

ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

APPLICATION FOR A WELL LICENCE
APPLICATION FOR A PIPELINE PERMIT
ROZSA PETROLEUM LTD.
KEHO FIELD

Examiner Report E 96-11
Applications No. 960765 and 960766

1 INTRODUCTION

1.1 Applications and Intervention

On 4 September 1996, Rozsa Petroleum Ltd. (Rozsa), applied to the Alberta Energy and Utilities Board (EUB) pursuant to section 2.020 of the Oil and Gas Conservation Regulations, for a licence to drill a well in Legal Subdivision 8 of Section 2, Township 12, Range 22, West of the 4th Meridian (the proposed well). The purpose of the well would be to obtain gas production from the Sunburst Formation. Rozsa also applied, on 3 September 1996, for a pipeline permit to construct approximately 0.58 kilometres of 114.3 millimetre outside diameter pipeline for the purpose of transporting sweet natural gas from the proposed well to an existing pipeline tie-in point at Legal Subdivision 6-2-12-22 W4M. In its applications, Rozsa indicated that it was unable to secure a surface lease agreement with the landowner for the purpose of drilling and operating the proposed well, nor had it been successful in obtaining a right-of-way agreement for the construction of the pipeline.

EUB staff contacted the surface owner, Ms. Vera Koppenstein, and received verbal and written confirmation of her objections to the applications. The objections were based on the impact the development would have on Ms. Koppenstein's farming practices and her future plans for irrigation of the subject lands.

1.2 Hearing

A public hearing of the applications was convened on 6 November 1996 in Lethbridge, Alberta before examiners appointed by the EUB. The examiner panel consisted of F. Rahnema Ph.D., T.M. Hurst, and F.G. Sorenson (the examiners). Those who appeared at the hearing are listed in the following table.

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THOSE WHO APPEARED AT THE HEARING

Principals and Representatives (Abbreviations Used in Report)

Rozsa Petroleum Ltd. (Rozsa)
G. Anderson

Vera Koppenstein/Koppenstein Farms Ltd.
A. R. Krushel

Alberta Energy and Utilities Board staff
C. S. Richardson, C.E.T.
T.M. Jobin, P.Geol.

Witnesses

R. D. Pryor, P.Eng.
M. A. Sztogryn, P.Geol.
H. B. Small, E.I.T.
Z. Iwasyk
G. Boyer, P.Eng.

V. Koppenstein

2 ISSUES

The examiners consider the issues respecting the applications to be:

- the need for the well and pipeline,
- the location of the well and pipeline, and
- the impacts of the well and pipeline.

3 CONSIDERATION OF THE APPLICATIONS

3.1 Views of the Applicant

Rozsa submitted that it should be allowed to drill and produce the proposed well because it held valid freehold petroleum and natural gas rights to the Sunburst Formation for all of section 2-12-22 W4M (section 2). It explained that a portion of the rights would expire after 27 December 1996 and as a result it was critical that the proposed well be spudded before that date. Rozsa stated the proposed well is needed in order to prove up its minerals and test its geologic interpretation of the area. It also believed that the well would provide benefits to the Province of Alberta through taxes, employment and use of the resource.

Rozsa submitted that the proposed pipeline was needed in order to transport gas from the proposed well to its gas plant. The proposed pipeline would tie into Rozsa's existing pipeline located in the west half of section 2. Rozsa submitted that during negotiations with Ms. Koppenstein, she agreed that the proposed pipeline route was the most direct route to its existing pipeline and would create the least amount of impact to the land surface.

Rozsa stated that the proposed well would be drilled to evaluate the Cretaceous Sunburst sand for gas. The proposed well is situated on an east/west seismic line. Rozsa's seismic interpretation showed a developed amplitude anomaly and a small isolated high at the Sunburst level. It believed that this anomaly is equivalent or superior to the anomaly at the existing 11-2-12-22 W4M well (the 11-2 well) and anticipated the proposed well would encounter a sand of similar reservoir quality as the 11-2 well. Rozsa noted the 11-2 well penetrated a thick porous fluvial sand and that on testing had significant oil and gas shows. It believed that the proposed well would be updip from the 11-2 well and therefore would have greater potential for encountering commercial gas in the Sunburst sand. Rozsa stated its interpretation shows that the reservoir quality within the Sunburst fluvial channel decreases in an easterly direction from the proposed well to the existing 6-1-12-22 W4M well (the 6-1 well). It stated that the 6-1 well is typical of wells that are on the eastern edge of the pool in this area. Rozsa stated that its interpretation would allow for maximum movement of the proposed well 100 metres east, however, having consideration for target area and equity issues, it believed that the proposed well represented the best technical location for a Sunburst gas well on section 2.

Rozsa stated that it considered directional drilling to its bottom hole location but discounted this option for economic, technical and geological reasons. It estimated that to drill to its preferred bottom hole location from a surface location on the western edge of section 1-12-22 W4M would impose an additional \$50,000.00 to the cost of drilling the well. It further estimated that directional drilling from a surface location on the eastern edge of section 2 would add almost the same cost to the well. Rozsa stated that directional drilling would increase the risk of drilling and operating problems and of missing its geological target. It stated that there was potential for shallower production from the Bow Island and Viking zones. A directionally drilled well may not be able to evaluate these zones because they would be situated in the build portion of the well bore. Rozsa did not believe that the surface impacts associated with the proposed well justified directional drilling.

Rozsa indicated that it had originally selected an access road to the proposed well from the south. After discussions with Ms. Koppenstein it appeared that this route would be unacceptable, however, it was unable to confirm a definitive access route with her and so chose a route that it believed created the least impact to the land surface and to farming operations. Its proposed route from the east is the shortest and most direct to the proposed well. It indicated that the access road location is still open for discussion and that it would change the route if the surface owner wishes.

Rozsa acknowledged that there would be impacts to the landowner resulting from the drilling and operation of the proposed well. It did not, however, feel that the impacts justified relocation of the well to the east boundary of the section as suggested by the intervener. Rozsa stated that it is prepared to build a low-profile road that would accommodate both farm machinery and an irrigation pivot. In the event of a successful well, its plans are to construct standard production facilities. However, if and when the surface owner decides to install an irrigation pivot, Rozsa would install low-profile production facilities that would permit an irrigation pivot to pass

unhindered. Rozsa also stated that if the well was successful it would return the majority of the wellsite back to agricultural use after drilling and completion operations. In the event of a dry hole, the location would be reclaimed and fully returned to agriculture.

3.2 Views of the Intervener

Ms. Koppenstein agreed that the proposed pipeline route from the proposed well to Rozsa's existing pipeline is the most direct. She also acknowledged that, as the pipeline would be situated underground, it would not affect farming operations. Her concerns related more to surface obstructions associated with the proposed well.

Ms. Koppenstein did not dispute Rozsa's rights to the minerals that may underlie section 2, however, she questioned the strength of Rozsa's seismic data. She noted that the proposed well location was chosen based on only one seismic line and that by Rozsa's own evidence the quality of the seismic data was poor. She questioned if this was sufficient information to determine that the proposed location was the only one that could be drilled. She suggested 3-D seismic be shot in order to either justify the proposed location or identify alternative locations.

Ms. Koppenstein believed that the proposed well, if drilled and operated, would create an unacceptable amount of impact on her farming operation. She stated that the well would be an obstacle for her to farm around and the access road would require that farm machinery be raised in order to cross the road. She was concerned that the well would create erosion problems by causing the additional working of the land around the wellsite. Ms. Koppenstein did not commit to a road location because she wanted to seek advice from agricultural experts regarding the most appropriate location for a road.

Ms. Koppenstein suggested that Rozsa directionally drill the well to its bottom hole coordinates from an alternative surface location on the east boundary of section 2. She considered this a viable alternative that would lessen surface impacts to an acceptable level. There would not be an access road and the lease would be less imposing to farm around. Further, if an irrigation pivot is installed in the future, the alternative location would fall outside of the pivot area. In response to questioning, she agreed that relocation of the wellsite 100 metres east, as allowed by Rozsa's seismic, would not be far enough to alleviate the farming impacts.

3.3 Views of the Examiners

The examiners accept there is a need for the proposed well and pipeline. They acknowledge that Rozsa has the rights to explore for gas in section 2 and that the pipeline would be needed in order to transport any gas that may be produced. The examiners note that Ms. Koppenstein did not dispute Rozsa's rights to the minerals and that she did not express significant concern over the

pipeline.

The examiners are satisfied that Rozsa has sufficient technical data available to justify the proposed well location. The examiners believe that the geological and seismic interpretations presented by Rozsa are reasonable. Seismic methods are commonly used in conjunction with geology in defining well locations and therefore the examiners accept Rozsa's desire to locate the well on the seismic line. The examiners note that the location for a vertical well could be moved up to 100 metres east of the proposed location, but this would put the well off-target for gas and may result in equity disputes. Further, the examiners believe that such a move does little to mitigate the impacts on farm operations. The examiners are satisfied that Rozsa's geological and seismic data demonstrate that a vertical well, farther east at the perimeter of the section, may not encounter a sand of equal reservoir quality to the proposed location.

With regard to directional drilling from the perimeter of section 2, the examiners do not see significant benefits from this option given the commitments put in place by Rozsa to mitigate surface impacts. The examiners believe that Rozsa's commitments for the proposed well would reduce the surface impacts to an acceptable level and thus do not believe that the additional costs associated with directional drilling are warranted. The examiners further accept that a directional well bore may not allow for the evaluation of potential reservoirs at a shallower depth. However, the examiners do not agree with Rozsa that directional drilling presents unacceptable risks. The examiners note that directional drilling technology has improved significantly in recent years and the risks that may have been common several years ago are not of concern today. In situations where it is warranted, directional drilling is a viable, and in most cases a practiced option.

With respect to the access road, the examiners accept Rozsa's commitments to construct the low-profile road to facilitate the crossing of farm machinery. The examiners also agree that the proposed road location represents the shortest route and would likely create the least impact. However, the examiners recognize Ms. Koppenstein's desire to seek expert advice on an appropriate access route. The examiners see merit in allowing Rozsa to utilize the proposed route on a temporary basis to provide Ms. Koppenstein the opportunity to consider alternative routes. This would require that Rozsa not construct a permanent road for a period of time and conduct only the basic necessary operations on the access route that would allow for rig move, testing and completion of the well. The examiners believe that a period of 60 days from the issuance of this report will be sufficient time for Ms. Koppenstein to decide on a permanent road location. If, after that period, Ms. Koppenstein does not present a preferred alternative location to Rozsa, then the applied-for access road becomes the permanent access to the well.

4 Recommendation

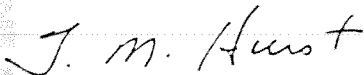
The examiners recommend that Applications No. 960765 and 960766 be approved subject to the following:

- Rozsa shall adhere to all its commitments made at the hearing and as described in its applications and supporting information.
- Rozsa shall use the proposed access road as a temporary road for a minimum period of 60 days from the date of issuance of this report. Construction of the road for this period shall be the minimum required for drilling, testing and completion operations. If after 60 days, Ms. Koppenstein has not presented Rozsa with a preferred alternative route, Rozsa may utilize the proposed access as a permanent road.

DATED at Calgary, Alberta on 25 November 1996.



F. Rahnama, Ph.D.

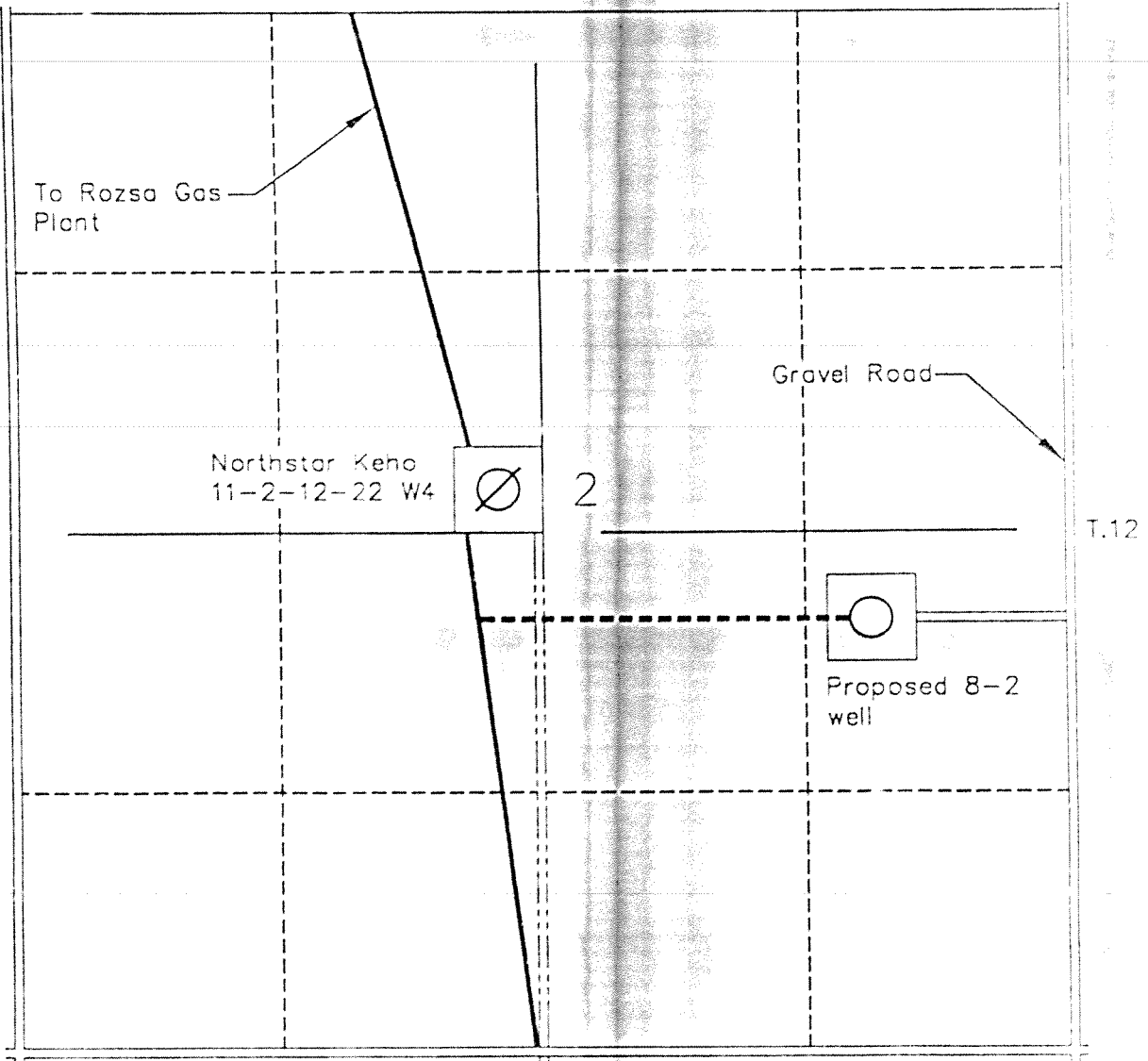


T. M. Hurst



F. G. Sorenson

R.22W.4M.



LEGEND



Standing Well



Proposed Pipeline



Proposed Well



Existing Pipeline



Proposed Access



Existing Access

PROPOSED WELLSITE, ACCESS AND PIPELINE

Applications No. 960765 & 960766

Rozsa Petroleum Ltd

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