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**Technical Report  
On the  
Gathering Lake Lithium Pegmatite Property**

**Thunder Bay Mining District  
Northwestern Ontario, Canada**

**Cells**

**344288 239493**

**Prepared for:**

**Kenneth Fenwick  
Thunder Bay, ON**

**Prepared by:  
Alexander J. R. Pleson**

**P. Geo  
April 19th, 2019**

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## 1.0 SUMMARY

The Gathering Lake Lithium Pegmatite Property consists of 84 provincial mining claim cells which covers approximately 1701 hectare of land in the South Beatty Lake and Gathering Lake Areas. Most of the historic work was accomplished in 1955 to 1957. It is located approximately 173 to 175 km northeast of Thunder Bay and 43km southwest of Geraldton. Geologically, the area is located within the Quetico Subprovince of the Superior Province. The Quetico Subprovince is composed of predominantly metasediments consisting of wacke, iron formation, conglomerate, and siltstone, which deposited between 2.70 and 2.69 Ga. The igneous rocks in the Quetico Subprovince include abundant felsic and intermediate intrusions, metamorphosed rare mafic and felsic extrusive rocks and an uncommon suite of gabbroic and ultramafic rocks. The earlier felsic intrusions occurred 5 to 10 million years after the accumulation of sediments and are interpreted to be I-type intrusions. The later felsic intrusions occurred 20 million years after the sedimentation and are designated as S-type. The pegmatites in the Quetico Subprovince which contain lithium and rare metals (beryllium, tantalum, niobium and tin) are hosted by metasediments and by their parent granite.

The pegmatite dykes, sills and lenses can be subdivided into rare-element pegmatites and granitic pegmatites. The rare-element pegmatites are of economic significance and they contain microcline or perthite, albite, quartz, muscovite and spodumene and minor amounts of beryl, columbite-tantalite and cassiterite. The granitic pegmatites are like the irregular pegmatites described above except that they contain more abundant plagioclase. Some of the pegmatites are parallel to the foliation or bedding of the metasediments, whereas others occur in joints in either the metasediments or granite. Contacts are usually sharp and, except where dykes cut granitic rocks, often found to be marked by a thin border zone of aplite or granitoid composition. A few pegmatites are internally zoned with mica-rich or tourmaline-rich rock along or close to the walls and quartz cores.

In 2008, F. Breaks, O.G.S.'s expert on rare-element pegmatite deposits, in his study of the Georgia Lake rare-element pegmatite field, discovered a new pegmatite group (Gathering Lake Pegmatite Group) that contained beryl-type and albite-type pegmatites. Breaks stated that this new pegmatite group has potential for a rare-element pegmatite deposit. Breaks located, on roads, nine Ta-Nb-Oxide bearing pegmatites within the Gathering Lake pegmatite group. Figure 5b indicates the 2018 descriptions, assays, and locations of the Nelson Li occurrences. Figure 6 provides the description, assays, and location of four occurrences of spodumene located in June 2018 at the Koshman occurrences.

## **2.0 INTRODUCTION**

### **2.1 Purpose of Report**

The present report summarizes findings of geological and prospecting work carried out by Pleson Geoscience on behalf of Kenneth Fenwick. The work was completed from June 4<sup>th</sup> to 7<sup>th</sup> 2018.

### **2.2 Sources of Information**

This report is based on published assessment reports available from the Ministry of Northern Development, Mines (MNDM) Ontario, and published reports by the Ontario Geological Survey (OGS), the Geological Survey of Canada (“GSC”), various researches, websites, and results of present exploration work. All consulted sources are listed in the References section. The sources of the maps are noted on the figures. The exploration work was carried out under the supervision of the author who worked and supervised on the property in June 2018.

## **3.0 PROPERTY DESCRIPTION AND LOCATION**

The Gathering Lake Lithium Pegmatite Property consists of 84 provincial mining claim cells which covers approximately 1701 hectare of land in the South Beatty Lake and Gathering Lake Areas. The center of the claim block is located 173km northeast of Thunder Bay, ON and 43km southwest of Geraldton, ON. Claim data is summarized in the Table 1, while a map showing the claims is presented in Figure 2.

Table 1: Claim Data

Claim ID	Township	Recorded Holder	Claim ID	Township	Recorded Holder
243297	South Beatty Lake Area	K. FENWICK	253117	South Beatty Lake Area	K. FENWICK
259774	South Beatty Lake Area	K. FENWICK	332994	South Beatty Lake Area	K. FENWICK
177246	South Beatty Lake Area	K. FENWICK	229328	Gathering Lake Area	K. FENWICK
164344	South Beatty Lake Area	K. FENWICK	104971	Gathering Lake Area	K. FENWICK
104636	South Beatty Lake Area	K. FENWICK	296545	Gathering Lake Area	K. FENWICK
193251	South Beatty Lake Area	K. FENWICK	192100	Gathering Lake Area	K. FENWICK
278346	South Beatty Lake Area	K. FENWICK	190812	Gathering Lake Area	K. FENWICK
243298	South Beatty Lake Area	K. FENWICK	306817	Gathering Lake Area	K. FENWICK
157751	South Beatty Lake Area	K. FENWICK	292964	Gathering Lake Area	K. FENWICK
193250	South Beatty Lake Area	K. FENWICK	292963	Gathering Lake Area	K. FENWICK
243299	South Beatty Lake Area	K. FENWICK	344287	Gathering Lake Area	K. FENWICK
157752	South Beatty Lake Area	K. FENWICK	344286	Gathering Lake Area	K. FENWICK
297741	South Beatty Lake Area	K. FENWICK	189558	Gathering Lake Area	K. FENWICK
118593	South Beatty Lake Area	K. FENWICK	238178	Gathering Lake Area	K. FENWICK
297740	South Beatty Lake Area	K. FENWICK	239492	Gathering Lake Area	K. FENWICK
193252	South Beatty Lake Area	K. FENWICK	126784	Gathering Lake Area	K. FENWICK
164345	South Beatty Lake Area	K. FENWICK	313537	Gathering Lake Area	K. FENWICK
118594	South Beatty Lake Area	K. FENWICK	286634	Gathering Lake Area	K. FENWICK
177247	South Beatty Lake Area	K. FENWICK	219459	Gathering Lake Area	K. FENWICK
259775	South Beatty Lake Area	K. FENWICK	238179	Gathering Lake Area	K. FENWICK
104969	South Beatty Lake Area	K. FENWICK	143570	Gathering Lake Area	K. FENWICK
175277	South Beatty Lake Area	K. FENWICK	285360	Gathering Lake Area	K. FENWICK
242014	South Beatty Lake Area	K. FENWICK	239493	Gathering Lake Area	K. FENWICK
279113	South Beatty Lake Area	K. FENWICK	126785	Gathering Lake Area	K. FENWICK
164346	South Beatty Lake Area	K. FENWICK	227506	Gathering Lake Area	K. FENWICK
326358	South Beatty Lake Area	K. FENWICK	144294	Gathering Lake Area	K. FENWICK
129820	South Beatty Lake Area	K. FENWICK	344288	Gathering Lake Area	K. FENWICK
118595	South Beatty Lake Area	K. FENWICK	143571	Gathering Lake Area	K. FENWICK
162570	South Beatty Lake Area	K. FENWICK	202211	Gathering Lake Area	K. FENWICK
287938	South Beatty Lake Area	K. FENWICK	285361	Gathering Lake Area	K. FENWICK
248839	South Beatty Lake Area	K. FENWICK	202966	Gathering Lake Area	K. FENWICK
336303	South Beatty Lake Area	K. FENWICK	227507	Gathering Lake Area	K. FENWICK
301759	South Beatty Lake Area	K. FENWICK	202965	Gathering Lake Area	K. FENWICK
149784	South Beatty Lake Area	K. FENWICK	286635	Gathering Lake Area	K. FENWICK
186523	South Beatty Lake Area	K. FENWICK	312300	Gathering Lake Area	K. FENWICK
205376	South Beatty Lake Area	K. FENWICK	344289	Gathering Lake Area	K. FENWICK
242015	South Beatty Lake Area	K. FENWICK	202212	Gathering Lake Area	K. FENWICK
104970	South Beatty Lake Area	K. FENWICK	219460	Gathering Lake Area	K. FENWICK
308688	South Beatty Lake Area	K. FENWICK	126787	Gathering Lake Area	K. FENWICK
287939	South Beatty Lake Area	K. FENWICK	126786	Gathering Lake Area	K. FENWICK
245100	South Beatty Lake Area	K. FENWICK	306818	Gathering Lake Area	K. FENWICK
133190	South Beatty Lake Area	K. FENWICK	209611	Gathering Lake Area	K. FENWICK

Figure 1: Property Location Map

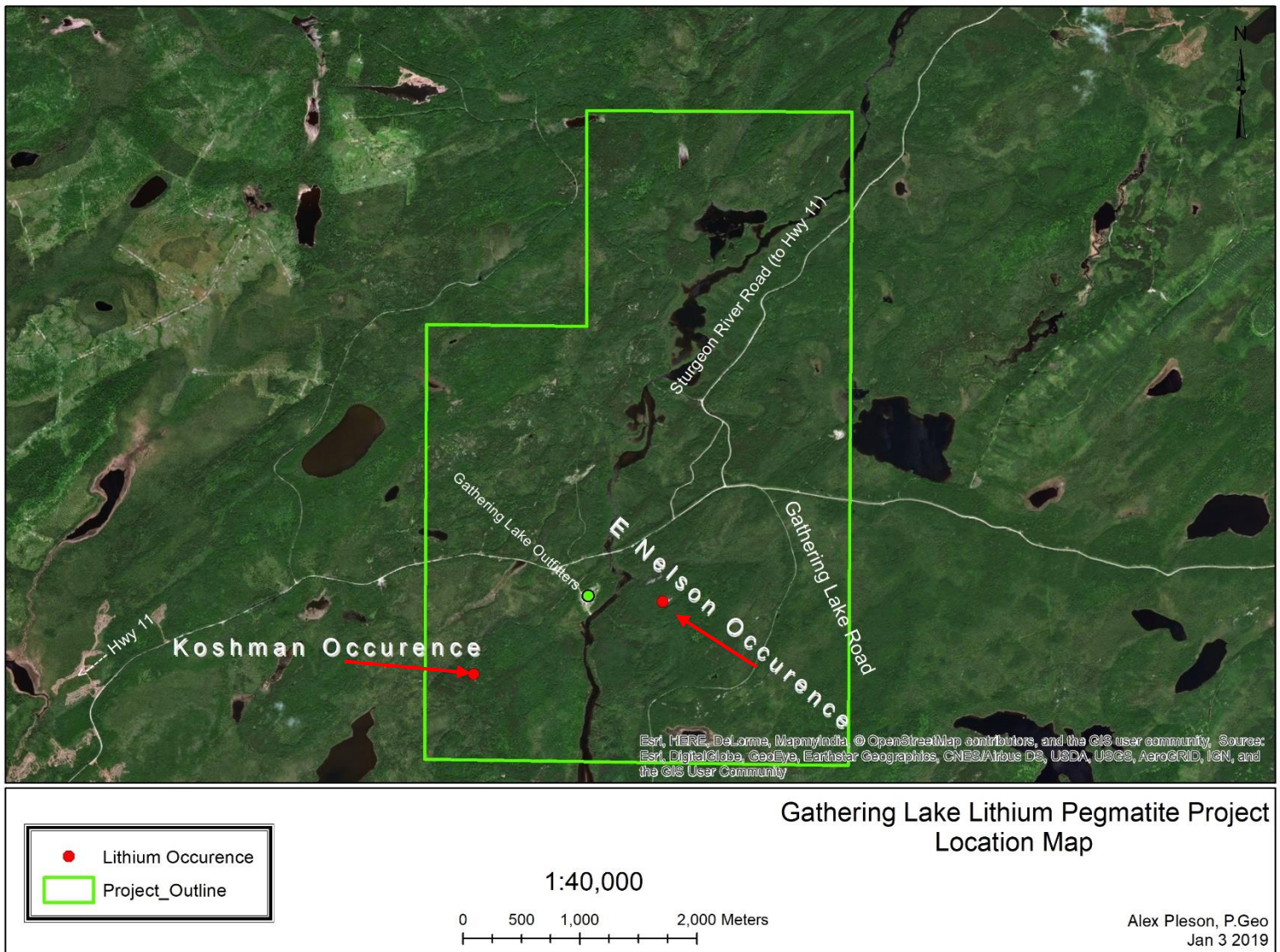
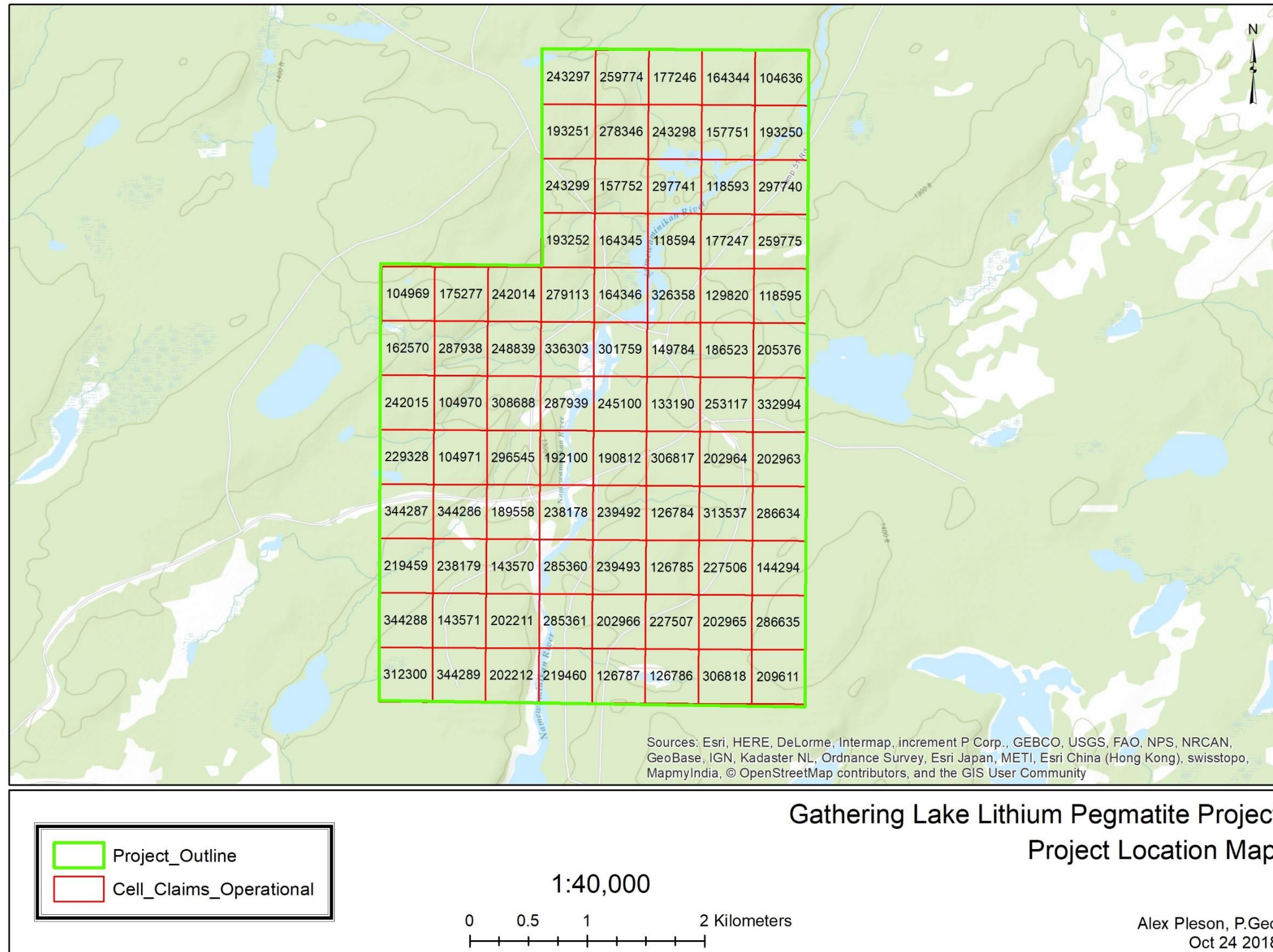




Figure 2: Mineral Claim Map



## **4.0 ACCESS, CLIMATE, PHYSIOGRAPHY, LOCAL RESOURCES, AND INFRASTRUCTURE**

### **4.1 Access**

The Gathering Lake project can be accessed by dirt roads off Highway 11 north of the town of Nipigon. The claims are accessed by driving 40 km north of the town of Nipigon on Highway 11, then driving approximately 59 km northeast on the Gorge Creek Road (Camp 75 Rd.) and Camp 51 road. An alternative route can also be utilized from Highway 11 between Beardmore and Geraldton, ON along the Camp 51/Sturgeon River Road towards Gathering Lake for approximately 28 km southwest.

### **4.2 Climate**

The forest of the Gathering Lake area is mixed growth of spruce, balsam, jack pine, poplar, birch and cedar (Pye, 1965). Vegetation is typical of continental climate a mixture of coniferous (pine and black spruce) and deciduous (primarily birch and minor poplar).

The climate is continental with cold and long winters (from November to late March) and significant snow accumulations. The temperature in the winter months (January and February) can reach  $-40^{\circ}\text{C}$  but typically ranges between  $-10^{\circ}$  and  $-25^{\circ}\text{C}$ . The Canadian Climate normals for 1971-2000 from Environment Canada ([/www.climate.weatheroffice.gc.ca/climate\\_normals/](http://www.climate.weatheroffice.gc.ca/climate_normals/)) for Geraldton (closest weather station to the property) indicate that the daily average temperature ranges from  $-19^{\circ}\text{C}$  in January to  $17^{\circ}\text{C}$  in July. The highest average accumulation of rain for a month is 112 mm in July. The highest average accumulation of snow for a month is 49 cm in November. The highest average snow depth is 48 cm in February. Drilling can be conducted year-round except for spring thaw in mid-March and April. Geological mapping and outcrop sampling can be conducted May to October when there is no snow on the ground.

### **4.3 Physiography**

Pye (1965) summarized the topography of the Gathering Lake area:

“The area is one of topographic contrasts. The parts of the area in which metasediments are exposed are, for the most part, of low relief. In contrast, the parts underlain by granitic rocks are rugged, with rounded hills rising to about 150 ft. (=45.7 m) above the general level. Most conspicuous, however, are high, imposing vertical or near-vertical cliffs at the boundaries of large exposed sheet-like masses of diabase.”

“Rock exposures in the area are abundant, and between the outcrops there is a thin mantle of glacial deposits. These glacial deposits consist mainly of stratified accumulations of unconsolidated sand and gravel. Some of them represent a ground

moraine sorted by the action of glacial meltwaters; others form prominent terraces along the shores of Lake Nipigon and in the valley occupied by Keemle and Wanogu Lakes, and are abandoned beach deposits. Esker ridges also are present but are not high and do not extend for any great distances.”

The topography is moderate. The minimum elevation is 250 m and the maximum elevation is 560 m above sea level. Thus, the range is 310 m. The low-lying areas are typically underlain by metasediments and the higher areas are underlain by Nipigon diabase.

#### **4.4 Local Resources and Infrastructure**

The towns of Beardmore and Geraldton is the closest community, located approximately 40 km northwest and 44km northeast, respectively, of the project. Beardmore is part of Greenstone, an amalgamated town encompassing Nakina, Geraldton, Longlac, Beardmore, Caramat, Jellicoe, Macdiarmid and Orient Bay. The population of Greenstone is 4,906 people (Statistics Canada, [www.statcan.gc.ca](http://www.statcan.gc.ca)) and the population of Beardmore is approximately 150 people (<http://www.highway11.ca/ThunderBay/06Beardmore>). Beardmore has limited accommodation and restaurants.

The town of Nipigon, located about 50 km to the south of the Property has most of the basic supplies needed for exploration work. Nipigon has grocery stores, a hardware store, restaurants, hotels, a hospital and an OPP station. The population for Nipigon Township is 1,752 people in 2006 (Statistics Canada, [www.statcan.gc.ca](http://www.statcan.gc.ca)).

The town of Thunder Bay, located about 130-150 kilometres from the Property, is the largest city in Northwestern Ontario, serving as a regional commercial Centre. The town is a major source of workforce, contracting services, and transportation for the forestry, pulp and paper and mining industry. Thunder Bay is a transportation hub for Canada, as the TransCanada highways 11 and 17 link eastern and western Canada. It is close to the Canada-U.S. border and highway 61 links Thunder Bay with Minnesota, United States. Thunder Bay has an international airport with daily flights to Toronto, Ontario and Winnipeg, Manitoba, and the United States.

The city of Thunder Bay has most of the required supplies for exploration work including drilling and geophysical survey companies, grocery stores, hardware stores, exploration equipment supply stores, restaurants, hotels, and a hospital. The population of the city of Thunder Bay was 109,140 people in 2006 (Statistics Canada, [www.statcan.gc.ca](http://www.statcan.gc.ca)). Many junior exploration and mining companies are based in Thunder Bay, and thus the city is a source of skilled mining labour.

The Gathering Lake Outfitters lodge is in the center of the property and will provide room and board at a reasonable price during fishing and hunting seasons (see Figure 1).

There are several lakes, rivers and creeks in and around the Property area which can be a source of water. Power lines are also within a 30-kilometer range.

(Source: [http://www.thunderbaydirect.info/about\\_thunder\\_bay](http://www.thunderbaydirect.info/about_thunder_bay)

[http://www.thunderbay.ca/Doing\\_Business/About\\_Thunder\\_Bay.htm](http://www.thunderbay.ca/Doing_Business/About_Thunder_Bay.htm))

## 5.0 HISTORY

The discovery of spodumene in the Georgia Lake area was summarized by Pye (1965):

“One of the topics featured on the program of the annual convention of the Prospectors and Developers Association in spring 1955 was the lithium deposits of the Preissac-Lacorne area in Quebec (Latulippe and Ingham 1955). Samples of the lithium-bearing mineral spodumene were on display. Many years ago, Eric W. Hadley of Auden had discovered a body of pegmatite forming a reef in Georgia Lake (now known as Island Deposit). He noted that the pegmatite contained a prismatic mineral, which he could not identify and which he considered then to be of no value. At the convention, however, he observed that the spodumene on display was very like the mineral in the pegmatite at Georgia Lake. He immediately contacted Gordon Miller of Conwest Exploration Company Limited. An examination was made at once, and impressed with the occurrence, Mr. Miller submitted samples to E.G. Pye for positive identification. Pye, in turn, presented the samples to Dr. H. Quackenbush, a Fort William dentist and amateur mineralogist, who as part of his hobby, had built a spectroscope. With this spectroscope, Dr. Quackenbush confirmed that the mineral was spodumene, and immediately Mr. Miller proceeded to stake a large group of claims for his company.”

“As news of Hadley’s discovery was publicized, prospectors entered the area. About 3,200 claims were staked and within a short time numerous additional lithium deposits were located. Many of these deposits were tested by diamond drilling in 1955 and 1956. Due to lack of adequate markets, however, none of these have been developed. Except for some limited diamond drilling by the Ontario Lithium Company Limited to test the original discovery in July 1957, the area has remained inactive since 1956” (as of Pye’s 1965 report).

Detailed prospecting and diamond drilling to the west of the project was completed by Rock Tech Lithium Inc. (Rock Tech), Infinite Lithium Corporation and Ultra Lithium Inc. on several of their properties in the Georgia Lake area has lead to the discovery of undocumented lithium-bearing pegmatite dikes.

Historic exploration was carried out by E. MacVeigh, E. Nelson, and Standard Lithium Corp. from 1955-1957 which included prospecting, mapping, trenching, and drilling.

Modern exploration work was completed by John Scott (2012-2013) on behalf of Ken Fenwick. The results are listed in the table below.

**Table 2: Historic Exploration Summary**

Historic Work (after Fenwick, 2017)													
Period	Description of Work												
1955-1957	Two lithium occurrences were located and explored. Referred to as the Koshman and Nelson occurrences												
Sep-55	<p>Diamond drilling on Nelson occurrence (42E06NW0002)</p> <p>Sixteen samples were split from the core, totalling more than 100 feet of pegmatite and aplite. Because of the obvious barren nature of the bulk of the rock, only 3 samples, considered representative of all the pegmatite and aplite cored, were selected for assay. These ran:</p> <table border="1"> <thead> <tr> <th></th> <th>Hole No.</th> <th>Footage</th> </tr> </thead> <tbody> <tr> <td>0.06% Li over 15.0 feet</td> <td>4</td> <td>25.0-40.0</td> </tr> <tr> <td>0.18 " " 5.0 "</td> <td>6</td> <td>40.0-45.0</td> </tr> <tr> <td>0.36% " " 5.8 "</td> <td>7</td> <td>64.0-69.8</td> </tr> </tbody> </table> <p>In the district, 1.0% Li is considered marginal ore.</p> <p>The remaining 13 samples will be retained at the Blind River office.</p>		Hole No.	Footage	0.06% Li over 15.0 feet	4	25.0-40.0	0.18 " " 5.0 "	6	40.0-45.0	0.36% " " 5.8 "	7	64.0-69.8
	Hole No.	Footage											
0.06% Li over 15.0 feet	4	25.0-40.0											
0.18 " " 5.0 "	6	40.0-45.0											
0.36% " " 5.8 "	7	64.0-69.8											
1957	Geological map of Koshman was made describing the local geology and prior trenching work completed. This indicated up to 15% spodumene within a pegmatite dyke and a larger sill or dyke with widespread disseminated spodumene												
2012	John Scott found spodumene bearing boulders on property considered to be associated to the Koshman mineralization, where they procured assays up to 9250 ppm Li.												
2013	John Scott located a large outcrop, white pegmatite (non-spodumene bearing) intrusion in proximity to the Nelson occurrence, portions of the large pegmatite samples up to 203 ppm Li. The 1955 drilling of this occurrence indicates much higher lithium grades, which intersected the spodumene zone of the intrusion.												

Rock Tech has been active in the Georgia Lake area since 2010 and has completed over 12,100 m of diamond drilling. This work has lead to the discovery of a NI 43-101 resource consisting of 1.89 Mt grading 1.04% Li<sub>2</sub>O (measured), 4.68 Mt grading 1.00% Li<sub>2</sub>O (Indicated) and an Inferred resource of 6.72 Mt grading 1.16% Li<sub>2</sub>O on the Nama Creek Zone (See Rock Tech's news release dated August 2, 2018). This resource is located 7 km northwest of Bold's Jean claim group.

Two diamond drill holes completed by Rock Tech in 2011 intersected the No.4 Dike on the eastern side of the Parole Lake patented claims. Hole PL-11-01 and PL-11-02 were located approximately 250 and 300 m respectively from the boundary with Bold's newly acquired claims (See figure 3 in the Maps and Charts section). Hole PL-11-01 returned 7.29 m @ 1.76% Li<sub>2</sub>O (including 5.15 m of 2.29% Li<sub>2</sub>O) and Hole PL-11-02 returned 5.41 m @ 1.25% Li<sub>2</sub>O (including 3.0 m @ 1.77% Li<sub>2</sub>O). Reference: Caracle Creek International Consulting Inc., Author Adrian Peshkepia, M.Sc., P. Geo., Drill Report For 2010-2011 Winter Drilling Program, June 14, 2011, prepared for Rock Tech Lithium Inc.



## 6.0 GEOLOGICAL SETTING AND MINERALIZATION

### 6.1 Regional Geology

The Georgia Lake area is located within the Quetico Subprovince of the Superior Province. The Quetico Subprovince is bounded by the granite-greenstone Wabigoon Subprovince to the north and Wawa Subprovince to the south (Williams, 1991). The Quetico Subprovince is composed of predominantly metasediments consisting of wacke, iron formation, conglomerate, ultramafic wacke and siltstone, which deposited between 2.70 and 2.69 Ga. The igneous rocks in the Quetico Subprovince include abundant felsic and intermediate intrusions, metamorphosed rare mafic and felsic extrusive rocks and an uncommon suite of gabbroic and ultramafic rocks. The earlier felsic intrusions occurred 5 to 10 million years after the accumulation of sediments and are interpreted to be I-type intrusions. The later felsic intrusions occurred 20 million years after the sedimentation and are designated as S-type (White and Chapell, 1983).

The Quetico Subprovince was subjected to four deformational events between approximately 2700 and 2660 million years (Williams, 1991). The predominant stratigraphic-facing direction is north. Regional schistosity is variably developed and oriented and is interpreted to be the result of regional shortening and dextral shearing.

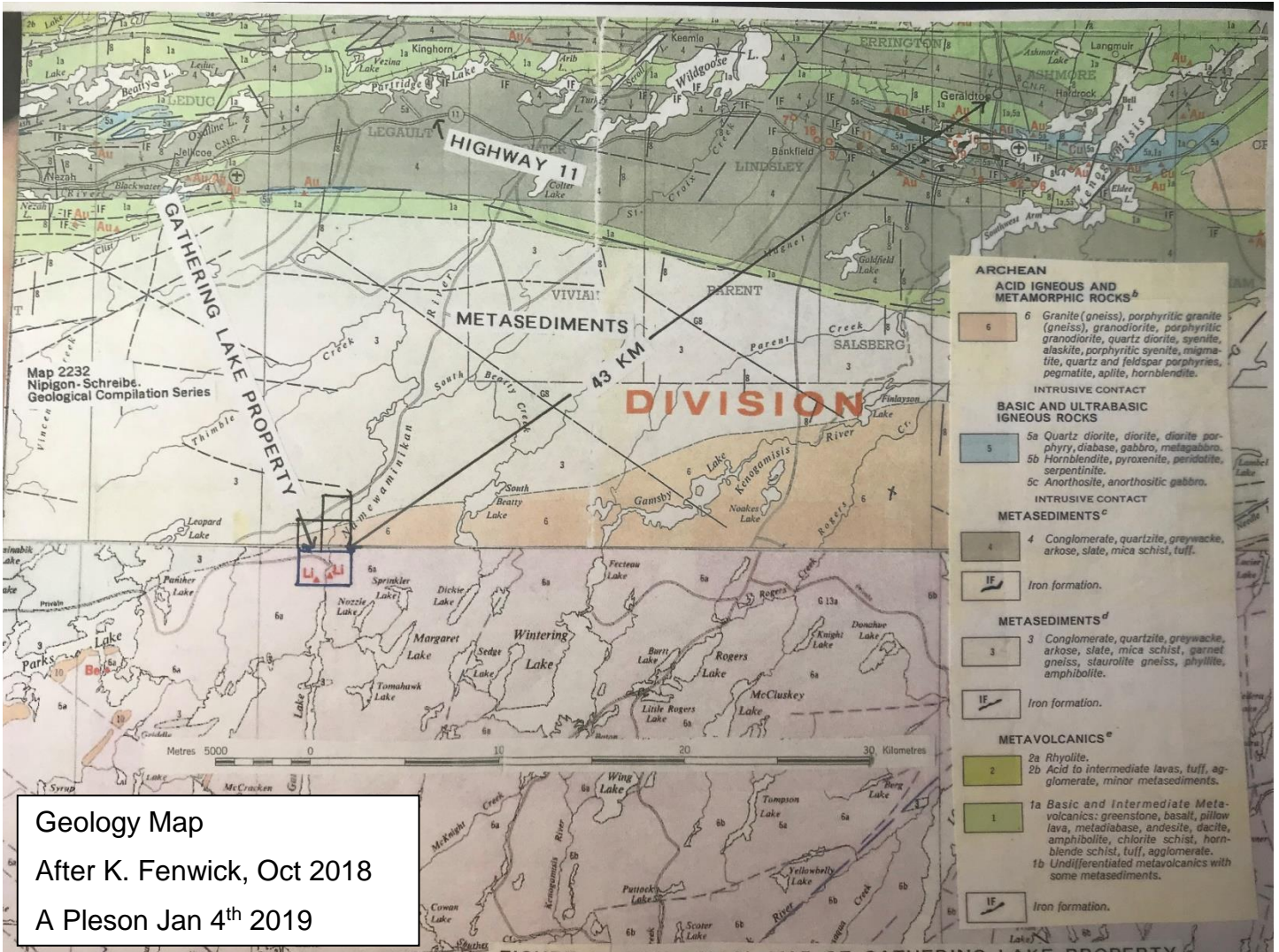
Four major faults cut through the Quetico Subprovince: the easterly trending Quetico fault, the Rainy Lake-Seine River fault, the northeasterly trending Gravel River fault (Williams, 1989) and the Kapuskasing Structural Zone (Selway 2011).

Metamorphism, migmatite formation and granite intrusion occurred between 2.67 and 2.65 Ga (Williams, 1991). The grade of metamorphism ranges from lower greenschist to amphibolite facies and tends to be lower in the marginal rocks of the subprovince and higher in the core regions.

Widespread economic mineralization within the Quetico Subprovince is generally lower than in the adjacent greenstone dominated terranes (Williams, 1991). Minor gold mineralization is associated with veining along the Quetico Fault (Poulsen, 1983). Molybdenite occurs in biotite leucogranites in the Dickinson Lake area. The only potentially important ore deposit type consists of the late-stage pegmatites that contain the rare elements lithium, beryllium, tantalum, niobium and tin (Williams, 1991). The rare-element pegmatites have widespread distribution in the Quetico Subprovince covering at least a 540-km strike length from west to east and a large percentage of pegmatites occur in the centre of the subprovince (Breaks, Selway and Tindle, 2006).

The pegmatites in the Quetico Subprovince are hosted by metasediments and by their parent granite (Pye, 1965; Breaks, Selway and Tindle, 2003a, 2003b).

Figure 3a: Regional geological map





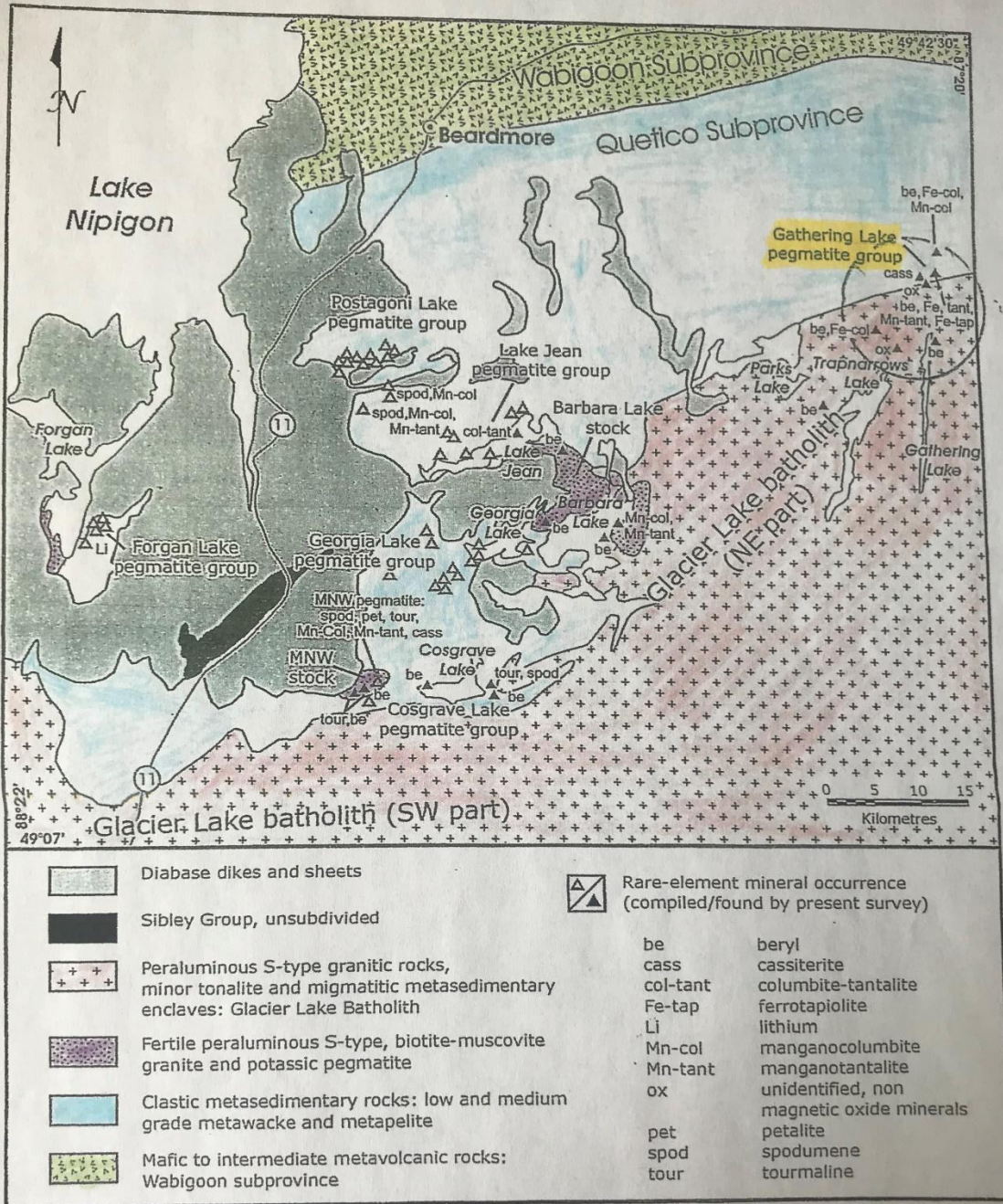


FIGURE 3: General geological setting of rare-element pegmatites of the Georgia Lake field and adjacent, S-type, peraluminous granitic rocks of the Glacier Lake batholith. (BREAKS, 2008)

*Twelve new Ta-Nb oxide mineral occurrences were found in Break's survey area (see Figure 3 for the size of the survey area). The Gathering Lake pegmatite group contains nine (9) of these Ta-Nb-oxide-bearing pegmatites.*

Figure 4b: Regional geological map after Breaks 2008



## 6.2 Local Geology

The geology is of Precambrian age and is discussed by Pye (1965).

### Metasediments

The oldest rocks are the Archean metasediments. The metasediments strike east-northeast and dip steeply, in general, to the north. The dominant metasedimentary rock is biotite-quartz-feldspar schist or gneiss. It is a grey, rather dark colored rock, having a distinct banded appearance due to compositional variations reflecting an original sedimentary stratification, with individual layers less than an inch to several feet thick. There is a distinct foliation due to parallel alignment of biotite crystals. Microscopic examination of the biotite-quartz-feldspar schist shows that it is made up of: 15-40 vol.% biotite, 20-35 vol.% quartz, 25-45 vol.% plagioclase, 1-3 vol.% magnetite, trace amounts of zircon and rare hornblende. Secondary minerals include chlorite, sericite and epidote. The plagioclase shows myrmekite texture. The most abundant texture in the biotite-quartz-feldspar schist or gneiss is granoblastic, but porphyroblastic rocks are also present with porphyroblasts of garnet, staurolite and cordierite.

### Metagabbro

The metagabbro has intrusive relationships and have been metamorphosed and intruded by granitic rocks. East of Cosgrave Lake and south of Barbara Lake, the metasediments were intruded by metagabbro. The metagabbro bodies range in size from a few hundred feet across to 9,500 feet (=2.9 km) across. The metagabbro is dark-colored (mesocratic), medium- to coarse-grained with a brownish weathered surface. For the most part, it is massive, but it is gneissic near its contacts with metasediments. The major minerals are: green hornblende and plagioclase (sodic andesine). The minor minerals include: microcline and biotite and trace amounts of magnetite and apatite. The alteration minerals are chlorite, epidote and sericite.

The porphyritic metagabbro differs from the metagabbro only in the presence of feldspar phenocrysts (usually microcline). The feldspar phenocrysts are pale-pink to red, stubby, rectangular, subhedral to euhedral and range in size from ¼ by 1/8 inch (=0.6 by 0.3 cm) to 2 by 1 inches (5 by 2.5 cm). The porphyritic metagabbro is best developed near the margins of the metagabbro bodies close to the granites.

Metagabbro dykes and sills cross cut the metasediments near Dump and Pawky lakes and near Blay, Georgia and Conner lakes. All the dykes and sills are small with thicknesses of 3 feet or less (=0.9 m). They are thought to be genetically related to the metagabbro, as they are similar in appearance and composition. They are cross cut by pegmatite and feldspar porphyry dykes.

### Granite

The metasediments were also intruded by large masses of granitic rocks and by numerous sills and dykes of genetically-related porphyry, pegmatite and aplite. The granitic rocks are

pale-grey or pale-pink in colour and their essential components are: 45-65 vol.% feldspar (microcline and plagioclase), 40 vol.% quartz, and one or both of muscovite and biotite and rarely little hornblende. The plagioclase has a composition of albite. Minor components of the granites include magnetite, zircon, and garnet, and secondary minerals: chlorite, sericite and epidote. For the most part the granites are equigranular, but porphyritic phases with microcline phenocrysts also occur. The contacts between the equigranular granitic rocks and the metasediments are generally abrupt.

### **Pegmatite**

There is an abundance of pegmatites close to and within the large masses of granitic rocks. A regional zoning is apparent and a genetic association of pegmatites and granite is indicated. The pegmatites occur in two geometries: as irregular-shaped bodies and as thin dykes, sills and attenuated lenses. The irregular bodies of pegmatite are intimately associated with the granite bodies often within a few hundred feet of the contact zone. They typically are medium- to coarse-grained, up to very coarse-grained and are made up of quartz, microcline, perthite and little muscovite. These would be classified as potassic pegmatites. Accessory minerals include biotite, tourmaline and garnet.

The pegmatite dykes, sills and lenses can be subdivided into rare-element pegmatites and granitic pegmatites. The rare-element pegmatites are of economic significance and they contain microcline or perthite, albite, quartz, muscovite and spodumene and minor amounts of beryl, columbite-tantalite and cassiterite. The granitic pegmatites are like the irregular pegmatites described above except that they contain more abundant plagioclase. Some of the pegmatites are parallel to the foliation or bedding of the metasediments, whereas others occur in joints in either the metasediments or granite. Contacts are usually sharp and, except where dykes cut granitic rocks, often found to be marked by a thin border zone of aplite or granitoid composition. A few pegmatites are internally zoned with mica-rich or tourmaline-rich rock along or close to the walls and quartz cores.

### **Diabase**

Intrusive into the Proterozoic sedimentary rocks and the older formations are bodies of diabase. The largest occur as flat sheets (Logan sills), up to about 650 ft. (=198.1 m) in thickness, and as dykes of vertical or near-vertical attitude. Most of the dykes are related closely to the sheets and are Keweenawan age. The gently dipping diabase sheets are dark colored and massive. The diabase sheets are well-jointed and most of the joints are vertical or steeply dipping. In outcrop, the diabase shows poorly-formed columnar structure.

There are two types of diabase dykes: one is equigranular and the other is porphyritic. The equigranular dykes are more abundant. Some of the dykes along or close to the contact zone of the large granite mass strike easterly; most dykes in other localities strike north or within 20° of north. With few exceptions, the dykes are vertical or dip steeply. The porphyritic diabase dykes are massive medium-grained, dark-colored rock characterized by

many pale-greenish yellow phenocrysts of highly altered plagioclase. Porphyritic diabase dykes are found near the Jackpot deposit.

### **6.3 Property Geology**

The property is dominated by granite related to the Glacier Lake Batholith. Based on the limited outcrop close to the historic workings, the general property geology is best described by the historic 1955 drilling and a small amount of observations by Pye 1956, Breaks 2008, and from the authors time on the project. Overall, the granite is mainly coarse-grained consisting of quartz, feldspar, and muscovite. The metasediments observed are typically meta-sandstone described as a muscovite schist with observed bedding and various stages of metamorphism are present, including migmatization imparting a gneissic texture. The pegmatite dykes observed at the Koshman occurrence are simple, non-zoned, albite-type spodumene pegmatites with trace amounts of oxides and apatite. The pegmatites at the Nelson occurrence display partial zoning, with a spodumene zone observed on the western portion of the large pegmatite outcrop/hill. The geology of the Koshman occurrence was mapped in detail by E. MacVeigh in 1957 and is presented in figure 4.



## **7.0 EXPLORATION WORK**

The exploration tasks were to identify areas of prospective lithium mineralization, assess the accuracy of the 1957 geological map, gain an overview of the terrain, and ultimately prospect and delineate any new lithium occurrences. The work was completed over 3 days involving local prospectors and a geologist. Mike Goodman, Luke Goodman, and Phil Houghton of Beardmore, ON and Alex Pleson of Nipigon, ON worked the property from June 5-7<sup>th</sup> 2018.

### **7.1 Prospecting**

A total of 5 grab samples were taken during the program on the Koshman and Nelson occurrences to confirm the presence of lithium mineralization and confirm their economic potential.

Showing	Sample ID	Li (%)	Li2O (%)	Easting	Northing	Structural Evidence	Description
Koshman	294410	0.17	0.36	465967	5481537	not enough outcrop, X-trench at 130°, possibly parallel to strike	8% pale green spod, in coarse grained feldspar pegmatite, <1% med. Gr. apatite,
	294411	1.34	2.88	466025	5481487	N-S strike, vertical dip, ~2m wide	25% cr. Gr. Spod, pale green, in albite pegmatite, tr black oxide minerals, possibly Fe-tant, 3-4% muscovite
	294412	1.1	2.37	465977	5481551	rubble from old trench	20% spodumene, 2-6cm crystals, 5% muscovite, minor apatite fine grained, minor black oxides Fe-tant?
	294413	1.12	2.4	465978	5481537	rubble from old trench	20% spodumene, 4-8cm crystals, some portions of the dyke are lacking spodumene and dominated by coarse albite crystals, no presence of apatite in this sample
Nelson	294414	1.49	3.22	467628	5482170	Dyke is almost flat lying in larger non-spod pegmatite dyke/sill. NE strike, dipping shallow 10-15° SE	High graded chips of very coarse grained pegmatite lense/dyke on side of cliff. ~1.5m wide spod pegmatite in 100m wide pegmatite sill or dyke, depending on structure of pegmatite, 2-4cm long spod crystals, pale green, very hard to chip sample. 2-3% green muscovite, tr apatite, tr oxide minerals, possibly represents a large zoned pegmatite or spodumene dyke subsequent intrusion into larger peg dyke which is visible on Sat photo.

**Table 3: Sampling Descriptions**



Figure 5a: Koshman Occurrence Sampling

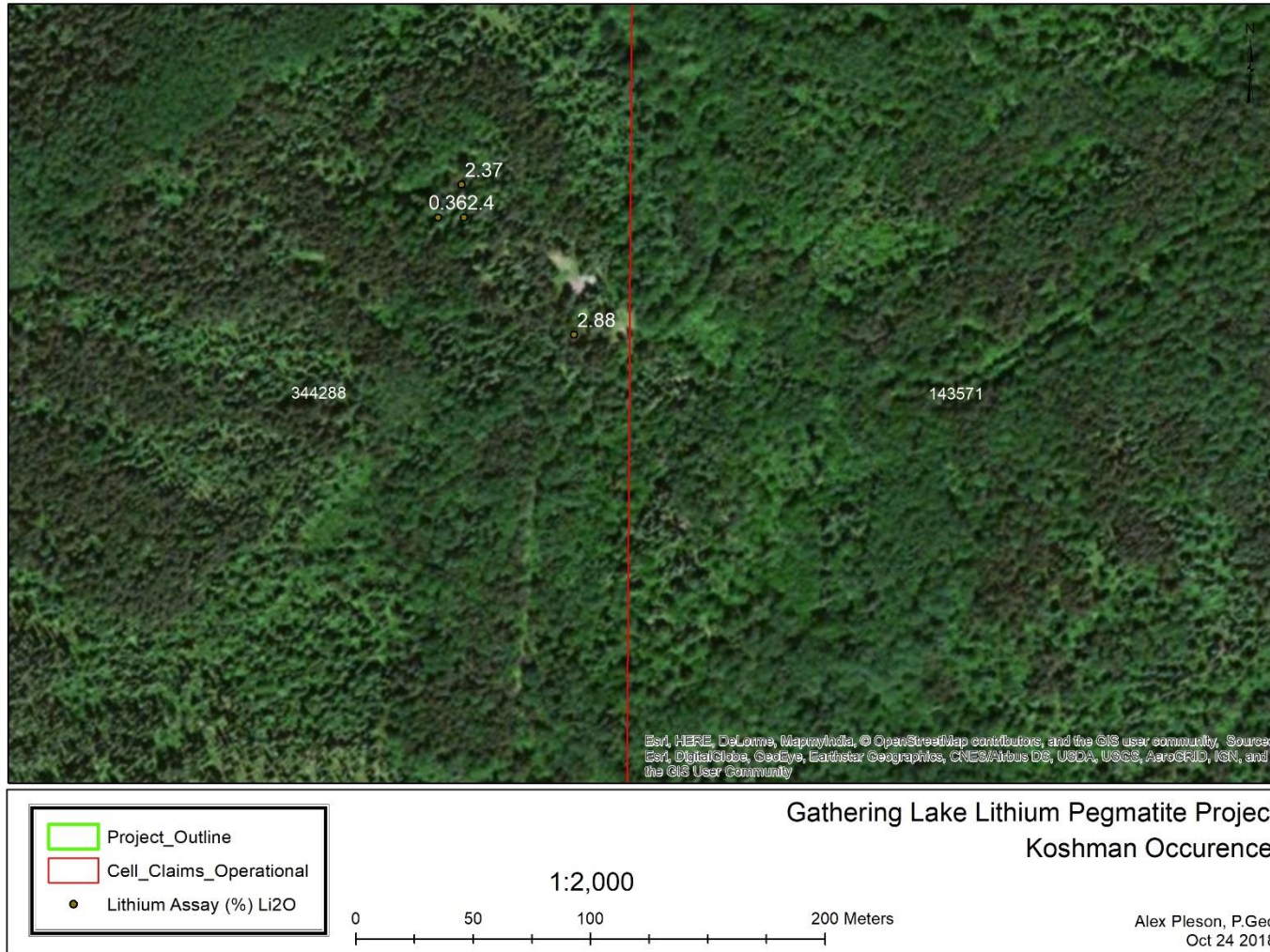
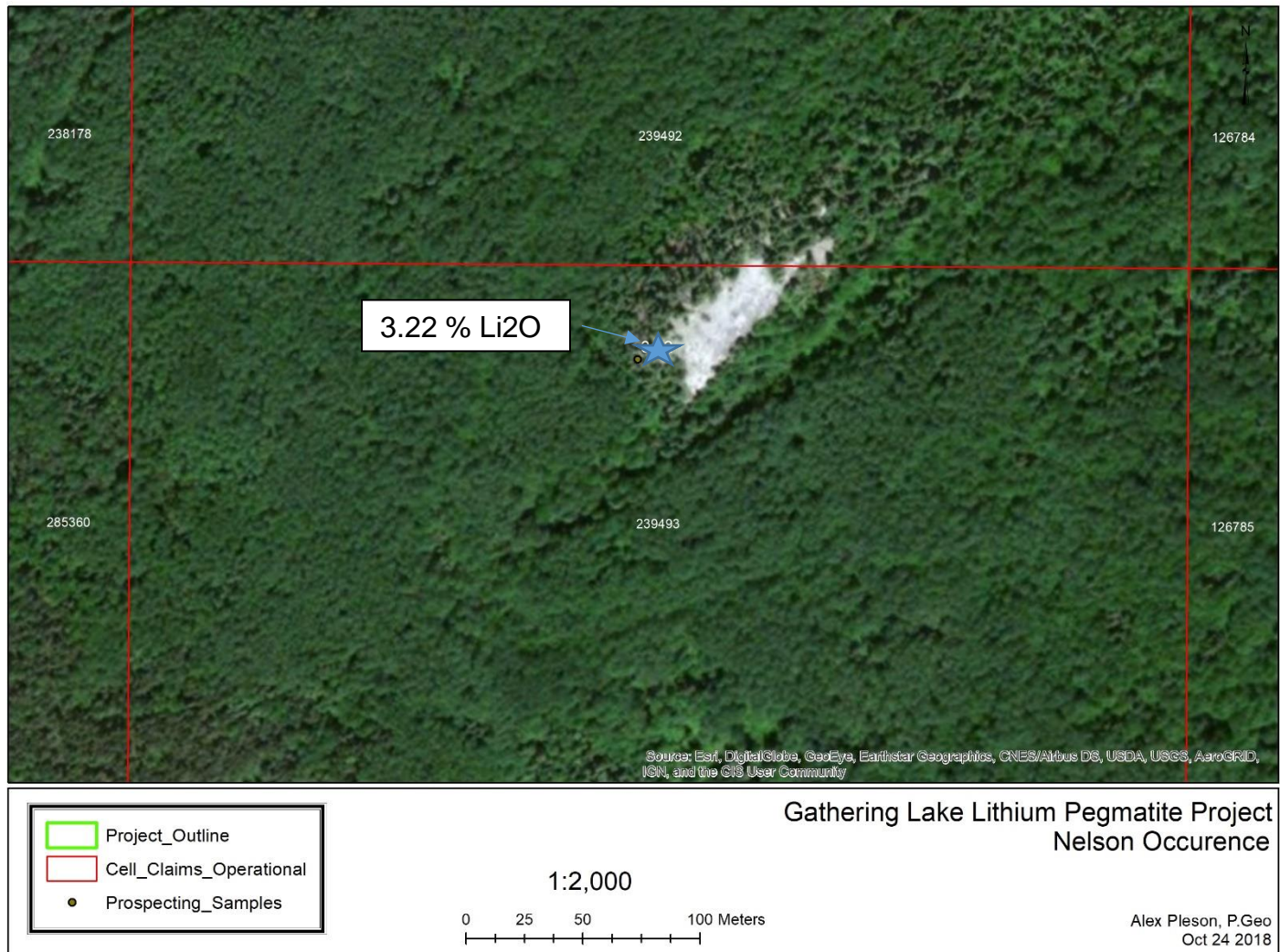


Figure 5b: Nelson Occurrence Assay Results







Hand Stripping 1m wide Spodumene  
Pegmatite Dyke near Koshman (16N 465967  
5481537)





Spodumene Crystal in Dyke at  
Nelson Occurrence  
(16N 467628 5482170)





Furthest West Trench on  
Koshman  
(16N 465892 5481679)





Top of the large pegmatite intrusion  
near the Nelson Spodumene  
Occurrence  
(16N 467628 5482170)

## 8.0 EXPLORATION RESULTS AND RECOMMENDATIONS

The prospecting and initial geological investigation produced encouraging results. The author was able to confirm anomalous lithium mineralization from representative samples at both the Koshman and Nelson occurrences of both in-situ rock and rubble from historic trenches.

### 8.1 Koshman Area (Western Li Occurrence)

The Koshman area is highly prospective as samples returned values up to 2.88%  $\text{Li}_2\text{O}$  from a 1.5m wide spodumene bearing pegmatite dyke. Based on the mapping completed by MacVeigh 1957 of the Koshman, the area to the immediate northwest of the discovered dyke (Figure 6) is most likely a flat lying pegmatite dyke or sill. This area sampled up to 2.37%  $\text{Li}_2\text{O}$ . The dyke or sill area of the Koshman holds the greatest economic potential so far observed on the property. Further exploration of the sill/dyke, mapped over a 175m x 110m area, has the potential to produce an economic tonnage. A dyke in the far northwest of the Koshman discovered in 1957 was not located. From MacVeigh's work in 1957, the geological map indicates that the host coarse-grained pegmatite of these dykes also contains disseminated spodumene.

### 8.2 Nelson Area

The Nelson area is dominated by a feldspar-muscovite pegmatite with trace beryl. John Scott sampled the pegmatite and received values of up to 202.9 ppm Li. The low-grade enrichment of Li is not economic but provides evidence that there is a potential for discoveries of spodumene bearing dykes in the area based on fractionation observations (Figure 7). The west side of the large FM-pegmatite is cut by a small NNE striking, shallow dipping, 2m wide spodumene bearing pegmatite dyke. This area was selectively sampled and returned a value of 3.22%  $\text{Li}_2\text{O}$ . This is most likely the historic Nelson Occurrence, which was also drilled in 1955.

### 8.3 Recommendations

Lithium mineralization has successfully been identified at the Gathering Lake Lithium Pegmatite Property. The location of the Koshman occurrence was successfully delineated and sampled. The geological map by MacVeigh 1957 has been georeferenced (figure 6) and provides an accurate baseline for further exploration endeavors. The assays received on the Koshman samples (figure 4) represent typical lithium grades based on other lithium exploration projects in the area. Based on the amount of growth and overburden in the historic trenches, it would be recommended that this area be trenched by hydraulic excavator and power washed. According to MacVeigh 1957 and from the aforementioned exploration program, the “pegmatite bearing spodumene” and “pegmatite, spodumene 15% plus” areas in figure 6 should be the focus a future exploration agenda. The historic trenching areas should be reexamined and channel sampled to determine the width and grade of lithium mineralization. Geological mapping of the trenched areas will also increase the understanding of the disseminated nature of spodumene outlined by MacVeigh and this would provide a constraint on the extent of mineralization. Mapping is also recommended to develop an idea of the vector properties of the dyke(s). Drilling would not be recommended until a certain level of geological understanding and channel sampling has been performed.

The Nelson occurrence represents a small target of lithium mineralization in a large pegmatite dyke. The lithium grade is encouraging. Further prospecting is necessary to increase the understanding of the dyke’s size and relation to the larger pegmatite intrusion. Trenching along strike and channel sampling would provide the most cost-effective means of further economic evaluation. The historic drilling of the Nelson occurrence provides a great starting point for understanding the dyke. However, more surface work in this area is recommended to develop a comprehensive understanding of the mineralization.

The presence of lithium mineralization at both the Nelson and Koshman areas supports further exploration within these areas, but also in the peripheral mining claims. Based on academic evidence from Cerny, Breaks, and Selway, the northern portions of the GLLPP claims should also be prospected for lithium bearing dykes. There may also be a potential for REE based on previous work, but the author did not examine this potential in the current program.

**Table 4: Li<sub>2</sub>O Assay Results**

Sample ID	Li (%)	Li <sub>2</sub> O (%)	Easting	Northing
294410	0.17	0.36	465967	5481537
294411	1.34	2.88	466025	5481487
294412	1.1	2.37	465977	5481551
294413	1.12	2.4	465978	5481537
294414	1.49	3.22	467628	5482170

Figure 6: Georeferenced Koshman Map after MacVeigh 1957 (Assays added by author in 2018)

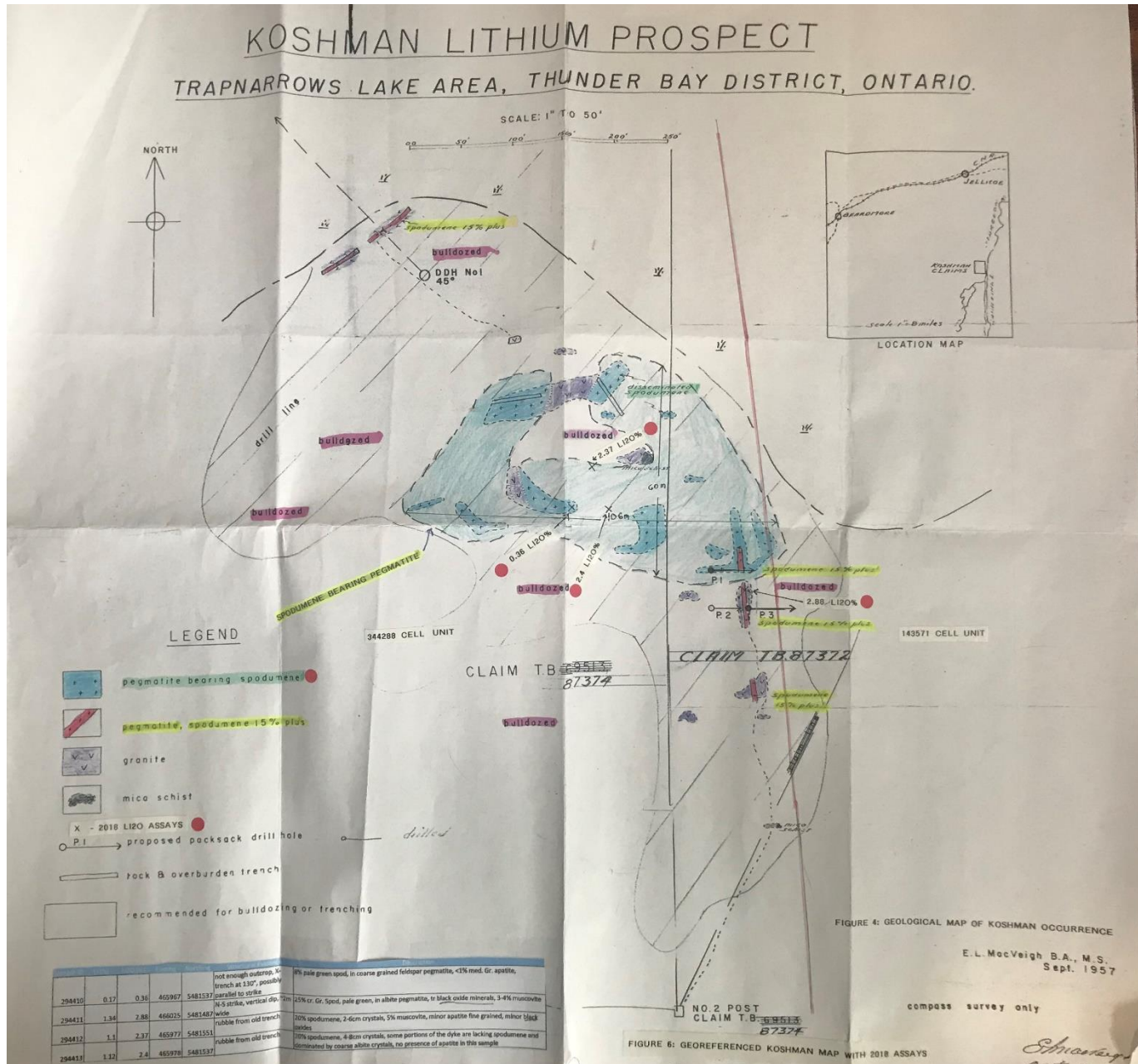
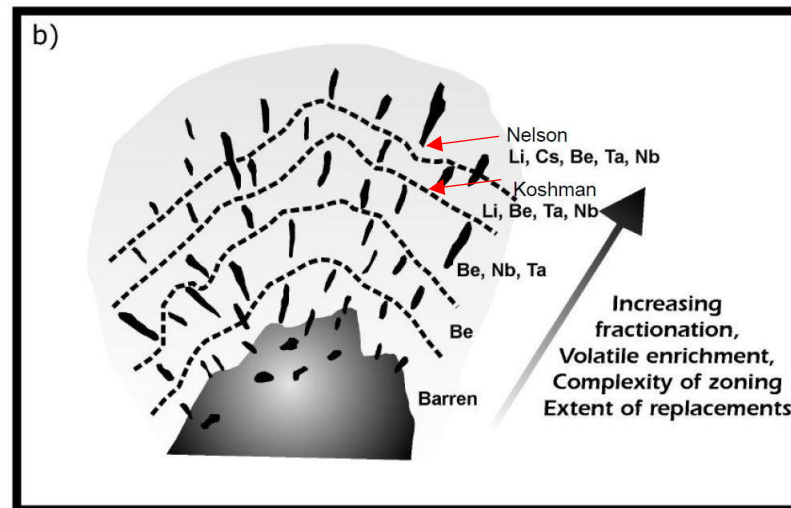
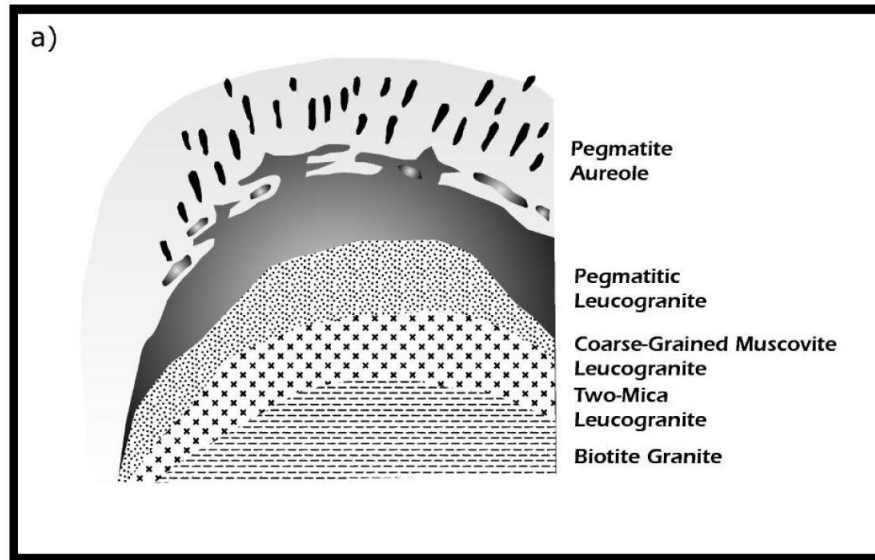




Figure 7: Pegmatite Diagram with proposed locations of occurrences on Gathering Lake Property (after *Cerny 1991*)



## **9.0 SAMPLE PREPARATION, AND QA/QC**

All the rock samples collected for the present study work were prepared and analyzed by Actlabs in Thunder Bay and Toronto, having been assessed by the Standards Council of Canada (SCC) and found to conform with the requirements of ISO/IEC 17025:2005 and the conditions for accreditation established by SCC. The Li % was analyzed by Actlabs Code 8 Sodium Peroxide Fusion - ICP-OES/ICP-MS Finish – Lithium Ore analysis package which digests the samples by sodium peroxide fusion and analyses them using ICP/OES.

## **10.0 CONCLUSIONS**

The Gathering Lake Lithium Property represents an area with high economic potential for lithium mineralization. The Koshman and Nelson occurrences showcase the areas potential for spodumene bearing dykes. Based on the current program and information from the historic reports, the Koshman area may host a large dyke or sill with moderate to low grade lithium ore. The Nelson occurrence requires more prospecting work, but based on the size of the pegmatite in proximity the area is still favourable for further exploration. The next steps in the area is to prospect the peripheral claims, trench, sample, and map the Koshman, and prospect and channel sample the Nelson.

## 11.0 REFERENCES

- Breaks, F.W. (1980): Lithophile mineralization in northwestern Ontario: rare-element granitoid pegmatites; *in* Summary of Field Work and Other Activities 1980, Ontario Geological Survey, Miscellaneous Paper 96, p. 5-9.
- Breaks, F.W., Selway, J.B. and Tindle, A.G. (2003a): Fertile and peraluminous granites and related rare-element mineralization in pegmatite, Superior Province, northwest and northeast Ontario: Operation Treasure Hunt; Ontario Geological Survey, Open File Report 6099, 179p.
- Breaks, F.W., Selway, J.B. and Tindle, A.G. (2003b): Fertile and peraluminous granites and related rare-element pegmatite mineralization, Barbara-Gathering-Barbaro lakes area, north-central Ontario: *in* Summary of Field Work and Other Activities, 2003, Ontario Geological Survey, Open File Report 6120, p.14-1 to 14-13.
- Breaks, F.W., Selway, J.B. and Tindle, A.G. (2008): The Georgia Lake rare-element pegmatite field and related S-type, peraluminous granite, Quetico Subprovince, north-central Ontario; Ontario Geological Survey, Open File Report 6199, 176p.
- Latulippe, M. and Ingham, W.N., 1955: Lithium deposits of the Lacorne area, Quebec; paper presented at the 1955 Convention of the Prospectors and Developers Association.
- London, D., 2008: Pegmatites, Mineralogical Association of Canada, Special Publication 10, Quebec City.
- Mulligan, R. (1960): Beryllium occurrences in Canada; Geological Survey of Canada, Paper 60-21.
- Peshkepia, A. (2011): Drill Report for 2010-2011 winter drill program, Nama Creek, Conway, Jean Lake, Aumacho, Georgia Lake pegmatite field, Ontario, Canada, NTS sheets: 42E05NW and 52H08NE, prepared for Rock Tech Lithium Inc., dated June 14, 2011, MNDMF assessment file number pending.
- Percival, J.A. (1989): A regional perspective of the Quetico metasedimentary belt, Superior Province, Canada; Canadian Journal of Earth Sciences, v.26, p.677-693.
- Pye, E.G. (1965): Georgia Lake Area, Ontario Department of Mines, Geological Report, pg 113, Map No. 2056
- Selway, J.B., Breaks, F.W., and Tindle, A.G. (2005): A review of rare-element (Li-Cs-Ta) pegmatite exploration techniques for the Superior Province, Canada and large worldwide Tantalum deposits, Exploration and Mining Geology, v. 14, p. 1-30.

- Selway, J., Magyarosi, Z, Ronacher, E., Tucker, M., Peshkepia, A., McKenzie, J. (2011): Independent Technical Report, Georgia Lake Lithium Property, Beardmore, Ontario, Canada, prepared for Rock Tech Lithium Inc., dated Mar. 25, 2011.
- White, A.J.R. and Chappell, B.W. (1983): Garnitoid types and their distribution in the Lachlan Fold Belt, southeastern Australia; in Circum-Pacific Plutonic Terranes, Geological Society of America, Memoir 159, p.21-34.
- Williams, H.R. (1991): Quetico Subprovince; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, p.383-404.
- Zayachivsky, B. (1985): Granitoids and rare-earth element pegmatites of the Georgia Lake area, northwestern Ontario; unpublished M.Sc. thesis, Lakehead University, Thunder Bay, Ontario, 234p.

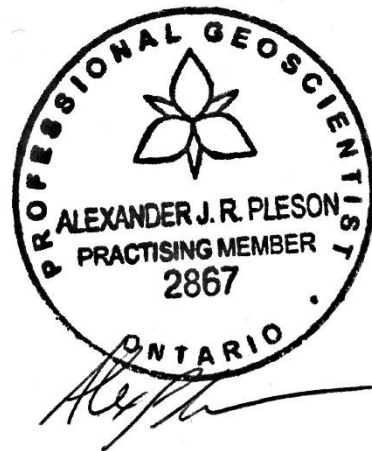
## 12.0 CERTIFICATE OF AUTHOR

I, Alexander Pleson, P.Ge., as an author of this report regarding the exploration project in the Thunder Bay Mining District, Northwestern Ontario, Canada; do hereby certify that:

1. I am a consulting geologist at Pleson Geoscience of Nipigon, ON, CA P0T 2J0
2. I have B.Sc. degree in Geology from Lakehead University.
3. I am registered as a Professional Geologist in Ontario (License #: 2867).
4. I have been practicing as a professional since 2017, and have 10 years of experience in mineral exploration.
5. The exploration work was carried out under my supervision and I was on site through the duration of the project.
6. The tasks outlined in this report were completed, in part, to gain a portion of ownership in the property

Dated: January 8th 2019

Signed and Sealed:



**APPENDIX A**  
**LIST OF PERSONNEL WORKED ON EXPLORATION WORK**

## **List of Personnel / Contractors Involved on the Project**

- 1. Alexander Pleson, P.Geo., - Geologist of Nipigon, ON (Pleson Geoscience)**
- 2. Luke Goodman - Prospector of Beardmore, Ontario (Pleson Geoscience)**
- 3. Mike Goodman – Prospector of Beardmore, Ontario (Pleson Geoscience)**
- 4. Phil Houghton – Prospector of Beardmore, Ontario (Pleson Geoscience)**

**APPENDIX B**  
**STATEMENT OF EXPENDITURES**



Project Expenses			
Item	Rate	Duration	Total
Prospecting	1200	3	3600
Geologist	600	3	1800
Report and Planning	600	2.5	1500
Travel	0.6	793	475.8
Supplies	103.4	1	103.4
Assays	169.22	1	169.22
ATV	50	3	150
Total			7798.42

**APPENDIX C**  
**LABORATORY CERTIFICATE OF ANALYSIS**

Quality Analysis ...



Innovative Technologies

**Date Submitted:** 24-Jul-18  
**Invoice No.:** A18-09822  
**Invoice Date:** 21-Aug-18  
**Your Reference:**

**Pleson Geoscience**  
118 Greenmantle Dr.  
Nipigon Ontario P0T 2J0  
Canada

**ATTN:** Alex Pleson

## CERTIFICATE OF ANALYSIS

5 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 8-Li (Sodium Peroxide Fusion) Sodium Peroxide Fusion

**REPORT**      **A18-09822**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Emmanuel Esemé". The signature is stylized and written over a horizontal line.

Emmanuel Esemé, Ph.D.  
Quality Control

ACTIVATION LABORATORIES LTD.  
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5  
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

## Results

Activation Laboratories Ltd.

Report: A18-09822

Analyte Symbol	Li	Li2O
Unit Symbol	%	%
Lower Limit	0.01	0.01
Method Code	FUS- Na2O2	FUS- Na2O2
294410	0.17	0.36
294411	1.34	2.88
294412	1.10	2.37
294413	1.12	2.40
294414	1.49	3.22

**APPENDIX D**  
**ACTIVITY LOG**



Date	Location	Mining Cell Claim	Description
June 4th 2018	Nipigon		Plan prospecting locations, data compile, maps
June 5th 2018	Koshman Occurrence	344288 143571 312300 344289	Prospect area based on 2012-2014 John Scott recon, traverse from road at Gathering Lake outfitters towards possible Koshman occurrence
June 6th 2018	Koshman Occurrence	344288 143571	Prospect Koshman historic workings for dykes and features to accurately georeference MacVeigh map
June 7th 2018	Nelson Occurrence	239493 239492	Prospect large pegmatite outcrop visible on sat photo, traverse general area of possible Nelson occurrence, sampled spodumene bearing dyke which is most likely same dyke as original discovery