February 27, 2013

Dear [Name],

Re: Your request for access to information under Part II of the Access to Information and Protection of Privacy Act, file # NR/017/2012

On November 8, 2012, the Department of Natural Resources received your request for access to the following records/information:

I wish to obtain access to the following information/records:

All communications, correspondence, documentation, environmental studies, feasibility studies, mapping, economic benefit studies, recommendations, advice and any and all other documentation, records or correspondence generated within, or provided to, the Department of Natural Resources (hereinafter the "DNR"), including, without limitation, to the Minister of the Department of Natural Resources, created or circulated between the period of August 12, 2011 to August 12, 2012. which includes, considers, addresses, contains advice respecting or is in any way relevant to any of the following:

1. the consideration of issuing a call for postings pursuant to section 16 of the Petroleum Regulations (the "Regulations"), passed further to the Petroleum and Natural Gas Act, RSNL 1990 c. P-10 (the "Act"), in that area of western Newfoundland and Labrador designated by the DNR, and herinafter referred to, as "Western Newfoundland";

2. the potential benefits to the Province of Newfoundland and Labrador ("the Province"), or others, which might arise as a result of issuing exploration or
production rights in Western Newfoundland pursuant to the Act and/or Regulations;

3. the potential benefits to the Province, or others, which might arise as a result of issuing exploration or production rights in Western Newfoundland, pursuant to the Act and/or Regulations, to companies or individuals with comparatively more capital, resources or experience than existing rights holders or other exploration or production rights applicants;

4. the possibility that certain petroleum producers or exploration entities, or a certain quality of petroleum producer or exploration entity, might have some reservation in applying for, or seeking, exploration or production rights in Western Newfoundland under the Act and/or Regulations by reason of the limited extent of land or land covered by water available for exploration or production in Western Newfoundland;

5. the possibility that certain petroleum producers or exploration entities, or a certain quality of petroleum producer or exploration entity, might be deterred from seeking exploration or production rights in Western Newfoundland under the Act by reason of the extent of land or land covered by water permitted, licensed or leased to others pursuant to the Act and/or Regulations;

6. the likelihood or possibility that more applicants would respond to a call for postings or request for bids under the Regulations or might otherwise express interest in exploring or potentially producing petroleum in Western Newfoundland if more land or land covered by water were available for the issuance of exploration or production rights under the Act and/or Regulations;

7. any DNR strategy or policy respecting requests for renewals of exploration or production rights under the Act and/or Regulations, including in particular, but without limitation, any DNR policy regarding the areal extent of renewal rights under the Act and/or Regulations;

8. any marketing, promotional, or other communications and/or correspondence to or from third-party petroleum producers or exploration entities in respect of their interest, actual or potential, in acquiring exploration or production rights in Western Newfoundland further to the Act and/or Regulations, including any materials presented or made available, in any format, at conferences, seminars or industry events;

9. any communications, presentations or other correspondence to, or from, petroleum producers or exploration entities other than [REDACTED] in respect of lands or lands covered by water that have at any time been subject to PL2002-01, issued pursuant to the Act and Regulations, or in respect of any other lands or lands covered by water in respect of which [REDACTED] has held rights further to the Act or Regulations; or,
any reports or other form of correspondence provided to the DNR and/or the Minister of Natural Resources recommending that, or alluding to the potential benefits of, more or a greater area of land or land covered by water be made available for the issuance of petroleum exploration or production rights under the Act and/or Regulations.

**Summary of Activity**

The search for records began shortly after receiving your request. Given the breadth and depth of the request and the volume of information that needed to be searched as a result, a 30-day extension of the request time limit was issued on December 5, 2012.

Through email correspondence with you between December 6 and December 10, 2012, a point of clarification was sought and received from you on requested items 2 and 3:

<table>
<thead>
<tr>
<th>Clarification Sought (DNR)</th>
<th>Clarification Received (applicant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 6, 2012: &quot;...where you ask for information regarding '...potential benefits...which might arise as a result of issuing exploration or production rights in Western Newfoundland...'. Could you please identify the specific types of benefits you are referring to in these points?&quot;</td>
<td>December 10, 2012: &quot;The 'potential benefits' to which the ATIPPA enquiries relate are the employment, industrial and related socio-economic benefits in the Province which are contemplated to be associated with petroleum operations, and the knowledge of the Province's petroleum resources which may be gained through petroleum operations.&quot;</td>
</tr>
</tbody>
</table>

A fee estimate was issued to you on December 17, 2012 in the amount of $367 in response to which we received your payment in full in two installments of $183.50.

The department has gathered, reviewed and redacted the responsive records in accordance with the Access to Information and Protection of Privacy Act (the Act), and has conducted consultations with a number third parties whose information forms part of the response.
Response

I am pleased to inform you that your request for access to these records has been granted. Please note that access to some information contained within the records has been refused in accordance with the following exceptions to disclosure, as specified in the Access to Information and Protection of Privacy Act (the Act):

- Section 20(1)(a)(c) – Policy advice or recommendations
- Section 27(1)(c)(i)(ii)(iii) – Disclosure harmful to business interests of a third party
- Section 30(1) – Personal information

In addition, some information contained within the records has been refused in accordance with Section 5.4 of the Energy Corporation Act. As required by subsection 7(2) of the Act, we have severed information that is excepted from disclosure and have provided you with as much information as possible. The relevant sections of the Act and the Energy Corporation Act have been appended to this letter for your reference.

In accordance with your request for a copy of the records, the appropriate copies have been enclosed. In addition to paper records, two CDs have been enclosed which contain public geoscience and mapping related files that the department typically distributes electronically to interested parties. Among the paper records enclosed you will notice a number of emails from the department to external parties with attachments pertaining to onshore Western Newfoundland. The attachments referenced in the email records are among the electronic files provided on the CDs. Please note that some of the electronic files will require specialized software in order to be viewed.

Section 43 of the Act provides that you may ask the Information and Privacy Commissioner to review this partial refusal of access or you may appeal the refusal to the Supreme Court Trial Division. A request to the Information and Privacy Commissioner shall be made in writing within 60 days of the date of this letter or within a longer period that may be allowed by the Commissioner.

The address and contact information of the Information and Privacy Commissioner is as follows:

Office of the Information and Privacy Commissioner
34 Pippy Place
P. O. Box 13004, Stn. A
St. John's, NL A1B 3V8
Telephone: (709) 729-6309
Facsimile: (709) 729-6500
In the event that you choose to appeal to the Supreme Court, you must do so within 30 days of the date of this letter. Section 60 of the Act sets out the process to be followed when filing such an appeal.

If you have any further questions, please feel free to contact the department’s ATIPP Coordinator at (709) 729-3214.

Sincerely,

[Signature]

CHARLES W. BOWN
Deputy Minister

c. Copy to Tanya Noseworthy
Access to Information Act – Sections Referenced

Policy advice or recommendations

20. (1) The head of a public body may refuse to disclose to an applicant information that would reveal

   (a) advice, proposals, recommendations, analyses or policy options developed by or for a public body or minister;

   (b) the contents of a formal research report or audit report that in the opinion of the head of the public body is incomplete unless no progress has been made on it for more than 3 years;

   (c) consultations or deliberations involving officers or employees of a public body, a minister or the staff of a minister; or

   (d) draft legislation or regulations.

(2) The head of a public body shall not refuse to disclose under subsection (1)

   (a) factual material;

   (b) a public opinion poll;

   (c) a statistical survey;

   (d) an appraisal;

   (e) an environmental impact statement or similar information;

   (f) a final report or final audit on the performance or efficiency of a public body or on any of its programs or policies;

   (g) a consumer test report or a report of a test carried out on a product to test equipment of the public body;

   (h) a feasibility or technical study, including a cost estimate, relating to a policy or project of the public body;

   (i) a report on the results of field research undertaken before a policy proposal is formulated;

   (j) a report of an external task force, committee, council or similar body that has been established to consider a matter and make a report or recommendations to a public body;

   (k) a plan or proposal to establish a new program or to change a program, if the plan or proposal has been approved or rejected by the head of the public body;

   (l) information that the head of the public body has cited publicly as the basis for making a decision or formulating a policy; or

   (m) a decision, including reasons, that is made in the exercise of a discretionary power or an adjudicative function and that affects the rights of the applicant.

(3) Subsection (1) does not apply to information in a record that has been in existence for 15 years or more.
Disclosure harmful to business interests of a third party

27. (1) The head of a public body shall refuse to disclose to an applicant information that would reveal

(a) trade secrets of a third party;

(b) commercial, financial, labour relations, scientific or technical information of a third party, that is supplied, implicitly or explicitly, in confidence and is treated consistently as confidential information by the third party; or

(c) commercial, financial, labour relations, scientific or technical information the disclosure of which could reasonably be expected to

(i) harm the competitive position of a third party or interfere with the negotiating position of the third party;

(ii) result in similar information no longer being supplied to the public body when it is in the public interest that similar information continue to be supplied;

(iii) result in significant financial loss or gain to any person or organization, or

(iv) reveal information supplied to, or the report of, an arbitrator, mediator, labour relations officer or other person or body appointed to resolve or inquire into a labour relations dispute.

(2) The head of a public body shall refuse to disclose to an applicant information that was obtained on a tax return, gathered for the purpose of determining tax liability or collecting a tax, or royalty information submitted on royalty returns, except where that information is non-identifying aggregate royalty information.

(3) Subsections (1) and (2) do not apply where

(a) the third party consents to the disclosure; or

(b) the information is in a record that is in the custody or control of the Provincial Archives of Newfoundland and Labrador or the archives of a public body and that has been in existence for 50 years or more.
Disclosure harmful to personal privacy

30. (1) The head of a public body shall refuse to disclose personal information to an applicant where the disclosure would be an unreasonable invasion of a third party’s personal privacy.

(2) A disclosure of personal information is not an unreasonable invasion of a third party’s personal privacy where

(a) the applicant is the individual to whom the information relates;

(b) the third party to whom the information relates has, in writing, consented to or requested the disclosure;

(c) there are compelling circumstances affecting a person’s health or safety and notice of disclosure is mailed to the last known address of the third party to whom the information relates;

(d) an Act or regulation of the province or of Canada authorizes the disclosure;

(e) the disclosure is for a research or statistical purpose and is in accordance with section 41;

(f) the information is about a third party’s position, functions or salary range as an officer, employee or member of a public body or as a member of a minister’s staff;

(g) the disclosure reveals financial and other details of a contract to supply goods or services to a public body;

(h) the disclosure reveals the opinions or views of a third party given in the course of performing services for a public body, except where they are given in respect of another individual;

(i) public access to the information is provided under the Financial Administration Act;

(j) the information is about expenses incurred by a third party while travelling at the expense of a public body;

(k) the disclosure reveals details of a licence, permit or a similar discretionary benefit granted to a third party by a public body, not including personal information supplied in support of the application for the benefit;

(l) the disclosure reveals details of a discretionary benefit of a financial nature granted to a third party by a public body, not including

(i) personal information that is supplied in support of the application for the benefit, or

(ii) personal information that relates to eligibility for income and employment support under the Income and Employment Support Act or to the determination of income or employment support levels;

(m) the personal information is about an individual who has been dead for 20 years or more; or

(n) the disclosure is not contrary to the public interest as described in subsection (3) and reveals only the following personal information about a third party:

(i) attendance at or participation in a public event or activity related to a public body, including a graduation ceremony, sporting event, cultural program or club, or field trip, or
(ii) receipt of an honour or award granted by or through a public body.

(3) The disclosure of personal information under paragraph (2)(n) is an unreasonable invasion of personal privacy where the third party whom the information is about has requested that the information not be disclosed.

(4) A disclosure of personal information is presumed to be an unreasonable invasion of a third party's personal privacy where

(a) the personal information relates to a medical, psychiatric or psychological history, diagnosis, condition, treatment or evaluation;

(b) the personal information is an identifiable part of a law enforcement record, except to the extent that the disclosure is necessary to dispose of the law enforcement matter or to continue an investigation;

(c) the personal information relates to employment or educational history;

(d) the personal information was collected on a tax return or gathered for the purpose of collecting a tax;

(e) the personal information consists of an individual's bank account information or credit card information;

(f) the personal information consists of personal recommendations or evaluations, character references or personnel evaluations;

(g) the personal information consists of the third party's name where

   (i) it appears with other personal information about the third party, or

   (ii) the disclosure of the name itself would reveal personal information about the third party; or

(h) the personal information indicates the third party's racial or ethnic origin or religious or political beliefs or associations.

(5) In determining under subsections (1) and (4) whether a disclosure of personal information constitutes an unreasonable invasion of a third party's personal privacy, the head of a public body shall consider all the relevant circumstances, including whether

(a) the disclosure is desirable for the purpose of subjecting the activities of the province or a public body to public scrutiny;

(b) the disclosure is likely to promote public health and safety or the protection of the environment;

(c) the personal information is relevant to a fair determination of the applicant's rights;

(d) the disclosure will assist in researching or validating the claims, disputes or grievances of aboriginal people;

(e) the third party will be exposed unfairly to financial or other harm;

(f) the personal information has been supplied in confidence;

(g) the personal information is likely to be inaccurate or unreliable;
(h) the disclosure may unfairly damage the reputation of a person referred to in the record requested by the applicant; and

(i) the personal information was originally provided to the applicant.
Section 5.4 – Energy Corporation Act

Records of commercially sensitive information

5.4 (1) Notwithstanding section 6 of the Access to Information and Protection of Privacy Act, in addition to the information that shall or may be refused under Part III of that Act, the chief executive officer of the corporation or a subsidiary, or the head of another public body,

(a) may refuse to disclose to an applicant under that Act commercially sensitive information of the corporation or the subsidiary; and

(b) shall refuse to disclose to an applicant under that Act commercially sensitive information of a third party where the chief executive officer of the corporation or the subsidiary to which the requested information relates reasonably believes

(c) that the disclosure of the information may

(i) harm the competitive position of,

(ii) interfere with the negotiating position of, or

(iii) result in financial loss or harm to

the corporation, the subsidiary or the third party; or

(d) that information similar to the information requested to be disclosed

(i) is treated consistently in a confidential manner by the third party, or

(ii) is customarily not provided to competitors by the corporation, the subsidiary or the third party.

(2) Where an applicant is denied access to information under subsection (1) and a request to review that decision is made to the commissioner under section 43 of the Access to Information and Protection of Privacy Act, the commissioner shall, where he or she determines that the information is commercially sensitive information,

(a) on receipt of the chief executive officer’s certification that he or she has refused to disclose the information for the reasons set out in subsection (1); and

(b) confirmation of the chief executive officer’s decision by the board of directors of the corporation or subsidiary,

uphold the decision of the chief executive officer or head of another public body not to disclose the information.

(3) Where a person appeals,

(a) under subsection 60(1) of the Access to Information and Protection of Privacy Act, from a decision under subsection (1); or

(b) under subsection 43(3) of the Access to Information and Protection of Privacy Act, from a refusal by a chief executive officer under subsection (1) to disclose information,
paragraph 62(3)(a) and section 63 of that Act apply to that appeal as if Part III of that Act included the grounds for the refusal to disclose the information set out in subsection (1) of this Act.

(4) Paragraph 56(3)(a) of the Access to Information and Protection of Privacy Act applies to information referred to in subsection (1) of this section as if the information was information that a head of a public body is authorized or required to refuse to disclose under Part II or III of that Act.

(5) Notwithstanding section 21 of the Auditor General Act, a person to whom that section applies shall not disclose, directly or indirectly, commercially sensitive information that comes to his or her knowledge in the course of his or her employment or duties under that Act and shall not communicate those matters to another person, including in a report required under that Act or another Act, without the prior written consent of the chief executive officer of the corporation or subsidiary from which the information was obtained.

(6) Where the auditor general prepares a report which contains information respecting the corporation or a subsidiary, or respecting a third party that was provided to the corporation or subsidiary by the third party, a draft of the report shall be provided to the chief executive officer of the corporation or subsidiary, and he or she shall have reasonable time to inform the auditor general whether or not in his or her opinion the draft contains commercially sensitive information.

(7) In the case of a disagreement between the auditor general and a chief executive officer respecting whether information in a draft report is commercially sensitive information, the auditor general shall remove the information from the report and include that information in a separate report which shall be provided to the Lieutenant-Governor in Council in confidence as if it were a report to which section 5.5 applied.

(8) Notwithstanding the Citizens' Representative Act, the corporation, a subsidiary, another public body, or an officer, member or employee of one of them is not required to provide commercially sensitive information, in any form, to the citizens' representative in the context of an investigation of a complaint under that Act.
Speaking Notes
6th International Symposium on Oil and Gas Resources
Wednesday, August 24, 2011 – 8:30 a.m.
Marble Mountain Ski Resort, Steady Brook

Good morning. Thank you to the Greater Corner Brook Board of Trade, and the Western Newfoundland oil and gas steering committee for the invitation to join you here today for the 6th International Oil and Gas Symposium on Newfoundland and Labrador’s beautiful west coast.

It is always a pleasure for our government to come together with its partners to explore regional opportunities for increased investment in oil and gas exploration and development in Western Newfoundland.

Since its inception in 2006, this Symposium has played a vital role in promoting awareness within the local, national, and international oil and gas community of the exploration activity and development potential happening in Western Newfoundland.

This year’s program consists of many interesting presentations, speakers, a great field trip and numerous networking opportunities. I encourage everyone to get involved and take part in the activities over the coming days.
Newfoundland and Labrador’s petroleum industry has witnessed tremendous growth since first oil, and continues to be a significant contributor to the provincial economy. Provincial real GDP has grown by nearly 52 percent in the last two decades – with over half of the growth attributed to the oil industry.

With an estimated six billion barrels of oil and 60 trillion cubic feet of natural gas yet to be discovered, the province’s highly-prospective offshore and onshore basins boast a wealth of exploration opportunities, especially here in Western Newfoundland. We believe in the potential of the region, and the development of a viable oil and gas sector on the west coast.

Over the past several years, seismic programs have been completed, and exploration wells have been drilled including onshore to offshore wells. These activities have resulted in total expenditures approaching $100 million being spent in the region.

Exploration on the west coast continues to gain momentum. We believe that this will only help to further enhance our understanding of the region and provide us with much needed geoscientific information that will encourage future exploration activity and success.

As I have stated, oil production is the single most significant source of revenue in Newfoundland and Labrador, and future revenue growth from oil production is directly related to exploration activity and new discoveries.
Our government will continue its efforts to support exploration in our prospective basins. Given that over 90 percent of our discovered oil resources are either in production or going through the approval process, it is important that we continue our efforts to discover additional resources.

Exploration will assist us in unlocking the province's potential and sustaining industry growth and development. Ongoing exploration will only help to fuel continued economic growth while ensuring the long-term, responsible development of the oil and gas industry.

The 2011 Call for Bids, issued in May by the Canada-Newfoundland and Labrador Offshore Petroleum Board, indicates a rising interest in the exploration opportunities and resource potential of Newfoundland and Labrador.

Eight parcels of land in multiple basins, with exploration rights totalling nearly 1.6 million hectares, are up for bidding.

Particular to this region, two parcels of land are offered in the Anticosti Basin and together cover over 350,000 hectares. Both are in relatively shallow water areas, but offer an excellent resource opportunity for new and existing players.

A Call for Postings to identify prospective parcels of land in onshore western Newfoundland for possible future oil and gas exploration was issued last year following consultations with industry through the
Western Newfoundland Region Working Group.

An estimated seven million acres of land was open for nomination, and included the Bay St. George, Anticosti and Deer Lake Basins. Unexplored basins such as the Howley Basin and the onshore part of the St. Anthony Basin were also included.

The results of this Call are now under review and the next step will be to determine whether or not a formal Request for Bids should be issued. As this review proceeds, we will make certain that any decisions will provide primary benefit to the residents and businesses on the west coast.

Our government believes that the exploration work happening on the west coast will improve our understanding of the region, generating new ideas and concepts that may contribute to future exploration successes.

Here in Newfoundland and Labrador, we have maintained significant levels of industry interest in our province’s offshore and onshore basins with ongoing exploration and development activity.

To attract ongoing investment into the province, our government continues to invest in geoscience programs that will help improve the province’s knowledge base of its basins.

The provincial Energy Plan included a five million dollar investment in the Petroleum Exploration Enhancement Program, or PEEP as it is more commonly known, to boost new exploration activity in the region.
The objective of this program, administered jointly by the Department of Natural Resources and Nalcor, is to increase the province's geoscientific knowledge of the onshore petroleum potential that exists in its west coast basins.

Through PEEP, some 18 projects have been completed or are underway in Western Newfoundland with an allocation of approximately $2-million dollars. The intent of these projects is to improve exploration efficiency, reduce exploration risk, and provide valuable geoscience on the area.

Just last week – the Research and Development Corporation announced funding to investigate natural gas hydrates on the provinces continental margin, and to undertake seafloor mapping to assess the petroleum resources potential of Western Newfoundland.

Another commitment in the Energy Plan was for the development of the Offshore Geoscience Data Program with funding of $20 million. Initiatives through this program will help to purchase existing proprietary geoscience data for reevaluation as well as the acquisition of new data. Seven projects have been identified with financial support of $10-million dollars.

While many of the province's basins are being actively investigated, it is important for us to encourage continued exploration activity and seismic work in all areas of the province to further advance the industry.
As an example, the oil and gas division of Nalcor Energy has completed a two-year regional offshore oil seep mapping and interpretation study of Newfoundland and Labrador funded under the Offshore Geoscience Data Program.

The study was conducted by Infoterra Limited, and the data is now available on the company's global database and can be licensed to oil exploration companies around the world.

The data from this program will help to advance oil and gas exploration in Newfoundland and Labrador, and showcase our province's potential to new and existing industry players.

Nalcor is also completing an offshore regional seismic program this summer in Northern Labrador using advanced acquisition technologies. This is the largest seismic program by area being conducted in the province, and will foster a greater understanding of the Province's hydrocarbon potential in our under-explored basins.

Work of this nature provides industry with valuable information upon which to base their exploration and investment decisions. Our government recognizes that in order for Newfoundland and Labrador to compete for exploration investment on the global scene, industry needs to have access to high-quality data that will help inform their decisions.

As a result of this, we strongly support the movement within most oil-
producing jurisdictions to the release of digital seismic data in a more modern format after the confidentiality periods have expired.

Our government believes that releasing digital seismic data in the public domain will allow the geoscientific community to access data in a more efficient and timely manner. This, in turn, will showcase the province's exploration opportunities, and increase our ability to compete in the global oil and gas community.

Our government continues discussions with representatives from the petroleum industry, the Government of Canada, and the C-NLOPB to finalize a new seismic data release policy.

As part of our province's Exploration Attraction Strategy, we are in the process of consulting on means to increase exploration including all regulatory aspects and fiscal incentives.

Our Energy Plan supported the creation of the Offshore Continental Margin and the Western Newfoundland Region working groups to develop regulatory and fiscal measures that will further strengthen the industry in specific areas of the province and promote targeted exploration activity.

All of these activities highlighted above will support the long-term growth and sustainability of Newfoundland and Labrador's oil and gas industry. We have seen a tremendous impact from oil and gas development upon the province and our government believes this is
only going to continue.

The potential development of an oil and gas sector on the west coast will play a major part in ensuring our province's long-term success in this industry and our sustained economic growth. With the west coast's undiscovered potential, there's no doubt Western Newfoundland has a key role as contributor to the continued growth of our provincial economy.

In closing, I want acknowledge the Greater Corner Brook Board of Trade for actively pursuing opportunities that will contribute to the growth and future success of the west coast. You've organized yet another great Symposium that showcases the opportunities available in Newfoundland and Labrador.

Our province is certainly the place to be to explore and discover, and our government remains committed to the successful development of our resources in an environmentally-responsible manner.

We have the resources, the people, and the plan to ensure a bright future for Newfoundland and Labrador.

Thank you and enjoy your week.
Butland, Anne

From: Montague, Robyn J.
Sent: Thursday, June 28, 2012 3:14 PM
To: Foote, Wes
Subject: RE: Request for Bids...

Perfect. Please keep me in the loop.

Thanks Wes!

From: Foote, Wes
Sent: Thursday, June 28, 2012 2:39 PM
To: Montague, Robyn J.
Cc: Allen, Fred A.; Middleton, David; Hynes, Keith; Keith, Debra; Scott, Paul G.
Subject: RE: Request for Bids...

Robyn

A copy of the presentation is available in TRIM as Pres-2134.
I am scheduling a meeting with Charles to discuss further.

Regards
wes

From: Montague, Robyn J.
Sent: Wednesday, June 27, 2012 11:15 AM
To: Foote, Wes
Cc: Allen, Fred A.; Middleton, David; Hynes, Keith; Keith, Debra
Subject: Request for Bids...

Hi Wes,

I was wondering if you could give me an update on where we stand with the Request for Bids. I am hoping you can clarify:

Thanks,
Robyn

Robyn J. Montague, BEd, LLB
Manager of Regulatory Compliance
Regulatory Affairs, NRNL
(709) 729-5901
rmontague@gov.nl.ca

11/20/2012
Butland, Anne

From: Foote, Wes
Sent: Wednesday, January 04, 2012 5:01 PM
To: Middleton, David; Stoyles, Mike; Cook, Lori; Hicks, Larry
Cc: Chittoor, Venkat; Molloy, Paul; Hynes, Keith
Subject: Garden Hill South

CONFIDENTIAL

Folks

Engineering had a meeting today with regulatory affairs to discuss strategy concerning the status of the Garden Hill Lease. One potential course of action, is to define the pool boundaries for Garden Hill South with the remainder being relinquished. To this end, I ask your assistance in providing Venkat with necessary data in an attempt to build a Petrel model to describe this accumulation. Any ideas on other approaches to identifying “Garden Hill South” also welcomed.

Regards

Wes
Spurrell, Darrell

From: Middleton, David
Sent: Friday, September 30, 2011 3:37 PM
To: petroleum, petroleum
Subject: RE: Onshore Newfoundland Data Inquiry

No, different guy – the chap I was corresponding with is in Calgary.

I'll respond to this inquiry.

D

From: petroleum, petroleum
Sent: Thursday, September 29, 2011 12:59 PM
To: Middleton, David
Cc: Foote, Wes
Subject: FW: Onshore Newfoundland Data Inquiry

David:

Is this the same gentlemen that you have been talking to at [redacted]? Maybe it is best for you to respond to his request.

Darrell

From: [redacted]
Sent: Wednesday, September 28, 2011 12:58 PM
To: petroleum, petroleum
Subject: Onshore Newfoundland Data Inquiry

Dear Sir/Madam,

I am a geologist for the [redacted] in Houston and currently working on evaluation of possible opportunities in onshore Newfoundland.

I am interested to know where or who to contact for data, such as:

1) Core Data – Can we visit and look at the cores? Are there reports that we can download?
2) Well Data – Do you have a public database where we can acquire well logs/well reports?
3) Seismic – I saw some seismic lines onshore. Are they still confidential? If not, where can we purchase?

Hope to hear from you soon.

Regards,
Butland, Anne

From: Middleton, David
Sent: Tuesday, May 22, 2012 1:08 PM
To: Spurrell, Darrell; Foote, Wes
Subject: RE: Onshore Bid

Let's discuss tomorrow morning at the decisional meeting.

D

From: Spurrell, Darrell
Sent: Tuesday, May 22, 2012 1:04 PM
To: Foote, Wes; Middleton, David
Subject: FW: Onshore Bid
Importance: High

Folks:

The folks at [redacted] are wondering the status of the onshore licensing round as per email below. Do we have an anticipated date/timing announcing the round that I can respond with?

Thanks

Darrell

From: [redacted]
Sent: Wednesday, May 16, 2012 1:10 PM
To: Spurrell, Darrell
Cc: Kendall, Brad
Subject: Onshore Bid
Importance: High

Mr. Darrell Spurrell
Director, Marketing and Promotion
Provincial Office
Natural Resources Building
50 Elizabeth Ave.
St. John's, NL A1B 4J6

May 16, 2012

Mr. Darrell Spurrell,

11/20/2012
Hello, my name is [Redacted] and we met at this year’s NAPE convention here in Houston. To refresh your memory I work for [Redacted] in Houston, Texas and as part of my duties I cover leases/licenses in parts of Canada for our energy group.

During our discussion you mentioned that there would more than likely be an onshore Request for Bids sometime during the late spring or early summer as several companies had nominated “most of the onshore in western Newfoundland”. At the time you were unsure of the possible timing of a bid round owing to the group’s promotional travel schedule.

I would like to know if you have any additional, updated information on the subject that you could share with us. Any help would be appreciated. Thanks for your time and consideration.

Regards,

[Redacted]
Hi Andrea

Here is the original email. Let me know whether it works or not.

Mike

Hi Mike,

We have loaded the files after QC of the NAV etc.

Our data loaders could not load Robriver.sgy (where is that in the map?) There's a survey file that came with it that said Pasture Road.

Are the other released lines (in your map) in paper copies only? Are they available in digital (or even TIFF)?

Would like to see more of the Bay. St. George area and Deer Lake- Corner Brook area lines.

This is a screenshot of what we successfully loaded.
Hello

Please find attached the SEG-Y data for Western Newfoundland as discussed. Please let me know if you have issues accessing the files.

Regards,
Mike Stoyles

Petroleum Geophysics Consultant
Petroleum Geoscience Division
Newfoundland and Labrador Department of Natural Resources

tel: (709) 729-4096
fax: (709) 729-2508

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Attachment: EL-01-101-01-RS 2 of 3.zip, 1,134,104.56 KB  [Fingerprint: 051127e664a89d cf0aadbdf0fbce9bd1b]
Attachment: EL-01-101-01-RS 3 of 3.zip, 3,664,660.12 KB  [Fingerprint: a89cb84ca96504ff78a7a269f3dae5780]
Attachment: EL-01-116-01-ES.zip, 19,082.06 KB  [Fingerprint: f67c2515ac566dc4636a9e03e21c094e]
Attachment: EL-89-101-01-ES.zip, 1,143,876.88 KB  [Fingerprint: 4bc50a76e8d4fe8a646647c7cd5246b3]
Attachment: EL-93-106-02-ES.zip, 61,756.17 KB  [Fingerprint: 2613bda095528de9ed0152fbc3d42ca4]

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Stoyles, Mike

From: [redacted] – S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Sent: February 7, 2012 3:27 PM
To: Stoyles, Mike
Subject: RE: NL Seismic

Hi Mike,

Thank you very much. Just in time when I’m fully working on this.

Regards,

From: mikestoyles@gov.nl.ca [mailto:mikestoyles@gov.nl.ca]
Sent: Tuesday, February 07, 2012 11:19 AM
To: [redacted] – S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Subject: NL Seismic

Hello [redacted] – S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)

Please find attached the following:
- additional files for the Robinsons River / Pasture Road survey (EL 89-101-01-RS);
- scans of Bay St. George surveys 01-116-01-ES, 04-116-01-ES and 05-116-01-ES;
- SEGY for survey in the Deer Lake area.

Please let me know if you have any problems with these files.

Regards,
Mike Stoyles

Petroleum Geophysics Consultant
Petroleum Geoscience Division
Newfoundland and Labrador Department of Natural Resources
tel: (709) 729-4096
fax: (709) 729-2508

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File(s) will be available for download until 08 March 2012:

File: 89-101-01-RS Kirkoff Migration.zip, 99,358.94 KB [Fingerprint: e2baa88ff57fa1ffe1f3bafd9a099946]
File: 89-101-01-RS Structure Stack.zip, 36,116.78 KB [Fingerprint: 68a525320a21e0640e6eff04f0abdcf6]
File: 01-116-01-ES PDF Files.zip, 32,631.91 KB [Fingerprint: 4c628fe7fd11ac5b5a4d6bedee954200]
File: 04-116-01-ES PDF Files.zip, 15,661.67 KB [Fingerprint: c4798403c30273de33d50d6a7a8e5604]
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Thanks Mike.

That helped.

Cheers,

The Robinsons River line is NAD 27, Zone 21. I’ve attached the processing report for your reference.

The Deer Lake survey is also NAD 27, Zone 21.

Mike

Hi Mike,

Some lines didn’t have CRS in the headers, are they also using UTM Zone 21, NTS?

Thanks,

Hi Mike,

Some lines didn’t have CRS in the headers, are they also using UTM Zone 21, NTS?

Thanks,

Hi Mike,

Some lines didn’t have CRS in the headers, are they also using UTM Zone 21, NTS?

Thanks,
- scans of Bay St. George surveys 01-116-01-ES, 04-116-01-ES and 05-116-01-ES;
- SEGY for survey in the Deer Lake area.

Please let me know if you have any problems with these files.

Regards,
Mike Stoyles

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File: 89-101-01-ES Structure Stack.zip, 36,116.78 KB [Fingerprint: 68a525320a21e0640e6fe040f0abdcf6]
File: 01-116-01-ES PDF Files.zip, 32,631.91 KB [Fingerprint: 4c628fe7fd11ac5b54d6bedee954200]
File: 04-116-01-ES PDF Files.zip, 15,661.67 KB [Fingerprint: c4798403c30273de33d50d6a7a5e5604]
File: 05-116-01-ES PDF Files.zip, 50,760.09 KB [Fingerprint: 1307e74103a3cf81c6bb3353526748b8]
File: 97-114-01 and 03-ES.zip, 156,589.75 KB [Fingerprint: 4d10742e9d4d9ac632a4c072bb0ac0c]

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Hi Mike,

Thank you for the explanation. I just wanted to be sure that we have everything that’s been released in the database for our evaluation.

I already have a copy of the Fleming report. We’ll just try to georeference the locations then.

Thanks again for your assistance.

Regards,

Stoyles, Mike

There is only one other recent petroleum exploration well in the Deer Lake area. Werner Hatch #1 was drilled by Deer Lake Oil & Gas early in 2010. It is not off confidential status so I cannot provide too much detail until after March 31 of this year. I can tell you the coordinates and point you to the weekly drilling update that was posted:

5,451,554.926N, 474,800E (NAD 27, Zone 21)

There is a discrepancy in the location since we used the data provided in the application for reporting but the coordinates I provided are off the legal survey conducted when the rig was released.

There are several older wells from early 1900 to the 1950’s (Mills and Claybar wells) referenced in a Mines branch publication that can be found through the GeoFiles database:

“Petroleum exploration in Newfoundland and Labrador” (Fleming, 1970). There are questions to the location accuracy so we don’t like to plot them on the onshore wells shape file.


The Mills and Claybar wells are also plotted on the attached geology map.

Regards,
Mike
To: Stoyles, Mike  
Subject: Well locations

Hi Mike,

Is there a well list with the geographic locations of the onshore wells?

We have a list from [redacted] but I see duplicates of wells showing up in different locations.

Found a map on the Natural Resources website, but only shows 2 wells in Deer Lake. The reports say there are more in the area. Is there an updated shape file for this.

http://www.nr.gov.nl.ca/nr/energy/petroleum/onshore/geographic/geographic_data.html

Regards,

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]  
Sent: Thursday, December 15, 2011 9:17 AM  
To: [redacted]  
Subject: RE: NL SEGY

This is what we have on file. Let me know if you are looking for anything else.

Regards,
Mike

From: [redacted]  
Sent: December 14, 2011 7:13 PM  
To: Stoyles, Mike  
Subject: RE: NL SEGY

Hi Mike,

Thank you for the quick response. I’m downloading them now.

I have browsed through the well reports that were on the DNR website. However, I have not found any digital versions of the well logs. I’ve found some in the reports or the reports mentioning logs.

I think I have exhausted the website (clicked all the obvious links) for well logs. Are there digital logs that we are allowed to have?

I understand that some of the wells have cores only. For those, we might need to arrange a visit. We’ll discuss this when everyone comes back from the holidays.

Regards,
From: mkeystyles@gov.nl.ca [mailto:mkeystyles@gov.nl.ca]
Sent: Wednesday, December 14, 2011 2:33 PM
To: NL SEGY
Subject: NL SEGY

Hello

Please find attached the SEG-Y data for Western Newfoundland as discussed. Please let me know if you have issues accessing the files.

Regards,
Mike Stoyles

Petroleum Geophysics Consultant
Petroleum Geoscience Division
Newfoundland and Labrador Department of Natural Resources

tel: (709) 729-4096
fax: (709) 729-2508

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Hi Mike,

Do you have the pdf for the Bay St. George geology map as well? Your copy of the Deer Lake map has better resolution than the ones posted on the Maps section of the Mines section website.

Regards,

---

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]
Sent: Thursday, February 09, 2012 7:29 AM
To: S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Subject: RE: Well locations

Hello S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)

There is only one other recent petroleum exploration well in the Deer Lake area. Werner Hatch #1 was drilled by Deer Lake Oil & Gas early in 2010. It is not off confidential status so I cannot provide too much detail until after March 31 of this year. I can tell you the coordinates and point you to the weekly drilling update that was posted:
5,451,554.926N, 474,800E (NAD 27, Zone 21)
There is a discrepancy in the location since we used the data provided in the application for reporting but the coordinates I provided are off the legal survey conducted when the rig was released.

There are several older wells from early 1900 to the 1950’s (Mills and Claybar wells) referenced in a Mines branch publication that can be found through the GeoFiles database:
"Petroleum exploration in Newfoundland and Labrador" (Fleming, 1970). There are questions to the location accuracy so we don’t like to plot them on the onshore wells shape file.

The Mills and Claybar wells are also plotted on the attached geology map.

Regards,
Mike

---

From: [Redacted]
Sent: February 8, 2012 4:47 PM
To: Stoyles, Mike
Subject: Well locations

Hi Mike,
Is there a well list with the geographic locations of the onshore wells?

We have a list from [redacted] but I see duplicates of wells showing up in different locations.

Found a map on the Natural Resources website, but only shows 2 wells in Deer Lake. The reports say there are more in the area. Is there an updated shape file for this.

http://www.nr.gov.nl.ca/nr/energy/petroleum/onshore/geographic/geographic_data.html

Regards,

S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]
Sent: Thursday, December 15, 2011 9:17 AM
To: [redacted]
Subject: RE: NL SEGY

This is what we have on file. Let me know if you are looking for anything else.

Regards,

Mike

From: [redacted]
Sent: December 14, 2011 7:13 PM
To: Stoyles, Mike
Subject: RE: NL SEGY

Hi Mike,

Thank you for the quick response. I'm downloading them now.

I have browsed through the well reports that were on the DNR website. However, I have not found any digital versions of the well logs. I've found some in the reports or the reports mentioning logs.

I think I have exhausted the website (clicked all the obvious links) for well logs. Are there digital logs that we are allowed to have?

I understand that some of the wells have cores only. For those, we might need to arrange a visit. We'll discuss this when everyone comes back from the holidays.

Regards,
From: mikestoyles@gov.nl.ca

Sent: Wednesday, December 14, 2011 2:33 PM

To: [redacted]

Subject: NL SEG Y

Hello [redacted]

Please find attached the SEG-Y data for Western Newfoundland as discussed. Please let me know if you have issues accessing the files.

Regards,
Mike Stoyles

Petroleum Geophysics Consultant
Petroleum Geoscience Division
Newfoundland and Labrador Department of Natural Resources

tel: (709) 729-4096
fax: (709) 729-2508

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Attachment: EL-01-101-01-RS 3 of 3.zip, 3,664,660.12 KB [Fingerprint: a89cb84caee66504f8a7a269f3dace5780]
Attachment: EL-01-116-01-ES.zip, 19,082.06 KB [Fingerprint: f67c2515ac566dc4636a9e03e21c094e]
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Stoyles, Mike

From: February 14, 2012 1:50 PM
Sent: February 14, 2012 1:50 PM
To: Stoyles, Mike
Subject: Report links question

http://www.nr.gov.nl.ca/nr/publications/energy/93_105_01_eg.pdf

http://www.nr.gov.nl.ca/nr/publications/energy/94_105_01_ec.pdf

Hi Mike,

I was wondering if you know how to access the links to the figures for these reports.

The links in the other reports are live. But not the ones from above. They appear to be available though because they have pdf file sizes indicated.

Can you help find out where they’ve moved?

Thanks,

From: mikestoyles@gov.nl.ca
Sent: Thursday, February 09, 2012 8:35 AM
To: mikestoyles@gov.nl.ca
Subject: 

Hello

Here is the Bay St. George map you requested.

Regards,
Mike Stoyles

Petroleum Geophysics Consultant
Petroleum Geoscience Division
Newfoundland and Labrador Department of Natural Resources

tel: (709) 729-4096
fax: (709) 729-2508

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Mike,

I realized I had one more question: Shoal Point Energy's consolidated offshore acreage also includes the offshore area in front of the Gros Morne National Park, I am assuming that for that area only offshore drilling is allowed and not onshore-to-offshore, is that correct? In comparison I am mainly thinking of how Shoal Point Energy is drilling into EL1070, but with their rigs placed on land on the very tip of Shoal Point.

Thank you,

Mike,  

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]  
Sent: Monday, April 16, 2012 9:19 AM  
To: [REDACTED]  
Subject: RE:  

Hello,  

Those wells were drilled from onshore to an offshore target so cross into the Canada-Newfoundland and Labrador Offshore Petroleum Board’s jurisdiction. You will have to contact them for access to these files. I am not sure about data format available.

The Board’s website is www.cnlopb.nl.ca  
They also have an information request email: information@cnlopb.nl.ca

Let me know if you require further assistance.

Best Regards,
Mike
Thank you!

Best regards,

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]
Sent: Monday, April 09, 2012 7:17 PM
To: 
Subject: RE:

Hello

You can download the map or order hard copies here:

http://geoscan.ess.nrcan.gc.ca/starweb/geoscan/servlet.starweb?
path=geoscan/geoscanfastlink_e.web&search1=R=126990

Regards,
Mike

From: 
Sent: Mon 09/04/2012 1:32 PM
To: Stoyles, Mike
Subject: RE:

Hello Mike,

I was looking for the geological map of the “Humber Arm Allochthon”, but can’t seem to find it online.
I attached a picture that I took from a corporate presentation, on the right side in the background it shows the map I am looking for.
Would you have an electronic version of this map?

Thank you!

Best regards,

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]
Sent: Thursday, April 05, 2012 11:21 AM
To: 
Subject: RE: NL Mag Data

The parcel ownership has not changed.

Mike
Hello Mike,

Thanks for the info.
The main thing I was trying to find was about blocks 03-102 / 03-103, is the ownership of these blocks still the same as described in the April 2010 file? (= 6 different rights holders)

Best regards!

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]
Sent: Wednesday, April 04, 2012 6:28 PM
To: S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Subject: RE: NL Mag Data

Hello S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)

Thank you for bringing this to my attention. I will have it fixed.

I can confirm that Permits 03-101 and 03-104 have reverted to the crown and onshore; and holdings are currently as depicted on this map:

Regards,
Mike

Hello Mike,

I noticed that the following file:

http://www.nr.gov.nl.ca/nr/energy/petroleum/onshore/listing.pdf

hasn’t been updated since April 2010. It seems that since then several of the blocks have changed (looking at the 2011 maps), so I was wondering if you have an up-to-date version of this file available?

Thank you!

Best regards,
From: mkeystyles@gov.nl.ca [mailto:mkeystyles@gov.nl.ca]
Sent: Friday, March 30, 2012 1:47 PM
To: [REDACTED]
Subject: NL Mag Data

Hello [REDACTED]  

Please find attached the data file for the mag survey (EL 05-116-02-EM) over Bay St. George, NL. This is in follow-up to an email I sent with pdf files on March 8th.

Regards,
Mike Stoyles

Petroleum Geophysics Consultant
Petroleum Geoscience Division
Newfoundland and Labrador Department of Natural Resources

tel: (709) 729-4096
fax: (709) 729-2508

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Hi Mike,

Ok, thanks for the info!

Best regards,

---

It is a joint process with the Province overseeing rig requirements while formation evaluation and testing requirements would fall under jurisdiction of the Board.

If an operator does not have an exploration permit of production lease an exploration licence would be required. This is needed to trigger the Drilling Program Approval and Authority to Drill a Well process.

I’ve copied the Manger of Engineering (Drilling and Production) on this message in case you have logistical questions regarding drilling programs.

Mike

---

Hi,

Thanks for the map!
What are actually the regulations for onshore to offshore drilling? As long as the target is offshore it is OK, or do you need to put the rig within a certain maximum distance from the shoreline? From the Shoal Point Energy example I understand it is not necessary to have a separate EL for the onshore area you are drilling from, right?

Thank you,
I tried sending this file at a smaller resolution but it bounced back. There are a few enclaves within the park that you may be able to access for onshore to offshore drilling. You can follow the park boundary to see where the enclaves are around St. Paul’s (historical petroleum exploration in this area) and Sally’s Cove in the attached file for example.

This file was created from 1:50k map sheets.

Regards,
Mike Stoyles
Petroleum Geophysics Consultant
Petroleum Geoscience Division
Newfoundland and Labrador Department of Natural Resources
tel: (709) 729-4096
tax: (709) 729-2508

The data provided is on an “as is” basis. While the Government of Newfoundland and Labrador has made efforts to ensure the accuracy of this data, the Government of Newfoundland and Labrador does not warrant or guarantee that the data is accurate, complete or current. The Government of Newfoundland and Labrador accepts neither responsibility nor liability for errors, inaccuracies, and/or omissions. The Government of Newfoundland and Labrador shall be neither responsible nor liable for any loss, damage, personal injury or death arising from or in any way related to the use of or reliance on any of this data by any person.

File(s) will be available for download until 16 May 2012:

File: Gros Morne 600DPI.jpg, 41,033.13 KB  [Fingerprint: 2f055f87358d3ae068e1082329f7c170]

You have received attachment link(s) within this email sent via Accellion Secure File Transfer. To retrieve the attachment(s), please click on the link(s).

Accellion File Transfer

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Stoyles, Mike

From: [redacted]  S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Sent: June 25, 2012 6:45 PM
To: Stoyles, Mike
Subject: RE: Onshore seismic data and digital well information

Hi again,

I got knocked down last week by a cold...

Generally and in the effort of building a regional database we are interested in any available line as SEGY where available. Where SEGY is not available either PDF or TIFF would do. Hard copy reproductions are not really an option.

Do you have a list of which lines are available as SEGY and which are only available as PDF/TIFF? This might be easier for me to narrow down a wish list.

P.S.: Before finally exchanging data I might need to have my legal/procurement department looked at the case.

Best regards,
[redacted]

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]
Sent: Tuesday, June 19, 2012 11:43 AM
To: [redacted]
Subject: RE: Onshore seismic data and digital well information

We do not have SEGY for those programs. We have TIFF, PDF and hard copy. Do you have numbers for the Stag Lake lines? I believe you are referring to 89-3A and/or 89-5A acquired under licence 89-100-01-NS. I can send them to you via ftp unless you prefer to have a hard copy reproduced.

Regards,
Mike

From: [redacted]  S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Sent: June 18, 2012 6:00 PM
To: Stoyles, Mike  
Subject: RE: Onshore seismic data and digital well information

Mike,

I hope you had a good weekend.
Thanks for the .las files.
Regarding seismic, can you comment the availability/format (TIFF or SEGY) for the following lines:
   - IEXCO - Humber Arm
   - IEXCO - Stag Lake
   - BFR - Serpentine Valley

Hello

From: Stoyles, Mike [mailto:mikestoyles@gov.nl.ca]  
Sent: Thursday, June 14, 2012 9:01 AM  
To: S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)  
Subject: RE: Onshore seismic data and digital well information

Hello

Please find attached digital log data for most of the onshore wells. Nalcor’s Seamus #1 just recently came off confidentiality status so I will have to consult a colleague on the files for that well.

The seismic files are more complicated. I can send you the limited SEGY we have for the released lines through an FTP-like application. We also have TIFF files I can send but it may take some time to upload all of them. Is there an area you would like to focus on first or will I prepare everything? There is no fee for the files unless you want prints.

Regards,

Mike Stoyles  
Petroleum Geophysics Consultant  
Petroleum Geoscience Division  
Newfoundland and Labrador Department of Natural Resources  
tel: (709) 729-4096  
fax: (709) 729-2508

From: S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)  
Sent: June 13, 2012 6:20 PM  
To: Stoyles, Mike  
Subject: Onshore seismic data and digital well information

Hi Mike,

I have been getting back the email addressed to Donna. Looking through the contacts, I found yours with a similar job title and the phone number published.
Could you help me with the request below?
Hi Donna,

I found your email-address on a presentation of the DNR that I picked up on a conference recently. I wonder if you have a list of reproduction costs for the seismic that is released?

Additionally, I'm curious if there is well information available that is exceeding the reports on the website, e.g. digital log data (.las files)?

I'm looking forward to your answer.

Best regards,
Stoyles, Mike

From: [Redacted]
Sent: February 29, 2012 5:01 PM
To: Stoyles, Mike; Cook, Lori
Subject: Receipt Notification: Borehole Compensated Sonic.tif RE: Union Brinex Anguille H-98 Well Logs

Return Receipt

Your attachment: Borehole Compensated Sonic.tif
Was downloaded at: 29 February 2012 16:43:25
By recipient: [Redacted]
File size is: 396.53 MB

---
This is an automated email from Secure File Transfer. Please do not reply to this email. If you require assistance, please contact the Service Desk at 729-HELP or servicedesk@gov.nl.ca.
Stoyles, Mike

From: [redacted]
Sent: February 29, 2012 5:17 PM
To: Stoyles, Mike; Cook, Lori
Subject: Receipt Notification: Composite Well Log.tif RE: Union Brinex Anguille H-98 Well Logs

Return Receipt

Your attachment: Composite Well Log.tif
Was downloaded at: 29 February 2012 17:10:09
By recipient: [redacted]
File size is: 167.76 MB

---
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Stoyles, Mike

From: [Redacted]
Sent: February 29, 2012 5:24 PM
To: Stoyles, Mike; Cook, Lori
Subject: Receipt Notification: Dual Induction Laterolog.tif RE: Union Brinex Anguille H-98 Well Logs

Return Receipt

Your attachment: Dual Induction Laterolog.tif
Was downloaded at: 29 February 2012 17:11:13
By recipient: [Redacted]
File size is: 396.85 MB

---
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Stoyles, Mike

From: [Redacted]  
Sent: February 29, 2012 5:25 PM  
To: Stoyles, Mike; Cook, Lori  
Subject: Receipt Notification: Continuous Dipmeter.tif RE: Union Brinex Anguille H-98 Well Logs

Return Receipt

Your attachment: Continuous Dipmeter.tif  
Was downloaded at: 29 February 2012 17:11:06  
By recipient: [Redacted]  
File size is: 365.33 MB

---

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From: grahamdillabough@nalcorenergy.com
Sent: September 23, 2011 4:23 PM
To: Stoyles, Mike
Subject: RECEIVED: Attachment

Return Receipt

Your attachment:  
Was downloaded at: 23 September 2011 15:22:07
By recipient: grahamdillabough@nalcorenergy.com
File size is: 8.58 MB

---
This is an automated email from %SERVICE_NAME%. Please do not reply to this email. If you require assistance, please contact the Service Desk at 729-HELP or servicedesk@gov.nl.ca.
Stoyles, Mike

From: grahamdillabough@nalcorenergy.com
Sent: September 23, 2011 4:23 PM
To: Stoyles, Mike
Subject: RECEIVED: Attachment: S. 5.4(1)(a) - Energy Corporation Act

Return Receipt

Your attachment: S. 5.4(1)(a) - Energy Corporation Act
Was downloaded at: 23 September 2011 15:22:59
By recipient: grahamdillabough@nalcorenergy.com
File size is: 7.64 MB

---

This is an automated email from %SERVICE_NAME%. Please do not reply to this email. If you require assistance, please contact the Service Desk at 729-HELP or servicedesk@gov.nl.ca.
Stoyles, Mike

From: grahamdillabough@nalcorenergy.com  
Sent: September 23, 2011 4:23 PM  
To: Stoyles, Mike  
Subject: RECEIVED: Attachment

Return Receipt

Your attachment was downloaded at: 23 September 2011 15:23:11  
By recipient: grahamdillabough@nalcorenergy.com  
File size is: 9.26 MB

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This is an automated email from %SERVICE_NAME%. Please do not reply to this email. If you require assistance, please contact the Service Desk at 729-HELP or servicedesk@gov.nl.ca.
Return Receipt

Was downloaded at: 30 September 2011 17:13:22
By recipient: [Redacted]
File size is: 3.72 MB

This is an automated email from 100%SERVICE_NAME%. Please do not reply to this email. If you require assistance, please contact the Service Desk at 729-HELP or servicedesk@gov.nl.ca.
Return Receipt

Your attachment: **EL-01-101-01-RS 1 of 3.zip**
Was downloaded at: **15 December 2011 17:28:30**
By recipient: **[Redacted]**
File size is: **904.62 MB**

---

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Stoyles, Mike

From: [Redacted]  
Sent: December 15, 2011 6:42 PM  
To: Stoyles, Mike; Cook, Lori  
Subject: RECEIVED: Attachment EL-93-106-02-ES.zip

Return Receipt

Your attachment: EL-93-106-02-ES.zip  
Was downloaded at: 15 December 2011 18:39:58  
By recipient: [Redacted]  
File size is: 60.31 MB

---

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Stoyles, Mike

From: [Redacted]  S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Sent: December 15, 2011 7:20 PM
To: Stoyles, Mike; Cook, Lori
Subject: RECEIVED: Attachment EL-89-101-01-RS.zip

Return Receipt

Your attachment: EL-89-101-01-RS.zip
Was downloaded at: 15 December 2011 18:38:17
By recipient: [Redacted]  S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
File size is: 1.09 GB

***
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Stoyles, Mike

From: [Redacted]
Sent: December 19, 2011 5:46 PM
To: Stoyles, Mike; Cook, Lori
Subject: RECEIVED: Attachment EL-01-116-01-ES.zip

Return Receipt

Your attachment: EL-01-116-01-ES.zip
Was downloaded at: 19 December 2011 17:44:50
By recipient: [Redacted]
File size is: 18.63 MB

---
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Stoyles, Mike

From: [REDACTED]
Sent: December 19, 2011 6:25 PM
To: Stoyles, Mike; Cook, Lori
Subject: RECEIVED: Attachment EL-01-101-01-RS 2 of 3.zip

Return Receipt

Your attachment: EL-01-101-01-RS 2 of 3.zip
Was downloaded at: 19 December 2011 17:47:48
By recipient: [REDACTED]
File size is: 1.08 GB

***
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Return Receipt

Your attachment: **EL-01-101-01-RS 3 of 3.zip (This is number 1 of total 2 subfiles)**
Was downloaded at: **19 December 2011 18:59:41**
By recipient: **[Redacted]**
File size is: **1.95 GB**

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Stoyles, Mike

From: [Redacted]  S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
Sent: December 20, 2011 1:14 PM
To: Stoyles, Mike; Cook, Lori
Subject: RECEIVED: Attachment EL-01-101-01-RS 3 of 3.zip (This is number 2 of total 2 subfiles)

Return Receipt

Your attachment: EL-01-101-01-RS 3 of 3.zip (This is number 2 of total 2 subfiles)
Was downloaded at: 20 December 2011 12:19:14
By recipient: [Redacted]  S. 27(1)(c) sub (i), (ii) & (iii), S. 30(1)
File size is: 1.54 GB

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Hydrocarbon Activity

Western Newfoundland

Larry Hicks, P.Geo.
Department of Natural Resources, NL
Sedimentary Basins (Onshore & Offshore)

NEWFOUNDLAND & LABRADOR
Regulatory Framework - NL

**ONSHORE**
- Administered by Province
- Department of Natural Resources (DNR) – Energy Branch
- Office – St. John’s, NL
- Maintains Data Repository, Core Storage Facilities, etc.
- [Web: www.nr.gov.nl.ca/nr](http://www.nr.gov.nl.ca/nr)

**OFFSHORE**
- Administered by conjoint Federal / Provincial Board
- Canada – Newfoundland & Labrador Offshore Petroleum Board (C-NLOPB)
- Office – St. John’s, NL
- Maintains Data Repository, Core Storage Facility, etc.
- [Web: www.cnlopb.nl.ca/](http://www.cnlopb.nl.ca/)
**NL Offshore**

**Four Producing Fields**
- **Hibernia** (Nov/97)
- **Hibernia South** (Jun/2011)
- **Terra Nova** (Jan/02)
- **White Rose** (Nov/05)
- **North Amethyst** (May/2010)

**Discovered Reserves**

**Grand Banks**
- 3.0 billion barrels Oil
- 6.8 Tcf Natural Gas
- 355 million barrels NGL

**Labrador**
- 4.2 Tcf Natural Gas
- 123 million barrels NGL

**Undiscovered Resources**
- 6 billion barrels Oil
- 60 Tcf Natural Gas
ONSHORE
WESTERN
NEWFOUNDLAND
Onshore Hydrocarbon Shows
Regional Summary

Onshore:
- 7 Onshore Exploration Permits
- 1 Production Lease

Offshore:
- 9 Offshore Exploration Licences
- 2 parcels offered in the 2011 Call for Bids
Anticosti Basin

**Age:** Cambrian - Devonian

**Area:** ~13,100 km²

**Basin Type:** Foreland Basin
(developed over deformed passive margin)

**Basin Infill:** 3500+ m; 2000+ m

**Source Rock (TOC’s)**
- CHG - Green Point Fm. – up to 11%
- GTG - Mainland/Black Cove Fm. – up to 8.1%
- Table Cove Fm./Curling Group – potential

**Kerogen Type**
- mainly Type II (marine derived)

**Thermal Maturity**
- immature to overmature (oil)
- maturity increases from W to E; S to N
- Four offshore licences totaling almost 660,000ha
- 500 km² seismic completed in Dec 2008
- Two resource assessments completed
- Seeking investors/farm in partners
Ptarmigan Energy Inc.

- Offshore exploration licence awarded in 2010
- Over 140,000 ha offshore Western Newfoundland
Nalcor Energy – Oil & Gas

- Two onshore permits in Parson’s Pond area
- Two exploration wells drilled in 2010 and both entered gas bearing zones
Port au Port Area

Legend
- Well
- Production Lease
- Exploration Licence

EL-1070
EL-1116
Offshore exploration licence awarded in 2009
Over 200,000 ha off Western Newfoundland
Less than 200m water depth
Shallow Rights EL-1070

- Offshore exploration licence awarded in 2002
- Over 103,000 ha north of Port au Port peninsula
- Onshore to offshore well to pursue oil-in-shale play
- Casing run to 1711 m / cement
- Plans to test, subject to regulatory approval

Image credit – Canadian Imperial Venture Corp.
Drilled horizontal sidetrack to discovery well PAP #1 in 2009

Produced 1,300 bbls in 2010, over 35,000 bbls to date

Workover program completed in 2010

Goal: Improve connectivity between wellbore and the reservoir
Bay St. George Basin

Age: Upper Paleozoic
Area: ~2400 km²
Basin Type: Strike-slip
Basin Infill: 9,000+ m

Source Rock (TOC’s)
- (BG) up to 31.9% (L)
- (CG) Woody Cape Fm. – up to 3%
- (CG) Robinson’s River Fm. – up to 4%
- (AG) Snakes Bight Fm. – up to 2% (L)

Kerogen Type
- Type III (terrestrial), minor Type I & II

Thermal Maturity
- variable; northern BSG – ‘Oil window’
- southern BSG – mostly ‘gas window’
Corridor Resources Inc.

- 20,000 ha in Laurentian Channel
- Referred to as the “Old Harry Prospect”
- Soliciting partner interest to drill an exploration well
- EOI issued for drilling unit to drill a well 2012-2014
- Environmental Assessment ongoing

Potential copyright material - If you wish to obtain a copy please contact the ATIPP Office at (709) 729-7072 or atippoffice@gov.nl.ca.
B.G. Oil & Gas Ltd.

- Offshore exploration licence awarded 2007
- Salt-associated hydrocarbon plays
- “Young Harry”
Vulcan Minerals Inc.

- Three onshore permits in region
- Re-entered Flat Bay #1, Q3, 2010
- Completed Robinsons #1 & Red Brook #2, Q3-Q4, 2010
- Conducted 130km 2D seismic program, Q3-Q4, 2010
- Permitting underway for new test holes
Deer Lake Basin

**Age:** Upper Paleozoic

**Area:** ~2400 km$^2$

**Basin Type:** Strike-slip

**Basin Infill:** 3,000+ m

**Source Rock (TOC’s)**
- Rocky Brook Fm. – up to 15.9% (L)
- Forty-five Brook Fm. – up to 2.5% (L)
- Cape Rouge Fm. – no data (L)
- Saltwater Cove Fm. – no data (L)

**Kerogen Type**
- Type I (lacustrine), Type III (terrestrial)

**Thermal Maturity**
- post-Anguille Group: Immature to mature (oil)
- Anguille Group: late mature to overmature (oil)
Deer Lake

Legend
- Well
- Exploration Permit

Deer Lake Oil and Gas

Newfoundland Labrador
Deer Lake Oil and Gas Inc.

- Two exploration permits in Deer Lake Basin
- Drilled Werner Hatch exploration well in 2010
- Currently evaluating drilling results including an analysis of recovered core
Petroleum Exploration Enhancement Program (PEEP)

- $5 million onshore program jointly administered by the Department of Natural Resources and Nalcor Energy.
- Currently supporting 18 projects in Western NL with $2 million allocated to date.
- Projects include developing new seismic sources, acquisition of hi-res aeromag data, reprocessing of seismic data, geological and geochemical studies.
PEEP Funded Project

Michael Kelly & Elliott Burden

“Atlas of strata and source rock characteristics for the Rocky Brook Formation, Deer Lake Group, Newfoundland and Labrador”

- Pasadena Core Library (7 of 9) & active mineral exploration program (3).
- Core examined for lithology, sedimentary structures; sampled for Rock-eval analysis; core photography.
- Plus – archival assessment reports; core & sample data summarized.
- Results - Core Atlas produced for Rocky Brook Fm.; assessment of thermal maturity & generative capacity.
“Atlas of strata and source rock characteristics for the Rocky Brook Formation, Deer Lake Group, Newfoundland and Labrador”

148 pages

Atlas of strata and source rock characteristics for the Rocky Brook Formation, Deer Lake Group, Newfoundland and Labrador

Michael Kelly and Elliott Burden
Offshore Geoscience Data Program (OGDP)

- $20 million offshore program jointly administered by the Department of Natural Resources and Nalcor Energy
- Currently supporting 7 projects offshore with $10 million allocated to date, 5 of these projects with $4 million value relevant to Western NL
- Projects in Western NL include planned acquisition of hi-res aeromag data, and satellite seep surveying.
OGDP initiative of Nalcor Energy and Astrium Services

Study Area: Offshore Newfoundland and Labrador, 1.5 million sq. kms

Data added to Astrium’s Global Seeps database

Data available by licence
2011 Call for Bids - Anticosti Basin

Call For Bids NL11-01

- 2 parcels – 353,988 hectares (874,723 acres)
- Average water depth: 143 m
- Water depth range: 30 – 240 m
- Close: Nov 15, 2011 (4 pm)
Onshore Call for Postings

Onshore Land Rights – Issuance Process

- Crown Lands
- Call for Postings
- Request for Bids
- Exploration Permit
- Production Lease
- Eligible Land for 2010 Call for Postings
- Exploration Permit
- Production Lease
- Park, Wilderness or Ecological Reserve

Newfoundland Labrador
Summary

- Three onshore basins (with proven petroleum systems)
- Conventional & Unconventional resource plays
- Multiple play types & associated reservoir rock
- Multiple, rich source rocks (Type I, II, III) – variable maturity
- Large land parcels (onshore – up to 40,000 ha; offshore – up to 80,000 ha)
- Modern data & core libraries (onshore & offshore)
- Call for Bids (offshore) – close on Nov. 15, 2011 @ 4pm
- Potential Request for Bids (onshore) - late 2011 / early 2012
Thank You – Questions??

www.nr.gov.nl.ca/nr

Visit the DNR Booth at GeoExplo

Sample Location: TEA COVE – Port au Port Peninsula
Western Newfoundland Update

Wes Foote, P. Eng.
ADM, Petroleum Development
Department of Natural Resources
Regional Overview
Basin Summary

- Anticosti Basin underlies the northern part of the gulf (purple)
- The Magdalen Basin underlies the south (lower blue)
- St. Anthony Basin underlies the north (upper blue)
Appalachian Structural Front

- 18 Paleozoic Basins along both sides of the front
- Numerous oil and gas discoveries throughout
Regional Summary

Onshore:
- 7 Onshore Exploration Permits
- 1 Production Lease

Offshore:
- 7 Offshore Exploration Licences
Nalcor Energy - Oil & Gas

- Two onshore permits in Parsons Pond area
- Two exploration wells drilled, both encountered gas shows while drilling
Deer Lake Oil and Gas Inc.

- Two exploration permits in the Deer Lake Basin
- Drilled Werner Hatch #1 exploration well
- 344 meters of core recovered
Investcan Energy

- Three onshore exploration permits
- Conducted 130km 2D seismic program
- 2012 – 4 well Pilot Appraisal Program
Enegi Oil Inc.

- Discovered in 1994
- Total production to date over 35,000 bbls
- Workover programs completed in 2010 and 2011
Offshore Western Newfoundland

- Four operators – seven exploration licences
- Seismic programs planned for 2012
- Some licences can accommodate onshore to offshore wells
Shoal Point Energy - EL 1097R

- Consolidation of four offshore blocks approved in 2011
- One offshore licence totaling 103,000 hectares
- Sites for onshore to offshore wells being evaluated
Ptarmigan Energy Inc.
ELs 1120, 1127 and 1128

- Three offshore exploration licences
- Approximately 500,000 hectares of land held
Exploration License - EL 1070

- Onshore to offshore well – testing in progress
- Pursuing shallow unconventional oil resources in the Green Point Formation
Enegi Oil Inc. - EL 1116

- Offshore exploration licence awarded in 2009
- Over 200,000 hectares of land held
- Less than 200m water depth
Corridor Resources Inc. - EL 1105

- Located in the Gulf of St. Lawrence
- Referred to as the “Old Harry Prospect”
- Strategic Environmental Assessment ongoing
- Soliciting partner interest to drill an exploration well
Petroleum Exploration Enhancement Program (PEEP)

• Initial $5 million onshore program jointly administered by the Department of Natural Resources and Nalcor Energy

• Currently supporting 21 projects in Western NL with $3 million allocated
Offshore Geoscience Data Program (OGDP)

- Initial $20 million offshore program jointly administered by the Department of Natural Resources and Nalcor Energy
- Recent approval of $3.0 million for a potential fields survey covering nearshore and offshore Western, NL
Onshore Call for Postings

Onshore Land Rights Issuance Process

Crown Lands

Call for Postings

Request for Bids

Exploration Permit

Production Lease

Parsons Pond

Corner Brook

Deer Lake

Flat Bay

Legend
- Eligible Land for 2010 Call for Postings
- Exploration Licence
- Exploration Permit
- Production Lease
- Park, Wilderness or Ecological Reserve
7th International Symposium on Oil and Gas Resources in Western Newfoundland

September 12 - 14, 2012 - Marble Mountain Resort, Corner Brook, NL
2012 Call for Bids
Laurentian Basin

Call For Bids NL12-01

- 6 parcels – 1,589,738 hectares
- Parcel size ranges from 143,588 to 296,530 hectares
- Close: Nov 1, 2012
2012 Call for Bids
Flemish Pass/Central Ridge

Call For Bids NL12-02

• 1 parcel – 208,899 hectares
• Water depth ranges from 390 to 1200 meters
• Close: Nov 1, 2012
Thank you.
Newfoundland and Labrador: Resource Opportunities Available
Call for Bids NL12-01 and NL12-02
Overview

- Total Land Area in excess of 800,000km² (200 Million acres). Average Block size 100x the size of US Gulf of Mexico Blocks.
- Numerous sedimentary basins, some underexplored.
- > 3 Billion barrels oil, >11 Tcf gas & > 500MM barrels NGLs discovered so far.
- Undiscovered resources estimated at 6 Bbbl oil and 60 Tcf. 1.3 Billion barrels produced to date.
- NL accounts for > 10% of Canada’s total oil production and approx 1/3 of Canada’s conventional light crude output.
- One producing basin so far, Jeanne d’Arc, averaging 275,000 bopd production. Recent Significant Discovery in Flemish Pass Basin.
- < 10% currently held under licence
Underexplored Proven Petroleum Region

**SAGLEK BASIN**
- Exploration and Appraisal Wells
  - 1 well per 139 km²
  - 1 well per 461 km²
  - 1 well per 4,203 km²

**SOUTH WHALE BASIN**

**SCOTIAN SHELF**
- Exploration and Appraisal Wells

**Legend**
- Mesozoic Basins
- Upper Paleozoic Basins
- Lower Paleozoic Basins
- 2012 Calls for Bids
- Exploration Licence
- Exploration Permit
- Significant Discovery Licence
- Production Licence
- Production Lease
- Boundaries
- Oil and Gas
- Gas

Drilling Activity 2012 – Offshore

- Drilling activity increasing – expecting as many as 5 offshore rigs in NL in 2012
- Statoil announced plans to drill 2-4 wells offshore NL, starting late 2012.
- Chevron announced plans to drill a third well in the Orphan Basin – Exxon & Shell left EL1074R consortium, while Statoil and Repsol have joined.
Call for Bids: Offshore

C-NLOPB 2012 Offshore Call for Bids recently made public. Consists of seven large parcels in two underexplored basins. Winning bid: Work Commitment.

Offshore Land Rights – Issuance Process

Crown Lands

Call for Nominations

Call for Bids

Exploration Licence

Significant Discovery Licence

Production Licence
Call for Bids: Laurentian Basin

Parcels 2 and 3
WD 2 km
WD 2.5 km
Parcels 4, 5 and 6
WD 3 km

Tertiary
Jurassic
Cretaceous
Argo Salt
Basement

East Wolverine G-37
Laurentian Basin

Newfoundland Labrador
Call for Bids: Laurentian Basin
Call for Bids NL12-02 Flemish Pass Basin

- Flemish Cap
- Beothuk Knoll
- Flemish Pass B.
- East Orphan B.
- Central Ridge
- A
- B
- Jeanne d’Arc
- Mizzen
- White Rose
- A’
Call for Bids: Flemish Pass Basin
Call for Bids: Flemish Pass Basin
Call for Bids: Seismic Coverage

- Large multi-client modern surveys, including some 3D.
- Only released, publically available data (CNLOPB) shown below.
Summary

- >3 Billion bbls Oil and >11 Tcf Gas discovered to date.
- Daily production approx 275,000 bopd.
- 1.3 Billion bbls light crude oil produced since first oil in 1997.
- Vast area, very lightly explored to date. Numerous prospective basins.
- Increasing exploration activity in offshore area, open to new entrants.
- New significant discovery: Mizzen O-16 in Flemish Pass Basin.
- Six Intermediate to deepwater large parcels in Laurentian Basin and one in Flemish Pass Basin are now offered at the 2012 NL Call for Bids to be closed November 1st, 4 pm, NST.
- Favourable fiscal regime, geopolitically stable.
- Proximity to North American and European markets.
Come visit us for more information at our booth #1831

THANK YOU
Newfoundland Labrador
it’s happening here.

Energy Resource Opportunities
Provincial Energy Policy

- Released September, 2007
- Established a long-term vision for the responsible development of the Province’s energy resources
Provinceal Energy Plan

Contained Goals related to:

• Effective Governance
• Energy Security
• Sustainable Economic Development
• Environmental Leadership
• Maximizing Electricity Export Value
• Maximizing Long-Term Value of Oil and Gas
Provincial Energy Plan

Committed to:

“Leverage our non-renewable oil and gas wealth into a renewable future by investing a significant portion of our non-renewable resource revenues in renewable energy infrastructure and development.”
Energy Warehouse

Hydro
> 6,000 MW

Wind
> 5,000 MW

Oil
> 6 Billion Barrels

Natural Gas
> 60 Trillion Cubic Feet

Others

6,700 MW
> 51 MW

3.1 Billion Barrels

11 Trillion Cubic Feet

Developed
Undeveloped
Discovered
Undiscovered
Oil and Gas Sector
Major Economic Engine

- 35% of GDP
- 30% of provincial revenues
- 2.5% total employment
Endowment
Total Reserves/Resources

9 Billion Barrels of Oil

>70 tcf Natural Gas
Production Profile

Over 14 years of oil production
Sedimentary Basin Map

East Coast Offshore Region

Legend
- Mesozoic Basins
- Upper Paleozoic Basins
- Lower Paleozoic Basins
- 2012 Calls for Bids
- Exploration Licence
- Exploration Permit
- Production Lease
- Production Licence
- Significant Discovery Licence
- Boundaries
- Oil and Gas
- Gas

Hibernia
1.395 Bbbls of oil
1.984 tcf of gas

Hebron
707 MMbbls of oil

Terra Nova
419 MMbbls of oil
0.053 tcf of gas

North Amethyst
68 MMbbls of oil
0.315 tcf of gas

White Rose
305 MMbbls of oil
3.023 tcf of gas

Newfoundland and Labrador
Hibernia Project Ownership

<table>
<thead>
<tr>
<th>Company</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExxonMobil</td>
<td>33.125%</td>
</tr>
<tr>
<td>Chevron Canada</td>
<td>26.875%</td>
</tr>
<tr>
<td>Suncor</td>
<td>20%</td>
</tr>
<tr>
<td>Canada Hibernia Holding Corporation</td>
<td>8.5%</td>
</tr>
<tr>
<td>Murphy Oil</td>
<td>6.5%</td>
</tr>
<tr>
<td>Statoil</td>
<td>5.0%</td>
</tr>
</tbody>
</table>
Hibernia Southern Extension

- Divided into 2 Areas
  - AA Blocks
  - Hibernia Southern Extension Unit (HSE)
- Nalcor Energy – 10% ownership position in HSE
Terra Nova

### Terra Nova Project Ownership

<table>
<thead>
<tr>
<th>Company</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suncor</td>
<td>37.675%</td>
</tr>
<tr>
<td>ExxonMobil</td>
<td>19%</td>
</tr>
<tr>
<td>Statoil</td>
<td>15%</td>
</tr>
<tr>
<td>Husky Energy</td>
<td>13%</td>
</tr>
<tr>
<td>Husky Energy</td>
<td>13%</td>
</tr>
<tr>
<td>Murphy Oil</td>
<td>10.475%</td>
</tr>
<tr>
<td>Mosbacher Operating</td>
<td>3.85%</td>
</tr>
<tr>
<td>Chevron Canada</td>
<td>1.0%</td>
</tr>
</tbody>
</table>
White Rose

White Rose Project Ownership

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husky Energy</td>
<td>72.5%</td>
</tr>
<tr>
<td>Suncor</td>
<td>27.5%</td>
</tr>
</tbody>
</table>
White Rose Satellite Fields

- Includes land surrounding White Rose Project - North Amethyst, West White Rose and South White Rose discoveries
- Nalcor Energy – 5% ownership position
North Amethyst

Development through satellite tie back to Sea Rose FPSO

White Rose Extension Ownership

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Husky Energy</td>
<td>68.875%</td>
</tr>
<tr>
<td>Suncor</td>
<td>26.125%</td>
</tr>
<tr>
<td>Nalcor Energy</td>
<td>5%</td>
</tr>
</tbody>
</table>
West White Rose

- Amendment to development Plan for Pilot Scheme approved in June/10
- Pilot scheme consists of oil producer and water injector
- Results of pilot scheme will determine full development plan
Hebron Field

Hebron Ownership

<table>
<thead>
<tr>
<th>Company</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExxonMobil</td>
<td>36%</td>
</tr>
<tr>
<td>Chevron Canada</td>
<td>26.7%</td>
</tr>
<tr>
<td>Suncor</td>
<td>22.7%</td>
</tr>
<tr>
<td>Statoil</td>
<td>9.7%</td>
</tr>
<tr>
<td>Nalcor Energy – Oil &amp; Gas</td>
<td>4.9%</td>
</tr>
</tbody>
</table>
Area of petroleum potential in excess of 800,000 square km or 200 million acres

< 10% held under licence
Offshore Rights Issuance

- Managed by the Canada – Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB)
- Federal and Provincial Entity
- Open and transparent bidding process
- Criteria – Exploration Work Commitment
2012 Call for Bids
Laurentian Basin

Call For Bids NL12-01

• 6 parcels – 1,589,738 hectares

• Parcel size ranges from 143,588 to 296,530 hectares

• Close: Nov 1, 2012
2012 Call for Bids
Flemish Pass/Central Ridge

Call For Bids NL12-02

- 1 parcel – 208,899 hectares
- Water depth ranges from 390 to 1200 meters
- Close: Nov 1, 2012
Underexplored Region

Well Density - Exploration and Appraisal Wells

<table>
<thead>
<tr>
<th>Country</th>
<th>Wells</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>3918</td>
<td>1 well per 139 km²</td>
</tr>
<tr>
<td>Norway</td>
<td>1427</td>
<td>1 well per 461 km²</td>
</tr>
<tr>
<td>Newfoundland Labrador</td>
<td>189</td>
<td>1 well per 4,203 km²</td>
</tr>
</tbody>
</table>

NL Exploration Success

Average Discovery Size per Exploration/Appraisal Well

Data from Wood Mackenzie, 2010
Data from Dillabough, 2009
2012 Exploration Outlook
Prosperous Future

- Highly prospective region
- Fair fiscal region
- Annual licensing rounds
- Resource opportunities available
Renewable Energy in NL

- On a per-capita basis, Newfoundland and Labrador is the largest producer of electricity in the world.
- Vast majority is renewable hydroelectric power.
- Poised to greatly increase renewable hydroelectric capacity.
The Lower Churchill Project is the most attractive undeveloped hydroelectric project in North America.
Lower Churchill Project

- Provides Province with a long-term, source of energy with stable electricity prices
- Competitively priced energy will attract new energy-intensive industrial development
- Allows Province to eliminate emissions from a significant GHG emitting source

Two dams and powerhouse at Muskrat Falls

824 MW/ 5 TW-h/yr
Reservoir length - 60 km
Flood area – 41 sq km
Lower Churchill Project

Phase 1 – Muskrat Falls, Labrador Island Link and Maritime Link
Newfoundland Labrador
it’s happening here.

Energy Resource Opportunities
Newfoundland Labrador
it’s happening here.
Strategic Location

- Calgary: 4,375 kms (2,712 miles)
- Houston: 4,125 kms (2,558 miles)
- St. John's: 3,774 kms (2,340 miles)
- London: 3,774 kms (2,340 miles)
Area of petroleum potential in excess of 800,000 square km or 200 million acres

< 10% held under licence

Land Area
Underexplored Region

Exploration and Appraisal Wells


1 well per 139 km²
1 well per 461 km²
1 well per 4,203 km²
## Activity Summary

### Wells Drilled

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploration (Total)</td>
<td>227</td>
</tr>
<tr>
<td>Offshore</td>
<td>145</td>
</tr>
<tr>
<td>Onshore</td>
<td>82</td>
</tr>
<tr>
<td>Delineation</td>
<td>53</td>
</tr>
<tr>
<td>Development</td>
<td>161</td>
</tr>
</tbody>
</table>

### Discoveries

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>19</td>
</tr>
<tr>
<td>Gas</td>
<td>7</td>
</tr>
</tbody>
</table>

### Current Holdings

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploration Licences/Permits</td>
<td>42</td>
</tr>
<tr>
<td>Significant Discovery Licences</td>
<td>49</td>
</tr>
<tr>
<td>Production Licences/Leases</td>
<td>9</td>
</tr>
</tbody>
</table>
Significant Discoveries
Offshore East Coast

- 46 Significant Discovery Licences
- 5 Development Projects
- Recoverable Resources
  - 3.1 billion barrels of oil
  - 6.8 tcf of gas
Significant Discoveries
Offshore Labrador

- 5 Significant Discovery Licences
- Recoverable Resources
  - 4.2 tcf of natural gas
  - 123 million barrels NGL’s
Prospectivity

- $1.3 billion in current outstanding work commitments
- 2011 Call for Bids - $349 million work commitments
- Over the last 5 years in excess of $800 million in new work commitments
Petroleum Development

... it’s happening here.
Other “R&R”
Shale Oil Potential of the Anticosti Basin

Western Newfoundland, Canada

Larry Hicks, P. Geo.
Manager of Petroleum Geoscience
Department of Natural Resources
Government of Newfoundland & Labrador, Canada
Regulatory Framework

**Onshore Western Newfoundland**
- Department of Natural Resources (DNR)

**Offshore Newfoundland & Labrador**
- Canada-NL Offshore Petroleum Board (CNLOPB)
Geological Evolution – Anticosti Basin

Legend

- Carboniferous: Undifferentiated clastic sedimentary rocks, Lower Devonian
- Devonian: Sedimentary rocks
- Mid to Upper Ordovician: Foreland Basin Facies
- Middle Ordovician to Lower Cambrian: Molasse
- Lower Cambrian: Relict & new sediment
- Lower Cambrian to Ordovician: Pelagic sediments
- Mid- to Lower Ordovician: Molasse
- Precambrian: Pre-Cambrian Basement

Passive Margin Sequence

- Western shelf carbonates
- Continental slope / rise sediments
- LAPIETUS OCEAN (500 mya)
- Cow Head Group
- Northern Head Group
- Ocean Floor
- Continental Crust (basement)
- Mantle
- Foreland Basin Sediment
- Carbonate Platform
- Carbonate Platform & Riff Sediments

Triangle Zone

Newfoundland Labrador
Anticosti Basin

Extensional / Inversion Fairway
Allochthonous Slope / Rise Sediments – Cow Head & Northern Head Groups

Green Point

West Bay

Middle Arm

Shoal Point
Foreland Basin Source Rock – Table Head & Goose Tickle Groups

Table Cove Fm. at Spudgell’s Cove

Black Cove Fm. at Spudgell’s Cove

Cape Cormorant Fm. at Cape Cormorant

Black Cove Fm. at West Bay
Geochemistry Data

Allochthonous / Autochthonous Source Rocks

Allochthonous / Autochthonous Source Rocks

Newfoundland Labrador
Hydrocarbon Shows around Port au Port Bay
Hydrocarbon Shows in Allochthonous Cow Head & Northern Head Groups

Little Port

West Bay

Portland Creek

Green Point
Hydrocarbon Saturated Allochthonous Reservoir Rock

Newfoundland Labrador
Allochthonous Cow Head and/or Northern Head Group Shale
Historic Exploration Activity at Shoal Point (1898 – 1965)
Golden Eagle Refining Co. of Canada – Shoal Point #2

Drilled in 1965
Petroleum Activity at Bay of Islands (1996 – 97)

Lark Harbour WW2

Total Organic Content (TOC)

TOC% 1.00 1.25 1.50 1.75 2.00

Depth (m) 50 60 70 80 90 100 110 120

AAI

Shale

Acritarch Index Value
Historic Exploration Activity at Parson’s Pond (1867 – 1965)

Geology

Parson’s Pond, NL

Legend

- Lower Head Fm. flysch
- Cow Head Group slope sediments
- Carbonate platform
- Precambrian basement

Nalcor et al. Finnegan #1
Nalcor et al. Seamus #1
Contact et al. Parson’s Pond #1

Gulf of St. Lawrence

Newfoundland
Current Exploration Activity at Shoal Point, Port au Port Peninsula

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Shoal Point et al., 3K – 39 Well

Core exhibits petroliferous odour upon extraction from core barrel

Oil fluorescence distinctly highlights natural fracture patterns in the core

Core bottoms over time (days) exhibit faint to good oil staining
Summary – Lower Paleozoic Anticosti Basin

- Unconventional & Conventional resource plays
- Multiple, organic rich source rocks – variable maturity
- Multiple play types & associated reservoir rock
- Large land parcels (onshore – up to 40,000 ha; offshore – up to 80,000 ha)
- DNR finalizing details for a 2012 land sale
- Two onshore Upper Paleozoic basins (with proven petroleum systems)
Come Visit: **BOOTH # 1039**

World Global Stratotype & Point

Ordovician

Cambrian

Green Point Formation at Green Point, NL

Web Address (DNR): [www.nr.gov.nl.ca/nr](http://www.nr.gov.nl.ca/nr)

THANK YOU
Location

- Calgary
- Houston
- St. John's
- Nuuk
- London

Distances:
- 4350 km
- 4200 km
- 1850 km
- 3700 km
Location

- 2400 km
- 2500 km
Overview

• Total Land Area in excess of 800,000km\(^2\) (200 Million acres).
• Average Block size 100x the size of US Gulf of Mexico Blocks.
• Numerous sedimentary basins, very lightly explored.
• >3 Billion barrels oil, >11 Tcf gas & >500MM barrels NGLs discovered so far. Undiscovered estimated at 6 Bbbl oil and 60 Tcf. 1.3 Billion barrels produced to date.
• One producing basin so far, Jeanne d’Arc, averaging 275,000 bopd production. Significant Discovery now in Flemish Pass.

< 10% currently held under licence

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Numerous sedimentary basins with significant hydrocarbon potential, from Mesozoic to Paleozoic age.
Regional Government-Sponsored Exploration Projects

- The Provincial Energy Plan, released in September 2007, introduced policy actions to encourage and promote exploration activity in Newfoundland known as the Petroleum Exploration Enhancement Program (PEEP) for onshore and the Offshore Geoscience Data Program (OGDP) for offshore.

- The Department of Natural Resources announced a two-year program to encourage onshore exploration through the application and acquisition of petroleum geoscience data. Funding extended to 2011-2012.
PEEP & OGDP - Objectives

- **Identify New Play Opportunities**: Source, Reservoir, Trapping, Timing.

- **Review of Existing Geoscience Data**: Potential reprocessing of existing geophysical data such as seismic. Identify data and knowledge gaps, bring to bear new geological concepts & models, “New Plays in Old Basins”.

- **Collection of New Geoscience Data**: e.g. acquisition of new geological field data, gravity/magnetic data, seismic data (infill or new seismic), “New Plays in New Basins”.

- **Enhance Existing Exploration**: Reduce risk and uncertainly for current explorers, highgrade exploration targets from basin to prospect-scale, focus exploration geographically and stratigraphically.

- **Promotion of New Exploration**: Make data publicly available at point of project completion where possible, disseminate to industry and academia to generate new geoscience concepts, generate interest in explorationists not yet active in the region.
PEEP & OGDP - Objectives

INDUSTRY

ACADEMIA

GOVERNMENT
PEEP Overview

- $5 million onshore program
- Jointly administered by the Department of Natural Resources and Nalcor Energy – Oil and Gas
- Currently supporting 18 projects in WNL.
- Projects include developing new seismic sources, acquisition of hi-res aeromag data, reprocessing of seismic data, geological and geochemical studies.
MUNSIST Seismic Source, Ongoing Testing

Key Features

- MUNSIST: MUN Swept Impact Seismic Technology.
- Successfully field tested in Five Mile Road area, Northern Peninsula 2009. Ongoing field testing in Flat Bay area, BSG Basin.
- Comparative testing against existing “conventional” seismic over same lines – early results encouraging.
- Economic, portable, environmentally friendly seismic source.

Key Deliverables

- Development of an in-province, on-island seismic source. Logistically sound, ease of deployment.
- Comparative testing and technology refinement ongoing.
- With development, will allow low-cost, readily available seismic technology for Western Newfoundland explorers.
Evolution of the Appalachian Foreland Basin and Thrust Front

Key Features

- Provenance studies of foreland basin sediment samples from PaP Peninsula using petrographic and detrital Zircon U-Pb methods and of outcrop-scale structures around Round Head Thrust.
- Interpretation of all available seismic data, on- and offshore.

Key Deliverables

- Understanding of foreland basin provenance, including sediment age, environment, potential for porosity development.
- Timing and variability of tectonism along the thrust front, to guide search for additional structural traps.
- Outcrop-scale studies will improve understanding of fracture development associated with the thrust front.
OGDP Overview

- $20 million offshore program
- Jointly administered by the Department of Natural Resources and Nalcor Energy – Oil and Gas
- Currently supporting 10 projects offshore.
- Projects in W NL include acquisition of hi-res aeromag data, acquisition of seismic data, satellite seep surveying.
OGDP: Offshore Western NL Aeromag

- c. $3 Million offshore program, funded through OGDP.
- Partnership and consultation with GSC-A on data acquisition and geophysical parameters of survey, to be completed this year.
- Will greatly increase our understanding of the geologically complex plays in the triangle zone offshore Western Newfoundland, contiguous with the previous data acquisition onshore through PEEP.
OGDP: NAPSA Plate Reconstruction Project

- Joint Initiative between Irish and Newfoundland-Labrador Governments.
- Understanding of source rock distribution, reservoir provenance and quality, basin evolution, and more.
- First comprehensive study of its kind in the North Atlantic using deformable plate boundaries. Final results to be announced at Conjugate Margins 2012 in Dublin, Ireland.

After Ziegler, 1987
Atlantic Canada Exploration

- $970 Million work commitment from Shell across four blocks in deepwater SW Nova Scotia.
- Highest single work-commitment bid seen in Atlantic Canada.
- Rejuvenates Nova Scotia’s recent relative quiescence in hydrocarbon exploration.
- Renewed activity in NS due in part to $15 Million investment in state-of-the-art Play Fairway Analysis Project.
Call for Bids: Offshore and Onshore

• 2012 Offshore Call for Bids expected imminently. Areas for licensing yet to be made public.
MKI Seismic: Labrador 2D Program

• State-of-the-art 2D Seismic Program utilizing modern Geostreamer™ Technology.

• In excess of 20,000 line-km of seismic data to be acquired offshore N L. >10,500km acquired in 2011 season of which c.5000km in N Lwaters. 2012 season planned for an further 11,500km.

• Baffin Bay – Davis Strait seismic planned for minimum 6,000km new seismic, expected to grow as interest in the area grows.
MKI Seismic: Planned NE NL Shelf 2D Program

- State-of-the-art 2D Seismic Program utilizing modern Geostreamer™ Technology.
- In excess of 20,000 line-km of seismic data planned to be acquired in Northern Jeanne d’Arc, Flemish Pass and Orphan Basins.
- Currently in planning stage – subject to change.

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- Currently in planning stage – subject to change.

Seismic Grid courtesy of TGS-NOPEC and PGS
Seismic grid to be acquired subject to change
3D Seismic Planned Activity 2012

- Western Geco submitted EA to CNLOPB for 3D Seismic Program in Jeanne d’Arc Basin.
- Ptarmigan planning 3D survey offshore West Coast Newfoundland – to be confirmed
Drilling Activity 2012 – Offshore

• Drilling activity increasing – expecting as many as 5 offshore rigs in NL in 2012

• Statoil announced plans to drill 2-4 wells offshore NL, starting late 2012.

• Chevron announced plans to drill a third well in the Orphan Basin – Exxon & Shell left EL1074R consortium, while Statoil and Repsol have joined.
Offshore Labrador: Wells & Discoveries

Number of wells drilled

Year


Bjarni, Gudrid
Snorri
Hopedale
North Bjarni

Wells
Discoveries
Summary

- Ongoing and increasing exploration activity levels in Newfoundland and Labrador, both in drilling and seismic acquisition.
- Activity focusing on heartland areas, but also frontier areas such as Offshore Labrador, Flemish Pass, Orphan Basin and Offshore Western NL.
- Onshore and Offshore Bid Rounds to be announced in Q2 2012. First onshore bid round in 10 years.
- Ongoing geoscience research in aid of exploration through programs such as PEEP and OGDP.
- Seeing renewed interest from potential new entrants to the area – limited running room in some other major hydrocarbon resource areas globally. In large part due to favourable fiscal regime and geopolitical stability.
Newfoundland and Labrador: Resource Opportunities Available

David Middleton
Director of Petroleum Geoscience
Department of Natural Resources
Government of Newfoundland and Labrador, Canada
Location
Overview

- Total Land Area in excess of 800,000km$^2$ (200 Million acres). Average Block size 100x the size of US Gulf of Mexico Blocks.
- Numerous sedimentary basins, very underexplored.
- >3 Billion barrels oil, >11 Tcf gas & >500MM barrels NGLs discovered so far. Undiscovered estimated at 6 Bbbl oil and 60 Tcf. 1.3 Billion barrels produced to date.
- NL accounts for >10% of Canada’s total oil production and approx 1/3 of Canada’s conventional light crude output.
- One producing basin so far, Jeanne d’Arc, averaging 275,000 bopd production. Significant Discovery now in Flemish Pass.

< 10% currently held under licence
Underexplored Proven Petroleum Region

Exploration and Appraisal Wells

1 well per 139 km²
1 well per 461 km²
1 well per 4,203 km²

Call for Bids: Offshore and Onshore

- 2012 Offshore Call for Bids expected imminently. Areas for licensing yet to be made public.

Onshore Land Rights – Issuance Process

Crown Lands

Call for Postings

Request for Bids

Exploration Permit

Production Lease

Exploration Permit
Drilling Activity 2012 – Onshore

Photo Credit – Canadian Imperial Venture Corp. (CIVC)
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- Daily production around 275,000 bopd.
- 1.3 Billion bbls light crude Oil produced since first oil in 1997.
- Vast area, very lightly explored to date. Numerous prospective basins.
- Increasing exploration activity levels in offshore area, open to new entrants. New discovery in Flemish Pass Basin. First bid round since 2002 in onshore area and new offshore bid round to expected to be announced imminently.
- Favourable fiscal regime, geopolitically stable.
- Proximity to North American and European markets.
Come visit us for more information at our booth #130, directly behind the coffee station in the IP.
Paleozoic Basins along the Appalachian Structural Front

Lower Paleozoic Basin

Onshore Western Newfoundland

Paleozoic Basins of the Appalachian Structural Front

Legend

- Paleozoic Basins
- Atlantic Ocean

<table>
<thead>
<tr>
<th>Basin Name</th>
<th>Label</th>
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<tr>
<td>Hopedale</td>
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<td>Anticosti</td>
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<td>Sydney</td>
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<td>Magdalen</td>
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Anticosti Basin - Onshore

**Generalized Stratigraphic Section Western Newfoundland**

- **Area**: 13,070 km².
- **Age**: Lower Cambrian to Devonian.
- **Type**: Foreland basin developed over deformed continental margin of ancient North America.
- **Thickness**: Up to 6000+ metres, mostly marine sediments.
- **Exploration wells**: 48 (pre-1994*): 14 (recent).
- **Stratigraphic test holes**: 11 (recent).
- **Oil and gas shows**: Numerous oil and gas shows in pre-1994 and recent wells.
- **Oil and gas discoveries**: 1 (recent) Garden Hill South on the Port au Port Peninsula.
- **Production to date**: Approximately 35,000 barrels of oil through pre-production testing at Garden Hill South and unknown quantities (up to 5,000 barrels of oil) from historic (pre-1994) wells at Parson’s Pond and Shoal Point.
- **Wells prior to 1994 were drilled without seismic data.**

### Source Rocks

- **Cow Head Group**: Green Point Formation shales, TOCs up to 10.3% (proven).
- **Goose Tickle Group**: Mainland Formation and Black Cove Fm. shales, TOCs up to 8.1% (proven).
- **Potential Source**: Table Cove Formation, Forteau Formation and Curling Group shales.

### Reservoirs

- **Dolomitized** (also hydrothermally dolomitized) portions of the Lower Paleozoic carbonate platform (mainly St. George Group).
- **Sand dominated sequences** within the Hawke Bay Formation Labrador Group.
- **Dolomitized carbonate conglomerates and calcarenites**, and thin to thick bedded massive turbiditic sandstones within the Goose Tickle Group and the Humber Arm Allochthon.
- **Flysch sandstones** and marginal marine shoreline sands of Long Point Group and Clam Bank Formation.
- **Silurian/Devonian aged reefs** (based on seismic anomalies).

### Play Concepts

- **Thrusted, dolomitized and/or hydrothermally dolomitized platform** (as per Port au Port #1 well).
- **Horst structures** and tilted fault blocks within carbonate platform sediments found beneath foreland basin cover and transported sequences.
- **Stratigraphic traps**: including diagenetic porosity within platform carbonates, bioherms, unconformity related or pinch-outs.

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- **Age:** Lower Cambrian to Devonian.
- **Type:** Foreland basin developed over deformed continental margin of ancient North America.
- **Thickness:** Up to 6000+ metres, mostly marine sediments.
- **Exploration wells:** 48 (pre - 1994*); 14 (recent).
- **Stratigraphic test holes:** 1 (recent).
- **Oil and gas shows:** Numerous oil and gas shows in pre-1994 and recent wells.
- **Oil and gas discoveries:** 1 (recent) Garden Hill South on the Port au Port Peninsula.
- **Production to date:** Approximately 30,000+ BOE through pre-production testing at Garden Hill South and unknown quantities (up to 5,000 barrels of oil) from historic (pre-1994) wells at Parson’s Pond and Shoal Point.

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