

**43-101 TECHNICAL REPORT**

**GOLD HILL PROPERTY**

**AMERICAN CREEK RESOURCES LTD.  
SOUTHEASTERN BRITISH COLUMBIA  
CANADA**

**PREPARED FOR:**

**AMERICAN CREEK RESOURCES LTD.**

**BOX 70 #92, 2ND AVE WEST  
CARDSTON ALBERTA T0K 0K0  
CANADA**

**OFFICE: 403-752-4040**

**JULY 4, 2018**

**PREPARED BY:**

**FRANK O'GRADY, P.ENG.**

## **Table of Contents**

	<u>Page</u>
<b>1. SUMMARY .....</b>	<b>1</b>
<b>2. INTRODUCTION.....</b>	<b>2</b>
2.1 Abbreviations, Acronyms & Conversion Factors.....	4
<b>3. RELIANCE ON OTHER EXPERTS .....</b>	<b>6</b>
<b>4. PROPERTY DESCRIPTION AND LOCATION .....</b>	<b>7</b>
4.1 Environmental Aspect.....	8
<b>5. PHYSIOGRAPHY, ACCESS, LOCAL RESOURCES, CLIMATE AND INFRASTRUCTURE.....</b>	<b>9</b>
5.1 Physiography.....	9
5.2 Access .....	9
5.3 Local Resources .....	12
5.4 Climate .....	12
5.5 Infrastructure.....	12
<b>6. HISTORY .....</b>	<b>14</b>
6.1 Placer Mining History .....	14
6.2 Lode Gold History .....	15
6.2.1 Midas Area, Dec 7, 1895 .....	16
6.2.2 Big Chief Area, Jan. 7, 1899.....	16
6.2.3 Pat Egan No. 2 Tunnel, Big Chief .....	18
6.2.4 Nagel and Myrene, CM&S, 1934-1956.....	19
6.2.5 Boulder Creek Mines, 1966 .....	24
6.2.6 Bowes and Lyons, 1983 .....	24
6.2.7 Hammond Resources, 1984-1996.....	25
6.2.8 Golder Group, 1995 and 1996.....	26
6.2.9 Javorsky, 1999-2004 .....	27
6.2.10 Javorsky, 2014 .....	27
<b>7. REGIONAL GEOLOGY.....</b>	<b>29</b>
7.1 Proterozoic Purcell Supergroup .....	29
7.2 Paleozoic .....	33
7.3 Structure: The Kimberley Gold Trend.....	35
7.4 Intrusives .....	40

## **Table of Contents** (cont.)

	<u>Page</u>
7.5 Property Geology.....	43
7.5.1 Stratigraphy.....	44
7.5.2 Structure.....	44
7.5.3 Intrusive Rocks.....	45
7.5.4 Gold Mineralization, Host Rocks, Alteration, and Controlling Structures.....	45
Big Chief Showing.....	45
Midas/Gold Hill Showing.....	46
<b>8. DEPOSIT TYPES.....</b>	<b>46</b>
8.1 Big Chief.....	46
8.2 Midas/Gold Hill.....	47
<b>9. EXPLORATION, AMERICAN CREEK RESOURCES LTD.....</b>	<b>47</b>
9.1 Stream Sediment Sampling.....	47
9.2 Soil Sampling.....	48
9.3 Rock Sampling.....	48
<b>10. SAMPLE PREPARATION, ANALYSIS AND SECURITY.....</b>	<b>48</b>
<b>11. ADJACENT PROPERTIES.....</b>	<b>50</b>
11.1 Tenure 391359.....	50
11.2 KPB Au Showing.....	54
<b>12. OTHER RELEVANT INFORMATION: THE LONG TUNNEL.....</b>	<b>55</b>
<b>13. INTERPRETATION AND CONCLUSIONS.....</b>	<b>55</b>
<b>14. RECOMMENDATIONS AND PROPOSED BUDGET.....</b>	<b>57</b>
<b>15. REFERENCES.....</b>	<b>60</b>
<b>16. CERTIFICATE OF AUTHOR.....</b>	<b>64</b>

## **Table of Contents** (cont.)

### **List of Tables**

	<u>Page</u>
Table 1: Abbreviations and Acronyms .....	5
Table 2: Conversion Factors .....	6
Table 3: Big Chief-Midas/Gold Hill Property Tenure Specifications .....	7
Table 4: Tenure, Type, Name, Good Until, Size of Tenure .....	7
Table 5: Approximate Dimensions of Historical Workings (circa 1895-1937) ....	9
Table 6: Property History Summary to 2014.....	15
Table 7: Car Samples from No. 3 Tunnel, CM&S, 1937 .....	22
Table 8: Face Samples from No. 3 Tunnel, CM&S, 1937 .....	22
Table 9: Assay From CM&S Trail Smelter, 1950's.....	23
Table 10: Samples from Historical Showings, Hammond Resources.....	25
Table 11: Selected Grab Samples, Golder Group.....	26
Table 12: Phase 1 and Phase 2, Proposed Exploration Budget .....	59

### **List of Photographs** (taken October 30, 2017)

	<u>Page</u>
Photograph 1: Entrance to No. 1 Tunnel .....	16
Photograph 2: Entrance to No. 2 Tunnel .....	19

## **Table of Contents** (cont.)

### **List of Figures**

	<u>Page</u>
Figure 1: Province Location of the Big Chief-Midas/Gold Hill Property.....	3
Figure 2: Mineral Tenure.....	8
Figure 3: Access to The Property from Cranbrook, BC.....	10
Figure 4: Access Roads on The Property.....	11
Figure 5: Location of Historical Showings and Legacy Claim Overlap.....	13
Figure 6: Spatial Relationship between Big Chief-Midas/Gold Hill Lode Gold Deposits and Wild Horse River Placer Fields .....	14
Figure 7: Sample #11675.....	17
Figure 8: Tunnel Driven by Contractor Pat Egan Between 1898 - 1905 .....	18
Figure 9: Big Chief Cross Sections showing No. 2 Tunnel & No. 3 Tunnel ....	20
Figure 10: Plan of No. 3 Tunnel, CM&S, 1937 includes Car and Face Sample Values .....	21
Figure 11: Bowes and Lyons Geochemical Grid Overlap.....	24
Figure 12: Geological Map of Tenure 505843.....	28
Figure 13: Hypothetical Cross Section .....	29
Figure 14: Purcell Supergroup Canada, Belt Supergroup USA.....	30
Figure 15: Regional Geology.....	31
Figure 16: Geological Column of the Purcell Supergroup .....	32
Figure 17: Big Chief-Midas/Gold Hill Property Location on Kimberley Gold Trend.....	36

## **Table of Contents** (cont.)

### **List of Figures** (cont.)

	<u>Page</u>
Figure 18: Big Chief-Midas/Gold Hill Property in Relation to Major Faults .....	39
Figure 19: Geology and Associated Magnetic Anomalies, Kiakho and Reade Lake Stocks.....	42
Figure 20: American Creek Resources Ltd. Tenure and Surrounding Tenure ...	43
Figure 21: Tenure 391359 North Group and South Group Sample Locations ..	51
Figure 22: North Group Rock Samples.....	52
Figure 23: South Group Rock Samples.....	53

### **List of Appendices**

- Appendix 1: The Prospector Newspaper Article, December 7, 1895
- Appendix 2: The Prospector Newspaper Article, January 7, 1899
- Appendix 3: The Big Chief Story, C.F. Myrene, August, 1967  
(Appendix B of Javorsky (2004) AR 27713)
- Appendix 4: Minfile 082GNW022
- Appendix 5: Minfile 082GNW023

## 1. SUMMARY

The Big Chief-Midas/Gold Hill property is 836 hectares in size and is composed of a contiguous group of 4 mineral claims wholly owned by American Creek Resources Ltd. The Property is situated approximately 25 kilometers northeast of Cranbrook (Figure 1) in the East Kootenay District of British Columbia. Driving distance from the junction of Victoria Avenue and Highway 3 in Cranbrook is approximately 33 kilometers by road and takes about one hour drive time.

The Author has been commissioned by American Creek Resources Ltd. to review and summarize the available relevant technical documentation on The Property.

The Property is 100% owned by American Creek Resources Ltd. It was obtained from prospector David Javorsky in 2016. Since 2016 American Creek Resources Ltd. has conducted two exploration programs on The Property totaling \$55,723.14. These programs were designed to verify the location of historical showings and, by sampling, to verify historical assay values, particularly gold. The two exploration programs have confirmed the historical gold values and have located the historical workings.

There are two separate known showings on The Property that were the focus of historical work:

1. The Big Chief showing situated on the north side of Boulder Creek
2. The Midas/Gold Hill showings, situated on the south side of Boulder Creek.

The mineralization at the Big Chief showing is exposed in a breccia zone on the hanging wall side of a syenite dyke. This breccia is developed in the Middle Cambrian Eager Formation slates.

The mineralization at the Midas/Gold Hill showings occur in a breccia zone. This breccia occurs in a 2.5 meter thick dolomitized limestone zone on top of an eight meter thick sequence of limestone beds. The dolomitized limestone contains irregular small quartz-siderite veins and veinlets that form a breccia-like structure.

The principal showings on The Property were discovered in 1895 (Midas/Gold Hill) and in 1898 (Big Chief) by prospectors searching for the lode source of the placer gold on the Wild Horse River. Work on The Property from 1898 to 1957 did a good job of exposing gold bearing structures and related sulfides and associated alteration minerals.

From 1957 to 1996 The Property was explored by junior mining companies. This work, consisting of some scattered mapping, rock sampling of the showings and geochemical sampling, did not lead to any conclusive results.

A thorough program of opening up the access to the historical workings, plus consolidating ownership of the property by David Javorsky in 2004, advanced The Property to where it could be explored. Mapping by Pighin (Javorsky & Pighin (2015 amendment) AR34920) accompanied by cross sections interpreted from the mapping of the Big Chief showing, exhibit favorable geology for preferential mineral deposition at depth.

The Property has not been subject to a systematic and thorough modern exploration program. There is no evidence of core drilling on The Property or in any historical records.

In the opinion of the Author, a Qualified Person, The Property merits further investigation. A Phase One exploration program budgeted at \$257,600 is recommended. If warranted, results from the Phase One program will be utilized to design diamond drill holes being recommended in Phase Two, which is budgeted at \$950,000.

In conclusion, the Author is of the opinion the Big Chief-Midas/Gold Hill property offers excellent potential to discover an exploitable gold-silver property with possible additional smelter credits for base metal sulfide concentrates produced.

## **2. INTRODUCTION**

This Technical Report was commissioned by Darren R. Blaney, President, Chief Executive Office, and Director of American Creek Resources Ltd (the Company). The Company is 100% owner of the subject property, which includes BC Mineral Tenures No. 505843, 1028500, 1028501 and 1029131.

The Property was obtained by American Creek from prospector David Javorsky. The Company announced the acquisition of the Gold Hill property in southeastern British Columbia along with the acquisition of the D-McBride property in northern British Columbia in a news release on March 9, 2015. In that news release the company stated the vendor, David Javorsky, was issued 3,900,000 common shares of American Creek Resources Ltd. as full payment for the transaction.

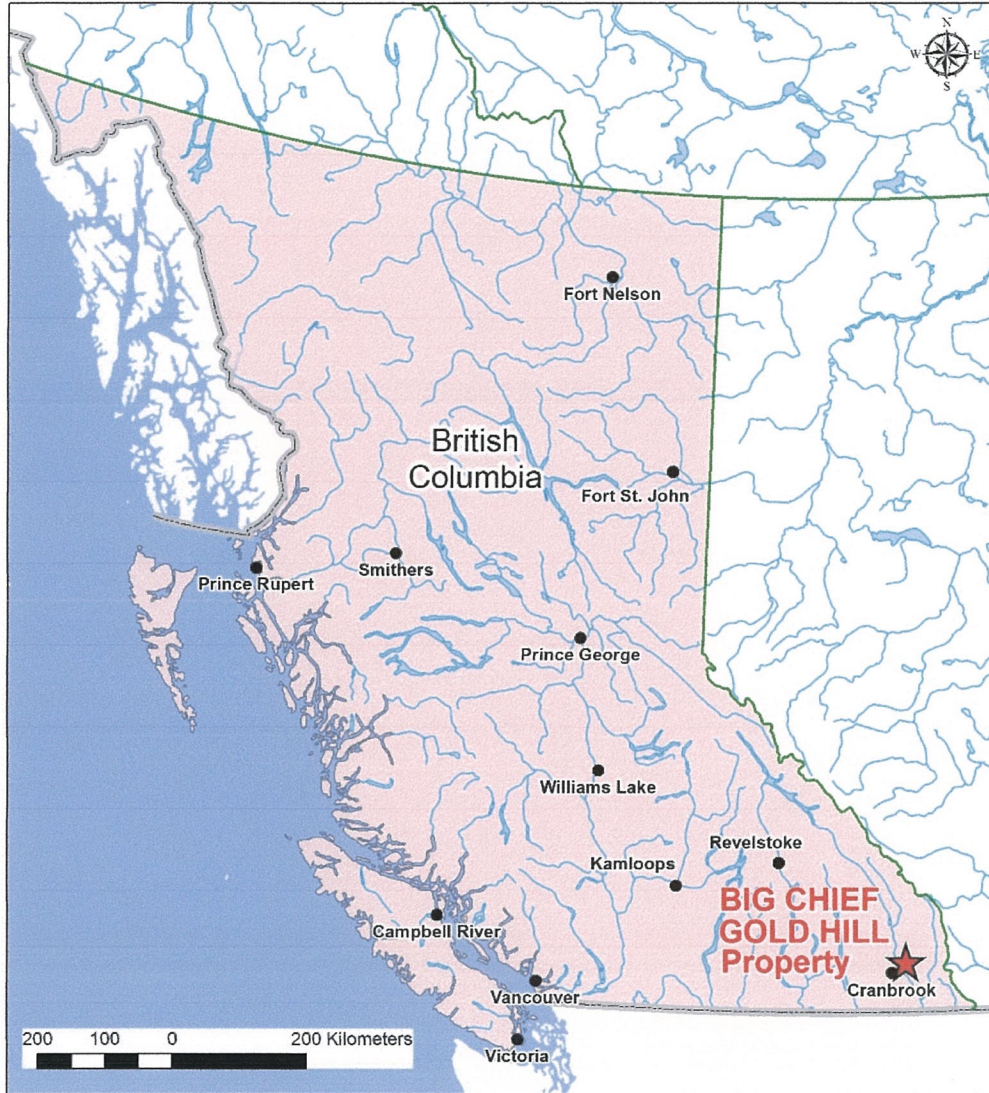
This report summarizes available data and documentation related to The Property. This report has been prepared by Frank O'Grady, P.Eng. (the Author) and is based on a review of all known technical documentation on public record. The Author's objective was to present the results of work performed without promotional or misleading intent.

The information utilized for this report is from Assessment Reports (AR), other reports from the Ministry of Energy Mines and Petroleum Resources (MEMPR), namely the BC Geological Survey (BCGS), the Geological Survey of Canada (GSC) which include scientific papers and presentations at various symposiums, and the Author's personal communication with prospectors, geologists and others that have worked on and near The Property. The Author visited The Property on October 30 and October 31, 2017 during which time he examined the underground workings where accessible, some dump material where exposed, as well as several of the known showings.

Description of the Regional and Property Geology is derived from the Geological Survey of Canada (GSC) as well as Geoscience BC papers and presentations.

This report has been prepared to comply with the requirements of National Instrument 43-101 and 43-101F1.





**Figure 1: Province Location of the Big Chief-Midas/Gold Hill Property**  
Northeast of Cranbrook, British Columbia

The Property has an extended history of exploration dating back to the late 19th century. However, The Property has not been subjected to a thorough modern exploration program and there is no evidence on the ground or on paper of core drilling. Hence The Property status is still in an early stage of development. Therefore, some sections of the NI 43-101 Technical Report Form are excluded as they do not apply.

All units of measurement are consistent with the International System (SI) of Units unless specifically noted otherwise. Where values in historical documents are made in some other system of measurement, they will be quoted directly with SI equivalents offered in brackets where practical, sometimes rounded for convenience. All maps and drawings containing Universal Transverse Mercator (UTM) coordinates conform to zone 11 of the North American Datum 1983 (NAD83) unless specified differently. All monetary figures are in Canadian dollars.

To eliminate ambiguous references pertaining to the subject property, clarification of the descriptive names of the showings on the Big Chief-Midas/Gold Hill property are as follows:

- The initial lode gold discovery in the Boulder Creek basin was made in 1895. This showing was referred to as Gold Hill by the local newspaper at that time. Around the same time a claim named the Midas was staked approximately 300 meters north of the Gold Hill discovery. Later on, the Gold Hill showing, now known as the Guggenheim and Iron Cap showings, were frequently referred to as the Midas showings. The Iron Cap and the Guggenheim are separated by approximately 100 meters. The Author has chosen to refer to the Guggenheim and Iron Cap showings as the Midas/Gold Hill showings. The Midas/Gold Hill showings are situated on the south side of Boulder Creek.
- In 1898 the Big Chief showings were discovered on the north side of Boulder Creek and were reported on in the local newspaper as the Big Chief property. The author refers to this showing as the Big Chief. Also, in some mining literature and particularly news reporting, the Midas/Gold Hill and the Big Chief are collectively referred to as the Gold Hill property.

To summarize, in this report, the complete tenure is referred to as “The Big Chief-Midas/Gold Hill Property” or “The Property” while the showings on the south side of Boulder Creek are referred to as the Midas/Gold Hill showings and the showings on the north side of Boulder Creek are referred to as the Big Chief showings.

## **2.1 Abbreviations, Acronyms and Conversion Factors**

Metals and mineral abbreviations used in this report conform to standard mineral industry standards. With references to The Property dating back over a century, the Mineral Titles Branch may be referred to by a variety of names due to the reorganization of British Columbia ministries over the years. Table 1 lists abbreviations and acronyms utilized in this report.

**Table 1: Abbreviations and Acronyms**

<b>Text</b>	<b>Description</b>
~	approximately
Ag	silver
AR	Assessment Report
Au	gold
az	azimuth (degrees relative to true north)
BCGS	British Columbia Geological Survey
cm	centimeter, centimeters
CM&S, CM&S Co.	Consolidated Mining & Smelting Co. (later Cominco)
Cu	copper
EM	electromagnetic
ERP	Emergency Response Plan
ft (or ')	foot, feet
g/t	grams per metric tonne
GSC	Geological Survey of Canada
ha	hectare(s)
km	kilometer(s)
km/h	kilometers per hour
lb	pound (avoirdupois)
m	meter, meters
Ma	Million years (age date of rock)
MEM	BC Ministry of Energy and Mines
MEMPR	BC Ministry of Energy Mines and Petroleum Resources
MTO	Mineral Titles Online
NAD83	North American Datum 1983 (map datum)
NI 43-101	National Instrument 43-101
oz/T	Troy ounce per short (US) ton (avoirdupois) [ <i>preferred format</i> ]
Pb	lead
ppb	parts per billion
ppm	parts per million
PPE	Personal Protective Equipment
SI	International System of Units
SD	Standard Deviation
TRIM	Terrain Resources Information Management (Maps)
UTM	Universal Transverse Mercator (map projection)
VLF- EM	Very Low Frequency Electromagnetic (geophysics)
Zn	zinc

This report uses the Metric System. More recent documents use the Metric System, but older references almost exclusively use the Imperial System. These values will be converted (Table 2) with SI equivalents offered in brackets where practical, sometimes rounded for convenience.

<b>Imperial Unit</b>	<b>SI Unit</b>
acre	0.4047 hectares
foot	0.3048 meters
inch	2.54 centimeters
troy ounces	31.1035 grams
pound	0.4536 kilograms
mile	1.609 kilometers
oz/T (ounces per US ton)	34.2857 g/t (grams per metric tonne)
Ton (US short)	0.9072 tonnes

### **3. RELIANCE ON OTHER EXPERTS**

The early part of the history of The Property was taken primarily from historical accounts compiled by prospector David Javorsky in 2004 and C.F. Myrene in 1967. Mr. Myrene was an Engineer who worked at the Sullivan Mine, then owned by the CM&S. Mr. Myrene was a university-trained engineer but not a professional engineer. The accounts of Mr. Javorsky and Mr. Myrene coincide with historical newspaper accounts.

From 1937 to 2017 the Author has depended on drawings and reports prepared by geologists and engineers that are certified professionals. A great deal of information was obtained from Assessment Reports filed with the MEMPR. These Assessment Reports are included in the Reference section of this report.

The Author of this report has no reason to doubt the veracity of any of the documentation of the exploration history of The Property that he has included. Some of the early accounts of The Property had been handed down verbally and reported on. Some early descriptions were left out if the Author could not verify it, considered the info to be hearsay, or the information was vague. The Author has attempted to accurately convey the content of historical records, but cannot guarantee the accuracy or validity of the work contained in those files.

The location of the various original workings was not referenced to a known world coordinate system. However, these workings have been clearly identified and placed on various maps with coordinates taken by hand-held GPS instrument.

In the case of soil sampling programs reported in assessment reports, where the sampling grid was originally established by chain and compass, and where such grids overlay parts of The Property, the grid location was determined by tying them into topographical features, as best as possible, primarily creeks.

All transactions involving mineral tenures in British Columbia are completed on MEM's Mineral Titles Online (MTO) web-site. Details on the status of the mineral titles that comprise The Property are publicly available on that website. After a review of the MTO site, the Author is satisfied that the ownership and location of the mineral tenures are as stated herein.

#### 4. PROPERTY DESCRIPTION AND LOCATION

The Property is situated in the East Kootenay District of British Columbia approximately 25 kilometers northeast (Az 45 °) of Cranbrook, British Columbia and 11 kilometers northeasterly (Az 50°) from Fort Steele, British Columbia. It falls within the jurisdiction of the Fort Steele Mining Division (Table 3).

The Property consists of 4 contiguous mineral claims. The total area covered by the tenure is approximately 836 hectares. Table 4 lists the four contiguous claims that form The Property and relevant information including Good Until Date and size from Mineral Titles Online (MTO). Figure 2 on the next page is a Mineral Tenure map.

<b>TABLE 3:</b>	<b>BIG CHIEF-MIDAS/GOLD HILL PROPERTY TENURE SPECIFICATIONS</b>
Mining Division	Fort Steele
NTS	82G/12E
TRIM	82G 063
Latitude	49° 40'
Longitude	115° 30'
UTM N	5504000
UTM E	607500
Area	836 hectares
Owner	American Creek Resources Ltd.

**Table 4: Tenure, Type, Name, Good Until, Size of Tenure**

Tenure Number	Type	Claim Name	Good Until	Area (ha)
505843	Mineral		20211231	418.15
1028500	Mineral	BOULDER	20211231	83.62
1028501	Mineral	VERTICAL MOUNTAIN	20211231	146.30
1029131	Mineral	WILDHORSE	20211231	188.10

Total Area: 836.17 ha

The Property was acquired by American Creek Resources Ltd. from prospector David Javorsky. The Company announced the acquisition of the Gold Hill property in southeastern British Columbia, along with the D-McBride property in the Stikine Mining Division in northern British Columbia, in a news release on March 9, 2015. In that news release the company states the vendor, David Javorsky, was issued 3,900,000 common shares of American Creek Resources Ltd. as full payment for the transaction. Therefore, American Creek Resources Ltd. owns 100% interest in the Big Chief-Midas/Gold Hill Claim Group.

The Property is not subject to any royalties, back-in-rights, payments, percentage of Net Smelter Returns (NSR) or other agreements or encumbrances.

In British Columbia a mineral tenure can be located on Crown Land except in excluded areas such as Parks and Recreation areas. A mineral tenure does not include surface rights but does carry the right to use the surface for permitted exploration and mining activities. Geochemical surveys and geophysical surveys do not require permitting.

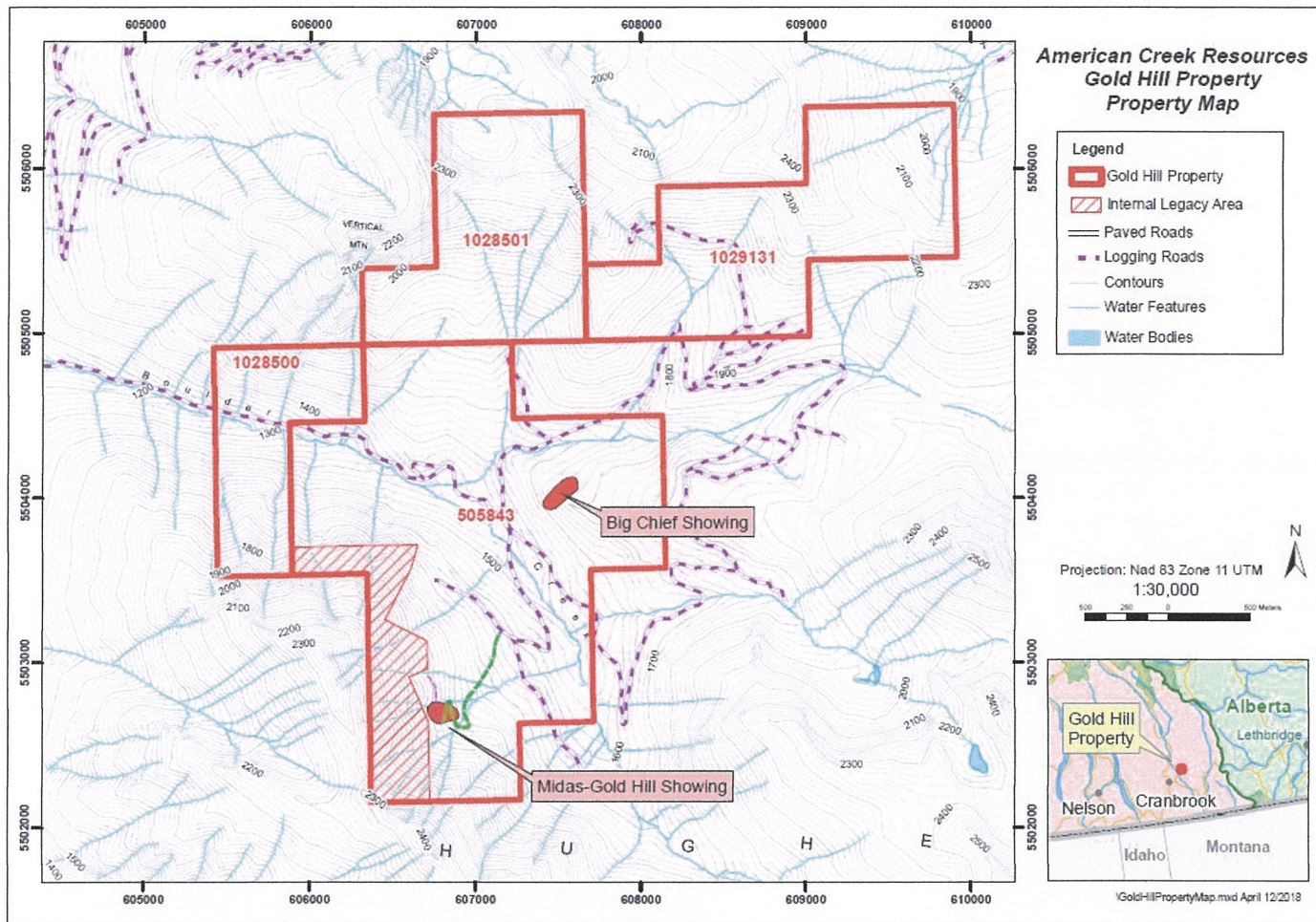


Figure 2: Mineral Tenure

#### 4.1 Environmental Aspect

Except for the small underground workings at two different locations, logging roads and ATV trails The Property is completely undeveloped.

There is evidence of the mining carried out sporadically between 1865 and 1937 which is documented in the History section of this report. The evidence consists of tunnels and accompanying rock dumps. The rock dumps consist primarily of waste rock with minor amounts of mineralized rock. The mineralization consists of sulfides, namely Galena (PbS), Sphalerite ((Zn,Fe)S), Chalcopryrite (CuFeS<sub>2</sub>), minor Tetrahedrite (Cu<sub>12</sub>Sb<sub>4</sub>S<sub>13</sub>) and minor Pyrite (FeS<sub>2</sub>). There does not appear to be sufficient sulfides from these historical rock dumps to cause Acid Mine Drainage.

Apart from natural deterioration, the tunnels and pits on The Property do not appear altered from when they were abandoned. The dimensions of the tunnels are summarized in Table 5.

**Table 5: Approximate Dimensions of Historical Workings (circa 1895 – 1937)**

Name	Dimension	Working Location
Tunnel No. 1	~7m x ~2m	North of Boulder Creek
Tunnel No. 2	~45m x ~2m	North of Boulder Creek
Tunnel No. 3	~70m x ~1.5m	North of Boulder Creek
Iron Cap	~6m x ~1.5 – 2m	South of Boulder Creek
Guggenheim Tunnel	~5m x ~ 3 – 1.5m	South of Boulder Creek
Long Tunnel*	~62m x ~1.5m	South of Boulder Creek

\*No Record on when, or by whom, the Long Tunnel was established.

At the time of the Author’s visit October 30 and 31, 2017 no water was running out of any of the workings nor was there any evidence of excessive run off from any of the tunnels that may have taken place previously or during a different time of the year.

Elsewhere on The Property there are no known environmental issues or liabilities attributable to mining or exploration activity that would impact future exploration. No diamond drill holes, drill core, abandoned PVC hose, discarded drilling mud or other evidence including documentation is evident on The Property. It is, therefore, safe to assume there are no drill holes on The Property.

## **5. PHYSIOGRAPHY, ACCESS, LOCAL RESOURCES, CLIMATE AND INFRASTRUCTURE**

### **5.1 Physiography**

The Gold Hill claims are almost completely contained within the Boulder Creek drainage. The elevation of The Property ranges from 1300 meters on the west side of The Property, to 1900 meters on the east side, and to 2400 meters on the north and south sides.

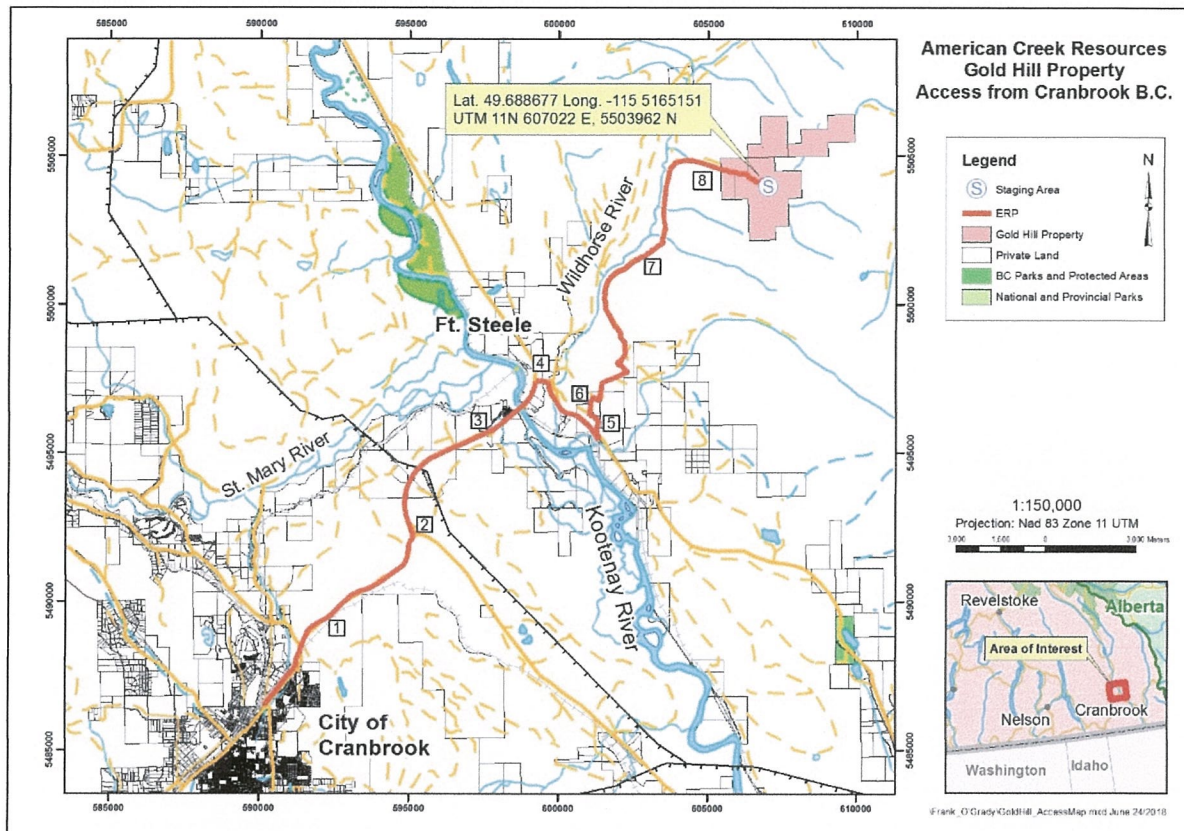
On the north side of Boulder Creek, in the vicinity of the Big Chief mineral showings, the relief is moderate but begins to rise steeply approximately 1 kilometer north of the showings.

The merchantable timber on the north side of The Property was logged during the 1950’s. A second growth of fir, larch, spruce, balsam, and lodgepole pine is present in the logged area. Alder is also prolific.

On the south side of The Property the vegetation consists of mature spruce and balsam with intervening tongues of alder in avalanche paths.

### **5.2 Access**

Access to the west edge of The Property is by good two-wheel drive roads (highways, paved roads, and gravel service roads built to forest access road standards) a distance of approximately 33 kilometers by road northeast of Cranbrook, BC (Figure 3).



**Figure 3. Access to The Property from Cranbrook, BC**

Detailed access to The Property from Cranbrook, British Columbia is as follows:

1. From the junction of Victoria Avenue and Highway 3 in Cranbrook, British Columbia go north 1.2 km.
2. Merge left heading east on Highway 3 towards Fort Steele and continue for 8.0 km.
3. Exit on the right onto Highway 95 and continue 7.4 km to the town of Fort Steele.
4. At Fort Steele turn right on the Wardner Fort Steele Road for 3.1 km to the intersection with Maygard Road.
5. Turn left on Maygard Road and follow it northerly for a distance of 1 km to where it intersects the Mause Creek Road.
6. Turn right (northeasterly) on the Mause Creek Road for a distance of 3.2 km to the start of the logging road that follows the east side of the Wild Horse River.
7. Follow the above logging road a distance of 7.5 km to the intersection of the Boulder Creek logging road on the east (right) side.
8. Follow the Boulder Creek logging road a distance of approximately 3 km to the west edge of The Property.

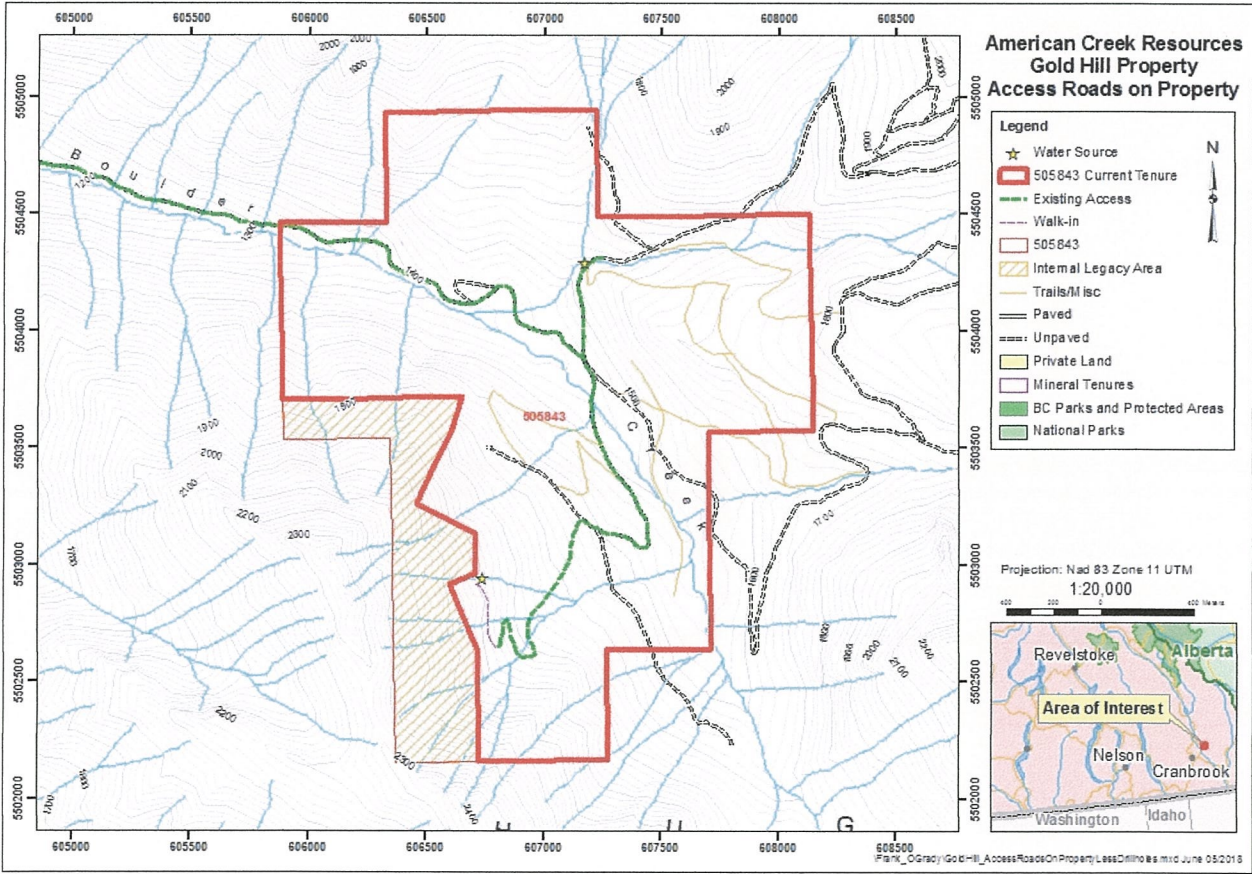


**Access on The Property**

Access once on The Property is then by gravel road and quad trails over steep rugged terrain.

The Boulder Creek logging road, a gravel road built to forest access road standards, enters the west side of The Property and completely traverses the tenure in a southeasterly direction on the north side of Boulder Creek. This logging road is passable by 2-wheel drive vehicles. Near the Big Chief mineral showing a quad trail branches off to the north providing quad access to No. 3 Tunnel and No. 2 Tunnel located in the Big Chief showing area.

Similarly, a quad trail branches off the main logging road access to the south. This trail crosses Boulder Creek and switchbacks up the steep terrain to the Iron Cap showing. The Guggenheim showing is a short hike from the end of this quad trail. The quad trail also comes within a short steep hike of the Long Tunnel (Figure 4 and Figure 5).



### **5.3 Local Resources**

The nearest service center to The Property is Cranbrook, BC situated approximately 33 kilometers southwesterly by road.

Cranbrook is an industrial center with services that include equipment rental, equipment sales, and industrial supply retail stores that stock Personal Protective Equipment (PPE). There are several hardware stores in Cranbrook that stock hand tools. In addition, there is access to consumables, including fuel and lubricants, from both bulk suppliers and retailers. In addition, there are mechanical, including mobile, services and fabrication services.

The Cranbrook International Airport has scheduled daily flights to both Calgary and Vancouver. The area is well served with helicopter services that include medical evacuation. Cranbrook also has a Regional Hospital that handles emergencies 24/7.

### **5.4 Climate**

The nearest place to the Big Chief-Midas/Gold Hill property with historical climate records is Fort Steele, BC situated 11 kilometers southwest of The Property.

Government of Canada historical data records ([www.climate.weather.gc.ca](http://www.climate.weather.gc.ca)) show the warmest month is July with an average temperature of 18.1°C and the coldest month January with an average temperature of -7.6°C.

A climograph for Fort Steele shows March as the driest month with 29mm of rainfall and June with the most precipitation at 58mm. The same climograph shows January, November and December with precipitation greater than 50mm.

To apply these readings to The Property, some consideration will need to be made for the elevation difference between Fort Steele at 765 meters and The Property with an elevation at the center of approximately 1500 meters and rising to 2400 meters at the north and south edges of The Property.

The Boulder Creek basin, where The Property is situate, is mostly snow free from mid-June to late October. Some small patches of snow, at the higher elevations, particularly on the north slopes, may be present well into July. However, exploration can be conducted during this period. A 12-month mining operation could be conducted on The Property but may require dedicated and specialized snow removal equipment.

### **5.5 Infrastructure**

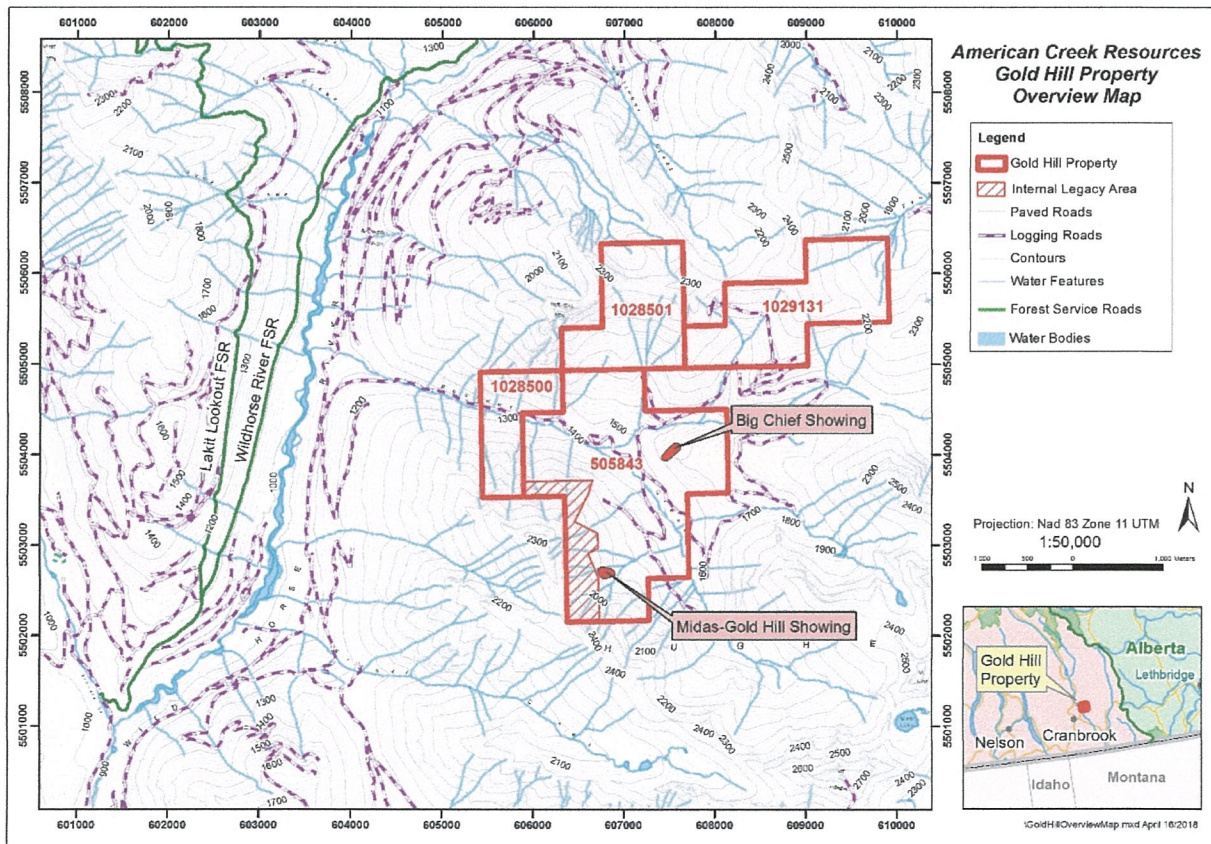
A 138-kV power line runs along the Rocky Mountain Trench 8 kilometers west of The Property. The size (daily production rate) of a potential mine in the Boulder Creek basin would determine if a power line would be extended to The Property or if the power would be generated on-site by diesel generators. Additionally, the power requirements would be influenced by whether the

processing plant for the mine ore is situated in the Boulder Creek valley or in the more accessible Rocky Mountain Trench area west of the Boulder Creek Valley.

There appears to be sufficient water in Boulder Creek for a mining operation. If associated processing ore treatment facilities are located in the Boulder Creek Valley, additional water may be required by pumping from the Wild Horse River or pumping from wells drilled on The Property.

A small draw immediately north of the Big Chief showing has a 100-meter relief or more for approximately 1 kilometer. This draw may be suitable for a tailings disposal area as well as for waste material from mine development.

A skilled mining workforce and associated tradespersons are available in Cranbrook, Kimberley and other cities situated in the nearby coal operations of Fernie, Sparwood and Elkford, BC. In addition, the College of the Rockies in Cranbrook has extensive training programs for tradespersons as well as programs that specialize in training mine workers.

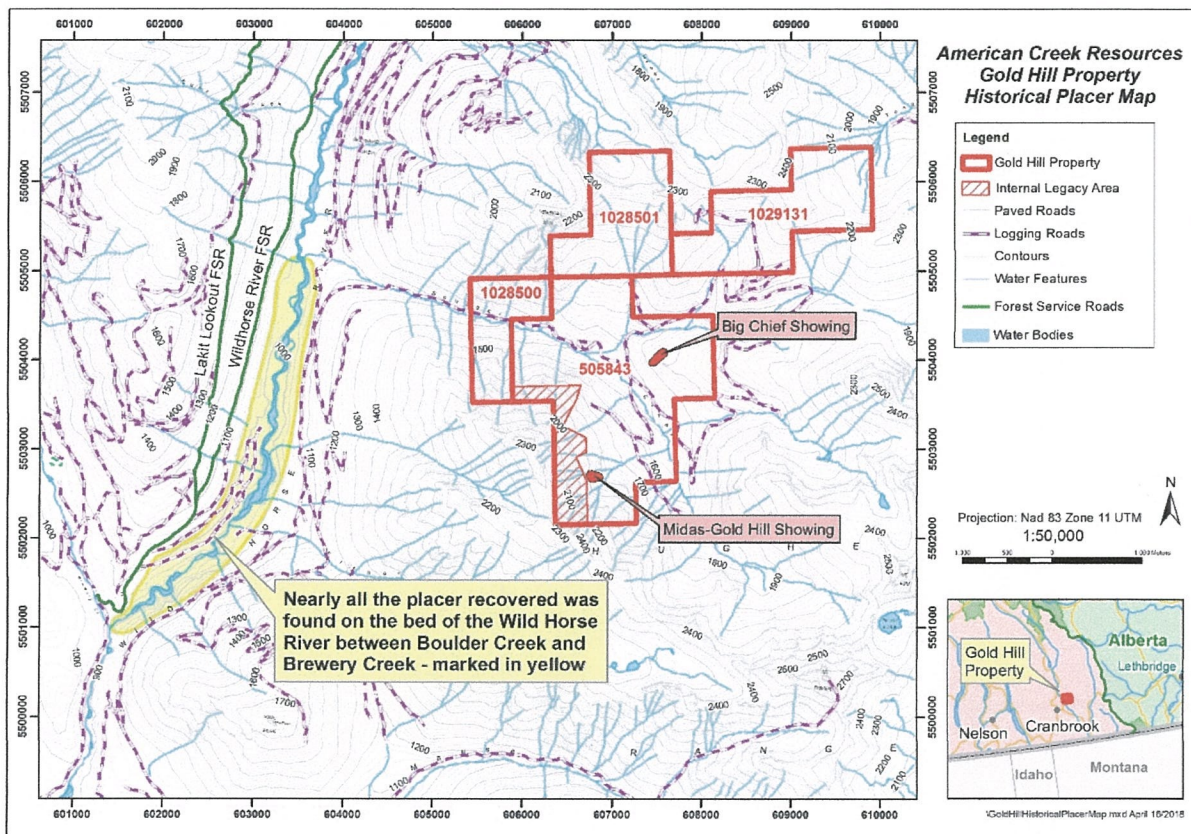


**Figure 5: Location of Historical Showings and Legacy Claim Overlap**  
Hatched Area is a Legacy Claim Overlap (not part of American Creek Tenure).

## 6. HISTORY

### 6.1 Placer Mining History

The first mining in the Fort Steele/Wild Horse River/ Boulder Creek area was placer mining which started in 1864. The placer mining was conducted on the Wild Horse River. Boulder Creek, the drainage in which the subject Big Chief-Midas/Gold Hill Property (tenures 505843, 1028500, 1028501 and 1029131) is situated, is a tributary of the Wild Horse River.



**Figure 6. Spatial Relationship Between Big Chief-Midas/Gold Hill Lode Gold Deposits and Wild Horse River Placer Fields**

Old reports suggest that from 1864 to the 1930's the Wild Horse River pay streak produced over 1.5 million troy ounces [46.6 million grams] of gold. However, newspaper interviews conducted in the 1920's, with some of the original placer miners, state that most of the gold recovered from placer operations on the Wild Horse River was smuggled into the United States where it was sold for a higher price than the British were paying. No records exist on how much gold mined in Canada was sold in the United States.

The pay streak on the Wild Horse River extended from the confluence of Boulder Creek with the Wild Horse River downstream for 6 kilometers to the confluence of Brewery Creek with the Wild Horse River. The fact that the pay streak began where Boulder Creek enters the Wild Horse River led to a theory that Boulder Creek was the source of gold in the Wild Horse. This theory is illustrated in Figure 6 on the preceding page.

There was a second period of placer mining during the 1930's. The mining during the 1930's utilized hydraulic monitors which were used to move the large amounts of material overlying the bedrock in the Wild Horse River and expose the auriferous gravels on and near bedrock.

## 6.2 Lode Gold History

Table 6 summarizes the history of the Big Chief-Midas/Gold Hill property prior to 2015 when the property was acquired by American Creek Resources Ltd.

**Table 6: Property History Summary to 2014**

Year	Owner/Operator	Location on Present Property	Work Performed	References
1895	H.L. Ames & Chas. Elwood	Midas/Gold Hill	Two short tunnels (possibly Iron Cap and Guggenheim)	The Prospector Newspaper, Dec 7, 1895
1899	Mr. Highby & partner, Prospectors	Big Chief No. 1 Tunnel	Seven-meter tunnel; 1.8-meter shaft	The Prospector Newspaper, Jan. 7, 1899
Between 1898 - 1905	Pat Egan (railroad tunnel contractor)	Big Chief No. 2 Tunnel	140 feet [42.7 meter] tunnel and 2 short cross cuts	The Big Chief Story by C.F. Myrene (1967) in AR 27713, Javorsky (2004)
1934 - 1956	Ted Nagel & C.F. Myrene, CM&S Co.	Big Chief No. 3 Tunnel	250 feet [76 meters] tunnel; car and face sampling	The Big Chief Story by C.F. Myrene (1967) in AR 27713, Javorsky (2004)
1966	Boulder Creek Mines	Big Chief	Prospectus Issued; no records of work performed available	AR 34920, Javorsky & Pighin (2015 amendment)
1983	Bowes Lyons	West side of tenure 505843, overlapping geochemical survey	Systematic soil sampling	AR 12247, Sookochoff (1983)
1984 - 1996	Hammond Exploration Inc.	Big Chief and Midas/Gold Hill	67 channel samples; 13 grab samples	AR 13658, Nelles (1984)
1995 - 1996	Golder Group	Midas/Gold Hill	3 grab samples anomalous gold; minor mapping Midas/Gold Hill	AR 24230, Olfert (1996) AR 24683, Skopik (1996)
1999 - 2004	David Javorsky	Big Chief and Midas/Gold Hill	Rehab roads and trails; reaffirmed high grade gold values	AR 27713, Javorsky (2004)
2014	David Javorsky	Big Chief and Midas/Gold Hill	Sampling; commissioned report and geological map by D. Pighin, P.Geo.	AR 34920, Javorsky & Pighin (2015 amendment)

Lode prospecting of the area east of, and upstream from, the Wild Horse placer deposits is reported to have begun in 1885. It is believed that lode gold prospecting began seriously in 1885 as the CPR Railway came to the area during that year. Prospecting for lode gold was initiated to search for the source of the placer gold in the Wild Horse River.

### **6.2.1 Midas Area, Dec. 7, 1895**

The first recorded account of lode gold in Boulder Creek is contained in “The Prospector” newspaper (The Prospector newspaper was published between 1895 and 1905 by A. B. Grace in Fort Steele, British Columbia) on December 7, 1895. The account states that two prospectors, H.L. Amme and Chas. Elwood, discovered a gold bearing quartz. This showing is situated on the south side of Boulder Creek, in what is now referred to as the Midas (or Gold Hill) area. It is described in the newspaper as a ledge.

The original prospectors, H.L. Amme and Chas. Elwood, did some work consisting of hand trenching and 2 short drifts that exposed gold bearing breccia 300 feet [91 meters] long that remains open on strike and at depth.

The aforementioned article forms Appendix 1.

### **6.2.2 Big Chief Area, Jan. 7, 1899**

The first mention of the Big Chief showing which is situated on the North side of Boulder Creek was in the January 7, 1899 edition of the previously mentioned Prospector newspaper.

From the description of the showing and the work conducted on the showing it has been determined that the location of this showing is the location of the upper tunnel on the historic Crown Grant Big Chief claim. Subsequent reports on this area refer to this tunnel as the No. 1 Tunnel.

The two prospectors drove a short tunnel and sank a short 6 foot [1.8-meter] shaft in the tunnel.

Examination of the tunnel and numerous pieces of mineralized rock near the area failed to show up any gold that could be visible through a magnifying glass at that time.

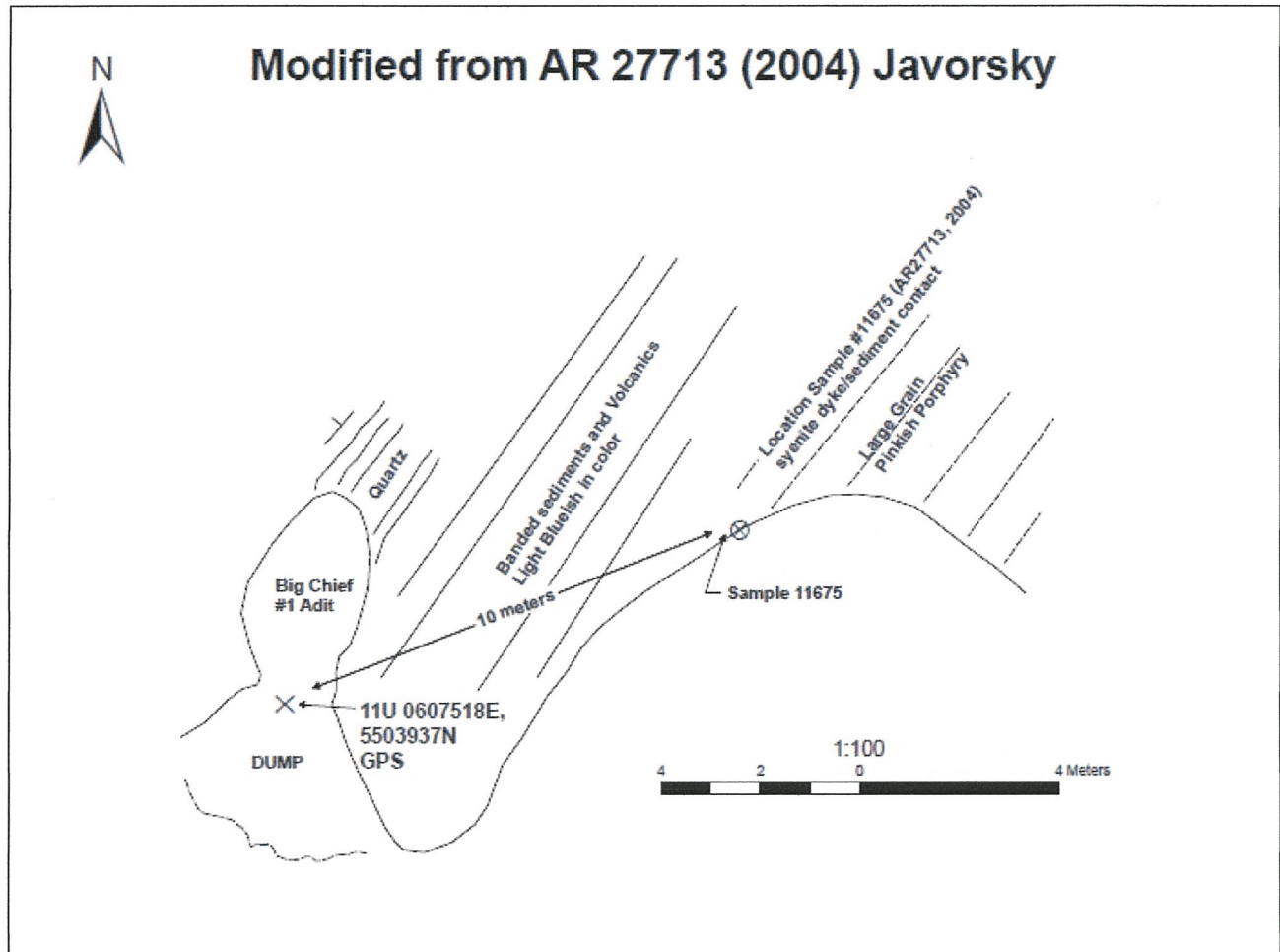
The aforementioned article forms Appendix 2 of this report.



**Photograph 1: Entrance to No. 1 Tunnel**

It should be noted, however, that during a sampling program conducted by David Javorsky in 2004 Mr. Javorsky sampled an area approximately 10 meters east of No. 1 Tunnel. This sample #11675, reported on in AR 27713, returned an assay of 0.484 oz/Ton [16.6 grams/tonne] Gold and 0.26 oz/Ton [8.9 grams/tonne] Silver (Figure 7). No visible gold or sulfides were contained in this sample.

Note No. 1 Tunnel is labelled as #1 Adit in Figure 7.



**Figure 7: Sample #11675**, modified from Javorsky (2004) AR 27713  
0.484 oz/Ton [16.6 grams/tonne] Gold and 0.26 oz/Ton [8.9 grams/tonne] Silver  
Note No. 1 Tunnel is labelled as Big Chief #1 Adit in Figure 7.

Javorsky (2004) AR 27713 describes Sample #11675 as: “Dyke material 10 meters east of the #7 dyke. This dyke appears to dip under the quartz vein at the Big Chief #1 adit. It is separated by bleached sediments. The dyke has long, 2 inch [5 cm] long crystals and it is pinkish. The sample was taken from the hanging wall on the west side of the trench.”

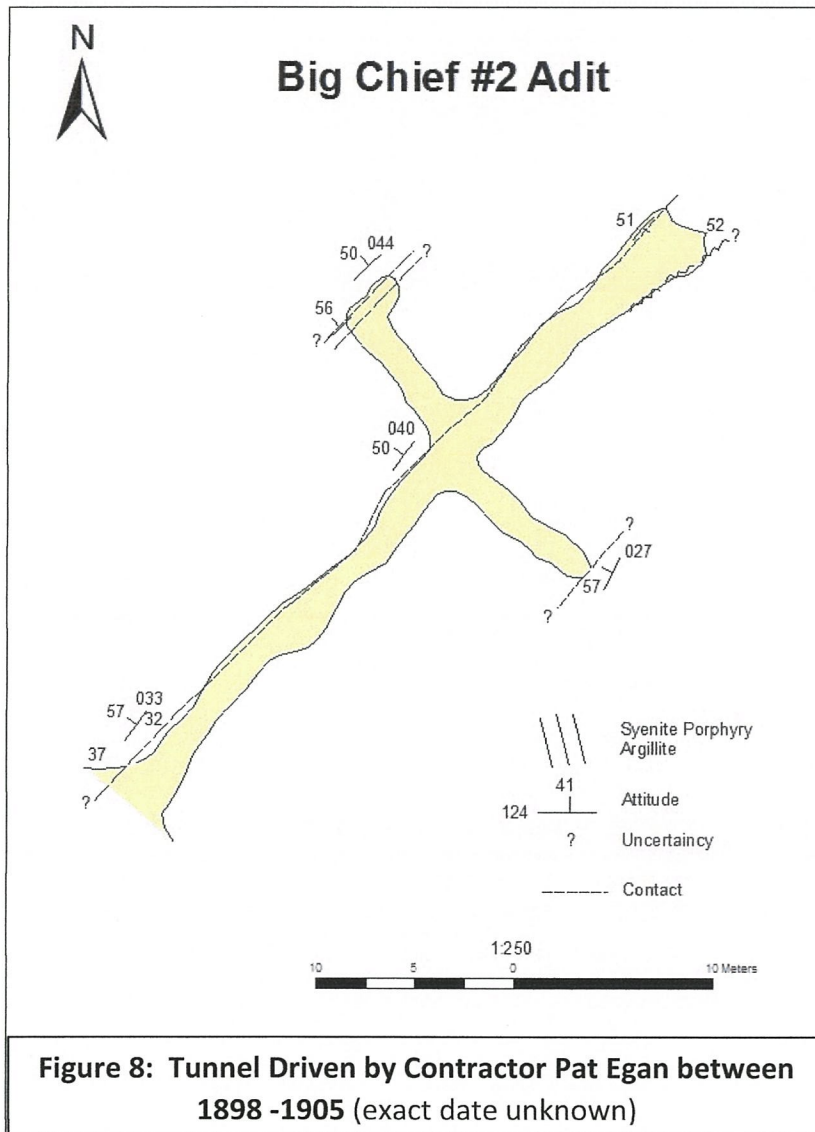
### 6.2.3 Pat Egan No. 2 Tunnel, Big Chief between 1898 - 1905

from The Big Chief Story by C.F. Myrene (1967), Appendix B in AR 27713, Javorsky (2004)

Subsequent to 1898 when the Big Chief claims were originally staked and before 1905, the property was purchased by Pat Egan, a railroad contractor. Mr. Egan's "tunnel crew" drove a

tunnel along the gold bearing structure approximately 300 feet [91 m] below the upper No. 1 Tunnel. This second tunnel is named the No. 2 Tunnel.

The No. 2 Tunnel was driven along the hanging wall contact of a syenite porphyry for 140 feet [42.7 meters] to where it was reportedly stopped when encountering a fault zone. A cross cut was driven to the foot wall (easterly) of the structure. Very little mineralization was encountered in this cross cut; the mineralization encountered was in the form of minor pyrite. A shorter cross cut was driven to the hanging wall side (westerly) where, again, very little mineralization was encountered. Figure 8 is a plan of No. 2 Tunnel.



No. 2 Tunnel was driven along the gold bearing structure. There are no assays available for this material, however, there is high grade material on the dump. In Mr. Myrene's account of the history of the property he stated "the main drift did show up rich specimens of gold and sulfides in the back of the drift" (The Big Chief Story, Appendix 3 of this report).

Note No. 2 Tunnel is labelled as #2 Adit in Figure 8.





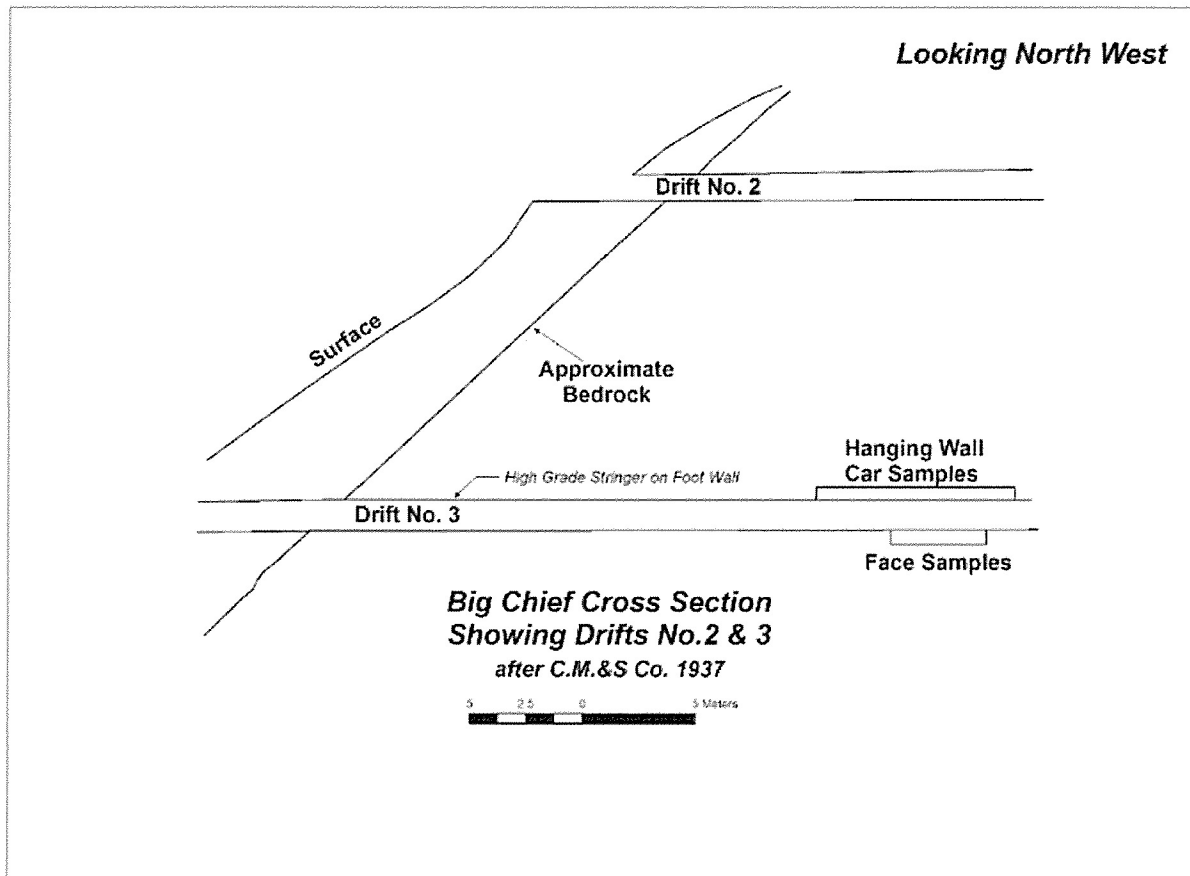
**Photograph 2:  
Entrance to No. 2 Tunnel**

#### **6.2.4 Nagel and Myrene, CM&S Co., 1934-1956**

from *The Big Chief Story* by C.F. Myrene, Appendix B in AR 27713, Javorsky (2004)

The Big Chief property was idle from when the work was done on No. 2 Tunnel until 1934 when the Crown Grants were acquired by C.F. Myrene and Ted Nagel of Kimberley, BC.

From 1934 to 1937 Mr. Nagel and Mr. Myrene collared what became No. 3 Tunnel (referred to as Drift #3 in Figure 9). The No. 3 Tunnel, was collared approximately 50 feet [16 meters] vertically below the No. 2 Tunnel and on the same structure as the No. 2 Tunnel. They drove the tunnel through approximately 70 feet [21 meters] of unconsolidated material and into bedrock. Ten feet [3 meters] into the bedrock material a sample assayed 16 ounces/Ton [548 grams/tonne] gold. It should be noted that the high grade material they encountered 10 feet [3 meters] in is a small stringer near the foot wall of the syenite dyke, it was not part of the main 1.5 foot [0.45 meters] mineralized breccia zone later encountered on the hanging wall side of the syenite dyke (Figure 10).



**Figure 9: Big Chief Cross Sections showing No. 2 Tunnel & No. 3 Tunnel**  
Looking Northwest of No. 2 Tunnel driven by Pat Egan between 1899 & 1905,  
and No. 3 Tunnel Driven by CM&S, 1937

At this time Mr. Nagel and Mr. Myrene approached the CM&S Co. (originally the Consolidated Mining and Smelting Company became Cominco and subsequently became part of Teck Resources) seeking an option agreement. CM&S Co. sent out a Geologist who took several samples. The results of the assays from these samples convinced CM&S Co. that the property warranted further work.

The Consolidated Mining and Smelting Company hired 4 miners and a cook to work the property. The miners were instructed by a CM&S Co. Engineer on how to take car samples and face samples. CM&S hoped they could establish a low grade high tonnage gold mining operation.

The results of this exploratory program demonstrated the gold and accompanying silver and lead values were confined to a 1.5-foot [0.45-meter] zone of mineralization along the hanging wall of the structure and that a pronounced nugget effect is exhibited.

A plan of No.3 Tunnel and the associated Gold and Silver values form Figure 10. Table 7 and Table 8 contain the data from the car samples and the face samples respectively.

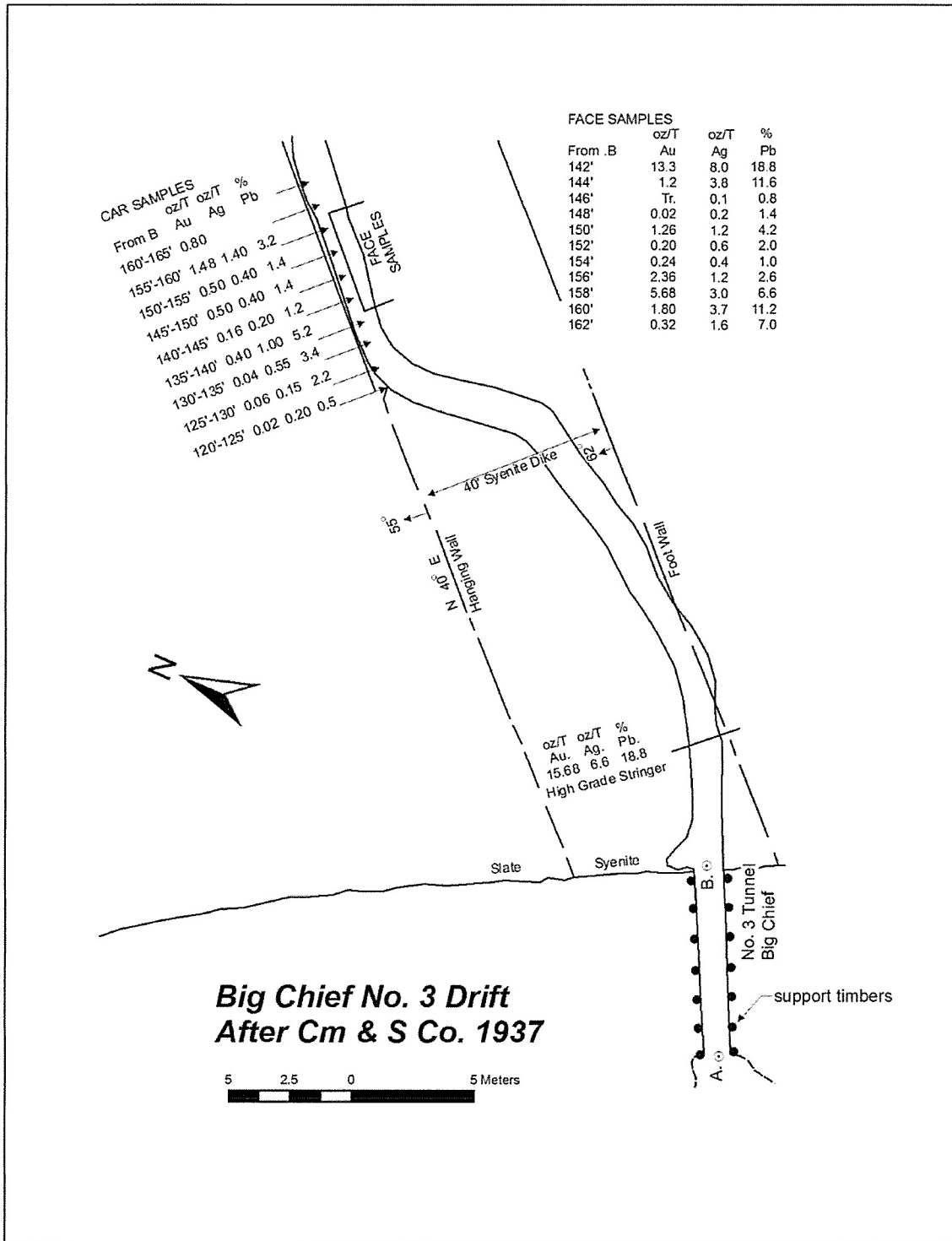


Figure 10: Plan of No. 3 Tunnel, CM&S, 1937  
 Includes car and face sample values

**Table 7: Car Samples from No. 3 Tunnel CM&S, 1937**

Interval in feet	Interval in meters	Au troy oz/Ton	Au grams/tonne	Ag troy oz/Ton	Ag grams/tonne	Pb %
160'- 165'	48.8 - 50.3	0.8	27.4	0	0	ND*
155'- 160'	47.2 - 48.8	1.48	50.7	1.4	48	3.2
150'- 155'	45.7 - 47.2	0.5	17.1	0.4	13.7	1.4
145'- 150'	44.2 - 45.7	0.5	17.1	0.4	13.7	1.4
140'- 145'	42.7 - 44.2	0.16	5.5	0.2	6.9	1.2
135'- 140'	41.1 - 42.7	0.4	13.7	1	34.3	5.2
130'- 135'	39.6 - 41.1	0.04	1.4	0.55	18.9	3.4
125'- 130'	38.1 - 39.6	0.06	2.1	0.15	5.1	2.2
120'- 125'	36.6 - 38.1	0.02	0.7	0.2	6.9	0.5
		Average 0.44	Average 15.1	Average 0.48	Average 16.4	Average 2.3
ND* denotes no data available						

**Table 8: Face Samples from No. 3 Tunnel CM&S, 1937**

Distance in feet from adit	Meters from adit	Au troy oz/Ton	Au grams/tonne	Ag troy oz/Ton	Ag grams/tonne	Pb %
142'	43.3	13.3	456	8	274.3	18.8
144'	43.9	1.2	41.1	3.8	130.3	11.6
146'	44.5	Tr.	Tr.	0.1	3.4	0.8
148'	45.1	0.02	0.7	0.2	6.9	1.4
150'	45.7	1.26	43.2	1.2	41.1	4.2
152'	46.3	0.2	6.9	0.6	20.6	2
154'	46.9	0.24	8.2	0.4	13.7	1
156'	47.6	2.36	80.9	1.2	41.1	2.6
158'	48.2	5.68	194.7	3	102.9	6.6
160'	48.8	1.8	61.7	3.7	126.9	11.2
162'	49.4	0.32	10.1	1.6	54.9	7
		Average 2.4	Average 82.1	Average 2.16	Average 74.2	Average 6.1
Tr. denotes trace amount						

In Summary:

Car Samples: The assay results indicate:

- 45 feet [13.7 meters] of 0.44 oz/T [15.1 g/t] Gold, 0.48 oz/T [16.4 g/t] Silver, 2.3% Lead

Face Samples: The assay results indicate:

- 22 feet [6.7 meters] of 2.4 oz/T [82.1 g/t] Gold, 2.16 oz/T [74.2 g/t] Silver, 6.1% Lead

The No. 3 Tunnel was driven on a syenite dyke. The tunnel was driven from the collar north easterly to the foot wall contact, along the foot wall contact and then northwesterly to the hanging wall contact, and then along the hanging wall contact. It is along the hanging wall contact that the above reported face and car samples were taken. This tunnel design was almost certainly to determine if the Gold and accompanying mineralization was distributed across the entire dyke which it was not, it was confined to the hanging wall side. Figure 10 does not show the tunnel past the assayed portion.

CM&S Co. subsequently returned the property to Mr. Nagel and Mr. Myrene.

In 1945 CM&S Co. decided to take another look at the Big Chief property. During that summer they sent in a crew of 5 Geologists and Engineers plus a cook and two samplers. They conducted a program of topographic mapping, sampling and geological mapping in the immediate vicinity of the Big Chief. A report on the program (unavailable), dated December 5, 1945 recommended no further work on the property.

Around 1950, Dinty Moore, a logging contractor, built a road along the east side of the Wild Horse River and into the Boulder Creek drainage. In addition, Mr. Moore built an access road to the No. 3 Tunnel. This road placement provided easy access to the Boulder Creek drainage and the Big Chief-Midas/Gold Hill mining properties.

Previous to 1950 access was by a very narrow road along the west side of the Wild Horse river, across the river by foot bridge and by trail into the Boulder Creek drainage.

Subsequent to the road emplacement Mr. Nagel, Mr. Myrene and a third partner, identified only as Steve, mined from No. 3 Tunnel and gathered from the dump, a stock pile they estimated to be 2 or 3 tons of what visually appeared to be good grade material. The plan was to send one or more small shipments to the CM&S Co. smelter in trail. They hoped to make a profit from this small operation.

Prior to shipping to the smelter Mr. Myrene selected a 10 lb [4.5 kilogram] representative sample from the 2 to 3-ton stockpile they had accumulated. The sample was sent to the smelter for assay. The results form Table 9:

**Table 9: Assay From CM&S Trail Smelter, 1950's on 10 lb. [4.5kg] Sample**

Au ounces/ton	Au grams/tonne	Ag Ounces/ton	AG grams/tonne	Cu%	Pb%	Zn %	S%	SiO <sub>2</sub> %	Fe %
0.40	13.7	1.2	41.2	0.2	1.4	.2	2	55	3.5

The smelter value of the 10 lb [4.5 kg] sample was determined to be \$13.42/Ton and the smelter costs (charges and penalties) were determined to be \$14.55/Ton, a negative return of \$1.13/Ton. Therefore, the partners decided not to pursue the venture.

This material was probably not subjected to modern metallurgical testing by bench testing in a properly equipped lab by trained personnel.

### 6.2.5 Boulder Creek Mines, 1966 from AR 34920, Javorsky & Pighin (2015 amendment)

“In 1966 the Big Chief and Midas properties were acquired by Boulder Creek Mines, a junior mining company with offices in Calgary, Alberta. In a 1966 prospectus R.J. MacDougall, P.Eng. recommended a \$24,300 exploration program be conducted on the Big Chief and Midas showings. Mr. MacDougall’s proposed program consisted of road construction, underground, work on old drifts [tunnels] and diamond drilling. However, there is no evidence in writing or on the ground as to what work was actually done by Boulder Creek Mines” (quote from AR 34920, Javorsky and Pighin (2015 amendment), Appendix A, p. 4).

### 6.2.6 Boves and Lyons, 1983 from AR 12247, Sookochoff (1983)

A program of geochemical soil sampling and an EMVLF survey (Electromagnetic Very Low Frequency) was conducted on Claim C for Boves-Lyons Resources Ltd. during the summer of 1983.

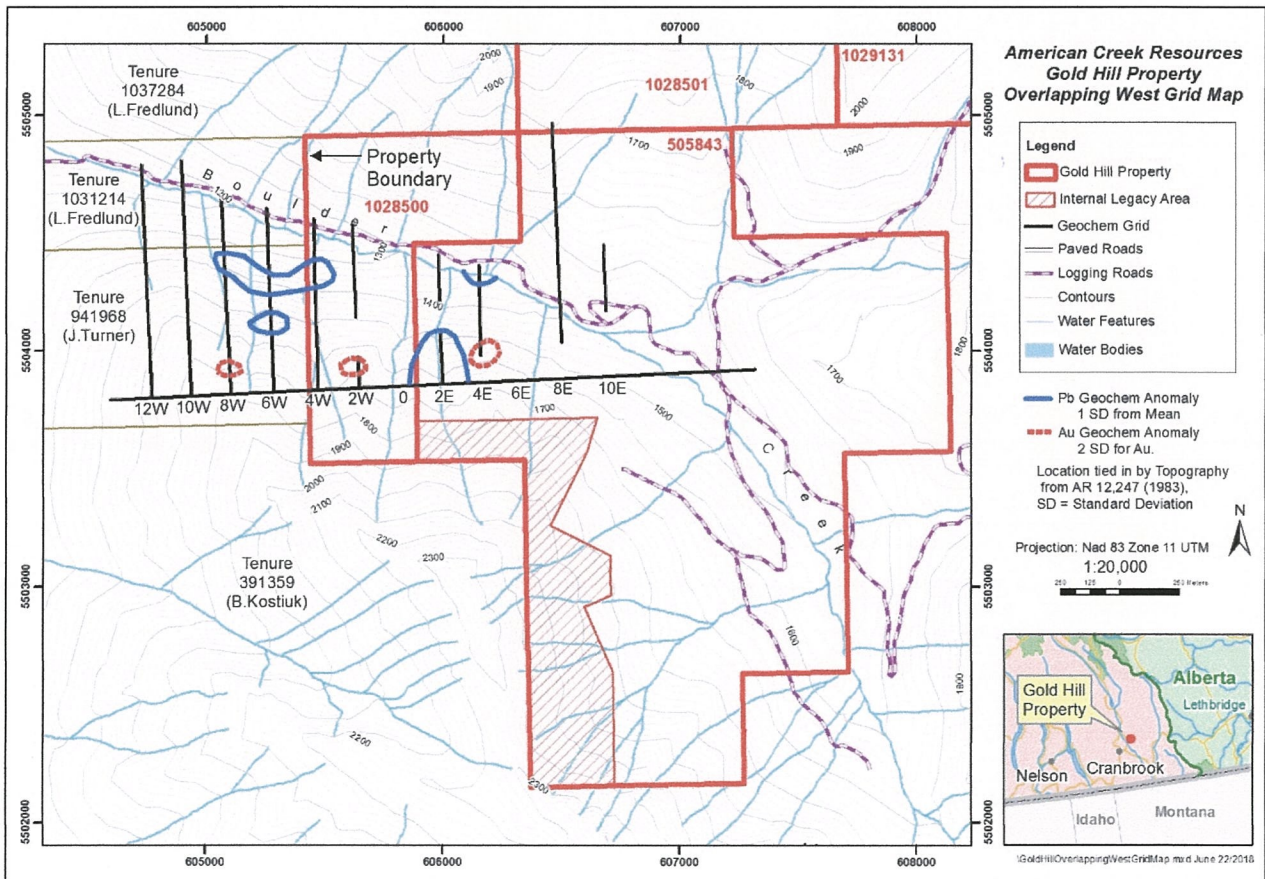


Figure 11: Boves and Lyons Geochemical Grid Overlap  
AR 12247, Sookochoff (1983)

Claim C partially overlaps Tenure 505843 on its western side. The geochemical grid installed on Claim C partially overlapping Tenure 505843 contains a well-defined geochemical anomaly which includes copper, lead, zinc, gold, arsenic, and silver (Figure 11). There is no record of the geochemical anomaly having been followed up.

The EMVLF was conducted using an EM16 instrument. The data was plotted (AR12247) but not interpreted hence it did not contribute to the exploration program.

The work program sponsored by Bowes Lyons is covered in Assessment Report 12247 by Skookochoff Consultants Inc.

### 6.2.7 Hammond Resources, 1984-1996 from AR 13658, Nelles (1984)

During 1984 Hammond Resources Ltd., then owners of the Big Chief -Midas/Gold Hill property, contracted Golden Porphyrite Ltd. to conduct sampling of known historical showings on The Property.

Golden Porphyrite Ltd. conducted the sampling program on the hypothesis that the property may contain a large tonnage low grade deposit. Hence regularly spaced channel samples were taken in the existing historical workings (Table 10).

**Table 10: Samples from Historical Workings, Hammond Resources**  
 AR13658 Nelles (1984)

<b>BIG CHIEF WORKINGS</b>		
<b>Showing</b>	<b>Nominal Spacing Meters</b>	<b>Number of Samples</b>
No. 1 Tunnel	2	6
No. 2 Tunnel	2	15
No. 3 Tunnel	2	24
<b>MIDAS/GOLD HILL WORKINGS</b>		
<b>Showing</b>	<b>Nominal Spacing Meters</b>	<b>Number of Samples</b>
Iron Cap	1	10
Guggenheim	1 – 1.5	7

A total of 62 channel samples and 13 grab samples were taken. Results from the channel samples indicated the possibility of a large tonnage low grade precious metal deposit was precluded as the precious metal values were too low.

Of the 13 grab samples taken one sample, sample number RNOC 13 assayed 0.676 oz/T gold [23 g/t] and 33.7 oz/T Silver [1155 g/t]. This sample, taken from the Iron Cap Adit area, indicated the precious metals are associated with galena and pyrite. The values also correlated with previous historic selected samples from the Iron Cap showing. In addition, several of the grab sample contained anomalous values of precious and base metals.

Drawings of the workings and location of the samples and assay results are contained in AR 13658 authored by David Nelles, B.Sc.

### 6.2.8 Golder Group, 1995 and 1996

from AR 24230, Olfert (1996) and AR 24683, Skopik (1996)

A program of reconnaissance soil sampling and mapping was conducted on the Golder Claim Group under the direction of Ernest G. Olfert, P.Geo. Mr. Olfert was retained by numbered company 402813 Alberta Ltd.

One claim, Golder 2, of this claim group covered the Guggenheim and Iron Cap showings (now part of The Property tenure 505843). Olfert refers to these showings as the Fisher showings in Assessment Report 24230 which he authored. The geochemical program conducted on the some of the other claims of the property did not overlay the present Big Chief-Midas/Gold Hill property.

A follow-up program in 1996 was conducted under the direction of Rick Skopik, B.Sc. on the Golder 2 claim and the Sunstar 14 claim (adjacent to and immediately west of Golder 2).

Three grab samples, two from the Guggenheim dump and one from the immediate area of the Iron Cap, (analyzed by atomic absorption geochemical method) returned anomalous gold values. Some of the samples were also anomalous in silver, copper, lead and zinc. The results form Table 11.

**Table 11 Selected Grab Samples, Golder Group, AR 24230 Olfert (1996)**

GOLDER 2 GOLD-SAMPLES						
<u>Sample</u>	<u>Au</u> ppb	<u>Ag</u> ppm	<u>Cu</u> ppm	<u>Pb</u> ppm	<u>Zn</u> ppm	<u>Sample-type</u>
95-RS-02	4280	<0.3	6	10	43	grab-outcrop
95-RS-04	2140	251.7	24	18126	60	trench-rubble
GR-4	5300	1.6	38	694	29	float-grab

These grab samples confirm the presence of gold and base metals in selected samples.



### **6.2.9 Javorsky, 1999-2004** from AR 27713 (2004) Javorsky

From 1999 to 2002 David Javorsky acquired all the area that now forms tenure number 505843. (Mr. Javorsky added contingent tenures 1028500, 1028501 and 1029131 during 2014).

In 2004 Javorsky conducted a program of road and trail rehabilitation which included the location of historic workings. In addition, Javorsky took 11 rock samples from the Midas/Gold Hill area, at and near the Iron Cap and Guggenheim showings. The assays from these samples indicate the gold values in that area are from quartz-siderite veins and veinlets closely associated with visible galena.

Javorsky also took 16 rock samples from the area of the Big Chief showings. One of these samples, sample 11675 (Figure 7), assayed 16.6 g/t gold and 8.8 g/t silver. The other 15 samples assayed nil gold and silver or very low values. It is noted, however, that Javorsky did not sample the sulfide material from the dumps of No. 2 Tunnel and No. 3 Tunnel where samples taken by previous programs produced encouraging results. It is also noted that sample 11675 was from an outcrop that displayed no sulfides or visible gold and had not been previously sampled.

### **6.2.10 Javorsky, 2014** from AR 34920 Appendix A, Javorsky & Pighin (2015 amendment)

In 2014 David Pighin, P.Geol. produced a report titled “**SUMMARY REPORT, UNTESTED GOLD TARGETS ON THE BIG CHIEF PROPERTY**”. This report forms Appendix A of Assessment Report 34920 submitted and amended by David Javorsky in 2015.

The report by Pighin includes a Geological Map at a scale of 1:5,000 produced by Pighin (Figure 12). This map covers tenure 505843. From mapping and studying the geology and composing hypothetical cross sections (Figure 13). Pighin deduces that the rocks underlying the Big Chief showing on the northeast area of the property form an overturned anticline. Hence the normal geological sequence of the Cranbrook formation (early Cambrian) overlain by the Eager formation (early Cambrian) overlain conformably by the Jubilee formation (middle Cambrian) is reversed. Therefore, the older Cranbrook formation (lower Cambrian) would overlie the younger Eager formation (lower Cambrian) which in turn would overlie the younger Jubilee formation (middle Cambrian) (Figure 13).

Pighin postulates that the calcareous Jubilee formation would be a more favorable host rock for mineral deposition, where intruded at depth, by the Cretaceous Syenite dykes than the exposed overlying argillic Eager formation that hosts the known Big Chief showings (Figures 12 and 13).

The geological interpretation by D. Pighin, P.Geol. will be used to design the initial proposed Phase 1 drilling on the Big Chief showing.

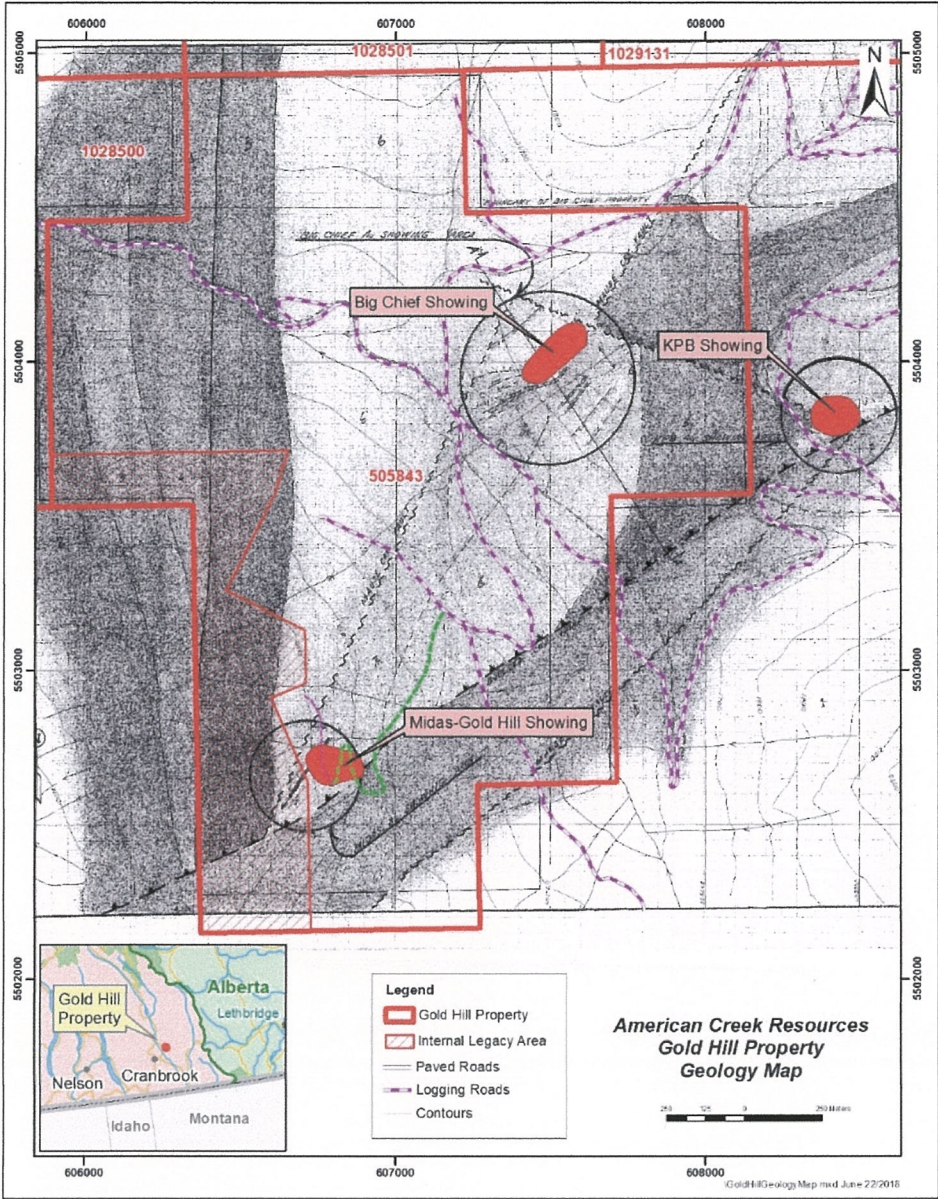


Figure 12: Geological Map of Tenure 505843, (modified from Pighin 2014) 1:5,000 with Big Chief showing, Midas/Gold Hill showing plus KPB (adjacent, off tenure) showing

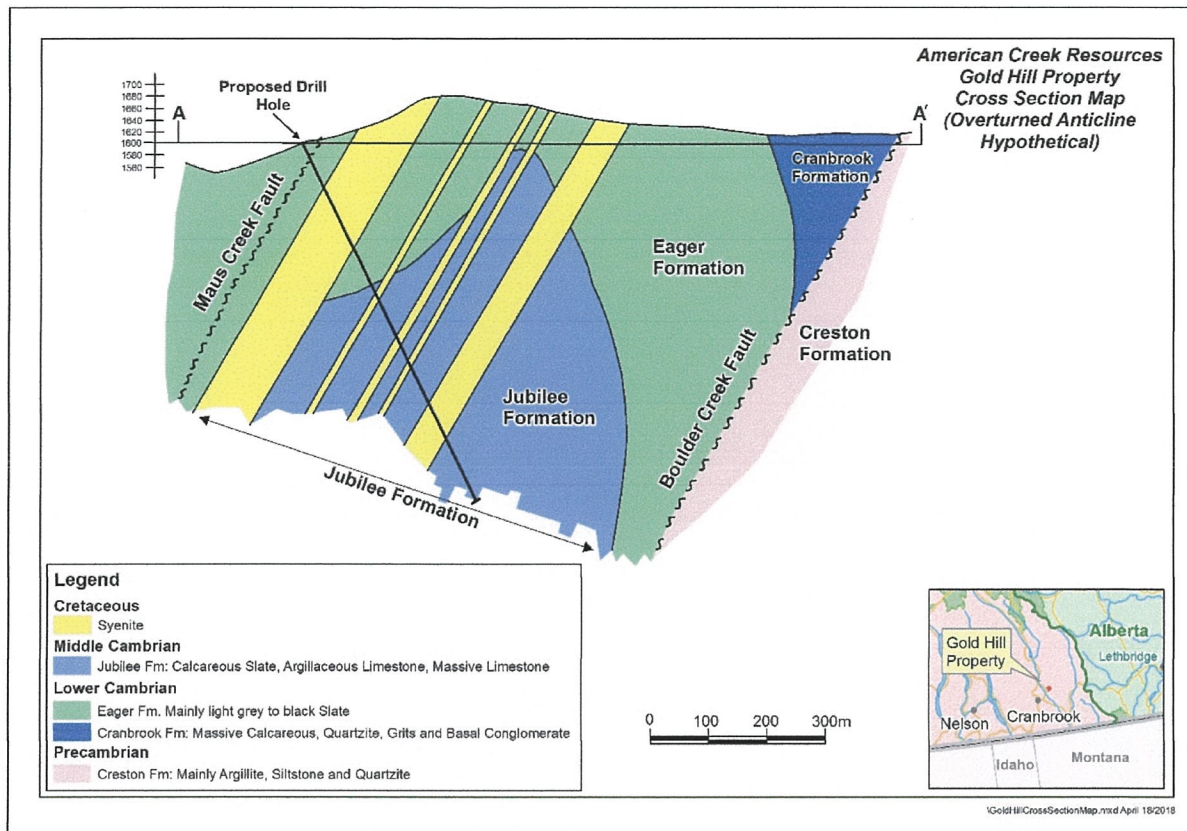


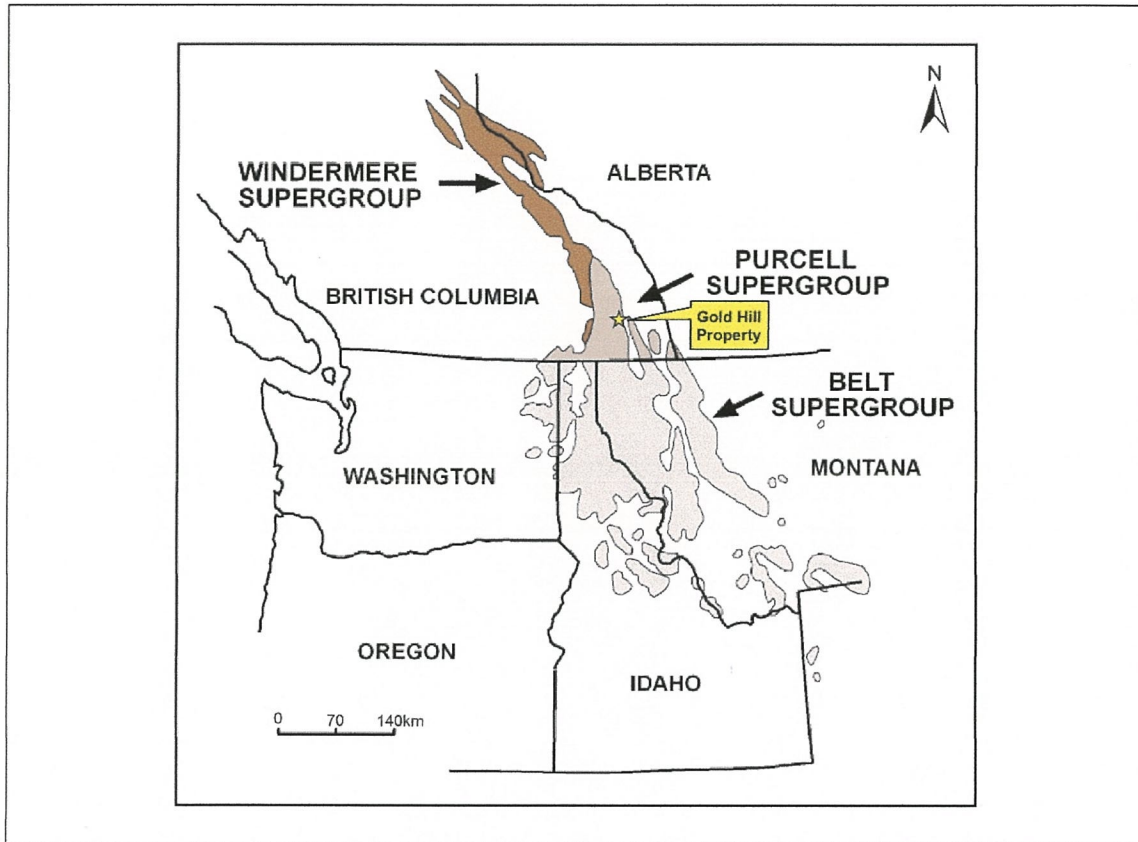
Figure 13: Hypothetical Cross Section (modified from Pighin 2014)

## 7. REGIONAL GEOLOGY

The regional area is underlain by rocks, from oldest to youngest: of the Proterozoic Purcell Supergroup, of the Lower Cambrian Cranbrook and Eager formations, and of the Middle Cambrian Jubilee formation.

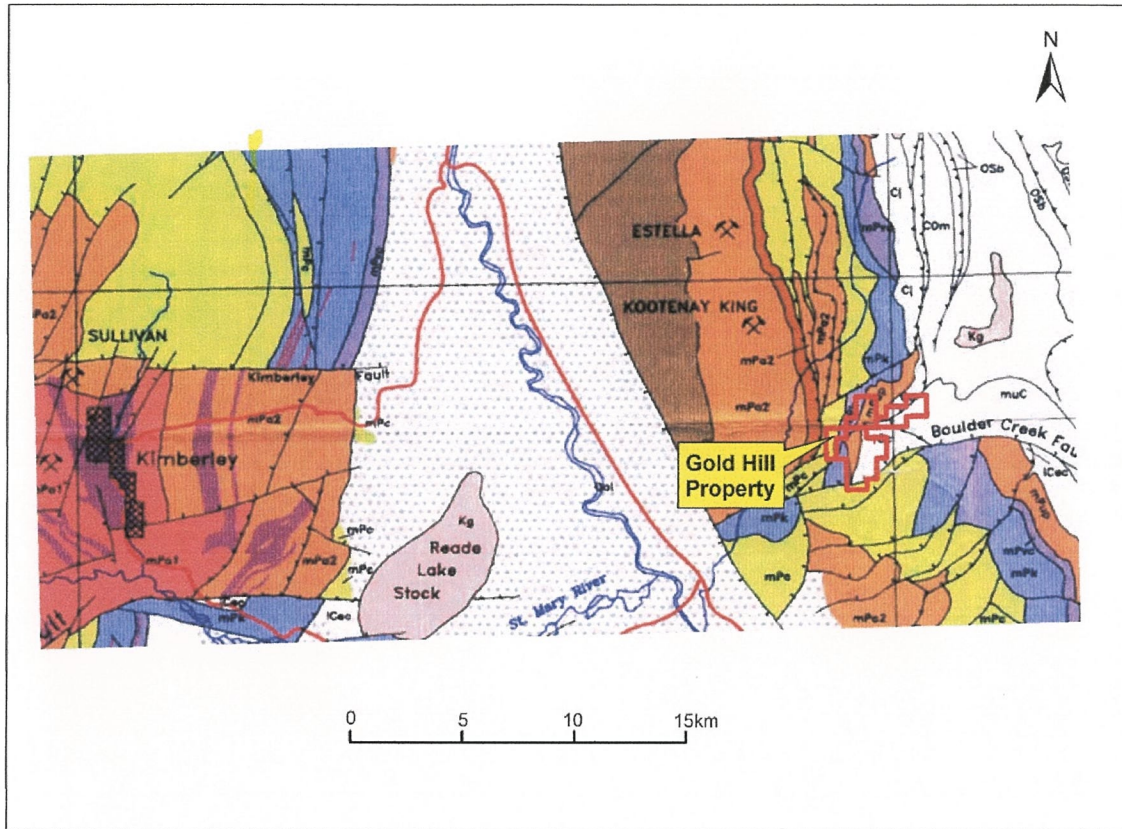
### 7.1 Proterozoic Purcell Supergroup

The oldest rocks, the Purcell Supergroup rocks and correlative Belt Supergroup rocks in the United States (Figure 14) comprise a thick sequence of predominantly clastic and carbonate rocks of Middle Proterozoic age (Price, 1964; Harrison, 1972). The base of the Purcell Supergroup is not exposed in Canada. It is inferred to rest unconformably on basement gneiss in the Alberta foothills and in Montana that has been dated at 1700 to 1900 Ma (Burwash *et al.*, 1962; Obradovich and Peterman, 1968) and is unconformably overlain by the Late Proterozoic Windermere Group or by Cambrian clastic or carbonate rocks.



**Figure 14: Purcell Supergroup Canada, Belt Supergroup USA**  
University of Montana

In the Purcell Mountains west of the Rocky Mountain Trench and in the Hughes, Lizard, and Galton Ranges on the east side of the Rocky Mountain Trench the Purcell Supergroup rocks are exposed. Throughout the Purcell Mountains, formations are generally thick, contacts between them gradual. However, in the northern Hughes Range the lower part of the Purcell Supergroup is markedly different, with predominantly fluvial, alluvial fan and deltaic deposits at the base, overlain by a relatively thin and heterogeneous Aldridge succession. Facies and thickness changes within the Aldridge Formation are pronounced here indicating influence of syndepositional faults or growth faults. A thick succession of turbidites, interlayered with gabbroic sills, was deposited to the south and west. The transition between these contrasting facies marks the edge of the Purcell basin in early Purcell time. The tectonic disturbance recorded in these rocks continued intermittently near the basin edge during deposition of younger, generally shallow-water sediments.



**Figure 15: Regional Geology**

excerpt from Höy, *et al.* (1995): Purcell Supergroup Regional Geology; GEOSCIENCE MAP 1995-1  
See Figure 16 on the following page for the Geological Column

Referring to Regional Geology Figure 15 and Geological Column Figure 16, the Purcell Supergroup members proximal to the Big Chief-Midas/Gold Hill property are:

- Creston Formation (mPc)
- Kitchener Formation (mPk)
- Upper Aldridge Formation (MpA3)
- Middle Aldridge Formation (mPa2)
- Fort Steele Formation (mPf)



**Figure 16: Geological Column of the Purcell Supergroup**  
Höy, *et al.* (1995): Purcell Supergroup Regional Geology; GEOSCIENCE MAP 1995-1

## 7.2 PALEOZOIC

### **Lower Cambrian Cranbrook Formation** (Schofield (1922) GSC Museum Bulletin 35)

The Cranbrook Formation unconformably overlies Precambrian (Proterozoic) strata. Evidence of angular unconformity is difficult to discern locally but is obvious regionally. The wedge exposed near 49°30'N rests on progressively older strata as it thickens westward. The wedge rests on the Gateway or the Phillips Formation (upper Purcell) in the Rocky Mountains or the Kitchener Formation (lower Purcell) in the Purcell Mountains, where western exposures contain clasts of the still older Creston Formation. The Cranbrook Formation is overlain, apparently conformably by the pelitic Lower Cambrian Eager Formation. Cranbrook strata in the Rocky Mountains near and northward from 50°N rest on the Roosville Formation (upper Purcell), in the south and the Horsethief Creek Group (Windermere) in the north. They are overlain conformably by arenaceous and calcareous Lower Cambrian beds and, where these are lacking, unconformably by conglomerate, dolomitic sandstone and sandy dolomite beneath typical strata of the Upper (?) Cambrian Jubilee Formation.

#### Lithology

Predominantly siliceous quartzite, medium- to coarse-grained, in part containing sporadic quartz pebbles with gritty quartzite and lenticular beds of quartz-pebble conglomerate. White, cream and grey colors prevail, but pale green, rose and pale tan are common. Weathered surfaces are typically smooth and white or yellowish. The formation is generally distinctly bedded in thicknesses of 1 to 4 ft [0.3 to 1.2 m], but instances of indefinite and/or much thicker beds occur. Beds are mostly massive or have repetitive slight color variations that in part reflect grain size variations. Cross-bedding is common. The basal beds vary with locality but are generally quartzite, pebbly quartzite or quartz-pebble conglomerate, with or without fragments of the underlying formation. These beds are commonly darker than higher ones and in places are red-brown. Locally the lowest beds are thin alternations of siltstone and quartzite, but there are instances of a thin basal conglomerate of angular and partly rounded Precambrian fragments in a sandy matrix. The coarsest and thickest conglomerates are in western exposures. In the Purcell Mountains, near 49°35'N, 116°W the highest part of the formation consists of thin interbeds of quartzite and carbonate and locally contains magnesite.

### **Lower Cambrian Eager Formation** (Schofield (1922) GSC Museum Bulletin 35)

The Eager Formation is exposed near 49°30'N in the Purcell Mountains, between the Moyie and St. Mary faults and, directly across the Rocky Mountain Trench between the comparable Dibble Creek and Boulder Creek faults in the Hughes Range of the Rocky Mountains. The thickness of the Eager Formation is undetermined, but is greatest in the Purcell Mountains, where it is probably at least 3,280 ft [1,000 m] in western exposures.

#### Lithology

A pelitic formation, composed predominantly of argillite with local shale, siltstone and limestone. It is not distinctly calcareous, but limy lenses and beds occur throughout. The argillites are mostly dark grey but may be blue-grey or grey-green and locally reddish. The argillites commonly weather rusty; calcareous beds and lenses weather to lighter colors, commonly buff.

## Relationship

The Eager Formation overlies the Cranbrook Formation with apparent conformity. In the Purcell Mountains the strata are bounded upward by faults and the present erosion surface. Early Cambrian fossils occur at a number of localities, but no fossils have been found in the upper part of the apparent thickest section. In the Rocky Mountains the formation is succeeded by Middle Cambrian limestones and shales, with which it is in deformed and poorly exposed contact.

## **Middle Cambrian Jubilee Formation** (G.G. Henderson (1954) Bulletin 35)

This formation was named the Jubilee limestone by Evans (1933, p. 125) and was described by him as consisting of "massive-bedded, cliff-forming magnesian limestone, generally grey in colour, and weathering grey to white." Chemical analyses show that more than 95 per cent of the rock consists of the mineral dolomite, and thus, to conform with present practice, the unit is called the Jubilee formation instead of the Jubilee limestone. The formation was correlated by Walker with the Ottertail formation of the Field map-area and was mapped as such by him within the Windermere map-area. The present mapping has extended sufficiently far south to show that the formation is also the equivalent of the Elko formation named by Schofield in the vicinity of Crowsnest Pass. The Jubilee formation occurs almost entirely within the western fault block. It is between 1,500 and 2,000 feet [457 and 610 meters] thick, but at most occurrences it is either incompletely exposed or so cut up by faults that reliable measurements of thickness cannot be made. No fossils were found or have been reported from the Jubilee formation, but an approximate age may be obtained from its position in the stratigraphic sequence. On Sabine Mountain it is conformably overlain by beds of the Sabine formation which contain an abundant medial Upper Cambrian fauna. On Mount Grainger, a few miles to the southeast, the base of the Jubilee is exposed and Middle Cambrian fauna occur within the Burton formation a few feet below this contact. This age of Middle and (or) Upper Cambrian agrees with that determined by Evans farther north. It was found convenient for structural mapping to subdivide the Jubilee formation into two map units, the Upper and Lower Jubilee dolomite. The Upper Jubilee consists essentially of unbedded, massive dolomite, whereas the Lower Jubilee is composed of bedded, well-laminated dolomite. In most cases the laminated Lower Jubilee passes gradationally into the massive Upper Jubilee, so that the position of the contact cannot be located exactly. However, the gradational zone is rarely more than 40 feet thick [12 meters], and the error involved does not influence the over-all usefulness of the subdivision. In certain areas in which the exposures were insufficient to define clearly the contact between the upper and lower units the rock has been mapped as undivided Jubilee.

## Lower Jubilee Dolomite

The Lower Jubilee dolomite is distinguished from the Upper Jubilee dolomite by its well-bedded and normally laminated character. With the exception of one or two beds of mottled, partly dolomitized limestone, it is composed exclusively of fine-grained light and dark-grey dolomites that occur in well-defined beds from 6 inches [0.15 meter] to 4 feet [1.2 meters] thick. Black, brown, or white chert is found in small quantities throughout many of the beds in the form of irregular blebs, lenses, and thin discontinuous lentils. In one or two beds, chert is present in appreciable amounts, occurring as irregular lace-like intergrowths parallel to the bedding. Primary lamination, present in nearly all of the beds, is the most distinctive feature of the Lower



Jubilee dolomite. The laminae range in thickness from less than 0.01 inch [0.03 centimeters] to more than 0.5 inch [1.27 centimeters] and in abundance from one to as many as fifty per inch [20 per centimeter]. The lamination consists of alternations of normal, fine-grained dark-grey dolomite and whitish sandy laminae composed of dolomite and quartz. In thin section the sandy laminae are seen to be coarser-grained (0.06 mm) than the dark-grey dolomite (0.005 mm) and to contain as much as 30 to 40 per cent quartz. Cross-bedding and slump structures are common. Wherever a complete section is exposed, the Lower Jubilee dolomite is about 1,000 feet [305 meters] thick.

### Upper Jubilee Dolomite

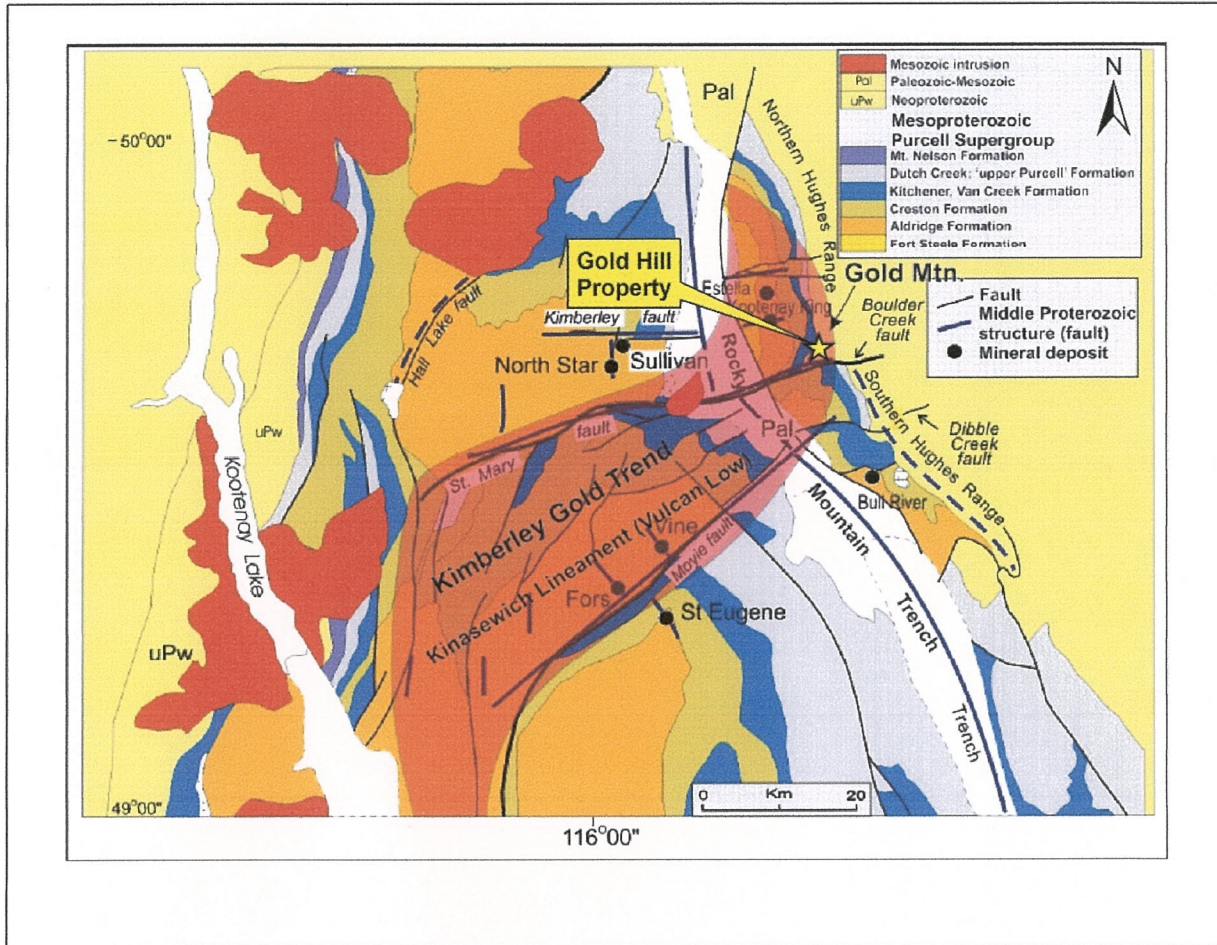
The Upper Jubilee dolomite is characterized by an almost complete absence of recognizable bedding. Where stratification is present, the beds are very thick, commonly as much as 20 feet [61 meters], and can only be identified with certainty under favorable conditions. The Upper Jubilee consists almost entirely of fine-grained light-grey crystalline dolomite. Certain beds are fragmental, containing angular dolomite fragments, normally about one-quarter to one-half inch in diameter, that are set in a matrix of fine-grained crystalline dolomite. Most beds contain appreciable amounts of granular chert in the form of intricate honeycomb structures, irregular masses, and thin lenses. Chert also occurs in delicate lace-like outlines that resemble corals. It is normally white, but in places it is pink or reddish-brown. The weathered surface of the Upper Jubilee is a uniform light grey, but locally the lowest beds may be stained a light-pink colour. At the few places where the full thickness of the Upper Jubilee can be observed, as in exposures east of Fairmont Hot Springs, it is between 500 and 1,000 feet [152 and 305 meters] thick.

## 7.3 STRUCTURE: The Kimberley Gold Trend

The Big Chief-Midas/Gold Hill Property is located on the eastern limit of the Kimberley Gold Trend. A major transverse feature that crosses the generally north-northwest fabric of the Cordillera.

The structural features of the regional geology are on Figure 17. Michael Seabrook and Trygve Høy have spent many years researching the Kimberley Gold Trend resulting in Geoscience Report 2015-13. The information has been made available in several formats through conference presentations, maps and posters. The following excerpt on Structural Controls is taken from their map GM2015-13-01 of that report:

“The structural controls to mineralization in the Kimberley Gold Trend were established through geological mapping, rock and soil geochemistry and to a lesser extent, geophysics. The structural features identified can be separated into two main groups categorized by their orientation, motion or relative displacement, vein mineralogy and character, and alteration composition. The two groups are named for their orientation; North to North-east trending oblique thrust faults called NE Shears and East to South-east trending normal faults and structural breaks called SE Breaks.



**Figure 17: Big Chief-Midas/Gold Hill Property Location on Kimberley Gold Trend**  
 from Geoscience BC Map 2015-03-01, Kimberley Gold Trend

The NE Shears are the primary gold bearing structures in the Kimberley Gold Trend. They are sub-parallel to a regional northeast trending foliation attributed to the St. Mary fault and the Moyie fault which are the approximate bounding structures of the Kimberley Gold Trend. The amount of throw along the shears varies but the orientation of displacement is commonly right-lateral and reverse as determined by slickenside and other shear sense indicators. Gold occurs locally within these shears, concentrated in mineralized zones. Veining in the zones is highly variable ranging from thin, high-density, foliation parallel veins to bifurcating and anastomosing composites and intense breccias. The veins are composed of white quartz with weathered iron-carbonate and rare pyrite or other base metal sulfides. A locally intense sericite, iron-carbonate and lesser Mn and silica alteration is associated with the veins. The zones range from a few square meters to several hundred meters in strike length. Some zones of intense alteration

and veining along the NE Shears have no gold, whereas others have returned values of gold up to 57,000ppb from selective sampling (Klewchuk, 2003).

The SE Breaks are believed to be extensional structures oriented perpendicular to the axial plane of folds (or simply shear related extensions). The SE Breaks are synkinematic with the NE Shears and where discrete intersections have been observed, either structure can predate. Where movement can be determined along the Breaks it appears to be normal with minor lateral displacement. In some areas, almost pure extension is present and marker units and structures on either side of the fracture do not appear to be offset and here quartz has filled sizable fractures. Quartz veining that occurs within SE Breaks ranges from 1cm to 8m in width, pinching out along their strike. These veins can be en echelon, and as a set, oriented east-west. Within the veins are dominantly two minerals, chlorite plated along the margins of the veins and massive blebs of specularite up to 5cm in diameter that can extend across the vein width.

Alteration zoning commonly occurs along the veins with hematite proximal to the vein followed by a strong pervasive chlorite in the surrounding host rock. The zone of chlorite alteration can be so extensive that it may grade into the regional greenschist metamorphism.

A variation of the typical SE Break alteration may include albite specularite-chlorite breccia, grading to albite-chlorite breccia, as observed on the Quartz Mountain property. A similar albite-chlorite zone was mapped on the Eddy property, and here the alteration was related to syenite. Soloviev (2010) hypothesized that the gold mineralization is closely associated with syenite intrusions, at least along a specific east-southeast trending zone near the Bar prospect.

The intersection of SE Breaks and NE Shears is the primary control on gold mineralization. Secondary controls are less well understood although important enough to note. Several gold prospects, including the Hill Vein, the Prospectors Dream, and the David, are hosted in a particular stratigraphic interval, between a set of gabbro sills that are commonly present in the middle part of the Middle Aldridge Formation. This stratigraphic horizon is known as the Sundown marker and is characterized by thinly laminated siltstone packages separated by turbidite siltstones and quartzites. The mixed layering competency may allow for shearing to take place along softer argillaceous beds, and for mineralized fractures to develop in the more competent quartzite beds. The mixed lithology also appears to be a control for gold emplacement in middle Creston Formation units. Interbedded thin argillites and quartzites in the Middle Creston commonly host more occurrences of mineralized zones than the surrounding thick quartzite packages as has been noted on the Zinger property [Geoscience BC Report 2015-13, Seabrook and Höy (2015)]. This suggests that a secondary control for gold mineralization in the Kimberley Gold Trend is the host rock composition of mixed soft and hard lithologies.

Lastly, (large and small scale) folds have been observed to host strong fracture mineralization that in many cases contain anomalous gold concentrations. In the Northern Hughes Range, a trend of rock and soil geochemistry samples are aligned along a large-scale recumbent anticline known as the Lewis Creek anticline (Seabrook (2013)). Similarly, zones of strong 'M' folding and associated fracturing have been observed to host gold mineralization in the Zinger area. On the Zinger property, NE Shears and axial planes fold share a similar orientation but on the Eddy property, the two structural features have different strike orientations and intersect near mineralized occurrences (Hill Vein and Prospector's Dream).

In summary, the dominant structural controls of gold mineralization in the Kimberley Gold Trend are:

1. North north-east trending right lateral thrusts that produce zones of composite quartz vein breccias and associated sericite-carbonate-sulfide and lesser manganese (pyrolusite?) alteration.
2. East south-east trending normal extensional faults and breaks with, en echelon bull quartz veins hosting chlorite and specularite. These structures have an associated pervasive hematite and chlorite alteration halo. In some cases, an albite-specularite to albite-chlorite breccia occurs along this trend and may have a relationship with syenite dykes and plugs.

Secondary controls that may lead to increased grade or size of gold deposits are:

1. Competency variations in host rock lithologies (composition of mixed soft and hard lithologies) that allow for shearing within soft units and vein filling fractures within harder units.
2. Fold hinge zones where increased fracture density may provide a suitable structural trap for mineralization." (Geoscience Map GM2015-13-01, Seabrook and Höy (2015))

Figure 18 shows the location of the Big Chief-Midas/Golf Hill property in relation to regional faults.

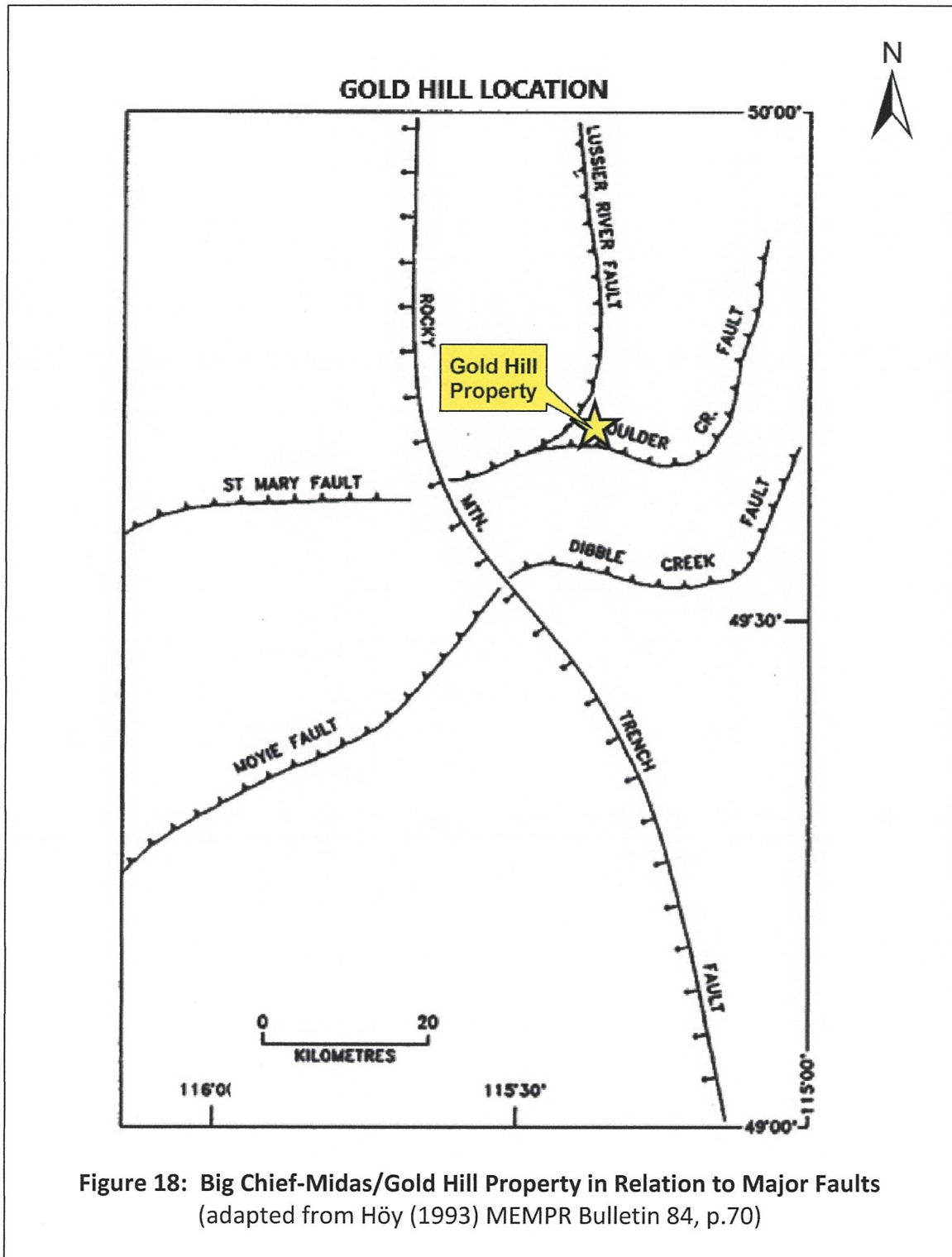


Figure 18: Big Chief-Midas/Gold Hill Property in Relation to Major Faults  
(adapted from Höy (1993) MEMPR Bulletin 84, p.70)

## 7.4 INTRUSIVES

There are three types of intrusive in the region of The Property:

1. Moyie Intrusives
2. Mesozoic Intrusives
3. Syenite Dykes (of lesser prominence)

Trygve Höy (1993) described these Intrusives in MEMPR Bulletin 84:

### MOYIE INTRUSIVES

Moyie sills are restricted to the lower Aldridge, the lower part of Middle Aldridge, and to correlative rocks in the northern Hughes Range east of the Rocky Mountain Trench. Diorite sills that occur higher in the stratigraphic succession are chemically and mineralogically distinct from the Moyie sills and appear to represent a later magmatic event, perhaps related to the Nicol Creek lavas. Moyie intrusions generally form laterally extensive sills. Their aggregate thickness in the Purcell Mountains exceeds 2000 meters (Reesor, 1958; Bishop, 1974a, b; Hamilton *et al.*, 1983). Commonly, they comprise up to 30 per cent of lower and lower-middle Aldridge successions; in the Lamb Creek area west of Moyie Lake, an aggregate thickness of approximately 1300 meters of sills are interlayered with 2800 meters of lower and middle Aldridge sedimentary rock ...

### Field Relationships

Moyie intrusions are generally a few tens to several hundred meters thick and commonly persist laterally for tens of kilometers. They generally form sills, although locally they may form dykes of thick lensoid intrusive complexes... Moyie intrusions in the Lone Pine Hill area 7 kilometers southeast of the Sullivan deposit form thick, lensoidal intrusive complexes that thin rapidly to their edges. (Høy (1993) MEMPR Bulletin 84 p.55)

### Petrography

The Moyie sills are dominantly composed of gabbro and diorite.

### MESOZOIC INTRUSIVE ROCKS

'Granitic' intrusive rocks are abundant in the Omenica crystalline belt in southeastern British Columbia but become less prominent to the east within the predominantly miogeoclinal rocks of North American provenance. Although only minor petrographic and chemical work has been done on most of these intrusive rocks, they have played an important role in unravelling the thermal and tectonic history of southeastern British Columbia (Archibald *et al.*, 1983; Mathews, 1983). Intrusive rocks within the Purcell Supergroup near the Rocky Mountain Trench include a number of small postkinematic mesozonal quartz monzonite, monzonite and syenetic plutons, numerous small quartz monzonite and syenite dykes and sills probably related to these stocks, and late mafic dykes. The Kiakho and Reade Lake stocks (Høy and van der Heyden, 1988),

two of the larger of the mesozonal plutons cut across and apparently seal two prominent east-trending faults that transect the eastern flank of the Purcell anticlinorium, and hence place constraints on the timing of latest movements on these faults. Other small intrusions of similar composition occur near the headwaters of Wild Horse River and on the flats at the mouth of the Bull River.

## READE LAKE STOCK

The Reade Lake stock is exposed in small scattered outcrops on the flats north of the St. Mary River southeast of Kimberley [Figure 19]. These exposures were reported initially by Rice (1937) and appear on the maps by Leech (1960) and Höy (1984). Bedrock is largely overlain by Quaternary sands and gravels and, as a result, defining the limits of the stock is difficult. Because of a well-defined magnetic anomaly virtually centered on the known exposures [Figure 19], the stock is inferred to underlie an area covering at least 35 to 40 square kilometers straddling the St. Mary fault. It intrudes Aldridge, Creston and Kitchener Formation rocks and Lower Cambrian siltstone of the Eager Formation. As the stock cuts across the St. Mary fault with little apparent offset, it provides a minimum age for movement on the fault.

### Field Description

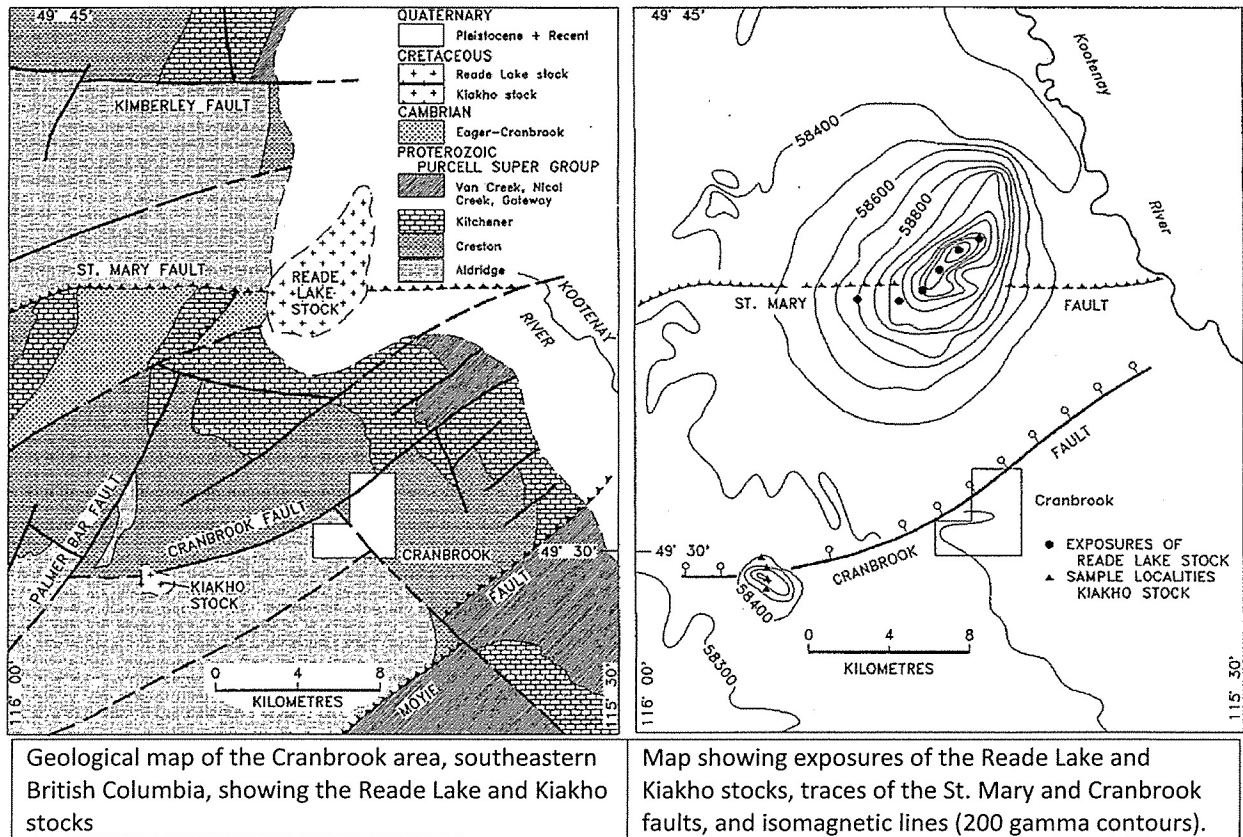
Exposures of the Reade Lake stock include subcrops of rounded, weathered boulders small isolated rounded knobs of leached rock, and rare, small outcrops of fresh unaltered rock. Where exposed, the contact of the stock is sharp, cutting at a high angle across layering in the country rock. The country rock is hornfelsed and commonly cut by widely spaced quartz, quartz-feldspar and aplite veins. These may extend several tens of meters into the intrusion, commonly through a chilled marginal phase a few meters thick.

### Petrology

The dominant phase of the Reade Lake stock is a grey, coarse-grained porphyritic quartz monzonite. With decrease in size of feldspar phenocrysts, this phase grades into equigranular, medium-grained quartz monzonite. Intrusive relationships between these two phases were not observed but, near the margins of the stock, aplite dykes and irregular zones a few meters thick commonly cut the porphyritic or equigranular phases. A minor quartz-augite diorite phase of the Reade Lake stock was noted by Rice (1937) and R. St. Lambert (personal communication with Höy, 1986).

## KIAKHO STOCK

The Kiakho stock is exposed on the heavily wooded slopes of Kiakho Creek approximately 10 kilometers east-southeast of Cranbrook (Figure 19). It was mapped initially by Schofield (1915) and appears on subsequent maps by Leech (1960) as well as Höy and Diakow (1982). Exposures consist mainly of large, fresh angular boulders or boulder fields. Although contacts with country rocks were not observed, regional mapping indicates it intrudes clastic rocks of the Aldridge and Creston formations. The distribution of outcrops and a pronounced aeromagnetic anomaly (Figure 19) indicate that it cuts the east-trending Cranbrook normal fault with no apparent offset.



**Figure 19: Geology and Associated Magnetic Anomalies, Kiakho and Reade Lake Stocks**  
 (Høy (1993) MEMPR Bulletin 84 p.56; original magnetic data from MEMP and GSC maps 8469G (Cranbrook) and 8468G (Moyie Lake))

**Petrology**

The Kiakho stock is similar to the Reade Lake stock with the dominant phase being a light grey, medium grained quartz monzonite. It is generally equigranular but grades into a hypidiomorphic granular porphyritic phase with plagioclase and light grey to flesh-colored potassic feldspar phenocrysts; both are up to several centimeters in diameter in a granular groundmass of white subhedral plagioclase, light grey potassic feldspar, quartz and black hornblende.

(Høy (1993) MEMPR Bulletin 84 pp.55-57)

**SYENITE DYKES**

There are a few syenite dykes, most of which, occur in the Rocky Mountains (Rice 1937). These dykes are mentioned as they are adjacent and, in some samples, contain gold mineralization on the Big Chief (north side) of The Property. The syenite dykes are considered to be the intrusive that is the mineralizer of the Big Chief showing.



## 7.5 Property Geology

The Geology underlying the Big Chief-Midas/Gold Hill Property has been mapped at a small scale by the following:

- 1937 Rice Geological Survey of Canada Memoir 207 1:250,000
- 1960 Leech Geological Survey of Canada Map 11-1960 1:250,000
- 1978 Höy BC Energy Mines and Petroleum Resources Preliminary Map 36 1:50,000

The preceding work conducted and supervised by competent professionals is valuable for understanding the Regional Geology.

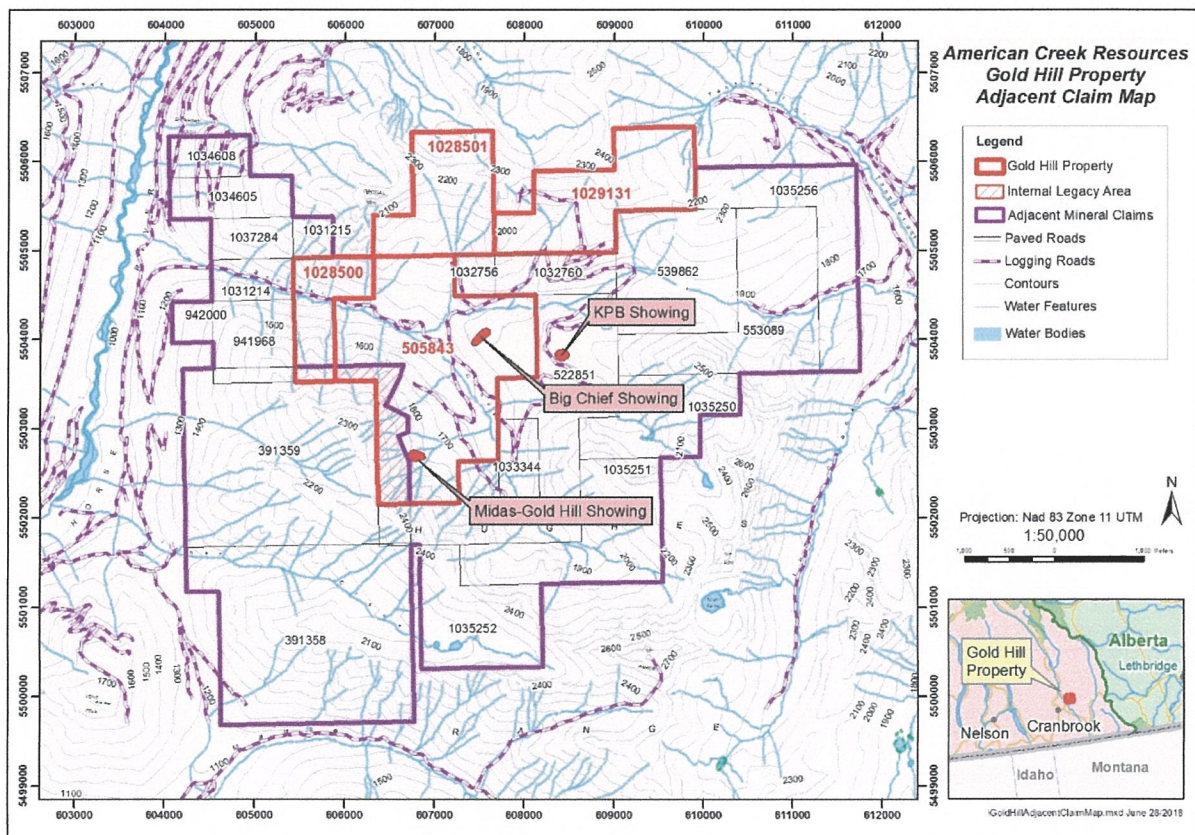


Figure 20: American Creek Resources Ltd. Tenure (labelled Gold Hill) and Surrounding Tenure (held By Kostiuk)

The Property geology of Big Chief and the adjacent area has been mapped at a large scale of 1:5,000 by David Pighin, P. Geo. (Figure 12). The mapping by Pighin has led to a clearer understanding of the Geology, including structure of the Big Chief property, as well as the genesis of the gold and accompanying base metal mineralization on The Property.

In addition to the large-scale mapping of the Big Chief property by Pighin and reported in 2014, Pighin and Kennedy also conducted mapping and sampling in 2014 on tenure 391359, an adjacent property not owned by American Creek Resources Ltd. This mapping and sampling on the contiguous tenure has also led to a better understanding of the Big Chief-Midas/Gold Hill property as well as tenure 391359. Figure 20 shows The Property in relation to the adjacent claims.

For the Property Geology description, the Author of this report has relied on the work and 2014 summary report by David Pighin, P.Geo. in AR 34920, Javorsky and Pighin (2015 amendment):

### **7.5.1 Stratigraphy**

The Big Chief-Midas property is underlain mainly by Lower Cambrian sediments, with some Precambrian sediments along the western edge of the property. On the claims, the Lower Cambrian sediments host the gold mineralization and are, therefore, economically significant. On the property, the Middle and Lower Cambrian sediments are subdivided into three distinct lithological assemblages, namely the Cranbrook, Eager and Jubilee formations.

The Cranbrook formation rests with angular unconformity on Precambrian sediments. The Cranbrook formation consists of a basal conglomerate formed by pebble to boulder sized clasts of the underlying Precambrian sediments. The basal conglomerate is overlain by a thick sequence of massive, medium to coarse grained, calcareous quartzite and dolomite. The thickness of the Cranbrook formation on the property is unknown.

The Eager formation is conformable with the underlying Cranbrook formation. The Eager formation consists mainly of thin bedded, dark grey to black argillite, commonly altered to slate. The thickness of the formation on the property is unknown. Locally, within the Lower Cambrian sediments, debris-flow deposits form large and small lenses of intraformational conglomerate. These deposits consist of pebble to boulder-sized, sharply angular clasts of mainly Precambrian sediments and volcanics in an arenaceous, calcareous mudstone matrix.

The Middle Cambrian-Jubilee formation is conformable with the underlying Eager formation. The Jubilee formation consists of a thick succession of thin to thick bedded limestone and dolomite.

### **7.5.2 Structure**

Sediments along the west side of the property are overturned and are right side up on the far east and south sides of the property. The sediments that underlie the claims may or may not be overturned. Mapping [by Pighin] in the adjacent areas projects the Boulder creek and Mause creek faults through the Big Chief-Midas property. These economically significant faults are commonly associated with intrusive activity and associated gold mineralization.

The Boulder creek fault is a regional high angle reverse fault that dips 60° to 65° to the northwest. The Mause creek fault was first recognized by Pighin in 2004. The Mause creek fault appears to be a steeply dipping, left lateral, normal fault with an indicated strike slip of approximately 700 meters. The geology suggests that the Mause creek fault predates the Boulder creek fault. The Big Chief fault is an inferred, right lateral fault that cuts the property approximately 1.0 km north of the old Big Chief adit. This fault offsets the Mause creek fault but is cut by the Boulder creek fault (Figure 12).

### **7.5.3 Intrusive Rocks**

A number of en echelon dykes form a 450-meter-wide northeast-trending swarm that occurs where the Big Chief fault intersects the Mause creek fault. The swarm is formed by auriferous syenite dykes that may range between 100.0 meters to 1.0 meters in thickness. A recently discovered large float train consisting of altered auriferous syenite and diabase boulders (The KPB Showing) occurs approximately 1 km southeast of the Big Chief dyke swarm. This float train is 200 to 300 meters East of the East boundary of The Property. The boulders are located at a point where the Big Chief and Mause creek faults intersect the Boulder creek fault (Figure 12).

### **7.5.4 Gold Mineralization, Host Rocks, Alteration and Controlling Structures**

#### **BIG CHIEF SHOWING**

Sporadic exploration work beginning in 1898 until 1956, completed three short tunnel that expose gold mineralization along the hanging wall of a syenite dyke. In the workings, the gold bearing breccia is developed mainly in the adjacent Eager slates. The breccia zone is 18 inches [0.45 meter] thick and is mineralized by quartz and dolomite, with lesser pyrite, galena, chalcopyrite and coarse grains of native gold. The native gold in the breccia structure is commonly visible and usually adheres to galena. Alteration of the Big Chief syenite dykes consists of albitization of both the orthoclase and plagioclase feldspars, and locally the syenite is altered to a soft white rock due to intense sericitization and carbonatization. Alteration has also obscured the exact contacts between the syenite dykes and the adjacent slates. The most reliable assays from the Big Chief showing were reported by the CM&S when they drove the No. 3 Tunnel in 1937. The miners took car samples for every 5 feet [1.5 m] of advance. These samples gave an average gold grade of 0.43 oz per ton [14.7 g/t] for 40 feet [12 m] of drift. The miners also sampled the high-grade zone along the dyke contact at 2 feet [0.6 m] intervals for 22 feet [6.7 m]. These samples averaged 2.4 oz Au per ton [82 g/t] over the 22 feet [6.7 m]. However, it is important to note that the CM&S miners only tested 45 feet [13.7 m] of the gold bearing structure, before the drift turned into a barren syenite dyke for 60 feet [18 m], to where they stopped drifting.

### **MIDAS/GOLD HILL SHOWING**

The Midas gold showing is 1.5 km southwest of the Big Chief adits. The Midas workings are located high up on the southwest side of the Boulder creek valley. The Midas gold mineralization occurs near the trace of the Mause creek fault and is therefore on strike with the gold mineralization in the Big Chief adits. The Midas mineralization occurs along the top of a sequence of limestone beds 8.0 meters thick. Intense dolomitization, approximately 2.5 meters thick, is developed along the top of the limestone unit. Late, irregular, small quartz-siderite veins are developed throughout the dolomite altered zone, forming a breccia like structure. The quartz-siderite veins host coarse gold, often visible to the naked eye, minor galena, pyrite and tetrahedrite. Open cuts and two short adits completed by historic prospectors has traced the Midas gold mineralization, along strike for 350 meters. Historic spot samples assayed between 0.10 oz/T [3.4g/t] Au, 24.9 oz/T [854 g/t] Ag, and 49.89% Pb and 26.2 oz/T [898 g/t] Au, 180.3 oz/T [6,182 g/t] Ag and 44.24% Pb (AR 27713, Map D, Javorsky, 2004).

Sampling by Dave Javorsky in 2004 (AR27713) clearly shows that high gold values occur mainly in the quartz-siderite veinlets and veins. His work also shows that the highest gold values are usually associated with galena. (from Pighin report 2014)

To summarize the mineralization in the two principal showings:

1. Big Chief: the mineralization is principally related to intruded syenite dykes.
2. Midas/Gold Hill: the mineralization is related to a brecciated zone in a dolomitized limestone.

## **8. DEPOSIT TYPES**

There are two types of polymetallic, gold bearing veins (and veinlets) on The Property; they are exhibited at:

1. The Big Chief showing north of Boulder Creek
2. The Midas/Gold Hill showing area south of Boulder Creek

### **8.1 Big Chief**

The Big Chief vein is described as a narrow quartz vein/breccia zone that occurs on the hanging wall (northwest side) of a northeast striking, northwest dipping syenite dyke (Javorsky (2004) AR 27713).

The contact of the syenite dyke and the adjacent argillite is highly altered where exposed. The sulfide mineralization and the gold are related to the syenite intrusive.

This showing is described in Minfile occurrence 082GNW022 as a polymetallic vein. (see Appendix 4).

## **8.2 Midas/Gold Hill**

The Midas/Gold Hill showing is situated approximately 1.5 kilometers southwest of the Big Chief showing on the south side of Boulder Creek. The mineralization is within a breccia zone in a dolomitized limestone bed.

The breccia zone occurs in a 2.5-meter-thick dolomitized limestone bed situated top of an 8-meter-thick sequence of limestone beds. The dolomitized limestone contains irregular small quartz-siderite veins that form a breccia like structure. The quartz-siderite veins within the breccia zone host coarse gold, often visible, minor galena and tetrahedrite. The gold occurs mainly in the quartz-siderite veins and veinlets (Javorsky (2004) AR 27713).

The extent of the breccia zone containing the gold and other sulfide mineralization has not been clearly determined. The breccia zone containing shears has been described as 200 meters by 200 meters by Pighin and Kennedy ((2015) AR 35844).

Minfile 082GNW023 (Appendix 5) describes the mineralization as a polymetallic vein in the form of a Manto (blanket) deposit.

## **9. EXPLORATION, AMERICAN CREEK RESOURCES LTD.**

During 2015 a program of sediment sampling, soil sampling and rock sampling was conducted on the Big Chief-Midas/Gold Hill Property by the owners American Creek Resources Ltd. and reported on by Warwick (2015) in Assessment Report 35639. The objective of the program was for the principals of American Creek Resources to familiarize themselves with The Property and take a sufficient number of samples from strategic locations to direct them on the most effective way to proceed with exploration work on The Property.

### **9.1 Stream Sediment Sampling**

A total of 12 stream sediment samples were taken on The Property. The gold values in the samples ranged from a low of 0.9 ppb to a high of 10.9 ppb.

When completed, evaluation of this program indicated that sediment sampling was of limited use due to the steep gradient of the streams. The high velocity of the streams precludes the accumulation of fine sedimentary material required for stream sampling.

## 9.2 Soil Sampling

A total of 7 soil samples were taken and analyzed for gold. All soil samples were taken in close proximity to No. 3 Tunnel. The values ranged from a low of 8 ppb to a high of 261.1 ppb Au. While the amount of soil sampling was limited, it indicates that soil sampling is a useful exploration technique for exploring The Property. In addition, the base metal values of Copper, Lead and Zinc loosely correlate with elevated gold values in the soil samples hence they act as pathfinders.

## 9.3 Rock Sampling

A total of 16 rock samples were taken on The Property in the vicinity of No. 3 Tunnel. The gold values ranged from a low of 2 ppb to a high of 372 ppb. The objective of the sampling was to determine which of the various rock types on The Property carried metal values, particularly gold. The obvious sulfides were sampled as well as proximal sedimentary and igneous rocks.

A further exploration program was conducted by American Creek Resources Ltd. in 2016 and reported on in Assessment Report 36410 (M. Warwick) in 2017. The objective of this program was to investigate the mineralization on The Property and to determine the association between the various minerals and the gold values as well as the relationship between the mineralization and the gangue minerals.

The 2016 program consisted of locating and sampling as many of the historic workings located on The Property as possible. This program successfully located all recorded historic workings. Gold mineralization was confirmed to be present over both the Big Chief and Midas/Gold Hill showing areas for a strike distance of greater than 300 meters on each area.

The 2016 program further defined that gold mineralization in the Big Chief showing area is related to the Cretaceous Syenite intrusive. One hundred forty-eight (148) rock samples were taken in the Big Chief area. Seventeen samples returned values of greater than 100 ppb and 28 samples returned values of less than 5 ppb. In every sample elevated gold values were accompanied with anomalous Pb values. This indicates that Pb is an excellent pathfinder metal for exploration in the Big Chief area.

The 2016 program confirmed the association of gold values with the quartz-siderite galena bearing veins in the breccia zones in the Midas/Gold-Hill workings area. A total of 97 rock samples were taken in this area. Fifteen (15) of the samples from this area assayed greater than 1 gram/tonne gold. The gold values ranged from a low of 1.04 grams/tonne to a high of 25.14 grams/tonne. The associated Pb values from the samples in the Midas/Gold Hill area also indicate Pb is a good pathfinder element in this area.

## 10. SAMPLE PREPARATION, ANALYSIS, AND SECURITY

The earliest sample results from The Property are given in a newspaper report on Dec. 7, 1895. The values are given in dollars per ton. The samples were brought in from the then newly discovered Gold Hill showing by prospectors. The reported values range from Can\$3.90 per ton to Can\$40 per ton. The values given are for the combined value of the Gold and Silver. There are no records of how the samples were taken, handled, transported or the assay method used.

An account of the sampling method, that took place in 1937, in the No. 3 Tunnel on the Big Chief showing is included in AR 27713 Javorsky (2004). In that report, written in 1967, by C.F. Myrene he states that the engineer in charge of the project instructed the miners on how to take car samples and how to take face samples. The engineer was employed by the CM&S Company; he visited the property once per week. There is no description of handling, method of transport, or method of assaying. The samples were probably fire assayed at the CM&S facilities at the Sullivan Mine in Kimberley, BC. However, the Author is satisfied the samples were representative and reasonably accurate as defined by the practices of that time period. The results of the 1937 sampling are summarized in Table 7 and Table 8. The original CM&S reporting of these values is contained in Figure 10.

In 1984 a program of grab sampling, and channel sampling was conducted by Vancouver based consultants Golden Porphyrites Ltd. for Hammond Exploration Inc. (AR13658 Nelles (1984)). The sampling, handling and analysis was completed to industry standards of that time under the direction of Geologist David Nelles. The samples were analyzed at Chemex Labs, a BC certified lab.

The sample results produced by CM&S in 1937 in the No. 3 Tunnel (Table 7, Table 8) and the results produced by Golden Porphyrite (AR 13658) in 1984 are not similar. It is the Author's opinion and other's opinion that the values differ because of sampling method and a pronounced nugget effect in the mineralized showings. Furthermore, the 1937 sampling by CM&S was on a mineralized zone that was being mined, while the 1984 sampling program was designed to search for lower grade, finely disseminated Carlin type mineralization. The No.3 Tunnel was not accessible for examination by the Author during a property visit on Oct. 30, 2017 due to tunnel collapse near the entrance to the tunnel.

During 2004 an extensive sampling program was conducted by prospector David Javorsky. The samples were taken in accordance with standard procedures and assayed at Eco Tech Laboratory in Kamloops, BC. Eco Tech was a BC certified laboratory. Complete results are appended to AR 27713 Javorsky (2004).

During 2015 American Creek Resources conducted a sampling program on The Property consisting of 36 samples: 16 rock samples, 12 stream samples and 8 soil samples (AR 35639 Warwick (2015)). The sampling was conducted under the direction of geologist Malcom Warwick. The samples were analyzed at BC certified Bureau Veritas Laboratories Canada located in Vancouver, BC. The results are appended to AR 35639.

For this program, quality control and assurance procedures included the use of field and analytical duplicates and independent standards. For soil samples, one field duplicate was inserted into each group of 20 samples. In addition, sample preparation blanks, analytical duplicates, reagent blanks, and aliquots of inhouse reference material were inserted by Acme Laboratories as part of their quality assurance procedures. The Certificates of Analyses provided in the appendices in AR 35639, include the results of the quality control and assurance program. The results show that differences between duplicate samples are within acceptable ranges (< 5%) for most elements; the typical exceptions are elements such as gold and silver.

During 2016 American Creek Resources Ltd. undertook a program of rock sampling in and around as many of the historic workings on The Property as possible. There are two main areas of historical workings on The Property:

1. The “Big Chief” showing situated on the north side of Boulder Creek and
2. The “Midas/Gold Hill situated on the south side of Boulder Creek. The principal showings on this area are two short historical tunnels; the Iron Cap and the Guggenheim.

A total of 239 rock samples were taken and analyzed at ISO 9001:2008 certified Loring Laboratories (Alberta) Ltd. in Calgary, Alberta. The location where the samples were taken and the values obtained are well documented in AR 36410 (2017) authored by Malcolm Warwick, geologist. The Author is satisfied the samples were taken and handled in a professional manner.

A geochemical survey was conducted over an area west of the Big Chief showing during 1983 under the direction of L. Skookochoff, P. Eng., on behalf of Bowes-Lyons Resources Ltd. The soil sample grid for this program overlaps The Property on the west side. Figure 11 shows the approximate location of the grid. There is not sufficient data to tie the grid in precisely. The grid was tied in by overlaying a map from AR 12247 on a MEMPR tenure map and coordinating the trace of more than one creek. The Author considers the grid is within a few meters of it's on the ground location.

The results from the geochemical survey are covered in Section 6, History section of this report.

The soil samples were taken and handled to the existing standards of the time and were analyzed in BC certified Acme Laboratories (now aligned with Bureau Veritas) of Vancouver. The method of taking the samples is briefly described in AR 12247. The Author is satisfied the samples were taken and handled in a professional manner.

## **11. ADJACENT PROPERTIES**

The two adjacent tenures relevant to the Big Chief-Midas/Gold Hill property are 391359, plus 522851 where the newly discovered KPB showing is located. These two tenures are held by Brian Kostiuk.

### **11.1 Tenure 391359**

Tenure 391359, held by Brian Kostiuk, borders the southwest side of tenure 505843 held by American Creek Resources Ltd.

During the summer of 2015 a program of geological mapping and prospecting/rock geochemistry was conducted on tenure 391359. This 2015 work was primarily conducted on the eastern portion of Brian Kostiuk's tenure 391359 (Figure 20). Hence it was close to the boundary with American Creek Tenure 505843. This work, on Kostiuk's tenure 391359, was filed by Kostiuk as assessment work in 2015 Assessment Report 35844.



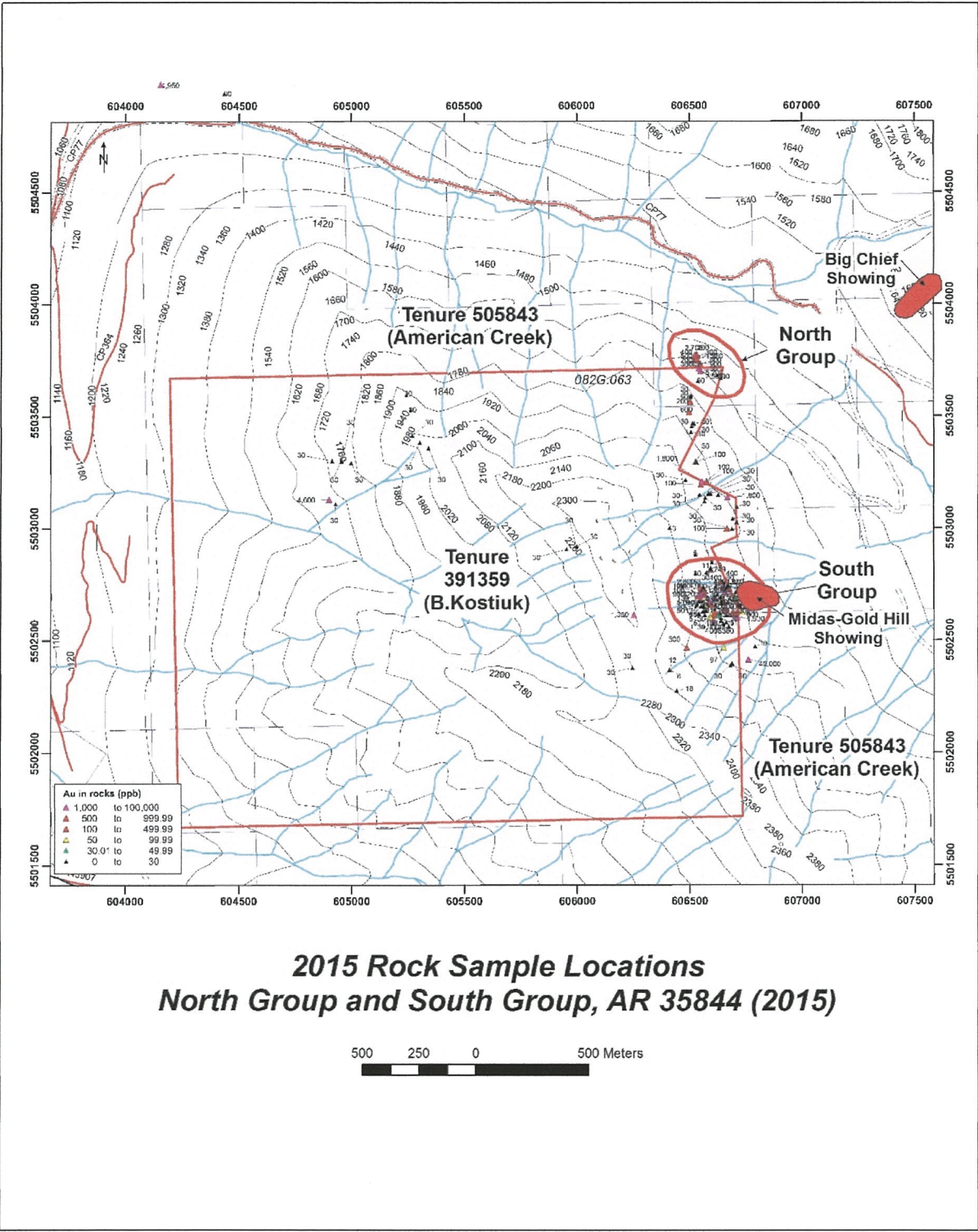


Figure 21: Tenure 391359 North Group & South Group Sample Locations, AR 35844 Pighin & Kennedy (2015)

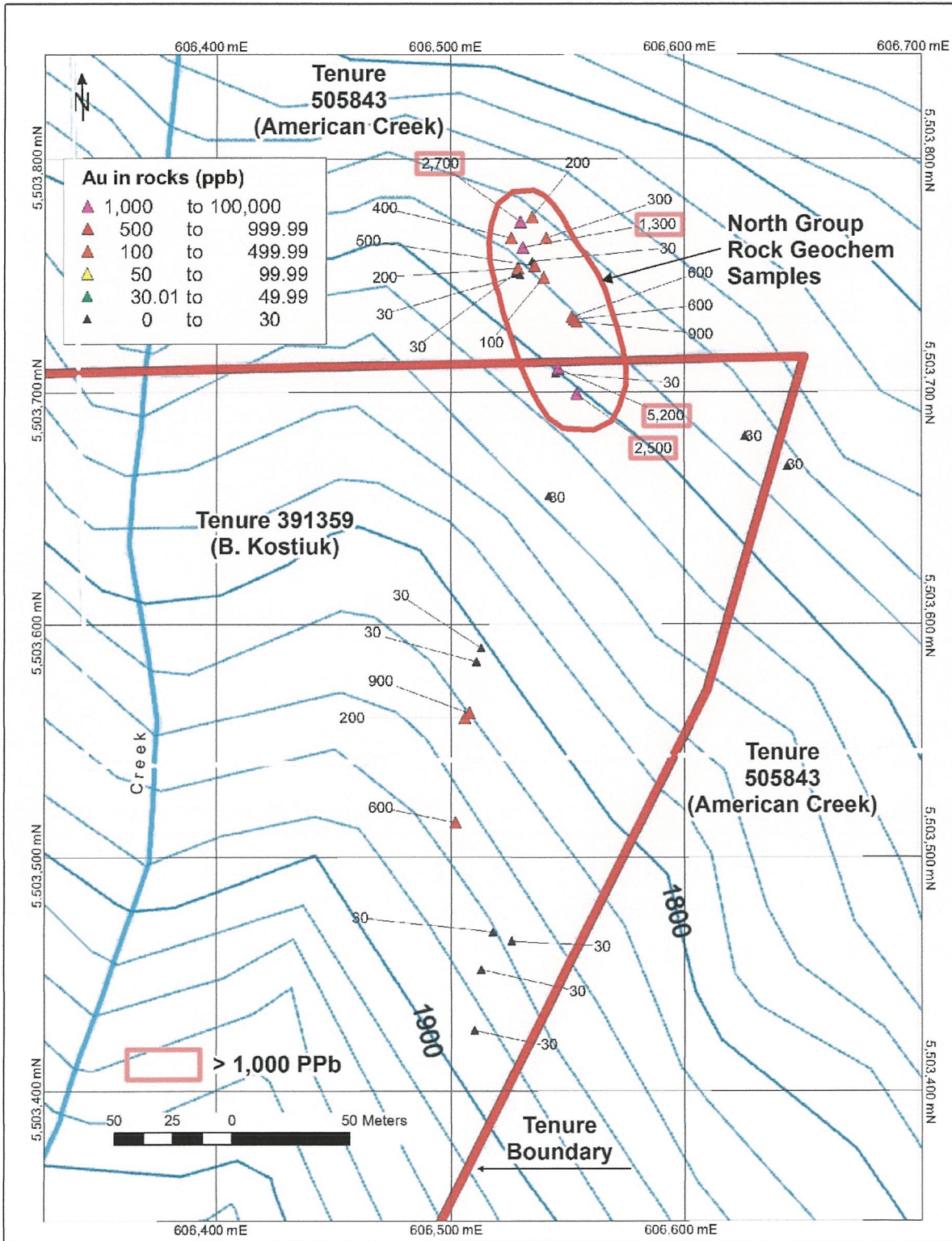


Figure 22: North Group Rock Samples, AR 35844 Pighin & Kennedy (2015)

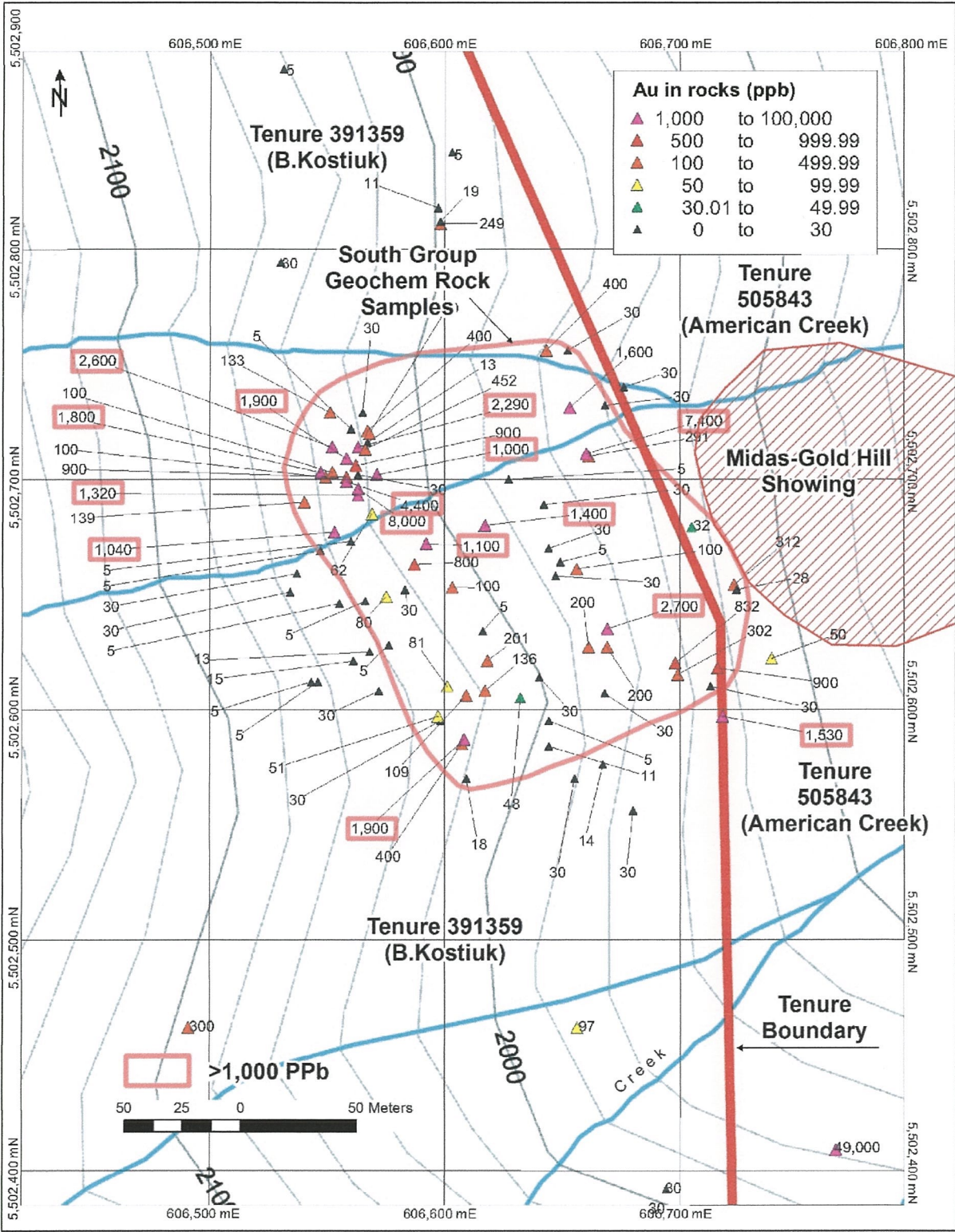


Figure 23: South Group Rock Samples, AR 35844 Pighin & Kennedy (2015)

During this program two groups of closely spaced rock/geochemical samples were taken on tenure 391359. The most northerly of the two groups is situated on the northeast corner of the Kostiuk tenure (Figure 21). This sample group, referred to herein as the North Group, consists of 17 rock samples (Figure 22). Fourteen of these 17 samples were actually taken on American Creek tenure 505843 (probably inadvertently). The 14 samples range in distance from 30 meters to 80 meters north of Kostiuk's tenure 391359. The gold geochemical values in these samples range from a low of 30 ppb to a high of 2,700 ppb (1000 ppb = 1 gram/tonne). The other three rock samples, taken on Kostiuk's tenure 391359, approximately 10 meters south of the northern boundary of his tenure, have reported values of 30ppb, 2500 ppb and 5200 ppb.

The southerly group of rock samples is centered at approximately the mid-point of the east side of tenure 391359, and is referred to herein as the South Group, is composed of about 90 samples. The gold geochemical values of this group range from a low of 14ppb to a high of 8000 ppb with 15 samples reported at greater than 1000 ppb (Figure 23).

The South Group of rock geochemical samples are on strike with and proximal to the Midas/Gold Hill showings on American Creek Resources Ltd. tenure 505843, which are, in turn, on strike with the Big Chief showing.

To summarize the South Group samples, the Midas/Gold Hill showings, and the Big Chief showing 1.5 kilometers to the northeast, are all on, or close to, the mapped location of the Mause Creek Fault recognized by Pighin in 2004 (Figure 12).

## 11.2 KPB Au Showing

The KPB showing was discovered by D. Pighin, P.Geo., B. Kostiuk and F. Billy prior to 2015.

From Pighin Summary (2014) in AR 34920:

"The KPB showing is situated along a forestry road on tenure 522851 and is centered 350 meters east of the east side of American Creek tenure 505843, and 900 meters east and slightly south (Azimuth 100°) of the Big Chief showing [Figure 12].

The KPB showing consists of a large float train composed of boulders of auriferous syenite and diabase associated with abundant rough gold found in the glacial till. The float train and associated grains of gold are centered where the Mause Creek fault and the Big Chief fault intersect the Boulder Creek fault [Figure 12]. There is no outcrop proximal to the float train. However, a ground magnetic survey (referenced in AR 34920 but no data to accompany) over the area of the syenite-diabase float train located a weak magnetic anomaly approximately 50 meters wide that follows the trend of the Boulder Creek fault. The syenite boulders are weakly mineralized by disseminated magnetite and pyrite with relatively abundant serpentine lining miarolitic vugs and replacing some of the pyroxene minerals.

Four boulders of syenite float were sampled. Three were anomalous in gold and one ran 4.1 grams of gold per tonne. A panned 23 Kilogram samples of unscreened glacial till produced a heavy mineral concentrate that contained up to 35 grains of rough gold,

generally less than 1 mm in size, associated with abundant magnetite, pyrite, hematite, ilmenite, serpentine, and lesser fluorite and tourmaline.” (2014 summary report by David Pighin, P.Geo. in AR 34920 (2015 amendment) Javorsky and Pighin)

## **12. OTHER RELEVANT INFORMATION: THE LONG TUNNEL**

During an exploration program conducted by American Creek Resources during 2016 a tunnel, named the Long Tunnel by American Creek Resources, was encountered. The tunnel is situated approximately 125 meters north of the Guggenheim showing and at the same elevation (1920 meters). There is no documentation or historical records of the Long Tunnel. The date the tunnel was mined or by whom cannot be determined.

The Long Tunnel is in a different geological environment than the Iron Cap and Guggenheim showings of the Midas/Gold Hill Area. The country rock surrounding the Long Tunnel is a grey colored slate rather than the dolomitized limestone that hosts the Iron Cap and Guggenheim.

A narrow (10 cm) vein runs intermittently along the strike of the tunnel, sometimes exposed in the back and sometimes exposed in the west wall. A systematic, reliable sampling of the quartz vein material has not been conducted

## **13. INTERPRETATION AND CONCLUSIONS**

The Big Chief-Midas/Gold Hill property is a property of merit. There are two well defined showings on The Property: the Big Chief and the Midas/Gold Hill, both of which have the potential to become economic deposits. There is some evidence the two showings may be connected. A third more recently discovered showing, which is off The Property, the KPB showing exhibits a weak magnetic signature, trending towards The Property.

The Big Chief showing is accessible by a good logging road while the Midas is accessible by All-Terrain Vehicle (ATV) from the good logging road. The Property is close to the cities of Cranbrook and Sparwood, both of which service the mining industry and have a supply of skilled mine workers and tradesmen. In addition, The Property is close to other infrastructure including a power grid, well-maintained highways, rail service and regular flights to the larger centers of Calgary and Vancouver.

The Big Chief, mineralized by a swarm of Cretaceous dykes, was investigated by an underground program carried out by the CM&S Company (later to become COMINCO and Teck Resources) during 1937. This work revealed a 1.5 foot [0.46 m] wide mineralized zone for a distance of 40 feet [12 m] that averaged 2.4 oz/Ton Au [82 grams/tonne], 2.17 oz/Ton Ag [74 grams/tonne] and 6.1% Pb. The drift exploring this zone was diverted off the mineralized zone to investigate other parts of the structure. It is probable that this mineralized zone continues past the point where the drift swung off the structure.

Geological mapping by David Pighin P. Geo. and reported on in AR 34920 Javorsky (2015 amendment) indicates the Big Chief showing, exposed in Lower Cambrian slates of the Cranbrook Formation, may be underlain by the Middle Cambrian carbonate Jubilee Formation at depth (Figure 13). Where the syenite dykes intrude the Jubilee Formation at depth it may be amenable to the deposition of an economic gold deposit.

The Big Chief showing is on the western edge of a zone that has been intruded by a syenite dyke swarm that extends 400 to 500 meters to the southeast. The Big Chief showing is a result of hydrothermal alteration of the intruded rock and of alteration of the syenite dyke itself. In the Big Chief No. 3 Tunnel, driven by the CM&S Co. in 1937, there is a 12-meter long zone that averages 2.4 oz/Ton [82 grams/tonne] Au across a width of 0.45 meters. This zone is also reported by early workers to be present in No. 2 Tunnel, situated 52 feet [16 meters] above No. 3 Tunnel on the same structure. In addition, 10 meters east of No. 1 Tunnel, also on the same structure, a sample of highly altered syenite dyke material taken in 2004 assayed 16.6 grams/tonne Au. There were no visible sulfides or gold in the sample. The No. 1 Tunnel is 95 meters vertically above the No. 2 Tunnel and on strike with the No. 2 Tunnel and the No. 3 Tunnel. No drilling, geophysics or soil sampling has been done in the dyke swarm area; hence this area is a good exploration target.

The Midas showing, situated 1.5 kilometers southwest of the Big Chief showing, is on the auriferous Mause Creek fault. At the Midas showing the mineralization consists of irregular quartz-siderite veins and veinlets in a 2.5-meter dolomitized limestone unit. The quartz-siderite veins are in a breccia zone that has been sampled on surface and underground. Six Selected samples averaged 3.46 oz/T [119 grams/tonne] Au and 12.86 oz/T [440 grams/tonne] Ag. Also, there is visible gold present (AR 34920 Javorsky 2014). The breccia zone containing the showing can be traced for 300 meters. The zone has not been core drilled, hence this breccia zone is a good exploration target.

Sampling by Javorsky and others has determined the gold values are most likely associated with galena and in some cases with galena and pyrite.

The nugget effect is present in the values on both the Big Chief and the Midas showings because of the ubiquitous free gold. To determine the grade of gold accurately on both showings, and to allow for the nugget effect which can yield erratic results, bulk sampling may be required.

While The Property has been known and explored intermittently since the 1890's, The Property is in an early exploration stage. This report is not meant to imply that an economically viable deposit has been defined or exists on The Property. The recommended program in Section 14 is designed to search for an exploitable deposit on The Property, but there is no assurance of success. In the opinion of the Author, there are no known risks involved in conducting the recommended program on the Big Chief-Midas/Gold Hill Property.

## 14. RECOMMENDATIONS AND PROPOSED BUDGET

The Big Chief-Midas/Gold Hill property is at an early stage of exploration development in spite of historical activity plus recent fieldwork. The Author is of the opinion that, as of this writing, there are no known risks involved in advancing exploration programs on The Property. This report cannot assert or imply that an economically viable mineral deposit of any type or of any size has been defined or is known to exist on the Property. The recommendations for additional work in this section are designed to continue the exploration effort in the search for an economically viable deposit, but no assurance of success is expressed.

A two-phase program is recommended for The Property. The proposed budget for Phase 1 is \$257,600. If warranted by the results of Phase 1, Phase 2 is recommended with an additional \$950,000 expenditure (see Table 12).

Phase 1 consists of a program of field work and diamond drilling on the core tenure (505843) of The Property. The recommended field work consists of geological mapping, limited rock sampling, a systematic soil sampling program and ground geophysics. Rock samples for analysis will be required where the soil sample survey indicates anomalous metal values if mineralized rock (float or outcrop) is close by and where new mineralized showings are encountered during mapping. Additionally, 600 meters of diamond drilling is recommended on the easily accessible Big Chief showing. It is important to note that this showing, discovered in 1896, has never been drill tested at depth.

The field programs conducted by American Creek Resources Ltd. during 2015 and 2016 as well as similar programs conducted by others (Javorsky, 2004) have determined grades and mineralization on the main showings within The Property which include Big Chief, Iron Cap, and Guggenheim. The Property has been thoroughly sampled with respect to known showings.

The recommended program of ground geophysics including magnetometer survey and a Very Low Frequency Electromagnetics (VLF-EM) survey may trace a known low magnetic response from a recently discovered gold showing on an adjacent property (KPB showing) that trends on to The Property. The surveys may also delineate further magnetic anomalies that could indicate the location of known syenite dykes on The Property where they are concealed by overburden and locate more similar intrusive features.

Geological mapping is recommended on the underground showings where they are accessible. That is, on Big Chief, Guggenheim, Iron Cap and the Long Tunnel. This mapping should be done by an experienced underground geologist at a scale of 1:200 and, if required in some places, at a scale of 1:100 (personal communication Paul Ransom P.Geol. with the Author).

Additionally, geological surface mapping is recommended at a scale of 1:2000 over a one-kilometer square area centered on the Big Chief showing. This detailed mapping is critical in constructing cross sections of The Property geology which in turn would lead to designing diamond drill holes so they will intersect the calcareous Jubilee Formation. It is the Author's opinion (after Pighin (2014) in AR 34920 Javorsky 2015 amendment) that the unexposed Jubilee Formation, which is projected to be present at depth, is amenable to mineral deposition where

intruded by the Cretaceous syenite dykes on The Property. A similar geological surface mapping program is recommended on the Midas/Gold Hill area of The Property to project the mineralized breccia zone present in this area northwards for determining drill targets.

A program of reconnaissance mapping/prospecting on tenures 1028501 and 1029131, situated respectively north and northeast of the principal tenure 505843, is recommended at a scale of 1:20000 to determine if there is favorable geology for further exploration on these tenures. This reconnaissance may also encounter unknown historical exploration activity.

In addition to the two main historic showings on The Property, the Big Chief and the Midas/Gold Hill, it is recommended three specific features on The Property should receive special attention in Phase 1:

1. The possible extension of the recently discovered KPB showing (reported in AR 34920, Javorsky 2014) on adjacent tenure 522851. This showing is situated approximately 300 meters east of the east boundary of The Property. Ground magnetics completed on this adjacent property indicate a magnetic response and a boulder train with gold values in the KPB showing area trending onto The Property.
2. The trench 10 meters east of No. 1 Tunnel, exposing an altered syenite dyke, from which a sample with no visible sulfides assayed at 16.9 grams/tonne gold and 8.8 grams/tonne silver. The details of this sample are: Sample #11675, (AR 27713 Javorsky 2004), at 0607444E 5503914N UTM Zone 11. (Figure 7).
3. The two areas of rock samples (referred to as the North Group and the South Group in Section 11 Adjacent Properties in this report) reporting anomalous gold values on adjacent tenure 391359, located west of the western boundary of The Property. These two areas are reported on in AR 35844 by Kennedy and Pighin in 2015 (Figure 21). They are also discussed in Section 11 Adjacent Properties in this report.

For Phase 2, diamond drilling is recommended on two existing showings on The Property: on the Big Chief north of Boulder Creek and on the Midas showings south of Boulder Creek. Results from Phase 1 will determine the optimum design of Phase 2 drill holes and may determine further drill targets on The Property.

Drilling costs on Big Chief are based on recent “all in” actual costs incurred by mining companies’ core drilling in the East Kootenay area. On the Midas showing area, higher costs are anticipated because some helicopter support may be required for drill hole set up and dismantling.



**Table 12: Phase 1 & Phase 2 Proposed Exploration Budget**

<b>PHASE 1</b>	<b>Budget</b>
Underground Mapping: 5 days Geologist mapping @ \$600/day	\$3,000
Compiling underground mapping/drafting map: 2 days @ \$600/day	1,200
Mapping core tenure 505843: geologist 14 days @ \$600/day	8,400
Mapping assistant, recent geology graduate, 14 days @ \$400/day	5,600
Compiling mapping data, drafting map, geologist 5 days @ \$600/day	3,000
Recent graduate geologist 5 days @\$400/day	2,000
Soil sampling; 10 days @ \$200/day	2,000
Magnetometer/VLF operator: 8 days @ \$300/day	2,400
Magnetometer/VLF data compilation/analysis	2,000
Field Technical Supervision: 20 days @ \$600/day	12,000
Accommodation 70 days @ \$150/person/day	10,500
Truck rental including fuel 20 days @ \$150/day	3,000
Quad (ATV) rental: 10 days @ 150/day	1,500
Chain saw rental: 2 days @ \$50/day	100
Gem Systems GSM Overhauser magnetometer rental: 8 days @ \$50/day	400
Soil sample analysis: 1000 samples @ \$30/sample	30,000
Rock assaying: 50 samples @ \$40/sample	2,000
Report preparation: 10 days @ \$600/day	6,000
Freight: soil and rock samples	2,000
Field supplies: soil sample bags, rock sample bags, flagging, markers, etc.	1,500
Mobilization and demobilization field personnel	5,000
Diamond Drilling Big Chief 600 meters @ \$200/meter	120,000
Contingencies: ~ \$15%	34,000
<b>TOTAL Phase 1</b>	<b>\$257,600</b>
<b>PHASE 2 (contingent upon results of Phase 1)</b>	<b>Budget</b>
Big Chief area, Core drilling: 3000 meters @ \$200/meter	\$600,000
Midas area, Core drilling: 1000 meters @ \$225/meter	225,000
Contingencies: ~ 15%	125,000
<b>TOTAL Phase 2</b>	<b>\$950,000</b>

## 15. REFERENCES

- American Creek Resources Ltd, [www.americancreek.com](http://www.americancreek.com) , news release March 9, 2015.
- Archibald, D.A., Glover, J.K., Price, R.A., Farrar, E. & Carlume and Carmichael, D.M. (1983): Geochronology and Tectonic Implications of Magmatism and Metamorphism, Southern Kootenay Arc and Neighboring Regions, Southeastern British Columbia, Part I: Jurassic to Mid-Cretaceous; *Canadian Journal of Earth Sciences*, Volume 20.
- Bishop, D.T. (1974a): Petrology and Geochemistry of the Purcell Sills, Boundary Country, Idaho and Adjacent Areas; unpublished Ph.D. thesis, *University of Idaho*.
- Bishop, D.T. (1974b): Petrology and Geochemistry of the Purcell Sills in Boundary County, Idaho in Belt Symposium, Volume II; *Department of Geology, University of Idaho and Idaho Bureau of Mines and Geology*.
- Burwash, R.A., Baadsgaard, H. and Peterman, Z.E. (1962): Precambrian K-Ar Dates from the Western Canada Sedimentary Basin; *Journal of Geophysical Resources*, Volume 67.
- Evans, C. S. (1933): Brisco-Dogtooth map-area, British Columbia; *Geological Survey of Canada*, Summary Report 1932.
- GSC Map 8469G, Cranbrook sheet (1971): *Geological Survey of Canada Geophysical Series Map*.
- GSC Map 8468G, Moyie Lake sheet (1971): *Geological Survey of Canada Geophysical Series Map*.
- Hamilton, J.M., Delaney, G.D., Hauser, R.L. and Ransom. P.W. (1983): Geology of the Sullivan Deposit, Kimberley, BC, In Sediment-hosted Stratiform Lead-Zinc Deposits; Sangster, D.F., Editor; *Mineralogical Association of Canada*, Short Course Notes, Chapter 2.
- Harrison, J.E. (1972): Precambrian Belt Basin of Northwestern United States: Its Geometry, Sedimentation, and Copper Occurrences; *Geological Society of America*, Bulletin Volume 83.
- Henderson, G. G. L. (1954): Geology of the Stanford Range of the Rocky Mountains, Kootenay District, British Columbia (including Map 1 inch = 1 mile); *British Columbia Department of Mines*, Bulletin 35.
- Höy, T. (1978): Geology of the Estella - Kootenay King Area, *BC Ministry of Energy, Mines and Petroleum Resources*, Preliminary Map 36.
- Höy, T. (1984): Structural Setting, Mineral Deposits, and Associated Alteration and Magmatism, Sullivan Camp, Southeastern British Columbia; in *Geological Fieldwork 1983, BC Ministry of Energy, Mines and Petroleum Resources*, Paper 1984-1.

- Höy, T. (1993): Geology of the Purcell Supergroup in the Fernie West-Half Map Area, southeastern British Columbia, *BC Ministry of Energy, Mines and Petroleum Resources*, Bulletin 84.
- Höy, T. and Diakow, L. (1982): Geology of the Moyie Lake Area; *BC Ministry of Energy, Mines and Petroleum Resources*, Preliminary Map 49.
- Höy, T., Price, R.H., Legun, A., Grant, B., & Brown, D. (1995): Purcell Supergroup Regional Geology; *Geoscience BC*, Map 1995-1.
- Höy, T. and van der Heyden, P. (1988): Geochemistry, Geochronology, and Tectonic Implications of Two Quartz Monzonite Intrusives, Southeastern British Columbia; *Canadian Journal of Earth Sciences*, Volume 25.
- Javorsky, David (2004): Prospecting Report on the Gold Mountain-Big Chief Group, Fort Steele Mining Division, British Columbia; *BC Ministry of Energy and Mines*, AR 27713.
- Javorsky, David and Pighin, David (2015 amendment): *BC Ministry of Energy and Mines*, AR 34920.
- Kennedy, S. & Pighin, D. (2015): Report on Geological Mapping and Rock Geochemistry on the Gold Mountain Property, Ft. Steele Mining Division, Boulder Creek, South Eastern BC.; *BC Ministry of Energy and Mines*, AR35844.
- Klewchuk, P. (2003): Assessment Report on Rock Geochemistry, Zinger Claims, Upper Perry Creek Area, Fort Steele Mining Division, British Columbia, *BC. Ministry of Mines and Petroleum Resources*, AR 27090.
- Leech, G.B. (1960): Geology Fernie (West Half), Kootenay District, British Columbia; *Geological Survey of Canada*, Map 11-1960.
- Mathews, W.H. (1983): Early Tertiary Resetting of Potassium-Argon Dates in the Kootenay Arc, Southeastern British Columbia; *Canadian Journal of Earth Sciences*, Volume 20.
- Myrene, C.F. (1967): The Big Chief Story, contained as Appendix B in *BC Ministry of Energy and Mines*, AR 27713 Javorsky (2004).
- Nelles, David B.Sc. (1984): *BC Ministry of Energy and Mines*, AR 13658.
- Obradovich, J.D. and Peterman, Z.E. (1968): Geochronology of the Belt Series, Montana; *Canadian Journal of Earth Sciences*, Volume 5.
- Olfert, Ernest G. P.Geo. (1996): *BC Ministry of Energy and Mines*, AR 24230.
-

- Pighin, David, P.Geo. (2014): Summary Report Untested Gold Targets on the Big Chief Property, April 2014 (including Big Chief Property, Preliminary Geology Map), contained as Appendix A in *BC Ministry of Energy and Mines*, AR 34920 Javorsky & Pighin (2015 amendment).
- Price, R.A. (1964): The Precambrian Purcell System in the Rocky Mountains of Southern Alberta and British Columbia; *Bulletin of Canadian Petroleum Geology*, Volume 12.
- Ransom, Paul personal communication with Frank O'Grady P.Eng. in 2018.
- Reesor, J.E. (1958): Dewar Creek Map-area, British Columbia; *Geological Survey of Canada*, Memoir 292.
- Rice, H.M.A. (1937): Cranbrook Map-area, British Columbia; *Geological Survey of Canada*, Memoir 207.
- Schofield, S.J. (1915): Geology of the Cranbrook Area; *Geological Survey of Canada*, Memoir 76.
- Schofield, S.J. (1922): Relationship of the Precambrian (Beltian) terrain to the Lower Cambrian strata of southeastern British Columbia; *Geological Survey of Canada*, Museum Bulletin 35.
- Seabrook, M. (2013): Geological Mapping and Rock Geochemistry Dewdney Trail Property Southeastern British Columbia; *BC Ministry of Energy and Mines*, AR 36112.
- Seabrook, M. and Höy, T. (2015): The Structural Controls of the Kimberley Gold Trend, East Kootenay District, Southeast British Columbia; *Geoscience BC*, Report 2015-13 includes Geoscience Map GM2015-13-01 Kimberley Gold Trend.
- Sookochoff, L. P.Eng. (1983): *BC Ministry of Energy and Mines*, AR 12247.
- Skopik, R. B.Sc. (1996): *BC Ministry of Energy and Mines*, AR 24683.
- Soloviev, S.G. (2010): Evaluation of Reduced Intrusive-Related Gold Mineralization in the Area West of Cranbrook, Southeastern British Columbia (NTS 082F/08, 16); in *Geological Fieldwork 2009*, *BC Ministry of Energy and Mines*, Paper 2010-1.
- St. Lambert, R personal communication with Trygve Höy in 1986.
- The Prospector (1895-1905 newspaper Fort Steele, British Columbia): A.B. Grace, publisher.  
December 7, 1895: Gold Hill and Midas.  
January 7, 1899: Big Chief.
- Walker, J.F. (1926): Geology and Mineral Deposits of Windermere Map-area, British Columbia; *Geological Survey of Canada*, Memoir 148.
-

Warwick, M. (2015): Assessment Report on the Gold Hill Property; *BC Ministry of Energy and Mines*, AR 35639.

Warwick, M. (2017): Assessment Report on the Gold Hill Property; *BC Ministry of Energy and Mines*, AR 36410.

Winston, Don (1986): Belt Supergroup. A Guide to Proterozoic Rocks of Western Montana and Adjacent Area, *Montana Bureau of Mines and Geology*, Special Publication 94.

[www.climate.weather.gc.ca](http://www.climate.weather.gc.ca) : *Government of Canada* historical climate data.

## 16. CERTIFICATE OF AUTHOR

I, Frank O'Grady, address 587 Wallinger Avenue, Kimberley, BC, Canada V1A 1Z8, hereby certify that:

1. I am a graduate of the University of British Columbia, B.Sc. Geology 1969.
2. I am a graduate of the University of Missouri - Rolla (Missouri School of Mines), B.S. Mining Engineering 1977.
3. I am a registered Professional Engineer in the Province of British Columbia since 1978.
4. I have practiced my profession as a Geologist since 1969 and as a Geologist - Mining Engineer since 1977.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I visited the Big Chief/Midas-Gold Hill property on October 30 and October 31, 2017. During this visit I examined the main showings on the property and several outcrops.
7. I am responsible for all sections of the Technical Report, Gold Hill Property, American Creek Resources Ltd, Southeastern British Columbia, Canada dated 4<sup>th</sup> day of July 2018.
8. I am independent of the issuer, American Creek Resources Ltd., applying all of the tests set out in section 1.5 of National Instrument 43-101. I am also independent of the vendor, David Javorsky.
9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that Instrument and Form.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public of the Technical Report.

Dated at Kimberley, British Columbia this 4<sup>th</sup> day of July 2018.

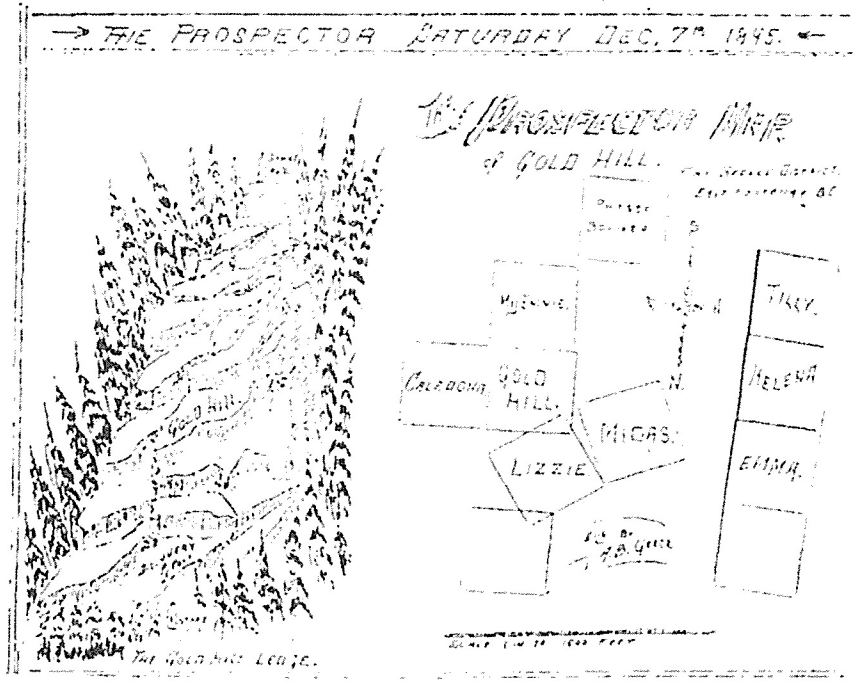
*Frank O'Grady*

Frank O'Grady, P.Eng.



## APPENDICES

### Appendix 1: The Prospector Newspaper Article, December 7, 1895



#### THE GOLD HILL PROPERTY.

This immense body of mineral, was discovered in July last, by W.L. Lane and Chas. Elwood. The property is located on Boulder creek, a tributary of Wild Horse creek. The ledge is a gold bearing quartz, about 160 feet in width, and is exposed the entire length of the claim. In fact the ledge is exposed on three sides. And rises up the mountain by a series of layers, or steps some 12 to 20 feet in height. The ledge prospects well in gold, and some 3,000 square feet of the ledge has been sampled, and the assays shows that it will average \$3.90 to the ton. And there is a strip of some 60 feet in the center of the ledge that assays as high as \$8. to the ton, and it is hard work to find a piece of quartz on this ledge that does not contain gold. No work has been done on the claim to speak of, the owners have cut a trail from the creek to the mine, also cut and cleared an old game trail from Wild Horse creek to the East fork of Boulder. This prospect can be easily worked, as there is plenty timber, and water near the mine, and it is only 3,000 feet from the creek to the mine, and there is quartz enough in sight to keep a 100 stamps running day and night for many years. It is quite easy to estimate the amount of quartz in sight, into tons, and you will find that it is over a 1,000,000. tons. A party in Butte, Montana has made a proposition to the owners, which has not been accepted. Mr. Cronan manager of the St. Elizabeth mine, was engaged by the parties to sample the mine, but was unable to do so, on account of the lateness of the season, and the snow.

The extension to gold hill on the south, is the Myrtle, located by O.S. Pritzel. There is quite a good showing of mineral on this claim. It has four foot ledge exposed, cutting the formation at right angles, and prospects well in gold.

The extension of Gold Hill on the north is the Lizzie, located by A.S. Grace, but little of the ledge is exposed on this claim, but there is sufficient to show that there is a large body of mineral underlying the surface. A small spring issuing from the mountain at the south end line flows over a solid bed of quartz.

The Midas, is west of the Lizzie, located by Harry Brown, this claim has also a good showing of quartz.

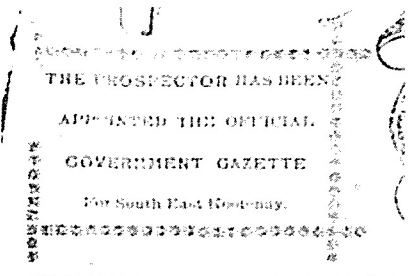
The Patsy Boliver is the highest claim in the group, and is situated on and runs parallel with the ledge, there is a good ledge, of 15 feet on this claim. It was located by Harry O. Donaghee.

The Boston Girl, is another good prospect located by H.L. Amze and is situated on the north side of the creek. It has a three foot lead, which carries \$46.00 in gold and silver to the ton. The ledge has solid granite walls, and can be traced for six hundred feet.

Mr. V.M. Sprague and parties representing the International Placer Mining Co, have five locations west of Gold Hill. They have a six foot lead on these claims.

Read the PROSPECTOR and then Subscribe for it.

Appendix 2: The Prospector Newspaper Article, January 7, 1899



Vol. 5.

New Advertisements To-day.

A. W. Hensdell.....	Page 5
Fort Steele Mercantile Co.....	" 4
Cann & Co.....	" 6
H. Heineman.....	" 5
G. Arnold.....	" 3
Wolton-John Hildgood.....	" 5
Notice-Wm. R. Ross.....	" 5

BIG CHIEF MINE.

Mr. K. J. Highby came down from the Big Chief mine on Wednesday. Mr. Highby says that the property is looking better every day. A new tunnel has been started about 100 feet below the No. 1 tunnel.

The ore is of a higher grade than that found in the upper tunnel. There is no doubt but that the Big Chief is a bonanza.



**Appendix 3: The Big Chief Story, C.F. Myrene, August, 1967**  
(Appendix B in Javorsky (2004) AR 27713)

Appendix D

THE "BIG CHIEF" STORY.

INTRODUCTION: This story has been of some concern to me for the past seven years as to whether I should write down what I know to be true facts and to also state other information relative to this story but which I am unable to prove.

How does a person write such a story so that it will appear to be logical?

I have decided to tell this story in the order to which the events happened to me and to others concerned directly with the story. The individual stories are not stories of "success" but mostly of failure, disappointment, hard work, and years of effort spent in trying to locate and develop a gold mine. I have been totally disabled due to a heart condition for the past seven years, which prohibits me from any further prospecting activity. I have some information, however, that only I know about, and I have decided to try and fit these pieces together in story form while I am still able to do so. My partner, Ted Nagle, and myself are directly involved with this story from 1934 until 1956. Others, too, are involved with the story dating back to 1898 when the property now known as the "Big Chief" group was discovered and staked. The area of the three crown-granted claims is roughly 95 acres, and it is this area where two gold bearing quartz veins were found and lost again and where at least nine separate syenite-porphry dikes are known to occur. Only one dike has had any work done on it and gold was found in several places but not in commercial widths. My story concerns this area which I hope to be able to record in a truthful and logical manner for those who may be interested in its further development.

WILD HORSE CREEK: Placer gold was discovered on this creek in 1864 and miners from south of the border and elsewhere came to this area in great numbers to seek their fortunes. Placer claims were staked along both sides of the creek for a distance of about 5 miles. Many of these claims proved to be very rich and yielded fortunes to the owners. It is estimated that at least \$20,000,000 in gold has been found on this creek since it was discovered. The largest nugget found, weighed 36 ounces and was worth \$700.00 at the price of gold at that time. Today's value would be much more. Gold was found on both sides of the creek and the richest values were to be found on the bedrock. Many shafts were put down through the gravel to reach the rich bedrock areas. It was also found that gold occurred in the high gravel banks adjacent to the creek. Small companies were formed to provide the capital necessary to build flumes to bring water from the higher elevations on Fisher and Boulder creeks, in order to hydraulic the gravel into the sluice boxes. Anyone who is interested can visit this area today and see the enormous amounts of gravel that were "hydraulicked" by these early day operators. The area was later reworked by Chinese miners and some few white miners worked small patches of ground. One cannot help but wonder where all this gold came from and why it was only found along such a short distance of the creek? Gold was mined along the creek to a point opposite Fisher Creek, which is a small creek that flows into Wild Horse Creek from the east. There is very little evidence of placer mining on this creek. Surely this creek must have been thoroughly tested by the early placer miners. The same may be said about the next creek to the north, known as Boulder Creek. Flumes were constructed by the early hydraulic miners to carry water from both of these streams but there is little evidence where the placer miners attempted serious placer mining on these creeks, except for one area on Boulder Creek where some mining took place. This area is located approximately three-eighths of a mile from the mouth of the creek. Bedrock was found at a comparatively shallow

- 2 -

distance at this point. There are no other areas to the north of Boulder Creek which show any signs of placer mining.

**LODE PROSPECTING:** The early day prospector was interested in finding "placer gold" as this did not require any further treatment and was readily accepted by everyone for the purchase of the necessities of life. It wasn't until the C.P.R. railroad came into the area in 1885 that any serious attempt was made to prospect the area for possible gold bearing veins. Most prospectors lacked the capital to spend on developing a "lode" property and most of them lacked the training to be able to recognize a worthwhile prospect and the mountainous areas were very inaccessible. It is surprising though, to see where some of these prospectors managed to locate and work on some properties. It was a rough hard life as trails had to be cut, cabins built for shelter and food and mining supplies had to be back-packed or brought in by pack horse often considerable distances. Many lode claims were staked in this area by these prospectors and on some, a considerable amount of work was done, but most of them eventually were allowed to lapse and lie forgotten in the hills. A few of the more promising claims had sufficient work done on them to obtain crown-grants. One such group of claims located three and one half miles up Boulder Creek comprised three crown granted claims and was known as the "Big Chief" group

HEY BUILT  
NO LARRE  
SO CABINS  
IN THE EASTERN  
SIDE OF THE  
PROPERTY

**"BIG CHIEF" GROUP:** These three claims were reportedly staked in 1898 by two prospectors who were reported to have struck a rich pocket of high grade gold ore near the top of the ridge on these claims. This is where the upper tunnel was driven and a small shaft was put down in the tunnel to a depth of 6 feet. Examination of the tunnel and of the numerous pieces of mineralized rock near the area failed to show up any gold that could be visible through a magnifying glass. The property, however, was sold to a Mr. Pat Egan, who was a railroad building contractor. He brought in a crew of his railroad "tunnel-men" to work on the property adjacent to a nice spring and convenient to the No. 2 tunnel which was located approximately 300 feet below the short upper tunnel. The cabins have long since been demolished but the cabin sites can be seen to this day. Mr. Egan's crew must have found considerable encouragement when driving No. 2 tunnel along the hanging wall contact of the syenite-porphry dike. The drift followed the contact for approximately 140 feet before it was stopped when a fault zone was encountered. A cross-cut was then driven across the dike to the footwall, a distance of approximately 25 feet. The cross-cut was started about 25 feet back from the face of the drift. A close examination of the dike in the cross-cut showed only minor amounts of pyrite present. The footwall contact at this point showed very little mineralization. A short cross-cut was also driven in the hanging wall to a small dike which showed very minor mineralization. The main drift did show up rich specimens of gold and sulphides near the contact in the back of the drift. High grade specimens could be found on the waste dump.

The early day newspaper which was published in Fort Steele during the time that the "Big Chief" property was being operated, contained several articles in regard to the high esteem that the owner had about the property. One particular article mentions numerous samples being taken that assayed several thousand dollars a ton in gold. The paper expressed confidence that a very rich mine was soon to be established in the area. These newspaper articles were owned by a storekeeper in Fort Steele who had saved them these many years and were quite fragile. The storekeeper allowed me to read some of these articles but I didn't have the opportunity to copy any of the articles. I hope to be able to get copies of these articles from the Provincial Library in Victoria if they happen to have copies of these early day newspapers on file. If I am able to get copies of these articles, they will be included at the conclusion of this story.

- 3 -

There was one other tunnel that was driven much lower down and to the east of No. 2 tunnel. This tunnel was "caved-in" when we located it so no information is available on it.

Our part in the "Big Chief" story began in 1934, when I was invited by a Mr. John Hendrickson to visit his placer lease on Boulder Creek and which was located approximately three miles from Wild Horse Creek. Mr. Hendrickson, together with his two grown sons and a relative, were engaged in driving a tunnel in gravel in order to contact the bedrock at a point which would be directly under the junction of the North Fork of Boulder Creek and the main creek. The north fork joins the main creek at nearly right angles at this point. The tunnel had been driven nearly 200 feet when I visited there. Mr. Hendrickson was very confident of success when the tunnel was advanced to the bedrock.

It was on this visit that Mr. Hendrickson told me about the Big Chief property and he stated that the property could be obtained from the government by paying the back taxes owing on the property. He took me to see the property which was located about one half mile from his place. We examined the upper and lower tunnels and I was able to see gold and galena and other sulphides associated with quartz in certain places in No. 2 tunnel. This tunnel had been advanced as previously described. Mr. Hendrickson stated that he had talked to one of the men who had worked in this tunnel. He told Mr. Hendrickson that he could find a lot of gold if he would put down a shaft outside the mouth of the tunnel. I became interested in the property and talked over its possibilities with a friend, Ted Nagle, and we decided to lease the property from the government. In those days, a narrow road from Fort Steele followed for the most part along the west side of Wild Horse Creek. It was a hair-raising experience to negotiate this road, especially in certain places along Wild Horse Creek canyon, where the road had been blasted out of sheer rock and was very narrow. A slight error in driving would mean certain disaster. The road had very few places where a car could turn off to allow another car coming in the opposite direction to pass. It was approximately 7 miles from Fort Steele to Boulder Creek by road and we would park our car at a turn-out and then follow a steep pack trail down along the hillside to Wild Horse Creek. We crossed the creek on a log bridge and followed the trail up Boulder Creek for  $3\frac{1}{2}$  miles to our property. At this time, a Mr. Suran, and his two sons were working a placer lease just above the old workings on Boulder Creek. They had found a rich pocket on bedrock and showed us many nuggets worth from ten to forty dollars each as well as a quantity of smaller nuggets. Mr. Suran stated that he had found one nugget which he had sold for \$87.00. They were having problems with the large boulders and didn't have the equipment to handle them. The two sons eventually left to seek work elsewhere but, Mr. Suran continued to work his claim alone. He was over seventy years of age and he wasn't a big man physically, but he had plenty of courage, enthusiasm, and lots of determination. We would always stop and visit with him on our return from a week-end of work on our property and would leave him any food supplies that we had left over. We knew that he was having a hard time of it, in addition to failing health. He had to eventually retire to Cranbrook where he passed away. To my knowledge no further work was done on this property. Mr. Hendrickson and his party continued to work during the fall of 1934 but had to abandon the tunnel in the spring of 1935 when fine sand and considerable water was encountered at the face, making further work impossible.

We had no cabin on our property when we took over, but we did find a partially completed cabin alongside the creek and near the eastern boundary. We decided to make it habitable and did quite a lot of work on it but had to cook outside as we had no stove. The cabin was nice as long as it didn't rain, otherwise, we managed to make it livable. (Mention is made here of an incident which happened to us early one morning). We were busy

- 4 -

getting our breakfast when three men suddenly appeared at the cabin. They came from the east and were on their way down Boulder Creek. We did not see them come in by the trail which ran alongside the cabin. They appeared to be as surprised to see us as we were to see them. I do remember one man as saying that they were looking for the "Big Chief" property. When I told him that we owned it they seemed in a hurry to leave and our conversation was very short. This will be brought up later on in the story.

Nagle and I were both employed at the Sullivan Mine at Kimberley and we had no money to spend on the property ourselves, except the few dollars we could manage to save. We could only do week-end prospecting on the property which didn't give us much of a chance to do any real work. We made a compass survey of the No. 2 tunnel and took several samples to satisfy ourselves that we could get gold in the tunnel. We decided that we required some financial help to hire someone to work the property, so we approached our druggist and our doctor friend in Kimberley on a four way partnership deal. They agreed to come in with us and we borrowed \$1,000 from the bank, each party agreeing to pay back his share of the loan each month. We were able to hire two men who had prospected in this area and were capable and experienced. We paid them \$50.00 per month each and provided the food and necessary mining supplies, such as, hand drill steel, hammers, fuse, powder, etc. They decided to use Mr. Hendrickson's cabin as it was in better condition than ours. We ordered the necessary supplies and they would meet us at the road on week ends and the four of us back-packed all supplies up to the cabin or to the No. 2 tunnel. It was hard work getting these supplies up there. The two men also were to receive equal shares in anything that we found or shares, if a company could be formed. We had them take two rounds out of the face at No. 2 tunnel in the faulted area and we stopped further work because it would require timbering in order to advance the face of the tunnel. I do remember getting a coarse piece of gold from a panful of this material. We decided to sink a short shaft outside the tunnel entrance and the two men had to timber the shaft through the overburden and gravel, a distance of approximately 15 feet until they hit the solid rock. Mention here is made that one of the men found a rounded quartz boulder when digging in this material. This piece of quartz would be approximately half the size of a man's fist and on examination appeared to be about one-third quartz, one third galena, and one-third gold. We had the piece assayed by C.M. Fassett, Assayers in Spokane. The report showed that it contained 1139.8 ounces per ton or a value of \$39,850.00 at \$35.00 per ounce for gold. The question was where did this piece of quartz come from? It couldn't have come from this particular dike from directly above us as the distance to the top of the ridge would be less than 500 feet. The boulder had all the characteristics of some of the quartz that we had found in No. 2 tunnel especially, the native gold in association with galena. We decided that this piece must have been moved by glacial action and must have come from regions east of our property. It was the only piece of this kind of material that they found. We did however, hit a small rich pocket of gold, quartz, galena ore when they sank the shaft a few rounds more in the solid rock at the contact. I packed out fifty pounds of this material and brought it home to Kimberley. I had no means of crushing this material fine enough and by panning, I managed to get enough concentrate to have a gold button made which was sold to the government through the bank in Kimberley for something like \$30.54 (this is not the exact figure but very close). The money obtained was turned into the partnership funds. I would estimate that I only recovered about one-third of the gold that was in the fifty pound sample. If this estimate is correct then the value per ton of gold in the sample would approach \$3600.00 per ton. The two men were instructed to use care in gathering up the rock and to set it aside. We noted that it appeared that the quartz stringer

- 5 -

seemed to come from the footwall side of the dike, so we decided to go lower down on the hillside and drive a new tunnel so as to hit the footwall side of the dike at approximately 70 feet below the No. 2 tunnel. We had to drive this tunnel through approximately 50 feet of overburden before the solid footwall was reached. As soon as we hit the solid rock we immediately obtained high gold assays from the various samples. We drove the tunnel in solid rock for approximately 10 feet and obtained one sample which assayed 16 ozs. of gold per ton. The C.M. & S. Co. was approached to send out a geologist to examine the property. He took several samples and appeared satisfied that the property warranted further work on it. We made an agreement with the C.M. & S. Co. for one year in which they would perform certain work and if satisfied at the end of a year that the property still had possibilities, a new company would be formed and we would have an interest in the company.

Mention is made here of another incident that occurred a few months after we acquired the property. I was alone at this time and was doing some prospecting near the top of the uppermost tunnel and was working my way eastward towards the old abandoned cabins when I heard someone digging a short distance away. I spoke to this man and he seemed very surprised to see me. I mentioned that I thought that he was doing work on our property and if he cared to work on, that it was O.K. with me. He was very short with his answers and somehow had a guilty look on his face. I don't recall ever seeing this person again. Years later this incident had some meaning to me.

The C. M. & S. Co. hired the two men who worked for us and two other miners and a Chinese cook. They immediately had the men build a log cabin 24' x 28' and had 6 ft. boards packed in by pack horse to be used for the roof and floor. They partitioned the cabin to allow part for sleeping quarters and part for cook house and dining area. They installed several windows and built a first class cabin along with a cellar in the kitchen for winter storage of vegetables and fruit. The four miners were given a contract at a certain price per foot and the company furnished all necessary supplies which were all brought in before the winter set in. A company engineer used to make weekly visits to direct the work and to bring out samples for assaying. He had instructed the men how to take "face samples" and also "muck" samples. This work was carried out all winter and some encouragement was obtained from some of the samples taken along the hanging wall of the dike.

The company had decided to cross-cut from the footwall of the dike to the hanging wall and to follow the hanging wall contact. No values were obtained while cross-cutting the dike but good assays came in as soon as they contacted the hanging wall. We had no part in this operation while the property was under lease to the company but we did manage to get reports on the assays. After the company had spent the agreed amount on the property, they decided that further work was not warranted and the property came back to us. The company had driven nearly 250 feet of tunnel and had built us a nice log cabin. We did not receive any cash payment in the deal, but were given a map of the tunnel and assays of all samples taken from the tunnel. All of us concerned were disappointed when the property came back to us and our druggist and doctor friends decided that they also had enough, so the property again became Mr. Nagle's and mine. The company had hoped to be able to mine the entire dike as a large tonnage lower grade operation. The narrow width would not carry a grade that would permit this. The assays taken over drift width of 5 feet showed the ear samples for a length of 40 feet to average 0.43 gold, 0.48 silver and 2.13% lead. The face samples for 22.0' gave the following average over drift width; 2.4 gold, 2.17 silver and 6.1% lead. It was also noticed that the miners turned the drift away from the contact for the last 65 feet and as a result, they got into the barren dike.

- 6 -

As mentioned previously, Mr. Nagle and I were both employed underground at the Sullivan Mine. During my travels underground one day with a shift boss named Jim Thomas, he mentioned that he and his partner had prospected Boulder Creek and stated that they had found a quartz vein that contained a lot of visible gold. He explained that he and his partner had taken a rest alongside the trail and while sitting there, they spotted the quartz vein outcropping. They examined it and had chipped some pieces off for an assay. He said that the pieces assayed well over 2 ounces per ton. He couldn't state the exact width but estimated that it was over two feet wide. He told me that both he and his partner knew that this vein was on our property so had decided to keep quiet about finding it until we let the property go. He also told me that they had found tin on Wild Horse Creek while panning the gravel. This shift-boss was a good friend of mine and was a family man who was respected by everyone in the town and by everyone underground at his work. He was honest and truthful and trusted by his employer and by the men who worked for him. Jim told me the reason that he told me about the property was that his former partner was very ill in Calgary and that he knew that we were not going to let the property go back to the government. He said that he wanted to get his partners permission before showing the quartz vein to us. I told Jim we would give him a fair share of anything that proved worth while. Jim mentioned this same story to me on several other occasions when I travelled around underground with him. I believe that his former partner did pass away in Calgary later on but Jimmy, too, became ill and passed away without ever showing us where this quartz vein was located. Personally, I believe that Jim Thomas told me the truth and I was sorry that he never got to show us this quartz vein.

After the C. M. & S. Co. relinquished the option on the "Big Chief" group my partner and I continued to pay the 25¢ per acre tax on the property to hold the claims. We made the occasional trip to the property to keep the cabin in a good state of repair and we did some prospecting in the area surrounding our claims. We looked for the "quartz vein" previously described, but not too seriously, as most of the area is covered with overburden and timber.

In the summer of 1945, the C. M. & S. Co. agreed to take another look at the property. They sent in a party of five geologists and engineers, two samplers and a cook. They spent ten days on the property making a compass and tape survey of the tunnels and also made a plane table survey of the portion of the surface adjacent to the tunnels. A contour map was made and the outcrops of other dikes were mapped. The area was carefully geologized and considerable sampling was done. My only comment is in regards to the sampling; far too much of the barren dike material was included in the samples. I was at the property when much of the sampling was being done and knew that the samples would assay very low. I couldn't tell them how to do their work so didn't say anything. A detailed report of the work was made on Dec. 5, 1945, and as expected, the report recommended that no further work was warranted. We received a copy of the report and of the contour map. On the results of the assays that they had obtained, they couldn't recommend the property. Had the samples been taken along the hanging wall contact to a width of eighteen inches, the assays results would have been much different. As previously explained, the dike was barren of any minerals except for minor amounts of pyrite. The gold values were in the cooling cracks at the contacts on the hanging wall and the footwall of the dike.

We continued to keep the claims in good standing.

A logging operator from Fort Steele, a Mr. Dinty Moore, acquired some timber leases on Wild Horse Creek north of Boulder Creek and also acquired timber leases on Boulder Creek which included the north fork and the main creek and included the timber on our claims. This took place around 1950. Mr. Moore constructed a very good road along the east side of Wild Horse Creek to Boulder Creek and beyond. He set-up a portable mill and first logged off the Wild Horse Creek section and then built a road alongside Boulder Creek to where our cabin was located. We gave him permission to use our cabin, providing that he would maintain it in good condition and would also construct a road for us from the cabin to the portal of No. 3 tunnel. He agreed to do this and moved his portable sawmill quite near to our cabin. They cut a large amount of timber from this area during the next four or five years and hauled the cut lumber in large trucks to the town of Cranbrook. Many side roads had to be made on the steep mountain sides in order to remove some of the timber. The logging operation completely changed the upper area of Boulder Creek. Not all of the timber was logged off; only the best timber was taken. This still left a great deal of timber still standing but the countryside was more open than previously.

We now had a good road from No. 3 portal to the outside world, which meant that it would be possible to move large amounts of material to the property or to take quantities of material by truck out at any time and at a reasonable cost.

My partner and I figured that we could make a small ore shipment to the Trail smelter now. We made an agreement with a jeweler in Kimberley who was anxious to get out of the jewelery business. He had previously done considerable mining and prospecting in the West Kootenays and he owned some good mining equipment such as a small air drill, drill steel, wheelbarrow, shovels, picks, etc. The only equipment that he did not have was an air compressor. He moved all of his equipment to the property with his own truck. He had to use the old upper cabin as the logging outfit was still using our other cabin. We agreed on a one-third interest for each and we would supply the compressor, powder, fuse caps, etc., and all of his food requirements. We also agreed to take a week of our holidays to help him get the ore for a shipment. We had more work to do than we expected to retimber the entrance to the tunnel which had caved. When we were ready to do some drilling, we rented a compressor from a firm in Cranbrook and had it hauled to the portal. Steve, who was our new partner, got busy drilling numerous holes where we considered we had the best chance to find ore. The holes were then blasted and the rock was wheeled to the surface. Only the best of the material was saved and we also picked over the waste dump for more ore. We managed to get two or three tons of ore ready for shipment. We first made up a 10 lb. sample of the rock to be shipped and sent this to the smelter for assaying. We intentionally made the sample lower than the ore to be shipped because we didn't want to have the shipment back-fire on us. In due course we received the report of the sample as follows:

<u>Au.</u>	<u>Ag.</u>	<u>Cu.%</u>	<u>Pb%</u>	<u>Zn%</u>	<u>S.%</u>	<u>S<sub>4</sub>O<sub>2</sub>%</u>	<u>Fe%</u>	
.40	1.2	.2	1.4	.2	2.0	55.0	3.5	plus traces of other elements.

The smelter value total of the above was \$13.42 /ton.  
 The smelter charges and penalties on the above was \$14.55/ton..  
 This meant that we would owe the smelter \$1.13 per ton plus the cost of shipping and mining. This report made us realize that we couldn't make a go of it and that we had once again failed. Steve pulled out with his equipment and we returned the compressor to Cranbrook and paid our debts and returned back to work. We left the material that we intended to ship on the hillside near the portal. This was and should have been the end of our association with the "Big Chief" property. We had tried very hard to get the property going but just couldn't make it.

- 8 -

However, this was not to be quite the end of the story, as we noticed that someone had staked placer leases on our property along Boulder Creek. The following summer, we went up to the property and noted that No. 2 tunnel had "caved-in" for nearly its entire length. We also noticed that someone had had a "bull-dozer" to make trenches along both sides of the creek. We couldn't understand why this was done. This was to be my last visit to the property as I had a heart attack in July, 1956 and never got to the property again. I managed to return back to work after a six month lay-off and by changing my job to an office job, continued to work with only the occasional lay off for the next three years. I was finally forced to quit working on Aug. 6, 1959 on the orders of my doctor. I was granted a company pension in Feb. 1960. My wife and I decided to rent our home in Kimberley and to spend the winter in an apartment in Victoria. We returned to our home in Kimberley on July 1st, 1961. One day shortly after we had returned, I received a phone call from a Mr. McDougall, a mining engineer who had more or less retired in Fort Steele for many years. He said that he had two men with him who were the new owners of the "Big Chief" and that they would like to talk to me about the property. This was the first time that I was aware that we had lost the property. My partner, had agreed to pay the taxes due because I had paid for the rent of the compressor and the cost of hauling it to and from the property. I agreed to have the two men come to my home and they introduced themselves as Jacques De Foras and Chester Johnson, both residents of Alberta. Mr. De Foras explained that they had staked the placer leases on Boulder Creek and had also engaged the bull-dozer to cut the trenches along Boulder Creek near our cabin. They said that the mining recorder in Cranbrook told them that the "Big Chief" property could be taken over for the back taxes owing on the property; so they paid the taxes and now were the owners.

They explained that they wanted to talk to me about the property and wanted any information on the property that would help them to promote the property. I explained to them of our efforts over nearly 25 years in trying to make a producing property and how it had cost us a lot of money and hard work only to end in failure. I told them that I was sorry that I couldn't help them to find what we couldn't find in 25 years of searching. Mr. De Foras then told me a story and explained his reason for being in the area. It seems back in the early 1930's that he had grub-staked a fellow in Calgary who told him that he had found gold on Boulder Creek. He mentioned this fellow's name which sounded like ~~Robert MacGowan~~ - Burquist. The mention of the name seemed to ring a bell and I recalled that Jim Thomas had mentioned his partner's name to me and it seemed to be a very similar name. Mr. De Foras went on to explain that some time later, that he had received an urgent telegram from his grub-staked partner to meet him at Boulder Creek at a certain time. Mr. De Foras stated that they came up Boulder Creek in the dead of night and he was cautioned by his partner not to make a noise or show a light because he said that the owners of the property were at the cabin. His partner took him to a place alongside of the creek where they made camp for the night. Early next morning, Mr. De Foras was shown a gold quartz vein that crossed the creek. He said that it measured 42 inches in width and contained visible gold. He managed to chip off some samples which he later had assayed and returned values of over 2 ounces. He further stated that his partner had panned over \$600.00 in placer gold on the creek just below the quartz vein. His partner gave him \$300.00 in gold nuggets as his share. He stated that they left the area early in the morning but not before Mr. De Foras had taken a bearing on Vertical Mt., the cabin and a tree that he had blazed. They were both sure that the quartz vein was on our property and didn't want us to know that they were in the country. They intended to return later when we had dropped the property.



- 9 -

Mr. De Foras stated that his partner had passed away in Calgary sometime later and that it wasn't until 1955 that he was able to return to Boulder Creek with a new partner, Chester Johnson. He said that the logging operations along the creek had changed the appearance of the area so much that he had completely lost his bearings. That was his reason for hiring a bulldozer to cut channels along the creek where he had hoped they might find the quartz vein again.

After Mr. De Foras and Mr. Johnson left my home, I called in to see my partner, Mr. Nagle. Apparently, Mr. De Foras and Mr. Johnson had contacted him a few days before and were after information. Mr. Nagle explained that he didn't pay the taxes when they were due because he felt that I would never be interested or able to work again and that he had also decided to give up the property. We both have some excellent specimens of native gold also gold in galena and assay reports, maps etc. of the property in our possession.

Since retiring in Victoria, my thoughts often go back to the 'Big Chief' property and to the events as I have told them in the previous pages. They happened as I have described them and are as nearly accurate as I can remember them. What conclusions are possible from these events? Is there any chance of finding the lost 'gold quartz' veins which two people claim to have seen on the property? Do the other syenite-porphry dikes on the property contain possible pockets of high grade gold ore and what are the chances of the fault on No. 2 tunnel (now caved) to contain concentrations of gold by following along the fault zone? Is it possible that the two quartz veins are the same vein but found at different altitudes? Was Mr. De Foras' partner, <sup>and my</sup> ~~Bergman~~ ~~or Barquist~~, the same person who was Jim Thomas' partner? Was the person I met prospecting on our property ~~Mr. Bergman~~ ~~or Barquist~~ and was he trying to trace the quartz vein to the top of the ridge? These are some of the many questions that are still to be answered. I do know that Jim Thomas told me the truth but I cannot really say that I believe Mr. De Foras' story entirely, yet how could he have made up such a story and why would he have had a bulldozer cut the channels along the creek trying to locate the quartz vein? I believe that Mr. De Foras was completely lost when he returned to Boulder Creek after his one visit which had occurred many years previously. The country had been logged off and he used our new cabin to get his bearing on Vertical Mtn. instead of the older upper cabin which is approximately one-half mile further up stream. I believe that his 'quartz vein' can be found by sighting from the old cabin and Vertical Mountain. The new cabin was not built until 1937 and he was there in 1934. This would place the quartz vein nearer the eastern boundary of the property and also in line where the fellow I met was prospecting.

This is the end of my story, except to write a conclusion. I decided to wait until I had an opportunity to see if I could find any information at the Provincial Library regarding the early history of the property before writing the conclusion. I have been able to get quite a bit of early information, which is included in this story.

Conclusion: This particular area which constitutes the 'Big Chief' group of three crown granted mineral claims and the area to the immediate east should have a thorough re-examination. The most efficient method to use to properly and thoroughly explore this area is to employ a geophysical firm to make a detailed survey of the 95 acre property with provisions to extend the survey to the east if results are favorable on the 95 acres. The survey must be very detailed because of the narrow widths of the 'ore zones' along both contacts of the more than nine separate syenite porphyry dikes which have

- 10 -

previously been mapped and are known to exist on this property. The geophysical survey should also locate the two lost gold bearing quartz veins that are known to have outcropped on the property. The gold quartz veins, once located, should be traced by the survey to whatever length they may happen to extend. All favorable areas so located should be plotted on a map. (Scale 1" = 40')

The extremely high grade ore that exists whenever sulphide concentrations are encountered, make even small pockets of ore very valuable. This was known by the early day operators of this property and their recorded assays bear this out. My own experience on this property also confirms this fact. Most of the work to date has been confined to one syenite dike and even this one has not been 'scratched' as far as the ore making possibilities are concerned. The other dikes show that they are of the same composition and there is every reason to believe that they too carry sulphide concentrations along either or both contact.

These dikes cannot be traced on the surface for any great lengths but they do outcrop along the top of the east-west trending ridge and also at various places along the side of the mountain. They appear to be more or less parallel in strike, and dip with the argillite contacts. It would be very costly to try and trench along the contacts of these dikes as there is considerable overburden to be removed to expose them. The geophysical survey would pin point the sulphide concentrations and thus eliminate a lot of unnecessary and useless work.

As regards the two lost gold-quartz veins that are supposed to have outcropped on this property, I can only make the comments which I have already made. I do believe that Jim Thomas told me the truth as regards to his story. As regards to Mr. De Foras' story about the gold-quartz that his former partner is supposed to have found and which he claims to have seen, measured, and sampled; I can only say that this is possible. I do not know Mr. De Foras but I did know Mr. Thomas for many years and can see no reason to doubt his story. I am inclined to believe part of Mr. De Foras' story as he must have had some reason for bulldozing the side of Boulder Creek trying to locate the gold-quartz vein. I believe that Mr. De Foras was completely confused when he came into this area after such a long period of time had lapsed since his first and only previous visit. The geophysical survey should be able to locate these veins if they do exist on the property.

There are also two areas that can be 'opened up' for immediate mining of 'high grade ore'. This is the No.2 tunnel which was driven a distance of approximately 140 feet before a fault zone was encountered. The tunnel is now 'caved in' for nearly its entire length. The tunnel was driven by the early day operators who found that the high grade ore occurred along the hanging wall contact and the pay streak was approximately eighteen inches wide but very rich. The tunnel was driven for approximately 100 feet almost on the surface and the remaining 40 feet had very little solid rock above it. I would recommend that the overburden which now is on the tunnel, be bulldozed off and the floor of the tunnel be exposed along its entire length. When this work is completed a six foot bench be taken along the bottom for the width of the drift. Care must be taken to blast off  $3\frac{1}{2}$  feet of the bench first on the barren dike side on the right side looking at the face. This broken material should be taken out and discarded as waste (any mineralized rock should be saved). The remaining 18" of the bench round should then be blasted lightly and the broken 'high grade' sorted and sacked for shipment to a smelter. There is every reason to believe that the lower part of the tunnel contains as much high grade ore as did the original tunnel; the only difference is that we will now be taking off 6 feet of the original tunnel floor. I know that this could prove very profitable but again great care must be taken not to put barren dike material into the ore sacks

- 11 -

as this only lowers the value of the ore. After each round of ore is blasted, the bottom should be carefully swept up with a broom as the 'fines' are very high grade. As each round is cleaned up the same procedure is to be followed; ie. break away the 3/2 feet of waste rock then discard this material and then blast the remaining 18 inches very lightly so as not to scatter the ore. I would estimate that approximately 100 feet of the tunnel floor would carry ore values. If we can further assume that 18 inches of the 5 ft. width is ore then a six foot bench for 100 ft. length would contain 75 tons of high grade ore and 175 tons of waste rock to discard. By careful resorting of the high grade material, we could reduce the 75 tons to 30 tons of much higher grade which could be shipped or trucked direct to the smelter at Trail or Kellogg Idaho. The 45 tons would not be discarded but could be stock piled for further use if a small mill were ever warranted. Assays were obtained in the No.2 tunnel that went from \$2500 to \$12,000 per ton. It is impossible to make an estimate of the value of the 30 tons, but I'm sure it would be a great deal of money if extreme care is used in blasting and sorting.

If the first bench proved good values were present for the 100 ft. of length, then it would be advisable to drive a 5' x 10' raise from No.3 tunnel to follow the hanging wall and break thru as shown on the map. The distance would be approximately 76.0 feet. The raise should have a manway and muck compartment. This raise would start in ore and follow in ore to the break-thru.. It is recommended that a 10 ft. sill be left as protection until all the ore is mined out. The sill could be drilled off and blasted after all available ore is mined out. To make one other assumption is an effort to determine the possible total tonnage available in this block of 'possible ore' we can assume a block 100 ft. long x 18" wide x 76.0' high. We use 12 cubic feet of solid rock equals one ton. Therefore, this block would contain 100 x 1.5 x 76 or 11,400 cu. ft. of possible ore. This converted to tons would be 950 tons possible ore.

Finally, the fact of No.2 tunnel should be tested as the C.M. & S. Co. obtained its best values here when they resampled the property. I also obtained a fairly large piece of gold when I panned some of this material. The fact can be exposed with a bulldozer. This is a fault zone and will require timbering to advance the face. I would recommend following the contact of this zone for at least 25 feet as this could prove a rich area for ore deposition.

In closing my story, I wish to state that I have tried to honestly express my conclusions after a great deal of study of maps and other information that I have on the property. I trust that whoever reads this story will realize and understand that I have no way of knowing how much 'ore' tonnage is available or what ore grade might be obtained in the block of ground that is contained between No.2 and No.3 tunnels. This area could only be classified as 'possible ore' as the present state, but has definite possibilities.

If it is possible to carry out the recommendations as made in this story, this property will have many chances of developing into a good producing property. The maps, reports and assays that were used in this story are available to the party or parties who are willing to discuss favorable terms with me for providing this information.

- 12 -


It must be clearly understood by all concerned with this story that I am not a registered member of the Professional Engineers Society of B.C. or of any other Province in Canada. I am a graduate Engineer of an accredited University and have been directly working in the mining industry for over forty years.

This story therefore, cannot be used to promote the sale of stock to the public and it was not written with that intent. The story is a history of this property and of my direct association with the property from 1934 until 1956.


Signed: *C. F. Myrene*  
C. F. Myrene

Dated: August 1, 1967

## Appendix 4: Minfile 082GNW022



**Ministry of Energy and Mines**  
and Responsible for Core Review



Help

News | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINEFILE Home page](#) | 
 [ARIS Home page](#) | 
 [MINFILE Search page](#) | 
 [Property File Search](#)

[MINFILE Record Summary](#)  
**MINFILE No 082GNW022**

[XML Extract/Production Report](#)

[Print Preview](#) | 
 PDF | 
 24-Jul-85 | 
 27-Nov-14

-- SELECT REPORT -- | 
 BC Geological Survey (BCGS) | 
 by Laura deGroot(LDG) | 
 New Window

**SUMMARY**

<p><b>Name</b></p> <p><b>Status</b></p> <p><b>Latitude</b></p> <p><b>Longitude</b></p> <p><b>Commodities</b></p> <p><b>Tectonic Belt</b></p> <p><b>Capsule Geology</b></p> <p><b>Bibliography</b></p>	<p>MIDAS (L.5456), BIG CHIEF (L.4046), MAGNET</p> <p>Past Producer</p> <p>49° 40' 00" N</p> <p>115° 30' 14" W</p> <p>Lead, Silver, Gold, Copper</p> <p>Foreland</p> <p>At the Midas occurrence, quartz veins occupy joints and fractures within a Cretaceous syenite dyke in Lower-(?)Middle Cambrian Eager Formation argillites. Pyrite, chalcopyrite and galena are hosted by quartz stringers. Visible gold is reported locally. Dykes are highly carbonatized and locally the dyke and host sediments are silicified and carry disseminated pyrite. Dykes strike about 050 degrees and dip 55 degrees northwest.</p> <p>EMPR AR 1899-593,659; 1900-797,979; 1902-130,302; *1934-E30; 1954-148</p> <p>EMPR ASS RPT <b>3928, 1224Z</b></p> <p>EMPR GEM 1972-67; 1968-269</p> <p>EMPR MAP 36</p> <p>EMPR OF *1988-14</p> <p>EMPR PF (Prospectors Report 1999-13 by David Javorsky)</p> <p>GSC MAP 396A; 11-1960</p> <p>GSC MEM 76; *207, p. 50</p>
---	---

[COPYRIGHT](#) | 
 [DISCLAIMER](#) | 
 [PRIVACY](#) | 
 [ACCESSIBILITY](#)

## Appendix 5: Minfile 082GNW023

### South side of Boulder Creek



Ministry of Energy and Mines  
and Responsible for Core Review

Help ?

News | The Premier Online | Ministries & Organizations | Job Opportunities | Main Index



BRITISH COLUMBIA

[MINFILE Home page](#) | [ARIS Home page](#) | [MINFILE Search page](#) | [Property File Search](#)

**MINFILE Record Summary**

**MINFILE No 082GNW023**

[XML Extract](#)

Print Preview PDF  
File Created: 24-Jul-85  
Last Edit: 27-Nov-14  
-- SELECT REPORT --  
by BC Geological Survey (BCGS)  
by Laura deGroot(LDG)  New Window

#### SUMMARY

Summary Help ?

<b>Name</b>	FISHER	<b>NMI</b>	Fort Steele
<b>Status</b>	Showing	<b>Mining Division</b>	082G063
<b>Latitude</b>	49° 40' 25" N	<b>BCGS Map</b>	082G12E
<b>Longitude</b>	115° 31' 04" W	<b>NTS Map</b>	11 (NAD 83)
<b>Commodities</b>	Gold, Silver, Lead, Copper	<b>Northing</b>	5503397
<b>Tectonic Belt</b>	Foreland	<b>Easting</b>	606942
<b>Capsule</b>	The Fisher showing is located on the south side of Boulder Creek, 3.8 kilometres from its junction with the Wild Horse River.	<b>Deposit Types</b>	I05 : Polymetallic veins Ag-Pb-Zn+/-Au J01 : Polymetallic mantle Ag-Pb-Zn
<b>Geology</b>	At the Fisher showing, a 2 metre bed of dolomitic limestone of the Lower Cambrian Cranbrook Formation occurs in part of the Wild Horse River fault zone. The bed has been highly shattered and a network of quartz veinlets and stringers traverses the rock. About 10 per cent of the mineralized bed contains quartz vein material. The zone is up to 5 metres wide and contains a central mineralized vein system up to 1 meter wide. The quartz is host to pyrite, galena and chalcopyrite and a high-grade sample assayed 54 grams gold and 3565 grams silver, but this is not representative of average values. In 1996, grab samples returned values of 5.0 grams per tonne gold (Assessment Report 24683).	<b>Terrane</b>	Ancestral North America

In 1995-1996, the showing was explored by 402813 Alberta Ltd. as a part of the Golder and Sunstar claim groups. A complete exploration history can be found in Assessment Report 24230.

#### Bibliography

EMPR AR 1903-245  
EMPR ASS RPT [12247](#), [24230](#), [24683](#)  
EMPR MAP 36  
EMPR OF +1988-14  
EMPR PF (Prospectors Report 1999-13 by David Javorisky)  
GSC MAP 396A; 11-1960  
GSC MEM 76; +207, p. 48

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)