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GEOLOGICAL REPORT

on

STIRRUP CREEK PROPERTIES

92 O 1 CLINTON MINING DIVISION B.C.

51° 06'N, 122° 13'W

for

AURUN MINES LTD

by

Charles A.R. Lammle, PEng

26 October 1986

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fig 1
TASEKO LAKES
92-O

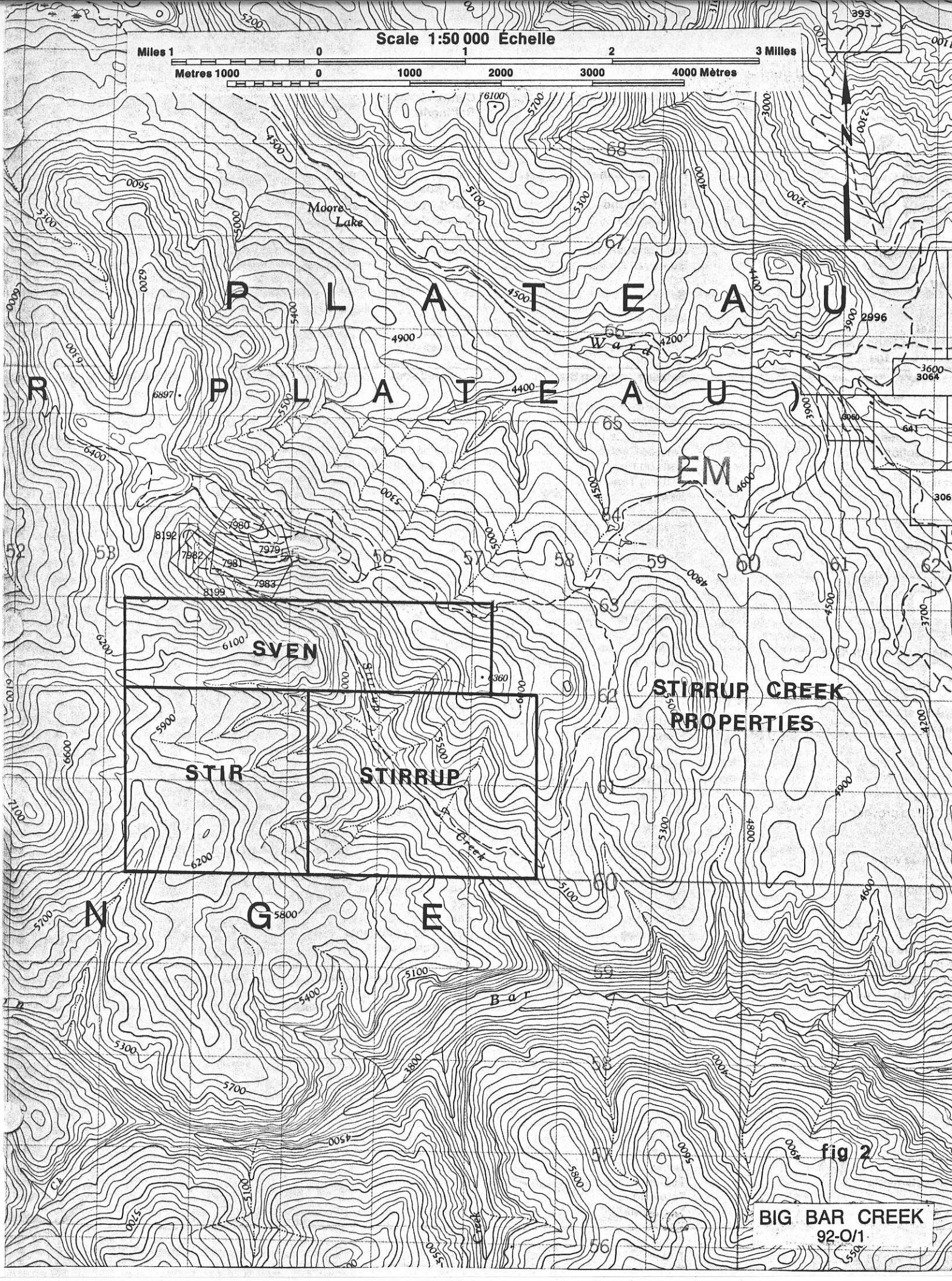

fig 2

BIG BAR CREEK
92-O/1

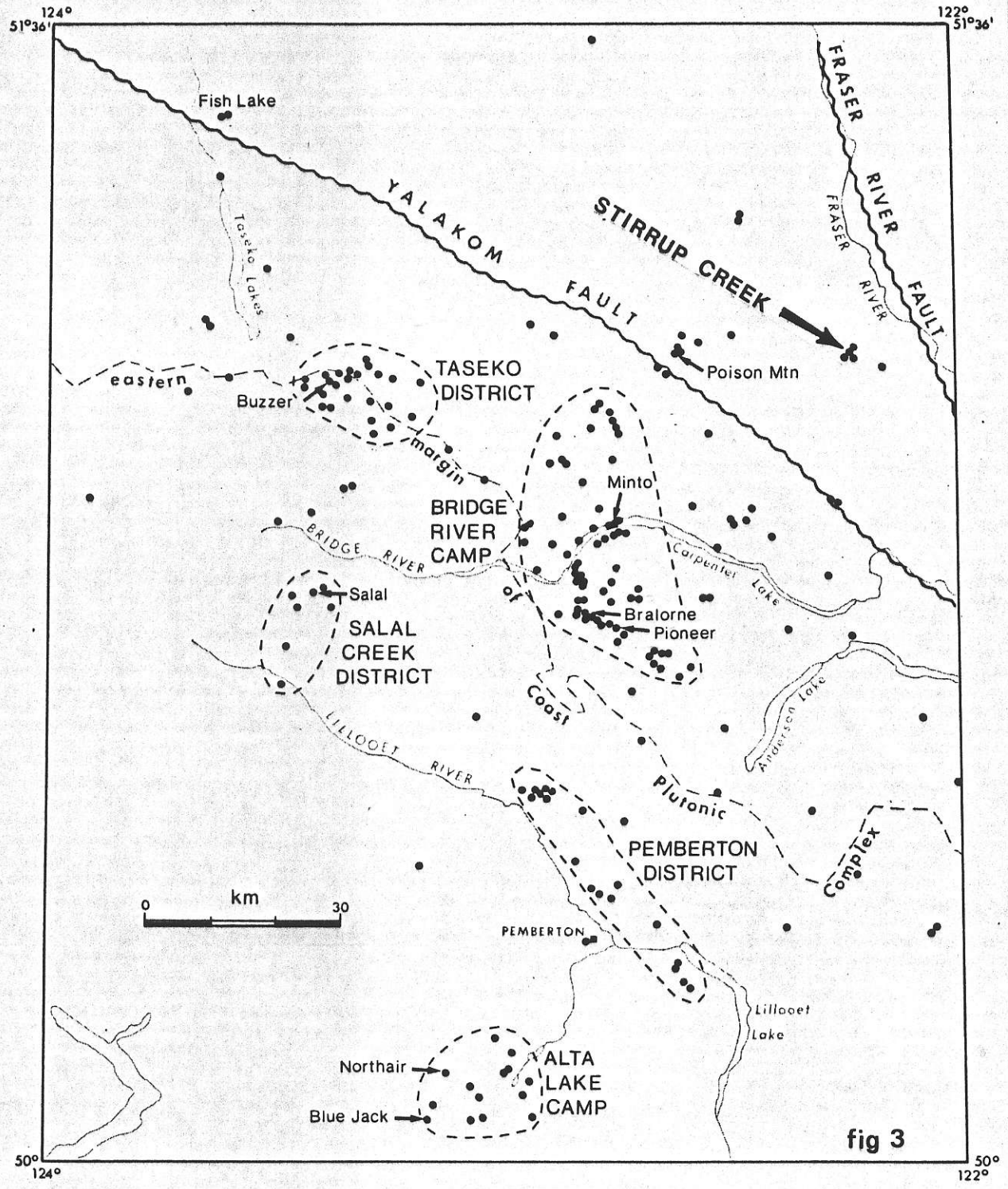

FIG. 3. Redrafted computer-generated plot of all mineral deposits (dots) in Pemberton and southern two-thirds of Taseko Lakes map-areas. Dashed lines show approximate outlines of camps.

After Woodsworth, Pearson, and Sinclair; 1977

GEOLOGICAL REPORT

STIRRUP CREEK PROPERTIES
AURUN MINES LTD

INTRODUCTION AND SUMMARY

Stirrup Creek, once known as the north fork of Watson Bar Creek, is located 45 km west of Clinton, B.C., in the Clinton Mining Division, or alternatively, about 30 km southeast of the new epithermal gold mine at Blackdome Mountain. It is known principally because of placer gold - some 70,725 gm of reported production during the period 1916 to 1940, and there is still seasonal placer work being done on the creek. It is also well known because of a group of 6 crown granted mineral claims staked originally by professors from the University of British Columbia, and because of the published detailed geochemical and biogeochemical studies made in recent years by one of those professors on the low grade epithermal gold mineralization there.

Modern exploration work including detailed geochemistry, trenching and drilling has been done on the crown grants in past years by Placer Development, Chevron and Rio Tinto, and more recently on adjoining claims geological and geochemical reconnaissance work has been done by Brinco and other individual property owners. Additionally, on claims 8 km to the southeast along Watson Bar Creek, much detailed work has been done on similar epithermal gold occurrences in similer host rocks by Utah Mines, E&B, and Dome. In spite of this work, only small sub-economic amounts of gold have been discovered, but more significantly, the source of the placer gold on Stirrup Creek has not yet been found.

The writer's work in the area suggests that the most likely area to search for the Stirrup Creek gold is close to the south margin of the crown granted claims near the upstream cutoff point of the placer gold. Aurun Mines owns the 16 unit Stir Claim in this area, and has the opportunity to option the crown granted property, as well as two others - the 8 unit Sven Claim and the 20 unit Stirrup Claim.

It is recommended that a favourable option be negotiated for all of these available claims, that some additional protective claims be staked, and that a comprehensive etaged exploration be initiated on the package. The recommended program would take the form of a first stage of work consisting of line cutting, geology, geochemistry and geophysics; and a second stage contingent on achieving encouraging results from the first, of fill-in geology, geochemistry, geophysics, trenching and drilling. As outlined, the first stage is estimated to cost $88,700 and the second contingent stage, $268,000.

CONCLUSIONS AND RECOMMENDATIONS

1. It is concluded that the best remaining exploration possibilities would be within or along strong easterly- to northeasterly trending faults, because:

   (a) the best visible mineralization - Sb - is in small irregularly silicified shears with that attitude,

   (b) many of the adits driven by the old timers followed small faults and fractures with that direction,

   (c) many of the best assays from bedrock come from fault zones or near them,

   (d) the high grade Rio Tinto float appears to have been a silicified portion from a fault,

   (e) the best stream sediment geochemical results are reported to have come from near fault zones.

2. It is concluded that the best area to explore for such strong faults would be very close to the upstream cut-off of the placer gold because:

   (a) the placer gold is reported to be angular, and presumably has not moved far,

   (b) the "V" shape of the "hanging" Stirrup Creek valley suggests that stagnant ice rather that moving ice occupied it, and hence that transport in the valley by glacial movement is minimal.

3. It is allowed that exploration possibilities for large tonnage low grade mineralization exists beneath the anomalous soils (presumably underlain mainly by quartz-feldspar porphyry) along the divide, but these possibilites are relegated to a low order because:

   (a) antimony-bearing sheares appear to die out in the quartz-feldspar porphyry,

   (b) small shears erratically mineralized with gold and followed underground by old-time miners appear to die out in the quartz-feldspar porphyry,

   (c) the appreciable trenching and side-hill trenching effort in the contact area failed to disclose any important mineralization in the quartz-feldspar porphyry,

   (d) two drill holes on the summit area did not appear to indicate important mineralization.

In accordance with the foregoing conclusions, the following two-stage contingent program with estimated costs is recommended, the second stage conditional on achieving encouraging results from the first:

STAGE 1.

Line cutting	58km @ $275/km	$16,000
Magnetometer & EM surveys	30 days @ $250/day	7,500
Instrument rental	2 mo @ $1000/mo	2,000
Geochemical sampling	30 days @ $200/day	6,000
Geology and supervision	4 months @ $4000/mo	16,000
Geochemical analyses	1100 samples @ $12/sample	13,200
Transportation	3 mo @ $1500/mo	4,500
Sustenance	200 man days @ $20/man day	4,000
Freight		1,000
Supplies		2,000
Communications		500
Head Office expense		8,000
Contingencies		8,000
Total Estimated Cost, Stage 1.		$88,700

STAGE 2. (Contingent on encouraging results from Stage 1.)

Fill-in line cutting	allow	$ 8,000
Magnetometer and EM surveys	allow	4,000
Instrument rentals		1,000
Geochemical Sampling	allow	4,000
Senior Geologist	6 mo @ $4000/mo	24,000
Assistant Geologist	4 mo @ $3000/mo	12,000
Geochemical Analyses	allow	7,000
Transportation	allow	7,000
Sustenance	allow	6,000
Freight	allow	4,000
Supplies	allow	5,000
Communications	allow	1,000
Tractor-excavator	150 hr @ $140/hr	21,000
Drilling	1500m @ $75/m	112,000
Core and rock assays	allow	8,000
Head Office expense	allow	22,000
Contingencies	allow	22,000
Total Estimated Cost, Stage 2.		$268,000

PROPERTY

The subject properties of this report are:

CLAIM	UNITS	AREA	RECORD NO.	EXPIRY DATE
Stir*	16		2046	31 July 1987
Sven**	8			
Stirrup**	20			
ASTONISHER CG**		17.20 ha	L.7979	
MONITER CG**		13.72 ha	L.7980	
CHEVALIER CG**		20.49 ha	L.7981	
AJAX CG**		12.27 ha	L.7982	
MONTY CG**		10.29 ha	L.7983	
SUN FRACTION CG**		9.54 ha	L.8199	
land lot**			L.8192	

NOTE * denotes wholly owned by Aurun by staking.
** denotes available for option by Aurun.

The writer has examined a number of the legal corner and other perimeter marker posts and from these, it can be concluded that the claims appear to be properly and validly staked.

LOCATION AND ACCESS (Fig 1 & 2)

The properties start from the divide at the headwaters of Stirrup Creek and extend downstream across the placer ground (held by other interests) for a distance of about 5 km. This is at latitude 51° 06'N and longitude 122° 13'W, with a range in elevation from 1500m to 2000m, all in Clinton Mining Division. Airline distance from Clinton is about 45km in a direction nearly due west.

Access is west from Clinton to the Big Bar ferry across the Fraser River, about an hour long drive, and then generally southerly to the Reynold's ranch, then briefly south along the road to Lillooet, and then westerly along a poor tortuous road to the property, another hour long drive. At the property, the road loops back upon itself, providing good access to the placer area and the crown grants. The portion of this road beyond the ranch requires 4x4 vehicle, particulary in wet weather when portions of it can quickly become impassible.

A number of ruined log cabins were built decades ago along the gold-bearing section of Stirrup Creek and are no longer useful. A good but small cabin on L.8192 (the "farm") may be used to advantage with the permission of the owners.

GENERAL GEOLOGY (Fig 3)

The general area is underlain by the Lower Cretaceous Jackass Mountain Group, a sedimentary assemblage of graywacke, argillite, sandstone, siltstone, and occasionally conglomeratic strata - erosional detritus from volcanic and igneous rocks. These sediments occupy a portion of the graben along the Fraser River in a position where very strong splays from the major Fraser River Fault System trend northwesterly along the eastern front of the Coast Mountains. One of these strong faults, the Yalakom Fault might have as much as 200km of right lateral displacement along it.[1]

The Jackass Mountain Group, for the most part, is relatively unexplored and unknown, for the literature describing it generally does not mention intrusives, alteration, or mineralization. It is known to be an environment favourable for porphyry copper mineralization, however, for two such prospects are known, Poison Mountain and Fish Lake, each of which have associated gold mineralization. Also the general area may possibly be part of a regional area of zoned mineralization extending from the Bralorne and Gold Bridge areas - zoned mineralization characterized by the well known Bralorne gold mineralization which is overlapped to the northeast by a broad area containing antimony mineralization, and both of which are in turn overlapped, again to the northeast by a broad area of weak mercury mineralization.[2] A prospect on Watson Bar Creek, 9km southeast of Stirrup Creek, has a large argillic, propylitic and silica alteration aureole associated with small intrusive masses and much fracturing, and hence might likely be the surface expression of an unroofed porphyry occurrence.

LOCAL GEOLOGY

The Stirrup Creek area is underlain by typical sediments of the Jackass Mountain Group. These are intruded by an irregular small stock of leucocratic quartz-feldspar porphyry in the area of the topographic divide between Stirrup and Ward Creeks, and a large number of irregular dykes and possibly sills of this stock extend downslope southwesterly across the bedrock and placer workings and continue an unknown distance, under overburden, upslope on the southwest side of Stirrup Creek. Other dark green diorite

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[1] Tipper, H.W., 1969, Mesozoic and Cenozoic Geology of the Northeast part of Mount Waddington Map-Area, (92N), Coast District, British Columbia, G.S.C. Paper 68-33, 103 p.

[2] Woodsworth, F.J., Pearson, D.E., and Sinclair, A.J., 1977, Metal Distribution Patterns across the Eastern Flank of the Coast Plutonic Complex, South-Central British Columbia, Econ. Geol., vol. 72, pp 170-183.

porphyry dykes or intrusive masses, partly with fault contacts, have been found in the creek workings, particularly on the southwest side of the creek. The general attitude of the sedimentary strata is east to northeasterly with dips at low angles, generally 30° or less, to the north and northwest.

The contact zone of the feldspar porphyry with the graywackes and argillites trends generally along the ridge forming the topographic divide and shows effects of weak baking rather than hornfelsing or metasomatism. However, a conspicuous low-grade aureole of argillic alteration and bleaching is present, and most of the contact rock are rusty weathering because of weak, fracture controlled pyrite-arsenopyrite mineralization. Pervasive silicification is absent, and quartz in the porphyry appears to be depleted near the contact. The diorite porphyry dykes do no appear to have had appreciable contact sffects either, some having fault contacts.

Minor silicification is locally present, however, in small shears and joints particularly near the contact. Tiny quartz veinlets have been exposed by extensive ground sluicing, and old maps show two spot references to chalcedony in carbonatized sediments in the sluiced trenches. There is no evidence of any extensive silicification, moreover, there is almost no float quartz. Small amounts of barite have been identified, however.

MINERALIZATION

Very small amounts of visible gold mineralization has been reported in some of the tiny quartz veinlets exposed in the carbonatized rocks, and a little has been found on rusty fracture surfaces in the weathered quartz-feldspar porphyry, and a rare silver-bismuth telluride - wehrlite - has also been identified. Small shears close to and paralleling feldspar porphyry dykes along the divide southeast of the saddle are erratically mineralized with coarse grained stibnite up to widths of ¼m, pinching and swelling, and over strike lengths of a few metres, but assays indicate no associated gold mineralization. Cinnabar with some barite has been found in place in carbonatized rocks, and by panning on the southwest side of Stirrup Creek.

The best reported find (1969, Rio Tinto) was a piece of silicified float from near the source of Stirrup Creek; it reportedly contained mioron-sized gold assaying 22 gm/tonne. This discovery of this float generated an appreciable exploration effort on the crown granted claims which included trenching and about 490m of percussion drilling in 9 holes, two of which were abandoned short of planned depths because of water problems, 2 diamond drill holes totalling 183m, 426 rock chip samples and 989 soil samples, and the best result of this work was a 15m section of rock containing 1.4 gm/tonne, 3m of which had 3.4 gm/tonne. The general results of the drilling was quite disappointing. A half-dozen

short adits on the crown granted claims, one with a winze, follow very thin joint controlled leads containing sporadic gold values.

Placer work during the interval between 1916 and 1940 produced a reported 70,725 gm (2,274 oz). Placer work continues seasonally on the creek, when water is available in sufficient amounts. The gold has been described as generally coarse ,about 2-3 gm in size, and to be angular and of unusual purity, about 892 fine. More recent work[3] indicates 930 fine, the impurities being mainly copper and mercury.

GEOCHEMISTRY

Soil and plant geochemistry of the prospect are very interesting, and have been very closely studied. The main anomalous area lies astride the topographic divide between Stirrup and Ward Creeks, and this coincides in position and alignment with the contact between the feldspar porphyry and the sedimentary rocks, which as mentioned earlier, is an area of argillic alteration and rusty weathering. Much of the area on the Stirrup side of the divide is a dry, windswept alpine meadow; much of the area on the Ward side is supports a growth of stunted pine and fir.

Here arsenic in soils forms a large coherent anomaly 1200 metres long by 500 metres as measured along the 100 ppm contour, the length being along the ridge. The higher values are close to the contact; lower order values trail-off into broadar areas down-slope on the Ward side.

Gold in soils exceeding a remarkable 1.0 ppm forms a number of discrete areas within the arsenic anomaly. An area of some 10 ha (25 acres) is underlain by soils containing 0.5 ppm Au or more. An area of 40 ha (100 acres) has soils containing 50 ppm As or more, and about 20 ha (50 acres) has soils containing 125 ppb Hg or more. These remarkably strong anomalous areas have been explored by trenching and limited drilling with disappointing results.

Interesting recent biogeochemical work[4] documents the prasence of a unique cyanogenic perennial plant, the Mountain Phacelia, which in the area contains highly anomalous amounts of gold. It is

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[3] Knight, J., and McTaggart, K.C., 1986, The Composition of Placer and Lode Gold from the Fraser River Drainage Area, Southwestern British Columbia, C.I.M.M., vol 1, no. 1, pp 21-30.

[4] Warren, H.V., 1982, The Significance of a Discovery of Gold Crystals in Overburden, The Assoc. of Exploration Geochemists, Precious Metals in the Northern Cordillera Volume, pp 45-51.

believed that the gold dissolved and hence remobilized by this plant migrates progressively downslope, eventually reaching a zone of marked changes in soil chemistry, where it recrystallizes. Along the margins of a swampy area downslope from the gold-bearing plants, careful panning has yielded abundant fine faceted gold crystals, adding credence to the theory.

Small antimony anomalies within the arsenic anomaly reflect the known stibnite-bearing veins, but mercury is not markedly anomalous in this area. Elsewhere, on the southwest side of Stirrup Creek headwaters in a ground sluiced area, a little cinnabar has been found with barite in carbonatized rocks.

Bearing importantly on interpretation of these areas of anomalous soils is the direction of glacial transport: glacial geomorphology maps[5] the direction of movement of the Cordilleran ice sheet to have been north-northeasterly in this vicinity. Interestingly, Stirrup Creek itself follows a markedly "V" shaped rather than "U" shaped valley which trends more or less perpendicular to the direction of ice movement, and it is "hanging" about 450 metres in elevation above its junction with Watson Bar Creek. A possible explanation for this would be that at the time of the main ice sheet, Stirrup Creek valley was filled by stagnant ice, and the principal ice movement was at a high elevation, perheps mainly above 2000 metres in elevation. A few conspicuous erratics occur above this elevation, and lower in the valley most of the unconsolidated material appears to be local. These factors would help account for the trailing-off of the arsenic in soils anomaly on the Ward Creek side of the divide, and it would suggest the main exploration target indicated by the soils anomalies would be along the intrusive contact which is where most of the ridge top trenching has been done. It would also suggest that the placer gold has not travelled far, and consequently that the most probable place to search of the source of the placer gold would be close to the upstream cut-off; much of the ground sluicing has been done just above the limit of the bulk of the placer digging.

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[5] Tipper, H.W., 1971, Glacial Geomorphology and Pleistocene History of Central British Columbia, G.S.C. Bull. 196, 89 p.

WORK ACCOMPLISHED ON THE PROPERTIES

Work done on the properties can be classified according to the particular property, the Crown Grants, the Stirrup Claim and the Stir Claim. There is no record available for any work, if any, that might have been done on the Sven Claim. A brief tabulation of the work for which there is some knowledge, or partial record, follows:

(a) Crown Grants
- old time adits
- ground sluicing
- 9 percussion drill holes, about 490 metres
- 2 diamond drill holes, about 183 metres
- 426 rock samples
- 989 soil samples

(b) Stirrup Claim
- reconnaissance geology
- reconnaissance geochemistry
  - 11 bedrock samples; Sb about 10 to 15 times background
    As about 5 to 10 times background
    Hg about 1.5 times background
  - 18 stream sediments; Au amounts between 5 and 330 ppb

(c) Stir Claim
- reconnaissance geochem by a prospector sponsored by Brinco and for which there is no available record of results.

To summarize, it is clear that the soils and stream sediment geochemistry, and biogeochemistry, particularly on the Crown Granted Claims has yielded decidedly interesting and intriguing results. It is equally clear that the follow-up work completed to date has definitely not disclosed the source of the placer gold in Stirrup Creek. This study suggest a relatively unexplored area covered by overburden where there is a good chance of discovering the bedrock source for the placer gold. It is concluded that additional work as outlined herein is warranted and justified because of the potential high rewards that might result from discovery of the source of the gold.

Respectfully submitted,

C.A.R. Lammle, PEng.

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CERTIFICATE AND PERMISSION TO USE REPORT

Re: Geological Report
Stirrup Creek Properties
92 0 1 Clinton Mining Division
for Aurun Mines Ltd
26 October 1986

I, Charles A.R. Lammle, hereby certify that:

1. I am a registered professional geological engineer residing in Burnaby, British Columbia.

2. I am a graduate of the University of British Columbia (1962) having been granted the B.A.Sc. degree in Geological Engineering.

3. I have practiced my profession continuously since graduation.

4. I have been a member of the Association of Professional Engineers of British Columbia continuously since 1965.

5. I have no interest, direct or indirect in the above captioned mineral property, nor in the securities of the above named Company. The only remuneration I expect for preparation of this report is the amount of my professional fee to be normally rendered.

6. I hereby grant Aurun Mines Ltd permission to use this report for its corporate purposes.

Charles A.R. Lammle, PEng
Burnaby, British Columbia
26 Oct 1986