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Ministry of Energy and Mines
BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT (type of survey(s)): Technical (Prospecting)

AUTHOR(S): Nicholas Langner
Aleoir Ventures

TOTAL COST: \$ 7545.63

SIGNATURE(S): 

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

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): Event # 5854127
August 3-17

YEAR OF WORK: 2021

PROPERTY NAME:

CLAIM NAME(S) (on which the work was done): 1079318 "AMBIGUITY"

COMMODITIES SOUGHT: Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Cariboo Mining Division NTS/BCGS: 093H001

LATITUDE: 53° 4' 0.22" LONGITUDE: -121.7° 53' 35.8" (at centre of work)

OWNER(S):
1) Nicholas Langner
Aleoir Ventures

MAILING ADDRESS:
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OPERATOR(S) (who paid for the work):
1) Nicholas Langner
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PROPERTY GEOLOGY KEYWORDS (if known, e.g., stratigraphy, structure, alteration, mineralization, size and altitude):
Tregulus, Succession, Keithley Succession, glacio fluvial gravels
debris, Holocene, placer gold, paleo gulch

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 0005, 00007, 33327
3417, 3507, 34983, 17016, 17394

Next Page

Aleoir Ventures:
Lightning Creek Claim; 2021 Technical Report

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	OR MINOR CLAIMS	PROJECT COSTS ESTIMATED (SEE MEMO)
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			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)	7,800 m ²	1079318	\$7545.63
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:			\$7545.63

Mineral Titles

Placer Claim Exploration and Development Work/Expiry Date Change

- Select Input Method
- Select/Input Titles
- Input Lots
- Link Event Numbers
- Data Input Form
- Upload Report
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Placer Claim Exploration and Development Work/Expiry Date Change Confirmation

Recorder: LANGNER, NICHOLAS ANDREW (285529) Submitter: LANGNER, NICHOLAS ANDREW (285529)
 Recorded: 2021/DEC/06 Effective: 2021/DEC/06
 D/E Date: 2021/DEC/06

Confirmation

If you have not yet submitted your report for this work program, your technical work report is due in 90 days. The Exploration and Development Work/Expiry Date Change event number is required with your report submission. **Please attach a copy of this confirmation page to your report.** Contact Mineral Titles Branch for more information.

Event Number: 5854127

Work Type: Technical Work
Technical Items: Prospecting

Work Start Date: 2021/AUG/3
Work Stop Date: 2021/AUG/14
Total Value of Work: \$ 7545.63
Mine Permit No:

Summary of the work value:

Title Number	Claim Name	Issue Date	Good To Date	New Good To Date	# of Days Forward	Area in Ha	Applied Work Value	Sub-mission Fee
1079318	AMBIGUITY	2020/OCT/29	2021/OCT/29	2025/MAY/29	1308	97.14	\$ 6956.58	\$ 0.00

Aleoir Ventures:

Lightning Creek Claim; 2021 Technical Report

2021 Technical Report on the Placer Claim "AMBIGUITY"

Barkerville/Wells Designated Area

Cariboo Mining District, Central British Columbia, Canada

NTS Map sheet 093H001

Centre of work: UTM Zone 10 574157E 5880266N

Work done: August 3-14 2021

Event #: 5854127

Tenure Number: 1079318

Methods: Prospecting

Commodities Sought: Gold

Tenure Owner/Operator: Nicholas Langner

Prepared for Aleoir Ventures

Mailing address:

PO Box 2532, RPO St Laurent, Quesnel, BC, V2J 0A7

Prepared by Nicholas Langner

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1.0 Introduction

This report was prepared by Nicholas Langner, for Aleoir Ventures, of which, I, Nicholas Langner, am the sole proprietor. As a prospector, everything written in this report is from my own perspective, observations, and experience. This report outlines the placer claim’s geographic location, physiographic location, access, history, economic assessment, general assessment, and the details of the work performed on placer tenure **1079318 “AMBIGUITY”**.

2.0 Summary

The Claim consists of 5 contiguous cells totalling 97.14 ha (Table 2). It is situated approximately 50 km east from the town of Quesnel, in the Quesnel Highland physiographic region. A forest service road can be easily accessed directly off Highway 26.

The Claim was logged sometime during the past 15-20 years. It is very hilly terrain that has several gulches with streams flowing through them. They tend to flow south west down the mountain to eventually reach Lightning Creek. Being able to access most areas with the use of the forest service road makes work much easier and less time consuming.

The views of the surrounding area are magnificent; there is a panoramic view of the end of the Lightning Creek valley. It is a very healthy mountain habitat, there are many robins and jays, all kinds of rodents, mule deer, lynx, and black bear, among others.

This claim lies along the northern border of **1049252** (“LIGHTNING”) (Figures 2,3) of which, I, Nicholas Langner (Aleoir Ventures) also own 100%. After exploring and prospecting “LIGHTNING” in July/2021 (Event# 5852075), it was determined that my efforts should be focused somewhere northwest of the location of the test hole that I dug on that claim.

My work trailer was already set up from when I had prospected in July of this year; as such, there was no moving or transportation involved. From my work trailer, it was approximately 635 m west, walking up the forest service road to the location of the test hole for “AMBIGUITY”.

Smoke from nearby forest fires and extreme heat were also an issue while prospecting. Each week, I would catch the Wells city bus on Thursday’s directly on the side of the highway as it made its weekly trip to Barkerville and back from the city of Quesnel. The cost of this this transportation is \$5 each way. Every week I would remove any garbage and recycling, the only waste produced was organic.

Electricity was harvested using a 40W solar panel and 12V battery; propane with a single burner was the only source for cooking. All work was done by hand; as a prospector, my work program is specifically designed to have the least amount of impact to the environment while keeping costs at a minimum.

3.0 Terms of Reference

This report has been written to fulfil the requirements for filing assessment work under the British Columbia Mineral Tenure Act. The report describes the exploration work undertaken on placer claim "AMBIGUITY" on the dates of August 3-14, 2021.

For the purposes of this report, all common measurements are given in metric units. All monetary units are in Canadian dollars unless otherwise noted.

Table 1. Abbreviations used in this report

Symbol	Term	Conversion
Au	gold	
km	kilometer	1 km = 3280.84 ft
m	meter	1 m = 3.2808 ft
ft	feet	1 foot = 0.3048 m
yd	yard	1 yard = 0.9144 m
ha	hectare	1 ha = 0.01 km ²
km²	square kilometer	1 km ² = 100 ha
m³	cubic meter	1 m ³ = 1.308 yd ³
yd³	cubic yard	1 yd ³ = 0.7646 m ³
oz	ounce	1 ounce = 28.3495 g; 1 troy ounce (oz t) = 31.1035 g
g	gram	1 g = 0.0352 oz; 1 g = 0.0322 oz t
kg	kilogram	1 kg = 35.274 oz; 1 kg = 32.151 oz t
ppm	parts per million	1 ppm = 1 g/t; 1 g/t = 0.035 oz/t; 1 oz/t = 28.35 g/t
ppb	Parts per billion	1 ppm = 1,000 ppb
ybp	years before present	

4.0 Hours Worked/Cost Statement

A total of **74** hours were worked prospecting over the course of two weeks on the Placer Claim **1079318**.

Prospecting.....	74hrs@ \$90/hr=	<u>\$6660</u>
Food.....	10 days @ \$50/day=	<u>\$500</u>
Transportation.....		<u>\$80</u>
Report Writing.....	10hrs @\$30/hr=	<u>\$300</u>
GST.....		<u>\$5.63</u>

TOTAL: \$7545.63

5.0 Claim Description and Location

This claim consists of five contiguous cells totalling 97.14 ha, and was registered with MTO in October 29 of 2020 (Event # 5816031). It is located in the Cariboo region of British Columbia, within the Quesnel Highland physiographic region. Placer Claim 1049252 (“LIGHTNING”), of which I also own 100%, can be found along the southern border of The Claim (Figures 2,3).

The Claim can be accessed directly via Highway 26 (Figure 4); after driving approximately 50 km east from the city of Quesnel, a Forest Service Road can be found on the north side of the highway, across from Peter’s Creek FSR (5600).

This FSR gives access to all areas of The Claim, whether hiking on foot or using 4x4/ATV, etc. The terrain is flowing and hilly, with meandering gulches, and low-energy streams. Much of the area has been logged and replanted with pine, balsam and spruce trees. Many different blueberry, raspberry, huckleberry, and saskatoon bushes can be found growing in between these trees.

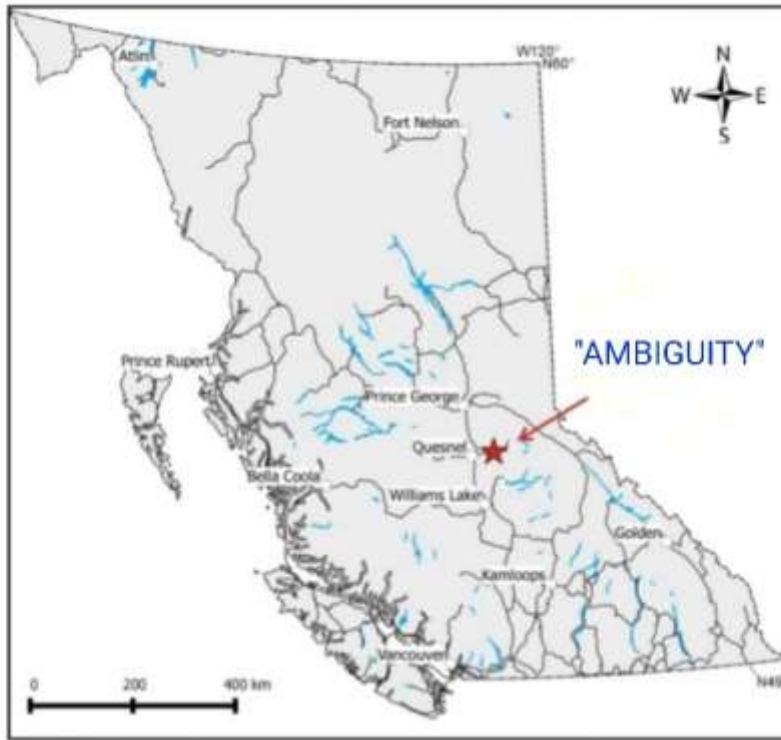


Figure 1. Placer Tenure Location Map

Table 2. Tenure Information

Tenure Number	Claim Name	Tenure Subtype	Map Number	Issue Date	Good to Date	Area
1079318	"AMBIGUITY "	Claim	093H	2020/OCT/29	2021/OCT/29	97.14 ha

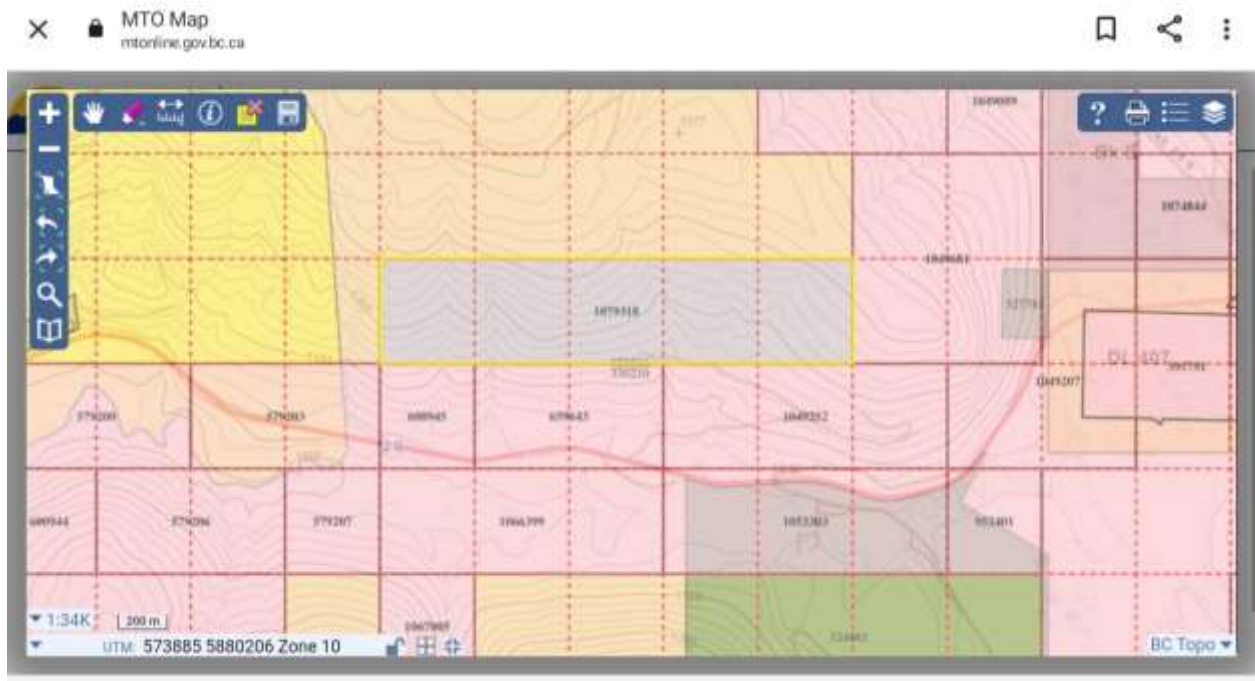


Figure 2. Placer Tenure Map



Figure 3. Placer Aerial Image

6.0 Accessibility, Local Resources and Infrastructure, Climate, and Physiography

6.1 Accessibility

The Claim ("LIGHTNING") is located approximately 50 km east, driving from the city of Quesnel. Quesnel is situated 420 km north-northeast of Vancouver. The total driving distance between Vancouver and Quesnel is approximately 665 km along the Trans Canada Highway 1E and Highway 97N.

Highway 26 is a two-lane paved road that is open year-round and ploughed regularly during the winter season. The city can also be reached flying with Central Mountain Air. Jet airline services from Edmonton, Calgary, and Vancouver are available in the city of Prince George (located 118km north along Highway 97 from Quesnel).

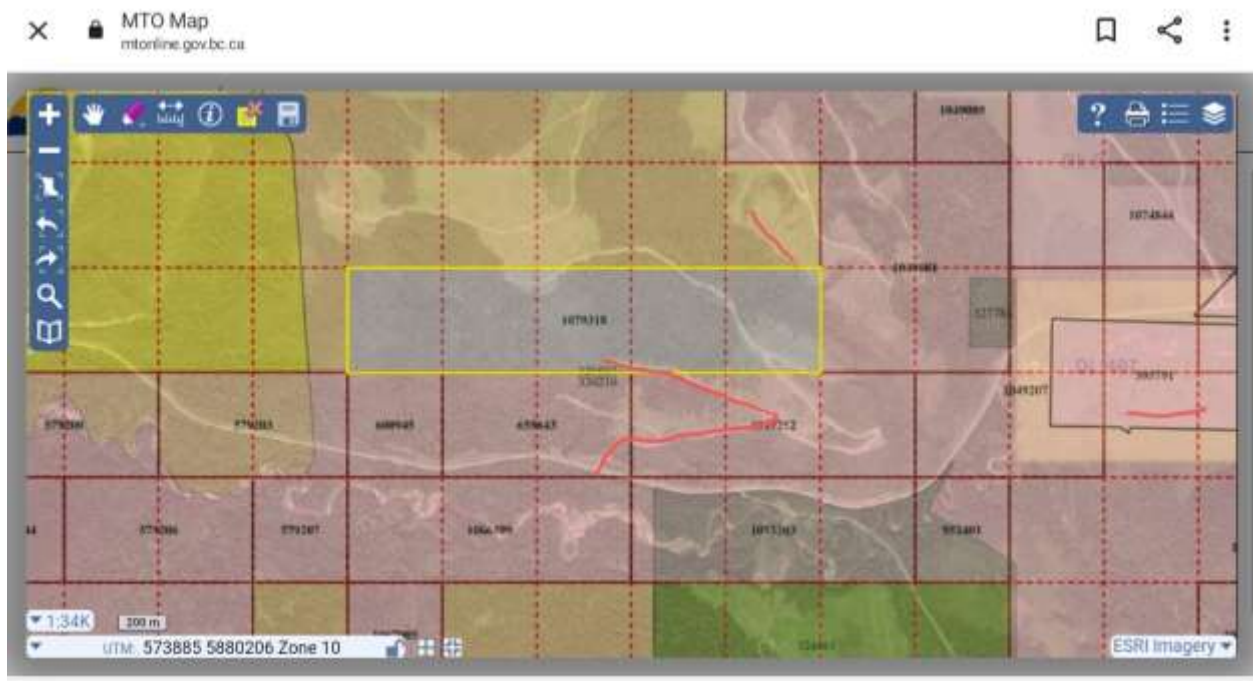


Figure 4. Map Showing Hwy 26 Access to 1079318 (Highlighted in Red)

6.2 Local Resources and Infrastructure

Quesnel is a city located in the Cariboo Regional District of BC, Canada. Located nearly evenly between the cities of Prince George and Williams Lake, it is on the main route to northern BC and the Yukon. It is located at the confluence of the Fraser and Quesnel Rivers (52°58'42.4" N 122°29'33.6"W).

The population of Quesnel rural agglomeration for 2016 was 23,146 (Statistics Canada, 2016). The urban population within the city limits is about 10,000 residents. The city is a well-established industrial community that provides essential supplies and services for the mining, forestry, and agriculture sectors. The main industry over the past 50 years was and remains the forestry sector. The city hosts five sawmills, two pulp mills, one veneer plywood plant, panel board plant, log home manufacturer, and a pellet mill. The rural areas consist of agricultural communities that include cattle and horse ranches. Quesnel and the surrounding remote areas are supported by the tourism industry that revolves around historic mine sites, hiking and mountain biking trails, snowmobiling, camping, hunting, and boating/canoeing/kayaking.



Figure 5. Quesnel Census Agglomeration Location

6.3 Climate

The regional ecosystems in British Columbia are made up of 14 Ecoprovinces, 47 Ecoregions and 139 Ecosections (Demarchi, 2011).

The ecosystems are progressively more detailed and narrow in their scope and describe areas of similar climate, physiography, vegetation, and wildlife potential. An Ecoprovince is defined at a subcontinental level as an area with consistent climatic or oceanographic processes or relief.

An ecoregion is defined at a regional level as an area with major physiographic and minor macroclimatic or oceanographic variation. An Ecosection is defined at a sub-regional level as an area with minor physiographic and macroclimatic or oceanographic variation.

The Claim (“AMBIGUITY”) is located within the Southern Interior Mountains Ecoprovince, the Columbian Highlands Ecoregion, and the Bowron Valley Ecosection.

The following description for the Bowron Valley Ecosection is taken from Demarchi (2011):

The Bowron and Willow Valleys are surrounded by low highlands and ridges to the west and rugged mountains to the east, while in the south, there is a rounded hilly area. During the ice age, glaciers moved north down these valleys to coalesce with glaciers from the south over the Fraser Plateau and with ice from the northern portion of the Rocky Mountain trench to eventually move eastward over the Rocky Mountains. During their movement, they moved a lot of rock and soil, and when the glaciers stagnated they left behind many eskers, drumlins, and melt water channels.

This Ecosection is drained by several streams, including: The Bowron and Willow Rivers which flow northward into the Fraser River; and the Nader, Abbay, and Sovereign streams which flow westward into the Fraser. In addition to many lakes and wetlands, the largest lakes include: Stony, Bowron, Ahbau, the western point of Indianpoint and the northern portion of Spectacle Lakes.

This is a moist, cold area, with a wide Bowron River Valley, and the narrower Willow Creek Valley, both of which open northward exposing the interior of the Ecosection to northerly weather systems. Moist Pacific air drops it's moisture content as it rises over the hills to the west and the Cariboo Mountains to the east.

In winter, cold, dense air brings intense cold and heavy snowfall. Sub-boreal Spruce forests occur throughout the wide valleys and lower mountain slopes; while Engelmann Spruce - Sub-alpine Fir forests occur on the middle and upper slopes. The alpine zone is uncommon and occurs mainly in the higher mountains in the south.

The climate in the Central Interior Ecoprovince, and more specifically the Cariboo Plateau Ecosection uplands is described by the Koppen system as Cfb with moderate temperatures and increased rainfall. The climate locally is dependant on altitude and varies from humid temperature to sub-alpine (Hodder and Leroux, 2010). Statistics for the climate in the city of Quesnel are given in Figure 5 (Environmental Statistics Canada). The 400 m elevation between Quesnel and Wingdam creates lower temperatures and higher precipitation in the region.

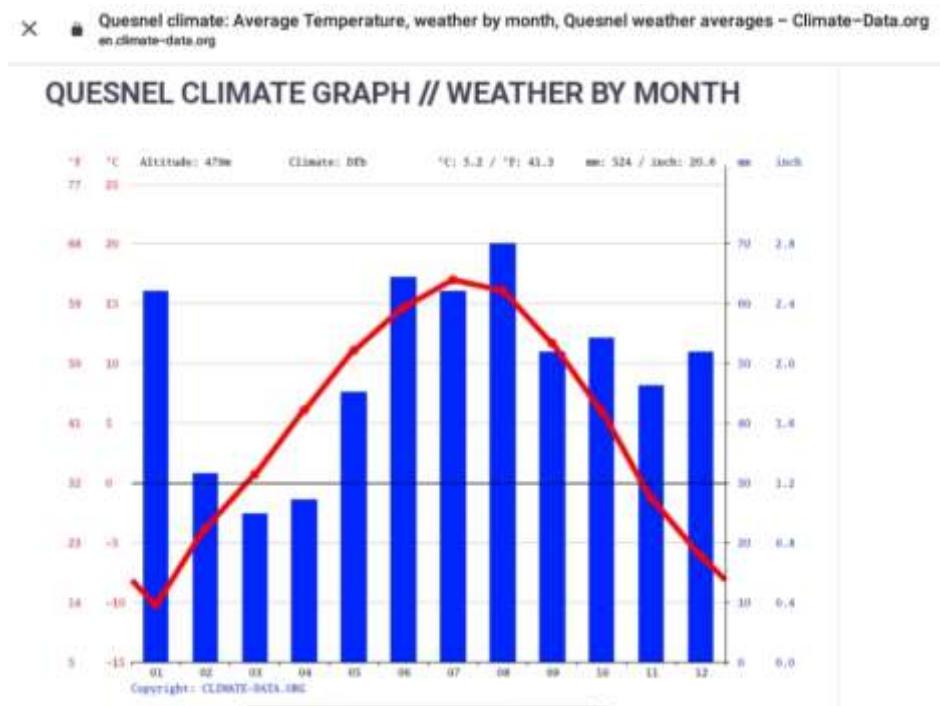


Figure 6. Quesnel Climate Graph

Table 3. Quesnel Weather by Month

Quesnel climate: Average Temperature, weather by month, Quesnel weather averages - Climate-Data.org

QUESNEL WEATHER BY MONTH // WEATHER AVERAGES

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	-10.2	-3.8	0.7	6.1	11.1	14.7	17	16.1	11.7	6	-1.3	-6.1
Min. Temperature (°C)	-14.5	-9	-5.4	-0.8	3.5	7.4	9.6	9	5.1	0.6	-5	-9.8
Max. Temperature (°C)	-5.9	1.5	6.8	13.1	18.7	22	24.4	23.2	18.4	11.4	2.5	-2.4
Avg. Temperature (°F)	13.6	25.2	33.3	43.0	52.0	58.5	62.6	61.0	53.1	42.8	29.7	21.0
Min. Temperature (°F)	5.9	15.8	22.3	30.6	38.3	45.3	49.3	48.2	41.2	33.1	23.0	14.4
Max. Temperature (°F)	21.4	34.7	44.2	55.6	65.7	71.6	75.9	73.8	65.1	52.5	36.5	27.7
Precipitation / Rainfall (mm)	55	28	22	24	40	57	55	62	46	48	41	46

Data: 1982 - 2012

The precipitation varies 40 mm | 2 inch between the driest month and the wettest month. During the year, the average temperatures vary by 27.2 °C | 81.0 °F

6.4 Physiography

The Claim (“AMBIGUITY”) lies within the Quesnel Highland. The Quesnel Highland is bordered to the west by the Cariboo Mountains and extends south from Bowron Lake to Mahood Lake. The highland extends northwest along a 160km distance and is 48km wide. Two isolated remnants of the highland are located in the vicinity of Narrow Lake, north of Two Sisters Mountain.

Parts of the upland are remnants of highly dissection plateau region exhibiting moderate relief. The ground elevation gradually rises in an easterly direction across the width of the highland area from 1500 m to over 2000 m amsl. Valley dissection becomes more prominent in the same direction. The two highest points are Mt. Watt (2520 m) and Mt. Perseus (2548 m).

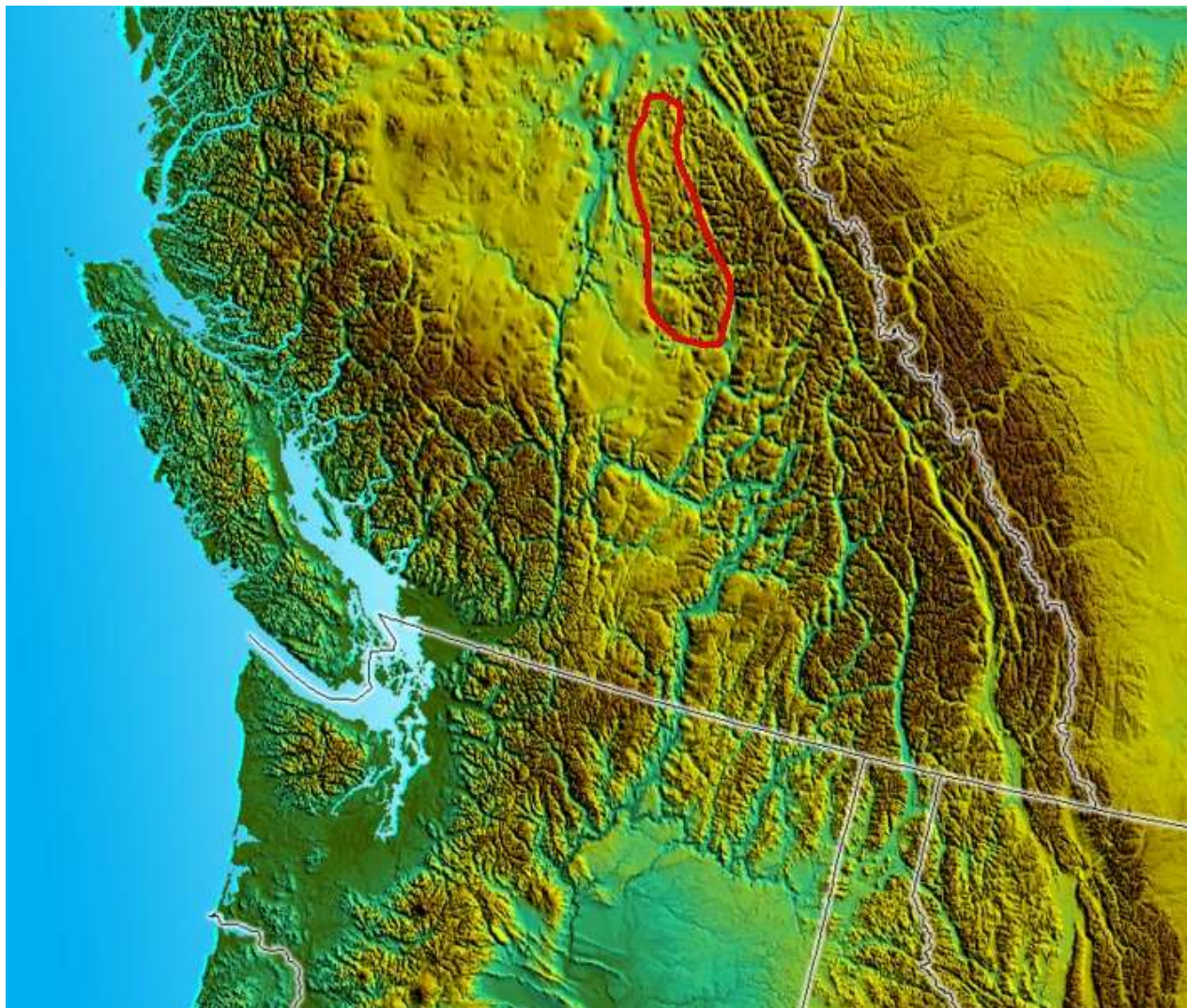


Figure 7. Quesnel Highland Location

Lightning Creek valley elevations range from 1020 m along the valley floor, to 1740 m atop Mt. Eaglenest. The terrain is relatively flat at the valley bottom, but rugged and often steep along the valley sides.

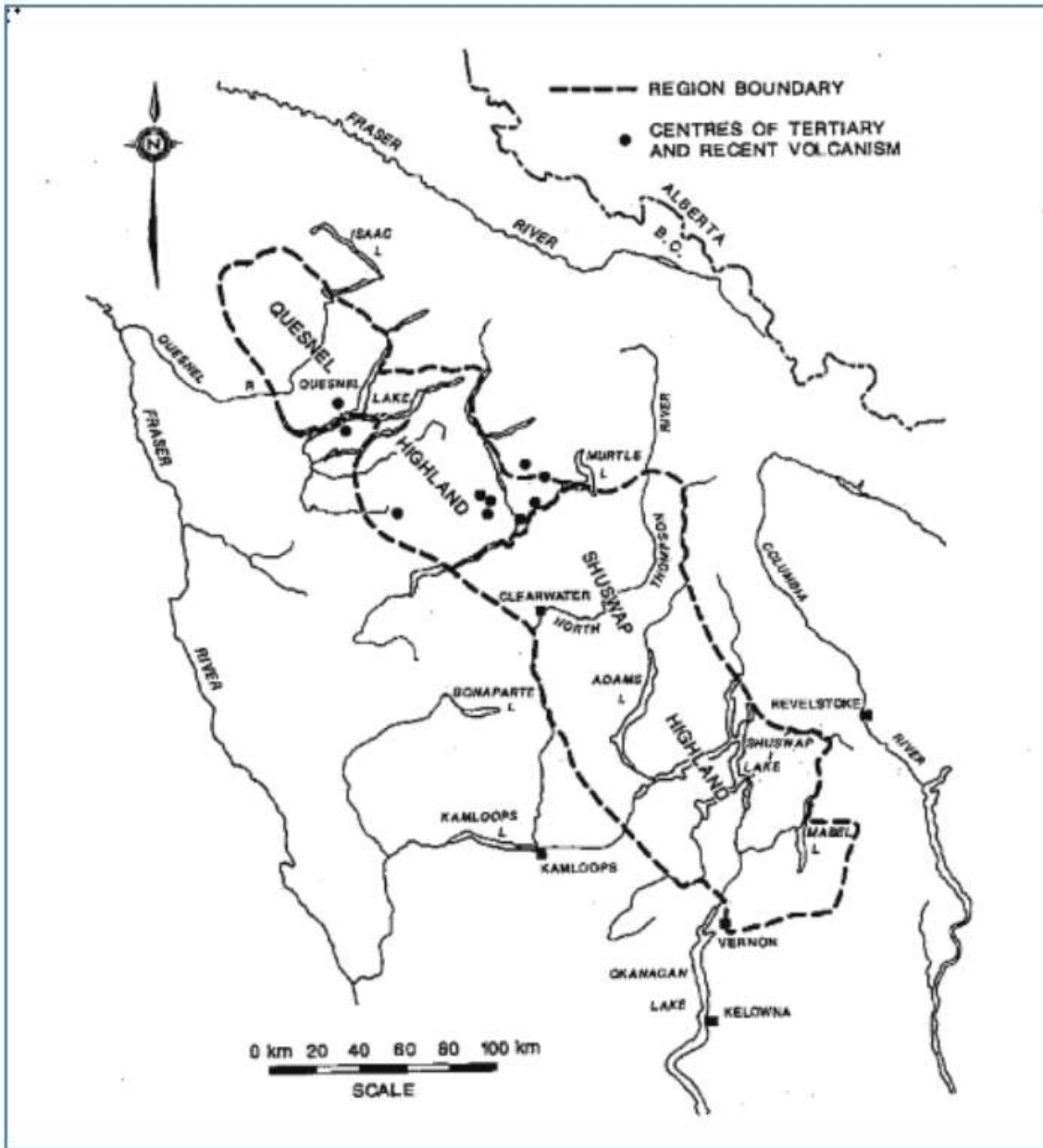


Figure 8. Quesnel Highland Location (detailed)

The most productive placer deposits along Lightning Creek (Kocsis, 2012) and throughout the Cariboo are those that stratigraphically underlie glacial till, and other non-auriferous glaciogenic sediments of one or more glaciations (Levson et al. 1993). Quarternary placer targets depend on more factors than the Tertiary targets, e.g. the local glacial environment (Kellaway et al. 2013).

The Claim was at least once entirely covered by a northerly-flowing ice sheet (Gonzales, 1988) during the Fraser (Wisconsin) glacial period (95,000-11,700 ybp) (Kocsis, 2012). Glaciation has slightly to moderately modified the topography by deepening and widening the main valleys. The Fraser glaciation may have started and ended with stages of piedmont and valley glaciers.

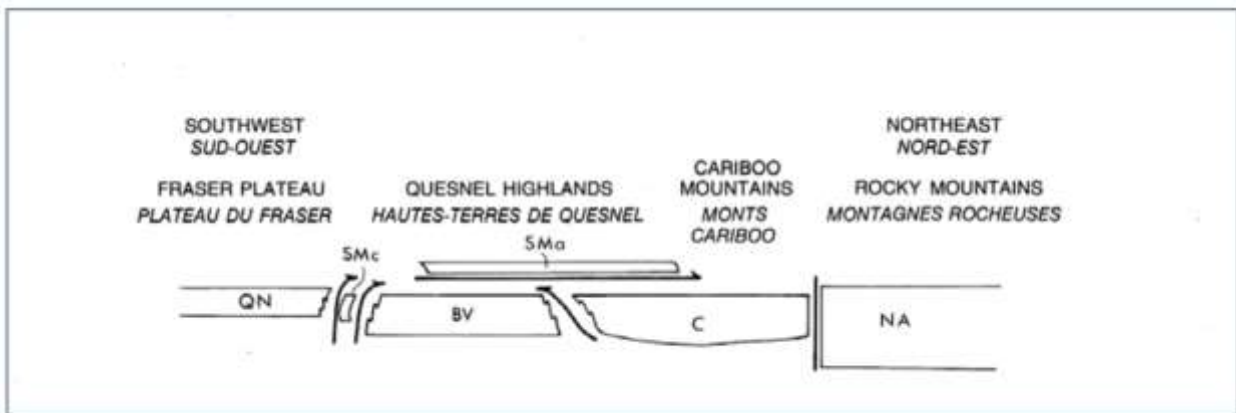


Figure 9. Terrane Structural Relationships

7.0 History

Lightning Creek is a creek located in the Cariboo Region of BC. This creek flows into the Swift River and was discovered by Cunningham, Bell, and Hume in 1861. It was mined for gold; however, the main problem was the depth of bedrock, and the subsequent flooding that occurred from trying to dig to such depths. In 1876, around 6 companies were operating 24 hours a day, and raising approximately 20 million gallons per day in an effort to keep the ground drained. The total amount of gold recovered from this creek is roughly \$15M. Tributaries from the south yielded gold, but little from the north side.

Beaverpass House is an unincorporated locality and former roadhouse on the Cariboo Wagon Road (now Barkerville Highway) in the Cariboo region of the Central Interior of British Columbia. Between Beaverpass House and Coldspring House are the localities of Wingdam and Pinegrove. Pinegrove is the location of Troll Ski Resort, a small operation popular with skiers and snowboarders from Quesnel.

The Wingdam Property (Kocsis, 2012), formerly owned by CVG Mining Limited, is located downstream from the western boundary. CVG explored a bedrock proximal gold-enriched interglacial gravel deposit (Sangaman) called the Deep Lead Channel. The channel contains some of the highest placer gold concentrations in the Cariboo District ($\sim 31 \text{ g/m}^3$, 2.44 m thick) The channel occupies the deepest portion of the buried bedrock floor beneath Lightning Creek at about 51 m deep. Mining is challenging due to water saturated glaciolacustrine silt and sand layers.

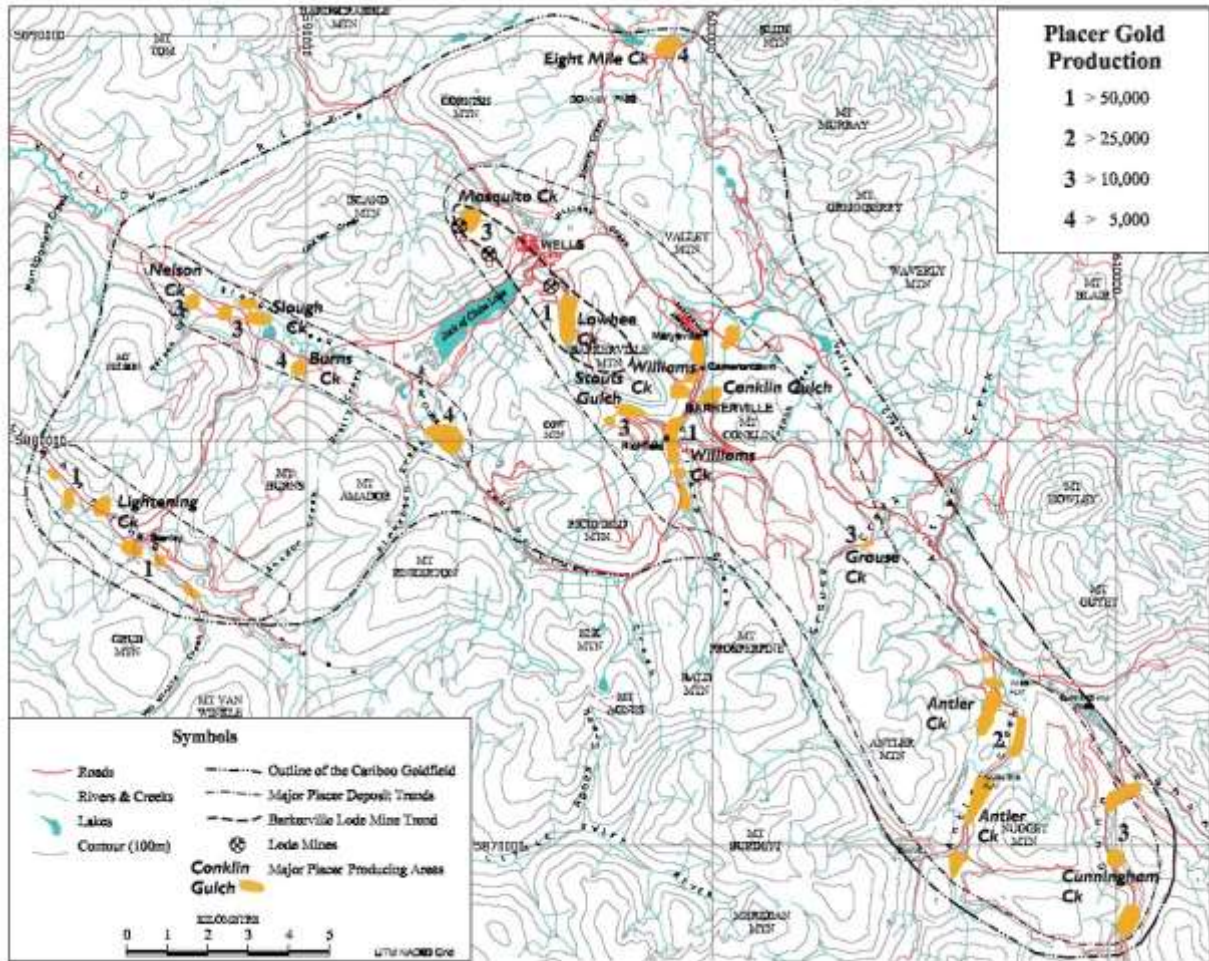


Figure 10. Top. Map Showing the Distribution of Major Placer Deposits

The majority of the placer gold was produced during the gold rush which started around 1861 and tapered off substantially near 1898 when the gold rush started in the Yukon. Placer Gold was discovered in the Wingdam area and a shaft was driven vertically to get to the pay zone. It was abandoned due to flooding.

The only lode gold operations in the area in the past are the Cariboo Gold Quartz Mine and the Island Gold Quartz Mine, which started production in the 1930s. The only known lode mine in the Quesnel trough is the Mosquito Creek Mine located approximately 2 miles north of Wells. This mine produced gold from replacement type ore bodies in contrast to the gold produced from quartz veins with pyrite and gold in the original Cariboo Gold Quartz Mine. (Samchek, Myers, 1987)

7.1 Relevant Proximal Mining Exploration

In 1947, L.C. Gold Alluvials Ltd. conducted a geophysical survey across the Lightning Creek Valley floor near Beaver Pass Creek (ARIS Report No. 00007). The survey revealed a bedrock depth of about 200 ft. (61 m) below creek level and the presence of a buried bench-type deposit. (Brown, et al. 1947)

In 1985, Redfern Resources Ltd. conducted a magnetic survey with the aim to identify buried stream channels (Pezzot, et al. 1988)

In 2008, a pine-bark geochemistry survey was conducted on the western part of the Beaver Pass Crossing claim (Muloin, 2008)

In 2012, SkyTEM (EADE, et al. 2012) conducted a combined airborne time domain electromagnetic survey on the property on behalf of Mary Creek Gold Mines Inc., a wholly owned and operated subsidiary of HGMI.

In 2012, Attic Geophysics Inc. (Moll, et al, 2014) conducted a 2D resistivity survey on the property for Henning Gold Mines Inc. The survey consisted of five lines totalling, 3,255 m. The purpose of the Arctic survey was to investigate and confirm results obtained by the 2012 SkyTEM survey.

8.0 Local and Regional Geology

8.1 Regional Geology

The Claim (“AMBIGUITY”) is located long the western edge of the Omineca Belt that makes up part of the Quesnel Highland in central British Columbia. The Omineca is one of five Canadian Cordillera sub-parallel morphotectonic belts or allochthonous superterrane accreted to the North American Craton as the result of Mesozoic and Cenozoic tectonic collisions. The belts from east to west are called Foreland, Omineca, Intermontane, Coast and Insular Belts.

The Omineca belt accreted some time during the middle Jurassic and locally comprises three distinct moderate terraces. From east to west the composites consist of the Cariboo (C), Barkerville (Bv) and Slide Mountain (Sma and Smc). The Quesnel Terrane (QN) is part of the Intermontane Belt of Superterrane that accreted during the early Mesozoic (180 mya) and forms a suture zone with the Omineca Belt.

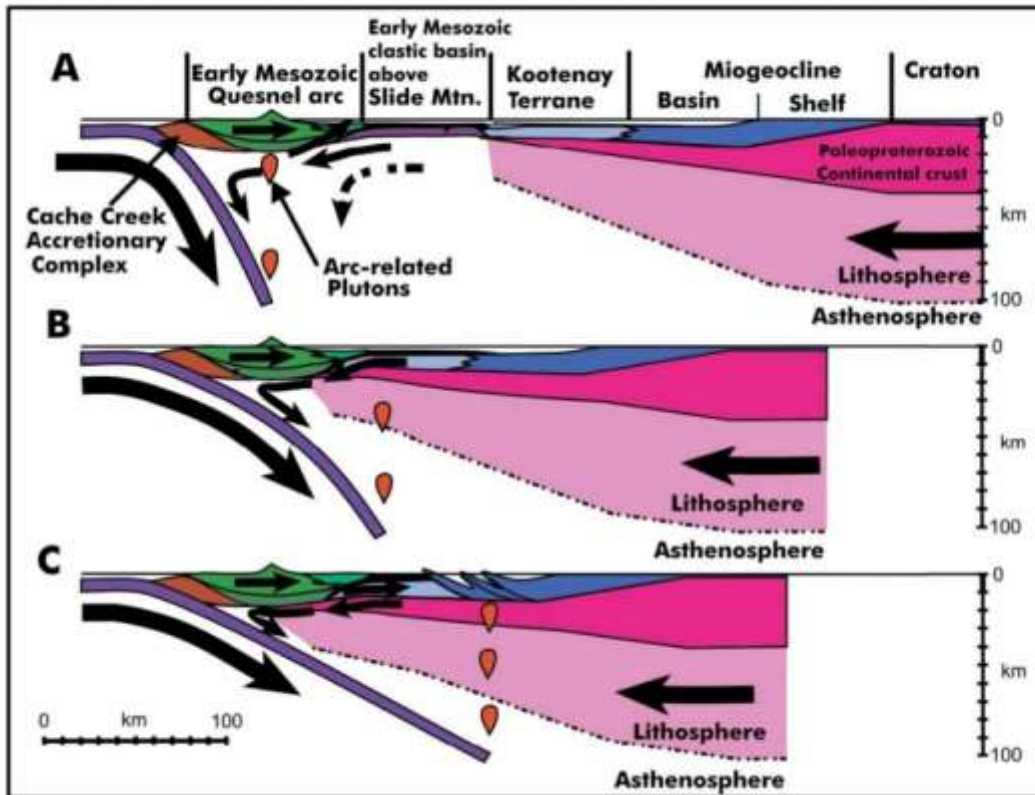


Figure 11. Tectonic wedging and crustal thickening in southeastern British Columbia (Monger, Price, 2002). Subduction processes in Jurassic times resulted in the juxtaposition of the Quesnel Terrane, representing an island-arc, and the pericratonic Kootenay Terrane.

The suture is locally called the Eureka Thrust, and is disrupted by slivers of thrustured rocks belonging to the Slide Mountain Terrane. It is dominated by deep-ocean-basin sedimentary rocks, basaltic volcanic rocks, and bodies of ultramafic rocks. This disrupted terrane mainly represents oceanic accretionary prisms that mark the sites of former ocean basins, and/or back-arc basins. (Monger/Price, 1979)



Figure 12. Regional Bedrock Geology

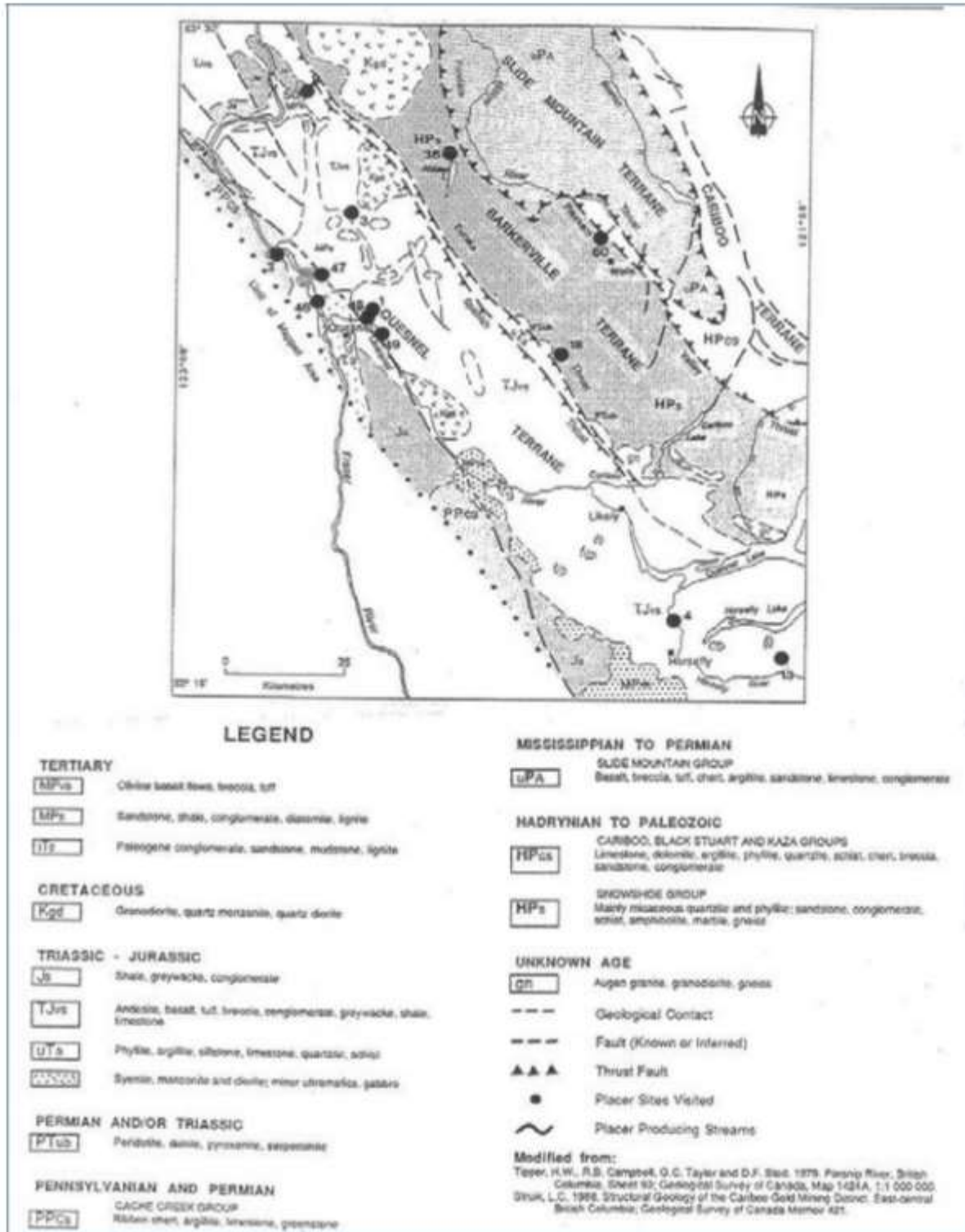


Figure 13. Regional Composite Bedrock Terranes

8.2 Local/Surficial Geology

The Claim (“AMBIGUITY”) is mainly situated over bedrock belonging to the Kootenay Terrane, which consists of rocks of the Proterozoic to Paleozoic Snowshoe Group. The Snowshoe Group, representing the distal edged ancestral North America (Ferri and Schiarizza, 2006) is composed of micaceous quartzite, quartzite, phyllite, slate, and schist; lesser siltite, limestone, and limestone- or quartzite-clast conglomerate, minor amphibolite, metatuff, marble, and diabase.

The Claim lays over Keithley and Tregillus Successions. The Claim, the Ramos and Harvey Ridge Successions are separated by a thrust fault. This thrust parallels the Eureka Thrust, which is a major boundary separating the Quesnel and Kootenay Terranes. The western most part is located along the Quesnel Terrane. The two terranes are bounded by the Eureka Thrust Fault and possible slivers of deep-ocean-basin sedimentary rocks, basaltic volcanic rocks, and bodies of ultramafic rocks belonging to the Slide Mountain Terrane. (Struck, 1988)

Table 4. Barkerville Terrane Bedrock Successions

Succession	Description
Ramos (HR)	Interbedded micaceous quartzite and phyllite with subordinate siltite, amphibolite, marble and tuff. The succession is characterized by olive-colored coarse-grained quartzite layers. The tuff and siltite layers appear high in the succession as opposed to the lower-seated tuff and amphibolite occurrences.
Harveys Ridge (PHR)	Black and grey siltite, phyllite, fine-grained micaceous quartzite, limestone and minor dolostone. The limestone and dolostone is confined to the upper part of the succession and has not been identified on the Property.
Keithley (HKE)	Olive and olive-grey phyllite, fine-grained quartzite and orthoquartzite. The phyllite and quartzite beds are commonly thinly layered and indistinct. The phyllite layers easily weather to olive and light brown colors.
Intrusive Rocks (Pi)	Intrusive rocks in the Barkerville Terrane are mainly diorite, subordinate rhyolite, and rhyodacite. The diorite forms sills 0.4 to 30 m thick and are most abundant along the western margin of the Barkerville Terranes. The sills are isoclinally folded and predate Jurassic tectonism. The rhyolite and dacite occur sporadically throughout the terrane as 1 to 10 m thick sills and dykes. The sills and dykes predate and postdate folding. Some are reported to be highly ankeritized and susceptible to brown weathering.

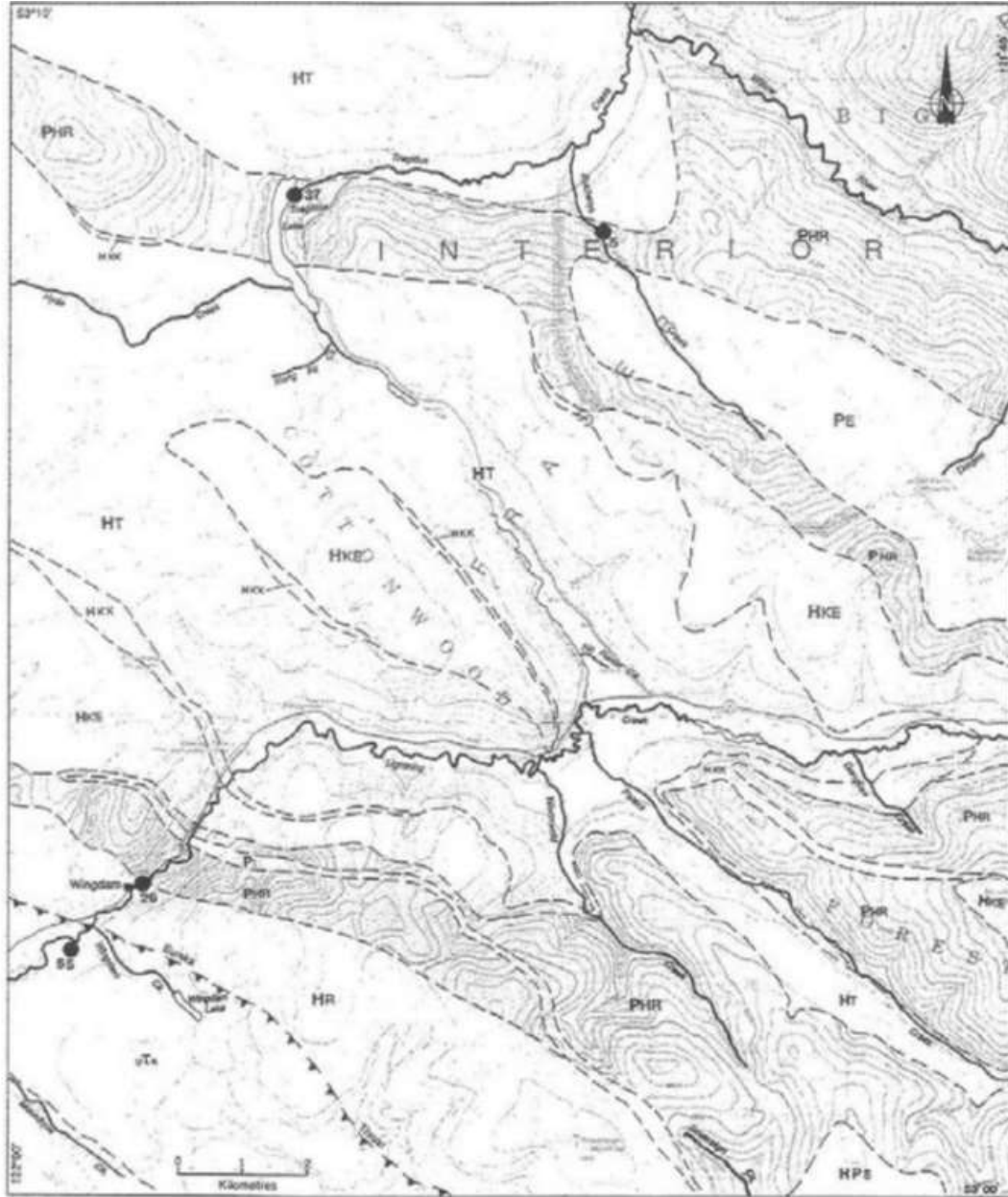


Figure 14. Local Bedrock Geology

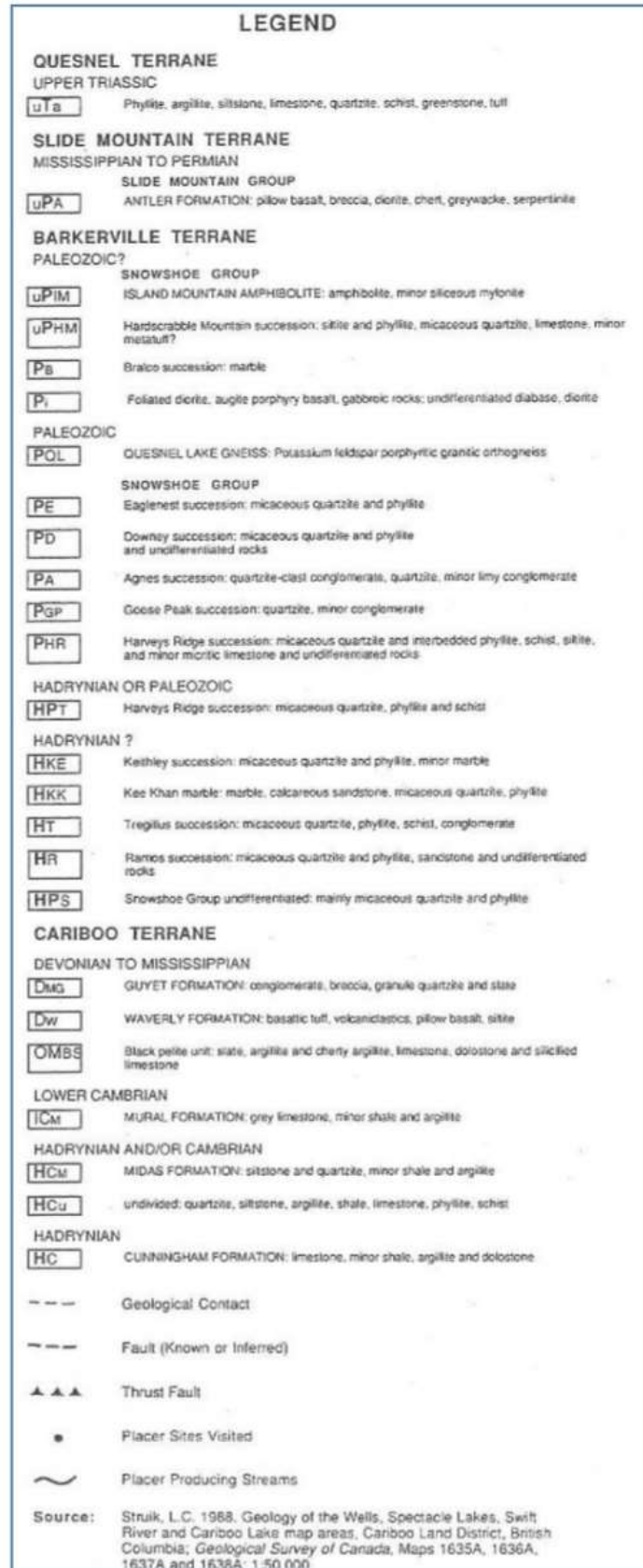


Figure 15. Local Bedrock Geology Legend

9.0 Deposit Types

It is commonly believed that the dominating pre-glacial or Tertiary watershed drainage patterns such as Lightning Creek, formed along bedrock bounded by structural faults or other weak zones. The watersheds or valley were later modified during the Pleistocene by glacial erosion and deposition processes.

The most lucrative placer gold deposits formed during the Tertiary along valley bottoms by processes involving long periods of bedrock incision, gold liberation from local lode sources, and the deposition of gold-enriched high-energy cobble/boulder fluvial layers.

Most of the auriferous gravel layers are proximal to paleo-valley bedrock floors and buried by tens to hundreds of meters of interglacial, glacial, and post glacial sediment sequences. The glacial sequences are dominated by the glaciolacustrine mud, fine glacial alluvial, and movement fill.

Levson and Giles(1993) subdivide buried placer deposits into paleochannels that have been further subdivided into four types:

Buried Trunk Valleys: They occur in broad bedrock valleys on the order of hundreds of meters of deep and wide. They are typically located t higher elevations than modern low-gradient streams.

Buried Channels in Modern Valleys: They occur directly beneath or adjacent to modern streams with a similar gradient. They are commonly buried by alluvial and glacial sediments.

Buried High Level Valley: These deposits occur 20 m to 100 m above modern streams as paleo channel remnants with an intermediate gradient. It is suggested that they were formed by adjacent modern streams and are tens of meters wide and deep.

Buried Gulch: These are small and narrow valley's with a steep gradient in areas with high relief.

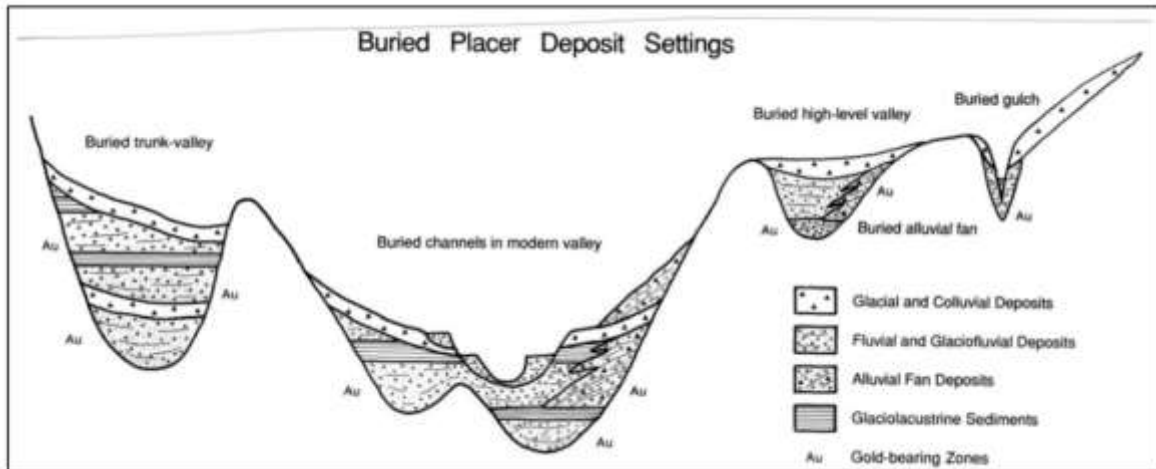


Figure 16. Buried Placer Deposit Settings

The following is a summary about the history of the property area and is taken from MINFILE No. 093H 012 (Jones, 2013):

Placer Gold deposits of the Quesnel Highland region, including the former rich producers of the Barkerville camp, have accounted for a large proportion of British Columbia's alluvial gold production. With the exception of a few producers in the Wingdam area, which are underlain by Upper Triassic sediments correlative with the Nicola group, almost all the deposits are underlain by Upper Proterozoic to Lower Paleozoic Snowshoe group. These rocks have been metamorphosed to green schist facies and are predominantly metasedimentary.

Placer Gold deposits in the region are generally found in young Pleistocene gravels. The morphology and mineral associations of the gold suggests that it was derived locally. The most obvious sources are the numerous auriferous veins in the Downey Succession of the Snowshoe group.

10.0 2021 Exploration and Development

The northern border of placer tenure 1049252 “LIGHTNING” aligns with the southern border of 1079318 “AMBIGUITY”. Also, the forest service road bisects both of these claims. For both of these reasons, no subsequent exploration was needed for this area of The Claim. I was able to hike from the site of my work trailer approximately 635 m west to the location of the test hole. Only one test hole was dug to prospect for the presence of gold.

11.0 Prospecting

After prospecting 1049252 “LIGHTNING”, it was decided that a test hole should be dug somewhere northwest of the test hole (UTM 574600E 5879960N) dug on that claim and closer to a source of water (UTM 574116E 5880268N) (Figure 20). There are several streams that cross the forest service road. I chose the stream that appeared to have the greatest amount of flow, and dug a test hole on the opposite (eastern) side of what appeared to be a debris flow (Figures 19,22).

It is known that most productive placer deposits along Lightning Creek (Kocsis, 2012) and throughout the Cariboo are those that stratigraphically underlie glacial till and other non-auriferous glacial sediments of one or more glaciations (Levson, et al., 1993).

“Beaver Pass has the potential for buried paleogulches, which typically contain poorly sorted, cobble to boulder-sized fluvial gravels with interbedded debris-flow deposits and are much smaller than buried valley placers (Levson and Giles, 1993). These buried paleogulches can have high gold contents and historically have been some of the richest gold producers in the Cariboo (Levson and Giles, 1993).”

---- MINFILE# 33327

11.1 Objective

The goal for the 2021 season is to prospect The Claim and dig a test hole closer to a source of water to test for any indication or indicators of gold while studying the layers of strata which lie beneath the surface.

11.2 Days/Hours Worked

Six hours were worked on August 14, four hours on August 12, and eight hours on the days of August 3,4,6,7,8,9,10, and 13 for a total of **74** cumulative hours. Work usually commenced at 0800 to 1200, and 1400-1800. The reason for the sporadic work hours was due to extreme heat and forest fire smoke; working beyond these hours risked dehydration and fatigue.

11.3 Equipment Used

A shovel, a tree planting shovel, and a rock hammer were the equipment used to dig the test holes. A 65L Tupperware container, an 22.7L (5 Gal.) pail, 20 and 45 cm plastic gold pans, as well as 1/4" and 50 mesh classifiers were used to test the samples taken from Test Hole #1.



Figure 17. Prospecting Equipment Used



Figure 18. Prospecting Area (65 m X 120 m)



Figure 19. Eastern View of Prospecting Area *The left hand side of the FSR has been logged, the debris flow is highlighted in red.*

Table 5. UTM Coordinates

Location	Easting	Northing	
Work Trailer	574731	5880022	1129 m
Stream	574116	5880268	1139 m
Test Hole #1	574146	5880279	1143 m
Test Hole #2 1049252 Event # 5852075	574600	5879960	1114 m

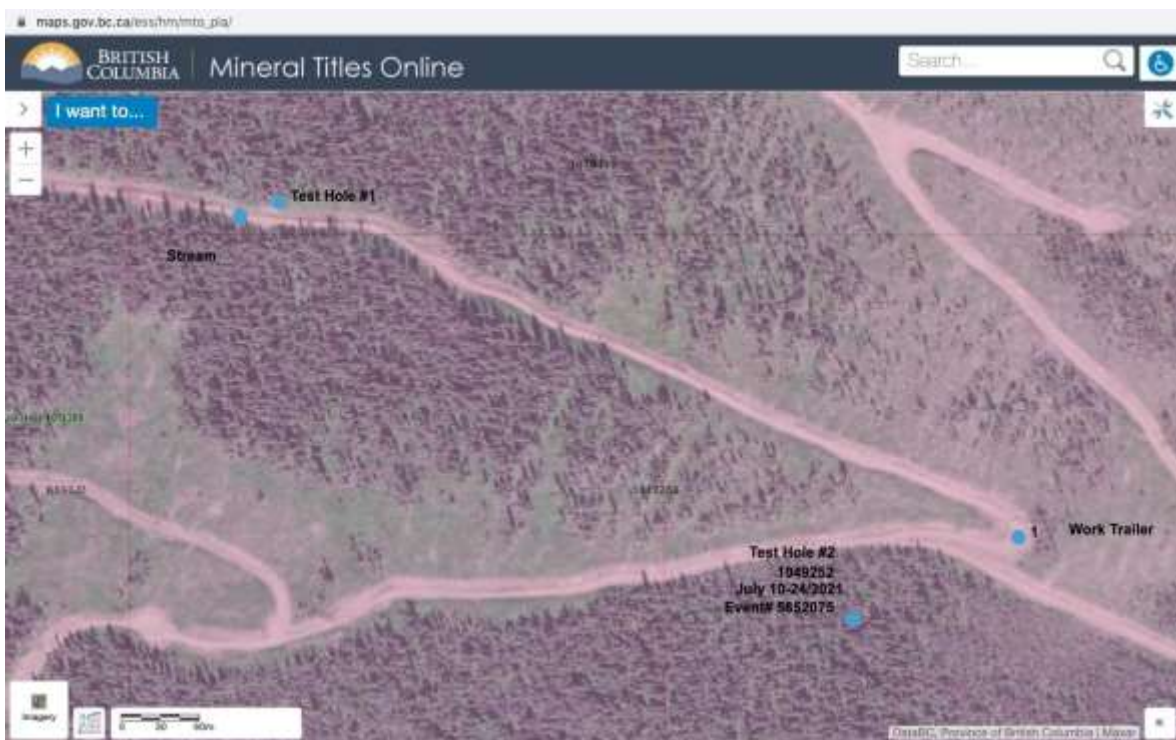


Figure 20. Test Hole #1 In Relation to Test Hole #2 (~ 548.6 m)
(1049252, Event# 5852075)

11.4 Methods Used

A GPS was used to locate the coordinates, flagging tape was used to designate the hole, and a Samsung tablet was used to take photographs. Hiking was the only mode of transportation used, it took an average of 30 minutes to hike from my work trailer to the test hole. The test hole was dug using a tree-planting shovel and long-handled shovel. Below the depth of 1.22 m, a different method of

excavation must be used because it becomes increasingly difficult to maneuver inside the test hole to dig. Instead, it is much more efficient and time-saving to dig by hand and fill up a large gold pan and toss the material outside of the hole. A 22.7L (5 Gal.) pail was used to transport material for testing. Water was collected from a nearby stream to wash the materials and classify them into a 65L Tupperware container. The concentrates were processed using a gold pan to recover any fine gold.

11.5 Description of Activities Undertaken

All relevant media can be found in APPENDIX A: Prospecting Media, Pages 52-61.

August 03 30C/13C

Located an area to dig east of stream and debris flow (Figures 19,20,22); a distance of approximately 635 m west of work trailer. An old growth Spruce tree had fallen or been pushed over at some point in the past and, as a result, the ground was already disturbed. The area east of the stream (Figure 19) has been logged but not replanted, there is a possibility more logging could take place in the future. Marked out the perimeter for the test hole with flagging tape. The top layer is a tan colored, compact, silty clay; best tools for excavation are rock pick and tree-planting shovel as they are more precise. Work is slow with the media being so compact. One advantage is: while time consuming to excavate, the consolidated media can be dug with better accuracy as there is little to no chance of a cave-in. The dimensions of the hole are currently 1.22m X 1.22m X 0.6m, or approximately 0.89 m³ removed.

August 04 31C/10C

A good day for digging, cloudy and not as hot. As the hole gets below the 1.0 m mark, the media becomes more compact and breaks into chunks (Figures 21,23). It now contains some small pebbles held in matrix, including small stones. Uncovered what looks like a large type green stone (APPENDIX A, page 56) in the northern wall of Test Hole #1. Very rounded, and clearly originates from a fluvial source, this is a very good sign. A 22.7 L (5 Gal.) pail was filled to one-third and brought to the stream to do a quick test; chunks of media took a long time to break down in the water due to how compact they were and the amount silts and

clays, nearly cemented. Only result was a very thin line of black sand and no gold. The green stone found and presence of black sand are both good signs to keep digging in this location. Dimensions for test hole are approximately 1.22 m X 1.22 m X 1.06 m, or approximately 0.68 m³ removed for the day.

August 06 22C/11C

Today was spent digging out the rest of the face of the green stone that was found. The boulder is large and oddly shaped, so it was decided that it should be left in the side of the hole to be used as a step to exit the hole, and to continue digging beneath it. It was also necessary to shave down the sides of the hole to keep everything square. Dimensions of test hole are now approximately 1.22 m X 1.22 m X 1.37 m, or approximately 0.43 m³ removed for the day.

August 07 22C/12C

It seems that the deeper the hole is dug, the more the media becomes saturated with water. The media is also significantly less consolidated compared to 0.3 m above it. Constant shaving of the sides of the hole is needed, otherwise it will close in on you, this process can be time consuming. Another large, oval shaped boulder was found taking up the northeast section of the test hole at a depth of 1.5 m (APPENDIX A, page 59). It has a length of 0.6 m, and thickness and width of 0.3 m. Dimensions of the test hole are now approximately 1.22 m X 1.22 m X 1.68 m, or approximately 0.46 m³ removed for the day.

August 08 26C/11C

Today was spent trying to dig around as much of the boulder found at 1.5 m. Due to its positioning, I am only able to dig deeper into the hole on its western and southern edges. The test hole was dug to a depth of 1.83 m to grab samples to test, a pile was set aside. The total dimensions of the test hole are 1.22 m X 1.22 m X 1.83 m, or approximately 0.20 m³ removed for the day, disregarding the volume of the boulder found at 1.5 m.

August 9 25C/10C

More excavation was done in the hole to dig down another 15 cm to collect more grab samples at a depth of 2.0 m. Digging was slow as there were a couple of cobble-sized stones found at this depth. With the large boulder sitting at 1.5 m, it

is difficult digging below it in such a small space. It can take quite a lot of time trying to dig out one small stone so that you are able to take out the larger one. The rock hammer is a very useful tool in that it can help to loosen up cobble-sized rocks as well prying them out. These gravels have a plastic characteristic due to their moisture content and amount of silts and clays (Figure 24). It had the tendency to hold its shape long after being emptied from a pail (Figure 25). The total volume of the materials removed is approximately 2.5 m^3 .

August 10 Testing 28C/14C

A 22.7L (5 Gal.) pail was used to transport material from the test hole to the testing area. Due to the amount of water contained in the media, the pail could only be filled up one-third full at a maximum due to its weight. The pail needed to be carried through the logging slash and back onto the forest service road (~ 75 m) to the test area (Figure 26). This process was repeated a total of 6 times throughout the day, for a total of approximately 45.4L (10 Gal.) (2 pails) of material to be washed and processed.

Water was collected from the stream and transported and dumped into a 65L Tupperware container to wash the materials. This was done to ensure no contaminants are released back into the stream while testing. It also makes using a classifier (50 mesh) to separate all fine materials from the silty clay much easier.

It is still time consuming, as the fine pebbles and gravels are well coated in clay. When this process was complete, the water used for washing had turned into a thick soup due to the amount of silts and clays.

The silty/clay soup was emptied directly onto the forest service road (Figure 27) so that the water would evaporate. Once this step was finished, the concentrates could be panned down to reveal what they contain. There was a thin line of black sand, and what appears to be two very fine colors of gold. These results were disregarded: the gold pan I am using is made of plastic, and it is very possible that a very fine color of gold could have become trapped in a scratch in the plastic from a different time. Therefore, it is best to ignore these results, clean the gold pan as well as you can, and repeat the testing process again to compare results.

August 11 Testing 28C/12C

Testing process for today was much the same as yesterday. The process of collecting and transporting material through the logging slash to test was repeated a total of six times, each time with the pail filled one third full, for a total of (2) 22.7L (5 Gal.) pails. Next, a 65 L Tupperware container was filled with water from the same stream to be able to classify the materials collected. The container was dumped onto the forest service road so the water could evaporate in the sun.

Next, all of the concentrates of fine materials were collected into a gold pan to test. Surprisingly, 2 more of what appear to be very fine colors of gold were recovered. Unfortunately, not everything that glitters is gold, and these will need to be viewed under a microscope. The test area was cleaned and all testing equipment was removed at this time and carried back to the work trailer. Reclamation will begin tomorrow.

August 13 Reclamation 37C/9C

There are two distinct piles of material that were removed from the test hole (APPENDIX A, page 60). The first, and located east, is the top 1.0 m of silty clay that was on the surface, and will be replaced last. The other pile is located to the south of the test hole and contains the fluvial gravels and clay which will be replaced first. First part of the day was easy as only a shovel was needed. What remained after returning most of the material back into the hole needed to be scraped by hand into a bucket to try and reclaim as much as possible. Because this pile of dirt wasn't sitting on top of the vegetation for long, it recovered quickly.

August 14 Reclamation 27C/11C

Finished all reclamation today and contoured hole accordingly, photographs taken. A tree seedling will be planted next spring in place of the fallen Spruce tree. All remaining tool were hiked back to work trailer. 2021 exploration and development is complete.

11.6 Sampling

A total of approximately (4) 22.7L (5 Gal.) pails of material (12 pails filled to one-third) from the depth of 1.67 m – 2.0 m were collected to test for the presence or

indication of gold. Testing was spread over two days: water was collected from a nearby stream and stored in a 65L Tupperware container. All fine materials were classified into this container, and a gold pan was used to pan the resulting concentrate to recover any fine gold. A 20L (5 Gal.) pail has an approximate volume of 0.0193 m³ (0.68 ft³) and can hold an approximate weight of 31.75 kg (70 lbs.). It takes roughly 40 of these pails to equal a cubic yard.

Table 5. Sample Results

Test Hole #1	Weight (approx.)	Results
1079318		
UTM 574146E 5880279N 1149 m	127 kg (280 lbs.)	Good (2 fine colors of gold recovered)



Figure 21. Orientation of Gravels in Matrix

This test was repeated twice, on the days of August 10 and 11. The first test produced what appeared to be two very fine colors of gold. Because the gold pan is made of plastic, it is possible that a fine color of gold could have become trapped within a scratch sometime in the past, producing a false-positive result.

When recovering fine gold there are two characteristics you must look for: the first is that the colors of gold must behave like gold, i.e. they settle with the heavy black sands and have the tendency to want to stay where they are against the forces of the water swirling around in the gold pan. The other is color; it must first be a bright yellow like gold, and continue to be bright after it is shaded by your hand.



Figure 22. View of Test Hole From FSR *The debris flow is highlighted in red and the test hole location is highlighted in yellow. Opposite view of Figure 19 (page 34).*



Figure 23. Gravels in Matrix



Figure 24. Clay Saturated Media From 1.68 m



Figure 25. Plastic (Clay Saturated) Media



Figure 26. Test Area and Equipment



Figure 27. Test Area



Figure 28. Test Pan Showing Line of Black Sand (Left of Centre)

On August 11, the test was re-done to try and produce similar results. Another (6) 22.7L (5 Gal.) pails filled one-third full were carried from the test hole to the testing area. Again, the Tupperware container was filled with water to classify all of the material down to its finest constituents. Finally, a gold pan was used to separate the heavier materials from the lighter ones. This ended up producing a result similar to the day before, two more very fine colors of gold were recovered (Figure 29). Back at the work trailer, I transferred these colors to a small vial for further observation.

A USB microscope capable of producing 1000x zoom was used to have a better view of the two fine colors of gold recovered. After adjusting at approximately 750x zoom, it was evident that they are in fact gold. This is made clear by its color and the pitting that is visible on the larger piece. The pitting indicates that these fine pieces of gold traveled very far by fluvial transport before finally settling in this location.



Figure 29. Magnified Photograph of Two Fine Colors of Gold (750X)

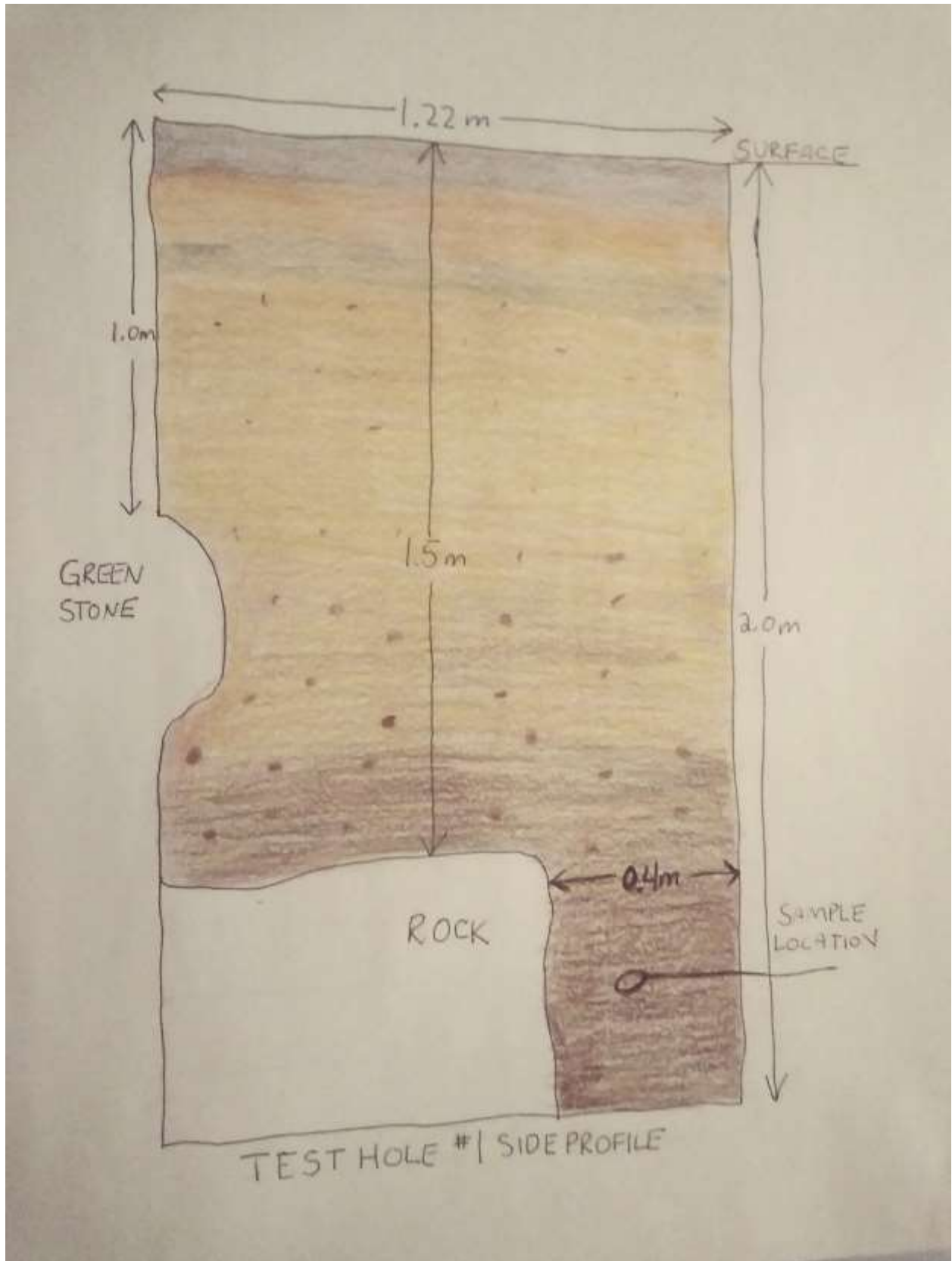


Figure 30. Test Hole #1 Side Profile (W → E)

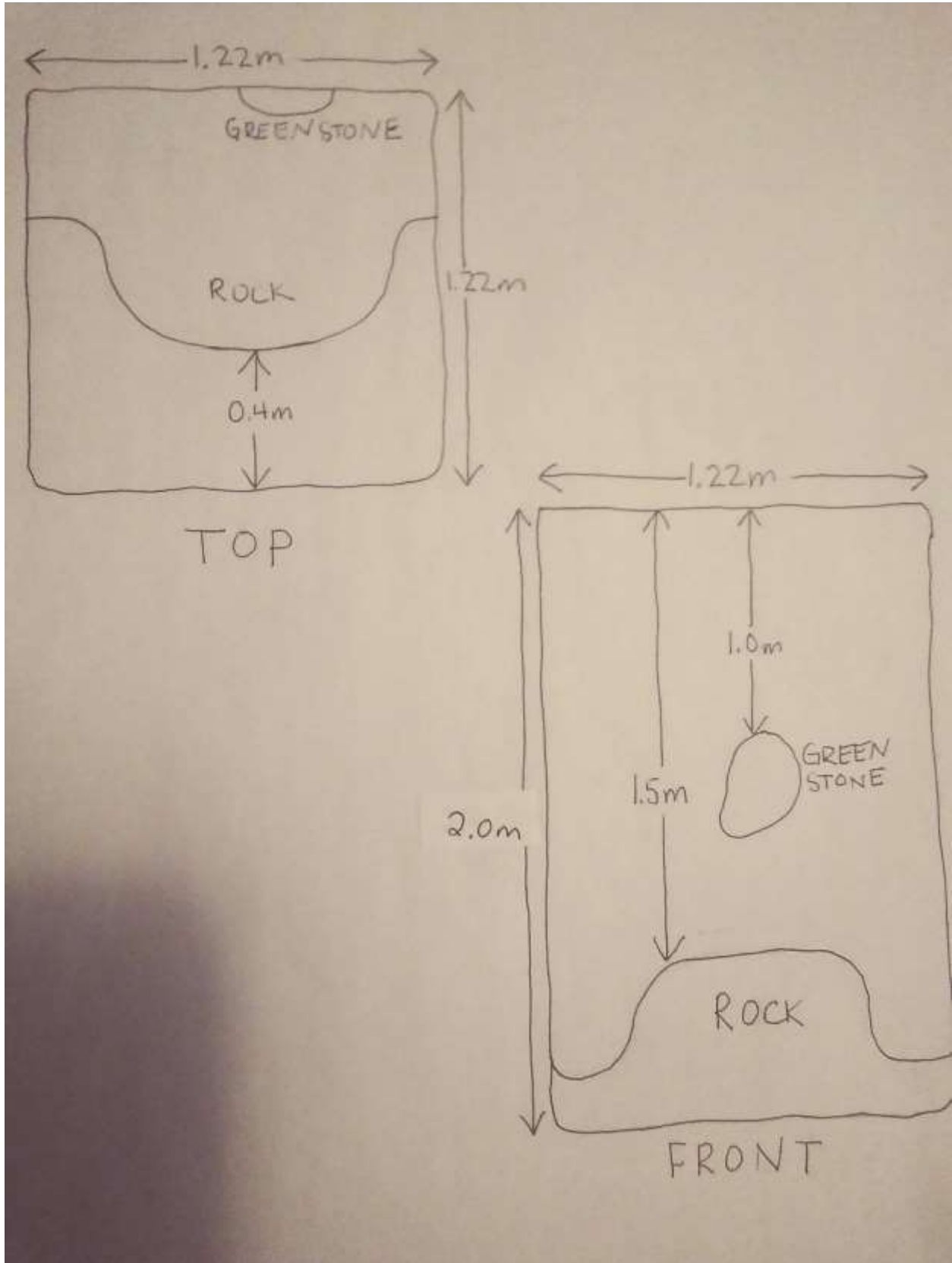


Figure 31. Top and Front (North Facing) Views of Test Hole #1

11.7 Analysis and Conclusion

The results of the 2021 season could not have been better. The goal was to try and identify a source of gold located somewhere northwest of the test hole that was dug on 1049252 (“LIGHTNING”).

At the start of this season, little was known about the area that The Claim covers, apart from some geotechnical testing and studying maps. To my knowledge, no prospecting by hand had occurred as of yet. With basic tools and the right knowledge, anything can be accomplished. A gold pan is still, and always will be the most precise and efficient way to recover gold.

While two fine colors of gold are nothing to write home about, it is the first step in constructing a productive work program in the future. It would be the suggestion of the work in this report to apply for a Notice of Work permit so machine digging can occur to test gravels much deeper.

12.0 Economic/General Assessment

At this point in time, there is not enough information to generate a gold resource estimate on the Lightning Creek claim.

13.0 Software Used

This report was prepared using Microsoft Word, maps were created using MTO Online.

14.0 Statement of Qualifications

I am a professional prospector with 25+ years working in the Cariboo region. I grew up prospecting and exploring my father’s legacy claim on Lightning Creek. I also have a background in engineering (Queen's University), and a certificate in Water and Wastewater Management from TRU in Kamloops, BC. I was also trained as a safety officer in Alberta and have worked for both Husky and Cenovus. My combined life experience makes me a unique individual in my field.

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APPENDIX A: Prospecting Media

Test Hole #1



















