



Defiant Resources Corporation

Application for a Well Licence and a Pipeline Licence
Grande Prairie Field

August 28, 2007

ALBERTA ENERGY AND UTILITIES BOARD

Decision 2007-065: Defiant Resources Corporation, Application for a Well Licence and a Pipeline Licence, Grande Prairie Field

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ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

DEFIANT RESOURCES CORPORATION APPLICATION FOR A WELL LICENCE AND A PIPELINE LICENCE GRANDE PRAIRIE FIELD

Decision 2007-065
Applications No. 1486287 and 1504712

1 DECISION

Having carefully considered all of the evidence, the Alberta Energy and Utilities Board (EUB/Board) hereby approves Applications No. 1486287 and 1504712.

2 INTRODUCTION

2.1 Applications

Defiant Resources Corporation (Defiant) applied to the EUB, in accordance with Section 2.020 of the *Oil and Gas Conservation Regulations*, for a licence to drill a directional well from a surface location at Legal Subdivision (LSD) 5-18-72-4W6M (5-18 surface location) to a projected bottomhole location at LSD 8-13-72-5W6M (8-13 bottomhole location). The purpose of the proposed well would be to obtain natural gas from the Dunvegan Formation with a maximum hydrogen sulphide (H₂S) concentration of 0.00 moles per kilomole (mol/kmol), or 0.0 per cent.

Defiant also applied to the EUB, in accordance with Part 4 of the *Pipeline Act*, for approval to construct and operate a pipeline for the purpose of transporting natural gas from the proposed well at the 5-18 surface location to an existing Suncor Energy Inc. (Suncor) compressor station located at LSD 2-19-72-4W6M (2-19 compressor station). The proposed pipeline would be about 2.36 kilometres (km) in length, with a maximum outside diameter of 88.9 millimetres (mm), and would transport natural gas containing a maximum H₂S concentration of 0.00 mol/kmol, or 0.0 per cent.

The proposed well and pipeline would be located about 10 km northeast of Grande Prairie.

2.2 Interventions

John Smith Wells and Alysoun Wells (the Wellses) are the landowners of the south half of Section 18-72-4W6M. The Wells family resides in the southwest quarter of the section, which is the section on which the proposed well and a portion of the proposed pipeline would be located. The Wellses filed an intervention in opposition to the subject applications, raising concerns regarding present and future land use and development, land value, public consultation and communications with Defiant, safety, and environmental impacts.

Peter Miles and Kari Miles (the Mileses) are the landowners of the northwest quarter of Section 18-72-4W6M, which is adjacent to the proposed well and a portion of the proposed pipeline

right-of-way (ROW). The Mileses reside and operate a registered lighted private airstrip on this quarter section. The Mileses filed an intervention in opposition to the subject applications, raising concerns regarding possible impacts on the use of their airstrip, present and future land use and development, public consultation and communications with Defiant, safety, and environmental impacts.

Erin Wells (Ms. Wells) participated at the hearing. Ms. Wells is the daughter of the Wellses and resides with her parents in the southwest quarter of Section 18-72-4W6M. She participated at the hearing in order to make a statement regarding potential impacts of the proposed developments and their location on her family's land, future development and land value, compensation, and safety. Ms. Wells's statement was made June 12, 2007, during the hearing of Standard Energy Inc. Application No. 1471540 and was read into the record of this proceeding with the consent of all parties.

2.3 Hearing

The Board held a public hearing in Grande Prairie, Alberta, on June 12, 2007, before Board Member T. M. McGee (Presiding Member) and Acting Board Members K. G. Sharp, P.Eng., and R. C. Clark. The Board panel and staff conducted a tour of the general area on June 11, 2007, to view the lands encompassed by and surrounding the proposed well site and pipeline route. Those who appeared at the hearing are listed in [Appendix 1](#).

3 ISSUES

The Board considers the issues respecting the applications to be

- need for the well and pipeline
- location of the well and routing of the pipeline
- impacts on land values and future development
- other matters
- public consultation

4 NEED FOR THE WELL AND PIPELINE

4.1 Views of the Applicant

Defiant stated that it held mineral rights from surface to basement in Section 13-72-5W6M, pursuant to a farm-in agreement. It indicated that the proposed well would target a new pool of Dunvegan gas underlying this section with an H₂S content of 0.00 mol/kmol. It submitted that the 8-13 bottomhole location was the ideal target for the proposed well given that it was about 9 metres (m) structurally higher than the existing uneconomic and abandoned ConocoPhillips Canada Resources Corp. (ConocoPhillips) well at LSD 7-13-72-5W6M (7-13 well). Defiant's interpretation of the open-hole well logs from the 7-13 well was that a gas-water interface existed in the well with 3.5 m of net gas pay over 5.5 m net water. Moving up dip in the formation, the proposed 8-13 bottomhole location was expected to encounter gas reserves above

the water leg. Defiant stated that there were no other wells in the area that could capture production from the targeted Dunvegan gas pool based on the anticipated pool size as delineated by analysis of the available seismic data.

Defiant stated that one well would drain the targeted pool, with an expected pool size of 33 million cubic metres (10^6 m^3), an initial expected production rate of 28 thousand (10^3) m^3 per day, with a decline of 30 per cent and an expected producing life of six to eight years. It indicated that if the proposed well proved economic, the proposed pipeline would be necessary to transport production to the Suncor 2-19 compressor station, where it would be compressed and subsequently transported through the Suncor system to the EnCana West Sexsmith (Sexsmith) gas plant in Section 75-7W6M.

4.2 Views of the Interveners

The interveners did not dispute the need for a well or pipeline or Defiant's right to access and produce the minerals for which it had acquired rights. However, the interveners argued that Defiant had not established a need for the proposed location and routing of the well and pipeline. They also argued that any need of the applicant to produce and transport minerals should not negate the interveners' objection to the location of the proposed development.

4.3 Views of the Board

The Board finds that Defiant holds the mineral rights for Section 13-72-5W6M, giving it the right to explore for and produce the natural gas below the section. Defiant has also demonstrated the potential for recoverable reserves in the target pool. The Board notes that while the interveners questioned the need for the proposed location and routing of the well and pipeline, they did not dispute Defiant's need to access and produce the minerals for which it had acquired the rights. Accordingly, the Board is satisfied that there is a need for the proposed well and for resulting production to be transported to market, provided that there is an acceptable location for the well site and acceptable routing for the pipeline.

5 LOCATION OF THE WELL AND ROUTING OF THE PIPELINE

5.1 Views of the Applicant

5.1.1 Location of the Well

Defiant stated that it had considered four possible well site locations. The proposed Well Site A, which was ultimately applied for, would be at the 5-18 surface location in the northwest corner of the southwest quarter of Section 18-72-4W6M. This preferred location would require a directional drill to the 8-13 bottomhole location. Defiant explained that the 5-18 surface location was ultimately chosen over Well Site C for several reasons, including that, together with the associated pipeline, it would not impact an additional landowner and it would require less net workspace, avoid a need to bore under Range Road 50, and result in a shorter pipeline.

Well Site B would have been located at LSD 8-13-72-5W6M and would have resulted in a vertically drilled well. Defiant stated that it rejected this option due to the existence of a seasonal watercourse at the potential surface location and related environmental considerations.

Well Site C would have been located at LSD 8-13-72-5W6M in the northeast corner of the southeast quarter of Section 13-72-5W6M. It would have required a similar directional drill as Site A to the 8-13 bottomhole location. Defiant stated that it had rejected this site for several reasons, including that it would have required a surface agreement with an additional landowner, boring under Range Road 50, and a longer pipeline.

Well Site D would have been located at the existing surface lease at LSD 7-13-72-5W6M, belonging to ConocoPhillips. The well would have been drilled directionally to the 8-13 bottomhole location. Defiant stated that it had not chosen to apply for this site because there were potential unknown environmental impacts and possible liabilities at the site, since a reclamation certificate had not been issued for the original well site. In addition, it expressed concern about the construction of the access road and associated fencing and weed control and indicated that given the age of casing in the 7-13 well, the well centre would need to be moved and the lease enlarged to accommodate the new development.

Defiant explained that initially it had approached the landowners of the southeast quarter of Section 13-72-5W6M and of the proposed alternative surface locations B, C, and D, but they had refused consent to survey their land. Subsequently, Defiant indicated that it had received consent to survey on the Wellises' land. After receiving the Wellises' objection, Defiant stated that it had reviewed all of the possible locations and concluded that the proposed site was the most suitable. It submitted that the Wellises' decision to provide permission to survey had no impact on the final decision regarding the well location. In addition, it submitted that it had moved the proposed well location about 40 m farther away from the Mileses' land in order to avoid imposing any setback restrictions on their land.

5.1.2 Routing of the Pipeline

Defiant submitted that the optimal tie-in point for the pipeline was at the existing Suncor 2-19 compressor station, where the gas would be compressed and then transported through the Suncor system to the Sexsmith gas plant for processing. Defiant stated that this option would reduce the potential for a need to construct a compressor station at the well site.

Defiant indicated that it considered two possible routes from the proposed well site to the 2-19 location. Route 1, the proposed route, would run along the north boundary of the southwest quarter of Section 18-72-4W6M and then run north along the west boundary of the northeast quarter of Section 18-72-4W6M and into the Suncor 2-19 compressor station. Defiant submitted that it had applied for this route, as it was the shortest route and impacted the fewest landowners.

Route 1b would run north along the west boundary and east along the north boundary of the northwest quarter of Section 18-72-4W6M and then into the Suncor 2-19 compressor station. Defiant explained that this option was not applied for, as it would impact an additional home quarter, had the potential to impact the Mileses' airstrip, and would require an additional crossing of the Mileses' driveway.

In addition, Defiant indicated that it considered an alternative tie-in to a new Standard Energy Inc. (Standard) pipeline at LSD 3-23-72-5W6M. Route 2 would run west along the north boundary of the southeast quarter of Section 13-72-5W6M, north along the west boundary of the northeast quarter of Section 13-72-5W6M, and then west along the south boundary of Sections 24 and 23 to tie into the aforementioned new Standard pipeline at LSD 3-23-72-5W6M. Defiant indicated that this route was not chosen, as it was longer and would result in greater surface disturbance and impact on landowners.

5.2 Views of the Interveners

The interveners were of the view that Defiant had failed to demonstrate that the proposed Well Site A, at the 5-18 surface location, was the most appropriate location for the proposed well and that the applied-for pipeline Route 1 would have the least impact. They expressed concern that the 5-18 location had been chosen based primarily on the fact that the Wellses had consented to Defiant's request to survey this site and submitted that Defiant had rejected the alternative locations because it had been unable to obtain survey consent from other potentially affected landowners.

The Wellses were of the view that a more appropriate location for the well was on the quarter adjacent to their property, beneath which the bottomhole location of the proposed well would be located. They specifically drew the Board's attention to Well Site C, suggesting a possible pipeline route, Route 3, which might run due north from this site to an existing pipeline in the southeast quarter of Section 24-72-5W6M. In addition, they testified that although they were opposed to the proposed developments being located on their land, they were specifically concerned about energy developments on their home quarter in the southwest of Section 18, given that they resided on this quarter. The Wellses suggested that they might be willing to consider an alternative location on the southeast quarter of Section 18 at an abandoned Suncor well site, Well Site E, at LSD 8-18-72-4W6M, and an alternative route, Route 4, which would run due north from this site to an existing pipeline in the northeast quarter of Section 18-72-4W6M.

The Mileses expressed concern that the location of the proposed developments would affect their ability to use their airstrip, which ran east to west along the length of their quarter section. They indicated that it was possible to use the airstrip year round and it was their intention to do so, given the recent acquisition of a tractor equipped to clear it. The Mileses expressed concern regarding Defiant's decision to move the applied-for location of the well 40 m farther away from their property compared to the original location contemplated, indicating their perception was that it was done in an effort to exclude them from the hearing process.

5.3 Views of the Board

Having determined that there is a need for the well and associated pipeline to recover potential reserves under Section 13, the Board must now consider the application before it in terms of whether an acceptable surface location exists for the well and an acceptable route exists for the associated pipeline. The Board must also consider the applied-for well location and pipeline route in the context of alternatives discussed at the hearing and their relative impacts on the community as a whole and the individual impacted parties. In considering the various

alternatives discussed at the hearing, the Board must satisfy itself that a clearly superior alternative well location and pipeline route exist that would cause it to reject the applied-for location and route.

In this case, the Board is satisfied that Defiant has considered a number of possible locations for the well and pipeline route. With regard to well location, the Board is satisfied that the applied-for location minimizes the number of landowners impacted by the overall project, the general impact of the well on the area, and the size of the required lease site. In comparison, the Board notes the potential impacts and restrictions associated with the watercourse for Well Site B, the need to bore under Range Road 50 and additional setback restrictions associated with Well Site C, and the increased lease size and length of the access road associated with Well Site D.

With regard to pipeline routing, the Board considers that the Suncor 2-19 compressor station is the appropriate end point from the proposed well in order for it to tie into the EnCana system. The Board is satisfied that of the routes considered, the applied-for route minimizes the number of impacted landowners, the length of the pipeline, and the number of road bores that would be required.

In comparing the possible well locations and pipeline routes discussed at the hearing together as a project, the Board was unable to conclude that a clearly superior alternative existed to that applied for by Defiant. While some of the proposed alternatives had certain benefits for one or more of the hearing participants, these alternatives resulted in additional potential impacts on the greater community and its members. With respect to the interveners' concerns regarding the impact of the consent to survey, the Board notes that it expects applicants to choose the most appropriate location and route, regardless of survey consents or objections from landowners. In this case, for the reasons stated above, the Board is satisfied that Defiant applied for the most appropriate well location and pipeline route.

6 IMPACTS ON LAND VALUES AND FUTURE DEVELOPMENT

6.1 Views of the Applicant

Defiant submitted that the well location and pipeline route applied for were chosen to minimize existing and future impact on the Wellises, Mileses, and other area landowners. It stated that it altered the proposed well centre from its original plan to avoid imposing development setback restrictions on the Mileses' land. It also stated that the proposed well location in the northwest corner of the southwest quarter of Section 18-72-4W6M would minimize impacts on uses of the Wellises' land. Defiant also indicated that the proposed routing of its 15 m pipeline ROW adjacent to quarter-section boundaries was intended to minimize the impact on landowners.

6.2 Views of the Intervenors

The Wellises indicated that their land was currently used for agricultural purposes and that they had no development plans. Nonetheless, they expressed concerns about the potential for Defiant's development to affect the value and future sale of their land. They submitted that potential buyers could be put off by the presence of the proposed well and pipeline. The Wellises also indicated that the proposed location of the well centre, having been moved from 60 m to 101

m south of the north boundary of their property, increased the impact on their land without sufficient justification.

The Mileses described plans for a future airpark and subdivision, indicating they had done some research on similar properties and had also visited the County of Grande Prairie in the summer of 2006 to obtain information about subdividing. They expressed concern that the applied-for developments would limit their use of the airstrip and their ability to undertake these developments in the future.

6.3 Views of the Board

The Board may consider issues regarding land value only in relation to the potential impacts of the applied-for energy development on the specific land in question. In order to evaluate any potential effect, the Board is of the view that a site-specific analysis is necessary, which would include consideration of factors such as the nature and location of the applied-for energy development, the nature of the property, existing energy development in the area, and other land uses in the area. Such analysis would then be available for cross-examination. In this case, the Board notes that the interveners have not supplied any evidence of this nature. Accordingly, the Board considers that the interveners did not demonstrate that the well and pipeline would have an impact on land values.

With respect to development restrictions, the Board notes that the Wellses indicated that they have no current plans to develop their land. In addition, the Board notes that at this time the Mileses' development plans are conceptual in nature and they did not provide evidence as to how the proposed well and pipeline would affect their development plans. The Board notes that the type of well and pipeline proposed by the applicant coexists with residential development throughout the province.

With regard to the location of the well, the Board notes that while the lease for the applied-for location is larger than that of the location initially considered by Defiant, the applied-for location was chosen to prevent any part of the 100 m development setback extending onto the Mileses' land and thus avoids a potential impact on the Mileses.

7 OTHER MATTERS

7.1 Views of the Applicant

Defiant submitted that in the event of an emergency, it has a corporate emergency response plan (ERP) that would mitigate the impacts on landowners and residents with respect to safety. In addition, it stated that it would comply with all regulations and requirements of Workplace Health and Safety, the EUB, and Alberta Environment. It indicated that several safety control measures would be in place, including a pressure control and pressure relief valve on the separator.

Defiant stated that it intended to construct the well and pipeline in the fall of 2007 if licences were granted. It indicated that construction of the well site was expected to require 4 to 5 days, drilling was expected to require 7 days, and completion and testing of the well were expected to

require 7 to 10 days. Defiant also indicated that construction of the pipeline might occur one month after the well was drilled and was expected to require one week. Defiant expected the well to be on production within 30 to 60 days following the completion of pipeline construction. It indicated that equipment at the well site would include a wellhead, a separator skid with a 100 barrel water tank, a pig sender, a fuel gas line, and solar panels, but it would not result in more than minimal disturbance to the landowners. Defiant indicated that once the well and pipeline were completed, an operator would visit the site on a daily basis and the water tank located on site would likely be emptied weekly.

Defiant acknowledged that the use of the Mileses' airstrip might be restricted during the drilling and construction of the proposed well and pipeline, but there would not be any permanent impacts on usage. It also indicated that it would provide notification to the interveners with regard to drilling and construction time lines, as required.

Defiant stated that it would cement its production casing to surface and that it had provided information to the Wellses regarding water wells and the environmental footprint of the proposed well and pipeline. It indicated that the target zone was not expected to encounter sour gas. Defiant anticipated that once construction was complete, the site cleanup would take place in spring 2008. It would replace soil where possible and likely undertake reseeded in consultation with the landowner.

7.2 Views of the Intervenors

The intervenors expressed concern regarding the safety of the proposed well and pipeline. They also expressed concern regarding the type and nature of production from the proposed developments and potential effects on their water wells and natural resources in the area. In addition, they expressed concern that the proposed developments were merely the beginning of further development in the area.

The Mileses expressed concern that the use of their airstrip would be disrupted by the development. They also indicated that they and the Wellses both had dugouts in proximity to the proposed pipeline ROW that collected water drainage. The Mileses were concerned about the impacts of the proposed pipeline on the drainage. They also indicated that they had questions about where the landspreading of drilling waste would occur and how their water supplies might be impacted, and they expressed concern that the proposed development would be visible from their home.

7.3 Views of the Board

The Board is satisfied that with respect to technical matters, the applications meet all applicable EUB requirements.

The Board notes that Defiant has a corporate ERP and is satisfied that this plan would provide appropriate mitigation of potential safety impacts in the event of an emergency. In regard to concerns raised by the Mileses, the Board notes that groundwater, water bodies, and landspreading are subject to existing EUB requirements, which Defiant is required to meet. The Board considers that compliance with these requirements will ensure that the proposed well and pipeline will be drilled, constructed, and operated in a manner that affords appropriate protection

of the public and the environment. The Board considers that the visual impacts of the project will be limited and encourages Defiant to communicate with the interveners and to make every reasonable attempt to minimize these impacts on them and the community as a whole.

The Board considers that impacts on the interveners during the construction of the developments will, for the most part, be limited and short term in nature. Specifically, the Board is of the view that while the Mileses' use of the airstrip may be partially disrupted during construction and drilling, there was no evidence presented to suggest that any long-term impacts would be experienced. The Board also notes that Defiant has committed to communicating with the Mileses regarding the timing of construction and on details relating to impacts on usage of the airstrip during the drilling and construction phases. The Board encourages this communication to begin as soon as possible.

The Board notes the interveners' concerns regarding the increase in the volume of energy developments in their community. While mineral leaseholders have the right to explore for and produce the subsurface minerals and subsequently to transport this production, they must also coexist with the communities in which they operate. The Board strongly encourages proponents and the public to participate in ongoing issue identification, problem solving, and planning with respect to local energy developments.

8 PUBLIC CONSULTATION

8.1 Views of the Applicant

Defiant submitted that it complied with the consultation and notification requirements set out in *Directive 056: Energy Development Applications and Schedules* for the proposed well and pipeline. It submitted that it initially contacted the Wellses to obtain permission to survey, which was granted. After that, it delivered the information package on the proposed well to the Wellses' residence and subsequently met with Mrs. Wells and the Wellses' counsel. Defiant provided the Wellses' counsel with the information package and revised survey plan for the well, reflecting the applied-for location, and had subsequent communications with counsel regarding the proposed development. Defiant indicated that the information package on the proposed pipeline was also delivered to the Wellses and their counsel, but no personal consultation regarding the pipeline took place. Defiant submitted that it provided notification packages on the proposed well and pipeline to the Mileses and their counsel.

Defiant stated that it had attempted to engage the landowners in meaningful consultation but that the parties had been unable to resolve the issues. It expressed regret with regard to the breakdown of communication between the parties and stated that if given the opportunity to do its consultation over, it would have made additional efforts to meet with the landowners and would have provided clearer notification regarding its decision to change the surface location of the proposed well.

8.2 Views of the Intervenors

The intervenors expressed dissatisfaction with the consultation conducted by and on behalf of Defiant. Among other things, they expressed concern that they were not provided with sufficient

information regarding the project and the nature of the application process and that the chronology of events was misleading with regard to the interveners' availability to engage in consultation.

The Wellses testified that they were not initially provided with information about the proposed pipeline and that detailed discussions on the project and viable alternatives did not occur. The Mileses expressed concern that they were not advised in a timely way about the surface location of the proposed well being moved 41 m farther away from their land.

Generally, the interveners expressed concern regarding the degree of openness of Defiant's communication with them, resulting in distrust of Defiant. They indicated that they would have been assisted in the process if they had had more information regarding the proposed development and further plans for the area. In addition, they stated that to create balance between the applicant and interveners, the applicant should have advised the interveners to keep records for themselves.

8.3 Views of the Board

The Board notes the high level of concern and dissatisfaction expressed by the interveners with respect to the consultation process. In the Board's experience, building relationship and trust between parties is one of the keys to a successful consultation process; the Board therefore strongly encourages Defiant to find ways to improve communication and to build trust with the interveners and the community.

The Board is satisfied that Defiant met the minimum requirements of *Directive 056* for the proposed well and pipeline. However, the Board notes that full participant involvement requires attention to local needs, must continue throughout the life of a project, and must include parties who express an interest in a proposed development, whether they are located inside or outside the minimum consultation radiuses outlined in *Directive 056*. The Board encourages Defiant to strive for ongoing communication with the interveners and other area residents and landowners and to have due regard for the views they express.

Although there were communication challenges, the Board is encouraged that both Defiant and the interveners have expressed a willingness to enter into appropriate dispute resolution (ADR). Nonetheless, the Board notes that ADR is a voluntary process and that a hearing is also an established and appropriate means to resolve issues between the parties.

The Board also encourages community members to continue to participate in meaningful discussion throughout the life of a project in order to address concerns that may arise from time to time. The Board is of the view that an effective working relationship can be achieved if parties work toward a communication strategy that will allow for the timely exchange of information and the development of a collaborative approach to accommodating multiple land uses in the area.

Dated in Calgary, Alberta, on August 28, 2007.

ALBERTA ENERGY AND UTILITIES BOARD

<original signed by>

T. M. McGee
Presiding Member

<original signed by>

K. G. Sharp, P.Eng.
Acting Board Member

<original signed by>

R. C. Clark
Acting Board Member

APPENDIX 1 HEARING PARTICIPANTS

Principals and Representatives
 (Abbreviations used in report)

Witnesses

Defiant Resources Corporation (Defiant)
 J. H. Hockin, Counsel
 H. L. Meldrum, Counsel

S. Pierson, of
 Britt Land Services
 D. Seefried, of
 Defiant Resources Corporation
 D. Cavanagh, P.Eng., of
 Defiant Resources Corporation
 A. Hamarsnes, P.Eng., of
 Defiant Resources Corporation
 M. Downey, of
 Defiant Resources Corporation

J. S. Wells and A. Wells (the Wellses)
 D. Carter, Counsel

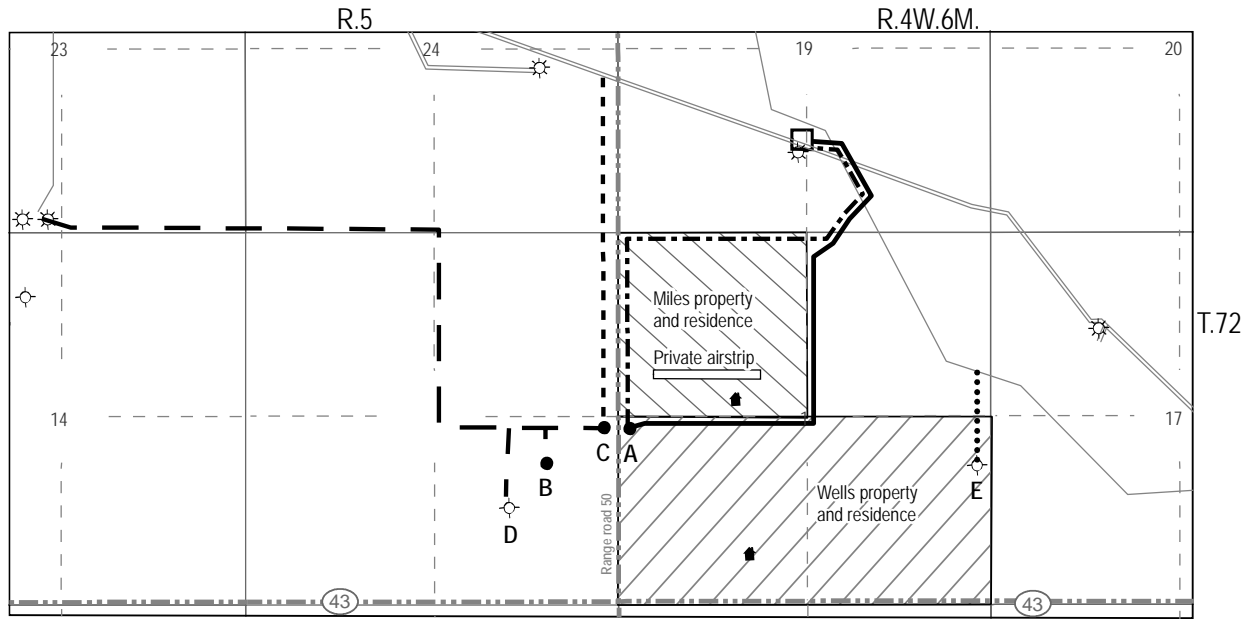
J. S. Wells and A. Wells
 E. Wells*

P. Miles and K. Miles (the Mileses)
 J. Palmer, Counsel

P. Miles and K. Miles

Alberta Energy and Utilities Board staff
 C. McMenemy-Savage, Board Counsel
 C. O'Dea
 J. Fulford
 G. McLean

* Ms. Wells did not appear at the hearing but had a statement read into the record.



Legend

- | | | |
|---|---|---|
| ○* Abandoned well | - - - - - Road | ● 5-18 well site, Defiant proposed |
| ☼ Gas well | — Other existing pipelines | A Application No. 1486287 |
| ■ Residence | — Route 1 - Defiant proposed pipeline Application No. 1504712 | ● 8-13 well site (vertical), Defiant alternative well site |
| □ Existing 2-19 Suncor compressor station | - - - - - Route 1b - Defiant alternative pipeline route | B |
| | — Route 2 - Defiant alternative pipeline route | ● 8-13 well site (directional), Defiant alternative well site |
| | - - - - - Route 3 - Wells alternative pipeline route | C |
| | ••••• Route 4 - Wells alternative pipeline route | ○* 7-13 well site, Defiant alternative well site |
| | | D Abandoned ConocoPhillips well site |
| | | ○* 8-18 well site, Wells alternative well site |
| | | E Abandoned Suncor well site |

Figure 1. Project area