520530
93A/6

Property — LEMON LAKE CU/AU PROSPECT
Cariboo M.D. British Columbia
N.T.S. 93 A/6
Lat: 52°21'N, Long: 121°15'W

Claims

LEM #1 -	Record No. 3057 -	18 units,	Expiry Nov 28/86
LEM #2 -	Record No. 3058 -	18 units,	Expiry Nov 28/86
LEM #3 -	Record # Pending	12 units,	Expiry Jan 16/85
	Total	48 units	

Location and Access

Accessible by 13 km (8 miles) of secondary gravel roads easterly from Horsefly, B.C. sections of which require 4 wheel-drive vehicle.

Ownership

The above claims are presently owned by Mt. Calvery Resources Ltd., 1027-470 Granville Street, Vancouver, B.C. V6C 1V5 (FMC No. 264204, issued December 15, 1983 at Vancouver).

They are the subject of an option-to-purchase agreement with Orbex Minerals Ltd., dated January 1984.

History and Development

"A small copper showing in the creek about 750 m south of Chain Lake shows evidence of old-timers' work, and the main copper showing (about 200 m south of Chain Lake) was held by local prospectors in 1965. Chapman, Wood and Griswold, managers of the Helicon Project, explored the area in 1965, and optioned the claims covering the main showing. Their interest in the area was probably generated by the discovery of the Cariboo-Bell deposit at about this same time. C.W.G. completed an aeromagnetic survey, ground magnetics/EM/IP and soil sampling. This work was followed by some bulldozer trenching and the diamond drilling of 3 holes." (Seraphim, 1969)

Silver Standard optioned the property in 1969, and they completed 36 percussion drill holes, considerable bulldozer trenching and ground magnetic/I.P. surveys. Generally low copper values found in their drill holes caused them to drop their option in 1971.

Much of the ground was acquired by HBOG in 1973, but the northern portion was acquired at this time by Carl Zuber, who optioned his claims to Noranda. HBOG drilled 11 percussion drill holes after completing magnetometer surveys and soil sampling. Noranda apparently drilled 3 diamond drill holes.

Orbex re-staked much of the property in 1980 and completed an airborne magnetics/EM survey and a ground geochemical survey (Au, Cu, Ag, As) later that year. Mt. Calvery Resources re-staked the mineralized zones south of Chain Lake in January 1984, and optioned Orbex's claims at the same time.

Geology and Mineralization

"The prospect is situated in the Quesnel Trough structural province not far from its eastern boundary with metamorphosed rocks of the Cariboo Mountains. Rocks in the prospect area, the Takla Group, consist of a thick succession of submarine volcanics, pillow basalts, polylithic volcanic breccias, and several thousand metres of sub-aerial volcanics consisting of leucite-bearing basalt and related flow top breccias, conglomerate, sandstone and laharic breccias. Several synvolcanic stocks of diorite, syenodiorite and syenite occur within the volcanic sequence and represent eroded conduit zones from which much of the flows and breccia materials may have erupted.

The Lemon Lake stock of syenodiorite, monzonite and syenite is situated northeast of Lemon Lake. Within this intrusion, and adjacent volcanic and pyroclastic rocks, sulphides and alteration minerals form numerous 'porphyry-type' copper showings. Several 'pyrometasomatic-type' prospects, occurring as veins, disseminations and shear zones, are also developed." (Fox, 1981).

The copper showings south of Chain Lake occur within a broad (six to eight hundred feet wide) zone of alteration (feldspathization) along the eastern margin of the Lemon Lake stock. "Most of the outcrops observed are dark green, chloritic, soft, and andesitic to basaltic in composition. The exposures nearer to the intrusive are unusually brittle, and locally contain veinlets and blebs of orange-pink feldspar. Exposures locally show bright biotite crystals and much orange-pink feldspar in reticulating veinlets and disseminations. Copper mineralization is found in all the rock types. It is more abundant in the known exposures of the feldspathized zone along the contact." (Seraphim, 1969).

A table on the accompanying Compilation Map lists the better Cu intercepts found by the previous drilling. Only one hole has been assayed for gold - HP-4 which showed good Cu/Au correlation, i.e. 0.25% Cu and 337 ppb Au over 70 feet.

Geochemistry

As noted above, geochemical soil surveys have been completed over the property at least 3 times, but only the last program by Orbex (1981) analyzed for Au. Previous operators had analyzed for Cu, Mo, Pb, Zn, Ag.

Orbex tested 1100 samples (100 x 80 m grid) - 70 samples (6.4%) were at or above 20.4 ppb. The Compilation Map shows the location of those samples containing + 20 ppb Au, and only where there are at least two adjacent anomalous samples. There is a clearly defined association between the known Cu-mineralized areas around and south of Chain Lake, and a strong clustering of anomalous Au soil samples immediately to the west (i.e. down-ice direction); in fact, both Cu-mineralized 'greenstone' outcrop areas are immediately up-ice from Au soil anomalies.

Geophysics

The area has been flown twice (Mag/EM) by previous operators, and has had several ground magnetics, EM and I.P. surveys (see Bibliography). However, the most important geophysical feature of the area, apart from the prominent aeromagnetic anomaly caused by the syenitic intrusive complex, is the I.P. anomaly (PFE) trending NNW along the east flank of the intrusive complex. This anomaly was first outlined in 1966 by Helicon, and was a focus for their, and Silver Standard's exploration efforts. Despite its importance, it has never been closed off - yet it extends for at least 2500 feet and is 400-600 feet wide (apparent width-dipole spacing was 200 feet). Peak values reach 7% PFE within the overall 4% PFE contour, and are correlatable with the observed Cu-mineralized outcrops. Later diamond and percussion drilling indicated the sulphide content of this zone (py $\pm$ cpy) to range from 1% to 5%, with some zones of heavy (+20%) epidote.

Conclusions

The geological, geochemical and geophysical setting of this prospect is very analogous to that of Dome's QR gold-copper deposit, located about 50 km to the northwest (+950,000 t @ 0.21 opt Au). Both have geochemical/ I.P. anomalies developed on the flank of a syenitic intrusive, within a zone of alteration. As such, the writer believes that the LEM prospect warrants further work to determine whether any significant gold mineralization might occur in or near the known copper mineralized area.

Recommendations

The writer believes the following programs would be necessary to evaluate the prospect:

1) Geologically map, in detail, the eastern margin of the syenite intrusive complex, particularly the known zone of alteration.

2) Systematically sample all altered outcrop areas in or near the Chain Lake I.P. and geochemical anomalies. Assay these samples for Au, Ag.

3) Expand the soil grid at least 500 m further to the east of the Chain Lake anomalies and 400 m further south of the known mineralization on the new LEM #3 claim. (i.e. 500 m EW x 1500 m NS).

4) If the results of the above work yield any encouragement (i.e. significant Au assays or further Au-soil anomalies), a Rotary (not percussion) drill program should be initiated, to test the indicated gold-bearing zones. At least 10 holes, each 200 feet deep would be required as a first test.

5) If any encouragement is received from this preliminary drill testing, (i.e. any significant Au-bearing zones), then a detailed I.P. survey of the Chain Lake area should be completed to the limits of any indicated anomalies. This I.P. survey should be done before any additional drilling is begun, in order that any new I.P. anomalies could be drilled.

Depending on the ultimate extent of these various surveys, probable costs of these work programs will be in the $60,000 - $75,000 range, including the 2000 feet of rotary drilling.

A. Schmidt

A.J. Schmidt, P.Eng.

BIBLIOGRAPHY

1. Assessment Report #883 - Aug. 1966 — Helicon Explorations Ltd. IP Survey

2. Assessment Report #2779, July 1970 — Silver Standard Mines Ltd. IP Survey

3. Assessment Report #4679, Oct 1983 — Hudson Bay Oil & Gas Ltd. Geochemical Soil Survey

4. Assessment Report #5117, Aug 1974 — Hudson Bay Oil and Gas Ltd. Percussion Drilling

5. Assessment Report #5260, Nov 1974 — Hudson Bay Oil & Gas Ltd. Magnetometer Survey

6. Assessment Report #10005, Nov 1981 — Orbex Minerals Ltd. Geochemical Soil Survey

7. Assessment Report #10509, Feb 1981 — Orbex Minerals Ltd. Airborne Mag/EM Survey

8. GSC Open File Map #574 — Quesnel Lake Map Area (93A) R.B. Campbell, 1978 Scale 1:125 000

9. GSC Geophysical Map #5239G — Airborne Magnetic Survey, 1967 Scale 1:63 360

MT. CALVERY RESOURCES

(Letterhead)

DRAFT

February 1984

Mr.------

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Dear _____

Re: Available for Acquisition
Lemon Lake Prospect, Horsefly Area, B.C.

Mt. Calvery Resources has acquired title to a 48 unit block of claims over this well-known porphyry copper prospect, located about 6 miles east of Horsefly, in the newly recognized Quesnel Trough Gold Belt. Despite a considerable amount of previous exploration work directed towards locating open-pit copper reserves, there has been almost no assaying done to determine the Au or Ag content of drill core/cuttings or known surface mineralization. The exception to that statement is percussion drill hole HP-4, which was analyzed for Au in 1975, and was determined to contain 337 ppb Au (i.e. 0.01 oz/t) along with 0.25% Cu, over 70 feet. A geochemical soil survey in 1981 analyzed 1100 samples for Au, and located a number of Au anomalies correlatable with previously known areas of alteration, mineralization and IP anomalies.

Attached is a brief summary report describing the property's geology and mineralization, and a compilation map. As well, we enclose our proposed terms for acquisition of this prospect by interested parties.

We believe the prospect merits further work to determine if it contains possible open-pittable gold mineralization.

Yours very truly,

John S. Brock
Director

Enc: