



Standard Energy Inc.

Application for a Multiwell Licence
Grande Prairie Field

October 21, 2008

ENERGY RESOURCES CONSERVATION BOARD

Decision 2008-093: Standard Energy Inc., Application for a Multiwell Licence, Grande Prairie Field

October 21, 2008

Published by

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ENERGY RESOURCES CONSERVATION BOARD

Calgary Alberta

**STANDARD ENERGY INC.
APPLICATION FOR A MULTIWELL LICENCE
GRANDE PRAIRIE FIELD**

**Decision 2008-093
Application No. 1543589**

1 DECISION

Having carefully considered all of the evidence, the Energy Resources Conservation Board (ERCB/Board) hereby approves Application No. 1543589 subject to the conditions listed in Appendix 2.

2 INTRODUCTION

2.1 Application

Standard Energy Inc. (Standard) applied to the ERCB for a licence to drill a multiwell pad from a surface location at Legal Subdivision (LSD) 8, Section 29, Township 71, Range 4, West of the 6th Meridian, to projected bottomhole locations in LSD 2-29-71-4W6M (the 2-29 well), LSD 8-29-71-4W6M (the 8-29 well), LSD 9-29-71-4W6M (the 9-29 well) and LSD 4-28-71-4W6M (the 4-28 well). The purpose of the wells would be to obtain crude oil production from the Dunvegan Formation. No hydrogen sulphide was expected to be encountered in the drilling of the wells.

2.2 Intervention

Gerald McDonald and Denise McDonald (the McDonalds) filed an objection to the proposed project. The McDonalds own and reside on the southeast quarter of Section 29-71-4W6M, where the proposed wells would be located. The McDonalds stated that their daughter and son-in-law also reside on this land. The McDonalds grow pedigreed seed and raise cattle on their land. They expressed concerns related to adverse impact on their water wells, future residential development of their land, and Standard's area development plans. During the course of the hearing, the McDonalds elaborated on their concerns by discussing the impact of dust, noise, flaring, and potential pipelines on their quality of life and property value. They also expressed concerns about public consultation and property rights and questioned the impact of transferring licences between companies.

Shirley Norton and Phil Marcy also participated in the hearing in support of the McDonalds. Ms. Norton owns and resides on a portion of the northeast quarter of Section 20-71-4W6M. During the hearing, Ms. Norton expressed concerns related to property values, noise, flaring, traffic, safety, health, public consultation, and the adverse effects of a well at LSD 7-20-71-4W6M, directly west of her property.

Mr. Marcy is an adjacent landowner who resides east of the proposed project on the southwest quarter of Section 28-71-4W6M. Mr. Marcy expressed concerns related to noise, adverse impact on water wells, Standard's area development plans, flaring, pipelines, property values, quality of life, reclamation, compensation and dust.

2.3 Hearing

The Board held a public hearing in Grande Prairie, Alberta, which commenced and concluded on July 24, 2008, before Board Members G. M. Miller and M. J. Bruni, Q.C., and Acting Board Member T. L. Watson, P.Eng. Those who appeared at the hearing are listed in [Appendix 1](#). The Board Members, ERCB staff, counsel and representatives for Standard, and Mr. McDonald and his counsel conducted a site visit on July 23, 2008.

At the close of the hearing, Standard was required to complete an undertaking to provide a detailed analysis of the potential life of the Dunvegan C pool. The undertaking was completed on September 8, 2008.

3 ISSUES

The Board considers the issues respecting the application to be

- public consultation,
- well site location,
- property values and development in populated areas,
- licence transfer,
- noise,
- pipeline tie-ins,
- groundwater protection,
- progressive cavity pumps,
- lease maintenance, and
- dust control.

In reaching the determinations in this decision, the Board has considered all relevant materials constituting the record of this proceeding, including the evidence and argument provided by each party. Accordingly, references in this decision to specific parts of the record are intended to assist the reader in understanding the Board's reasoning related to a particular matter and should not be taken as an indication that the Board did not consider all relevant portions of the record with respect to that matter.

4 PUBLIC CONSULTATION

4.1 Views of the Applicant

Standard stated that it met with the McDonalds in December 2006 to discuss drilling a single well from a location at LSD 8-29-71-4W6M. Standard submitted that the McDonalds opposed the development on their land and expressed concerns about the proximity of the development to the residences on the southwest quarter of Section 29-71-4W6M. Standard contended that it moved the location of the well farther north in the southwest quarter of Section 29 in response to the McDonalds' concern. In August 2007, Standard amended its plans and submitted an application to the ERCB for four wells from a single pad at LSD 8-29. Standard stated that it and

its representatives met with the McDonalds on five different occasions between December 2006 and April 2007. It further stated that the McDonalds opposed the development on their property and requested information regarding the proposed bottomhole locations, future drilling plans, and pipeline plans. Other than these concerns, Standard contended that the McDonalds did not provide specific details of their opposition to the project.

Standard stated that it received a letter from the McDonalds' counsel on September 28, 2007, outlining four concerns that Standard identified as 1) Standard's development plans; 2) the impact of industrial development on residential development; 3) the impact of industrial development on future land-use options; and 4) the potential impact of the proposed development on the McDonalds' water wells. Standard contended that the McDonalds did not raise any concerns regarding noise or flaring.

Standard advised that it believed it appropriately consulted with the McDonalds and attempted to address their concerns. It submitted that the McDonalds did not engage in meaningful consultation with Standard, making it difficult for concerns to be mitigated. Standard acknowledged it did not hold an open house to inform area residents of its development plans.

Regarding pipelines, Standard submitted that it advised the McDonalds that future pipeline development and routing would depend on the results of drilling the 2-29 well. Specifically, Standard stated that the 2-29 and the 4-28 wells would be drilled, completed, and tested first. If these wells were successful, Standard would drill one or both of the 9-29 and 8-29 wells.

Standard advised that it had plans to drill up to 14 wells from four surface locations in the area and its pipeline plans would depend on the success of these wells. Further, it contended that area residents were aware of its plans for future development. During the hearing, Standard exhibited a conceptual diagram indicating the possible pipeline routes and tie-in points if all of the wells in its program were successful. Standard stated that should all the wells be successful, it would consider installing a central battery at either the LSD 7-20-71-4W6M or 13-20-71-4W6M existing well sites and could require a water injection facility at this battery.

Standard submitted that it had acquired the rights from the Crown to develop the resource and had attempted to address the McDonalds' concerns.

4.2 Views of the Interveners

The McDonalds stated that they did not want the project on their land because they planned to develop the land into acreages for their retirement and for their children. They stated that they did not engage in extensive negotiations with Standard because they did not wish to relinquish their right to object to the project outright. They disputed Standard's claim that the company moved the well location to suit their request, saying they did not make such a request of Standard. The McDonalds advised that they would have preferred the well be moved to nearby Crown land.

The McDonalds contended that they had not seen Standard's photo-mosaic of its area development plan until the hearing and therefore were not fully informed of its pipeline and development plans. Ms. Norton stated that she preferred that Standard not drill the well at all, but acknowledged that more information about Standard's entire project would have been helpful. The McDonalds submitted that Standard should have consulted with area residents regarding its

entire project prior to acquiring the mineral rights. This way, the McDonalds asserted, Standard would have become aware of resistance to the project from area residents.

The McDonalds advised that they did not have adequate information regarding Standard's plan for the entire area and what impacts the project might have on all of their neighbours. They argued that Standard's plan involved too much uncertainty.

The McDonalds acknowledged that the Province of Alberta granted two types of development rights: surface and mineral. They did not dispute Standard's right to access its mineral rights. The McDonalds maintained that should the licence be granted, they would not be able to develop the land as they had planned and would no longer have free title to their land. They stated that they should not have to sacrifice their rights of surface ownership to accommodate the rights of an oil company to develop the reserves below ground.

4.3 Views of the Board

The Board accepts the interveners' claim that area residents were not fully informed of Standard's area development plans and notes that Standard did not hold an open house to discuss its plans for pipelines, batteries, related wells, and infrastructure.

The Board recognizes that the McDonalds wanted to preserve their right to object to the project entirely and simply do not want the wells on their land. However, the Board also notes that the McDonalds did not engage in meaningful discussion with Standard.

The Province of Alberta grants two types of ownership rights: the rights of the mineral lessee to develop hydrocarbon resources, and the rights of the surface owners to develop land. The Board emphasizes that these two rights must coexist and cannot be exercised to the exclusion of one or the other.

The Board encourages Standard to engage in open, meaningful dialogue with area residents regarding its development plans. The Board further encourages the McDonalds and area residents to engage fully in meaningful discussion with Standard. The Board emphasizes that engaging in meaningful and mutually beneficial dialogue with energy companies does not impede a landowner's right to object fully to a development, including proceeding to a hearing. Open discussions between the parties will help address concerns, identify alternatives, and narrow the list of issues that need to proceed to a hearing.

5 WELL SITE LOCATION

5.1 Views of the Applicant

Standard stated that it currently operated four wells producing from the Dunvegan Formation in Section 20, about 1.6 kilometres (1 mile) southwest from the proposed development. Standard proposed to drill one well with a bottomhole location in LSD 8-29-71-4W6M and directional wells with bottomhole locations in LSDs 2-29-71-4W6M, 9-29-71-4W6M, and 4-28-71-4W6M. Standard stated that the purpose of the wells would be to obtain production from and delineate the areal extent of the Dunvegan C pool. Standard proposed to drill, complete, and test the 2-29 and 4-28 wells first because they would be closest to the existing wells in Section 20. Standard

stated that if the 2-29 and 4-28 wells were successful, it would drill one or both of the remaining wells on this site (bottomhole locations in 8-29 and 9-29).

Standard advised that it chose to drill four wells from a single surface location to minimize surface impacts.

Regarding the directional wells, Standard stated that it had to keep the horizontal deviation to a minimum and that it could not deviate beyond 450 metres (m) or 40 degrees from the surface location without significantly increasing the mechanical risks involved and impairing its ability to obtain production and well data from the formation. Further, Standard stated that the pad site could not be moved any farther north away from the McDonald residences and still be able to reach the intended bottomhole target locations because the wells would be step-out wells from those currently producing in Section 20 to the south.

Standard advised that while it would be technically possible to drill the wells farther away from the bottomhole locations, that would not be economically feasible.

Standard further advised that it chose the surface location because it was in a flat, cultivated field with little or no environmental constraints and was adjacent to a road, thus eliminating the need for an access road through the McDonald property.

Standard stated that should the licence be approved, the lease would be directly west of a high-grade gravel road and would consist of tanks and containment rings, separators, a generator, and a flare stack. Access to the lease would be directly off the high-grade gravel road, and the lease would be constructed in a teardrop shape. The tanks would be located in the northeast corner of the lease. Trucks would enter the eastern side of the site and travel counterclockwise around the wells: they would first travel on the south side of the wells, turn north, then finally east, so as to fill as close to the road as possible. Standard stated that this configuration minimized surface impacts because the trucks would enter and turn around while empty, fill at the eastern edge of the lease, and then drive directly off of the lease when full.

Standard stated that the most easterly of the four proposed wells would be 85 m from the county road, which was unusually far from a road. Standard acknowledged that landowners would prefer that the wells not be placed unnecessarily far into a field and that there was no regulation requiring the well to be 85 m from the road. Standard also stated that it planned to drill the 2-29 well first, which would be 115 m from the road. It acknowledged that a landowner would not want a well 115 m into a field if this was not necessary.

5.2 Views of the Interveners

The McDonalds disputed Standard's claim that it could not deviate more than 450 m from the surface location and suggested that the 2-29 bottomhole could be drilled from other surface locations farther away, such as in Section 13-21-71-4W6M or farther north on the McDonald property away from the McDonald residences.

The McDonalds noted that the 2-29 well would be situated 115 m into their field and stated that landowners would not want a well so far into a field.

The McDonalds maintained that the application for the multiwell pad should be turned down, asserting that the Board should only consider a licence for the 2-29 bottomhole and should not make any further decisions until the results of the 2-29 well were reviewed.

5.3 Views of the Board

The Board examined the possibility of moving the pad to another location. The Board accepts Standard's submission that the pad site cannot be moved farther north due to technical constraints. The Board further acknowledges that Standard cannot reach the LSD 2-29 bottomhole location from LSD 13-21 or from farther north in the McDonald quarter section.

The Board notes that Standard has applied for a holding approval, which the Board considers as confirmation of Standard's area development plan.

The Board reiterates its spacing requirements, as detailed in *Directive 056: Energy Development Applications and Schedules*. The ERCB requires

- a minimum of 60 m between any tanks and a surveyed road;
- a minimum of 50 m between any tank and a well centre; and
- a minimum of 40 m between a well centre and a surveyed road.

The Board acknowledges Standard's commitment to comply with these requirements.

6 PROPERTY VALUES AND DEVELOPMENT IN POPULATED AREAS

6.1 Views of the Applicant

Standard stated that should all the wells in its Dunvegan program be successful, it planned to drill 14 Dunvegan wells from four surface locations in the area. Standard also stated that it would undertake project-based applications for its Dunvegan development.

Standard acknowledged that industrial development affects future land-use options for landowners, but stated that a successful Dunvegan program would potentially be good for the area residents. The company stated that should all 14 wells be successful, it would build a pipeline and a central battery, which in turn would eliminate the need for individual batteries, tanks, and possibly separators. In this way, Standard stated that a greater amount of each lease could be used for farming.

6.2 Views of the Interveners

The McDonalds contended that energy development in the area of their farm would reduce property values. They advised that they did not have a pension plan and depended on the value of their land to fund their retirement. They stated that they feared energy development on or near their land would lower their property values, thereby reducing their retirement savings.

The McDonalds submitted that they planned to develop their land into acreages for their children and to build a house for themselves on the spot where the well pad was proposed. They stated that they had already invested money to add services such as power, sewer, and natural gas to the

site of this future home and this money would be lost if the wells were approved. They contended that they would not be able to carry out these plans if the well licences were granted.

The McDonalds asserted that energy development in the area was driving up the cost of services, such as machine shop rates, and that farmers had to carry the burden of higher costs without benefiting financially from energy development.

Ms. Norton and Mr. Marcy also stated that they depended on the value of their land to fund their retirement and were concerned about a drop in property values due to oil and gas activity in the area.

6.3 Views of the Board

The Board acknowledges that the interveners' concerns regarding property values resonate with those of landowners in other areas of the province. The Board is sympathetic to the interveners' position that they depend on the value of their property to fund their retirement and, further, that any activity that would potentially adversely affect the value of their land could also adversely affect their investment for retirement. The Board does not wish to dismiss these concerns out-of-hand, but emphasizes that matters of compensation are not within the Board's jurisdiction. The Board considers property value to be a matter of compensation, and therefore it is not within the Board's jurisdiction.

7 LICENCE TRANSFER

7.1 Views of the Applicant

Standard advised that it was a private oil and gas exploration and development company operating in Alberta since January 2004. It had applied for and drilled about 15 or 20 wells, 4 or 5 of which were in the area of the proposed development. Standard stated that it employed two geologists and that landowners might consider Standard to be a small oil company.

Standard stated that it had discovered the Dunvegan C pool by examining the uphole information from an EnCana well in LSD 13-20-71-4W6M and discovering a zone that EnCana had overlooked. Further, Standard had acquired the mineral rights from EnCana in Section 20.

Standard stated that it would be the owner and operator of the applied-for wells, but further acknowledged that should the company's Dunvegan program be successful, there was a chance that the company would be sold.

7.2 Views of the Intervenors

The McDonalds asserted that if the wells were successful, Standard would be sold to another company. They stated that they felt Standard would not be the operator for the life of the wells and did not feel there were any safeguards in place to ensure that their agreements with Standard would be enforced.

Because of this, the McDonalds stated that they were concerned about entering into agreements with Standard only to have another operator assume responsibility for the wells.

7.3 Views of the Board

Landowner-company agreements may arise in a variety of circumstances. These are private agreements, and the ERCB does not have the authority to enforce private agreements between a landowner and a company. The power to enforce such agreements has been reserved to the Alberta courts.

However, the ERCB considers it important that companies meet their commitments. Failure to do so may provide grounds for the ERCB to review and possibly vary decisions related to the breached commitment. For example, if the ERCB were influenced in its decision to grant a licence or permit by a commitment made at a hearing and that commitment was later breached, the ERCB may decide to revisit its decision.

The Board also has strict regulations, as described below, to ensure that operations and abandonment procedures are met, even when a well licence is transferred from one company to another.

Potential licensees must meet specific requirements to hold an ERCB licence, as set out in Sections 20 and 21 of the *Oil and Gas Conservation Act* and Sections 21 and 22 of the *Pipeline Act*. According to these sections, a party must have a Business Associate code (BA code) prior to commencing any type of business with the ERCB (such as transferring a licence or assuming ownership of an existing well, facility, or pipeline). (The BA code is referred to as an identification code in the *Oil and Gas Conservation Act* and the *Pipeline Act*.)

With certain exceptions (for example, licensees holding only water licences or licensees of farm gas wells for domestic use only), potential licensees applying for a BA code must remit a one-time nonrefundable fee of \$10 000. Applicants must also sign a declaration that formally acknowledges that they understand their obligations and responsibilities as an ERCB licensee under all applicable provincial acts and regulations.

Parties wishing to transfer licences must submit a licence transfer application to the ERCB, in accordance with *Directive 006: Licensee Liability Rating Program (LLR) and Licence Transfer Process*. The ERCB reviews the compliance record of both the transferor and transferee as part of its licence transfer application process and has the authority to approve or deny licence transfer applications as it deems appropriate.

The purpose of the ERCB's LLR Program is to minimize the risk to the Orphan Fund posed by unfunded well, facility, and pipeline abandonment and reclamation liability. The Orphan Fund pays for the abandonment and reclamation of wells, facilities, and pipelines included in the LLR Program if a licensee or working interest participant defaults on its obligations to abandon and reclaim or to pay the costs associated with those activities. The Orphan Fund is fully funded by the oil and gas industry through a levy administered by the ERCB.

The ERCB considers public access to abandonment and reclamation liability information to be an integral component of the LLR Program. Information on each licensee's assessed LLR, as well as other performance measures, is posted on the ERCB's Web site www.ercb.ca under Industry Zone : Rules, Regulations, Requirements : Liability Management Programs : Reporting : Licensee Liability Rating Report.

8 NOISE

8.1 Views of the Applicant

Standard stated that it had planned to use progressive cavity pumps on the three directional wells and a pump jack on the vertical well to produce the oil and that it would require electricity to power the pumps. Standard stated that it would cost the company about \$375 000 to install three-phase power. Alternatively, Standard proposed to use generators to power its pumps, unless the wells in its Dunvegan C program were successful and the company deemed it economically feasible to install three-phase power.

Standard stated that as an alternative method of reducing the noise caused by generators for the progressive cavity pumps, it would consider using sound sheds and “genset” generators that it said had very low decibel ratings.

8.2 Views of the Interveners

During the course of the hearing, the McDonalds stated that they were concerned about the adverse impacts of noise. Ms. Norton also expressed concern about noise, specifically that coming from a current well location at LSD 7-20-71-4W6M. Ms. Norton stated that the 7-20 site was about half a mile from her residence and she experienced noise late at night from workers on the site. She added that this noise woke her up at night and was an invasion of her privacy. Ms. Norton acknowledged that the 7-20 site was not operated by Standard.

Mr. Marcy also expressed concerns regarding noise. He stated that should Standard proceed with its plans for well sites at LSDs 6-28, 8-29, and 13-21, he would be surrounded by the noise from these sites. Mr. Marcy maintained that the ERCB’s regulations do not go far enough to mitigate noise and felt the only option was for Standard to find a quiet source of power for its downhole pumps. Mr. Marcy further stated that the only alternative power source he could think of was three-phase power.

8.3 Views of the Board

The Board acknowledges that noise is a concern for area residents, particularly the potential of noise from the proposed well pad, as well as any existing or future oil and gas development in the area. Further, the Board points out that noise can emanate from on-site generators and other lease equipment and that three-phase power alone would not ensure mitigation of significant noise sources. Therefore, the Board expects Standard to comply with *Directive 038: Noise Control*. In particular, the Board requires Standard to complete a noise impact assessment based on detailed engineering and design data, in accordance with Section 3 of *Directive 038*.

If the results of the initial noise impact assessment indicate noncompliance with the permissible sound level of *Directive 038*, Standard must develop noise mitigation measures to achieve compliance with the directive and include these measures in its noise impact assessment submitted to the ERCB. Standard will not be allowed to place the wells on production until the noise impact assessment has been completed, submitted, and approved by the ERCB. Should a valid noise complaint arise subsequent to commencement of production from the well pad, Standard must resolve the complaint as outlined in Section 4 of *Directive 038*.

9 PIPELINE TIE-INS

9.1 Views of the Applicant

Standard stated that if the proposed wells were successful, it would plan to tie them all into a central battery, along with subsequent wells. Standard submitted that it would likely use an existing LSD 13-20-71-4W6M well site for a central battery, as it was off of a main county road and would have fewer impacts in terms of tanker truck traffic.

In the course of the hearing, Standard presented a map (Exhibit 5: Photo Mosaic Showing Existing Proposed and Potential Wellsites and Conceptual Pipeline Routes) showing conceptual pipeline routes connecting several well pads to a central battery. Standard stated that the routes were conceptual only and that construction of pipelines, and thus the tying in of wells to a central battery, would depend on drilling success.

Standard stated that solution gas from the wells would be used to operate facilities at a central battery and the remainder of the gas would either be flared or, if quantities were sufficient, pipelined to existing natural gas flow lines in the area. Standard stated that it would consider pipelining the solution gas once the pool it was accessing was delineated, but that there was still a possibility that gas would be flared at the central facility.

Standard stated that if the proposed site were not tied into a central battery, it would flare excess solution gas from a flare to be placed northwest of the proposed well pad.

9.2 Views of the Interveners

The McDonalds stated that they were concerned about future pipelines on their land as a result of the proposed development. They contended that having wells and pipelines on their land would mean giving up free title to their land.

The McDonalds submitted that as flaring affected the levels of selenium in the atmosphere, flaring gas close to their cattle operations would have a negative effect on them. They asserted that with multiple pads producing, Standard should produce and ship all solution gas.

9.3 Views of the Board

The ERCB considers flare reduction and resource conservation to be of utmost importance to Albertans and has recently developed additional requirements to address these concerns. The Board notes that Section 2.5, 1(c) of *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting* states:

Operators must conserve solution gas at all sites where flared volumes are greater than 900 m³/day per site and the flare is within 500 m of an existing residence, regardless of economics.

In the case of Standard's proposed development, Board notes that there is at least one existing residence within 500 m of the proposed well sites. Therefore, according to *Directive 060*, if the total amount of gas flared for the site is greater than 900 m³/day, the gas must be conserved.

The Board also notes that according to *Directive 060*, Standard must undertake an economic evaluation to assess the feasibility of conserving the gas if the solution gas flare stack is greater than 500 m from an existing residence but the flared volume for a site is greater than 900 m³/day. As stated in Section 2.8 (1) of *Directive 060*:

If conservation is determined to be economic by any method using the economic decision tree process, the gas must be conserved.

a) Methods of conservation include pipeline to sales, fuel, power generation, pressure maintenance, or any other alternative method that may become available.

Operators must also take into consideration any other possible clustering opportunities within a 3 km radius of the proposed well site. Clustering is defined as “the practice of gathering the solution gas from several flares or vents at a common point for conservation.” Clustering may improve the likelihood that conservation of the gas is economic and is therefore required by the ERCB.

The Board notes that there are other facilities within 3 km of Standard’s proposed pad site. Thus, by requiring conservation at this pad if solution gas production rates are greater than 900 m³/day, the required gas conservation infrastructure may facilitate additional conservation at other nearby facilities. Section 2.6(2) of *Directive 060* states:

Operators of multiwell oil or bitumen projects must assess conservation on a project or development area basis regardless of distance. Evaluations must address all potential gas vent and flare sources associated with the multiwell development.

a) Operators must incorporate provision for conservation at all stages of project development to optimize the opportunity for economic conservation of solution gas.

In accordance with Section 3.2 of *Directive 060*, Standard would only be allowed up to 72 hours of flaring to test its well in order to determine flow rates. At the end of the test period, the well must be shut in pending the results of the solution gas conservation evaluation process. If the gas production rates are greater than 900 m³/day, Standard would not be permitted to flare this gas, as explained above, and would be required to install the necessary infrastructure for gas conservation.

The Board further notes that Section 2.5(3) of *Directive 060* states: “The EUB may still require economic evaluations for sites flaring or venting combined volumes less than 900 m³ per day and not conserving on a case-by-case basis if it is believed that conservation may be feasible.”

Having regard for this, the Board hereby requires Standard to evaluate the feasibility of conserving the gas, including consideration of clustering with its own operations and other operators within a 3 km radius, even if the gas production rates are less than 900 m³/day.

Standard would only be allowed to flare the gas at this pad if the solution gas production rates for the pad are less than 900 m³/day and gas conservation is determined to be uneconomic, even when considering other solution gas flared or vented within 3 km by Standard or other operators and considering future potential development in the area by Standard.

10 GROUNDWATER PROTECTION

10.1 Views of the Applicant

Standard stated that regulations required it to set surface casing to 15 m (49 feet) below the deepest water well in the area and that the base of groundwater protection was 502 m below ground surface (1647 feet). The deepest water wells in the area were between 70 and 110 m (about 230 and 360 feet respectively). Standard submitted that it would cement surface casing to a depth of 215 m (or about 705 feet), about 105 m (345 feet) beneath the deepest water well. Standard also stated that it would cement the production casing the full length of the well, cementing to surface. In this manner, Standard stated that shallow aquifers from which local water wells drew would be isolated behind both the surface casing and the production casing. Further, it advised that all drilling activities above the base of groundwater protection would be conducted using a freshwater gel system, to avoid impacting nonsaline aquifers.

Standard stated that all casing situated above the base of groundwater protection would be cemented full length to ensure protection of groundwater aquifers. If full cement coverage were not achieved above the base of groundwater protection, Standard stated it would contact the ERCB and follow appropriate remedial cementing procedures.

Standard committed to test the quantity and quality of the two water wells on the McDonalds' land both before and after drilling.

10.2 Views of the Interveners

The McDonalds stated that they did not discuss concerns about their water wells with Standard because their position was that they did not want Standard to drill wells on their property. They stated that they were "not receptive" to Standard's proposed oil wells and therefore did not want to discuss what would satisfy them if Standard's wells were on their land.

10.3 Views of the Board

The Board notes that Standard stated that Alberta Environment (AENV) has a process for handling water well complaints that landowners can use. Standard stated that costs, testing, and geologic surveys are covered by AENV's processes.

The Board accepts the protection measures in place, which include cementing the production casing to surface to protect all nonsaline waters encountered above the base of groundwater protection.

The Board notes that Standard made a statement in its written submission that "usable" water must be protected behind surface casing. AENV and ERCB regulations do not require surface casing to be set 15 m below the base of groundwater protection depth on conventional oil wells. However, *Directive 009: Casing Cementing Minimum Requirements* requires fully cemented casing above the base of groundwater protection to ensure protection of groundwater aquifers. The Board acknowledges that all water wells in the area are shallower than the proposed surface casing depth and will therefore be additionally protected by a second layer of cemented casing.

Standard's proposed cementing plan meets ERCB regulations.

11 PROGRESSIVE CAVITY PUMPS

11.1 Views of the Applicant

Standard stated that it planned to use progressive cavity pumps on the directional wells and a pump jack on the vertical 8-29 well. After further discussion, however, Standard committed to using progressive cavity pumps on all four wells to help reduce the visual impact of a pump jack.

Standard advised that while it was willing to use progressive cavity pumps in place of a pump jack on its vertical well, progressive cavity pumps required more servicing and had a shorter life span than pump jacks.

11.2 Views of the Interveners

The McDonalds stated that they would prefer the use of progressive cavity pumps rather than pump jacks because of experience with a nearby pump jack. They stated that there was a pump jack on LSD 13-20-71-4W6M about 800 m (half a mile) from their house that they could clearly hear under certain weather conditions.

11.3 Views of the Board

The Board accepts that the use of progressive cavity pumps would reduce the visual impact of the well and further accepts Standard's commitment to use progressive cavity pumps on all four wells, including the vertical 8-29 well. However, the Board will condition this aspect of the licence to ensure that potential subsequent licensees will be held to using progressive cavity pumps on these wells in the future.

12 LEASE MAINTENANCE

12.1 Views of the Applicant

Standard stated that its lease road would be constructed in a teardrop-shape around the wells and that its storage tanks would be on the northeast corner of the lease. Trucks would enter the lease travelling west, turn and travel south of the wells, again turn north, and then turn east to fill from the storage tanks, thus driving around the wells counterclockwise. Standard contended that as new leases were generally soft, it was preferable for trucks to travel the lease empty and thus lighter and fill as close to the exit of the lease as possible. This way, the trucks would cause less damage to the soft lease road.

Regarding drainage, Standard asserted that a pre-site assessment would be done, elevations and drainage patterns would be measured, and it would construct the lease in a teardrop shape or install culverts if the well location impeded drainage.

Regarding road conditions, Standard advised that it had a bond with the County of Grande Prairie of between \$10 000 and \$12 000 for road repair and that any needed road repair would be done in consultation with the county.

Standard submitted that to construct the lease, it would move the disturbed topsoil alongside the road and eventually only require between 35 and 50 per cent of the lease site for a teardrop lease

road and production equipment. Some or the all of the remainder of the lease could then be used by the McDonalds for farming.

12.2 Views of the Interveners

The McDonalds stated that weed control was an issue for them and that they used their land to grow seed and run cattle. The McDonalds asserted that weed control was frequently an issue on well sites.

12.3 Views of the Board

The Board acknowledges that Standard had agreed to construct its lease site in a teardrop shape, control drainage, and return a portion of the lease to farming conditions. The Board hereby requires Standard to recontour the lease, seed the landscaped portion, and gravel the road portion of the lease within one year of completing drilling operations in an effort to reduce pooling and eliminate unacceptable runoff to neighbouring fields.

13 DUST CONTROL

13.1 Views of the Applicant

Standard stated that it has no dust control agreements in place with the County of Grande Prairie or with area residents. Standard also stated that it would provide some dust control on the road leading to the McDonald land, especially during drilling operations.

13.2 Views of the Interveners

The McDonalds stated that they did not discuss dust control measures with Standard during initial negotiations, as they did not want the well on their property.

13.3 Views of the Board

The Board notes that Standard has committed to providing dust control during periods when traffic is exceptionally heavy. The Board strongly recommends that Standard work with the county on any dust control issues. Further, the Board requires Standard to provide dust control during the drilling and completion phases from the north portion of the southeast quarter of Section 29-71-4W6M to the access road on the McDonald property. It is the Board's expectation that access to the lease will be from the north along existing county roads. If this is not the likely route of Standard's vehicles, Standard must notify the Board of its route, and the Board will then determine appropriate dust control measures.

14 CONCLUSION

Having carefully considered all of the evidence, the Board hereby approves Application No. 1543589.

Dated in Calgary, Alberta, on October 21, 2008.

ENERGY RESOURCES CONSERVATION BOARD

<original signed by>

G. M. Miller
Presiding Member

<original signed by>

M. J. Bruni, Q.C.
Board Member

<original signed by>

T. L. Watson, P.Eng.
Acting Board Member

APPENDIX 1 HEARING PARTICIPANTS

Principals and Representatives

Standard Energy Inc. (Standard)
G. S. Fitch, Counsel
W. Woo

G. McDonald and D. McDonald
D. Carter, Q.C.

Energy Resources Conservation Board staff
S. Damji, Board Counsel
J. FitzGerald
M. Greer
C. Dickinson
M. Bevan

Witnesses

R. Wiebe
B. Patrick,
of Caribou Land Services Ltd.
K. Stecyk, P.Eng.,
of Crest Consultants Ltd.

G. McDonald
D. McDonald
S. Norton
P. Marcy

APPENDIX 2 SUMMARY OF COMMITMENTS AND CONDITIONS

The Board notes throughout the decision report that Standard has undertaken to conduct certain activities in connection with its operations that are not strictly required by the ERCB's regulations or guidelines. These undertakings are described as commitments and are summarized below. It is the Board's view that when a company makes commitments of this nature, it has satisfied itself that these activities will benefit both the project and the public, and the Board takes these commitments into account when arriving at its decision. The Board expects the applicant, having made the commitments, to fully carry out the undertaking or advise the ERCB if, for whatever reasons, it cannot fulfill a commitment. The ERCB would then assess whether the circumstances regarding the failed commitment warrant a review of the original approval. The Board also notes that the affected parties also have the right to request a review of the original approval if commitments made by the applicant remain unfulfilled.

Conditions generally are requirements in addition to or otherwise expanding upon existing regulations and guidelines. An applicant must comply with conditions or it is in breach of its approval and subject to enforcement action by the ERCB. Enforcement of an approval includes enforcement of the conditions attached to that licence. Sanctions imposed for the breach of such conditions may include the suspension of the approval, resulting in the shut-in of a facility. The conditions imposed on the licence are summarized below.

COMMITMENTS BY STANDARD ENERGY INC.

- Standard commits to test both water wells on the McDonald property prior to and after drilling.
- Standard commits to comply with the ERCB's minimum equipment spacing requirements as detailed in *Directive 056: Energy Development Applications and Schedules*.
- Standard commits to submit project-based applications for future development in the Dunvegan area wherever reasonably possible.

CONDITIONS

- Standard must evaluate the feasibility of conserving the gas, including consideration of clustering with its own operations and other operators within a 3 km radius, **even if the gas production rates are less than 900 m³/day** (in accordance with Section 2.5(3) of *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*).
- Standard must conduct a noise impact assessment, in accordance with *Directive 038: Noise Control*.
- Standard must use progressive cavity pumps on all four wells in LSD 8-29-71-4W5M, including the vertical 8-29 (bottomhole) well.
- Standard must recontour and seed the landscaped portion of the lease and gravel the road portion of the lease area within one year of completing drilling operations.
- Standard must undertake dust control during the drilling and completion phases from the north portion of the southeast quarter of Section 29-71-4W6M to the access road on the McDonald property. The Board assumes this portion to be the likely route for Standard's vehicles. If this is not the route of Standard's vehicles, Standard must notify the Board of its route, at which time the Board will determine appropriate dust control measures.