

ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

IMPERIAL OIL RESOURCES LIMITED
COMPULSORY POOLING
WILLESDEN GREEN FIELD

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Examiner Report E 96-9
Application No. 960346

1 INTRODUCTION**1.1 Application, Intervention, and Hearing**

Imperial Oil Resources Limited (Imperial) applied under section 72 of the Oil and Gas Conservation Act (the Act) for a compulsory pooling order designating that all tracts within the drilling spacing unit comprising Section 25 of Township 41, Range 6, West of the 5th Meridian (Section 25), be operated as a unit for the production of gas from the Glauconitic Sand through the existing well with the unique identifier of 00/16-25-041-06 W5/2 (the 16-25 well).

Mutiny Oil and Gas Ltd. (Mutiny) submitted an intervention opposing the application.

The application was considered at a public hearing on 17 September 1996, in Calgary, Alberta, by Board-appointed examiners F. Rahnama, Ph.D., W. J. Schnitzler, P.Eng., and F. G. Sorenson.

The following table lists the participants at the hearing.

THOSE WHO APPEARED AT THE HEARING

Principals and Representatives (Abbreviations Used in Report)	Witnesses
Imperial Oil Resources Limited (Imperial) W. F. Muscoby	J. Lowes E. Obreiter, P.Eng.
Mutiny Oil & Gas Ltd. (Mutiny) K. Wilson, P.Eng.	K. Wilson, P.Eng.
Alberta Energy and Utilities Board Staff K. Fisher S. Kelemen	

1.2 Background

The 16-25 well was drilled in August 1981 by Texaco Canada Resources Ltd. (Texaco), now Imperial, for the purpose of obtaining production from the Glauconitic Sand. The well was completed and abandoned in the Shunda Formation and subsequently perforated in both the Cardium Formation and the Glauconitic Sand. Production began from the Cardium zone in

September 1982 and totalled 2 thousand cubic metres (10^3 m^3) of oil and $470 \times 10^3 \text{ m}^3$ of gas by September 1991 when the pool was suspended. Production began from the Willesden Green Glauconitic D Pool in May 1984 and totalled 42 million m^3 of gas and 85 m^3 of oil by January 1996 when the well was shut-in.

Mutiny acquired the petroleum and natural gas rights to the base of the Mannville Group in the northwest quarter and south half of Section 25 effective 1 April 1995. Imperial continued to hold the mineral rights in the northeast quarter of the section.

2 ISSUES

The examiners consider the issues respecting the application to be

- the need for a pooling order, and
- the provisions of the order if issued, and in particular, the determination of well costs related to the Glauconitic Sand.

3 CONSIDERATION OF THE APPLICATION

3.1 Views of Imperial

Imperial submitted that negotiations for pooling of the tracts in Section 25 began in November 1995; however, it has been unable to obtain a satisfactory voluntary pooling agreement. The applicant concluded that a pooling order is needed to allow production of Glauconitic gas through the 16-25 well.

Imperial proposed that the allocation of costs and revenues be on an area basis, and that Imperial be named operator of the 16-25 well under the pooling order. The applicant agreed with the intervener that pooling should be effective 1 April 1995 when Mutiny acquired an interest in the mineral rights in Section 25. However, Imperial was not aware of any provision in the Act which would allow the issuance of a retroactive pooling order.

The applicant submitted that the actual cost of drilling and completing the 16-25 well as a Glauconitic gas well should be equalized under the pooling order in accordance with section 75(1) of the Act. Imperial argued that equalizing only the salvage value of the tangible wellbore equipment of \$40 000 as proposed by Mutiny would amount to a windfall for the other tract owner.

Imperial agreed that the costs associated with drilling deeper to the Shunda Formation, completion and abandonment of the Shunda zone, and completion of the Cardium zone should not be included in any equalization. Imperial stated that, as a prudent operator, it had drilled a larger size hole because the well was exploratory in nature and had the potential to be productive

from more than one zone. The larger size hole would allow Imperial to set 7-inch casing and dually complete the well. However, in response to questioning, the applicant conceded that it may be reasonable to deduct the cost of drilling a larger size hole, as proposed by Mutiny. Imperial stated that other deductions from the total well cost as suggested by Mutiny (see section 3.2 and the attached table) were not appropriate. In particular, Imperial argued that credits received under the exploratory drilling incentives program and the gas royalty holiday were not relevant to actual drilling costs. Further, the applicant maintained that discounting drilling and completion costs to account for recovery of costs by previous Glauconitic production or to account for remaining recoverable reserves was not justified, and would not be in accordance with the Act.

In response to questioning, Imperial stated that its estimate of drilling and completions costs for the 16-25 well was based on the book value of the well at the time of amalgamation of Texaco and Imperial. Costs which Imperial viewed to be irrelevant were then deducted from this book value. Based on this data, the applicant determined drilling and completion costs of \$690 000 for the Glauconitic Sand at the 16-25 well.

The applicant requested that the maximum penalty allowed under the Act be imposed against a tract owner's share of drilling and completion costs. It submitted that the maximum penalty would be justified as compensation for the risk associated with drilling the well and the cost of financing the well. Imperial stated that the penalty should be applied against the total drilling costs as determined by the Board, and not against costs reduced by the amount of revenue owed to Mutiny for Glauconitic production during the period of 1 April 1995 to 16 January 1996. Imperial agreed that the penalty should be applied if a tract owner failed to pay its share of drilling and completion costs within 30 days after the later of three events has occurred: the pooling order has been issued, the well has commenced production, and each tract owner has been notified in writing of its share of drilling and completion costs.

Imperial did not dispute Mutiny's proposals regarding equalizing of costs for uphole remedial work, abandonment of the 16-25 well, or surface reclamation. However, the applicant preferred that these details not be addressed in any pooling order issued.

3.2 Views of Mutiny

Mutiny submitted that it was unable to reach a voluntary pooling agreement with Imperial because of differences respecting the equalization of well costs. Therefore, Mutiny agreed that there is a need for the Board to issue a pooling order.

Mutiny agreed that the allocation of costs and revenues should be on an area basis, and that Imperial should be designated as operator of the 16-25 well under the pooling order. The intervener submitted that the effective date of pooling should be 1 April 1995; however, it acknowledged that the Board may not have the jurisdiction to grant a retroactive pooling order.

Mutiny stated that equalization of original drilling and completion costs is not appropriate because the net revenues obtained from the two producing zones in the 16-25 well, as well as incentive

credits and royalty holidays received, have been sufficient to recover any drilling costs. Mutiny proposed equalization of the current salvage value of the tangible well equipment of \$40 000.

Notwithstanding its position as noted above, if equalization of original well costs were stipulated in a pooling order, Mutiny maintained that its estimate of costs as set out in its intervention should be used (see attached table). The intervener submitted that costs associated with drilling and completion of the Shunda and Cardium zones should not be included. Further, Mutiny argued that the total well costs should be reduced by 50 per cent of the cost of drilling to the Cardium zone and by the cost of drilling and casing a larger wellbore to facilitate production of more than one zone. The intervener also requested that the incremental cost of a dual wellhead be deducted from any well costs. However, as Imperial stated at the hearing that the cost of a dual wellhead was not included in the total well cost, Mutiny amended its request and proposed that the salvage value of the original wellhead be deducted as this equipment was no longer in use at the 16-25 well.

Mutiny considered the exploration drilling incentive credit and the gas royalty holiday to be substantial benefits accrued by the party who drilled the well; therefore, these benefits should be balanced against the original cost of the well.

Based on the above deductions and its estimate of drilling and completion costs from the daily drilling reports, Mutiny determined that the cost of the 16-25 well attributable to the Glauconitic zone is \$351 000. Further, the intervener argued that this amount should be discounted by 70 per cent considering that some recovery of original drilling costs has occurred prior to pooling, and considering that previous Board decisions have allowed for well costs to be reduced by 50 per cent in certain cases. Mutiny believed that a 70 per cent discount factor was justified based on its calculation that 30 per cent of the original Glauconitic gas reserves remained to be produced from Section 25.

Mutiny submitted that a penalty imposed against drilling and completion costs was not necessary as such a penalty would apply only to original well costs, which it did not believe should be equalized. However, Mutiny further stated that it was neutral on the imposition of a penalty as it would likely pay its share of costs upfront. Mutiny agreed with Imperial with respect to the timing for the penalty to come into effect.

Mutiny requested that any award of equalization of costs or any costs subject to a penalty be made net of the production revenues owed by Imperial to Mutiny for production of the Glauconitic zone at the 16-25 well during the period of 1 April 1995 to 16 January 1996.

Finally, Mutiny proposed that the downhole abandonment of the Cardium and Glauconitic zones in the 16-25 well be the responsibility of the mineral rights owners of the respective zone, and that any uphole remedial work and surface reclamation costs be shared by the Cardium and Glauconitic owners. In response to questioning, Mutiny submitted that these conditions should be stipulated in the pooling order to avoid any possibility of a dispute in the future.

3.3 Views of the Examiners

The examiners note that Imperial and Mutiny were unable to reach a voluntary pooling arrangement and therefore conclude that there is a need for a pooling order.

In the absence of any views to the contrary, the examiners also agree that the allocation of costs and revenues should be on an area basis, and that Imperial should be named operator of the 16-25 well.

In accordance with section 75(1) of the Act, the examiners consider it appropriate to equalize actual well costs incurred by Imperial to drill the 16-25 well and complete it in the Glauconitic Sand. The examiners note from the evidence presented that Imperial was unable to provide the actual cost of the 16-25 well. However, Imperial provided the value of the well used at the time of the amalgamation of Texaco and Imperial in 1989. This estimate of \$1 145 000 was used by both Imperial and Mutiny as a reasonable starting point to derive the cost estimate. The examiners are prepared to accept this cost. Both parties also agreed that well costs to be equalized should not include any expenditures associated with drilling and completion of the Shunda Formation, and completion of the Cardium Formation. However, the parties provided different estimates for the expenditures associated with the Shunda and Cardium formations. In the absence of any conclusive evidence on the accuracy of costs to be deducted from the starting value of \$1 145 000, the examiners believe that it is reasonable to average the cost data provided by Imperial and Mutiny. The examiners believe that these costs and the costs of drilling a larger size hole should be deducted from the total well cost as they would not have been expended for a single-zone Glauconitic well. As the only evidence submitted with respect to the cost associated with drilling a larger size hole was provided by Mutiny, the examiners are prepared to adopt the intervener's estimate of these costs.

The examiners do not consider other deductions from the total well cost, as proposed by Mutiny, to be appropriate or relevant to actual drilling costs. The examiners therefore conclude that drilling and completions costs for the Glauconitic Sand at the 16-25 well to be equalized under the pooling order should be set at \$601 000, as shown on the attached table.

The examiners concur with Imperial that the maximum penalty under the Act should be applied against a tract owner's share of costs if the tract owner does not pay those costs within 30 days of the later of three events: the pooling order being issued, the well resuming production, and the tract owner being notified of its share of costs.

The examiners observe that section 72 of the Act has no provision for retroactivity. The examiners therefore conclude that the pooling order should be effective on the date that it is issued. Further, the examiners do not believe it is appropriate for the pooling order to stipulate that the equalization of costs or costs subject to the penalty be made net of production revenues owed to Mutiny.

Finally, the examiners note that the views of Imperial and Mutiny respecting the allocation of costs associated with abandonment, uphole remedial work, and surface reclamation are similar, and do not consider it necessary to specify conditions in the pooling order.

4 RECOMMENDATION

The examiners recommend that

- the Board, with the approval of the Lieutenant Governor in Council, issue an order under section 72 of the Act, designating that all tracts within Section 25 be operated as a unit for the production of gas from the Glauconitic Sand through the well with the unique identifier of 00/16-25-41-6 W5/2,
- the order allocate the costs and revenues associated with the drilling, completing, operating, and abandoning the 16-25 well on an area basis, with each tract's share being in the same proportion as the area of each tract is to the total area of the drilling spacing unit,
- the order specify drilling and completion costs for the 16-25 well of \$601 000,
- 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 drilling and completing the 16-25 well if that owner fails to pay such costs within 30 days after the later of the following three events has occurred: the pooling order has been issued, the well has commenced production, and each tract owner has been notified in writing of its share of the actual costs, and
- the order designate Imperial as the operator of the 16-25 well.

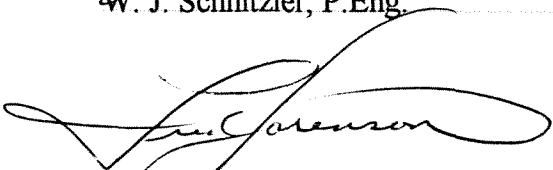
DATED at Calgary, Alberta on 29 October 1996.



F. Rahnama, Ph.D.



W. J. Schnitzler, P.Eng.



F. G. Sorenson

SUMMARY OF WELL COSTS (in thousands of dollars)

Estimated Total Cost of 16-25 Well	Imperial	Mutiny	EUB Panel
	1145	1145	1145
Deductions From Total Cost:			
Incremental Drilling Costs to Shunda	134	147	141
50% of Drilling Costs to Cardium	-	64	-
Salvage Value of Wellhead	-	34 ^a	-
Incremental Cost of Large Size Hole	-	50	50
Shunda Completion	95 ^b	77	101 ^b
Pull Shunda Packer & Abandon Zone	-	30	-
Mill Glauconitic Packer & Plug Back Zone	50	57	54
Cardium Completion	66	110	88
Cardium Production Tubing	24	24	24
Equipping and Tie-in Costs	86	86	86
Drilling Incentive Credit	-	25	-
Royalty Holiday	-	90	-
Estimated Net Cost (Glauconitic Sand)	690	351	601

a Estimated based on revisions proposed by Mutiny at the hearing.

b Shunda completion costs include the costs of pulling the Shunda packer and abandoning the zone.