

BC Geological Survey  
Assessment Report  
38276



**ASSESSMENT REPORT TITLE PAGE AND SUMMARY**

**TITLE OF REPORT: Geology Report on the Trout Mineral Claim**

**TOTAL COST: \$8,304.71**

AUTHOR(S): Linda Erdman

SIGNATURE(S): 

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): October 1 to 4, 2018

STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): 5733993 March 12, 2019

YEAR OF WORK: 2018

PROPERTY NAME: Trout tenure # 600923

CLAIM NAME(S) (on which work was done): Trout

COMMODITIES SOUGHT: Gold, silver

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 93F 044

MINING DIVISION: Omineca

NTS / BCGS: 93F10

LATITUDE: 53 ° 39 ' 07 "

LONGITUDE: 124 ° 44 ' 42 " (at centre of work)

UTM Zone: EASTING: NORTHING:

OWNER(S): Venerable Ventures Ltd.

MAILING ADDRESS:

Suite 500, 666 Burrard Street  
Vancouver, BC  
V6C 2X8

OPERATOR(S) [who paid for the work]: Venerable Ventures Ltd.

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REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**) Jurassic, Eocene, Ootsa Volcanics, Hazelton Group volcanics, epithermal, brecciation, structural intersections, alluvial cover

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

AR 34474 Geological Assessment report on a Structural Analysis of the Trout 600923 Claim Group.

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	1:50000, 290 ha	Trout	8304.71
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other			
		<b>TOTAL COST</b>	\$8,304.71

# **Assessment Report**

## **Geology Report on the Trout Mineral Claim**

**Tenure Number: 600923**

**Omineca Mining Division  
Fraser Lake Area  
British Columbia  
NTS 93F10  
53° 39'07" North Latitude  
124° 44' 42" West Longitude**

**October 1 to 4, 2018**

**Owner and Operator:  
Venerable Ventures Ltd.**

**Report written by:**

**Linda Erdman B.Sc., M.Sc., P.Geo.**

**for  
Global Geological Services Inc.  
101 – 1001 W. Broadway, Vancouver, BC**

May 14, 2019

## Table of Contents

Summary.....	i
1.0 Introduction.....	1
2.0 Property Description and Location .....	1
3.0 Access and Physiography and Climate .....	1
4.0 Exploration History .....	4
5.0 Geological Setting .....	6
5.1 Regional Geology.....	6
5.2 Property Geology .....	10
6.0 Deposit Types and Styles of Mineralization.....	11
6.1 Original Trout 'DiscoveryZone' .....	11
6.2 Camp and Camp North Zone .....	12
7.0 Data Corroboration.....	12
8.0 2018 Work Program .....	12
9.0 Interpretation and Conclusions.....	14
10.0 Disbursements .....	14
11.0 Bibliography .....	16
12.0 Certificate of Qualified Person.....	18

## List of Tables

Table 1	Tenure information .....	1
Table 2	Work History .....	5
Table 3	Intersecting Feature location (UTM).....	12

## List of Figures

Figure 1	Property Location Map .....	2
Figure 2	Claim Map .....	3
Figure 3	Regional Geology Map.....	8
Figure 4	Intersecting Features .....	13

## List of Appendices

Appendix I	Rock Descriptions and Location Map.....	19
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## SUMMARY

The Trout mineral claim consists of an irregularly shaped, 287.51 hectare claim, located in the Omineca Mining Division of north central British Columbia. It is 100% owned by Venerable Ventures Ltd. and is part of the larger Trout Property.

The Trout mineral claim is located approximately 135 kilometres south west of Prince George and is readily accessed by a network of forest service and secondary logging roads south from the Village of Fraser Lake, 50 kilometres to the north. Regionally it is situated in the Nechako Plateau, an area of subdued relief with extensive glacial drift, and bedrock surface exposures comprises less than 1% of the claim area.

Regional geology shows the area of the Trout mineral claim to be underlain by middle Jurassic volcanics of the Hazelton Group, middle Jurassic sediments of the Bowser Lake Group, and andesites and rhyolites of the Eocene Ootsa Lake Group. These older rocks are unconformably overlain by basalts belonging to the Endako and Chilcotin Groups. Intrusive rocks are identified as the Brooks Diorite complex (mid Triassic to late Jurassic), an undivided Diorite complex (late Cretaceous) and the Copley Lake phase of the Francois Plutonic Suite (Eocene).

The structure of the area is dominated by northeasterly trending normal faults which are thought to have localized deposition of the Eocene volcanic units. Eocene rocks are typically down dropped on the northwest side of these faults.

The Trout showing (Minfile 93F 044) is located in the brecciated hangingwall of a northeasterly trending normal fault and is comprised of round to subround pebble-sized clasts of volcanic rock cemented by quartz-adularia veinlets.

In a structural analysis report, Sookochoff (2013) describes mineralization at the Trout showing as being controlled by the intersection of a northwesterly and a northeasterly fault. He identified three other similar structural feature intersections but no further work ensued. During the 2018 work program site visits were made to each of these three intersections to investigate for potential mineralized features.

No evidence was found to explain the three intersecting structural features identified by Sookochoff except for the northeasterly directed lineament which passes through targets A and B: the valley of Swanson Creek. Outcrops were observed in the vicinity of targets B and C, no outcrops were observed near target A. Lithologies suggest all outcrops are andesites belonging to the Hazelton Group. None of the outcrops exhibited brecciation, silicification, or quartz veining as has been described for the Trout Showing (Minfile 93F 044).

Further work at the locations of the intersecting structural features is not recommended.

## 1.0 Introduction

This report documents the results of a four day geologic mapping program undertaken on the Trout mineral claim. Work was carried out by L. Erdman (P.Geol.) and G. Goodall (P.Geol.) from October 1 to 4, 2018. The Trout mineral claim is located in central British Columbia and is accessed by a series of logging roads and secondary roads leading south from Fraser Lake. Traverses were made to follow-up on three structural intersections identified by Sookochoff (2013) that are similar to the intersection that controls the Trout Showing (Minfile 93F 044).

## 2.0 Property Description and Location

The Trout mineral claim consists of an irregularly shaped, 287.51 hectare mineral claim, located on BCGS map sheet 093F.067 within the Omineca Mining Division of central British Columbia (Figure 1). The claim belongs to the much larger Trout property which is located approximately 135 kilometres west of Prince George, BC and 50 kilometres south of the Village of Fraser Lake. The claim surrounds, and lies to the south of, the legacy two post claims of Winnie, Maggie, Maren and Jocelyn. These latter claims cover the Trout showing, which is a low sulphidation, gold and silver bearing epithermal system first discovered in 1984. The Trout mineral claim is centered at 53° 39' 07" North latitude, 124° 44' 42" West longitude (Figure 2).

Table 1

CLAIM NAME	TENURE NUMBER	EXPIRY DATE	HECTARES
Trout	600923	November 15, 2020*	287.51

\* Expiry date is based on acceptance of this written report

The Trout mineral claim is property is located within a Mineral and Placer reserve, number 332561, which has a Conditional Registration Reserve (CRR) designation. According to information on the website: <https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/mineral-titles/reserves/getting-started> the CRR “permits acquisition of title on a parcel of land subject to the specific conditions stated in the Regulation. For example, a conditional reserve over a proposed hydro transmission line right-of-way would allow acquisition of a mineral claim but provide that the recorded holder or agent must not interfere with, obstruct or endanger the construction, operation or maintenance of that project identified in the Regulation.” At this time there are no land use conflicts and neither are there any known Native Land Claims issues. There are no known environmental concerns. Logging operations are active throughout the region. Prior to conducting exploration, a Mineral Exploration permit must be granted by the Ministry of Energy and Mines. A Free Use permit will be required from the Ministry of Forests should disturbance of timbered areas exceed the allowance in the MinEx permit.

## 3.0 Access, Physiography and Climate

The Trout property is accessed by taking the Kenny Dam Forest Service road turn off from Highway 16 at Vanderhoof and driving southwest along the Nechako River to kilometre 71 where a left turn is made onto the Swanson Forest Service Road (FSR 9933 01). This secondary road heads south for 5.3 kilometres and then take the fork to the right. Continue for 2.9 km to the old



# Figure 1 Location Map



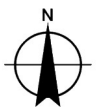
Legend



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.

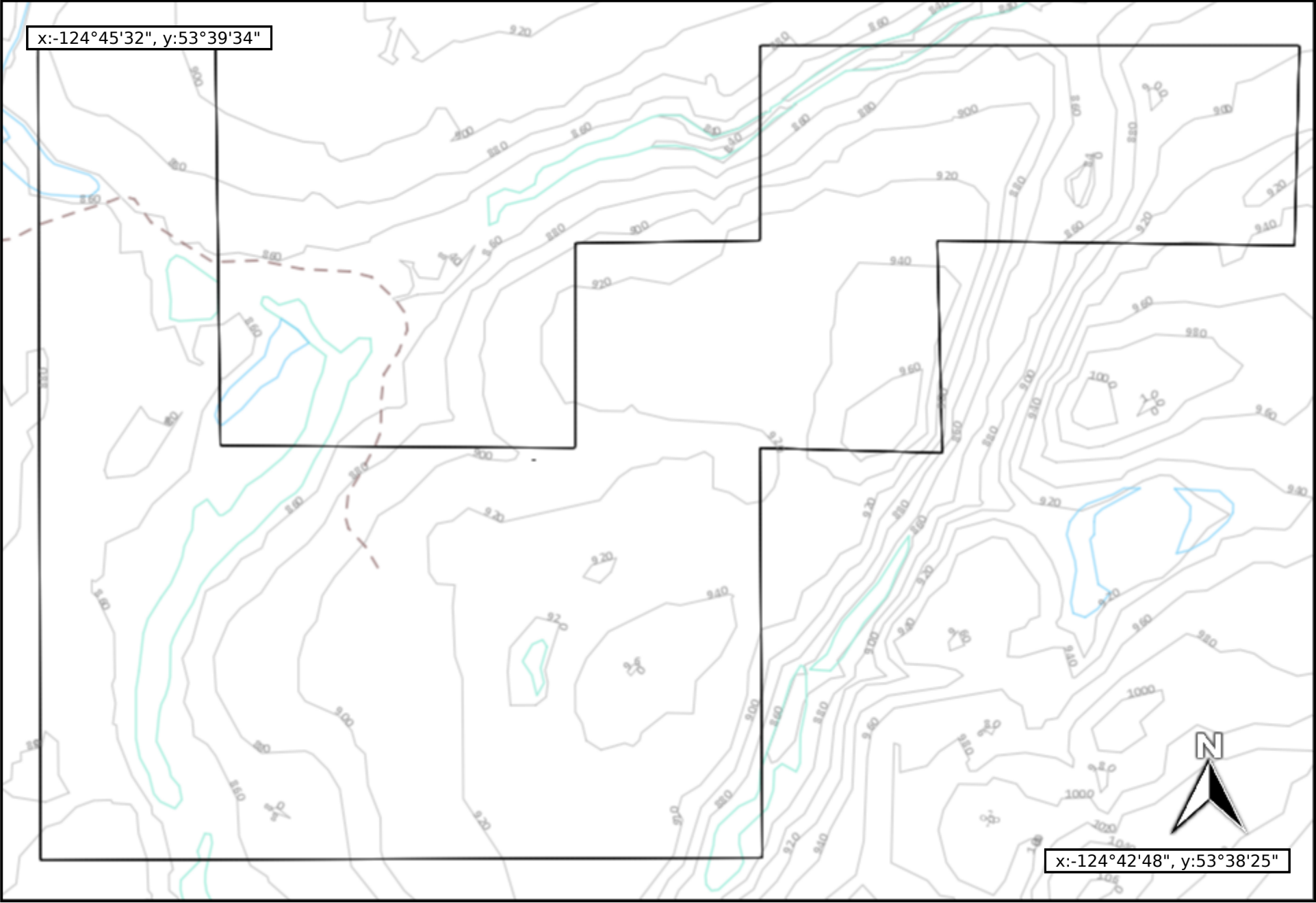
**Center:** 52°40'5", -122°34'23"  
**Scale:** 1 : 8666858  
**SRS:** EPSG:3857  
**UTM Zone:** 10





# Figure 2

## Trout Claim Tenure 600923



400 m  
1300 ft

May/03/2019  
Scale 1:20000

This map is generated from MapPlace.



Trout exploration camp. At this point the road has been deactivated and access to the claim is on foot.

The Trout property is located within the Nechako Plateau region of central British Columbia and is centered over the low lying drainage of Swanson Creek. Topography on the property is gentle, with rolling hills and broad wet valleys, elevations range from 840 metres to 940 metres. At higher elevations the vegetation consists of a mixed and open growth of white spruce, aspen, and lodge pole pine. At lower elevations small creek valleys, swamps and marshes are dominant and small diameter, dense, black spruce growths are typical. All elevations are below tree line.

A portion of the Trout claim has been logged by clear cut, since replanted, and timber which was infected by Pine Beetle has fallen to the ground to form a cover resembling toppled “pick-up sticks”. At present there is no merchantable timber remaining.

The Nechako Plateau is an area of subdued relief with extensive glacial drift and bedrock surface exposures are typically limited to 5-10%. Outcrop is rare and soil/till cover typically ranges from 1 meter to several meters thick. On the Trout claim outcrop is limited to road cuts, and creek drainages and comprises less than 1% of the claim area.

The Trout claim has a temperate continental climate with warm summers, ranging from 5 to 25°C, and cold winters, ranging from 0 to lows of -30°C. Annual precipitation averages 33 cm of rainfall and 165 cm of snowfall. Surface exploration work on the property is best carried out between April and October.

#### **4.0 Exploration History**

The area surrounding and underlying the Trout claim was first mapped at a scale of 1:250,000 by the Geological Survey of Canada (Tipper, 1963). Subsequent detail mapping at 1:50,000 was carried out by Anderson, Snyder, Resnick and Barnes (1998) on the Big Bend Creek map sheet (NTS 93F/10).

The earliest recorded geological exploration work on and around the Trout claim dates back to 1978 when several major and junior exploration companies were actively searching the Nechako area for uranium and molybdenum mineralization. At the time, the Nechako Plateau was considered a relatively remote area to explore, characterized with few access roads. With the discovery of gold at the Trout 'Discovery' outcrop in the summer of 1984 companies realized the potential for precious metal mineralization and the focus of exploration changed.

A table of previous assessment work on the entire claim group is presented as Table 2. Note that with the exception of the work done in 2013 (AR 34474) most of this previous work occurred on the larger Trout Property not specifically on the Trout claim (Tenure 600923). For detailed descriptions of the Trout Property work history refer to previous assessment reports listed in Table 1. A brief synopsis, from MINFILE, is provided below the table.

Table 2

<b>Year</b>	<b>Type of Work</b>	<b>Company</b>	<b>Assessment reports</b>
1978	Drilling	E&B Exploration	06195
1984-1985	Prospecting/Trenching/Drilling	Kerr Addison	13937,16539
1987	Soils/Trenching/Rotary Drilling	Welcome North	16733
1993-1994	1250m Drilling	Cogema	23389
1995-1997	Sampling/ 615m Drilling	Phelps Dodge	24147, 24833, 25257
2000	Rock Sampling	Carmichael	26711
2004	310m Drilling	Southern Rio	27468
2010	Airborne survey -6900 hectares	Landmark Geological	32229
2012	78 kms cut line / IP/ trenching & 2019m diamond drilling	Venerable Ventures	34163
2013	Structural Analyses	Gold Bridge Holdings	34474
2014	Soils/ Mapping/Prospecting	Venerable Venture	35187
2015	Soils	Venerable Ventures	36090

Precious metals were first discovered by Kerr Addison Mines Limited in 1984 when gold and silver values within a 60 by 300 metre zone were reported. Subsequent exploration by Kerr Addison and Welcome North Mines Limited including drilling in 1985, 1987 and 1990, targeted mainly on the Discovery zone, failed to trace the mineralization. In 1990, the property was optioned by Goldrite Resources and nine HQ holes (1050 metres) were completed on the Discovery and Camp zones (not shown in table above as assessment work was not filed). In 1992, Cogema Resources Inc. staked the ground and an airborne geophysical survey (VLF-EM, magnetics and resistivity) was flown in 1993. Eleven diamond drillholes totalling 1221 metres were completed in 1994.

In 1995, Phelps Dodge Corporation of Canada Ltd conducted a program of geological mapping, prospecting and rock sampling designed to explore for continuations of mineralization to the northeast and southwest of the Trout showing. A number of float and bedrock samples were found to contain elevated to highly anomalous gold and silver concentrations, often with anomalous lead, mercury and arsenic.

In 1996, Phelps Dodge conducted geological mapping and re-logging drillcore which provided a better understanding of the lithological and structural controls to mineralization in the Trout deposit. Bedrock samples collected along trend of the Discovery outcrop all contained anomalous concentrations of gold and silver over a total distance of 3.6 kilometres.

Work in 1997 by Phelps Dodge consisted of 615.1 metres of diamond drilling in four holes to test for extensions of the Trout mineralization along dip of the altered breccia-conglomerate unit.

In 2004, Southern Rio Resources Ltd completed a total of 310.5 metres of diamond drilling in four holes. The results of the diamond drilling program show that the northeasterly trending, normal fault structure extends both downdip and along strike to the northeast from the Discovery Zone.

In 2010, Landmark Geological, completed an airborne magnetic survey over the entire Trout gold-silver property, totalling 825 line kilometres of magnetic and electromagnetic data. The survey identified several lineaments that trend northwest, north and northeast from the Discovery zone area.

In 2012, Venerable Ventures Ltd. conducted a diamond drill program on the property. Ten holes were drilled into four target areas within the boundaries of the graben feature for a total of 2019 metres. They also completed 211 meters of trenching across eight profiles in the Camp and Camp North areas.

In 2015, Venerable Ventures Ltd. announced that, pursuant to a Mineral Property Purchase Agreement dated November 23, 2015 with Robert Carmichael and Landmark Geological Inc., it had completed the purchase of the Trout Property.

## **5.0 Geological Setting**

### **5.1 Regional Geology**

The Trout property is situated in the Nechako Plateau, which is at the northern end of the much larger Interior Plateau region of central British Columbia, which is part of the Intermontane Belt. This latter Belt consists of late Paleozoic to late Tertiary sedimentary and volcanic rocks belonging to the Stikinia, Cache Creek and Quesnellia Terranes. The Yalakom and Fraser fault systems bound the plateau to the northeast and southwest.

The geology of the area was first mapped at a regional scale of 1:250,000 by Tipper (1963) with additional mapping by Lane and Schroeter (1997). The Big Bend Creek map sheet (93F/10) was most recently mapped in 1997 as part of the combined GSC / BCGS NATMAP project (Anderson et.al., 1998). Regional geology for this map sheet is shown in Figure 3 (from Massey et al, 2005). As with much of the Nechako Plateau area, bedrock mapping in the Big Bend Creek map sheet is hampered by a lack of outcrop due to thick glacio-fluvial and glacio-lacustrine sediments and gently rolling topography.

According to Lane & Schroeter (1997) the Nechako region is underlain by basement rocks of the Stikine Terrane comprised of remnants of superposed island arc volcanics and associated marine sequences that are assigned to the Lower Permian Asitka, the Upper Triassic Stuhini and the Lower and Middle Jurassic Hazelton Groups.

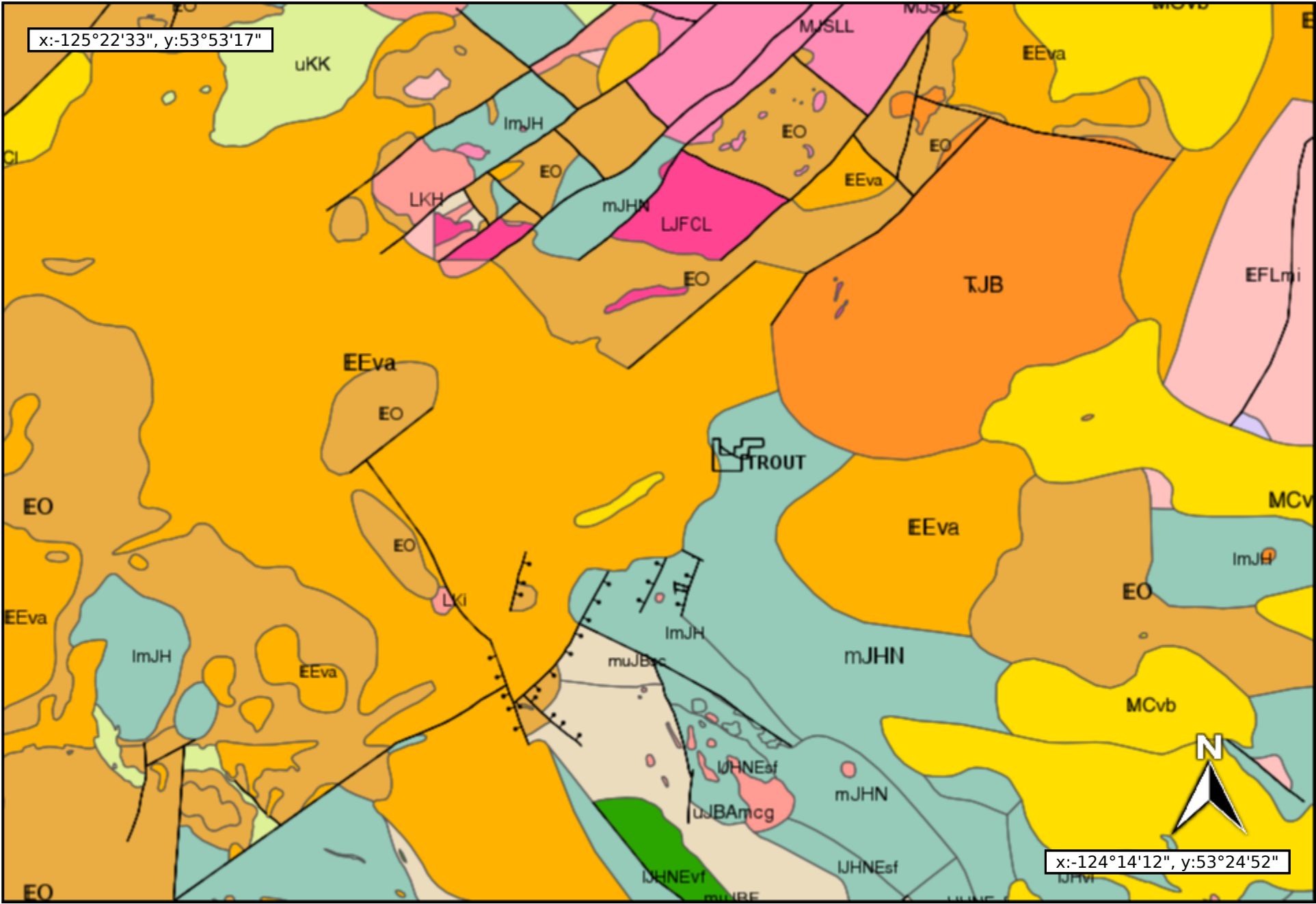
The regional geology within 25 km of the Trout claim is described below (Figure 3).

Hazelton Group volcanics (mJHN, ImJH) are the oldest units mapped in the area of the Trout claim, and on the regional map of Massy et.al. (2005) the Trout claim is shown to be primarily underlain by volcanics of the Hazelton Group. The rocks are typically maroon and green, heterogeneous, plagioclase-rich epiclastic volcanoclastic rocks and lapilli to pebble volcanic breccia and crystal lithic tuff, and rare grit layers and minor andesite flows.

During Middle Jurassic time, the previous widespread volcanism ended and structural onlap of the Cache Creek Terrane onto Stikinia led to the formation of basinal settings. Initial deposits in

# Figure 3 Regional Geology

within 25 km of Trout claim after Massey et.al. 2005



10 km  
6 mi

May/09/2019  
Scale 1:500000  
This map is generated from MapPlace.

Figure 3 Regional Geology Legend (after Massy et al 2005) Note: 2 pages in length

Map unit	Unit Name	Age	Description
MPCvb	Chilcotin Group	Neogene to Quaternary	Olivine basalt flows; minor interflow breccia and pillow breccia; locally includes gabbro, conglomerate, sandstone, siltstone and diatomite
MiCvb	Chilcotin Group	Neogene	Tan, reddish tan, dun, to light grey, vesicular to amygdaloidal, massive to scoariaceous, aphanitic, clinopyroxene-, plagioclase-magnetite- and rarely olivine-phyric, subalkaline basalt flow and rare hyaloclastite rocks; flows are 30 cm-5 m thick.
EEva	Endako Formation	Eocene	Brownish grey, rusty brown, buff, to grey-green, basaltic andesite and andesitic lava flow, hyaloclastite, tuff and hematite-rich interflow breccia units which are vesicular and amygdaloidal, thin and locally flow-layered and/or columnar-jointed.
EO	Ootsa Lake Formation	Eocene to Oligocene	Flow-laminated rhyolite with minor rhyolite fragments, primary flow folding, minor vesicles, perlitic or spherulitic textures and/or minor lithophysae; variegated buff white to tan, pink, brown, orange, green, and grey, porphyritic and aphanitic rocks.
LKi	Undivided intrusive rocks	late Cretaceous to Pliocene	Undivided plugs, sills and dykes: greenish grey to mottled pink and white, fine- to medium-grained, equigranular (biotite-) hornblende diorite, granodiorite, and granite, porphyritic diorite and syenite, and pegmatitic monzonite and pyroxene-rich.
LKH	Holy Cross Pluton	Late Cretaceous	Greenish grey, homogeneous, andesitic hornblende-plagioclase porphyry; minor dark grey clinopyroxene gabbro.
uKK	Kasalka Group	Late Cretaceous	Grey-green or purple, heterolithic andesite lapilli tuff and tuff breccia; some pale-green to green, andesite to dacite, aphanitic (biotite-, hornblende- and/or chloritized pyroxene-) plagioclase-phyric crystal-rich flows, tuffs, and volcanic rocks.

LJFCL	Francois Lake Plutonic Suite – Copley Lake Phase	late Jurassic with Copley Lake phase as Eocene	Mottled pink and white, unfoliated, fine- to medium-grained biotite monzogranite.
uJBAmcg	Bowser Lake Group – Ashman Formation	mid to late Jurassic	Conglomerate, sandstone, siltstone and minor mudstone: conglomerate is planar bedded and contains off white to light grey chert and lesser black argillite pebbles and cobbles, interlayered grey or light green siltstone and sandstone.
muJBsc	Bowser Lake Group	mid to late Jurassic	Undivided, greenish grey heterolithic conglomerate, grey or light green siltstone and sandstone, and minor dark green and black mudstone: conglomerate is clast- to matrix supported, poorly sorted, and poorly to planar bedded.
MJHn	Hazelton Group	middle Jurassic	Undivided, dark green, greenish grey and maroon, clinopyroxene- and plagioclase-phyric basaltic and andesitic lava flows, volcanic breccia and conglomerate, undivided volcanoclastic rocks, rare hyaloclastite, and associated argillite and greywacke.
ImJH	Hazelton Group	early to mid Jurassic	Undivided, maroon, maroon-grey, and green, heterogeneous, fine- to coarse-grained, feldspar-phyric basaltic, andesitic and rhyolitic pyroclastic and flow rocks; heterolithic and monolithic volcanoclastic and epiclastic volcanic rocks, and tuffaceous rocks.
TrJB	Brooks Diorite Complex	Middle Triassic to late Jurassic	Diorite, monzodiorite, monzonite, amphibolite

these basins consisted primarily of shale, succeeded by chert dominated coarse clastic deposits characteristic of marine regression and fluvial-deltaic sedimentation. This depositional sequence is represented by the Bowser Lake Group (muJBsc uJBAmcg). These rocks are rusty to black, unfossiliferous, sedimentary rocks including: basal well bedded, siltstone and shale; medial siltstone and fine grained, chert-rich sandstone; and, upper sandstone and chert-rich conglomerate.

During Early Cretaceous time Hazelton Group volcanics were conformably overlain by rocks of the Skeena Group (not represented on Figure 3), shallow marine sediments comprised of chert pebble conglomerate, minor argillite, conglomerate, sandstone, and mudstone.

Upper Cretaceous calc-alkaline hornblende phyric andesite flows of the Kasalka Group (uKK), stratigraphically overlie the Skeena Group and mark the construction of a continental margin arc. This volcanism remained active until latest Late Cretaceous time.

Continental arc magmatism was re-established during Middle to Late Eocene time with the eruption of andesites and rhyolites belonging to the Ootsa Lake Group (EO). These volcanic units unconformably overlie the older rocks in the area and generally appear as windows in the overlying Endako and Chilcotin Groups. The Ootsa Lake volcanics are typically heterogeneous pale pink to rusty tan felsic porphyry, tuff, breccia and dacite and rhyolite flows which commonly exhibit weak but widespread clay alteration, rare disseminated pyrite, and pyrolusite fracture coatings.

Flat lying andesite and basalt flows of the Eocene to Oligocene Endako Group (EEva) cover about one half of map sheet 93F 10 and are in turn overlain by basalts of the Miocene and Pliocene Chilcotin Group (MiCvb, MPCvb), a broad lava plateau covering much of south central British Columbia.

Four suites of plutonic rocks have been recognized in the area: the mid Triassic to late Jurassic Brooks Diorite Complex (TrJB); the Late Cretaceous Holy Cross pluton; undivided Late Cretaceous to Pliocene intrusives (LKi); and the Eocene Copley Lake phase of the Francois Lake Plutonic Suite (LJFCL). The Copley Lake plutonic phase is interpreted to be an intrusive equivalent to the Ootsa Lake volcanic rocks.

The structure of the area is dominated by northeasterly trending normal faults which are thought to have localized deposition of the Eocene volcanic units. Eocene rocks are typically down dropped on the northwest side of these faults.

## **5.2 Local and Property Geology**

The following description applies to the Trout showing (Minfile 93F 044), which lies 100 meters to the west of the Trout Mineral Claim (600923) – the subject of this report.

According to the regional geology map of Massey et. al. (2005) (Figure 3) the Trout showing is underlain by Middle Jurassic Hazelton Group: undivided, dark green, greenish grey and maroon, clinopyroxene- and plagioclase-phyric basaltic and andesitic lava flows, volcanic breccia and conglomerate, undivided volcanoclastic rocks, rare hyaloclastite, and associated argillite and greywacke. These same rocks also underlie the Trout Mineral Claim – the subject of this report.

After the 1984 discovery of gold mineralization at the Trout showing additional mapping and other geologic studies suggested the area is underlain by various volcanic and sedimentary rocks belonging to the Ootsa Lake, Kasalka and Endako groups, as well as volcanics belonging to the Hazelton Group. In various reports the rocks which host the Trout showing have been described as belonging to the Eocene Endako Group (Anderson et al., 1998); or the Cretaceous Kasalka Group (Lane and Schroeter, 1997), or by Upper Cretaceous to Lower Tertiary Ootsa Lake volcanics intruded by porphyritic felsic dykes (MINFILE 93F 044). All studies agree the



showing is localized along a major northeasterly trending normal fault, topographically expressed as a swampy creek valley (Swanson Creek).

The fault is interpreted to separate Jurassic Hazelton volcanics to the southeast from Eocene Ootsa Lake volcanics and volcanoclastics to the northwest. The Jurassic volcanics are described by Fox (1997) as consisting of felsic ash tuff, lapilli tuff and flow breccia which are locally flow-banded with minor interbedded sedimentary rocks. Ootsa Lake rocks are primarily andesite flows, flow breccias and tuffs with secondary rhyolite and dacite banded flows and breccias. Gold mineralization is, for the most part, restricted to the brecciated hanging wall of the fault.

Kasalka Group (Lane and Schroeter, 1997), or by Upper Cretaceous to Lower Tertiary Ootsa Lake volcanics intruded by porphyritic felsic dykes (MINFILE 93F 044). All studies agree the showing is localized along a major northeasterly trending normal fault, topographically expressed as a swampy creek valley (Swanson Creek).

The fault is interpreted to separate Jurassic Hazelton volcanics to the southeast from Eocene Ootsa Lake volcanics and volcanoclastics to the northwest. The Jurassic volcanics are described by Fox (1997) as consisting of felsic ash tuff, lapilli tuff and flow breccia which are locally flow-banded with minor interbedded sedimentary rocks. Ootsa Lake rocks are primarily andesite flows, flow breccias and tuffs with secondary rhyolite and dacite banded flows and breccias. Gold mineralization is, for the most part, restricted to the brecciated hanging wall of the fault.

## **6.0 Deposit Types and Styles of Mineralization**

The following descriptions applies to the Trout showing (Minfile 93F 044), which lies 100 meters to the west of the Trout Mineral Claim (600923) – the subject of this report.

Mineralization at the Trout showing (MINFILE 93F 044) is consistent with a low-sulphidation epithermal system. Two styles of mineralization have been described.

### **6.1 Original Trout 'DiscoveryZone'**

At the Discovery zone, bonanza style gold and silver mineralization is hosted in banded chalcedony and quartz - adularia stockworks, veinlets and breccias, in and around semi rounded clasts of relatively unaltered and brecciated andesite and conglomerates. These clasts and fragments are commonly rimmed by banded chalcedony and quartz adularia mixes. Thin section descriptions (Potter, 1985) of mineralized breccia samples from the Discovery zone confirm two stages of brecciation both containing small 'bead-like' grains of native gold and argentite, laminated chalcedonic quartz, adularia with quartz and lesser sericite.

Trench sampling averaged 19.5 grams per tonne gold over 5 metres of banded quartz-chalcedony-adularia veining and stockwork in polymictic conglomerate (Schmidt, 1987) and rotary drilling resulted in an assay of 3.7708 grams per tonne gold over 20 metres (Schmidt, 1987).

## 6.2 Camp and Camp North Zone

Low grade gold showings are found in two other areas, the Camp and Camp North zones, located 150 metres northwest and 400 metres north of the Discovery Zone respectively. Gold and minor silver mineralization is hosted predominantly with silicified volcanic breccias, tuffs, conglomerates and clay altered zones. The volcanic rocks are rhyodacitic to trachytic in composition and are highly porphyritic. They are commonly but not always re-cemented or healed with pervasive silica, quartz veinlets and laminated silica and quartz and clay gouge. Disseminated pyrite is seen but is not overly abundant. Trench sampling has returned grades of 0.41 gram per tonne gold over 21.1 meters (Cuttle, 2012).

## 7.0 Data Corroboration

This report relies on information collected from numerous sources including Geological Survey of Canada memoirs, BC Geological Survey bulletins, the BC Ministry of Mines database of annual reports, assessment reports and Minfile records and personal knowledge.

## 8.0 2018 Work Program

The goal of the 2018 work program was to follow - up on the results reported in Assessment Report 34474 (Sookochof, 2013). Sookochof performed structural analysis on a MapPlace hillside and picked out 71 lineaments. These lineaments were plotted on a rose diagram and three intersecting structural features were identified, labelled A, B, C. He concluded that these locations are important as they structurally relate to the significant gold-silver mineral zone at the Trout showing, but no further work was done.

A follow-up geologic program was conducted on the Trout mineral claim by L. Erdman, P.Geo. and G. Goodall, P.Geo. from October 1 to 4, 2018. The work program consisted of traverses to, and in the vicinity of, each of the three identified structural locations looking for outcrops. As the mineral claim has subdued topography, is forested and is covered by overburden, outcrop is less than 1% the total area. Traverses totaled 9 kilometres.

Table 3 and Figure 4 shows the locations of Sookochof's (2013) structural intersections: targets A, B, C. To see the lineaments associated with these intersections refer to Sookochof's original report.

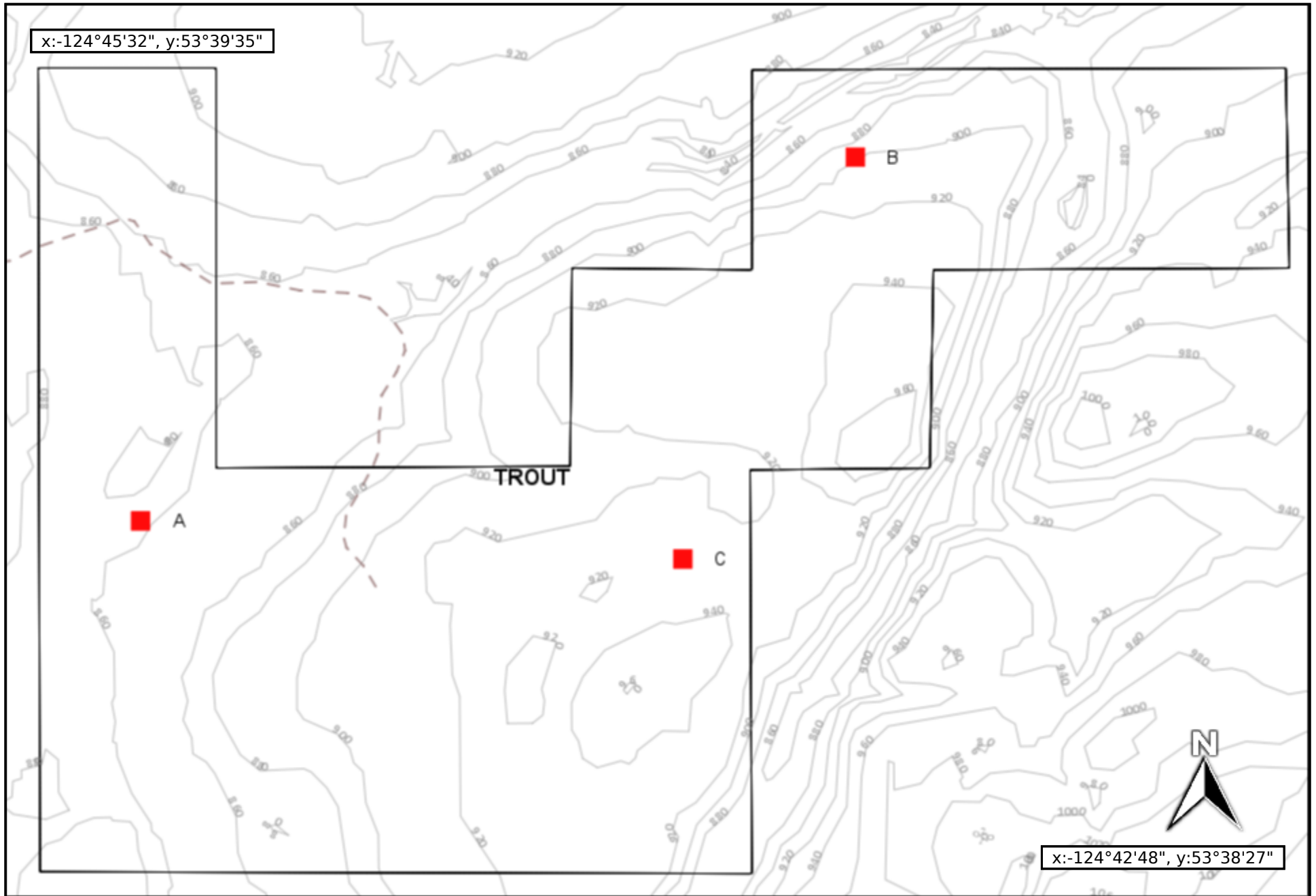
**Table 3**

Intersecting features	UTM East (N83)	UTM North (N83)
Target A	384058	5945880
Target B	385735	5946679
Target C	385300	5945763

The northeasterly directed structural feature at targets A and B is expressed as the valley of Swanson Creek, and is the same structural feature associated with the Trout showing (Minfile

# Figure 4 Structural Intersections

After Sookochof (2013)



400 m  
1300 ft

May/09/2019  
Scale 1:20000

This map is generated from MapPlace.

093F 044). Although Sookochof identified the cross structures at targets A and B as having a north-south orientation these were not observed on the ground. Target C has intersecting structural features in a north-south and a northwest-southeast orientation. This latter target lies on the same northwesterly directed feature as the one controlling the location of the Trout showing. The location of target C is in a heavily treed area and no topography/structures were observed that could explain Sookochof's intersecting structural features.

A total of six outcrops were found in the vicinity targets B and C, no rocks were found by target A. Rocks exposed in outcrop ranged from light green feldspar phyric andesite to a medium green lapilli tuff with lapilli to 1.5 cm in size. None of the outcrops displayed brecciation, nor were they highly silicified or veined by quartz.

## 9.0 Interpretation and Conclusions

During the 2018 work program site visits were made to each of the three structural feature intersections identified by Sookochof (2013).

No evidence was found to explain the identified structural features except for the northeasterly directed lineament which passes through targets A and B. This lineament is expressed as the valley of Swanson Creek. There was no evidence on the ground to explain the north-south or northwesterly directed lineaments.

Six outcrops were located in the vicinity of the intersecting structural feature targets B and C; target A is in the valley of Swanson Creek and no outcrops were discovered. Observed lithologies are andesitic and are suggestive of belonging to the Hazelton Group.

As none of the outcrops exhibited brecciation, silicification, or quartz veining as has been described for the Trout Showing (Minfile 93F 044), further work at the locations of the intersecting structural features is not recommended.

## 10.0 Disbursements

A total of \$8,304.71 was spent on the Trout property during the 2018 geology program, as tabulated below:

Linda Erdman, P. Geo.	4 days - mapping	\$2,800.00
Geoffrey Goodall P. Geo.	4 days – mapping	\$2,800.00
Report Writing and Drafting		\$ 840.00
Transportation		\$ 641.50
Accommodation and Board		\$1,200.00
Miscellaneous		<u>\$ 23.21</u>
	Total	\$8,304.71

Prepared by:  
Global Geological Services Inc.

A handwritten signature in blue ink that reads "Linda Erdman". The signature is written in a cursive style with a large initial "L".

Per: \_

Linda Erdman, B.Sc., M.Sc., P. Geo.  
May 14, 2019

## 11.0 BIBLIOGRAPHY

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## 12.0 CERTIFICATE OF QUALIFIED PERSON

I, Linda R. Erdman, certify to the following:

1. I am a consulting geologist residing at 101 – 1001 W. Broadway, Vancouver, BC
2. I am a graduate of the University of BC with a Bachelor of Science and a Masters of Science degrees in Geology.
3. I am a Professional Geoscientist registered in the Association of Professional Engineers and Geoscientists of British Columbia
4. I have been engaged in geological work since my B.Sc. graduation in 1978.
5. I am a "Qualified Person" as defined by National Instrument 43-101.
6. I am the author of the report titled "Geology Report on the Trout Mineral Claim" dated May 14, 2019



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Linda Erdman, B.Sc., M.Sc., P. Geo.  
May 14, 2019

## APPENDIX I

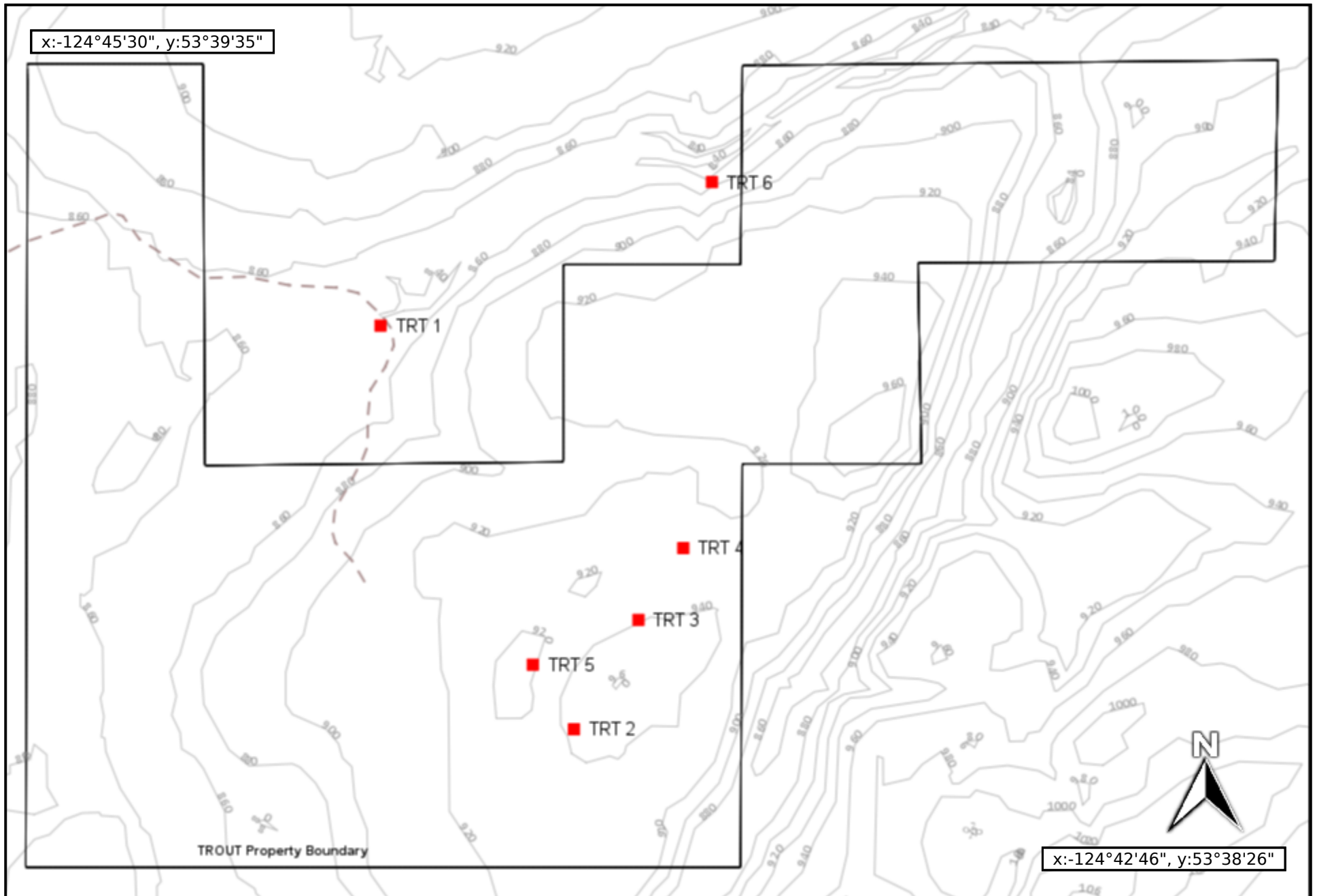
### ROCK DESCRIPTIONS and LOCATION MAP

2018 Fall Work Program - Trout

Station	Easting (N83)	Northing (N83)	Description
TRT 1	384647	5946314	o/c on S side of creek. Maroon -to brick red Bx w angular grn and red frags 1 to 5 cm, abundant Qz and black and white xtls infilling fracs and in matrix
TRT 2	385066	5945359	o/c on hillslope, 1m X 1.5 m, felsic volcanic tuff, light green fresh sfc with pink KFS as diffuse spots (altn?), < 1% vfgd to fgd PY, wk sericite altn
TRT 3	385222	5945629	similar to previous stn but green grey fresh sfc and no pink Kspar alt spots. No vis PY. At this stn there are approx 3% subround to subangular lapilli to 1.5 cm large
TRT 4	385336	5945777	tree root exposure, similar to previous with the larger lapilli, light green fresh sfc with rusty spots. Continue walking at 230 degrees following swamp. About 30m length of sporadic o/c close to Sookochof C
TRT 5	384979	5945524	Small cliff on swamp edge 2m X 6m, Similar to TRT2, large lapilli absent, rare fgd PY, med green fresh surface with diffuse pink spots (K altn?)
TRT 6	385417	5946625	o/c of cgl(?), grey grn fragmental volcanic, fine grain matrix, weakly siliceous, trace PY, FeOx stains on fracs, Qz vnlt

# Appendix 1 Trout Rocks

## Locations of outcrops



400 m  
1300 ft

May/11/2019  
Scale 1:20000

This map is generated from MapPlace.