



MINFILE Detail Report
BC Geological Survey
Ministry of Energy, Mines and Petroleum Resources

Location/Identification

MINFILE Number:	082FSW176	National Mineral Inventory Number:	082F6 Ag1
Name(s):	SILVER KING (L.141) DANDY (L.231), OLLIE (L.412), KING, F.W., D50, D45, IROQUOIS, KOHINOOR, KOOTENAY BONANZA, AMERICAN FLAG, HALL MINES		
Status:	Past Producer	Mining Division:	Nelson
Mining Method	Underground	Electoral District:	Nelson-Creston
Regions:	British Columbia	Resource District:	Selkirk Natural Resource District
BCGS Map:	082F044		
NTS Map:	082F06W	UTM Zone:	11 (NAD 83)
Latitude:	49 25 18 N	Northing:	5474376
Longitude:	117 18 04 W	Easting:	478163
Elevation:	1844 metres		
Location Accuracy:	Within 500M		
Comments:	Centre of Lot 141 (Assessment Report 12611).		

Mineral Occurrence

Commodities:	Silver, Copper, Gold, Lead, Zinc		
Minerals	Significant:	Pyrite, Chalcopyrite, Galena, Sphalerite, Stromeyerite, Tetrahedrite, Bornite	
	Associated:	Quartz, Manganite, Calcite, Siderite, K-Feldspar	
	Alteration:	Malachite, Azurite, Hematite, Chlorite, Sericite, Ankerite	
	Alteration Type:	Oxidation, Chloritic, Carbonate	
	Mineralization Age:	Unknown	
Deposit	Character:	Vein, Shear, Concordant	
	Classification:	Hydrothermal, Epigenetic	
	Type:	I05: Polymetallic veins Ag-Pb-Zn+/-Au	
	Shape:	Modifier:	Sheared, Faulted
	Dimension:	Strike/Dip:	200x90x8 metres 305/70S
	Comments:	Vein systems parallel regional schistosity. Dimension of historic ore zone.	

Host Rock

Dominant Host Rock:	Metavolcanic		
Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Lower Jurassic	Rossland	Elise	-----
Jurassic	-----	-----	Silver King Porphyry
Isotopic Age	Dating Method	Material Dated	
-----	-----	-----	
177 +/- 3.0 Ma	Uranium/Lead	Zircon	
Lithology:	Schist, Plagioclase Porphyry, Augite Porphyry, Schistose Volcanic Rock		
Comments:	Units Je1 and Je4 of the Elise Formation (Open File 1989-11). The Silver King intrusions are deformed - a maximum age of mineralization.		

Geological Setting

Tectonic Belt:	Omineca	Physiographic Area:	Selkirk Mountains
Terrane:	Quesnel		

Inventory

Ore Zone: DRILLHOLE
Category: Assay/analysis

Year: 2009
Report On: N
NI 43-101: N

Sample Type: Drill Core

Commodity	Grade
Silver	166.3 grams per tonne
Copper	0.64 per cent
Lead	3.21 per cent
Zinc	2.26 per cent

Comments: Over 2.02 metres in drillhole XB-09-20.

Reference: WWW <http://www.sedar.com/>

Ore Zone: DUMPS
Category: Measured

Year: 1983
Report On: Y
NI 43-101: N

Quantity: 6,187 tonnes

Commodity	Grade
Silver	141.60 grams per tonne
Copper	1.1600 per cent
Lead	0.0900 per cent

Comments:

Reference: Assessment Report 12611, page 46.

Ore Zone: F.W. VEIN
Category: Measured

Year: 1983
Report On: Y
NI 43-101: N

Quantity: 11,975 tonnes

Commodity	Grade
Silver	325.7 grams per tonne
Copper	1.8000 per cent
Lead	1.0000 per cent

Comments:

Reference: Assessment Report 12611, page 46.

Ore Zone: KING VEIN
Category: Measured

Year: 1983
Report On: Y
NI 43-101: N

Quantity: 29,756 tonnes

Commodity	Grade
Silver	258.52 grams per tonne
Copper	2.0900 per cent
Lead	0.5400 per cent

Comments:

Reference: Assessment Report 12611, page 46.

Ore Zone: MAIN VEIN EXTENSION
Category: Measured

Year: 1983
Report On: Y

Quantity: 5,534 tonnes

NI 43-101: N

Commodity	Grade
Silver	288.0 grams per tonne
Copper	1.6000 per cent
Lead	0.1000 per cent

Comments:

Reference: Assessment Report 12611, page 46.

Ore Zone: OPEN PIT

Year: 1983

Category: Measured

Report On: Y

Quantity: 6,148 tonnes

NI 43-101: N

Commodity	Grade
Silver	99.4 grams per tonne
Copper	1.2000 per cent
Lead	0.3000 per cent

Comments:

Reference: Assessment Report 12611, page 46.

Ore Zone: D50, D45

Year: 1983

Category: Measured

Report On: Y

Quantity: 8,544 tonnes

NI 43-101: N

Commodity	Grade
Silver	293.5 grams per tonne
Copper	1.0500 per cent
Lead	3.6700 per cent

Comments: D50 and D45 zones off Dandy level combined and averages weighted.

Reference: Assessment Report 12611, page 46.

Summary Production

		Metric	Imperial
	Mined:	202,049 tonnes	222,720 tons
	Milled:	0 tonnes	0 tons
Recovery	Silver	138,214,612 grams	4,443,703 ounces
	Gold	8,896 grams	286 ounces
	Copper	6,789,739 kilograms	14,968,812 pounds
	Lead	15,234 kilograms	33,585 pounds
	Zinc	4,071 kilograms	8,975 pounds

Capsule Geology

The Silver King mine is located at approximately 1676 metres elevation, 6.5 kilometres south of Nelson on the northeast side of Toad Mountain. Production began on a large scale in 1896 and continued intermittently until about 1949.

Locally, the occurrence lies along the Silver King Shear Zone, the core of a fold of the Hall Creek syncline. The shear zone extends over 1000 metres in width. The area contains abundant sericite, chlorite, quartz, carbonate, hematite, and epidote alteration in discrete to pervasive zones. The Elise Formation acts as the host rock for most mineralization around the occurrence. The formation's lithology is mainly volcanic augite porphyry and chlorite schist, with lenses of felsic material from metasedimentary or intrusive sources. Mineralized veins occur as quartz-chalcedony-chert breccias with in larger iron-manganese carbonate alteration halos. Sulphide minerals in the veins include pyrite, chalcopyrite, galena, sphalerite, tetrahedrite-tennantite, and bornite.

The property is underlain by highly schistose volcanics of the Lower Jurassic Elise Formation (units Je1 and Je4, Open File 1989-11), Rossland Group. These strike 305 to 290 degrees and dip 70 degrees south. Both mafic and felsic units are observed in the volcanic stratigraphy which is intruded to the east and southeast by plagioclase porphyry of the Middle to Late (?) Jurassic Silver King Porphyry. The mine occurs in the Silver King shear zone.

Mineralization is confined to three major shear controlled vein systems which parallel the regional Silver King shear zone and are cut by numerous east-west cross fractures. A gangue of quartz with some carbonate and siderite hosts pyrite, chalcopyrite and galena with minor amounts of sphalerite, stromeyerite, bornite, tetrahedrite, malachite, azurite and hematite. The major silver mineral is stromeyerite. Mineralized zones are somewhat erratic along strike and occur as blebs or lenticular features particularly in areas influenced by the intersection of east-west cross fractures with the main shear zones.

The mineralized veins at the Silver King occurrence are named Main, King, Kohinoor, Iroquois, and Queen. The veins display characteristics of polymetallic veins with sulphide-rich sphalerite, galena, copper, silver, and sulphosalt minerals hosted in calcite, and quartz alongside siderite, and rhodochrosite. Other mineralization occurs in the schistose, altered mafic and intermediate volcanic rocks of the Elise Formation as lower grade disseminated copper and silver mineralization.

Galena yields lead isotopes that indicate that the galena was emplaced as a result of a Jurassic I type magmatic event (Bulletin 109, page 156).

Historical production from zones in the order of 90 by 200 by 8 metres, has totaled over 200 000 tonnes with values of approximately 672 grams per tonne silver, 0.5 gram per tonne gold and 3.2 per cent copper.

The showings were discovered by the Hall Brothers in the fall of 1886 while prospecting for placer gold. Three claims were staked, the Kootenay Bonanza, Silver Kings and American Flag (Lots 140-142, respectively); these were Crown-granted in 1890. Development work was carried out under the name Kootenay Bonanza Co. The first high-grade ore was shipped in 1889.

The Hall Mines Limited, of London, England, purchased the property in 1893. A mine development program was begun and a 7.2 kilometre tramway was built to Nelson, where the company opened a 100 tonne-per-day smelter in January 1896. Smelter capacity was increased to 300 tonnes-per-day in 1897. The company was reorganized in 1900 under the name Hall Mining and Smelting Company Limited. The company shut down the mining operation in 1902 and subsequently leased the mine to a former company superintendent, M.S. Davys, who resumed mining operations. In 1904, the company resumed work under a partnership arrangement with Mr. Davys; the partnership terminated in 1906. Both mine and smelter closed in September 1907.

The property was leased in 1908 to the Kootenay Development Syndicate Limited, of London, England, with M.S. Davys as Managing Director. The mine closed in June 1910. To that date the mine had been developed by opencuts and four adits (Nos. 1, 3, 4 and 5), with a main shaft from the No. 5 level to the No. 10 level, giving a total vertical depth on the lode of 283 metres. From the No. 8 level to the surface the several levels are connected by stopes and raises. The main lode had been stoped from the surface to the sill of No. 5 level, and the south lode from No. 5 to No. 8.

The Dandy claim, adjoining the Silver King group on the northwest, was staked in about 1887 and Crown-granted to Messrs. Fox, Kelly and Cook in 1891; the Crown-grant was listed, apparently in error, as Lot 141, the same as the Silver King. Development work to 1893 included a 12-metre shaft and a 5-metre long adit. Owner A.H. Kelly reportedly shipped 600 tons of ore in 1899. The Dandy and Ollie Consolidated Mines Limited, was incorporated in 1903 but no work was reported.

In the Fall of 1910, Pacific Coast interests, through R.S. Lennie, merged some 40 claims on Toad Mountain formerly held by Hall Mining, The Dandy and Ollie Consolidated Mines, Starlight Mines Limited, Kootenay Development Syndicate Limited and by several individuals. Kootenay Bonanza Mines Limited was incorporated in January 1912 to hold the property.

The Consolidated Mining and Smelting Company of Canada (Limited) purchased a controlling interest in the property and Silver King Mines Limited was incorporated in December 1912 as the operating company. The Dandy adit was extended some 732 metres to intersect the Silver King shaft 12 metres above No. 8 level; other development work and approximately 1524 metres of diamond drilling was carried out. Development work was suspended in the fall of 1914 but resumed in 1916 under contract. Small scale development work and diamond drilling continued until October 1919, when the mine closed. The Silver King Mines Limited charter was surrendered in 1927.

Lessees carried out small scale intermittent mining operations in 1936, 1946 to 1949, 1956 and 1958.

The mine was dormant until 1965, when a Vancouver company began an exploration program. Surface drilling and underground sampling discovered a modest tonnage of proven and probable ore. The property was examined in 1973 with geophysics and geochemistry. Three anomalies were discovered, some indicating buried mineralization with similar orientation to the original orebodies. Exploration occurred in 1983 and resource calculations were reported.

Cronin Babine Mines Limited, by an agreement of February 1965 with The Consolidated Mining and Smelting Company of Canada Limited (name

changed to Cominco Ltd. in 1966), acquired an option to earn a 75 per cent interest in the property through an exploration expenditure of \$9 200 000. A private company, Silver King Mines Ltd., was incorporated in 1967 to hold the 24 Crown-grant and six recorded claims.

Work by Cronin during 1965-1967 included surface diamond drilling totaling 3715 metres in more than 54 holes. This work indicated proven reserves of 82 400 tons averaging 291.4 grams per tonne silver, 2.1 per cent copper and 1.0 per cent lead.

The company name (New Cronin) was changed in 1973 to Sproatt Silver Mines Ltd. The option was exercised in 1973 and the claims transferred to Silver King Mines Ltd. Work during the year included a time domain induced potential survey over 11 line-miles and a geochemical soil survey comprising 200 samples. In past work diamond drilling has established a proven 82 700 tons averaging 294.8 grams per tonne silver, 0.9 per cent lead and 2.0 per cent copper (Sproatt Silver Mines Ltd. Statement of Material Facts, Nov. 7, 1975).

The company name (Sproatt) was changed in 1977 to Hecate Gold Corp. In June 1982, the company was amalgamated with Host Ventures Ltd. under the latter name. Work in 1983, including trenching, diamond drilling of 566 metres in 10 holes and dump sampling was financed by the company, thereby increasing its interest in Silver King Mines Ltd. to 90 per cent The company name (Host Ventures) was changed in 1984 to Hot Resources Ltd., and in 1985, to Inter-Globe Resources Ltd.

Amulet Resources Ltd. was incorporated in 1998, optioned the property and planned drilling.

In March 2002, Sultan Minerals Inc. entered into an option agreement to earn 100 per cent of the Silver King Mine property, composed of 24 crown grants and two claims optioned from Arbutus Resources. Sultan expanded soil geochemical surveying onto the newly acquired claims in the Starlight, Silver King Mine and Cariboo areas.

In 2005, Sultan Minerals reported the discovery of copper and silver mineralization. The new discovery was made by prospecting near the historic Silver King mine, which is located approximately 1500 metres southwest of Sultan's Gold Mountain zone. The mineralized exposure was found in a 1-metre wide by 7-metre long area exposed by erosion in the wall of a narrow pit excavated in approximately 1900. The mineralization occurs in the footwall rocks beneath the historic Silver King vein and is composed of disseminations and veinlets of copper-silver minerals. Historic mine records make reference to several exposures of similar footwall mineralization located 125 metres and 360 metres along strike to the east of the new discovery. At the time of the historic mining, only the high-grade veins were considered to be important, and the disseminated mineralization was neither sampled nor assayed.

The best sample taken from the new discovery assayed 2.48 per cent copper and 165.0 grams per tonne silver; 7 metres of continuous chip sampling taken along the apparent strike of the showing yielded an average grade of 1.71 per cent copper and 61.0 grams per tonne silver (Press Release, Sultan Minerals Inc., June 7, 2005).

In 2009, Excalibur Resources Ltd. completed exploratory diamond drilling totaling 2137.55 metres on the Silver King property. Highlights include drillhole XB-09-20, which returned 2.02 metres grading 166.3 grams per tonne silver, 0.64 per cent copper, 3.21 per cent lead and 2.26 per cent zinc, including a 0.86 metre section grading 286.9 grams per tonne silver, 0.698 grams per tonne gold, 1.33 per cent zinc, 6.88 per cent lead and 4.67 per cent zinc (Technical Report available on Sedar).

Bibliography

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Dandy, L. (2011-04-08): Technical Report on the Silver King Property.

Date Coded:	1985/07/24	Coded By:	BC Geological Survey (BCGS)	Field Check:	N
Date Revised:	2020/06/10	Revised By:	Nicole Barlow (NB)	Field Check:	N