

Ministry of Energy and Mines  
BC Geological Survey

Assessment Report  
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geologic

TOTAL COST: \$ 6,159

AUTHOR(S): Scott Allan

SIGNATURE(S): Scott Allan

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): \_\_\_\_\_ YEAR OF WORK: 2015

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): \_\_\_\_\_

PROPERTY NAME: Nonda Creek, Mile 428, Pat

CLAIM NAME(S) (on which the work was done): Nonda 1 (860907) , Nonda 2 (860927) Nonda 3 (1018122), Nonda Barite (950135)

COMMODITIES SOUGHT: Barite

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 0094K001

MINING DIVISION: Liard

NTS/BCGS: 094K13E/094K093

LATITUDE: 58 ° 57 ' 25 " LONGITUDE: 125 ° 31 ' 49 " (at centre of work)

OWNER(S):

1) Fireside Minerals LTD 2) \_\_\_\_\_

MAILING ADDRESS:

Box 32069 Westbank, BC, Canada V4T-3G2

OPERATOR(S) [who paid for the work]:

1) Fireside Minerals LTD 2) \_\_\_\_\_

MAILING ADDRESS:

Box 32069 Westbank, BC, Canada V4T-3G2

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Barite, Dunedin Formation, Devonian, Vein

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 00327A, 34543

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping	1:10,000. 5000 M <sup>2</sup>		\$ 5,540
Photo interpretation			
<b>GEOPHYSICAL (line-kilometres)</b>			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil			
Silt			
Rock			
Other			
<b>DRILLING (total metres; number of holes, size)</b>			
Core			
Non-core			
<b>RELATED TECHNICAL</b>			
Sampling/assaying	3 samples		\$ 609
Petrographic			
Mineralographic			
Metallurgic			
<b>PROSPECTING (scale, area)</b>			
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
			<p style="text-align: right;"><b>TOTAL COST:</b> \$ 6,159</p>

Geological Report  
Nonda Mineral Claims

Liard Mining Division  
Northeastern British Columbia  
N.T.S. 94K.13E

Latitude 58° 57' 25" Longitude 125° 31' 49"

Field work on August 29<sup>th</sup> 2015

On behalf of:

Fireside Minerals Ltd.

Westbank, British Columbia

May 5<sup>th</sup> 2016

Sylvan Lake, Alberta

Report By:

Scott Allan, G.I.T

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## Introduction:

On August 29<sup>th</sup>, 2015 Jemma Allan and the author completed one day of prospecting on the Nonda mineral claims, located near Toad River, British Columbia. The Nonda showing is focused along a fault plane at the apex of Nonda Mountain occurring at a maximum height of 2100 meters, the slopes are 45° presenting challenges for exploration. The Nonda is one four barite showings nearby and is the closest deposit to the highway. Of the four deposits the Nonda offers the highest quality barite. The other three deposits occur in the Stone formation whereas the Nonda occurs in the overlying Dunedin formation, there are multiple other barite fluorite occurrences to the south in the Dunedin formation.

## Access:

The Nonda Creek barite deposit can be partially accessed at kilometer 658 of the Alaska Highway. At kilometer 658 a bridge has been constructed along with a nineteen kilometer gravel road to an inactive microwave tower. This service road passes within three kilometers of Nonda Mountain. Helicopters can be chartered from Watson Lake or Fort Nelson, with Watson Lake being the closest air base. Currently the only way to accesses the showing is by helicopter. There is no room to land the helicopter, a hovering drop off was used to unload personnel.

## Claims and Ownership:

All four claims are 100% owned by Fireside Minerals Ltd and are in good standing until May 19<sup>th</sup> 2016.

Name	Tenure #	Type	Sub-Type	Size Ha.	Issue Date	Good to Date	Status	Owner	Ownership
NONDA 1	860907	Mineral	Claim	400.75	2011/jun/28	2016/may/19	Good	Fireside Minerals Ltd.	100.00%
NONDA 2	860927	Mineral	Claim	217.03	2011/jun/28	2016/may/19	Good	Fireside Minerals Ltd.	100.00%
NONDA BARITE	950135	Mineral	Claim	33.9	2012/feb/16	2016/may/19	Good	Fireside Minerals Ltd.	100.00%
NONDA 3	1018122	Mineral	Claim	317.29	2013/mar/28	2016/may/19	Good	Fireside Minerals Ltd.	100.00%

## General setting:

Mountains in the region are characterised by north-northwest trending folds and northeast verging thrust faults in sedimentary rocks of the Paleozoic. Three major deposits of low grade barite, one with tonnages in excess of 100 million tonnes have been identified nearby. These deposits occur at the base of the stone formation and are strata bound. Barite deposits of north eastern British Columbia are commonly assigned to the Devonian when important SEDEX deposits were emplaced in the Selwyn basin and Kechika trough. The area is remote, in pristine condition, and the area is prized by hunters for its stone sheep population. Two outfitters operate in the area, Stone Mountain Safaris and Folding Mountain Outfitters. The provincial park boundary is marked to the south by Nonda Creek.

## Local Geology and Mineralization:

A geologic map was made of the area, from data made public from the B.C.G.S (Appendix 1). This map shows a series of west dipping thrust sheet of Silurian and Devonian rocks occur between Muncho Lake and Nonda Creek. A north south contact between the Besa River Shale (Devonian) and the Kindle formation (Permian) can be traced for at least 6 miles. Locally on Nonda Mountain it is mapped that the Dunedin is underlain by the Kindle suggesting a thrust fault. It is thought that the thrust fault occurring at the apex of the mountain is a splay fault from the fault placing Dunedin formation above the Kindle formation. Outcrop of the Besa River formation is preserved on the foot wall of this splay fault. Barite mineralization occurs over a zone of interest with a maximum extent of approximately forty meters near the center of the showing and eighteen meter at its northern most fringe. Focused in this zone are patches of barite separated by rubble consisting of dolostone and calcite. The barite and calcite have weathered faster than the Dunedin formation creating large float trains obscuring showings of continuous mineralization. It is evident that barite occurs throughout length of the deposits, Page (1960) previously defined the zone of interests to be one hundred and twenty by forty five meters, with a horses of shale is reportedly twelve by thirty metres, both remaining open with depth [Page, 1960]. From air it is obvious that the unit extends for several hundred meters, past the “horse”.

Stratigraphy: (CSPG Lexicon of Canadian Stratigraphy, Volume 4)

Kindle Formation: Permian

Consist of rhythmically interbedded calcareous silt shales and medium to dark grey calcareous to dolomitic sandy siltstone and silty limestone. This unit has a coarsening upwards sequence.

Besa River Shale: Upper Devonian – Mississippian

Is mainly dark shale containing spicules and radiolarian. Representing a sediment starved deep water marine environment. This shale succession conformably overlies the Dunedin formation.

Dunedin Formation: Middle - Upper Devonian

The Dunedin formation transitionally overlies the lighter coloured stone formations and is overlain by the besa river shales. It is expected to be 300 meters thick on nonda mountain, consisting of fine grained limestone and dolomitic wackestones that are claimed to be entirely regressive (Morrow, 1978). The Dunedin formation is known to host, crinoids, and giant ostracodes.

### Stone Formation: Lower Devonian

The Stone formation is part of the bear rock sequence and is expected to be 500 meters thick in the area consisting of light colour fine to medium grained crystalline dolostone with breccia's ( Stott , Aitken 1993). The top of the Stone formation is transitionally conformable to the Dunedin formation. At its base it normally consists of sandstone that disconformably overlies the Wokkash formation, these sandstones can be hard to distinguish from the Wokkash formation ( Stott , Aitken 1993). It has been noted that basal barite lag deposits commonly form at the base of the stone formation (Taylor, Mackenzie 1970). Nearby, this unit is significant as it hosts the strata bound barite at its base. Two intraformational breccias are common in the unit the first being, conformable tabular dolomite breccia that occur throughout the formation (Morrow, 1975). The second type of breccia forms buttress structures cutting the overlying Dunedin formation these breccia's are composed of rubble and are associated with solution collapse (Stott, Aitken 1993). It is noted by Taylor and Mackenzie (1970) that barite and fluorite commonly act as cement with in the stone formation.

### Wokkash Formation: Lower Devonian

The Wokkash formation consists of red-brown and yellow weathering sandstones and dolomitic sandstone provide a highly visible marker unit, for the base of the stone formation and potential barite deposits (Watson, 1979). This unit represents the top of the Delorme sequence and is considered to be a terminal formation of a regressive shoreline (Stott, Aitken 1993).

## Results:

*Aerial observations: Aerial photographs can be seen in Appendix 2.*

From the air it is apparent that there is a large white streak focused along a fault plane at the apex of Nonda Mountain. It is also apparent that the Dunedin formation has a horizontal dip, and that minor deformation takes place near the fault zone. The besa river shales are almost indiscernible from air having a limited extent before transitioning back to the underlying Dunedin formation. Most importantly the fault zone can be traced for several hundred meters down the mountain side before the plane of the fault is lost.

### Ground Observations:

Upon landing it is immediately obvious that zone is dominated by weathered calcite and barite rubble, with similar colours visually this makes the zone look extensive and homogenous. Grades are steep roughly 45 degrees and inhibit significant sample collection, and movement along the showing. Due to the steep grades and high degree of weathering masking the showings it was very difficult to determine, what was high concentration of barite rubble from weathering mineralization slightly above or an actual surface expression of a vein.

It is evident that barite is continuous throughout the zone due to the float. But the area accessed dominantly consists of dolomite with calcite filled vugs and veins. The western flank of the fault zone is marked by a distinct barite showing, and the protruding fault surface. The foot wall of this thrust fault consists of Besa River Shales which provide easy walking due to their near vertical dips. The hanging wall is comprised of dolomite from the Dunedin formation the attitude/plunge of thrust fault was found to be 170°/80°.

Following the fault north, no other zones of mineralization were noted with no traces of barite float, this was also confirmed by aerial observation. The north end of the fault zone was identified to be eighteen meters wide, of this zone two showings of barite were readily identified with obscured showing being possible underneath a rubble float. The barite (veins?) was measured at the northern most point as it was the only point that was safely accessible the western most measured a width of one meter, the second showing boasted a width of two and half meters separated from the first showing by four meters of dolostone with calcite filled vugs. Between the second vein and the fault plane laid ten meters of dolostone with calcite filled vugs. This area of limestone was thoroughly inspected for barite veining. No other significant minerals were noted, or seen in hand samples.

**Rock Samples:**

Three rock samples were taken in-situ from the barite showings to gauge impurities and specific gravity.

Sample Name	Sample Code	Type	Depth	Lithology	Colour	Northing	Easting	Elevation	Zone	Datum
Nonda Top	Nonda Top	Rock	Surface	Dunedin	White	6538156	354474	2082	10	NAD 83
Nonda Mid Point	Nonda MP	Rock	Surface	Dunedin	White	6538056	354513	2060	10	NAD 83
Nonda Bottom	Nonda BTM	Rock	Surface	Dunedin	White	6537988	354501	2030	10	NAD 83
Sample Name	S.G. g/cm3	BaSO4 %	LOI %	CaO %	SiO2 %	Cd ppm	Cu ppm	Sr ppm	Zn ppm	Pb ppm
Loring Labs										
Nonda Top	4.46	96.48%	0.27	0.15	0.65	<1	<1	1027	4	5
Nonda Mid Point	4.09	86.48%	5.22	7.19	0.28	2	<1	172	29	13
Nonda Bottom	4.42	96.58%	1.26	1.49	0.16	<1	<1	716	3	7

Nonda Top – sample taken the north end of the west barite showing (vein?).

Nonda MP – Sample taken from the midpoint of the east showing along fault contact.

Nonda BTM – Sample taken from the lowest accessible point of the east (vein?).

## **Discussion:**

### *Geochemistry:*

From limited sampling it does appear that the Nonda barite showing has sufficient quality to be sold into the oil and gas industry for drilling mud. In the Nonda Midpoint samples, the loss of ignition highlights that calcite is an impurity. Calcite in this sample has lowered the specific gravity below API grade of 4.1 g/cm<sup>3</sup>. Samples should be tested to see if they meet the water soluble alkaline earth metals as calcium, standard (250 mg/Kg max). Typical samples from the fireside mine have an LOI 0.2- 0.5%. Further sampling will have to focus on grade consistency to determine if the selective mining is warranted, or if blending will achieve the desired product. All samples tested seem to be devoid of any considerable metal content with the main contaminant again being calcite. Without proper mountain climbing equipment, to allow for bolting and rappelling it is not feasible that one could sample the entire length and width of the showing.

### *Deposit type:*

Hydrothermal: as suggested by Page. (1960)

The Nonda may represent a relic hot spring deposits, where hot meteoric water circulated through area formations stripping them of their mineral content and depositing them along fault planes. The orogeny that built Nonda Mountain could have provided sufficient heat to remobilize the barite found at the base of the Stone formation. These barite bearing waters would also be rich with calcite that were then deposited along the thrust fault to form a vein deposit. If this is taken to be correct using, assumed stratigraphic thickness of the Stone formation being 500 meters and the Dunedin formation being 300 meters, the barite bearing fluids could have risen 800 meters in formation thickness. Petrographic examination of the lower Stone Formation near the BV deposit has identified euhedral laths of barite in the dolomite matrix. It can also be derived that fluid chemistry of the enriched waters changed with depth, and as such it should be expected that there will be increased mineral content with increasing depth. It is likely that lead and zinc grades will be encountered to some extent if a drilling program commences.

### Mississippi Valley Type (MVT):

It is also possible that the barite deposit, is an up thrown MVT unit. MVT deposits are relatively common in the Dunedin formation between Robb Lake and Liard River Hot Springs. These deposits are topographically driven; during uplift associated with mountain building basal fluids migrate away from the uplift portion of the formation towards porous rock types such as dolomite. Generally the fluids migrate down fault zones and locally intrude the porosity of the host formation. It should be considered that this deposit was thrust to the apex of the Nonda Mountain after its emplacement in the Dunedin formation. This explains why it was

difficult to connect showings along the zone of interest, as barite and calcite is not necessarily occurring in veins, but occurring in pods filling relic porosity and cavities.

### **Conclusions:**

The Nonda deposit host high purity barite, the zone boast considerable width and given its proximity to the highway it becomes an attractive exploration target. The weathering of calcite causes the zone to appear more homogenous and enormous from air, which is misleading. Initial exploration of this deposits will require a large capital investment as the drill holes will be long, helicopter supported and limited to a less risk window for local wildlife. Area users and residents have created resistance on notice of works, and it is suspected that long term mining projects will be subject to a high degree of scrutiny. With this in mind the deposits boast a great strike length and will have significant dip extent if the fluids have been derived from the Stone formation as hypothesised.

I recommend that further time be spent mapping and exploring the base of the Stone formation by using the Wokkpash as a marker. It is likely that, more barite deposits exists at the base of the Stone formation that have not been identified. Formation mapping will be the most useful exploration tool. Field Criteria for formations are:

Dunedin formation: darker limestone provide contrast to the older lighter coloured dolomites of the Stone formation.

Stone formation: Lighter coloured than Dunedin, a useful marker of grey black dolomite in the stone formation occurs at 180 meters in formation thickness (Taylor, Mackenzie 1970).

Wokkpash formation: readily distinguished from the overlying stone formation by the yellow brown weathering sand and siltstones. It is cautioned by (Taylor, Mackenzie 1970) that in the area of keily creek, the basal beds of the stone formation can weather a brown consisting of massive deltaic sandstone, and that from a distance could easily be mistaken for the Wokkpash formation.

Secondly, I recommend that a larger attempt of sampling on the Nonda showing be made with proper mountain climbing equipment. By doing this it will allow for a more extensive look at calcite contamination, and the habit of mineralization. Following this proposed work it will then be possible to determine if a drill program is warranted. For site assessment purposes a proposed access roads to the property has been laid out on the accompanying property map with accompanying proposed drill sites. Drill holes would be upslope and would be between 600 – 800 meters in length. It is expected that at \$300/m helicopter supported drill program that the costs would exceed 2,000,000 CAD.

**Recommendations:**

- 1) Further exploration should be done in the area by mapping the Wokkpash formation, as this formation marks the barite unit, it may be possible to find new showings by using the Wokkpash as a marker. All known barite showings in the area should be thoroughly inspected and evaluated.
- 2) Extensive sampling program on Nonda Mountain focussing on lower extremities of the deposits which remain untested.

**Total Proposed work – \$32,000**

*3 days geologic mapping: - \$3,225*

Geologist - \$450 / per day

Assistant - \$375 / per day

Lodging - \$150 / per day

Meals - \$100 / per day

*3 days helicopter support: - \$12,000*

4 hours minimum/day - \$1,000/ hr + Fuel

*Sampling: \$13,275*

100 rock samples: \$ 132.75 / sample,

*Trace Metals, Mercury, Whole Rock, Specific Gravity*

*Report: \$3500*

## References:

Page, P.E. (1960): Geologic Report Nonda Creek Syndicate Mineral Claims, Mile 428 Alaska Highway, B.C. ; BC Mineral Titles Assessment Report #00327A , 20 pages

Taylor, G.C and Mackenzie W.S. (1970): Devonian Stratigraphy of Northeastern British Columbia , Geological Survey of Canada, Bulletin 186, 74 pages  
Dawson R.H, 1968

Geologic Report Covering BV 1 to BV 15 Mineral Claims, Liard Mining Division, Assessment report 01682, 28 pages, 8 photos, 2 maps.

Stott, D F; Aitken J D, 1993

Sedimentary Cover of the Craton in Canada, Natural Resources Canada, Page 165, 169

Watson I M, June 1979

Geologic Report on the Mun 1 & 2 Claims, Muncho Lake Area, Liard Mining Division, Assessment report 7349, 16 pages, 1 map , 2 cross sections Sedimentary Cover of the Craton in Canada, Natural Resources Canada, Page 165, 169

Cecile M P, 1983

The Isotopic composition of western Canadian barites and the possible derivation of oceanic sulphate  $S^{34}S$  and  $S^{18}O$  age curves , Canada journal of earth science , volume 20 , page 1528-1535

Livo E, Kruse F, Clark R, Kokaly R and, Shank W Hydrothermally altered rock and hot spring deposits at Yellowstone national park characterized using airborne visible and infrared spectroscopy data, Chapter of integrated geoscience studies in the greater yellow area, Volcanic, tectonic and hydrothermal processes in the Yellowstone geosystem, professional paper 1717 , page 495



## NONDA BARITE

**Year total**

\$6,159.00

**Labour**

Scott Allan -Geo	450 / day x 6	\$2,700.00
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*Aug 29th .5 day (site inspection), May 1 - 4th( 4 days, report/mapping/research),  
Decemeber 9- 10th 2 days report revisions Mapping*

Andrew Allan- President	700 / day x 0	\$0.00
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Jemma Allan - CFO	700 / day x .5	\$350.00
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*August 29th .5 day ( site inspection)*

Diesel Fuel - minesite (L)	1.10 / L	-
----------------------------	----------	---

Gasoline - Minesite (L)	1.10 / L	-
-------------------------	----------	---

Fuel- Gas Station	1.10/ L	-
-------------------	---------	---

Helicopter	\$1000/ hr (2.5 h	\$2,500.00
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**Assaying**

*Loring Labs*

Log in Fee	\$0.50	\$1.50
Rehomoginize Samples	\$1.25	\$3.75
Whole Rock ICP - Total Digestion	\$60.00	\$180.00
30 Element ICP Analyses - Total Digestion	\$108.25	\$324.75
Specific Gravity Determinations	\$32.00	\$96.00
Sample Disposal Fee	\$ 1.00	\$3.00

**Soil**

Log in Fee	\$0.50	\$0.00
Sample Perparation	\$4.70	\$0.00
Barium	\$11.00	
Lead & Zinc Geochem	\$7.45	

*Fireside Labs*

Thin Section Analysis	\$200.00	
Specific Gravity Determinations	\$25.00	
Water Solubule Alkaline earthmetals as calcium	\$100.00	
Sample Preparation	\$7.00	

*Calgary Rock*

Thin Section preparation	\$50.00	
Detailed thin sections analysis	\$350.00	
Brief thin sections analysis	\$250.00	

**Equipment Rentals**

Gravity Meter	\$175.00	\$0.00
Base Station	\$175.00	\$0.00
Prep Fee	\$55.00	\$0.00
Survey stakes		\$0.00
Survey Supplies		\$0.00
Total Station Survery Equipment (owned By fireside)		\$0.00

**Statement of qualifications:**

*I, Scott Allan, geologist, with business address of box 32069 Kelowna BC, V4T 3G2 and residential address of 250 Jarvis bay drive Alberta, T4S 1R8 certify that,*

I have obtained a Bachelor of Science degree from the University of Calgary in 2013

That I am a registered geologist in training with Alberta Professional Engineers and geoscientist association (APEGA, member # 116181)


From 2010 to present I have been involved in Production and Exploration for Fireside Minerals Ltd.

I have personally participated in field acquisition of data and data interpretation.


*Scott Allan*

# **APPENDIX 1**


# NONDA Location Map


 **NONDA Location**


**BC Administrative Area Layers**


 **Cities**


**Topographic Layers**


 **Roads 1:6M**

 Trunk Road


 Major Roads

 All Others

 **Lakes 1:6M**

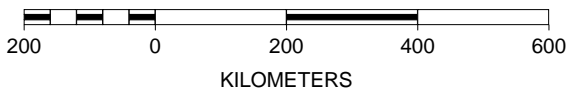
 **Rivers 1:6M**

**BC Border Layers**

 **BC Border 1:6M**





SCALE 1 : 11,508,191




# NONDA Claim Map







**Mineral Titles Layers**

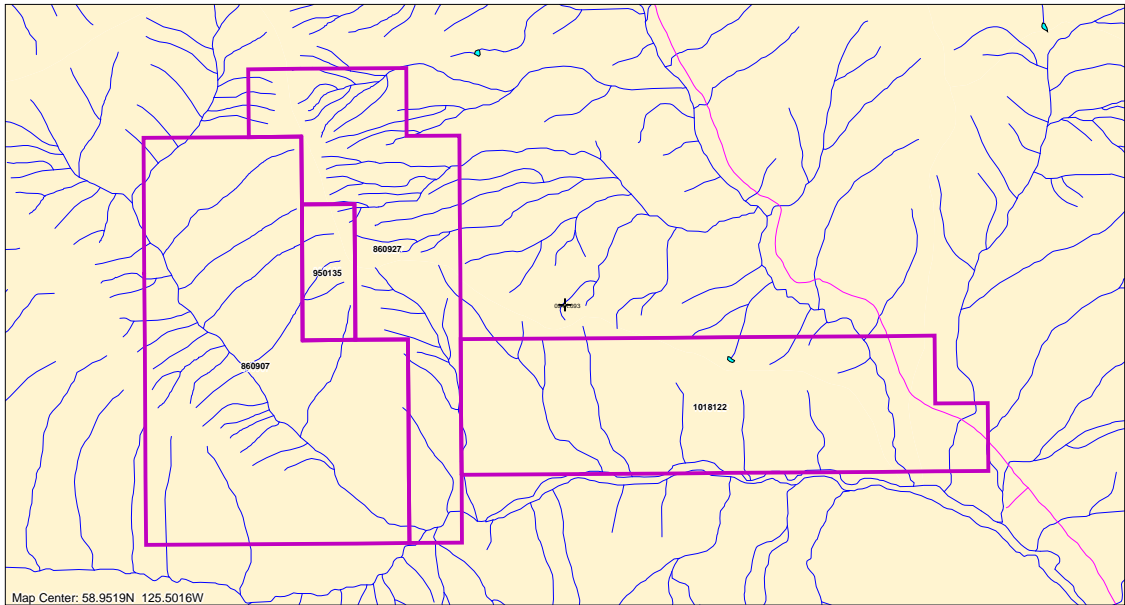
-  NONDA Tenure
-  All Mineral Tenures

**BC Administrative Area Layers**

-  Cities

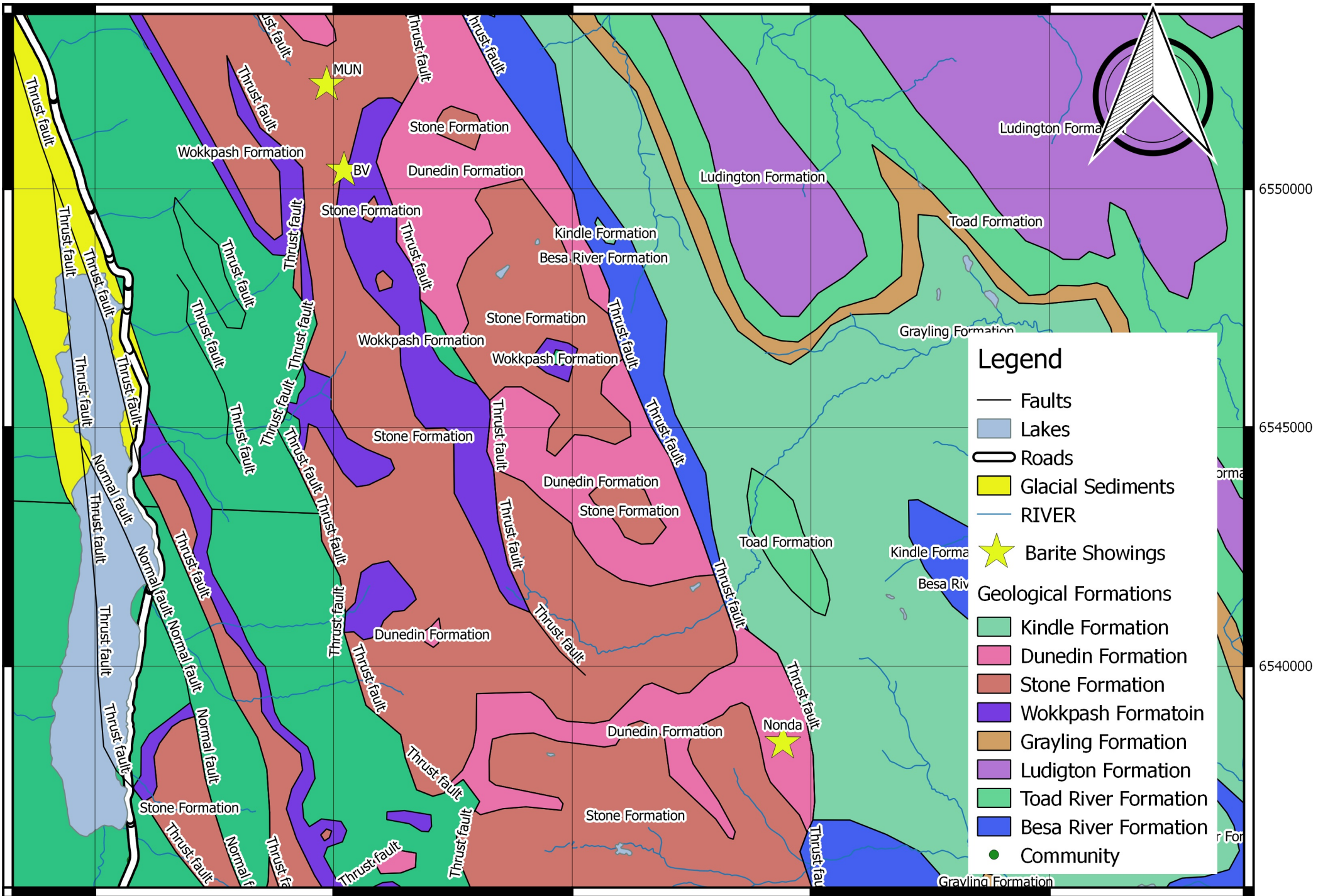
**Topographic Layers**

-  Railways 1:20K
- Roads 1:20K**
  -  Gravel Road
  -  Paved Road
  -  Rough Road
-  Lakes 1:20K
-  Rivers 1:20K



SCALE 1 : 51,678



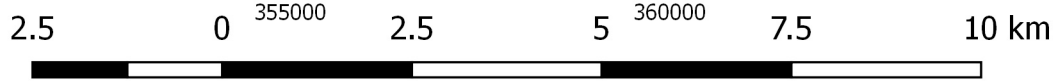


### Legend

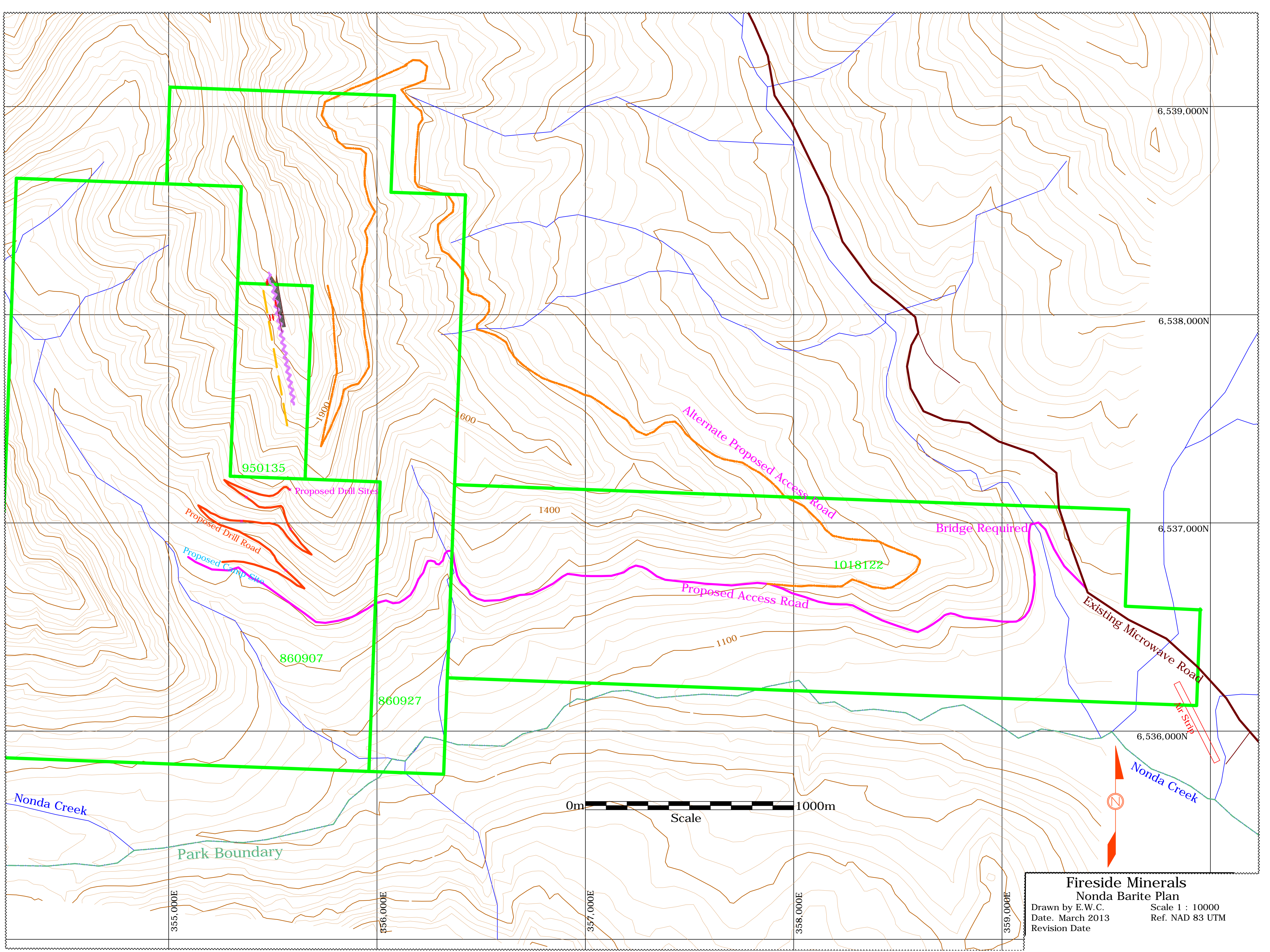
- Faults
- Lakes
- ▬ Roads
- Glacial Sediments
- RIVER
- ★ Barite Showings

#### Geological Formations

- Kindle Formation
- Dunedin Formation
- Stone Formation
- Wokkpush Formation
- Grayling Formation
- Ludington Formation
- Toad River Formation
- Besa River Formation
- Community







355.000E

356.000E

357.000E

358.000E

359.000E

6,539,000N

6,538,000N

6,537,000N

6,536,000N

950135

Proposed Drill Sites

Proposed Drill Road

Proposed Camp Site

860907

860927

1400

1100

1900

600

Alternate Proposed Access Road

Proposed Access Road

1018122

Bridge Required

Existing Microwave Road

Air Strip

Nonda Creek

Park Boundary












Nonda Creek


0m Scale 1000m

**Fireside Minerals**  
**Nonda Barite Plan**  
Drawn by E.W.C. Scale 1 : 10000  
Date. March 2013 Ref. NAD 83 UTM  
Revision Date



# Legend

-  Barite outcrop
-  Extensive - Barite / Calcite Rubble
-  Claim Boundaries
-  Fault Plane
-  Extent of Mineralization
-  Contour line (20 m)
-  Index Countour (100 m)
-  Alternate Proposed Access Road
-  Sample Site, (S.G., BaS04, SiO2)
-  Dunedin Formation
-  Besa River Shale

0m  200m  
Scale

355,000E

356,000E

6,538,000N



**Nonda Top**  
(4.46 g/cm<sup>3</sup>, 96.48%, 0.65 %)












**Nonda MP**  
(4.09 g/cm<sup>3</sup>, 86.48 %, 0.28 %)

**Nonda BTM**  
(4.42 g/cm<sup>3</sup> , 96.58 %, 0.16%)

**Fireside Minerals**  
**Nonda Barite Plan, Whole Rock**  
Drawn by S.C.A  
December 2016  
Scale 1 : 2000  
Ref. NAD 83 UTM




# Legend

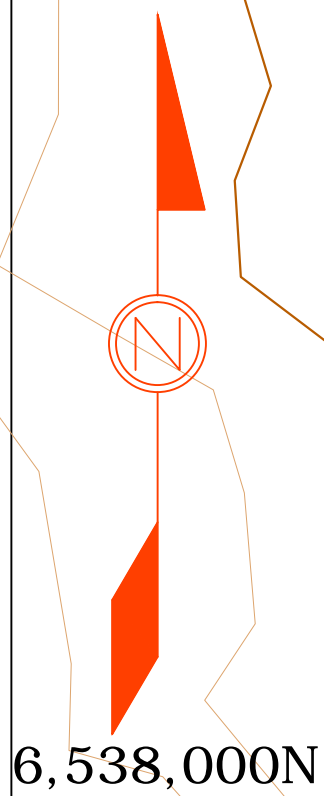
-  Barite outcrop
-  Extensive - Barite / Calcite Rubble
-  Claim Boundaries
-  Fault Plane
-  Extent of Mineralization
-  Contour line (20 m)
-  Index Countour (100 m)
-  Alternate Proposed Access Road
-  Sample Site, (Pb,Zn, Sr)
-  Dunedin Formation
-  Besa River Shale

Nonda Top  
(5 ppm, 4 ppm , 1027 ppm)

Nonda MP  
(13 ppm , 29 ppm , 172 ppm)

Nonda BTM  
(7 ppm , 3 ppm , 716 ppm)

0m  200m  
Scale



6,538,000N

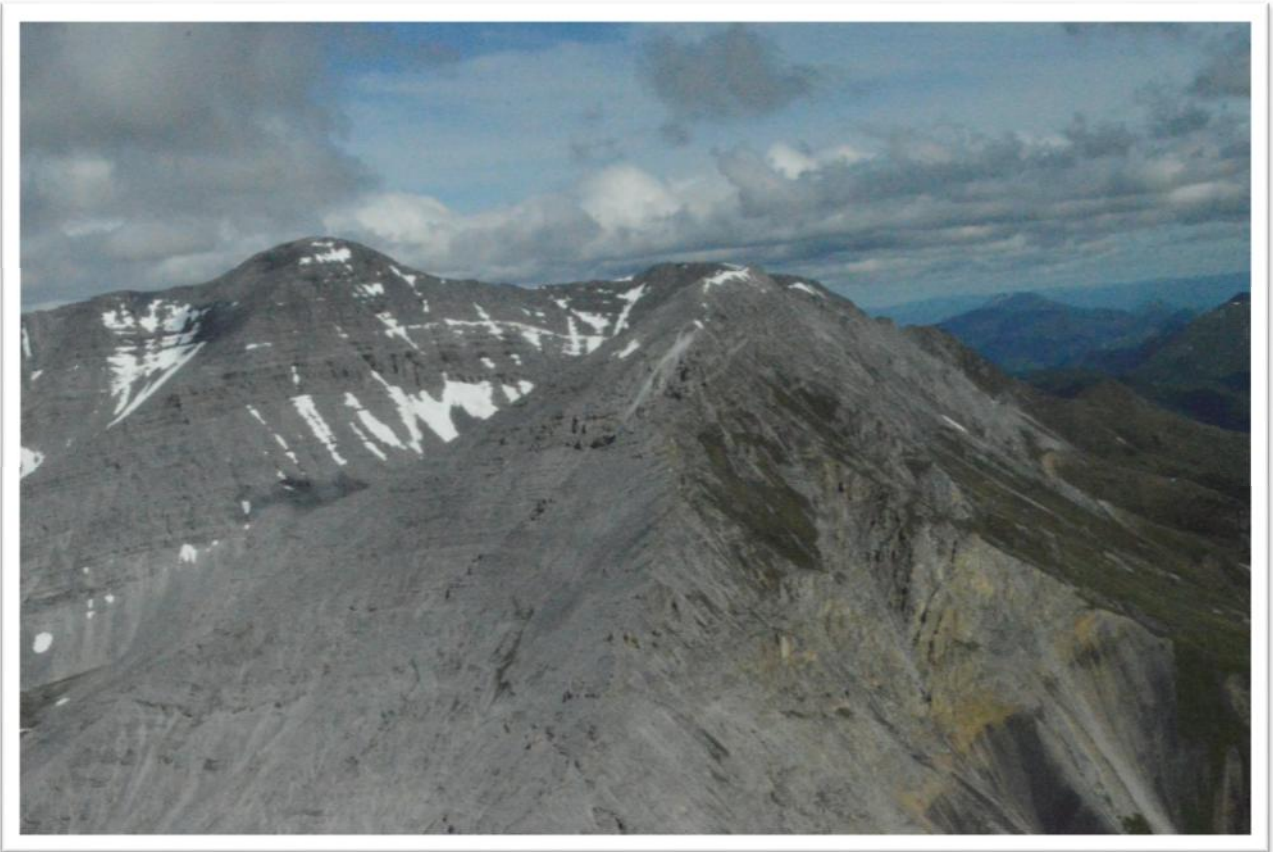
356,000E

355,000E

**Fireside Minerals**  
**Nonda Barite Plan, ICP**  
Drawn by S.C.A  
December 2016  
Scale 1 : 2000  
Ref. NAD 83 UTM

# **APPENDIX 2**

SW



NE

Figure 1 Nonda Mountain looking North West, note yellow rock formation near right hand corner

N



S

Figure 2 Nona Mountain Looking East



W

E



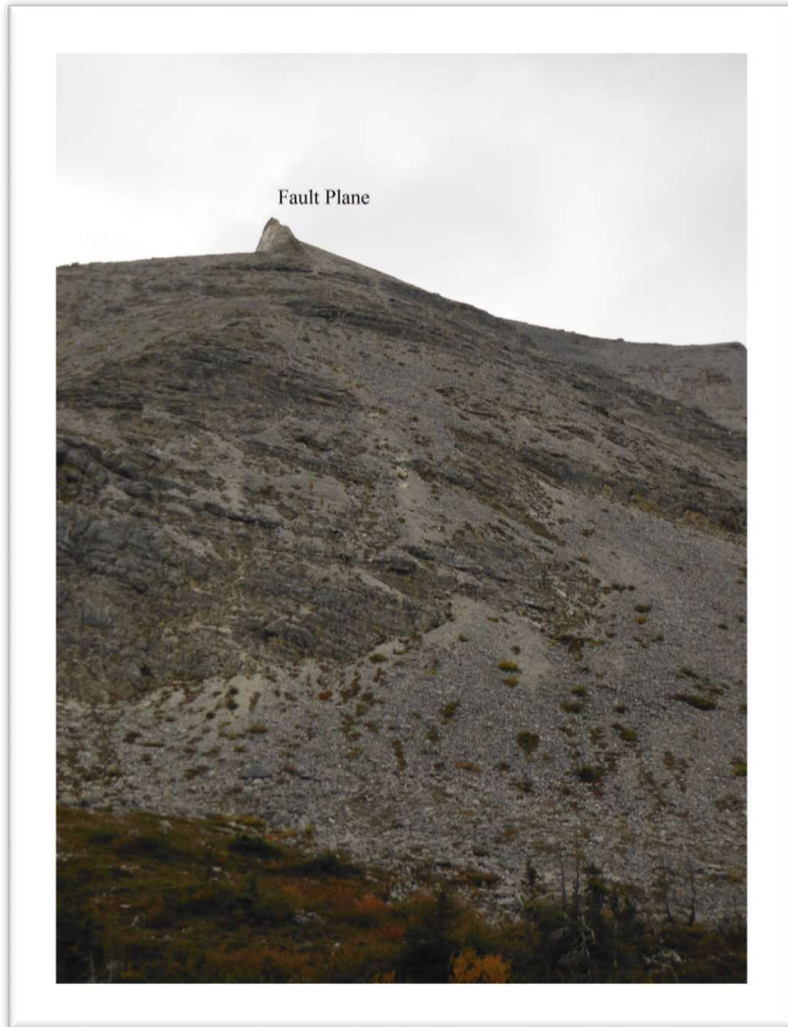
Figure 3 Nonda Mountain Looking North, Note horse? separating barite



Figure 4 Nonda showing Looking North, note dolostone and calcite on right hand side of photo



*Figure 5 Looking South Nonda Mountain over zone of interest*



*Figure 6 Base of Nonda Mountain looking towards zone of interest*

# APPENDIX 3





# Loring Laboratories(Alberta) Ltd.

629 Beaverdam Road N.E.,  
Calgary Alberta T2K 4W7  
Tel:403- 274-2777 Fax:403- 275-0541

ISO9001:2008 Certified

TO: Fireside Minerals  
Box 32069 West Bank BC  
V4T 3G2

FILE: 5 8 9 2 3

DATE: September 22, 2015

Sample: Pulp

Attn: Scott Allan

## WHOLEROCK ICP ANALYSIS

Sample I.D.	Al <sub>2</sub> O <sub>3</sub> %	BaSO <sub>4</sub> %	CaO %	Cr ppm	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	Ni ppm	P <sub>2</sub> O <sub>5</sub> %	SO <sub>3</sub> %	SiO <sub>2</sub> %	Sr ppm	TiO <sub>2</sub> %	V ppm	LOI@1000 %	SUM %
Nonda MP	0.04	86.48	7.59	1	0.02	0.01	0.03	<0.01	0.01	2	<0.01	0.79	0.28	172	<0.01	1	5.22	100.47
Nonda TOP	0.01	98.48	0.15	1	0.01	<0.01	0.01	<0.01	0.02	<1	<0.01	0.65	0.06	1023	<0.01	<1	0.27	99.66
Nonda BTM	0.04	96.58	1.49	<1	0.02	0.01	0.02	<0.01	0.10	<1	<0.01	0.81	0.16	716	<0.01	<1	1.26	100.48

Sample received on Sept. 11, 2015

0.5 gm sample digested with multi acids and finished by ICP

Certified by: David Leo

BaSO<sub>4</sub> value by wet chemistry gravimetric assay method.



# LORING LABORATORIES (ALBERTA) LTD.

629 Beaverdam Road N.E. Calgary, Alberta T2K 4W7

Tel : (403) 274-2777 Fax : (403) 275-0541

Email: loringlabs@telus.net www.loringlabs.net

ISO 9001:2008 Certified

TO: Fireside Minerals  
Box 32069 West Bank BC  
V4T 3G2

Attn: Scott Allan

FILE: 5 8 9 2 3

DATE: September 22, 2015

Sample: Pulp

## Certificate of Assay

Sample No.	% BaSO4	S.G.	ppb Hg
<u>"Assay Analysis"</u>			
Nonda MP	86.48	4.09	16
Nonda TOP	98.48	4.46	10
Nonda BTM	96.58	4.42	10

Methodology: Specific Gravity by le Chatelier SG bottle.  
BaSO4 by wet chemistry gravimetric method.

Sample received on Sept. 11, 2015

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples:

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

FORM ASYC-015





## Loring Laboratories ( Alberta ) Ltd.

629 Beaverdam Road N.E.,  
 Calgary Alberta T2K 4W7  
 Tel: 403- 274-2777 Fax: 403-275-0541  
 loringlabs@telus.net

FILE: 5 8 9 2 3

DATE: September 22, 2015

Sample: Pulp

TO: Fireside Minerals  
 Box 32069 West Bank BC  
 V4T 3G2

Attn: Scott Allan

### 30 ELEMENT ICP ANALYSIS

Sample No.	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sb ppm	Sr ppm	Th ppm	Ti %	U ppm	V ppm	W ppm	Zn ppm	Zr ppm
Nonda MP	<0.5	0.02	2	125	>10000	1	5.30	2	<1	1	<1	0.01	<0.01	1	0.02	6	1	0.01	2	<0.01	13	<1	172	<1	<0.01	6	1	2	29	4
Nonda TOP	<0.5	0.01	1	123	>10000	<1	0.11	<1	<1	1	<1	0.01	<0.01	2	<0.01	2	<1	0.01	<1	<0.01	5	<1	1027	<1	<0.01	<1	<1	1	4	9
Nonda BTM	<0.5	0.02	1	178	>10000	1	1.52	<1	<1	<1	<1	0.01	<0.01	2	0.01	4	<1	0.07	<1	<0.01	7	<1	716	<1	<0.01	<1	<1	2	3	14
Blank	<0.5	<0.01	<1	<1	<1	<1	<0.01	<1	<1	<1	<1	<0.01	<0.01	<1	<0.01	<1	<1	<0.01	<1	<0.01	<1	<1	<1	<1	<0.01	<1	<1	<1	<1	<1

\* 0.500 Gram sample is total digested with multi acid and ICP finish.

\* Sample received on Sept. 11, 2015

Certified by: 