# Assessment Report

# Lithogeochemical Sampling

# Pyrophyllite Project

# Mill Brook, Cape Breton County, N.S.

# 11K01B

by

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Commissioned by

Harry Cabrita, President & CEO, Nova Copper Inc.

December 2019

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# SUMMARY

Work done by Coxheath Resources in 2006 and 2007 to evaluate the extent of the Mill Brook Pyrophyllite Showing investigated by the NSDNR in the fall of 2002 (Kontak, et al. 2003, 2004) confirmed the quality of pyrophyllite in an historic 40m long “quarry” exposure west of Mill Brook and in a trench they emplaced approximately 100 m to the NNW of this quarry. As only three 1 m channel samples were taken at that time across a discontinuous exposure within a partially filled in trench, a more rigorous sampling was carried out in Nov. 2019 on a newly located outcrop ridge located 25 m south of the NSDNR trench. (“Ridge Showing”).

Here 6 continuous channel samples ranging in width of 0.5 to 0.9 m were taken over 3.6 m of a 6.0 m exposure. Major oxide analysis of these samples indicated consistent aluminum oxide values of 20.11 - 24.8 weight per cent (avg. 21.51%). Unaltered rhyolite averages 12-15% $Al_2O_3$. Silica content averaged 70% indicating the original rock to be of rhyolitic composition. The chemical results showed the pyrophyllite also to be very low in Na, K, Ca, Mg and Fe oxides. From x-ray analysis D. Kontak calculates the mineralization to be 50-90% by weight pyrophyllite.(Kontak et al., 2004)

The pyrophyllite exposure that trends NNW is now confirmed to be at least 175 m in length. It has been reported by Kontak et al to be approximately 15 m in width. This heavily clay altered zone is either massive or heavily foliated with the cleavage ranging from 312°Az /50°NE to 330° Az /70° NE. The minerals in thin section are aligned parallel to this fabric and are either “synchronous with or pre-date fabric development” (Kontak et al 2004). The vertical component of this zone might align with this fabric. (This has yet to be tested!)

A northern limit to the Mill Brook Showing was noted to be 88 m north of the NSDNR trench, where Carboniferous sediment outcrop was found. An angular pyrophyllite rich boulder was found some 48m north of the trench.

An experiment to see if fir twigs could be used to trace pyrophyllite showings through wooded areas failed to show any significant uptake of some trace metals (such as Al, Ba, Sr, Zr ) elevated in the pyrophyllite. No decernable difference in metal content was seen in tree samples taken near the pyrophyllite outcroppings and those in unaltered host rocks.

# INTRODUCTION

In discussion of the mineral potential of the Coxheath Claim group, now under control of a private owner, Nova Copper Inc and attention has been given to the potential of epithermal gold/silver. Of the coeval Hydrinian volcanics to the porphyry copper/molybdenum/gold intrusives that were extensively investigated in 2005-2010 period by Coxheath Resources / Silvore Fox Ltd.

Various exploration activities were conducted in these volcanic rocks: geologic mapping, rock sampling, IP surveys and some drilling (Mountain Zone), primarily in the Mackenzie, Morrison and Mill Brooks. Only trace silver and gold have been found to date However zones of intensive phyllic alteration have been located in proximity to faults and associated with heavy pyrite and sericite in the MacKenzie and Morrison Brooks areas. The areas have deep chargeability anomalies and have yet to be drill tested.

Zones of intensive argillic alteration have been noted in the easternmost areas of the volcanic terrain, particularly in the Mill Brook Area where two pyrophyllite showings are located. The Main Mill Brook Pyrophylllite Showing had been sampled and trenched in a limited manner by the NSDNR in 2002 (Kontak et al 2003 and 2004).

Higher levels of barium within the pyrophyllite prompted them to postulate a genetic link to the Copper Brook high grade copper showings as barium rich potassic feldspar is present in the ore zones there. (Kontak, et al 2003).

The buoyant price of industrial grade pyrophyllite prompted Coxheath Resources to look at the Mill Brook area more closely culminating with some limited mapping, sampling and the drilling of 3 holes (Jensen 2005)

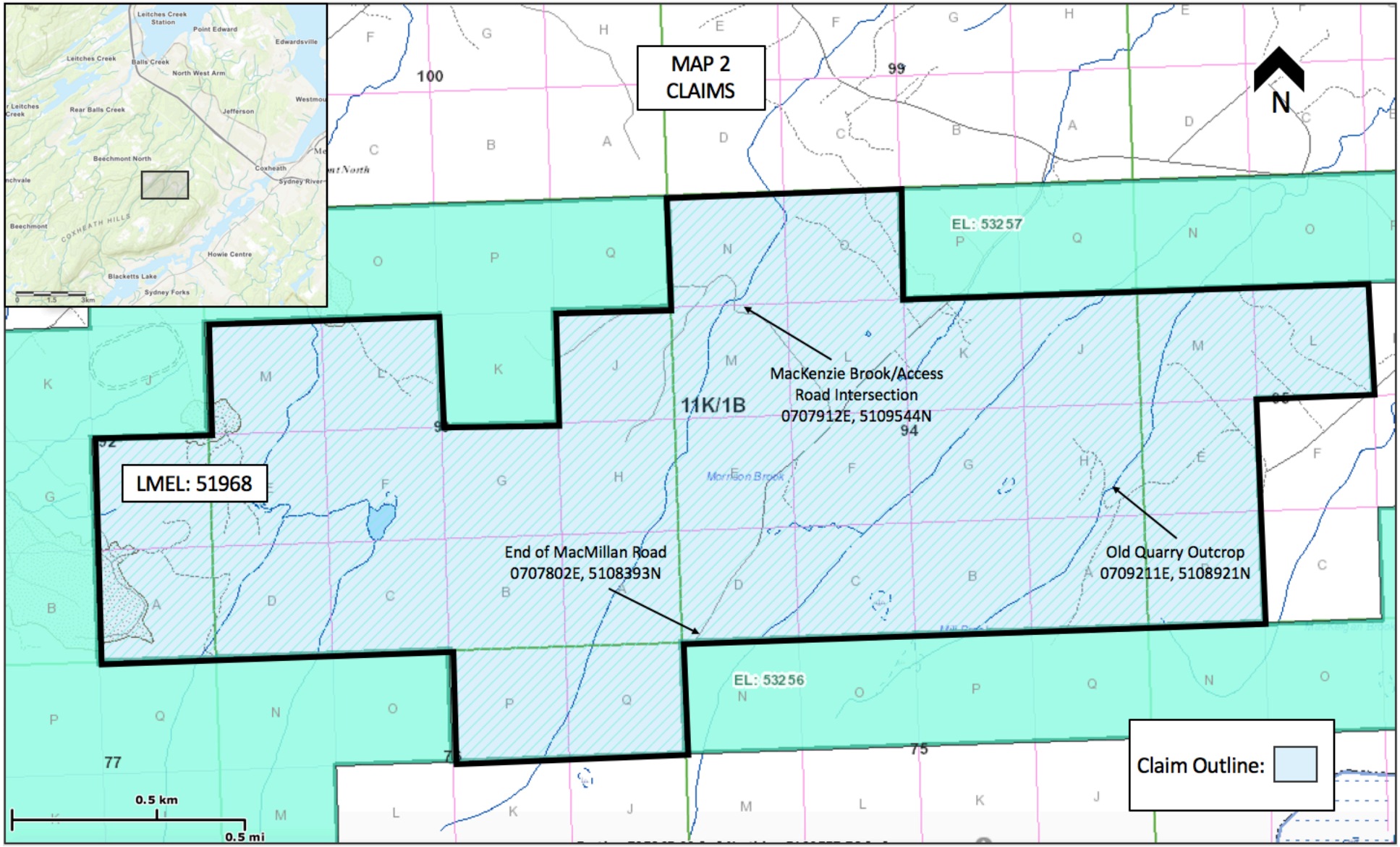
The need for more confidence in the limits of the mineralization, its chemical consistancy, and its vertical dip prompted this work.

# LOCATION, ACCESS AND TOPOGRAPHY

The claim block is located 6 miles. WSW of Sydney, N.S. with the center of the property at LAT 46 07’ 30” and LONG 60 17’ 00”

Assess to the property is excellent via paved highway from Sydney 12 miles of travel and good paved and gravel secondary roads. (The Beaton Road)

The property occupies the NE side of the Coxheath Hills that reach a peak elevation of 500 feet. Three brooks cut the claims MacKenzie, Morrison and Mill Brook producing 200 foot valley walls. The property is heavily treed with mixed hardwoods and conifers (mostly fir).


MAP 2
CLAIMS
N
EL: 53257
EL: 53256
11K/1B
LMEL: 51968
MacKenzie Brook/Access
Road Intersection
0707912E, 5109544N
End of MacMillan Road
0707802E, 5108393N
Old Quarry Outcrop
0709211E, 5108921N
Claim Outline:
0.5 km
0.5 mi

# TABLE 1

# LIST OF CLAIMS

| Licence # | Tract | Claims |
|---|---|---|
| 51968* | 76 | PQ |
| | 92 | AH |
| | 93 | ABCDEFGHJLM |
| | 94 | ABCDEFGHJKLMNO |
| | 95 | CDEFGKLM |

*Licence was issued to Nova Copper Inc. Date of issue: 2017-11-16

This report of work done on the licence is by Lyndon Jensen on behalf of Nova Copper Inc.

# PRESENT WORK

A careful examination of the main Mill Brook Pyrophyllite Showing was carried out in mid November by the author and an assistant. This consisted of some geological mapping, the locating of a new outcrop of high grade pyrophyllite and a more rigorous channel sampling of this new outcrop than previous done on outcrop exposed by a trench emplaced by NSDNR in 2002.

In addition two days were spent trying to locate other historic pyrophyllite showings reported on and sampled by J Midgley in 1917 using a rough hand drawn sketch map he submitted to the then NS Department of Mines at the time. In spite of careful inspection of the presumed locations of these showings, only volcanic outcrop ridges were observed in some of the locations with no pyrophyllite showings being observed!

The dates worked and personnel are as follows;

| | |
|---|---|
| Lyndon Jensen | Nov 04, 05, 06, 07, 12, 13 |
| Giovani Holmes | Nov 04, 05, 06, 07,12, 13 |

# PREVIOUS WORK

Pyrophyllite or. “Fire Clay” was discovered in the early 1900’s in the Mill Brook. Area and reported on by Meissner (1900). A mining engineer John Midgley conducted an extensive search for fire clay. He reported on locating 17 pyrophyllite showings and assayed some 16 samples of unknown size. Most of them averaged approximately 14% $Al_2O_3$. Midgley’s values were consistently lower than those reported on by subsequent workers from the same outcrop by 5% , suggesting the methology for analysis was not as efficient as modern techniques. Unfortunately he included only rough hand drawn sketch of these occurrences with his 1917 report, with no local landmarks being shown on his map.
Attempts by various explorationists to confirm this work over the years, have not been successful!

A small quarry was operated by the Dominion Steel Company in the early 1900’s along the outcrop ridge along the west side of Mill Brook for use as a flux to extract contaminants from the iron melt.

To determine the strike extent of this showing a total of 200m in 4 trenches were dug by P. Finck of the NSDNR and reported on by D. Kontak and J Dewolfe (Kontak, et al 2003, 2004). Geochemically elevated barium within the pyrophyllite prompted these authors to propose a genetic link to the Coxheath Cu/Mo/Au porphyry mineralization as its associated barium enriched potassic feldspar to the west.

Coxheath Resources Ltd conducted a limited prospecting and lithogeochemical sampling program in the summer of 2006. This was followup with a 267 m NQ drill program in the winter of 2007 in 3 holes to determine the vertical orientation and extent of the pyrophyllite zone outlined by the NSDNR. A 5-6 m wide pyrophyllite zone some 450m to the SSE was relocated and sampled along the east side of. Mill Brook. (Jensen 2007)

The dip direction of the main Mill Brook Prophyllite zone could not be determined as no pyrophyllite was cut in a moderately inclined easterly trending drill hole. It did lead to conclusion that the mineralization did not trend vertically or dipped towards the west.

Matrix GeoTechnologies Ltd of Toronto under contract with Silvore Fox Minerals completed 2.0 line kilometers of gradient IP to a survey depth of 250 m on four one hundred meter spaced lines in July 2008. A weak chargeability anomaly is associated at depth >200m and extending to >500m depth in the area of the pyrophyllite zone. Of note is that weak chargeability and higher resistivity is apparent from surface to 200m which may trace the alteration zone.

# GEOLOGY

The claims are underlain by Late Pre Cambrian (Hadrynian) volcanic rocks. In the Mill Brook area, these rocks consist of brick red and grayish red subarial muddy ignimbritic tuffs interbedded with coarser (up to pebble size tuffs) with rarer thin flow banded rhyolite. Ridges of massive porphyritic rhyolite have been observed particularly east of Mill Brook.

Drilling in 2007 indicate that the volcanics dip some 50 to 75 NE. The volcanics are fairly fractured and jointed and cut by barren quartz, calcite and montmorillinite veinlets with no sulphides being found.

Zones of intensive argillic alteration have been located in the Mill Brook area containing abundant pyrophyllite, minor diaspore and kaolinite indicating the preservation of a high sulphidization system in this locality. Kontak et al. 2003 postulates a genetic link to the Cu/Mo/Au porphyry mineralization westward in the Beechmont Road area due to the fact both the pyrophyllite and the potassic feldspar alteration associated with the sulphide rich zones there have elevated levels of  barium.

# LITHOGEOCHEMICAL SAMPLING

A total of sixteen rock samples were tested for major oxides by the Lithium borate fusion. ICP -OES finish at Dalhousie University Engineering Centre. The preparation of the samples and the methodology of analysis is given in Appendix B along with the results. Sample description and some field structural observations are given in. Appendix A. The location of the samples are given in Map 2.

The prime focus of this sampling was to test for continuity of the major elements throughout a new pyrophyllite outcrop exposure located approximately 30m S of the 2002 NSDNR northwesterly mineralized trench. The exposure was 6m wide (apparent width). Six continuous channel samples ranging in width 0.5 to 0.9m were taken from east to west across the exposure (R2 to R7) and one 0.5 m thick sample (R#8) further to the west after a 1.5 m unsampled gap. Sample 2A was a duplicate run to test for possible variation in analysis.

In comparing the alumina results with that of previous sampling in the NSDNR trench, all samples were within 0.5% of each other. The alumina averaged 22.47%. Moreover the rest of the metal oxides were quite low: Na (.04%), K (.02%), Ca (.09%), Mg (< 0.01%), Fe (.46%), Ti (.70%) and P (.18%). This indicates a quality “mid range” (Kontak, et al 2004) alumina pyrophyllite product exists in the Mill Brook Pyrophyllite Zone.

Thew western side of the exposure seems to be more siliceous (apporximately by 4%. This is in part due to some 2-3 cm cross cutting quartz veins. This trend was also seen in the NDDNR trench sampling.

R 1 sample was from an angular boulder field occurring 48 m north of the of the NSDNR northernmost mineralized trench. If this area is trench to bedrock, it might extend the mineralization further north. Unfortunately at 88 m north of the trench Carboniferous sediment outcrop was observed along a small tributary.

# BIOGEOCHEMICAL SAMPLING

As an experiment to see if a biogeochemical exploration technique could be employed to trace pyophyllite alteration zones through treed areas within the claims, a small fir twig sampling was done. If sufficient spruce trees existed in the area, spruce bark would have been first choice of a sampling medium.

Eight samples were taken, 5 over known pyrophyllite showings. (See Map 2) and 3 in areas where unaltered host rocks were present.

The samples were sent to Activation Laboratories of Ancaster Ontario. The twigs samples were ashed and the ash run fir some 59 elements using $HNO_3$- $H_20_2$ digestion with a ICP/MS finish. (See methodology details and results in Appendix C.)

Ba, Sr, Zr had been shown to be elevated within previous sampled pyrophyllite in the Mill Brook area. In addition, the high alumina content might show up in the aluminum content of the fir twigs.

Unfortunately there was little uptake in these or any other metals in all the samples. Also there was no discernable difference between the fir twigs uptake over altered zones or over fresh host rock volcanic lithologies.

# LOCATING J. MIDGLEY'S PYROPHYLLITE OCCURRENCES

Seventeen pyrophyllite occurrences were reported by J. Midgley in 1917. He attached a hand drawn rough sketch map of these showings and indicated where 16 samples were taken along with 5 samples from the Mill Brook quarry outcrop. They were run for $SiO_2$ , $Fe_2O_3$ $Al_2O_3$ CaO and MgO. Overall alumina values averaged 15.38%. He sampled the same outcrop that was quarried on Mill Brook as was sampled by. Kontak et al in 2004. Midgley's results averaged 14.74% alumina as opposed to Kontak's 20% average a difference of 5% lower. This indicates his analytical methodology was probably not as precise in 1917 as today.

Because of the lack of local geographic features on his map, attempts by previous workers to relocate these occurrences have met with little success. A best guess locations of these showings were determined and resistered in the GPS. ( see some of these in Map 3). Two days were devoted to try and confirm these showings.

He mentioned in his report that he encountered "felsites of a variable dip but generally the strike aligned with the ridges" and he did "considerable prospecting in the form of trenching and crosscutting". Ridges of reddish gray andesitic and rhyolitic tuffs and some porphyritic rhyolite were indeed found in the. M3-5, M2 and M8,14 areas. Careful prospecting along and at the base of these ridges failed to locate any pyrophyllite alteration or evidence of old trenching. Other occurrences were prospected and not even any outcrop was located!

Using the SW Mill Brook pyrophyllite showing as an example. There a 5m wide pyrophyllite showing was trenched and some small amount of ore stockpiled. This showing ran parallel to the outcrop ridge at its base (020°Az). (Jensen, 2007) Perhaps crude trenches dating back to 1917 might now be covered by slumped rock talus and/or vegetation has covered these areas of ground disturbance. Sadly no additional pyrophyllite showings were found!

# CONCLUSIONS

The main Mill Brook Pyrophyllite showing is now firmly established as being a NNW trending heavily pyrophyllite altered zone at least. 175m in length. The zone pinches and swells and is reported by Kontak, et al 2004 to be up to 15m in apparent width.

The vertical extent and dip direction of this zone is still not firmly established at this time. From previous drilling, it is definitely not vertical or moderately dipping to the west. It in fact appears to be subparallel to a pervasive cleavage fabric that strikes variably from 330° to 350° Az and dips. 50° to 70° NE.

An old trench along the east side of Mill Brook some 450m to the SE of R10 location exposed a 5-6m wide pyrophyllite  The zone strikes  to the. NNE (020° Az). If Mill Brook occupies a fault (030°Az ) it may  be  the displaced extension of the main Mill Brook showing?

# RECOMMENDATIONS

The Mill Brook Zone still needs further evaluation as to the variability of the width of the alteration at say 25m intervals along its strike using an excavator. Exposures uncovered should be washed down mapped and continuous 1 m long channel samples taken.

The northern extent of the zone should also be established with the use of the excavator.

The problem of establishing its dip component and what depth it extends to is complicated by the rugged terrane along the NE side of Mill Brook. An air track drill would be more maneuverable. Holes should be drilled initially at -45° and steepened if zone is successfully cut.

# AUTHORS CERTIFICATE

1) I Lyndon R. Jensen. Reside at : 48 Perrier Drive
New Minas
Nova Scotia B4N4C3

2). I have a Bachelor of Science degree in Geology from. Dalhousie University and have been a practicing exploration geologist for the past 40 years, most of the work has been with major mining companies and midsize exploration companies here in the Atlantic Provinces.

3) I am president of a consulting company called Bluenose Gold Exploration Ltd which has been in operation since 1994.

4) This report is based on direct involvement , geological mapping, rock sampling, etc on claims under exploration. L# 51968.

5) I am responsible for the preparation of this assessment report. I had assistance by Giovani Holmes in preparation of the maps accompaning this report.

Dated the 11th day of. December, 2019

Lyndon R Jensen
President of Bluenose Gold Exploration Ltd.

# REFERENCES

Jensen , L.R. 2007. Assessment Report, Drilling of Pyrophyllite Claims. Coxheath Project, Cape Breton. County, NTS 11K01B

Kontak, D.J, DeWolfe, J. And Finck, P.W. 2003 The Coxheath Plutonic-Volcanic Belt (NTS 11K/01B: A Linked Porphyry-Epithermal Mineralized System of PreCambrian Age NSDNR. report 2003-1

Kontak,D.J., DeWolfe, J and Finck , P.W. 2004 Pyrophyllite Occurrences in the Coxheath Area, Cape Breton Island, NSDNR. Open File Report. ME 2004-1

Meissner, 1900 Coxheath Assessment Report and Analysis AR # 00C 27(02)

Midgley, J. 1917, Report on the Fireclays at Scotch Mountain, C. B. NS Dept of Mines. Assessment Report. 11K01B 09-C-27 (04)

O'Reilly, G.A. , 2003, Coxheath Mountain Pyrophyllite: Economic Possibilities; in Nova Scotia Minerals Update V20, No 1 Winter 2003. , NSDNR Mineral Resources Branch, p 5

# APPENDIX A

# ROCK SAMPLE DISCRIPTION AND STRUCTURAL DATA FIELD NOTES

# ROCK SAMPLES

**R1**: 25cm x 30cm Angular boulder of highly silicified altered rhyolite (pyrophyllite) (709192E, 5109097N) it is 48m N of the NSDNR trench.
-Has 2 mm quartz veins scattered through it with biotite
- Appears to be fairly brecciated with dark grey silicified veinlets and patches
- Looks a lot like the contact phase of the NSDNR trench pyrophyllite showing

**R2-R8**: Half meter channel samples starting from E and moving W along the northern section of a ridge outcrop with heavy pyrophyllite alteration (709178E, 5109018N):

- **R2**: 0-0.5 m,[0.5 m], **R3**: 0.5-1.1 m [0.6 m], **R4**: 1.1-1.6 m [0.5 m], **R5**: 1.6-2.3 m [0.7 m], **R6**: 2.3-3.2 m [0.9], **R7**: 3.2-3.6 m [0.5 m], unsampled gap of 1.5 m to 5.1 m, **R8**: 5.1-6.0 m [0.9 m]

- Outcrop flat, massive, unable to chisel and sledge to get sufficient fresh sample material in the unsampled gap area.
- Cleavage striking 312°Az, dipping 55° to the NE
- Jointing 118°/80° to the NE
- More jointing 074°/90°
- More jointing 025°/45° toward NW
- 6 m apparent width of this section

**R9**: Taken from northern end of quarry face (709211E, 5108921N)
- Small faults, 150°/65° toward SW, slickensides dipping 20° down toward the E
- (Southwestern block moved past northeastern block toward E)
- Another fault 106°/65° toward NW
- Slickensides dipping 20° to the NE. Here, (SE moved past NW to E)
- Some jointing 080°/85° toward S
- More jointing striking 138°, dipping 70° toward NE
- More joints oriented 158°/80° toward E
- More joints oriented 165°/20° toward E
- Cliff face itself strikes 040°

**R10**: Rhyolitic tuff in Mill Brook (709242E, 5108935N)
- Well sorted, fine grained
- May be intrusive
- Foliation striking 330°Az and dipping 70° to the NE
- Exceptionally jointed, every 5-0cm. Mostly striking 048°/80° toward the W
- Some jointing going 078°/80° toward NW
- Outcrop very light/tan colour, similar to pyrophyllite
- Quite silicious, may run pyrophyllite alteration
- ~1m sample
- Similar material directly in the river bed another 5m north
- These outcrops are 35m SE from quarry face along 165° trend.

**R11**: Taken west from R9 on the other side of quarry face (709197E, 5108930N)
- Foliation striking 342°Az, glacial striae striking 010°
- Some shear foliation almost like slickensides parallel to the cleavage . It dips 55° NE
- Eastern portion moved past western portion to the N along the strike of the foliation.

**R12**: From outcrop on the W side of the N portion of the pyrophyllite ridge (709180E, 5108979N)
- Cleavage striking 335 Az and dipping 50°NE
- Outcrop ridge 8.5m in width.

**R13**: Porphyritic rhyolite (709234E, 5108956N)
- Just NE of quarry face, between pyrophyllite ridge and Mill Brook some grayish red to pinkish-beige in colour.

**R14**: Originally taken as a specimen sample (709630E, 5108690N)
- Same location as M19
- Rhyolitic tuff from valley hillside behind W. Ball's farm

**Office Sample**: Taken from the "SE Mill Brook Showing" spoil pile (709023E, 5108532N) (note change this name to "SW Mill Brook Showing"

## FIR TWIG SAMPLES

**T1**: Taken from directly on top of R2 outcrop, trunk 20cm in diameter (709178E, 5109018N)
**T2**: Taken 7m south of NSDNR trench, trunk 10cm in diameter (709178E, 5109040N)
**T3**: Exploratory, taken 21m north of NSDNR trench, trunk 10cm in diameter (709175E, 5109068N)
**T4**: Taken from the quarry outcrop, same location as R9 (709211E, 5108921N)
**T5**: Taken from red rhyolite outcrop on hill to the west of access road (709157E, 5108928N)
**T6**: Taken from the top of the same red rhyolite hill as T5 (709128E, 5109008N)
**T7**: Taken from the SE showing spoil pile (709023E, 5108532N)
**T8**: Taken from the R12 pyrophyllite ridge outcrop (709180E, 5108979N)

## MIDGLEY 1917 SHOWINGS

M19 Search: Volcanic ridge outcrop (709630E, 5108690N)
- Running E-W and extending >150m long
- ~50m wide valley separates ridge from another ridge parallel
- Rocks are unaltered grey volcanic tuffs

M2 Search: 2 ridges striking 018° (709420E, 5108866N)
- About 30m apart, outcrop consists of light reddish grey, medium grained tuff
- No sign of pyrophyllite at all

M3 Search: (709213E, 5108050N)
M8 Search: (708955E, 5109050N)
M15 Search: (708972E, 5109173N)
M16 Search: (709160E, 5109240N)
M20 Search: (709360E, 5108129N)

## ADDITIONAL OUTCROP DESCRIPTIONS

### Unnamed Brook (west of Mill Brook ) outcrop (708986E, 5109387N)

- Western side of brook
- Broken up fragmented rhyolitic tuff

- Contact between bedding striking 040°
- Coarse pyroclastics, fragments ranging from 0.25-2cm over a zone of 4m wide
- Lots of joints dipping toward NW at 70°

Carboniferous outcrop: In Mill Brook tributary (709208E, 5109137N) 88m north of the NSDNR trench.( Limits the strike of the pyrophyllite)
- Outcrop striking 070° on northern side of west to east flowing tributary
- 1.5m thick Red mudstone
- Bedding difficult to see but significant amount of fracturing striking 070° and dipping 75° to the N
- Some joints in rock striking 042° and dipping 90°, others striking 047° and dipping 90°
- Approximately 0.5m of unexposed material

- Stratigraphically above mudstone get 1.5m thick conglomerate bed , containing sub-rounded volcanic clasts, with average size of clasts 5-6cm
- the conglomerate bed contains some cobbles up to ~25 cm in diameter! This conglomerate occurs in a channel facies at least 10m in length.
- Above conglomerate bed, there is a very coarse sandy conglomerate about ~1m thick containing very poorly sorted clasts with average sizes ranging from 1 to 2cm in diameter .

Pyrophyllite ridge outcrop beginning near historic CB11 sample (Jensen ,2006) (709178E, 5109018N - Northern point of ridge)
- Ridge strikes North/South, begins about 20m south of NSDNR trench which strikes 090°
- Old trenching ~17m south of CB11. Two trenches strike E/W, approximately 10m long x 1m deep
- Whole ridge appears to be pyrophyllite, with varying grade
- Foliation running 332 Az and dipping about 50° toward the East (away from drilling)
- Quartz vein cutting through couple of cm, striking 050° and highly broken up by foliation. Vein itself 1.5cm but now is angular breccia fragments
- Jointing striking 153° and dipping 90°
- Small fault along joint (slickensides dipping 40° toward south)

# ADDITIONAL COORDINATES

Old Pit (age?) (709165E, 5109002N)
West end of NSDNR trench (709171E, 5109049N)
East end of NSDNR trench (709184E, 5109044N)
Porphyritic Rhyolite outcrop (709230E, 5108903N)
Mill Brook outcrop - Red rhyolite tuff (709136E, 5108774N)
Coxheath Trail system Bridge (709127E, 5108185N)

# APPENDIX B

# ANALYTICAL METHODOLOGY AND LITHOGEOCHEMICAL RESULTS

**Minerals Engineering Centre**

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1360 Barrington Street
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# Sample Preparation of Rocks and Core

Samples undergo multiple stage crushing (minus 10.0 mm) with jaw crushers. For rock and core samples requiring gold analysis, samples may be crushed to <3mm using a cone crusher. Crushed samples are riffle split to 200-250 grams, then pulverized with a ring and puck pulverizer (Spex Industries Inc. Shatterbox) to approximately 100% passing 0.15 mm or 75% passing 0.075mm. Equipment is cleaned with jets of air and silica sand between samples.

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# Oxide Analysis – Whole Rock Geochemistry

**($Al_2O_3$, BaO, CaO, $Cr_2O_5$, $Fe_2O_3$, $K_2O$, MgO, MnO, $Na_2O$, $P_2O_5$, $SiO_2$, SrO, $TiO_2$,$V_2O_5$, $ZrO_2$)**

Samples (0.05 to 0.5g) are mixed with a flux of lithium metaborate and lithium tetraborate (2.000g). The mix is fused in platinum crucibles at 1050ºC using a Claisse M4 fusion fluxer. The fusion is quenched and dissolved in 10% nitric acid in a 150ml Teflon beaker. The solution is made up to 250ml in a volumetric flask. Dilutions may be required for analysis of some elements. The elements are determined by ICP OES. Reference samples from CANMET and other recognized agencies are analyzed with the samples to ensure that the fusions, digestions, and ICP OES analysis are complete and accurate.

Loss on Ignition (LOI) is performed using porcelain crucibles and a muffle furnace. A 0.5000 to 1.0000 gram sample is weighed into the porcelain crucible and heated to 1000 ºC for one hour. The weight loss is calculated and reported as % LOI.

Reference: U.S. Geological Survey Bulletin 1401
Rapid Analysis of Silicate, Carbonate
and Phosphate Rocks-Revised Edition
By Leonard Shapiro

Geological Survey of Canada Paper 74-19
Analysis of Rocks and Minerals using
an Atomic Absorption Spectrophotometer
By Sydney Abbey, Naomi J.Lee and J.L.Bouvier

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28-Nov-19

Nova Copper, Inc.
Bedford, NS
Atten: Harry Cabrita

Re: Results of analysis on submitted samples. Major elements by Li-borate fusion, ICP OES finish. Major elements expressed as oxides.

| | Wt. % | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample | Al2O3 | BaO | CaO | Cr2O3 | Fe2O3 | K2O | MgO | MnO | Na2O | P2O5 | SiO2 | SrO | TiO2 | V2O5 | ZrO2 | LOI 1000°C | Total |
| R-1 | 24.81 | 0.07 | 0.11 | 0.08 | 1.14 | 0.01 | <0.01 | <0.01 | 0.02 | 0.25 | 67.52 | 0.10 | 0.98 | 0.01 | 0.06 | 4.69 | 99.88 |
| R-2A | 23.81 | 0.01 | 0.10 | 0.04 | 0.32 | 0.01 | <0.01 | 0.01 | 0.04 | 0.16 | 69.89 | 0.08 | 0.60 | <0.01 | 0.03 | 4.82 | 99.91 |
| R-2B | 24.06 | 0.01 | 0.09 | 0.03 | 0.31 | 0.01 | <0.01 | <0.01 | 0.03 | 0.16 | 69.67 | 0.08 | 0.59 | <0.01 | 0.03 | 4.88 | 99.97 |
| R-3 | 24.40 | 0.04 | 0.07 | 0.03 | 0.32 | <0.01 | <0.01 | <0.01 | 0.04 | 0.17 | 69.29 | 0.08 | 0.57 | <0.01 | 0.03 | 4.74 | 99.77 |
| R-4 | 23.20 | 0.21 | 0.08 | 0.04 | 0.39 | 0.02 | <0.01 | <0.01 | 0.04 | 0.18 | 69.92 | 0.09 | 0.63 | <0.01 | 0.03 | 4.95 | 99.79 |
| R-5 | 22.67 | 0.04 | 0.09 | 0.04 | 0.48 | 0.03 | <0.01 | <0.01 | 0.05 | 0.18 | 70.86 | 0.10 | 0.55 | <0.01 | 0.03 | 4.78 | 99.89 |
| R-6 | 22.39 | 0.03 | 0.08 | 0.05 | 0.40 | 0.02 | <0.01 | <0.01 | 0.04 | 0.20 | 71.37 | 0.13 | 0.66 | <0.01 | 0.04 | 4.48 | 99.88 |
| R-7 | 20.11 | 0.05 | 0.08 | 0.05 | 0.43 | 0.01 | <0.01 | <0.01 | 0.03 | 0.19 | 74.12 | 0.12 | 0.54 | <0.01 | 0.03 | 4.09 | 99.86 |
| R-8 | 20.06 | 0.03 | 0.08 | 0.05 | 0.41 | 0.01 | <0.01 | <0.01 | 0.03 | 0.18 | 74.05 | 0.09 | 0.56 | <0.01 | 0.03 | 4.24 | 99.82 |
| R-9 | 22.29 | 0.03 | 0.12 | 0.06 | 0.65 | 0.03 | 0.01 | 0.02 | 0.03 | 0.24 | 70.64 | 0.18 | 0.68 | <0.01 | 0.03 | 4.82 | 99.84 |
| R-10 | 19.33 | 0.04 | 0.07 | 0.05 | 0.52 | 0.02 | <0.01 | <0.01 | 0.02 | 0.12 | 75.27 | 0.09 | 0.39 | <0.01 | 0.03 | 3.93 | 99.88 |
| R-11 | 21.73 | <0.01 | 0.16 | 0.02 | 0.29 | 0.05 | <0.01 | <0.01 | 0.05 | 0.18 | 72.41 | 0.05 | 0.58 | <0.01 | 0.03 | 4.32 | 99.86 |
| R-12 | 21.01 | 0.01 | 0.16 | 0.06 | 1.04 | 0.04 | <0.01 | 0.01 | 0.04 | 0.29 | 71.32 | 0.24 | 0.73 | <0.01 | 0.03 | 4.86 | 99.84 |
| R-13 | 17.20 | 0.04 | 2.39 | 0.02 | 5.67 | 1.79 | 3.14 | 0.17 | 3.57 | 0.25 | 60.70 | 0.05 | 0.97 | 0.01 | 0.03 | 3.89 | 99.88 |
| R-14 | 11.21 | 0.02 | 1.75 | 0.11 | 21.94 | 0.54 | 3.20 | 0.04 | 0.66 | 0.14 | 52.93 | 0.02 | 0.32 | 0.02 | <0.01 | 6.96 | 99.86 |
| R-14Dup | 11.25 | 0.02 | 1.75 | 0.11 | 21.94 | 0.54 | 3.20 | 0.04 | 0.65 | 0.13 | 53.11 | 0.02 | 0.32 | 0.02 | <0.01 | 6.73 | 99.82 |

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QA/QC Results

| | Wt. % (Measured) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample | Al2O3 | BaO | CaO | Cr2O3 | Fe2O3 | K2O | MgO | MnO | Na2O | P2O5 | SiO2 | SrO | TiO2 | V2O5 | ZrO2 |
| SY-4 | 20.65 | 0.05 | 8.06 | <0.01 | 6.20 | 1.66 | 0.53 | 0.10 | 6.95 | 0.13 | 50.09 | 0.14 | 0.29 | <0.01 | 0.07 |
| Till-2 | 16.01 | 0.05 | 1.28 | 0.01 | 5.49 | 3.02 | 1.86 | 0.09 | 2.23 | 0.18 | 61.02 | 0.02 | 0.87 | 0.01 | 0.05 |

| | Wt. % (Expected) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample | Al2O3 | BaO | CaO | Cr2O3 | Fe2O3 | K2O | MgO | MnO | Na2O | P2O5 | SiO2 | SrO | TiO2 | V2O5 | ZrO2 |
| SY-4 | 20.69 | 0.038 | 8.05 | 0.00175 | 6.21 | 1.66 | 0.54 | 0.108 | 7.10 | 0.131 | 49.9 | 0.14113 | 0.287 | 0.0014 | 0.07 |
| Till-2 | 16.00 | 0.06 | 1.27 | 0.0108 | 5.39 | 3.07 | 1.83 | 0.10 | 2.19 | 0.17 | 60.80 | 0.0171 | 0.88 | 0.0137 | 0.053 |

# APPENDIX C

# ANALYTICAL METHODOLOGY AND BIOGEOCHEMICAL RESULTS

**Activation Laboratory Code 2D Analytical Methodology for Ashed Fir Twigs**

Vegetation samples are ashed at 475°C over a 36 hour period. A proprietary acid digestion is used on the ash. Digested ash samples are diluted and analyzed by Perkin Elmer Sciex ELAN 9000 ICP/MS. A matrix blank and digested blank are each run every 35 samples. Two digested standards are run every 35 samples. Instrument is recalibrated every 70 samples. Duplicates are digested and analyzed every 14 samples. Results are reported on an ash weight basis.

Required Preparation: B3 (drying and ashing at 475°C in dedicated kilns)

*Quality Analysis ...* *Innovative Technologies*

**Report No.:** **A19-15598**
**Report Date:** **09-Dec-19**
**Date Submitted:** **18-Nov-19**
**Your Reference:**

**NOVA COPPER INC**
**1650 GRANDVILLE ST SUITE 1009**
**HALIFAX ON**
**Canada**

**ATTN: GIOVANNI HOLMES**

# CERTIFICATE OF ANALYSIS

8 Vegetation samples were submitted for analysis.

| The following analytical package(s) were requested: | | Testing Date: |
|---|---|---|
| 2D | HNO3-H202 Digestion ICP/MS | 2019-11-28 16:11:23 |
| B3-Ash Report | Ash Report | 2019-12-02 12:57:36 |

REPORT **A19-15598**



Notes:

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

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| Analyte Symbol | Li | Be | B | Na | Mg | Al | Si | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn | Ga | Ge | As | Se |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Symbol | ppm | ppm | ppm | % | % | ppm | ppm | % | % | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.5 | 0.005 | 5 | 0.01 | 0.01 | 2 | 0.2 | 0.01 | 0.1 | 0.5 | 1 | 1 | 1 | 0.1 | 0.01 | 0.01 | 5 | 0.2 | 1 | 0.1 | 0.1 | 1 | 1 |
| Method Code | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS |
| T1 | 37.2 | < 0.005 | 19 | < 0.01 | 0.11 | 80 | 88.0 | 0.60 | 0.9 | < 0.5 | 1 | < 1 | < 1 | 1560 | < 0.01 | 0.03 | < 5 | 3.2 | 42 | < 0.1 | < 0.1 | < 1 | < 1 |
| T2 | 29.9 | < 0.005 | 18 | < 0.01 | 0.07 | 116 | 64.3 | 0.44 | 0.7 | < 0.5 | 1 | < 1 | < 1 | 1380 | < 0.01 | 0.06 | < 5 | 3.5 | 52 | < 0.1 | < 0.1 | < 1 | < 1 |
| T3 | 43.8 | 0.007 | 13 | < 0.01 | 0.08 | 134 | 62.6 | 0.42 | 0.9 | < 0.5 | 1 | < 1 | < 1 | 1010 | < 0.01 | 0.04 | < 5 | 3.2 | 66 | < 0.1 | < 0.1 | < 1 | < 1 |
| T4 | 33.5 | < 0.005 | 15 | < 0.01 | 0.10 | 90 | 68.1 | 0.29 | 0.6 | < 0.5 | 1 | < 1 | < 1 | 2980 | < 0.01 | 0.03 | < 5 | 2.9 | 54 | < 0.1 | < 0.1 | < 1 | < 1 |
| T5 | 49.2 | < 0.005 | 21 | < 0.01 | 0.04 | 82 | 71.7 | 0.44 | 0.5 | < 0.5 | 1 | < 1 | < 1 | 1730 | < 0.01 | 0.04 | < 5 | 4.0 | 56 | < 0.1 | < 0.1 | < 1 | < 1 |
| T6 | 50.6 | 0.005 | 16 | < 0.01 | 0.07 | 141 | 106 | 0.53 | 0.5 | < 0.5 | 1 | < 1 | < 1 | 590 | < 0.01 | 0.09 | < 5 | 3.1 | 49 | < 0.1 | < 0.1 | < 1 | < 1 |
| T7 | 30.1 | < 0.005 | 13 | < 0.01 | 0.06 | 147 | 75.2 | 0.54 | 0.6 | < 0.5 | 1 | < 1 | < 1 | 637 | < 0.01 | 0.05 | < 5 | 2.4 | 38 | < 0.1 | < 0.1 | < 1 | < 1 |
| T8 | 28.3 | 0.008 | 22 | < 0.01 | 0.08 | 207 | 54.3 | 0.56 | 1.3 | < 0.5 | 1 | < 1 | < 1 | 2690 | < 0.01 | 0.04 | < 5 | 2.9 | 49 | < 0.1 | < 0.1 | < 1 | < 1 |

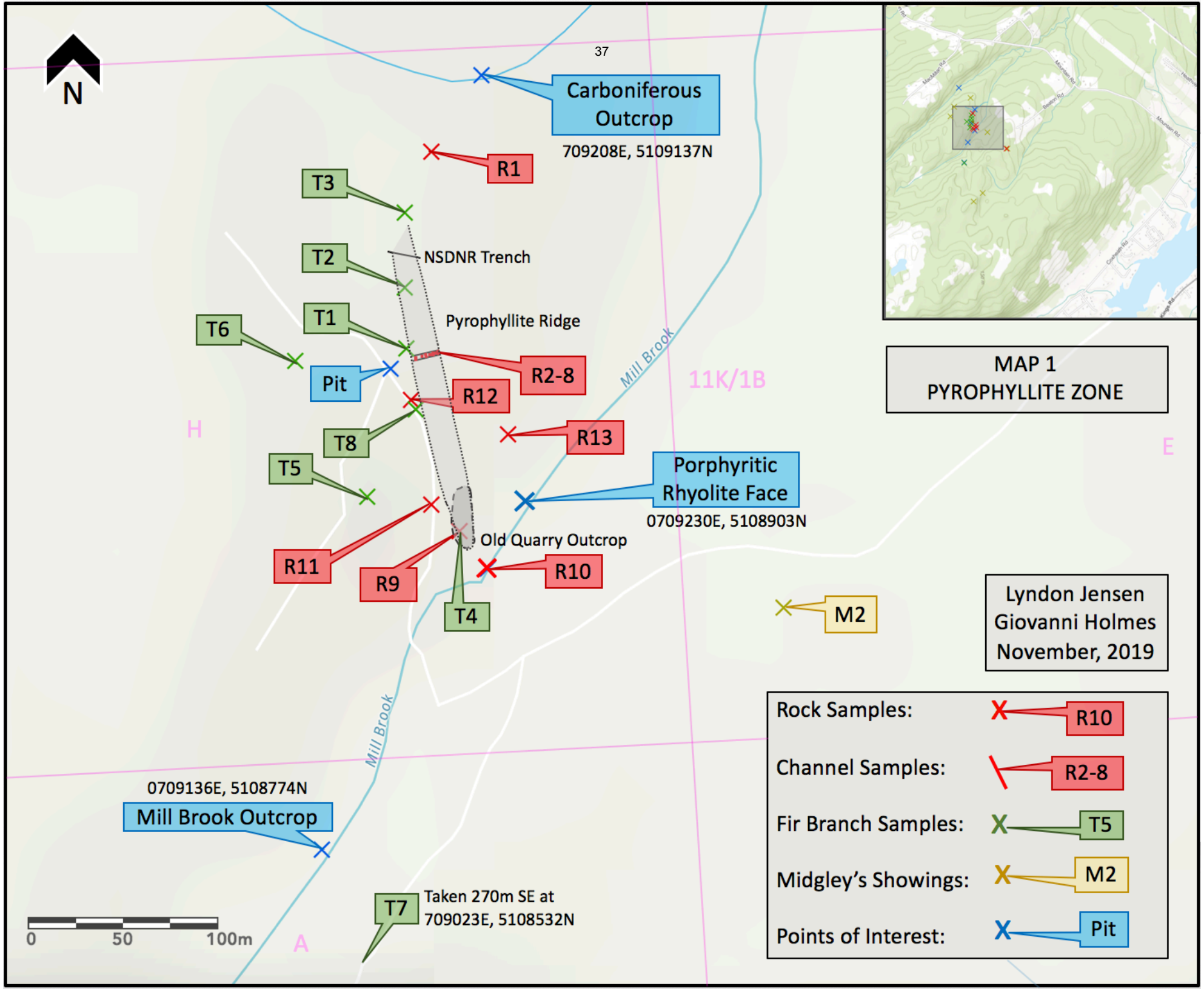
| Analyte Symbol | Rb | Sr | Y | Zr | Nb | Mo | Ag | Cd | In | Sb | Te | Cs | Ba | La | Ce | Pr | Nd | Sm | Eu | Gd | Tb | Dy | Ho |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Symbol | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.01 | 0.1 | 0.001 | 0.5 | 0.005 | 0.1 | 0.2 | 0.01 | 1 | 0.02 | 0.01 | 0.001 | 3 | 0.002 | 0.01 | 0.002 | 0.002 | 0.001 | 0.001 | 0.01 | 0.001 | 0.001 | 0.001 |
| Method Code | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS |
| T1 | 3.50 | 16.7 | 0.010 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.14 | < 1 | < 0.02 | < 0.01 | 0.019 | 10 | 0.023 | 0.04 | 0.005 | 0.020 | 0.003 | < 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| T2 | 3.27 | 22.2 | 0.013 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.32 | < 1 | < 0.02 | < 0.01 | 0.013 | 41 | 0.026 | 0.04 | 0.005 | 0.020 | 0.004 | 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| T3 | 3.48 | 35.3 | 0.019 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.30 | < 1 | < 0.02 | < 0.01 | 0.038 | 19 | 0.037 | 0.09 | 0.007 | 0.027 | 0.005 | 0.001 | < 0.01 | < 0.001 | 0.003 | < 0.001 |
| T4 | 3.62 | 18.2 | 0.014 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.21 | < 1 | < 0.02 | < 0.01 | 0.048 | 13 | 0.024 | 0.04 | 0.005 | 0.020 | 0.004 | < 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| T5 | 4.17 | 18.7 | 0.012 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.29 | < 1 | < 0.02 | < 0.01 | 0.080 | 28 | 0.023 | 0.05 | 0.005 | 0.018 | 0.003 | 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| T6 | 6.30 | 28.6 | 0.014 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.09 | < 1 | < 0.02 | < 0.01 | 0.091 | 46 | 0.028 | 0.05 | 0.006 | 0.022 | 0.004 | 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| T7 | 3.02 | 14.4 | 0.014 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.08 | < 1 | 0.05 | < 0.01 | 0.036 | 41 | 0.024 | 0.05 | 0.005 | 0.020 | 0.003 | 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| T8 | 3.98 | 39.2 | 0.016 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.30 | < 1 | < 0.02 | < 0.01 | 0.077 | 44 | 0.028 | 0.05 | 0.005 | 0.022 | 0.004 | 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |

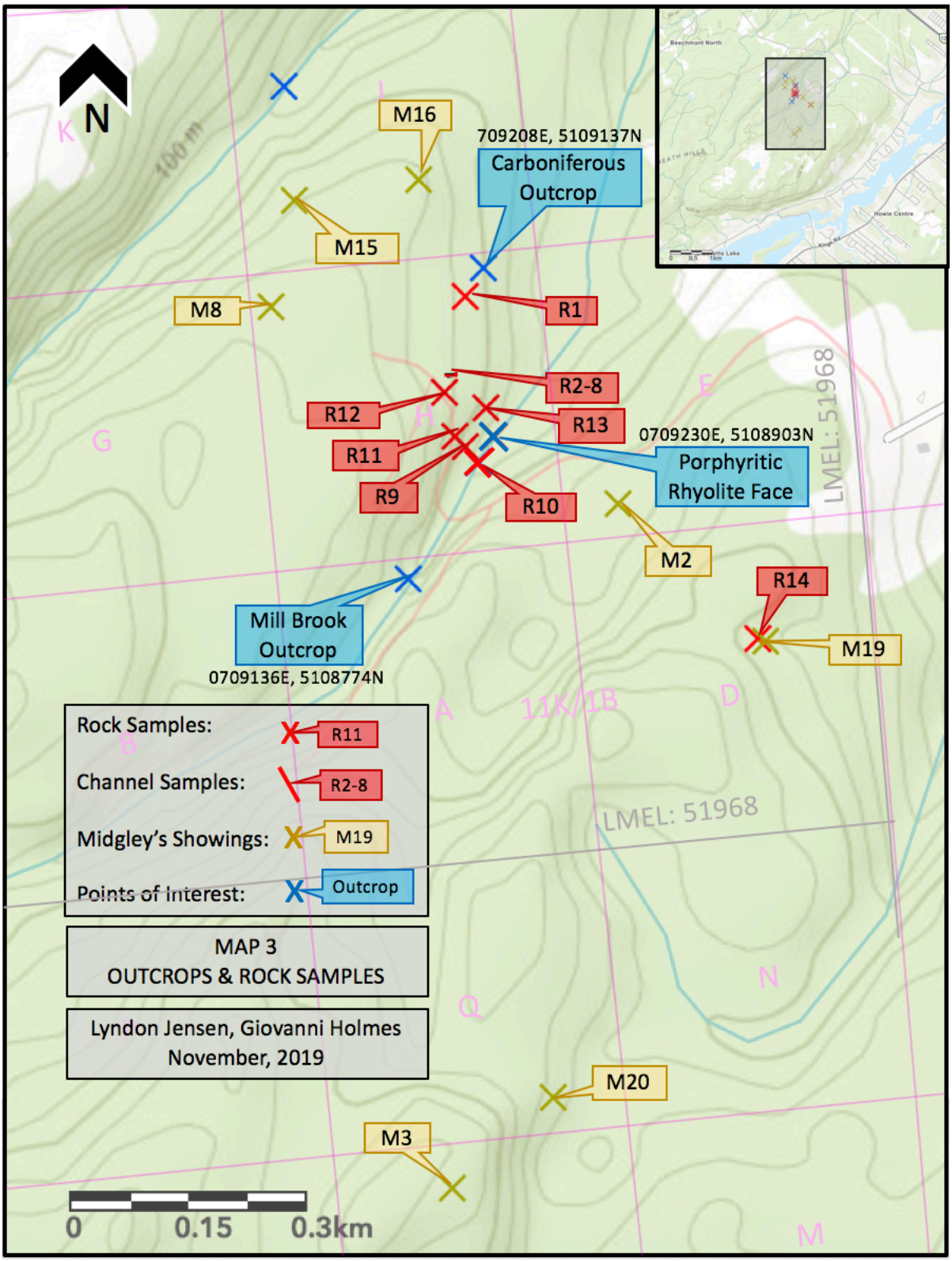
| Analyte Symbol | Er | Tm | Yb | Lu | Hf | Ta | W | Re | Tl | Pb | Bi | Th | U | % Yield | Unashed Weight | Ashed Weight | % Ash |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Symbol | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppb | ppm | ppm | ppm | ppm | ppm | % | g | g | % |
| Lower Limit | 0.001 | 0.001 | 0.001 | 0.001 | 0.01 | 0.001 | 0.5 | 0.1 | 0.001 | 0.1 | 0.05 | 0.001 | 0.001 | | | | |
| Method Code | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | none | none | none |
| T1 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | < 0.001 | 0.3 | < 0.05 | 0.002 | 0.002 | 3.12 | 70.2 | 2.19 | 3.12 |
| T2 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | < 0.001 | 0.5 | < 0.05 | 0.002 | 0.002 | 3.27 | 73.2 | 2.39 | 3.27 |
| T3 | 0.001 | < 0.001 | 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | < 0.001 | 0.2 | < 0.05 | 0.003 | 0.002 | 3.28 | 72.0 | 2.36 | 3.28 |
| T4 | 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | 0.002 | 0.3 | < 0.05 | 0.004 | 0.002 | 3.25 | 70.2 | 2.28 | 3.25 |
| T5 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | 0.002 | 0.3 | < 0.05 | 0.004 | 0.003 | 2.82 | 70.4 | 1.99 | 2.82 |
| T6 | 0.001 | < 0.001 | 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | 0.001 | 0.4 | < 0.05 | 0.003 | 0.002 | 2.32 | 70.1 | 1.63 | 2.32 |
| T7 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | < 0.001 | 0.4 | < 0.05 | 0.003 | 0.001 | 2.88 | 61.2 | 1.76 | 2.88 |
| T8 | 0.001 | < 0.001 | 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | 0.002 | 0.6 | < 0.05 | 0.003 | 0.002 | 3.72 | 70.2 | 2.61 | 3.72 |

| Analyte Symbol | Li | Be | B | Na | Mg | Al | Si | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn | Ga | Ge | As | Se |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Symbol | ppm | ppm | ppm | % | % | ppm | ppm | % | % | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.5 | 0.005 | 5 | 0.01 | 0.01 | 2 | 0.2 | 0.01 | 0.1 | 0.5 | 1 | 1 | 1 | 0.1 | 0.01 | 0.01 | 5 | 0.2 | 1 | 0.1 | 0.1 | 1 | 1 |
| Method Code | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS |
| Coal Ash Std-2 Meas | | 0.457 | 71 | 0.05 | 0.04 | 1710 | | 0.01 | 0.4 | 0.6 | 159 | 3 | 2 | 31.0 | 0.16 | 0.70 | | 3.9 | 4 | 1.5 | < 0.1 | < 1 | < 1 |
| Coal Ash Std-2 Cert | | 0.456 | 70 | 0.05 | 0.040 | 1660 | | 0.010 | 0.40 | 0.6 | 122 | 4.0 | 3.0 | 37.5 | 0.170 | 0.670 | | 3.80 | 5.00 | 0.900 | 0.100 | 1.0 | 1.0 |
| T8 Orig | 27.8 | 0.008 | 22 | < 0.01 | 0.06 | 209 | 55.2 | 0.56 | 1.3 | < 0.5 | 1 | < 1 | < 1 | 2700 | < 0.01 | 0.04 | < 5 | 2.9 | 49 | < 0.1 | < 0.1 | < 1 | < 1 |
| T8 Dup | 28.9 | 0.008 | 22 | < 0.01 | 0.10 | 205 | 53.4 | 0.55 | 1.4 | < 0.5 | 1 | < 1 | < 1 | 2680 | < 0.01 | 0.04 | < 5 | 2.8 | 49 | < 0.1 | < 0.1 | < 1 | < 1 |
| Method Blank | < 0.5 | < 0.005 | < 5 | < 0.01 | < 0.01 | < 2 | 9.3 | < 0.01 | < 0.1 | < 0.5 | < 1 | < 1 | < 1 | < 0.1 | < 0.01 | < 0.01 | < 5 | < 0.2 | < 1 | < 0.1 | < 0.1 | < 1 | < 1 |

| Analyte Symbol | Rb | Sr | Y | Zr | Nb | Mo | Ag | Cd | In | Sb | Te | Cs | Ba | La | Ce | Pr | Nd | Sm | Eu | Gd | Tb | Dy | Ho |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Symbol | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.01 | 0.1 | 0.001 | 0.5 | 0.005 | 0.1 | 0.2 | 0.01 | 1 | 0.02 | 0.01 | 0.001 | 3 | 0.002 | 0.01 | 0.002 | 0.002 | 0.001 | 0.001 | 0.01 | 0.001 | 0.001 | 0.001 |
| Method Code | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS |
| Coal Ash Std-2 Meas | 0.33 | 123 | 2.20 | 2.1 | 0.472 | 0.2 | < 0.2 | 0.04 | 6 | 0.04 | < 0.01 | 0.039 | 326 | 2.25 | 4.06 | 0.462 | 1.83 | 0.362 | 0.073 | 0.36 | 0.059 | 0.295 | 0.061 |
| Coal Ash Std-2 Cert | 0.340 | 128 | 1.98 | 3.10 | 0.418 | 0.200 | 0.100 | 0.040 | 7.00 | 0.050 | 0.050 | 0.043 | 330 | 2.02 | 3.86 | 0.438 | 1.64 | 0.351 | 0.0660 | 0.340 | 0.051 | 0.278 | 0.054 |
| T8 Orig | 4.11 | 39.5 | 0.016 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.28 | < 1 | < 0.02 | < 0.01 | 0.077 | 43 | 0.029 | 0.05 | 0.006 | 0.022 | 0.004 | 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| T8 Dup | 3.84 | 38.9 | 0.017 | < 0.5 | < 0.005 | < 0.1 | < 0.2 | 0.31 | < 1 | < 0.02 | < 0.01 | 0.076 | 45 | 0.028 | 0.05 | 0.005 | 0.022 | 0.004 | 0.001 | < 0.01 | < 0.001 | 0.002 | < 0.001 |
| Method Blank | < 0.01 | < 0.1 | < 0.001 | < 0.5 | 0.036 | < 0.1 | < 0.2 | < 0.01 | < 1 | < 0.02 | < 0.01 | < 0.001 | < 3 | < 0.002 | < 0.01 | < 0.002 | < 0.002 | < 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.001 | < 0.001 |

| Analyte Symbol | Er | Tm | Yb | Lu | Hf | Ta | W | Re | Tl | Pb | Bi | Th | U | % Yield |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Symbol | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppb | ppm | ppm | ppm | ppm | ppm | % |
| Lower Limit | 0.001 | 0.001 | 0.001 | 0.001 | 0.01 | 0.001 | 0.5 | 0.1 | 0.001 | 0.1 | 0.05 | 0.001 | 0.001 | |
| Method Code | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS | NP-MS |
| Coal Ash Std-2 Meas | 0.179 | 0.026 | 0.166 | 0.025 | 0.07 | 0.029 | | | 0.065 | 1.8 | < 0.05 | 0.712 | 0.268 | |
| Coal Ash Std-2 Cert | 0.159 | 0.021 | 0.146 | 0.030 | 0.100 | 0.023 | | | 0.060 | 2.10 | 0.040 | 0.564 | 0.286 | |
| T8 Orig | 0.001 | < 0.001 | 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | < 0.1 | 0.002 | 0.6 | < 0.05 | 0.003 | 0.002 | 3.72 |
| T8 Dup | 0.001 | < 0.001 | 0.001 | < 0.001 | < 0.01 | < 0.001 | < 0.5 | 0.1 | 0.002 | 0.6 | < 0.05 | 0.003 | 0.002 | 3.72 |
| Method Blank | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.01 | 0.003 | < 0.5 | 0.7 | < 0.001 | < 0.1 | < 0.05 | < 0.001 | < 0.001 | |


N
Carboniferous Outcrop
709208E, 5109137N
R1
T3
T2
NSDNR Trench
T1
Pyrophyllite Ridge
T6
Pit
R2-8
R12
T8
R13
T5
Porphyritic Rhyolite Face
0709230E, 5108903N
Old Quarry Outcrop
R11
R9
R10
T4
M2
Mill Brook
11K/1B
H
E
A
Mill Brook
0709136E, 5108774N
Mill Brook Outcrop
T7
Taken 270m SE at
709023E, 5108532N
0
50
100m
MAP 1
PYROPHYLLITE ZONE
Lyndon Jensen
Giovanni Holmes
November, 2019
Rock Samples:
R10
Channel Samples:
R2-8
Fir Branch Samples:
T5
Midgley's Showings:
M2
Points of Interest:
Pit


N
M16
709208E, 5109137N
Carboniferous Outcrop
M15
M8
R1
R2-8
R12
R13
R11
R9
R10
0709230E, 5108903N
Porphyritic Rhyolite Face
M2
R14
M19
Mill Brook Outcrop
0709136E, 5108774N
Rock Samples:
R11
Channel Samples:
R2-8
Midgley's Showings:
M19
Points of interest:
Outcrop
MAP 3
OUTCROPS & ROCK SAMPLES
Lyndon Jensen, Giovanni Holmes
November, 2019
M20
M3
0
0.15
0.3km
LMEL: 51968
LMEL: 51968
11K/1B