

**ALBERTA ENERGY AND UTILITIES BOARD**

**Calgary Alberta**

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**MOBIL OIL CANADA, LTD., AND MOBIL RESOURCES LTD.**

**APPLICATION FOR A WELL LICENCE TO DRILL**

**A CRITICAL SOUR GAS WELL**

**LSD 4-36-27-28 W4**

**CROSSFIELD FIELD**

**Decision 99-28**

**Application No. 1037560**

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**1 DECISION**

Having carefully considered all of the evidence, the Alberta Energy and Utilities Board (the EUB/Board) has determined that Application No. 1037560 meets all of the EUB's regulatory requirements and is satisfied that appropriate measures will be taken to ensure that public safety risks and impacts will be minimized. The Board therefore confirms that Well Licence No. 221575 for the well MOBIL PCP HZ CROSS 7-36-27-28 remains in good standing subject to Mobil Oil Canada, Ltd., and Mobil Resources Ltd. (Mobil) meeting all regulatory requirements, its various undertakings, and the conditions listed in Attachment 1.

The reasons for the Board's decision are presented below.

**2 APPLICATION AND HEARING**

**2.1 Application and Interventions**

On 12 February 1999, Mobil submitted Application No. 1037560 to the Board on a routine basis, pursuant to Section 2.020 of the Oil and Gas Conservation Regulations, for a well licence to drill a critical sour gas well. The well would be drilled from a surface location in Legal Subdivision (LSD) 4 of Section 36, Township 27, Range 28, West of the 4th Meridian (LSD 4-36-27-28 W4M) (the 4-36 well) to a bottomhole location in LSD 7-36-27-28 W4M, with an 1100 metre (m) horizontal section. The purpose of the 4-36 well is to obtain gas production from the Crossfield Member. On 17 February 1999, the EUB issued Well Licence No. 221575 on the understanding that there were no outstanding objections related to the 4-36 well.

Mobil spudded the 4-36 well on 3 March 1999, drilled to 363 m and set surface casing. The EUB subsequently received objections to the application from area residents near the proposed well location. Accordingly, pursuant to Section 43 of the Energy Resources Conservation Act, the EUB directed that a public hearing be held to consider the application. Mobil agreed to refrain from any further activity related to Well Licence No. 221575 and the 4-36 well pending the outcome of the hearing.

The attached figure shows the location of the proposed well, the emergency planning zone, and residences in the area.

## 2.2 Hearing

The application was considered at a public hearing in Airdrie, Alberta, commencing on 13 October 1999, before Board Member T. McGee and Acting Board Members M. J. Bruni and J. R. Nichol, P.Eng.

At the opening of the hearing, following Mobil's presentation of its application, the Board panel and staff and hearing participants who wished to attend viewed the surface location of the proposed well, the surrounding area, and the residences of the interveners.

Those who appeared 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
Mobil Oil Canada, Ltd., and Mobil Resource Ltd. (Mobil) K. F. Miller	C. D. Cook E. Mather E. Scott, P.Geol. W. P. Shtand D. Fraser, of Bissett Resource Consultants Ltd. M. J. Zelensky, P.Eng., Public Safety and Air Quality Management Consultant
G. Dowler, J. Gunoff, S. Sandau, H. Sandau S. K. Luft	G. Dowler S. Sandau H. Sandau
L. Harnack	L. Harnack
Rockyview Wapiti Farms Ltd., B. Pagenkopf, L. Pagenkopf K. Wilson	B. Pagenkopf L. Pagenkopf J. S. Church, Ph.D.

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**THOSE WHO APPEARED AT THE HEARING (cont'd)**


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 Principals and Representatives  
 (Abbreviations Used in Report)

 Witnesses
 

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Alberta Energy and Utilities Board staff

M. Brown, P.Eng.  
 W. Elsner, P.Geol.  
 M. Craig  
 A. Girgis, P.Eng.  
 S. Kelemen, C.E.T.  
 B. Kennedy, Board Counsel  
 R. Kennedy, L.L.B.,  
 S. Milligan

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### 3 BASIS OF DECISION

The Board is directed by the Energy Resources Conservation Act to review the subject application to determine whether, in the Board's opinion, the proposed well, MOBIL PCP HZ CROSS 7-36-27-28, is in the public interest, having regard to the social and economic effects of the proposed development and its effect on the environment. The Oil and Gas Conservation Act provides, in part, that the purposes of the Board are to secure the observance of safe and efficient practices in the locating, spacing, drilling, equipping, completing, reworking, testing, operating, and abandonment of wells and in the operations for the production of oil and gas and that the Board provide for the economic, orderly, and efficient development of the oil and gas resources of Alberta in the public interest. In assessing the various impacts, the Board must have regard for the existing or background circumstances so that the effects of all impacts may be considered.

In considering the public interest, there are a number of issues that are not singularly social, economic, or environmental matters, but that cut across and affect each of these categories. For example, even minimal negative social and environmental effects might not be acceptable and positive economic effects would not likely occur if there were not justification or need for the proposed well or if the applicant did not have the technical capability to carry it out. Accordingly, the Board believes that the first issues it should consider in assessing the application are:

- \$ justification for the proposed well, and
- \$ selection of technology for the proposed well.

If it concluded that there is justification for the well, the Board, having due regard for the input received from the participants in the hearing, believes it should then go on to assess in detail the effects that would likely result and the mitigative measures that may be taken to reduce any negative effects. In doing so, it would deal specifically with the following issues:

- \$ proposed well location,
- \$ impacts of the proposed well,

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- \$ safety of the well, and
- \$ public notification and consultation.

The Board, in making its decision, believes it should bring together its conclusions respecting the various effects that would result from the proposal, some of which would be negative and some of which would be positive. The Board must balance these effects and on that basis form an overall opinion as to whether the proposed well is in the broad public interest.

## **4 JUSTIFICATION FOR THE PROPOSED WELL**

### **4.1 Views of the Board**

The Board notes that while the interveners argued against the proposed well on the basis of health, safety, and environmental concerns, the interveners did not dispute Mobil's right to recover the natural gas underlying Section 36-27-28 W4M (Section 36). The Board accepts that Mobil has the right to explore for and produce petroleum and natural gas underlying Section 36 and therefore accepts that there is a need for the well, provided that the development can be carried out in an acceptable manner.

## **5 SELECTION OF TECHNOLOGY FOR THE PROPOSED WELL**

### **5.1 Views of the Board**

The Board notes that Mobil has drilled a number of critical horizontal sour wells in the general area in the last three and a half years and that more than 50 per cent of all wells drilled by Mobil were sour wells. The Board also accepts that Mobil understands the Crossfield reservoir and the technical and operational measures needed to control the reservoir. Mobil stated that it had not encountered any well control problems in the area. On this basis, the Board believes that the applicant has the technical capability to drill the proposed well.

## **6 PROPOSED WELL LOCATION**

### **6.1 Views of the Applicant**

The applicant stated that the proposed 4-36 well would be an exploratory well targeting a new Crossfield pool that could not be produced through any existing wells. Mobil described the Crossfield reservoir in the area of application as an isolated porous facies separated from known Crossfield pools by an area of tight matrix lacking effective porosity. Mobil estimated a 50 per cent probability of drilling a successful gas well.

Mobil stated that it had chosen the 4-36 surface location and 7-36 bottomhole location to allow the drilling of a vertical pilot hole and evaluation of the Crossfield Member prior to the drilling of a horizontal section through the optimum portion of the Crossfield reservoir. Mobil assessed alternative sites in Section 36; however, the possible surface locations were constrained by an existing pipeline to the east and degrading reservoir quality to the north. Further, the proposed surface location in the corner of the section in LSD 4 was the preferred location of the surface

owner, as it would limit the effect of the well on farming operations.

Mobil submitted that if the 4-36 well were successful, a second well to evaluate Section 25-27-28 W4M (Section 25) may be warranted. The proposed surface location in LSD 4 would allow this second well to be drilled from the same surface location. Mobil argued that this would minimize surface impacts associated with well site facilities and pipelines, while maintaining a larger separation distance from residences than if a well were drilled with a surface location in Section 25.

## **6.2 Views of the Interveners**

Mr. Dowler and the Sandaus submitted that the location of the proposed well site to the north of their residences, with prevailing winds from the north and west, would result in a direct and unnecessary risk in the event of a sour gas release and that therefore the proposed location was not the least intrusive. Mr. Dowler suggested that moving the surface location of the well 2000 m to the northeast would lessen the impact of the well on his property and still allow a horizontal section to be drilled to the 7-36 bottomhole location. Further, the Sandaus stated that they had not been advised of Mobil's intentions to potentially drill a second well and they expressed concerns over the possibility of another critical sour gas well in the area.

The Pagenkopfs stated that Mobil had not demonstrated the need for the well to be located at the well site and that the existing supporting oil and gas infrastructure located within the area provided Mobil with many less sensitive alternative gas well locations.

## **6.3 Views of the Board**

The Board notes that Mobil identified the 4-36 surface location and 7-36 bottom hole location to provide the greatest probability for the success of the horizontal section of the well through the optimum portion of the reservoir; it also notes that no evidence was presented to dispute the selection of the locations on this basis. Further, no evidence was submitted to conclude that any alternative site would be clearly superior. The Board also notes that the proposed 4-36 surface location is the preferred location of the surface owner. Accordingly, the Board believes that the 4-36 surface location and 7-36 bottomhole location are acceptable from a reservoir development perspective.

The Board notes that if Mobil believes the drilling of a second well from the 4-36 surface location is warranted, a new application for a well licence would be required. This would provide the opportunity for any potentially affected parties to express their concerns.

# **7 IMPACTS OF THE PROPOSED WELL**

## **7.1 Views of the Applicant**

Mobil stated that the base of the lowest groundwater aquifer in the area is at 323 m. Surface hole at the 4-36 location was drilled to 363 m with a benign freshwater/gel mud, and surface casing was installed and cemented to surface without any loss of cement to the hole. Mobil submitted that the groundwater aquifer is suitably protected for drilling below the surface casing. Further long-term protection of groundwater would be maintained by running production tubing and

casing and cementing the production casing to surface. Mobil indicated that it had tested three water wells in the area for rate and quality and would be prepared to test other water wells if requested.

Mobil submitted that the well site has been bermed to ensure that any fluids are contained on the lease during drilling operations and that a vacuum truck would be present to manage any liquids. The 4-36 location was designed as a sumpless location. Drilling fluids would be disposed of by the landspray process at an approved off-lease location.

Mobil stated that sealed storage vessels would be used during drilling operations to minimize any fugitive emissions and odours. Further, Mobil submitted that production facilities at the 4-36 well site would be a closed system consisting of a wellhead, flow line, heater, and associated controls. It argued that the elimination of a separator, flare knockout, and flare stack on site would greatly reduce the chance of any fugitive emissions and odours during production operations.

Mobil stressed that any emissions from the 4-36 well would occur only as a result of flaring/incineration during cleanup operations. If the well were successful, it would be tied in to a pipeline and production testing would be conducted in-line if necessary. Mobil committed to restrict flaring to 120 hours over approximately ten days. To further mitigate the effects of flaring, Mobil also committed to monitor ground-level concentrations of hydrogen sulphide ( $H_2S$ ) and sulphur dioxide ( $SO_2$ ) to ensure that ambient air quality guidelines are met. Finally, Mobil committed to make reasonable efforts to use incinerator technology in place of a conventional flare stack, provided that the use of such equipment is technically feasible and safe. Mobil submitted that it has operational experience using incinerators; however, the use of this technology for well cleanup and testing is still evolving.

Mobil stated that it was aware since about April 1998 that there was an elk herd on the Pagenkopfs' property. However, it was not until August 1999 that the Pagenkopfs expressed any concerns regarding the effect of the proposed well on the elk herd. Mobil acknowledged the concerns, and in order to address adverse potential effects it made further commitments in addition to the duration of flaring and the use of incineration. Specifically, Mobil agreed to

- provide the Pagenkopfs with a portable  $H_2S$  detector for their home;
- inform the Pagenkopfs prior to sensitive drilling or well operations;
- maintain a closed system during production to prevent the escape of  $H_2S$  and other gases;
- provide monitoring of animal health issues to obtain baseline data and provide vet monitoring where required;
- comply with all EUB requirements during drilling and production of the well; and
- compensate the Pagenkopfs for any future losses resulting from Mobil's operations in accordance with established legal and compensation principles.

Mobil believed that the primary unresolved concern of the Pagenkopfs involved the building of three additional elk paddocks to facilitate the movement of the elk to a coulee during flaring operations. Mobil submitted that construction of fencing was not justified, as it believed that the drilling of the 4-36 well posed little risk to the elk herd. As to air emissions, Mobil argued that

the low-level emissions that would occur over a short period of time during flaring would not adversely affect the elk herd. Furthermore, it was felt that the monitoring of the air emissions would confirm that the flaring operations were being conducted within the provincial ambient guidelines.

In addressing the concern of the light from the flare itself affecting the elk, Mobil stated that any flaring would start during daylight hours and the size of the flame would be increased slowly to minimize any impacts on the elk.

Mobil did not believe that the noise of the flare would be a concern because, even if it used the noisier incineration technology, previous testing had shown that the sound levels were down to 40 dBA at an approximate distance of a half kilometre from the incinerator. Further, Mobil submitted that noise should not be an issue during drilling and completion operations, and it committed to comply with EUB noise requirements.

## **7.2 Views of the Interveners**

Mrs. Harnack, Mr. Dowler, and the Sandaus expressed concerns over the immediate and long-term effects of the well on their water wells. The Sandaus indicated that Mobil had tested their water well; however, both Mrs. Harnack and Mr. Dowler stated that their wells had not been tested by Mobil.

All of the interveners at the hearing expressed concerns relating to their individual health and the health of their families and livestock should the 4-36 well proceed. In particular, the interveners expressed concerns with flaring at the well. Mr. Dowler believed that incineration should be used at the well, as opposed to flaring, to reduce the carcinogens in the air; however, he did not feel confident that Mobil would use its best efforts to utilize this technology. Mrs. Harnack did not feel reassured regarding the use of incineration at the well and still believed that something could go wrong. Mrs. Harnack stated that Mobil had offered to relocate her family during flaring operations; however, she did not believe that it was possible to leave the farm unattended. Further, she believed that her family should remain together.

The Sandaus raised concerns about the increasing number of wells and related pipelines and facilities in the area. They believed that a development plan setting out proposed wells for the next five years within a six-mile (9.6 kilometre) radius of their residence should be available so that they would be aware of what is occurring.

The Pagenkopfs estimated that they have invested \$200 000 in developing a high-quality elk facility on their property. Currently 153 elk are located on site. Evidence of the potential effects of the 4-36 well on their elk was provided by an expert, Dr. John Scott Church. Dr. Church also provided a report specific to the Pagenkopfs' elk operation entitled "Observations and recommendations on the anticipated impacts of a sour gas well installation on the health and productivity of the farmed wapiti residing at Rockyview Wapiti Farms Ltd." The report advised that more intensive development should be avoided during the summer months because of the elk calving season, which begins in May and ends in July. The report also identified the end of March to the end of June as the antler growth period and thus a critical time for antler injuries.



Antler removal operations also occur during the summer months. The elk breeding season is from the start of September to mid-November. Therefore, the report advised that activities such as drilling and pad site construction should be done preferably during winter months, when animal activities are minimal under most elk management programs.

The report also stated that elk repeatedly exposed to stimuli become accustomed to the stimuli and eventually lose their fear reactions if the stimuli are predictable and occur on a regular basis. In this regard, the Pagenkopfs were most concerned about the visual impact of the flare. They and Dr. Church felt that the sudden ignition of the flare and associated light and noise had the potential to spook the animals and possibly result in mechanical injury to the elk or to their antlers. Dr. Church thought mechanical injury was the greatest risk and suggested that there was the possibility that two or three animals could be affected and eventually die of complications.

The Pagenkopfs also expressed concerns about the effect of any emissions from the well on elk reproduction and the general health of their elk. The Pagenkopfs noted that their property is located directly east of the proposed 4-36 well, downwind of the prevailing winds, which the Pagenkopfs stated are from the west.

The Pagenkopfs and Dr. Church believed that the best means of mitigating any potential impacts was to provide natural shelter for the elk. They felt this could best be accomplished by creating paddocks for the elk that encompassed the coulee on the northern part of their property where the elk would be sheltered from the visual aspects of the flaring, the noise, and airborne emissions. Dr. Church also thought it prudent to have an underground water source to avoid airborne contaminants affecting the elk's drinking water. To accomplish this the Pagenkopfs would require three additional paddocks with waterers to be built in the coulee at a material cost of approximately \$27 000. The Pagenkopfs had offered that if Mobil were to supply the materials, they would provide the labour.

Dr. Church also provided evidence as to other means of mitigating the potential impacts. Specifically, he suggested that as a secondary alternative it might be possible to create more pens within the existing fencing in the coulee so as to keep more animals in these pens. The use of shade netting on the existing fence might also be helpful to some extent, but he thought the elk would still be able to see the flare over top of the fence.

### **7.3 Views of the Board**

The Board notes the measures that Mobil has already taken to protect groundwater in the area as well as the additional preventive measures that Mobil has committed to. In view of this, the Board does not believe that the proposed well poses a risk to area water wells. However, the Board expects Mobil to work with area residents to ensure that additional water well testing is conducted if requested by the residents.

The Board considers the likelihood of fugitive emissions and odours at the 4-36 well during both the drilling and production phases to be low given the mitigative measures proposed by Mobil. However, the Board expects Mobil to provide a contact name and phone number with 24-hour availability to area residents for reporting problems or obtaining assistance. This would be in addition to the Mobil contact provided for emergency purposes.

The Board acknowledges the concerns of the interveners with respect to health risks during flaring at the 4-36 well. The Board believes that the proposed use of incineration would provide improved combustion and reduce the potential for the emission of products of incomplete combustion. However, it agrees that the application of incinerator technology to well cleanup and testing is evolving and accepts that it may not be feasible for Mobil to use it in this case. If incineration is used, an appropriate flare stack should also be on site to handle the initial flow back from the well. The Board notes that any flaring or incineration would be limited to 120 hours over 10 days and would require written approval from the Board of the method, stack height, and equipment to be used to flare the gas. The public should realize that although incineration provides better combustion efficiency than conventional flaring equipment, both conventional flaring and incineration emit SO<sub>2</sub> as an inherent product of the combustion of H<sub>2</sub>S; this SO<sub>2</sub> emission is not reduced with incineration. The Board also notes that any emissions would have to meet Alberta's ambient air quality guidelines and it relies on those guidelines to protect humans and animals from the potential health risks that might be associated with flaring emissions.

Although the Board does not believe that Mobil's proposed flaring operation would pose any health risk to the public, it believes that due to the perception of the interveners, it would be advisable for Mobil to discuss possible relocation of sensitive family members during flaring operations with those who expressed such a concern.

The Board notes the comments of the Sandaus respecting development in the area; however, the Board also recognizes the difficulties in providing details regarding future development because of the uncertainties related to whether a reservoir exists and, if it does, the nature and extent of it. Notwithstanding this, the Board expects Mobil to communicate as fully as possible with area residents regarding future development. The Board would encourage Mobil to proceed with an open house in conjunction with other operators in the area so that the full spectrum of development plans can be addressed.

The Board notes the evidence provided from Mobil and the Pagenkopfs regarding the potential impacts to the elk and especially notes the lack of evidence that there are no impacts. Given the unique opportunity available to mitigate these impacts in this situation, the Board will require that additional paddocks be constructed prior to any flaring/incineration operations at the well. The Board also expects Mobil to consult with the Pagenkopfs in planning its drilling operations and associated pipeline and facility construction to avoid activities during the elk calving season and the antler growth period and to adjust those plans as appropriate to avoid or minimize the impacts on the elk herd.

## 8 SAFETY

### 8.2 Views of the Applicant

Based on a theoretical flow model, Mobil determined the surface deliverability for the 4-36 well with various wellbore configurations during drilling, completion, and producing operations. It submitted that the maximum potential release rate would be from the horizontal section of the well during completion operations and calculated a maximum poststimulation wellhead absolute open flow of  $1570 \times 10^3$  cubic metres per day ( $\text{m}^3/\text{d}$ ).

Mobil stated that the maximum expected  $\text{H}_2\text{S}$  concentration for the proposed 4-36 well was 17.5 per cent.  $\text{H}_2\text{S}$  values for the Crossfield Member within the area vary from 6.4 to 34 per cent. However, Mobil believed that the values vary in a consistent and predictable manner, decreasing from west to east, and it used this mapping technique to predict  $\text{H}_2\text{S}$  concentration at a proposed well site.

Based on the above, Mobil determined that the maximum  $\text{H}_2\text{S}$  release rate of the 4-36 well was 3.180 cubic metres per second ( $\text{m}^3/\text{s}$ ), with a corresponding emergency planning zone (EPZ) of 5.05 kilometres (km).

Mobil submitted that the 4-36 critical sour well would be drilled following the Alberta Recommended Practices as well as all applicable standards, regulations, and guidelines. Further, Mobil indicated that prior to completion of the well, all data would be updated and modifications to the completion program would be made as required.

Mobil developed an emergency response plan (ERP) using a reduced EPZ of 4 km for drilling and completion operations. Mobil submitted that a 4 km EPZ was manageable, considering the terrain, access into the area, and ease of evacuation. Mobil stated that plume dispersion modelling had been conducted for the 4-36 well to understand the extent of a potential hazard associated with an  $\text{H}_2\text{S}$  release and that the modelling confirmed that the 4 km EPZ was appropriate. Further, Mobil committed to ensuring that a mobile air monitoring unit would be dispatched to the EPZ during any level of alert, the ignition criteria would include igniting if  $\text{H}_2\text{S}$  concentrations of 1.0 parts per million (averaged over one hour) were detected in any unevacuated unrestricted country residential development area or urban density area, and dual ignition equipment would be on site prior to penetrating the Crossfield Member and during all sour drilling and completion operations.

Mobil submitted that its practice is to conduct corporate emergency response exercises on a regular basis to enhance response capabilities and to improve its emergency response systems. Mobil stated that prior to entering the sour formation at the 4-36 well, a meeting would be held and on-site drills conducted to ensure that all on-site and off-site personnel were familiar with their responsibilities and prepared to respond in the event of an emergency.

Mobil would advise all parties within the EPZ at least 24 hours prior to drilling into the sour zone. Mobil stated that any sensitive individuals and those requiring assistance were identified in the ERP. Mobil intended to offer such individuals voluntary evacuation during a level-1

emergency; however, in response to questioning, Mobil agreed that this was not clearly set out in the ERP. Mobil stated that if an emergency occurred during school hours, school buses would be diverted to the evacuation centre and the children's parents would be informed. Mobil further stated that it believed these procedures had been discussed with the public during the consultation process.

## **8.2 Views of the Interveners**

The interveners did not comment specifically on the calculated release rate of the 4-36 well.

The interveners expressed concerns over the ability of Mobil to drill the proposed 4-36 well in a safe manner. Mr. Dowler also questioned Mobil's request for a waiver of the use of blind shear rams.

The interveners expressed numerous concerns regarding Mobil's proposed ERP. In general, the interveners questioned the adequacy and reasonableness of the ERP and Mobil's ability to carry out the emergency evacuation plan should the 4-36 well encounter problems.

Mrs. Harnack was not convinced that Mobil would be able to locate her family should an emergency occur. She was not reassured by Mobil's offer of a beeper, as batteries could go low and a beeper may be ineffective.

## **8.3 Views of the Board**

The Board accepts Mobil's methodology of calculating flow rates and agrees that the maximum expected flow rate of the 4-36 well is  $1570 \times 10^3 \text{ m}^3/\text{d}$  from the horizontal portion of the wellbore during completion operations.

The Board does not accept Mobil's method of calculating an  $\text{H}_2\text{S}$  concentration for the subject well. The Crossfield Member produces from several wells in the surrounding area with greatly varying  $\text{H}_2\text{S}$  percentages. In the Board's opinion, it is prudent to use an  $\text{H}_2\text{S}$  percentage that is more representative of the worst possible case for the area. Although rates over 40 per cent are indicated by Mobil in its application, the Board considers 25 per cent  $\text{H}_2\text{S}$  to be more typical of the surrounding area. The Board calculates an  $\text{H}_2\text{S}$  release rate of  $4.543 \times 10^3 \text{ m}^3/\text{d}$  based on the maximum surface deliverability of  $1570 \times 10^3 \text{ m}^3/\text{d}$  and an  $\text{H}_2\text{S}$  concentration of 25 per cent. The Board requires Mobil to adopt a release rate of  $4.543 \times 10^3 \text{ m}^3/\text{d}$ , with a corresponding calculated EPZ of 6.44 km.

The Board requires that the drilling, completion, production, and maintenance of wells in Alberta be done in accordance with the Oil and Gas Conservation Act and Regulations, all EUB standards and guidelines, and the Alberta Recommended Practices. In this case, the Board notes that Mobil has submitted a detailed drilling plan and that the proposed well would meet or exceed all requirements. Based on the increase in the calculated EPZ, Mobil will be required to revise its drilling plan to include the use of blind shear rams. The expanded calculated EPZ includes an Unrestricted Country Development and over 100 occupied dwellings; therefore, blind shear rams must be used in the drilling of the 4-36 well to meet the requirements of

*Interim Directive 97-6: Sour Well Licensing and Drilling Requirements.* The Board also notes that Mobil must comply with the requirements of *Interim Directive 90-1: Completion and Servicing of Sour Wells* prior to completion operations at the well.

The Board notes that Mobil has developed an ERP using a reduced EPZ of 4 km. Notwithstanding the increase in the H<sub>2</sub>S release rate calculated by the Board and the corresponding increase in the calculated EPZ, the Board is satisfied that the use of a reduced EPZ of 4 km is still appropriate, provided that the ERP is revised as outlined below. Further, the Board finds the ignition criteria as defined by Mobil to be acceptable.

In this case, the Board expects Mobil to revise the ERP and obtain the Board's approval prior to resuming drilling operations. The revised plan must identify and address any sensitive individuals, as well as any other special needs, and clearly indicate that in a level-1 emergency sensitive individuals will be notified and provided the option of evacuation. Further, the Board expects that Mobil will ensure that all individuals within the reduced EPZ are aware of the potential emergency situations, the procedures in place to respond to emergencies, and how the ERP specifically relates to them.

## **9 PUBLIC NOTIFICATION AND CONSULTATION**

### **9.1 Views of the Applicant**

Mobil stated that it takes its responsibility to meet the Board's expectations regarding public consultation very seriously. Mobil believed that it had engaged in a thorough, meaningful, and sincere public consultation program. It submitted that its public consultation program, conducted through a consulting company, included individually contacting all parties within the EPZ, as well as providing and discussing an information package. If concerns were expressed, a Mobil representative contacted the party and attempted to resolve the issue. When concerns were general and unspecified, Mobil questioned whether the landowner would formally object to the application. In this case, Mobil submitted that none of the parties involved indicated that they would formally object to the well licence application and so filed the application indicating that there were no outstanding objections.

Mobil stated that an applicant must provide the public with sufficient information to participate meaningfully in the decision-making process concerning the proposed development. However, affected parties must take every opportunity to learn more about resource development and to bring their concerns forward as early as possible so that attempts may be made to resolve outstanding issues.

Mobil submitted that it had conducted open houses in the general area and had found this process to be beneficial in communicating technical information and educating the public. Mobil intended to continue with a similar open house program on a regional level. However, in view of its consultation program, Mobil did not believe it was necessary to have an open house on a specific well prior to submitting an application.

## **9.2 Views of the Interveners**

A number of concerns were raised by the interveners regarding Mobil's consultation process. In general, the interveners believed that Mobil had not adequately informed landowners as to the specifics of the well being drilled. They expressed concerns regarding the lack of consistent, factual, and instructive information from Mobil. The interveners submitted that they did not have sufficient information to fully understand the potential impacts of the well, or even the appropriate questions to ask. The interveners felt mistrustful in their dealings with Mobil and believed that Mobil had failed to be forthright and honest concerning its intentions.

The interveners submitted that Mobil should have held an open house with landowners in the area at the start of the process to provide more information on the well.

## **9.3 Views of the Board**

The Board accepts that Mobil takes its responsibilities regarding public consultation seriously and agrees that an effective consultation program must be a cooperative venture between the parties involved. However, the Board is not satisfied that Mobil and its consultant provided the landowners and residents with enough detailed information to fully understand the true nature of the well and operations being proposed or how the ERP would address their particular issues or sensitivities. It is clear to the Board that Mobil's failure to provide the parties with the kind of information they needed to fully understand its proposal was a key element in establishing the lack of trust in Mobil that was prevalent throughout the hearing. Once the feeling of trust has been lost, it is very difficult to re-establish.

The Board is also very concerned that although Mobil did not believe that there were any formal objections to its application, it failed to advise the Board that there were a number of landowners and residents who had expressed concerns about the proposed well. An applicant must advise the Board of all situations where concerns have been expressed so that the EUB can ensure that due process is provided to those individuals with respect to the resolution of their concerns. In this case, Mobil's failure to identify these concerns at the application stage resulted in the issuance of a well licence that was subsequently challenged by the concerned parties. Such an after-the-fact approach to the identification and addressing of concerns is not condoned or expected by the Board. It usually results in the polarization of positions, the loss of trust in the applicant and the process, and an ultimate decision that is unlikely to be viewed as a win by any of the parties.

Although the Board does not believe that Mobil provided the residents with the appropriate information respecting the well or the ERP, the Board does not find that this failure is reason enough to deny the application. The consequence of this failure to conduct adequate and effective communication with the affected parties is the public hearing process, which in this case clearly added additional time, effort, and cost to the decision-making process.

The Board believes that the following information should be provided as a minimum to all residents and landowners as part of the information package respecting all critical sour wells:

- company name, company contact person, phone number, facility location and type
- level classification, H<sub>2</sub>S concentration, and H<sub>2</sub>S release rate
- a brief description of how the development complements or is part of the existing development in the area
- a brief description of the equipment to be installed (e.g., number and size of tanks, size of buildings, safety features)
- type of flaring (continuous or intermittent) or other occurrences such as odours, and an explanation
- scope of emissions and control measures if applicable
- noise sources at the facility and mitigative measures, if applicable
- amount and type of vehicular traffic
- an example of a similar existing facility preferably in the area (a tour of a similar facility may be an option to consider where feasible and warranted)
- implications of any setback restrictions on surface land use
- emergency response plans, particularly the need to identify sensitivities, evacuation, and ignition criteria

The Board believes that an open house prior to submission of this well licence application would have assisted residents in the area in obtaining more information specific to the proposed well and may have promoted a more open and trustful relationship between the parties; however, it likely would not have precluded the hearing.

Dated at Calgary, Alberta, on 17 December 1999.

## **ALBERTA ENERGY AND UTILITIES BOARD**

*[Original signed by]*

T. McGee  
Board Member

*[Original signed by]*

M. J. Bruni  
Acting Board Member

*[Original signed by]*

J. R. Nichol, P.Eng.  
Acting Board Member

**ATTACHMENT 1 TO DECISION 99-28**

**Condition 1**

Mobil shall test the Sandaus', Dowlers', Harnacks' and Pagenkopfs' water wells before resuming drilling operations and after completion of the clean-up operations if these residents so wish. Mobil shall conduct similar water well testing for any other landowner within 2 km of the 4-36 well site if requested to do so.

**Condition 2**

Mobil shall provide all residents within the 4 km reduced EPZ with a contact name and phone number with 24-hour availability for reporting problems or obtaining assistance prior to resuming drilling operations.

**Condition 3**

Flaring at the 4-36 well shall be limited to cleanup operations of 120 hours over 10 days. Incineration technology shall be used whenever feasible. Downwind mobile air monitoring will be conducted and the results provided to the Board.

**Condition 4**

Mobil shall use blind shear rams during drilling of the 4-36 well.

**Condition 5**

Drilling of the 4-36 well is not to occur during the elk calving season from May to July or during the antler growth period from the end of March to the end of June unless agreed to by the Pagenkopfs.

**Condition 6**

Mobil will undertake to provide the Pagenkopfs with three additional elk paddocks in the coulee in accordance with the proposal made by the Pagenkopfs to facilitate movement of the elk. Such fencing shall be in place prior to any flaring/incineration operations at the 4-36 well.

**Condition 7**

Mobil shall obtain approval of a revised ERP for this well before resuming drilling operations at the 4-36 site. Mobil must revise its ERP to include updated information regarding sensitive individuals and updated procedures for providing these individuals with the opportunity to be evacuated at a level 1 emergency.