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82F
Nelson Area

REPORT ON THE
SILVER KING PROPERTY
OF
SPROATT SILVER MINES LTD.

by

E. D. CRUZ, P. ENG

January, 1974

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INTRODUCTION

This report presents an evaluation of the recently completed geochemical and geophysical program conducted by Glen E. White Geophysical Consulting and Services Ltd. on the Silver King Property near Nelson, B.C. Results of previous underground sampling and diamond drilling by New Cronin Babine Mines are summarized.

The writer has not visited the Silver King property. This report is therefore based upon all the information in the form of reports supplied by the company as well as from government publications.

PROPERTY

The Silver King property consists of 29 claims and fractions. Details of the claims are listed below:

<u>Claim</u>	<u>Type</u>	<u>Number</u>	<u>Owner</u>
American Flag	Crown Grant	L142	Silver King Mines Ltd.
Dandy	" "	L231	"
Democrat	" "	L236	"
Etna	" "	L414	"
Forest	" "	L233	"
Grizzly Bear	" "	L105	"
Hidden Treasure	" "	L411	"
Hannah	" "	L371	"
Kohinoor	" "	L245	"
Kootinai	" "	"	"
Bonanza	" "	L140	"
Money Market	" "	L235	"
Ollie	" "	L412	"
O.V.G. Fraction	" "	L3254	"
Silver King	" "	L141	"
Starlight	" "	"	"
Fraction	" "	L12274	"
Victoria	" "	"	"
Fraction	" "	L12273	"
Young Dominion	" "	L2541	"
Silver Queen	" "	L105A	"
Lulu	" "	L247	"
Copper King	" "	L417	"
Grandview	" "	L685	"
Eureka	" "	L3255	"
Union Jack	" "	L244	"

<u>Claim</u>	<u>Type</u>	<u>Number</u>	<u>Owner</u>
Ivanhoe M60	Mineral Lease	L416 (K)	Silver King Mines Ltd.
Sheri Fraction	Mineral Claim	7304H	"
Brenda Fraction	" "	7436M	"
Jim Fraction	" "	7305H	"
Goldendale Fraction	" "	7895B	"
C.O.D. Fraction	" "	7896B	"

The claims are owned by Silver King Mines Ltd., a private company, owned by Sproatt Silver Mines Ltd. and Cominco on a 75 - 25 participation.

LOCATION AND ACCESS

The Silver King property lies at an elevation of 6000 feet on the northeast side of Toad mountain about 4 miles south of Nelson, B.C. Its approximate geographic position is 49°25'N Latitude, 117°18'W Longitude.

Access to the property is by 8 miles of gravel road from the town of Nelson.

HISTORY

The Silver King property is one of the oldest mining properties in B.C. Its history, which dates back to the year 1886, was described in the annual reports of the B.C. Minister of Mines, 1887 - 1956.

The original claims were staked by the Hall brothers in 1886. Production of ore began in 1889 and continued intermittently by several different companies, including Cominco (1912 - 1914) until 1948. Within this period, a total of 222,246 tons of ore was shipped. This contained 14,946,235 pounds of copper, 4,441,051 ounces of silver, 280 ounces of gold, 30,798 pounds of lead and 7,397 pounds of zinc.

The property was apparently dormant till New Cronin Babine Mines rehabilitated some of the old workings and did considerable amounts of sampling and diamond drilling in 1965 - 1967. A detailed description of this program and an economic study of the property was prepared by M. K. Lorimer, P. ENG, of Manning and Associates.

The above reports indicated that there exists on the property a total of 82,700 tons of proved ore. Details are as follows:

<u>Date Explored</u>	<u>Proved Reserve M.T.</u>	<u>Silver</u> oz/ton	<u>Copper</u> %	<u>Lead</u> %
1965-1966	63,403	8.4	2.2	1.0
1967	19,300	9.2	1.7	0.7
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Total	82,703	8.6	2.0	0.9

GEOLOGICAL SETTING

The limited amount of published geological information on the property indicates the presence of three distinctly parallel and several subsidiary vein systems forming a northwesterly trending structural zone in a belt of schist rock of the Rosslund formation of lower Jurassic age. The above rock unit was intruded by fine grained porphyritic syenite to quartz diorite of probably Cretaceous age.

The three parallel veins, namely Silver King, Kohinoor, and Iroquois, strike N60°W and dip from 60° to 70° south. Another important vein, known as the south vein, strikes due east and intersects the Silver King vein. The productive orebodies are along the intersection of the Silver King and south vein and along cross fractures.

About 600 and 800 feet to the southeast along strike of the Silver King vein, are the Bonanza and King veins reportedly found by the previous diamond drilling.

Diamond drilling of the Iroquois vein showed no economic sulphide mineralization.

The different veins occur as typical fissure fillings of sulphide minerals such as chalcopyrite, bornite, tetrahedrite, stromeyerite, galena, sphalerite and pyrite.

GEOCHEMICAL AND GEOPHYSICAL SURVEYS

With the aim of locating additional ore potential, a program of geochemical and induced polarization surveys was conducted by Glen E. White Geophysical Consulting and Services Ltd. on behalf of Sproatt Silver Mines Ltd. on September 11-25, 1973.

The geochemical program consisted of soil sampling at 200 foot intervals along established grid covering the whole claimed area. Results of this survey, as depicted on the accompanying geochemical map, delimited significant coincident anomalies in lead and silver and a copper anomaly located well to the south of the mine workings. The anomalies trend parallel to the vein system in the area. The lead-silver anomalies attained maximum values of 425 p.p.m. and 4 p.p.m. over backgrounds of less than 60 p.p.m. and less than 1.8 p.p.m. in lead and silver respectively. The copper anomaly reached a maximum value of 290 p.p.m. over a background of less than 160 p.p.m.

Results of the induced polarization survey, as shown on the accompanying chargeability map, indicate a significant NW trending chargeability high coincident with the lead-silver geochemical anomaly. The chargeability reached a maximum value of 22.6 over background level of 4 milliseconds. The copper geochemical anomaly showed excellent correlation with a chargeability high attaining a maximum value of 18.7 milliseconds.

Interpretation of the induced polarization data by Glen E. White, geophysicist, suggests that these anomalies are indicative of sulphide mineralization.

SUMMARY AND CONCLUSION

The Silver King property is situated about 4 miles south of Nelson, B.C. This property has produced more than 200,000 tons of ore in the past.

Mineralization occurs as fissure fillings of sulphides arranged in parallel following a northwesterly trending structural zone in a schist belt of the Rossland formation. Minerals consist of chalcopyrite, bornite, tetrahedrite, galena, sphalerite, stromeyerite and pyrite.

Previous diamond drilling and underground sampling done by New Cronin Babine Mines in 1965 - 1967, established the presence of 82,700 tons of proved ore assaying 8.6 oz. of silver per ton, 2.0 percent copper and 0.9 percent lead. A metallurgical study of the underground ore sample made by Britton Research Limited indicates a possible recovery of 85% for silver and 87% for copper. Using these figures and the

price of silver and copper at \$3.85 per ounce and \$0.85 per pound respectively, the recoverable value per ton of the proved ore would be in the order of \$57.70. The gross recoverable value of the proved ore reserve was estimated at about \$4,772,000.00.

The recent geochemical and geophysical surveys on the property delimited significant anomalous zones to the south of the mine workings. These zones are indicative of sub-surface sulphide mineralization that warrants verification by diamond drilling.

RECOMMENDATIONS

1. Update the economic study and recalculate the ore reserve based on the present metal prices. The considerable jump in metal price since 1967 would favourably change the economic picture of the property.
2. Undertake detailed geological mapping to understand the structural control of the vein systems that may aid in further exploration.
3. Diamond drilling of the geochemical and geophysical anomalies to verify the existence of additional tonnage of ore grade material.

PROGRAM AND EXPENDITURES

1. Detailed geological mapping.....	\$1,500.00
2. Diamond drilling - 2,500 feet @ \$15/foot.....	37,500.00
3. Assaying.....	2,000.00
4. Engineering and Supervision.....	1,500.00
5. Food and lodging.....	2,000.00
6. Supplies.....	<u>1,000.00</u>
Total estimated expenditure.....	\$45,500.00

Respectfully submitted,

E. D. Cruz, P. ENG

C E R T I F I C A T E

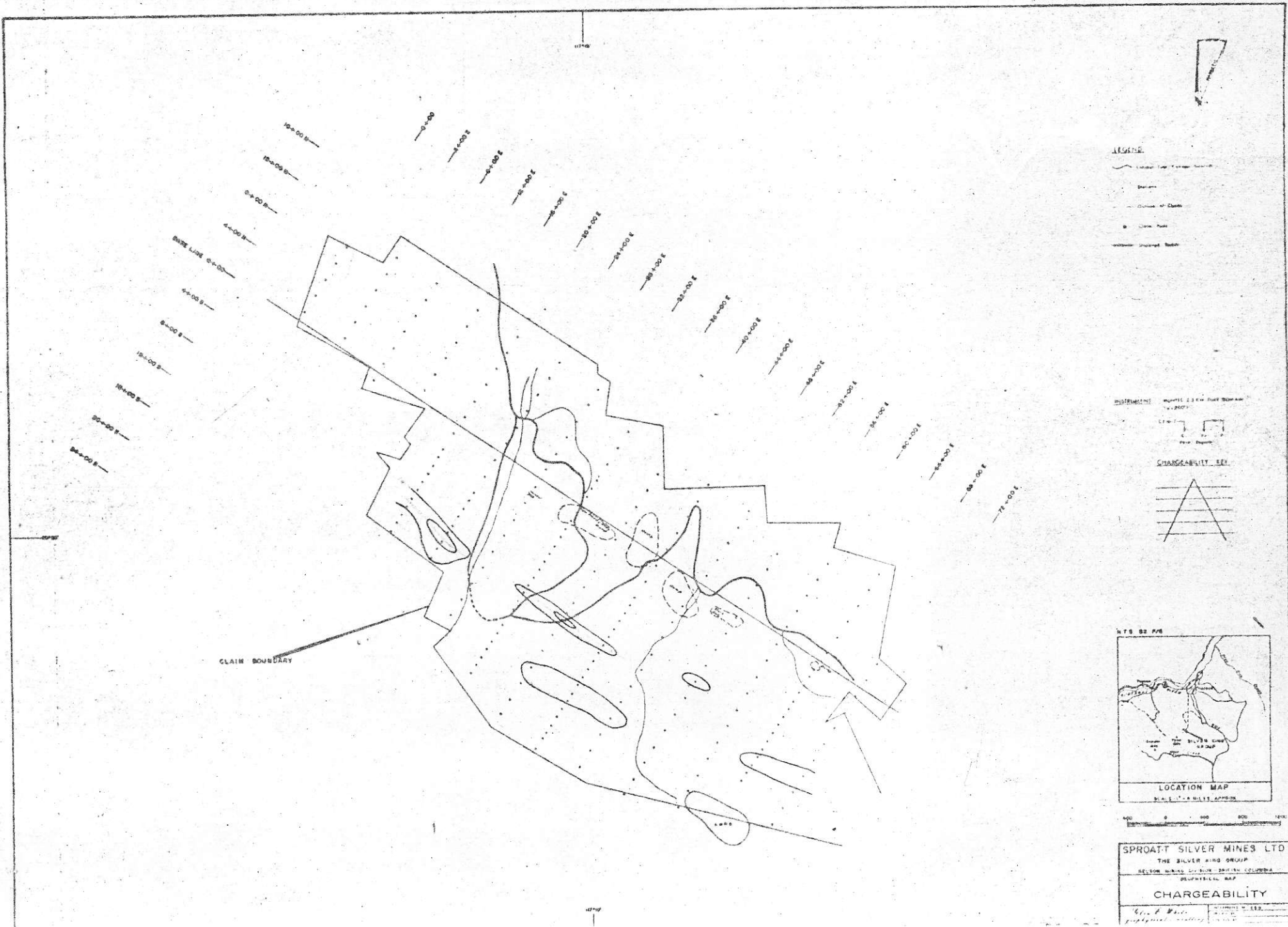
I, Ernesto D. Cruz, DO HEREBY CERTIFY AS FOLLOWS:

- (1) That I am a Consulting Mining Engineer and reside at 8596 Terrace Dr., Delta, B.C.
- (2) That I am a Graduate of Mapua Institute of Technology Phillipines (B.A.Sc.) and University of Washington (M.A.Sc.) in the Faculty of Mining Engineering.
- (3) That I am a registered P. ENG in the Association of Professional Engineers in the province of British Columbia.
- (4) That I have practised geological engineering for ten (10) years.
- (5) That this report consists of 7 typewritten pages.
- (6) That I have no interest directly or indirectly in the Silver King Property or the securities of Sproatt Silver Mines Ltd. nor do I expect to acquire or receive any.

DATED at Vancouver, British Columbia, this 28th day of January, 1974.

ERNESTO D. CRUZ, P. ENG

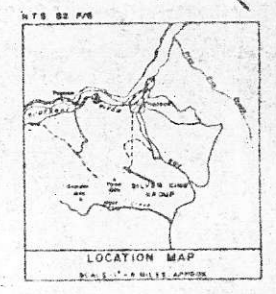
Ernesto D. Cruz, P. ENG



LEGEND

- Contour Line (Elevation)
- Stream
- Claim Boundary
- Claim Post
- Unsurveyed Area

SYMBOLS



SPROATT SILVER MINES LTD
 THE SILVER KING GROUP
 BELLEVILLE BRANCH DISTRICT COLORADO
 BLUEFIELD MAP
CHARGEABILITY
 Eric A. Wainwright
 Geologist



LEGEND

- Contour Line (Elevation)
- Claim Boundary
- Dashed Line (0.4-10)
- Claim Posts
- Section Boundary

PROPERTY KEY



NETS OF 240



SPROATT SILVER MINES LTD
 THE SILVER MINE GROUP
 REFORMED MINE GROUPS OF THE COLUMBIA
GEOCHEMICAL MAP
 SILVER, LEAD, COPPER

- Cu
- Pb
- Ag

To accompany report by E Cruz, P.Eng

