

**Geological Evaluation Report**

for

**SUNDANCE GOLD LTD.**

07/86

on the

**MONTANA CLAIM GROUP**

FILMED

**Greenwood M.D.**

**N.T.S. 82E/7W**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**14,313**

07/86

**July 11, 1985  
Vancouver, B.C.**

**L. Sookochoff, P.Eng.  
Consulting Geologist**



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Geological Evaluation Report

for

SUNDANCE GOLD LTD.

on the

Montana Claim Group

PART A

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SUMMARY AND CONCLUSIONS

The Montana Claim Group is comprised of six reverted crown grants and one sixteen unit claim which include workings with mineralization containing up to 11.71 oz Ag/ton within zones hosted by the Anarchist Group of rocks.

The property is located 30 km north of Camp McKinney where amongst others, some one million dollars of gold was produced largely between 1894 and 1903.

The Wallace Mountain - Beaverdell silver camp is 10 km to the west. The Wallace Mountain silver deposits have produced silver since 1900 with the Highland Bell (1930) property in continuous production since 1916.

The silver deposits are hosted by the West Kettle batholith which is intruded by the Beaverdell Stock. Native silver is "found throughout a vertical range of at least 1000 feet".

On the Montana Group a number of old workings - circa 1900 - explore northwesterly trending zones of mineralization hosted by volcanics and pelitic sediments of the Anarchist Group of rocks.

Tunnel No.1 exposes a 0.3 meter quartz vein from which a chip sample returned .81 oz Ag/ton and a grab sample returned 5.62 % Cu., 1.76 % Pb., 5.35% Zn., 11.71 oz Ag/ton and .022 oz Au/ton.



A rhyolitic zone along the footwall of the zone returned .60% Cu and 1.61% Zn across .46 meters. The rhyolite is in contact with pelitic sediments which were not sampled.

The zone is intermittently exposed for 40 meters northwestward where a quartz grab sample from an open cut returned 1.26 oz Ag/ton and 2.03% Zn.

A parallel quartz vein zone is exposed 25 meters from the first zone.

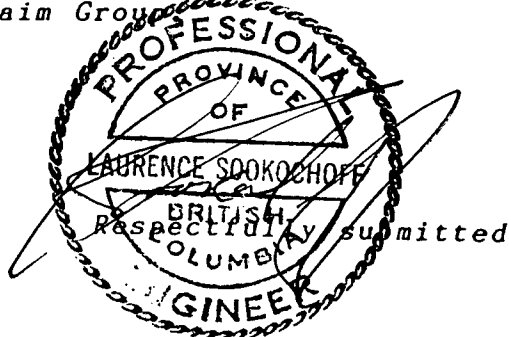
It is concluded that northwesterly trending zones host mineralization associated with quartz and volcanic flows. One of the zones is indicated to occur sandwiched between greenstone and pelitic sediments.

Mineralization occurring as pockets of sulfides within the quartz is significant but sporadic however the mineralization occurring within the rhyolitic host would be more consistent. The volcanic-sedimentary mineral zone could be extensive with the potential for parallel zones.

An exploration program to delineate the extent of the zones and mineralization and to determine the configuration of the mineral zones is warranted.

### RECOMMENDATIONS

A three stage exploration program of recce and detailed geochemical and geophysical surveys followed by trenching, mapping and sampling and diamond drilling estimated to cost \$197,500 is recommended to be carried out on the Montana Claim Group.



Laurence Sookochoff, P.Eng.

July 11, 1985  
Vancouver, B.C.



Geological Evaluation Report

for

SUNDANCE GOLD LTD.

on the

Montana Claim Group

PART B

-----

INTRODUCTION

At the request of officials of SUNDANCE GOLD LTD. the writer prepared the following report on the geological potential of locating economic gold-silver zones on the Montana Claim Group.

Information for this report was obtained from sources as cited under bibliography and from a personal property examination carried out on June 13, 1985.

PROPERTY

The property consists of six reverted crown grants and one unit claim of sixteen units. The unit claim creates a contiguous claim group. Particulars are as follows:

<u>Claim Name</u>	<u>Lot No.</u>	<u>Record No.</u>	<u>Expiry Date</u>
Fourth of July	2638	4115	July 6, 1986
Muldoon	2639	3842	July 6, 1986
Idaho	2642	3841	July 6, 1986
Montana	2640	3840	July 6, 1986
Colorado	2641	3839	July 6, 1986
Assayer	991	3838	July 6, 1986
Montana	-16 units	4309	April 1986



### LOCATION AND ACCESS

The claim is located 32 km north of Rock Creek on Lake Ridge between Canyon Creek to the west and the Kettle River to the east.

From Rock Creek on the Southern Trans Provincial Highway No.3 the Rock Creek - Kelowna Highway is taken to Westbridge and then the Christian Valley road which parallels the Kettle River to the west. At km 32 the Canyon Creek road is taken to the claim group. The eastern boundary of the property is approximately one km along this road.

### PHYSIOGRAPHY AND CLIMATE

The property is within the Beaverdell Range of mountains. On the property occasional steep forested slopes with elevations up to 1250 meters on the southwest corner from 975 meters in the northeast occur.

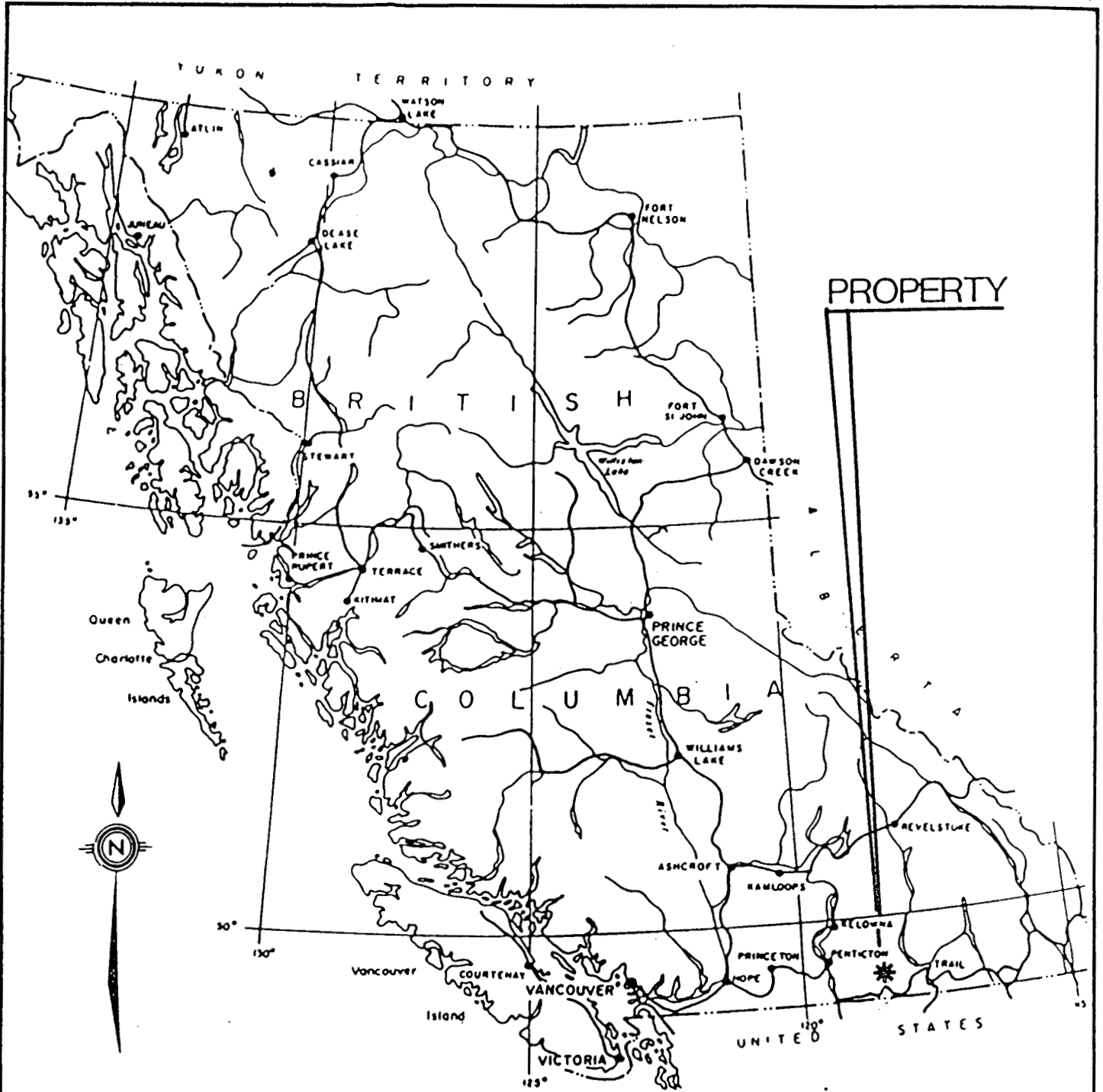
The general climate of the area includes moderate winters with a snow free period of up to eight months.

Canyon Creek forms a relatively deep canyon on the claim group.

### WATER AND POWER

Canyon Creek, the main waterway of the area crosses the southwestern portion of the property. Kettle River parallels the eastern boundary one km to the east.





SOOKOCHOFF CONSULTANTS INC.			
SUNDANCE GOLD LTD.			
Montana Group			
GREENWOOD M D			
LOCATION MAP			
SCALE 1:6,300,000	DATE JULY '85	NTS 82 E /7W	JOB NO. FIGURE 1

## HISTORY

The history of the area stems from the discovery of placer gold in 1859-60 within Rock Creek which enters the Kettle about three km north of the International Boundary about 50 km south of Beaverdell. It was probably during this period that the Kettle River and its tributaries were prospected nearly to their headwaters.

The first lode claim in southern British Columbia was staked upon Rock Creek in 1884. With the ensuing lodes of copper and gold discovered and developed in the Boundary district and Rossland a small army of prospectors found their way up the West Kettle river between 1896 and 1900. At Beaverdell all the more important claims on Wallace Mountain were located between 1896 and 1897 and in the next four years numerous claims were worked on this mountain, at Carmi, near Triple Lakes and on Arlington mountain.

Development work began on the Carmi mine four km north of Beaverdell in 1899 and on the Sally group on Wallace Mountain in 1900. These two small properties were more or less continuously developed between 1900 and 1909. The Carmi mine was worked sporadically to 1940 with records on the Sally group includes shipments up to 1941.

At the Carmi mine production from 1901 to 1940 totalled 5,480 tons with recovered values of 2,994 ounces of gold, 9,675 ounces of silver, 7,806 pounds lead and 17,498 pounds zinc.

Recorded production from the Bell property on Wallace Mountain starts in 1913 and from 1916 on thru was in production every year. Production exceeded 1000 tons in 1926 and in subsequent years. Production from the Highland Lass was recorded in 1922 and beginning in 1928 production was recorded for each year.

The Bell and Highland properties came under the same management in 1930 and were operated as the Highland Bell mine since 1936. Production from 1936 to 1945 which was mainly from hand sorted ore shipped to Trail afforded 1,583 oz gold, 6024,732 oz silver, and some lead and zinc from the 41,447 tons of ore shipped.



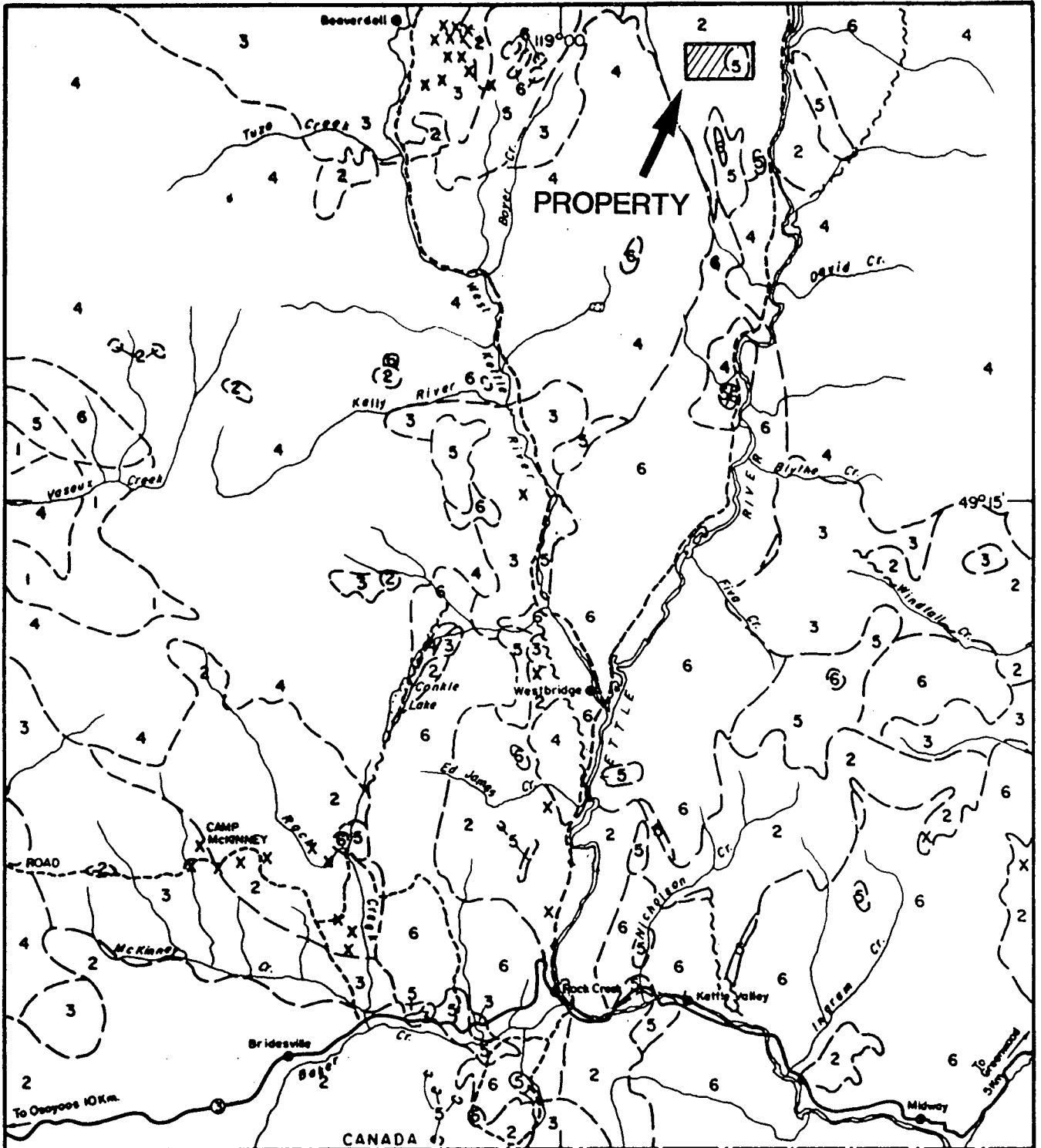


FIGURE 2

**LEGEND**

- 6 ANDESITE, TRACHYTE, MINOR BASALT
- 5 KETTLE RIVER FORMATION
- 4 VALHALLA PLUTONIC ROCKS
- 3 NELSON PLUTONIC ROCKS
- 2 ANARCHIST GROUP
- 1 MONASHEE GROUP
- X MINERAL OCCURRENCES



SOOKOCHOFF CONSULTANTS INC.

SUNDANCE GOLD LTD.

Montana Group

**GEOLOGY & CLAIM MAP**

N.T.S. 82E/7W

0 5 10 15 KM.

SCALE 1:250,000

July '85

Production from the Wallace Mountain deposits have been achieved continuously from the Sally in 1900 to the present where production from the Highland Bell continues at 100 tons per day.

On the Montana Claim Group reference is made in the Minister of Mines Reports on the former crown grants. In the 1900 M.ofM. Report the Montana Colorado et. al. group is mentioned where \$2,000 has been expended in development work.

In the 1901 M. of M. Report reference is made to a 70 foot tunnel and 6 foot winzed developed on the property. An open cut 100 foot to the south and a second open cut is referred to.

There is no known work recorded on this property from the early 1900's work to 1985.

In June 1985 Z.A. Szybinski under the employ of Sookochoff Consultants Inc. located, sampled and reported on the workings.

### GEOLOGY

The general geology of the area is of predominantly the Permian Anarchist Group overlain by minor localized areas of the Cenozoic Kettle River Formation and to a greater extent, and the youngest rocks of the area, the Phoenix volcanic group. The Cretaceous Nelson Plutonic Rocks intrude the Anarchist group as stocks or plugs which are also overlain by the Kettle River and Phoenix groups.

The Anarchist group consists very largely of highly metamorphosed sedimentary rocks but includes also altered greenstones and possibly also altered intrusive rocks. The sedimentary members of the group are the altered equivalents of quartzite, slate and limestone, micaceous quartzites, mica schists, and crystalline limestone. The sheared greenstones possibly represent both intrusive and extrusive types.

Feldspar porphyry "dykes" are also common in the area. The rock is described as a "pale pink to flesh colored, fine grained rock with granitic texture. Quartz is fairly common and feldspar, shreds of biotite, hornblende, small individuals of apatite and some iron ore make up the balance of the rock".

At Camp McKinney, irregular veins of massive to bluish quartz up to several hundred feet long in a general association with the Nelson-Anarchist contact zone are mineralized with pyrite, galena, sphalerite and free gold. One mine - the Cariboo-Amelia produced over a million dollars worth of ore in the years of 1895 to 1903 inclusive.

The gold bearing mineral zones at Camp McKinney are mainly of quartz veins occurring in the schists of the Anarchist series and in general paralleling the strike and dip of the schistosity. The quartz veins are mineralized with pyrite accompanied by galena and zinc blende and carry in places good values in gold. With only pyrite in the veins, the gold values are low.

South of Camp McKinney, gold mineralization is associated with shear zones within volcanic rocks with little or no quartz. The zones are "from 3 to 4 feet wide" and are impregnated with considerable amounts of ankeritic carbonates. Abundant pyrite is disseminated throughout the rock in the vicinity of the shear zones.

On the Bluejay claims within 200 meters west of the southwest corner of the Montana claim a series of pits and shafts were excavated along a N 30 degree W strike along a shear zone. The fracture zone is up to two meters wide heavily oxidized and dipping 45 to 70 degrees to the southwest.

Reported samples from the workings along the 200 m long shear zone (over a 50 m vertical elevation) gold assays range from 0.02 to 1.08 oz Au/ton. In 1983 an 18 Kg sample grading 0.38 oz Au/ton was sent to the Dankoe mill for metallurgical testing.

Placer gold has been derived from the creeks in the Camp McKinney area - more significant ones being McKinney and Rock Creeks.

Crouse Creek (Cedar Creek) within two km west of the Montana claim contains placer gold.

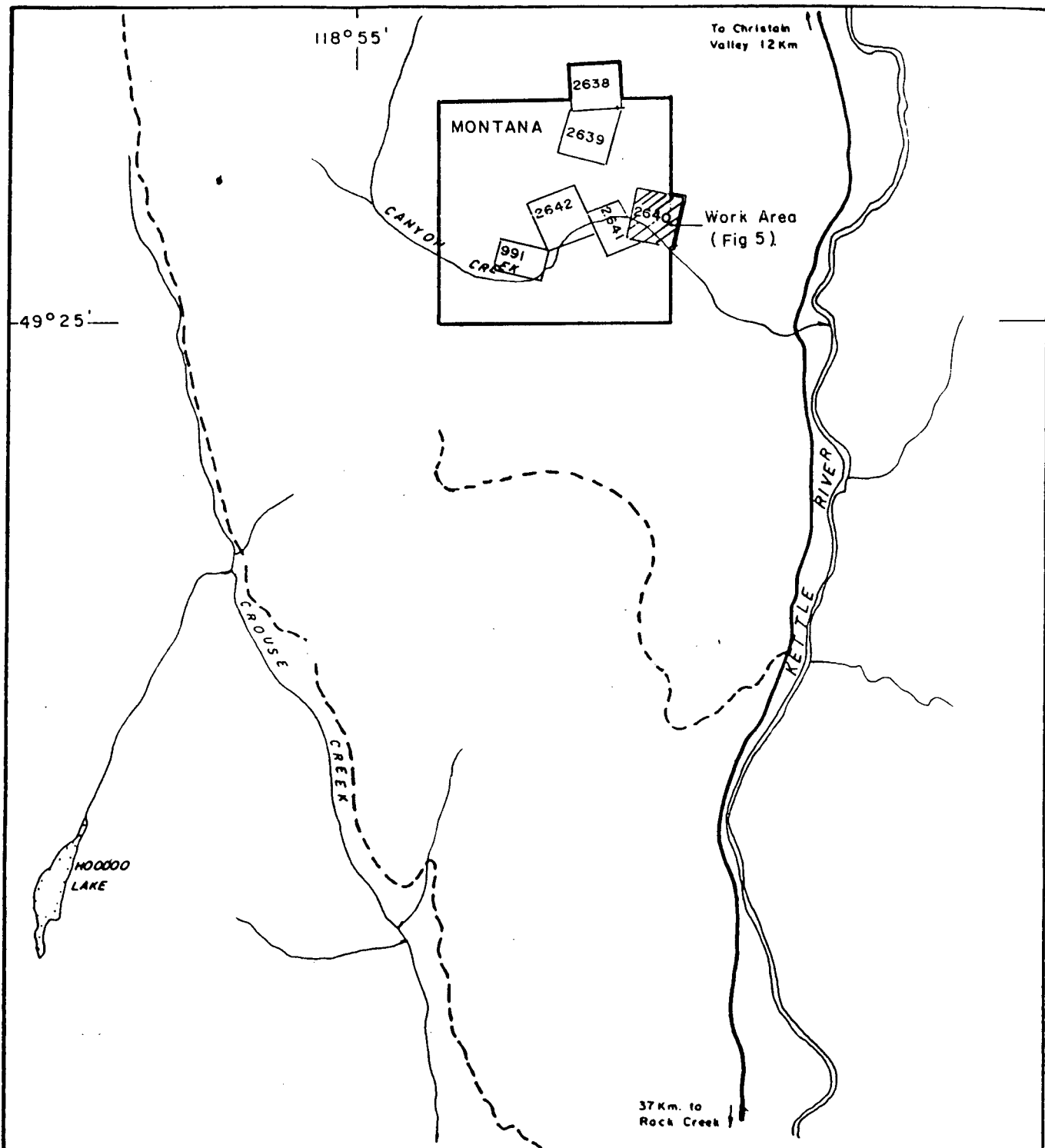


FIGURE 3

SOOKOCHOFF CONSULTANTS INC.  
**SUNDANCE GOLD LTD.**  
 Montana Group  
**INDEX MAP**  
 N.T.S. 82E-7W GREENWOOD M.D., B.C.  
 0 1 2 3 KM.  
 SCALE 1:50,000 July '85

The claim as indicated from Map 6-1957 Kettle River Geology East Half, is underlain mainly by the Anarchist Group with the Kettle River formation adjacent at the southeast.

The Intrusives in the Beaverdell area which is referred to as the West Kettle Batholith is composed of an even grained granitic rock having an average grain size of about 1.5 millimeters. It has a speckled gray appearance due to approximately equal amounts of dark and light colored grains. Some of the feldspar has a pinkish tint.

The Beaverdell stock intruding the West Kettle batholith and occurring at the Beaverdell mines is a light colored pinkish rock resembling granite, having a grain size of about 5 millimeters.

The productive veins of the Beaverdell camp are found in the rocks of the West Kettle batholith. The veins are in zones of altered granodiorite or sodic granite up to 50 feet wide. The adjacent altered rock is soft and appears speckled with small purplish blotches. Abundant development of sericite and clay minerals, chlorite, calcite, epidote and hematite occurs.

The ore occurs in simple veins, composite branching veins and stringer lodes.

The vein hosts medium grained pyrite, sphalerite and galena with some arsenopyrite and some chalcopyrite. Commonly the veins have a banded structure produced by a rude parallelism of sulphide stringers. The parts of the vein that constitute oreshoots contain in addition to the common sulphides visible amounts of silver bearing minerals such as tetrahedrite, pyrargyrite (ruby silver), polybasite, argentite and native silver.

The native silver occurs in and associated with the vein and other minerals and is found throughout a vertical range of at least 1000 feet.

At the Carmi mine the main vein is a well defined fissure from two to 15 feet wide and cuts a gneissic granite formation. It is exposed intermittently on the surface for 2500 feet. The vein filling is for the most part quartz with iron pyrites occurring as the chief mineral within the quartz. A black hornblende dyke parallels the vein and in places is also mineralized. The gold values are apparently associated with the iron pyrites.

In the general area of the Carmi mine subsequent exploration has delineated some 27 million tons of .067% Molybdenum (Mo). The molybdenite occurs with minor chalcopyrite in altered quartz-diorite-granodiorite.

On the Montana Claim Group a tunnel was driven within "...black shaley material occurring between two slip walks in a fine, igneous rock ... mineralized with iron sulphide ... and irregularly distributed ... lenses of quartz of varying sizes carrying chiefly iron sulphides, but occasionally copper pyrites, galena and zinc blende. The values found are said to have been chiefly in gold and silver. ... upon assay gave \$8 in gold and 6 oz in silver per ton." (1901 Minister of Mines report p.1136).

This area previously explored and reported on is located in the reverted Montana crown grant approximately 2.4 km west of the main Christian Valley - Rock Creek (Kettle River road).

The workings are located between the Canyon Creek road and Canyon Creek and consist of adits and open cuts on the northwesterly zones of mineralization. (Figure 5)

Szybinski describes the zones as:

No.1 tunnel located 87 on north of Canyon Creek on a 35-45° southwest slope is two meters long in a direction of 320°. The drift is exploring a highly oxidized zone mineralized with malachite, azurite, pyrite, galena and zinc blende. The mineralization is hosted by a 0.5 meter wide quartz vein striking at 310-320° and dipping 70° NE. The vein can be traced on the surface of the outcrop at 310°.



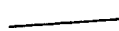
**LEGEND**



Fine grained, acid, igneous rocks.



Greenstones of Anarchist Group



Mineralized quartz vein



ox. quartz lenses



assumed faults

Grab samp#	Cu%	Pb%	Zn%	Ag	Au
G3010	4.98	1.72	5.27	11.42	—

oz/ton

G 3013 / —, —, 2.03, 1.26, .004

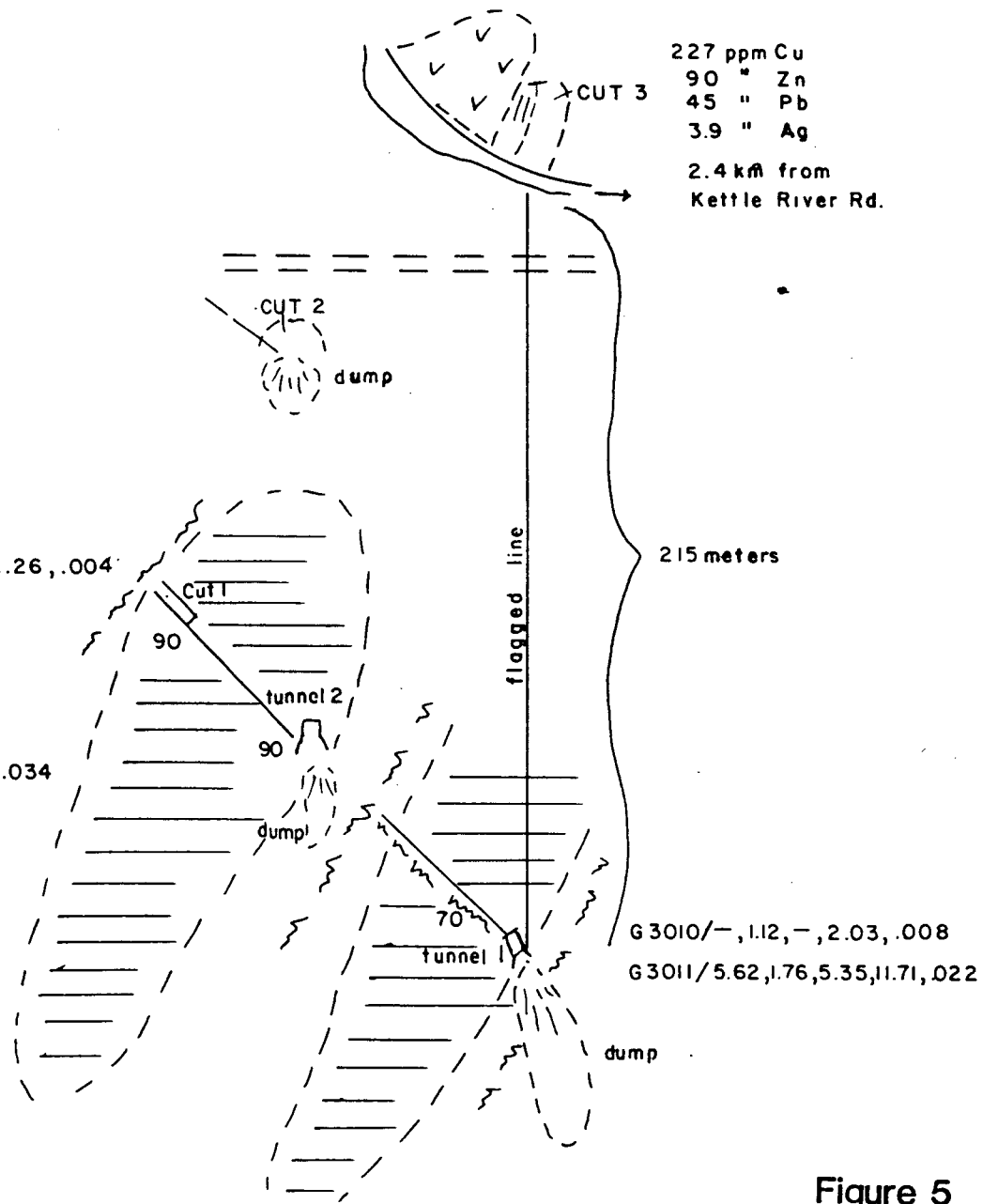
Geology and samples by; Z. A. Szybinski

G3012 / —, —, —, 5.08, .034

**SUNDANCE GOLD LTD.**

**Localization of tunnels & cuts  
on Montana claim**

Scale 1:500



**Figure 5**

Grab samples from the dump taken by Szybinski and described by the writer are as follows:

<u>Sample No.</u>	<u>Description</u>	<u>Assay</u>				
		<u>%Cu</u>	<u>%Pb</u>	<u>%Zn</u>	<u>Ag</u>	<u>Au</u>
					<u>oz/ton</u>	
3010	Drusy qtz w/mod limonite and pyrite	--	1.12	--	2.03	.008
3011	Pockets of sulfides (25%) in a highly oxidized volcanic debris matrix -25%	5.62	1.76	5.35	11.7	.022
3012	Sulfide pockets assoc. w/ a feldspar porphyry carbonated flow	--	--	--	5.08	.034

The writer sampled the tunnel No.1 showing (Fig 4) with results as follows:

<u>Sample No.</u>	<u>Description</u>	<u>Width</u> <u>m</u>	<u>Assay</u>				
			<u>%Cu</u>	<u>%Pb</u>	<u>%Zn</u>	<u>Ag</u>	<u>Au</u>
						<u>oz/ton</u>	
3098	Heavily carbonated lt. gray rhyolite	.3	.60	.01	1.61	.02	--
3097	Qtz veins with lt sulfides	.46	.18	.04	.21	.81	.004
3096	Greenstone w/lt diss py.	.3	.03	.002	.05	.026	--

The footwall zone of gray rhyolite is in contact with a pelitic schist with a gougy brecciated limonite zone. The pelitic schist is also carbonated with lt. sulfides and alachite on the fracture planes.

Tunnel No.2 is situated 25 meters northwest of tunnel No.1 and is at 360° crosscutting the vein. The tunnel is partially caved however the vein exposed at the portal strikes at 315° and dips 90° and is up to 0.8 meters thick. The quartz carbonate vein is mineralized with pyrite and malachite.





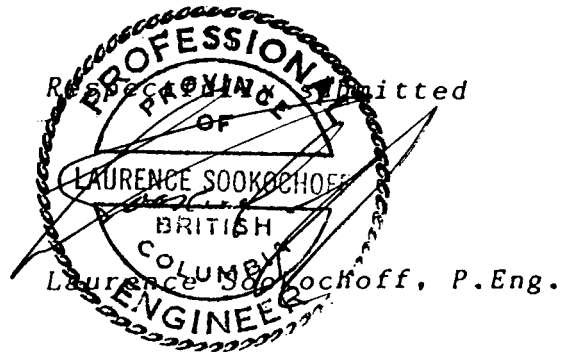
A grab sample from the vein returned 5.08 oz Ag/ton and 0.34 oz Au/ton.

Cut No.1 is 15 meters at 310° from tunnel No.2. A 0.3 meter quartz vein is brecciated and contains pyrite and weak oxidation. A grab sample from the zone returned 2.03% Cu, 1.26 oz Ag/ton and .004 Au/ton.

Cut No.2, 25 meters at 25° from Cut No.1 contains a heavily oxidized one meter wide quartz vein with malachite stain.

At a road cut northwest of cut No.2 a sample of a fine-grained acid igneous rock containing lenses of highly oxidized material returned an assay of 227 ppm Cu, 90 ppm Zn, 45 ppm Pb and 3.9 ppm Ag.

A grab sample of dacitic float material in the vicinity of Cut No.2 returned an assay of 140 ppm Cu, 225 ppm Zn, and .4 ppm Ag.



July 11, 1985  
Vancouver, B.C.



CERTIFICATE AND CONSENT

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist and principal of Sookochoff Consultants Inc. with offices at 311-409 Granville Street, Vancouver, B.C., V6C 1T2.

I further certify that:

1. I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology
2. I have been practising my profession for the past nineteen years.
3. I am registered with the Association of Professional Engineers of British Columbia.
4. The information for this report was obtained from sources as cited under bibliography and from a property examination carried out on June 13, 1985.
5. I have no direct, indirect or contingent interest in the property described herein or in the securities of SUNDANCE GOLD LTD. nor do I expect to receive any.
6. This report may be utilized by SUNDANCE GOLD LTD. for financing purposes.



July 11, 1985  
Vancouver, B.C.



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Interim Exploration Report for Silverleaf Resources Ltd. on the Cann 2 Mineral Claim

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Minister of Mines Reports

1900 p. 879

1901 p. 1136

1902 p. 182

Sundance Gold Ltd.  
Glory Mineral Claim  
Statement of Costs

The Geological Survey on the Glory Mineral Claim was carried out from May 15,1985 to June 30,1985 to the value of:

Geotronic Surveys:Geological mapping & search of workings-	\$ 1750.
L.Sookochoff P.Eng:Geological mapping & sampling - June 13-14,1985	800.
	<hr/>
	\$ 2550.