

GEOLOGICAL REPORT ON THE  
GILLIAN PROPERTY  
HOUSTON, BRITISH COLUMBIA

Omineca Mining Division, B.C.

N.T.S. Map Sheet 93L/1W

Latitude  $54^{\circ} 10' N$

Longitude  $126^{\circ} 22' W$

For

Gillian Mines Ltd.

By

D.G. Leighton

And

R.R. Culbert, Ph.D., P.Eng.

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT

8189

D.G. Leighton & Associates Ltd.

28 March 1980

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D. G. LEIGHTON & ASSOCIATES LTD.  
GEOLOGICAL CONSULTANTS

3155 WEST 12TH AVENUE  
VANCOUVER, B.C.  
V6K 2R6

March 28, 1980.

The Directors,  
Gillian Mines Ltd.,  
1650 Riverside Drive,  
North Vancouver, B.C.  
V7H 1V7

Dear Sirs:

At the request of Mr. J. Paul Stevenson, President of Gillian Mines Ltd., we have prepared a report on your mineral claims located near Houston, B.C. During February of this year a limited diamond drilling program was carried out consisting of three holes for a total of 2,000 feet. This work was done under our direction. We have also carefully reviewed the results of earlier exploration work as documented in various reports and examined core from previous drilling on the claims.

This report, together with our recommendations for drilling, is attached.

Respectfully submitted,

D.G. LEIGHTON & ASSOCIATES LTD.

D.G. Leighton,  
President

DGL/dh

Attch.

D. G. LEIGHTON & ASSOCIATES LTD.  
GEOLOGICAL CONSULTANTS

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GILLIAN PROPERTY  
HOUSTON, B.C.

INTRODUCTION

This report discusses a mining prospect located twenty-five miles southeast of Houston, British Columbia which is owned by Gillian Mines Ltd. The Gillian claims are situated seven miles west of the Sam Goosly Mine and the hope is that of discovering a similar type of mineralization; namely, volcanogenic massive sulphide ore. The latest work on the Gillian property consisted of three diamond drill holes. While no significant sulphide mineralization was intersected during the course of this work, the geologic setting was established as one conducive to the formation of massive sulphide type ore. Therefore, more work has been recommended.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

1. The Gillian property comprised of six unsurveyed mining claims owned by Gillian Mines Ltd. is situated eighteen miles southeast of Houston, British Columbia.
2. The property is reached at present via Buck Flats Road a distance of twenty miles from a Highway 16 exit, two miles west of Houston.
3. The claims are underlain by sediments and volcanics of early Mesozoic age in contact with gabbroic intrusive rock.
4. We feel geological conditions to be favourable for strata-bound volcanogenic type mineral deposition.
5. No measurable ore reserves have been delineated on the property.
6. Exploration work carried out over the past several years has consisted of geophysical and geochemical surveys, followed by percussion and diamond drilling.
7. We believe that the Gillian property is a prospect which justifies expenditure of additional risk capital to determine whether or not volcanogenic massive sulphide ore is present.
8. We recommend a program of additional diamond drilling under the direction of a geologist.

9. The proposed program with estimated costs:

10,000 feet of diamond drilling in 20 holes averaging 500 feet each. Selected ore should be tested for Pb, Zn, Cu, Cd, Ag, F and Ba.

Estimated "all up" cost @ \$20/foot \$200,000.00

10. The program would be terminated immediately at any time that it became evident that the target ore body was non-existent or that the odds against its presence had become prohibitive. We believe that reasonably definitive indications can be developed within the program outlined above.

Respectfully submitted,

D.G. LEIGHTON & ASSOCIATES LTD.

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D.G. Leighton

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R.R. Culbert, PhD., P.Eng.

28 March 1980

GENERAL DESCRIPTIONS

Location and Access

The Gillian property is located two miles southwest of Goosly Lake and 18 miles southeast of Houston, B.C. Geodetic co-ordinates are 54° 10' North; 126° 22' West. Access at present is from Houston via Buck Flats Road a distance of about 25 miles (38 km).

Previous Work

The Gillian property covers an area previously held by Lewes River Mines Ltd. (Gail and G.M.G.W. claims). The current stage of exploration, financed by Gillian Mines Ltd., developed from recommendation in a report by F. Holcapek. R.G. Potter supervised geological, geochemical and geophysical surveys in the summer of 1976. A small amount of percussion drilling was done subsequently with inconclusive results. In September, 1979 E.T. Pezzot and G.E. White completed an E.M. survey. This was followed-up by two stages of diamond drilling, the latest being done in February, 1980.

Claims

The Gillian property consists of the following mineral claims:

<u>Claim</u>	<u>Units</u>	<u>Record No.</u>
Gillian East	8	204
Gillian West	12	205
Loyd	8	238
Loyd North	14	239
Diane	6	249
Douglas	12	

## REGIONAL GEOLOGY

The regional geology of the Goosly Lake area is described in a B.C. Ministry of Mines & Petroleum Resources publication by B.N. Church (1970). This work establishes an early Mesozoic sequence as the host to the Sam Goosly deposit and a window in the widespread younger formations express similar rocks on the Gillian property. The early Mesozoic sequence includes: acid and intermediate lavas and pyroclastic rocks, argillite, sandstone and conglomerate. Although the Sam Goosly deposit is complicated by post ore metamorphic effects, possibly associated with an adjacent stock, the ore is generally presumed to be of a stratabound volcanogenic massive sulphide (or loosely Kuroko) type. Since massive sulphide deposits tend to occur in clusters but confined to a restricted part of the stratigraphic section, it is reasonable to expect more deposits in the vicinity of Sam Goosly.

### Property Geology

The sparse outcrop on the Gillian property was mapped by R. Potter and described in a report dated 8 July 1976. Diamond drilling completed since Potter's work (three holes in 1979 and three holes in 1980) have made it possible to enlarge on the earlier interpretation. It is now apparent that the property is underlain by a rhyolite flow, largely autobrecciated, which is exposed on surface in the vicinity of grid station 55 east on line 51 south. The flow is overlapped on the east by an "argillite" which might be more accurately described as a poorly bedded siltstone. The "argillite" in turn grades upward into volcanic sandstones and tuffs which have been recorded on the west side of a hill near

grid station 62 east on line 50 south. The recent drill hole data is summarized below:

<u>Hole</u>	<u>Grid Location</u>	<u>Direction</u>	<u>Depth (Feet)</u>	<u>Lithology</u>
79-1	53S 57+25E	-90	0-500?	Autobrecciated
79-2	53S 57+25E	-45 west	0-500?	rhyolite flow
79-3	53S 52+25E	-90	0-500?	or dome?
80-1	50S 59+75E	-90	0-436	Argillite
			436-557	Rhyolite
80-2	52S 61E	-90	0-599	Argillite
80-3	54S 63E	-45 east	0-843	Argillite

The formative environments of Kuroko type ore tend to have certain features in common. These can be used to assess the potential of a target and help to guide exploration work. For example:

1. The deposits form at the end of a major acid volcanic cycle marked by a transition from acid volcanic to sedimentary rock.
2. They occur in a shallow (less than 1,000 metre) marine setting.
3. The deposits occur in clusters within an area of about ten kilometers in diameter.
4. The deposits themselves, though rich, are of very limited areal extent and easily missed.

The features listed above apply to the Gillian property as confirmed by recent drilling. The "basement" is rhyolite, the same rock unit which hosts the nearby Sam Goosly Mine. This is



grid station 62 east on line 50 south. The recent drill hole data is summarized below:

<u>Hole</u>	<u>Grid Location</u>	<u>Direction</u>	<u>Depth (Feet)</u>	<u>Lithology</u>
79-1	53S 57+25E	-90	0-500?	Autobrecciated rhyolite flow or dome?
79-2	53S 57+25E	-45 west	0-500?	
79-3	53S 52+25E	-90	0-500?	
80-1	50S 59+75E	-90	0-436	Argillite
			436-557	Rhyolite
80-2	52S 61E	-90	0-599	Argillite
80-3	54S 63E	-45 east	0-843	Argillite

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1. The deposits form at the end of a major acid volcanic cycle marked by a transition from acid volcanic to sedimentary rock.
2. They occur in a shallow (less than 1,000 metre) marine setting.
3. The deposits occur in clusters within an area of about ten kilometers in diameter.
4. The deposits themselves, though rich, are of very limited areal extent and easily missed.

The features listed above apply to the Gillian property as confirmed by recent drilling. The "basement" is rhyolite, the same rock unit which hosts the nearby Sam Goosly Mine. This is

overlain by siltstone (argillite) which has the characteristics of shallow marine deposition. The target horizon coincides with the volcanic-sedimentary contact. Testing this contact will require a relatively large commitment to diamond drilling with specific attention to the details of stratigraphy and trace element distribution - especially the elements lead (Pb), zinc (Zn), copper (Cu), cadmium (Cd), Silver (Ag), fluorine (F) and barium (Ba).

It should be noted that trace element ratios determined by the B.C. Ministry of Mines & Petroleum Resources during the course of regional rock chip sampling indicated anomalous ratios common to both Gillian and Sam Goosly rocks (C.B.N. Church, personal communication).

The generally inconclusive geophysical and geochemical survey results from the Gillian property are compatible with the geology as delineated by drilling. The thick "argillite" layer would tend to mask any sulphide body that may be present. We have concluded, therefore, that the only effective test of the property is by more diamond drilling. There is a limit, however, to how much drilling can be reasonably justified. It is our opinion that if indications of "stratabound" mineralization are not found within a drill commitment of 10,000 feet, no further work will be warranted.

CERTIFICATION

I, D.G. Leighton, do hereby certify that:

1. I am a professional geologist with offices at 3155 West 12th Avenue, Vancouver, B.C.
2. I am a graduate of the University of British Columbia, B.Sc. (1968).
3. I have practiced mining exploration for twelve years, most of which was based in the Province of British Columbia.
4. I am a member in good standing (Fellow) in the Geological Association of Canada.
5. I have no interest, direct or indirect, in the properties or securities of Gillian Mines Ltd.
6. This report is based on my examination of the Gillian property near Houston, B.C. together with a review of pertinent data and discussion with geologists who were involved with previous work.

Respectfully submitted,

D.G. Leighton, B.Sc.

28 March 1980

CERTIFICATION

I, R.R. Culbert, do hereby certify that:

1. I am a practicing Professional Geological Engineer with offices at 3155 West 12th Avenue, Vancouver, B.C.
2. I am a graduate of the University of British Columbia, B.A.Sc. (1964), Ph.D. (1971).
3. I have practiced mining exploration for nineteen years, most of which was based in British Columbia.
4. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.
5. I have no interest, direct or indirect, in the properties or securities of Gillian Mines Ltd.
6. This report is based on my examination of the Gillian property near Houston, B.C. together with a review of pertinent data and discussions with geologists who were involved with previous work.

Respectfully submitted,

R.R. Culbert, Ph.D., P.Eng.

28 March 1980

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