

ALBERTA ENERGY AND UTILITIES BOARD

Calgary, Alberta

NYCAN ENERGY CORP.

REVIEW OF AN OFF-TARGET PENALTY

NYCAN FORTY MILE 02/03-23-007-10W4M

FORTY MILE AREA

Decision 2000-72

Applications No. 1048341 and 1060562

1 DECISION

The Alberta Energy and Utilities Board (EUB/Board), after carefully considering all of the evidence, is satisfied that the well Nycan Forty Mile 02/03-23-007-10 is not the “first well” in a new pool for the purposes of off-target penalty administration and, therefore, directs the following:

- C The off-target penalty suspended in the EUB’s letter dated July 20, 2000, be reinstated effective May 22, 2000.
- C The well Nycan Forty Mile 02/03-23-007-10, located in Legal Subdivision 03-23-007-10 West of the 4th Meridian, be suspended by December 15, 2000, in accordance with Sections 4.070(1) and 10.280(3) of the Oil and Gas Conservation Regulations (OGCR).
- C The EUB advise Nycan Energy Corp. of the said well’s allowable status for the 2000 and 2001 allowable periods by December 20, 2000.

The Board directs its staff to meet with the Canadian Association of Petroleum Producers and the Small Explorers and Producers Association of Canada to review *Interim Directive (ID) 94-2* and Subsections 4.060(5) and (6) of the OGCR to determine what clarifications or amendments, if any, are required to the “first-well” policy.

2 INTRODUCTION

2.1 Application

On June 19, 2000, Nycan Energy Corp. (Nycan) applied, pursuant to Section 43 (1) of the Energy Resources Conservation Act (ERCA), for a hearing to consider the need to apply an off-target penalty to the well Nycan Forty Mile 02/03-23-007-10 (the 02/03-23 well). Pursuant to Section 43(4) of the ERCA, Nycan also requested that the off-target penalty applied to the 02/03-23 well be suspended pending the EUB’s decision. On July 20, 2000, the EUB suspended the off-target penalty pending the outcome of a hearing pursuant to Section 43(1) of the ERCA. In a letter dated July 20, 2000, the EUB advised that should it decide that an off-target penalty is warranted, the effective date of the penalty would be May 22, 2000. The EUB also cautioned that production after that date may be considered all or in part as overproduction.

2.2 Hearing

A public hearing was convened on September 27, 2000, at the offices of the EUB in Calgary before a Board panel consisting of J. D. Dilay, P.Eng. (Chair), and K. G. Sharp, P.Eng., and R. J. Willard, P.Eng. (Acting Board Members).

Those who appeared at the hearing are listed in the following table.

THOSE WHO APPEARED AT THE HEARING

Principals and Representatives
(Abbreviations Used in Report)

Witnesses

Nycan Energy Corp.
D. Wood

C. Jeffery, P.Geol.
D. Clark, P.Eng., of Diaz Resources Ltd.

Sphere Energy Inc.
B. Roth

H. Verlaan, P.Eng.
S. Drombrowski, P.Geol.

Alberta Energy and Utilities Board staff
J. P. Mousseau, Board Counsel
K. Fisher, CET

The Canadian Association of Petroleum Producers (CAPP) filed a submission expressing a general interest in ensuring consistent and predictable interpretation and application of EUB policies as reflected in the regulations and directives. CAPP argued matters related to the effect of an abandoned well where the mineral rights have reverted to the Crown on the administration of well spacing issues. It took no position on any other matters in dispute, including any question of evidence, and did not attend the hearing.

The Board acknowledges the argument filed by CAPP but notes that CAPP chose not to directly participate in the hearing. As a consequence, the Board is unable to place much weight on the CAPP submission because it was unable to test the argument by way of cross-examination.

2.3 Background

2.3.1 Interim Directive 94-2

The EUB issued *Interim Directive (ID) 94-2: Revisions to Oil & Gas Well Spacing Administration* on March 8, 1994, after extensive consultation with CAPP, the Small Explorers and Producers Association of Canada (SEPAC), and the Alberta Department of Energy, now known as the Department of Resource Development (DRD). The ID was intended, in part, to respond to industry concerns surrounding the need for off-target penalty relief for an off-target

exploration well. Often the optimum geological target is outside the prescribed target area of the applicable drilling spacing unit, prompting many applications for target area changes to ensure that the well will be on target. The industry associations expressed concern that such applications could alert competitors to a possible play and that interventions under the EUB application process could cause lengthy delays. These delays would penalize the company that took the initiative to identify a play and risk drilling an exploratory well. The EUB, in conjunction with the industry associations, concluded that it was appropriate to vary the normal off-target penalty regulations for these particular situations. The EUB also adopted in *ID 94-2* a policy of applying equity-based off-target penalties only in cases where a concern has been filed by an adjacent mineral right owner. In December 1998 the policy with regard to first wells was given statutory recognition by the enactment of Subsections 4.060(5) and 4.060(6) of the Oil and Gas Conservation Regulations (OGCR).

The two subsections read as follows:

Section 4.060(5) Where a well is spudded on or after 1 April 1994 and is the first well in a new pool, the off-target penalty factor prescribed for the well under section 4.070 shall not apply.

Section 4.060(6) For the purpose of this section,

- (a) “capable”, when the term is used in connection with a first well, means
 - (i) an oil well that is placed on production within 6 months of the spud date, and
 - (ii) a gas well that is completed and a suitable test has demonstrated to the Board’s satisfaction that the well has the ability to produce gas at commercial rates on a sustained basis;
- (b) “first well” means the well in a new pool with the earliest spud date that is capable of production.

The OGCR differs slightly from *ID 94-2*, upon which it was based. The OGCR requires that a first well be the well in a **new** pool with the earliest spud date that is capable of production, whereas *ID 94-2* defines a first well as the well with the earliest spud date that is capable of production. While the ID does not specifically differentiate between “pool” and “new pool,” it does suggest that the intent of the policy is to reward those who take the initiative to explore for a new pool. Subsection 1(1)(q) of the Oil and Gas Conservation Act (OGCA) defines “pool” as “a natural underground reservoir containing or appearing to contain an accumulation of oil or gas or both separated or appearing to be separated from any other such accumulation.”

ID 92-4 and the OGCR also specify that first-well designation applies only to wells spudded on or after April 1, 1994. Consequently, it is possible for a well drilled after this date to be precluded from first-well consideration by a well drilled prior to the effective date of the ID. Also, where pools containing a well with first-well status are coalesced, only one well will retain its first-well status. However, the new pool will not be reviewed for first-well status until a

request is made to apply an off-target penalty.

2.3.2 Regional Well Information

Six wells have been drilled in Sections 14, 21, 22, and 23 of Township 7, Range 10W4M since 1977. The following table gives a chronology of the six wells and summarizes the pool development.

Regional Well Information

Well Location & Lahee classification*	Licensee	Spud date	Date completed	Test date and results	Comments
15-14-7-10W4M Development	Sphere	July 19, 1999	Aug. 3, 1999	Oct. 6, 1999 70.2 10 ³ m ³ /d** AOF test	On production Sept. 28, 1999 Off target
16-21-7-10W4M Outpost	Zapata	May 28, 1988	Jan. 29, 2000	No test in EUB records	On production Jan. 30, 2000; initially completed in 1989 and produced from a deeper pool On target
9-22-7-10W4M Development	Zapata	Oct. 8, 1999	Oct. 13, 1999	Dec. 21, 1999 58.77 10 ³ m ³ /d AOF test	On production Nov. 23, 1999 On target
3-23-7-10W4M Development	Jordan	Sept. 22, 1987	Not completed	No test in EUB records	Abandoned Oct. 3, 1987 On target
2/3-23-7-10W4M Development	Nycan	May 28, 1999	June 3, 1999	June 18, 1999 22.3 10 ³ m ³ /d AOF test	On production July 6, 1999 Off target
10-23-7-10W4M Development	Talisman	Jan. 19, 1977	Not completed	Jan. 23, 1977 2.3 10 ³ m ³ /d Drillstem test	Abandoned Jan. 24, 1977 On target

* Lahee classification as described in *Guide 56* has been used by the EUB, industry, and Revenue Canada for many years to describe a well's drilling intent or risk classification. Lahee classification is not specifically referenced in the first-well policy.

** 10³ m³/d—thousand cubic metres per day.

2.4 The Applications

2.4.1 Application No. 1048341

Nycan submitted Application No. 1048341 on September 30, 1999, requesting that the EUB apply an off-target penalty to the well Sphere Forty Mile 15-14-007-10 (the 15-14 well), operated by Sphere Energy Inc. (Sphere) for the production of gas from the Fish Scales Sand. The 15-14 well was directionally drilled from a surface location of 350 metres (m) south and 772.3 m west to a bottomhole location of 156.4 m south and 799.1 m west of the nearest boundaries of Section 14-007-10W4M, as shown in the attached figure. This placed the well off target toward Section 23-007-10W4M (Section 23).

Nycan had already directionally drilled the 02/03-23 well in Section 23 from a surface location in Legal Subdivision (LSD) 14-14-007-10W4M to a bottomhole location in LSD 3-23-007-10W4M, 120 m North and 451.5 m East of the nearest boundaries of Section 23. This location is off target toward Section 14.

Nycan submitted that the 15-14 well was producing from the same pool as it was in Section 23 and that the 15-14 well was encroaching on its mineral rights. Therefore, it requested that the EUB assign an off-target penalty to the 15-14 well and classify the 02/03-23 well as the first well in a new Fish Scale pool. EUB staff determined that the 15-14 well and the 02/03-23 wells were producing from the same pool, which was subsequently designated as the Forty Mile Fish Scale A pool (A pool). Consequently, the EUB assigned an off-target penalty factor of 0.5 to the 15-14 well and suspended the off-target penalty assigned to the 02/03-23 well because it was the first well in the newly designated two-well pool. These assignments are in accordance with the OGCR Subsections 4.060(5) and (6) and *ID 94-2*.

2.4.2 Application No. 1060562

Sphere submitted Application No. 1060562 on February 23, 2000, requesting a review of the first-well status given to the 02/03-23 well. Sphere submitted that the A pool was known to exist long before the drilling of the 15-14 and 02/03-23 wells and that, therefore, the assignment of first-well status to the 02/03-23 well was inappropriate. To support its argument, Sphere cited the BVX Foremost 10-23-007-10 well (the 10-23 well), which was drilled in January 1977 and had a successful drillstem test (DST) over the Fish Scale interval. The 10-23 well flowed gas to surface at a rate of $2.3 \times 10^3 \text{ m}^3/\text{d}$ but was not completed; it was subsequently abandoned.

EUB staff, reviewing the area of application, noted that since the initial assignment of the off-target penalty one additional well had been drilled and completed in LSD 09-22-007-10W4M and one existing well in LSD 16-21-007-10W4M had been recompleted in the A pool. As a consequence, the EUB undertook a pool review, resulting in an expansion of the A pool to include wells 15-14, 16-21, 9-22, 02/03-23, and 10-23. (See table in Section 2.3.3 for the wellbore information on all A pool wells.) The EUB noted that the 10-23 well was now in the A pool. While this well may not have been considered capable of production, in the opinion of the EUB it did identify the existence of hydrocarbons and, hence, the presence of a pool as defined in the OGCA. Consequently, the EUB removed the first-well status from the Nycan well and applied an off-target penalty factor of 0.25, effective May 22, 2000. On June 19, 2000, Nycan appealed the assignment of the penalty and requested a hearing under Section 43(1) of the ERCA.

3 ISSUES

The Board considers the issues with respect to the review to be

- the intent of *ID 94-2*;
- the qualification of the 02/3-23 well as a first well for the purpose of off-target penalty administration and how well data acquired prior to April 1, 2000, affect first-well determination; and
- the need for an off-target penalty on the 02/03-23 well.

4 CONSIDERATION OF THE APPLICATIONS AND INTERVENTIONS

4.1 Views of Nycan

Nycan submitted that it held the mineral rights for Section 23-007-10 W4M. Due to topographical problems arising from a deep ravine and available capacity in the gas-gathering system in the southern area of Section 23, the optimum surface location for drilling a well to access the Fish Scale zone in Section 23-007-10W4M was from a surface location at LSD 14-14-007-10W4M. This required the well to be directionally drilled.

Nycan, at the time the 02/03-23 well was being considered as a prospect, reviewed the wells in the area of Section 23. It determined that no other well had been completed and tested to show that it was capable of producing gas from the Fish Scale zone on a sustained basis at commercial rates. Therefore, on the basis of its interpretation of the first-well policy, Nycan concluded that the 02/03-23 well would be the first well in the pool and would not have an off-target penalty applied. Nycan stated that there was sufficient geological control to show that pay existed in the target area and that an on-target well could have been drilled. It chose the bottomhole location of LSD 3-23-007-10W4M to minimize operational difficulties and capital costs, not to gain an equity advantage. Nycan stated that it relied on its interpretation of *ID 94-2* in designing and implementing the drilling program for the 02/03-23 well location.

In response to questioning, Nycan confirmed that the 02/03-23 well was licensed with a Lahee classification of development as a result of an internal error. In Nycan's view, the well was clearly an exploration well but it did not think it was necessary to change the classification at that time. However, the development classification became a problem when Revenue Canada would not recognize a higher risk classification for relief from income tax requirements. This prompted Nycan to request that the EUB change the Lahee classification from development to exploratory. Nycan confirmed that its application was turned down by the EUB on the basis that the reserves encountered by the 02/03-23 well were considered an extension to a pre-existing pool previously encountered by the 10-23-007-10W4 wellbore.

Nycan argued that the Lahee classification of a well was not critical in making a first-well determination. It submitted that having only wells with the classification of exploratory qualified to be first wells would distort the definition of first well. As defined in *ID 94-2*, a first well is the well with the earliest spud date that is capable of gas production. The definition does not refer to the exploratory well with the earliest spud date that is capable of gas production. Nycan submitted that a well that falls within the definition of first well is really de facto an exploratory well: that is, a well that is the first well in a pool to be spudded, completed, and suitably tested is, for all intents and purposes, an exploratory well.

Nycan also argued that the 16-21 well should not pre-empt its well from being the first well.

Nycan interpreted Sphere's argument to be that it is only necessary for a well to have the earliest spud date, so long as it is completed and tested to show the ability to produce gas at a commercial rate on a sustained basis in the future. Nycan argued that while it is possible to read the definition of first well in this fashion, such an interpretation runs counter to the goal of achieving certainty and predictability necessary in policy and regulation. In its view, such an interpretation would make it impossible for operators to arrange their affairs if they have to take into account the risk that a dormant well, which may have been spudded years ago, might be recompleted and tested and at that point be designated the first well.

Nycan submitted that it believed it had a "new pool" because when it drilled the 02/03-23 well there was no commercial production from the pool, nor was the pool properly defined by a commercial well. Not until the 02/03-23 well was completed, tested, and placed on commercial production did Nycan consider it to be a productive pool. Nycan said that all information should be considered, including well information from pre-1994 wells, in determining a new pool. It maintained that the relevant time for gauging whether a test demonstrates that a well has the ability to produce gas at a commercial rate on a sustained basis is when the test is done. That is when the operator makes the evaluation based on the economics at that time, and that is when the EUB should make the evaluation as well. It suggested that to evaluate whether a test demonstrates that a well has the ability to produce gas at a commercial rate on a sustained basis at a point other than when the test is conducted invites speculation.

Nycan noted that the 10-23 well was spudded on January 19, 1977, and the rig released on January 22, 1977. A DST revealed a small amount of gas between 612.6 and 618.1 m subsurface, but production casing was never run and the well was never completed. Nycan concluded that the 10-23 well should not impact the first-well determination for the 02/03-23 well because it was not completed and did not have a suitable test that demonstrated the ability to produce gas at a commercial rate on a sustained basis.

In response to questioning, Nycan stated that it agreed with the intent of CAPP's argument regarding the legal interpretation of first well.

4.2 Views of Sphere

Sphere submitted that it became involved in the Forty Mile area in April 1999, when seeking low-risk shallow gas prospects. It had a geological report prepared that included an isopach map of the Fish Scale sand, as shown on the attached figure. In its review, Sphere noted three existing wells, 1-22, 3-23, and 10-23, and further noted that the 10-23 well had conducted a DST that flowed gas to surface at a rate of $2.3 \times 10^3 \text{ m}^3/\text{day}$. Sphere further analyzed the 10-23 well's DST and noted that the reservoir pressure built up quite rapidly after the initial flow period and no depletion was indicated. It concluded that with a fracture treatment in this zone one could develop an economic well, especially at today's gas prices.

Sphere said that it then compared the DST results from the 10-23 well to DSTs of wells in a similar Taber pool, which is also a Barons Sands pool, and found them to be comparable. It also found that when the Taber pool wells were completed and fracture treated, all of them became economic gas wells. This convinced Sphere that this prospect was the type of low-risk development that it would like to pursue.

Sphere submitted that it competed with Nycan for both the mineral rights for Sections 14 and 23 and the same surface location in Section 14. Sphere was successful in acquiring only the mineral rights to Section 14. When it had to negotiate for a different surface location, its drilling plans fell behind those of Nycan. Sphere said that it was aware at the time of drilling that its well would be off target and debated whether to target the bottomhole location in the 0.75 or 0.5 off-target penalty bands. It decided to go for the best possible well and targeted the sweetest part of the pool, consequently placing the bottomhole location into the 0.5 off-target penalty band. Sphere submitted that it applied for a development well licence on July 7, 1999, spudded the well on July 19, 1999, and placed it on production on September 28, 1999. Sphere said that on November 18, 1999, EUB staff advised that its well would be subject to a 0.5 off-target penalty factor.

Sphere submitted that there were two reasons why it believed Nycan's 02/03-23 well was not entitled to off-target penalty relief pursuant to Subsection 4.060(5) of the OGCR and the EUB's policy implemented by *ID 94-2*. First, the 02/03-23 well was not an exploratory well, and second, the 16-21 well pre-empted the 02/03-23 well's status as first well in a pool when it was completed and put on production from the A pool.

Sphere cited Section 4.060(6)(b) of the OGCR in which first well is defined as "the well in a new pool with the earliest spud date that is capable of production." Sphere noted that the regulations did not define what constitutes a new pool but referred to the text in the ID, which states that "it is considered appropriate to establish a policy that recognizes those companies willing to take the risk associated with drilling exploratory wells." Sphere concluded from this that the policy was intended for exploration wells. Sphere submitted that Nycan applied for a development well and drew the attention of the Board to the EUB's *Guide 56: Energy Development Application Guide*, wherein the "development" Lahee classification describes a development well as a well to further exploit the productive zone of a known pool(s). The well may be inside the established limits of the pool or in close proximity to the edge of the pool(s).

Sphere submitted that the issue of whether the 10-23 well would qualify for status as first well in the pool was irrelevant. It stated that the first-well policy and the definition of a first well in a pool are only relevant for the purposes of providing off-target penalty relief to wells spudded on or after April 1, 1994. Sphere maintained that the fact that a well may have been abandoned after it was drilled because of gas prices or lack of existing gathering and processing facilities in the area was simply not relevant. What was relevant was that the 10-23 well identified the pool in question. Sphere agreed that this finding was consistent with the well licence applications for development wells that had been submitted by both Nycan and Sphere.

Sphere also argued that the first-well status for the 02/03-23 well was pre-empted by the 16-21 well, which was recompleted and placed on production from the A pool on February 1, 2000. Sphere supported its contention by noting that as a result of an EUB pool review, the 15-14, 16-21, 9-22, 02/03-23, and 10-23 wells were now included in the A pool. Sphere said that *ID 94-2* states that “where pools containing a well with first well status are coalesced only one well will retain its ‘first well’ status. However, the new pool will not be reviewed for ‘first well’ status until a request is made to apply an off-target penalty. Until then, all wells with first-well status will produce without penalty.” Sphere submitted that to the extent that the 02/03-23 well had first-well status, it lost that status when the 16-21 well and the 02/03-23 wells were coalesced into a new pool designated by the EUB in its letter of May 19, 2000. Sphere said that the 16-21 well did not qualify for “first well” status because it was drilled prior to April 1, 1994, but when it was placed on production in February 2000, it became the well with the earliest spud date that was capable of production in the A pool.

In response to questioning, Sphere submitted that in its opinion the intent of the “first well” regulation and the ID was to reward companies that were willing to take the risk to explore, most typically on a seismic play. Sphere said that, in its opinion, there was more than adequate information to establish the existence of the Fish Scale pool prior to the drilling of Nycan’s well. It believed that the combination of well logs that met the normal cutoffs to establish the Fish Scale zone (Barons Sand) and the DST that showed no depletion clearly established the existence of the pool.

Sphere indicated that it was aware of the CAPP submission but had no directly related comments.

4.3 Views of the Board

The Board notes that Nycan and Sphere both support a first-well program and together with the related industry associations expect Board policy and directives to be clear and concise. The degree of regulatory equity protection expected by industry and the specific rules must be generally endorsed and clearly understood. *ID 94-2* was a product of extensive consultation among the EUB, CAPP, SEPAC, and DRD and therefore included many diverse views. For the first-well program to be successful, a company proposing to drill an exploratory well must be able, with due diligence, to review readily available well information and be able to reasonably determine whether its well would meet the criteria of a first well. If not, or if there are doubts about pool delineation or well data, then a formal application with disclosure to competitors is warranted.

The EUB recognized when it issued the ID that it was not possible to clearly define all iterations and combinations associated with the first-well program and that there still might be an occasional situation where a hearing might be necessary to solve disputes of interpretation.

The Board confirms that the intent of the first-well policy is to support exploratory drilling as a special case. Accordingly, most first wells would be expected to have an exploration type Lahee classification. However, the first-well policy does not preclude the possibility that a development-type well may in fact be the first well to identify a new pool and show commercial capability.

The qualification criteria appear to be the crux of the issue before the Board. The policy is targeting new pools and rewarding those who assume the risks associated with such activities. As stated earlier, the OGCA defines “pool” as “a natural underground reservoir containing or appearing to contain an accumulation of oil or gas or both separated or appearing to be separated from any other such accumulation.” Neither the OGCA nor the first-well regulation states that a pool must be a “commercial pool,” as Nycan interprets, or subject to other definitions, such as a pool defined by an EUB G Order or one having recognized proven reserves.

After considering the intent of the ID and the wording of the regulation, the Board’s view is that a “first well” must

- 1) be spudded on or after April 1, 1994;
- 2) be the first well to encounter or discover the pool in question; and
- 3) be the first well capable of production in the pool in question.

It is the Board’s position that the above interpretation most clearly reflects the intentions and goals of the first-well policy. Further, such an interpretation provides interested parties with the clarity and certainty necessary when making decisions with regard to the potential drilling of first wells.

Upon review of the evidence presented at this hearing, there is, in the opinion of the Board, sufficient ambiguity in the first-well program to warrant a review by EUB staff, CAPP, and SEPAC. These parties may wish to examine the merits and regulatory burdens of extending the first-well policy into more medium-risk situations or other scenarios. However, in the opinion of the Board, the existing rules are sufficient to maintain the program and to fairly render a decision in this case.

After reviewing the evidence, the Board concludes that the 10-23 well did demonstrate the presence of hydrocarbons and thus a pool. As such, the subsequent 02/03-23 well should have benefited from this information and therefore does not represent the high-risk exploratory drilling expected in the first-well policy. The 02/03-23 well was the first well spudded after April 1, 1994, to demonstrate capability; but without also finding a new pool, it does not meet the criteria for a first well.

The suggested inclusion of the 16-21 well in determining first-well status raises another scenario not discussed in *ID 94-2*. Noting the aforementioned pool definition, an operator may, for good

operational reasons, decide to produce multiple zones sequentially and not test them as it passes through them. The Board does not accept Sphere's suggestion that once a well is spudded it puts an indefinite hold on first-well status for all potentially productive zones, such that a test many years later will pre-empt another well.

The Board concludes from the evidence that the 02/03-23 well is not the first well in a new pool and that an off-target penalty as prescribed by EUB regulations is appropriate.

DATED at Calgary, Alberta, on December 5, 2000.

ALBERTA ENERGY AND UTILITIES BOARD

<original signed by>

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

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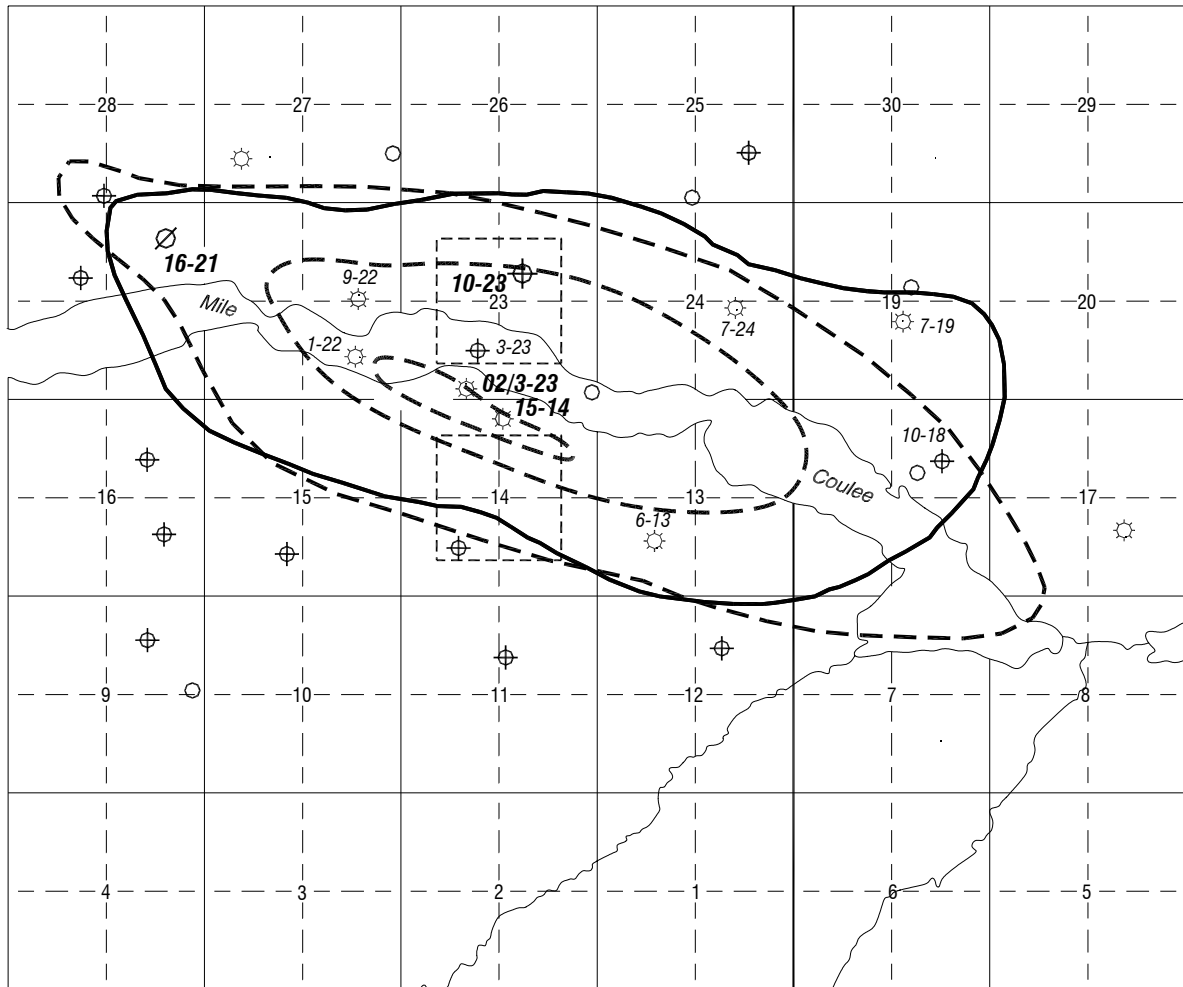
K. G. Sharp, P.Eng.
Acting Board Member

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

R.10

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T.7

Legend

- Sphere Energy Inc. pool outline and net pay contours
- Nycan Energy Corp. pool outline
- .-.- Target area boundary
- ☼ Gas well
- ⊕ Abandoned well
- ⊘ Suspended well
- Standing well

Forty Mile Fish Scale A Pool

Application No. 1060562

Nycan Energy Corp.