

PROOF OF CLAIM

IN THE MATTER OF THE RECEIVERSHIP OF TWIN BUTTE ENERGY LTD. ("Twin Butte")

Regarding the claim of Sutton Energy Ltd. and GeoCap Energy Corporation (the "Claimant")

All notices or correspondence regarding this claim are to be forwarded to the Claimant at the following address:

c/o Miles Davison LLP, 900, 517 – 10th Avenue SW, Calgary, Alberta T2R 0A8

Telephone Number: (403) 266 - 7627

Facsimile Number: (403) 263 - 6840

Email address: panic@milesdavison.com

Attention (Contact Person): Pred Anic

(All future correspondence will be delivered to the designated email address unless the Claimant specifically requests hard copies)

Please provide hard copies of correspondence to the address above.

I, Dan Jukes (name of Claimant or authorized representative), of Sutton Energy Ltd. and GeoCap Energy Corporation (City, Province or State), do hereby certify that:

1. The Claimant has received a Claims Package from the Receiver, and wishes to assert a Claim.
2. I am the Claimant.

OR

I am legal counsel (position/title) of the Claimant:

3. I have knowledge of all the circumstances connected with the claim referred to in this form.
4. The Claimant states that Twin Butte was at September 1, 2016, and still is, indebted to the Claimant in the sum of CDN \$2,040,927.42 (insert CDN\$ value of claim) as shown by the statement of account attached hereto and marked Schedule "A".

If the claim is to be reduced by deducting any counterclaim to which the Twin Butte is entitled, or amounts associated with the return of equipment or assets by Twin Butte, please specify.

The statement of account must specify the evidence in support of the claim including the date and location of the delivery of all services and materials. Any claim for interest must be supported by contractual documentation evidencing the entitlement to interest.

5. A. **UNSECURED CLAIM OF \$2,040,927.42.** That in respect of this claim the Claimant does not hold and has not held any assets as security.
- B. **SECURED CLAIM OF \$_____.** That in respect of this claim the Claimant holds assets valued at \$_____ as security, particulars of which are as follows:

Give full particulars of the security, including the date on which the security was given and the value at which the claimant assesses the security together with the basis of valuation, and attach a copy of the security documents as Schedule "B".

C. TRUST CLAIM OF \$_____. That in respect of said debt I claim a trust interest incertain of Twin Butte's assets valued at \$_____, particulars of which claim and assets are attached.

Give full particulars of the alleged trust, including the date on which the trust arose, the property against which the trust is asserted, and the value at which the claimant assesses the trust property together with the basis of valuation, and attach a copy of all relevant documents as Schedule "C".

6. Other than as already set out herein, the particulars of the undersigned's total Claim against Twin Butte are attached on a separate sheet. – See Schedule "A".
7. Have you acquired this Claim by assignment? ___ Yes No
(if yes, attach documents evidencing assignment)
8. This Proof of Claim form must be received by the Receiver by no later than 5:00 p.m. (Mountain Time) on June 1, 2017 (or, if you are a Subsequent Creditor within the meaning of the Claims Procedure Order, by the Subsequent Claims Bar Date as that term is defined in the Claims Procedure Order) by either prepaid registered mail, personal delivery, courier, facsimile transmission at the following address:

The Receiver:

FTI Consulting Canada Inc., Court-appointed receiver of Twin Butte Energy Ltd.
Attn: Deryck Helkaa / Dustin Oliver
720, 440 2nd Avenue SW
Calgary, AB T2P 5E9
Telephone: (403) 454-6031 / (403) 454-6032
Fax: (403) 232-6116

or by email to Dustin Oliver at dustin.oliver@fticonsulting.com

Failure to file your Proof of Claim and required documentation as directed by 5:00 p.m. on June 1, 2017 (Mountain Time) (or, if you are a Subsequent Creditor within the meaning of the Claims Procedure Order, by the Subsequent Claims Bar Date as that term is defined in the Claims Procedure Order) will result in your Claim being forever barred and you will be prohibited from making or enforcing a Claim against Twin Butte and shall not be entitled to further notice or distribution, if any, and shall not be entitled to participate as a Creditor in these proceedings.

<p><u><i>Jaw</i></u> Witness Signature</p>	<p>Name of Claimant: <u>Sutton Energy Ltd. and GeoCap Energy Corporation</u></p> <p>Per: <u><i>[Signature]</i></u></p> <p>Name: <u>Dan Jukes</u></p> <p>Title: <u>Legal Counsel</u> ____ (please print)</p>
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Dan Jukes
Writer's Direct Line: (403) 298-0327
Email Address: djukes@milesdavison.com
File No. 35841

June 1, 2017

Email: dustin.olver@fticonsulting.com

FTI Consulting Canada Inc.,
Court-Appointed Receiver of Twin Butte Energy Ltd.
Attention: Deryck Helkaa/Dustin Olver
720, 440 – 2nd Avenue SW
Calgary, AB T2P 5E9

Dear Sirs:

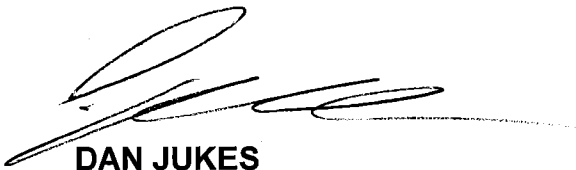
Re: Receivership of Twin Butte Energy Ltd. – Proof of Claim of Sutton Energy Ltd. and GeoCap Energy Corporation

Please find enclosed the Proof of Claim on behalf of our clients Sutton Energy Ltd. and GeoCap Energy Corporation.

If there is any further information or documents the Receiver requires in order to assess the enclosed Proof of Claim please do not hesitate to contact myself or Pred Anic. Mr. Anic has primary conduct of this matter.

Yours truly,

MILES DAVISON LLP



DAN JUKES

DKJ/ss
Enclosure

**SCHEDULE "A" TO THE PROOF OF CLAIM OF SUTTON ENERGY LTD. AND
GEOCAP ENERGY CORPORATION**

Further particulars of the claim of Sutton Energy Ltd. ("Sutton") and GeoCap Energy Corporation ("GeoCap") against Twin Butte Energy Ltd. ("Twin Butte") are set out below under the Executive Summary.

The following additional documents are attached in support of the claimants' claim:

- **TAB 1** - Statement of Claim by GeoCap and Euromax Resources Ltd. against Twin Butte in Court of Queen's Bench Action 1001-06764.
- **TAB 2** – Statement of Defence and Counterclaim filed by Sutton and Penn West Petroleum Ltd. in Court of Queen's Bench Action 1001-02577.
- **TAB 3** – Expert Report of Kenneth Richard Bissett dated December 9, 2015 (the "Bissett Report"), which establishes liability on the part of Twin Butte Energy Ltd ("Twin Butte").
- **TAB 4** – Expert Report of GLJ Petroleum Consultants dated May 30, 2017 (the "GLJ Report") providing reserve values incorporated in the quantification of claim.
- **TAB 5** – Documents supporting cost of new well
- **TAB 6** – Documents supporting expert expenses

EXECUTIVE SUMMARY

Background

Sutton and GeoCap are oil and gas exploration and production companies operating in Alberta and incorporated under Alberta's *Business Corporations Act*.

Pursuant to a Participation Agreement, GeoCap, Sutton, Twin Butte, and two other parties (Penn West Petroleum Ltd. ("Penn West") and Euromax Resources Ltd. ("Euromax")) were working interest owners in a natural gas well known as Sawn Lake 102/01-35-090-13W5M (the "1-35 Well").

GeoCap and Sutton each hold a 25% interest in the 1-35 Well, while Twin Butte owns a 20% interest. Twin Butte agreed to be appointed Operator under the Participation Agreement.

In approximately August, 2008, an issue arose at the 1-35 Well due to fluid accumulating in the well. As will be described in greater detail below, Twin Butte attempted to remedy the fluid accumulation by injecting high pressure gas down the annulus between the tubing and production casing (these actions are hereinafter referred to as the "Unloading Procedure").

As the Bissett Report confirms, the Unloading Procedure was reckless, unnecessary, and a marked departure from the conduct expected of a prudent operator in the circumstances. Twin Butte undertook this course of action without any consultation with its working interest partners.

After the actions taken resulted in a dangerously high flow of natural gas, methanol and produced water from the surface casing vent, Twin Butte proceeded to mislead its working interest partners and the ERCB (as it was then known) about what it had done in an attempt to cover up its grossly negligent actions.

Twin Butte compounded the problem by embarking on a remedial program to address the surface casing vent flow (namely cementing and re-drilling) that was unnecessary and which ultimately failed. Had Twin Butte advised its working interest partners and the ERCB of the true cause of the vent flow (i.e. the Unloading Procedure), a different and far less costly remedial action could have been undertaken.

The unnecessary remedial action, which cost nearly \$1 million, failed due to problems encountered during the operation, with the result that the 1-35 Well was rendered inoperable and incapable of further production.

As a result of Twin Butte's actions, GeoCap and Euromax commenced an action against Twin Butte on May 6, 2010. In a related action commenced a few months earlier, Twin Butte filed a Statement of Claim against Sutton and Penn West for payment of their share of expenses in relation to the Unloading Procedure and subsequent unnecessary remedial actions. Sutton and Penn West defended and counterclaimed on the basis of Twin Butte's gross negligence and breach of its duties as Operator.

The two court actions were consolidated under Court of Queen's Bench Action 1001-02577 by Order of the Honourable Justice Hawco on June 4, 2010. The matter proceeded through Questioning until the stay of proceedings was imposed by the Receivership Order. Copies of Questioning transcripts are available upon request.

History of 1-35 Well

The following is a brief summary of the well history. Greater details on the well history can be found at section 2.1 (p.11) and section 3.0 (p.21) of the Bissett Report.

As detailed further under the Quantum of Damages section below, the 1-35 Well was drilled in December 2002 and production began in December 2003. It was connected to a gas plant,

compression facility and a pipeline, and continued to produce consistently until just before August 2008 when the Unloading Procedure was conducted.

In approximately August, 2008, the 1-35 Well loaded with fluid. This was a normal occurrence in the past in part due to the associated condensate and water production. Previous successful remedial response was routine on the basis of conventionally swabbing the well (using a swabbing unit or service rig).

In addition, there had been an incident of corrosion in the 1-35 Well's casing, and a patch had been installed to seal the casing. The liner patch constituted a "weak link" in terms of future operations.

On July 29, 2008, the natural gas compressor shut down as a result of "low gas flow", and an automated message was relayed to Twin Butte's contract field operator, Mr. Juneau. Twin Butte ultimately concluded that the problem was the wellbore becoming loaded with formation fluid.

On the recommendation of Mr. Juneau, Twin Butte made the decision to try the Unloading Procedure.

Particulars of Gross Negligence of Twin Butte

The Bissett Report stands as a stark indictment of Twin Butte's conduct in this matter, and should be referenced for a detailed account of what was done, whether it conformed to proper practice, and what alternatives should have been employed. Consequently, the paragraphs below serve only to highlight some of the key facts.

Mr. Juneau was a relatively inexperienced operator with little or no down-hole or high pressure experience. The Bissett Report confirms that Mr. Juneau did not have the credentials to carry out the Unloading Procedure. Despite this, Twin Butte's Production Engineer (Mr. Friedley) and Vice-President Operations (Mr. Hodgson) gave him approval to proceed, without providing Mr. Juneau with a Workover Program (as is required by ERCB regulations) nor did Twin Butte provide any support or safety personnel to the site. None of the working interest partners were consulted with respect to this proposed plan, which was "definitely not an industry standard" according to the Bissett Report (p.51).

Twin Butte provided this approval without performing any of the elementary engineering calculations that would have been expected of a prudent operator. Had these basic calculations been done, it would have been obvious that the Unloading Procedure was doomed to fail, as the pressure required to successfully unload the well could not be achieved. In the words of Mr. Bissett, this constituted a "careless and ill-fated oversight which ultimately led to the ruination of the well...In essence, this [Unloading Procedure] technique was reckless, irresponsible and had no hope of reinstating gas production." (p.14, p.55).

It is also apparent that Twin Butte paid no attention to the pressure limitations caused by the presence of the casing patch. In fact, Twin Butte had not even made their contract operator, Mr. Juneau, aware of the existence of the casing patch. It appears nobody bothered to review the well file before proceeding with the Unloading Procedure.

In short, Twin Butte embarked upon a highly unorthodox and doomed-to-fail remedy (the Unloading Procedure) on the recommendation of an unqualified individual without performing even the most basic engineering calculations or considering the consequences of pressure on the casing patch. Furthermore, they gave the go-ahead for this operation in flagrant violation of basic occupational health and safety and ERCB regulations (see pp. 15 – 20 of the Bissett Report).

As concluded in the Bissett Report, Twin Butte appeared to be “winging it in terms of the [Unloading Procedure]. They merely took the suggestion of an inexperienced Contract Operator (Juneau) and allowed him to ‘give it a go’ without considering prerequisite requirements and possible consequences for their actions.” (p.16).

The obvious and correct solution to the fluid issue would have been to bring in a service unit to swab the well (which was successful in the past). Mr. Juneau indicated in his Questioning that Twin Butte wanted to try the cheapest way first before bringing in expensive trucks.

As a result of the Unloading Procedure, the casing patch was breached and contaminated formation water/natural gas and methanol escaped through the surface casing vent. A surface casing vent flow is considered a serious issue, and was accordingly reported to the ERCB.

However, Twin Butte never disclosed to its working interest partners or the ERCB that the vent flow had resulted from the Unloading Procedure. In fact, Twin Butte not only failed to disclose, but knowingly lied, suggesting the patch may have failed due to corrosion. The true facts were only uncovered when one of the working interest owners reviewed Twin Butte’s internal documentation early in the following year (2009), over 5 months later.

Twin Butte also claimed after the fact that a swabbing truck was not the chosen option because conditions were too wet, but these statements have been shown to be incredulous and not supported by the evidence given by Mr. Juneau in his Questioning.

Had Twin Butte communicated in the manner expected and required of them, it would have been apparent that the breach of the casing patch was caused by exposure to high pressure gas and not the conveniently made up contention that it was caused by external casing corrosion. Had this been known, a simple replacement of the casing patch would have sufficed and the 1-35 Well would still be producing today.

In the absence of proper information that would have identified exposure to high pressure as the cause of the casing patch breach, Twin Butte worked with the ERCB to develop a workover plan that was inappropriate given the true cause of the breach. Twin Butte never consulted with

working interest partners regarding their plans to remedy the issue. They simply issued an authorization for expenditures (AFE) to the partners on an “information only” basis under the pretense that partner approval was not required due to regulatory compulsion.

Issues arose during the drilling involved in the workover plan, resulting in the ruination of the well. The Bissett Report confirms that if a camera had been run down the well rather than blindly running a Chevron blade drag bit, much of the damage could have been avoided. However, ultimately it was Twin Butte’s desire to cover up their grossly negligent conduct that led to the workover plan to start with.

Quantum of Damages

The GLJ Report is attached at Tab 4 setting out the reserve value attributable to the interests of GeoCap and Sutton.

As a result of Twin Butte’s gross negligence and breach of their obligations as operator, the 1-35 Well was rendered inoperable. Accordingly, the reserves that were to be produced by the 1-35 Well can no longer be accessed without drilling a new well at a prohibitive cost (see below).

But for the actions of Twin Butte, the 1-35 Well would have continued to produce and GeoCap and Sutton would have received their proportionate share of profits (attributable to their combined 50% working interest) from the production. Sutton and GeoCap have therefore suffered damages equivalent to their share of historical production value to date plus the forecast value thereafter.

As noted in the summary to the historical portion of the GLJ Report (p.8), the historical reserve value (which represents value net of normal production and abandonment costs, etc.) for the interests of Sutton and GeoCap at an undiscounted value equates to \$1,092,000 from August 2008 through May 31, 2017.

Forecast reserve values thereafter are \$501,000 based upon an 8% discounted value on proved plus probable reserves (see summary at p.25 of the GLJ Report).

Lost profit due to Twin Butte’s gross negligence and breach of its duties as operator therefore totals \$1,593,000.

Please note that while a discounted value was applied to the forecast portion, no escalation factor was applied to the historical cash flow to adjust for the reference date of August 2008 to current.

The Claimants also wish to note that there is no mitigation value attributable to the ongoing interest in these reserves, as the cost to place the reserves back on production is prohibitive and uneconomic. A new well would need to be drilled and completed in order to resume production. In accordance with the more detailed figures attached at Tab 5, these costs are estimated as follows:

(i) Drilling of new well	\$1,040,110
(ii) Completion	\$ 152,175
(iii) Re-certify facilities (gas plant) and pipeline	\$ 350,000
(iv) Additional estimated abandonment costs for second well	\$ 100,000
 TOTAL	 \$1,642,285

The drilling and completion estimates are third party estimates completed by Gary Gwartney, a Drilling and Completions Engineer with Veracity Energy Services Ltd. ("Veracity"), and the re-certification estimates were provided by Roger Moore, who is the President of Veracity. Additional backup documents can be obtained from Veracity and provided upon request.

In addition to the production losses, the actions of Twin Butte have significantly increased the abandonment liability associated with the 1-35 Well. Had Twin Butte not conducted the Unloading Procedure which ultimately led to the ruination of the 1-35 Well, Sutton and GeoCap would have been responsible for their working interest share of the costs to conduct a conventional abandonment of a well. These costs have already been included in the Forecast Section of the GLJ Report (bottom of page 38 under "Abnd. & Recl. Costs"). Given that the value of the claim has already been reduced to account for the abandonment of a well, Sutton and GeoCap should be insulated from their net share of costs to abandon the 1-35 Well.

Under normal circumstances, cost estimates (AER) to abandon a well in the Sawn area are approximately \$70,000 – 100,000 (\$78,866 is the current AER estimate for the 1-35 Well). However, because of the vent flow issue, Twin Butte has caused the abandonment of the 1-35 Well to be far more complicated. According to estimates published by AER, an additional \$169,309 is the average incremental cost associated with properly abandoning a well that has a surface casing vent flow and/or cement integrity issues. Half (50%) of these abandonment costs (\$124,088) will fall on the shoulders of Sutton and GeoCap. It should be noted that this likely represents the minimum claim possible for the extra abandonment costs, as actual abandonment costs could be much higher. Sutton and GeoCap reserve their right to revise the portion of the claim with respect to abandonment costs if more precise estimates or actual costs become available prior to the acceptance of their claim by the Receiver or Court.

In addition to the damages claims described above, Sutton and GeoCap claim the following costs and expenses:

- Expert fees for Bissett Resource Consultants Ltd. in the sum of \$134,830.25 excluding GST
- Expert fees for the GLJ Report in approximate sum of \$7,000 excluding GST (claimants are still awaiting invoice and will provide the same upon receipt).
- Legal Fees and disbursements on a solicitor and his own client (full indemnity basis) in the sum of \$100,023.16 (exclusive of GST and including unbilled WIP to May 30, 2017).

- Pre-Judgment Interest based on damages of \$1,092,000 totaling: \$81,986.01, calculated as follows:

Amount	Interest Rate	Total Interest	# of Days in year	Per Diem	Days	Total Judgment Interest
\$1,092,000.00 x	0.00825 =	9009	/ 365 day	24.68219 x	25 =	\$617.05
\$1,092,000.00 x	0.00825 =	9009	/ 365 day	24.68219 x	214 =	\$5,281.99
\$1,092,000.00 x	0.0185 =	20202	/ 365 day	55.34795 x	365 =	\$20,202.00
\$1,092,000.00 x	0.012 =	13104	/ 365 day	35.90137 x	365 =	\$13,104.00
\$1,092,000.00 x	0.014 =	15288	/ 365 day	41.88493 x	365 =	\$15,288.00
\$1,092,000.00 x	0.011 =	12012	/ 365 day	32.90959 x	365 =	\$12,012.00
\$1,092,000.00 x	0.0105 =	11466	/ 365 day	31.4137 x	365 =	\$11,466.00
\$1,092,000.00 x	0.0055 =	6006	/ 365 day	16.45479 x	244 =	\$4,014.97
					2308	\$81,986.01

The quantum of the claim of Sutton and GeoCap can therefore be summarized as follows:

Lost value of GeoCap and Sutton share of reserves	1,593,000.00
Abandonment Costs	124,088.00
Damages Subtotal:	1,717,088.00
Expert Fees Bissett	134,830.25
Expert Fees GLJ	7,000.00
Legal Fees and Disbursements	100,023.16
Expert and Legal Subtotal	241,853.41
Pre-Judgment Interest (calculated on \$1,092,000)	81,986.01
TOTAL CLAIM	2,040,927.42

Thank you for your consideration. If you require any further documents or information in order to assess the Proof of Claim of Sutton and GeoCap, please do not hesitate to contact counsel.

TAB 1

Action No. 1001-06764

IN THE COURT OF QUEEN'S BENCH OF ALBERTA
JUDICIAL DISTRICT OF CALGARY

BETWEEN:

**GEOCAP ENERGY CORPORATION and
EUROMAX RESOURCES LTD.**

Plaintiffs

- and -

TWIN BUTTE ENERGY LTD.

Defendant

STATEMENT OF CLAIM

1. The Plaintiff, Geocap Energy Corporation ("GeoCap"), is a corporation registered pursuant to the laws of Alberta.
2. The Plaintiff, Euromax Resources Ltd. ("EurOmax"), is a corporation registered pursuant to the laws of British Columbia and extra-provincially registered in Alberta.
3. The Defendant, Twin Butte Energy Ltd. ("Twin Butte"), is a corporation registered pursuant to the laws of Alberta.
4. The Plaintiffs and Defendant are parties to an agreement entitled "Participation Agreement Sawn Lake Area, Alberta" dated December 4, 2002, (the "Participation Agreement").
5. Pursuant to the terms of the Participation Agreement, at all material times the Plaintiffs and Defendant were each working interest owners in a natural gas well known as Sawn Lake 102/01-35-090-13W5M (the "1-35 Well").

6. Pursuant to the terms of the Participation Agreement, the beneficial working interest owners and their respective ownership interests in the 1-35 Well were the following:
 - (a) Twin Butte Energy Ltd. 20%
 - (b) Penn West Petroleum Ltd. 25%
 - (c) Sutton Energy Ltd. 25%
 - (d) GeoCap Energy Corporation 25%
 - (e) EurOmax Resources Ltd. 5%

7. It was well known to Twin Butte and Twin Butte acted at all material times on the basis that the beneficial working interest owners and their respective ownership interests in the 1-35 Well were as set out in the preceding paragraph.

8. Twin Butte was at the material time the operator of the 1-35 Well under the Participation Agreement (the "Operator") and Twin Butte, as Operator, owed contractual, fiduciary and other duties to the working interest owners, including the Plaintiffs, which duties included but were not limited to the following:
 - (a) those duties and responsibilities as set out in the provisions of the 1990 Canadian Association of Petroleum Landmen Operating Procedure (the "1990 CAPL Operating Procedure") the terms of which were incorporated into the Participation Agreement;
 - (b) to operate the 1-35 Well in a reasonable and prudent fashion and in the interests of all of the working interest owners, including the Plaintiffs;
 - (c) to perform any work on or in connection to the 1-35 Well in a reasonable, safe and diligent fashion and in accordance with good engineering practice and accepted industry standards;
 - (d) to expressly refrain from any action or perform any work to or in connection with the 1-35 Well that poses serious risk:
 - (i) to the safety of any person working on the 1-35 Well;
 - (ii) to the safety of any person in the vicinity of the 1-35 Well;

- (iii) of harm to the environment; or
 - (iv) of harm or damage to the 1-35 Well;
 - (e) to provide full, complete and timely information as to the operations of the 1-35 Well to the working interest owners, including the Plaintiffs;
 - (f) to account to all working interest owners, including the Plaintiffs, for all revenues derived from and expenditures incurred in connection with the 1-35 Well;
 - (g) to not incur nor commit any expenditures in excess of \$25,000 on behalf of the working interest owners without the express written authorization of the working interest owners;
 - (h) to promptly advise the working interest owners, including the Plaintiffs, of the nature of any event or regulatory requirement necessitating the Operator to incur an expenditure without obtaining the approval for expenditure of the working interest owners and to promptly advise of the anticipated cost associated with such action; and
 - (i) such other duties as may be established at trial.
9. Immediately prior to August 24, 2008, Twin Butte wrongfully attempted to remove fluid from the 1-35 Well by injecting high pressure natural gas through the annulus between the tubing and production casing in an effort to lift the liquid through the tubing to surface and allow the natural gas to flow (such actions being referred to hereinafter as "Unloading the 1-35 Well") thereby causing a surface casing vent flow. Twin Butte's actions as described were in direct breach of the duties owed to the working interest owners, including the Plaintiffs, in that:
- (a) Twin Butte knew or ought to have known that the 1-35 Well had previously undergone a casing repair and that the 1-35 Well was equipped with a casing patch;
 - (b) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well would never have worked given the depth of the 1-35 Well and the pressure that would have been required to Unload the 1-35 Well;

- (c) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well was not accepted standard practice in any circumstance, especially in the case of a well equipped with a casing patch;
 - (d) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted a serious risk to the life and safety of its workers undertaking the procedure;
 - (e) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted a serious risk to the life and safety of any person in the vicinity of the 1-35 Well;
 - (f) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted serious risk or harm to the environment;
 - (g) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted serious risk to the future productive life and viability of 1-35 Well itself; and
 - (h) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted serious risk of harm and damage to the working interest owners.
10. The actions undertaken by Twin Butte were not undertaken out of necessity or for the benefit of the working interest owners. Instead, the Plaintiffs state that Twin Butte further breached its duties to the working interest owners, including the Plaintiffs, in Twin Butte's assessment of the need for the repair work having regard to all of the circumstances and specifically the following:
- (a) Twin Butte was fully aware that the 1-35 Well never had a surface casing vent flow history;
 - (b) Twin Butte was fully aware that prior to any surface casing vent flow appearing, its workers had injected high pressure gas down the annulus of the 1-35 Well which was equipped with a casing patch;

- (c) Twin Butte either knew or failed to recognize that the injected high pressure gas was the actual cause of the surface casing vent flow;
 - (d) Twin Butte failed to critically assess the surface casing vent flow and misdiagnosed a failed casing patch;
 - (e) Twin Butte performed unnecessary repairs and operations; and
 - (f) Twin Butte failed to advise the working interest owners of any of its wrongful actions leaving them to wrongly believe that there was in fact a surface casing vent flow issue in need of emergency repair.
11. Ultimately, Twin Butte did not respond in a prudent technical way and in such a manner as to reduce unnecessary downhole operations and to return the 1-35 Well to production at minimum cost and with minimum delay but instead was grossly negligent in its conduct.
12. Twin Butte breached its duties to the working interest owners, including the Plaintiffs, was grossly negligent, and misled the working interest owners, including the Plaintiffs, in the following manner:
- (a) By failing to initially disclose the fact that Twin Butte injected high pressure natural gas through the annulus between tubing and production casing on August 24, 2008, causing a surface casing vent flow; and
 - (b) By representing that the certain repairs being undertaken were required for regulatory compliance, even after the surface casing vent flow dissipated and Twin Butte knew that the surface casing vent flow had been downgraded to "Non-Serious" and would only require annual monitoring and reporting to the ERCB.
13. Twin Butte, as Operator, breached both its fiduciary duties and its duties to the working interest owners, including the Plaintiffs, under the Participation Agreement and the 1990 CAPL Operating Procedure, in conducting operations in a grossly negligent manner, failing to seek proper authority for expenditures on the 1-35 Well and in failing to keep the working interest owners informed of the operations in respect of such well.


14. Twin Butte first acted unreasonably, imprudently and dangerously in Unloading the 1-35 Well, and then, unreasonably, imprudently and without providing the working interest owners with full and complete information, directed authorization for expenditure for operations to the 1-35 Well which were neither warranted nor necessary. Twin Butte conducted such operations in a manner that was far from consistent with the actions of a good and prudent operator.
15. But for Twin Butte's breach of its duties owed to the Plaintiffs and Twin Butte's gross negligence in wrongfully injecting high pressure gas into the 1-35 Well and its conduct thereafter, the 1-35 Well would still have been capable of production and would still have been producing and generating revenue for the working interest owners, including the Plaintiffs.
16. As a result of Twin Butte's breach of its duties and its gross negligence, the working interest owners, including the Plaintiffs, suffered damages including:
 - (a) loss of the 1-35 Well and all costs incurred to drill and equip the Well;
 - (b) loss of production and revenue from the 1-35 Well;
 - (c) the costs to be incurred to drill a well to replace the 1-35 Well;
 - (d) the costs to abandon the 1-35 Well; and
 - (e) such further damages and losses as may be proven at trial.
17. The Plaintiff proposes that the trial of the within action be held at the Court House in Calgary, Alberta.
18. The Plaintiff further states that the trial of the within action will not exceed 25 days of trial time.

WHEREFORE THE PLAINTIFFS CLAIMS AGAINST THE DEFENDANT ON A JOINT AND SEVERAL BASIS:

- (a) Damages in the sum of \$1,440,000.00 representing the loss of the 1-35 Well and all costs incurred to drill and equip the Well;
- (b) Damages in the sum of \$900,000.00 representing loss of production and revenue of from the 1-35 Well;
- (c) Damages in the sum of \$750,000.00 representing the cost to drill a well to replace the 1-35 Well;
- (d) Damages in the sum of \$60,000.00 representing the costs to abandon the 1-35 Well;
- (e) Such other damages and losses as may be proven at trial;
- (f) Interest pursuant to the Judgment Interest Act, R.S.A. 2000, c.J-1 and amendments thereto and regulations thereunder;
- (g) Costs; and
- (h) Such further and other relief as this Honorable Court may deem necessary.

DATED at the City of Calgary, in the Province of Alberta, this 6th day of May, 2010; AND DELIVERED BY Messrs. **FLEMING** LLP, Barristers and Solicitors, Solicitors for the Plaintiff, whose address for service is in care of the said solicitors at 900, 926 - 5th Avenue SW, Calgary, Alberta, T2P 0N7, Attention: Predrag Anic, tel: (403) 266-7627.

ISSUED out of the office of the Clerk of the Court of Queen's Bench of Alberta, Judicial District of Calgary, this 6 day of May, 2010.

K. MCAUSLAND 

CLERK OF THE COURT

NOTICE TO THE DEFENDANT

No. 1501-06764 A.D. 2010

TO:

TWIN BUTTE ENERGY LTD.

IN THE COURT OF QUEEN'S BENCH
OF ALBERTA
JUDICIAL DISTRICT OF CALGARY

You have been sued. You are the Defendant. You have only 15 days to file and serve a Statement of Defence or Demand of Notice. You or your lawyer must file your Statement of Defence or Demand of Notice in the office of the Clerk of the Court of Queen's Bench of Alberta in Calgary, Alberta. You or your lawyer must also leave a copy of your Statement of Defence or Demand of Notice at the address for service of the Plaintiff named in this Statement of Claim.

BETWEEN:

**GEOCAP ENERGY CORPORATION
and EUROMAX RESOURCES LTD.**

Plaintiffs

- and -

TWIN BUTTE ENERGY LTD.

Defendant

WARNING: If you do not do both things within 15 days, you may automatically lose the lawsuit. The Plaintiff may get a Court judgment against you if you do not file or do not give a copy to the Plaintiff, or do either thing late.

STATEMENT OF CLAIM

The Statement of Claim is filed by

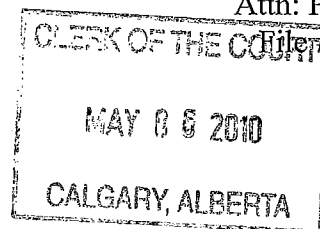
FLEMING LLP

Solicitors for the Plaintiff, who resides at Calgary, Alberta and whose address for service is in care of the said Solicitors.

The Defendant, insofar as is known to the Plaintiff, reside in Calgary, Alberta.

FLEMING LLP

Barristers & Solicitors
900, 926 – 5th Avenue SW
Calgary, Alberta T2P 0N7
Phone: (403) 266-5550 (main)
(403) 266-7627 (direct)
Fax: (403) 265-6910
Attn: Predrag Anic



TAB 2

IN THE COURT OF QUEEN'S BENCH OF ALBERTA
JUDICIAL DISTRICT OF CALGARY

BETWEEN:

TWIN BUTTE ENERGY LTD.

Plaintiff

- and -

SUTTON ENERGY LTD. and PENN WEST PETROLEUM LTD.

Defendants

STATEMENT OF DEFENCE

1. The Defendants, Sutton Energy Ltd. ("Sutton") and Penn West Petroleum Ltd. ("Penn West"), deny the allegations contained in the Statement of Claim except those admitted herein.
2. The Defendants admit the allegations set out in paragraphs 1 to 3 of the Statement of Claim.
3. In response to paragraphs 4 and 5 of the Statement of Claim, the Defendants admit the existence and validity of the Participation Agreement. The Defendants further admit that the Defendants and the Plaintiff, Twin Butte Energy Ltd. ("Twin Butte"), were working interest owners in a natural gas well known as Sawn Lake 102/01-35-090-13W5M (the "1-35 Well") but deny that any amounts are due or owing by the Defendants, or either of them, to Twin Butte under the Participation Agreement or otherwise.
4. In response to paragraph 6 of the Statement of Claim, the Defendants state, and it was well known to Twin Butte and Twin Butte acted at all material times, that under the terms of the Participation Agreement, the beneficial working interest owners and their respective ownership interests in the 1-35 Well were the following:

- (a) Twin Butte 20%

- (b) Penn West 25%
- (c) Sutton 25%
- (d) GeoCap Energy Corporation 25%
- (e) EurOmax Resources Ltd. 5%

5. In response to paragraph 7 of the Statement of Claim, the Defendants admit that Twin Butte was at the material time the operator of the 1-35 Well under the Participation Agreement (the "Operator") and further state that Twin Butte, as Operator, owed contractual, fiduciary and other duties to the working interest owners, including the Defendants, which duties included but were not limited to the following:

- (a) those duties and responsibilities as set out in the provisions of the 1990 Canadian Association of Petroleum Landmen Operating Procedure (the "1990 CAPL Operating Procedure") the terms of which were incorporated into the Participation Agreement;
- (b) to operate the 1-35 Well in a reasonable and prudent fashion and in the interests of all of the working interest owners, including the Defendants;
- (c) to perform any work on or in connection to the 1-35 Well in a reasonable, safe and diligent fashion and in accordance with good engineering practice and accepted industry standards;
- (d) to expressly refrain from any action or perform any work to or in connection with the 1-35 Well that poses serious risk:
 - (i) to the safety of any person working on the 1-35 Well;
 - (ii) to the safety of any person in the vicinity of the 1-35 Well,
 - (iii) of harm to the environment; or
 - (iv) of harm or damage to the 1-35 Well;

- (e) to provide full, complete and timely information as to the operations of the 1-35 Well to the working interest owners, including the Defendants;
- (f) to account to all working interest owners, including the Defendants, for all revenues derived from and expenditures incurred in connection with the 1-35 Well;
- (g) to not incur nor commit any expenditures in excess of \$25,000 on behalf of the working interest owners without the express written authorization of the working interest owners;
- (h) to promptly advise the working interest owners, including the Defendants, of the nature of any event or regulatory requirement necessitating the Operator to incur an expenditure without obtaining the approval for expenditure of the working interest owners and to promptly advise of the anticipated cost associated with such action; and
- (i) such other duties as may be established at trial.

6. In response to paragraph 8 of the Statement of Claim, the Defendants state that the alleged surface casing vent flow and the alleged casing failure at the 1-35 Well, was the direct, obvious and foreseeable result of wrongful actions taken by Twin Butte immediately prior to August 24, 2008, those actions specifically being the attempt by Twin Butte to empty the 1-35 Well of any liquids in the 1-35 Well by injecting high pressure natural gas through the annulus between the tubing and production casing in an effort to lift the liquid through the tubing to surface and allow the natural gas to flow (such actions being referred to hereinafter as "Unloading the 1-35 Well"). Twin Butte's actions as described were in direct breach of the duties owed to the working interest owners, including the Defendants, in that:

- (a) Twin Butte knew or ought to have known that the 1-35 Well had previously undergone a casing repair and that the 1-35 Well was equipped with a casing patch;

- (b) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well would never have worked given the depth of the 1-35 Well and the pressure that would have been required to Unload the 1-35 Well;
- (c) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well was not accepted standard practice in any circumstance, especially in the case of a well equipped with a casing patch;
- (d) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted a serious risk to the life and safety of its workers undertaking the procedure;
- (e) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted a serious risk to the life and safety of any person in the vicinity of the 1-35 Well;
- (f) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted serious risk of harm to the environment;
- (g) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted serious risk to the future life and viability of 1-35 Well itself; and
- (h) Twin Butte knew or ought to have known that its procedure for Unloading the 1-35 Well constituted serious risk of harm and damage to the working interest owners.

7. In further response to paragraph 8 of the Statement of Claim, the Defendants state that the repairs undertaken by Twin Butte were not undertaken out of necessity or for the benefit of the working interest owners. Instead, the Defendants state that Twin Butte further breached its duties to the working interest owners, including the Defendants, in Twin Butte's assessment of the need for the repair work having regard to all of the circumstances and specifically the following:

- (a) Twin Butte was fully aware that the 1-35 Well never had a surface casing vent flow history;

- (b) Twin Butte was fully aware that prior to any surface casing vent flow appearing, its workers had injected high pressure gas down the annulus of the 1-35 Well which was equipped with a casing patch;
- (c) Twin Butte either knew or failed to recognize that the injected high pressure gas was the actual cause of the surface casing vent flow;
- (d) Twin Butte failed to critically assess the surface casing vent flow and misdiagnosed a failed casing patch;
- (e) Twin Butte performed unnecessary repairs and operations; and
- (f) Twin Butte failed to advise the working interest owners of any of its wrongful actions leaving them to wrongly believe that there was in fact a surface casing vent flow issue in need of emergency repair.

8. Ultimately, the Defendants state and the fact is that Twin Butte did not respond in a prudent technical way and in such a manner as to reduce unnecessary downhole operations and to return the 1-35 Well to production at minimum cost and with minimum delay but instead was grossly negligent in its conduct and is not entitled as such to any recovery from the Defendants, or other working interest owners, for the expenditures claimed to have been incurred on the 1-35 Well.

9. In specific response to paragraphs 10 and 11 of the Statement of Claim, the Defendants state that these charges claimed by Twin Butte also arise from and are connected with the gross negligence of Twin Butte and the breach of Twin Butte's duties to the working interest owners and the Defendants deny any liability to Twin Butte for or in respect of the compressor.

10. In response to the entirety of the Statement of Claim, the Defendants expressly deny that either AFE #08W008 or AFE #09F003 were properly issued and further state that the working interest owners, including the Defendants, were not properly advised of the actual circumstances giving rise to these AFE's. More specifically, Twin Butte further breached its duties to the working interest owners, including the Defendants, was grossly negligent and misled the working interest owners, including the Defendants, in the following manner:

- (a) By failing to disclose in advance of the expenditure of the claimed funds the fact that Twin Butte injected high pressure natural gas through the annulus between

tubing and production casing on August 24, 2008, causing a surface casing vent flow; and

- (b) By representing that the certain repairs being undertaken were required for regulatory compliance, even after the surface casing vent flow dissipated and Twin Butte knew that the surface casing vent flow had been downgraded to “Non-Serious” and would only require annual monitoring and reporting to the ERCB.

11. In response to the entirety of the Statement of Claim, the Defendants expressly deny that AFE #08W008 or AFE # 09F003 were accurate, properly issued or valid and further deny that any expenses incurred by Twin Butte under AFE #08W008 and AFE #09F003 were properly incurred for the joint account pursuant to the terms of the Participation Agreement or otherwise.

12. In response to the entirety of the Statement of Claim, the Defendants state that they did not grant authorization for expenditures related to either AFE #08W008 or AFE #09F003, or alternatively, if authorization was granted it was given as a result of false and misleading information given to the Defendants by Twin Butte or by the concealment of relevant and material information from the Defendants by Twin Butte.

13. In the alternative, if any part of the expenditures incurred by Twin Butte under AFE#08W008 or AFE#09F003 was properly incurred for the joint account and for the benefit of the working interest owners of the 1-35 Well, those expenditures are to be shared in proportion to the working interests determined by the Participation Agreement as set out in paragraph 4 of this Statement of Defence, and not as alleged in paragraphs 13 and 14 of the Statement of Claim.

14. Furthermore, Penn West has already paid Twin Butte the sum of \$219,375.92 towards its share of any amount properly owed to Twin Butte in respect of expenditures under one or both of AFE#08W008 or AFE#09F003.

15. In response to the entirety of the Statement of Claim, the Defendants state that Twin Butte, as Operator, breached both its fiduciary duties and its duties to the working interest owners, including the Defendants, under the Participation Agreement and the 1990 CAPL Operating Procedure, in conducting operations in a grossly negligent manner, failing to seek

proper authority for expenditures on the 1-35 Well and in failing to keep the working interest owners informed of the operations in respect of such well.

16. In response to the entirety of the Statement of Claim, the Defendants expressly deny being indebted to Twin Butte for the amount as alleged or for any amount at all.

17. As a result of Twin Butte's breach of its duties and its gross negligence, the Defendants suffered damages including:

- (a) loss of the 1-35 Well and all costs incurred to drill the Well;
- (b) loss of production and revenue from the 1-35 Well;
- (c) the costs to be incurred to drill a well to replace the 1-35 Well;
- (d) the costs to abandon the 1-35 Well; and
- (e) such further damages and losses as may be proven at trial

and the Defendants claim that they are entitled to set off their damages against any sum claimed by Twin Butte.

18. In response to paragraphs 13 and 14 of the Statement of Claim, the Defendants state that they have repeatedly requested that Twin Butte provide proper supporting documentation with respect to the operations of the 1-35 Well and the amounts allegedly owed, and Twin Butte has neglected, omitted or refused to do so.

19. In response to paragraph 17 of the Statement of Claim, the Defendants agree with the proposal to have the trial held in Calgary, Alberta and with the estimate that the trial is likely to take less than 25 days.

WHEREFORE THE DEFENDANTS PRAY THAT THE WITHIN ACTION BE DISMISSED AS AGAINST THEM WITH COSTS.

AND BETWEEN:

SUTTON ENERGY LTD. and PENN WEST PETROLEUM LTD.

Plaintiffs by Counterclaim

- and -

TWIN BUTTE ENERGY LTD.

Defendant by Counterclaim

COUNTERCLAIM

20. The Plaintiffs by Counterclaim repeat and adopt the allegations set out in the Statement of Defence as part of this Counterclaim.

21. Further, the Plaintiffs by Counterclaim state that the Defendant by Counterclaim (“Twin Butte”) first acted unreasonably, imprudently and dangerously in Unloading the 1-35 Well, and then, unreasonably, imprudently and without providing the working interest owners with full and complete information, directed authorization for expenditure for operations to the 1-35 Well which were neither warranted nor necessary. The Plaintiffs by Counterclaim state that Twin Butte conducted such operations in a manner that was far from consistent with the actions of a good and prudent operator.

22. The Plaintiffs by Counterclaim state that but for Twin Butte’s breach of its duties owed to the Plaintiffs by Counterclaim and Twin Butte’s gross negligence in wrongfully injecting high pressure gas into the 1-35 Well and its conduct thereafter, the 1-35 Well would still have been capable of production and would still have been producing and generating revenue for the Plaintiffs by Counterclaim.

23. As a result of Twin Butte’s conduct described in this Counterclaim and in the Statement of Defence, no amounts were properly owing to Twin Butte in respect of expenditures to repair the 1-35 Well. Accordingly, there was no basis for the payment by the Plaintiff by Counterclaim

Penn West Petroleum Ltd. ("Penn West") towards its share of those expenses and therefore the funds are required to be reimbursed to Penn West. Alternatively, Twin Butte has been enriched by that payment in the amount of \$219,375.92, Penn West has been correspondingly deprived, and there is no juristic reason for the enrichment.

24. As a result of Twin Butte's breach of its duties and its gross negligence, the Plaintiffs by Counterclaim suffered damages including:

- (a) loss of the 1-35 Well and all costs incurred to drill and equip the Well;
- (b) loss of production and revenue from the 1-35 Well;
- (c) the costs to be incurred to drill a well to replace the 1-35 Well;
- (d) the costs to abandon the 1-35 Well; and
- (e) such further damages and losses as may be proven at trial.

WHEREFORE THE PLAINTIFFS BY COUNTERCLAIM CLAIMS AGAINST THE DEFENDANT BY COUNTERCLAIM AS FOLLOWS:

- (a) Damages in the sum of \$2,400,000.00 representing the loss of the 1-35 Well and all costs incurred to drill and equip the Well;
- (b) Damages in the sum of \$1,500,000.00 representing loss of production and revenue of from the 1-35 Well;
- (a) Damages in the sum of \$1,250,000.00 representing the cost to drill a well to replace the 1-35 Well;
- (a) Damages in the sum of \$100,000.00 representing the costs to abandon the 1-35 Well;
- (a) Damages in the sum of \$219,735.92 to recover amounts paid by Penn West as its proportionate share of the expenses of repair to the 1-35 Well;

- (b) Set-off of any such damages against any amounts properly owing to Twin Butte in the main action;
- (c) Such other damages and losses as may be proven at trial;
- (a) Interest pursuant to the Judgment Interest Act, R.S.A. 2000, c.J-1 and amendments thereto and regulations thereunder;
- (a) Costs; and
- (a) Such further and other relief as this Honorable Court may deem necessary.

DATED at the City of Calgary, in the Province of Alberta, this 19 day of ~~February~~^{March}, 2010; AND DELIVERED BY FLEMING LLP, Barristers and Solicitors, Solicitors for the Defendants/Plaintiffs by Counterclaim, whose address for service is in care of the said solicitors at 900, 926 – 5th Avenue SW, Calgary, Alberta, T2P 0N7 Attention: Predrag Anic.

TAB 3



TWIN BUTTE ENERGY LTD.

SPR SAWN 1-35-90-13

UWI: 102/01-35-090-13W5/00

WELL LICENCE NO. 0269441

**INCIDENT: WELLBORE UNLOADING,
INTERMEDIATE CASING AND PRODUCTION LINER FAILURES, AND
ATTEMPTED TUBULAR REPAIRS
JULY 29 THROUGH NOVEMBER 7, 2008**

December 9, 2015



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ATTACHMENTS:

- No. 1 Initial Wellbore Schematic C/W Tubing, and;
Initial Wellbore Schematic without Tubing
- No. 2 EUB Well licence, licence No: 0269441, April 19, 2002
Survey Plan, February 1, 2002
- No. 3 Access Map, driving distances and driving directions,
April 24, 2015
- No. 4 Licence Transfer Application (number 1286370), OMAX RESOURCES LTD. TO
RICHMOUNT PETROLEUM LTD., Application submitted on December 13,



2002 and approved on December 16, 2002

- No. 5 Estimated costs of options considered to unload the Wellbore and to restore wellbore where production operations can be resumed
- No. 6 Required surface pressure to unload Wellbore vs. Fluid Density
- No. 7 Photographs of twisted steel rod found lodged in water course of Chevron 3 or 4 wing blade bit
- No. 8 Casing Patch Schematic, Ran and Set November 7, 2006
- No. 9 Schematic of wellsite/wellhead connections during Twin Butte Unloading Procedure (TBUP)
- No. 10 SPR SAWN 1-35-90-13 (W5M)

Joint News Release

Twin Butte Energy Ltd. Announces closing of strategic combination with E4 Energy Inc.

- No. 11 AER, EUB Interim Directive ID 2003-01 dated January 30, 2003
- No. 12 Production Plots
 - A) Production Rate (mmscf/d) vs time
 - B) Production Rate (mmscf/d) vs Cumulative Gas Production (MMSCF)



TWIN BUTTE ENERGY LTD.

SPR SAWN 1-35-90-13

UWI: 102/01-35-090-13W5/00

WELL LICENCE NO. 0269441

**INCIDENT: WELLBORE UNLOADING,
INTERMEDIATE CASING AND PRODUCTION LINER FAILURES, AND
ATTEMPTED TUBULAR REPAIRS
JULY 29 THROUGH NOVEMBER 7, 2008**

1.0 PROJECT SCOPE AND QUALIFICATIONS

On August 24, 2008, Twin Butte Energy Ltd. (TB), as Operator of the well SPR Sawn 102/01-35-090-13W5/00 (the "1-35 well") attempted an operation designed to remove fluid from the 1-35 wellbore as a means of restoring natural gas production from the completed Gilwood formation (the "Twin Butte Unloading Procedure" or "TBUP").

I have been hired by GeoCap Energy Corporation and Sutton Energy Ltd. (each as an owner of a 25% working interest in the 1-35 well) to provide an opinion, based on my qualifications and years of experience in oil and gas operations, as to the merit of the **TBUP**. I do so as an expert in oil and gas operations.

My name is Kenneth Richard (Dick) Bissett. I attended Northeast State College in Tahlequah, Oklahoma and Southern Methodist University in Dallas, Texas and have

been employed in the oil and gas industry for over 59 years. Presently I am President of Bissett Resource Consultants Ltd. a petroleum engineering consulting company specializing in: drilling, completions, well servicing, recompletions, horizontal drilling, emergency response planning, safety planning and audits, project management, well control management, emergency response management, training and support services of oil, gas, disposal and injection wells in Canada, USA and some six countries world-wide. It is with the benefit of all these years of experience that I have reviewed the operations on the 1-35 well as they were conducted by Twin Butte, as operator, during August through November, 2008.

To assist those reading this report, refer to Attachment No. 1 where you will find:

1. Initial Wellbore Schematic complete with Tubing; and
2. Initial Wellbore Schematic without Tubing

These two schematics should provide those unfamiliar with the oil and gas industry with an understanding of what a wellbore looks like and some clarity regarding wellbore equipment/materials commonly utilized in the industry.



1.1 GLOSSARY OF TERMS AND ABBREVIATIONS

A

“ACP”: Annulus Casing Packer. (Refer to Attachment No. 1).

AER – Alberta Energy Regulator: Currently regulates all of the oil and gas operations in Alberta. (formerly regulated by the ERCB/EUB)

Annulus: The space between the outside of the tubing and the inside of the production casing. This concentrically circular space in a wellbore is accessed by way of the “casing” or “annular” wellhead valves.

C

CAPL: Canadian Association of Petroleum Landmen.

Casing Patch (CP): A patch inside the casing where an opening (failure) in the production casing can be isolated and/or repaired. Isolating the casing failure can be accomplished by two common methods:

1. “Sealing” the failed portion of the production casing from within the casing by setting and rolling out a smaller diameter piece of casing over the breach (a “Casing Patch”).
2. By running a sufficient length of smaller diameter casing with packers on both ends to seal off the failed portion of the production casing. This is commonly referred to as a “scab liner” and was the method utilized in the 1-35 well.

Casing Patch Failure (CPF): The failure of one or both of the sealing packers located on the top and bottom of the patch, allowing gas and/or fluid to by-pass the elements and pass through the split casing, to flow to surface via the surface casing vent.

CBL – Cement Bond Log: An electric logging tool, to evaluate the cement bond to casing and formation.



CF: Casinghead flange. Reference point for depth measurements. (See also KB).

Compressor: A mechanical device that increases the pressure of natural gas by reducing its volume. In the case of the Sawn 1-35 well, gas was compressed to 1,100 psi to enable the gas to flow down the sales gas pipeline.

Contract Operator: Field contract well operator Paul Juneau who was retained by Twin Butte.

CRWS: Continuous Rib Wireline Sleeve (ACP). How ACP is manufactured.

C/W: Means complete with.

CTU – Coiled Tubing Unit: Refer to Endless Tubing Unit (ETU).

D

DDS – Digital Data Submission: The on-line regulatory reporting system (ERCB/EUB/AER).

E

E4 - E4 ENERGY INC.: previous operator. E4 amalgamated with Twin Butte by a Plan of Arrangement on February 8, 2008 (Refer to Attachment No. 10).

ERCB – Energy Resources Conservation Board: Formerly the regulator of oil and gas operations in Alberta. The EUB splits to become the Alberta Utilities Commission and the Alberta Energy Regulator (AER) on January 1, 2008.

ETD: Effective Total Depth

ETU – Endless Tubing Unit: A continuous coiled tubing string (pipe, carried on a mobile unit) that can be lowered from surface inside the tubing to allow for the injection of nitrogen or other gaseous fluids to lighten or displace to surface the fluid column inside the tubing, thereby allowing the reservoir gas from below to begin flowing. ETU is also often referred to as Coiled Tubing Unit (CTU).



EUB: The ERCB is amalgamated with the Public Utilities Board to become the Energy Utilities Board (EUB) during 1995 (exact date is unknown) and is responsible for the regulation of oil and gas operations in Alberta.

H

H₂O: Chemical Formula for water.

Hydrate: A gas hydrate is an ice-like crystalline solid, formed from a mixture of water and natural gas, usually methane that forms under certain temperature & pressure conditions and can plug tubulars &/or pipelines.

Hydrate Plug: An ice-like crystalline solid which has formed inside the tubing string, and completely blocks the flow of gas and fluids to surface. A common remedy used to “thaw” a hydrate plug is to expose it to liquid methanol.

J

Joint-Operator: Means a party having a working interest in the joint lands, including the operator if it has a working interest in the joint lands.

JOA - Joint-Operating Agreement: This is the CAPL, Operating Procedure contract governing the operating relationship/procedures amongst the parties to the agreement.

I

ID: Inside Diameter.

K

KB – Kelly Bushing: All wellbore depth measurements are referenced to the Kelly Bushing (KB) located in the drilling rig floor when the well was drilled. The elevation of the Kelly Bushing relative to surveyed ground elevation (i.e. KB to Ground) allows the



universal conversion of drilled depth to standardized relative subsea depth (above or below sea level) between wells.

M

Magus Engineering Limited: Consulting company contracted by the Operator, Twin Butte, to oversee the remedial operation following the Casing Patch Failure and SCV "blow-out".

N

N/A: Not applicable.

N₂: Nitrogen - An inert gas often used to energize or unload wellbores of unwanted fluids.

O

OD: Outside Diameter.

OH&S - Occupational Health and Safety: Provincial government agency which investigates and reviews work place accidents, and enforces safety policies.

Operator: Means the party appointed by the Joint-Operators to conduct operations hereunder for the joint account pursuant to the governing JOA (CAPL, Operating Procedure).

P

Pamco – Enerflex: Owner of the gas Compressor required to compress the sales gas produced from the 1-35 Sawn well. Pamco was also contracted to maintain the compressor.

PBR: Polished Bore Receptacle. A device with a honed internal diameter (ID) sealing surface.



POOH: Pull Out Of Hole.

PSV – Pressure Safety Valve: A valve set to open at a certain pressure in order to protect equipment from excessive pressure.

R

RIH: Run In Hole and usually applies to tubulars or other equipment lowered into a wellbore.

Roots PD Gas Meter: Dynamic volume gas measurement, positive displacement meter.

S

SCADA: – Acronym for Supervisory Control And Data Acquisition, a computer system for gathering and analyzing real time volume, temperature and pressure data and allows for remote access so well data can be monitored.

SCV – Surface Casing Vent: A wellhead valve and vent assembly on the surface casing housing outlet which allows for the “bleed off” of any gas escaping from below.

SCVF – Surface Casing Vent Flow: Typically, low pressure gas “leaking” (small flow rates) up the outside of the production casing and into the surface casing (meant to be an indicator of a cement bond issue). (Refer to Attachment No. 11 ID 2003 – 1 for casing failure reporting and repair requirements).

Surface Casing Vent “Blow-Out”: The catastrophic release of high pressure gas through the casing vent that occurred immediately following the start-up of **TBUP** on August 24, 2008.

SDFN: Shut Down For Night.

SICP: Shut-in casing pressure.

SISCVP: Shut-In Surface Casing Vent Pressure.



SITP: Shut-In Tubing Pressure.

T

TB – Twin Butte Energy Ltd.: Also “Operator” appointed by the Joint-Operators to conduct operations for the joint account.

THF: Tubinghead flange. Reference point for depth measurements.

Throttle: To control gas or fluid flowrate with a valve, choke etc.

TSTM: Too Small To Measure.

TBUP - Twin Butte Unloading Procedure: The failed operation conducted by Twin Butte on August 24, 2008, to restart gas production at the Sawn Lake 1-35 Well by attempting to lift the water buildup in the tubing that was restricting the flow of gas. The operation involved connecting the sales gas high pressure line side to the casing annulus of the Sawn 1-35 well in order to exert high pressure gas down the annulus to the bottom of the tubing string landed at 1688.97m KB (MD), in order to force (lift) fluid up the tubing string.

Tubing – (Tbg): Usually the smallest diameter string of pipe run in a well inside the production casing through which the oil/gas/water is usually produced (production). Because the tubing pipe diameter is smaller than the casing diameter, the velocity flow of production is greater within the tubing than the annulus thereby allowing for greater “lift” when flowing associated fluids with the gas production.

U

USI – UltraSonic Imager: A well log imaging tool for casing inspection and cement evaluation. This is a Schlumberger Company tool.

UWI – Unique Well Identifier: Well description (location) assigned to every well by the ERCB/EUB/AER during the licencing process, in the case of the 1-35 Sawn Lake well, the UWI is 102/01-35-090-13W5/00.



W

WOO: Waiting on orders.

WP: Working Pressure.

WRP: Wireline Retrievable Plug.

X

“X” Nipple: Tubing nipple with an inside profile for setting a tubing plug.

“XN” Nipple: Tubing “X” nipple with a bottom no/go to restrict tools from passing through.



Unit Measurements

Metres – m: the SI base unit of length and depth.

TD: Total Depth of a Well (metres – m)

FTD: Final Total Depth of a Well (metres – m). Deepest depth to which a well has been drilled.

TVD: True Vertical Depth of a Well (metres – m)

MD: Measured Depth of a Well (metres – m)

kPa: Kilopascals (unit of pressure, 1,000 pascals). To convert to psi divide by 6.895.

MPa: Mega pascals (unit of pressure, 1,000,000 pascals).

MPag: Mega pascals gauge versus absolute. To convert to absolute add 93 kPa.

PSIG: Lbs/in² (Imperial unit of pressure; gauge). To convert to kPa multiply by 6.895.

PSIA: Lbs/in² (Imperial unit of pressure; absolute). (Absolute equals gauge plus 13.5 psi)

kg/m³: kilograms per cubic meter. Unit of fluid density.

Ppg: pounds per gallon. Unit of fluid density. To convert to kg/m³ multiply by 119.826.

m³/d: cubic meter per day. Gas flow measurement or fluid flow measurement. (SI)

scf/d: standard cubic feet per day. Gas flow measurement. (Imperial)



1.2 WELL HISTORY

Omax Resources Ltd. (Omax) licenced (Refer to Attachment No. 2) a new well known as Omax 102 SAWN LAKE 1-35-90-13 (W5M). The objective was to “twin” the existing Penn West Sawn Lk 1-35-90-13 (W5M) Slave Point oil well which showed bypassed Gilwood gas pay on logs and tests so the new surface lease was taken such that the two wells shared the same access road. (Refer to Attachment No. 2). The new well is located in the northwest plains of Alberta (Refer to Attachment No. 3). The Alberta Energy and Utilities Board (EUB) issued the well licence on April 19, 2002. Subsequently and on December 16, 2002 the Well Licence No. 0269441 was transferred from Omax (Transferor) to Richmount Petroleum Ltd. Richmount (Transferee) – (Refer to Attachment No. 4). Richmount directionally drilled and cased a potential gas well to a final total depth (FTD) of 1 720.0 mKB (MD) or 1 705.4 mKB (TVD). The well was completed in the Gilwood Sand and put on production as a gas well on December 3, 2003.

Thereafter (date unknown to this writer) E4 Energy Inc. (E4) took over operatorship of the 1-35 well. During January or February, 2008, Twin Butte amalgamated with E4 and assumed operatorship of the 1-35 well (Refer to Discovery Transcript of Mr. Elekes page 27, lines 3 through 27 and page 28, lines 1 and 2 and Attachment No. 10).

Evidently the well and facility operated without any major problems as the well file did not contain any correspondence to the contrary (Refer to Attachment No. 12).

However, sometime during October, 2006 (exact date was not found in the well file) E4 suspected a leak had developed in the 177.8 mm OD Intermediate Casing (detection method is not known). Also, the operator suspected water originating from the Wabamum formation had entered the Intermediate Casing and “killed” the Gilwood formation gas flow. E4 then brought in a wireline unit (October 31, 2006) and swabbed the well for ±1.5 days recovering 6.50 m³ salt water containing ±19, 300 PPM (salt). Released wireline unit and brought in a service rig. Pulled and stood



back production tubing string. Ran packer and bridge plug. Pressure tested intermediate casing and located a "SPLIT" (described by E4 personnel) at 708.9 m – 712.9 mKB (MD).

Subsequently, a Casing Liner Patch was run and set as described in Attachment No. 8. Production tubing string was run and landed at 1688.17 mKB (MD). The well was then successfully swabbed recovering 49.95 m³ formation water before the well began flowing. Rig out and released service rig on November 13, 2006.

As a result of these remedial operations conducted by E4 (now Twin Butte), the Operator and working interest owners of the Sawn 1-35 well learned the following:

- 1) The intermediated casing was compromised from 708.9 – 712.9 mKB (split) and had successfully been isolated through the installation of a liner patch (2 packers and a length of 114mm casing; a scab liner). This liner patch was now the "weak link" in terms of future operations.
- 2) Once the source of unwanted water had been successfully isolated, swabbing the well with a swabbing unit or service rig is the only proven method to successfully return the well to gas production from the Gilwood formation.
- 3) Because of the casing patch installation, the Operator would need to account for this in all future wellbore operations. E4 (now Twin Butte) had the responsibility (as Operator) to understand and incorporate these learnings into all future operations.

The well produced until July 29, 2008 when the SCADA System notified the contract operator of "**Low Gas Inflow**" sometime during the day or night (Refer to Attachment No. 12). The remainder of the "Well History" can be found in **Section 2.0, Well Operational Overview**.



2.0 FINDING AND CONCLUSIONS

A) **The Twin Butte Unloading Procedure (TBUP)**

The **TBUP** conducted on the 1-35 well was poorly conceived, devoid of any engineering rigour or planning and technically had no possibility of reinstating gas production from the Gilwood formation at the 1-35 well. Twin Butte supervisory personnel (Mr. Hodgson and Mr. Friedley) regarded this as a “no risk” undertaking at the suggestion of its contract operator (Mr. Juneau) who did not have any high-pressure experience or the “credentials” required to carry out the operation. The elementary engineering calculations that Twin Butte should have completed prior to attempting the **TBUP** have been included in this report as Attachment No. 6 – “Required Surface Pressure to Unload the Wellbore vs. Fluid Density”. Regardless as to the assumptions made regarding the fluid composition within the wellbore, the pressure at surface required to be applied down the annulus (casing) in order to lift the fluid up the tubing within, was impossible to achieve; the minimum surface pressure required to unload the 1-35 wellbore ranges from 10,414 kPag (1,510 PSIG) to 14,215 kPag (2,062 PSIG) while the maximum achievable pressure from the line pack (or compressor) was 9,136 kPag (1,325 PSIG). It is important to note that these pressures do not account for any pressure drop (loss) due to friction which would further increase the surface pressures required to unload the 1-35 well.

Furthermore, at these pressures, the gas producing Gilwood formation in the 1-35 well at a depth of 1,676 m KB would be vulnerable to being fractured. Based on a fracture gradient of 17.0 Kpa/meter, the Gilwood reservoir would fracture at a surface pressure of 28,492 Kpa ($17.0 \text{ Kpa/meter} \times 1,676 \text{ meters} = 28,492 \text{ Kpa}$) less the weight of the column of fluid in the wellbore. In this case, the weight of the wellbore fluid ranges from 13,274 kPag (pure methanol) to 18,302 kPag (100% formation water) so the maximum surface treating pressure to ensure the Gilwood does not fracture ranges from 10,190 kPag (100% formation water) to 15,218 kPag (100% methanol). The **TBUP** would have exposed the Gilwood reservoir to pressures very near to or exceeding the pressure that would result in fracturing this reservoir which may have compromised the ability to further produce the Gilwood.



Twin Butte neglected to carry out these fundamental engineering calculations (a competent operator paying attention would absolutely have done so) and, as a result, could have exposed this gas reservoir to fracture pressures risking the loss of the well.

To summarize, Twin Butte operational personnel (Mr. Hodgson and Mr. Friedley) approved the **TBUP** without completing these elementary engineering calculations, a careless and ill-fated oversight which ultimately led to the ruination of the well (Refer to Transcript of Mr. Friedley's testimony page 51, lines 7 through 41, pages 52 through 59 and page 60, lines 1 through 6). Had the Operator, as is required by the JOA (CAPL Operating Procedure), taken the time to determine the surface pressures required to unload the wellbore using their non-standard **TBUP**, they would have concluded that neither the Aerial compressor nor the natural gas sales line-pack pressures were capable of unloading the wellbore as outlined. (See Attachment No. 6).

Minimum surface pressure required to unload wellbore (full of formation water and 1,000 meters of methanol in tubing)* $\pm 11\,946$ kPag (1 732 PSIG)

Compressor maximum discharge pressure (If PSV's were disabled) $\pm 9\,136$ kPag (1 325 PSIG)

Sales Gas Pipeline maximum line pack pressure $\pm 7\,584$ kPag (1 100 PSIG)

**does not include friction pressure*

With the above knowledge, the **TBUP** should have been rejected as an option by any reasonable and prudent Operator. Concern regarding potentially fracturing and thereby compromising the Gilwood gas reservoir as a producing zone should also have caused Twin Butte to abandon the **TBUP** idea. Logically, the well should have been unloaded with a CTU and nitrogen or alternatively one of the swabbing techniques could have been utilized. These methods may have been more costly but less likely to damage the reservoir, the down hole tubulars or the casing patch.



(note: evidently, the **TBUP** was thought to be less costly by Twin Butte only because of the haphazard manner in which Twin Butte conducted the **TBUP**. In reality, had Twin Butte simply swabbed the excess fluid from the 1-35 wellbore (as E4 had done in the past) this well would have remained shut-in for, at the most, an additional 12 days (as Twin Butte was able to move a service rig onto this location immediately after they caused an uncontrolled, catastrophic gas release up through the surface casing vent).

B) Surface Casing Vent Flow

An uncontrolled release of natural gas (methanol and formation water) was caused by the **TBUP**. The ACP (Annulus Casing Packer), being the bottom inflatable packer on the existing Casing Patch, was over pressured by the **TBUP** causing the casing patch to fail allowing formation water contaminated with methanol as well as natural gas to enter the split in the compromised intermediate casing string (the reason the casing patch was initially installed). The wellbore fluid (water/methanol/natural gas mixture) was expelled through the surface casing vent outlet located on the wellhead assembly at surface. If Twin Butte had acted as a prudent Operator, had discounted the **TBUP** as being dangerous and destined to fail, reviewed its own (E4) well file and the history relating to the Casing Patch to fully appreciate that E4 had previously and successfully swabbed the fluid out of the wellbore to restore Gilwood gas production and, had Twin Butte been more patient in its approach (i.e. a service rig was moved expeditiously onto the location on September 2, 2008 immediately following the catastrophic Surface Casing Vent Flow with lease conditions that had not changed refer to Discovery Transcript of Mr. Juneau page 71, lines 19 through 27 and pages 72, lines 1 and through 7), it is my opinion that the 1-35 well would likely still be producing today.

C) The TBUP and Resulting Operational Transgressions

Twin Butte is an Owner, Operator and Prime Contractor of the 1-35 well. In my review of the operations performed by Twin Butte, I have identified numerous operational transgressions/deficiencies pertaining to Occupational Health and Safety



(OH&S) and AER Regulations. These are listed in their entirety in Section 2.1 of the report (“Operational Deficiencies Pertaining to Occupational Health and Safety (OH&S) and AER Regulations”).

The most egregious transgressions are summarized as follows:

- 1) The Contract Operator was not aware that the wellbore contained a casing patch; Twin Butte supervisory personnel neither advised him nor did they consider the possible ramifications.
- 2) Twin Butte supervisory personnel failed to establish any guidelines for the Contract Operator, including the specification of the maximum surface pressure.
- 3) Twin Butte failed to provide a complete and detailed Workover Program (required by the regulations) to the Contract Operator with approved piping diagrams and pressure limitations.
- 4) Twin Butte approved and authorized an operation knowing that their representative on location (Mr. Juneau) would be working alone with high pressure gas, with no medic on-site in a remote area with no cellular service. Mr. Juneau carried out this operation on a solo basis with no one around to potentially transport any injured or ill workers from site and no provisions were made for enhanced communication (satellite phone as an example) during the workover in the event of a mishap/injury occurred. In the case of the failed **TBUP**, the mishap was not reported to Twin Butte until the following day.

In conclusion, it appears as though Twin Butte was “winging it” in terms of the **TBUP**. They merely took the suggestion of an inexperienced Contract Operator (Juneau) and allowed him to “give-it-a-go” without considering prerequisite requirements and possible consequences for their actions. According to Mr. Friedley, he and Mr. Hodgson spoke with Mr. Juneau on August 20th concerning the particulars of conducting the **TBUP**. Part of that discussion was: “reviewed the



pressure needed to do the **TBUP**" (Refer to Discovery Transcript of Mr. Friedley, page 51, lines 7 through 41 and page 52, lines 1 through 23). This conversation ended after making the decision to attempt the **TBUP** (Refer to Discovery Transcript of Mr. Friedley page 51, lines 40 and 41 and page 52, line 1). Evidently, Messrs. Friedley and Hodgson misjudged the pressure required to successfully complete the **TBUP** (or the calculations were never actually done by Twin Butte).

Had a Workover Program been provided, it would/should have considered the proper engineering calculations to clearly show that the proposed **TBUP** could not possibly be successful. The Workover Program would also have included a down hole diagram which would have clearly shown that the wellbore contained a casing patch and would have drawn everyone's attention to this "weak link" in the wellbore that was ultimately compromised.

This operation approved by Twin Butte management demonstrated a total disregard for the safety of its field personnel, the environment and the property of its Joint-Operators (I have been advised that the Joint-Operators knew nothing of the events that transpired between August 24, 2008 and September 4, 2008 until months after). It appears Twin Butte had no intention of informing its partners as no reports were ever prepared or distributed (to my knowledge).

It is apparent that Twin Butte should have moved a service rig onto the 1-35 location in early August and the real reasons they didn't appear to be as follows:

- 1) Friedley and Hodgson took the advice of an inexperienced Contract Operator (Mr. Juneau) who had never had a service rig on this location during his tenure; and
- 2) Twin Butte only owned a 20% working interest in the 1-35 well and, from their actions, treated this asset as "Non-Core". From the events that transpired, one can easily conclude that Twin Butte personnel failed to make themselves as informed or paid as much attention to this property as they, as Operator, were obligated to.



This concludes my findings with regard to this matter. I would be pleased to answer any questions related to the contents of this report.



2.1 OPERATIONAL DEFICIENCIES PERTAINING TO OCCUPATIONAL HEALTH & SAFETY (OH&S) AND AER REGULATIONS

- Failure to have a “readily available” copy of the Alberta OH&S Act, Regulations and Code at the work site.
- Failure to establish an Emergency Response Plan for responding to an emergency that may require rescue or evacuation. OH&S Regulations require that the plan be in writing and available to workers. Regulations also require that emergency workers receive appropriate and adequate training.
- Failure to provide a written hazard assessment or prepare a safe work permit as a site-specific, task-specific assessment of the procedures involved in attempting to unload the wellbore with pressure from the sales gas line.
- Failure to establish maximum surface pressure guidelines for the Contract Operator, who was given the responsibility as a Wellsite Supervisor for conducting the wellbore unloading operation. Working as a Completion Supervisor, a Completion’s BOP ticket is considered best practice by **INDUSTRY RECOMMENDED PRACTICE, VOLUME 7 (IRP-7)**.
- In order to make a proper hazard assessment of any operation involving down hole equipment, a schematic diagram containing all the wellbore casing sizes c/w pressure ratings, and tubing sizes, as well as any down hole completion tools, and liner assemblies should be available to the Contract Operator, to aid in evaluating the hazards of any operational procedure (Note: Contract Operator was not aware that the wellbore contained a casing patch – Refer to Discovery Transcript of Mr. Juneau pages 79, lines 3 through 27 and page 80, lines 1 and 2).
- Failure to provide a single person working alone at a work site the minimum required Type “P” First Aid Kit.



- Failure to provide, and make available to workers a written plan of procedures for transporting injured or ill workers from the worksite to the nearest health care facility. This plan should be available to the workers. (Refer to Discovery Transcript of Mr. Juneau page 82, lines 4 through 27, pages 83 through 88 and page 89, lines 1 through 20).
- Mr. Juneau did not maintain a daily written report detailing the operating conditions of the 1-35 well nor the Choke Plant and Compressor operating conditions. Twin Butte, Messrs. Hogdson and Friedley, did not instruct Mr. Juneau to complete a Daily Operations Report. The compressor was a rental unit from Pamco Enerflex. Mr. Juneau testified (Refer to Discovery Transcript of Mr. Juneau page 25, lines 1 through 21) that the rental company did not require any daily written Compressor Operations reports, thus there is no documentation history of the operational conditions of the Choke Plant or the Compressor.



3.0 WELL OPERATIONAL OVERVIEW

Twin Butte, the licensee and operator of the 1-35 well, prepared (after the fact) a **Chronology of Events, July 29 - November 7, 2008** which details ongoing operations. Daily well costs were not included from July 29 through September 1, 2008. Thereafter, September 2 through November 7, 2008, daily and cumulative costs were included on Daily Completion/Workover Reports prepared by Magus Engineering Limited. Summarized below are the well operational details:

July 29, 2008

The natural gas compressor shut down as a result of “**Low Gas in Flow**” sometime during the day or night. (Refer to Discovery Transcript of Mr. Juneau, Contract Operator, page 30, lines 12 through 27, pages 32 through 35 and page 36, lines 1 through 3). The “Supervisory Control and Data Acquisition” (SCADA) system notified Mr. Juneau, Contract Operator of the shutdown.

July 30, 2008:

No operational activity reported.

July 31, 2008:

Contract Operator travelled to the wellsite on this date but was unable to start compressor. Twin Butte Energy Ltd. (Twin Butte) instructed Contract Operator to arrange for Pamco Enerflex to repair the compressor’s prime mover. Pamco Enerflex arranged for mechanic(s) to service the compressor’s prime mover and provided a quotation to Twin Butte.

(Note: The Contract Operator did not provide a written Daily Plant and Well Report. Nor did Twin Butte request written Daily Reports). The Contract Operator would talk with Mr. Friedley, Production Engineer and/or Mr. Hodgson, Vice-President, Operations when he had a problem or needed guidance. At that time the Contract



July 31, 2008 (continued):

Operator would verbally provide operational information to Messrs. Hodgson and or Friedley. Consequently there is a lack of written operational information. (NOTE: Failure to provide daily operational reports is **not** a standard oilfield practice).

August 1 through August 11, 2008:

No operational activity reported.

August 12 and 13, 2008:

Pamco Enerflex personnel arrived on-site and repaired the compressor's prime mover as required over a two day period. (Note: The Pamco Enerflex service reports pertaining to the repairs completed were not available for my review).

August 14 through August 19, 2008:

Contract Operator during this time period was: 1) attempting to start the well flowing, 2) pumping methanol to dissolve suspected hydrate plug(s) and, 3) determining how to unload liquids from the wellbore.

The well never flowed after the compressor's prime mover was repaired. Contract Operator pumped 1.0 m³ Methanol into the tubing and 2.0 m³ Methanol into the annulus (Refer to Discovery Transcript of Mr. Juneau page 50, lines 10 through 27, pages 51 through 56 and page 57, lines 1 through 22)

Subsequent to the methanol being pumped into the tubing and annulus both Messrs. Hodgson and Friedley concluded the reason the well would not produce gas was because the wellbore was loaded with formation water and methanol and was not due to a hydrate plug. (Refer to Discovery Transcript of Mr. Friedley, page 44, lines 4 through 40) and (Refer to Discovery Transcript of Mr. Juneau page 53, lines 6 through 22).

**August 20, 2008:**

The well would flow gas a short period of time then would die. In the opinion of the Contract Operator, ground conditions on this date were too wet to bring in a Swab Unit, Wireline Unit or ETU (Refer to Discovery Transcript of Mr. Juneau page 65, lines 16 through 24). Consequently, the group (Messrs. Hodgson, Friedley and Juneau) made the decision to proceed with an Unloading Procedure suggested by Mr. Juneau, a relatively inexperienced operator with little or no down hole experience (the **TBUP**). (Refer to Discovery Transcript of Mr. Juneau page 70, lines 10 through 16) and (Refer to Discovery Transcript of Mr. Friedley page 48, lines 22 through 36). The Contract Operator was given approval to attempt to unload the well bore using the **TBUP** method. The Contract Operator connected the "Sales Gas Pipeline" so as to discharge into the casing valve (See Attachment No. 9). High pressure gas 7 584 kPag (1 100 PSIG) would then be injected into the casing (Annulus) using a globe valve. The casing patch design pressure was rated for a maximum of roughly 28 MPag (4 000 PSIG). (Note: The weakest link in the casing patch as run, is the Annulus Casing Packer [ACP] Continuous Rib Wire Sleeve (CRWS) Weatherford rating of the ACP* is as follows: Rated differential WP = $\pm 27\,560$ kPag [4 000 PSIG], recommended actual WP = $[27\,560 \text{ kPag} \times 0.80] = 22\,050$ kPag [3 198 PSIG]). The wellhead was rated for roughly 21.0 MPag (3 000 PSIG). The pressure safety valve(s) located on the compressor were set for 8 200 kPag (1 189 PSIG). (Note: The information I have indicates the two [PSVs] located on the "Gas Aftercooler" sections are rated for 8 200 kPag [1 189 PSIG]).

No reports or correspondence has been provided to indicate that Twin Butte paid any attention to the pressure limitations caused by the presence of the casing patch down hole. As well, I have been unable to find any evidence that Twin Butte performed any engineering calculations on the **TBUP** to ascertain if there was sufficient pressure on lease (either from the sales gas pipeline or the compressor).

* According to Weatherford the ACP pressure rating will tend to decline where numerous pressure reversals occur across the Continuous Rib Wire Sleeve

**August 20, 2008 (continued):**

inflatable element during its operational life. Additionally I understand that when the element fails, it does not hold applied pressure afterwards. I believe this explains why the surface casing vent flow occurred on August 24, 2008 during the failed **TBUP** operation.

August 21, 22 and 23, 2008:

In order to attempt the **TBUP**, the Contract Operator needed to acquire the required fittings, valves, hose, and so on in order to modify existing piping. Afterwards, the Contract Operator modified the existing piping that would allow the **TBUP** attempt to be completed, (Refer to Discovery Transcript of Mr. Friedley page 71, lines 24 through 41, pages 72 through 79 and page 80, lines 1 through 13) and (Refer to Discovery Transcript of Mr. Juneau page 76, lines 1 through 27, pages 77 through 81 and page 82, lines 1 through 10).

To my knowledge, there were no piping drawings produced nor was there any formal approval of the piping modifications that were made.

August 24, 2008:

TBUP set up was installed as instructed and put into operation. (Refer to Discovery Transcript of Mr. Juneau page 89, lines 21 through 27, pages 90 through 105 and page 106, lines 1 through 19). "After approximately 10 minutes of high pressure gas injection, the surface casing vent catastrophically blew out and unloaded methanol contaminated formation water and natural gas at very high pressures. The surface casing vent flow was explosive in nature and was great enough to blow debris and puddles of water around the lease." The Contract Operator shut in the surface casing vent valve and shut down the **TBUP** operation. The compressor was shut down (Note: It is assumed that this was incorrectly reported as it appears the compressor was never turned on for this operation).

**August 25, 2008:**

It was not until the next day, August 25, 2008 that the Contract Operator called Twin Butte office (Mr. Friedley) to report the surface casing vent flow and to determine what to do about it (to my knowledge this is the first report of what transpired the previous day; this is very unusual given what had occurred). It is unclear, given the severity of the consequences of the **TBUP**, why this was not immediately reported by the Contract Operator to Twin Butte. Mr. Friedley contacts the Energy Resources Conservation Board (ERCB) office, St. Albert, and reports the surface casing vent flow to Mr. Frank Parolin. Mr. Friedley then contacts Lisa Ditosto of the ERCB Calgary Well Operations Group, and discussed the surface casing vent flow. Both casing (Annulus), and surface casing vent shut-in pressures registered 3 102 kPag (450 PSIG). (Refer to Discovery Transcript of Mr. Friedley page 21, lines 7 through 41 and page 22, lines 1 through 7).

Contract Operator is instructed to flow the casing (Annulus) to flare until the well loads up with produced fluid (water) and is dead. Wellhead service crew were called (and mobilized) to inspect wellhead.

Magus Engineering Limited is given information on the well along with the current status, and is instructed to begin preparing plans for a workover to determine/discover source of the down hole failure.

August 26, 2008:

Contract Operator: Casing (Annulus) gas is flared until SICP has bled off to 0 kPag/PSIG (Note: Initial SICP not reported). Surface casing vent pressure is then bled off from 2 586 kPag (375 PSIG) to 0 kPag/PSIG. Tubing pressure bled off to 0 kPag/PSIG (Note: Initial SITP was not reported). Wellhead service crew tested wellhead and found it OK. Surface casing vent flow reported to the ERCB on the DDS system. Time line of 90 days discussed for the repair of the surface casing vent flow/casing failure is discussed between Lisa Ditosto and Twin Butte. In the

**August 26, 2008 (continued):**

event that a casing failure is determined to be the source of the surface casing vent flow, the repair program will have to be submitted to the ERCB for approval.

Contract Operator installs a Roots PD Gas Meter on the surface casing vent and records (an average) flow rate of 47 m³/dy (1 668 scf/dy) over a 3 hour period.

August 27, 2008:

No field operations reported, waiting on Magus Program.

August 28, 2008:

Magus Engineering Limited submits first draft of the proposed workover program to Twin Butte (presume Mr. Friedley) with the purpose of determining the source of the surface casing vent gas flow.

August 29 through September 1, 2008:

No field operations reported. Waiting on service rig to arrive and approval of proposed workover program by Twin Butte personnel. Additionally, we were unable to find records evidencing any attempts made by Twin Butte to communicate with the other Joint-Operators of the 1-35 well to explain the events that had transpired or how Twin Butte was proposing to spend the Joint-Operators capital in attempting to fix what they had done.

September 2, 2008:

Magus Wellsite Consultant, Shane Hillstrom, arrives at location with service rig. Records: SITP and SICP too small to measure (TSTM) and SISCVP 50 kPag (7.0 PSIG). Bleed off surface casing vent (SCV) pressure, left SCV open. Spot service rig on location and rig up. Shut down for night (SDFN).

It is interesting to note the service rig arrived on location this date which was only 10 calendar days after the unsuccessful **TBUP**, a period in which there was additional

**September 2, 2008 (continued):**

rainfall. What changed to allow the service rig to access the location now? Really nothing other than the fact that Twin Butte wrecked the well without consulting the other Joint-Operators.

Est'd Costs: Daily \$7,035 Cumul. \$7,035

September 3, 2008:

Pull Out of Hole (POOH) with 60.3 mm OD Production tubing.

Est'd Costs: Daily \$14,760 Cumul. \$21,795

September 4, 2008:

Run in Hole (RIH) with wireline and set "WRP" Bridge Plug @ 1 260 mKB (MD).
Dump bail 10 m sand on top of bridge plug. SDFN.

Est'd Costs: Daily \$22,440 Cumul. \$44,235

September 5, 2008:

RIH with production tubing and 114.3 mm Weatherford "QDG" packer and set packer at 720.5 mKB (MD). Pressure tested Intermediate Casing from 720.5 mKB (MD) to surface with 7.0 MPag (1 015 PSIG); holds OK. Existing casing patch is from 675.2m to 724.3 mKB (MD). RIH with production tubing and "QDG" packer, tag sand top at 1 255 mKB (MD), set packer at 1 252 m KB (MD). Pressure test packer and bridge plug to 7.0 MPag (1 015 PSIG) and it holds. With Packer set at 1 255 mKB (MD) pressure (test) casing (Annulus) to 7.0 MPag (1 015 PSIG). Observed feed rate of 50 ℓ/min (13 US gals/min). Final feed rate of 34 ℓ/min (9 US gals/min) at 8.9 MPag (1 291 PSIG). Pull out of hole (POOH) with production tubing and packer. SDFN

Est'd Costs: Daily \$17,864 Cumul. \$62,099



September 6, 2008:

RIH with Noise and Temperature tools. Noise at 787 m and 770 mKB (MD). Shut down; suspend operations until a plan can be approved.

Est'd Costs: Daily \$16,284 Cumul. \$78,383

September 7 through 14, 2008:

Operations suspended until a plan can be approved.

Est'd Costs: Daily \$0.00 Cumul. \$78,383

September 15, 2008:

Authorization for Expenditures (AFE's) sent to ENDEV (55%) and Sutton (25%).

Est'd Costs: Daily \$0.00 Cumul. \$78,383

September 16, 2008:

Operations suspended until a plan can be approved.

Est'd Costs: Daily \$0.00 Cumul. \$78,383

September 17, 2008:

RIH with spinner survey. Pressure up @ 7.0 MPag (1 015 PSIG), 8.0 MPag (1 160 PSIG), 9.0 MPag (1 305 PSIG) with no feed rate but always a leak off. Pump 11 l/min (2.9 US gals/min) @ 10.2 MPag (1 479 PSIG). Results showed very inconsistent readings. Spinner survey was considered inconclusive. Shut down until plan could get approved.

Est'd Costs: Daily \$44,954 Cumul. \$123,337



September 18, 2008:

Stand by in Red Earth waiting on orders from Calgary.

Est'd Costs: Daily \$6,030 Cumul. \$129,367

September 19, 2008:

SICP: TSTM, SISCVF: Rapid flow, SITP: N/A (Not available) RIH with wireline and perforate (ACP) inflate element; 719.84 m to 720.64 mKB (MD) of bottom (casing patch) packer.

Est'd Costs: Daily \$35,389 Cumul. \$164,756

September 20, 2008:

Wash over permanent casing patch top packer 675.24 m to 675.59 mKB (MD).

Est'd Costs: Daily \$29,681 Cumul. \$194,437

September 21, 2008:

Continue washing over casing patch top packer. Grapple was releasing from patch. Pull out of hole (POOH) and re-pin grapple in place on spear, re-pin clutch assembly on RIZ tool.

Est'd Costs: Daily \$15,947 Cumul. \$210,384

September 22, 2008:

Wash over casing patch top packer. Start pulling packer and casing patch out of the wellbore.

Est'd Costs: Daily \$22,546 Cumul. \$232,930



September 22, 2008 (continued):

Bob Summer of Geocap e-mailed asking to be updated on the status of the well workover. He was informed of the compressor downtime, **TBUP** operation, the workover to date and the future plans. Shut down due to heavy rain and mud. Too dangerous to lay out equipment in these conditions.

September 23, 2008:

Shut Down, wait on weather.

Est'd Costs: Daily \$7,945 Cumul. \$240,875

September 24, 2008:

POOH with casing patch assembly.

Est'd Costs: Daily \$19,230 Cumul. \$260,105

September 25, 2008:

Lawrence Jonker at the ERCB approves plan of cementing in a tie-back string of 114.3 mm OD casing from the top of the production liner to surface. RIH with caliper log, and logged top of 114.3 mm OD production liner top @ 1 246.72 mKB (MD).

Est'd Costs: Daily \$16,965 Cumul. \$277,070

September 26, 2008:

Change over wellhead to accommodate 114.3mm OD production string (Tie-back string).

Est'd Costs: Daily \$32,174 Cumul. \$309,244

**September 27, 2008:**

RIH with 60.3 mm OD tubing. Tag production liner top. Polished ID of liner top Polished Bore Receptacle (PBR). POOH with polishing tool. RIH with 177.8 mm packer and set @ 718 mKB (MD). Pressure test from 718 mKB (MD) to production liner top at 1 246.72 mKB (MD). Feeding at 0.1271 l/min (0.03 US gals/min) @ 5.0 MPag (725 PSIG).

Est'd Costs: Daily \$23,936 Cumul. \$333,180

September 28, 2008:

RIH with 177.8 mm OD packer. Pressure tests bled off at multiple points from 776 mKB (MD) down to production liner top. Pressure test from 705.3 mKB to surface and held for 10 minutes at 7.0 MPag (1 015 PSIG). Establish major leak off area between 706.8m to 711.5 mKB (MD) with feed rate and leak off areas below 711.5 mKB (MD). Intermediate casing above 706.8 mKB (MD) to surface is good.

Est'd Costs: Daily \$16,778 Cumul. \$349,958

September 29, 2008:

Attempt 10.0 tonne cement squeeze to plug off thief-zone behind intermediate casing leak. Let cement set for 6 hours. Pump from surface with zero pressure.

Est'd Costs: Daily \$24,139 Cumul. \$374,097

September 30 and October 1, 2008:

Shut Down; stand by in Red Earth waiting on orders from Calgary.

Est'd Costs: Daily \$14,237 Cumul. \$388,334

**October 2, 2008:**

Received approval of amended (Tie-back, not casing patch) casing installation plan. After the first unsuccessful cement squeeze it is unlikely that cement will set up above the Wabamun formation. ERCB granted approval to cement in (Tie-back string not casing patch) from production liner top at (1 246.72 mKB [MD] to above the Wabamun at approximately 775 mKB [MD]).

Est'd Costs: Daily \$93,767 Cumul. \$482,101

October 3, 2008:

Attempt to enter liner top (PBR) with seal assembly but unable to get in more than 0.15 m. POOH and inspect seal assembly.

Est'd Costs: Daily \$18,357 Cumul. \$500,458

October 4, 2008:

RIH with full open shoe, float collar catch assembly and 114.3 mm OD casing to surface. Tag liner top. Land casing in casing slip assembly with shoe landed at 1 250.72 mKB (MD), 0.30 m off top liner at 1 251.02 mKB (MD).

Est'd Costs: Daily \$16,950 Cumul. \$517,408

October 5, 2008:

Pump cement job. No cement returns to surface. Secure wellhead. RIH with 60.3 mm OD tubing with 98.4 mm bit (type of bit is unknown), bit sub and drill collars.

Est'd Costs: Daily \$45,067 Cumul. \$562,475

October 6, 2008:

RIH with 98.4 mm bit and tag float collar at 1 250 mKB (MD). Drill out float collar at 1 250.19 mKB (MD) and RIH to 1 253 mKB (MD). Tag sand top at 1 255 mKB (MD), circulated sand down to 1 257 mKB (MD). POOH with bit, RIH with 114.3 mm OD

**October 6, 2008 (continued):**

casing scraper to 1 257 mKB (MD) with no obstructions. Pressure test to 3.5 MPag (508 PSIG) surface pressure, good test.

Est'd Costs: Daily \$18,692 Cumul. \$581,167

October 7, 2008:

RIH with "WRP" Bridge Plug retrieving tool and latch onto "WRP" Bridge Plug. RIH past setting depth to 1 277 mKB (MD). POOH with tubing and "WRP". RIH with 60.3 mm OD final production tubing string and tagged obstruction at 1 300 mKB (MD).

Est'd Costs: Daily \$15,164 Cumul. \$596,331

October 8, 2008:

RIH with Chevron blade bit, bit sub and drill collars. Drill out from 1 300 m to 1 300.5 mKB (MD). Recovered metal fillings, cement and formation sand. POOH with bit and production tubing. Bit is worn. Twisted steel rod resembling a drill bit (?) is stuck in the center of the Chevron bit.

Note: Photograph of twisted steel rod found lodged in water course of 98.4 mm OD Chevron 3 or 4 wing blade bit (Refer to Attachment 7, Photographs of twisted steel rod found lodged in water course of Chevron 3 or 4 wing blade bit).

Est'd Costs: Daily \$18,306 Cumul. \$614,637

October 9, 2008:

RIH with impression block. Block impression shows two (2) pieces of metal sticking up. Noted by Rig Supervisor that it could be the top of slickline spang (Jars).

Est'd Costs: Daily \$12,453 Cumul. \$627,090



October 10 through 14, 2008:

Operations suspended. Shut down for long weekend.

Est'd Costs: Daily \$0.00 Cumul. \$627,096

October 15, 2008:

RIH with flat bottom mill and mill on obstruction. Recovering straight metal cuttings.

Est'd Costs: Daily \$25,863 Cumul. \$652,953

October 16, 2008:

RIH with impression block. Found nick on face of block. RIH with flat bottom mill and continue milling on obstruction.

Est'd Costs: Daily \$19,339 Cumul. \$672,292

October 17, 2008:

Continue milling through obstruction and mill to 1 311 mKB (MD). Cement in returns. POOH with mill. RIH with 98.4 mm OD Bit (type of bit unknown).

Est'd Costs: Daily \$16,804 Cumul. \$689,096

October 18, 2008:

Tag obstruction at 1 301 mKB (MD). Ream obstruction to 1 310 mKB (MD). Pump will pressure up to 6.0 MPag (870 PSIG). Got stuck with Production Tubing at 1 300 mKB (MD). SDFN.

Est'd Costs: Daily \$14,538 Cumul. \$703,634



October 19, 2008:

Work pipe free. POOH with Production Tubing and Bit.

Est'd Costs: Daily \$9,973 Cumul. \$713,607

October 20, 2008:

RIH with wireline re-entry guide and 60.3 mm OD Production tubing. Tag effective total depth (ETD) at 1 309.32 mKB (MD).

Est'd Costs: Daily \$8,775 Cumul. \$722,378

October 21, 2008:

RIH to 1 311 mKB (MD) and try to circulate clean water to wash out the wellbore.

Est'd Costs: Daily \$13,779 Cumul. \$736,157

October 22, 2008:

RIH with camera. Appears to be damaged casing and a hole in the casing at 1 301 mKB (MD). POOH with Production tubing. Shut down until final plan put in place.

Est'd Costs: Daily \$30,975 Cumul. \$767,132

October 23, 2008:

Stand by in Red Earth waiting on orders from Calgary. Ordered to shut down until further notice.

Bob Summer from Geocap and Brent Gough from Sutton met with Twin Butte and Magus Engineering Representatives to review the video from the camera run. Magus Engineering given direction to give Twin Butte a list of options for regaining production from the Gilwood Formation.

Est'd Costs: Daily \$23,315 Cumul. \$790,447



October 24 through 29, 2008:

Operations suspended, waiting on orders.

Est'd Costs: Daily \$0.00 Cumul. \$790,447

October 30, 2008:

Chris Friedley distributes e-mail to Sutton, Geocap, Penn West outlining a summary of the camera run and a list of options to get production from the Gilwood Formation. This included: 1) a swage tool to get through the production liner casing obstruction, 2) drilling through the bad production liner casing, 3) approaching Penn West to take over their offsetting well and, 4) recomplete the Gilwood, drill a new well or, 5) try to drill directionally from above the obstruction and install a new string of casing.

Est'd Costs: Daily \$0.00 Cumul. \$790,447

October 31 through November 5, 2008:

Operations suspended, waiting on orders.

Est'd Costs: Daily \$0.00 Cumul. \$790,447

November 6 and 7, 2008:

Rigout and Released Service Rig.

Est'd Costs: Daily \$62,019 Cumul. \$872,465



3.1 COMMENTARY – OPERATIONAL OPTIONS AVAILABLE TO TWIN BUTTE POST TBUP

Before proceeding with the remedial workover, the options below were available to Twin Butte following the failed **TBUP** procedure:

- 1) After setting the “WRP” bridge plug at 1 260 mKB (MD) and pressure testing the intermediate casing, a Casing Inspection Log USI (Ultrasonic Imager Tool) and Cement Bond Log (CBL) should have been run to determine the casing that indicates damage due to a suspected pitting type corrosion attack. Then log from 1 250 mKB (MD) – top of production liner to surface.

Estimated cost: \$32,000

- 2) Mill out existing casing patch. Run retrievable Scab Liner Assembly covering corroded intermediate casing section(s). Pressure test scab liner to the pressure at mid-point equal to shut-in reservoir pressure + 10%.

Should the USI-CBL Log indicate wide spread corrosion to the intermediate casing, consider running a 114.3 mm OD tie-back casing string. However do not run any rigid or semi-rigid centralizers or any type of centralizers on the bottom five joints of casing immediately above the seal assembly.

(Note: The 114.3 mm OD production liner casing either collapsed or split at ± 1 300 mKB (MD) for an undetermined and unexplainable reason.

Estimated cost: \$229,719 (Scab Liner Assembly)
 \$250,929 (Tie-back casing)

- 3) On October 7, 2008, Day 26, the production tubing string was made up and run into the wellbore. At 1 300 mKB (MD) a hard obstruction was encountered. Tubing string was rotated and spudded a few times without any forward progress. Instead of blindly running a Chevron bladed bit, the prudent strategy at this time would have been to suspend operations. Thereafter, hold a meeting amongst the Joint-Operators for the purpose of developing a “**go forward**” strategy based



upon current known well conditions. Attendees would have included Twin Butte office staff, Magus office staff, Fishing company senior representative, Wellsite Supervisor and a logging company senior representative as a minimum. Their task would be to develop a **“go forward”** operations plan. The sole goal and purpose of this plan would be to restore the damaged production liner casing to where Gilwood production operations could be successfully resumed. Note: the Joint-Operators partners were unaware, at this point, as to the cause of the catastrophic surface casing vent flow.

I'm sure Twin Butte discussed this matter with Magus personnel and plotted a **“go forward”** plan. However, instead of attempting restoration operations, a 98.4 mm OD Chevron blade bit was run and drilled from 1 300.0 m – 1 300.5 mKB (MD). During the drilling operation: **“recovered some formation sand, cement and a lot of fresh metal fillings.”** At this point, the Chevron drag bit became plugged and had to be pulled. Following is a quote taken from the Daily Completion/Workover Report dated October 8, 2008, Day 27: “Bit is completely worn & has what seems to be a 0.3 m x 26.99 mm (1 1/16”) drill bit in it ran up the center. Sending pictures, not sure what it is or where it is from. There is also what looks like green paint spots on recovered what ever. Did someone lose tools down the hole at some point in time? Can well file be checked?” (*sic*)

Note: Refer to Attachment No. 7, Photographs of twisted steel rod found lodged in water course of Chevron 3 or 4 wing blade bit).

My opinion is this: The 114.3 mm OD production liner had, 1) collapsed, 2) split, or, 3) parted at 1 300.0 mKB (MD). The 98.4 mm OD blade bit was unable to run inside the damaged 114.3 mm OD casing. Instead the bit rotated on 114.3 mm OD casing that had collapsed, split or parted and which was not centred in the 177.8 mm OD Intermediate Casing. Actually, the “what ever” (quoted above) was a sliver of the 114.3 mm OD casing that entered the Chevron blade bit water course and eventually plugged the lower exit of the watercourse while the drill



string was being rotated. To further substantiate this rationale the 114.3 mm OD production liner casing was J55 Grade. To distinguish the J55 Grade the tubular manufacturer paints the casing coupling a bright green plus a bright green band which is ± 25 mm in width near the coupling end of each casing joint which provides ease of visual identification. Thus the green paint spots seen on the "what ever" substantiate that the material came from a J55 Grade casing.

It was unfortunate that Twin Butte did not run a camera to determine what the obstruction was at 1 300 mKB (MD) rather than blindly running a Chevron blade drag bit which is capable of drilling/milling casing/junk/etc. in the wellbore. The camera could have provided numerous clues about the obstruction and allowed none, or less, damaging tools to be run. For example, a driving swage or casing roller are both capable of restoring collapsed casing to its original size and shape with minimal damage to the casing. Split casing can also be restored to its original size and shape, but, cannot restore the internal pressure capability. Parted casing in this situation is another matter. You can only hope that the final production tubing string can be snaked into the lower parted casing and run to top of the Gilwood formation.

- 4) Should all efforts fail to open the damaged production liner casing, abandon that part of the wellbore. Cut a window in the intermediate casing at ± 775 mKB (MD) and directionally re-drill the main hole. Run and cement 114.3 OD production liner. Thereafter complete this wellbore in the Gilwood Sand formation. (This procedure is not worth while because of the Wabamun loss of circulation potential and inability to run a second casing string).



- 5) Lastly and rather than spending additional monies on the original wellbore that is not worthy of salvaging, the remaining option would be to drill a new well. Cathodic protection should be investigated, and considered if a new well is drilled, in order to protect the casing strings and be able to produce the Gilwood Sand formation.

Estimated cost: \$1,000,000



4.0 REFERENCE LITERATURE

The following information and documents related to the 1-35 well were available for my review:

- August 25, 2008 copy of e-mail from Chris Friedley to Jeff Magus, Steve Magus, Wade Adams and Greg Hodgson regarding casing failure.
- August 26, 2008 copy of e-mail from Lisa Ditosto ERCB to Chris Friedley regarding surface casing vent flow/migration report for 102/01-35-090-13W5
- August 26, 2008 copy of e-mail from Lisa Distosto ERCB to Chris Friedley, Frank Parolin, Greg Hodgson regarding surface casing vent flow/migration report 102/01-35-090-13W5
- August 28, 2009 copy of e-mail from Wade Adams to Chris Friedley, Greg Hodgson, Chris Gylander regarding 102/1-35-90-13 W5 program phase 1. Copy of program attached.
- September 5, 2008 copy of e-mail from Steve Elekes to Chris Friedley regarding JIPs for 1-35-90-13W5.
- September 05, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding SAWN with Attachments Brent Gough VCF Marjorie Smith [Marjorie Smith@pennwest.com] and euromax@euromaxresources.com (Note: The writer did not receive copy of Attachments.)
- September 5, 2008 copy of email from Chris Friedley to Steve Elekes, Greg Hodgson, Ron Cawston, Chris Gylander regarding SAWN Lake 1-35-90-13W5.
- September 5, 2008 copy of e-mail from Chris Friedley to Wade Adams, Greg Hodgson regarding 1-35-90-13W5 casing failure.
- September 5, 2008 copy of e-mail from Chris Mundy to Chris Friedley, Steve Elekes, Greg Hodgson, Ron Cawston regarding SAWN Lake 1-35-90-13W5
- September 8, 2008 copy of e-mail from Shane Hillstrom to Chris Friedley regarding Twin Butte 102 SAWN Lake 1-35-90-13 W5M Day #5.
- September 8, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding update.



- September 10, 2008 copy of e-mail from Wade Adams to Chris Friedley regarding 1-35-90-13W5M.
- September 12, 2008 copy of e-mail from Wade Adams to Chris Friedley, Greg Hodgson, Chris Gylander regarding E4 Energy c/o Magus #1082, 102/1-35-90-13W5M (Includes Magus Engineering Limited authorization for expenditure and Weatherford Fishing Services estimate #1082)
- September 15, 2008 copy of e-mail from Steve Elekes to Chris Friedley regarding SAWN Lake 1-35-90-13W5.
- September 18, 2008 copy of e-mail from Chris Friedley to Lawrence Jonker ERCB regarding 1-35-90-13W5 casing leak complete with well diagram (Current Configuration).
- September 18, 2008 copy of e-mail from Wade Adams to Chris Friedley, Greg Hodgson, Chris Gylander regarding 1-35-90-13. Magus Engineering Limited authorization for expenditure dated September 10, 2008 is attached.
- September 19, 2008 copy of letter from ERCB Lawrence Jonker to Chris Friedley regarding non routine casing repair request.
- September 22, 2008 copy of e-mail from Bob Sumner to Chris Friedley regarding SAWN 1-35-90-13W5 (Update).
- September 22, 2008 copy of e-mail from Wade Adams to Chris Friedley, Greg Hodgson Re 1-35-90-13 (Update).
- September 22, 2008 copy of e-mail from Bob Sumner to Chris Friedley regarding SAWN 1-35-90-13W5 (Update).
- September 24, 2008 copy of e-mail from Chris Friedley to Lawrence Jonker ERCB, Greg Hodgson regarding SAWN Lake 1-35-90-13 W5. Cement squeeze revision to plan approval.
- September 25, 2008 copy of e-mail from Wade Adams to Chris Friedley regarding 1-35 well details update.
- September 25, 2008 copy of e-mail from Bob Sumner to Chris Friedley regarding SAWN 1-35 Workover (Update).
- September 25, 2008 copy of e-mail from Wade Adams to Chris Friedley regarding 1-35 well details.



- September 25, 2008 copy of e-mail from Phil Floucault to Chris Friedley regarding quick question. Attachments: perforating gun performance plot UZI.pdf: Gun Performance plot dual string.pdf
- September 25, 2008 copy of e-mail from Chris Friedley to Brent Gough, Bob Sumner regarding SAWN Lake 1-35-090-13W5 progress reports day No 1 through 10 daily reports (Note: Daily reports not enclosed)
- September 25, 2008 copy of e-mail from Wade Adams to Chris Friedley, Greg Hodgson regarding TBE 102-1-35 MSC log liner top (Note: Photocopy of Caliper Log is attached)
- September 25, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding update.
- September 25, 2008 copy of e-mail from Bob Sumner to Chris Friedley regarding SAWN 1-35 workover (Update).
- September 25, 2008 copy of e-mail from Lawrence Jonker (ERCB) to Chris Friedley regarding Twin Butte SPR SAWN 1-35-90-13 W0269441 casing failure repair approval.
- September 25, 2008 copy of e-mail from Greg Hodgson to Shane Hillstrom, Wade Adams, Steve Magus, Chris Friedley, Well Operations regarding Twin Butte 102 SAWN Lake 1-35-90-13W5 Day #12.
- September 26, 2008 copy of e-mail from Steve Magus to Greg Hodgson, Shane Hillstrom, Wade Adams, Chris Friedley, and Well Operations regarding Twin Butte 102 SAWN Lake 1-35-90-13W5 Day #12.
- September 27, 2008 copy of e-mail from Steve Magus to Chris Friedley, Greg Hodgson, Ron Cawston, Shane Hillstrom, Jeff Magus regarding Twin Butte 1-35-90-13W5M. (Note: Attachment 1-35-90-13W5M LC.PDF is not enclosed as it was not available).
- September 28, 2008 copy of e-mail from Ron Cawston to Chris Friedley, Steve Magus, Greg Hodgson, techpet@telus.net, Jeff Magus regarding Twin Butte 1-35-90-13W5M, determination of future operations.
- September 28, 2008 copy of e-mail from Steve Magus to Chris Friedley regarding SAWN Lake 1-35, discussion re-running cement retainer.



- September 28, 2008 copy of e-mail from Ron Cawston to Chris Friedley regarding SAWN Cementing.
- September 29, 2008 copy of e-mail from Chris Friedley to Bob Sumner, Brent Gough, Fogres@shaw.ca regarding SAWN Lake 1-35-90-13W5, Attachments: computer/workover report: for day #15, #16 and #17.
- September 29, 2008 copy of e-mail from Steve Magus to Chris Friedley, Wade Adams regarding TBE 1-35 Update.
- September 29, 2008 copy of e-mail from Ron Cawston to Chris Friedley regarding SAWN Lake, procedure for running cement plug.
- September 30, 2008 copy of e-mail from Wade Adams to Chris Friedley, Steve Magus, Greg Hillstrom regarding SAWN (ERCB) approval.
- October 1, 2008 copy of e-mail from Greg Hodgson to Chris Friedley regarding SAWN Lake (ERCB) approval.
- October 1, 2008 copy of e-mail from Greg Hodgson to Lawrence Jonker ERCB, Chris Friedley regarding SAWN Lake 1-35-90-13W5 ERCB approval for revised cementing program, tie-back casing string.
- October 2, 2008 copy of e-mail from Lawrence Jonker, ERCB to Greg Hodgson, Chris Friedley regarding Twin Butte SPR SAWN 1-35-90-13 W0269441 casing failure repair approval 2.
Attachment: October 2, 2008 copy of ERCB approval letter for Non Routine Casing Repair Request from Lawrence Jonker ERCB to Greg Hodgson.
- October 2, 2008 copy of e-mail from Greg Hodgson to Chris Friedley regarding Twin Butte c/o Magus 1-35-90-13 W5M Sanjel Cementing program for tie-back casing string.
Attachment: October 2, 2008 copy of (tie-back) cementing program from Andre Benson, Sanjel to Wade Adams
- October 2, 2008 copy of e-mail from Greg Hodgson to Chris Friedley regarding the tie-back casing string cementing program proposed by Sanjel.
- October 4, 2008 copy of e-mail from Wade Adams to Chris Friedley regarding 1-35-90-13W5 cementing operations update.



- October 7, 2008 copy of e-mail from Greg Hodgson to Chris Friedley regarding SAWN Lake mysterious/unknown obstruction in the production liner at 1300 MKB (MD).
- October 8, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding update on SAWN Lake.
- October 9, 2008 copy of e-mail from Steve Magus to Chris Friedley, Wade Adams regarding junk found stuck in watercourse of a Chevron blade bit, Twin Butte 102 SAWN Lake 1-35-90-13W5M, day #27.
- October 9, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding junk found stuck in Chevron blade bit that was run in SAWN Lake 1-35-90-35W5
- October 14, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding obstruction in the wellbore at SAWN Lake Well.
- October 15, 2008 copy of e-mail from Shane Hillstrom to Chris Friedley regarding potential leak off through the obstruction at 1-35.
- October 15, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding unidentified junk recovered on October 9, 2008 at SAWN Lake.
- October 17, 2008 copy of e-mail from Steve Elekes to Marjorie Smith @ Penn West, Chris Friedley regarding an AFE that was sent to Penn West without any response to date to 1-35-90-13W5 casing failure.
- October 17, 2008 copy of e-mail from Wade Adams to Chris Friedley, Greg Hodgson regarding operations update to 1-35-90-13W5.
- October 17, 2008 copy of e-mail from Brent Gough to Chris Friedley regarding missed telephone call.
- October 19, 2008 copy of e-mail from Bob/Maureen Sumner regarding operational update on SAWN Lake.
- October 20, 2008 copy of e-mail from Craig Terry to Chris Friedley regarding geological information at Twin Butte 1-35-90-13W5
- October 20, 2008 copy of e-mail from Wade Adams to Greg Hodgson, Chris Friedley, Steve Magus, Shane Hillstrom regarding DHV quotation and copy of



a letter from Curtis Jerrom, DHV to Twin Butte providing Hawkeye111 camera operational costs.

- October 20, 2008 copy of e-mail from Chris Friedley to Michael Blair (Penn West), Chris Friedley, Steve Elekes, Greg Hodgson regarding operational update, Twin Butte 102 SAWN Lake 1-35-90-13W5M. (Note: Update reports referenced in the e-mail are not available).
- October 21, 2008 copy of e-mail from Wade Adams to Greg Hodgson, Shane Hillstrom, Steve Magus, Chris Friedley, Well Operations regarding certain service Rig costs at Twin Butte 102 SAWN Lake 1-35-90-13W5M, Day #34.
- October 28, 2008 copy of e-mail from Steve Magus to Greg Hodgson, Chris Friedley regarding setting up a meeting to determine a go forward well strategy for SAWN 1-35.
- October 29, 2008 copy of e-mail from Chris Friedley to Bob Sumner, Bob/Maureen Sumner, Brent Gough, Michael Blair, Greg Hodgson, Don Finley regarding an update on SAWN Lake 1-35-90-13W5.
- October 29, 2008 copy of e-mail from Steve Magus to Chris Friedley regarding an update on SAWN.
- October 30, 2008 copy of e-mail from Steve Magus to Chris Friedley regarding re-drill cost estimate for TBE SAWN Lake 1-35. (Note: copy of Magus Engineering Limited, Authorization for Expenditure [AFE] to re-drill SAWN Lake 1-35-90-13W5).
- October 31, 2008 copy of e-mail from Steve Magus to Chris Friedley regarding Swage proposal for SAWN 1-35. (Attachments: SAWN 1-35 SWAGE proposal from Weatherford, procedure and cost estimates are enclosed).
- October 31, 2008 copy of e-mail from Steve Magus to Chris Friedley regarding SAWN 1-35 Swage proposal.
- November 4, 2008 copy of e-mail from Perry Zich to Chris Friedley, Michael Blair regarding SAWN Lake 1-35-90-13W5 Update.



- November 5, 2008 copy of e-mail from Chris Friedley to Wade Adams, Steve Magus, Greg Hodgson, Don Finley regarding releasing the service rig at SAWN Lake 1-35-90-13W5.
- November 5, 2008 copy of e-mail from Wade Adams to Chris Friedley, Steve Magus, Greg Hodgson, Don Finley regarding rigging out service rig, store tubing in trucking company yard in Red Earth and return all rentals from SAWN Lake 1-35-90-13W5.
- November 25, 2008 copy of e-mail from Wade Adams to Chris Friedley, Greg Hodgson regarding updating/finalizing ERCB records (DDS)
- December 4, 2008 copy of e-mail from Karen Hutley to Lawrence Jonker, ERCB, Chris Friedley, Steve Magus, Wade Adams regarding 102/1-35-90-13W5 – casing failure DDS Submission.
- December 4, 2008 copy of e-mail from Lawrence Jonker, ERCB to Chris Friedley regarding 102/1-35-90-13W5 – casing failure DDS Submission, Twin Butte SPR SAWN 1-35-90-13 W0Z69441 casing failure repair approved.PDF, view Well Drilling Completion data; Well Drilling Completion cover sheet.
- December 5, 2008 copy of e-mail from Lawrence Jonker, ERCB to Chris Friedley regarding 102/1-35-90-13W5 – casing failure DDS Submission, casing failures for well licence W0269441.
- December 8, 2008 copy of e-mail from Karen Hutley to Chris Friedley regarding 1-35 SCVF and casing failure.
- December 9, 2008 copy of e-mail from Karen Hutley to Lawrence Jonker ERCB, Chris Friedley regarding 1-35-90-13W5 casing failure submission has been done.
- December 11, 2008 copy of e-mail from Chris Friedley to Steve Elekes, Greg Hodgson, Rhonda Plant regarding SAWN Lake supplement AFE No. 08W008.
- May 20, 2009 copy of letter from Colin F. Ogilvy, Vp-land Twin Butte Energy Ltd to Sutton Energy Ltd Mr. Brent Gough and Geocap Energy Corporation, Mr. Bill Tobman regarding an offer to meet and discuss the specific details of the SAWN Lake situation.



- Date unknown, Twin Butte 102 SAWN Lake 1-35-90-13W5M, Completion/Workover reports prepared by Magus Engineering Limited. Includes: Wellbore Schematic, production liner casing tally, Completion/Workover reports September 2 through November 7, 2008, Cost Control September 2 through November 7, 2008, invoice control report September 2 through November 7, 2008, completion fluid summary September 3 through November 6, 2008, material transfer sheet, on EUB Surface Casing Vent Flow/Gas Migration data sheet.
- November 8, 2008 copy of well summary sheet (Wellbore Schematic).
- July 29 through November 7, 2008 SAWN Lake 1-35-90-13W5 Chronology of Events
- October 16, 2008 copy of letter from Feketter Associates Inc., Gary D. Metcalfe to Euromax Resources Ltd. C.A.Serin regarding evaluation of certain interests of Euromax Resources Ltd. as of September 30, 2008.
- Date Unknown, copy of process flow sheet, drawing No. 9939-A0027 of the compressor facilities installed at SPR SAWN 1-35-90-13W5M Wellsite.
- Transcript of Oral questioning of Christopher Derek Friedley conducted by Mr. P. Anic on June 15, 2011.
- Transcript of Oral questioning of Michael Brent Gough conducted by Mr. A J. McConnell on June 17, 2011.
- Transcript of Oral questioning of Steve James Elekes conducted by Mr. P. Anic on February 28, 2012.
- Transcript of Oral questioning of Paul Juneau conducted by Mr. P. Anic on March 2, 2012.
- Sutton Energy Ltd., company generated well file.



5.0 DISCUSSION OF WELL OPERATIONS

On July 29, 2008 the SCADA system notified the Contract Operator, Mr. Juneau (time of notification is unknown) that the compressor had shut down at the 1-35 well as a result of **Low Gas Inflow** (Note: Refer to Discovery Transcript of Mr. Juneau page 30, lines 12 through 27, pages 31, 32 through 34 and page 35, lines 1 through 13). Over the past few days, the Contract Operator pointed out the compressor had shut down approximately six (6) times because of **Low Gas Inflow** (Refer to Discovery Transcript of Mr. Juneau page 34, lines 5 through 13). The Contract Operator was unable to access the 1-35 wellsite because of heavy rains which rendered the access roads impassable.

Mr. Juneau testified (Refer to Discovery Transcript of Mr. Juneau page 67, lines 2 through 27, page 68 and page 69, lines 1 through 5) the lease (wellsite) conditions were permanently wet. Mr. Juneau agreed there was nothing unusual about the weather at this time that prevented bringing in a swab unit. He went on to testify that Messrs. Friedley and Hodgson wanted to try the cheapest way first being the **TBUP** before bringing in expensive trucks that required matting the working area of the wellsite in order for the swab unit to access the wellhead.

Additionally, I find it amazing that Mr. Juneau was unable to reach the wellsite due to heavy rains and impassable roads on July 28, 2008 (Refer to "**Chronology of Events**", July 29 – Nov. 7, 2008) which was prepared by Mr. Friedley. It's the writer's understanding the access road to the 1-35 wellsite from highway 88 (53.15 km) is a medium to high grade all weather road now owned and operated by Penn West Petroleum. On September 2, 2008 Magus Engineering Limited moved on and rigged up a service rig on the 1-35 wellsite. Operations were conducted starting on September 2 through November 7, 2008 (Refer to "**Chronology of Events**", July 29 – Nov. 7, 2008) and only was shut down one day (September 22, 2008) due to heavy rains and mud. Reason for the shutdown was: "Too dangerous to lay out equipment in these conditions" as found in the Completion/ Workover Report prepared by Magus Engineering Limited, September 22, 2008. It is difficult to imagine the Contract Operator, Mr. Juneau was



unable to reach the wellsite on July 29th and 30th due to heavy rain and impassable roads.

Finally, the Contract Operator was able to access the 1-35 wellsite on July 31, 2008. However, he was unable to start the compressor's prime mover. Also, he was unable to get the well flowing.

Twin Butte instructed the Contract Operator to arrange for Pamco Enerflex to service/repair (as required) compressor's prime mover. The Pamco Enerflex mechanics serviced/repared compressor's prime mover on August 12th and 13th (Note: Copies of the Pamco Enerflex service/repair reports were not available for my review).

During this time the Contract Operator pumped 2.0 m³ Methanol down the casing (Annulus) and 1.0 m³ Methanol down the tubing (Note: There were no daily operations reports prepared; listing pumping volume, pumping pressures, fluid returns and so on were not recorded and not available for my review). The methanol was pumped to remove suspected hydrates from the tubing and casing (Annulus). Subsequently, the well still would not flow.

This brings us up to August 23, 2008. This means the 1-35 well had not produced any gas from July 30 to August 23, 2008, which is 25 days since the SCADA system shut down production on July 29, 2008. The reason for this inactivity can be attributed entirely to: 1) suspected hydrate formation in either or both the production tubing and/or the casing (Annulus), and, 2) the wellbore had become loaded with formation water and methanol.

Messrs. Hodgson, Friedley and Juneau discussed the different options that they saw available to unload the wellbore. The options considered (Refer to Discovery Transcript of Mr. Friedley page 47, lines 15 through 27) were: 1) coil tubing unit to unload fluid from the wellbore, 2) a swab rig or service rig to unload fluid from the wellbore, and, 3) attempt a **TBUP** to unload fluid from the wellbore.



Prior to August 20, 2008, the date Twin Butte personnel decided to attempt the **TBUP** and August 24, 2008 there are no daily operations reports or emails evidencing any attempts made by Twin Butte to contact or communicate with any of the Joint-Operators in the 1-35 well. Prior to conducting an operation of this nature and especially since Twin Butte only owned 20% of this well, I believe it prudent, if not required, that Twin Butte present their findings and proposed operations to the Joint-Operators and request approval to attempt the **TBUP** operation.

A. Summarized below is a detailed description of the three options contemplated by Twin Butte. In my experience, numbers 1) and 2) are industry standard procedures. In my experience I have never recommended or attempted anything like the **TBUP** and this option is definitely not an industry standard.

1) COIL TUBING UNIT WITH NITROGEN (N₂)

DISADVANTAGES

Due to prevailing wet/unstable surface conditions, may require matting and towing in order for CTU unit to access the wellhead. An N₂ unit should be able to be positioned on the access road during the operation. Both CTU and N₂ units may have to be towed on to the location and access road which will lead to increased costs.

ADVANTAGES

Unloading fluid from the wellbore utilizing the CTU and N₂ will minimize the maximum pressure exerted on the existing casing patch and potentially corroded intermediate casing and production liner tubulars. The operation should only consume one operational day, provided weather co-operates.



RISKS

This method of unloading the wellbore is normally a minimal risk provided operational personnel and Wellsite Supervisor are all competent individuals and provided the CTU and N₂ equipment has been properly maintained and the equipment is utilized properly. Also, the Twin Butte Wellsite Supervisor must fully understand the goals and objectives of the ongoing operation.

TIME PERIOD

Provided weather co-operates, the unloading operation should be completed in three calendar days. One day to mobilize equipment, one day to unload wellbore, and one day to demobilize.

ESTIMATED COSTS

\$51,425 (Refer to **Attachment No. 5** for specific details of the estimated costs).

2) **SWABBING UNIT OR SERVICE RIG**

DISADVANTAGES

Due to prevailing wet/unstable surface conditions, may require matting and towing in order for either the swabbing unit or service rig to access the wellhead. This will lead to increased costs.

ADVANTAGES

Unloading fluid from the wellbore utilizing a swabbing unit or service rig will result in the lowest pressure exerted on the existing casing patch, potentially corroded Intermediate Casing and production liner tubulars than the CTU and **TBUP**



techniques. Also, E4 as Operator proved in 2006 that swabbing fluid from this well will result in the successful restoration of Gilwood gas production.

RISKS

This method of unloading the wellbore is normally a minimal risk to the borehole provided operational personnel and Wellsite Supervisor are all competent individuals, provided the swabbing equipment has been properly maintained and the equipment is utilized properly. Also, the Twin Butte Wellsite Supervisor must fully understand the goals and objectives of the ongoing operation.

TIME PERIOD

Provided weather co-operates, the unloading operation should be completed in seven operational days.

ESTIMATED COSTS

\$35,200 Swabbing unit

\$88,025 Service Rig (Refer to **Attachment No. 5** for specific details of the estimated costs).

3) TWIN BUTTE UNLOADING PROCEDURE - TBUP

DISADVANTAGES

The pressures that Twin Butte were planning to expose the wellbore tubulars to in the **TBUP** far exceed 110% of the shut-in reservoir pressure. As well, the operational pressure required to successfully **TBUP** the wellbore fluids from the 1-35 wellbore far exceeded the maximum discharge pressure of the compressor and the sales gas line pack pressure so there was no chance the **TBUP** was going to be successful, all the while exposing the compromised wellbore tubulars to excessive pressures for no reason. (See Attachment No. 6



ADVANTAGES

Less costly than the two other methods stated above.

RISKS

Should the existing casing patch (which did fail) or corroded tubulars fail during the procedure, a gas flow, along with the formation water, could have been expected to be released at the wellhead as the cement top behind the Intermediate Casing was ± 810 mKB (MD). The 2006 Intermediate Casing failure was at 706.8 m – 711.5 mKB (MD) which means if the existing casing patch should fail due to internal applied pressure (which it did) then the natural gas and formation water contaminated with Methanol would be released (which it was) at the wellhead. Also, the Contract Operator failed to install a flare line from the SCV to a flare pit located at least 50 m from the Natural Gas Facility. If the casing patch were to fail, (which it did), or the corroded Intermediate Casing fail (which it did not), natural gas being flared would have created an explosive environment on-site. Additionally, environmental damage could occur from formation water ($\pm 104\ 000$ mg/l NaCl) contaminated with methanol being released onto surrounding lands. "Lastly, from testimony it is clear that both Messrs. Juneau and Friedley were either unaware that the casing patch existed or were unaware of the pressure limitations/ risk of failure with respect to the casing patch, or both".

TIME PERIOD

Thirty nine service rig operating days.

ESTIMATED COSTS

Unknown for certain, estimate in excess of \$1,000,000.



REMARKS

The **TBUP** operation performed by Twin Butte is not a standard oilfield practice. Use of this particular technique should not have been used as projected wellbore pressures exceeded the capability of surface equipment, existing casing patch, the down hole tubulars and the fracture pressure of the Gilwood reservoir. In essence, this **TBUP** technique was reckless, irresponsible and had no hope of reinstating gas production.

B. Below is an overview of the outcomes of the **TBUP** performed on August 24, 2008:

Twin Butte **did not** prepare a written **TBUP** program, detailing goals and objectives of the procedure. Neither the Contract Operator, nor his company had a Health and Safety program, and Twin Butte did not provide the Contract Operator with a copy of their Health and Safety program. Twin Butte never provided the Contract Operator with any information or training as to their Health and Safety program. Neither the Contract Operator, nor his company had an Emergency Response Plan. Twin Butte never supplied a Site-Specific or Corporate Emergency Response Plan to be kept at the wellsite. Additionally, Twin Butte never provided the Contract Operator with any information or training as to their Site-Specific/Corporate Emergency Response Plan. Twin Butte office operational personnel (Messrs. Hodgson and Friedley) verbally provided guidance with respect to field operations. In return, the Contract Operator provided verbal operational reports to Messrs. Hodgson and Friedley. I do believe e-mail was used by both parties to communicate with each other, on an interim basis.



Prepared by: K. R. Bissett

Signature: _____

Date: December 14, 2015



ATTACHMENT NO. 1

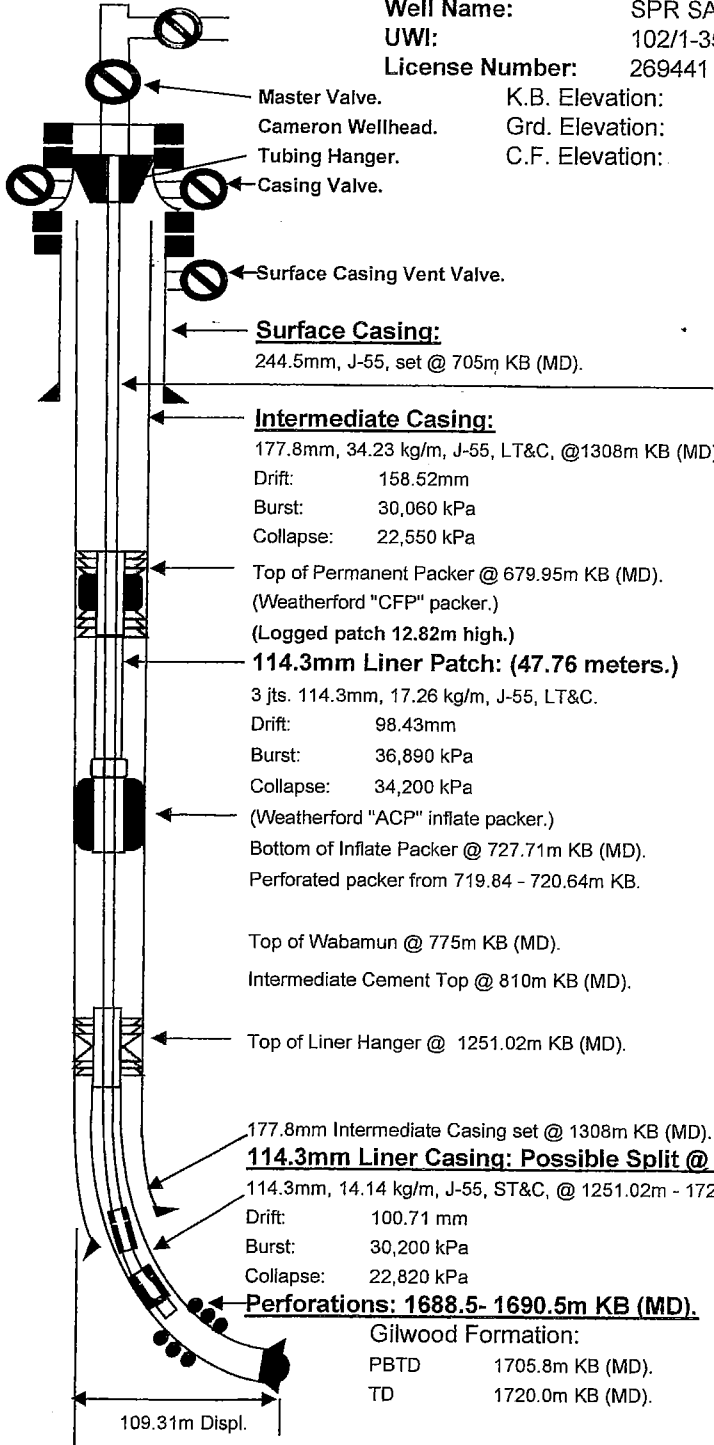
- INITIAL WELLBORE SCHEMATIC C/W TUBING
- INITIAL WELLBORE SCHEMATIC WITHOUT TUBING

BOTH DATED APRIL 16, 2015



Initial Wellbore Schematic c/w Tubing

Well Name: SPR SAWN 1-35-90-13 (W5M)
UWI: 102/1-35-090-13 W5/00
License Number: 269441
K.B. Elevation: 799.8m **K.B. to C.F.:** 4.3m
Grd. Elevation: 795.5m **K.B. to T.H.F.:** 3.7m
C.F. Elevation: 795.5m **T.H.F. Elv.:** 796.1m



Tubing String:

60.3mm, 6.99 kg/m, J-55, 8rd, EUE, set @1688.17m KB (MD).
 Drift: 48.29 mm
 Burst: 53,090 kPa
 Collapse: 55,850 kPa

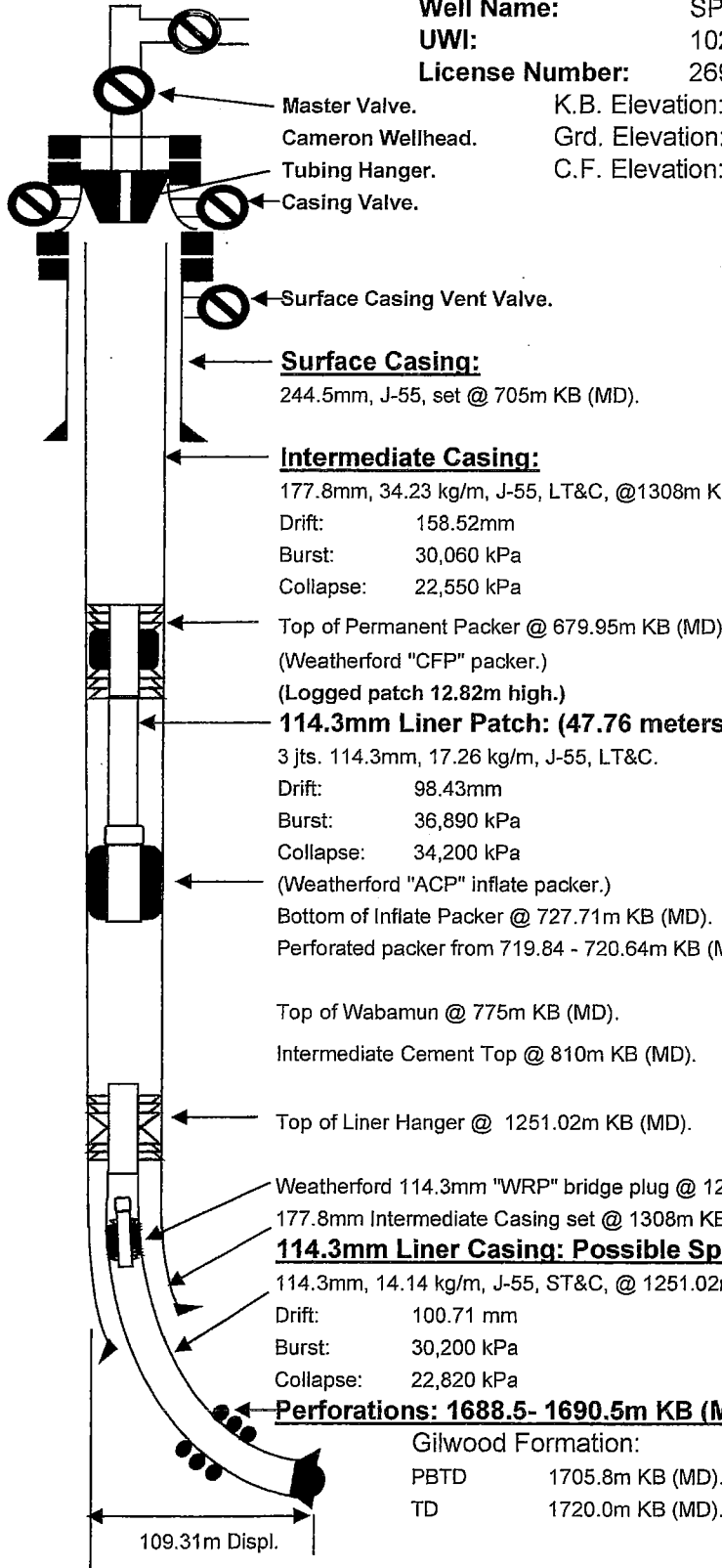
Tubing Details: (Prior to gas injection.)		
	Length (m).	Top Set mKB (MD).
Tubing hanger.	0.21	2.78
1 jt., 60.3mm tubing.	9.68	2.99
60.3mm, pup joint.	2.43	12.67
60.3mm, pup joint.	3.11	15.1
60.3mm, pup joint.	3.11	18.21
171 jts., 60.3mm tubing.	1649.92	21.32
60.3mm, pup joint.	1.23	1671.24
60.3mm x 47.63mm "X" nipple.	0.28	1672.47
1 jt., 60.3mm tubing.	9.64	1672.75
60.3mm x 45.49mm "XN" nipple.	0.38	1682.39
60.3mm, pup joint.	3.08	1682.77
60.3mm re-entry guide.	0.12	1685.85
Landed Depth.	--	1685.97



Initial Wellbore Schematic Without Tubing

Well Name: SPR SAWN 1-35-90-13 (W5M)
UWI: 102/1-35-090-13 W5/00
License Number: 269441

K.B. Elevation: 799.8m **K.B. to C.F.:** 4.3m
Grd. Elevation: 795.5m **K.B. to T.H.F.:** 3.7m
C.F. Elevation: 795.5m **T.H.F. Elv.:** 796.1m



Tubing String:

60.3mm, 6.99 kg/m, J-55, 8rd, EUE.
Drift: 48.29 mm
Burst: 53,090 kPa
Collapse: 55,850 kPa

Operations Summary (After Gas Injection):

- 1) Ran 96.7mm gauge ring/CCL to 1270m KB (MD).
- 2) Logged casing patch 12.82m high.
- 3) Set 114.3mm packer @ 720.5m KB (MD).
a) Tubing side leaking.
b) Annulus side good to 7 Mpa.
- 4) Set 114.3mm packer @ 1252m KB (MD).
a) Tubing side good to 7 Mpa.
b) Annulus side feeding @ 50 l/min.
- 5) Ran noise/temp. log from 1246m KB (MD) to surface.
- 6) Ran spinner survey in liquid filled hole.
a) Not enough injection rate for spinner.
b) Results inconclusive.
- 7) Perforated "ACP" 719.84m - 720.64m KB (MD).
- 8) Milled out top packer and retrieved patch.



ATTACHMENT NO. 2

EUB WELL LICENCE

OMAX 102 SAWN LAKE 1-35-90-13 (W5M)

LICENCE NO.: 0269441

APRIL 19, 2002

SURVEY PLAN

FEBRUARY 1, 2002

WELL LICENCE

LICENCE NO.: 0269441
 WELL NAME : OMAX 102 SAWN LAKE 1-35-90-13
 LICENSEE : OMAX RESOURCES LTD.
 PURPOSE : TO OBTAIN PRODUCTION FROM THE GRANITE WASH.
 SURFACE LOCATION : LSD 01-35-090-13 W5M
 SURFACE CO-ORDINATES: 276.8 METRES NORTH 277.2 METRES WEST
 (AS MEASURED OR CALCULATED FROM THE EXTERIOR
 BOUNDARIES OF THE QUARTER SECTION)

UNIQUE ID : 102/01-35-090-13W5/00	SURFACE RIGHTS : CROWN
FIELD : SAWN LAKE	MINERAL RIGHTS : CROWN
LAHEE CLASS: NPW (C)	PROJECTED DEPTH : 1730 METRES
AREA OFFICE: EDMONTON	TERMINATING ZONE: GRANITE WASH
(Ph 780-460-3800)	GROUND ELEVATION: 795.5 METRES

THE LICENSEE SHALL COMPLY WITH THE OIL AND GAS CONSERVATION ACT AND REGULATION, THE OIL SANDS CONSERVATION ACT AND REGULATION AND ALL APPLICABLE GUIDES AND INTERIM DIRECTIVES PUBLISHED BY THE BOARD.

Brian Mrazek

777-9199

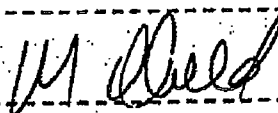
Number of Pages: *1*

Alberta Energy and Utilities Board Applications Section

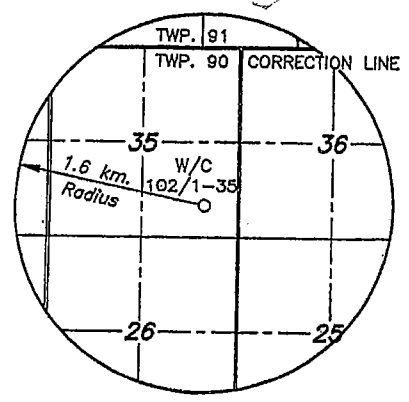
Fax No.

THIS LICENCE WILL EXPIRE 1 YEAR FROM DATE OF ISSUE IF WELL HAS NOT BEEN SPUDDED.

DATED AT CALGARY, ALBERTA THIS :
 19TH DAY OF APRIL 2002 :



: FOR ALBERTA ENERGY AND UTILITIES BOARD



RESIDENCE SKETCH
SCALE 1:50000

NOTE
THERE ARE NO RESIDENCES
WITHIN 1.6km OF W/C



OMAX 102 SAWN LAKE 1-35-90-13
WELL SITE LOCATION
DIRECTIONALLY DRILLED FROM A SURFACE LOCATION OF
L.S. 1, SEC. 35, TWP. 90, RGE. 13, W5thMer.

WELL CENTER LOCATION (SURFACE LOCATION)						
W/C CO-ORDS. (Bdy of Sec. 35)	(NAD 27 - Central Meridian 117°)		(NAD 83 - Central Meridian 117°)		ELEV.	DATE:
	GEO. CO-ORDS.	U.T.M. CO-ORDS.	GEO. CO-ORDS.	U.T.M. CO-ORDS.		
276.82 N. OF S. 277.16 W. OF E.	56°50'42.49" Lat. 115°56'45.82" Long.	6 300 429.9 N. 564 291.2 E.	56°50'42.90" Lat. 115°56'50.36" Long.	6 300 653.9 N. 564 211.7 E.	795.53	FEB. 1/2002

BOTTOM HOLE LOCATION				
CO-ORDS. (Bdy of Sec. 35)	(NAD 27 - Central Meridian 117°)		(NAD 83 - Central Meridian 117°)	
	GEO. CO-ORDS.	U.T.M. CO-ORDS.	GEO. CO-ORDS.	U.T.M. CO-ORDS.
330.04 N. OF S. 372.59 W. OF E.	56°50'44.22" Lat. 115°56'51.45" Long.	6 300 481.7 N. 564 195.0 E.	56°50'44.62" Lat. 115°56'55.99" Long.	6 300 705.7 N. 564 115.5 E.

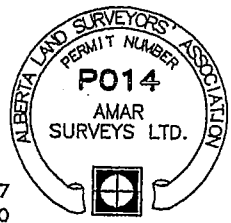
OPERATOR
OMAX RESOURCES LTD.

I, Andrew K. Lee, Alberta Land Surveyor, of the City of Calgary, Alberta, certify that the survey represented by this plan is true and correct to the best of my knowledge, has been carried out in accordance with the Alberta Land Surveyors' Association Manual of Standard Practice and was completed on the 1st day of FEBRUARY, 2002.

Andrew K. Lee
Alberta Land Surveyor

[Signature]
Witness

AREAS	Hectares	Acres
WELL SITE	= 1.210	2.99



ELEVATIONS Well Center 795.53
N.W. Corner 796.44 N.E. Corner 795.57
S.W. Corner 796.09 S.E. Corner 796.00
DATUM : A.S.C.M. 238972 (Elev. 726.364) CVD 28

LICENCING INFORMATION

- | | | | | |
|---|-------------------------------------|-----|-------------------------------------|----|
| 1. The Proposed Well is at LEAST 1.5 km from the Corporate Limit of a CITY, TOWN OR VILLAGE | <input checked="" type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| 2. The Proposed Well is at LEAST 100m from any Water Body as defined by G-56..... | <input checked="" type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| 3. The Proposed Well is at LEAST 100m from any Surface Improvements..... | <input type="checkbox"/> | YES | <input checked="" type="checkbox"/> | NO |
| 4. The Proposed Well is at LEAST 40m from Surveyed Road..... | <input checked="" type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| 5. The Proposed Well is at LEAST 5.0 km from a Lighted Aerodrome..... | <input checked="" type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| 6. The Proposed Well is at LEAST 1.6 km from an Unlighted Aerodrome..... | <input checked="" type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| 7. The Proposed Well is outside any Potential Coal Development Area..... | <input checked="" type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| 8. The Proposed Well Site DOES NOT require the Approval of Alberta Community Development..... | <input checked="" type="checkbox"/> | YES | <input type="checkbox"/> | NO |

Owner(s)
CROWN

Title No. NIL

LEGEND SCALE 1 : 5000

- Statutory Iron Survey Post Found shown thus: ●
- Iron Spike shown thus: ----- Placed...△ Found....
- Iron Bar shown thus: ----- Placed...◇ Found....
- Wooden Hub shown thus: ----- Placed...□ Found....
- Temporary Point shown thus: X
- Portions referred to shown Bounded thus: -----▲
- Distances and Elevations are in Metres.
- Measurements derived from Global Positioning System shown thus: G.P.S.
- U.T.M./Geographic Co-ords. derived from A.T.S. 2.6
- Bearings are referred to Central Meridian Through Twp. 90, Range 13, W5Mer.

Survey:	Drawn:	Check:	Revision:	Date:
TW	ACR	dlb	ORIGINAL WELL SITE PLAN	FEB. 7/2002
-	BC	dlb	ADDED BOTTOM HOLE	APR. 16/2002



Prepared by:
AMAR SURVEYS LTD.
818-16th Avenue N.W., Calgary, Alberta T2M 0K1
Phone: (403) 289-1220 - Fax: (403) 289-1299

File Number: 02OMA129

GULF CANADA
 20.00 P/L R/W
 PLAN 872 1594
 PLA 870353
 EUB PERMIT 22651
 LICENSEE: KEYSpan ENERGY

Theoretical
 35
 90-13-5

L.S. 7 L.S. 8

THE S.E.1/4 SECTION 35, TWP. 90, RGE. 11, W5M IS SUBJECT TO THE FOLLOWING:
 TPA 66 - TRAPPER: WALTER WHITEHEAD
 FMA 8900027 - DAISHOWA-MARUBENI INTERNATIONAL

NOTE
 (1) 102/1-35 W/C TO EXISTING
 1-35 W/H = 124.31 @ 299°08'05"
 (2) W/C/ TO BOTTOM HOLE
 109.31 @ 299°08'05"

Well Center Co-ords. Referred to N.E. 33-88-13-5
 18100.30 NORTH
 2967.74 EAST



UNSURVEYED TERRITORY

RENAISSANCE 1C-35
 (OPERATOR: HUSKY)
 MSL 972281-HUSKY

BOTTOM HOLE LOCATION
 330.04 N. 372.59 W.

200m RADIUS

524.00 Calc. East

L.S. 2 L.S. 1

Fd.I. (Bent) BT

RENAISSANCE 1C-35
 MSL 972281-HUSKY
 (OPERATOR: HUSKY)

91°23'15" Fd. Spike
 110.00

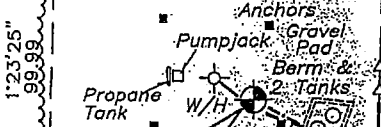
Fd. Spike

LINE OF SIGHT
 150.00 WEST
 350.00 EAST

Total Co-ords. Referred to N.E. 33-88-13-5
 18186.75 NORTH
 3118.65 EAST

TIE LINE ONLY Fd.I.
 271°08'20" Mp. 0.30E
 205.94

TIE LINE ONLY
 26.80
 172°23'25"



BOTTOM HOLE LOCATION

181°24'15" 7.64
 181°24'15" 47.00
 (DRILL PATH) 299°08'05"
 109.31

Muskeg Black Spruce & Some Pine (up to 0.15ø)

15.00 A/R to 1-35 LOC 971536 (HUSKY) & RENAISSANCE 15.00 P/L R/W PLA 980347 (HUSKY) NO EUB PERMIT

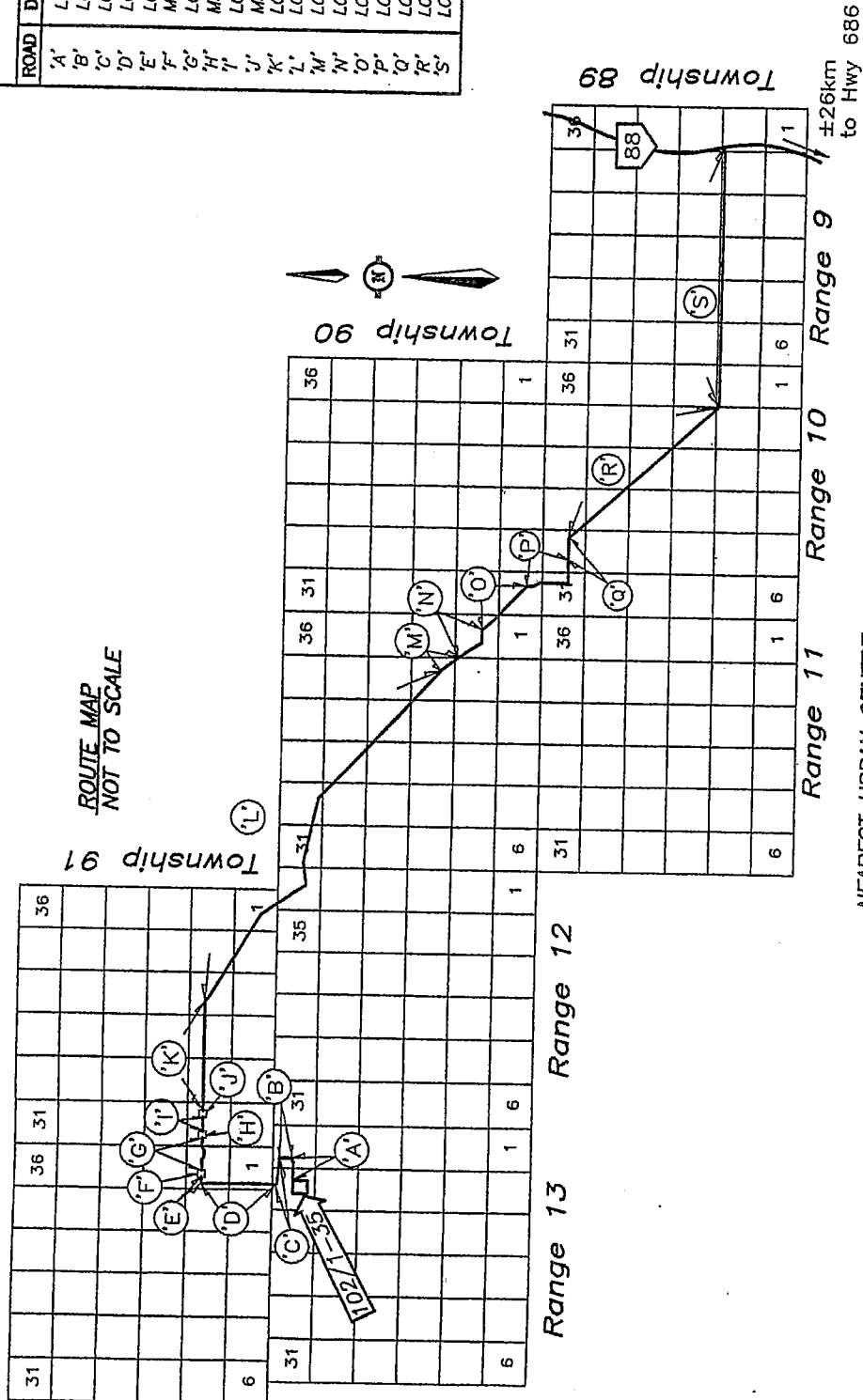
Muskeg Black Spruce & Some Pine (up to 0.15ø)

DETAIL 'A'
 SCALE 1:2000

TIMBER SALVAGE (ha.)		
	EXIST.	NEW CUT
WELL SITE	0.000	1.210

GULF CANADA
 20.00 P/L R/W
 PLAN 872 1594
 PLA 870353
 EUB PERMIT 22651
 LICENSEE: KEYSpan ENERGY

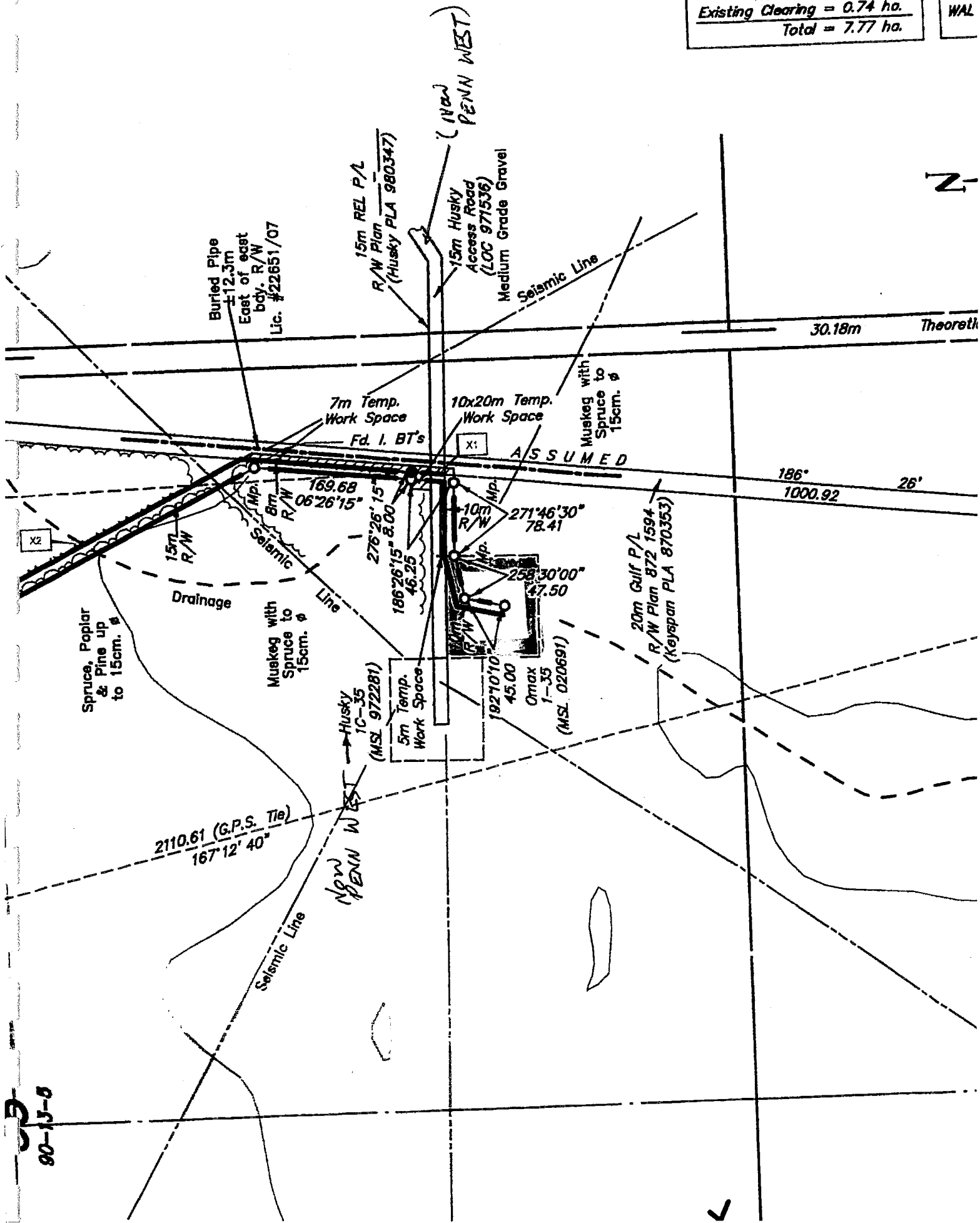
ROAD USE			
ROAD	DESCRIPTION	OPERATOR	LENGTH
'A'	LOC 971536	HUSKY OIL	±0.65 km
'B'	LOC 830409	HUSKY OIL	±0.8 km
'C'	LOC 850274	HUSKY OIL	±1.1 km
'D'	LOC 830409	HUSKY OIL	±3.0 km
'E'	LOC 840824	HUSKY OIL	±0.1 km
'F'	MSL 831600	HUSKY OIL	±0.1 km
'G'	LOC 831083	HUSKY OIL	±1.4 km
'H'	MSL 840735	HUSKY OIL	±0.1 km
'I'	LOC 831083	HUSKY OIL	±0.8 km
'J'	MSL 840718	HUSKY OIL	±0.1 km
'K'	LOC 831083	HUSKY OIL	±3.8 km
'L'	LOC 830773	HUSKY OIL	±16.2 km
'M'	LOC 830895	HUSKY OIL	±0.7 km
'N'	LOC 840490	HUSKY OIL	±1.1 km
'O'	LOC 791367	HUSKY OIL	±2.5 km
'P'	LOC 5473	HUSKY OIL	±2.2 km
'Q'	LOC 840120	HUSKY OIL	±0.9 km
'R'	LOC 5740	HUSKY OIL	±7.7 km
'S'	LOC 830818	HUSKY OIL	±9.9 km



NEAREST URBAN CENTRES
 LOON LAKE - ±47.5km South East from W/C
 LITTLE BUFFALO - ±46.5km South from W/C

UNSURVEYED TERRITORY	
Timber Salvage	
New Cut = 7.03 ha.	
Existing Clearing = 0.74 ha.	
Total = 7.77 ha.	

DA
WAL



90-13-0





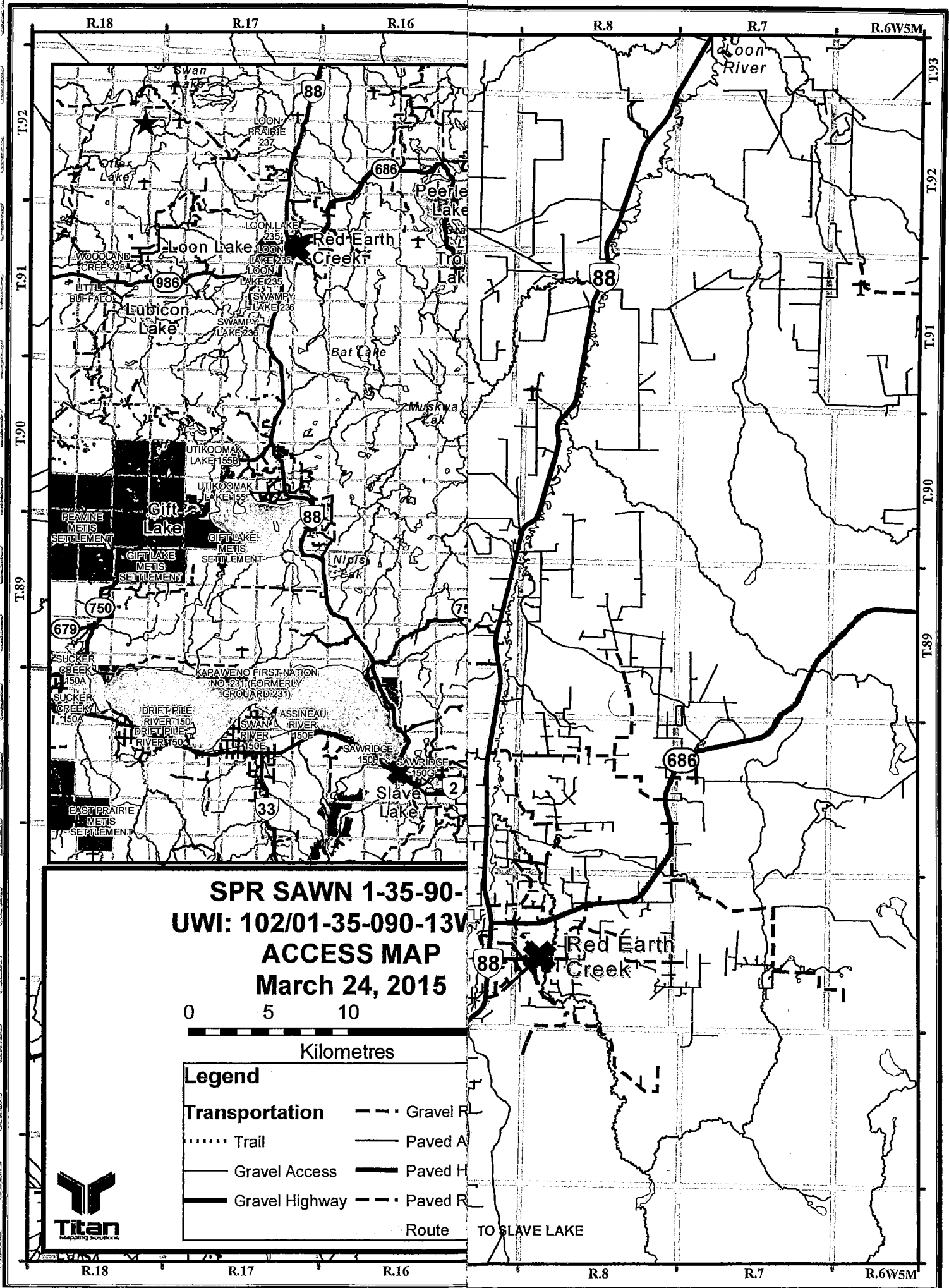
ATTACHMENT NO. 3

TWIN BUTTE ENERGY LTD.

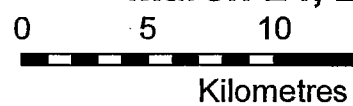
ACCESS MAP

DRIVING DISTANCES AND DRIVING DIRECTIONS,

MARCH 24, 2015



SPR SAWN 1-35-90-
UWI: 102/01-35-090-13V
ACCESS MAP
March 24, 2015



Legend	
Transportation	--- Gravel R
.....	Trail
—	Gravel Access
—	Gravel Highway
—	Paved Access
—	Paved Highway
—	Paved Road
—	Route



TO SLAVE LAKE



SPR SAWN 1-35-90-13

UWI: 102/01-35-090-13W5/00

Driving Distances

Red Earth Creek – 73.94

Loon Lake – 77.05 km

Slave Lake – 186.98 km

Driving Directions

Red Earth Creek

2.76km West on Airport Road

17.45 km North on Highway 88

48.53 km North and West on Unnamed Gravel Road

5.20 km South on Wellsite Access Road

Loon Lake

4.65 km North on Unnamed Gravel Road

3.85 km East on Unnamed Gravel Road

14.82 km North on Highway 88

48.53 km North and West on Unnamed Gravel Road

5.20 km South on Wellsite Access Road

Slave Lake

184.55 km North on Highway 88

48.53 km North and West on Unnamed Gravel Road

5.20 km South on Wellsite Access Road



ATTACHMENT NO. 4

ALBERTA ENERGY AND UTILITIES BOARD

LICENCE TRANSFER APPLICATION (NUMBER 1286370) APPROVAL

OMAX RESOURCES LTD. TO RICHMOUNT PETROLEUM LTD.

WELL LICENCE NO.: 0269441

DECEMBER 16, 2002

LICENCE
TRANSFER

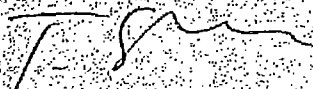
12379

December 16, 2002

INTERNAL FILING COPY

LICENCE TRANSFER APPLICATION (NUMBER: 1286370) APPROVAL

Pursuant to Section 18 of the Oil and Gas Conservation Act and/or Section 24 of the Pipeline Act, the EUB hereby approves Application Number 1286370 submitted on December 13, 2002 between OMAX RESOURCES LTD. and RICHMOUNT PETROLEUM LTD.



HAF Howard A. Fedorak, C.E.T.
Section Leader, Liability Management
Corporate Compliance Group

cc: OMAX RESOURCES LTD.

cc: RICHMOUNT PETROLEUM LTD.

Attachment

Transfer Application Details

Application Number: 1286370

TRANSFEROR

EUB ID Code: 0YM5
Name: OMAX RESOURCES LTD.
Contact Name: Brian Mracek
Licence Eligibility: Any
Company Type: Exploration & Production
File Number: 1-35-90-13W5M
DDS ID: OM2838
Agent EUB ID: 0YM5
Agent Name: OMAX RESOURCES LTD.

TRANSFEEE

EUB ID Code: 0C5D
Name: RICHMOUNT PETROLEUM LTD.
Contact Name: Larry Urichuk
Licence Eligibility: Any
Company Type: Exploration & Production
File Number:
DDS ID: RI4288
Agent EUB ID: 0C5D
Agent Name: RICHMOUNT PETROLEUM LTD.

Well Licences (Total: 1)

Licence Number	Surface Location	Working Interest Participants
0269441	1-35-090-13W5	CROSSBILL RESOURCES LTD. 45 %
0269441	1-35-090-13W5	ECLIPSE EXPLORATION LTD. 20 %
0269441	1-35-090-13W5	GEOCAP II RESOURCES INC 16.25 %
0269441	1-35-090-13W5	GEOCAP RESOURCES INC. 8.75 %
0269441	1-35-090-13W5	RICHMOUNT PETROLEUM LTD. 10 %

Facility Licences (Total: 0)

Pipeline Licences (Total: 0)

Transfer Application Details

Well Name Changes

Licence Number

New Name

0269441

RICHMOUNT 102 SAWN 1-35-90-13



ATTACHMENT NO. 5

SPR SAWN 1-35-90-13 (W5M)

ESTIMATED COSTS OF OPTIONS

**CONSIDERED TO UNLOAD THE WELLBORE AND TO RESTORE WELLBORE
WHERE PRODUCTION OPERATIONS CAN BE RESUMED**

- SWAB UNIT TO UNLOAD WELL
- SERVICE RIG TO UNLOAD WELL
- CTU/N₂ TO UNLOAD WELL
- SIDE TRACK DRILLING COST ESTIMATE
- NEW WELL-DRILLING COST ESTIMATE
- MILL OUT CASING PATCH AND RE-RUN NEW CASING PATCH
- RUN AND CEMENT TIEBACK STRING



ESTIMATED COSTS OF OPTIONS CONSIDERED TO UNLOAD THE WELL-BORE					
SWAB UNIT TO UNLOAD WELL:					
SERVICE LOCATION:	SLAVE LAKE				
SERVICE SUPPLIER:	Kodiak Wireline Services:				
	Rate	Km	Hours	Days	Cost
Lease Work and Mat Rentals				2	\$10,000
Travel Mileage (\$/km)	\$3.50	1,500			\$5,250
Hourly Rate (\$/hr)	\$175.00		84	7	\$14,700
Subsistence (\$/day)	\$250.00			7	\$3,500
Consumables (\$/day)	\$250.00			7	\$1,750
TOTAL ESTIMATED COST					\$35,200

SERVICE RIG TO UNLOAD WELL:					
SERVICE LOCATION:	SLAVE LAKE				
SERVICE SUPPLIER:	TBA				
	Rate	Km	Hours	Days	Cost
Lease Work and Mat Rentals				2	\$10,000
Rig Move From Slave Lake					\$25,000
Travel Mileage (\$/km)	\$1.75	3,000			\$5,250
Hourly Rate (\$/hr)	\$500.00		70	7	\$35,000
Subsistence (\$/day/6-men)	\$250.00			7	\$10,500
Consumables (\$/day)	\$325.00			7	\$2,275
TOTAL ESTIMATED COST					\$88,025

COILED TUBING/N2 TO UNLOAD WELL:					
SERVICE LOCATION:	GRANDE PRAIRIE				
SERVICE SUPPLIER:	TBA				
Coiled Tubing Unit:	Rate	Km	Hours	Days	Cost
Lease Work and Mat Rentals				2	\$10,000
Estimated Travel Charge (\$/km)	\$5.00	1,000			\$5,000
Estimated Operating Time (hr)	\$400.00		14.0		\$5,600
Estimated Cycling Charge (\$/m)	\$2.00	3,500			\$7,000
Crew Truck Charge (\$)	\$250.00			2	\$500
Coil Checkvalves and BHA	\$300.00			1	\$300
High Pressure Stripper	\$275.00				\$275
Dual Combi 5K BOP	\$750.00				\$750
Data Aquisition	\$500.00				\$500
Subsistence	\$500.00			2	\$1,000
				Sub-total	\$30,925
Nitrogen Unit:					
Set up and cool down					\$1,500
N2 pumping charges					\$15,000
Estimated Travel Charge (\$/km)	\$5.00	700			\$3,500
Subsistence	\$250.00			2	\$500
				Sub-total	\$20,500
TOTAL ESTIMATED COST:					\$51,425



SPR SAWN 1-35-90-13 (W5M)

SUMMARY OF COSTS TO UNLOAD WELL FLUID		
Equipment Required:	Cost	
Braided Line Swab Unit for 7 Days	\$35,200	
Service Rig and Equipment for 7 Days	\$88,025	
Coiled Tubing and Nitrogen for 2 Days	\$51,425	

CASING INPECTION LOG ESTIMATED COST			
	Logs to be Run:	Meters	Cost
E & P Wireline Ltd.	USI log plus CBL log	1250m	\$32,000
(Schlumberger Company)	Liner top to surface		



CODE	DESCRIPTION			DRILLING	SUBTOTAL	CUMULATIVE
						TOTAL
8715 330	SURVEY LEASE/CONSTRUCTION/STANDBY CAT			15,000	\$ 15,000	\$ 15,000
8715 334	CLEANUP/RESTORATION			5,000	\$ 5,000	\$ 20,000
8715 335	WATER ACCESS & HAULING	\$/Day	# of Days		\$ 4,550	\$ 24,550
	Rig & Boiler Water		7	-		
	WellSite Shack & Camp Water	650	7	4,550		
8715 338	RIG/CAMP MOVE IN/OUT				\$ 75,000	\$ 99,550
	Rig Move In			75,000		
	Rig Move Out (Demobilization)					
8715 344	FISHING EQUIP/SERV			100,000	\$ 100,000	\$ 199,550
8715 346	DAYWORK	\$/Day	# of Days		\$ 115,500	\$ 315,050
	Rig Invert Compensation		7	-		
	Daywork (Drilling Rig Cost)	16500	7	115,500		
8715 348	STEAMER	\$/Day	#	# of Days	\$ -	\$ 315,050
	Steamer/Boiler (winter only)			7	-	
8715 350	TRAVEL/SUBSISTANCE/CAMP	\$/Day	#	# of Days	\$ 12,880	\$ 327,930
	Crew Invert Allowance			7	-	
	Camp Move In & Tear Out				-	
	Crew Truck	400	1	7	2,800	
	Camp / Includes camp sub	1440	1	7	10,080	
8715 352	POWER/FUEL	\$/Day	#	# of Days	\$ 17,500	\$ 345,430
	Rig AND Boiler (increase cost in winter)	2500	1	7	17,500	
8715 354	MUD/FLUIDS/LUBRICATION	\$/Day		# of Days	\$ 41,250	\$ 386,680
	Surface	4500			-	
	Intermediate	7500		2	15,000	
	Main	7500		4	26,250	
	Mud Man			4	-	
8715 358	EQUIP RENTAL	\$/d	# of tools	# of Days	\$ 18,025	\$ 404,705
	All Pason Cost	500	1	7	3,500	
	Rig phone / Booster	225	1	7	1,575	
	Communication / Telephone	200	1	7	1,400	
	Invert Tank Farm			7	-	
	All Sewer cost	450	1	7	3,150	
	Garbage bin / Inc / Ash bins	70	1	7	490	
	Flight Pump/Trash	75	1	7	525	
	Sample Shack			7	-	
	400 Bbl Storage Tank	30	1	7	210	
	Flare Tank	135	1	7	945	
	Washgun			7	-	
	Surface - Loader / Tractor for towing	450	1	7	3,150	
	Top Drive			7	-	
	WellSite Shacks/Units	220	2	7	3,080	
8715 360	TRANSPORT/TRUCKING	\$/Day		# of Days	\$ 14,000	\$ 418,705
	\$6500/d BHB, \$3500/d PCBU	2000		7	14,000	
8715 364	INSPECTION/SERVICE				10,000	\$ 428,705



8715 366	CONTRACT SERVICE/LABOUR				\$ 1,000	\$ 429,705
	All Welding				-	
	Pressure Testing				1,000	
8715 368	LOG/PERF/ANALYSIS				\$ 35,000	\$ 464,705
	Intermediate Logging				-	
	Main Logging				35,000	
8715 376	SUPERVISION	\$/Day	# of Men	# of Days	\$ 13,300	\$ 478,005
	Drilling Supervision	1400	1	7	9,800	
	Travel Drilling				3,500	
8715 377	MAT RENTALS	\$/Mat/Day	# of Mats	# of Days	\$ -	\$ 478,005
	Mat rental - lease			7	-	
8715 384	SAFETY	\$/Day	#	# of Days	\$ -	\$ 478,005
	Fire Extinguishers			7	-	
	Inspector			7	-	
	Emergency Medical Technician			7	-	
	H2S Safety Hand (Site Specific ERP)			7	-	
	H2S Air Monitoring and Air Trailer			7	-	
8715 400	CASING BOWL				\$ -	\$ 478,005
8715 402	SURFACE CASING	\$/m	Meters		\$ -	\$ 478,005
	Surface Casing	150			-	
8715 404	SURFACE CASE-CEMENT				\$ -	\$ 478,005
8715 406	SURFACE CASE-ACC/WELD/TONGS	\$/item	# of Items		\$ -	\$ 478,005
	Float Equipment	350			-	
	Centralizers/Standoff Bands	55			-	
	Power Tongs				-	
	Pipe Handling (Thread Cops)				-	
8715 408	INTERMEDIATE CASING	\$/m	Meters		\$ -	\$ 478,005
	Intermediate Casing # 1	1250			-	
	Intermediate Casing # 2				-	
8715 410	INTERMEDIATE CASING-CEMENTING				\$ -	\$ 478,005
8715 412	INTERMED CASE-ACC/WELD/TONGS	\$/item	# of Items		\$ -	\$ 478,005
	Float Equipment	250			-	
	Centralizers/Standoff Bands	45			-	
	Power Tongs				-	
	Speed Head				-	
	Pipe Handling (Thread Cops)				-	
8720 414	PRODUCTION CASING	\$/m	meters		\$ 81,000	\$ 559,005
	Production Casing #1	\$	45.00	1800	81,000	
	Production Casing #2				-	
8720 416	PRODUCTION CASING-CEMENT				35,000	\$ 35,000
8720 418	PROD'N CASING-ACC/WELD/TONGS	\$/item	# of Items		\$ 6,050	\$ 600,055
	Float Equipment/Hanger	150	2		300	
	Centralizers/Standoff Bands	35	50		1,750	
	Power Tongs				4,000	
	Pipe Handling (Thread Cops)				-	



8715 464	UNDERBALANCED SERVICES	\$/Day	# of Items		\$ -	\$ 600,055
	N2 & UBD equipment		7		-	
	UBO equipment Mob / Demob		7		-	
	Fuel for N2 & UBD equipment		7		-	
8715 602	AVIATION TRANSPORTATION	Crew Flights			\$ -	\$ 600,055
8715 622	CORE ANALYSIS				\$ -	\$ 600,055
8715 626	CUTTING INJECT/DISPO/STORAGE				\$ 10,000	\$ 610,055
	Vacuum Truck	5000	2		10,000	
	Invert Solids/Track Hoe		7		-	
8715 628	DIRECTIONAL EQUIP/SERV	\$/Day	# of Days		\$ 82,500	\$ 692,555
	Directional - Vertical (Surf/Int, no gamma)	7500	3		22,500	
	Directional - Build/hz (w/Gamma Ray)	10000	3		30,000	
	Directional - Motor Hours	4500	3		13,500	
	Directional - Motor Relines	5750	2		11,500	
	Directional - Standby	2500	2		5,000	
	Directional - Resistivity/MWD Tools				-	
	EM & Btm Hole Press.				-	
8715 632	DOWN HOLE EQUIP RENTAL	\$/Day	# of Items	# of Days	\$ 2,725	\$ 695,280
	Downhole - stabilizers/jar/s.s.	250	1.00	3	625	
	Downhole - 101.6 mm HWDP	20	15	7	2,100	
	Downhole - 101.6mm Dogsubs				-	
	Downhole - Drillpipe - SS105			7	-	
	Downhole - Agitator				-	
8715 634	DRILL BITS	\$/Bit	# of Bits		\$ 15,000	\$ 710,280
	Surface - tooth/insert				-	
	Surface - PDC				-	
	Intermediate - insert				-	
	Intermediate - PDC				-	
	Intermediate - insert (slimhole)				-	
	Intermediate - PDC (slimhole)				-	
	Main - insert				-	
	Main - PDC	7500	2		15,000	
8715 636	DRILLSTEM TEST				\$ -	\$ 710,280
	Drill Stem Test				-	
	Analysis & Evaluation				-	
8715 648	ENVIRONMENTAL CONTROL	\$/Day	# of Days		\$ 3,500	\$ 713,780
	Miscellaneous Environmental Charges	500	7		3,500	
8715 666	SOLIDS CONTROL EQUIP/SERV	\$/Day	# of Items	# of Days	\$ 3,850	\$ 717,630
	Shale Dryer, shale tank			7	-	
	Centrifuge	550	1	7	3,850	
8715 676	GEOLOGICAL SUPERVISION	\$/Day	# of Men	# of Days	\$ 6,300	\$ 723,930
	Geological Supervision	1200	1	4	4,800	
	Travel Geologist				1,500	
8715 692	ABANDONMENT EQUIP/SERVICE				\$ -	\$ 723,930
8715 327	IN HOUSE ENGINEERING	2%			14,479	\$ 738,409
8715 396	OVERHEAD	3-2-1			9,384	\$ 747,793
8715 899	DRILL CREDIT				-	\$ 747,793
						TOTAL \$ 747,793



DRILLING
Detailed Cost Estimate
SPR SAWN 102/01-35-090-13 (W5M)

ACCOUNT DETAIL COST ESTIMATES			DESCRIPTION
8715 330	LEASE/ROAD MAINT/STANDBY CAT	\$ 15,000.00	
8715 334	CLEANUP/RESTORATION	\$ 5,000.00	
8715 335	WATER ACCESS & HAULING	\$ 4,550.00	
8715 338	RIG/CAMP MOVE IN/OUT	\$ 75,000.00	
8715 344	FISHING EQUIP/SERV	\$ 100,000.00	
8715 346	DAYWORK	\$ 115,500.00	
8715 348	STEAMER	\$ -	
8715 350	TRAVEL/SUBSISTANCE/CAMP	\$ 12,880.00	
8715 352	POWER/FUEL	\$ 17,500.00	
8715 354	MUD/FLUIDS/LUBRICATION	\$ 41,250.00	
8715 358	EQUIP RENTAL	\$ 18,025.00	
8715 360	TRANSPORT/TRUCKING	\$ 14,000.00	
8715 364	INSPECTION/SERVICE	\$ 10,000.00	
8715 366	CONTRACT SERVICE/LABOUR	\$ 1,000.00	
8715 368	LOG/PERF/ANALYSIS	\$ 35,000.00	
8715 376	SUPERVISION	\$ 13,300.00	
8715 377	MAT RENTALS	\$ -	
8715 384	SAFETY	\$ -	
8715 400	CASING BOWL	\$ -	
8715 402	SURFACE CASING	\$ -	
8715 404	SURFACE CASE-CEMENT	\$ -	
8715 406	SURFACE CASE-ACC/WELD/TONGS	\$ -	
8715 408	INTERMEDIATE CASING	\$ -	
8715 410	INTERMEDIATE CASING-CEMENTING	\$ -	
8715 412	INTERMED CASE-ACC/WELD/TONGS	\$ -	
8720 414	PRODUCTION CASING	\$ 81,000.00	
8720 416	PRODUCTION CASING-CEMENT	\$ 35,000.00	
8720 418	PROD'N CASING-ACC/WELD/TONGS	\$ 6,050.00	
8715 464	UNDERBALANCED SERVICES	\$ -	
8715 602	AVIATION TRANSPORTATION	\$ -	
8715 622	CORE ANALYSIS	\$ -	
8715 626	CUTTING INJECT/DISPO/STORAGE	\$ 10,000.00	
8715 628	DIRECTIONAL EQUIP/SERV	\$ 82,500.00	
8715 632	DOWN HOLE EQUIP RENTAL	\$ 2,725.00	
8715 634	DRILL BITS	\$ 15,000.00	
8715 636	DRILLSTEM TEST	\$ -	
8715 648	ENVIRONMENTAL CONTROL	\$ 3,500.00	
8715 666	SOLIDS CONTROL EQUIP/SERV	\$ 3,850.00	
8715 676	GEOLOGICAL SUPERVISION	\$ 6,300.00	
8715 692	ABANDONMENT EQUIP/SERVICE	\$ -	
8715 327	IN HOUSE ENGINEERING	\$ 14,478.60	
8715 396	OVERHEAD	\$ 9,384.09	
8715 899	DRILL CREDIT	\$ -	
TOTAL COSTS		\$ 747,792.69	



DRILLING COST ESTIMATE

AFE Number
Well Name
Spud Date
Rig Release Date
Well Type
Surface Location
Bottomhole Location
Drilling Rig
Province
Sour Well
SPR Working Interest
Hole Depth
TVD
Horizontal Section

Table with 2 columns: Field Name and Value. Values are mostly redacted with black boxes.

Blue cells are for information only. Grey cells are used for cost estimate calculations.

Purpose

Table with 2 columns: Field Name and Value. Values are mostly redacted with black boxes.

Hole Configuration

Conductor
Surface
Intermediate/Main
Liner
Open Hole

Table with 6 columns: Hole Size (mm), M.D. (m), Casing (mm), Weight (kg/m), Grade, Mud Type. Values are mostly redacted with black boxes.

Table with 7 columns: Time Breakdown, Days, Hours, Cost Estimate, Depth (MD), Mud Days. Rows include RIG UP, SURFACE HOLE, INTERMEDIATE/MAIN HOLE, and MAIN HOLE.

Table with 5 columns: CODE, DESCRIPTION, DRILLING, SUBTOTAL, CUMULATIVE TOTAL. Rows include SURVEY LEASE/CONSTRUCTION/STANDBY CAT, CLEANUP/RESTORATION, and WATER ACCESS & HAULING.



8715 338	RIG/CAMP MOVE IN/OUT				\$ 75,000	\$ 103,450
	Rig Move In			75,000		
	Rig Move Out (Demobilization)					
8715 344	FISHING EQUIP/SERV				\$ -	\$ 103,450
8715 346	DAYWORK	\$/Day	# of Days		\$ 214,500	\$ 317,950
	Rig Invert Compensation		13	-		
	Daywork (Drilling Rig Cost)	16500	13	214,500		
8715 348	STEAMER	\$/Day	#	# of Days	\$ -	\$ 317,950
	Steamer/Boiler (winter only)			13		
8715 350	TRAVEL/SUBSISTANCE/CAMP	\$/Day	#	# of Days	\$ 23,920	\$ 341,870
	Crew Invert Allowance			13	-	
	Camp Move In & Tear Out				-	
	Crew Truck	400	1	13	5,200	
	Camp / Includes camp sub	1440	1	13	18,720	
8715 352	POWER/FUEL	\$/Day	#	# of Days	\$ 32,500	\$ 374,370
	Rig AND Boiler (increase cost in winter)	2500	1	13	32,500	
8715 354	MUD/FLUIDS/LUBRICATION	\$/Day		# of Days	\$ 54,000	\$ 428,370
	Surface	4500		2	9,000	
	Intermediate/Main	10000		5	45,000	
	Horizontal			3	-	
	Mud Man			7	-	
8715 358	EQUIP RENTAL	\$/d	# of tools	# of Days	\$ 33,475	\$ 461,845
	All Pason Cost	500	1	13	6,500	
	Rig phone / Booster	225	1	13	2,925	
	Communication / Telephone	200	1	13	2,600	
	Invert Tank Farm			13	-	
	All Sewer cost	450	1	13	5,850	
	Garbage bin / Inc / Ash bins	70	1	13	910	
	Flight Pump/Trash	75	1	13	975	
	Sample Shack			13	-	
	400 Bbl Storage Tank	30	1	13	390	
	Flare Tank	135	1	13	1,755	
	Washgun			13	-	
	Surface - Loader / Tractor for towing	450	1	13	5,850	
	Top Drive			13	-	
	Wellsite Shacks/Units	220	2	13	5,720	
8715 360	TRANSPORT/TRUCKING	\$/Day		# of Days	\$ 26,000	\$ 487,845
	\$6500/d BHBUS, \$3500/d PCBU	2000		13	26,000	
8715 364	INSPECTION/SERVICE				10,000	\$ 497,845
8715 366	CONTRACT SERVICE/LABOUR				\$ 3,500	\$ 501,345
	All Welding				2,500	
	Pressure Testing				1,000	
8715 368	LOG/PERF/ANALYSIS				\$ 35,000	\$ 536,345
	Intermediate/Main Logging				35,000	
	Horizontal Hole Logging				-	
8715 376	SUPERVISION	\$/Day	# of Men	# of Days	\$ 21,700	\$ 558,045
	Drilling Supervision	1400	1	13	18,200	
	Travel Drilling				3,500	
8715 377	MAT RENTALS	\$/Mat/Day	# of Mats	# of Days	\$ -	\$ 558,045
	Mat rental - lease			13	-	
8715 384	SAFETY	\$/Day	#	# of Days	\$ -	\$ 558,045
	Fire Extinguishers			13	-	
	Inspector			13	-	
	Emergency Medical Technician			13	-	
	H2S Safety Hand (Site Specific ERP)			13	-	
	H2S Air Monitoring and Air Trailer			13	-	
8715 400	CASING BOWL				3,500	\$ 561,545
8715 402	SURFACE CASING	\$/m	Meters		\$ 93,750	\$ 655,295
	Surface Casing	150	625		93,750	
8715 404	SURFACE CASE-CEMENT				15,000	\$ 670,295



8715 406	SURFACE CASE-ACC/WELD/TONGS	\$/item	# of Items	\$	3,025	\$	673,320
	Float Equipment	350	2	700			
	Centralizers/Standoff Bands	55	15	825			
	Power Tongs			1,500			
	Pipe Handling (Thread Cops)						
8715 408	INTERMEDIATE CASING	\$/m	Meters	\$	119,700	\$	793,020
	Intermediate Casing # 1	1330	90	119,700			
	Intermediate Casing # 2						
8715 410	INTERMEDIATE CASING-CEMENTING			30,000	\$	30,000	\$
8715 412	INTERMED CASE-ACC/WELD/TONGS	\$/item	# of Items	\$	5,250	\$	828,270
	Float Equipment	250	2	500			
	Centralizers/Standoff Bands	45	50	2,250			
	Power Tongs			2,500			
	Speed Head						
	Pipe Handling (Thread Cops)						
8720 414	PRODUCTION CASING	\$/m	meters	\$	24,750	\$	853,020
	Production Casing #1	\$	45.00	550	24,750		
	Production Casing #2						
8720 416	PRODUCTION CASING-CEMENT			1,500	\$	1,500	\$
8720 418	PROD'N CASING-ACC/WELD/TONGS	\$/item	# of Items	\$	17,550	\$	872,070
	Float Equipment/Hanger	15000	1	15,000			
	Centralizers/Standoff Bands	35	30	1,050			
	Power Tongs			1,500			
	Pipe Handling (Thread Cops)						
8715 464	UNDERBALANCED SERVICES	\$/Day	# of Items	\$	-	\$	872,070
	N2 & UBD equipment		13	-			
	UBO equipment Mob / Demob		13	-			
	Fuel for N2 & UBD equipment		13	-			
8715 602	AVIATION TRANSPORTATION	Crew Flights			\$	-	\$
8715 622	CORE ANALYSIS				\$	-	\$
8715 626	CUTTING INJECT/DISPO/STORAGE			\$	30,000	\$	902,070
	Vacuum Truck	5000	6	30,000			
	Invert Solids/Track Hoe		13				
8715 628	DIRECTIONAL EQUIP/SERV	\$/Day	# of Days	\$	-	\$	902,070
	Directional - Vertical (Surf/Int, no gamma)		3	-			
	Directional - Build/hz (w/Gamma Ray)		8	-			
	Directional - Motor Hours		10	-			
	Directional - Motor Relines		2	-			
	Directional - Standby			-			
	Directional - Resistivity/MWD Tools			-			
	EM & Btm Hole Press.			-			
8715 632	DOWN HOLE EQUIP RENTAL	\$/Day	# of Items	# of Days	\$	6,025	\$
	Downhole - stabilizers/jar/s.s.	250	1.00	9	2,125		
	Downhole - 101.6 mm HWDP	20	15	13	3,900		
	Downhole - 101.6mm Dogsubs						
	Downhole - Drillpipe - SS105			13			
	Downhole - Agitator						
8715 634	DRILL BITS	\$/Bit	# of Bits	\$	34,000	\$	942,095
	Surface - tooth/insert	2500	1	2,500			
	Surface - PDC						
	Intermediate - insert						
	Intermediate - PDC	12000	2	24,000			
	Intermediate - insert (slimhole)						
	Intermediate - PDC (slimhole)						
	Main - insert						
	Main - PDC	7500	1	7,500			
8715 636	DRILLSTEM TEST			\$	-	\$	942,095
	Drill Stem Test						
	Analysis & Evaluation						
8715 648	ENVIRONMENTAL CONTROL	\$/Day	# of Days	\$	6,500	\$	948,595
	Miscellaneous Environmental Charges	500	13	6,500			



8715 666	SOLIDS CONTROL EQUIP/SERV	\$/Day	# of Items	# of Days	\$	7,150	\$	955,745	
	Shale Dryer, shale tank			13	-				
	Centrifuge	550	1	13	7,150				
8715 676	GEOLOGICAL SUPERVISION	\$/Day	# of Men	# of Days	\$	12,400	\$	968,145	
	Geological Supervision	1200	1	10	11,400				
	Travel Geologist				1,000				
8715 692	ABANDONMENT EQUIP/SERVICE				\$	-	\$	968,145	
8715 327	IN HOUSE ENGINEERING	2%			19,363	\$	19,363	\$	987,508
8715 396	OVERHEAD	3-2-1			11,875	\$	11,875	\$	999,383
8715 899	DRILL CREDIT				-	\$	-	\$	999,383
							TOTAL	\$ 999,383	

DRILLING
Detailed Cost Estimate
SPR SAWN 103/01-35-090-13 (W5M)

ACCOUNT DETAIL COST ESTIMATES			DESCRIPTION
8715 330	LEASE/ROAD MAINT/STANDBY CAT	\$ 15,000.00	
8715 334	CLEANUP/RESTORATION	\$ 5,000.00	
8715 335	WATER ACCESS & HAULING	\$ 8,450.00	
8715 338	RIG/CAMP MOVE IN/OUT	\$ 75,000.00	
8715 344	FISHING EQUIP/SERV	\$ -	
8715 346	DAYWORK	\$ 214,500.00	
8715 348	STEAMER	\$ -	
8715 350	TRAVEL/SUBSISTANCE/CAMP	\$ 23,920.00	
8715 352	POWER/FUEL	\$ 32,500.00	
8715 354	MUD/FLUIDS/LUBRICATION	\$ 54,000.00	
8715 358	EQUIP RENTAL	\$ 33,475.00	
8715 360	TRANSPORT/TRUCKING	\$ 26,000.00	
8715 364	INSPECTION/SERVICE	\$ 10,000.00	
8715 366	CONTRACT SERVICE/LABOUR	\$ 3,500.00	
8715 368	LOG/PERF/ANALYSIS	\$ 35,000.00	
8715 376	SUPERVISION	\$ 21,700.00	
8715 377	MAT RENTALS	\$ -	
8715 384	SAFETY	\$ -	
8715 400	CASING BOWL	\$ 3,500.00	
8715 402	SURFACE CASING	\$ 93,750.00	
8715 404	SURFACE CASE-CEMENT	\$ 15,000.00	
8715 406	SURFACE CASE-ACC/WELD/TONGS	\$ 3,025.00	
8715 408	INTERMEDIATE CASING	\$ 119,700.00	
8715 410	INTERMEDIATE CASING-CEMENTING	\$ 30,000.00	
8715 412	INTERMED CASE-ACC/WELD/TONGS	\$ 5,250.00	
8720 414	PRODUCTION CASING	\$ 24,750.00	
8720 416	PRODUCTION CASING-CEMENT	\$ 1,500.00	
8720 418	PROD'N CASING-ACC/WELD/TONGS	\$ 17,550.00	
8715 464	UNDERBALANCED SERVICES	\$ -	
8715 602	AVIATION TRANSPORTATION	\$ -	
8715 622	CORE ANALYSIS	\$ -	
8715 626	CUTTING INJECT/DISPO/STORAGE	\$ 30,000.00	
8715 628	DIRECTIONAL EQUIP/SERV	\$ -	
8715 632	DOWN HOLE EQUIP RENTAL	\$ 6,025.00	
8715 634	DRILL BITS	\$ 34,000.00	
8715 636	DRILLSTEM TEST	\$ -	
8715 648	ENVIRONMENTAL CONTROL	\$ 6,500.00	
8715 666	SOLIDS CONTROL EQUIP/SERV	\$ 7,150.00	
8715 676	GEOLOGICAL SUPERVISION	\$ 12,400.00	
8715 692	ABANDONMENT EQUIP/SERVICE	\$ -	
8715 327	IN HOUSE ENGINEERING	\$ 19,362.90	
8715 396	OVERHEAD	\$ 11,875.08	
8715 899	DRILL CREDIT	\$ -	
TOTAL COSTS		\$ 999,382.98	

Well: SPR SAWN 01-35-90-13 (W5M)

Objective: Mill out casing patch and re-run casing patch.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Total
Move in and rig up service rig. Trip 60.3mm tubing string. Rig up wireline and perforate inflate packer. Pick up milling assembly and mill out slip on top packer, and retrieve casing patch. Run casing inspection log, and CBL. Pick up and run Weatherford new patch assembly. Re-run 60.3mm tubing string, and swab fluid from wellbore. Rig out and release service rig.	Rig up Service Rig	Perforate Inflate Packer. Pick-up mill	Mill out packer and retrieve patch.	Run casing log, CBL	Pick-up Weatherford casing patch and set.	Pick-up 60.3mm tubing string, Trip in and land in dognut.	Rig up swab equipment and swab well.	Rig up swab equipment and swab well.	Rig out and release rig.	
9300-313 Service Rig & Snubbers	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	54,000
9300-322 Bits & Mills		5,000								5,000
9300-327 Surf Equip & Tool Rentals (Pwr Svl)	1,500	4,500	4,500	1,500	1,500	1,500	1,500	1,500	1,500	19,500
9300-328 Downhole Equipment Rental (motor bit man)										0
9300-335 Safety Equipment & Services										0
9300-356 Rig Move/Cat Services	20,000								20,000	40,000
9300-362 Eng Services & Design										0
9300-371 Third Party Labour (Fisherman)		2,500	2,500	2,500	2,500					10,000
9300-378 Well Supervision	2,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	2,500	15,500
9300-399 Environmental Service (Site Asses,Line Loc)										0
9300-429 Transport Fluid, (Fl,Haul,Tnks,Vac, Disp)	5,000					3,500			5,000	13,500
9300-431 Completion Fluids (Inhibited Fluid)										0
9300-433 Remedial cement										0
9300-435 Stimulation										0
9300-437 Pumping & CTU (Displace to inhibited fluid)										0
9300-439 Cased Hole Log & Perforation & Recdr's		5,000		30,000						35,000
9300-443 Slickline (Set Plugs)										0
9300-445 Picker Truck										0
9300-950 Miscellaneous & Other	500	500	500	500	500	500	500	500	500	4,500
Sub Total	35,500	25,000	15,000	42,000	12,000	13,000	9,500	9,500	35,500	197,000
TANGIBLE WELL EQUIPMENT										
7700-328 Weatherford Casing Patch					25,000					25,000
7700-415 Tubing (1700 m x 60.3 mm EUE)										0
7700-501 Wellhead Assembly										0
7700-520 BH Pump & Rods										0
7700-527 Artificial Lift & Prime Mover										0
Sub Total	0	0	0	0	0	0	0	0	0	25,000
										222,000
										229,719

Over head	5% 50	3% 100	1% +150	Total
	2500	3000	2218.5	7718.5



BISSETT RESOURCE CONSULTANTS LTD.

Well: SPR SAWN 01-35-90-13 (W5M)

Objective Run and cement 114.3mm tie-back casing string.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Total
Move in and rig up service rig. Trip out 60.3mm tubing string. Rig up wireline and run and set 114.3mm "WR" bridge plug and set in top of 114.3mm liner, and cap with sand. Pick-up and run 114.3mm, 14.14 kg/m, J-55, ST&C tie-back string. Rig up cementers, pick-up tubing string and pull out of seal assembly, and cement tie-back string to surface. Re-land tubing in sealbore. Trip in 60.3mm tubing, and retrieve bridge plug. Re-run 60.3mm tubing string, and land in dognut. Rig up wellhead and swab fluid from wellbore. Rig out and release service rig.	Rig up Service Rig. Trip out 60.3mm tubing string.	Rig up wireline unit and run wireline set tubing retrievable bridge plug in liner top. Cap with sand.	Pick-up and trip in 114.3mm tie back string.	Continue running tie-back string. Space out and land in wellhead in compressio n.	Rig up cementers. Pick-up string out of tie-back sealbore, and cement tie-back string to surface. Land tie-back string in sealbore assembly.	Trip in 60.3mm tubing string. Trip in and circulate cement and sand from top of bridge plug.	Trip out 60.3mm tubing and trip in with overshot to recover bridge plug. Trip out bridge plug.	Trip in with final 60.3mm tubing string. Land tubing in dognut at approx. 1685m KB. Nipple up wellhead and swab tubing.	Continue swabbing tubing. Rig out and release service rig.	
9300-313 Service Rig & Snubbers	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	54,000
9300-322 Bits & Mills						500				500
9300-327 Surf Equip & Tool Rentals (Pwr Svl)	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	13,500
9300-328 Downhole Equipment Rental (motor bit man)										0
9300-335 Safety Equipment & Services										0
9300-356 Rig Move/Cat Services	20,000								20,000	40,000
9300-362 Eng Services & Design										0
9300-371 Third Party Labour (Fisherman)					2,500					2,500
9300-378 Well Supervision	2,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	2,500	15,500
9300-399 Environmental Service (Site Asses,Line Loc)										0
9300-429 Transport Fluid, (Fld,Haul,Tnks,Vac, Disp)	5,000									5,000
9300-431 Completion Fluids (Inhibited Fluid)						3,500				3,500
9300-433 Cement Tie-back String					20,000					20,000
9300-435 Stimulation										0
9300-437 Pumping & CTU (Displace to inhibited fluid)										0
9300-439 Cased Hole Log & Perforation & Recdr's		5,000								5,000
9300-443 Slickline (Set Plugs)										0
9300-445 Picker Truck										0
9300-950 Miscellaneous & Other	500	500	500	500	500	500	500	500	500	4,500
Sub Total	35,500	14,500	9,500	12,000	32,000	13,500	9,500	9,500	35,500	171,500

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Total
TANGIBLE WELL EQUIPMENT										
7700-328 Bridge Plug Rental		1,500								1,500
7700-415 114.3mm, 14.14 kg/m, J-55, ST&C tie-back string		60,000								60,000
7700-501 Wellhead Assembly		10,000								10,000
7700-520 BH Pump & Rods										
7700-527 Artificial Lift & Prime Mover										
Sub Total	0	71,500	0							71,500

	5% 50	3%100	1%+150	Total
Over head	2500	3000	2428.5	7928.5
Sub Total				243,000
				250,929



ATTACHMENT NO. 6

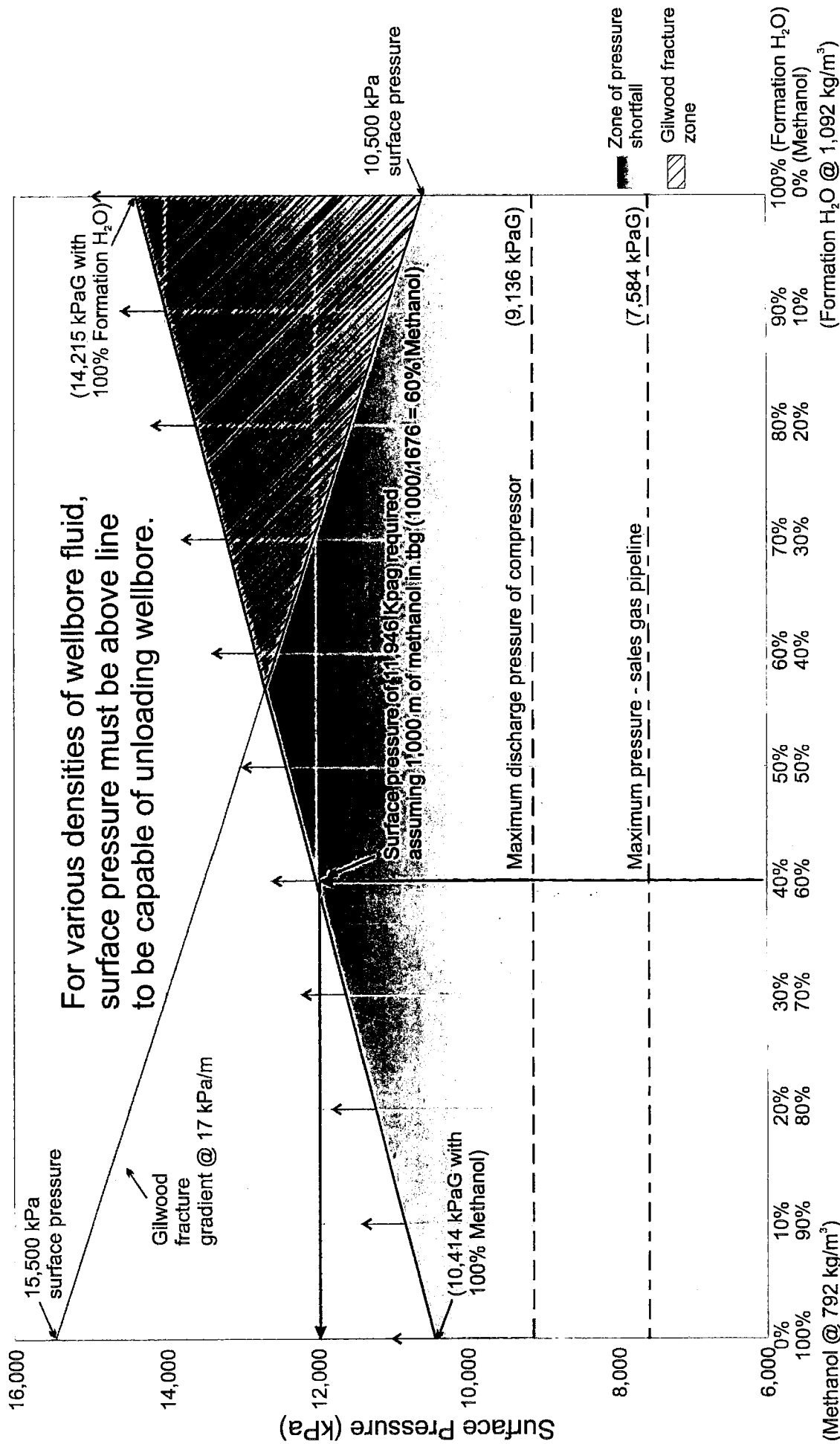
SPR SAWN 1-35-90-13 (W5M)

REQUIRED SURFACE PRESSURE TO UNLOAD WELLBORE VS. FLUID DENSITY
VS. FLUID DENSITY



SPR Sawn 1-35-90-13 W5M

Required Surface Pressure* to Unload Wellbore vs. Fluid Density





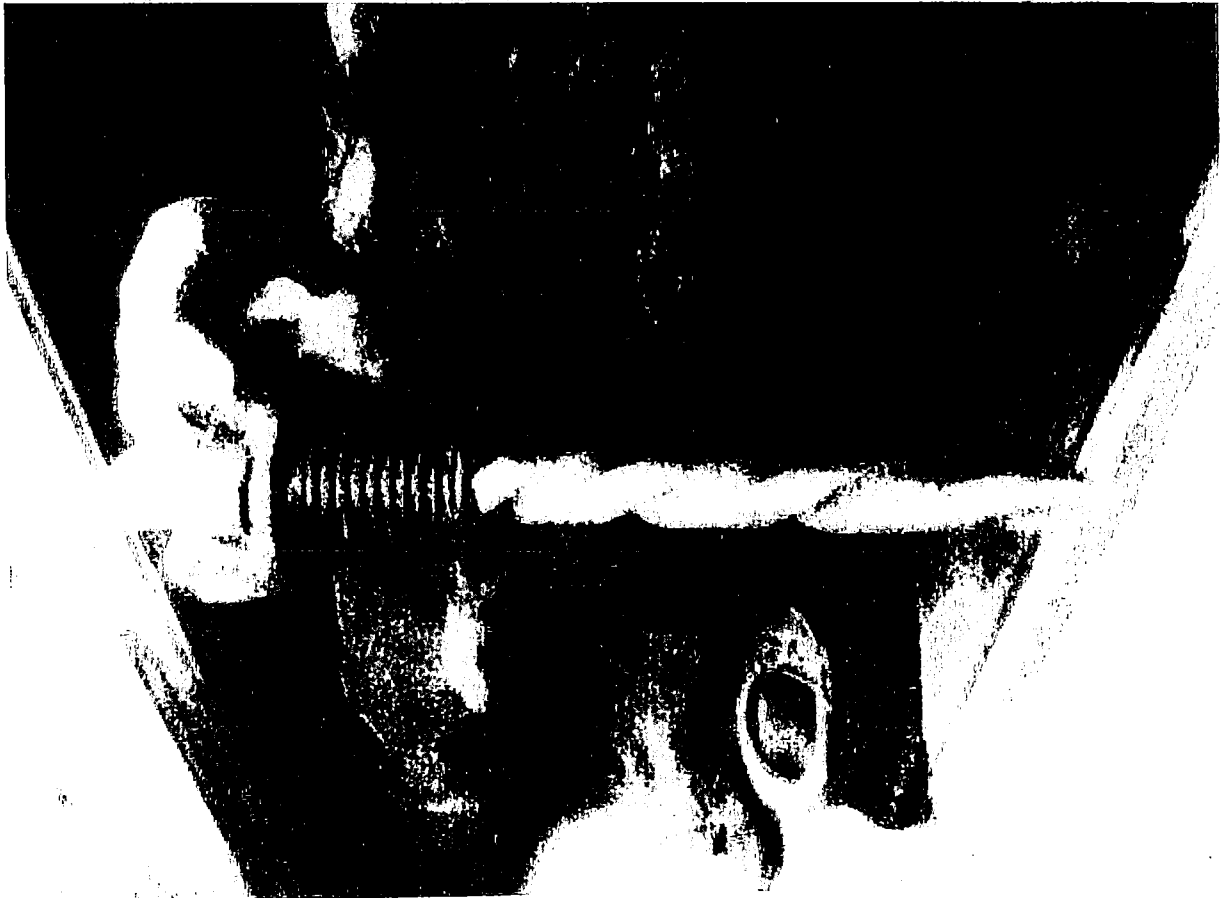
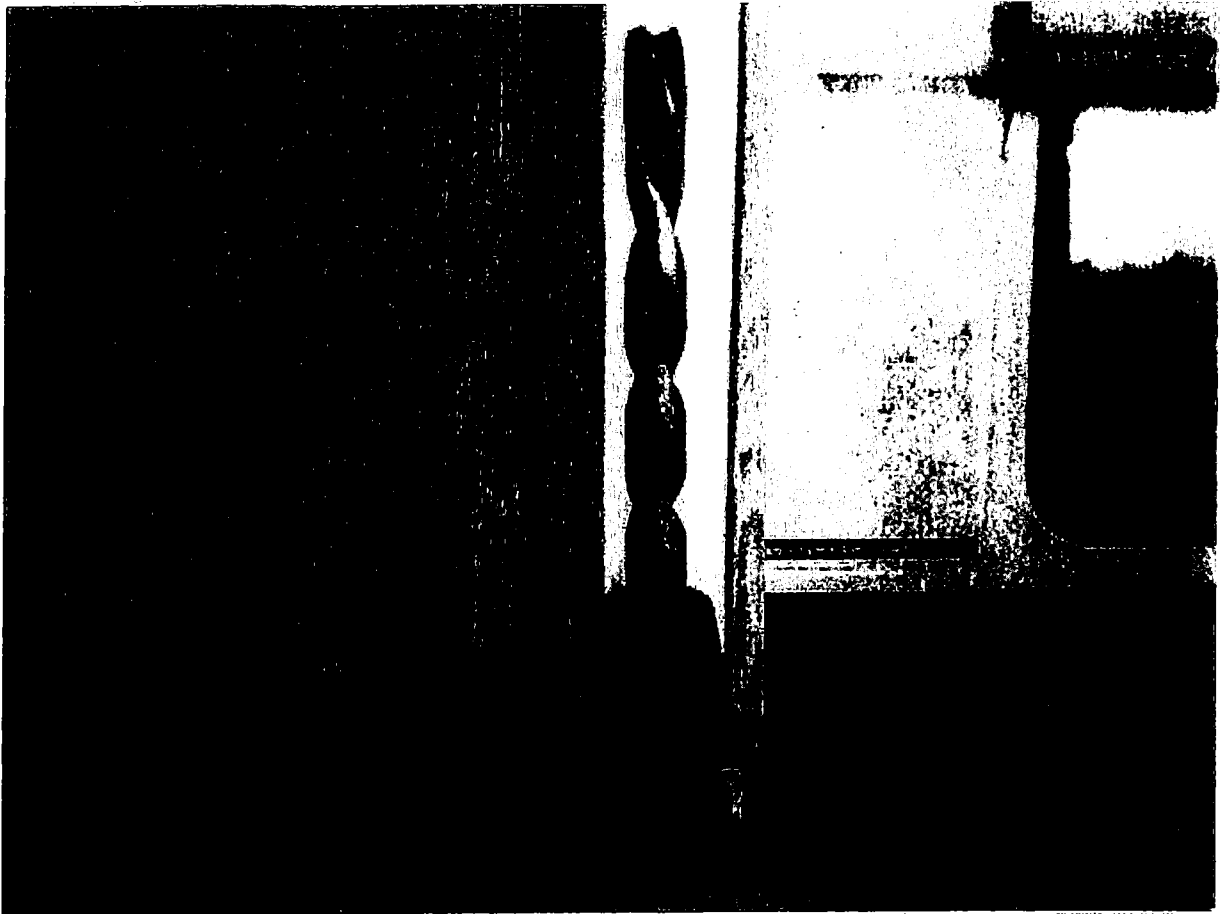
ATTACHMENT NO. 7

SPR SAWN 1-35-90-13 (W5M)

**PHOTOGRAPHS OF TWISTED STEEL ROD LODGED IN
WATER COURSE OF 98.4 mm OD CHEVRON BLADE BIT**

RAN AND PULLED BIT OCTOBER 8, 2008

DAY NO. 27





ATTACHMENT NO. 8

SPR SAWN 1-35-90-13 (W5M)

CASING PATCH WELLBORE SCHEMATIC

RAN AND SET NOVEMBER 7, 2006

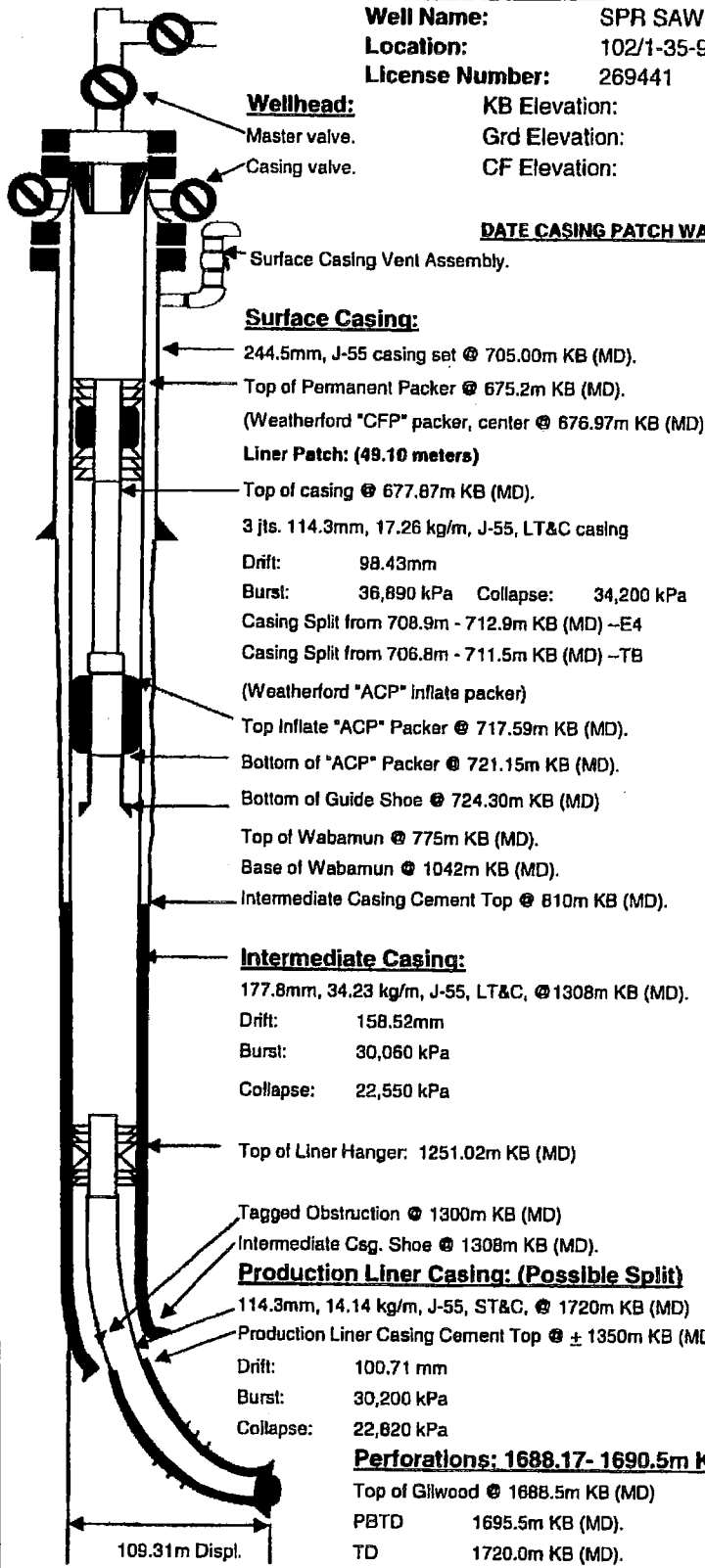


Casing Patch Wellbore Schematic

Well Name: SPR SAWN 1-35-90-13 (W5M)
Location: 102/1-35-90-13 W5/00
License Number: 269441

Wellhead: KB Elevation: 799.80m KB to CF: 4.3m
 Master valve: Grd Elevation: 795.50m KB to THF: 3.72m
 Casing valve: CF Elevation: 796.08m THF: 795.75m KB

DATE CASING PATCH WAS RUN: NOVEMBER 7, 2006.



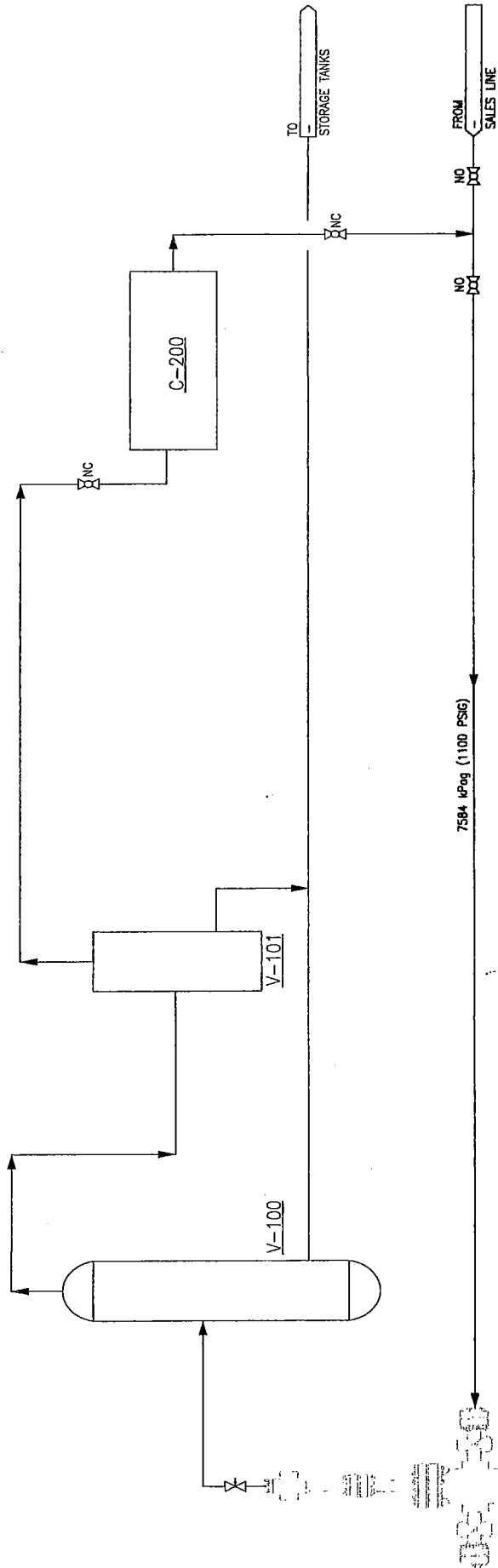
Operations Summary:	
1)	Located casing split: 708.9m to 712.9m KB (MD).
2)	Ran 159.8mm mill & 177.8mm casing scraper to 750.0m KB (MD).
3)	Ran Weatherford 114.3mm casing patch.
	a) Set top of patch @ 675.2m KB (MD).
	b) Set bottom of patch @ 724.3m KB (MD).
4)	Pressure test annulus to 7.0 Mpa; solid test.



ATTACHMENT NO. 9

**SCHEMATIC OF WELLSITE/WELLHEAD
CONNECTIONS DURING TWIN BUTTE
UNLOADING PROCEDURE (TBUP)**

V-100 SEPARATOR
 V-101 GAS PLANT
 C-200 COMPRESSOR
 NOT CONNECTED TO ANNULUS



01-35-080-13 WSM B/H

REV	DATE	DESCRIPTION	ENGR	DESIGNED	TEST	APPROVED	SCALE	PROJECT NUMBER	REVISION
B	SM 15/12/18	RE-ISSUED FOR REVIEW						MW 15/12/17	
A	MW 15/12/17	ISSUED FOR REVIEW							A

ROSVA
 Roskva DBO Inc.
 www.roskva.com
 Ph: (760) 532-8347

BISSETT RESOURCE CONSULTANTS LTD.
 WELLSITE SCHEMATIC OPTION "B"
 LSD 102/1-35-90-13 WSM



ATTACHMENT NO. 10

SPR SAWN 1-35-90-13 (W5M)

JOINT NEWS RELEASE

**TWIN BUTTE ENERGY LTD. ANNOUNCES CLOSING STRATEGIC
COMBINATION WITH E4 ENERGY INC.**



Twin Butte Energy Ltd.



E4 ENERGY INC.

JOINT NEWS RELEASE

**TWIN BUTTE ENERGY LTD. ANNOUNCES CLOSING OF STRATEGIC COMBINATION
WITH E4 ENERGY INC.**

CALGARY, ALBERTA, February 8, 2008 - Twin Butte Energy Ltd. ("**Twin Butte**" or the "**Company**") (TBE-TSX) and E4 Energy Inc. ("**E4**") (EFE-TSXV) are pleased to announce that the previously announced Plan of Arrangement (the "**Arrangement**") involving Twin Butte, E4 and the shareholders of E4 has been completed. The Arrangement was approved at the special meeting of shareholders of E4 and by the Court of Queen's Bench of Alberta on February 7, 2008. Holders of common shares of E4 voted 99.9% in favour of the Arrangement resolution. Twin Butte issued 15,663,027 common shares to the former shareholders of E4 on completion of the Arrangement. As a result of the Arrangement, Twin Butte also assumed bank debt of approximately \$19.2 million, including E4's transaction costs.

Twin Butte is also pleased to announce that Mr. Paul Starnino, the former President and Chief Executive Officer of E4, and Mr. Jim Brown, a former director of E4, joined the board of directors of Twin Butte upon completion of the Arrangement. In addition, Twin Butte is pleased to announce that Glenn Downey, the former Senior Vice President of E4, has joined Twin Butte as Vice President, Exploration.

The Arrangement complements Twin Butte's acquire, exploit and explore growth strategy and provides additional critical mass with regards to production, land and cash flow further establishing Twin Butte as a growth-oriented junior. In addition to a solid production base consisting of 45 percent oil, the acquisition brings approximately 86,000 net undeveloped acres of land, and a new core area in Ft. St. John, British Columbia. The B.C. assets contribute over 50 percent of the acquired E4 production which will be unaffected by recent royalty changes proposed in Alberta.

The geographical fit of the S.E. Alberta assets is enhanced by large oil in place reservoirs with 3D seismic coverage setting up future drilling opportunities. Identified well optimization and facility construction is underway which should provide short term production growth and additional drilling opportunities. The E4 land base in Alberta and B.C. brings an inventory of over 50 drilling opportunities and a recent new discovery brings significant growth upside.

It is anticipated that E4's common shares will be delisted from the TSX Venture Exchange at the close of business on Monday, February 11, 2008. In conjunction with the closing of the Arrangement, the directors and officers of E4 resigned and certain officers of Twin Butte were appointed as directors of E4. Following the Arrangement, E4 was amalgamated with Twin Butte.

For further information please contact:

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Suite 415, 311 – 6th Avenue S.W.
Calgary, Alberta T2P 3H2
Ron Cawston
President and Chief Executive Officer
Tel: (403) 215-2040

R. Alan Steele
Vice President, Finance and Chief Financial
Officer
Tel: (403) 215-2692

Website: www.twinbutteenergy.com

Reader Advisory

Certain information regarding Twin Butte set forth in this joint news release including management's assessment of the Company's future plans and operations, the effect of the Arrangement on the Company and on shareholders of Twin Butte, production increases and future production levels contain forward-looking statements that involve substantial known and unknown risks and uncertainties. These forward-looking statements are subject to numerous risks and uncertainties, certain of which are beyond Twin Butte's control including, without limitation, the impact of general economic conditions, industry conditions, volatility of commodity prices, currency fluctuations, imprecision of reserve estimates, environmental risks, competition from other producers, lack of availability of qualified personnel, stock market volatility, ability to access sufficient capital from internal and external sources and uncertainty related to the effect of the Arrangement. Twin Butte's actual results, performance or achievements may differ materially from those expressed in, or implied by, these forward-looking statements and, accordingly, no assurance can be given that any events anticipated by the forward-looking statements will transpire or occur, or if any of them do so, what benefits that Twin Butte will derive therefrom. Additional information on these and other factors that could affect Twin Butte's results are included in reports on file with Canadian securities regulatory authorities and may be accessed through the SEDAR website (www.sedar.com), or Twin Butte's website (www.twinbutteenergy.com). Furthermore, the forward-looking statements contained in this joint news release are made as at the date of this joint news release and Twin Butte does not undertake any obligation to update publicly or to revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by applicable securities laws.

The TSX Venture Exchange has not reviewed and does not accept responsibility for the adequacy or accuracy of this release.



ATTACHMENT NO. 11

EUB, INTERIM DIRECTIVE (ID) 2003- 01

DATED JANUARY 30, 2003

Interim Directive ID 2003-01

January 30, 2003

TO: All Oil and Gas Operators

- 1) ISOLATION PACKER TESTING, REPORTING, AND REPAIR REQUIREMENTS**
- 2) SURFACE CASING VENT FLOW/GAS MIGRATION TESTING, REPORTING, AND REPAIR REQUIREMENTS**
- 3) CASING FAILURE REPORTING AND REPAIR REQUIREMENTS**

The Alberta Energy and Utilities Board (EUB) has streamlined and consolidated the reporting processes for isolation packer test results, surface casing vent flows (SCVFs), gas migration (GM), and casing failure, as detailed in this interim directive (ID).

This ID replaces the following documents, which are rescinded:

- *Informational Letter (IL) 94-18: Isolation Packer Tests—Testing and Reporting Requirements*
- *ID 99-3: Surface Casing Vent Flow/Gas Migration (SCVF/GM) Testing and Repair Requirements*
- *IL 89-19: Casing Failure Reporting*

This ID provides details on the following changes:

- 1) Effective January 30, 2003, an electronic data capture system for Digital Data Submission (DDS) will be in place for licensees to submit isolation packer test data, surface casing vent flow/gas migration reports, and casing failure reports. The DDS applications system will be available on the EUB's Web site <www.eub.gov.ab.ca> beginning January 30, 2003. Licensees requiring access to DDS should call (403) 297-2626 or (403) 297-6630. While the EUB prefers that these types of reports be submitted electronically effective January 30, 2003, hard copy data submissions will be accepted until March 31, 2003.
- 2) Failure to meet the testing, reporting, and repair requirements in any category of this ID will result in escalating consequences of enforcement for noncompliance in that category in accordance with *Informational Letter (IL) 99-4: EUB Enforcement Process, Generic Enforcement Ladder, and Field Surveillance Enforcement Ladder*.
- 3) A licensee may request an extension of a deadline for meeting the requirements set out in this ID by submitting the request to the EUB Well Operations Section.

Note: References to *Informational Letter (IL) 99-4 EUB Enforcement Process, Generic Enforcement Ladder, and Field Surveillance Enforcement Ladder* on page 1 and in Section 1.5 Enforcement and 2.6 Enforcement have been replaced by *Directive 019 EUB Compliance Assurance – Enforcement* (Latest release: February 20, 2007)

- 4) A licensee has 20 days from the date of receiving an audit request to submit the required data. This was previously 10 days.
- 5) A licensee must complete isolation packer repair programs within 90 days of failure detection (test failure). This was previously 30 days.
- 6) A licensee must repair serious vent flows within 90 days of failure detection. Previously this deadline was one year.

Further information regarding the information in this ID can be obtained from the EUB Well Operations Section at (403) 297-5290.

1 ISOLATION PACKER TESTING, REPORTING, AND REPAIR REQUIREMENTS

1.1 Regulation

Section 6.120 of the Oil and Gas Conservation Regulations requires all injected fluids, other than potable water, to be isolated from the production casing above the production packer. Section 7.050 requires the production casing in a well producing sour gas with a concentration greater than 50 moles per kilomole to be similarly protected, unless the well is produced by artificial lift.

1.2 Testing and Repair Requirements

The EUB requires the licensee

- 1) to conduct packer isolation tests annually, and
- 2) to have the test results certified as conclusively proving hydraulic isolation by personnel qualified, through training and experience, to make such interpretations.

When packer isolation tests do not prove hydraulic isolation, the licensee must complete necessary remedial work and retest for packer isolation. The licensee must begin repair planning immediately and repair, retest, and report the repair results to the EUB within 90 days of failure detection. A licensee may submit to the EUB Well Operations Section a request for an extension to the repair deadline, if exceptional circumstances exist.

1.3 Reporting Requirements

Licensees must submit isolation packer test results using the DDS Packer Test Reporting application by September 1 of each year. The new DDS Packer Test Reporting application will now list all wells that the EUB believes require isolation packer tests performed on them. (Previously, licensees were not provided with an initial list of wells to test.) If a well that should be tested is not listed, licensees must perform the test as required by regulations and report the test results using the DDS system. If a well is listed that does not appear to require testing, the

licensee should contact the EUB Well Operations Section to request that the well be removed from the list.

Note that if as a result of packer testing, a casing failure is discovered, the casing failure must be reported separately.

1.4 Records Retention

The licensee must keep all packer isolation testing and repair information on file for the life of the well plus two years. The EUB will use an audit system to confirm licensees' compliance and to help measure the effectiveness of the packer test reporting process. Upon written notification that the well has been selected for audit, the licensee must submit the required information within 20 days.

1.5 Enforcement

In accordance with *IL 99-4*, the following enforcement ladder applies to noncompliance related to isolation packer testing.

Level of Enforcement	Example of Noncompliance
Minor Level 1	(1) Errors in reporting. (2) Failure to respond to written notification from the EUB in the time provided. (3) Failure to submit a response to an audit in the time provided.
Major Level 2	(1) Failure to complete and submit the necessary reporting of required packer testing by September 1 of each year. (2) Failure to perform repairs and to report repair results to the EUB within 90 days of failure detection. (3) Failure to retain the required records.
Major Level 3	(1) Initial major item combined with a demonstrated disregard for the regulations/requirements or fraudulent activities. (2) Failure to take action on a Major Level 2 item. (3) A second Major Level 2 item recorded within 12 months.

1.6 Recommended Test Procedures

The EUB has developed recommended test procedures to provide guidance for evaluation of the test results. Licensees should design a test procedure that best suits their specific well situation and will provide an accurate evaluation of the hydraulic isolation of the tubing/casing annulus. In all cases, the person who will certify the test results should review the test procedure prior to conducting the test to ensure that the test method is adequate to prove hydraulic isolation. Variations to the recommended test procedure should be clearly identified and retained on file with the test results.

In general, the EUB will accept, as a maximum, a 3 per cent pressure decline over a 10-minute interval as a successful packer isolation test. However, factors such as annular fluid capacity and

the mode of operation should be considered when designing the test and evaluating the test data. Prior to beginning the test, the following information should be measured and recorded:

- tubing pressure
- casing pressure
- annular fill/bleed-off volume

The EUB-recommended test procedures are set out below.

CASE 1—Casing pressure greater than 1400 kilopascals (kPa) prior to bleed down

- Bleed down the casing pressure to 0 kPa.
- Record the shut-in pressure after 24 hours and evaluate any pressure increase. If the pressure increase is less than 42 kPa (3 per cent of 1400 kPa), the test is considered satisfactory.

CASE 2—Casing pressure less than 1400 kPa prior to bleed down

- Bleed down the casing pressure to 0 kPa.
- Pressure test the casing annulus to 1400 kPa and allow pressure to stabilize.
- After the well has stabilized, record the pressure over a 10-minute test interval.
- Bleed off the test pressure to 0 kPa and record the shut-in pressure after 24 hours.
- In the casing annulus pressure test, if the pressure change is less than 3 per cent of the test pressure over the 10-minute test interval and if the pressure increase after the 24-hour shut-in period is less than 42 kPa, the test is considered satisfactory.

CASE 3—No initial casing pressure

- Pressure test the casing annulus to 1400 kPa and allow pressure to stabilize.
- After the well has stabilized, record the pressure over a 10-minute test interval. If the pressure change is less than 3 per cent of the test pressure, the test is considered satisfactory.
- Bleed off the casing pressure.

2 SURFACE CASING VENT FLOW (SCVF)/GAS MIGRATION (GM) TESTING, REPORTING, AND REPAIR REQUIREMENTS

2.1 Regulation

Section 6.100 of the Oil and Gas Conservation Regulations specifies that the annulus between the second casing string and the surface casing of a well completed to produce oil or gas or to inject any fluid must be left open to atmosphere and describes the equipment and minimum working pressure required. The licensee must test the surface casing for a vent flow or gas migration in the manner set out below. If a surface casing vent flow or gas migration problem is detected, the licensee must report and repair it as set out below.

2.2 Definitions

Surface Casing Vent Flow (SCVF) is the flow of gas and/or liquid or any combination out of the surface casing/casing annulus (often referred to as internal migration).

A SCVF is **serious** if there is a

- 1) vent flow where any usable water zone is not covered by cemented surface casing and/or by the cement of the next casing string (Oil and Gas Conservation Regulations, Section 6.080, subsection 4) (see note below.); or
- 2) vent flow with a stabilized gas flow equal to or greater than 300 cubic metres per day (m^3/d) and/or equal to a surface casing vent stabilized shut-in pressure greater than
 - a) one-half the formation leak-off pressure at the surface casing shoe, or
 - b) 11 kPa/m times the surface casing setting depth;
(The criterion of 11 kPa/m, or half the known formation leak-off pressure, was chosen to avoid exceeding the fracture gradient. The surface shut-in pressure may vary with formation leak-off pressure, density of the fluid in the annulus, depth to fluid, lost circulation zones, or other well conditions that would limit the allowable shut-in pressure); or
- 3) vent flow with hydrogen sulphide (H_2S) present; or
- 4) hydrocarbon liquid (oil) vent flow; or
- 5) nonusable water vent flow (any water with total dissolved solids greater than 4000 milligrams per litre [mg/l]);
- 6) usable water (as defined by Alberta Environment) vent flow where the surface shut-in pressure is as in (2)(a) or (b); or
- 7) vent flow due to wellhead seal failure or casing failure; or
- 8) vent flow that constitutes a fire, public safety, or environmental hazard.

Note that a SCVF where any usable water zone is not covered by cement may be considered **nonserious** if

- 1) the vent flow with a stabilized gas flow is less than $300 \text{ m}^3/\text{d}$; and
- 2) the surface casing vent stabilized shut-in pressure does not exceed 9.8 kPa/m times the surface casing setting depth; and
- 3) the vent flow is only gas (no hydrocarbon or water); and
- 4) there are no producing domestic or agricultural water wells from the unprotected aquifers within a 1 km radius; and
- 5) the vent flow is not deemed serious in any other category.

If a producing domestic or agricultural water well from an unprotected aquifer is subsequently established within the 1 km radius, the licensee of a well that has previously been considered to have a nonserious SCVF must complete the reporting and repair requirements outlined in Sections 2.3 and 2.4 of this interim directive.

An SCVF is **nonserious** if it has not been classified as a serious vent flow.

Gas Migration (GM) is a flow of gas that is detectable at surface outside of the outermost casing string (often referred to as external migration or seepage). A GM is **serious** if there is a fire or public safety hazard or off-lease environmental damage, such as groundwater contamination. A GM is **nonserious** if it has not been classified as serious migration.

2.3 Testing and Reporting Requirements

2.3.1 Testing for SCVF

Within 90 days of drilling rig release, licensees must test new wells for a vent flow. Within 30 days of initial detection of an SCVF problem at a well, the EUB must be notified via the DDS SCVF/GM system. After reporting a nonserious SCVF, the licensee must perform an SCVF test on the well on an annual basis for the next five years, measuring the flow and stabilized pressure buildup to detect possible change. Annual test results do not need to be reported. If there is no change in the flow and pressure after five years of testing, or if the vent flow dies out, no further testing is required. However, if a nonserious vent flow becomes serious, the licensee must notify the EUB by DDS within 30 days of the test. Licensees must check all wells for a vent flow prior to abandonment.

2.3.2 Testing for GM

Within 90 days of drilling rig release, licensees must test new wells for GM problems in Townships 45-52, Ranges 1-9, West of the 4th Meridian, and Townships 53-62, Ranges 4-17, West of the 4th Meridian. If a GM problem is detected, the licensee must notify the EUB by DDS within 30 days. While GM testing will only be enforced in the problem regions specified, the EUB recommends that industry check all wells for GM at the time of abandonment.

If as a result of testing for vent flow or gas migration, a casing failure is discovered, the casing failure must be reported separately.

If a flow is detected after completing the initial test, the licensee must report the incident using the DDS SCVF/GM application. EUB *Guide 20: Well Abandonment Guide* outlines SCVF/GM testing procedures.

2.4 Repair Requirements

The licensee of a well determined to have a **serious** SCVF/GM problem as defined above must repair the problem as soon as possible and not later than 90 days from discovery. If the licensee plans to request a deferral of repair as outlined in Section 2.4.3, the request must be received by the EUB Well Operations Section within 90 days from the failure date.

Nonserious SCVF/GM problems must be addressed at the time of well abandonment. Should a nonserious SCVF/GM problem escalate to the serious category, the licensee must conduct repairs within 90 days of determining the change in category. A licensee may submit to the EUB

Well Operations Section a request for an extension to the repair deadline, if exceptional circumstances exist. Once an SCVF or GM repair has been attempted, regardless of the repair result, the licensee must notify the EUB Well Operations Section.

2.4.1 Option 1—Routine Repair Program (EUB approval not required)

The EUB does not require industry to submit proposed repair programs for routine SCVF/GM repairs, provided that all of the following conditions are incorporated and followed in the repair program:

- The source depth or formation of origin is clearly identified.
- A method acceptable to the EUB is used to determine the source (e.g., gas analysis, noise/temperature surveys, logs).
- The SCVF/GM problem is stopped or eliminated by perforating and cementing the casing(s) at or below the source. **Note that pumping of any type of fluid down the surface casing annulus is NOT an approved repair option.**
- The cement and additives used in the repair program meet EUB minimum cement requirements (see *Guide 9: Casing Cementing Minimum Requirements* and *Guide 20: Well Abandonment Guide*).
- The casing is pressure tested to the maximum operating pressure for 10 minutes with no pressure drop recorded.

2.4.2 Option 2—Nonroutine Repair Program (EUB approval required)

If the licensee designs a repair program that deviates from the criteria outlined in Option 1 or if the initial attempt was unsuccessful in eliminating the flow, a repair program must be submitted to the EUB Well Operations Section for approval prior to implementation. The program must include all of the following:

- method used to identify source of the SCV/GM flow,
- all relevant logs,
- casing and cementing details,
- base of groundwater protection depth,
- complete details of the proposed repair program,
- proposed perforating depth if greater than 10 m above the identified source, and
- summary of initial operations to repair the flow.

2.4.3 Option 3—Deferral of Repair (EUB approval required)

There are two ways to defer repair of a serious vent flow: produce the vent flow and/or cap the well with pressure remaining on the annulus. Approval to defer repairs on serious vent flows must be received before work begins.

a) SCVF Production

The licensee must submit an application to the EUB Well Operations Section to produce any serious vent flow. An application is not required to produce a nonserious vent flow.

The application must show the following in detail:

- The source depth or formation of origin has been clearly identified.
- The licensee owns the mineral rights to produce the source formation.
- The cemented portion of the surface casing or the next casing string covers the deepest known groundwater.
- The flow has been analyzed and determined to be sweet (0 per cent H₂S).
- A pressure relief device will be installed to ensure that excessive pressure is not exerted below the casing shoe when the system is shut in.
- A check valve will be installed downstream of the pressure relief device to prevent backflow.
- The vent flow will be continuously measured and reported on the monthly production reports.
- The vent flow will be tied in and placed on production within 60 days of receiving approval.
- The licensee confirms in writing to the EUB Well Operations Section the date the vent flow is tied in.

The EUB will rescind the approval to produce if the licensee fails to comply with any of the above conditions and will require that the SCVF be repaired immediately.

b) Capping with Pressure

The objective of any abandonment is to cap the well without pressure remaining on the casing annulus. The EUB will consider an application to cap a well with pressure only after the licensee has made serious attempts to completely eliminate any vent flow. The EUB Well Operations Section will review all applications to ensure that the licensee has considered every option to eliminate the problem. An application to cap a well with pressure must meet the requirements listed in *Guide 20: Well Abandonment Guide*.

2.5 Records Retention

The licensee must keep all SCVF/GM testing and repair information on file for the life of the well plus two years. The EUB will use an audit system to confirm licensees' compliance and to help measure the effectiveness of the SCVF/GM regulatory process. Upon written notification that the well has been selected for audit, the licensee must submit the required information within 20 days.

2.6 Enforcement

In accordance with *IL 99-4*, the following enforcement ladder applies to noncompliance related to SCVF/GM.

Level of Enforcement	Example of Noncompliance
Minor Level 1	(1) Errors in reporting. (2) Failure to respond to written notification from the EUB in the time provided. (3) Failure to submit a response to an audit in the time provided.
Major Level 2	(1) Failure to perform SCVF/GM tests as required. (2) Failure to report a known SCVF/GM. (3) Producing a vent flow that does not meet the SCVF production requirements. (4) Failure to retain the required records. (5) Failure to repair a serious SCVF/GM.
Major Level 3	(1) Initial major item combined with a demonstrated disregard for the regulations/requirements or fraudulent activities. (2) Failure to take action on a Major Level 2 item. (3) A second Major Level 2 item recorded within 12 months. (4) Failure to eliminate cross-flow of hydrocarbon or freshwater zones.

3 CASING FAILURE REPORTING AND REPAIR REQUIREMENTS

3.1 Regulation

The Oil and Gas Conservation Regulations, Section 12.141, requires that the licensee of a well notify the EUB immediately on detection of a casing leak or failure and, if requested by a representative of the EUB, provide a report assessing the leak or failure, including a discussion of the cause, duration, damages, proposed remedial program, and measures to prevent future failures.

3.2 Definition

A casing leak or failure is any loss of casing integrity, including casing damage that results in suspension of operations or in abandonment of the well.

3.3 Reporting and Repair Requirements

The licensee of the well must report a casing failure incident within 30 days of initial detection using the DDS Casing Failure application. The licensee must begin repair planning immediately and perform remedial action within 90 days of the reporting date. A licensee may submit to the EUB Well Operations Section a request for an extension to the repair deadline, if exceptional circumstances exist. Once a casing failure repair has been attempted, regardless of the repair result, the licensee must notify the EUB Well Operations Section.

3.4 Records Retention

The licensee must keep all casing failure testing and repair information on file for the life of the well plus two years. The EUB will use an audit system to confirm licensees' compliance and to help measure the effectiveness of the casing failure regulatory process. Upon written notification that the well has been selected for audit, the licensee must submit the required information within 20 days.

3.5 Enforcement

In accordance with *IL 99-4*, the following enforcement ladder applies to noncompliance related to casing failures.

Level of Enforcement	Example of Noncompliance
Minor Level 1	(1) Errors in reporting. (2) Failure to respond to written notification from EUB in the time provided. (3) Failure to submit a response to an audit in the time provided.
Major Level 2	(1) Failure to report a known casing failure. (2) Failure to retain the required records. (3) Failure to repair a casing failure.
Major Level 3	(1) Initial major item combined with a demonstrated disregard for the regulations/requirements or fraudulent activities. (2) Failure to take action on a Major Level 2 item. (3) A second Major Level 2 item recorded within 12 months.

[Original signed by]

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



ATTACHMENT NO. 12

SPR SAWN 1-35-90-13 (W5M)

PRODUCTION PLOTS

- A) PRODUCTION RATE (mmscf/d) VS TIME**
- B) PRODUCTION RATE (mmscf/d) VS CUMULATIVE GAS PRODUCTION (mmsef)**



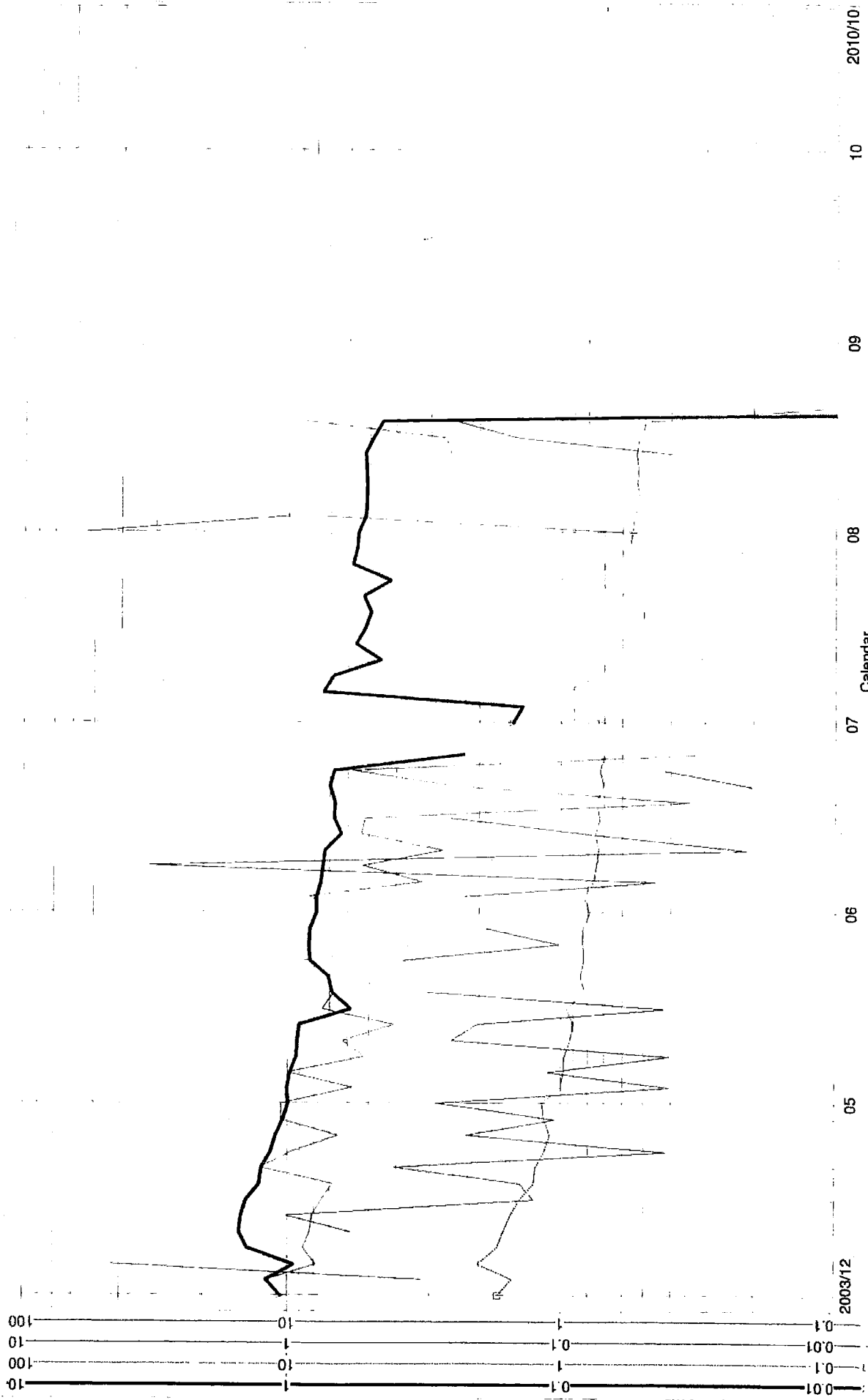
— Production Gas Calendar
 — Production Gas Daily
 — Production Water Calendar
 — Production Condensate Daily

mmscf/d
 mmscf/d
 bbl/d
 bbl/d

Production Plot - 2015/12/14
 02/01-35-090-13W5/0
 SAWN LAKE
 GILWOOD A

Production Oil Cumulative:
 Production Gas Cumulative:
 Production Water Cumulative:
 Injection Other Cumulative:
 Injection Gas Cumulative:
 Injection Water Cumulative:

0 (bbl)
 1285 (mmscf)
 1102 (bbl)
 0 (mmscf)
 0 (mmscf)
 0 (bbl)



2003/12
 05
 06
 07
 08
 09
 10
 2010/10
 Calendar



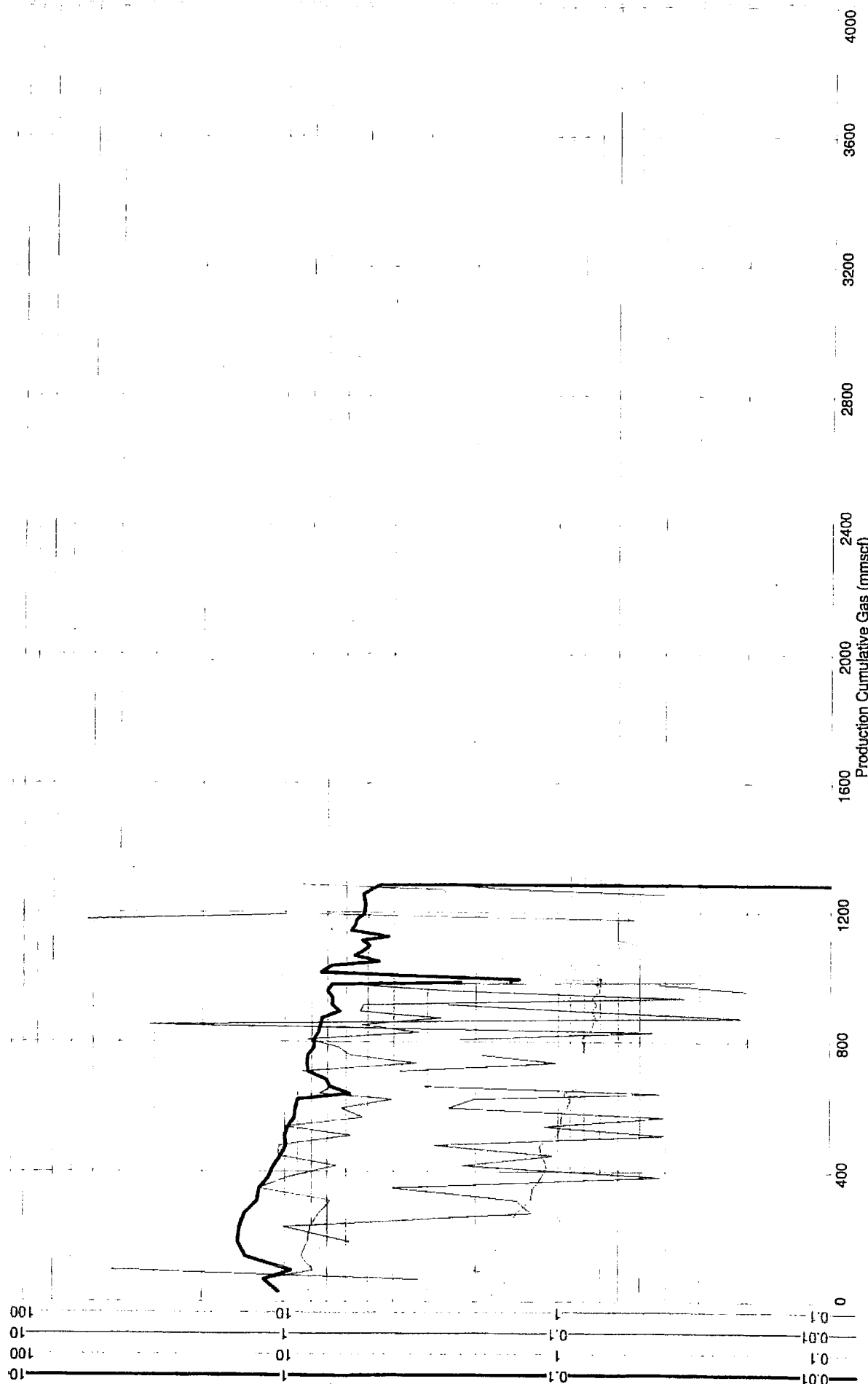
— Production Gas Calendar
 — Production Gas Daily
 — Production Water Calendar
 — Production Condensate Daily

mmscf/d
 mmscf/d
 bb/d
 bb/d

Production Plot - 2015/12/14
 02/01-35-090-13W5/0
 SAWN LAKE
 GILWOOD A

Production Oil Cumulative:
 Production Gas Cumulative:
 Production Water Cumulative:
 Injection Other Cumulative:
 Injection Gas Cumulative:
 Injection Water Cumulative:

0 (bbl)
 1285 (mmscf)
 1102 (bbl)
 0 (mmscf)
 0 (mmscf)
 0 (bbl)



1600 2000 2400 2800 3200 3600 4000
 Production Cumulative Gas (mmscf)

TAB 4

**SUTTON ENERGY LTD.
AND
GEOCAP ENERGY CORPORATION
RESERVES ASSESSMENT AND
EVALUATION OF THE
SAWN LAKE WELL**

Effective August 01, 2008

1171310

SAWN LAKE WELL EVALUATION**TABLE OF CONTENTS**

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May 30, 2017

Project 1171310

Sutton Energy Ltd.
GeoCap Energy Corporation
c/o 300, 520 – 3rd Avenue S.W.
Calgary, Alberta T2P 0R3

Dear Sirs:

Re: Sutton Energy Ltd.
GeoCap Energy Corporation
Sawn Lake Well Evaluation
Effective August 1, 2008

GLJ Petroleum Consultants (GLJ) has completed an independent reserves assessment and evaluation of Sutton Energy Ltd. (“Sutton”) and GeoCap Energy Corporation (“GeoCap”) interests in the Sawn Lake Well (02/01-35-090-13W5/0). The effective date of this evaluation is August 1, 2008.

The Sawn Lake well commenced production in late 2003, and produced until July 2008, when the well was shut-in for mechanical reasons. Sutton and GeoCap requested that GLJ evaluate the well as of the shut-in date. The evaluation was conducted in two parts, the “Historical” evaluation, effective August 1, 2008 and ending at May 31, 2017, and the “Forecast” evaluation effective June 1, 2017 for the remainder of the forecast productivity of the well. The evaluation was prepared using available data until May 31, 2008, and the well was forecast as continuing to produce from that time. Well interest and burden information was provided by Sutton and GeoCap. Operating costs were estimated based on 2007 and 2008 lease operating statements provided by Sutton and GeoCap. Product prices were prepared based on historical actual reference and par pricing from August 1, 2008 until May 31, 2017, then utilize the GLJ (2017-04) Price Forecast thereafter.

The evaluation was conducted in accordance with standard industry practice and reserves definitions, procedures and guidance contained in the Canadian Oil and Gas Evaluation Handbook (COGE Handbook). The potential value associated with lands to which no reserves have been attributed has not been addressed in this report.

In the course of the evaluation, Sutton and GeoCap provided GLJ personnel with basic information which included well information, estimates of on-stream dates, contract information, current hydrocarbon product prices, operating cost data, capital budget forecasts, financial data and future operating plans. Other engineering, geological or economic data required to conduct the evaluation, and upon which this report is based, were obtained from public records, other operators and from GLJ nonconfidential files. Estimates of reserves and projections of production were generally prepared using well information and production data available from public sources to approximately May 31, 2008. Sutton and GeoCap provided accounting data and other

technical information not available in the public domain to approximately May 31, 2008. Sutton and GeoCap have confirmed that, to the best of their knowledge, all information provided to GLJ is correct and complete as of the effective date.

The evaluation was conducted on the basis of historical actual reference point prices from August 1, 2008 until May 31, 2017, then the GLJ (2017-04) Price Forecast thereafter, which is summarized in the Product Price and Market Forecasts section of this report.

It is trusted that this evaluation meets your current requirements. Should you have any questions regarding this analysis, please contact the undersigned.

Yours very truly,

GLJ PETROLEUM CONSULTANTS LTD.



Bryan M. Joa, P. Eng.
Vice President

INDEPENDENT PETROLEUM CONSULTANTS' CONSENT

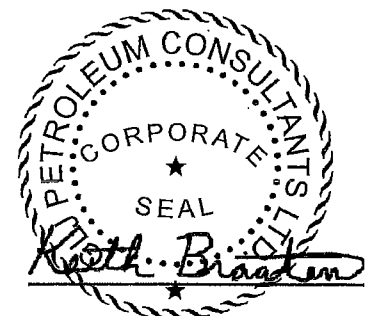
The undersigned firm of Independent Petroleum Consultants of Calgary, Alberta, Canada has prepared an independent evaluation of **Sutton Energy Ltd. (Sutton)** and **GeoCap Energy Corporation (GeoCap)**, collectively called the Companies, interests in the Sawn Lake well 02/01-35-090-13W5/0, and hereby gives consent to the use of its name and to the said estimates. The effective date of the evaluation is **August 1, 2008**.

In the course of the evaluation, the Companies provided GLJ Petroleum Consultants Ltd. personnel with basic information which included land data, well information, geological information, reservoir studies, estimates of on-stream dates, contract information, current hydrocarbon product prices, operating cost data, capital budget forecasts, financial data and future operating plans. Other engineering, geological or economic data required to conduct the evaluation and upon which this report is based, were obtained from public records, other operators and from GLJ Petroleum Consultants Ltd. nonconfidential files. The Companies have provided a representation letter confirming that all information provided to GLJ Petroleum Consultants Ltd. is correct and complete to the best of its knowledge. Procedures recommended in the Canadian Oil and Gas Evaluation (COGE) Handbook to verify certain interests and financial information were applied in this evaluation. In applying these procedures and tests, nothing came to GLJ Petroleum Consultants Ltd.'s attention that would suggest that information provided by the Company was not complete and accurate. GLJ Petroleum Consultants Ltd. reserves the right to review all calculations referred to or included in this report and to revise the estimates in light of erroneous data supplied or information existing but not made available which becomes known subsequent to the preparation of this report.

The accuracy of any reserves and production estimate is a function of the quality and quantity of available data and of engineering interpretation and judgment. While reserves and production estimates presented herein are considered reasonable, the estimates should be accepted with the understanding that reservoir performance subsequent to the date of the estimate may justify revision, either upward or downward.

Revenue projections presented in this report are based in part on forecasts of market prices, currency exchange rates, inflation, market demand and government policy which are subject to many uncertainties and may, in future, differ materially from the forecasts utilized herein. Present values of revenues documented in this report do not necessarily represent the fair market value of the reserves evaluated herein.

<p>PERMIT TO PRACTICE GLJ PETROLEUM CONSULTANTS LTD.</p>
<p><i>Myron Hladky</i></p>
<p>Signature: _____</p>
<p>Date: _____ May 30, 2017 _____</p>
<p>PERMIT NUMBER: P 2066 The Association of Professional Engineers and Geoscientists of Alberta</p>



SUTTON ENERGY LTD. & GEOCAP ENERGY CORPORATION
SAWN LAKE (HISTORICAL)

Effective August 01, 2008

Prepared by
Dragan Ridic, P. Eng., C.F.A.

The analysis of this property as reported herein was conducted within the context of an evaluation of a distinct group of properties in aggregate. Extraction and use of this analysis outside this context may not be appropriate without supplementary due diligence.

SAWN LAKE (HISTORICAL)**TABLE OF CONTENTS**

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ECONOMIC FORECASTS	
Proved Producing	19
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Company: Sutton Energy Ltd. & GeoCap Energy Corporation
 Property: Sawn Lake (Historical)
 Description: Sawn Lake

Reserve Class: Various
 Development Class: Classifications
 Pricing: 2008-08 Historical Pricing (2017-04 Forecast)
 Effective Date: August 01, 2008

Summary of Reserves and Values

	Proved Producing	Proved Developed Non-Producing	Proved Undeveloped	Total Proved	Proved Plus Probable Producing	Proved Plus Probable Developed Non-Producing	Proved Plus Probable Undeveloped	Total Proved Plus Probable
MARKETABLE RESERVES								
Residue Gas (MMcf)								
Gross Lease	862	0	0	862	943	0	0	943
Total Company Interest	431	0	0	431	471	0	0	471
Net After Royalty	299	0	0	299	323	0	0	323
Natural Gas Liquids (Mbbbl)								
Gross Lease	6.0	0.0	0.0	6.0	6.6	0.0	0.0	6.6
Total Company Interest	3.0	0.0	0.0	3.0	3.3	0.0	0.0	3.3
Net After Royalty	1.4	0.0	0.0	1.4	1.6	0.0	0.0	1.6
Oil Equivalent (Mboe)								
Gross Lease	150	0	0	150	164	0	0	164
Total Company Interest	75	0	0	75	82	0	0	82
Net After Royalty	51	0	0	51	55	0	0	55
BEFORE TAX PRESENT VALUE (M\$)								
0%	1,092	0	0	1,092	1,190	0	0	1,190
5%	947	0	0	947	1,024	0	0	1,024
8%	877	0	0	877	944	0	0	944
10%	836	0	0	836	898	0	0	898
12%	799	0	0	799	856	0	0	856
15%	749	0	0	749	800	0	0	800
20%	680	0	0	680	722	0	0	722
FIRST 6 YEARS BEFORE TAX CASH FLOW (M\$)								
2008 (5 Months)	140	0	0	140	141	0	0	141
2009	218	0	0	218	223	0	0	223
2010	178	0	0	178	186	0	0	186
2011	147	0	0	147	158	0	0	158
2012	83	0	0	83	93	0	0	93
2013	100	0	0	100	114	0	0	114

BOE Factors: HVY OIL 1.0 RES GAS 6.0 ETHANE 1.0
 COND 1.0 SLN GAS 6.0 BUTANE 1.0 SULPHUR 0.0

Run Date: May 29, 2017 08:28:01

1171310 Class (A,B1,B2,C,G,H1,H2,L), 2008-08 Historical Pricing (2017-04 Forecast), psum

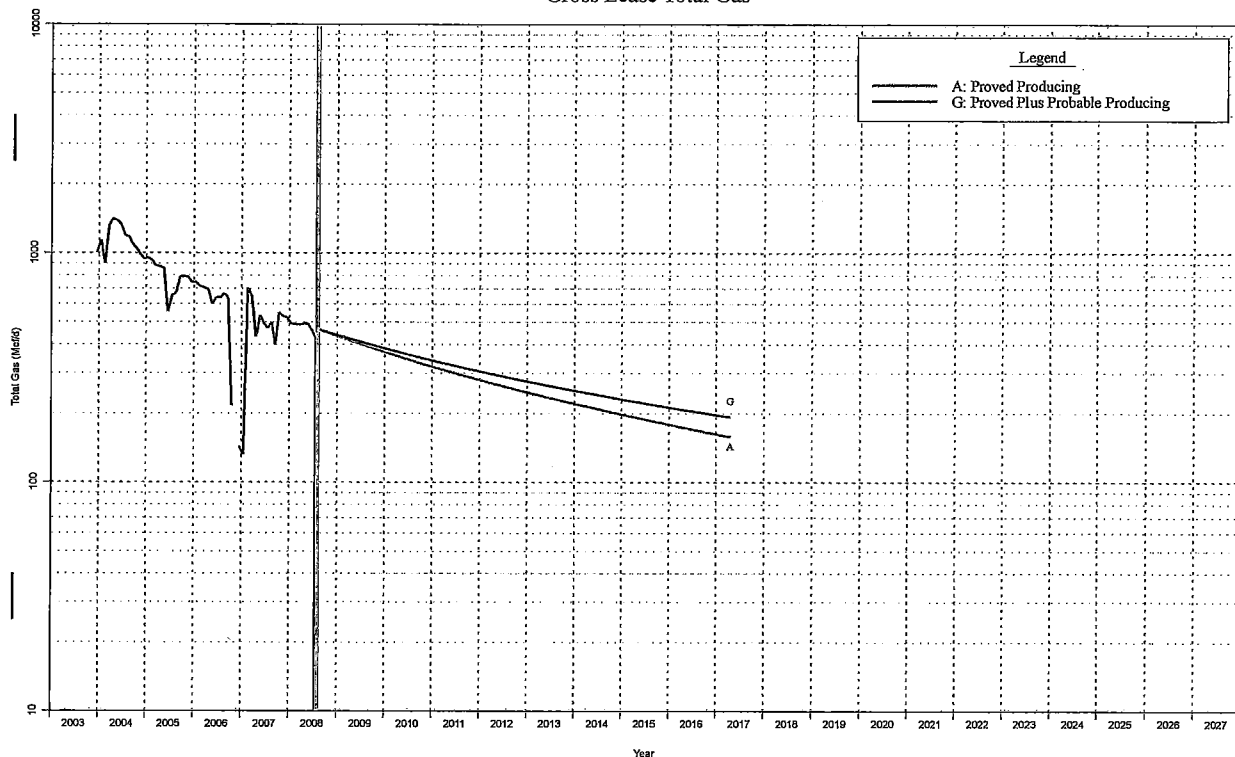
Historical and Forecast Production

Company:
Property:
Description:

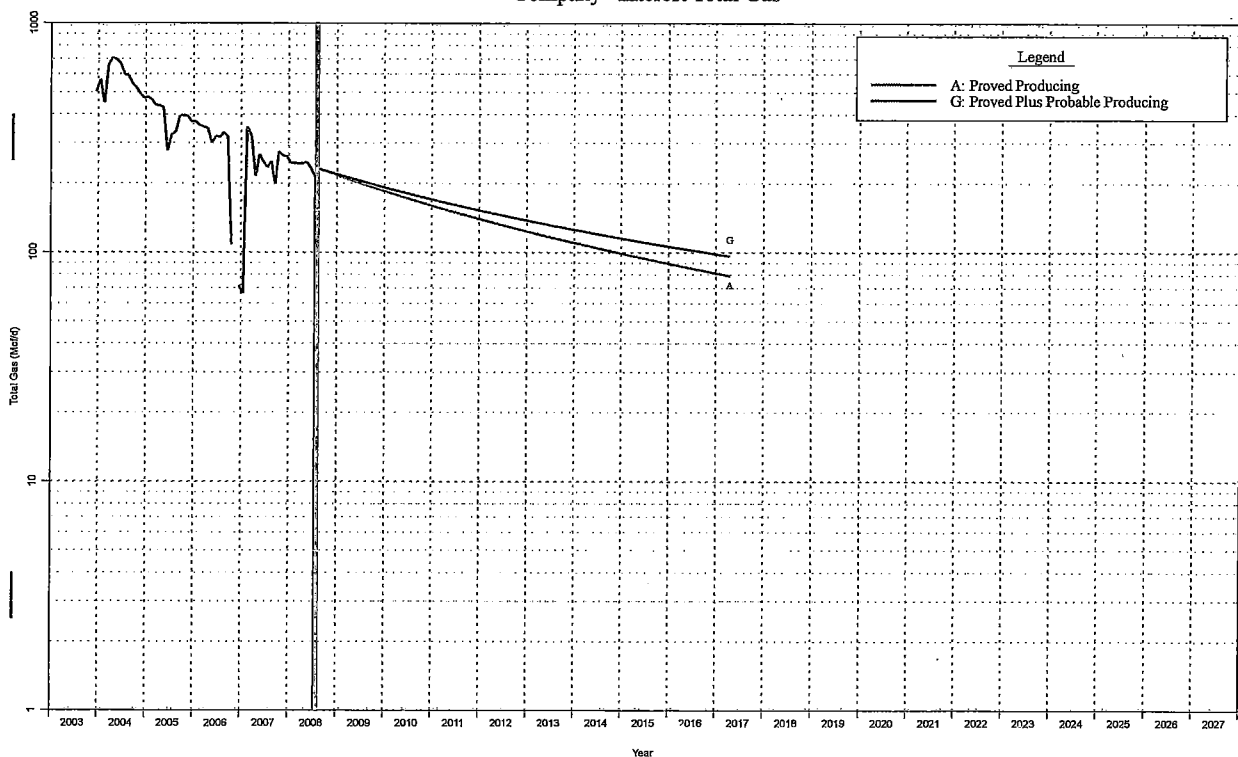
Sutton Energy Ltd. & GeoCap Energy Corpora... Pricing:
Sawn Lake (Historical) Effective Date:
Sawn Lake

2008-08 Historical Pricing (2017-04 Forecast)
August 01, 2008

Gross Lease Total Gas



Company* Interest Total Gas



*Note: Historical company interest production is based on current interests in the evaluated reserves entities applied to reported actual gross lease production. Consequently, company actuals may differ from the history shown due to changes in ownership.

Company Interest Total Gas
1171310 / May 30, 2017

Sutton Energy Ltd. & GeoCap Energy Corporation
Sawn Lake (Historical)

Company:
Property:

Reserve Class:
Development Class:
Pricing:
Effective Date:

Various
Classifications
2008-08 Historical Pricing (2017-04 Forecast)
August 01, 2008

Daily Production, Reserves and Present Value Summary

Entity Description	Zone	2008 Gross Lease Production						2008 Company Interest Production						Gross Lease Reserves						Company Interest Reserves						Before Tax 10% Dcf Present Value M\$
		Reserve Class	Gas Mcf/d	Oil bbl/d	NGL bbl/d	Oil Eq. boe/d	Gas Mcf/d	Oil bbl/d	NGL bbl/d	Oil Eq. boe/d	Gas Mcf/d	Oil Mbbbl	NGL Mbbbl	Sulphur Mit	Oil Eq. Mboe	Gas MMcf	Oil Mbbbl	NGL Mbbbl	Sulphur Mit	Oil Eq. Mboe	Gas MMcf	Oil Mbbbl	NGL Mbbbl	Sulphur Mit	Oil Eq. Mboe	
<i>Proved Producing</i> 02/01-35-090-13W5/0	GILWOOD A	A	452	0	3	78	226	0	2	39	862	0	6	0	150	431	0	3	0	75	836					
Total: Proved Producing			452	0	3	78	226	0	2	39	862	0	6	0	150	431	0	3	0	75	836					
<i>Proved Plus Probable Producing</i> 02/01-35-090-13W5/0	GILWOOD A	G	454	0	3	79	227	0	2	39	943	0	7	0	164	471	0	3	0	82	898					
Total: Proved Plus Probable Producing			454	0	3	79	227	0	2	39	943	0	7	0	164	471	0	3	0	82	898					

BOE Factors: HVY OIL 1.0 RES GAS 6.0 ETHANE 1.0
COND 1.0 SLN GAS 6.0 BUTANE 1.0 SULFUR 0.0

Class (A,G), 2008-08 Historical Pricing (2017-04 Forecast), ppv

1171310

May 30, 2017 16:43:44



Company: Sutton Energy Ltd. & GeoCap Energy Corporation
 Property: Sawn Lake (Historical)

Reserve Class: Proved Plus Probable
 Development Class: Producing
 Pricing: 2008-08 Historical Pricing (2017-04 Forecast)
 Effective Date: August 01, 2008

Summary of Well Interests and Burdens

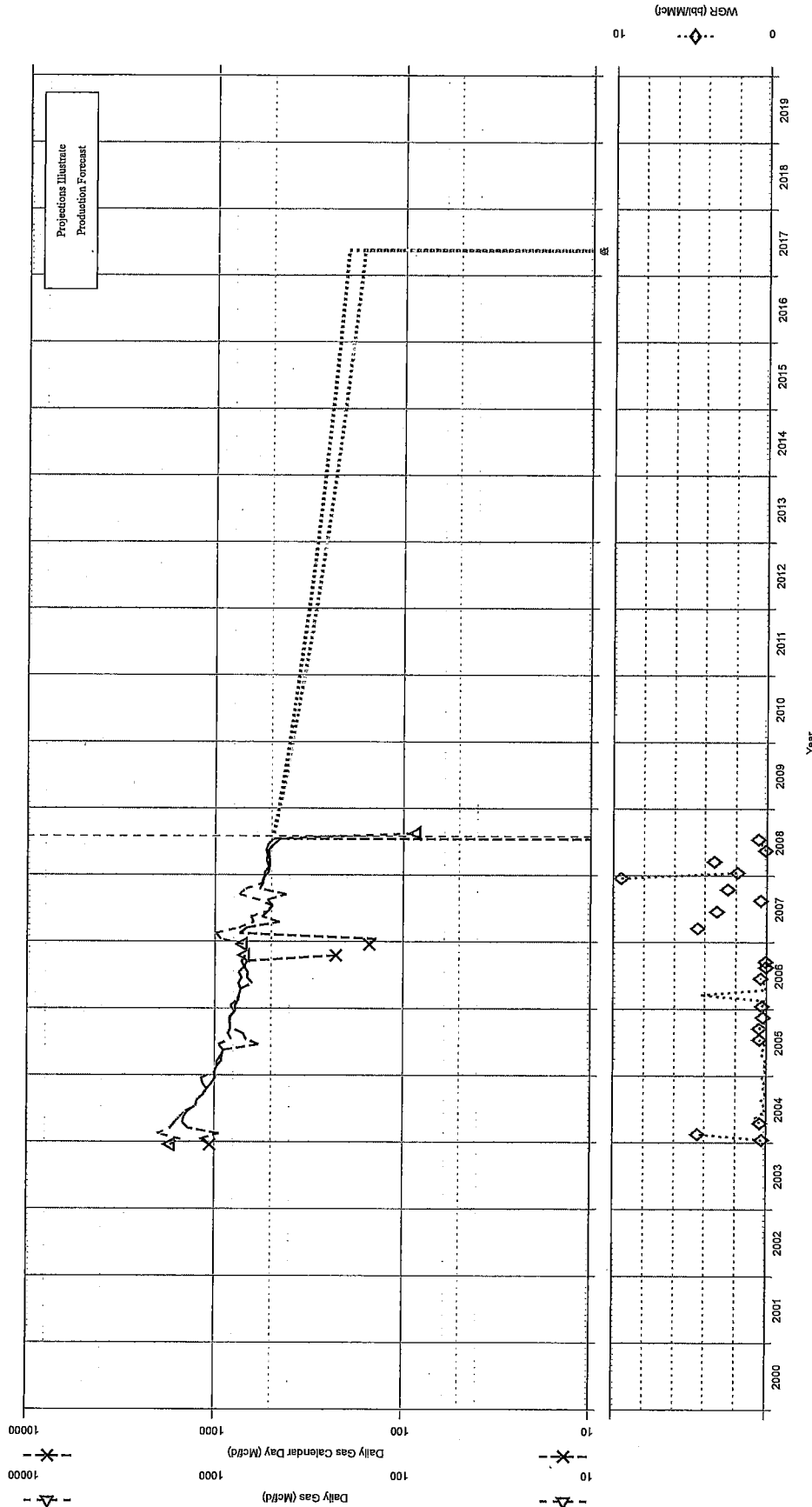
Entity Description	Well Type	Working Interest			Royalty Interest			Other Royalty Burdens			
		BPO %	APO %	Rem PO (000's)	BPO %	APO %	Rem PO (000's)	Type	BPO %	APO %	Rem PO (000's)
Sawn Lake 02/01-35-090-13W5/0	GAS	50.000	-	-	-	-	-	GOR	15.000	-	-

Lessor Royalty: AB CR AARF/MRF GAS

Glossary
 AARF/MRF: Adjusted Alberta Royalty Framework extends till January 2027, then transitioning to the Modernized Royalty Framework
 AB: Alberta
 APO=BPO interests unless otherwise specified
 CR: Crown Royalty
 GOR: Gross Overriding Royalty

Historical and Forecast Production Sawn Lake (Historical) - Total Property

Property : Sawn Lake (Historical)
Well Name : SPR SAWN 1-35-90-13
Regulatory Field : Sawn Lake
Regulatory Pool : Gilwood A
Operator : Twin Butte Energy Ltd.



Total Reserves Summary At 2008/08/01

Reserves Classification	Raw Gas (MMcf)	
	Ultimate	Remaining
Pv Prd A(R)	2192	1285
P + P Prd G(R)	2277	1285

Average Production Rates

Gas :	0.0 Mcf/d	WGR :	0.0 bb/MMcf
Oil :	0.0 bbl/d	GOR :	0.0 scf/stb
On Prod :	0.0 days	WC :	0.0 %

Cumulative Production

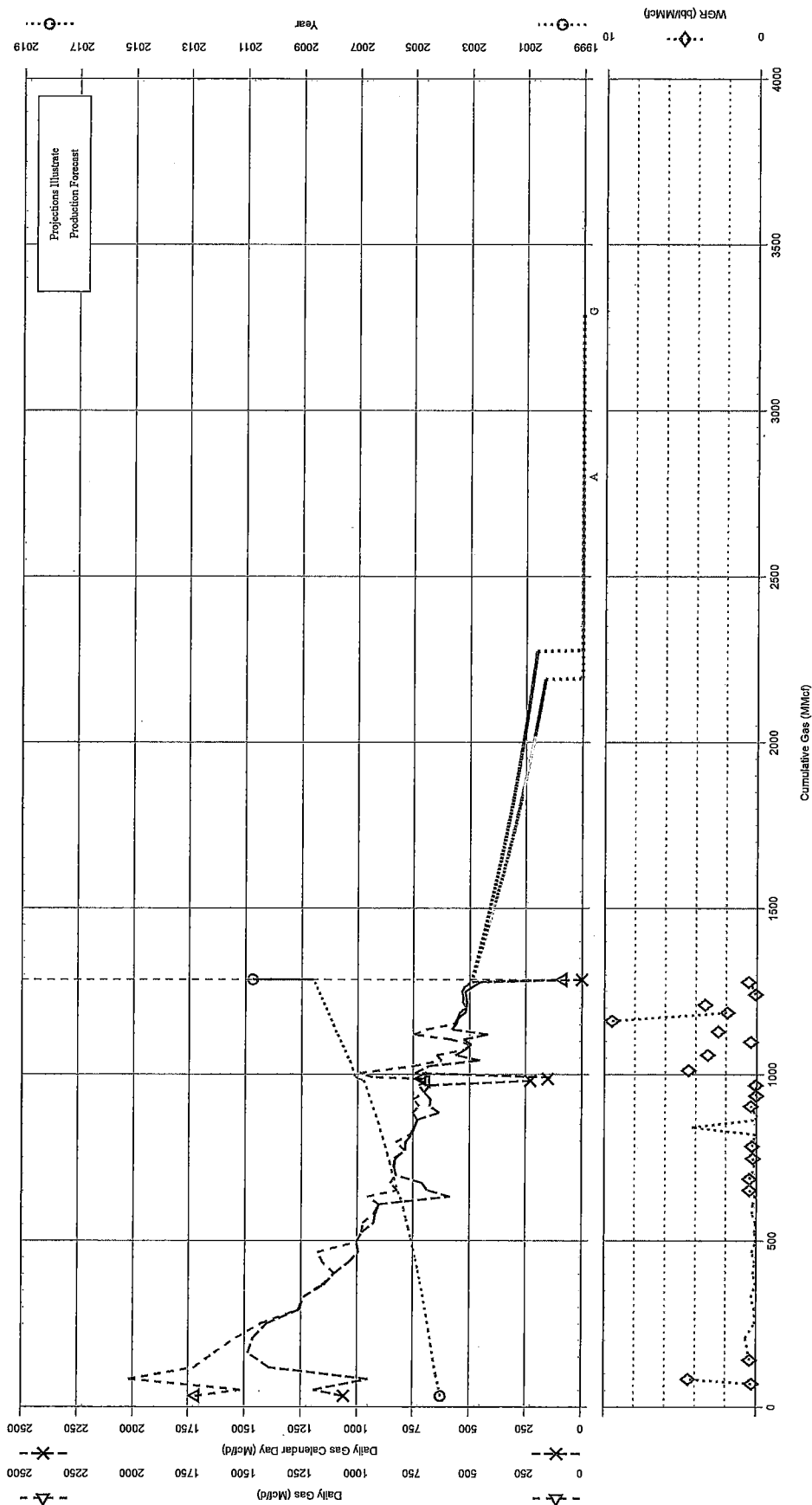
Oil :	0.0 Mbbl	Gas :	1284.6 MMcf	Water :	1.1 Mbbl
Sawn Lake (Historical) - Total Property					
1171310 / May 30, 2017					



Plot 1

Historical and Forecast Production Sawn Lake (Historical) - Total Property

Property : Sawn Lake (Historical)
Well Name : SPR SAWN 1-35-90-13
Regulatory Field : Sawn Lake
Regulatory Pool : Gilwood A
Operator : Twin Butte Energy Ltd.



Total Reserves Summary At 2008/08/01

Reserves Classification	Raw Gas (MMcf)		
	Ultimate	Cum Production	Remaining
Pv Prd - A(R)	2192	1285	908
P + P Prd - G(R)	2277	1285	993

Average Production Rates			
Gas :	0.0 Mcf/d	WGR :	0.0 bb/MMcf
Oil :	0.0 bbl/d	GOR :	0.0 scf/stb
On Prod :	0.0 days	WC :	0.0%
Cumulative Production		Water :	1.1 Mbbbl
Gas :	0.0 Mbbbl	Gas :	1284.6 MMcf
Oil :	0.0 MMcf		

Sawn Lake (Historical) - Total Property
1171310 / May 30, 2017



Plot 2

Property: Sawn Lake (Historical)

Table 1

Page 1
Currency Date: 2008-07

Well List and Production Summary

#	Well Location	Regulatory Field Pool	Current Status	RigRel yr-mm	Production Dates		Last Quarter Production Statistics						Cumulative Production				
					First yr-mm	Last yr-mm	Inj yr-mm	Prod Days	Oil bbl/d	Gas Mcf/d	GOR scf/stb	WGR bbl/MMcf	WC %	OH Mbbl	Gas MMcf	Water Mbbl	
1	02/01-35-090-13W5/0	SAWN LAKE GILWOOD A	SUSPENDED GAS	2002-12	2003-12	2008-07		87	0	486		0	100	0	0	1,285	1
	Total								0	486		0		0	0	1,285	1



Table 2

Company: Sutton Energy Ltd. & GeoCap Energy Corporation
Property: Sawn Lake (Historical)

Reserve Class: Various
Development Class: Classifications
Pricing: 2008-08 Historical Pricing (2017-04 Forecast)
Effective Date: August 01, 2008

Gross Lease Reserves Summary

Entity Description	Reserve Class	Methodology	Oil (Mbbbl)			Non-Associated Gas (MMcf)				Other Gross Lease Reserves			
			Initial Recoverable	Cumulative Production	Reserves	Initial Recoverable	Cumulative Production	Raw Gas	Sol'n Gas MMcf	Cond Mbbbl	LPG Mbbbl	Sulphur Mlt	
<i>Proved Producing</i> 02/01-35-090-13W5/0	A	Dee	0	0	0	2,800	1,285	908	862 *	0	6	0	0
Total: Proved Producing			0	0	0	2,800	1,285	908	862 *	0	6	0	0
<i>Proved Plus Probable Producing</i> 02/01-35-090-13W5/0	G	Dee	0	0	0	3,300	1,285	993	943 *	0	7	0	0
Total: Proved Plus Probable Producing			0	0	0	3,300	1,285	993	943 *	0	7	0	0

Notes

1. [*] Remaining reserves are less than the estimate due to economic limit.

Company: Sutton Energy Ltd. & GeoCap Energy Corporation
 Property: Sawn Lake (Historical)

Table 2.1

Effective Date: August 01, 2008

Gas Decline Parameters

Resource Entity	Zone	Method	Res. Class	Analysis Date	Analysis Data													
					Initial Effective Decline	Terminal Decline	Initial Rate Mcf/d	Final Rate Mcf/d	Decline Exponent	Reserve Life yrs	Original Recoverable Raw Gas MMcf	Cum Production @ Analysis MMcf	Cum Production 2008-08-01 MMcf	Remaining Raw Gas 2008-08-01 MMcf	Surface Loss %	Remaining Sales Gas MMcf		
Proved Producing																		
02/01-35-090-13W5/0	GILWOOD A	Decline	A	2008-08-01	15.26	8.000	490	25	0.60	31.4	2,800	1,285	1,285	1,515	5.0	1,440		
Total: Proved Producing							490				2,800	1,285	1,285	1,515	5.0	1,440		
Proved Plus Probable Producing																		
02/01-35-090-13W5/0	GILWOOD A	Decline	G	2008-08-01	12.98	6.000	490	25	0.80	42.3	3,300	1,285	1,285	2,015	5.0	1,915		
Total: Proved Plus Probable Producing							490				3,300	1,285	1,285	2,015	5.0	1,915		

The reserves calculated above may not match the economic forecasts due to economic limit considerations.

Glossary

A: Proved Producing

G: Proved Plus Probable Producing

Table 3

Sutton Energy Ltd. & GeoCap Energy Corporation
 Sawm Lake (Historical)
 Sawm Lake

Company:
 Property:
 Description:

Reserve Class:
 Development Class:
 Pricing:
 Effective Date:

Various
 Classifications
 2008-08 Historical Pricing (2017-04 Forecast)
 August 01, 2008

Daily Production

Entity Description	Reserve Class	Year											Totals			
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Subtotal	Remainder	Total
Gross Lease Daily Sales Gas Production (Mcf/d)																
Proved Producing	A	452	400	344	299	264	233	209	188	171	66	0	0	862	0	862
Proved Plus Probable Producing	G	454	410	361	322	291	263	241	221	205	80	0	0	943	0	943
Company Daily Sales Gas Production (Mcf/d)																
Proved Producing	A	226	200	172	150	132	117	104	94	83	33	0	0	431	0	431
Proved Plus Probable Producing	G	227	205	181	161	145	132	120	111	102	40	0	0	471	0	471

Company: **Sutton Energy Ltd. & GeoCap Energy Corpora...**
 Property: **Sawn Lake (Historical)**

Table 4

Effective Date: **August 01, 2008**

Economic Parameters

A) Price Forecasts and By-Product Data

2008-08 Historical Pricing (2017-04 Forecast)

Gas Reference:	AECO-C Spot Price
Gas Heat Content:	1100 Btu/scf
Surface Loss:	5.0 %

Price Adjustment:	
Condensate:	-5.00 \$/bbl

Yields (raw):	
Condensate:	6.6 bbl/MMcf

B) Operating Costs (2008 Dollars)

Major Stream Costs:	
Fixed:	3500 \$/well/month

Gathering Costs:	
Variable:	0.75 \$/Mcf

All variable costs are \$/product (sales).

C) Gas Cost Allowance (2008 Dollars)

Operating Costs included in GCA Allowance:	
Variable Gathering:	0.75 \$/Mcf
Additional GCA Allowance:	0.90 \$/Mcf

D) Abandonment Costs (2008 Dollars)

Abandonment Costs not included.

E) Capital Costs (2008 Dollars)

No capital expenditures are forecast.

Company: Sutton Energy Ltd. & GeoCap Energy Corpora...
 Property: Sawn Lake (Historical)
 Description: Sawn Lake

Reserve Class: Proved
 Development Class: Producing
 Pricing: 2008-08 Historical Pricing (2017-04 Forecast)
 Effective Date: August 01, 2008

Economic Forecast

PRODUCTION FORECAST

Year	Residue Gas Production						Condensate Production					Oil Equivalent Production				
	Gross Gas Wells	Gross Daily Mcf/d	Company Daily Mcf/d	Company Yearly MMcf	Net Yearly MMcf	Price \$/Mcf	Gross Daily bbl/d	Company Daily bbl/d	Company Yearly Mbbl	Net Yearly Mbbl	Price \$/bbl	Gross Daily boe/d	Company Daily boe/d	Company Yearly Mboe	Net Yearly Mboe	Price \$/boe
2008	1	452	226	34	18	7.44	3	2	0	0	84.54	78	39	6	3	46.23
2009	1	400	200	73	45	4.39	3	1	1	0	63.14	69	35	13	8	27.81
2010	1	344	172	63	41	4.41	2	1	0	0	79.16	60	30	11	7	28.58
2011	1	299	150	55	38	3.99	2	1	0	0	98.91	52	26	9	7	26.93
2012	1	264	132	48	37	2.64	2	1	0	0	95.50	46	23	8	6	19.02
2013	1	233	117	43	33	3.50	2	1	0	0	99.31	41	20	7	6	24.12
2014	1	209	104	38	28	4.95	1	1	0	0	96.95	36	18	7	5	32.42
2015	1	188	94	34	26	2.97	1	1	0	0	54.87	33	16	6	4	19.33
2016	1	171	85	31	24	2.40	1	1	0	0	50.61	30	15	5	4	15.84
2017	1	66	33	12	9	3.36	0	0	0	0	64.02	11	6	2	2	21.90
Tot.				431	299	4.07			3	1	80.34			75	51	26.63

REVENUE AND EXPENSE FORECAST

Year	Revenue Before Burdens														
	Working Interest				Royalty Interest	Company Interest	Royalty Burdens Pre-Processing		Gas Processing Allowance		Total Royalty After Process.	Net Revenue After Royalty	Operating Expenses		
	Oil M\$	Gas M\$	NGL+Sul M\$	Total M\$	Total M\$	Total M\$	Crown M\$	Other M\$	Crown M\$	Other M\$	M\$	M\$	Fixed M\$	Variable M\$	Total M\$
2008	0	256	20	276	0	276	87	41	19	9	101	175	9	26	35
2009	0	321	32	353	0	353	38	53	14	18	59	294	21	55	76
2010	0	277	35	311	0	311	52	47	19	16	64	247	21	48	70
2011	0	218	38	255	0	255	32	38	12	15	43	212	22	43	65
2012	0	127	32	159	0	159	10	24	6	13	15	144	22	39	61
2013	0	149	29	178	0	178	12	27	5	12	21	157	23	34	57
2014	0	189	26	214	0	214	20	32	7	11	34	180	23	31	54
2015	0	102	13	115	0	115	12	17	7	10	12	103	23	29	52
2016	0	75	11	86	0	86	10	13	7	9	6	80	24	26	50
2017	0	40	5	46	0	46	5	7	3	4	6	40	10	10	20
Tot.	0	1,753	241	1,993	0	1,993	279	299	99	117	362	1,632	198	342	540
Disc	0	1,333	175	1,508	0	1,508	227	226	76	84	294	1,215	133	246	379

Year	Aband. & Recl.								Net Capital Investment			Before Tax Cash Flow		
	Mineral Tax M\$	Capital Tax M\$	NPI Burden M\$	Net Prod'n Revenue M\$	Other Income M\$	Recl. Costs M\$	Oper. Income M\$	Oper. Income M\$	Dev. M\$	Plant M\$	Tang. M\$	Total M\$	Annual M\$	Cum. M\$
2008	0	0	0	140	0	0	140	0	0	0	0	140	140	137
2009	0	0	0	218	0	0	218	0	0	0	0	218	358	337
2010	0	0	0	178	0	0	178	0	0	0	0	178	535	485
2011	0	0	0	147	0	0	147	0	0	0	0	147	683	596
2012	0	0	0	83	0	0	83	0	0	0	0	83	766	653
2013	0	0	0	100	0	0	100	0	0	0	0	100	865	716
2014	0	0	0	126	0	0	126	0	0	0	0	126	991	787
2015	0	0	0	51	0	0	51	0	0	0	0	51	1,042	814
2016	0	0	0	29	0	0	29	0	0	0	0	29	1,072	828
2017	0	0	0	20	0	0	20	0	0	0	0	20	1,092	836
Tot.	0	0	0	1,092	0	0	1,092	0	0	0	0	1,092	1,092	836
Disc	0	0	0	836	0	0	836	0	0	0	0	836	836	836

SUMMARY OF RESERVES

Product	Units	Remaining Reserves at Aug 01, 2008					Oil Equivalents			Reserve Life Indic. (yr)		
		Gross	Working Interest	Roy/NPI Interest	Total Company	Net	Oil Eq. Factor	Company Mboe	% of Total	Reserve Life	Life Index	Half Life
Residue Gas	MMcf	862	431	0	431	299	6.000	72	96	9.4	5.2	3.8
Gas Heat Content	BBtu	948	474	0	474	328	0.000	0	0	9.4	5.2	3.8
Condensate	Mbbl	6	3	0	3	1	1.000	3	4	9.4	5.2	3.8
Total: Oil Eq.	Mboe	150	75	0	75	51	1.000	75	100	9.4	5.2	3.8

PRODUCT REVENUE AND EXPENSES

Product	Units	Average First Year Unit Values				Net Revenue After Royalties				
		Wellhead Price	Net Burdens	Operating Expenses	Other Expenses	Prod'n Revenue	Undisc M\$	% of Total	10% Disc M\$	% of Total
Residue Gas	\$/Mcf	7.44	2.95	1.00	0.00	3.48	1,409	86	1,049	86
Condensate	\$/bbl	84.54	-0.79	0.00	0.00	85.32	223	14	166	14
Total: Oil Eq.	\$/boe	46.23	16.96	5.79	0.00	23.48	1,632	100	1,215	100

INTEREST AND NET PRESENT VALUE SUMMARY

Revenue Interests and Burdens (%)			Net Present Value Before Income Tax					
			Disc. Rate %	Prod'n Revenue M\$	Operating Income M\$	Capital Invest. M\$	Cash Flow	
	Initial	Average					M\$	\$/boe
Working Interest	50.0000	50.0000	0	1,092	1,092	0	1,092	14.59
Capital Interest	50.0000	50.0000	5	947	947	0	947	12.65
Royalty Interest	0.0000	0.0000	8	877	877	0	877	11.72
Crown Royalty	31.6901	13.9923	10	836	836	0	836	11.17
Non-crown Royalty	15.0000	15.0000	12	799	799	0	799	10.68
Mineral Tax	0.0000	0.0000	15	749	749	0	749	10.01
			20	680	680	0	680	9.09

Evaluator: Joa, Bryan M.
Run Date: May 29, 2017 08:28:01

Company: Suffon Energy Ltd. & GeoCap Energy Corpora...
 Property: Sawn Lake (Historical)
 Description: Sawn Lake

Reserve Class: Proved Plus Probable
 Development Class: Producing
 Pricing: 2008-08 Historical Pricing (2017-04 Forecast)
 Effective Date: August 01, 2008

Economic Forecast

PRODUCTION FORECAST

Year	Residue Gas Production						Condensate Production					Oil Equivalent Production				
	Gross Gas Wells	Gross Daily Mcf/d	Company Daily Mcf/d	Company Yearly MMcf	Net Yearly MMcf	Price \$/Mcf	Gross Daily bbl/d	Company Daily bbl/d	Company Yearly Mbbbl	Net Yearly Mbbbl	Price \$/bbl	Gross Daily boe/d	Company Daily boe/d	Company Yearly Mboe	Net Yearly Mboe	Price \$/boe
2008	1	454	227	35	18	7.44	3	2	0	0	84.54	79	39	6	3	46.23
2009	1	410	205	75	46	4.39	3	1	1	0	63.14	71	36	13	8	27.81
2010	1	361	181	66	42	4.41	3	1	0	0	79.16	63	31	11	7	28.58
2011	1	322	161	59	40	3.99	2	1	0	0	98.91	56	28	10	7	26.93
2012	1	291	145	53	40	2.64	2	1	0	0	95.50	50	25	9	7	19.02
2013	1	263	132	48	36	3.50	2	1	0	0	99.31	46	23	8	6	24.12
2014	1	241	120	44	31	4.95	2	1	0	0	96.95	42	21	8	5	32.42
2015	1	221	111	40	31	2.97	2	1	0	0	54.87	38	19	7	5	19.33
2016	1	205	102	37	29	2.40	1	1	0	0	50.61	36	18	6	5	15.84
2017	1	80	40	15	11	3.36	1	0	0	0	64.02	14	7	3	2	21.90
Tot.				471	323	4.02			3	2	80.21			82	55	26.36

REVENUE AND EXPENSE FORECAST

Year	Revenue Before Burdens														
	Working Interest				Royalty Interest	Company Interest	Royalty Burdens Pre-Processing		Gas Processing Allowance		Total Royalty After Process.	Net Revenue After	Operating Expenses		
	Oil M\$	Gas M\$	NGL+Sul M\$	Total M\$	Total M\$	Total M\$	Crown M\$	Other M\$	Crown M\$	Other M\$	M\$	Royalty M\$	Fixed M\$	Variable M\$	Total M\$
2008	0	257	20	277	0	277	88	42	19	9	102	175	9	26	35
2009	0	328	33	361	0	361	40	54	14	19	61	301	21	56	77
2010	0	291	36	327	0	327	58	49	21	17	69	258	21	51	72
2011	0	234	40	275	0	275	38	41	15	16	48	226	22	46	68
2012	0	140	35	175	0	175	13	26	8	15	17	158	22	43	65
2013	0	168	33	201	0	201	17	30	8	14	26	175	23	39	61
2014	0	217	30	247	0	247	28	37	9	13	43	204	23	36	59
2015	0	120	15	135	0	135	14	20	8	12	14	121	23	34	57
2016	0	90	13	103	0	103	12	15	9	11	8	95	24	32	55
2017	0	49	7	56	0	56	6	8	3	4	7	49	10	12	22
Tot.	0	1,895	263	2,158	0	2,158	315	324	114	129	395	1,763	198	374	573
Disc	0	1,423	189	1,613	0	1,613	251	242	86	91	316	1,296	133	266	399

Year	Aband. & Oper.								Net Capital Investment			Before Tax Cash Flow			
	Mineral Tax M\$	Capital Tax M\$	NPI Burden M\$	Net Prod'n Revenue M\$	Other Income M\$	Recl. Costs M\$	Oper. Income M\$		Dev. M\$	Plant M\$	Tang. M\$	Total M\$	Annual M\$	Cum. M\$	10.0% Dcf M\$
2008	0	0	0	141	0	0	141	0	0	0	0	0	141	141	138
2009	0	0	0	223	0	0	223	0	0	0	0	0	223	364	342
2010	0	0	0	186	0	0	186	0	0	0	0	0	186	550	497
2011	0	0	0	158	0	0	158	0	0	0	0	0	158	708	617
2012	0	0	0	93	0	0	93	0	0	0	0	0	93	800	681
2013	0	0	0	114	0	0	114	0	0	0	0	0	114	914	752
2014	0	0	0	145	0	0	145	0	0	0	0	0	145	1,059	834
2015	0	0	0	64	0	0	64	0	0	0	0	0	64	1,123	868
2016	0	0	0	40	0	0	40	0	0	0	0	0	40	1,163	886
2017	0	0	0	26	0	0	26	0	0	0	0	0	26	1,190	898
Tot.	0	0	0	1,190	0	0	1,190	0	0	0	0	0	1,190	1,190	898
Disc	0	0	0	898	0	0	898	0	0	0	0	0	898	898	898

SUMMARY OF RESERVES

Product	Units	Remaining Reserves at Aug 01, 2008					Oil Equivalents			Reserve Life Indic. (yr)		
		Gross	Working Interest	Roy/NPI Interest	Total Company	Net	Oil Eq. Factor	Company Mboe	% of Total	Reserve Life	Life Index	Half Life
Residue Gas	MMcf	943	471	0	471	323	6.000	79	96	9.4	5.7	4.0
Gas Heat Content	BBtu	1,037	519	0	519	356	0.000	0	0	9.4	5.7	4.0
Condensate	Mbbl	7	3	0	3	2	1.000	3	4	9.4	5.7	4.0
Total: Oil Eq.	Mboe	164	82	0	82	55	1.000	82	100	9.4	5.7	4.0

PRODUCT REVENUE AND EXPENSES

Product	Units	Average First Year Unit Values				Net Revenue After Royalties				
		Wellhead Price	Net Burdens	Operating Expenses	Other Expenses	Prod'n Revenue	Undisc M\$	% of Total	10% Disc M\$	% of Total
Residue Gas	\$/Mcf	7.44	2.95	1.00	0.00	3.48	1,519	86	1,117	86
Condensate	\$/bbl	84.54	-0.81	0.00	0.00	85.35	244	14	179	14
Total: Oil Eq.	\$/boe	46.23	16.98	5.78	0.00	23.46	1,763	100	1,296	100

INTEREST AND NET PRESENT VALUE SUMMARY

Revenue Interests and Burdens (%)			Net Present Value Before Income Tax					
			Disc. Rate %	Prod'n Revenue M\$	Operating Income M\$	Capital Invest. M\$	Cash Flow	
	Initial	Average					M\$	\$/boe
Working Interest	50.0000	50.0000	0	1,190	1,190	0	1,190	14.53
Capital Interest	50.0000	50.0000	5	1,024	1,024	0	1,024	12.51
Royalty Interest	0.0000	0.0000	8	944	944	0	944	11.53
Crown Royalty	31.7414	14.5882	10	898	898	0	898	10.97
Non-crown Royalty	15.0000	15.0000	12	856	856	0	856	10.45
Mineral Tax	0.0000	0.0000	15	800	800	0	800	9.77
			20	722	722	0	722	8.82

Evaluator: Joa, Bryan M.
Run Date: May 29, 2017 08:28:01

SUTTON ENERGY LTD. & GEOCAP ENERGY CORPORATION
SAWN LAKE (FORECAST)

Effective June 01, 2017

Prepared by
Dragan Ridic, P. Eng., C.F.A.

The analysis of this property as reported herein was conducted within the context of an evaluation of a distinct group of properties in aggregate. Extraction and use of this analysis outside this context may not be appropriate without supplementary due diligence.

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Company: Sutton Energy Ltd. & GeoCap Energy Corporation
 Property: Sawm Lake (Forecast)
 Description: Sawm Lake

Reserve Class: Various
 Development Class: GLJ (2017-04)
 Pricing: June 01, 2017
 Effective Date:

Summary of Reserves and Values

	Proved Producing	Proved Developed Non-Producing	Total Proved	Proved Plus Probable Producing	Proved Plus Probable Non-Producing	Proved Plus Probable Undeveloped	Total Proved Plus Probable
MARKETABLE RESERVES							
Residue Gas (MMcf)							
Gross Lease	524	0	524	898	0	0	898
Total Company Interest	262	0	262	449	0	0	449
Net After Royalty	204	0	204	350	0	0	350
Natural Gas Liquids (Mbbbl)							
Gross Lease	3.6	0.0	3.6	6.2	0.0	0.0	6.2
Total Company Interest	1.8	0.0	1.8	3.1	0.0	0.0	3.1
Net After Royalty	1.0	0.0	1.0	1.8	0.0	0.0	1.8
Oil Equivalent (Mboe)							
Gross Lease	91	0	91	156	0	0	156
Total Company Interest	46	0	46	78	0	0	78
Net After Royalty	35	0	35	60	0	0	60
BEFORE TAX PRESENT VALUE (M\$)							
0%	371	0	371	842	0	0	842
5%	310	0	310	600	0	0	600
8%	277	0	277	501	0	0	501
10%	257	0	257	449	0	0	449
12%	240	0	240	406	0	0	406
15%	217	0	217	354	0	0	354
20%	186	0	186	291	0	0	291
FIRST 6 YEARS BEFORE TAX CASH FLOW (M\$)							
2017 (7 Months)	31	0	31	40	0	0	40
2018	44	0	44	60	0	0	60
2019	42	0	42	59	0	0	59
2020	40	0	40	58	0	0	58
2021	37	0	37	56	0	0	56
2022	35	0	35	55	0	0	55

BOE Factors: HVY OIL 1.0 RES GAS 6.0 ETHANE 1.0
 COND 1.0 SLN GAS 6.0 BUTANE 1.0
 SULPHUR 0.0

Run Date: May 29, 2017 08:31:22

1171311

Class (A,B1,B2,C,G,H1,H2,I), GLJ (2017-04), psum

May 30, 2017 14:01:57

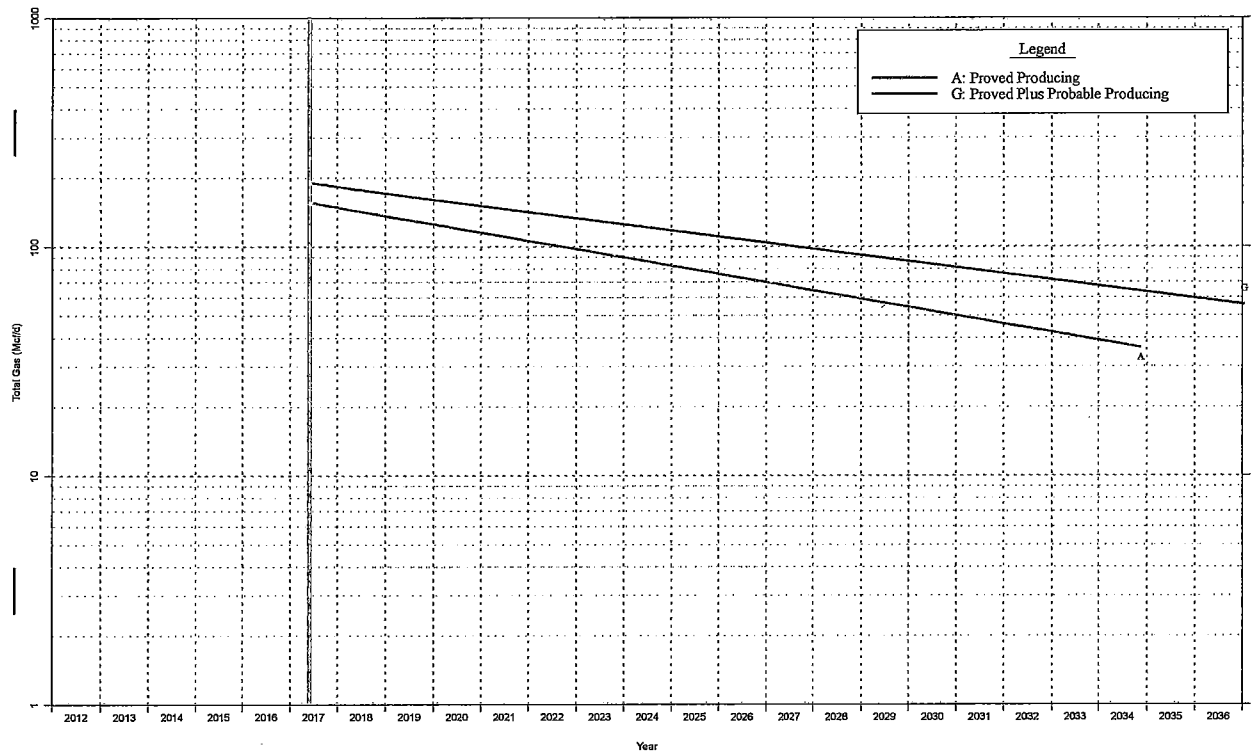
Historical and Forecast Production

Company:
Property:
Description:

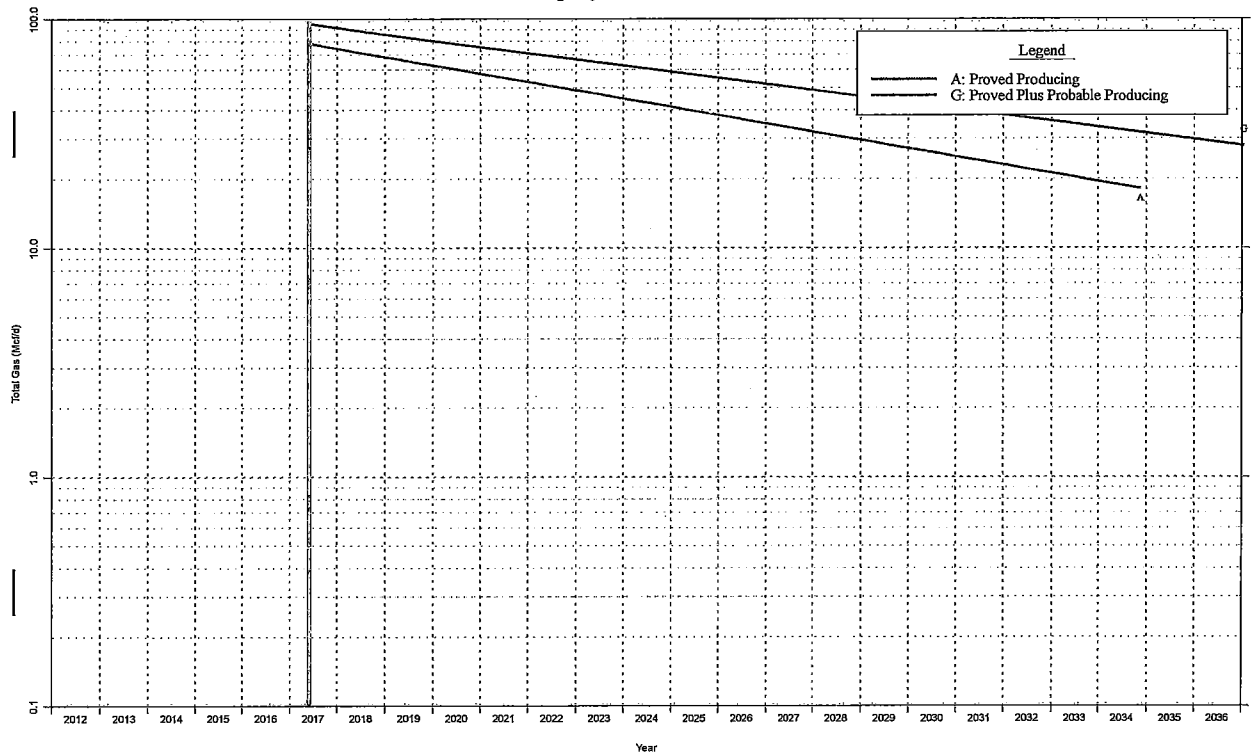
Sutton Energy Ltd. & GeoCap Energy Corpora... Pricing:
Sawn Lake (Forecast) Effective Date:
Sawn Lake

GLJ (2017-04)
June 01, 2017

Gross Lease Total Gas



Company* Interest Total Gas



*Note: Historical company interest production is based on current interests in the evaluated reserves entities applied to reported actual gross lease production. Consequently, company actuals may differ from the history shown due to changes in ownership.

Company Interest Total Gas
1171311 / May 30, 2017

Company: Sutton Energy Ltd. & GeoCap Energy Corporation
 Property: Sawn Lake (Forecast)

Reserve Class: Various
 Development Class: GLJ (2017-04)
 Pricing: GLJ (2017-04)
 Effective Date: June 01, 2017

Daily Production, Reserves and Present Value Summary

Entity Description	2017 Gross Lease Production										2017 Company Interest Production							Gross Lease Reserves							Company Interest Reserves							Before Tax 10% Dcf Present Value M\$			
	Gas Mcfd	Oil bbl/d	NGL bbl/d	Oil Eq. boe/d	Gas Mcfd	Oil bbl/d	NGL bbl/d	Oil Eq. boe/d	Gas MMcf	Oil Mbbbl	NGL Mbbbl	Sulphur Mit	Oil Mbbbl	Gas MMcf	Oil Mbbbl	NGL Mbbbl	Sulphur Mit	Oil Mbbbl	Gas MMcf	Oil Mbbbl	NGL Mbbbl	Sulphur Mit	Oil Mbbbl	Gas MMcf	Oil Mbbbl	NGL Mbbbl	Sulphur Mit	Oil Mbbbl	Gas MMcf	Oil Mbbbl	NGL Mbbbl		Sulphur Mit	Oil Mbbbl	Gas MMcf
<i>Proved Producing</i>																																			
02/01-35-090-13W5/0	A	153	0	1	27	77	0	1	13	524	0	4	0	91	262	0	2	0	46	257															
Total: Proved Producing		153	0	1	27	77	0	1	13	524	0	4	0	91	262	0	2	0	46	257															
<i>Proved Plus Probable Producing</i>																																			
02/01-35-090-13W5/0	G	188	0	1	33	94	0	1	16	898	0	6	0	156	449	0	3	0	78	449															
Total: Proved Plus Probable Producing		188	0	1	33	94	0	1	16	898	0	6	0	156	449	0	3	0	78	449															

BOE Factors: HVY OIL 1.0
 COND 1.0
 RES GAS 6.0
 SLN GAS 6.0
 PROPANE 1.0
 BUTANE 1.0
 ETHANE 1.0
 SULPHUR 0.0

Company: Sutton Energy Ltd. & GeoCap Energy Corporation
 Property: Sawm Lake (Forecast)

Reserve Class: Proved Plus Probable
 Development Class: Producing
 Pricing: GLJ (2017-04)
 Effective Date: June 01, 2017

Summary of Well Interests and Burdens

Entity Description	Working Interest			Royalty Interest			Other Royalty Burdens					
	Well Type	BPO %	APO %	Rem. PO (000's)	Type	BPO %	APO %	Rem. PO (000's)	Type	BPO %	APO %	Rem. PO (000's)
Sawm Lake 02/01-35-090-13W5/0	GAS	50.000	-	-	-	-	-	-	GOR	15.000	-	-

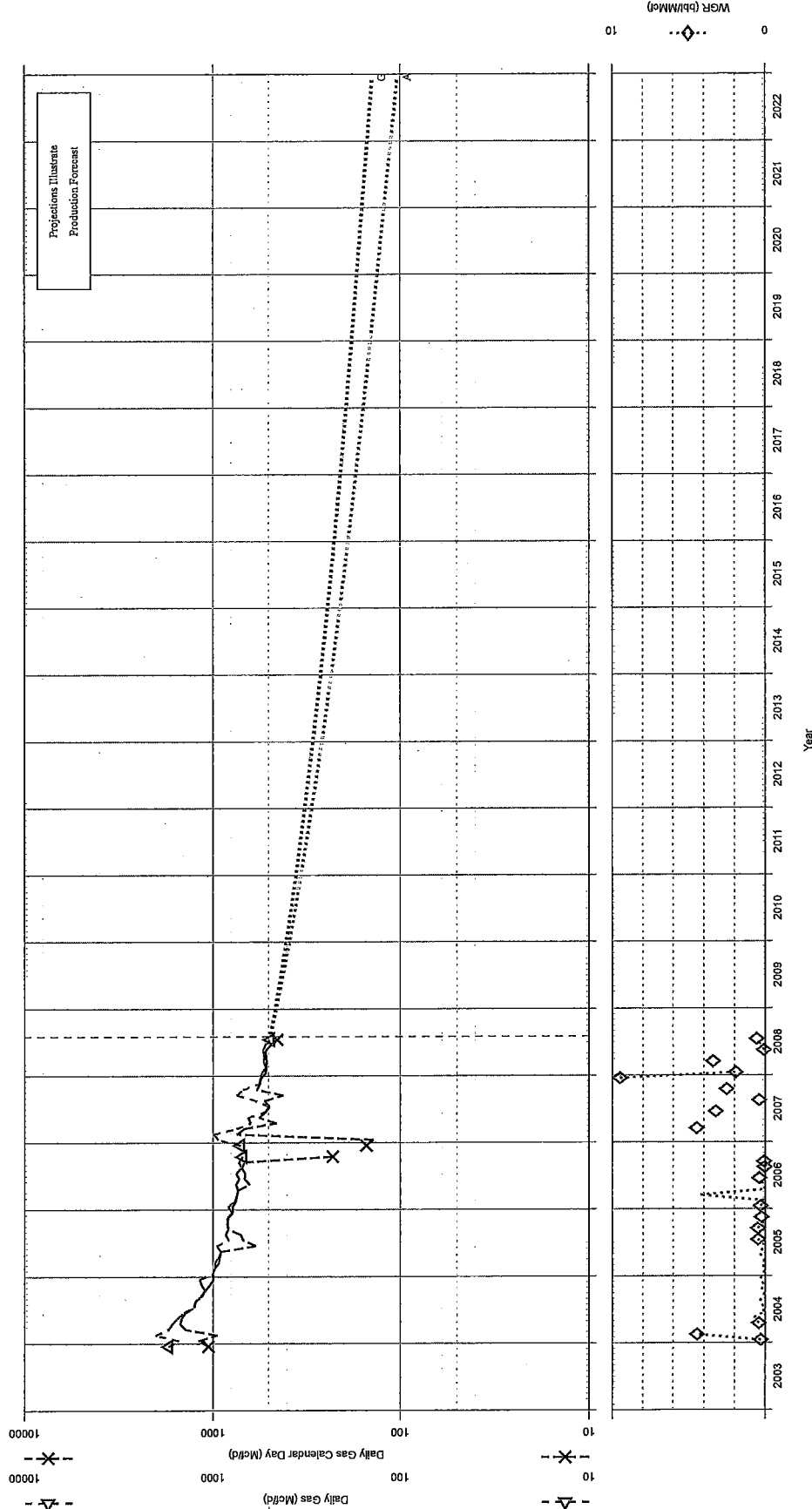
Lessor: AB CR AARF/MRF GAS

Glossary
 AARF/MRF: Adjusted Alberta Royalty Framework extends till January 2027, then transitioning to the Modernized Royalty Framework
 AB: Alberta
 APO=BPO interests unless otherwise specified
 CR: Crown Royalty
 GOR: Gross Overriding Royalty

Historical and Forecast Production Sawn Lake (Forecast) - Total Property

Regulatory Field : Sawn Lake
Regulatory Pool : Gilwood A
Operator : Twin Butte Energy Ltd.

Property : Sawn Lake (Forecast)
Well Name : SPR SAWN 1-35-90-13



Average Production Rates (Last 12 months ending 2008/07/31)

Gas :	566.6 Mcf/d	WGR :	1.7 bbbl/MMcf
Oil :	0.0 bbbl/d	GOR :	0.0 scf/stb
On Prod :	336.0 days	WC :	100.0 %
Oil :	0.0 Mbbl	Gas :	1284.6 MMcf
		Water :	1.0 Mbbl

Total Reserves Summary At 2008/08/01

Raw Gas (MMcf)	Ultimate	Cum Production	Remaining
	2800	1285	1515
	3300	1285	2015

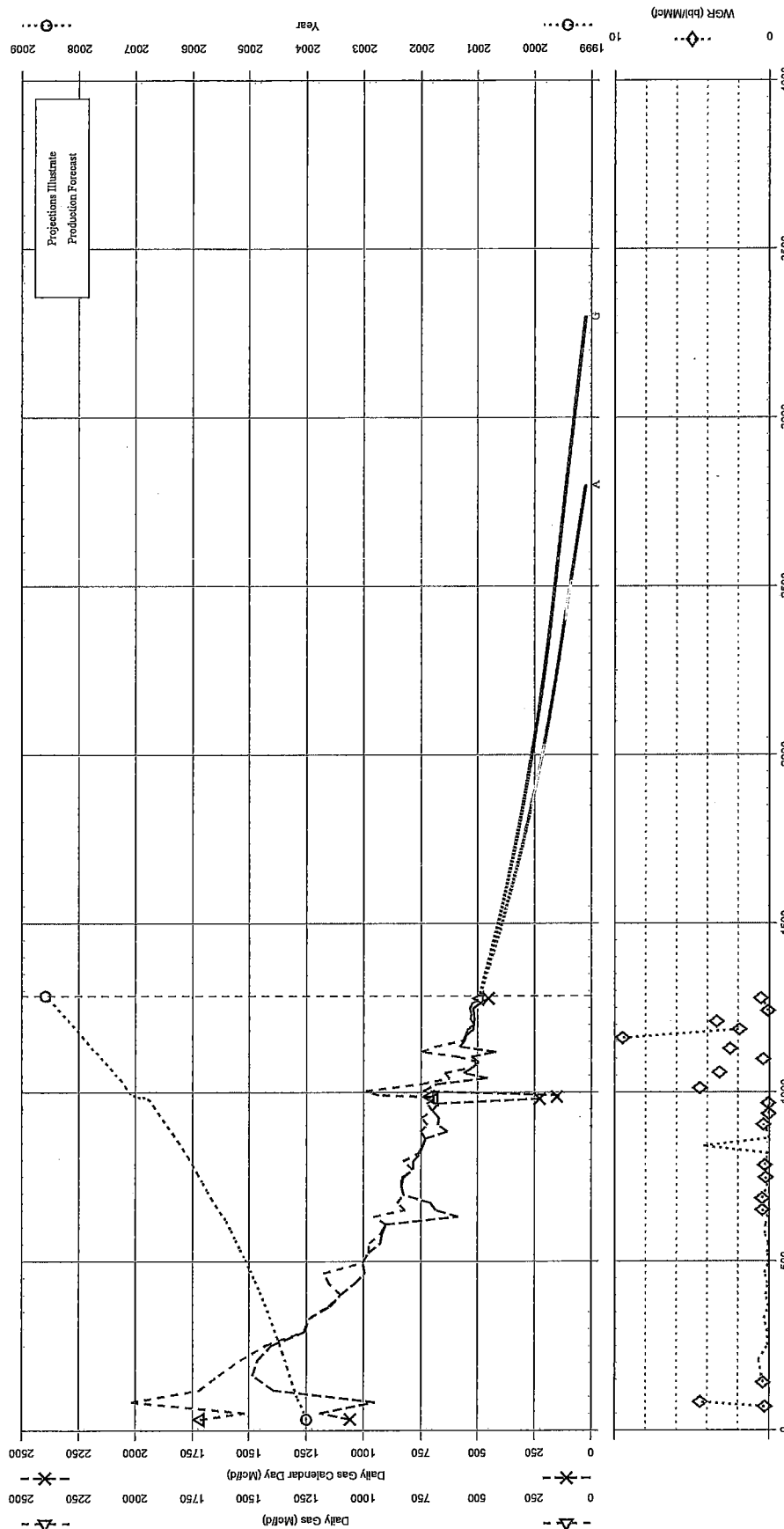
Plot 1



Historical and Forecast Production Sawn Lake (Forecast) - Total Property

Regulatory Field : Sawn Lake
Regulatory Pool : Gilwood A
Operator : Twin Butte Energy Ltd.

Property : Sawn Lake (Forecast)
Well Name : SPR SAWN 1-35-90-13



Average Production Rates (Last 12 months ending 2008/07/31)

WGR : 1.7 bbl/MMcf
GOR : 0.0 scf/stb
WC : 100.0 %

Gas : 566.6 Mcf/d
Oil : 0.0 bbl/d
On Prod : 336.0 days
Cumulative Production

Gas : 1284.6 MMcf
Oil : 0.0 Mbbbl
Water : 1.0 Mbbbl

Total Reserves Summary At 2008/08/01

Reserves Classification	Raw Gas (MMcf)		
	Ultimate	Cum Production	Remaining
Pv Prd - A(R)	2800	1285	1515
P + P Prd - G(R)	3300	1285	2015

Sawn Lake (Forecast) - Total Property
1171311 / May 30, 2017



Plot 2

Property: Sawn Lake (Forecast)

Table 1

Page 1
Currency Date: 2008-07

Well List and Production Summary

#	Well Location	Regulatory Field Pool	Current Status	RigRel yr-mm	Production Dates		Inj yr-mm	Prod Days	Last Quarter Production Statistics					Cumulative Production			
					First yr-mm	Last yr-mm			Oil bbl/d	Gas Mcf/d	GOR scf/stb	WGR bbl/MMcf	WC %	Oil Mbbl	Gas MMcf	Water Mbbl	
1	02/01-35-090-13W5/0	SAWNLAKE GILWOOD A	SUSPENDED GAS	2002-12	2003-12	2008-07		87	0	486	0	0	100	0	0	1,285	1
	Total								0	486	0	0		0	0	1,285	1

Table 2

Company: **Sutton Energy Ltd. & GeoCap Energy Corporation**
 Property: **Sawn Lake (Forecast)**

Reserve Class: **Various**
 Development Class: **Classifications**
 Pricing: **GLJ (2017-04)**
 Effective Date: **June 01, 2017**

Gross Lease Reserves Summary

Entity Description	Reserve Class	Methodology	Oil (Mbbbl)			Non-Associated Gas (MMcf)			Other Gross Lease Reserves				
			Initial Recoverable	Cumulative Production	Reserves	Initial Recoverable	Cumulative Production	Raw Gas Reserves	Sol'n Gas MMcf	Cond Mbbbl	LPG Mbbbl	Sulphur Mt	
<i>Proved Producing</i> 02/01-35-090-13W5/0	A	Dec	0	0	0	2,800	2,192	552	524*	0	4	0	0
Total: Proved Producing			0	0	0	2,800	2,192	552	524*	0	4	0	0
<i>Proved Plus Probable Producing</i> 02/01-35-090-13W5/0	G	Dec	0	0	0	3,300	2,192	945	898*	0	6	0	0
Total: Proved Plus Probable Producing			0	0	0	3,300	2,192	945	898*	0	6	0	0

Notes

1. [*] Remaining reserves are less than the estimate due to economic limit.

Effective Date: June 01, 2017

Table 2.1

Gas Decline Parameters

Sutton Energy Ltd. & GeoCap Energy Corporation
Sawm Lake (Forecast)

Company:
Property:

Analysis Data

Resource Entity	Zone	Method	Res. Class	Analysis Date	Initial Effective Decline	Terminal Decline	Initial Rate Me/gd	Final Rate Me/gd	Decline Exponent	Reserve Life yrs	Original Recoverable Raw Gas MMcf	Cum Production @ Analysis MMcf	Cum Production 2017-06-01 MMcf	Remaining Raw Gas 2017-06-01 MMcf	Surface Loss %	Remaining Sales Gas MMcf
Proved Producing																
02/01-35-090-13W5/0	GLWOODA	Decline	A	2008-08-01	15.26	8.000	490	25	0.60	31.4	2,800	1,285	2,192	608	5.0	577
Total: Proved Producing							490				2,800	1,285	2,192	608	5.0	577
Proved Plus Probable Producing																
02/01-35-090-13W5/0	GLWOODA	Decline	G	2008-08-01	12.98	6.000	490	25	0.80	42.3	3,300	1,285	2,192	1,108	5.0	1,052
Total: Proved Plus Probable Producing							490				3,300	1,285	2,192	1,108	5.0	1,052

The reserves calculated above may not match the economic forecasts due to economic limit considerations.

Glossary

- A: Proved Producing
- G: Proved Plus Probable Producing

Table 3

Company: Sutton Energy Ltd. & GeoCap Energy Corporation
 Property: Sawn Lake (Forecast)
 Description: Sawn Lake

Reserve Class: Various Classifications
 Development Class: GLJ (2017-04)
 Pricing: June 01, 2017
 Effective Date:

Daily Production

Entity Description	Reserve Class	Year											Totals			
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Subtotal	Remainder	Total
Gross Lease Daily Sales Gas Production (Mcf/d) Proved Producing	A	153	142	131	121	111	102	94	86	79	73	67	62	422	102	524
	G	188	177	166	156	146	137	129	122	114	107	101	95	570	328	898
Company Daily Sales Gas Production (Mcf/d) Proved Producing	A	77	71	65	60	55	51	47	43	40	36	34	31	211	51	262
	G	94	89	83	78	73	69	65	61	57	54	50	48	285	164	449

Company: **Sutton Energy Ltd. & GeoCap Energy Corpora...** Table 4 Effective Date: **June 01, 2017**
 Property: **Sawn Lake (Forecast)**

Economic Parameters

A) Price Forecasts and By-Product Data

GLJ (2017-04)

Gas Reference:	AECO-C Spot Price
Gas Heat Content:	1100 Btu/scf
Surface Loss:	5.0 %

Yields (raw):	
Condensate:	6.6 bbl/MMcf

B) Operating Costs (2017 Dollars)

Major Stream Costs:	
Fixed:	3500 \$/well/month

Gathering Costs:	
Variable:	0.75 \$/Mcf

All variable costs are \$/product (sales).

C) Gas Cost Allowance (2017 Dollars)

Operating Costs included in GCA Allowance:	
Variable Gathering:	0.75 \$/Mcf
Additional GCA Allowance:	0.90 \$/Mcf

D) Abandonment Costs (2017 Dollars)

Abandonment:	
Well Costs:	55.0 M\$/well

Reclamation:	
Well Costs:	25.0 M\$/well

E) Capital Costs (2017 Dollars)

No capital expenditures are forecast.

Company: **Sutton Energy Ltd. & GeoCap Energy Corpora...**
 Property: **Sawn Lake (Forecast)**
 Description: **Sawn Lake**

Reserve Class: **Proved**
 Development Class: **Producing**
 Pricing: **GLJ (2017-04)**
 Effective Date: **June 01, 2017**

Economic Forecast

PRODUCTION FORECAST

Year	Residue Gas Production							Condensate Production					Oil Equivalent Production				
	Gross Gas Wells	Gross Daily Mcf/d	Company Daily Mcf/d	Company Yearly MMcf	Net Yearly MMcf	Price \$/Mcf	Gross Daily bbl/d	Company Daily bbl/d	Company Yearly Mbbl	Net Yearly Mbbl	Price \$/bbl	Gross Daily boe/d	Company Daily boe/d	Company Yearly Mboe	Net Yearly Mboe	Price \$/boe	
2017	1	153	77	16	13	3.49	1	1	0	0	69.91	27	13	3	2	22.90	
2018	1	142	71	26	20	3.32	1	0	0	0	72.49	25	12	5	3	22.00	
2019	1	131	65	24	18	3.50	1	0	0	0	76.85	23	11	4	3	23.24	
2020	1	121	60	22	17	3.69	1	0	0	0	78.38	21	10	4	3	24.37	
2021	1	111	55	20	16	3.88	1	0	0	0	79.81	19	10	4	3	25.53	
2022	1	102	51	19	14	4.09	1	0	0	0	83.55	18	9	3	2	26.89	
2023	1	94	47	17	13	4.30	1	0	0	0	86.06	16	8	3	2	28.20	
2024	1	86	43	16	12	4.52	1	0	0	0	89.75	15	8	3	2	29.61	
2025	1	79	40	14	11	4.60	1	0	0	0	93.44	14	7	3	2	30.24	
2026	1	73	36	13	10	4.70	1	0	0	0	96.98	13	6	2	2	30.93	
2027	1	67	34	12	10	4.79	0	0	0	0	98.92	12	6	2	2	31.55	
2028	1	62	31	11	9	4.89	0	0	0	0	100.89	11	5	2	2	32.18	
Sub.				211	163	4.02			1	1	83.49			37	28	26.52	
Rem.				51	41	5.21			0	0	107.68			9	7	34.34	
Tot.				262	204	4.26			2	1	88.20			46	35	28.04	

REVENUE AND EXPENSE FORECAST

Year	Revenue Before Burdens							Royalty Burdens		Gas Processing Allowance		Total Royalty After Process.	Net Revenue After Royalty	Operating Expenses		
	Working Interest				Royalty Interest	Company Interest	Pre-Processing		Crown	Other	Fixed			Variable	Total	
	Oil M\$	Gas M\$	NGL+Sul M\$	Total M\$	Total M\$	Total M\$	Crown M\$	Other M\$	Crown M\$	Other M\$	M\$	M\$	M\$	M\$	M\$	
2017	0	57	8	65	0	65	7	10	3	4	10	55	12	12	24	
2018	0	86	13	99	0	99	11	15	5	7	14	85	21	20	41	
2019	0	84	13	96	0	96	11	14	5	6	14	82	22	19	40	
2020	0	81	12	93	0	93	11	14	5	6	14	79	22	18	40	
2021	0	78	11	90	0	90	10	13	4	6	13	76	23	16	39	
2022	0	76	11	87	0	87	10	13	4	5	13	73	23	15	39	
2023	0	73	10	84	0	84	9	13	4	5	13	71	24	14	38	
2024	0	71	10	81	0	81	9	12	4	5	13	68	24	14	38	
2025	0	67	9	76	0	76	9	11	3	5	12	64	25	13	37	
2026	0	63	9	71	0	71	8	11	3	4	11	60	25	12	37	
2027	0	59	8	67	0	67	3	10	1	4	8	59	26	11	37	
2028	0	55	8	63	0	63	3	9	1	4	7	56	26	11	37	
Sub.	0	850	122	972	0	972	101	146	42	62	143	830	273	174	447	
Rem.	0	266	38	304	0	304	15	46	6	20	35	270	168	51	219	
Tot.	0	1,116	161	1,277	0	1,277	116	191	48	81	177	1,099	441	225	666	
Disc	0	606	88	694	0	694	70	104	30	44	100	594	204	126	330	

Year	Mineral Tax M\$	Capital Tax M\$	NPI Burden M\$	Net Prod'n Revenue M\$	Other Income M\$	Aband. & Oper.		Net Capital Investment				Before Tax Cash Flow			
						Recl. Costs M\$	Income M\$	Dev. M\$	Plant M\$	Tang. M\$	Total M\$	Annual M\$	Cum. M\$	10.0% Def M\$	
2017	0	0	0	31	0	0	31	0	0	0	0	0	31	31	30
2018	0	0	0	44	0	0	44	0	0	0	0	0	44	74	69
2019	0	0	0	42	0	0	42	0	0	0	0	0	42	116	103
2020	0	0	0	40	0	0	40	0	0	0	0	0	40	156	133
2021	0	0	0	37	0	0	37	0	0	0	0	0	37	193	158
2022	0	0	0	35	0	0	35	0	0	0	0	0	35	227	179
2023	0	0	0	33	0	0	33	0	0	0	0	0	33	260	198
2024	0	0	0	31	0	0	31	0	0	0	0	0	31	291	213
2025	0	0	0	27	0	0	27	0	0	0	0	0	27	317	226
2026	0	0	0	23	0	0	23	0	0	0	0	0	23	341	235
2027	0	0	0	22	0	0	22	0	0	0	0	0	22	363	244
2028	0	0	0	19	0	0	19	0	0	0	0	0	19	382	251
Sub.	0	0	0	382	0	0	382	0	0	0	0	0	382	382	251
Rem.	0	0	0	51	0	62	-11	0	0	0	0	-11	371	371	257
Tot.	0	0	0	433	0	62	371	0	0	0	0	371	371	371	257
Disc	0	0	0	265	0	8	257	0	0	0	0	257	257	257	257

SUMMARY OF RESERVES

Product	Units	Remaining Reserves at Jun 01, 2017					Oil Equivalents			Reserve Life Indic. (yr)		
		Gross	Working Interest	Roy/NPI Interest	Total Company	Net	Oil Eq. Factor	Company Mboe	% of Total	Reserve Life	Life Index	Half Life
Residue Gas	MMcf	524	262	0	262	204	6.000	44	96	17.6	9.4	6.2
Gas Heat Content	BBtu	577	288	0	288	224	0.000	0	0	17.6	9.4	6.2
Condensate	Mbbl	4	2	0	2	1	1.000	2	4	17.6	9.4	6.2
Total: Oil Eq.	Mboe	91	46	0	46	35	1.000	46	100	17.6	9.4	6.2

PRODUCT REVENUE AND EXPENSES

Product	Units	Average First Year Unit Values				Net Revenue After Royalties				
		Wellhead Price	Net Burdens	Operating Expenses	Other Expenses	Prod'n Revenue	Undisc M\$	% of Total	10% Disc M\$	% of Total
Residue Gas	\$/Mcf	3.49	0.38	1.50	0.00	1.61	992	90	540	91
Condensate	\$/bbl	69.91	30.82	0.00	0.00	39.09	107	10	54	9
Total: Oil Eq.	\$/boe	22.90	3.42	8.65	0.00	10.83	1,099	100	594	100

INTEREST AND NET PRESENT VALUE SUMMARY

Revenue Interests and Burdens (%)			Net Present Value Before Income Tax					
			Disc. Rate %	Prod'n Revenue M\$	Operating Income M\$	Capital Invest. M\$	Cash Flow	
	Initial	Average				M\$	\$/boe	
Working Interest	50.0000	50.0000	0	433	371	0	371	8.15
Capital Interest	50.0000	50.0000	5	331	310	0	310	6.80
Royalty Interest	0.0000	0.0000	8	288	277	0	277	6.08
Crown Royalty	11.0786	9.0514	10	265	257	0	257	5.65
Non-crown Royalty	15.0000	15.0000	12	245	240	0	240	5.26
Mineral Tax	0.0000	0.0000	15	220	217	0	217	4.76
			20	188	186	0	186	4.10

Evaluator: Joa, Bryan M.
Run Date: May 29, 2017 08:31:21

Company: Suttton Energy Ltd. & GeoCap Energy Corpora...
 Property: Sawm Lake (Forecast)
 Description: Sawm Lake

Reserve Class: Proved Plus Probable
 Development Class: Producing
 Pricing: GLJ (2017-04)
 Effective Date: June 01, 2017

Economic Forecast

PRODUCTION FORECAST

Year	Residue Gas Production						Condensate Production					Oil Equivalent Production				
	Gross Gas Wells	Gross Daily Mcf/d	Company Daily Mcf/d	Company Yearly MMcf	Net Yearly MMcf	Price \$/Mcf	Gross Daily bbl/d	Company Daily bbl/d	Company Yearly Mbbl	Net Yearly Mbbl	Price \$/bbl	Gross Daily boe/d	Company Daily boe/d	Company Yearly Mboe	Net Yearly Mboe	Price \$/boe
2017	1	188	94	20	15	3.49	1	1	0	0	69.91	33	16	3	3	22.90
2018	1	177	89	32	25	3.32	1	1	0	0	72.49	31	15	6	4	22.00
2019	1	166	83	30	23	3.50	1	1	0	0	76.85	29	14	5	4	23.24
2020	1	156	78	28	22	3.69	1	1	0	0	78.38	27	14	5	4	24.37
2021	1	146	73	27	20	3.88	1	1	0	0	79.81	25	13	5	3	25.53
2022	1	137	69	25	19	4.09	1	0	0	0	83.55	24	12	4	3	26.89
2023	1	129	65	24	18	4.30	1	0	0	0	86.06	22	11	4	3	28.20
2024	1	122	61	22	17	4.52	1	0	0	0	89.75	21	11	4	3	29.61
2025	1	114	57	21	16	4.60	1	0	0	0	93.44	20	10	4	3	30.24
2026	1	107	54	20	15	4.70	1	0	0	0	96.98	19	9	3	3	30.93
2027	1	101	50	18	15	4.79	1	0	0	0	98.92	18	9	3	3	31.55
2028	1	95	48	17	14	4.89	1	0	0	0	100.89	17	8	3	2	32.18
Sub.				285	220	4.06			2	1	84.15			49	38	26.76
Rem.				164	131	5.62			1	1	115.99			28	23	36.99
Tot.				449	350	4.63			3	2	95.78			78	60	30.50

REVENUE AND EXPENSE FORECAST

Year	Revenue Before Burdens														
	Working Interest				Royalty Interest	Company Interest	Royalty Burdens Pre-Processing		Gas Processing Allowance		Total Royalty After Process.	Net Revenue After Royalty	Operating Expenses		
	Oil M\$	Gas M\$	NGL+Sul M\$	Total M\$	Total M\$	Total M\$	Crown M\$	Other M\$	Crown M\$	Other M\$	M\$	M\$	Fixed M\$	Variable M\$	Total M\$
2017	0	70	10	80	0	80	9	12	4	5	12	68	12	15	27
2018	0	107	16	123	0	123	14	19	7	8	18	106	21	25	46
2019	0	106	16	122	0	122	14	18	6	8	18	104	22	24	45
2020	0	105	16	120	0	120	14	18	6	8	18	103	22	23	45
2021	0	104	15	118	0	118	13	18	6	8	18	101	23	22	44
2022	0	103	15	117	0	117	13	18	5	7	18	99	23	21	44
2023	0	101	14	115	0	115	13	17	5	7	18	98	24	20	44
2024	0	100	14	114	0	114	13	17	5	7	18	96	24	19	43
2025	0	96	14	109	0	109	12	16	5	7	17	92	25	18	43
2026	0	92	13	105	0	105	12	16	5	6	17	89	25	18	43
2027	0	88	13	101	0	101	5	15	2	6	12	89	26	17	42
2028	0	85	12	97	0	97	5	15	2	6	11	85	26	16	42
Sub.	0	1,156	166	1,323	0	1,323	137	198	57	84	194	1,129	273	236	509
Rem.	0	921	132	1,053	0	1,053	56	158	22	73	120	933	461	176	636
Tot.	0	2,077	299	2,376	0	2,376	193	356	79	156	314	2,062	733	412	1,146
Disc	0	891	129	1,020	0	1,020	98	153	41	66	144	876	240	183	423

Year	Mineral Tax M\$	Capital Tax M\$	NPI Burden M\$	Net Prod'n Revenue M\$	Other Income M\$	Aband. & Recl. Costs M\$	Oper. Income M\$	Net Capital Investment			Before Tax Cash Flow			
								Dev. M\$	Plant M\$	Tang. M\$	Total M\$	Annual M\$	Cum. M\$	10.0% Def M\$
2017	0	0	0	40	0	0	40	0	0	0	0	40	40	39
2018	0	0	0	60	0	0	60	0	0	0	0	60	100	93
2019	0	0	0	59	0	0	59	0	0	0	0	59	159	141
2020	0	0	0	58	0	0	58	0	0	0	0	58	216	184
2021	0	0	0	56	0	0	56	0	0	0	0	56	272	222
2022	0	0	0	55	0	0	55	0	0	0	0	55	328	256
2023	0	0	0	54	0	0	54	0	0	0	0	54	382	286
2024	0	0	0	53	0	0	53	0	0	0	0	53	435	313
2025	0	0	0	49	0	0	49	0	0	0	0	49	484	336
2026	0	0	0	46	0	0	46	0	0	0	0	46	530	355
2027	0	0	0	46	0	0	46	0	0	0	0	46	576	373
2028	0	0	0	43	0	0	43	0	0	0	0	43	619	388
Sub.	0	0	0	619	0	0	619	0	0	0	0	619	619	388
Rem.	0	0	0	297	0	74	223	0	0	0	0	223	842	449
Tot.	0	0	0	916	0	74	842	0	0	0	0	842	842	449
Disc	0	0	0	453	0	4	449	0	0	0	0	449	449	449

SUMMARY OF RESERVES

Product	Units	Remaining Reserves at Jun 01, 2017					Oil Equivalents			Reserve Life Indic. (yr)		
		Gross	Working Interest	Roy/NPI Interest	Total Company	Net	Oil Eq. Factor	Company Mboe	% of Total	Reserve Life	Life Index	Half Life
Residue Gas	MMcf	898	449	0	449	350	6.000	75	96	26.6	13.1	8.8
Gas Heat Content	BBtu	987	494	0	494	385	0.000	0	0	26.6	13.1	8.8
Condensate	Mbbl	6	3	0	3	2	1.000	3	4	26.6	13.1	8.8
Total: Oil Eq.	Mboe	156	78	0	78	60	1.000	78	100	26.6	13.1	8.8

PRODUCT REVENUE AND EXPENSES

Product	Units	Average First Year Unit Values				Net Revenue After Royalties				
		Wellhead Price	Net Burdens	Operating Expenses	Other Expenses	Prod'n Revenue	Undisc M\$	% of Total	10% Disc M\$	% of Total
Residue Gas	\$/Mcf	3.49	0.38	1.36	0.00	1.75	1,849	90	794	91
Condensate	\$/bbl	69.91	30.82	0.00	0.00	39.09	213	10	82	9
Total: Oil Eq.	\$/boe	22.90	3.42	7.85	0.00	11.63	2,062	100	876	100

INTEREST AND NET PRESENT VALUE SUMMARY

Revenue Interests and Burdens (%)	Net Present Value Before Income Tax							
	Initial	Average	Disc. Rate %	Prod'n Revenue M\$	Operating Income M\$	Capital Invest. M\$	Cash Flow	
							M\$	\$/boe
Working Interest	50.0000	50.0000	0	916	842	0	842	10.81
Capital Interest	50.0000	50.0000	5	616	600	0	600	7.70
Royalty Interest	0.0000	0.0000	8	508	501	0	501	6.43
Crown Royalty	11.0786	8.1225	10	453	449	0	449	5.76
Non-crown Royalty	15.0000	15.0000	12	408	406	0	406	5.21
Mineral Tax	0.0000	0.0000	15	355	354	0	354	4.54
			20	292	291	0	291	3.74

Evaluator: Joa, Bryan M.
Run Date: May 29, 2017 08:31:22

RESERVES DEFINITIONS

Reserves estimates have been prepared by GLJ Petroleum Consultants (GLJ) in accordance with standards contained in the Canadian Oil and Gas Evaluation (COGE) Handbook. The following reserves definitions are set out by the Canadian Securities Administrators in National Instrument 51-101 Standards of Disclosure for Oil and Gas Activities (NI 51-101; in Part 2 of the Glossary to NI 51-101) with reference to the COGE Handbook.

Reserves Categories

Reserves are estimated remaining quantities of oil and natural gas and related substances anticipated to be recoverable from known accumulations, as of a given date, based on:

- analysis of drilling, geological, geophysical, and engineering data;
- the use of established technology;
- specified economic conditions¹, which are generally accepted as being reasonable, and shall be disclosed.

Reserves are classified according to the degree of certainty associated with the estimates.

Proved Reserves

Proved reserves are those reserves that can be estimated with a high degree of certainty to be recoverable. It is likely that the actual remaining quantities recovered will exceed the estimated proved reserves.

Probable Reserves

Probable reserves are those additional reserves that are less certain to be recovered than proved reserves. It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated proved plus probable reserves.

Possible Reserves

Possible reserves are those additional reserves that are less certain to be recovered than probable reserves. It is unlikely that the actual remaining quantities recovered will exceed the sum of the estimated proved plus probable plus possible reserves.

Other criteria that must also be met for the classification of reserves are provided in [Section 5.5 of the COGE Handbook].

Development and Production Status

Each of the reserves categories (proved, probable, and possible) may be divided into developed and undeveloped categories.

¹ For securities reporting, the key economic assumptions will be the prices and costs used in the estimate. The required assumptions may vary by jurisdiction, for example:

(a) **forecast prices and costs, in Canada under NI 51-101**

(b) **constant prices and costs, based on the average of the first day posted prices in each of the 12 months of the reporting issuer's financial year, under US SEC rules (this is optional disclosure under NI 51-101).**

Developed Reserves

Developed reserves are those reserves that are expected to be recovered from existing wells and installed facilities or, if facilities have not been installed, that would involve a low expenditure (e.g., when compared to the cost of drilling a well) to put the reserves on production. The developed category may be subdivided into producing and non-producing.

Developed Producing Reserves

Developed producing reserves are those reserves that are expected to be recovered from completion intervals open at the time of the estimate. These reserves may be currently producing or, if shut in, they must have previously been on production, and the date of resumption of production must be known with reasonable certainty.

Developed Non-Producing Reserves

Developed non-producing reserves are those reserves that either have not been on production, or have previously been on production, but are shut in, and the date of resumption of production is unknown.

Undeveloped Reserves

Undeveloped reserves are those reserves expected to be recovered from known accumulations where a significant expenditure (for example, when compared to the cost of drilling a well) is required to render them capable of production. They must fully meet the requirements of the reserves category (proved, probable, possible) to which they are assigned.

In multi-well pools, it may be appropriate to allocate total pool reserves between the developed and undeveloped categories or to subdivide the developed reserves for the pool between developed producing and developed non-producing. This allocation should be based on the estimator's assessment as to the reserves that will be recovered from specific wells, facilities, and completion intervals in the pool and their respective development and production status.

Levels of Certainty for Reported Reserves

The qualitative certainty levels referred to in the definitions above are applicable to individual reserves entities (which refers to the lowest level at which reserves calculations are performed) and to Reported Reserves (which refers to the highest level sum of individual entity estimates for which reserves estimates are presented). Reported Reserves should target the following levels of certainty under a specific set of economic conditions:

- at least a 90 percent probability that the quantities actually recovered will equal or exceed the estimated proved reserves;
- at least a 50 percent probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable reserves;
- at least a 10 percent probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable plus possible reserves.

A quantitative measure of the certainty levels pertaining to estimates prepared for the various reserves categories is desirable to provide a clearer understanding of the associated risks and uncertainties. However, the majority of reserves estimates are prepared using deterministic methods that do not provide a mathematically derived quantitative measure of probability. In principle, there should be no difference between estimates prepared using probabilistic or deterministic methods.

Additional clarification of certainty levels associated with reserves estimates and the effect of aggregation is provided in Section 5.5.3 [of the *COGE Handbook*].

DOCUMENTED RESERVES CATEGORIES

Production and revenue projections are prepared for each of the following main reserves categories:

Reserves Category

Proved
Proved Plus Probable

Production and Development Status

Developed Producing*
Developed Non-Producing
Undeveloped
Total (sum of developed producing, developed non-producing and undeveloped)

** as producing reserves are inherently developed, GLJ simply refers to "developed producing" reserves as "producing"*

Reserves and revenue projections are available in GLJ's evaluation database for any reserves and development subcategory including those determined by difference (e.g., probable producing).

The following reserves categories are documented in this evaluation:

Proved Producing
Proved Developed Non-Producing
Proved Undeveloped
Total Proved
Total Probable
Total Proved Plus Probable

When evaluating reserves, GLJ evaluators generally first identify the producing situation and assign proved, proved plus probable and proved plus probable plus possible reserves in recognition of the existing level of development and the existing depletion strategy. Incremental non-producing (developed non-producing or undeveloped) reserves are subsequently assigned recognizing future development opportunities and enhancements to the depletion mechanism. It should be recognized that future developments may result in accelerated recovery of producing reserves.

Table 1
Sutton Energy Ltd. & GeoCap Energy Corporation
Crude Oil and Natural Gas Liquids
2008-08 Historical Pricing (2017-04 Forecast)
Effective August 1, 2008

Year	Inflation %	CAD/USD Exchange Rate USD/CAD	NYMEX WTI Near Month Futures Contract Crude Oil at Cushing, Oklahoma	Brexit Blend Crude Oil FOB North Sea	Light, Sweet Crude Oil (40 API, 0.3% S) at Edmonton		Bow River Crude Oil Stream at Hardisty		WCS Crude Oil Stream Quality at Hardisty		Heavy Crude Oil Proxy (12 API) at Hardisty		Light Sour Crude Oil (35 API, 1.2% S) at Cromer		Medium Crude Oil (29 API, 2.0% S) at Cromer		Alberta Natural Gas Liquids (Then Current Dollars)			Edmonton C5+ Stream Quality CAD/bbl	
					Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl	Then Current CAD/bbl	Then Current USD/bbl		Then Current CAD/bbl
2008 Aug-Dec	2.5	0.8737	79.33	79.33	77.29	84.18	67.44	67.44	67.44	59.81	78.29	74.84	0.00	51.57	60.48	89.54	0.00	0.00	0.00	0.00	0.00
2009	0.4	0.8798	61.56	61.78	62.50	66.32	57.50	57.50	57.50	53.30	1,310.83	60.98	0.00	38.03	48.17	68.17	0.00	0.00	0.00	0.00	0.00
2010	1.8	0.9711	77.78	79.52	80.25	77.87	67.66	67.66	67.66	61.46	74.60	73.08	0.00	46.84	65.91	84.27	0.00	0.00	0.00	0.00	0.00
2011	2.9	1.0115	90.42	95.12	110.86	95.53	77.90	77.90	77.90	68.95	91.90	88.33	8.81	53.66	74.42	104.17	8.81	7.69	8.81	8.81	8.81
2012	1.5	1.0009	88.17	94.21	111.71	86.60	73.93	73.93	73.93	64.69	83.79	80.48	7.69	29.04	66.70	100.84	7.69	7.69	7.69	7.69	7.69
2013	0.9	0.9711	90.90	97.96	108.77	93.47	78.09	78.09	78.09	69.11	91.82	87.09	10.30	38.88	68.81	104.70	10.30	10.30	10.30	10.30	10.30
2014	1.9	0.9055	84.67	93.00	99.71	94.58	80.40	80.40	80.40	72.54	92.69	88.85	14.81	45.53	69.20	102.44	14.81	14.81	14.81	14.81	14.81
2015	1.1	0.7831	43.93	48.78	53.60	57.20	47.56	47.56	47.56	41.96	56.05	53.93	8.58	6.49	36.75	60.42	8.58	8.58	8.58	8.58	8.58
2016	1.4	0.7551	38.51	43.38	45.03	53.08	40.41	40.41	40.41	33.97	51.36	48.71	6.76	13.24	34.48	56.25	6.76	6.76	6.76	6.76	6.76
2017	2.0	0.7515	45.21	51.97	54.55	64.98	51.20	51.20	51.20	43.81	63.68	60.43	9.68	22.26	43.59	69.70	9.68	9.68	9.68	9.68	9.68
2018	2.0	0.7750	47.76	56.00	58.50	68.39	53.68	53.68	53.68	46.15	67.02	63.60	9.55	22.57	47.87	72.49	9.55	9.55	9.55	9.55	9.55
2019	2.0	0.8000	51.84	62.00	64.50	72.50	59.45	59.45	59.45	52.29	71.05	67.42	10.12	25.38	50.75	76.85	10.12	10.12	10.12	10.12	10.12
2020	2.0	0.8250	53.29	65.00	68.00	73.94	61.37	61.37	61.37	54.31	72.46	68.76	10.70	25.88	51.76	78.38	10.70	10.70	10.70	10.70	10.70
2021	2.0	0.8500	54.65	68.00	71.00	75.29	63.10	63.10	63.10	56.10	73.79	70.02	11.30	26.35	52.71	79.81	11.30	11.30	11.30	11.30	11.30
2022	2.0	0.8500	55.94	71.00	74.00	78.82	66.68	66.68	66.68	59.60	77.25	73.31	11.95	27.59	55.18	83.55	11.95	11.95	11.95	11.95	11.95
2023	2.0	0.8500	57.16	74.00	77.00	82.35	70.25	70.25	70.25	63.43	80.71	76.59	12.61	28.82	57.65	86.06	12.61	12.61	12.61	12.61	12.61
2024	2.0	0.8500	58.32	77.00	80.00	85.88	73.77	73.77	73.77	66.86	84.16	79.87	13.29	30.06	60.12	89.75	13.29	13.29	13.29	13.29	13.29
2025	2.0	0.8500	59.40	80.00	83.00	89.41	77.34	77.34	77.34	70.35	87.62	83.15	13.56	31.29	62.59	93.44	13.56	13.56	13.56	13.56	13.56
2026	2.0	0.8500	60.90	83.66	87.25	92.80	81.66	81.66	81.66	74.86	90.94	86.30	13.85	32.48	64.96	96.98	13.85	13.85	13.85	13.85	13.85
2027	2.0	0.8500	60.90	85.33	89.00	94.66	83.30	83.30	83.30	76.36	92.76	88.03	14.13	33.13	66.26	98.92	14.13	14.13	14.13	14.13	14.13
2028	2.0	0.8500	60.90	85.00	89.00	94.66	83.30	83.30	83.30	76.36	92.76	88.03	14.13	33.13	66.26	98.92	14.13	14.13	14.13	14.13	14.13

Historical futures contract price is an average of the daily settlement price of the near month contract over the calendar month.

Table 2
Sutton Energy Ltd. & GeoCap Energy Corporation
Natural Gas and Sulphur
2008-08 Historical Pricing (2017-04 Forecast)
Effective August 1, 2008

Year	NYMEX Henry Hub Near Month Contract		Midwest Price at Chicago		AECO/NIT Spot		Alliance Transfer Pool Spot		Alberta Plant Gate		Saskatchewan Plant Gate		British Columbia		Sulphur FOB Vancouver USD/ft		Alberta Sulphur at Plant at Gate CAD/ft				
	Constant 2008 \$ USD/MMBtu	Then Current USD/MMBtu	Then Current USD/MMBtu	Then Current USD/MMBtu	Then Current CAD/MMBtu	Then Current CAD/MMBtu	Then Current CAD/MMBtu	Then Current CAD/MMBtu	Constant 2008 \$ CAD/MMBtu	Then Current CAD/MMBtu	ARP CAD/MMBtu	SaskEnergy CAD/MMBtu	Spot CAD/MMBtu	Sumas Spot USD/MMBtu	Westcoast Station 2 CAD/MMBtu	Plant Gate Vancouver CAD/MMBtu	Spot Gate CAD/ft	Alberta Sulphur at Plant at Gate CAD/ft			
	2008 Aug-Dec	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
2008 Aug-Dec	7.00	7.00	7.39	6.76	6.76	6.76	6.76	6.76	6.55	6.55	6.86	6.94	6.67	6.38	7.45	7.24	585.19	618.78			
2009	4.14	4.16	4.05	3.99	3.99	3.99	3.99	3.99	3.77	3.79	3.85	3.87	3.83	3.80	3.90	3.70	57.06	24.57			
2010	4.30	4.40	4.53	4.01	4.01	4.01	4.01	4.01	3.70	3.78	3.77	3.96	3.85	4.13	3.78	3.63	88.94	48.26			
2011	3.83	4.03	4.21	3.62	3.62	3.62	3.62	3.62	3.25	3.42	3.46	3.57	3.58	3.90	3.33	3.18	217.16	171.93			
2012	2.65	2.83	2.92	2.40	2.40	2.40	2.40	2.40	2.07	2.21	2.25	2.31	2.26	2.70	2.30	2.12	201.03	157.91			
2013	3.46	3.73	3.81	3.18	3.18	3.18	3.18	3.18	2.74	2.96	2.98	3.09	3.10	3.71	3.14	2.94	105.74	74.02			
2014	3.89	4.28	5.36	4.50	4.50	4.50	4.50	4.50	3.87	4.26	4.22	4.39	4.42	4.37	4.29	4.07	145.41	110.41			
2015	2.37	2.63	2.85	2.70	2.70	2.70	2.70	2.70	2.22	2.47	2.56	2.71	2.61	2.31	1.80	1.59	139.61	128.14			
2016	2.27	2.55	2.48	2.18	2.18	2.18	2.18	2.18	1.72	1.94	1.93	2.18	2.09	2.17	1.77	1.60	82.96	60.06			
2017	2.89	3.32	3.48	3.05	3.20	3.20	3.20	3.20	2.42	2.78	2.81	2.91	2.91	2.96	2.70	2.52	86.15	63.83			
2018	2.73	3.20	3.25	3.01	3.11	3.11	3.11	3.11	2.34	2.74	2.74	2.84	2.91	2.80	2.61	2.44	100.00	79.03			
2019	2.80	3.35	3.40	3.18	3.18	3.18	3.18	3.18	2.43	2.91	2.91	3.01	3.08	3.70	2.88	2.71	102.00	77.50			
2020	2.87	3.50	3.55	3.35	3.35	3.35	3.35	3.35	2.52	3.08	3.08	3.18	3.25	3.20	3.05	2.88	104.04	76.11			
2021	2.97	3.70	3.75	3.53	3.53	3.53	3.53	3.53	2.61	3.25	3.25	3.35	3.43	3.50	3.23	3.05	106.12	74.85			
2022	3.07	3.90	3.95	3.72	3.72	3.72	3.72	3.72	2.71	3.44	3.44	3.54	3.62	3.70	3.42	3.24	108.24	77.34			
2023	3.17	4.10	4.15	3.91	3.91	3.91	3.91	3.91	2.80	3.62	3.62	3.72	3.81	3.90	3.61	3.43	110.41	79.89			
2024	3.26	4.31	4.36	4.11	4.11	4.11	4.11	4.11	2.89	3.82	3.82	3.92	4.01	4.11	3.81	3.63	112.62	82.49			
2025	3.26	4.39	4.44	4.18	4.18	4.18	4.18	4.18	2.89	3.90	3.90	4.00	4.08	4.19	3.88	3.70	114.87	85.14			
2026	3.26	4.48	4.53	4.27	4.27	4.27	4.27	4.27	2.90	3.98	3.98	4.08	4.17	4.28	3.97	3.79	117.17	87.85			
2027	3.26	4.57	4.62	4.35	4.35	4.35	4.35	4.35	2.90	4.06	4.06	4.16	4.25	4.37	4.05	3.87	119.51	89.60			
2028	3.26	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	2.90	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr

Unless otherwise stated, the gas price reference point is the receipt point on the applicable provincial gas transmission system known as the plant gate. The plant gate price represents the price before raw gathering and processing charges are deducted.

Table 3
Sutton Energy Ltd. & GeoCap Energy Corporation
International and Frontier
2008-08 Historical Pricing (2017-04 Forecast)
Effective August 1, 2008

Year	Inflation %	CAD/USD Exchange Rate		GBP/USD Exchange Rate		EUR/USD Exchange Rate		NYMEX WTI Near Month Futures Contract		Light Louisiana Sweet Crude Oil at Cushing, Oklahoma		Maya Crude Oil		Brent Blend Crude Oil FOB North Sea		NYMEX Henry Hub Near Month Contract		Nova Scotia Goldboro		National Balancing Point (UK)			
		USD/CAD	USD/GBP	USD/EUR	USD/GBP	USD/EUR	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	Then Current	
2008 Aug-Dec	2.5	0.8737	1.6760	1.3744	79.33	89.12	0.00	0.00	0.00	0.00	77.29	86.80	7.00	7.99	6.78	7.74	11.04	12.61					
2009	0.4	0.8798	1.5648	1.3930	61.78	69.56	0.00	0.00	0.00	0.00	62.50	70.47	4.16	4.75	3.35	3.87	4.95	5.68					
2010	1.8	0.9711	1.5465	1.3274	79.52	81.85	0.00	0.00	0.00	0.00	80.25	82.58	4.40	4.53	3.83	3.96	6.39	6.58					
2011	2.9	1.0115	1.6038	1.3920	95.12	94.02	0.00	0.00	0.00	0.00	110.86	109.57	4.03	3.98	3.62	3.58	9.35	9.25					
2012	1.5	1.0009	1.5854	1.2861	94.21	94.11	0.00	0.00	0.00	0.00	111.71	111.57	2.83	2.82	2.72	2.72	9.38	9.37					
2013	0.9	0.9711	1.5645	1.3285	97.96	100.95	108.22	111.47	97.31	100.28	108.77	112.04	3.73	3.84	4.56	4.66	10.50	10.82					
2014	1.9	0.9055	1.6472	1.3288	93.00	102.50	96.18	106.00	86.06	94.85	99.71	109.89	4.28	4.72	5.49	6.10	8.25	9.12					
2015	1.1	0.7831	1.5283	1.1097	48.78	62.12	52.14	66.41	46.85	59.65	53.60	68.23	2.63	3.36	4.60	5.81	6.52	8.31					
2016	1.4	0.7551	1.3550	1.1066	43.38	57.33	44.92	59.37	36.66	48.45	45.05	59.54	2.55	3.38	2.61	3.48	4.66	6.18					
2017	2.0	0.7515	1.2332	1.0725	51.97	69.16	53.59	71.32	43.82	60.97	54.55	72.59	3.32	4.42	3.44	4.58	5.69	7.57					
2018	2.0	0.7750	1.2315	1.0750	56.00	72.26	57.91	74.73	49.73	64.16	58.50	75.48	3.20	4.13	3.18	4.11	5.91	7.63					
2019	2.0	0.8000	1.2315	1.0750	62.00	77.50	63.86	79.82	55.47	69.34	64.50	80.63	3.35	4.19	3.33	4.17	6.16	7.70					
2020	2.0	0.8250	1.2315	1.0750	65.00	78.79	67.32	81.60	58.48	70.88	68.00	82.42	3.50	4.24	3.48	4.22	6.40	7.76					
2021	2.0	0.8500	1.2315	1.0750	68.00	80.00	70.29	82.69	61.77	72.67	71.00	83.53	3.70	4.35	3.68	4.33	6.65	7.82					
2022	2.0	0.8500	1.2315	1.0750	71.00	83.53	73.26	86.19	65.12	76.61	74.00	87.06	3.90	4.59	3.88	4.56	6.78	7.98					
2023	2.0	0.8500	1.2315	1.0750	74.00	87.06	76.23	89.68	67.76	79.72	77.00	90.59	4.10	4.82	4.08	4.79	6.92	8.14					
2024	2.0	0.8500	1.2315	1.0750	77.00	90.59	79.20	93.18	70.40	82.82	80.00	94.12	4.31	5.07	4.28	5.04	7.06	8.30					
2025	2.0	0.8500	1.2315	1.0750	80.00	94.12	82.17	96.67	73.87	86.91	83.00	97.65	4.39	5.16	4.36	5.13	7.20	8.47					
2026	2.0	0.8500	1.2315	1.0750	83.66	98.42	86.38	101.62	77.65	91.36	87.25	102.65	4.48	5.27	4.45	5.24	7.34	8.64					
2027	2.0	0.8500	1.2315	1.0750	85.33	100.39	88.11	103.65	79.21	93.18	89.00	104.70	4.57	5.38	4.54	5.34	7.49	8.81					
2028	2.0	0.8500	1.2315	1.0750	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr	+2.0%/yr				

Historical futures contract price is an average of the daily settlement price of the near month contract over the calendar month.

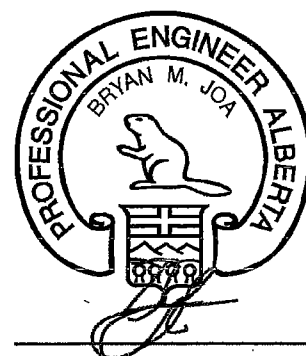
APPENDIX I
CERTIFICATES OF QUALIFICATION

Bryan M. Joa
Dragan Ridic

CERTIFICATION OF QUALIFICATION

I, Bryan M. Joa, Professional Engineer, 4100, 400 - 3rd Avenue S.W., Calgary, Alberta, Canada hereby certify:

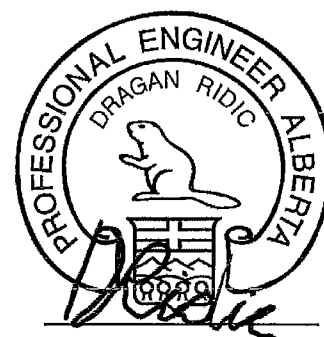
1. That I am an employee of GLJ Petroleum Consultants Ltd., which company did prepare a detailed analysis of the Sawn Lake Well for Sutton Energy Ltd. and GeoCap Energy Corporation (the "Companies"). The effective date of this evaluation is August 1, 2008.
2. That I do not have, nor do I expect to receive any direct or indirect interest in the securities of the Company or its affiliated companies.
3. That I attended the University of Calgary and that I graduated with a Bachelor of Science Degree in Chemical Engineering in 1984; that I am a Registered Professional Engineer in the Province of Alberta; and, that I have in excess of thirty-three years experience in engineering studies relating to oil and gas fields.
4. That a personal field inspection of the properties was not made; however, such an inspection was not considered necessary in view of the information available from public information and records, the files of the Company, and the appropriate provincial regulatory authorities.



CERTIFICATION OF QUALIFICATION

I, Dragan Ridic, Professional Engineer, 4100, 400 - 3rd Avenue S.W., Calgary, Alberta, Canada hereby certify:

1. That I am an employee of GLJ Petroleum Consultants Ltd., which company did prepare a detailed analysis of the Sawn Lake Well for Sutton Energy Ltd. and GeoCap Energy Corporation (the "Companies"). The effective date of this evaluation is August 1, 2008.
2. That I do not have, nor do I expect to receive any direct or indirect interest in the securities of the Company or its affiliated companies.
3. That I attended the University of Calgary where I graduated with a Bachelors Degree in Oil & Gas Engineering in 2013; that I am a Registered Professional Engineer in the Province of Alberta; and, that I have in excess of five years experience in engineering studies relating to oil and gas fields.
4. That a personal field inspection of the properties was not made; however, such an inspection was not considered necessary in view of the information available from public information and records, the files of the Company, and the appropriate provincial regulatory authorities.



TAB 5

SUTTON ENERGY LTD.

DRILLING COST ESTIMATE

WELL NAME:		Sutton Sawn Lake 103 1-35-90-13W5		DATE:	17-Mar-17
LOCATION:		103/01-35-090-13W5M		AFE #:	
ACCOUNT	DRILLING		D&A COSTS	CASING COSTS	TOTAL
INTANGIBLE DRILLING COSTS					
9310	304	SURVEY- ROAD AND LOCATION	\$7,500		\$7,500
9310	305	SFC. LEASE ACQ., LAND SERVICES	\$1,500		\$1,500
9310	310	LEASE & ACCESS ROAD CONSTRUCTION	\$20,000		\$20,000
9310	311	LICENSES AND PERMITS	\$1,500		\$1,500
9310	313	CONSTRUCTION SUPERVISION	\$6,000		\$6,000
9310	314	RIG & CAMP MOVE	\$40,000		\$40,000
9310	316	CREW TRAVEL, CAMP & SUBSISTENCE			\$0
9310	318	CONDUCTOR			\$0
9310	320	DRILLING - FOOTAGE			\$0
9310	321	DRILLING - TURNKEY			\$0
9310	322	DRILLING - DAYWORK	\$297,500		\$297,500
9310	323	DRILL PIPE & DIRECTIONAL DRILLING			\$0
9310	324	DRILL BITS	\$20,000		\$20,000
9310	326	MUD, MUD EQ. RENTALS & CHEMICALS	\$25,000		\$25,000
9310	327	DRILL WASTE DISPOSAL, LSWD & ENVIRONMENTAL	\$12,500		\$12,500
9310	330	SFC CASING & ATTACH	\$58,500		\$58,500
9310	331	POWER TONGS	\$25,000		\$25,000
9310	332	INT CASING & ATTACH	\$63,250		\$63,250
9310	333	CASING BOWL & ATTACH	\$20,000		\$20,000
9310	334	CEMENT & SERV - SFC/INT	\$60,000		\$60,000
9310	335	FISHING			\$0
9310	336	DST & ANALYSIS			\$0
9310	338	LOGGING	\$35,000		\$35,000
9310	339	GEOLOGICAL SUPERVISION/SUPPLIES	\$12,500		\$12,500
9310	340	CORING & ANALYSIS			\$0
9310	342	EQUIPMENT RENTALS	\$65,000		\$65,000
9310	344	TRUCKING AND HAULING/VAC TRUCK	\$45,000		\$45,000
9310	346	BOILER	\$25,500		\$25,500
9310	347	FUEL	\$25,000		\$25,000
9310	348	WATER	\$3,000		\$3,000
9310	349	SAFETY SERVICES	\$6,000		\$6,000
9310	350	SUNDRY LABOUR COSTS			\$0
9310	353	WELLSITE SUPERVISION	\$45,000		\$45,000
9310	355	OTHER CONTRACT/CONSULTING SERVICES			\$0
9310	360	CMT & SERV - ABANDONMENT (+ OR -)			\$0
9310	361	ENGINEERING/PROJECT MANAGEMENT	\$8,500		\$8,500
9310	370	MISCELLANEOUS	\$10,000		\$10,000
9310	380	INSURANCE			\$0
9310	382	CLEAN-UP, RESTORATION, RECLAMATION	\$10,000		\$10,000
9320	410	CEMENT & SERVICE PRODUCTION CASING		\$25,000	\$25,000
9320	405	PRODUCTION CASING & ATTACH		\$23,500	\$23,500
SUB-TOTAL			\$948,750	\$48,500	\$997,250
9310	391	CONTINGENCY (3%)	\$28,463	\$1,455	\$29,918
9310	362	OVERHEAD 3/2/1	\$11,488	\$1,455	\$12,943
TOTAL DRY HOLE/CASED COST			\$ 988,700	\$ 51,410	\$ 1,040,110
PREPARED BY:					

SUTTON ENERGY LTD.

COMPLETION COST ESTIMATE

WELL NAME: Sutton Sawn Lake 103 1-35-90-13W5
 LOCATION: 103/01-35-090-13W5M

DATE: _____
 AFE #: _____

ACCOUNT CODES		COMPLETION	COSTS		
			INTANGIBLE COMPLETION COSTS	ORIGINAL	REVISIONS
9320	401	SURFACE LEASE, LAND SERV, LEGAL			\$0
9320	403	SURVEYING COSTS			\$0
9320	405	PRODUCTION CASING & ATTACH (LINER)			\$0
9320	407	POWER TONGS			\$0
9320	410	CEMENT & SERVICE - CASING			\$0
9320	412	SERVICE RIG MOVE	\$12,000		\$12,000
9320	413	SERVICE RIG-TURNKEY			\$0
9320	414	ROAD & LOCATION PREPARATION			\$0
9320	415	WATER			\$0
9320	420	SERVICE RIG - DAYWORK	\$25,000		\$25,000
9320	422	PERMANENT DOWNHOLE EQUIPMENT	\$2,500		\$2,500
9320	423	SLICKLINE+P REC./WIRELINE/CTU + N2 Services			\$0
9320	425	LOGGING AND PERFORATING	\$7,500		\$7,500
9320	426	STIM SERVICES - ACIDIZING & FRAC'ING	\$30,000		\$30,000
9320	427	PROD TESTING & ANALYSIS	\$4,000		\$4,000
9320	428	BOILER			\$0
9320	429	FUEL			\$0
9320	430	EQUIPMENT RENTALS			\$0
9320	431	LOAD OIL PURCHASES/RECOVERIES			\$0
9320	432	TRUCKING & HAULING	\$6,000		\$6,000
9320	433	MUD & CHEMICALS			\$0
9320	434	CREW TRAVEL & CAMP			\$0
9320	435	FISHING (TOOLS & LABOUR)			\$0
9320	438	WELLSITE SUPERVISION	\$4,500		\$4,500
9320	440	ENGINEERING/PROJECT MANAGEMENT	\$2,500		\$2,500
9320	449	FIRE & SAFETY PROTECTION	\$2,500		\$2,500
9320	450	MISCELLANEOUS INTANGIBLE COMPLETION COSTS			\$0
9320	455	OTHER CONTRACT/CONSULTING SERVICES			\$0
9320	471	CLEAN-UP, RESTORATION, RECLAMATION			\$0
9320	472	CEMENT & SERVICE - ABANDON			\$0
9320	475	WASTE DISPOSAL & ENVIRONMENT			\$0
9320	477	COMMUNICATIONS			\$0
9320	480	LEGAL & INSURANCE			\$0
SUB-TOTAL:			\$96,500	\$0	\$96,500
9320	491	CONTINGENCY (3%)	\$2,895	\$0	\$2,895
9320	462	OVERHEAD (3,2,1%)	\$2,430	\$0	\$2,430
TOTAL INTANGIBLE COMPLETION COSTS			101,825	0	101,825
TANGIBLE COMPLETION COSTS					
9510	504	WELLHEAD ASSEMBLY	\$15,000		\$15,000
9510	506	PRODUCTION TBG & ATTACHMENTS	\$32,500		\$32,500
9510	508	MISC VALVES, FITTINGS, METER			\$0
9510	520	SUBSURFACE; RODS, BHP			\$0
9510	571	SUPERVISION			\$0
9510	572	LABOUR - INSTALLATION			\$0
9510	573	TRUCKING & HAULING			\$0
9510	585	MISCELLANEOUS TANGIBLES			\$0
SUB-TOTAL:			\$47,500	\$0	\$47,500
9510	562	OVERHEAD (1%)	\$475	\$0	\$475
9510	591	CONTINGENCY (5%)	\$2,375	\$0	\$2,375
TOTAL TANGIBLE COMPLETION COSTS			\$50,350	\$0	\$50,350
TOTAL COMPLETION COSTS			\$ 152,175	\$ -	\$ 152,175

PREPARED BY: _____

TAB 6

Bissett Invoicing

Re: Sawn Lake 1-35 Gilwood A Gaswell
Failed Gas Lift Operation - Twin Butte

Date	Invoice No	Gross (before GST)	GeoCap / Sutton Net (50%) each		
			Net Amount	Gst	Total
31-Jan-15	434669B	\$ 32,291.00	\$ 16,145.50	\$ 807.28	\$ 16,952.78
31-Jan-15	7609226B	\$ (4,392.50)	\$ (2,196.25)	\$ (109.82)	\$ (2,306.07)
28-Feb-15	434727B	\$ 17,233.25	\$ 8,616.63	\$ 430.84	\$ 9,047.47
31-Mar-15	434785B	\$ 27,936.00	\$ 13,968.00	\$ 698.40	\$ 14,666.40
30-Apr-15	434864B	\$ 24,925.47	\$ 12,462.74	\$ 623.13	\$ 13,085.87
25-May-15	434886B	\$ 6,473.10	\$ 3,236.55	\$ 161.82	\$ 3,398.37
30-Jun-15	432022B	\$ 426.79	\$ 213.40	\$ 10.67	\$ 224.07
18-Nov-15	435295B	\$ 17,880.39	\$ 8,940.20	\$ 447.01	\$ 9,387.21
31-Dec-15	435410B	\$ 12,056.75	\$ 6,028.38	\$ 301.42	\$ 6,329.80
		\$ 134,830.25	\$ 67,415.14	\$ 3,370.75	\$ 70,785.89

Notice of Disallowance

To: Sutton Energy Ltd and GeoCap Energy Corporation (the “**Claimant**”)

Date: July 4, 2017

Proof of Claim No. 311

IN THE MATTER OF THE RECEIVERSHIP OF TWIN BUTTE ENERGY LTD. (“TWIN BUTTE”)

Take notice that FTI Consulting Canada Inc., in its capacity as court-appointed receiver of Twin Butte (the “**Receiver**”) has reviewed the Proof of Claim in respect of the above-named Claimant, and has assessed the Proof of Claim in accordance with the order of the Alberta Court of Queen’s Bench issued on April 27, 2017 (the “**Claims Procedure Order**”).

All capitalized terms not defined herein have the meaning given to such terms in the Claims Procedure Order.

The Receiver has reviewed your *Proof of Claim* in accordance with the Claims Procedure Order, and has disallowed your Claim, for the following reason(s):

_____ The underlying proof of claim is the subject of outstanding litigation bearing Court of Queen’s Bench Action Nos. 1001-06764 and 1001-02577. All operations conducted on the 1-35 Well were carried out properly and in compliance with the obligations or duties which Twin Butte, as Operator, owed to the Plaintiffs Sutton Energy Ltd. and GeoCap Energy Corporation, or either of them. Liability has not been established and on the basis of the applicable facts and evidence, liability is unlikely to be established. The allegations of GeoCap Energy Corporation and Sutton Energy Ltd. are too remote, speculative, or uncertain to be recoverable as a Proven Claim. Claim is disallowed in its entirety.

Subject to further dispute by you in accordance with the Claims Procedure, your Claim will be disallowed as follows:

Name of Claimant	Claim Amount per Proof of Claim	Classification of Claim per Proof of Claim	Amount of Claim disallowed	Classification of Claim disallowed
Sutton Energy Ltd and GeoCap Energy Corporation	\$2,040,927.42	Unsecured	\$2,040,927.42	Unsecured

IF YOU WISH TO DISPUTE THE REVISION OR DISALLOWANCE OF YOUR CLAIM AS SET FORTH HEREIN YOU MUST TAKE THE STEPS OUTLINED BELOW

The Claims Procedure Order provides that if you disagree with the revision or disallowance of your claim as set forth herein, you must:

1. before 5:00 P.M. on the fifteenth (15th) Calendar Day after your receipt of this Notice of Revision or Disallowance, whichever is earlier, deliver to the Receiver a completed Notice of Dispute; and
2. file an application with the Court, with copies to be sent to the Receiver immediately after filing, with such application to be:
 - i. supported by an affidavit setting out the basis for disputing this Notice of Revision or Disallowance; and

- ii. returnable within ten (10) Calendar Days of the date on which the Receiver receives your completed Notice of Dispute.

If you do not dispute the revision or disallowance of your Claim in accordance with the above instructions and the Claims Procedure Order, the amount and classification of your Claim will deemed to be accepted, and the Claim shall be a Proven Claim in the amount, and classification, set forth herein.

If you have any questions or concerns regarding the Claims Procedure, or the attached materials, please contact the Receiver directly.

DATED the __4th__ day of _July_, 2017

FTI Consulting Canada Inc., in its capacity as Receiver of Twin Butte Energy Ltd.

Per:  _____

Notice of Dispute

To: FTI Consulting Canada Inc., in its capacity as Court-Appointed Receiver of Twin Butte Energy Ltd. (the "Receiver")

Date: July 18, 2017

Proof of Claim No.: 311

Claimant: SUTTON ENERGY LTD. and GEOCAP ENERGY CORPORATION (the "Claimant")

IN THE MATTER OF THE RECEIVERSHIP OF TWIN BUTTE ENERGY LTD. ("TWIN BUTTE")

Pursuant to the Claims Procedure Order dated April 27, 2017 (the "Claims Procedure Order"), the Claimant hereby gives notice that it disputes the Notice of Revision or Disallowance dated July 4, 2017, issued by the Receiver.

The Claimant disputes the Claim as revised or disallowed in the said Notice of Revision or Disallowance as follows:

Amount of Claim Disallowed by Receiver	Amount of Disallowed Claim as disputed	Classification of Disallowed Claim by Receiver	Classification of Disallowed Claim as disputed
\$2,040,927.42	\$2,040,927.42	Unsecured	N/A

Reason for the dispute (*attach copies of any supporting documentation*)

The Claimant disputes the Notice of Disallowance of the Receiver on the following grounds:

- Contrary to the statement in the Notice of Disallowance, operations conducted on the 1-35 Well were not carried out properly and in compliance with the obligations or duties which Twin Butte, as Operator, owed to the Claimant. In fact, Twin Butte was grossly negligent in carrying out its duties as Operator.
- There is an extremely high probability that liability on the part of Twin Butte will be established.
- The Claimant's allegations are not too remote, speculative, or uncertain to be recoverable as a Proven Claim.
- The Claimant's claim ought to have been accepted by the Receiver as a Proven Claim.
- Such further and other grounds as the Claimant may advise and the Honourable Court may accept in the course of the Claimants' Application filed in relation to this Notice of Dispute.

The Claimant further relies upon on the Affidavits to be sworn in support of its Application filed in relation to this Notice of Dispute, including the expert reports authored by Kenneth Richard Bissett and Bryan Joa.

Address for service of Notice of Dispute of Revision or Disallowance:

FTI Consulting Canada Inc., Court-appointed receiver of Twin Butte Energy
Ltd. Attn: Lindsay Shierman
720, 440 2nd
Avenue SW
Calgary, AB T2P
5E9
Email: lindsay.shierman@fticonsulting.com
Telephone: (403) 454-6036
Fax: (403) 232-6116

Pursuant to the Claims Procedure,

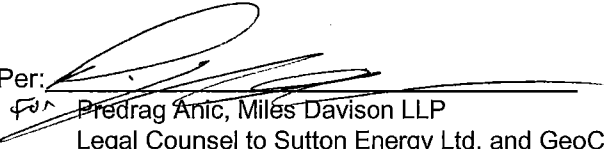
1. the Claimant has commenced an Application with the Court to resolve the dispute over its Claim as set forth herein, and will serve the Receiver with Application materials under separate cover; and
2. The return date for the Claimant's application is Wednesday, July 26, 2017.

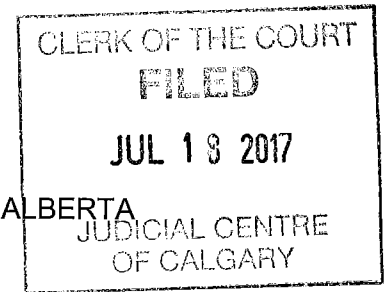
THIS FORM AND ANY REQUIRED SUPPORTING DOCUMENTATION MUST BE RETURNED TO THE RECEIVER BY REGISTERED MAIL, PERSONAL SERVICE, EMAIL (IN PDF FORMAT), FACSIMILE OR COURIER TO THE ABOVE-NOTED ADDRESS, AND MUST BE RECEIVED BY THE RECEIVER BEFORE 5:00 PM ON THE FIFTEENTH CALENDAR DAY AFTER THE DATE OF THE NOTICE OF REVISION OR DISALLOWANCE.

DATED this 18 day of July, 2017


Witness SHANIEK SHAW

SUTTON ENERGY LTD. and GEOCAP ENERGY
CORPORATION

Per: 
Predrag Anic, Miles Davison LLP
Legal Counsel to Sutton Energy Ltd. and GeoCap
Energy Corporation



COURT FILE NUMBER 1601-11552
COURT COURT OF QUEEN'S BENCH OF ALBERTA
JUDICIAL CENTRE CALGARY
PLAINTIFF NATIONAL BANK OF CANADA IN ITS CAPACITY AS ADMINISTRATIVE AGENT UNDER THAT CERTAIN AMENDED AND RESTATED CREDIT AGREEMENT DATED JANUARY 15, 2016, AS AMENDED
DEFENDANT TWIN BUTTE ENERGY LTD.
IN THE MATTER OF THE RECEIVERSHIP OF TWIN BUTTE ENERGY LTD.
APPLICANTS SUTTON ENERGY LTD. and GEOCAP ENERGY CORPORATION
DOCUMENT **APPLICATION BY SUTTON ENERGY LTD. and GEOCAP ENERGY CORPORATION**

ADDRESS FOR SERVICE AND CONTACT INFORMATION OF PARTY FILING THIS DOCUMENT
Miles Davison LLP
Barristers and Solicitors
900, 517 – 10th Avenue S.W.
Calgary, Alberta T2R 0A8
Telephone: (403) 266-7627
Facsimile: (403) 263-6840
Attention: Predrag Anic
File No. 35841

NOTICE TO RESPONDENT(S): FTI CONSULTING CANADA INC. in its capacity as Court-appointed Receiver of the current and future assets, undertakings and properties of Twin Butte Energy Ltd.

This application is made against you. You are a respondent. You have the right to state your side of this matter before the Justice.

To do so, you must be in Court when the application is heard as shown below:

Date: **Wednesday, July 26, 2017**
Time: **10:00 am**
Where: **Court of Queen's Bench, Calgary Courts Centre, 601 – 5 Street S.W., Calgary, Alberta T2P 5P7**
Before Whom: **Presiding Justice in Chambers**

Go to the end of this document to see what else you can do and when you must do it.

Remedy claimed or sought:

1. An Order abridging the time for service of this Application, if necessary.
2. An Order deeming service of this Application good and sufficient upon all interested parties.
3. Resolution of the dispute between the Claimant (as defined below) and the Receiver as to the validity and amount of the Claimant's Claim.
4. An Order setting aside the Notice of Disallowance issued by the Receiver to the Claimant and directing the Receiver to accept the Claimant's Claim (or in the alternative, an amount determined by the Court) as a Proven Claim in these proceedings.
5. A declaration that the Claim set out in the Claimant's Proof of Claim (or in the alternative, an amount determined by the Court) constitutes a Proven Claim in these proceedings.
6. Such further and other relief as this Honourable Court may deem just and appropriate.

Grounds for making this application:

7. On June 1, 2017, a Proof of Claim was filed on behalf of Sutton Energy Ltd. and GeoCap Energy Corporation (collectively, the "Claimant").
8. On July 4, 2017, the Receiver issued the Claimant a Notice of Disallowance.
9. The Claimant submitted a Notice of Dispute to the Receiver in accordance with the Claims Procedure Order granted in this Action by the Honourable Madam Justice K.M. Horner.
10. The Claimant states that the Receiver ought to have allowed the Claim as a Proven Claim, and has brought this Application to resolve the dispute as contemplated by the Claims Procedure Order.
11. The defence advanced by Twin Butte in response to the claims of the Claimant is without merit.
12. Such further and other grounds as may be advanced by Counsel and this Honourable Court may permit.

Material or evidence to be relied on:

13. Affidavit of Brent Gough, to be filed.
14. Affidavit of William Tobman, to be filed.
15. Affidavit of Bryan Joa sworn July 17, 2017, to be filed.
16. Affidavit of Kenneth Richard Bissett, to be filed.
17. The proceedings taken herein to date and materials and pleadings filed in Court of Queen's Bench Action Nos. 1001-06764 and 1001-02577.
18. Such further and other materials as counsel may advise and this Honourable Court may permit

Applicable rules:

19. *Alberta Rules of Court.*
20. Such other rules as counsel may advise and this Honourable Court may permit.

Applicable Acts and regulations:

21. *Alberta Rules of Court.*
22. Such further and other legislation as counsel may advise and this Honourable Court may permit.

Any irregularity complained of or objection relied on:

23. None

How the application is proposed to be heard or considered:

24. In person before the Honourable Justice. It is the intent of the parties to adjourn this Application to a date to be agreed on the Commercial List.

WARNING

If you do not come to Court either in person or by your lawyer, the Court may give the applicant(s) what they want in your absence. You will be bound by any order that the Court makes. If you want to take part in this application, you or your lawyer must attend in Court on the date and at the time shown at the beginning of the form. If you intend to give evidence in response to the application, you must reply by filing an affidavit or other evidence with the Court and serving a copy of that affidavit or other evidence on the applicant(s) a reasonable time before the application is to be heard or considered.