to the Rozsa gathering system, which was little more than half the length of a tie-in of a new well into the Nycan and Diaz gathering system.

Rozsa submitted that it had addressed the concerns raised by Nycan with respect to using the 5-14 well for Second White Speckled Shale gas production. Rozsa said that it would agree to operate the well as a single-zone producer to alleviate Nycan's concern that there would be technical and operational difficulties if the well were produced as a dual Sawtooth oil and Second White Speckled Shale gas producer. It also indicated that it would agree that Nycan and Diaz should share only the costs of recompleting the well for gas production, and not any drilling or Sawtooth completion costs. Rozsa indicated that it would want to review the economics of any proposal to tie the 5-14 well into the Nycan and Diaz gathering system and so could not make any commitments to such a tie-in before any analysis was done. The intervener said that it would produce the well equitably with other wells in the pool. In its opinion, any consideration of a rateable take order as requested by Nycan was premature, as a finding of discrimination is a necessary precondition to such an order. Rozsa also said that it would waive any off-target penalty on the 5-14 well on the condition that it operated the well. It acknowledged that its partners would also need to be consulted regarding waiver of the off-target penalty. Rozsa further stated that it would agree that Nycan and Diaz be fully indemnified against any liabilities attributable to previous oil production from the 5-14 well, as requested by those parties.

Rozsa requested that if the pooling order were to allow for the production of the 5-14 well, it should be named operator of the well on the basis that it drilled the well and was the current operator, as well as the operator of other wells in the area. It also wanted to retain operatorship of the well to pursue further development of other zones in the well.

Rozsa stated (as indicated above) that if the pooling order were to allow for the production of the 5-14 well, Nycan and Diaz should share only in the costs of recompleting the well for gas production and not any drilling or oil completion costs. However, if the order were to provide for a new well to be drilled in Section 14, the Board should direct that all drilling and completion costs be paid by Nycan and Diaz, because Rozsa had already drilled and completed a well capable of Second White Speckled Shale gas production.

Finally, Rozsa indicated that payment of costs should be subject to the Board's normal penalty provisions.

4.3 Views of the Examiners

The examiners note that, in spite of reasonable efforts, the parties have been unsuccessful in reaching a mutually satisfactory pooling arrangement for Section 14 and conclude that there is a need for a pooling order. The examiners do note, however, that in response to concerns raised by Nycan, Rozsa said that

- it would agree to produce the 5-14 well as a single-zone producer,

- Nycan and Diaz would share only costs of recompleting the 5-14 well as a gas producer,
- it would consider the economics of tying the 5-14 well into the Nycan and Diaz gathering system,
- it would produce the 5-14 well equitably with other wells in the pool, and
- it would agree that Nycan and Diaz be indemnified against any liabilities attributable to previous oil production from the 5-14 well.

The examiners observe that the parties are in agreement that there is no effective pay in the Second White Speckled Shale in the 13-14 well and conclude from a review of the evidence that at least a portion of the north half of the section in the area of the well does not have any producible gas from the zone. On that basis, the examiners further conclude that, on a balance of probabilities, it would be inequitable for allocation under the pooling order to be on a tract area basis.

The examiners next considered whether pooling should be based on either the Nycan or Rozsa interpretation of the pool. The Nycan mapping appears to the examiners to be too optimistic in the north portion of the section, where the 13-14 well, which has no net pay, is shown to be at the edge of the pool, and reserves are interpreted as underlying virtually the entire section. On the other hand, the Rozsa mapping shows the pool edge through the central portion of the section, with almost no reserves interpreted in the north half of the section. The examiners consider this interpretation to be unduly pessimistic and do not believe that there is a strong justification for placing the pool edge as far south as depicted. On the basis of the foregoing, the examiners are not satisfied that either map properly represents the distribution of reserves in the section.

Although the examiners are not prepared to base the allocation on either of the maps presented, they are of the view that the mapping can be used to indicate the probability of reserves in the various portions of the section and that allocation can be determined by weighing those probabilities. Both the Nycan and Rozsa maps show reserves for the south half of the section with the thickest pay in the section extending across the entire southern portion of the section; therefore, the examiners are prepared to weight the southeast and southwest quarters of the section equally. If the pool edge is placed southwards of where Nycan has placed it, but somewhat north of where Rozsa has interpreted it to be, there would be reserves underlying approximately one-third to one-half of the north half of the section. However, the weighting for the north half of the section should be reduced to account for the reserves thinning to zero in this half of the section and for being thinner overall than in the south half of the section. On this basis, the examiners estimate that only about 10 per cent of the reserves underlying the section are in the north half, with the remainder being in the south half of the section. Assuming equal weighting for the southwest and southeast quarters as indicated above results in an allocation of 45 per cent for Rozsa's southwest quarter of the section and 55 per cent for the southeast quarter and north half of the section held by Nycan and Diaz.

When determining which well should produce from Section 14 under a pooling order, the examiners believe that consideration should be given to which well would produce the maximum reserves from the section, while having regard for the environmental impacts of the development. In this context, the examiners note that neither Nycan nor Rozsa argued that either

the 2-14 or the 5-14 well would be more productive and recover more reserves than the other well. Therefore, from a conservation standpoint, one well does not appear to be preferable over the other. However, the examiners believe that drilling and tying in the 2-14 well would cause additional economical and environmental impact, which appears to be unnecessary in view of the small volume of reserves underlying the section. The examiners further believe that this would represent a needless duplication of facilities, given that the 5-14 well is already drilled, is capable of production, and would require a shorter tie-in than the 2-14 well. Accordingly, the examiners believe that the pooling order should allow for the production from the 5-14 well.

The examiners note that Rozsa is the current licensee of the 5-14 well. The licensee of a well is responsible for operations at a well, even if another party is conducting those operations, and the Board holds the licensee accountable for any impacts throughout the life of the well to final abandonment. The examiners believe that it would add an unnecessary complexity to the situation if Nycan were operating the 5-14 well while Rozsa remained the licensee of record. On that basis, the examiners are of the view that Rozsa should be the operator of the 5-14 well under the pooling order.

The examiners accept Rozsa's statement that it would waive any off-target penalty respecting the 5-14 well if it operated the well. The possibility that the ownership of the lands offsetting Section 14 may change and result in a request by a new owner for a penalty to be placed on the well is a normal risk of business. In the examiner's view, it is not the Board's role to anticipate and mitigate this type of situation, which is speculative and may not occur during the time that gas is being produced from the Second White Speckled Shale from Section 14.

The examiners do not believe that a rateable take order could be issued on the basis of Nycan's request at the hearing, as it does not constitute a complete application as required by legislation. The Board has indicated in previous decisions that an applicant for a rateable take order must show that it is being deprived of the opportunity to obtain its fair share of production from the pool. As the 5-14 well has not yet been placed on production, a rateable take application respecting the well would be premature.

The examiners note that both Rozsa and Nycan stated that if the 5-14 well were used to obtain production from the Second White Speckled Shale, Nycan and Diaz should share only in the costs of recompleting the well for gas production, and not in any drilling or Sawtooth oil completion costs. The examiners consider the sharing of such costs to be reasonable and are prepared to recommend that the pooling order reflect the agreement on this matter.

Finally, the examiners believe that the present case would not warrant the Board deviating from its normal practice with respect to the penalty for nonpayment of completion costs and the timing for the penalty to be applied. Therefore, the examiners consider that the order should provide for a penalty equal to two times the unpaid amount to be applied to a tract owner's share of the actual costs of recompleting the 5-14 well in the Second White Speckled Shale if that owner fails to pay such costs within 30 days of the later of the pooling order being issued, the owner being given written notice of its share of costs, or the well having commenced production.

5 CONCLUSION

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

DATED at Calgary, Alberta, on June 9, 2000.

(Original signed by)

K. G. Sharp, P.Eng.

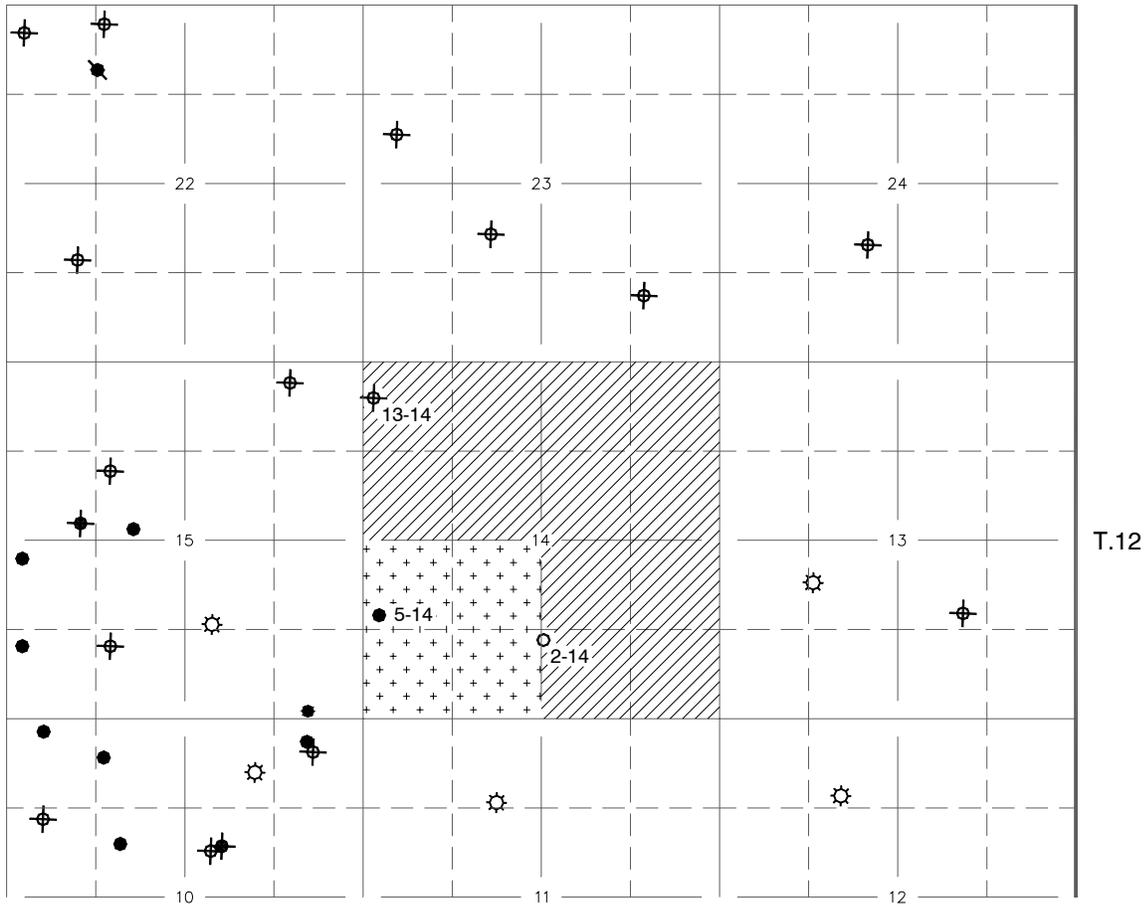
(Original signed by)

F. Rahnama, Ph.D.

(Original signed by)

W. Elsner, P.Geol.

R.16 W.4M.



LEGEND

- Flowing oil well
- ⊗ Suspended oil well
- ⚙ Flowing gas well
- ⊕ Abandoned well
- ⊕⊙ Abandoned oil well
- Licensed well (not drilled)
- ▨ Interests held by Nycan (50%) and Diaz (50%)
- ⊕⊕ Interests held by Rozsa (100%)

Overview of Application Area/Enchant Field

Application No. 1052140

Nycan Energy Corp. and Diaz Resources Ltd.

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