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REPORT
ON
STEWART AREA CLAIMS
(GYPSY, LITTLE JOE, LUCKY SEVEN, ETC.)
(55° 59'N, 129° 57'W)

018318

for
STARBIRD MINES LTD.

by
D. Arscott, P. Eng.

Vancouver, B.C.;

15th July, 1971

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SUMMARY

Potentially good mineralization has been indicated by a study of the Starbird Mines Ltd. claims in the Stewart Area of British Columbia, covering the former Portland Canal Mine.

A strong and persistent vein with a short history of gold-silver-lead mining is located on the Little Joe claim, near the centre of the widely mineralized Portland Canal Fissure Zone.

A detailed exploration program is recommended to evaluate this vein and probably neighbouring veins on the property.

INTRODUCTION

At the request of Starbird Mines Ltd., an engineering evaluation has been made of the company's mining property in the Stewart, B. C. area.

The report is based on the writer's visit to the property on the 1st and 2nd of June, 1971, and on previous engineering and government reports, as listed in the accompanying list of references.

CLAIMS

The property described consists of the following claims:

Claim Name	Claim Type	Record No. or Lot No.
Little Joe	Crown Grant	873
Gypsy	" "	416
Lucky Seven	" "	876
Glacier King	Located Mineral Claim	32295
Beth	" " "	32296
Ed	" " "	32297
Alyce	" " "	32298
Ann	" " "	32299
Dora	" " "	32300
Ron	" " "	32301
Bob	" " "	34543
Verne	" " "	34544
Frank	Fractional Mineral Claim	32807
Vic	" " "	32808
Su	" " "	32302
Kitten	" " "	34476
Cat	" " "	34477
Jules	" " "	34478
John	" " "	34479
Bill	Located Mineral Claim	Ownership in doubt
Lu	" " "	" " "
Julie	" " "	" " "

LOCATION AND ACCESS

The claims lie on Glacier Creek, a tributary of the Bear River, four miles northwest of Stewart at the head of Portland Canal, B. C.

A Vancouver Island Helicopters Ltd. 3-place helicopter is based in Stewart and provides fast, inexpensive access to the old workings on the Little Joe claim.

In addition, there is a long, low gradient and formerly corduroyed trail in excellent condition from the Bear Valley road to the property. However, the climb to the workings would probably take some three hours.

PREVIOUS WORK

Tunnelling was commenced on a well defined quartz vein on the Little Joe claim in 1906, and development continued until 1910, at which time a fifty-ton per day mill was put into operation, along with the completion of a two-mile tramway.

The underground development totalled some 1,300 feet of drifting on three levels, over a vertical distance of 100 feet.

Figures referring to the tonnage milled vary. However, one B.C. Minister of Mines Reports states that 7,000 tons was milled during 1911, and the present size of the stopes tends to confirm that figure as the total production.

In 1906, a 40-foot shaft was sunk on the Gypsy claim, on a vein believed to be an offshot of the main vein on the Little Joe.

Between 1906 and 1910 exploration and development was carried out on numerous other properties in the vicinity of Glacier Creek. These included the Dunwell, the Lakeview, the Ruth and Francis, the Ben Bolt, the Evening Sun, and the Columbia.

A geological mapping and sampling program was conducted by A.C.A. Howe International Ltd. in 1969, and in June 1971 the writer undertook a soil sampling orientation survey.

GEOGRAPHY

The main workings of the Portland Canal Mine lies at an elevation of 2,400 feet (A.S.L.), and relief across the property is approximately 1,000 feet.

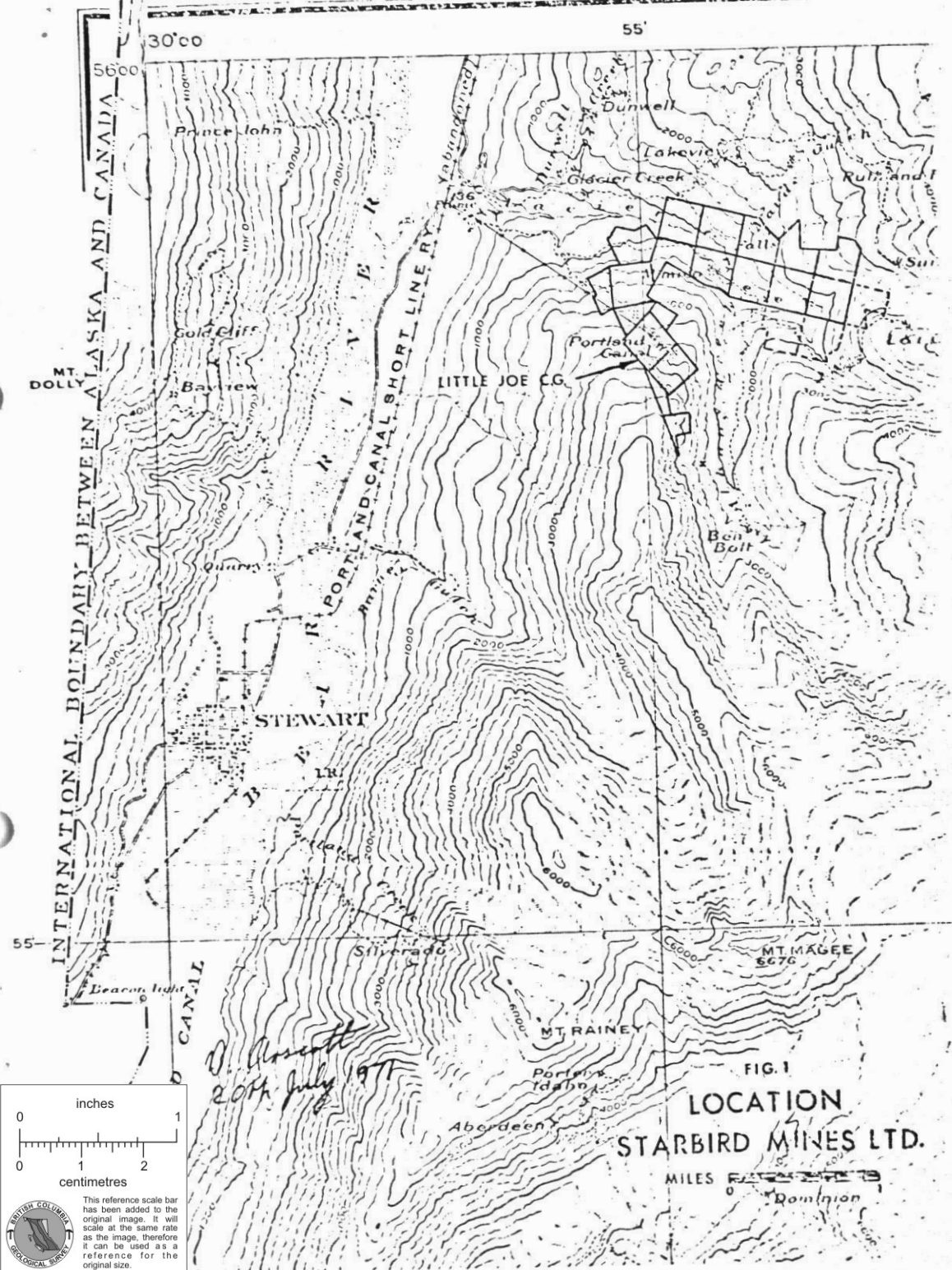
GEOLOGY

Regional Geology:

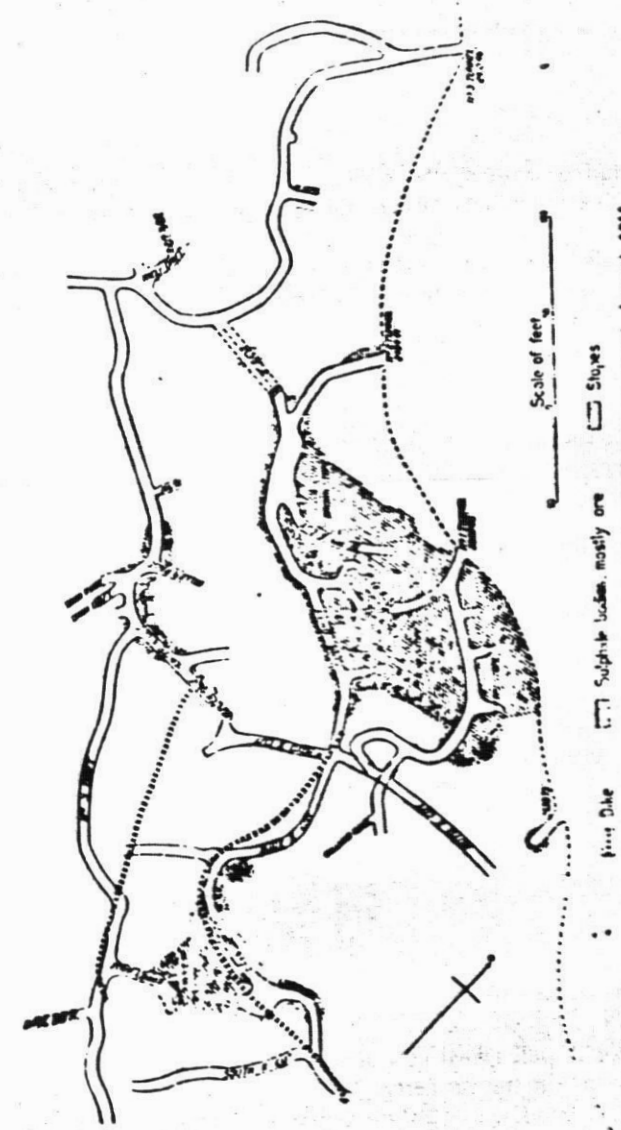
The Starbird Mines Ltd. property lies outside the eastern boundary of the Coast Range Batholith, the nearest outcropping of the main intrusive being one mile to the southwest.

Adjacent to the batholith (and at the western margin of the Bowser Basin), is a Jurassic sequence of rock formations, referred to as the Bitter Creek argillites, the Bear River volcanics, and the Nass volcanics. These are intruded locally by augite porphyry stocks and other small intrusives related to the Coast Range Batholith.

Within the Bitter Creek formation, is the Portland Canal Fissure zone, four miles long and up to 1,500 feet wide, trending northerly and centred on Glacier Creek. This zone consists of a series of northerly trending shears, frequently quartz-filled, and mineralized to a remarkably uniform degree with respect to tenor and mineral composition. One tunnel, half a mile northwest of the property described, crosscut seven such veins (all more than 2 feet in width) over a distance of 1,500 feet.



inches
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centimetres
0 1 2
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.



—Plan of workings of Portland Canal mine, from surveys by management, August, 1911.

Fig. 2

inches
1
centimetres
0 1 2
The 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.

Local Geology:

The Little Joe claim is near the centre of the Portland Canal Fissure zone. The main vein on which most of the work took place, strikes north-northwest and dips 20° to 30° to the west. The width of this vein averages 8 feet along a strike length which appears to be at least 2,200 feet.

The vein is a quartz and calcite filled fissure, with varying proportions of fragmented host rock within it. The host rock is mainly argillite, with a small amount of interbedded limestone. Felsitic dykes have been found in close proximity to the vein.

Mineralization:

The main vein is mineralized with pyrite, galena, sphalerite, tetrahedrite, argentite, and native silver. The pyrite is believed to carry the bulk of the gold values, and the galena, much of the silver.

The ore occurs as lenticular masses within the vein, and most of the stoping appears to have been carried out on two orebodies, each a few thousands of tons in size. Indications of the grades at these orebodies are given as follows:

In 1909, an average dump sample by W. J. Elmdort, mining engineer, yielded:

- 0.3 oz. per ton gold
- 11.9 oz. per ton silver
- 5.0% lead

"Usual" values were described by R. McConnell of the G.S.C. (1913), as,

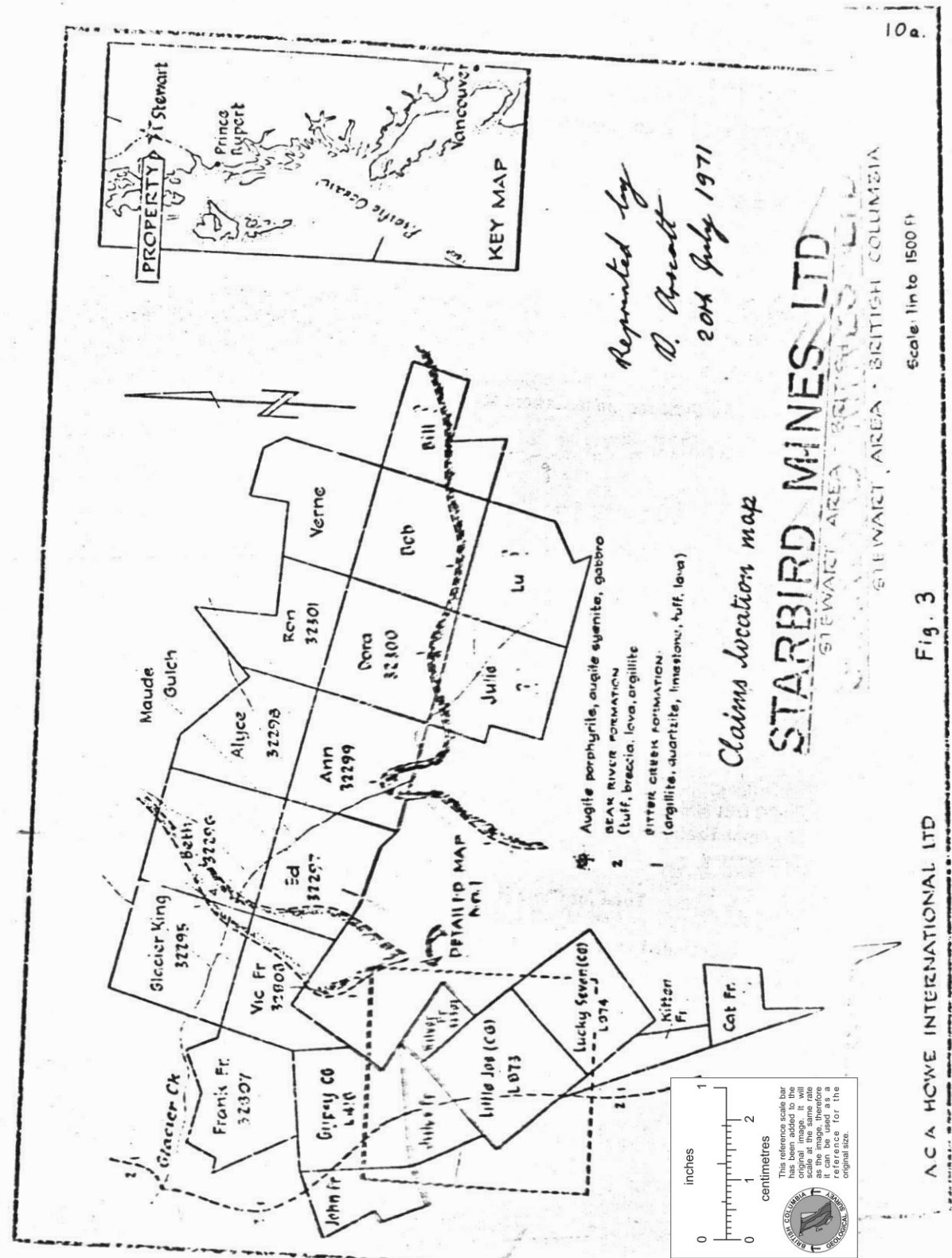
- 0.12 to 0.3 oz. per ton gold
- 5 to 25 oz. per ton silver
- 3 to 12% lead

The average monthly assay for the faces of No. 2 and No. 3 tunnels respectively, for September 1910, were quoted by the B. C. Minister of Mines Report as:

- \$5.20 and \$4.00 in gold
- 61 and 15 oz. per ton silver
- 2.5 and 4% lead

CONCLUSIONS

Systematic exploration could well reveal new ore-mineral concentrations within the main vein, and possibly in neighbouring veins on the property. The chances of locating commercial quantities of mineralization appear to be very good.



RECOMMENDATIONS

A fairly detailed exploration approach is necessary to compensate for the variability of the mineralization within the veins.

Soil sampling has been found to function well on the property. A 25-foot sample spacing and analysis for lead in the "B" soil horizon would give the best results. Detailed mapping should accompany the soil sampling to correlate the sampling with outcropping veins and relocate topography and workings with respect to the grid used.

Finally, drilling of the resulting anomalies on a priority basis will be necessary. An "Ax" core drill should provide the necessary combination of portability, recovery, and sampling capability.

Cost allowances for these recommendations are as follows:

Phase I:

Detailed Soil Sampling	\$ 12,000.00
Detailed Mapping	2,000.00
Drilling:	
2,500 feet @ \$12.00 per foot	30,000.00
Drill mobilization costs	3,000.00
Engineering costs	3,000.00
Total for Phase I	\$ 50,000.00

Phase II:

Detailed Drilling:	
4,000 feet @ \$12.00 per foot	\$ 48,000.00
Drill mobilization	4,000.00
Engineering	5,000.00
Total for Phase II	\$ 57,000.00

The total recommended expenditure is \$107,000.00. However, the results of Phase I should be evaluated by a competent consultant prior to continuation to Phase II.

Respectfully submitted,
David Arscott
20th July, 1971

APPENDIX

FACILITIES

Tide water at Stewart provides excellent low cost shipping. At north Stewart is serviced twice weekly by the Northland Navigation Co. Ltd., from Vancouver. Granduc Mines Ltd. is shipping ore concentrates from a dock one mile south of Stewart.

A plentiful supply of water is available from Glacier Creek and its tributaries for drilling purposes.

Stewart, with a population of 1,500 has most of the basic supply services.

REFERENCES

Regional:

McConnell, R., Portions of Portland Canal and Skeena Mining Divisions, Skeena District, B.C., G. S. C. Memoir 32, 1913.

Hanson, G., Bear River and Stewart Map Areas, Cassiar District, B.C., G.S.C. Memoir 159, 1929

Topography Map: Nass River, 1" = 4 miles, No. 103P

Property:

B.C. Minister of Mines Reports for 1906, 1907, 1908, 1909, 1910, 1914, 1967, 1968, and 1969.

Howe, A.C.A., and Timmins, W.G., Geological Report on Starbird Mines Ltd., Portland Canal Area, October 1967.

Timmins, W.G., Geological Report on the Starbird Mines Ltd. Property, October 1969.

Arscott, D., Geochemical Reconnaissance Survey, June 1971.

Airphotos: B.C. 2182 - 78 and 79

CERTIFICATE

I, David Philip Arscott, of office address 301-540 Burrard Street, Vancouver 1, British Columbia, do hereby certify that:

I am a Professional Engineer, registered in British Columbia.

I am a graduate of McGill University, with degrees of Bachelor of Engineering in Mining Engineering, (1963) and Master of Science in Mineral Exploration (1966).

I have five years experience in mineral exploration, mostly in British Columbia.

This report is based on my personal experience on the property on the 1st and 2nd of June 1971, and on all available references to the property and to the area.

I have no interest, direct, indirect, or anticipated in any property or securities of Starbird Mines Ltd.

DATED at Vancouver, B.C., this fifteenth day of July, 1971.

David Arscott, P. Eng.

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