BC Geological Survey
Assessment Report
38334

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BC Geological Survey

Assessment Report
Title Page and Summary

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

TOTAL COST: $4,021.95

AUTHOR(S): Andris Kikauka **SIGNATURE(S):** A. Kikauka

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):

YEAR OF WORK: 2019

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5743968

RECEIVED
JUL 03 2019
MINISTRY OF ENERGY AND MINES

PROPERTY NAME: Hellroaring Creek

CLAIM NAME(S) (on which the work was done): Ha Ha Hell 1065146, Hellroaring Creek Deposit 1068188

COMMODITIES SOUGHT: Beryllium, Feldspar, Mica, Silica, Tourmaline

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 082FNE110

MINING DIVISION: Fort Steele **NTS/BCGS:** 082F 09/E, 082F.060

LATITUDE: 49 ° 34 '00 " **LONGITUDE:** 116 ° 10 '33 " (at centre of work)

OWNER(S):

1) Andris Kikauka
2) John Bakus

MAILING ADDRESS:

4199 Highway 101,
Powell River, BC V8A 0C7

3-1572 Lorne St E
Kamloops, BC V2X 1X6

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

1) same
2) same

MAILING ADDRESS:

same

same

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

The area is underlain by Proterozoic Purcell Supergroup, Alldridge Fm argillite, greywacke, turbidite, conglomerate intruded by gabbroic Moyie Sills (with chlorite-actinolite retrograde alteration). This lithology sequence is intruded by Hellroaring tourmaline-muscovite granitic pegmatite that is exposed over a 1 X 4 km area. The pegmatite contains 60-70% feldspar, 20-30% quartz, 1-10% muscovite, 0.1-10% tourmaline, minor or trace beryl, garnet, pyrite, pyrrhotite, galena, sphalerite, & arsenopyrite

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 13415, 15760

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TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock	10 samples, ALS ME-ICP41, ME-XRF26	1065146, 1068188	4,021.95
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	4,021.95

Lat. 49 34' 00" N
Long. 116 10' 33" W
NTS 082 F/09 E
BCGS 082F.060
UTM 559,500 E, 5,491,000 N (NAD 83)

GEOCHEMICAL REPORT ON HELLROARING PROPERTY (MTO ID 1065145, 1065146, 1068188 MINERAL CLAIMS) FELDSPAR-MICA-SILICA-BERYL-TOURMALINE

HELLROARING CREEK
ST MARY'S RIVER,
MARYSVILLE, BC
FORT STEELE MINING DIVISION

Submitted by:
Andris Kikauka, P.Geo.
4199 Highway 101,
Powell R, BC V8A 0C7

38, 334

June 24, 2019

Mineral Titles Online Viewer

Exploration and Development Work / Expiry Date Change Event Detail

Event Number ID	**5743968**
Recorded Date	2019/jun/07
Work Type	Technical Work (T)
Technical Items	Geochemical (C), PAC Withdrawal (up to 30% of technical work required) (W3)
Work Start Date	2019/may/31
Work Stop Date	2019/jun/02
Total Value of Work	$ 4021.95
Mine Permit Number	

Summary of the work value:

Title Numbers	**1065145**
Claim Name/Property	
Issue Date	2018/dec/16
Work Performed Index	N
Old Good To Date	2019/dec/16
New Good To Date	2023/may/04
Numbers of Days Forward	1235
Area in Ha	20.95
Applied Work Value	$ 498.73
Submission Fee	$ 0.00
Title Numbers	**1065146**
Claim Name/Property	HA HA HELL
Issue Date	2018/dec/16
Work Performed Index	N
Old Good To Date	2019/dec/16
New Good To Date	2023/may/04
Numbers of Days Forward	1235
Area in Ha	62.84
Applied Work Value	$ 1496.16
Submission Fee	$ 0.00
Title Numbers	**1068188**
Claim Name/Property	HELLROARING CREEK DEPOSIT
Issue Date	2019/apr/28
Work Performed Index	Y
Old Good To Date	2019/jun/16
New Good To Date	2023/may/04
Numbers of Days Forward	1418
Area in Ha	83.80
Applied Work Value	$ 2478.62
Submission Fee	$ 0.00

Title Numbers	**1068189**
Claim Name/Property	HR 2
Issue Date	2019/apr/28
Work Performed Index	N
Old Good To Date	2020/apr/28
New Good To Date	2023/may/04
Numbers of Days Forward	1101
Area in Ha	62.85
Applied Work Value	$ 1267.33
Submission Fee	$ 0.00

Financial Summary:

Total Applied Work Value:	$ 5740.84
PAC name	John Nick Bakus
Debited PAC amount	$ 1718.89
Credited PAC amount	$
Total Submission Fees	$ 0.00
Total Paid	$ 0.00

Related Summary:

Existing Work Program Event Numbers

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SUMMARY

The Hellroaring prospect is situated in the St. Mary's Lake area of the Purcell Range, located about 10 km (6 miles) west-southwest of Marysville, BC (Fig 1, 2). The Hellroaring MTO tenures (1065145, 1065146, & 1068188, 'the subject property') covers a total area of approximately 167.33 hectares (413.31 acres).

The Hellroaring Creek mineral claims feature pegmatitic texture tourmaline-muscovite granite that is suitable for ceramic & glass industrial grade feldspar (with potential for by-product mica, beryllium, silica, garnet, & tourmaline). The property has had considerable previous work is considered a developed prospect. The Hellroaring mineral claims feature coarse to medium grain pegmatitic (graphic) granite with potential to host ceramic and glass grade feldspar.

The area has been mapped by the Geological Survey of Canada, Rice, 1941, and again in more detail by Leech in 1957. It was over this period that Ag-Pb-Zn polymetallic vein type deposits were developed on the west flank of the anticline that separates Angus and Hellroaring Creeks . An underground operation on four Crown-granted claims known as the Warhorse (Boy Scout) Group (located immediately east of Hellroaring Ck at 1,400-1,600 m elevation), produced very limited amounts of lead, zinc, minimal traces of silver and gold in quartz veins within Aldridge quartzites. The Warhorse (Boy Scout) is considered a polymetallic Ag-Pb-Zn +/- Au vein type deposit, work by previous operators had indicated approximately 23,000 to 27,000 tonnes at 6 per cent lead, 8 per cent zinc, 171 grams per tonne silver (Northern Miner, Dec. 30, 1965, NOTE: non-compliant resource estimate).

The Hellroaring Creek stock was staked and assessed by the Richfield Oil Corporation in the mid 1960's as a potential beryllium prospect. Most of their work was concentrated on the northernmost extremities of the pegmatite and they concluded the beryllium grade was too low. It was as a potential beryllium deposit that the Hellroaring Creek prospect first came to the attention of Lumberton Mines Limited. In 1984, a 32.4 km grid was established from Angus Creek in the southeast to Hellroaring Creek in the northwest. Previous drilling in 1985-86 revealed extensive areas of relatively "clean" pegmatite void of significant contamination (concentrations of tourmaline, iron and manganese staining and occasional traces of sulphides). Feldspar is the most abundant mineral averaging between 65% and 70% of the pegmatite. All principal constituents of the pegmatite ore are environmentally benign and, preliminary studies indicate, readily marketable. Exploration work in 1986 included grid establishment, roadbuilding, trenching, mapping and drilling 21 BQ diamond drill holes totalling 2010.4 m of core. Economic amounts of beryllium were absent in the drill core, though metallurgical testing of the feldspar pegmatite by CANMET indicated that feldspar and mica concentrates meet industry standards with full liberation at 50 mesh.

Analyses and petrology indicates the feldspar to be a mixture of both potassium rich microcline and sodic-plagioclase. Quartz occurs as large blocks up to two metres in length as well as in

aplitic and graphic phases. It comprises, on average, approximately 25% of the pegmatite. Muscovite comprising approximately 5% of the intrusive, occurs as fine-grain fracture coatings and as large books up to 10 cm in diameter. Schorl (coarse-grain tourmaline) is the most common accessory mineral found and is present as very fine grained, feathery crystals, to coarse crystals exceeding 3 cm in diameter and 10 cm in length. Percentages of tourmaline vary irregularly with few zones being completely void of the mineral. Other accessory minerals include pink garnets. Occasional traces of pyrrhotite, pyrite and galena were also observed. Manganese and iron staining is common. To date, thicknesses of up to 150 m have been drilled into the pegmatite, and several holes were terminated in quartzite or diorite. Contacts between the pegmatite and quartzite are usually very sharp. The metamorphosed sediments contain abundant fine grained tourmaline, and it is considered that the metamorphosed sediments are xenoliths within the pegmatite. Samples of core are described as follows:

1) Pegmatite Composition: Blocky very clean-clean crystalline quartz, feldspar, muscovite with less than traces of tourmaline, garnet, negligible staining.
2) Pegmatite Composition: Clean crystalline quartz, feldspar, muscovite, negligible tourmaline with abundant Fe and Mn stain.
3) Pegmatite Composition: Clean crystalline quartz, feldspar, muscovite, negligible tourmaline with abundant Fe and Mn stain.
4) Pegmatite Composition: Coarse - med. crystalline, feldspar, quartz, muscovite with 2-3% med.-coarse crystalline tourmaline, negligible staining.
5) Pegmatite Composition: Aplitic, very fine-fine crystalline, feldspar, quartz, muscovite, 3-8% tourmaline, 1-2% garnet and minor Fe stain.

The writer performed fieldwork consisting of geochemical sampling and accompanying descriptions on the south portion of Hellroaring mineral property between 1,500-1,720 m elev along the north trending ridge in the center of the property. Fieldwork was carried out May 31-June 2, 2019, on MTO tenures 1065146 (Ha Ha Hell), and 1068188 (Hellroaring Creek Deposit). Technical work is recorded in this assessment report, and reported as MEM Event number 5743968.

Geochemical sampling was carried out on exposed surface bedrock located in close proximity to historic mapped lenses of feldspar (mica, beryllium). A total of 10 rock chip samples were collected from the southern portion of the property (sample numbers 19HR-1 to 10). A total of 7 out f 10 rock chip samples were taken from 20-50 cm width, from various surface outcrop, and an additional 3 out of 10 rock samples were angular shaped float. Rock chip samples were analyzed by ALS Minerals, North Vancouver, BC, using Li Borate fusion, whole rock analysis ME-XRF-06 (XRF26), and ME-ICP41 (35 element aqua regia ICP-AES). Geological descriptions and geochemical analysis results from Hellroaring Upper Zone (>1,625 m elevation) and Lower Zone (<1,625 m elevation) on MTO ID 1065146 & 1068188 are listed as follows:

Sample ID	Zone name	Easting NAD 83	Northing NAD 83	Elev (m)	Type
19HR-1	Upper Zone	559631	5491128	1659	angular float
19HR-2	Upper Zone	559627	5491080	1670	angular float
19HR-3	Upper Zone	559620	5491028	1679	outcrop
19HR-4	Upper Zone	559709	5490905	1726	outcrop
19HR-5	Upper Zone	559647	5491256	1625	outcrop
19HR-6	Lower Zone	559753	5491364	1538	outcrop
19HR-7	Lower Zone	559766	5491389	1520	outcrop
19HR-8	Lower Zone	559633	5491466	1477	outcrop
19HR-9	Upper Zone	559647	5491055	1673	angular float
19HR-10	Lower Zone	559788	5491397	1502	outcrop

Sample ID	Lithology	Alteration	Width (cm)
19HR-1	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-2	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-3	pegmatite border phase	calcite, pyrolusite, K-feldspar, magnetite	20
19HR-4	pegmatite non-border phase	K-feldspar	40
19HR-5	pegmatite non-border phase	K-feldspar	50
19HR-6	pegmatite non-border phase	K-feldspar	50
19HR-7	pegmatite non-border phase	K-feldspar	50
19HR-8	pegmatite non-border phase	K-feldspar	50
19HR-9	pegmatite border phase	clay, calcite, pyrolusite, K-feldspar, magnetite	
19HR-10	pegmatite non-border phase	K-feldspar	50

Sample ID	Al2O3%	BaO%	CaO%	Fe2O3%	K2O%	MgO%	MnO%	Na2O%	P2O5%	SO3%	SiO2%	TiO2%
19HR-1	23.03	0.04	0.32	2.63	6.71	0.37	0.64	0.39	0.29	0.03	61.94	0.04
19HR-2	29	0.05	0.4	2.46	8.48	0.49	0.56	0.28	0.33	0.01	52.77	0.04
19HR-3	17.46	0.03	5.59	3.07	4.93	0.29	2.46	1.46	0.2	0.04	55.66	0.03
19HR-4	19.08	0.03	0.02	1.49	5.17	0.23	0.04	0.78	0.02	0.01	69.92	0.08
19HR-5	15.96	0.02	0.29	2.54	2.53	0.13	0.67	3.67	0.08	0.01	72.88	0.03
19HR-6	15.26	0.02	0.39	1.58	0.89	0.15	0.18	6.98	0.12	0.01	73.65	0.03
19HR-7	14.32	0.02	0.35	1.37	1.36	0.11	0.13	6.32	0.14	0.01	74.89	0.02
19HR-8	16.66	0.02	0.22	1.63	2.86	0.17	0.18	3.89	0.09	<0.01	72.02	0.04
19HR-9	20.28	0.04	1	3.04	5.98	0.35	1.44	0.35	0.5	0.03	62.52	0.04
19HR-10	15.28	0.02	0.35	2.05	2.01	0.14	0.37	4.31	0.09	0.01	73.61	0.04

Sample ID	Total%	LOI%	As ppm	Be ppm	La ppm	Pb ppm	Zn ppm	Cd ppm	P ppm	U ppm	Sr ppm
19HR-1	100.2	3.49	221	1.3	<10	307	788	5.3	1200	40	16
19HR-2	99.4	4.32	151	2.1	<10	141	811	4.6	1410	40	17
19HR-3	99.67	7.18	124	1.4	<10	176	7980	32.3	800	40	73
19HR-4	99.27	2.35	3	1	<10	12	27	<0.5	30	<10	1
19HR-5	99.92	1.02	17	0.7	<10	38	49	0.5	220	30	1
19HR-6	99.65	0.36	9	<0.5	<10	6	13	<0.5	380	10	1
19HR-7	99.43	0.38	3	<0.5	<10	5	11	<0.5	480	10	1
19HR-8	99.18	1.35	18	0.6	<10	59	91	1.1	260	10	3
19HR-9	99.8	3.63	539	1.4	<10	152	2840	13.6	2180	50	29
19HR-10	99.25	0.9	7	0.5	<10	14	32	0.5	270	20	1

TYPICAL ANALYSES (6 SAMPLES), FELDSPATHIC AND ALUMINOUS MATERIALS FROM FELDSPAR DEPOSITS (FROM LEFOND, 1983)

Si02 67.54	67.04	71.84	79.20	63.71	61.40
AI2O319.25	18.02	16.06	12.10	21.89	22.74
Fe203 0.06	1.94	0.09	0.06	0.09	0.06
CaO 1.94	0.38	0.48	0.52	5.70	0.70
MgO trace	trace	trace	trace	trace	trace
K2O 4.05	12.10	7.60	2.62	2.37	4.95
Na20 6.96	2.12	3.72	4.80	5.60	9.54
Li20	-	-	0.35	-	-
TIO2	-	-	-	0.43	-
Loss on ignition 0.13	0.30	0.20	0.35	0.21	0.60

Metallurgy with respect to ceramic and glass end use should include testing for the following: 1) no colouring oxides: Zr03, Cr203, NiO, C03O4, CuO, 2) no refractory minerals: zircon, corundum, spinel, 3) no sulphates or chlorides, 4) 5-10% K2O. Also grain size determination is important considerations for ceramic and glass end use of feldspar (MacClean, 1991).

Hellroaring claims 2019 geochemical analysis discussion of results:

Feldspar (& Ag-Pb-Zn +/- Au polymetallic veins) - Geochemical analysis results indicate 6 of 10 rock chip samples would be suitable for feldspar (mica, silica) beneficiation tests for ceramic and glass end use. 4 of 10 rock chip samples 19HR-1, 2, 3, & 9 contain 0.08-0.8% Zn, 0.01-0.03% Pb, 0.01-0.05% As across 0.2 meter width and as angular float taken from 1,660-1,680 m elevation (Fig 5-8), and would not be suitable for feldspar (mica, silica) beneficiation tests for ceramic and glass end use. Rock chip samples 19HR-1, 2, 3, & 9 are considered to be prospective for Ag-Pb-Zn (+/- Au) polymetallic vein type deposits but are considered as contaminants for use as industrial grade feldspar.

Be- Geochemical analysis results show that beryllium bearing minerals are not present (analysis values range from 0.5-2.1 ppm Be). As beryl occurrences on the property are site specific, i.e.

related to specific phases, e.g. border or core phase, and/or dykes/sills, e.g. Tanco pegmatite in SE Manitoba is characterized by beryl found locally in the border phase, but is rarely encountered in the intermediate zones and core zones. The Hellroaring property requires considerable detailed geochemical evaluation to outline zones of elevated beryllium, and based on previous work, these areas are considered to be from 1,500-1,750 m elevation along the ridge located in the center of the property. It is possible to develop the Hellroaring property as feldspar resource with by-product beryl.

Silica + Mica- There are zones of nearly pure SiO2 in the Hellroaring Stock, but silica zones are approximately 1-5 meters width. Coarse grain books of muscovite (mica) 1-10 cm size are common throughout the Hellroaring Stock. The beneficiation process for feldspar ceramic and glass industrial use, may result in by-product mica + silica (can be assess by future metallurgical testing of feldspar).

Further evaluation of commercial applications of Hellroaring feldspar (mica, beryllium, silica, tourmaline) as well as geochemical analysis of rock and soil samples prior to core drilling are recommended. A total of approximately 200 rock and soil samples should be taken in the area of the ridge between 1,500-1,750 m elevation, is recommended in order to assess the detailed geochemistry (notably Be and Li) of the pegmatitic granite to target specific portions of the Hellroaring Stock. The fractional crystallization of pegmatites suggests that a border phase and a core phase of the pegmatite may have economic concentrations of rare metals such as beryllium, or lithium. Industrial grade feldspar is likely to be associated with rare metals. Contingent on results of proposed geochemical sampling, a follow-up program of drilling in the area of the southern portion of the property (between 1,500-1,7,20 m elevation), is recommended in order to determine grade and distribution of Hellroaring feldspar (mica, beryllium, silica, tourmaline).

1.0 Introduction

This technical report has been prepared on behalf of the Hellroaring mineral claim owners, and describes property history and recent geochemical fieldwork done on the Hellroaring Feldspar (mica, beryllium, silica) industrial mineral claims (May 31-June 2, 2019). This report is prepared to comply with BC Ministry of Energy and Mines Mineral Act requirements for filing assessment reports.

2.0 Location, Access, Infrastructure, & Physiography

The Hellroaring Feldspar (mica, beryllium) property consists of MTO tenure ID numbers 1033194,1029860, and 1033236 that are located approximately12 km (7.7 miles) south of Kimberly, BC (Fig 1, 2). The property is located on NTS map sheet 082G/12W and on TRIM map sheet 082G.051 in the Fort Steele Mining Division of southern British Columbia, Canada (Figure 2). The Hellroaring Feldspar (miea, beryllium, silica) occurrences are located near latitude 49°34' 00" N and longitude 116°10' 33" W. The property covers a north trending ridge with zones of relatively pure feldspar (with potential for by-product mica, silica, & beryllium). Elevations on the claims range from 1,100 to 1,900 meters (3,608-6,232 feet).

The Hellroaring feldspar (mica, beryllium) property can be accessed using Hellroaring Creek FSR, which is connected to paved roads to Marysville located 12 km east-northeast of the property. There is good infrastructure in the form of paved highways, a railway spur line and a major power line all of which are within 12 kilometres of the property. Hellroaring feldspar (mica, beryllium) deposit is partly exposed on surface outcrops near the axis of a north trending ridge. A series of northwest, northeast, east and north trending faults has resulted in offsets of geologic contacts. Hellroaring Stock (exposed on a topographic high), occurs in an area of converging fault structures and anticline fold axes.

Vegetation on the property consists mainly of Lodgepole Pine with lesser Douglas Fir and Western Yellow Larch, with minor birch and aspen. The nearest towns are Cranbrook and Kimberly on Highway 95A. Both Kimberly and Cranbrook have suitable infrastructure to support mining and mineral processing.

3.0 Property Status

The Hellroaring claim consists of seven (7) mineral tenures (listed below) located within the Fort Steele Mining Division (Figure 2).

Title Number	Name	Issue Date	Good To Date	Hectares
1065145		2018/DEC/16	2023/MAY/04	20.95
1065146	Ha Ha Hell	2018/DEC/16	2023/MAY/04	62.84
1068188	Hellroaring Creek Deposit	2019/APR/28	2023/MAY/04	83.80

The total area of the mineral tenures that comprise the property is 556.55 hectares (1,396.9 acres). Details of the status of tenure ownership for the Hellroaring Feldspar (mica, beryllium) property were obtained from the Mineral-Titles-Online (MTO) electronic staking system managed by the Mineral Titles Branch of the Province of British Columbia. This system is based on mineral tenures acquired electronically online using a grid cell selection system. Tenure boundaries are based on lines of latitude and longitude. There is no requirement to mark claim boundaries on the ground as these can be determined with reasonable accuracy using a GPS. The Hellroaring claim has not been surveyed.

The mineral tenures comprising the Hellroaring Feldspar (mica, beryllium) mineral property are shown in Figure 2. The claim map shown in Figure 2 was generated from GIS spatial data downloaded from the Government of BC GeoBC website. These spatial layers are the same as those incorporated into the Mineral-Titles-Online (MTO) electronic staking system that is used to locate and record mineral tenures in British Columbia. Information posted on the MTO website indicates that mineral tenures 1065145, 1065146, 1068188 are owned 75% by John Nick Bakus (FMC 223385), and 25% by Andris Arturs Kikauka (FMC 114051).

4.0 Hellroaring (& Adjacent) Property History

The area has been mapped by the Geological Survey of Canada, Rice, 1941, and again in more detail by Leech in 1957. It was over this period that Ag-Pb-Zn polymetallic vein type deposits were developed on the west flank of the anticline that separates Angus and Hellroaring Creeks . An underground operation on four Crown-granted claims known as the Warhorse (Boy Scout) Group (located immediately east of Hellroaring Ck at 1,400-1,600 m elevation), produced very limited amounts of lead, zinc, minimal traces of silver and gold in quartz veins within Aldridge quartzites. The Warhorse (Boy Scout) is considered a polymetallic Ag-Pb-Zn +/- Au vein type deposit, work by previous operators had indicated approximately 23,000 to 27,000 tonnes at 6 per cent lead, 8 per cent zinc, 171 grams per tonne silver (Northern Miner, Dec. 30, 1965, NOTE: non-compliant resource estimate).

The Hellroaring Creek stock was staked and assessed by the Richfield Oil Corporation in the mid 1960's as a potential beryllium prospect. Most of their work was concentrated on the northernmost extremities of the pegmatite and they concluded the beryllium grade was too low. It was as a potential beryllium deposit that the Hellroaring Creek prospect first came to the attention of Lumberton Mines Limited. In 1984, a 32.4 km grid was established from Angus Creek in the southeast to Hellroaring Creek in the northwest. Previous drilling in 1985-86 revealed extensive areas of relatively "clean" pegmatite void of significant contamination (concentrations of tourmaline, iron and manganese staining and occasional traces of sulphides). Feldspar is the most abundant mineral averaging between 65% and 70% of the pegmatite. All principal constituents of the pegmatite ore are environmentally benign and, preliminary studies indicate, readily marketable. Exploration work in 1986 included grid establishment, roadbuilding, trenching, mapping and drilling 21 BQ diamond drill holes totalling 2010.4 m of core. Economic amounts of beryllium were absent in the drill core, though metallurgical testing of the feldspar pegmatite by CANMET indicated that feldspar and mica concentrates meet industry standards with full liberation at 50 mesh.

5.0 Regional Geology

The Hellroaring Group of claims occur within the middle Proterozoic Purcell Supergroup of clastic and carbonate rocks. The lower part of the Purcell Supergroup is exposed on the subject property. At the base of the Supergroup, the Aldridge Fm is comprised of argillites, siltstones and fine grained quartzites, and is conformably overlain by shallow water Creston Fm sediments and clastic Kitchener Fm. The Moyie diorite, considered to be at least 1225 m.a. intrudes the Purcell Supergroup. The East Kootenay orogeny produced uplift, folding, tilting, faulting and granitic intrusion. Ryan and Blenkinsop (1971) dated the Hellroaring stock as slightly younger than 1225 m.a. The stock consists of a coarse grained granitic tourmaline-muscovite pegmatite. The pegmatite is exposed over approximately 4 km in extent and approximately 1.5 km in width. The configuration of the pegmatite appears to be irregular in thickness. Based on data from

1985-85 drilling it is possible that Hellroaring Stock is a lopolith (sheeted intrusion) with satellite dyke/sills trending north and northwest. The true width of the pegmatitic granite layer may be in the order of 100-300 meters, but covering a surface area of 1.5 X 4 km. The satellite dyke/sills may be prospective for Be and Li bearing minerals.

Lithological units in the area of Hellroaring Feldspar (mica, beryllitum) are described as follows:

Lithology Legend

Kgd Cretaceous granodiorite

uPrCmE Upper Proterozoic-Lower Cambrian Eager Fm slate siltstone, argillite, limestone

mPrH Mid-Proterozoic Hellroaring Creek granitic tourmaline-muscovite pegmatite stock minor pink garnet and blue green white beryl

mPrPA Mid-Proterozoic Purcell Group Aldridge Fm argillite, greywacke, conglomerate, turbidite, gabbroic intrusions (Moyie Sills) with retro-grade chlorite-actinolite

A description of lithologies that occur in close proximity to the subject property are listed as follows:

There are two Cretaceous, 200-600 m diameter (elongated N-S), 'Angus Creek' stocks located 2-7 km south and southeast of the subject property (in Angus Creek valley). The Cretaceous intrusive rocks contain variable hornblende and biotite accessory minerals, and consist of granodiorite to quartz monzonite. Cretaceous intrusive activity is responsible for relative movement (following pre-existing fault and/or shear zones) along west, south, northwest, and northeast trending regional faults (Laramide uplift in the area of the Hellroaring pegmatite stock). It is unclear whether the Cretaceous intrusive rocks are associated with Warhorse (Boy Scout), and Broneo Ag-Pb-Zn (+/- Au) polymetallic veins (e.g. Warhorse-Boy Scout, and Bronco). However, it is postulated that intrusive-related hydrothermal emanations have re-mobilized galena-sphalerite-pyrite minerals hosted in siliceous gangue (with local arsenopyrite). Galena-sphalerite mineralization occurs along an east trending fault structure that aligns with the Bronco Ag-Pb-Zn (+/-Au) polymetallic vein type mineralization (Fig 8).

Upper Proterozoic-Lower Cambrian Eager Fm slate, siltstone, argillite, limestone (and Creston Fm greenish-grey, laminated and banded siltstone) occur 2-6 km south of the subject property, and the Eager and Creston Fm are characterized by folded, weakly metamorphosed and contorted clastic and carbonate sequences that are affected by Cretaceous Angus Creek Stocks.

A description of lithologies that occur on the subject property are listed as follows:

Mid-Proterozoic Hellroaring Creek granitic tourmaline-muscovite pegmatite stock minor pink garnet and blue green white beryl is exposed along the axis of a north trending ridge. Based on the widest exposures, the estimated thickest portion of the exposed the granitic tourmaline-muscovite pegmatite stock is at 1,480-1,625 m elevation (Lower Zone), and at 1,625-1,780 m elevation (Upper Zone). Both Upper and Lower Zone are prospective sources of ceramic and glass grade industrial feldspar (with potential for by-product mica, silica, beryllium, and tourmaline). Locally, there are 010, 135, and 170 degree trending faults that form complex converging structures that affect Mid-Proterozoic Purcell Group Aldridge Fm (argillite, greywacke, conglomerate, turbidite, gabbroic Moyie Sills with retro-grade chlorite-actinolite) sequence of lithologies underlying the Hellroaring granitic tourmaline-muscovite pegmatite stock.

6.0 2019 Field Program

6.1 Scope & Purpose

2019 geochemical sampling was carried out in order to evaluate industrial mineral potential in a 200 X 500 m area (elongated north), located in the central portion of Hellroaring feldspar (mica, silica, beryllium, tourmaline), at 1,500-1,720 meters elevation. The area where feldspar is partly exposed as sub-crop and outcrop is located along the crest of ridge that forms a pronounced positive topographic feature. Previous rock chip sampling outlined areas beryllium minerals at 1,500-1,700 m elevation along the topographic high, and due to favourable results from previous sampling of the central zone, 2019 sampling focused on extension of Be-bearing mineralization.

6.2 Methods and Procedures

A total of 10 rock chip samples (sample ID 19HR 1-10) were taken across 0.2-0.5 meter intervals along exposures of bedrock, and sub-crop in the Hellroaring Upper & Lower Zones (Fig 5 & 6). A total of 3 of the 10 samples (numbers 19HR 1, 2, & 9) were taken in areas of no outcrop, but did contain abundant angular sub-crop (suggesting local bedrock source). Rock chip samples were taken with rock hammer and chisel and consist of acorn to walnut sized bedrock pieces for a total weight ranging from 0.3-1 kgs. Sample material was placed in marked poly ore bags and shipped to ALS Minerals, Kamloops for ME-ICP41 35 element ICP-AES & ME-XRF26 whole rock geochemical analysis (methods and procedures see Appendix B).

ALS Minerals prepares the samples by crushing better than 70% passing a 2 mm screen split and pulverized rock chip samples. A split of 250 grams is pulverized to better than 85% passing a 75 micron screen. The sample pulp is analyzed using ALS Minerals ME-XRF-06 (XRF-26) Li borate flux major oxide whole rock geochemical analytical methods to test for suitability for industrial mineral purposes and ME-ICP41 35 element ICP to test for various metals.

6.3 Property Geology & Mineralization

Geochemical sampling in 2019 was carried out on exposed surface bedrock located in close proximity to historic mapped lenses of feldspar (mica, beryllium). A total of 10 rock chip samples were collected from the central portion of the property (sample numbers 19HR-1 to 10). A total of 7 out f 10 rock chip samples were taken from 20-50 cm width, from various surface outcrop, and an additional 3 out of 10 rock samples were angular shaped float. Geological descriptions and geochemical analysis results from Hellroaring Upper Zone (>1,625 m elevation) and Lower Zone (<1,625 m elevation) on MTO ID 1065146 & 1068188 are listed as follows:

Sample ID	Zone name	Easting NAD 83	Northing NAD 83	Elev (m)	Type
19HR-1	Upper Zone	559631	5491128	1659	angular float
19HR-2	Upper Zone	559627	5491080	1670	angular float
19HR-3	Upper Zone	559620	5491028	1679	outcrop
19HR-4	Upper Zone	559709	5490905	1726	outcrop
19HR-5	Upper Zone	559647	5491256	1625	outcrop
19HR-6	Lower Zone	559753	5491364	1538	outcrop
19HR-7	Lower Zone	559766	5491380	1520	outcrop
19HR-8	Lower Zone	559633	5491466	1477	outcrop
19HR-9	Upper Zone	559647	5491055	1673	angular float
19HR-10	Lower Zone	559788	5491397	1502	outcrop

Sample ID	Lithology	Alteration	Width (cm)
19HR-1	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-2	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-3	pegmatite border phase	calcite, pyrolusite, K-feldspar, magnetite	20
19HR-4	pegmatite non-border phase	K-feldspar	40
19HR-5	pegmatite non-border phase	K-feldspar	50
19HR-6	pegmatite non-border phase	K-feldspar	50
19HR-7	pegmatite non-border phase	K-feldspar	50
19HR-8	pegmatite non-border phase	K-feldspar	50
19HR-9	pegmatite border phase	clay, calcite, pyrolusite, K-feldspar, magnetite	
19HR-10	pegmatite non-border phase	K-feldspar	50

Sample ID	Al2O3%	BaO%	CaO%	Fe2O3%	K2O%	MgO%	MnO%	Na2O%	P2O5%	SO3%	SiO2%	TiO2%
19HR-1	23.03	0.04	0.32	2.63	6.71	0.37	0.64	0.39	0.29	0.03	61.94	0.04
19HR-2	29	0.05	0.4	2.46	8.48	0.49	0.56	0.28	0.33	0.01	52.77	0.04
19HR-3	17.46	0.03	5.59	3.07	4.93	0.29	2.46	1.46	0.2	0.04	55.66	0.03
19HR-4	19.08	0.03	0.02	1.49	5.17	0.23	0.04	0.78	0.02	0.01	69.92	0.08
19HR-5	15.96	0.02	0.29	2.54	2.53	0.13	0.67	3.67	0.08	0.01	72.88	0.03
19HR-6	15.26	0.02	0.39	1.58	0.89	0.15	0.18	6.98	0.12	0.01	73.65	0.03
19HR-7	14.32	0.02	0.35	1.37	1.36	0.11	0.13	6.32	0.14	0.01	74.89	0.02
19HR-8	16.66	0.02	0.22	1.63	2.86	0.17	0.18	3.89	0.09	<0.01	72.02	0.04
19HR-9	20.28	0.04	1	3.04	5.98	0.35	1.44	0.35	0.5	0.03	62.52	0.04
19HR-10	15.28	0.02	0.35	2.05	2.01	0.14	0.37	4.31	0.09	0.01	73.61	0.04

Sample ID	Total%	LOI%	As ppm	Be ppm	La ppm	Pb ppm	Zn ppm	Cd ppm	P ppm	U ppm	Sr ppm
19HR-1	100.2	3.49	221	1.3	<10	307	788	5.3	1200	40	16
19HR-2	99.4	4.32	151	2.1	<10	141	811	4.6	1410	40	17
19HR-3	99.67	7.18	124	1.4	<10	176	7980	32.3	800	40	73
19HR-4	99.27	2.35	3	1	<10	12	27	<0.5	30	<10	1
19HR-5	99.92	1.02	17	0.7	<10	38	49	0.5	220	30	1
19HR-6	99.65	0.36	9	<0.5	<10	6	13	<0.5	380	10	1
19HR-7	99.43	0.38	3	<0.5	<10	5	11	<0.5	480	10	1
19HR-8	99.18	1.35	18	0.6	<10	59	91	1.1	260	10	3
19HR-9	99.8	3.63	539	1.4	<10	152	2840	13.6	2180	50	29
19HR-10	99.25	0.9	7	0.5	<10	14	32	0.5	270	20	1

TYPICAL ANALYSES (6 SAMPLES), FELDSPATHIC AND ALUMINOUS MATERIALS FROM FELDSPAR DEPOSITS (FROM LEFOND, 1983)

Si02 67.54	67.04	71.84	79.20	63.71	61.40
AI2O319.25	18.02	16.06	12.10	21.89	22.74
Fe203 0.06	1.94	0.09	0.06	0.09	0.06
CaO 1.94	0.38	0.48	0.52	5.70	0.70
MgO trace	trace	trace	trace	trace	trace
K2O 4.05	12.10	7.60	2.62	2.37	4.95
Na20 6.96	2.12	3.72	4.80	5.60	9.54
Li20	-	-	0.35	-	-
TIO2	-	-	-	0.43	-
Loss on ignition 0.13	0.30	0.20	0.35	0.21	0.60

Metallurgy with respect to ceramic and glass end use should include testing for the following: 1) no colouring oxides: Zr03, Cr203, NiO, C03O4, CuO, 2) no refractory minerals: zircon, corundum, spinel, 3) no sulphates or chlorides, 4) 5-10% K2O. Also grain size determination is important considerations for ceramic and glass end use of feldspar (MacClean, 1991).

Hellroaring claims 2019 geochemical analysis discussion of results:

Feldspar (& Ag-Pb-Zn +/- Au polymetallic veins) - Geochemical analysis results indicate 6 of 10 rock chip samples would be suitable for feldspar (mica, silica) beneficiation tests for ceramic and glass end use. 4 of 10 rock chip samples 19HR-1, 2, 3, & 9 contain 0.08-0.8% Zn, 0.01-0.03% Pb, 0.01-0.05% As across 0.2 meter width and as angular float taken from 1,660-1,680 m elevation (Fig 5-8), and would not be suitable for feldspar (mica, silica) beneficiation tests for ceramic and glass end use. Rock chip samples 19HR-1, 2, 3, & 9 are considered to be prospective for Ag-Pb-Zn (+/- Au) polymetallic vein type deposits but are considered as contaminants for use as industrial grade feldspar.

Be- Geochemical analysis results show that beryllium bearing minerals are not present (analysis values range from 0.5-2.1 ppm Be). As beryl occurrences on the property are site specific, i.e. related to specific phases, e.g. border or core phase, and/or dykes/sills, e.g. Tanco pegmatite in SE Manitoba is characterized by beryl found locally in the border phase, but is rarely encountered in the intermediate zones and core zones, the Hellroaring pegmatite is considerably larger than Tanco and is less mineralogically complex . The Hellroaring property requires considerable detailed geochemical evaluation to outline zones of elevated beryllium, and based on previous work, these areas are considered to be from 1,500-1,750 m elevation along the ridge located in the center of the property. It is possible to develop the Hellroaring property as feldspar resource with by-product beryl, assuming that there are near-surface zones of beryl >0.1%.

Silica + Mica- There are zones of nearly pure SiO2 in the Hellroaring Stock, but silica zones are approximately 1-5 meters width. Coarse grain books of muscovite (mica) 1-10 cm size are common throughout the Hellroaring Stock. The beneficiation process for feldspar ceramic and glass industrial use, may result in by-product mica + silica (can be assess by future metallurgical testing of feldspar).

Further evaluation of commercial applications of Hellroaring feldspar (mica, beryllium, silica, tourmaline) as well as geochemical analysis of rock and soil samples prior to core drilling are recommended. A total of approximately 200 rock and soil samples should be taken in the area of the ridge between 1,500-1,750 m elevation, is recommended in order to assess the detailed geochemistry (notably Be and Li) of the pegmatitic granite to target specific portions of the Hellroaring Stock. The fractional crystallization of pegmatites suggests that a border phase and a core phase of the pegmatite may have economic concentrations of rare metals such as beryllium, or lithium. Industrial grade feldspar is likely to be associated with rare metals. Contingent on results of proposed geochemical sampling, a follow-up program of drilling in the area of the southern portion of the property (between 1,500-1,7,20 m elevation), is recommended in order to determine grade and distribution of Hellroaring feldspar (mica, beryllium, silica, tourmaline).

7.0 Discussion of Results

The Hellroaring property (on north-central portion of MTO 1068188) an east trending fault zone (e.g. rock samples 19HR-1, 2, 3, & 9 at 1,660-1,680 m elevation) aligns with Ag-Pb-Zn-As bearing mineralization on the Bronco minfile occurrences west of Hellroaring Creek (Fig 8). Rock samples 19HR-1, 2, 3, & 9 contain 0.08-0.8% Zn, 0.01-0.03% Pb, 0.01-0.05% As across 0.2 meter width, whereas Warhorse (Boy Scout), and Bronco contain >10% combined Pb-Zn, with >100 g/t Ag in quartz veins approximately 1 meter wide. The Hellroaring Pb-Zn-As zone may be related to late-stage (border phase) hydrothermal emanations hosted in faults/fractures developed in the Hellroaring Pegmatite Stock (Fig 8).

8.0 Conclusion

Future exploration and development of Hellroaring mineral claims should be focused on defining the extensions of known feldspar (mica, silica, beryllium). In order to outline zones of high purity feldspar, geochemical data should be collected from the area along the ridge crest between 1,500-1,750 m elevation. Based on geochemically defined targets, core drilling in the central and south portion of the property is recommended. In addition to drilling, a program of metallurgical testing (bulk sampling), for use in various end products is recommended.

Metallurgy with respect to ceramic and glass end use should include testing for the following: 1) no colouring oxides: Zr03, Cr203, NiO, C03O4, CuO, 2) no refractory minerals: zircon, corundum, spinel, 3) no sulphates or chlorides, 4) 5-10% K2O. Grain size determination is important considerations for ceramic and glass end use of feldspar (MacClean, 1991).

9.0 Recommendations

Further evaluation of commercial applications of Hellroaring feldspar (mica, beryllium, silica, tourmaline) as well as geochemical analysis of rock and soil samples prior to core drilling are recommended. A total of approximately 200 rock (& soil) samples should be taken in the area of the ridge between 1,500-1,750 m elevation. In order to assess the mineral zonation (notably Be and Li) of the pegmatitic granite, detailed geochemistry is recommended, targeting specific portions of the Hellroaring Stock. The fractional crystallization of pegmatites suggests that a border phase and a core phase of the pegmatite may have economic concentrations of rare metals such as beryllium or lithium. Industrial grade feldspar may be associated with rare metals. Contingent on results of proposed detailed geochemical sampling, a follow-up program of drilling in the area of the southern and central portion of the property (between 1,500-1,7,20 m elevation), is recommended in order to determine grade and distribution of Hellroaring feldspar (mica, beryllium, silica, tourmaline).

10.0 References

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CERTIFICATE AND DATE

I, Andris Kikauka, of 4199 Highway, Powell River, BC am a self-employed professional geoscientist. I hereby certify that:

1. I am a graduate of Brock University, St. Catharines, Ont., with an Honours Bachelor of Science Degree in Geological Sciences, 1980.
2. I am a Fellow in good standing with the Geological Association of Canada.
3. I am registered in the Province of British Columbia as a Professional Geoscientist.
4. I have practiced my profession for thirty five years in precious and base metal exploration in the Cordillera of Western Canada, U.S.A., Mexico, Central America, and South America, as well as for three years in uranium exploration in the Canadian Shield.
5. The information, opinions, and recommendations in this report are based on fieldwork carried out in my presence on the subject property during which time a technical evaluation consisting of rock geochemical sampling carried during May-June, 2019
6. I have a direct interest in the subject property. The recommendations in this report are intended to serve as general guidelines and cannot be used for the purpose of public financing.
7. I am not aware of any material fact or material change with respect to the subject matter of this Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
8. This technical work report supports requirements of BCEMPR for Exploration and Development Work/Expiry Date Change.

Andris Kikauka, P. Geo.,

A. Kikauka

June 24, 2019

ITEMIZED COST STATEMENT-

HELLROARING PROJECT-MTO Claims 1068188, 1068189, 1065145, 1065146
GEOCHEMICAL FIELDWORK
Dates worked: May 31-June 2, 2019
BCGS 082K.088, NTS 082 K 16 W, FORT STEELE MINING DIVISION
Work carried out on MTO tenure number: 1068188

FIELD CREW:

A. Kikauka (Geologist) 3 days	$ 1,732.50

FIELD COST:

Preparation, Mob and Demob	$ 287.50
Equipment, Supplies, Generator	32.80
Geochemical analysis 10 rock chip samples (& shipping to ALS Minerals Laboratories) code ME-XRF26 whole rock geochemistry, and ME-ICP41 multi-element ICP	712.45
Food	170.20
Fuel	240.05
Communication (sat phone, VHF radios)	96.45
Report	750.00
Total amount=	$ 4,021.95

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Appendix A: Analysis Certificate

CERTIFICATE KL19135260

Project: Hellroaring

This report is for 10 Rock samples submitted to our lab in Kamloops, BC, Canada on 3-JUN-2019.

The following have access to data associated with this certificate:

ANDRIS KIKAUKA

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	35 Element Aqua Regia ICP-AES	ICP-AES
ME-XRF26	Whole Rock By Fusion/XRF	XRF
OA-GRA05x	LOI for XRF	WST-SEQ

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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Finalized Date: 12-JUN-2019
Account: KIKAND

Project: Hellroaring

CERTIFICATE OF ANALYSIS KL19135260

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	ME-XRF26 Al2O3 % 0.01	ME-XRF26 BaO % 0.01	ME-XRF26 CaO % 0.01	ME-XRF26 Cr2O3 % 0.01	ME-XRF26 Fe2O3 % 0.01	ME-XRF26 K2O % 0.01	ME-XRF26 MgO % 0.01	ME-XRF26 MnO % 0.01	ME-XRF26 Na2O % 0.01	ME-XRF26 P2O5 % 0.01	ME-XRF26 SO3 % 0.01	ME-XRF26 SiO2 % 0.01	ME-XRF26 SrO % 0.01	ME-XRF26 TiO2 % 0.01
19HR-1		0.54	23.03	0.04	0.32	0.01	2.63	6.71	0.37	0.64	0.39	0.29	0.03	61.94	<0.01	0.04
19HR-2		0.97	29.00	0.05	0.40	<0.01	2.46	8.48	0.49	0.56	0.28	0.33	0.01	52.77	0.01	0.04
19HR-3		0.61	17.46	0.03	5.59	<0.01	3.07	4.93	0.29	2.46	1.46	0.20	0.04	55.66	0.01	0.03
19HR-4		0.60	19.08	0.03	0.02	<0.01	1.49	5.17	0.23	0.04	0.78	0.02	0.01	69.92	<0.01	0.08
19HR-5		0.68	15.96	0.02	0.29	<0.01	2.54	2.53	0.13	0.67	3.67	0.08	0.01	72.88	<0.01	0.03
19HR-6		0.66	15.26	0.02	0.39	<0.01	1.58	0.89	0.15	0.18	6.98	0.12	0.01	73.65	<0.01	0.03
19HR-7		0.62	14.32	0.02	0.35	<0.01	1.37	1.36	0.11	0.13	6.32	0.14	0.01	74.89	<0.01	0.02
19HR-8		0.44	16.66	0.02	0.22	<0.01	1.63	2.86	0.17	0.18	3.89	0.09	<0.01	72.02	<0.01	0.04
19HR-9		0.28	20.28	0.04	1.00	<0.01	3.04	5.98	0.35	1.44	0.35	0.50	0.03	62.52	0.01	0.04
19HR-10		0.51	15.28	0.02	0.35	<0.01	2.05	2.01	0.14	0.37	4.31	0.09	0.01	73.61	<0.01	0.04

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 12-JUN-2019
Account: KIKAND

Project: Hellroaring

CERTIFICATE OF ANALYSIS KL19135260

Sample Description	Method / Analyte / Units / LOD	ME-XRF26 Total % 0.01	OA-GRA05x LOI 1000 % 0.01	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
19HR-1		100.20	3.49	0.2	0.48	221	10	30	1.3	<2	0.24	5.3	1	3	6	1.15
19HR-2		99.40	4.32	0.3	0.53	151	10	20	2.1	<2	0.31	4.6	1	2	5	0.83
19HR-3		99.67	7.18	0.2	0.25	124	<10	20	1.4	<2	4.02	32.3	<1	2	5	1.58
19HR-4		99.27	2.35	0.2	0.52	3	<10	<10	1.0	<2	0.01	<0.5	1	7	2	0.44
19HR-5		99.92	1.02	0.3	0.32	17	<10	<10	0.7	4	0.04	0.5	<1	4	3	0.66
19HR-6		99.65	0.36	0.2	0.15	9	<10	<10	<0.5	<2	0.10	<0.5	<1	4	2	0.55
19HR-7		99.43	0.38	<0.2	0.15	3	<10	<10	<0.5	<2	0.11	<0.5	<1	4	2	0.56
19HR-8		99.18	1.35	<0.2	0.31	18	<10	10	0.6	<2	0.06	1.1	<1	5	1	0.58
19HR-9		99.80	3.63	0.2	0.47	539	<10	50	1.4	<2	0.78	13.6	2	3	5	1.54
19HR-10		99.25	0.90	<0.2	0.27	7	<10	<10	0.5	<2	0.06	0.5	<1	5	3	0.57

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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www.alsglobal.com/geochemistry

To: KIKAUKA, ANDRIS
4199 HIGHWAY 101
POWELL RIVER BC V8A 0C7

Finalized Date: 12-JUN-2019
Account: KIKAND

Project: Hellroaring

CERTIFICATE OF ANALYSIS KL19135260

Sample Description	Method / Analyte / Units / LOD	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
19HR-1		<10	<1	0.37	<10	0.02	4950	<1	0.01	2	1200	307	0.01	<2	<1	16
19HR-2		<10	<1	0.41	<10	0.02	4340	<1	0.01	3	1410	141	<0.01	<2	<1	17
19HR-3		<10	1	0.24	<10	0.02	18500	<1	0.01	4	800	176	0.01	<2	<1	73
19HR-4		<10	<1	0.36	<10	0.01	147	1	0.02	2	30	12	<0.01	<2	<1	1
19HR-5		<10	1	0.17	<10	<0.01	762	<1	0.03	1	220	38	<0.01	<2	<1	1
19HR-6		<10	<1	0.07	<10	<0.01	784	<1	0.06	2	380	6	<0.01	<2	<1	1
19HR-7		<10	<1	0.08	<10	<0.01	700	<1	0.06	1	480	5	<0.01	<2	<1	1
19HR-8		<10	<1	0.20	<10	<0.01	1005	<1	0.04	2	260	59	<0.01	<2	<1	3
19HR-9		<10	1	0.36	<10	0.01	11100	<1	0.01	4	2180	152	0.01	<2	<1	29
19HR-10		<10	1	0.14	<10	<0.01	595	<1	0.04	2	270	14	<0.01	<2	<1	1

***** See Appendix Page for comments regarding this certificate *****

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POWELL RIVER BC V8A 0C7

Finalized Date: 12-JUN-2019
Account: KIKAND

Project: Hellroaring

CERTIFICATE OF ANALYSIS KL19135260

Sample Description	Method Analyte Units LOD	ME-ICP41 Th ppm 20	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
19HR-1		<20	<0.01	<10	40	<1	<10	788
19HR-2		<20	<0.01	<10	40	<1	<10	811
19HR-3		<20	<0.01	<10	40	<1	10	7980
19HR-4		<20	<0.01	<10	<10	<1	<10	27
19HR-5		<20	<0.01	<10	30	<1	<10	49
19HR-6		<20	<0.01	<10	10	<1	<10	13
19HR-7		<20	<0.01	<10	10	<1	<10	11
19HR-8		<20	<0.01	<10	10	<1	<10	91
19HR-9		<20	<0.01	<10	50	<1	<10	2840
19HR-10		<20	<0.01	<10	20	<1	<10	32

***** See Appendix Page for comments regarding this certificate *****

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POWELL RIVER BC V8A 0C7

Finalized Date: 12-JUN-2019
Account: KIKAND

Project: Hellroaring

CERTIFICATE OF ANALYSIS KL19135260

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Kamloops located at 2953 Shuswap Drive, Kamloops, BC, Canada.

Applies to Method:				
	CRU-31	CRU-QC	LOG-22	PUL-31
	PUL-QC	SPL-21	WEI-21	

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:			
	ME-ICP41	ME-XRF26	OA-GRA05x

Appendix B: Sample Prep, methods & procedures

PREP-31

Standard Sample Preparation: Dry, Crush, Split and Pulverize

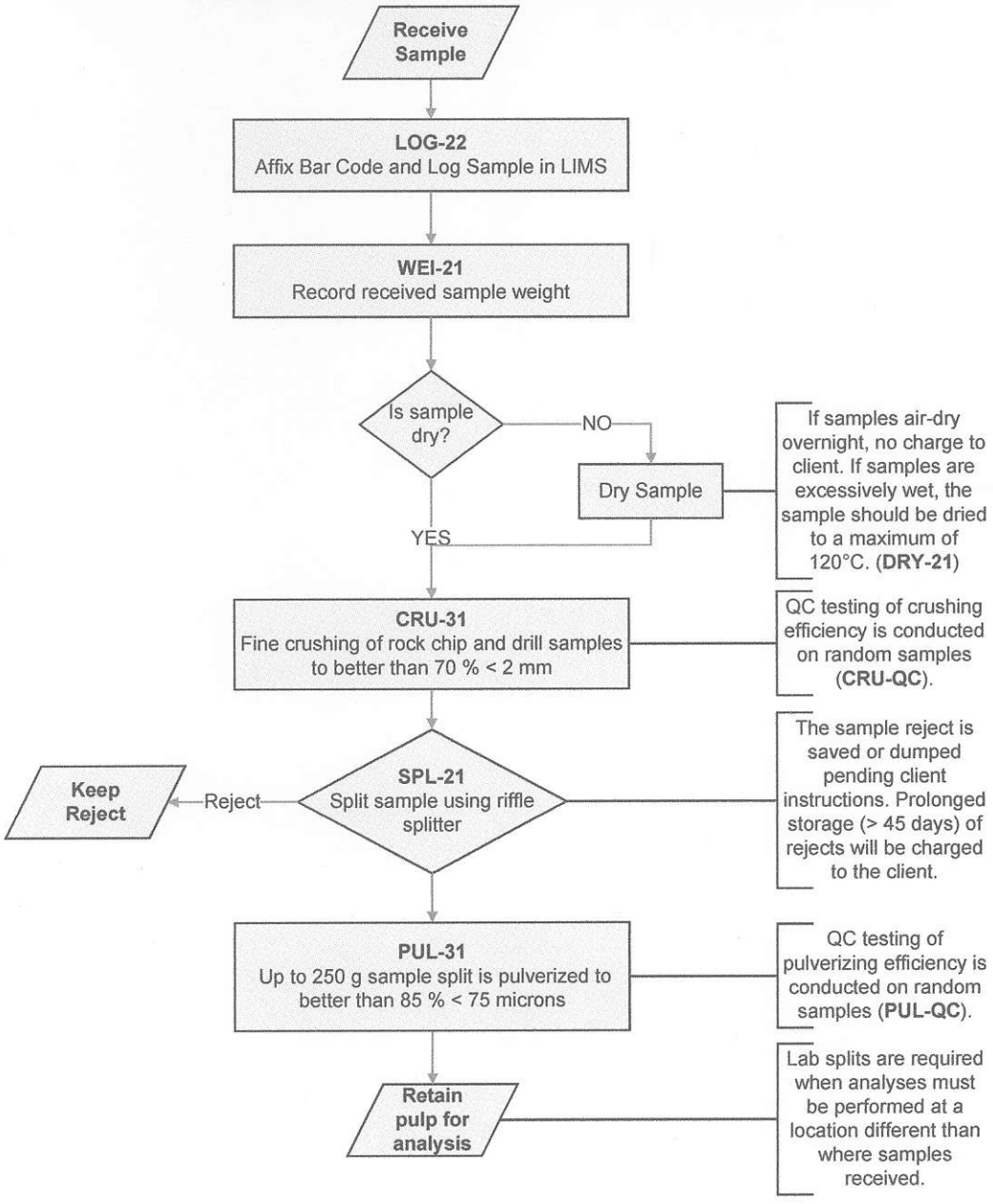
Sample preparation is the most critical step in the entire laboratory operation. The purpose of preparation is to produce a homogeneous analytical sub-sample that is fully representative of the material submitted to the laboratory.

The sample is logged in the tracking system, weighed, dried and finely crushed to better than 70 % passing a 2 mm (Tyler 9 mesh, US Std. No.10) screen. A split of up to 250 g is taken and pulverized to better than 85 % passing a 75 micron (Tyler 200 mesh, US Std. No. 200) screen. This method is appropriate for rock chip or drill samples.

Method Code	Description
LOG-22	Sample is logged in tracking system and a bar code label is attached.
CRU-31	Fine crushing of rock chip and drill samples to better than 70 % of the sample passing 2 mm.
SPL-21	Split sample using riffle splitter.
PUL-31	A sample split of up to 250 g is pulverized to better than 85 % of the sample passing 75 microns.

Flow Chart -

Sample Preparation Package – PREP-31
Standard Sample Preparation: Dry, Crush, Split and Pulverize



ME-ICP41 – Trace Level Methods Using Conventional ICP-AES Analysis

Sample Decomposition:

HNO3- HCl Aqua Regia Digestion (GEO-AR01)

Analytical Method:

Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)

A prepared sample (0.50 g) is digested with aqua regia for 45 minutes in a graphite heating block. After cooling, the resulting solution is diluted to 12.5 mL with deionized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. The analytical results are corrected for inter element spectral interferences.

NOTE: In the majority of geological matrices, data reported from an aqua regia leach should be considered as representing only the leachable portion of the particular analyte.

List of Reportable Analytes:

Analyte	Symbol	Units	Lower Limit	Upper Limit	Default Overlimit Method
Silver	Ag	ppm	0.2	100	Ag-OG46
Aluminum	Al	%	0.01	25	
Arsenic	As	ppm	2	10000	
Boron	B	ppm	10	10000	
Barium	Ba	ppm	10	10000	
Beryllium	Be	ppm	0.5	1000	
Bismuth	Bi	ppm	2	10000	
Calcium	Ca	%	0.01	25	
Cadmium	Cd	ppm	0.5	1000	
Cobalt	Co	ppm	1	10000	
Chromium	Cr	ppm	1	10000	
Copper	Cu	ppm	1	10000	Cu-OG46
Iron	Fe	%	0.01	50	
Gallium	Ga	ppm	10	10000	
Mercury	Hg	ppm	1	10000	
Potassium	K	%	0.01	10	
Lanthanum	La	ppm	10	10000	
Magnesium	Mg	%	0.01	25	
Manganese	Mn	ppm	5	50000	
Molybdenum	Mo	ppm	1	10000	
Sodium	Na	%	0.01	10	
Nickel	Ni	ppm	1	10000	
Phosphorus	P	ppm	10	10000	
Lead	Pb	ppm	2	10000	Pb-OG46
Sulfur	S	%	0.01	10	
Antimony	Sb	ppm	2	10000	
Scandium	Sc	ppm	1	10000	
Strontium	Sr	ppm	1	10000	
Thorium	Th	ppm	20	10000	
Titanium	Ti	%	0.01	10	

Analyte	Symbol	Units	Lower Limit	Upper Limit	Default Overlimit Method
Thallium	Tl	ppm	10	10000	
Uranium	U	ppm	10	10000	
Vanadium	V	ppm	1	10000	
Tungsten	W	ppm	10	10000	
Zinc	Zn	ppm	2	10000	Zn-OG46

Elements Listed below are available upon request:

Analyte	Symbol	Units	Lower Limit	Upper Limit	Default Overlimit Method
Cerium	Ce	ppm	10	10000	
Hafnium	Hf	ppm	10	10000	
Indium	In	ppm	10	10000	
Lithium	Li	ppm	10	10000	
Niobium	Nb	ppm	10	10000	
Rubidium	Rb	ppm	10	10000	
Selenium	Se	ppm	10	10000	
Silicon	Si	ppm	10	10000	
Tin	Sn	ppm	10	10000	
Tantalum	Ta	ppm	10	10000	
Tellurium	Te	ppm	10	10000	
Yttrium	Y	ppm	10	10000	
Zirconium	Zr	ppm	5	10000	

ALS Minerals

WHOLE ROCK GEOCHEMISTRY

ME- XRF06

- XRF26

SAMPLE DECOMPOSITION

50% - 50% $Li_2B_4O_7$ – $LiBO_2$ (WEI- GRA06)

ANALYTICAL METHOD

X-Ray Fluorescence Spectroscopy (XRF)

A calcined or ignited sample (0.9 g) is added to 9.0g of Lithium Borate Flux (50 % - 50 % $Li_2B_4O_7$ - $LiBO_2$), mixed well and fused in an auto fluxer between 1050 - 1100°C. A flat molten glass disc is prepared from the resulting melt. This disc is then analysed by X-ray fluorescence spectrometry.

ELEMENT	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT
Aluminum Oxide	Al_2O_3	%	0.01	100
Barium Oxide	BaO	%	0.01	100
Calcium Oxide	CaO	%	0.01	100
Chromium Oxide	Cr_2O_3	%	0.01	100
Ferric Oxide	Fe_2O_3	%	0.01	100
Potassium Oxide	K_2O	%	0.01	100
Magnesium Oxide	MgO	%	0.01	100
Manganese Oxide	MgO	%	0.01	100
Sodium Oxide	Na_2O	%	0.01	100
Phosphorus Oxide	P_2O_2	%	0.01	100
Silicon Oxide	SiO_2	%	0.01	100
Strontium Oxide	SrO_2	%	0.01	100
Titanium Oxide	TiO_2	%	0.01	100
Loss On Ignition	LOI	%	0.01	100
	Total	%	0.01	101

NOTE: Since samples that are high in sulphides or base metals can damage Platinum crucibles, a ME- ICP06 finish method can be selected as an alternative method.

Appendix C Hellroaring 2019 Rock Chip Sample Descriptions

Sample ID	Zone name	Easting NAD 83	Northing NAD 83	Elev (m)	Type
19HR-1	Upper Zone	559631	5491128	1659	angular float
19HR-2	Upper Zone	559627	5491080	1670	angular float
19HR-3	Upper Zone	559620	5491028	1679	outcrop
19HR-4	Upper Zone	559709	5490905	1726	outcrop
19HR-5	Upper Zone	559647	5491256	1625	outcrop
19HR-6	Lower Zone	559753	5491364	1538	outcrop
19HR-7	Lower Zone	559766	5491380	1520	outcrop
19HR-8	Lower Zone	559633	5491466	1477	outcrop
19HR-9	Upper Zone	559647	5491055	1673	angular float
19HR-10	Lower Zone	559788	5491397	1502	outcrop

Sample ID	Lithology	Alteration	Width (cm)
19HR-1	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-2	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-3	pegmatite border phase	calcite, pyrolusite, K-feldspar, magnetite	20
19HR-4	pegmatite non-border phase	K-feldspar	40
19HR-5	pegmatite non-border phase	K-feldspar	50
19HR-6	pegmatite non-border phase	K-feldspar	50
19HR-7	pegmatite non-border phase	K-feldspar	50
19HR-8	pegmatite non-border phase	K-feldspar	50
19HR-9	pegmatite border phase	clay, calcite, pyrolusite, K-feldspar, magnetite	
19HR-10	pegmatite non-border phase	K-feldspar	50

Sample ID	Al2O3%	BaO%	CaO%	Fe2O3%	K2O%	MgO%	MnO%	Na2O%	P2O5%	SO3%	SiO2%	TiO2%
19HR-1	23.03	0.04	0.32	2.63	6.71	0.37	0.64	0.39	0.29	0.03	61.94	0.04
19HR-2	29	0.05	0.4	2.46	8.48	0.49	0.56	0.28	0.33	0.01	52.77	0.04
19HR-3	17.46	0.03	5.59	3.07	4.93	0.29	2.46	1.46	0.2	0.04	55.66	0.03
19HR-4	19.08	0.03	0.02	1.49	5.17	0.23	0.04	0.78	0.02	0.01	69.92	0.08
19HR-5	15.96	0.02	0.29	2.54	2.53	0.13	0.67	3.67	0.08	0.01	72.88	0.03
19HR-6	15.26	0.02	0.39	1.58	0.89	0.15	0.18	6.98	0.12	0.01	73.65	0.03
19HR-7	14.32	0.02	0.35	1.37	1.36	0.11	0.13	6.32	0.14	0.01	74.89	0.02
19HR-8	16.66	0.02	0.22	1.63	2.86	0.17	0.18	3.89	0.09	<0.01	72.02	0.04
19HR-9	20.28	0.04	1	3.04	5.98	0.35	1.44	0.35	0.5	0.03	62.52	0.04
19HR-10	15.28	0.02	0.35	2.05	2.01	0.14	0.37	4.31	0.09	0.01	73.61	0.04

Sample ID	Total%	LOI%	As ppm	Be ppm	La ppm	Pb ppm	Zn ppm	Cd ppm	P ppm	U ppm	Th ppm	Sr ppm
19HR-1	100.2	3.49	221	1.3	<10	307	788	5.3	1200	40	<20	16
19HR-2	99.4	4.32	151	2.1	<10	141	811	4.6	1410	40	<20	17
19HR-3	99.67	7.18	124	1.4	<10	176	7980	32.3	800	40	<20	73
19HR-4	99.27	2.36	3	1	<10	12	27	<0.5	30	<10	<20	1
19HR-5	99.92	1.02	17	0.7	<10	38	49	0.5	220	30	<20	1
19HR-6	99.65	0.36	9	<0.5	<10	6	13	<0.5	380	10	<20	1
19HR-7	99.43	0.38	3	<0.5	<10	5	11	<0.5	480	10	<20	1
19HR-8	99.18	1.35	18	0.0	<10	59	91	1.1	260	10	<20	3
19HR-9	99.8	3.63	539	1.4	<10	152	2840	13.6	2180	50	<20	29
19HR-10	99.25	0.9	7	0.5	<10	14	32	0.5	270	20	<20	1

Appendix D - MINFILE

MINFILE Record Summary

MINFILE No 082FNE110

File Created: 24-Jul-1985 by BC Geological Survey (BCGS)
Last Edit: 27-Nov-2014 by Laura deGroot (LDG)

SUMMARY Summary Help

Name	HELLROARING CREEK, LINDA, LINDA 1	**NMI**	082F9 Gem1
		Mining Division	Fort Steele
		BCGS Map	082F060
Status	Developed Prospect	**NTS Map**	082F09E
Latitude	049° 34' 00"	**UTM**	11 (NAD 83)
Longitude	116° 10' 33"	**Northing**	5490779
		Easting	559594
Commodities	Feldspar, Mica, Beryllium, Gemstones, Rubidium, Beryl	**Deposit Types**	O01 : Rare element pegmatite - LCT family O03 : Muscovite pegmatite O04 : Feldspar-quartz pegmatite
Tectonic Belt	Omineca	**Terrane**	Ancestral North America

Capsule Geology

The Hellroaring Creek pegmatite stock is about 20 kilometres southwest of Kimberley and 31 kilometres west-northwest of Cranbrook. The stock has been explored for feldspar, quartz, mica and, in the 1960's, beryllium.

The area is underlain by quartzite and argillite of the Creston Formation and argillite, quartzite and mica schist of the Aldridge Formation, both of the Helikian Purcell Supergroup. These metasediments are intruded by sills and dykes of granodiorite of the Proterozoic Moyie Intrusions, which are in turn intruded by pegmatite of the Middle Proterozoic Hellroaring Creek stock. The east trending St. Mary fault separates this area from the area underlain by Creston Formation metasediments to the south. The Aldridge Formation is folded into an open northwest plunging anticline with the Hellroaring Creek stock emplaced in the core.

The pegmatite stock trends north-northwest for 4 kilometres within the Aldrige Formation and is up to 1.5 kilometres wide. The stock appears to be a series of large dyke swarms. Most of the sampling and diamond drilling is concentrated in an area at the north end of the stock, where drilling encountered thicknesses of up to 150 metres.

The stock is comprised of medium to coarse grained white to light grey pegmatite typically containing 60 to 70 per cent feldspar, 20 to 30 per cent quartz, 0 to 10 per cent muscovite and 0 to 10 per cent tourmaline. Beryl, garnet, pyrite, pyrrhotite, galena and arsenopyrite occur in minor to trace amounts. The feldspar occurs in distinct microcline and albite rich zones. Quartz occurs in massive lenses several metres thick that are free of feldspar. Muscovite forms fine flakes along fractures and books, up to 13 centimetres across, in irregular patches. Thin needle-like tourmaline crystals (3 by 10 millimetres) and blades up to 3 centimetres long occur in patches. Beryl forms erratically scattered very pale bluish green and white crystals and irregular masses up to 7.5 centimetres in diameter and 15 centimetres in length that tend to be associated with plagioclase, quartz and muscovite. Garnet is present as pink to red grains 1 to 2 millimetres across in addition to occasional veinlets of pyrite, pyrrhotite, galena and arsenopyrite. Iron and manganese staining is common on outcrops and in drill core.

Work in 1965, by Richfield Oil Corporation, indicated the north end of the stock contains 450,000 tonnes of 0.1 per cent beryllium oxide (Assessment Report 13415, p. 21). Diamond drilling in 1985 and 1986 by Lumberton Mines Ltd. encountered zones containing in excess of 1 per cent tourmaline (Assessment Report 15760, p. 12). Nineteen samples of feldspathic pegmatite analyzed as follows in per cent (Exploration in B.C. 1987, p. B111):

SiO2	64.86 to 76.72
Al2O3	12.61 to 19.00
K2O	0.45 to 12.45
Na2O	1.95 to 6.44
CaO	0.05 to 0.64
Fe2O3	0.05 to 4.24

Tests carried out by CANMET indicate that the pegmatite can be processed to produce feldspar and mica concentrates that meet industry standards with full liberation at 50 mesh.

This stock was first staked in 1958 as a beryllium prospect. Subsequent exploration, by various operators in the 1960's and by Lumberton Mines Ltd., in 1984 and 1985 failed to discover beryllium reserves of sufficient grade to warrant further development as a beryllium prospect. However, this work combined with further sampling and diamond drilling by Lumberton Mines in 1986 indicates that the stock contains a considerable amount of glass and ceramic

grade feldspar.

The property is located on the east side of Hellroaring Creek between the 1,219 and 1,524 metre elevations, 33.7 kilometres due south of the east end of St. Mary Lake.

In 1958 H. Bennett of Cranbrook located the Linda and Linda No. 1 claims on a pegmatite showing in which he found beryl crystals. International Beryllium Corporation was formed in 1961 to prospect the property, which had been expanded to 32 claims. Some 1,219 metres of trenching was done before the project was abandoned.

The property was acquired by Canuck Beryllium Corporation and a small amount of stripping and open-cutting was reported done by the company in 1963. An agreement between Canuck Beryllium, a subsidiary of Peace River Petroleum Ltd., and Richfield Oil Corporation of California for prospecting and development work on the property was announced in August 1, 1965. Under the terms of the agreement, Richfield Oil will have control over operations. Work in 1965 was limited to blasting and sampling some 365.7 metres of trench. This work is reported to indicate 500,000 tons averaging 0.1 per cent Beryllium oxide (Bearcat Explorations Ltd. News Release., 1/02/1984).

Some 4,550 acres of mineral claims covering these showings were acquired in early 1984 by Bearcat Explorations Ltd. (80 per cent) and Colt Exploration (Western) Ltd. (20 per cent). A joint venture agreement that same year with Fairholme Development Ltd. and Barnwell industries, Inc. provided financing for an initial stage of exploration. Work carried out in 1984 by Lumberton Mines Limited, Bearcats 100 per cent owned subsidiary, included trenching and 500 m of diamond drilling in 7 HQ drill holes; subsequent joint venture interests were: Colt (15 per cent), Fairholme (5 per cent), Barnwell (25 per cent), Bearcat (55 per cent). Further work in 1985-86 included 2584 metres of diamond drilling in 29 holes, and bulk sample flotation tests.

This work delineated three surface areas with significant high-grade ceramic feldspar; potential by-products are high-grade mica, high-grade silica, and a minor amount of beryllium in the form of beryl.

Surface prospecting by Chapleau Resources Ltd. in 2000 revealed a number of new untested outcrops of beryl-rich pegmatite. The work is reported to have extended "the old Richfield zone south for 500 metres and 500 metres east". Values high in beryllium and rubidium are reported from grab samples taken by Chapleau (George Cross Newsletter, August 1, 2000 (No. 147).

Bibliography

EMPR AR 1960-135, 1961-141, 1965-259
EMPR ASS RPT *13415;, *15760
EMPR EXPL *1987, pp. B109-B116
EMPR Mineral Market Update, July 1991
EMPR OF 1988-14, 1991-10
EMPR PF (Prospectors Report 1999-13 by David Javorsky)
EMPR PRELIM MAP 16
EMR MP CORPFILE (International Beryllium Corp.; Canuck Beryllium Corp.)
GSC EC GEOL 23, p. 62; 29, p. 71
GSC MAP 603A; 12-1957
GSC MEM 228
GSC P 60-21, p. 12
CJES *Vol. 8, 1971, pp. 85-95 (Ryan, B.D. and Blenkinsop, J. (1971): Geology and Geochronology of the Hellroaring Creek Stock, British Columbia)
GCNL #25,#70,#166, 1984; #147(Aug.1), #229(Nov.30), 2000
N MINER Aug. 30, 1984
Placer Dome File
WWW

Fig 1 Hellroaring Claims General Location

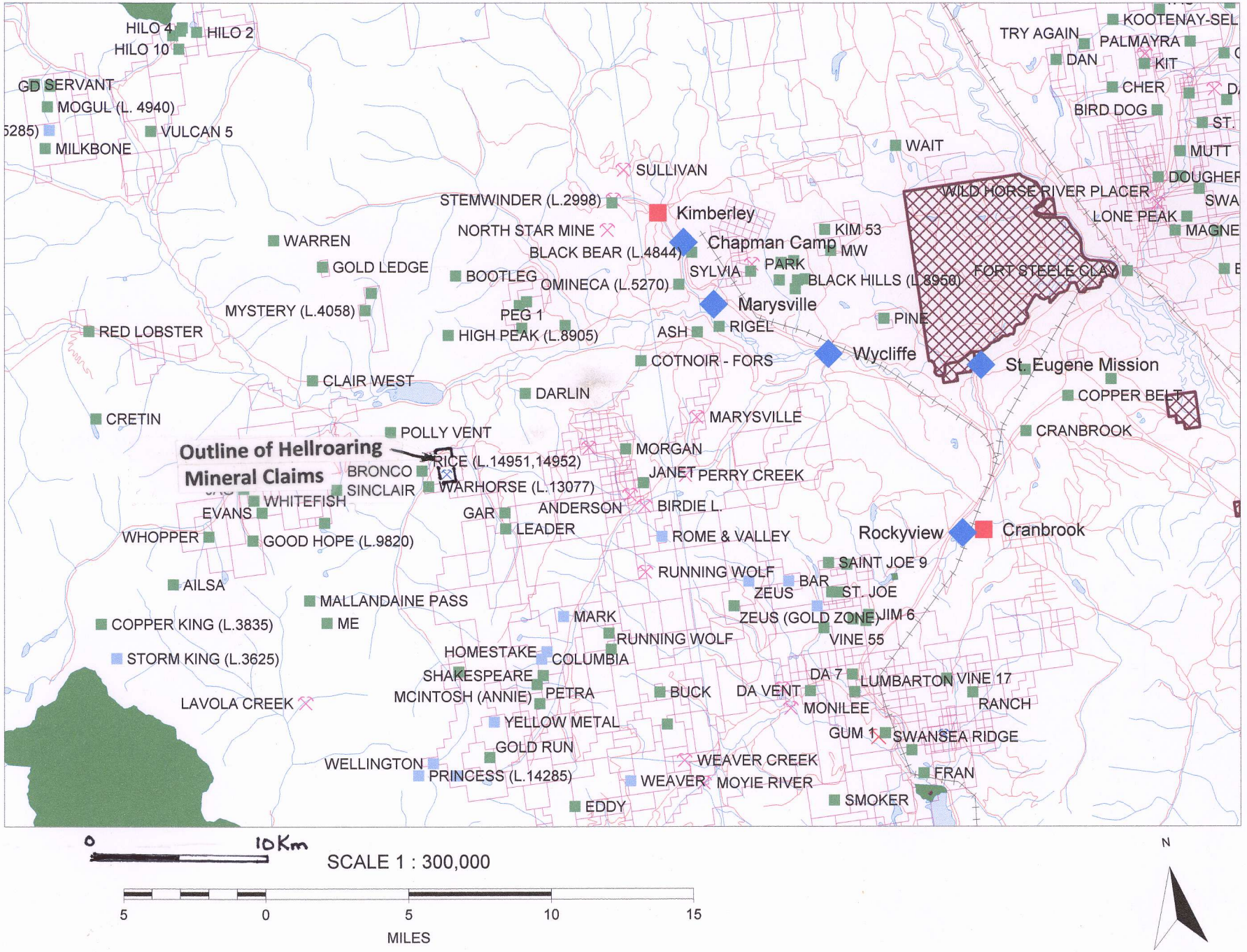
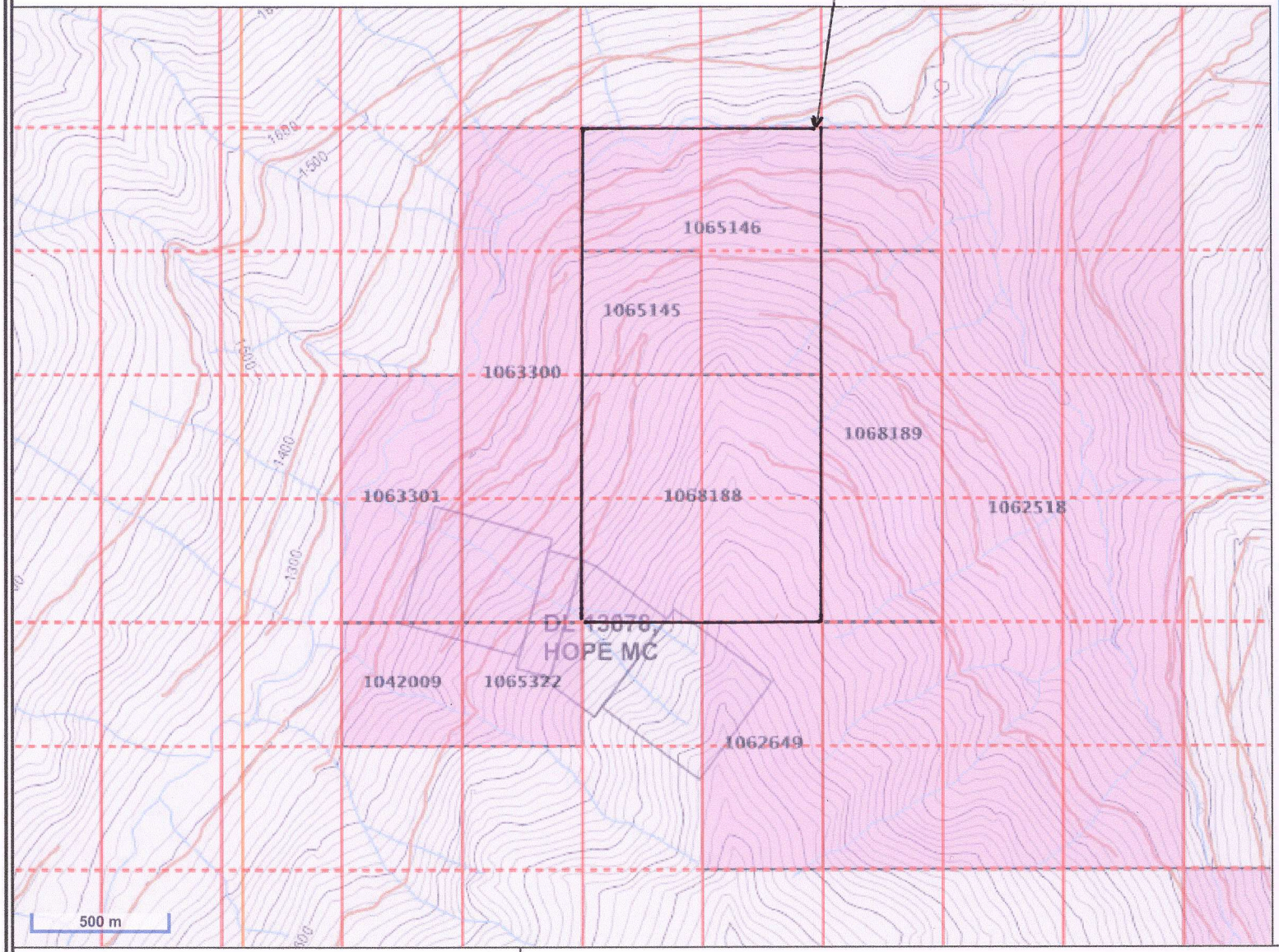


Fig 2 MTO Mineral Claim Map



Legend

Mineral Titles (MTO)
- MTO Grid
- Title (current)
- LEASE
- CLAIM
- Reserves
- No Registration
- Conditional
- Heritage/Historic Site

Crown Land Layers (Tantalis)
- Land Act Survey Parcels - Tantalis - Legal Descriptions
- Label Text
- Land Act Survey Parcels - Tantalis - Outlined

Administrative Boundaries
- Federal Transfer Lands - Outlined
- Federal Transfer Lands - Colour Filled
- National Parks - Outlined
- National Park
- National Parks - Colour Filled
- Conservancy Areas - Tantalis - Colour Filled
- Conservancy Areas
- Ecological Reserves - Tantalis - Colour Filled
- Ecological Reserves
- Protected Areas - Tantalis - Colour Filled
- Protected Areas
- Provincial Parks - Tantalis - Colour Filled
- Provincial Parks
- Recreation Areas - Tantalis - Colour Filled

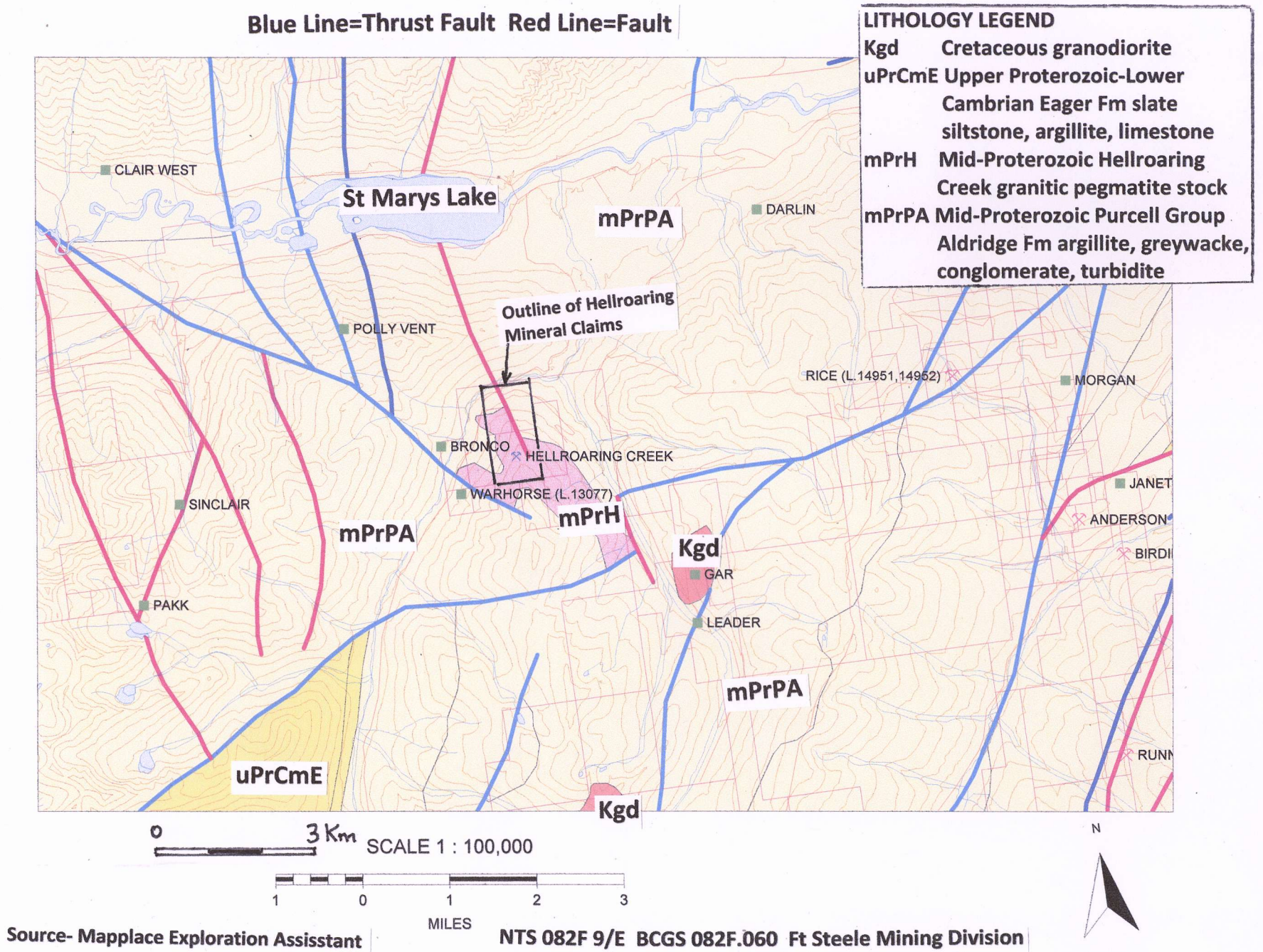
This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Printed using the Mineral Titles Online (MTO) application.NTS 082F 9/E, BCGS 082F.060, Ft Steele MD

Center: 49°34'2", -116°10'45"
Scale: 1 : 33855
SRS: EPSG:3857
UTM Zone: 11

N

Fig 3 Hellroaring Claims General Geology



Source- Mapplace Exploration Assisstant

NTS 082F 9/E BCGS 082F.060 Ft Steele Mining Division

Fig 4 Hellroaring Claims General Geology (Detail)

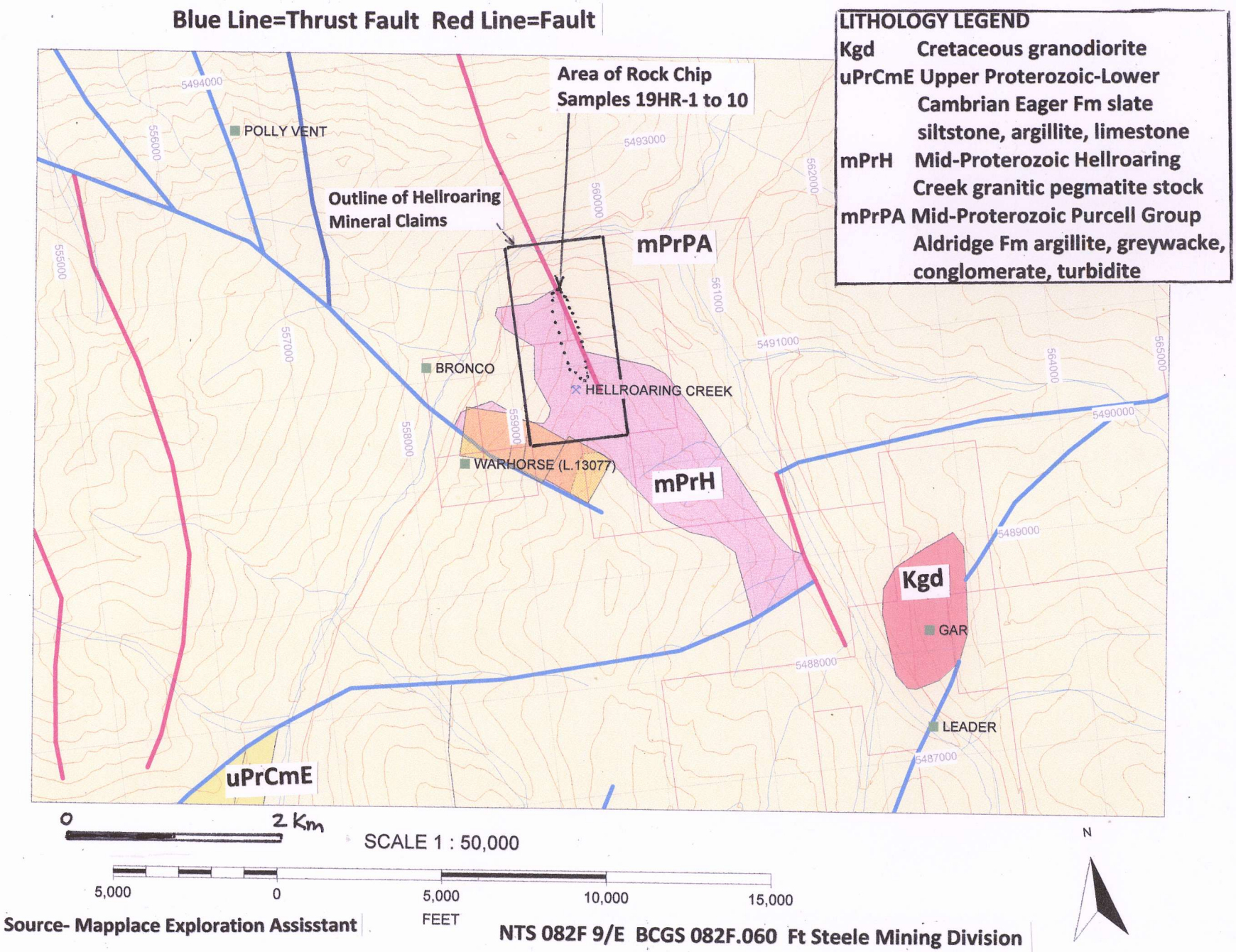
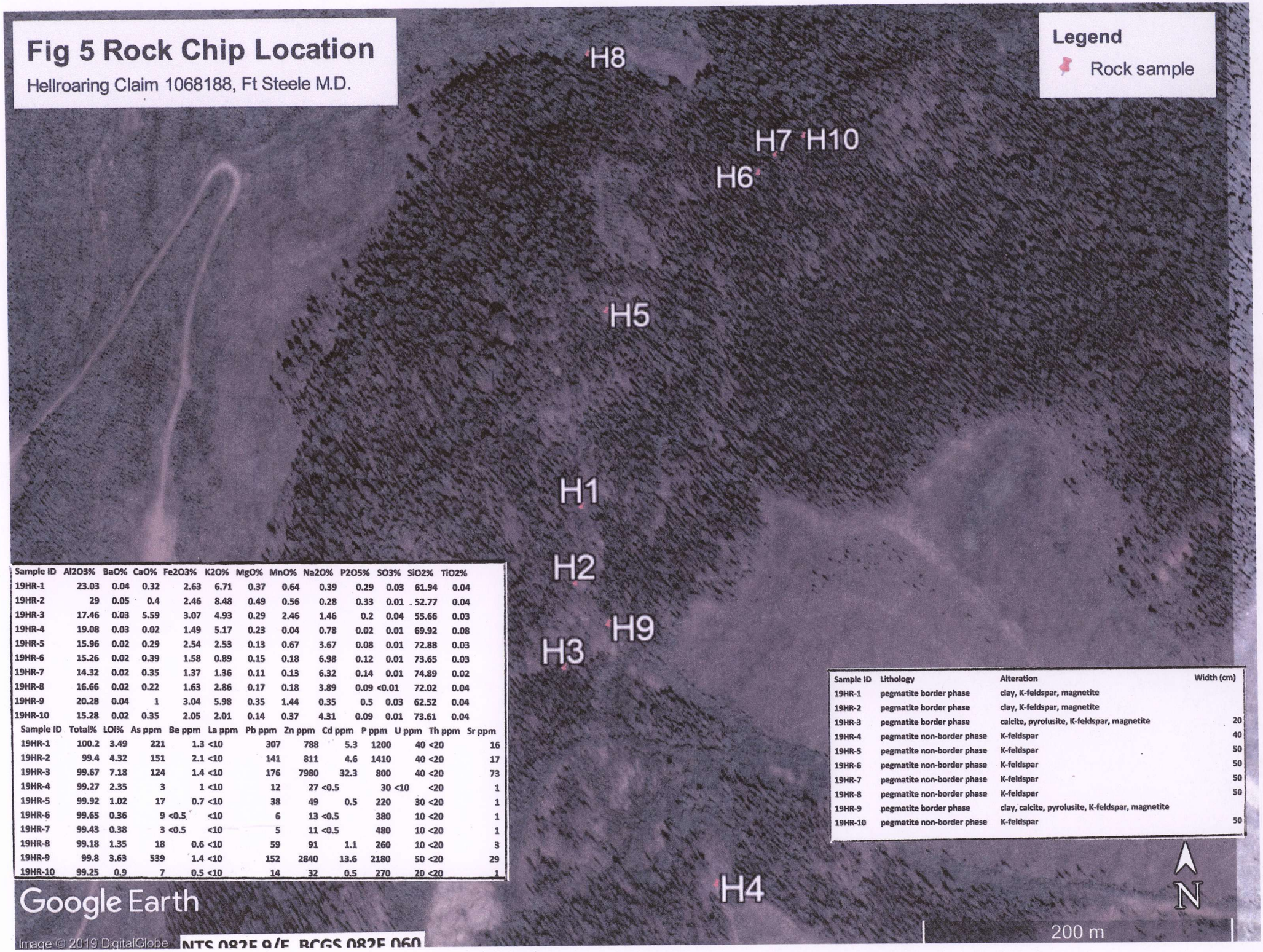


Fig 5 Rock Chip Location

Hellroaring Claim 1068188, Ft Steele M.D.

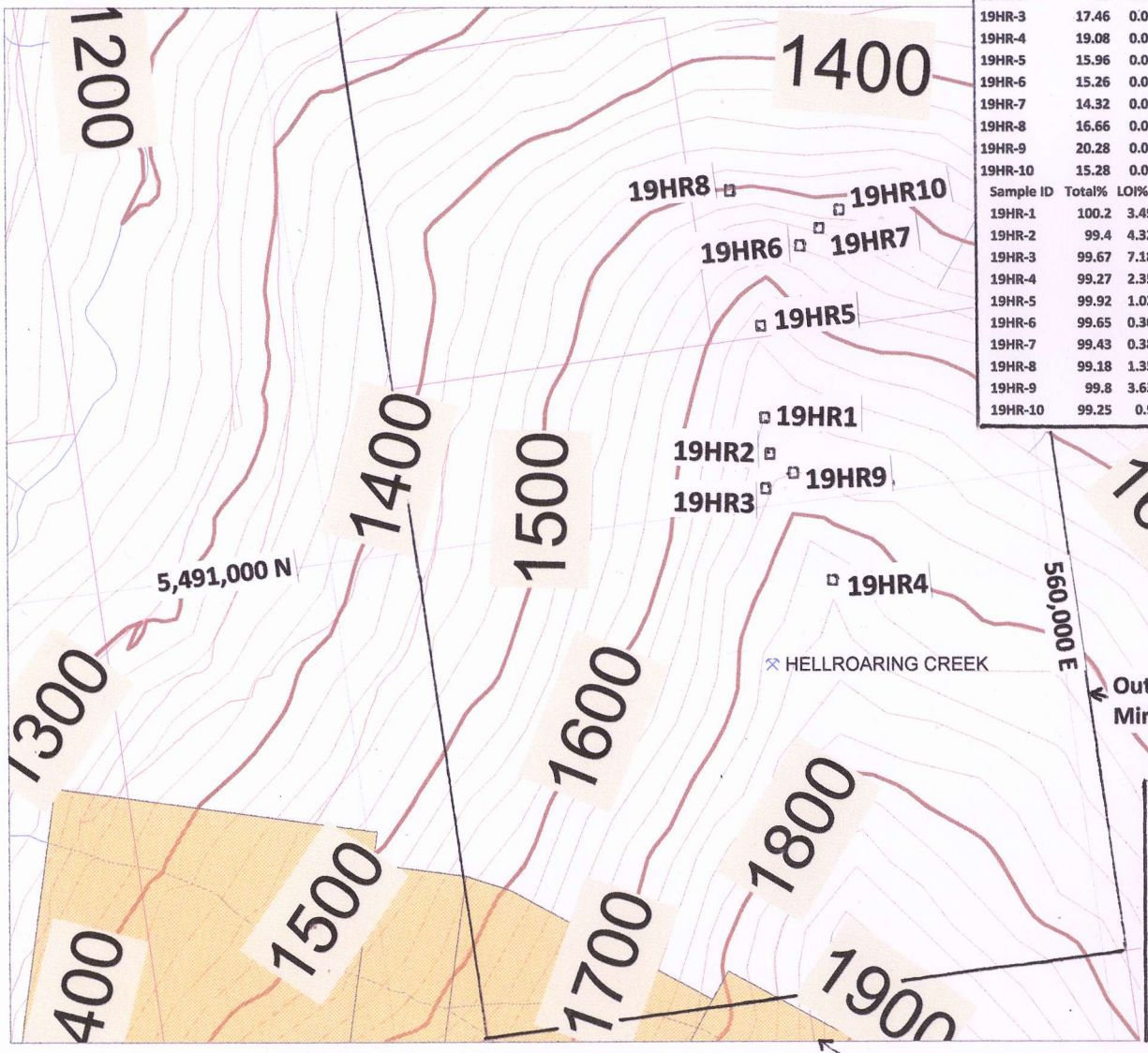


Sample ID	Al2O3%	BaO%	CaO%	Fe2O3%	K2O%	MgO%	MnO%	Na2O%	P2O5%	SO3%	SiO2%	TiO2%
19HR-1	23.03	0.04	0.32	2.63	6.71	0.37	0.64	0.39	0.29	0.03	61.94	0.04
19HR-2	29	0.05	0.4	2.46	8.48	0.49	0.56	0.28	0.33	0.01	52.77	0.04
19HR-3	17.46	0.03	5.59	3.07	4.93	0.29	2.46	1.46	0.2	0.04	55.66	0.03
19HR-4	19.08	0.03	0.02	1.49	5.17	0.23	0.04	0.78	0.02	0.01	69.92	0.08
19HR-5	15.96	0.02	0.29	2.54	2.53	0.13	0.67	3.67	0.08	0.01	72.88	0.03
19HR-6	15.26	0.02	0.39	1.58	0.89	0.15	0.18	6.98	0.12	0.01	73.65	0.03
19HR-7	14.32	0.02	0.35	1.37	1.36	0.11	0.13	6.32	0.14	0.01	74.89	0.02
19HR-8	16.66	0.02	0.22	1.63	2.86	0.17	0.18	3.89	0.09	<0.01	72.02	0.04
19HR-9	20.28	0.04	1	3.04	5.98	0.35	1.44	0.35	0.5	0.03	62.52	0.04
19HR-10	15.28	0.02	0.35	2.05	2.01	0.14	0.37	4.31	0.09	0.01	73.61	0.04

Sample ID	Total%	LOI%	As ppm	Be ppm	La ppm	Pb ppm	Zn ppm	Cd ppm	P ppm	U ppm	Th ppm	Sr ppm
19HR-1	100.2	3.49	221	1.3	<10	307	788	5.3	1200	40	<20	16
19HR-2	99.4	4.32	151	2.1	<10	141	811	4.6	1410	40	<20	17
19HR-3	99.67	7.18	124	1.4	<10	176	7980	32.3	800	40	<20	73
19HR-4	99.27	2.35	3	1	<10	12	27	<0.5	30	<10	<20	1
19HR-5	99.92	1.02	17	0.7	<10	38	49	0.5	220	30	<20	1
19HR-6	99.65	0.36	9	<0.5	<10	6	13	<0.5	380	10	<20	1
19HR-7	99.43	0.38	3	<0.5	<10	5	11	<0.5	480	10	<20	1
19HR-8	99.18	1.35	18	0.6	<10	59	91	1.1	260	10	<20	3
19HR-9	99.8	3.63	539	1.4	<10	152	2840	13.6	2180	50	<20	29
19HR-10	99.25	0.9	7	0.5	<10	14	32	0.5	270	20	<20	1

Sample ID	Lithology	Alteration	Width (cm)
19HR-1	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-2	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-3	pegmatite border phase	calcite, pyrolusite, K-feldspar, magnetite	20
19HR-4	pegmatite non-border phase	K-feldspar	40
19HR-5	pegmatite non-border phase	K-feldspar	50
19HR-6	pegmatite non-border phase	K-feldspar	50
19HR-7	pegmatite non-border phase	K-feldspar	50
19HR-8	pegmatite non-border phase	K-feldspar	50
19HR-9	pegmatite border phase	clay, calcite, pyrolusite, K-feldspar, magnetite	
19HR-10	pegmatite non-border phase	K-feldspar	50

Fig 6 Hellroaring Claims Rock Sample Locations



Sample ID	Al2O3%	BaO%	CaO%	Fe2O3%	K2O%	MgO%	MnO%	Na2O%	P2O5%	SO3%	SiO2%	TiO2%
19HR-1	23.03	0.04	0.32	2.63	6.71	0.37	0.64	0.39	0.29	0.03	61.94	0.04
19HR-2	29	0.05	0.4	2.46	8.48	0.49	0.56	0.28	0.33	0.01	52.77	0.04
19HR-3	17.46	0.03	5.59	3.07	4.93	0.29	2.46	1.46	0.2	0.04	55.66	0.03
19HR-4	19.08	0.03	0.02	1.49	5.17	0.23	0.04	0.78	0.02	0.01	69.92	0.08
19HR-5	15.96	0.02	0.29	2.54	2.53	0.13	0.67	3.67	0.08	0.01	72.88	0.03
19HR-6	15.26	0.02	0.39	1.58	0.89	0.15	0.18	6.98	0.12	0.01	73.65	0.03
19HR-7	14.32	0.02	0.35	1.37	1.36	0.11	0.13	6.32	0.14	0.01	74.89	0.02
19HR-8	16.66	0.02	0.22	1.63	2.86	0.17	0.18	3.89	0.09	<0.01	72.02	0.04
19HR-9	20.28	0.04	1	3.04	5.98	0.35	1.44	0.35	0.5	0.03	62.52	0.04
19HR-10	15.28	0.02	0.35	2.05	2.01	0.14	0.37	4.31	0.09	0.01	73.61	0.04

Sample ID	Total%	LOI%	As ppm	Be ppm	La ppm	Pb ppm	Zn ppm	Cd ppm	P ppm	U ppm	Th ppm	Sr ppm
19HR-1	100.2	3.49	221	1.3	<10	307	788	5.3	1200	40	<20	16
19HR-2	99.4	4.32	151	2.1	<10	141	811	4.6	1410	40	<20	17
19HR-3	99.67	7.18	124	1.4	<10	176	7980	32.3	800	40	<20	73
19HR-4	99.27	2.35	3	1	<10	12	27	<0.5	30	<10	<20	1
19HR-5	99.92	1.02	17	0.7	<10	38	49	0.5	220	30	<20	1
19HR-6	99.65	0.36	9	<0.5	<10	6	13	<0.5	380	10	<20	1
19HR-7	99.43	0.38	3	<0.5	<10	5	11	<0.5	480	10	<20	1
19HR-8	99.18	1.35	18	0.6	<10	59	91	1.1	260	10	<20	3
19HR-9	99.8	3.63	539	1.4	<10	152	2840	13.6	2180	50	<20	29
19HR-10	99.25	0.9	7	0.5	<10	14	32	0.5	270	20	<20	1

Sample ID	Lithology	Alteration
19HR-1	pegmatite border phase	clay, K-feldspar, magnetite
19HR-2	pegmatite border phase	clay, K-feldspar, magnetite
19HR-3	pegmatite border phase	calcite, pyrolusite, K-feldspar, magnetite
19HR-4	pegmatite non-border phase	K-feldspar
19HR-5	pegmatite non-border phase	K-feldspar
19HR-6	pegmatite non-border phase	K-feldspar
19HR-7	pegmatite non-border phase	K-feldspar
19HR-8	pegmatite non-border phase	K-feldspar
19HR-9	pegmatite border phase	clay, calcite, pyrolusite, K-feldspar, magnetite
19HR-10	pegmatite non-border phase	K-feldspar

0 300 m

SCALE 1 : 10,000

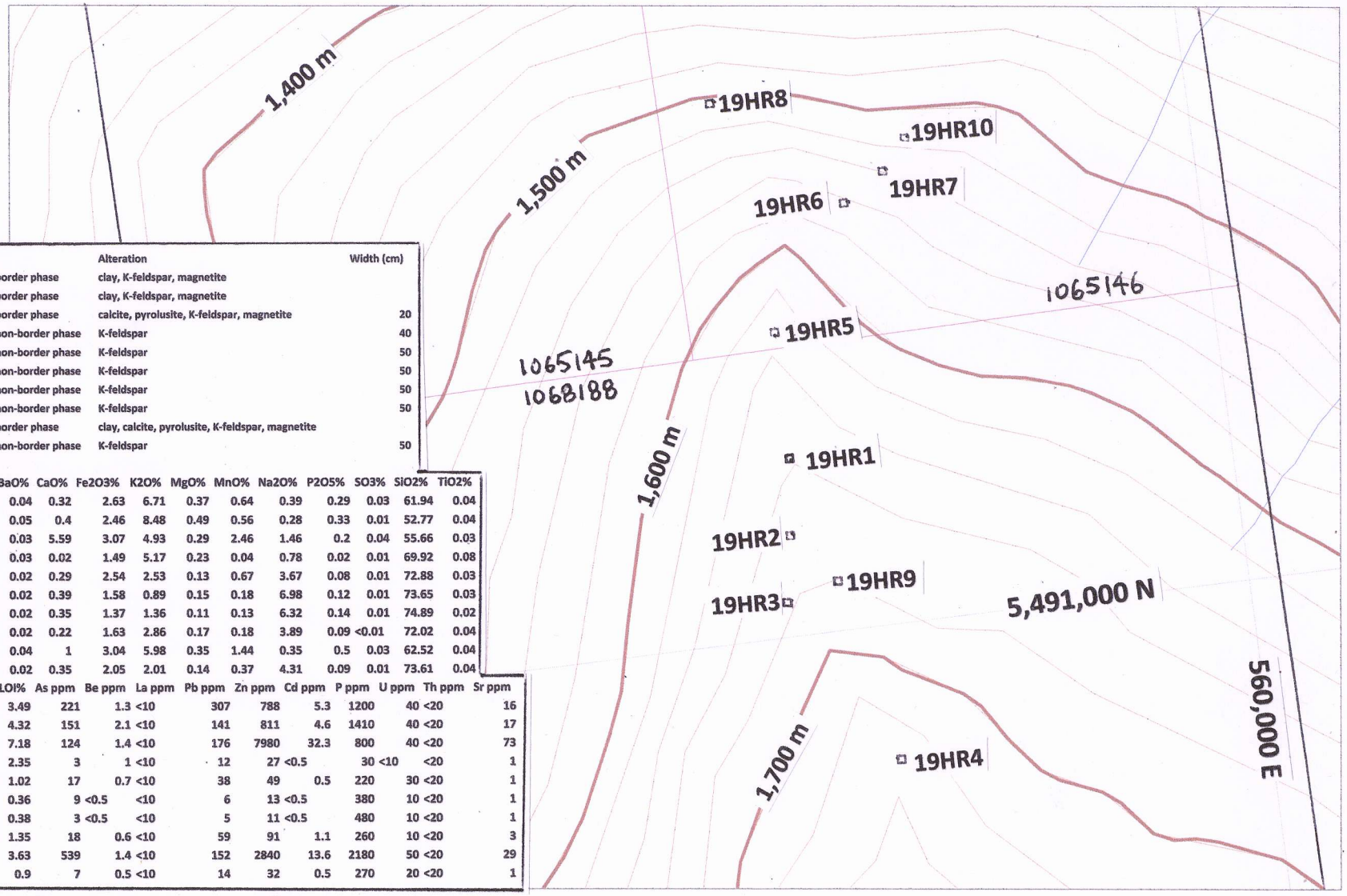
1,000 0 1,000 2,000 3,000

FEET

N

NTS 082F 9/E BCGS 082F.060 Ft Steele Mining Division

Fig 7 Hellroaring Claims Rock Sample Location (Detail)



Sample ID	Lithology	Alteration	Width (cm)
19HR-1	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-2	pegmatite border phase	clay, K-feldspar, magnetite	
19HR-3	pegmatite border phase	calcite, pyrolusite, K-feldspar, magnetite	20
19HR-4	pegmatite non-border phase	K-feldspar	40
19HR-5	pegmatite non-border phase	K-feldspar	50
19HR-6	pegmatite non-border phase	K-feldspar	50
19HR-7	pegmatite non-border phase	K-feldspar	50
19HR-8	pegmatite non-border phase	K-feldspar	50
19HR-9	pegmatite border phase	clay, calcite, pyrolusite, K-feldspar, magnetite	
19HR-10	pegmatite non-border phase	K-feldspar	50

Sample ID	Al2O3%	BaO%	CaO%	Fe2O3%	K2O%	MgO%	MnO%	Na2O%	P2O5%	SO3%	SiO2%	TiO2%
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19HR-3	17.46	0.03	5.59	3.07	4.93	0.29	2.46	1.46	0.2	0.04	55.66	0.03
19HR-4	19.08	0.03	0.02	1.49	5.17	0.23	0.04	0.78	0.02	0.01	69.92	0.08
19HR-5	15.96	0.02	0.29	2.54	2.53	0.13	0.67	3.67	0.08	0.01	72.88	0.03
19HR-6	15.26	0.02	0.39	1.58	0.89	0.15	0.18	6.98	0.12	0.01	73.65	0.03
19HR-7	14.32	0.02	0.35	1.37	1.36	0.11	0.13	6.32	0.14	0.01	74.89	0.02
19HR-8	16.66	0.02	0.22	1.63	2.86	0.17	0.18	3.89	0.09	<0.01	72.02	0.04
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19HR-10	15.28	0.02	0.35	2.05	2.01	0.14	0.37	4.31	0.09	0.01	73.61	0.04

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19HR-2	99.4	4.32	151	2.1	<10	141	811	4.6	1410	40	<20	17
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19HR-5	99.92	1.02	17	0.7	<10	38	49	0.5	220	30	<20	1
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19HR-9	99.8	3.63	539	1.4	<10	152	2840	13.6	2180	50	<20	29
19HR-10	99.25	0.9	7	0.5	<10	14	32	0.5	270	20	<20	1

0 200 m

SCALE 1 : 5,000

500 0 500 1,000 1,500

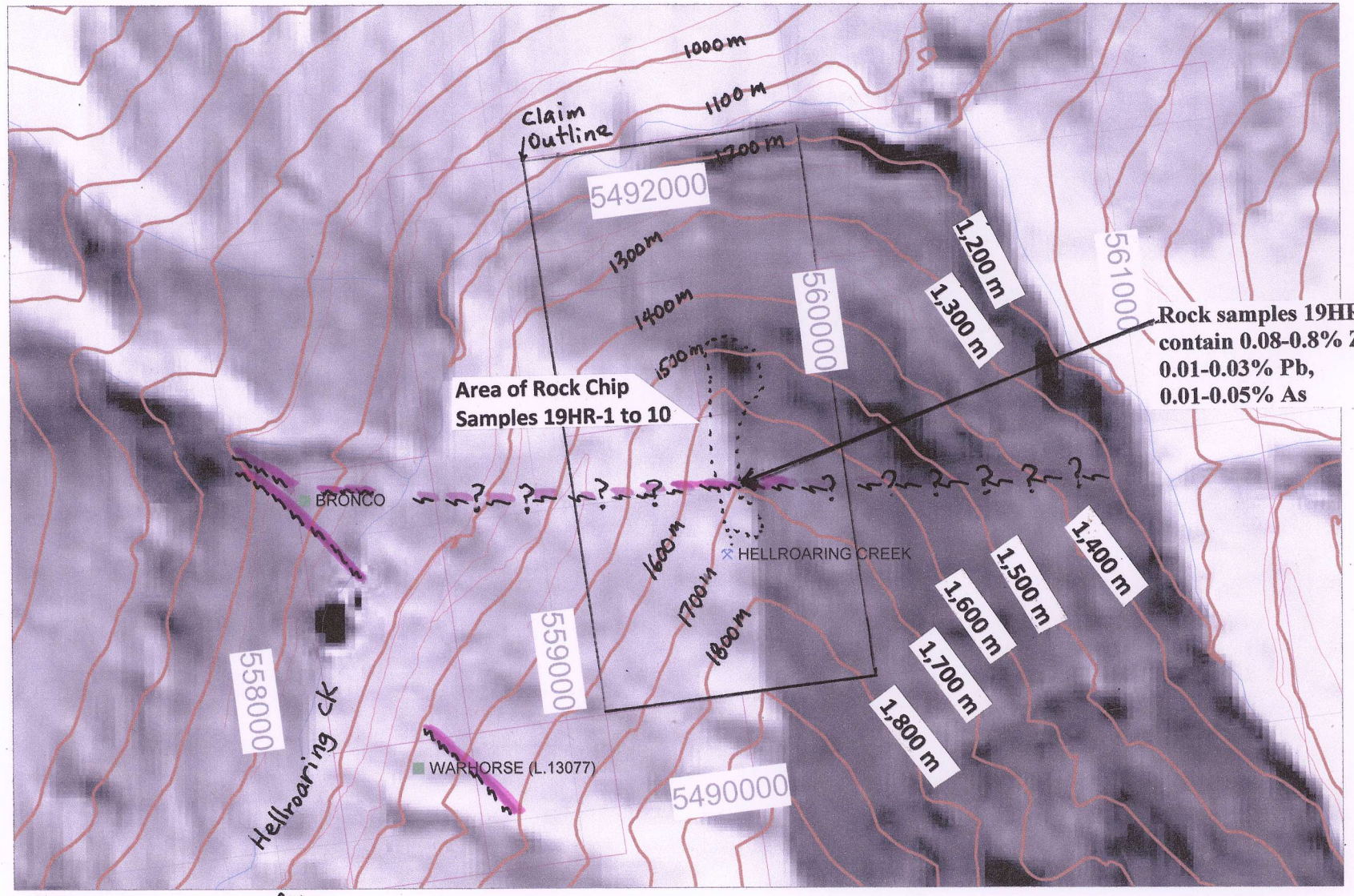
FEET

N

NTS 082F 9/E BCGS 082F.060 Ft Steele Mining Division

Fig 8 Hellroaring Pb-Zn-As Lineament (Interpretation)

Fault



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