RESSOURCES ET ÉNERGIE
SQUATEX

**FORM 51-101F1**

# STATEMENT OF RESERVES DATA AND OTHER OIL AND GAS INFORMATION FOR FISCAL YEAR ENDED MARCH 31st 2019

**July 18th 2019**

**REPORT SQX-2019-01_EN**

***Note***

*This document was translated from the original document edited in French « FORMULAIRE 51-101 F1 - RELEVÉ DES DONNÉES RELATIVES AUX RÉSERVES ET AUTRES INFORMATION CONCERNANT LE PÉTROLE ET LE GAZ AU* 31 MARS 2019»*. In the event of any apparent discrepancy between the English and the French versions, the French version shall prevail.*

## TABLE OF CONTENTS

## LIST OF FIGURES



## LISTE OF TABLES

## 1. DATE OF STATEMENT

The present statement of reserves data and other oil and gas information was completed on July 18, 2019. The effective date of the information provided is March 31, 2019 and the preparation date of the information provided is July 18, 2019.

The report is based on data and reports of the company, on various public documents available through the internet site from the Ministère de l'Énergie et des Ressources naturelles (MERN) or from the Ministère du Développement durable, Environnement et de la Lutte contre les Changements climatiques (MDDELCC) du Québec as well as geological publications related to the studied areas.

The data complies with the requirements of National Instrument 51-101, S*tandards of Disclosure for Oil and Gas Activities*. Additional information that is pertinent, but not required by NI 51-101, is provided in order to promote a better understanding.

## 2. DISCLOSURE OF RESERVES DATA

As of **March 31st 2019**, Ressources & Energy Squatex (Squatex) does not produce any hydrocarbons. The company has not established any oil and gas reserves over its exploration permits. Consequently, such as the rule allows it, the Company did not engage an independent evaluator to review its reserves.

*In 2016, Squatex has mandated Sproule Associates Limited (Sproule) to update its estimated of unrisked undiscovered hydrocarbon initially-in-place (undiscovered, non recoverable) for the lower Silurian reservoirs of the eastern part of the Massé structure located in Lower St. Lawrence area, by using new data from the Massé No.2 well. The Sproule assessment report summary is presented in section 7 of this report.*

## 3. PRICING ASSUMPTIONS

No object.

## 4. RECONCILIATION OF CHANGES IN RESERVES

No object.

## 5. ADDITIONAL INFORMATION RELATING TO RESERVES DATA

No object.

## 6. OTHER OIL AND GAS INFORMATION

### 6.1 OIL AND GAS PROPERTIES AND WELLS

No drilling activities for the research of oil and gas and for the acquisition of stratigraphic knowledge occurred on Squatex exploration permits during the concerned period ended **March 31 st 2019**.

Squatex holds an interest in the Canbriam Farnham No.1 well drilled near Farnham over permit 2009RS298 located to the south-est of Montreal in the St. Lawrence Lowlands area. The well drilled in 2009 reached a total depth of 2507 meters with gas shows and the well was abandoned by Canbriam in September 2015 according to the standards of the regulations. The inspection of the site by MERN staff after the work indicates no contamination or gas seepage near the site.

Squatex also holds a majority interest (70%) in the Lower St. Lawrence on permits and in a stratigraphic well with oil and gas shows that was suspended to be tested, Squatex Massé No.2, located on license 2009PG556. The Massé structure could contain significant quantities of oil and gas and Squatex intends to focus its exploration efforts on it in the coming years.

### 6.2 PROPERTIES WITH NO ATTRIBUTED RESERVES

#### 6.2.1 Permits

All Squatex oil and gas exploration permits are located onshore in the province of Quebec to the south of the St-Lawrence River into two distinct areas and extend over a total of 6560.93 $Km^2$ (Figure 1).

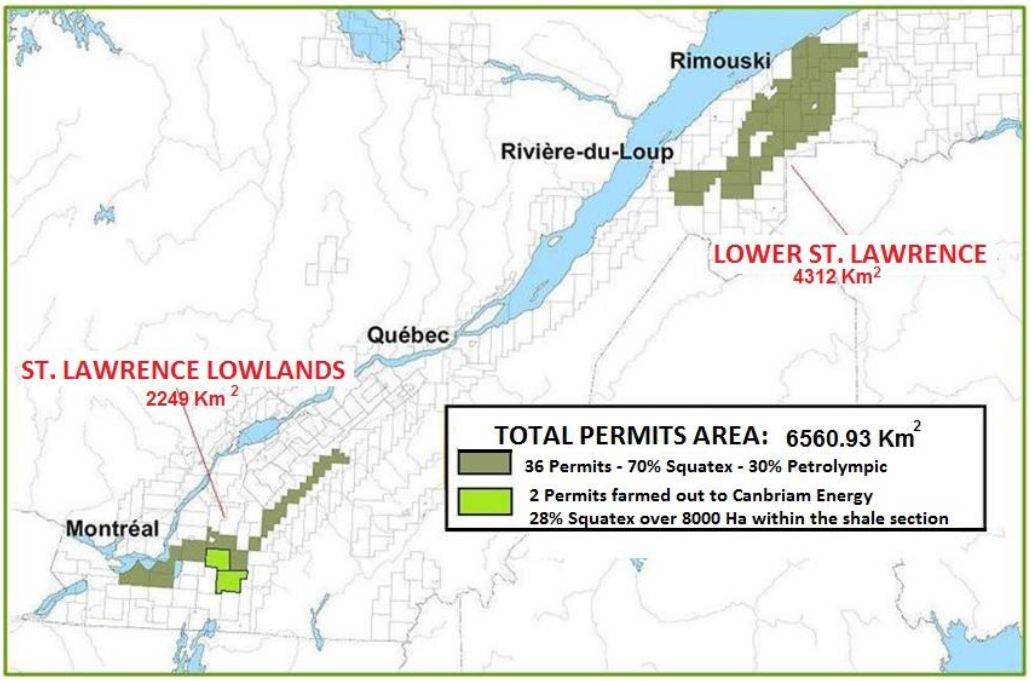


**Figure 1: Squatex permits over the Province of Québec**

These permits, issued under the previous Mining Act on September 1, 2009, could be renewed annually and remain in effect for two consecutive periods of five years provided they meet the basic requirements of the law and its regulations i.e the payment by the owner of annual rentals and the completion of minimum annual statutory work required.

Following the decrees by the Government of Bill 18 in 2011 and Bill 5 in 2014, the period of validity of exploration permits was suspended in 2011 and the statutory work requirement was exempted. However, holders had to continue to pay the annuity of their licences in order to retain their rights. This freeze period ended, according to the Government, on 20 September 2018, when the new Hydrocarbons Act came into force.

Since September 2018, all Squatex Energy and Resources permits have been automatically transferred by the Government under the new Hydrocarbons Act to the new conditions imposed by the Government's regulations.

Petrolympic Ltd holds an interest of 30% on all exploration permits of Squatex.

A first block of permits is situated in the Lower St. Lawrence/Gaspé (LSL) area between Témiscouata and Matapédia (Figure 2). These permits encompass a surface of 44311.6 $Km^2$ (3018.12 $Km^2$ Net). Table 1 is listing permit numbers, the date of renewal as well as the total surface in term of $Km^2$.

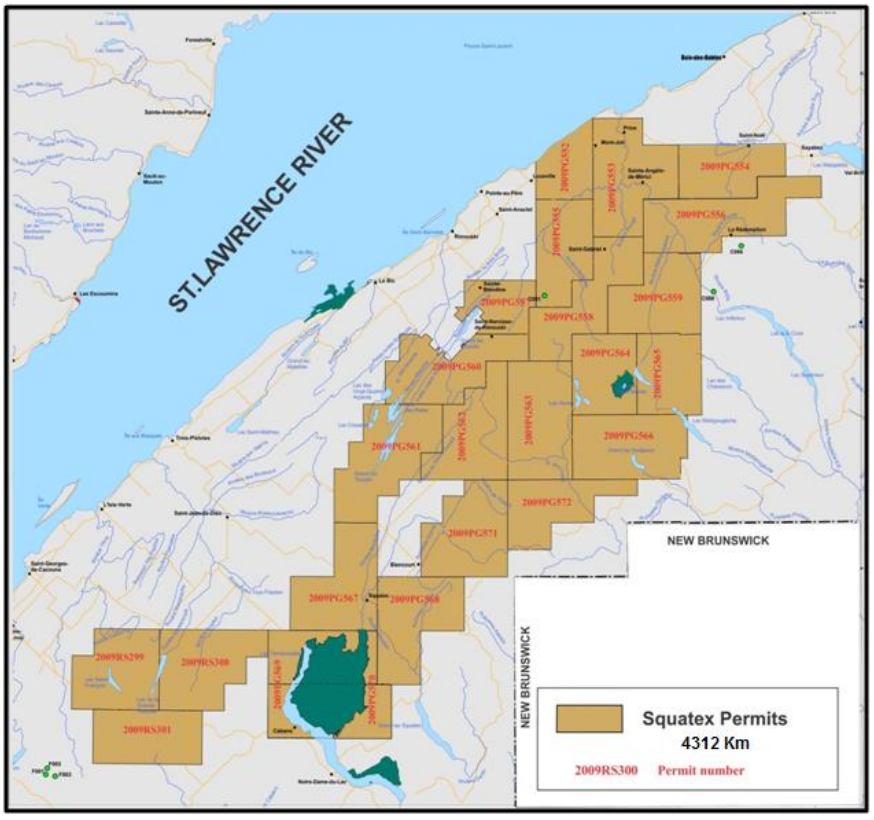


**Figure 2: Squatex permits in the Lower St. Lawrence/Gaspé area**

**Table 1: Permits over the Lower St. Lawrence/Gaspé area**

| Permit Number | Renewal Date | Area ($Km^2$) |
|---|---|---|
| 2009RS299 | 01/09/2019 | 189.75 |
| 2009RS300 | 01/09/2019 | 207.04 |
| 2009RS301 | 01/09/2019 | 171.36 |
| 2009PG552 | 01/09/2019 | 102.67 |
| 2009PG553 | 01/09/2019 | 230.68 |
| 2009PG554* | 01/09/2019 | 151.50 |
| 2009PG555 | 01/09/2019 | 164.38 |
| 2009PG556* | 01/09/2019 | 236.66 |
| 2009PG557 | 01/09/2019 | 98.94 |
| 2009PG558 | 01/09/2019 | 194.20 |
| 2009PG559 | 01/09/2019 | 187.37 |
| 2009PG560 | 01/09/2019 | 198.17 |
| 2009PG561 | 01/09/2019 | 244.35 |
| 2009PG562 | 01/09/2019 | 198.47 |
| 2009PG563 | 01/09/2019 | 225.73 |
| 2009PG564 | 01/09/2019 | 143.77 |
| 2009PG565 | 01/09/2019 | 153.70 |
| 2009PG566 | 01/09/2019 | 214.54 |
| 2009PG567 | 01/09/2019 | 206.31 |
| 2009PG568 | 01/09/2019 | 206.68 |
| 2009PG569 | 01/09/2019 | 134.97 |
| 2009PG570 | 01/09/2019 | 76.08 |
| 2009PG571 | 01/09/2019 | 209.51 |
| 2009PG572 | 01/09/2019 | 164.77 |
| **Subtotal** | | **4311.60** |

***** Gaspé Area

Figure 3 shows Squatex's permits located in the St. Lawrence Lowlands (SLL) area. Two blocks of permits stand out. The first one is located east of Montreal over a zone sited between Longueuil, St-Hilaire and Farnham to the south. The second block consists of a band which spreads over a territory located south of highway 20 between the previous permits and the town of Victoriaville. These permits cover a total surface of 2249.33 $Km^2$ (see Table 2).

Following a farmout to Canbriam Energy in 2008 and the drilling of a well 2009, the former acquired an interest of 60% from surface to the top of Trenton on a 80.0 $Km^2$ block within permits 2009RS298 and 2009RS296. Therefore, on this block, Squatex retains a 28% interest between the surface and the top Trenton and Petrolympic Ltd a 12% interest. The deeper portion as well as all the remainder of the permits remains at 70% Squatex and 30% Petrolympic Ltd.

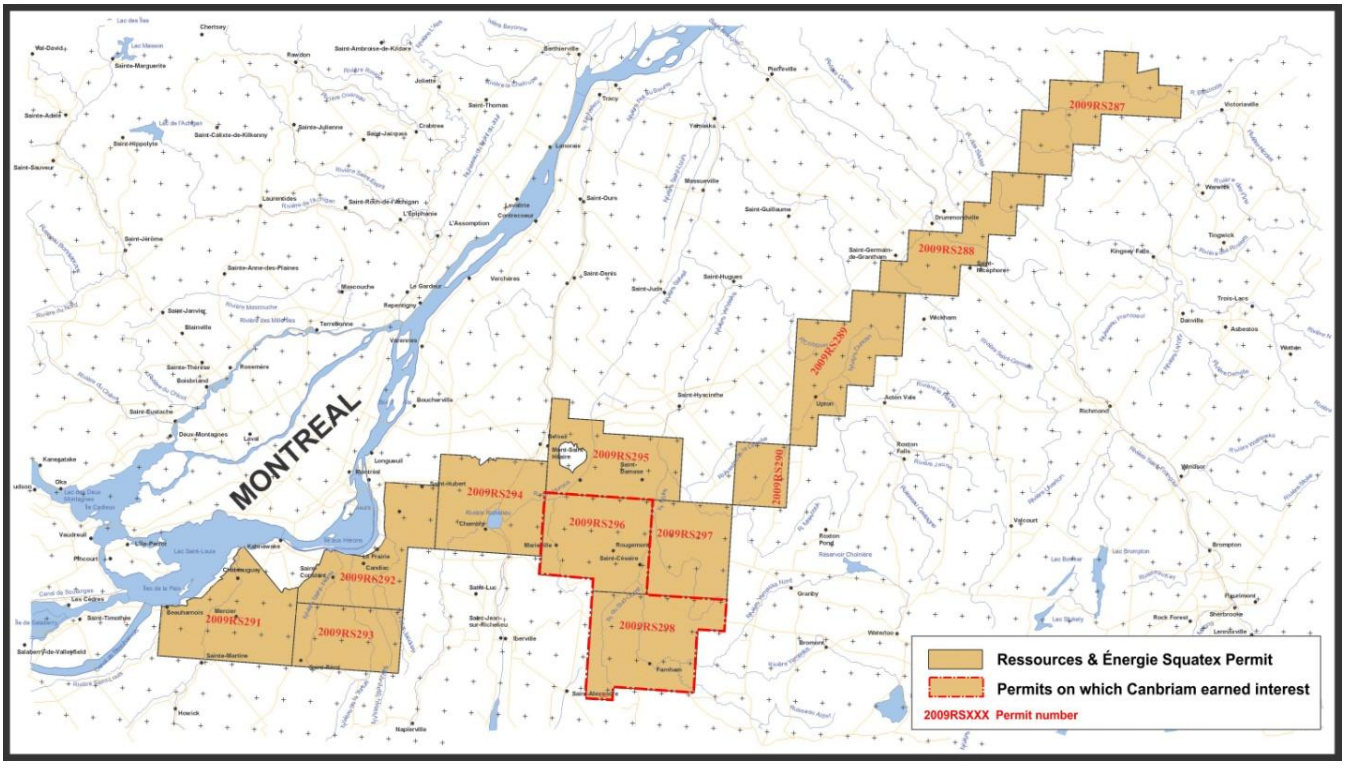


**Figure 3: Squatex permits in St. Lawrence Lowlands area**

## Table 2: Permits in the St. Lawrence Lowlands area

### 70% INTEREST PERMITS WITHIN THE ST. LAWRENCE LOWLANDS

| Permit Number | Renewal Date | Area ($Km^2$) |
|---|---|---|
| 2009RS287 | 01/09/2019 | 208.71 |
| 2009RS288 | 01/09/2019 | 179.90 |
| 2009RS289 | 01/09/2019 | 209.09 |
| 2009RS290 | 01/09/2019 | 72.48 |
| 2009RS291 | 01/09/2019 | 224.47 |
| 2009RS292 | 01/09/2019 | 188.27 |
| 2009RS293 | 01/09/2019 | 145.80 |
| 2009RS294 | 01/09/2019 | 216.64 |
| 2009RS295 | 01/09/2019 | 193.16 |
| 2009RS296 (part) | 01/09/2019 | 203.39 * |
| 2009RS297 | 01/09/2019 | 163.42 |
| 2009RS298 (part) | 01/09/2019 | 244.00 * |
| **Subtotal** | | **2249.33** |

*60% of interests between the surface and the top of Trenton on a block of 80.0 $Km^2$ were transferred jointly by Squatex and Petrolympic Ltd according to the Agreement to Canbriam on these two licences. Squatex retains 70% below the top of Trenton.

### PERMITS WITH 28% INTEREST WITHIN THE ST. LAWRENCE LOWLAND (FROM SURFACE TO THE TOP OF TRENTON)

| Permit Number | Renewal Date | Area ($Km^2$) |
|---|---|---|
| 2009RS296 (part) | 01/09/2019 | Part of 203.39 |
| 2009RS298 (part) | 01/09/2019 | Part of 244.00 |
| **Subtotal** | | **80.0 of 447.39** |

### 6.2.2 Statutory obligations

Since the new law's regulations came into effect on September 20, 2018, the work exemption has been lifted. However, the exploration credits that Squatex has completed during the freeze period will be applied in the first year under the new Act and partially in subsequent years. Squatex must now meet the following requirements:

The annual fee payable by the holder of an exploration licence is:

(1) for the first licence term, $51.50 per sq km;

(2) the renewal of the licence under section 49 of the law, $103 per sq km;

(3) the renewal of the licence under section 50, $257.50 per sq km.

The amount of minimum statutory work that the holder of an exploration licence must perform each year is:

(1) for the first year of licence validity, the highest between $100 per sq km or $6,000

(2) for the second year of licence validity, the highest between $200 per sq km or $12,000

(3) for the third year of licence validity, the highest between $300 per sq km or $18,000

(4) for the fourth year of licence validity, the highest between $400 per sq km or $24,000

(5) for the fifth year of licence validity, the highest between $500 per sq km or $30,000

(6) from the first renewal of the section 49 licence, the highest between $500 per sq km or $40,000.

Under the new Act, additional statutory spending over the minimum required are credited to reduce subsequent obligations.

In August 2018, Squatex paid the 2018-19 annual fee for all its licences in accordance with the regulations of the old Mining Act. In November 2018, MERN requested and received from Squatex a retroactive payment of $255,616, subject to protest, to cover the increase in the annuity under the new Hydrocarbons Act.

Also, to comply with the new law's transition measures, Squatex notified in December 2018 all concerned MRC and landowners of its presence to perform its exploration activities on its licenses over their territories and is in the process of organizing eight (8) different independent local monitoring committees requested by the new Act.

### 6.3 FORWARD CONTRACTS

No object.

### 6.4 OTHER INFORMATION RELEVANT TO THE ABANDONMENT COST AND FIELD REHABILITATION

The costs of abandonment of the Farnham No.1 well were paid in 2015 by the operator, Canbriam Energy Inc, accordingly to the agreement between the partners.

### 6.5 TAX HORIZON

No object.

### 6.6 COSTS INCURRED

The cost of Squatex's annual exploration work for the year ended **March 31, 2019** consists of expenses incurred to compile exploration records on permits, the publication in local newspapers of the company's presence on different territories, the implementation of follow-up committees required by the new Act and the development of exploration programs to be undertaken. Most of these expenses are allowed as statutory work obligations on the permits of the St. Lawrence Lowlands and, for the most part, on those of The Lower St. Lawrence/Gaspé.

Table 3 on the following page is detailing expenses carried out by Squatex as of **March 31st 2019**. During the fiscal year, Squatex invested as expenditures work $254,801 (net of re-invoicing to partner Petrolympic Ltd. and tax excluded). In addition, a total of $323,850 (net of re-invoicing to partner Petrolympic Ltd. and tax excluded) was disbursed to pay rentals over all the permits. Thus, with its partner Petrolympic Ltd, a total amount of $578,651 was invested during the fiscal year to explore all the Squatex permits including rentals.

**Table 3: Exploration expenditure per area in 2018-2019**

| ALLOCATION OF THE EXPLORATION EXPENDITURE PER AREA FROM APRIL 1, 2018 TO MARCH 31, 2019 (TAX EXCLUDED) | | | | | | |
|---|---|---|---|---|---|---|
| **CATEGORY OF EXPENSES** | **Rentals** | **Geol + Geoph Works** | **Geol + Geoph Consultants** | **Professionnal Fees** | **TOTAL OF WORKS EXPENDITURES** | **TOTAL EXPENDITURES** |
| **AREA** | **LOWER ST.LAWRENCE/GASPE** | | | | | |
| Expenditures incurred | $ 215 900 | $ 4 000 | $ 94 801 | $ 104 000 | $ 202 801 | $ 418 701 |
| Expenditures rebilled to partner Petrolympic | $ 64 770 | $ 1 200 | $ 29 040 | $ - | $ 30 240 | $ 95 010 |
| Net balance of expenditures | $ 151 130 | $ 2 800 | $ 65 761 | $ 104 000 | $ 172 561 | $ 323 691 |
| **AREA** | **ST.LAWRENCE LOWLANDS** | | | | | |
| Expenditures incurred | $ 107 950 | $ - | $ - | $ 52 000 | $ 52 000 | $ 159 950 |
| Expenditures rebilled to partner Petrolympic | $ 32 385 | $ - | $ - | $ - | $ - | $ 32 385 |
| Net balance of expenditures | $ 75 565 | $ - | $ - | $ 52 000 | $ 52 000 | $ 127 565 |
| **TOTAL EXPENDITURES INCURRED** | **$ 323 850** | **$ 4 000** | **$ 94 801** | **$ 156 000** | **$ 254 801** | **$ 578 651** |
| TOTAL EXPENDITURES REBILLED | $ 97 156 | $ 1 200 | $ 29 040 | $ - | $ 30 240 | $ 127 396 |
| **NET BALANCE OF EXPENDITURES** | **$ 226 695** | **$ 2 800** | **$ 65 761** | **$ 156 000** | **$ 224 561** | **$ 451 256** |

## 6.7 EXPLORATION AND DEVELOPMENT ACTIVITIES

### 6.7.1 Introduction

The main activity of Squatex is, as operator, to conduct studies and works with a well qualified staff in order to evaluate the oil and gas potential of its territory under exploration permits aiming to find and eventually produce hydrocarbons reserves.

### 6.7.2 Permits in the Lower St. Lawrence/Gaspé area

Squatex has been active in Lower St. Lawrence/Gaspé acreage since 2002 where it actively searches for porous reservoir areas in hydrothermal dolomites. Its current assets include 24 exploration licences totalling 4311.6 km2 (3018.12 km2 Net Squatex) as of March 31, 2019.

Squatex's exploration path involved the acquisition of seismic profiles and numerous other geological, geophysical and geochemical surveys in a territory-wide space remote sensing study. Squatex targeted areas where oil potential seemed to be the best. Starting in 2010, Squatex undertook a stratigraphic core campaign to validate its geological reinterpretation of the territory. Nine coreholes were drilled at depths of less

than 300 metres, and in 2011 two additional 447- and 600-metre wells were drilled near the village of La Redemption (Redemption No.1) and near the Mitis River in the municipality of Ste-Jeanne-D'Arc (Portage No.1). These boreholes aimed to better understand the stratigraphy of the Lower Silurian, to calibrate the seismic and to recognize the distribution of porous areas in the limestones. Portage No.1 drilling encountered near surface oil evidence (50$^{o}$ API light oil) in the Sayabec Formation.

In 2012, the 1874 metres deep Squatex Massé No.1 discovery well was drilled in the Ste-Jeanne d'Arc area, about 2.5 km south of the Portage drilling, to observe the stratigraphic sequences and determine the cause of an AVO seismic anomaly (amplitude vs offset), this type of anomaly usually indicating the presence of fluids or porosity. A porous dolomitized limestone was met between 1650 and 1669 meters with gas shows, then a very permeable area in a dolomitized limestone was encountered at 1847 meters and gas quickly reached the surface, indicating an overpressure zone. Given the risk of loss of control of the well due to lack of adequate equipment, Squatex stopped drilling and cemented the hole in June 2013. The base of the Sayabec Formation had porosities ranging from less than 5% to more than 20% over a thickness of 10 meters.

In July 2013, Squatex drilled the Sayabec No.1 well near the village of the same name at a total depth of 759 metres in the Silurian formations. Gas and oil evidence was observed in the Sayabec Formation in dolomitized limestone.

In September 2014, the Squatex Massé No.2 appraisal well was spudded at about 400 metres northwest of the Squatex Massé No.1 (Figure 4).

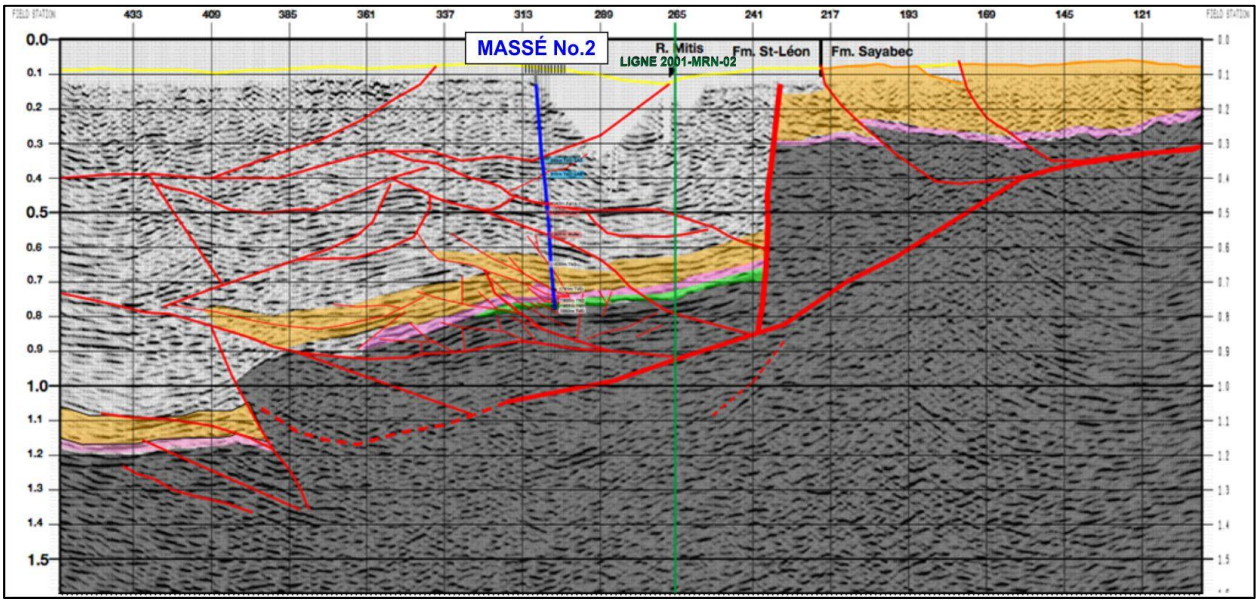


**Figure 4: Interpreted seismic line through the Massé No.2 well**

This well was cased to a depth of 210 meters with a BOP to protect the water table. Also, a closed-circuit mud recirculation system, similar to that used on oil-type rigs, was used to minimize potential effect on the environment. The well was cored to the total

depth of 1970.4 meters. After drilling through the St-Leon, the Sayabec limestones were encountered at 1534 meters and the Val-Brillant sandstones, at 1800 meters, slightly higher than in the Massé No.1 well. The Cambrian-Ordovician basement was drilled over the last 11 metres. A complete set of loggings was recorded before suspending the well. Separate fractured areas are observed in the St. Leon and the Sayabec - Val-Brillant. Gas analyses indicate the presence of natural gas liquid (C2 to C8) in the order of 100 ml/$m^3$ without hydrogen sulphide (H2S). The presence of oil was also observed in the mud bins and analyses show a density of 19.85 $^{o}$API with less than 1% sulphur.

The in-depth study of the Squatex Massé No. 2 logs allowed Squatex to target a very promising oil and gas potential in the St-Leon and the Sayabec Formations. Sproule Associates Limited ("Sproule") was commissioned to review the potential of the Massé Structure. The results of this study are presented in Section 7 of this report.

A collaboration agreement signed in 2015 between INRS-ETE and Squatex led to a detailed mapping campaign on its Lower St. Lawrence permits to study in more details the Sayabec Formation. The general summary report of this work presents conclusions on the 3D distribution of facies in the formation and the development and presence of porosity associated with them.

Currently in Squatex's exploration program, nine drilling prospects targeting very similar zones to those observed at Massé have been identified between St-Anaclet and Sayabec.

### 6.7.3 Permits over the St. Lawrence Lowlands

Squatex became involved in the St. Lawrence Lowlands in 2006 to look for hydrothermal dolomite reservoirs within the Ordovician platform. Squatex acquired 12 exploration permits totalling 2253.7 $Km^2$. This acquisition was very favorable since this region became in 2008 the most active in Quebec until the end of 2010, following the enthusiasm of investors for the Utica gas potential. Figure 5 shows Squatex's permits, the location of seismic lines acquired by Squatex since 2008 and the Canbriam Farnham No.1 well drilled in partnership in 2009.

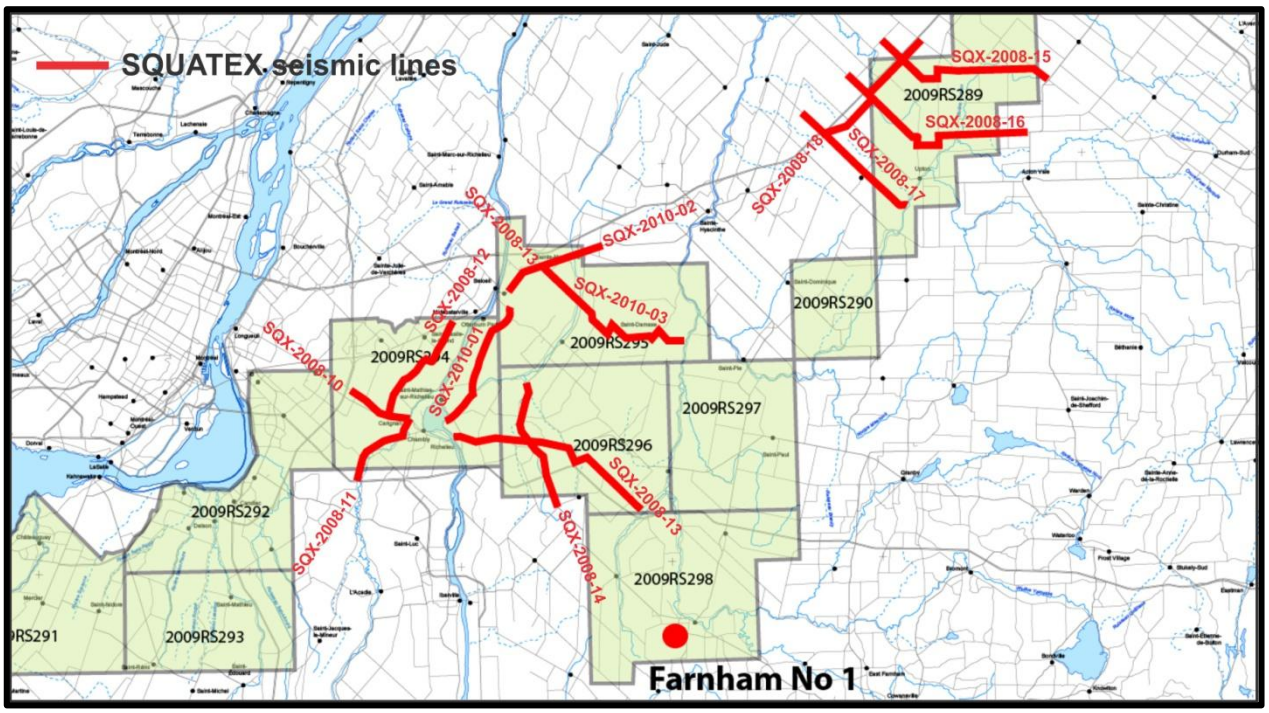


**Figure 5: St. Lawrence Lowlands permits location map**

In 2008, Squatex partnered with Petrolympic Ltd and acquired a 125 km seismic survey in the Chambly and St. Helene regions. A second farmout and joint venture agreement for the Utica shales was also concluded in the same year between Squatex, Petrolympic Ltd and Canbriam Energy Inc. on the 2009RS294 to 298 licences.

In 2009, Canbriam conducted an aeromagnetic survey and then drilled the Farnham No.1 well (A-271), which reached a total depth of 2507 metres after crossing the Lorraine and hitting the Utica at 1987 metres. The Top of the Trenton was met at 2332 meters. The well suspended in 2009 was finally abandoned in the fall of 2015 by the operator, Canbriam.

As of March 31th, 2019, Canbriam hold a 60% interest between surface and the Top Trenton over a 80.0Km$^2$ block within permits 2009RS296 and 2009RS298. Squatex retains its 70% interest below the Top Trenton. In 2010, Squatex carried out a geochemical sampling survey over a 10 km$^2$ surface over permits 2009RS291 to 293 located south of Montreal and acquired another 40 km of seismic in the Chambly and St. Hyacinthe regions.

### 6.7.4 Current and anticipated activities

Since April 3rd 2107, Squatex's common shares are traded on the Canadian Securities Exchange (CSE) under the stock symbol “SQX”.

Following the encouraging results of the last two holes over the Massé structure and the existence of possible extensions of the play according to geoscientific data, Squatex

intends to carry on its exploration efforts mainly over the of Lower St-Lawrence/Gaspé permits. Squatex is actively searching for adequate financing to achieve it. The next phase of work will take into account funds available and at the same time the oil and gas outlook. The emphasis will be put mainly on the evaluation of the potential of the Massé structure. No other activity is foreseen in the short term for the St. Lawrence Lowlands permits.

## 7. DISCLOSURE OF THE UNRISKED UNDISCOVERED UNRECOVERABLE PETROLEUM INITIALLY-IN-PLACE FOR THE LOWER SILURIAN RESERVOIRS OF THE EASTERN MASSÉ STRUCTURE

In 2016, Squatex mandated Sproule and Associates Ltd to assess the potential of the eastern part of the Massé structure which was investigated by the Massé No.1 and No.2 wells. The study covers a territory of 25 km$^2$ delemited by existing seismic anomalies (Figure 6). The analysis of logs recorded in Massé No.2 was used. Sproule's study supports that gross unrisked undiscovered unrecoverable petroleum initially-in-place (PIIP) for the project could extend over an area between 0.8 km$^2$ (probability of 90%, or P90) and 12.7 km$^2$ (probability of 10% or P10). The potential hydrocarbons are found in the Silurian limestones over a thickness range of almost 540 meters in which the effective net pay can vary between 66 meters and 210 meters with a mean value of 130 meters. The results of the study point out to a potential PIIP (100%) of 53.6 BCF of gas and 52.2 million barrels of oil over a probable average surface of 5.2 km$^2$, for a total in oil equivalent of 61.1 million barrels (MMBOE) (Table 4).

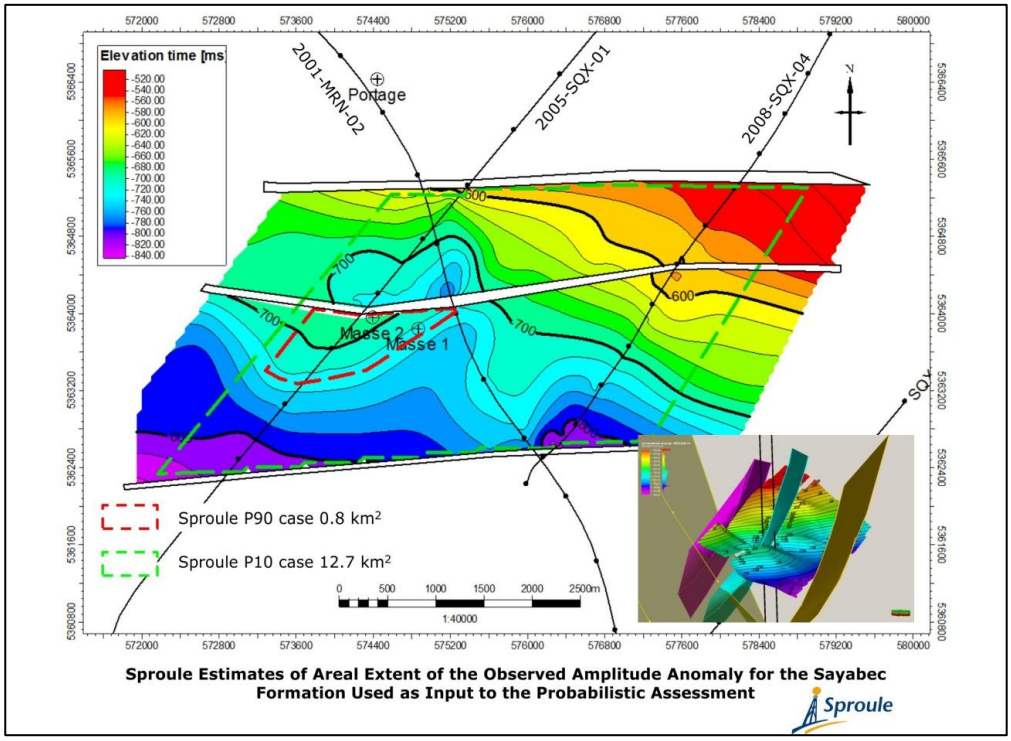


**Figure 6: Areal extent of assessment by Sproule near Massé No.1 and No.2 wells**

## Table 4: Gross unrisked undiscovered unrecoverable petroleum Initially-in-place of the eastern Massé Structure

**Table S-2**
**Summary of Project Gross Unrisked Undiscovered Unrecoverable Petroleum Initially-in-Place (PIIP) of the Eastern Massé Structure, Lower St. Lawrence Area, Québec, Canada[1,2]**
**Estimated by Sproule Associates Limited, As of April 30, 2016**

| Structure | Formation | | Low[4] ($P_{90}$) | Best[5] ($P_{50}$) | High[6] ($P_{10}$) | Mean[7] |
|---|---|---|---|---|---|---|
| Massé | St. Leon | Gas (BCF)[2,3] | 0.2 | 1.0 | 3.8 | **1.6** |
| | | Oil (MMbbl)[2,3] | 2.0 | 9.9 | 42.2 | **17.0** |
| | Sayabec | Gas (BCF)[2,3] | 4.4 | 24.0 | 119.7 | **49.0** |
| | | Oil (MMbbl)[2,3] | 2.9 | 17.1 | 87.3 | **35.8** |
| Total[7] | | Gas (BCF)[2,3] | 5.7 | 26.8 | 127.6 | **53.6** |
| | | Oil (MMbbl)[2,3] | 10.0 | 33.9 | 113.6 | **52.2** |
| | | MMBOE[2,3,7] | | | | **61.1** |

Notes:

1 Undiscovered Petroleum Initially-In-Place (equivalent to undiscovered resources) is that quantity of petroleum that is estimated, on a given date, to be contained in accumulations yet to be discovered. The recoverable portion of undiscovered petroleum initially in place is referred to as "prospective resources," the remainder as "unrecoverable." Only the in-place volumes are presented here as a development project to recover any hydrocarbons discovered has not been defined. **There is no certainty that any portion of these unrisked undiscovered PIIP will be discovered and, if discovered, there is no certainty that it will be developed or, if it is developed, there is no certainty as to either the timing of such development or whether it will be commercially viable to produce any portion of the resources.**

2 These are the project gross unrisked undiscovered petroleum initially in place volumes (i.e. 100% project gross) estimated for the Sayabec Formation of the Eastern Massé Structure without any adjustments for working interest and before deduction of any royalties.

3 "BCF" is billions of cubic feet, "MMbbl" is millions of barrels of oil, "MMBOE" is millions of barrels of oil equivalent. BOE's may be misleading, particularly if used in isolation. A BOE conversion ratio of 6 Mcf:1 bbl is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead.

4 Low Estimate is considered to be a conservative estimate of the quantity that will actually be in-place. It is likely that the actual remaining quantities in-place will exceed the low estimate. If probabilistic methods are used, there should be at least a 90 percent probability (P90) that the quantities actually in-place will equal or exceed the low estimate.

5 Best Estimate is considered to be the best estimate of the quantity that will actually be in-place. It is equally likely that the actual remaining quantities in-place will be greater or less than the best estimate. If probabilistic methods are used, there should be at least a 50 percent probability (P50) that the quantities actually in-place will equal or exceed the best estimate.

6 High Estimate is considered to be an optimistic estimate of the quantity that will actually be in-place. It is unlikely that the actual remaining quantities in-place will exceed the high estimate. If probabilistic methods are used, there should be at least a 10 percent probability (P10) that the quantities actually in-place will equal or exceed the high estimate.

7 Statistical aggregation is the process of probabilistically aggregating distributions that represent estimates of resource quantities at the reservoir, prospect, or portfolio level. Arithmetic summation and statistical aggregation of the means yield similar results. Arithmetic summation of the Low Estimate, Best Estimate and High Estimate are not statistically appropriate. Both the statistical and arithmetic summation of the unrisked prospects may be misleading because it assumes success for each of the prospect entities. The chance of this occurring is extremely unlikely. Actual recovery is likely to be less and may be zero.