ALBERTA ENERGY AND UTILITIES BOARD
Calgary Alberta

STAMPEDE OILS INC.
APPLICATION FOR A WELL LICENCE **Decision 99-30**
TURNER VALLEY FIELD **Application No. 1031511**

1 APPLICATION AND HEARING

1.1 Application

Stampede Oils Inc. (Stampede) applied to the Alberta Energy and Utilities Board (EUB/the Board) pursuant to Section 2.020 of the Oil and Gas Conservation Act for a licence to drill a level-1[1] sour gas well from a surface location at Legal Subdivision (LSD) 15, Section 15, Township 21, Range 3, West of the 5th Meridian, (15-15 surface location). The well would be directionally drilled to a bottomhole location in LSD 11-15-21-3W5M (11-15 well) to obtain gas production from the Turner Valley Formation.

1.2 Interventions

The EUB received objections to the application from area residents and landowners near the proposed well location. It also received an objection from the Whiskey Hill Owners Alliance (WHOA), a group of residents located approximately 5 kilometres (km) north of the proposed well. Pursuant to Section 29 of the Energy Resources Conservation Act, the EUB directed that a public hearing be held to consider the application and interventions. In response to the issuance of the notice of hearing and two subsequent notices of rescheduling of hearing, the EUB received interventions from several residents and landowners expressing concerns about the impacts from the surface location selected, the public consultation process, emergency planning, emissions, and Stampede's technical and financial ability to complete the project.

Figure 1 shows the location of the proposed well and residences in the immediate vicinity of the well. Figure 2 illustrates the region encompassing the conceptual development plan submitted by Stampede.

1.3 Hearing

The application and interventions were considered at a public hearing in Priddis, Alberta, commencing 6 July 1999 before Board Members J. D. Dilay, P.Eng., T. McGee, and Acting Board Member D. Waisman. The Board viewed the proposed surface location and the surrounding area on 17 June 1999.

Those who appeared at the hearing and abbreviations used in this report are listed in the following table:

---

[1] Sour wells are designated by levels pursuant to *Interim Directive 97-6* depending on their potential maximum hydrogen sulphide (H_2S) release rate. Level 1 wells have a potential maximum H_2S release rate of not more than 0.3 m^3/s and may not be closer than 100 m from an individual permanent dwelling.

THOSE WHO APPEARED AT THE HEARING

Principals and Representatives (Abbreviations Used in Report)	Witnesses
Stampede Oils Inc. (Stampede) B. S. Gilmour A. Evans	J. McLeod, P.Geol. D. M. Leahey, Ph.D., of Jacques Whitford Environment Ltd. J. K. Farries, P.Eng., of Farries Engineering (1977) Ltd. R. W. Adams, P.Eng., of Farries Engineering (1977) Ltd. E. Vader, Independent Consultant
The Interveners The Cones Panel G. S. Fitch	W. H. Wolff, P.Eng., of Bissett Resource Consultants Ltd. R. B. Wrigley, of Brown & Associates Planning Group R. C. Rudolph, of Conor Pacific Environmental Technologies Inc. (Conor Pacific) R. Cones D. MacDonald
The Fisher Panel R. Secord	A. Hicks K. McEwen L. McEwen R. Fisher T. Fisher
The Whiskey Hill Owners Alliance Panel (WHOA) R. Secord	W. Dudley S. Howorko P. Steen J. Kerluke S. Kerluke
E. A. Brueckner	
G. Honey	
H. Jacobson	

THOSE WHO APPEARED AT THE HEARING (continued)

Principals and Representatives (Abbreviations Used in Report)	Witnesses
Alberta Energy and Utilities Board staff	
D. Larder, Board Counsel	
C. Webb	
R. Kennedy	
M. Brown, P.Eng.	
M. Craig	
A.Wiechert, P.Geol.	
B. Austin, P.Geol.	
A. Girgis, P.Eng.	
C. Grant, C.E.T.	
S. Etifier	

2 PRELIMINARY MATTERS

At the outset of the hearing, counsel for a local intervener with land holdings within the extent of the conceptual development plan indicated that his client, Mr. Peters, would be unable to attend the hearing. Opposing counsel argued that Mr. Peters's intervention could not be cross-examined without his attendance and requested that the Board apply Section 22 of the EUB's Rules of Practice by requiring that the submission by Mr. Peters be struck or that he be directed to attend the hearing to present his submission.

The Board determined that Section 22 gives the Board the discretion to accept written submissions in the absence of the intervener actually attending to give oral evidence. The Board indicated that it would not compel Mr. Peters to attend and that it would assess the appropriate weight to be placed on Mr. Peters's written submission.

3 CONCEPTUAL DEVELOPMENT PLAN

On 13 April 1999, the EUB held a public hearing at Priddis, Alberta, to consider an application by Startech Energy Inc. (Startech) for a well licence for a sour gas well with a proposed surface location at LSD 13-32-21-3W5M (Application No. 1027549). At that hearing, residents requested that the EUB direct Startech to provide an overall development plan for the area because they believed that a number of operators were proposing development on a piecemeal and uncoordinated basis. They wanted a development plan that would allow them to better assess the impacts associated with all the proposed development for this area. The residents stated that the requirements for development planning as set out in *Informational Letter (IL) 93-9: Oil and Gas Developments – Eastern Slopes (Southern Portion)* were applicable to the Priddis-Millarville area.

In a letter dated 27 April 1999 sent to Startech, Berkley Petroleum Corporation (Berkley), and Stampede, the Board stated that it concurred with the residents that an initial conceptual development plan would be beneficial, but it also indicated it did not believe that *IL 93-9* applied to the Priddis–Millarville area of the province. The Board required the three companies who were seeking well licences to prepare a coordinated conceptual development plan and submit it

to the EUB and local residents. The Board requested that the plan incorporate such details as the extent of the pool(s), wells currently applied for, proposed future well locations, associated pipelines and surface facilities, flaring requirements, processing options, and the need for coordinated emergency response planning where different operators had overlapping emergency planning zones (EPZ).

As a result of the Board's request, it received one plan from Stampede that encompassed the potential development of an interpreted oil pool, as well as a joint development plan from Startech and Berkley that discussed the development of a sour gas reservoir.

4 ISSUES

The Board considers the issues respecting the application to be

- need for the well,
- the proposed surface and bottomhole locations,
- surface impacts,
- potential H_2S release rates,
- risk of an uncontrolled release,
- public consultation,
- emergency response planning, and
- the capability of Stampede to drill and maintain the well.

5 NEED FOR THE WELL

5.1 Views of the Applicant

Stampede submitted that it had acquired the petroleum and natural gas rights for section 15 through an agreement with PanCanadian Petroleum Limited (PanCanadian). Stampede provided evidence that the agreement was subject to an extension which would allow Stampede 30 days to spud a well once a licence and drilling rig has been obtained.

Stampede stated that it had relied on data acquired from the recent completion of a gas well, Imp Berkley Turner Valley 8-21-21-3W5M (8-21 well), to predict the presence of hydrocarbons in section 15. While Stampede had participated in the 8-21 well, it believed that the oil zone had not been tested properly by the operator prior to its completion as a gas well. Stampede contended that the geological prognosis for the area and the initial test results from 8-21 support the possibility of encountering a major oil reservoir underlying section 15-21-3W5M.

5.2 Views of the Interveners

The interveners agreed that companies that have acquired the necessary mineral rights have a right to explore for and evaluate the potential reserves within those lands, provided such drilling and development is prudent and necessary. However, the interveners argued that the applied-for well was not in the public interest and was not consistent with the economic, orderly and efficient development of oil and gas resources. They further contended that Stampede had not fully established the need for a well at this surface location, nor had it fully investigated other options that could achieve Stampede's goal to evaluate a potentially bypassed oil reservoir.

5.3 Views of the Board

The Board accepts that Stampede has acquired the petroleum and natural gas rights to the minerals under section 15 and has the right to explore those resources. Furthermore, the Board agrees that the well is needed to further evaluate the potential for commercial hydrocarbon production, provided the development can be carried out in an acceptable fashion.

6 THE PROPOSED SURFACE AND BOTTOMHOLE LOCATIONS

6.1 Views of the Applicant

Stampede submitted that it had obtained a surface lease agreement with the landowner of the northeast quarter of section 15 prior to filing its application for a well licence with the EUB. Stampede contended that it personally consulted with the landowner, Mr. G. Honey, with respect to the optimum location for the well in this quarter section and that it also discussed the associated surface impacts with him at that time. To alleviate the landowner's concerns respecting the visual impact of the proposed site, Stampede committed to providing a barrier of trees around the lease site.

Stampede stated that it had selected the surface location prior to the onset of its public consultation process. It explained that the site selection process took into consideration Stampede's primary objective of selecting a technically feasible site from which the target area can be reached. As well, it sought a site that minimized technical risk and, most important, that maximized the distance from the existing residences. In doing so, Stampede believed that it was ensuring the location would be as far from residents as possible while allowing Stampede to reach its targeted horizon at that particular structural interpretation.

Prior to filing its application for the 11-15 well, Stampede considered but rejected the possibility of a surface location at 14-15-21-3W5M (14-15 site) as being environmentally unacceptable due to its proximity to an intermittent water course and surface ponds. It also investigated a site at 6-15-21-3W5M (6-15 site) but believed that it would not be able to acquire a surface lease agreement. Stampede also interpreted that a 6-15 bottomhole location would be entirely in the gas cap of a considerable oil pool.

Stampede acknowledged that the cost estimates provided by the interveners' consultant for drilling at the applied-for 15-15 surface location and an alternative surface location proposed from the existing 8-21 site (surface location of 11-16) were reasonable. However, Stampede stated that it was unwilling to drill from alternative surface locations such as those proposed by the interveners as it believed none of the options presented could achieve its bottomhole target without impacting a larger number of residences. Stampede believed that it was not practical to directionally drill extended distances in a geologically faulted overthrust environment. The horizontal displacement from the alternative surface locations ranged from 1270 to 1330 m. This is considerably greater than the displacement of 585 m that Stampede was willing to drill from the proposed surface location to the 11-15 bottomhole location. Stampede noted that the displacement range was not much less than the 1500 m for the 8-21 well and attributed the increased risk of wellbore problems to increased displacement.

By drilling from a surface location elsewhere in section 15, Stampede believed that it might be subject to off-target penalties if the well were completed as a gas well but acknowledged that off-target penalties would be unlikely if oil production was established. Stampede acknowledged the existence of a NOVA pipeline right-of-way through section 16, but stated that it believed placing the well adjacent to the pipeline right-of-way would not lessen the impact on area residents.

Stampede agreed that rather than drill a new well, it would be potentially less expensive to re-enter and recomplete the existing 8-21 well to determine its potential to produce oil, but added that the potential oil zone was drilled in an overbalanced condition and exposed to the drilling mud environment for a period of ten days, which may have caused oil-mud emulsion blockage and poor test results. Stampede concluded that the best way to test the lower oil zone and capture meaningful test data would be in a new wellbore that has not experienced any excessive overbalance conditions during drilling. Stampede further stated that the test results from the 8-21 well were not indicative of the production capability of its applied-for well and stated that the production from section 15 cannot be assessed until the proposed 11-15 well is actually drilled.

Stampede expressed concerns with the interveners' alternative drilling proposals because they assumed reduced costs due to drilling with natural drift and allowed variable wellbore deviation trends. Stampede explained that while the wellbore will naturally develop a northeasterly trend, its drilling experience in the immediate area indicated that well deviations are erratic at depths less than 800 m. Stampede stated that uphole deviation control is possible with available technology utilizing reliable downhole motors and measurement-while-drilling (MWD) tools. This same technology means that a driller need not rely on natural drift to reach a prescribed bottomhole location and makes it possible to drill in any direction with no significant difference in costs. Stampede believed that the interveners' focus on alternative surface locations southwest of the proposed bottomhole merely shifted the possible surface location from the residents' backyard to their front yard. Stampede cited examples of wells drilled in the area and stated that attempts to deduce a consistent trend in drilling costs or the number of days to drill a well as a function of the drilling azimuth was inconclusive.

Stampede based its decision to locate the bottomhole of the proposed 11-15 well on geological and seismic interpretation and spacing considerations. Stampede stated that it was confident in its geological and seismic interpretations. To illustrate this, Stampede noted that prior to the drilling of the 8-21 well, its seismic interpretation led it to conclude that the Mississippian overthrust section would not be encountered, although its partners interpreted that an overthrust would be present. Stampede stated that the results of the 8-21 well confirmed its structural interpretation, as only regional Mississippian was encountered. Stampede further stated that its chances of encountering the leading edge of the Mississippian overthrust section at the proposed 11-15 location was remote.

Stampede stated that the 11-15 bottomhole location is the optimum location because

- seismic results demonstrated the regional structure is continuous;
- a move any higher on the structure eliminated the opportunity to test for the oil leg it believed may be present;
- locating the well structurally lower could result in a well that tested tight, as did the 8-21 well;
- moving the bottomhole farther to the west placed it entirely within the gas cap of a large regional anticlinal structure in the Turner Valley Formation;

- this would be an on-strike structural location with a chance of having 50 per cent of the reservoir in the gas zone and 50 per cent below in the oil zone;
- moving farther to the northwest moved the bottomhole location out of the gas spacing unit; and
- moving farther southeast moved the bottomhole location farther away from a known hydrocarbon accumulation, thereby increasing risk.

In discussing its conceptual development plan, Stampede indicated that it could not drill just anywhere within the conceptual pool outline, as consideration for oil target zones was needed when selecting bottomhole locations. As an example, Stampede stated that a well located in LSD 9-15-21-3W5M could be a follow-up location to a successful oil well at the 11-15 location, as it is down structure from the 11-15 well. Stampede reiterated that in order to get meaningful test results to confirm the predicted oil zone, it required a wellbore free of damage that can be caused by excessive overbalance drilling conditions, such as those experienced at the 8-21 well. The 11-15 well could provide this opportunity.

Stampede stated that the likelihood of drilling a dry hole was minimal and that it expected at least a low-grade sour gas well given the proximity to the 8-21 gas well. It anticipated a 90 per cent probability that the proposed well would encounter gas, but expected that the well would likely be capable of production similar to the 8-21 well. If that were the case, Stampede indicated that it was not likely to proceed to drill additional gas wells. Stampede pointed out that although the proposed well would likely be similar to the 8-21 well, it did not preclude the possibility that it could result in a more capable well. Stampede further stated that even a successful gas well had the potential of limited lateral extent. Two abandoned wells north of the proposed location were drilled and tested in 1945 and 1957 without gas results. However, Stampede was not convinced that these results were conclusive. Stampede estimated that the 8-21 well was capable of 56 348 cubic metres per day (m^3/d) of gas production and that a successful gas well at 11-15 would have a capability in the order of 140 870 m^3/d.

When discussing the prospect of encountering oil at the 11-15 location, Stampede felt “sure that it was there” but acknowledged only a 20 per cent chance that it could be commercially viable. Stampede stated that it would follow up with further drilling if it were a successful oil well and, in concept, it would need three or four oil wells to proceed with plans for a battery. Stampede estimated that it would require only two wells to effectively drain one section in a good reservoir and stated that conventional oil spacing at four wells per section would not be economic when drilling to 3048 m depths. Similarly, if the oil zone were not a commercially viable option, no additional oil development would occur. Stampede noted that it had extensive land holdings in the area and if the proposed 11-15 well results were poor it would rethink exploration and development plans. Stampede was unable to confirm how many new oil wells would be required to confirm the extent of the oil pool. Stampede suggested that should the 11-15 well be successful in recovering commercial quantities of oil, the pool development would proceed as depicted in the conceptual development plan and would be subject to separate applications in accordance with EUB regulations.

6.2 Views of the Interveners

Mr. Honey, the landowner, indicated that when approached by Stampede regarding a surface lease agreement for the northeast quarter of section 15, he provided input as to the optimum location for the well within this quarter section that would be least offensive from a visual perspective for the residents in close proximity.

The interveners stated that Stampede was proposing to drill a sour well in a highly populated residential area. They believed that Stampede selected the surface location without any input from area residents and without proper consideration of the associated impacts on the community. The interveners were not convinced that Stampede had to drill this well from the proposed 15-15 surface location. The interveners believed that Stampede had other opportunities to explore for oil in this area without creating unnecessary surface disturbances and that it was Stampede's responsibility to show that the impacts of the well were in the public's best interest. The interveners suggested that a more orderly development of the gas reserves in the area would occur if the drilling of development wells was done sequentially after new data had been captured through the drilling of the recently licensed Berkley 10-16-21-3W5M gas well (surface location of 11-16). Having consideration for the extent of the oil pool depicted in Stampede's conceptual development plan oil pool, the interveners believed that Stampede should be able to drill from any of those established surface locations in order to determine the feasibility of encountering a bypassed oil pool.

The Cones Panel acknowledged that others in the community opposed the other surface locations in sections 15 and 16 that it had suggested. However, it maintained that the alternative locations presented were not intended to lessen the impact on themselves and shift it to other members of the community, but were only to illustrate that the applicant did not adequately investigate all options. While the Fisher Panel expressed concerns with Stampede's proposed surface location, it also indicated that the alternatives proposed by the Cones Panel were unacceptable due to their proximity to a larger number of residences.

The Cones Panel contended that by drilling anywhere into the southwest half of section 15, the reserves underlying section 15 would be tested. The experts retained by the Cones Panel examined the directional drilling capabilities of the area to determine if alternative surface locations existed that would allow Stampede to be able to achieve its bottomhole target for similar costs while staying within the applied-for drilling spacing unit (DSU). The interveners stated that because they were unable to obtain any geological data from the applicant, deviation trends and structural geological information from offset wells in the area formed the basis of the alternatives proposed.

The Cones Panel indicated that a reassessment of the quality of the oil leg in the 8-21 well would be feasible, which may provide some insight into the commercial viability of the oil pool that Stampede contended existed and would also alleviate need for more exploratory wells. The Cones Panel suggested it may be feasible to cut a window in the existing casing so as to sidetrack within the Turner Valley Formation and subsequently evaluate the full potential of the purported oil leg in the 8-21 well. But it also acknowledged that if the 8-21 wellbore was damaged, as Stampede indicated, it would be impractical to recomplete the existing wellbore.

The Cones Panel also suggested that Stampede consider locating the well near a NOVA pipeline right-of-way that traverses section 16, as it believed this area to be an existing industrial corridor where fewer objections would be expected.

6.3 Views of the Board

It is the Board's view that the public as well as the landowner should have an opportunity to provide input as to the preferred surface location. A properly informed public can provide valuable insight as to the impacts that would be acceptable to the community. However, the Board does not believe that the site selected by one group should be at the expense and inconvenience of another. Furthermore, if consensus cannot be achieved, the applicant must have consideration for the impacts and proceed to select the optimum location. The Board notes that Stampede did not solicit input respecting the surface location from area residents other than the landowner but does acknowledge that discussions regarding the aesthetics and the actual placement of the lease within the section boundaries did occur with the landowner. Further, the Board believes that, given the evidence, Stampede attempted to place the surface location of the proposed well where it would potentially have the least surface impact on the nearby residents.

The Board observes that no evidence was presented to dispute Stampede's interpretation of the geology relative to placing the bottomhole in its most structurally optimum location to enhance the prospects of a successful oil test. The interveners' evidence focused on equal cost expenditures from various surface hole locations to bottomhole locations that fell within the gas target area of section 15.

The Board notes the interveners' suggestion that the 8-21 well has the potential to be a technically successful test for the evaluation of potential oil reserves in section 15. It appears to the Board that Stampede had not considered this option or discussed it with its partners in the 8-21 well. It did not appear that the interveners suggested this proposal to Stampede other than at the time of the hearing. It is unfortunate that the parties involved did not discuss this suggestion earlier, as it had the potential to resolve the current questions of reservoir fluid type and future reservoir development with minimal surface impacts to the area. While the result from such an endeavour would not allow evaluation per se of section 15, potentially Stampede could have determined whether a bypassed oil pool exists. Notwithstanding, Stampede established that it has the right to explore for and exploit hydrocarbon resources in section 15 and that it chose the bottomhole location for the proposed 11-15 well with due consideration for its geological interpretation and the regulatory rules governing the choice of a bottomhole location.

7 SURFACE IMPACTS

7.1 Views of the Applicant

Stampede submitted that it selected the access route after having considered suggestions provided by area residents at its public meeting. It proposed to access the well site by travelling north on 240th Street West and east on 290th Avenue West, with final access to the site via an existing approach located at the bottom of a hill. The route would incorporate well-oiled and maintained municipal roads, with approximately the last 700 m being gravel surface. Stampede believed this route would minimize traffic while avoiding the additional steep hills found on the alternative route suggested by the interveners. Stampede stated that the lease site would be large enough to accommodate all equipment required during the drilling operations, thereby alleviating

concerns respecting vehicles parked on the municipal roadways. Stampede indicated that the majority of the traffic would occur when the drilling rig was being moved. Since a school bus travels the same roads as those proposed to access the well site, Stampede committed to coordinate its activities around the hours of the school bus operations and to enforce a safe speed limit on all staff associated with the site. Stampede cited a previous experience whereby it installed a large reflector sign to advise rig crews of the appropriate speed limit and the presence of children in the area. Additionally, Stampede agreed to continue dialogue with the Municipal District of Foothills (MD) to ensure that the roads are maintained in acceptable condition by controlling dust and grading as necessary. However, Stampede further explained that a longer term increase in traffic might occur if the 11-15 well was a poor oil producer, since it may be necessary to truck the oil-water emulsion from the site if the economics did not support the construction of a pipeline. The amount of trucking required and resultant traffic would then be dependent on the well's production rates.

Stampede stated that it had moved the proposed well site from LSD 14 east to LSD 15 to increase the distance from two ponds located to the southwest. Stampede stated that runoff from its well site would not impact these ponds, as the site would be surrounded by a berm. Stampede was unable to provide details regarding the location, depth, or quality of water wells in the area, but it did note from historical data in the area that lost circulation should not be a problem when drilling through the aquifer. While Stampede believed that the calculated surface casing depth would provide adequate groundwater protection, it further committed to determine the base of groundwater protection for the proposed location and revise the casing or cementing program to ensure that usable groundwater would be protected. At the request of area residents, Stampede provided assurances that it would not drill a water source well for the drilling operations but would transport water to the site. Stampede recognized that water quality was an important issue and committed to conducting water quality testing on those water wells and dugouts (ponds) requested by the area residents. Stampede also acknowledged that greater dialogue with the residents and landowners could enhance the success of the program.

Stampede explained that it would require a five- to seven-day test period after the well was drilled to obtain the stabilized flow rate necessary to evaluate the well's productivity. During this time, Stampede proposed to conduct both its testing and cleanup operations to minimize the impact of flaring the produced gas. Stampede indicated that the volume of gas flared would be restricted by the EUB's regulations for gas and oil wells. Future servicing would likely be limited to periodic pressure surveys and casing integrity tests, and the flaring associated with these operations would be to limited to the volume associated with bleeding down the pressure trapped in the well or the surface equipment. Stampede stated that an oil well may require more frequent servicing; however, it would not be substantially different from that of a gas well. Stampede provided assurances that if the 11-15 well is a successful oil well, it would not produce it until such time as gas conservation measures had been implemented. In response to the interveners' concerns with respect to flaring and emissions, Stampede committed to using the method of dispersion that is most technically feasible and explained that it has been investigating incineration as an alternative to flaring. Stampede explained that incineration has been somewhat successful for small volumes of gas but that the noise impact from the incineration units is greater than from flaring. Stampede also suggested that any flaring associated with a gas well could possibly be eliminated through in-line testing, provided that the well's productivity justified the economics of installing the required pipeline.

Stampede described both oil and gas production scenarios throughout the course of the hearing to illustrate what surface facilities and equipment would be associated with the 11-15 well. Stampede explained that the on-site equipment would be dependent on the production scenario encountered. An oil production scenario would include the use of a separator, tank storage, a vapour recovery unit with compression to conserve the solution gas, and possibly a measurement system should the 11-15 location become a satellite feeding to a main battery located elsewhere. Future equipment required may include a pumpjack or submersible pump. A gas well scenario would include a line heater and pipeline. Both production scenarios would require a flare stack. Stampede also explained that the emergency flare stack that would be required for either production scenario would be triggered by an automatic ignition system in the event of an uncontrolled release. Stampede said that hydrogen sulphide (H_2S) detection equipment located in the separator building would immediately shut in the well if unacceptable H_2S limits were detected. Stampede also said that it would consider the use of continuous monitors on storage tanks to detect fugitive emissions.

Stampede did not comment on the impact the proposed well may have on land values in the area but stated that the setbacks associated with the 11-15 well would not impact the development of the 5-acre subdivided plot located north of the lease site. However, Stampede did acknowledge that if this acreage were developed, its occupants would be required to travel into the EPZ during an evacuation situation.

Stampede stated that it would ensure that the drilling operations would adhere to the EUB's noise guidelines and that it would attempt to secure a diesel electric drilling rig to mitigate the residents' concerns.

Stampede submitted a drilling plan describing the proposed method of drilling and completing the 11-15 well. The surface hole would be drilled with fresh water with the use of soda ash to control pH. Stampede proposed to set 244.5 millimetre (mm) surface casing to a depth of 370 m and to cement the casing to surface. Stampede expected to set 177.8 mm intermediate casing at the top of the Mississippian Formation and then either complete the well open hole or install a 114.3 mm liner. After setting surface casing, Stampede proposed to use a water-based potassium sulphate mud system**,** which is more environmentally friendly and significantly reduces cleanup and restoration problems. It would use a sumpless system, where the drill cuttings are removed with centrifuges and special cone tanks and the water is reused. Stampede stated that this would minimize cleanup problems and reduce the amount of water required. Stampede added that the drilling fluid would at all times have sufficient density to overbalance any formation pressures. Stampede submitted that the drilling fluid will be monitored continuously for flow rates, pit level, and gas detection and that the status of all these items together with alarms would be continuously displayed on computer monitors at both the driller's console and the drilling supervisor's trailer. Stampede testified that this system would provide a continuous display of all drilling functions and a warning of any problems.

Stampede explained that it did not expect to encounter any caving problems during drilling as it proposed to ensure that the drilling angle would not be too low and the length of the directional leg not too long and that it would design a sufficiently weighted mud system. However, Stampede acknowledged that caving has been known to occur when drilling directionally in a faulted area and that it had experienced such an occurrence at its 10-35-18-2W5M well (surface

location of 6-35). Stampede revealed that the 8-21 well experienced caving and believes it occurred because the angle was low and the length of the directional leg was too long.

Stampede indicated that it planned to run intermediate casing prior to entering the Turner Valley Formation, the only sour zone. Stampede acknowledged that the most likely time for a blowout to occur at the 11-15 well would be during the drilling of the pay zone, after setting intermediate casing. Once the intermediate casing had been set, Stampede would be capable of shutting in the well against any kick up to full reservoir pressure. To further avoid the risk of a blowout, Stampede intended to utilize pit-level indicators to monitor the influx of fluids and to pressure test to ensure the integrity of all equipment. Staff would be fully trained and run through practice drills to ensure that they would respond correctly. Stampede confirmed that a subsurface safety valve, which is normally only required for wells greater than a level-1 classification, would be installed as an additional safety feature.

7.2 Views of the Interveners

The interveners expressed concerns regarding the access route, including the school bus route, excessive speed, parking on 290th Avenue West, and the safety of accessing the site at the bottom of a sizable hill. They believed that these issues remained unaddressed by the applicant. The interveners said that these concerns arose from past experiences with oil companies operating in this area and they believed it would not be expensive for the applicant to police the traffic to alleviate concerns. While the interveners stated that alternative routes would be preferable and have less impact on them, they acknowledged that the impact of increased traffic would be transferred to others located along any alternative routes proposed.

The interveners stated that the potential impact on the quality of the regional aquifers is of significant concern to them. Several interveners noted that while Stampede had proposed to conduct a water-well testing program, they were concerned about the lack of detail supplied. The Fisher Panel explained that two ponds downslope of the proposed Stampede well are connected by a seasonal watercourse to a creek that runs near a number of residences. They also indicated that runoff from the area of the proposed well site supplies this creek and stocks watering dugouts adjacent to several residences. The Fisher Panel indicated that Stampede had not fully addressed its concerns related to either the ponds or water wells but that it was encouraged that they would be able to ask Stampede to conduct independent testing on suggested wells and ponds. Mr. D. MacDonald, an adjacent landowner immediately north of the proposed 15-15 surface location, indicated that an artesian water well located on his 5-acre subdivided plot is located less than 200 m from the proposed well site and could be subject to water quality and water yield problems given its close proximity to the proposed well.

The interveners expressed concerns with respect to the emissions from the flaring of sour gas during drilling, completion, and production phases and the impact these emissions have on the residents and animals in the community. The Fisher Panel indicated that its concerns were based on past experience with the drilling of the 8-21 well and Imperial's inability to adhere to its commitments regarding flaring. The interveners requested that Stampede use the best flaring technology available to eliminate the emissions associated with flaring. They cited examples of in-line testing, which has become a practice for other companies, and suggested that Stampede further investigate the feasibility of incineration as an alternative to flaring. Additionally, the Fishers expressed concern with the impact of emissions and odours from diesel engines. They indicated that numerous studies had been conducted with respect to H_2S emissions, but they

believed additional air studies related to the dispersion of diesel fumes and the associated health affects should be conducted if the well were to proceed.

Mr. Honey stated that the initial surface lease discussions with Stampede led him to believe that the applied-for gas well would have minimal surface disturbance since a pipeline riser may be the only visible equipment on the site. Furthermore, he believed from subsequent discussions with Stampede that the equipment required for an oil well scenario would be no more significant than for a gas well scenario, since he understood that most of the equipment would be located elsewhere at a main battery possibly located across Highway 22. The Fisher and Cones panels also indicated that they were unaware of the type of surface equipment associated with the oil production scenarios described, as this information had not been included in any consultation material issued by Stampede.

Several interveners expressed concern with the impact that sour operations could have on the value of their land holdings and their ability to further subdivide these lands in the future. Most comments were directed to the impact on land values should an intense regional development occur, such as that proposed in Stampede's conceptual development plan. However, Mr. MacDonald expressed specific concerns regarding his ability to sell this property with sour gas operations in close proximity. Mr. MacDonald indicated that he had subdivided this parcel from his quarter section with the intent to sell it if necessary.

The interveners expressed concern about the amount of time that could elapse after a sour gas release before the well might be ignited and the emergency response plan (ERP) implemented. The Cones Panel did not agree that the greatest risk for an uncontrolled occurrence would be during the drilling and completion stages but believed the likelihood was just as high during the producing phase. Mrs. Howorko referenced a past incident with flaring operations at a Stampede well that resulted in a fire and explained that the interveners were concerned that the high density of residences and livestock could create a potentially fatal situation if it were to recur. Mrs. Howorko indicated that fire safety concerns could have been addressed if Stampede considered the flare stack height, the wind direction, the possibility of spreading gravel across the downwind path that sparks would travel, and having a water pumping truck on site during flaring operations.

7.3 Views of the Board

The Board notes that many of the impacts discussed are those present in most drilling operations. The Board accepts that Stampede has attempted to minimize the impact of its operations with respect to the proposed access route by committing to enforce a reasonable speed limit on all staff associated with the well operations, to coordinate its activities with the school bus route and schedule, to assist the MD in maintaining the access road, and to ensure that all equipment is contained on the lease site. The Board believes that implementing these measures would result in a safe traffic situation.

The Board does not believe that Stampede has fully addressed the potential impacts of its well on the surface runoff, the adjacent ponds, or downstream water users. Given the concern of local landowners, the Board expects that Stampede would have a well-defined program in place to address potential impacts on these water resources. With respect to water wells, that includes clearly defined testing procedures acceptable to area residents, meeting their expectations. The Board is also concerned that Stampede was unable to provide specific evidence of its plans for

protection of the groundwater. While the Board acknowledges Stampede's general commitment to provide protection, it found that the company was unprepared to respond to specific questions and measures.

The Board acknowledges the concerns of the interveners regarding flaring and products of incomplete combustion. Although the use of a conventional flare for well testing would satisfy the air quality guidelines, the Board expects Stampede to fulfill its commitment to use in-line testing or incineration if feasible. However, the Board understands that in the absence of existing infrastructure, in-line testing may not be a feasible option, and based on the evidence, the Board does not believe that in-line testing would be an option in this case. With respect to incineration, the Board is keeping itself closely informed on the progress in incineration technology for well testing so that it would be able to assess the feasibility of this option. If neither of these options is feasible, a conventional flare stack designed to meet the provincial air quality guidelines may be required for testing the well. The Board expects that Stampede will continue its investigations of alternative combustion methods and inform the community on its findings.

The Board notes that the surface equipment installed and used will be dependent on the production scenario encountered. The Board agrees that Stampede did not provide sufficient information on surface equipment in its application and as such failed to adequately advise area residents and landowners of the impacts associated with this equipment. The Board notes that Mr. Honey stated that he was unclear as to the type of equipment proposed at the time of the surface lease negotiations and was even more confused after having received the conceptual development plan.

The Board notes that no conclusive evidence was presented to demonstrate that the proposed well would negatively impact land values in the area. However, it notes the interveners' concerns regarding this issue.

The Board notes that Stampede has proposed to reduce the impact of noise by using a diesel electric rig. The Board believes that Stampede's drilling plan meets or exceeds the EUB's regulations for the safe drilling of a level-1 sour well. It recognizes that Stampede has proposed to install a downhole safety valve, normally a safety requirement for the drilling of a sour well with greater than a level-1 release rate.

8 POTENTIAL H_2S RELEASE RATES

8.1 Views of the Applicant

Stampede said that the purpose of the proposed 11-15 well was to produce gas from the Turner Valley Formation. In its conceptual area development plan and during the hearing. Stampede said it believed that the well could encounter significant oil reserves in the Turner Valley Formation. It applied for a well licence to drill a gas well because results from the 8-21 well suggested that a gas well was a definite possibility and it was reasonable for H_2S release rate purposes to plan for a sour gas well.

Stampede used a drilling H_2S release rate of 0.017 cubic metres per second (m^3/s) and a corresponding EPZ of 188 m. Stampede based this release rate on an H_2S concentration of 3.75 per cent and a drillstem test flow rate of 39 300 cubic metres per day (m^3/d) from the 11-12-19-2W5M well (the 11-12 well). If the well were drilled, completed, and stimulated as a gas well,

flow rates from the proposed well could approach those of the absolute open flow potential (AOFP) of the 11-12 well at 761 000 m^3/d. An H_2S concentration of 2.71 per cent, derived from the 8-21 well applied to the AOFP from the 11-12 well, results in an H_2S release rate of 0.239 m^3/s and a corresponding EPZ of 871 m. Stampede committed to using the completion EPZ of 871 m for both the drilling and completion phases of the proposed well.

Stampede estimated that production from the proposed 11-15 well as an oil well would be in the order of 160 m^3/d, with a gas-oil ratio (GOR) of 150 m^3/m^3. At an H_2S concentration of 2.71 per cent, Stampede calculated the potential H_2S release rate to be 0.007 m^3/s, with a corresponding EPZ of 117 m.

Stampede noted that other operators in the area used differing H_2S concentrations and flow rates and that in comparison the H_2S concentration and flow rate used by Stampede were conservative. Stampede cited as one example the H_2S release rate developed for the 8-21 well prior to drilling. Stampede stated that an H_2S concentration of 4.73 per cent and a flow rate of 210 000 m^3/d were used for the anticipated overthrust Mississippian section and an H_2S concentration of 1.81 per cent and a flow rate of 19 400 m^3/d were used for the regional Mississippian section. Stampede stated that its studies showed that the overthrust Mississippian section has higher H_2S concentrations than the regional Mississippian. Stampede believed that it was appropriate to update the information used in an H_2S release rate calculation as data become available. In this case, the 3.75 per cent H_2S concentration from its original calculation came from a location some 26 km away and from a different reservoir. It elected to revise the H_2S release rate calculation and use the 2.71 per cent H_2S concentration from the 8-21 well when it became available because Stampede believed the proposed 11-15 well is in the same reservoir.

Stampede also considered using the flow test results from the 8-21 well of 70 400 m^3/d in developing its completion release rate. Stampede calculated an H_2S release rate of 0.022 m^3/s and a corresponding EPZ of 219 m using the noted flow rate and the 2.71 per cent H_2S concentration from the 8-21 well. Stampede decided to use the maximum stimulated AOFP of 761 000 m^3/d from the 11-12 well in response to resident concerns. Stampede noted as further evidence of the conservative approach used that the uncorrected sandface AOFP, rather than one corrected to wellhead, was used in its calculations.

Stampede noted that the interveners' expert used an H_2S concentration of 24 per cent, oil production of 158.91 m^3/d, and a GOR of 150 m^3/m^3 to calculate an H_2S release rate of 0.066 m^3/s, with a corresponding EPZ of 414 m. Stampede stated that the use of an H_2S concentration of 24 per cent is clearly inappropriate for the proposed 11-15 well. Upon investigation, Stampede determined that the source of information that Conor Pacific relied on was a resident information package for the Turner Valley Unit Number 6 operated by Anderson Exploration Ltd. In Stampede's opinion, the H_2S concentration of 24 per cent is anomalous and may be due to the equipment and sampling point used at the source of the samples.

Stampede found that its completion H_2S release rate and EPZ compared favourably with those calculated by the interveners' expert using the erroneous H_2S concentration data. In comparison, Stampede's completion H_2S release rate and EPZ were 3.6 times and 2.1 times greater respectively. Stampede concluded that should the proposed 11-15 well encounter gas, it would clearly be the worst-case scenario for the given reservoir. It concluded that if the proposed well encountered oil, the solution gas would have the same H_2S concentration of 2.71 per cent but the volume of gas potentially available for release would be significantly lower. Stampede stated that

it was not aware of a relationship whereby solution gas has a higher H_2S concentration than gas cap gas.

Stampede agreed to restrict the wellbore of the proposed 11-15 well downhole to limit its potential productivity to a level-1 sour well. It did acknowledge that with all the wells proposed for the area, a pipeline could exceed level 1, but it committed to maintaining a level 1 where it was within Stampede's control.

8.2 Views of the Interveners

The Cones Panel retained the services of Conor Pacific to model the release of H_2S and sulphur dioxide (SO_2) that could occur from an oil well battery. Conor Pacific relied on the following information in its modelling:

- The H_2S concentration in the associated gas stream was 24 per cent.
- Oil production was 158.91 m^3/d.
- The GOR was 150 m^3/m^3.

Conor Pacific did not report an H_2S release rate to its clients but used the noted input data to model the dispersion. The clients provided Conor Pacific with 24 per cent H_2S concentration for the associated gas stream. Conor Pacific acknowledged that a resident information package for the Turner Valley Unit Number 6 operated by Anderson Exploration Ltd was the source of this 24 per cent H_2S concentration. Conor Pacific did not provide an independent review of what an appropriate H_2S concentration in this circumstance might be. Conor Pacific noted that the relationship between H_2S concentration and modelling produces results that are proportional with changes in H_2S concentration as long as the other parameters used in the modelling are the same.

The Cones Panel indicated that it retained the services of Conor Pacific because it was concerned that the emission calculations as presented by Stampede were not sufficient for the oil well case. The Cones Panel was of the opinion that an oil development was potentially more dangerous than a gas development and therefore the gas case did not necessarily represent the worst-case scenario for the purposes of release rate calculation and modelling. Mr. Cones's worst-case scenario involved a multiwell situation capable of 1271.28 m^3/d of oil production, a GOR of 150 m^3/m^3, and an H_2S concentration of 24 per cent. Mr. Cones believed that this situation could occur if there was vessel damage or line failure at the battery.

Mr. Cones stated that 761 000 m^3/d of gas yielded an H_2S release rate of 0.3 m^3/s, a borderline level-1 or level-2 sour well. He considered that using either 158.91 m^3/d of oil production with its associated solution gas at 24 per cent or 1271.28 m^3/d of oil production with its associated solution gas at 3 per cent was the same as the gas case presented by Stampede. It was not inconceivable that the end result would be a level-2 facility. Mr. Cones agreed that some sort of downhole restriction that limited the proposed well to a level-1 productive rate during its life, as proposed by Stampede, would satisfy some safety concerns. Mr. Cones stated that his basic safety concerns stemmed in part from the trust that landowners had to put in the oil companies to operate in a safe manner.

The Cones Panel expressed concern over the different H_2S concentrations put forward by the operators active in the area: 2.71 per cent, 5.38 per cent, and 24 per cent. The Cones Panel noted

with frustration that it was unable to understand why the operators were using different numbers. The Cones Panel acknowledged that it was aware that if a well were approved, prior to it being placed on production, the ERP would be subject to EUB approval and would be reviewed using the actual well flow data and H_2S concentration.

8.3 Views of the Board

The Board recognizes that when landowners are presented with H_2S release rate information that appears inconsistent it can lead to heightened anxiety regarding safety. The Board also recognizes that in some areas, due to multiple operator activity, variable geology, targets, and reservoir compositions, the potential for confusion exists where there is no intent to mislead. However, the Board anticipates that a prudent operator will attempt to provide sufficient explanation to area landowners to alleviate concern regarding the validity of the H_2S release rate used to determine public safety parameters. The explanation may include a discussion as to why its H_2S release rate information may differ from information that has previously been publicly available or presented. In the same manner, the Board expects landowners will advise the operator involved of their concerns over apparent discrepancies and the perceived impact that this may have on their personal safety. In this case it is not clear that the parties involved undertook this two-way communication. The Board believes such a dialogue may have alleviated a portion of the landowners' concerns regarding public safety.

During the course of this proceeding the Board heard evidence regarding the potential H_2S concentration for the proposed well that ranged from 1.8 to 24 per cent. On the basis of its review of the information presented and that available in the public realm, the Board concludes that it is reasonable to estimate the potential H_2S concentration for the proposed well at 2.71 per cent. Stampede stated that its proposed 11-15 well is targeting a regional Mississippian Turner Valley section and the same pool as the 8-21 well. It is the Board's opinion that the available evidence supports such a statement. As such the H_2S concentration derived from the 8-21 well at 2.71 per cent is the best analog of the potential concentration. The regional Mississippian Turner Valley H_2S concentration of 1.8 per cent can be dismissed as too low, while the 3.75 per cent, 4.73 per cent, and 5.38 per cent H_2S concentrations can be discounted because they are derived from reservoirs at some distance or from overthrust Mississippian Turner Valley reservoirs. Finally, the 24 per cent H_2S concentration is not appropriate, as the evidence suggests it is anomalous for the area and its validity is suspect. The Board believes that experts have a responsibility to ensure that input data put forward by their clients are appropriate and reasonable for the use intended.

As to the AOFP of the proposed well, the Board agrees that Stampede's use of 761 000 m^3/d from the 11-12 well, the highest AOFP in the area, clearly represents a reasonable maximum potential expectation for the 11-15 well. This rate exceeds the reported AOFP of 70 400 m^3/d for the 8-21 well, an admittedly low productivity well, by ten times. The Board notes that the H_2S release rate as calculated in the gas case far exceeds the potential H_2S release rate envisioned in the interveners' worst-case scenario of a vessel or pipeline failure at a multiwell oil battery. This scenario results in an H_2S release rate of 0.06 m^3/s when calculated using an H_2S concentration of 2.71 per cent. The Board notes that while in some reservoirs the solution gas H_2S concentration may be greater than the gas cap H_2S concentration, in this case such a circumstance would have little impact due to the overwhelmingly larger gas release rate used for EPZ calculation. In addition, each facility, pipeline, or battery is required to have an EUB-approved ERP in place.

In conclusion, the Board believes that the maximum reasonable potential H_2S release rate for the proposed 11-15 well is 0.239 m^3/s, as reported by Stampede. The Board notes that Stampede committed to the use of the completion EPZ of 871 m for both the drilling and completion phases of the proposed well. The Board accepts the use of an uncorrected sandface AOFP in the H_2S release rate calculation and the EPZ of 871 m.

9 RISK OF AN UNCONTROLLED RELEASE

9.1 Views of the Applicant

In response to concerns raised by the interveners, Stampede assessed the risks associated with an uncontrolled release of sour gas during the production and servicing phases of a sour gas well. Stampede advised that it did not assess risks during the drilling phase due to the lower release rates expected prior to stimulation of the reservoir.

It simulated plume dispersion using the GASCON2 model and it used the triple-shifted Rijnmond probit parameters to assess H_2S toxicity. Stampede reduced the release frequency for servicing based on the assumption that servicing would occur for one week of the year. It used meteorological data from the Quirk Creek meteorological tower and rotated wind directions during stable conditions to account for the effects of local topography.

Stampede believed that its modelling appropriately accounted for the specific topography of the area. Stampede concluded that the risk to individuals at the closest residences was less than 0.000001 chances in a million. At distances greater than 75 m, Stampede considered the risk to be zero. Stampede maintained that there would be no need to evacuate the area following an uncontrolled release. Therefore, given the topography and meteorological data gathered, Stampede believed that the proposed well location resulted in the lowest overall risk for all of the surrounding residents and that moving the surface location to alternatives suggested by the interveners would result in increased risk.

Stampede did not provide isopleths of downwind H_2S concentrations in the original reports but generated these data for presentation at the hearing. The applicant did not investigate sublethal H_2S concentrations, such as odour thresholds, although it acknowledged the risk of experiencing odours. This risk would be greater for an oil well than a gas well.

Stampede also modelled the ground-level SO_2 concentrations that would occur as a result of well testing and emergency flaring during servicing of the proposed well. It simulated dispersion using the Industrial Source Complex (ISC3) model, along with the Rough Terrain Dispersion Model (RTDM) in areas of elevated terrain. Again, it used meteorological data from the Quirk Creek meteorological tower and rotated wind directions during stable conditions to account for local topography. It obtained supplemental data for cloud cover and upper air data from the Calgary International Airport and Environment Canada's Stony Plain measuring station respectively. Stampede produced isopleths for SO_2 concentrations resulting from both the test flaring and emergency flaring scenarios that showed that ambient air quality guidelines would not be exceeded and evacuation would not be necessary. Stampede believed that any impacts from flaring would be negligible and short term. Downwind monitoring would be on site during testing and used as required.

Stampede believed that the products of incomplete combustion temporarily resulting from flaring would be comparable to what would be found in the downtown area of a major city and would be negligible compared to what people routinely experience.

Regarding the interveners' dispersion modelling, the applicant felt that the H_2S concentration assumed was inappropriate and stated that the resulting ground-level concentrations were proportional to the H_2S concentration.

9.2 Views of the Interveners

Rather than taking significant issue with the values assumed in the applicant's risk assessment, the interveners questioned the value of risk assessment itself and expressed a lack of confidence in these assessments. The interveners were also of the opinion that some valuable information was not included in the applicant's reports. In their view, Stampede should have more thoroughly investigated downwind distances to certain H_2S concentrations such as the 100 ppm isopleth and the potential for odours.

The interveners proposed that greater downwind concentrations of H_2S or SO_2 may be encountered from an oil well rather than a gas well. This would be largely attributable to the greater H_2S concentration expected in oil, taken to be 24 per cent based on data from the Anderson well. The interveners conducted dispersion modelling using the SCREEN3 and GASCON2 models. They used a screening approach was used because the input data were from a number of sources. Their results stated that ambient air quality guidelines for SO_2 could be exceeded. These potential exceedances would suggest the need for refined modelling of the oil well scenario. Further, they predicted that odour associated with H_2S release and incomplete combustion should be expected.

The interveners questioned the accuracy of the models and the ability of the applicant's dispersion modelling to accurately simulate the local topography. The interveners also expressed significant concern about flaring efficiency and products of incomplete combustion. They believed that long-term health risks resulting from low-level emissions had not been addressed and that additional research was required. Further, the interveners requested that a flare-free zone be established.

9.3 Views of the Board

The Board notes that the applicant conducted a risk assessment in response to the interveners' concerns and to attempt to prove that the level of risk associated with the proposed well is low. The Board believes that risk assessment should also be done to understand the major contributing elements of the risks. A better understanding of what can be done to reduce the risks further can be attained through gaining more knowledge.

Also, risk assessment and consequence analysis especially can be used to develop more comprehensive emergency response planning. Risk assessors should see value in examining not just risks but also consequences. This value should be explained to the interested parties when the scope of the work is discussed.

Risk assessments do contain an element of uncertainty. Therefore, their predictions are not intended to be used as an absolute pass or fail criterion. Consequently, the Board has preferred

not to designate a specific value as an acceptable limit. The inherent uncertainty in the risk assessment likely contributed to the interveners' lack of confidence. The Board acknowledges the presence of uncertainty and bears this in mind when assessing risks. The Board does see value in risk assessment and considers it a valuable tool toward risk management decision making. Risk assessment allows activities such as sour gas development to be put into perspective for comparison to other risks. It is also a valuable tool in identifying how various components influence the magnitude of a risk and where further reduction may be pursued.

The Board believes that the applicant's approach to dispersion and toxicology is acceptable. Stampede's decision not to consider a drilling release scenario based on the lower potential release rate shows a lack of appreciation for the higher probability of a release during the drilling phase. Risk is based on both probability and consequence, not just consequence.

The Board believes that the release frequency for the servicing scenario is already expressed on an annual basis. Thus, there is no need to reduce this value through the use of an annualization factor. This correction does not change the Board's conclusion regarding the acceptability of the risk related to the proposed well.

The Board notes the interveners' concern that the applicant did not examine the possible impacts of associated with an oil well. Unfortunately, due to the input data provided to its experts, the interveners' modelling was not applicable and was of no use to the Board. Even considering a more appropriate lower H_2S concentration, the Board does not expect greater concern regarding an oil well scenario. On the basis of input data used in the applicant's modelling, the Board does not expect emissions to exceed the Alberta Ambient Air Quality Guidelines.

The Board does see value in addressing concerns related to odours. This provides the public with a better understanding of what they can expect if development proceeds and follows the spirit of public involvement.

10 PUBLIC CONSULTATION

10.1 Views of the Applicant

Stampede stated that it commenced its public consultation process in July 1998 through the issuance of an information package to residents and landowners that provided details of the proposed drilling and operation of the proposed 11-15 well. Stampede explained that it had followed the public consultation and notification guidelines set out in EUB *Guide 56: Energy Development Application Guide and Schedules.* It believed that it had exceeded the minimum requirements set out therein as it had used a larger, 1.6 km, radius of notification and was prepared to use the completion EPZ of 871 m for drilling and completion operations instead of the calculated 188 m EPZ for drilling operations.

Stampede stated that it had exceeded the minimum public consultation guidelines in that it had held a public meeting when there was no requirement to do so and had also extended the notification zone to 1.6 km from the required distance of the 188 m calculated EPZ. It also submitted that there was an outstanding offer for residents to contact Mr. McLeod of Stampede at home if necessary if they had concerns. In summary, Stampede stated that it had responded to public concerns in a meaningful way and had done so through information packages, an open

house, telephone and face-to-face meetings, written responses, a development plan and by undertaking further studies.

Stampede acknowledged that it had received statements of concern from area residents and landowners in response to the distribution of its information package and stated that it attempted to resolve those concerns through additional phone calls, letters, and meetings. Stampede subsequently scheduled a public meeting in August 1998 to further address the issues identified by residents and landowners. At that time, Stampede committed to utilizing the completion EPZ for both drilling and completion operations, which would address the evacuation concerns for those residents located outside the smaller drilling EPZ. After the public meeting, Stampede was of the view that the residents' and landowners' concerns could not be resolved and subsequently filed its application for a well licence to the EUB, indicating that unresolved public issues warranted the scheduling of a public hearing into the matter. Stampede initiated another round of notification in November 1998, when it was unable to confirm that all parties had received the information package distributed in July 1998 and when it became apparent that a draft ERP was required for submission to the EUB prior to a hearing being scheduled. Stampede did not contact all members of the public who were previously notified within a 1.6 km radius but concentrated its efforts only on those landowners and residents located within the 871 m EPZ.

Stampede stated that it did not discuss the potential for oil production in its information package or at the public meeting, since it was applying for a gas well and the potential for oil reserves was not contemplated at that time. Stampede also believed that presenting an oil scenario would be viewed by the public as downplaying the emergency response planning issues, which would be more significant for gas and more probable at this location. Because subsequent geological evaluations supported the potential for oil, Stampede incorporated this possibility into its conceptual development plan created in June 1999. Stampede maintained that if it had believed the probability of encountering oil was high, it would have reflected that in July 1998, when the resident information package was developed and distributed. However, at that time Stampede thought the prognosis for gas was better and presented its application accordingly.

Stampede stated that it did what it thought was necessary for public consultation, but it became evident that there was an impasse between the applicant and some of the interveners. The applicant acknowledged that it had concentrated on the major objections, with a special focus on those inside the 871 m EPZ. Its strategy was that if Stampede could not resolve the major concerns and an EUB hearing was inevitable, there was no point in addressing the lesser concerns or those brought forward by residents outside the EPZ. Stampede expressed frustration with dealing with residents who opposed any development. It believed that the residents should expect oil and gas development in their community, as they are located in an area with a long history of such development. Stampede acknowledged that many of the concerns expressed were generated by the recent drilling of the 8-21 well and further stated that it did not believe it should be responsible for mistakes made by another company. Stampede agreed that the residents became confused by the sometimes differing information provided through the information package, the application, the conceptual development plan, and the testimony at the public hearing. However, Stampede believed that it would have proceeded in the same manner anyway unless it had had a positive test for oil from a nearby well to use as supportive evidence for an oil well application.

Should additional development occur, Stampede recognized that it would need to work with the community and discuss its plans well in advance of the project. Stampede would also solicit and

include public input in the creation of a new development plan. Stampede agreed that the best way to establish trust is for both parties to treat each other with respect and dignity even if their views do not agree. It further concurred that organizations like the Quirk Creek Gas Processing Community Committee and Sundre Petroleum Operators Group were models that have improved community relations.

10.2 Views of the Interveners

Overwhelmingly, the interveners expressed grave concern about the applicant's public consultation process and attitude. They criticized the public consultation process was criticized for the following reasons:

- There was a lack of input in site selection.
- Not all residents received a copy of the conceptual development plan.
- Not all landowners located within the notification radius were contacted.
- A serious attempt to resolve matters through consultation with residents and landowners was not made.
- The applicant's documentation misstated the residents' concerns by suggesting the concerns were primarily about land values and, to a lesser degree, safety.
- The interveners were concerned about Stampede's relationship with Imperial, as Stampede was relying on Imperial for assistance during an emergency situation.
- There was a lack of public input and a feeling that the well was being forced by Stampede.
- There was a lack of trust in Stampede.
- Stampede's attitude was described as repugnant, deplorable, and adversarial and implying a lack of respect for the public.
- There was a lack of recognition that this area is unique and therefore requires a higher level of public consultation than the minimum guidelines.
- Information provided was sometimes contradictory and confusing.

Several interveners indicated that they had no personal contact with Stampede with respect to the proposed well licence application, although they did concede that they had received copies of the information packages distributed by Stampede. Several individuals also indicated that they had attended the public meeting.

The Fisher and Cones panels expressed disappointment in Stampede's site selection process, saying they had hoped to have input into the optimum location for the well, as well as in the formulation of the conceptual development plan. Even more significant, they indicated, was Stampede's failure to respond to their concerns in a professional manner. They cited examples of instances when Stampede acted unprofessionally and did not expend the time and effort to build trust in the community. The interveners stressed that effective communication is the key to success and that they would be willing to expend the time and effort required to create an effective community consultation process in conjunction with industry. Mr. Cones and Mr. MacDonald thought that Stampede may be able to find a workable solution by working with the community, gaining the trust of the community and addressing the stakeholders' concerns.

Although they acknowledged that Stampede addressed some of the concerns of the interveners through several commitments, they believed that Stampede's consultation process lacked credibility due to the contradictory information circulated and the lack of effort that Stampede

expended on consulting with the residents to determine if the commitments it had proposed were satisfactory or feasible.

10.3 Views of the Board

It is apparent to the Board that there was a decided lack of meaningful, well-intentioned public consultation or involvement on behalf of the applicant. The applicant's reliance on the minimum public guidelines as being the test for adequate public consultation is unacceptable. The guidelines specifically state that these are minimum requirements and that the company must gauge each circumstance and decide upon the level of consultation appropriate to the situation. The Board acknowledges that Stampede voluntarily extended its notification and consultation area. However, the Board would have expected that to occur in this particular case. The Board believes that Stampede either did not gauge the situation correctly or chose to only do what was minimally required and then relied on that as evidence that it undertook public consultation.

The Board repeatedly heard from interveners about Stampede's disrespectful attitude. This was also evident during the hearing itself. Stampede's consultation process failed to provide the public with a sense of trust or confidence. In the Board's view, Mr. McLeod and Stampede failed to recognize that proper public consultation is based upon providing information, listening to concerns, and then trying to resolve those concerns in a respectful and meaningful manner. The Board believes that Stampede's public consultation effort was seriously inadequate for the circumstances of this well application as it failed to provide the public with a sense of trust or confidence.

Stampede stated that "the city has moved to the country and we have a large amount of urban residential taking place in what historically has been an oil and gas area." The Board must question why Stampede, having recognized this change in the area, did not approach its public consultation with that same awareness.

The Board notes specific matters that evidence Stampede's lack of adequate public consultation as follows:

- Without prompting from the interveners or Board staff, Stampede offered certain concessions to specific landowners during the hearing. The Board questions why these matters were not dealt with prior to the hearing; any matters that can be resolved prior to the hearing become one less issue for the hearing participants and the Board to consider at the hearing.

- Stampede must recognize that despite the fact that it may appear that an application is headed for a hearing, the applicant is expected to continue with the consultation and negotiation process. The Board notes that the public consultation process was initiated early and the application process experienced several delays in setting the hearing date. The Board believes that ongoing communication is essential in meeting the application requirements and believes it is the responsibility of both parties to ensure that communication continues. The Board believes that the delay experienced in setting the hearing date could have been better used by both parties in attempting to resolve outstanding concerns.

- The conceptual development plan submitted by Stampede was based on oil development, whereas all the prior public consultation, including that with the surface landowner for the site of the well, was predicated upon a sour gas well. Although the most likely substance to

be encountered may be sour gas, the public should have been informed that the real intent of Stampede's proposed drilling was to explore for oil. While this may not make a difference to the industry, the surface impact of an oil development is much different from that of a sour gas play. At the very least, Stampede should have informed the public that there was a chance for oil or gas and explained the different possible scenarios for each type of development. This inconsistency has also had a significant impact on how the Board has viewed Stampede's application.

- Although Stampede committed to incorporating public input in the creation of a future development plan if this well were successful, it did so only after questioning from the Board and interveners. Unlike other area operators, Stampede had not addressed the idea of future public consultation forums until prompted at the hearing. Stampede only conceded to investigate membership in the Quirk Creek Gas Processing Community Committee after being prompted to provide that as an undertaking.

- Stampede's correspondence with members of the public was interpreted to show a general lack of courtesy and respect. The Board believes that this has contributed to the lack of trust from the community.

11 EMERGENCY RESPONSE PLANNING\

11.1 Views of the Applicant

Stampede stated that it had prepared a draft generic ERP, the details of which would need to be updated once a well licence were issued.

Stampede stated that it is common industry practice to use the potential drilling release rate to determine a drilling EPZ and then, if successful, to adjust the EPZ for completion of the well. It further stated that in this case, because the completion release rate could be greater than the drilling rate and it was aware of concerns from the local residents, it undertook to use the completion release rate of 0.239 m^3/s, with a corresponding EPZ of 871 m, for drilling and completions operations, rather than the smaller drilling release rate of 0.017 m^3/s and an EPZ of 188 m.

Stampede said that if residents residing within the 1.6 km notification zone requested inclusion in the EPZ, it would agree to incorporate those people in the final ERP.
Stampede stated that it had not obtained all of the personal information required for developing emergency response procedures, but that if a licence were granted all local residents within and adjacent to the 871 m EPZ would be contacted again to obtain the information and to discuss any special concerns and needs to be considered in preparing a final ERP. Stampede felt that it was not appropriate to develop or discuss emergency response procedures or to address special concerns with residents until it had obtained a licence. It said that it would have been a waste of everyone's time to have done so prior to knowing if the application would be approved since situations change. Stampede's understanding was that the only resident information it needed to gather for a draft plan was the number of people it would be dealing with and that this was normal practice.

Stampede stated that it was aware of some special concerns, such as Mr. Cone's riding program, which would be taken into consideration in developing a final ERP. It had considered procedures

such as arranging to have a bus on standby to evacuate children during sour drilling and completion operations. Stampede further stated that it would be prepared to work with Mr. Cones to incorporate satisfactory procedures into its ERP regardless of whether it felt it was required.

Stampede stated that it was also aware of the McEwens' concerns regarding evacuation of their animals and that even though their residence is located outside the EPZ, it agreed to work with the McEwens to make arrangements acceptable to them for the care of their animals in the event of an emergency. Because they are located beyond the EPZ, Stampede stated that it would evacuate the McEwens and their animals after the EPZ was evacuated.

Stampede acknowledged that there may be other special needs it is not yet aware of that would be identified and addressed during preparation of a final plan once a licence was obtained. It stated that specific procedures would be developed to address special needs and would be incorporated into the ERP.

Dr. Leahey, Stampede's risk expert, concluded that, based on his risk calculations, neither mandatory nor voluntary evacuation levels of H_2S or SO_2 would be reached at the Cones' riding facility or at the McEwens' residence. He further concluded that there would be no need for evacuation anywhere in the vicinity of the well, as there would be no risk of lethality or irreversible health effects.

Stampede acknowledged that it was aware that the road passing the proposed well site was a school bus route and stated that procedures would be incorporated into the ERP, including provisions for road blocks in the event of an emergency. It also stated that it would have personnel at the top of the hill during the time of day the school bus passes through the EPZ to ensure that no one speeds over the hill.

Stampede stated that it would ignite any uncontrolled release of H_2S that would pose a risk to the public. Once personnel were safely away from the rig, Stampede believed it could ignite an uncontrolled flow within one to two minutes because of the prior warning signs. Stampede proposed to use a flare pistol as its primary means of ignition.

Stampede committed to notifying area residents at a level-1 emergency and evacuating at a level-2 emergency. It stated that a mobile air monitoring unit would be dispatched from Calgary in the event of a level-1 emergency.

Stampede said that it would consider holding an evacuation drill with area residents if it was required; however, due to the likelihood that an evacuation would be required, it did not believe that a drill would be necessary. It stated that it would hold a full planning meeting with company personnel on site prior to entering the sour zone to review procedures to be followed in the event of an emergency. Local RCMP, EUB, and municipal disaster services representatives would be invited to attend.

Stampede stated that if the well was a successful gas well it would be tied into the Quirk Creek gas plant for production and emergency response would be managed from the plant. It believed that personnel could be on site from the gas plant in ten minutes to respond to an emergency.

Stampede committed that, in the unlikely event that the well were to be capable of producing at a level-2 rate (>0.3 m^3/s), it would restrict the flow to ensure the well operated as a level-1 well.

Stampede stated that if the ERP were implemented, a debriefing with response personnel would take place to discuss the effectiveness of the response. It also agreed that it would be beneficial to hold a debriefing with affected residents to answer questions and discuss their concerns.

Stampede stated that the details of the ERP would be finalized once a licence was received.

11.2 Views of the Interveners

The interveners expressed many concerns regarding Stampede's draft ERP. They stated that it was only due to concerns expressed by residents at the open house that Stampede agreed to use the larger completion EPZ for drilling and completion operations rather than the smaller drilling EPZ. The expert witness for the Cones Panel stated that it is common industry practice to use the larger completion release rate to calculate the EPZ for both drilling and completion operations. He added that by doing so, the company may avoid the potential for objections to the completion of a well by residents in the larger EPZ who had not previously been consulted by the company for the drilling operation.

The interveners were concerned that Stampede had not attempted to identify and discuss special needs or concerns with the residents prior to developing a draft ERP. They stated that even though some residents made Stampede aware of specific needs or concerns, Stampede did not attempt to address those needs or concerns in its draft ERP. They stated that they did not believe the company was even now aware of all resident concerns.

Mr. Cones stated that he believed that a draft ERP that addresses specific needs of a community should be made available for discussion during the company's public consultation process so that the community can work with the company to develop acceptable procedures. He further stated that he understood that Stampede's draft ERP only covered the drilling and completion operations. If the well is approved, he would expect that the production phase would be included as well.

Mr. McDonald stated that he owns a 5-acre parcel in the southeast corner of his property that was subdivided as a future building site. He stated that the drilling EPZ of the proposed well cuts through the southern portion of a likely building site for a house. He expressed concern that the future driveway would be within the 188 m EPZ and egress from the house would be towards the well site. He stated that Stampede was made aware of his ownership of the 5-acre parcel and his concerns regarding safety but had never attempted to discuss or address his concerns.

Mr. McDonald stated that he had initially objected to a well previously drilled in the area by another operator; however, he withdrew his objection after reviewing the safety plan and being satisfied that the operator was prepared to handle emergencies. He stated that he has also reviewed another company's proposal for a well in the area and is satisfied that it could safely deal with emergencies. He questioned Stampede's emergency response capabilities due to the manner in which the company conducted itself during the public consultation process and its apparent poor relationship with other area operators.

Mr. McDonald also questioned how three offsetting wells being drilled into the same formation by different operators could have such different EPZ calculations.

Mr. Cones stated that he operates a riding program for children with cerebral palsy and their families on Saturdays from September until May. He stated that there could be up to eight children and their families at the ranch at one time. Families are also encouraged to stay following lessons to enjoy the ranch. He stated the Calgary Cerebral Palsy Association sanctions the program. He has recently been approached by the Alberta Cerebral Palsy Association to start a riding program for handicapped adults, which he is considering. If this program were to be developed, it would increase evacuation difficulties.

Mr. Cones stated that he had invited Mr. McLeod to visit the ranch to inform him about the program and to discuss his concerns and the difficulties regarding evacuation of handicapped children but the offer was declined. He stated that Stampede had never attempted to consult with him regarding the appropriate evacuation methods if it would be necessary. He acknowledged that Stampede was now prepared to supply a bus on Saturdays but that this had never been discussed with him.

The Fishers stated that they believed that the risks extend beyond the EPZ and that although they live outside of the EPZ but within the 1.6 km awareness zone, they should be included. They stated that they had previously been included in the EPZ for another well drilled in the area even though they lived beyond the calculated EPZ.

The McEwens stated that they operate a small dog boarding kennel just outside of the EPZ and they use their property daily for walking dogs and riding horses. They expressed past concerns they had had during the drilling of another well in the area, such as over inadequate notification of entry into the sour zone. In that case they had requested early notification to allow them to take special measures regarding the animals in the event of an emergency. They stated that although they had felt they were asking for very little from the operator, they had received few concessions in the ERP. The McEwens stated that because of past experiences they are not confident that Stampede would evacuate their animals if it were necessary. They have received conflicting responses from Stampede when they have discussed the matter. First they were told that the animals would be evacuated, and then they were told they would not. They stated that they were also confused about whether they would be within the EPZ or not.

Mrs. McEwen stated that Stampede's response to many requests regarding safety was that it would give the request serious consideration but no commitments to anything were ever made.

WHOA members expressed concern for the welfare of their entire community, which in its view extends from Priddis Greens to Millarville, Turner Valley, and Black Diamond. Although the WHOA members do not reside within the EPZ for the proposed well, they and their children travel through it on a regular basis. They stated that the Millarville Community School is located approximately 1.5 km from the proposed well site and the school bus route traverses the EPZ daily. WHOA expressed concern that neither the school bus driver nor the school principal had been informed of any well operations in the area, and they believed it is important for companies to inform the community, including those living beyond the EPZ.

Mrs. Howorko stated that they own a pipeline inspection company and they have seen many problems associated with wells and pipelines in their 15 years of inspection work. She expressed concern that the risks associated with the proposed well in a densely populated area would be too high.

11.3 Views of the Board

The Board notes that Stampede has prepared a draft ERP using the completion release rate of 0.239 m^3/sec with a corresponding EPZ of 871 m, which it proposed to use for both drilling and completion operations. This is consistent with the requirements in place when the application was filed. The Board requires that an EUB-approved ERP be in place prior to the spudding of a well.

The Board expects industry to base its EPZ and public consultation process on the higher release rate if the anticipated release rate for completion of the well may be higher. The Board agrees with the interveners' expert witness that this approach avoids the possibility that residents beyond the drilling EPZ would not be informed of the proposed well and have the opportunity to discuss concerns early on in the process.

The Board notes that although Stampede was made aware of some very specific public concerns, it did not attempt to address those concerns through discussions with the residents. The Board expects industry to discuss special needs and concerns with all residents within the EPZ and to develop acceptable procedures for addressing special needs in its draft ERP during the public consultation process and prior to submitting an application to the EUB. The Board expects industry to respond to public concern by adjusting the size and configuration of the EPZ if necessary and establishing reasonable site-specific emergency response procedures in consultation with the public. Stampede failed to address any site-specific matters in its draft ERP or even to identify all special needs of the community prior to submitting its application. The Board believes that there are substantive issues related to emergency response planning that Stampede would need to address before the Board would be prepared to approve the applied-for well. The issues raised at the hearing include, but are not limited to, Mr. Cones's riding program, the evacuation of people and animals and coordination with the school bus routing.

In addition, the Board believes that the practice of providing only a general draft ERP at the application stage is not meeting the residents' needs. It is apparent to the Board that residents want to have detailed plans to consider and to provide the assurance that they will be safe. Accordingly, the Board will adjust its application information requirements so that more detailed plans are submitted at the application stage.

12 CAPABILITY OF STAMPEDE TO DRILL AND MAINTAIN THE WELL

12.1 Views of the Applicant

Stampede argued that it was more than capable of drilling and operating a well, as it had demonstrated its ability with the several completed wells that it had drilled previously in the area since 1993. It further asserted that it had complied with the conditions imposed on it by the EUB in connection with the cleanup of the other well sites and that it had not been placed on refer status[2] as a consequence.

Stampede maintained that the financing for the proposed well would be forthcoming from the equities market once the licence had been issued. It stated that the monies required for the

[2] A corporate status indicator reflecting a company's inability or unwillingness to comply, as per *Interim Directive (ID) 99-4: EUB Enforcement Process, Generic Enforcement Ladder, and Field Surveillance Enforcement Ladder.*

drilling of the well would be raised from the issuance of the company's treasury stock on a private placement basis and that, subject to the granting of a well licence, the required funds were basically committed by investors. Further, Stampede indicated that it had budgeted approximately $100 000 from the total projected well costs for abandonment work should the well be unsuccessful. Stampede defended its financial soundness and capacity to access drilling and operation funds by referring to the several millions of dollars that it had spent in the area since 1993. The company stated that these funds were raised notwithstanding that it had received negligible production revenues since the early 1990s from its several wells and that currently none of these wells was on commercial production.

Stampede confirmed that its sister company Bearcat Explorations Ltd. (Bearcat) was a working-interest partner in all the previous wells that Stampede had drilled in the area and that the two companies shared common offices, employees, officers, and three interlocking directors. It also acknowledged that the Board had issued an abandonment costs order against Bearcat regarding an unrelated well in May 1999 that had not been paid and that was being contested by Bearcat.

12.2 Views of the Interveners

The interveners argued that Stampede did not have the capability on an operational and financial basis to properly exercise the responsibilities and obligations required of a well licensee. They expressed concern that Stampede would not be able to safely drill the proposed well, respond to emergencies, or undertake the cleanup of spills and abandonment that might be required. Their view was based on Stampede's history with several other wells in the area over the past few years, a history that had elicited enforcement action from the Board.

The interveners pointed out that the Board saw fit to advise Stampede in the fall of 1997 that it would be placed on refer status on the Board's enforcement ladder if certain remedial actions were not taken in a timely way with respect to cleanup and other work at these well sites. They argued that Stampede's repeated inability or unwillingness to comply with Board requirements in the past militated against the likelihood that Stampede would operate the proposed facility in a more responsible manner.

The interveners submitted that Stampede did not demonstrate that it possessed the financial resources to drill, produce, operate, and, if necessary, abandon the well. They referred to Stampede's evidence that it would raise the money to drill and operate the well once a well licence had been granted and questioned whether there would be sufficient time to do this given the time that Stampede's farm-out partner, PanCanadian, would likely have imposed on Stampede within which to spud the well.

12.3 Views of the Board

The Board views the financial and operational soundness of an applicant as important factors in determining whether a well or other energy facility will be approved. It is clear that all aspects of drilling, production, and general operation of a well are dependent on a company's financial and technical ability to carry out these activities.

In the present case, Stampede has testified that the necessary drilling funds have been committed by investors, subject to the issuance of a well licence. The company has operated in the Turner

Valley area for several years, financing its operations through the equities market as opposed to production revenue. The Board accepts Stampede's testimony that the necessary funds will be available to properly and safely drill and, if necessary, abandon the well.

The Board is concerned about Stampede's history of compliance with EUB requirements, regulations, and guidelines in the area. A close affiliate of Stampede, Bearcat, failed to abandon an unrelated well after the issuance of an abandonment order by the Board. Aspects of Stampede's past operations have exposed it to a serious level on the EUB's enforcement ladder. The Board's ultimate enforcement authority is to suspend a licence, shutting in a facility. It is apparent to the Board that Stampede has now demonstrated its appreciation of the EUB's enforcement policy and the consequences of an operator's failure to comply with EUB requirements.

13 OTHER MATTERS

13.1 Views of the Applicant

Stampede explained that it is standard practice for industry to record the targeted substance on a well licence application as being that substance most likely to be encountered based on offsetting wells and that it is not unusual to test any zone that may be commercially interesting, provided the necessary mineral rights have been acquired. Therefore, Stampede believed that by applying for a level-1 sour gas well licence it would be presenting the impacted residents and landowners with the worst-case scenario should an uncontrolled release occur at the site during drilling or production. Furthermore, Stampede stated that it had acquired the necessary mineral rights that would allow production of either substance.

Stampede recognized that its well licence application contained a number of errors or omissions. Stampede stated that it would amend its application to correctly reflect that drill cutting samples would be taken from the base of the surface casing to total depth of the well, as required by EUB regulations, and that the survey plan would be amended to reflect the presence of a water well within 200 m of the proposed well site. Stampede also committed to having the lease site inspected by the appropriate Alberta Environment inspector to ensure that the lease site was acceptable given the elevation change across the lease.

13.2 Views of the Interveners

The interveners believed that information provided by Stampede to the public was contradictory and said that they were confused by the scope of the project when presented with a gas well application followed by an oil pool development plan. They believed that Stampede had been misleading the community by not providing consistent information.

13.3 Views of the Board

The Board accepts that applicants will base their applications on the substance most likely to be encountered. It is not unusual for well licence applications to have target zones that subsequently may not be encountered. It is also not unusual to determine the commercial productivity of the alternative substance after the physical drilling and completion operations have been carried out. The EUB is more concerned with those applicants filing such applications without having acquired the appropriate mineral rights. In this instance Stampede acquired the petroleum and

natural gas rights through a farm-out agreement with PanCanadian for the gas drilling spacing unit in section 15, and the Board believes this agreement satisfies the discovery of either oil or gas. However, the Board also cautions that this does not absolve the applicant from disclosing the associated impacts for both production scenarios to the public.

With respect to the level of accuracy in Stampede's application, the Board believes it is unacceptable as it expects all applicants to fulfill all requirements as outlined in *Guide 56: Energy Development Application Guide and Schedules*. The Board notes that Stampede failed to fulfill the application requirements when it did not consult with the Alberta Environment inspector, as required, prior to filing its application. The Board is concerned that Stampede failed to meet the notification requirements, but notes that Stampede undertook to pursue resolution of the issue after the closing of the hearing. The EUB application process relies on correct information being submitted for evaluation. Errors and omissions such as those in Stampede's application undermine the integrity of the EUB's process and can have a considerable impact on the public's ability to make an informed decision.

14 CONCLUSION

With respect to the need for a well, the Board believes that there is a need. There are no existing wells that would enable Stampede to determine conclusively if there are hydrocarbons present in the section 15 drilling spacing unit and, if they were present, to recover the resource. Stampede has the rights to the petroleum and natural gas in the section. With respect to the proposed surface and bottomhole locations, the Board believes that they are reasonable. On the matter of surface impacts from a well and access road, the Board believes that they can be mitigated. The Board concludes that the maximum potential H_2S release rate proposed to be used by Stampede for planning purposes is appropriate and that the risk of an uncontrolled release would be extremely small and well within levels of risk accepted by society.

However, on the basis of the evidence, the Board is not satisfied that Stampede appreciated the unique situation that exists in the area of the proposed well relative to emergency response planning, especially with respect to Mr. Cones's riding facility for children with cerebral palsy and their families, but also generally in terms of the country residential nature of the area. In addition, the Board believes that the residents who appeared at the hearing do not have trust and confidence in Stampede that it can drill the well safely and with acceptable impacts. The Board believes that this is due largely to the way in which Stampede conducted the public consultation program. It is evident to the Board from the evidence provided at the hearing and Mr. McLeod's attitude toward the residents as observed by the Board at the hearing that he has not responded to their concerns and does not appear to have taken their concerns seriously. The Board believes that in order for a company to gain the trust and confidence of the community, it must treat them and their concerns seriously and respectfully. The Board believes that Stampede failed to do that thus far.

Further, the Board believes that Stampede's decision not to advise the residents of his expectations and plans for an oil development until the conceptual development plan was requested was misguided. It served to confuse and anger the residents and further alienate them from the proposed well. The Board appreciates that even though oil and gas companies may have a primary interest in an area (that is, either oil or gas), they are usually open to finding either one. Thus, in that sense, the Board is not surprised that Stampede applied for a sour gas well but had oil primarily in mind. The Board believes, however, that applicants must also be open to disclose

the possibilities to the public in the area. This did not occur in this case. The area residents, including the owner of the surface on which the well was proposed to be located, and the Board became aware of the prospect of oil development only after Stampede submitted a conceptual development plan. Up to that time, only information about a sour gas development was provided.

Accordingly, the Board concludes that there are substantial issues of public consultation and planning that Stampede needs to address before its well could proceed.

15 DECISION

Having regard for the evidence, the Board denies Application No. 1031511 without prejudice to any future application.

Dated at Calgary, Alberta, on 14 December 1999.

ALBERTA ENERGY AND UTILITIES BOARD

[Original signed by]

J. D. Dilay, P.Eng.
Board Member

[Original signed by]

T. McGee
Board Member

[Original signed by]

D. Waisman
Acting Board Member

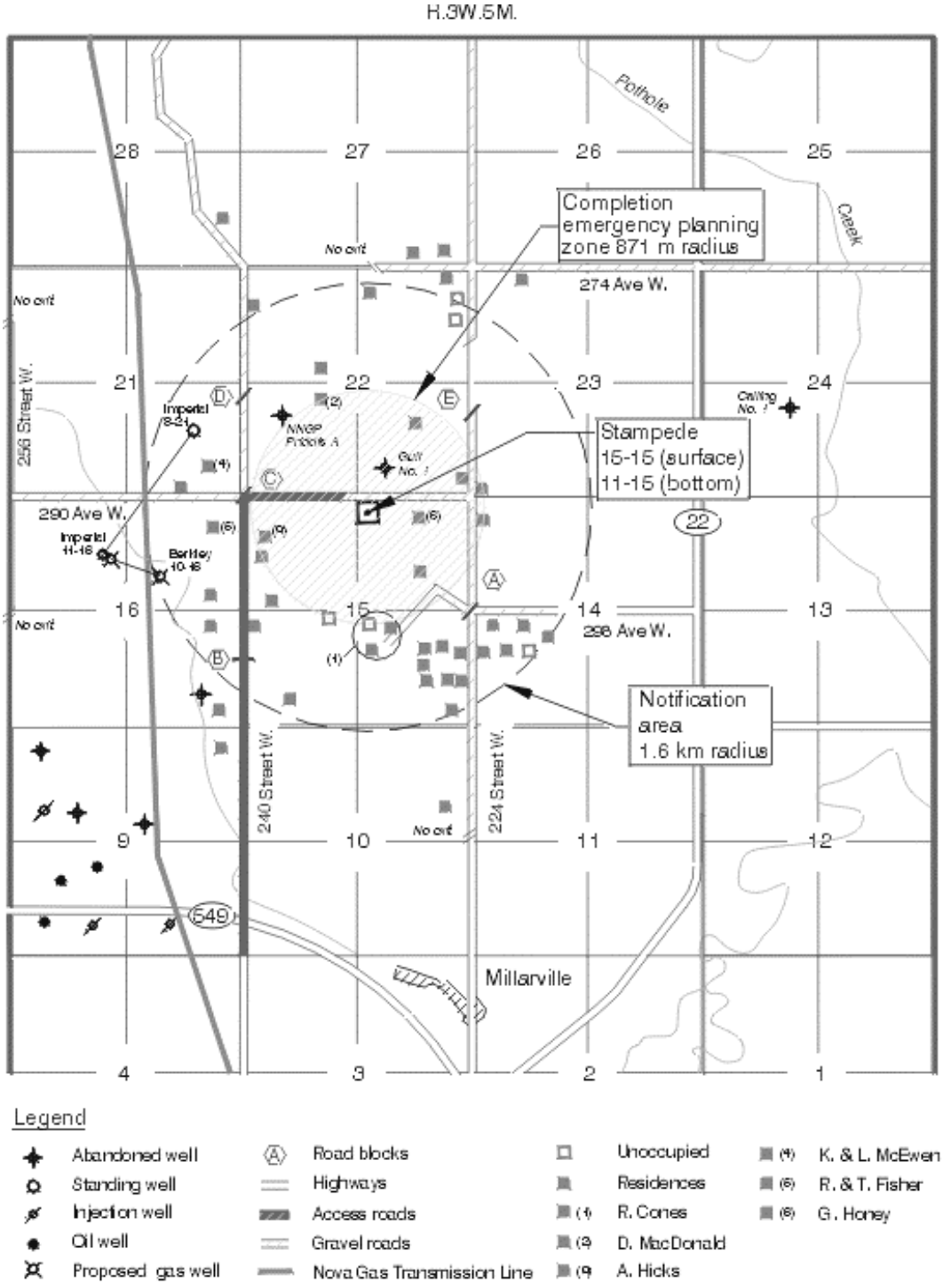

Figure 1. Proposed well and nearby residences
Application No. 1031511
Stampede Oils Inc.

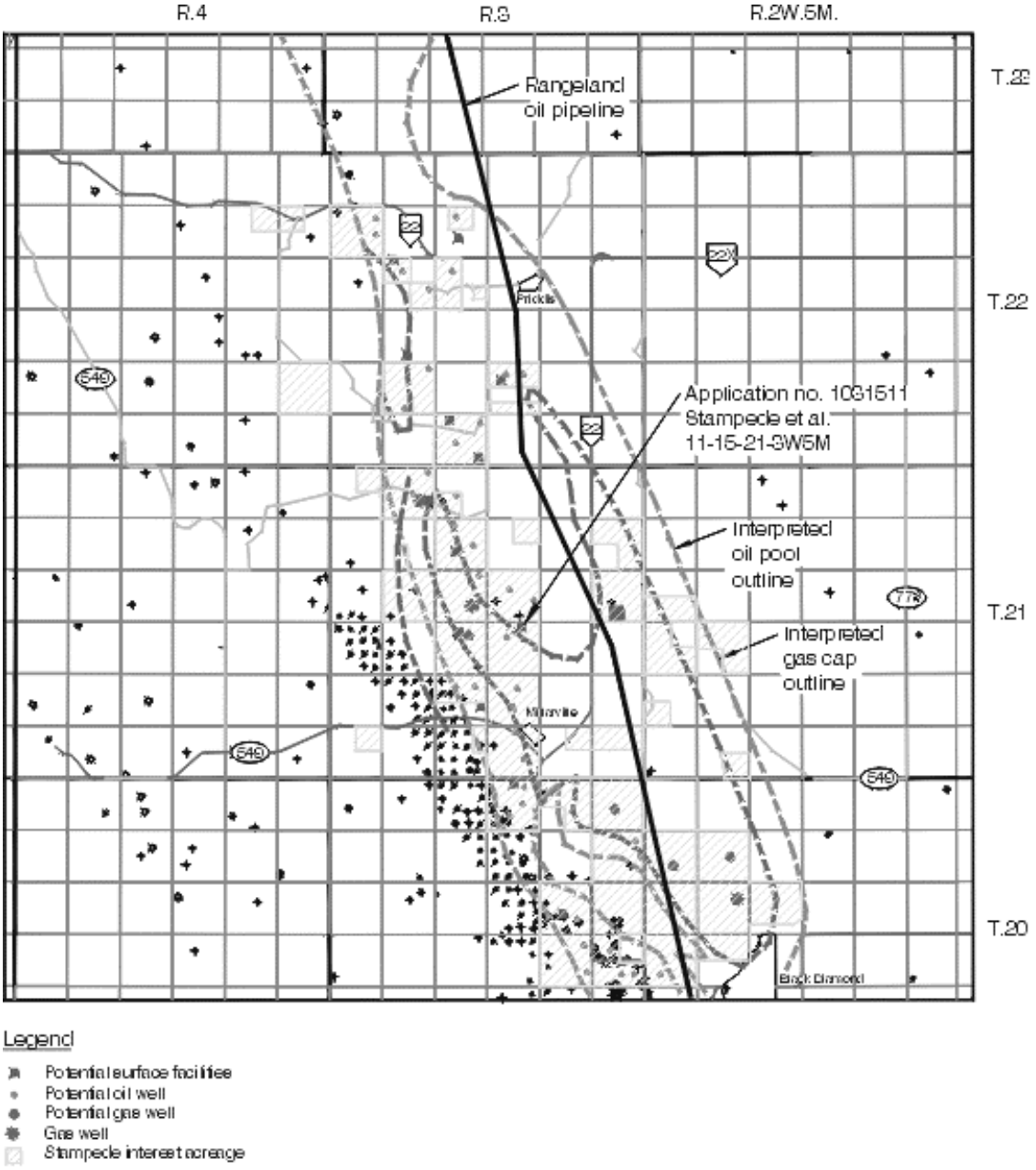

Figure 2. Conceptual development plan
Application No 1031511
Stampede Oils Inc

Decision 97-30