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**RENO GOLD MINES LIMITED**

[NON-PERSONAL LIABILITY]

**CENTRAL ZEBALLOS MINE  
ZEBALLOS, B.C.**

Property File

092L 039

Report of Examination

of the

G O L D   S T R E A K   G R O U P

formerly known as the

G O L D   S P R I N G   G R O U P

Zeballos, B. C.

To  
Reno Gold Mines Ltd.  
Vancouver, B. C.

By  
Charles C. Starr,  
Sept. 30, 1940.

## GOLD STREAK GROUP OF CLAIMS

formerly known as the GOLD SPRING GROUP.

**LOCATION:** The Gold Streak Group of mining claims is situated in the northern part of the Zeballos district on Vancouver Island, B. C., on Fault Creek which flows into the North Fork of the Zeballos River from the west. It is seven or eight miles from the town of Zeballos by road and trail.

**PROPERTY:** The property consists of four unurveyed claims, Gold Streak Nos. 1 and 2, and Goldspring Nos. 1 and 2, located in September 1940 by Les Smith. These claims cover a substantial part of the Gold Spring Group to which title has lapsed. The group lies a few hundred feet west of the King Midas Group of Crown Granted claims.

**ACCESSIBILITY:** The claims are best reached from the town of Zeballos via the road to the Central Mine, about six miles, thence by the King Midas trail across the Nomash River, then across the North Fork and over a rough steep trail about a mile to the property.

**TIMBER AND WATER:** The claims are heavily timbered, largely with hemlock, but with scattered fir, spruce, cedar, and balsam. During the dry season water is rather scarce except on Fault Creek which flows through the north edge of the property. For most of the year this creek has a considerable flow and a fall of upwards of 600 feet in about 3000. Considerable power could be developed during most of the year.

**TOPOGRAPHY:** The northern part of the claims lies along Fault Creek which has a steep gradient and steep banks on both sides. The claims lie on the steep south bank of the creek and over the ridge to the southward. There are frequent small cliffs and the topography on the whole is quite rough, especially in the northern part.

The following elevations are by aneroid barometer:-

North Fork of Zeballos River at Fault Creek, about	400 Ft.
Fault Creek at Gold Streak Cabin	1155
Lower tunnel on main vein	1515
Upper tunnel on main vein	1730
Ridge above upper tunnel	1850

**GEOLOGY:** The general geology of the district has been worked out by the Geological Survey, chiefly by Drs. Banerft and Gunning.

Briefly summarized, the oldest rocks of the district belong to the Vancouver Group, of Triassic age, which is subdivided into the Karmutsen Volcanics consisting of flows and breccias, which is overlain by the Quatsino Limestone, and it, in turn, by the Bonanza Volcanics, consisting of flows, tuffs, and interbedded argillites. These rocks have been intruded by a granodiorite batholith which strikes northwesterly across the district. Some extensive faulting, probably of pre-mineral age, has occurred along the North Fork of Zeballos

River and along Fault Creek.

The chief development in the district to date has been in the granodiorite and in the Bonanza Volcanics near the granodiorite contact; it is here that, thus far, the highest grade ore has been found. These veins have a general northeast southwest strike.

The Gold Streak Group is underlain by the Karmutsen Volcanics, so far as examined by the writer, but the west end of the property must be near the Quatsino Limestones, if not actually underlain by them. The group is about a mile from the northwest edge of the granodiorite outcrop.

**VEINS:** There is a small (No. 3) vein outcropping just above the trail on Gold Streak No. 2 claim at 1100 feet elevation. The vein outcrops for a few feet only and is up to two inches wide of lean appearing quartz with weak sulphides. The strike is north and south and the dip 85° east.

Another vein (No. 1) is along the common side of Gold Streak Nos. 1 and 2. claims and outcrops in a narrow gully at close intervals for about 350 feet up the steep hillside between elevations 1500 and 1750. The vein strikes approximately north and south and dips 55° east at the lower end and 70° east at the upper end. In outcrop width the vein averages 4½ inches of quartz, plus about a foot of sheared, altered rock and gouge which carries little value.

The quartz shows weak banding and traces of comb structure, and contains coarsely crystalline pyrite, sphalerite, galena, chalcopyrite, and possibly a little arsenopyrite; in places on the outcrop the sulphides are partly oxidised.

Some underground work has been done on this vein, and it will be mentioned again later.

A third vein (No. 2) outcrops at a single point at about the north center of the Gold Streak No. 1 claim, and a hundred feet south of the creek. It strikes N 5° east, dips 70° east, and consists of 18 inches of altered rock with irregular streaks of quartz containing fair amounts of pyrite. The walls are dark, fine grained volcanic. One sample was taken across 18 inches; it assayed 0.14 Oz. Gold per ton.

About sixty feet south of this vein there is an outcrop of massive pyrrhotite in silicified volcanic rock. The extent and attitude of this occurrence is not evident until some work is done on it. It is said that a sample from it showed little value.

A fourth vein has been found along the trail about 175 feet east of the cabin, striking northerly. It consists of silicified volcanic rock with a little quartz and pyrite with a small gouge. It appears to be low grade.



**DEVELOPMENT:** The only development is on No. 1 vein, and consists of two tunnels.

The lower tunnel is at elevation 1515 feet and is 255 feet in length, of which 215 feet is on the vein.

The upper tunnel is at elevation 1730 and is 16 feet in length on the vein. Both tunnels are driven in a southerly direction. The only equipment is a good car and track in the lower tunnel.

**SAMPLING:** The writer took eight samples on the outcrop of the No. 1 vein in 1938, before any work had been done on the property, and 21 samples, recently, from the two tunnels. These samples are shown on the map herewith, in detail. They are not closely enough spaced to give accurate averages, but are approximate.

2 samples over 75 ft. of outcrop average	0.35 ft	1.92	ozGold
6 " " 275 " " "	0.42 "	0.47	"
8 " " 1st 120 ft. of lower tunnel avg.	0.61 "	0.41	"
4 " " 70 ft. of lower tunnel average	0.52 "	1.47	"
4 " " 30 " " " "	0.45 "	0.08	"
5 " " 16 " of upper tunnel	0.38 "	1.69	"

Near the center of the lower tunnel the vein steps over from a N 5° W fissure to a due north and south fissure, the latter dipping slightly steeper than the first. The vein makes an abrupt turn at the step-over and is as wide and strong as ever; there is no sign of faulting. The vein is poor at the face of this tunnel, and while the fissure is strong there is very little mineralization. In the upper tunnel the vein is strong at the face.

**GENERAL NOTES:** The No. 1 vein appears strong and persistent, with generally fair mineralization. It is however narrow and the values thus far found are below commercial grade. It is probable that it can be traced further north and perhaps south with a reasonable amount of trenching, and this work might expose a better grade of ore.

The No. 2 vein is visible at one point only for a length of about six feet. Here, it appears to be strong, but is low grade and contains a rather small proportion of quartz and sulphides, may be found to be better at other points. It is well worth tracing by open cuts to see if any better values can be found.

The other two veins are not particularly promising.

All known veins in this northern section of the district have a nearly north and south strike, in contrast to those in the central part of the district which strike northeast to easterly. Little development has been done on the north-south veins, but thus far no ore comparable in value to the high-grade found in the northeast veins is known.

The north-south veins appear to have been formed under somewhat different conditions from the northeasterly striking

veins and are likely somewhat older. They lack the comb structure of the other veins and the sulphides are usually more coarsely crystalline.

CONCLUSION: No ore of commercial width and value has yet been exposed on the property, but there are still possibilities in other parts of both No. 1 and No. 2 veins which have not yet been exposed, and which may be exposed by a reasonable amount of surface trenching.

Respectfully submitted,

*Chas. C. Starr*

September 30, 1940.

*Page 4 of report  
given Lee Smith.  
- other pages as to Res. Co.  
Said to be lost  
Jan 1946*

veins and are very likely somewhat older. They lack the comb structure of the other veins and the sulphides are generally more coarsely crystalline.

**CONCLUSION:** Since no commercial ore has yet been exposed on the property and there is no definite reason to expect undeveloped parts of the vein to be essentially better there is little incentive for further development. There are however possibilities of finding ore of better grade by tracing No. 1 and No. 2 veins by surface trenching, but these possibilities are hardly good enough to make the property attractive to a mining company.

Respectfully submitted,

*Chas. C. Starr*

September 30, 1940.

For Cover Page use plain paper and OMIT

"To Reno Gold Mines Ltd  
Vancouver, B. C."

For "Conclusion" on the original substitute the following: •

CONCLUSION: No body of ore of more than marginal width and value has yet been exposed on the property, but there are still good possibilities remaining, especially on No. 1 vein, such as possible creshoots at the surface between the lower tunnel and Fault Creek, and above the upper tunnel, where the vein is in both cases masked by ~~silt~~ soil and debris.

Also, the upper tunnel shows good assays throughout, over narrow widths, which might continue or improve ahead.

The lower tunnel has for the most part been driven under a quite low grade outcrop and has not been extended far enough to cut the better ore of the upper tunnel if it should have a rake to the south. There is no indication of what the rake may be *until the upper ore has been encountered in the lower tunnel*

These possibilities in my opinion justify a further limited amount of exploratory work at a cost of not over \$7,000, which should consist of the following:-

1. Trenching across the covered outcrops at 50 foot intervals wherever the overburden is not too thick.
2. Drifting a further 150 feet, or more, south along the vein in the lower tunnel.

The results of this work should be used to determine further procedure.

Respectfully submitted,

September 30, 1940

*Report on Gold Streak Group" with this  
"Conclusion" substituted given Les. Smith Jan 21, 1946  
acs*

Property File

092 L 039

Goldsprings

REPORT ON THE  
GOLD SPRING GROUP OF CLAIMS

(Knutsen Property)

ZEBALLOS,

VANCOUVER ISLAND,

B. C.

To

Haida Gold Mines Ltd.  
Standard Bank Building,  
Vancouver, B. C.

By

Charles C. Starr,  
Yorkshire Building,  
Vancouver, B. C.



## GOLD SPRING GROUP OF CLAIMS.

**LOCATION:** The Gold Spring group of mining claims is situated in the northern part of the Zeballos district on Vancouver Island, B. C., on Fault Creek which flows into the north fork of the Zeballos River from the west. It is seven or eight miles from the town of Zeballos by road and trail.

**PROPERTY:** The property consists of six unsurveyed mining claims, located two claims wide and three long in a west-northwesterly direction. The common side-line of the claims lies close to Fault Creek on the west bank. The east end of the group adjoins the Big Ben Nos. 2 and 3 claims of the King Midas property which is Crown Granted.

The title to these claims was not examined by the writer, nor was any attempt made to survey them. They are believed, however, to be valid locations and to lie about as sketched on the small map herewith.

**ACCESSIBILITY:** The claims are best reached by road from the town of Zeballos to the end of the trail to the Central Zeballos Mine, 4½ miles, then along that trail for nearly two miles, then along the King Midas trail for 1½ miles to the cabin, thence across the North Fork of the Zeballos River and up Fault Creek. The trail is fairly good as far as the King Midas cabin and, except for a swampy stretch of a couple of hundred feet, could be traveled by horses. Beyond the cabin the trail is very poor or entirely lacking. It is said that a trail could be made on the north side of the main Zeballos River from the four-mile point on the road, which would be shorter and have a better grade.

**TIMBER & WATER:** The claims are heavily timbered, largely with hemlock, but with scattered fir, spruce, cedar, and balsam. During the dry season water is rather scarce except on Fault Creek which flows through the center of the property. This creek has a considerable flow, although there is no data on the exact amount, and a fall of upwards of 600 feet in about 3000. Considerable power could be developed here.

**TOPOGRAPHY:** The center line of the claims lies along Fault Creek which has a steep gradient, and steep banks on both sides. The claims lie mostly on the steep hillsides, but near the east end extend somewhat over the ridges. There are frequent small cliffs and the topography on the whole is quite rough. The following elevations are by aneroid barometer, -

North Fork Zeballos River opposite the claims	400 feet.
Outcrop of No. 3 vein, near location line	1100 "
Lower end of outcrop of No. 1 vein	1500 "
Ridge just above upper end No. 1 vein outcrop	1850 "
Outcrop of No. 2 vein	1400 "
Fault Creek near No. 2 post Gold Spring No. 3	1325 "

**GEOLOGY:** The general geology of the district has been worked out for the Geological Survey, chiefly by Dr. M. F. Bancroft (Geological Survey, Memoir 204.)

Briefly summarized, the oldest rocks of the district belong to the Vancouver Group, of Triassic age, which is subdivided into the Karmutsen Volcanics consisting of flows and breccias, which is overlain by the Quatsino limestone, and it in turn by the Bonanza Volcanics, consisting of flows, tuffs, and interbedded argillites. These rocks have been intruded by a granodiorite batholith which strikes northwesterly across the district. Some extensive faulting, probably of pre-mineral age, has occurred along the North Fork of the Zeballos River and along Fault Creek.

The chief development in the district to date has been in the granodiorite and in the Bonanza Volcanics near the granodiorite contact; it is here that, thus far, the highest grade ore has been found. These veins have a general northeast-southwest strike.

The Gold Spring group is underlain by the Karmutsen Volcanics so far as examined by the writer, but the west end of the property must be close to the Quatsino Limestones, if not actually underlain by them. The group is about a mile from the northwest edge of the granodiorite.

**VEINS:** There is a small (No. 3) vein outcropping just above the Location Line near the east end of the Gold Spring No. 4 claim at 1100 feet elevation. The outcrop only extends a few feet and the vein is up to two inches wide of lean appearing quartz showing a little scattered pyrite; this is bordered by a foot or more of strongly sheared and altered rock. The strike of the vein is north and south and the dip 85° east. It lies in the Karmutsen volcanics. No samples were taken on account of the narrow width and the lean appearance.

Another vein (No. 1) is situated near the center of Gold Spring No. 4 claim and outcrops in a narrow draw at close intervals for approximately 350 feet directly up the steep hillside (about 37° slope) on the south side of Fault Creek, from elevation 1500 to 1750. The lowest exposure of the vein is estimated to be about 350 feet south of the location line of the claim. The vein strikes approximately north and south and dips 50° east at the lower end and 70° east at the upper end.

In width the vein averages 4½ inches of quartz, plus about one foot of sheared, altered rock and gouge along the walls which are dark, fine grained, greenish, volcanic rocks. It is reported that samples of this material contain only a few cents per ton in gold.

The quartz shows weak banding and a <sup>little</sup> comb structure and contains coarsely crystalline pyrite, sometimes in considerable amount, with a little sphalerite (zinc sulphide); near the upper end of the outcrop the sulphides are mostly oxidised and leached out.

Eight samples were taken from this vein, several of them consisting of two cuts across the vein a few feet apart.

The following tabulation shows the locations and assays of the samples, the distances given being approximate slope distances from the summit of the ridge:-

Sample No.	Dist'n.	No. of Cuts	Dist. Apart	Width Inches	Oz. gold per ton	Remarks
355	140	2	10 ft.	4	2.34	Strongly oxidised, leached.
356	200	1		4	1.50	" "
357	275	1		4½	0.90	Slightly oxidised
358	300	1		4	0.39	Fairly fresh sulphides
359	310	1		3½	0.19	" " " banded.
360	400	2	8	5½	0.74	Coarse sulphides, tr. oxides
361	450	2	5	5½	0.41	" " " "
362	475	2	2	6	0.15	" " " "
Average .....				4½	0.78	

No work whatever has been done on this vein.

A third vein (No. 3) outcrops at one point only in a narrow gully about 30 feet west of the northeast corner of the Cold Spring No. 6 claim, and about a hundred feet south of the creek.

It strikes N 5° E, dips 70° east, and consists of 18 inches of altered rock with irregular streaks of quartz containing fair amounts of pyrite; it lies between walls of fine grained, green volcanic rock. One sample, No. 363, was taken across 18 inches and is made up of two cuts across the vein three feet apart; it assays 0.14 Oz. gold per ton.

About sixty feet south of this vein there is an outcrop of massive pyrrhotite in silicified volcanic rock. The extent or attitude of this occurrence is not evident until some work is done on it. It is reported that a sample from it showed little value.

The No. 1 vein appears strong and persistent, though narrow, with fair mineralization as far as it is exposed and there is good reason to expect that it can be traced a considerable distance further both north and south with a limited amount of trenching. In addition to tracing the vein, a few open-cuts should be blasted into the present outcropping portion in order to obtain more representative samples under the partially oxidised surface.

The No. 2 vein is visible at one point only for a length of about six feet. Here, it appears to be strong, but is low grade and contains a rather small proportion of quartz, but may be found to be better at other points. It is decidedly worth tracing and prospecting by trenching and open-cuts in both directions along its strike.

Tunneling on both of these veins should be deferred until the surface work is well advanced and, in fact, should be dependent on the results obtained in that work.

NOTES: All known veins in this northern section of the district have a nearly north and south strike, in contrast to those in the central part of the district which strike north-east to easterly. Little development has been done on the north-south veins, but thus far no ore comparable in value to the high-grade sometimes found in the northeast veins is known, the maximum assays seldom running more than 3 Ounces gold per ton. Something better than 3 ounces gold per ton average in a four-inch vein would be necessary to make a profitable operation. The limited amount of work that has been done on this type of vein does not prove anything except that development of these veins is somewhat more of a gamble than it would be in the northeasterly striking veins.

The north-south veins appear to have been formed under somewhat different conditions from the northeasterly striking veins and are very likely somewhat older. They lack the comb structure of the other veins and the sulphides are generally more coarsely crystalline.

It should be noted that no ore of a profitable working grade, taking the narrow widths into account, is shown by any of the samples taken on the property, therefore a better grade or width of ore must be developed before the property can become a profitable mine, and that, under these conditions, development is highly speculative. Yet a certain amount of development is, in the writers opinion, well justified.

The following recommendations are based on the assumption that there are no immediate property payments to be made, and that later payments are required only if development shows sufficiently favorable results to justify them. In case any large property payments are required, the following recommendations are nullified, and I would recommend that the property be dropped.

RECOMMENDATIONS & CONCLUSION: The present showing on the Gold Spring Group is moderately attractive, and in my opinion justifies some development, the extent of which must be governed by the results obtained as work progresses.

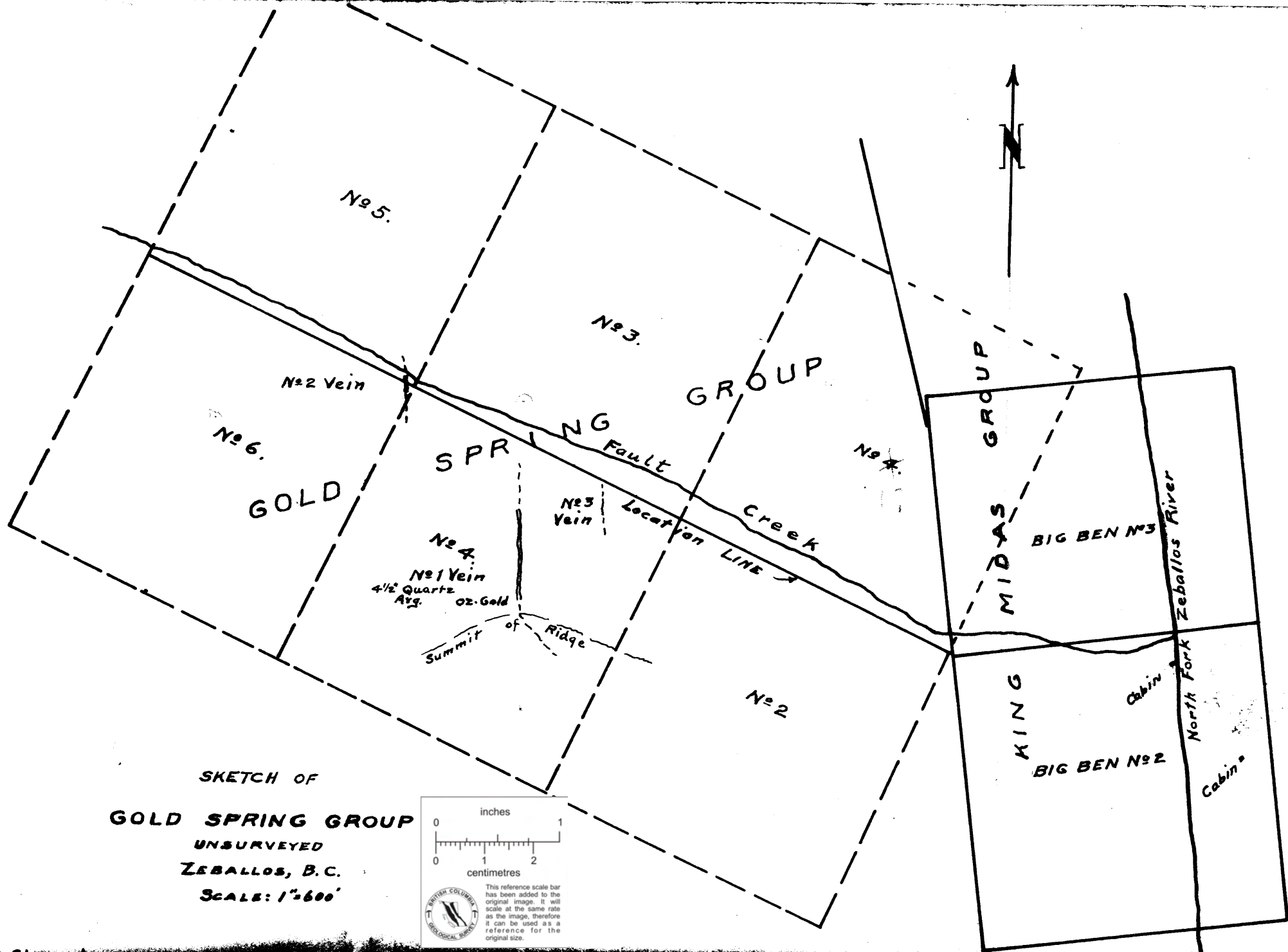
Subject to the conditions outlined in the preceding paragraph, I recommend:-

- (1) Tracing the extensions of the No. 1 vein north and south by trenches and open-cuts, and open-cutting the present outcrop at intervals to permit more representative sampling.
- (2) Tracing the extensions of the No. 2 vein north and south by trenches and open cuts.
- (3) Tunnelling on both veins underneath the best surface exposures. This tunnel work to be deferred until the surface work is well under way and then undertaken only if the results obtained are as favorable as may reasonably be expected.

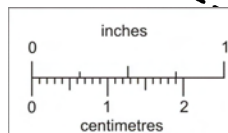
Respectfully submitted,

*Chas. C. Starr*  
June 29, 1938.





SKETCH OF  
**GOLD SPRING GROUP**  
 UNSURVEYED  
 ZEBALLOS, B. C.  
 SCALE: 1"=600'



This reference scale bar  
 has been added to the  
 original image. It will  
 scale at the same rate  
 as the image, therefore  
 it can be used as a  
 reference for the  
 original size.