# SHOAL POINT energy

Best estimate resource of 428 million barrels of light, sweet crude oil.

An important economic opportunity for western Newfoundland.

**CEO:** Mark Jarvis

# **SHOAL POINT ENERGY** Exploration Licences #1070 and #1120



Wells to be drilled from onshore surface locations to offshore licences during exploration and evaluation Program.

Shoal Point is operator and representative of EL 1070 and has certain farm-in rights on EL 1120

# **Oil seeps around Port au Port Bay**

Oil has been seeping continuously into the bay for approximately 10,000 years, since the glaciers melted and southern Newfoundland rose up above sea level.

The oil is sourced from shallow packages of the Humber Arm Allochthon, which outcrop at surface around the bay.

Seeps have been mapped and documented around the entire bay, from the tip of Long Point to Fox Island and further north.

Seeps have been observed and documented since the 1800's.

Documented history of difficulty finding drinkable water wells due to presence of hydrocarbons – unrelated to any oil drilling activity.

Guided by seeps, approximately 11 shallow oil wells were drilled on the west side of Shoal Point more than 100 years ago.

# **Seeps: Evidence of Active Petroleum System**



Oil Seep One Mile South of 3K Well

#### **Shoal Point Oil Exploration**

#### Report for 1865 - Murray



"whilst in the neighbourhood of Port au Port, I was informed that a <u>bituminous substance, resembling</u> <u>petroleum</u> had been observed on the middle long point (Shoal Point) on the west side of the bay" Report for 1874 - Howley



"these bituminous limestones are characterized by the presence of a set of drusy cavities lined with crystals of calc spar, <u>which are often filled with</u> <u>petroleum in a semi-liquid state of about the</u> <u>consistency of tar</u>. On the west side of the Point this substance exudes through the sand, and at low water is sometimes found in small depressions, where it has frequently been gathered by visitors"

Murray and Howley were, in turn, chief Geologists for Newfoundland. Source: Larry Hicks, Manager, Petroleum Geoscience, DNR, NL

### West Bay Water Wells Contaminated with Hydrocarbons

In 1964, a very detailed geological investigation of the Port au Port Peninsula was undertaken by H. Corkin for the Golden Eagle Refining Company of Canada Limited and Golden Eagle Oil and Gas Limited. While conducting this study he was quick to recognize the *highly bituminous nature of limestone beds* occurring within Humber Arm Series allochthonous strata at West Bay, Shoal Point and further to the east between the communities of Fox Island River and Port au Port East.

#### Water Wells / Mining Holes – Petroleum Occurrences (Figure 44)

In addition to petroliferous seeps, shows and odours observed in bedrock exposures, local residents living in the West Bay area (Port au Port Peninsula) have over the years experienced considerable difficulty when trying to obtain, clean, non-hydrocarbon contaminated drinking water from wells drilled into Humber Arm allochthonous strata. With respect to the above statement, Corkin in his report for 1965 states, "water wells drilled on the Humber Arm lowland between South Head and Lourdes (West Bay area) are in the majority of cases, *contaminated with oil* and often to such a degree that they must be abandoned". The engineers at the United States Air Force Telecommunication Base at West Bay were forced to drill four wells before oil free water fit for human consumption was obtained.

Source: Larry Hicks, Manager, Petroleum Geoscience, DNR, NL

# **SUMMARY OF DRILLING HISTORY**

# **Total wells:** Approximately 17

## **Historical Era:**

- Approximately 11 shallow wells (1898 1933) on
  Shoal Point
  - Produced 10-20 BOPD
  - Drilled to 51 366 meters TD

## **Modern Era:**

- 6 deeper wells drilled (1995 2012)
- Lacked current drilling and completion technology for shales

## Well at Shoal Point – drilled approximately 1900



## Shales thin out towards South end of bay



The thickest and most prospective shale formations are north of the line.

Shoal Point Energy does not plan any evaluation drilling south of the line.

## NI 51-101 Prospective Resource Estimate March 2014

Author: Douglas McBride, Morningstar Consultants

Low (Barrels)

**Best (Barrels)** 

High (Barrels)

177,300,000

428,400,000

908,600,000

Prospective resources are defined as those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity. Prospective resources have both an associated chance of discovery (geological chance of success) and a chance of development (economic, regulatory, market, facility, corporate commitment or political risks). The chance of commerciality is the product of these two risk components. The Province of Newfoundland and Labrador currently has a moratorium on hydraulic fracturing in place. The prospective resource estimates referred to herein have not been risked for either the chance of discovery or the chance of development. There is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources.

The Low Estimate represents the  $P_{90}$  values from the probabilistic analysis (i.e. the value is greater than or equal to the  $P_{90}$  value 90% of the time), while the Best Estimate represents the  $P_{50}$  values and the High Estimate represents the  $P_{10}$ . Actual resources may be greater or less than those calculated.

## **Estimated Royalties to Provincial government from development of Humber Arm Shales**

Using the middle (best) estimate of recoverable oil, full development of the Humber Arm Shales on Shoal Point's licences would result in royalties to the Province of:

Average \$65/barrel price: **\$1.55 billion U.S.** 

Average \$100/barrel price: **\$2.38 billion U.S.** 

Corporate taxes, income taxes from direct labour, plus corporate and income taxes from the many service industries that would blossom in Western Newfoundland would add substantial provincial tax revenues on top of the province's royalty revenue.

# LOCAL ECONOMIC IMPACTS:

- highly paid jobs (20 Full Time Equivalent jobs per well).
- real estate values will increase due to rising population
- local businesses will see increased revenues:
  - gas stations, grocery stores, restaurants, hotels, bed and breakfasts, pubs
  - rental car agencies, trucking companies, legal services, accounting services, surveyors
  - airports, port facilities, oil field services, construction services, safety companies

# LOCAL HIRING

One of the unique aspects of this project is that a well trained local work force already exists.

However, this highly skilled local work force does not live here. The workers live in Alberta, Saskatchewan, Manitoba, St. John's and further afield.

Many of these oil field workers would love to come home to work.

# **People moving in, not people moving out.**

#### **Public Sector Employees as percent of all Employees:**

Canada: 20.5%

#### **Provinces from highest to lowest:**

PEI	30%
NL	27.2%
Manitoba	26.4%
New Brunswick	25.6%
Nova Scotia	25.6%
Saskatchewan	24.7%
Quebec	22.1%
Ontario	19.4%
B.C.	18.8%
Alberta	17.1%

Newfoundland and Labrador's ratio of public to private employment is unsustainably high. The province should be encouraging private investment in responsible resource development.

# **Ripple Effect**

The most direct economic benefit would be to the small communities around Port au Port Bay. Real estate values would increase dramatically due to people moving in, rather than people moving out.

Stephenville and Corner Brook would experience large economic impacts. Every type of business would experience volume increases, plus many new businesses would be created both to service the oil business, but also to provide services to oil field workers who are making good money.

The smaller communities north of Corner Brook and along the south coast of the Port au Port peninsula would also experience the ripple effects of positive economic development.

# Unlocking this resource will involve increased activity during the development phase

- Increased truck traffic
- Noise from drilling and completion operations
- Surface disturbance at drilling locations

### **Increased truck traffic**

In the exploration and evaluation phase, truck traffic would be intermittent and infrequent.

If evaluation leads to full field development, transportation demands would increase. However, solutions exist to minimize truck traffic. Barges could be used to transport many materials. Pipelines could transport water to the drill pads and oil from the drill sites to port. Scheduling would be designed so that trucks would travel at times of day that would least disturb local residents.

Any road maintenance to support these operations could be the responsibility of the developer.

If the exploration and evaluation phase is successful, full field development would be subject to a Development Plan and Environmental Assessment that would address the issues of transportation and infrastructure. Public meetings would be held during the Planning and Assessment processes.

#### Noise from drilling and completion operations

We have no plans to drill within 1 kilometer of any permanent residence.

On a windy day, it will be difficult to hear our operations except from very close to the drill site.

On a flat calm day, sound does carry across the water. There are methods to baffle the noise to minimize this impact. The most noisy parts of completion operations could be scheduled during the day rather than at night.

### **Surface disturbance**

Development of natural resources is not possible without some degree of surface disturbance. Farming, logging, mining and hydrocarbon development all cause various amounts of surface disturbance.

Of these activities, logging and farming cause the largest disturbance relative to wealth generated. Open pit mining comes next in terms of surface disturbance. Underground mining and hydrocarbon development cause the least surface disturbance relative to the wealth generated.

Malls, airports, roads, railways, bridges, golf courses and houses also cause surface disturbance.

The question is, on balance, does the economic activity, leading to a higher standard of living, justify the surface disturbance?



Example of surface disturbance. The mill at Corner Brook is an important economic driver for the entire area, providing direct jobs plus many spinoff benefits. Logging to supply the mill causes other, larger surface disturbances.



Another surface disturbance, an open pit mine at Lower Cove on the Port au Port Peninsula.



Roads, houses, airports, malls and golf courses are other examples of surface disturbance.

### Multi well drill pads minimize surface disturbance



We do not have an art department, so we have to ask you to imagine the drill pad is on land and that the wells are drilled into rock formations deep under the shallow water of Port au Port Bay, rather than deep beneath the forest.



This is an 18 well pad in production after drilling and completion, located in northeast British Columbia. The surface disturbance is very small relative to the wealth being generated, wealth that will continue to be generated over many years. Oil and gas production sites are also very quiet.

### What's in it for the locals?

On the positive side, if the project proceeds and meets with success, it will be an important economic driver for the local economy. The long term decline and aging of the local population will reverse as young families move in for the jobs. Population increases usually lead to higher real estate values. Local communities will become more vibrant as new businesses open.

On the other hand, increased activity will be perceived as a negative by some. Development of any kind always involves trade-offs.

Under the current system, all royalties from oil and gas development flow to the provincial government.

We are on record as being willing to negotiate an additional royalty for the communities around Port au Port Bay so they can directly benefit from the success of the project. Structured as a royalty, the benefit will be directly related to the amount of activity. Assuming long term success, the royalty amount would grow slowly at first, but would add up to significant revenue over the life of the project.

# What could a 0.1% Royalty be worth over the life of the project?

Average \$65/barrel price: (All figures U.S. \$)

Low estimate	Best estimate	<u>High estimate</u>
\$11,524,500	\$27,846,000	\$59,059,000

Average \$100/barrel price:

Low estimate	Best estimate	High estimate
\$17,730,000	\$42,840,000	\$90,860,000

# SHOAL POINT energy

Thank you for taking the time to review our information

**CEO:** Mark Jarvis