

NAME OF PROPERTY HENDERSON, HUMMING BIRD (DUTHIE)

OBJECT LOCATED - McPherson adit.

UNCERTAINTY IN METRES 100. Lat. 54°46'23" Long. 127°21'20"

Mining Division Omineca District Coast, Range 5

County Township or Parish

Lot Concession or Range

Sec Tp. R.

OWNER OR OPERATOR AND ADDRESS

Silver Standard Mines Limited.

DESCRIPTION OF DEPOSIT

The country rock consists of Lower and (?) Mid Jurassic spherulitic flow-banded rhyolite and massive lapilli tuff cut by numerous greenstone, diabasic, and a few fine-grained diorite dykes. The flow-banded rhyolite outcrops in the southern part of the area on the lower slopes of the mountain. It is overlain to the north, east, and west by the massive lapilli tuff. The contact dips about 20 degrees north at about the 4,000-foot level on the Henderson vein. In the vicinity of the veins the country rock is usually bleached and altered.

The mineral deposits occupy four main fault zones, originally known as the Ashman, Henderson, Fault Plane, and Dome. These mineralized fault zones or "vein-lodes" strike northeasterly and have dips that vary from 50 degrees southeast to 70 degrees northwest. They range from a few inches to 8 feet in width and from 700 to more than 3,500 feet in length. The vein-lodes are sliced, sheared, and brecciated zones along which occur sulphide veins and replacement deposits, the latter associated with some vein quartz and carbonate. The principal

see Card 2

Associated minerals or products of value - Gold, lead, zinc, cadmium.

HISTORY OF EXPLORATION AND DEVELOPMENT

The property is located between elevations of 3,000 and 4,500 feet on the southwest side of Hudson Bay Mountain, 7½ miles west of Smithers.

The original claims were staked in about 1908. The Henderson Fraction was owned by Henderson, Boyd, and Ashman; the Humming Bird by Mark Hannah, Geo. Holbrook, and Geo. Charlton; the White Swan by Mark Hannah. Early exploration work consisted mainly of test pits and stripping on what is known as the Ashman vein. In 1921 the Henderson vein was discovered about 200 feet southeast of the Ashman.

J.F. Duthie, of Seattle, optioned the Henderson claim from J.K. Ashman in July 1922, and purchased the property the following year. The White Swan claim was optioned by Mr. Duthie in the fall of 1922. Underground work was begun in 3 adits on the Henderson vein.

In July 1923 Mr. Duthie sold a 55% interest in the property to the Federal Mining and Smelting Company, of Wallace, Idaho, a subsidiary of the American Smelting and Refining Company. Under the terms of the agreement a new operating company, Duthie Mines, Limited, was incorporated in British Columbia in December 1923, with head office at Prince Rupert. Shipments of high-grade ore began in 1923. Considerable development work was carried out on the Compressor, Thompson, and McPherson levels before operations were discontinued in August 1924. The property reverted to Mr. Duthie, who resumed work on the property in June 1925 with further exploration on the Compressor level, and on the White Swan showings. In 1926 a winze was sunk 158 feet below the Compressor level and 2 intermediate levels established. A 50 ton-per-day flotation mill was installed and milling began in July 1927.

Duthie Mines, Limited, was incorporated in February 1928 with head office in Vancouver. Shares of the new company were issued to Atlas Exploration Company Limited and Mining Issue Corporation Limited to provide funds for development work. Six claims, the Henderson Fr., Raven Fr., Raven, White Swan, Cobalt, and Muriel (Lots 2932, 2936-2940, respectively) were Crown-granted to the company in 1928. The adjacent Humming Bird and Canary claims were purchased from George Charlton in 1929. Mining and milling operations were suspended in March 1930. The company charter was surrendered in 1935.

see Card 2

Mineral Development Sector, Department of Energy, Mines and Resources, Ottawa.
510188

HISTORY OF PRODUCTION

From 1923-1954, inclusive, 79,281 tons of ore were milled or shipped from this property. From this ore 3,240 ounces of gold, 1,671,437 ounces of silver, 41,534 pounds of copper, 7,614,127 pounds of lead, 6,345,877 pounds of zinc, and 23,907 pounds of cadmium were recovered.

MAP REFERENCES

Map 69-1, Smithers, Hazelton, and Terrace Areas, (Geological compilation), Sc. 1":4 miles, British Columbia Dept. of Mines.

Geology of Hudson Bay Mountain, Sc. 1":5 miles, Fig. 9, Summary Report 1925, Pt. A, Geol. Surv. of Canada.

#Plan of Duthie Mine property, Sc. 1":400 ft., Fig. 9, Memoir 223.

Plan of workings, Sc. 1":1,100 ft., Report of Minister of Mines, British Columbia, 1922, p. 108.

Map 5319 G, Smithers, (Aeromag.), Sc. 1":1 mile.

Map 93 L/14, Smithers, (Topo.), Sc. 1:50,000.

REMARKS

Comp./Rev. By	DMacR	DMacR					
Date	12-75	1-79					

REFERENCES

Kindle, E.D.; Mineral Resources, Hazelton and Smithers Areas, Cassiar and Coast Districts, British Columbia; Memoir 223 (Revised Edition), p. 103, Geol. Surv. of Canada.

Reports of Minister of Mines, British Columbia: 1908, pp. 64, 172; 1911, p. 119; 1912, p. 115; 1914, pp. 215, 216; 1917, p. 113; 1922, p. 109; 1923, p. 108; 1924, p. 94; 1925, pp. 135, 359; 1926, p. 129; 1927, p. 134; 1928, pp. 159, 520; 1929, pp. 161, 429; 1930, p. 139; 1934, p. C 9; 1939, p. 69; 1940, p. 55; 1941, p. 55; 1942, p. 54; 1946, p. 86; 1947, p. 98; 1948, p. 82; 1950, p. 100; 1951, p. 112; 1952, p. 93; 1953, p. 93; 1954, p. 95; 1956, p. 26; 1957, p. 10; 1963, p. 25; 1968, p. 120.

Jones, R.H.B.; Geology and Ore Deposits of Hudson Bay Mountain, Coast District, B.C.; Summary Report 1925, Pt. A., p. 130, Geol. Surv. of Canada.

Leach, W.W.; The Bulkley Valley and Vicinity; Summary Report 1908, p. 45, Geol. Surv. of Canada.

Mineral Policy Sector; Corporation Files: "Duthie Mines, Limited"; "Atlas Exploration Company Limited"; "Dorita Silver Mines Ltd."; "Silver Standard Mines Limited".

Re Opening of the Duthie Mine, Western Miner, April 1947, p. 110.

Mines Branch, Ottawa; Investigations in Ore Dressing and Metallurgy; 1947, Invest. No. 2269; 1952, Invest. No. MD 2948.

Kerr, F.A.; Mineral Resources Along the Canadian National Railway, Between Prince Rupert and Prince George, British Columbia; Paper 36-20, p. 88, Geol. Surv. of Canada.

NAME OF PROPERTY HENDERSON, HUMMING BIRD (DUTHIE)

DESCRIPTION OF DEPOSIT (continued)

ore minerals are galena, sphalerite, tetrahedrite, ruby silver (pyrargyrite), pyrite, arsenopyrite, gold, and chalcopyrite; ore from the Henderson-Ashman vein-lode also contains some pyrrhotite and marcasite. All the ore contains gold, but rarely in visible form. It is generally associated with arsenopyrite. The ore is associated with minor amounts of quartz and carbonate gangue, and is cut in places by younger chalcedony veins up to 2 inches wide. There is a progressive change in mineralization along the Henderson vein-lode; in a northeast direction, towards the granitic core of the mountain, galena-sphalerite-tetrahedrite-ruby silver ore gives place to arsenopyrite-sphalerite ore that contains more gold and zinc but less galena and silver.

The Henderson vein-lode is marked by stronger slicing and brecciation than the other vein-lodes, and has proved to be the most productive on the property. It outcrops at intervals for more than 2,000 feet between elevations of 3,550 and 4,200 feet, at which point it is joined by the Ashman vein-lode. Beyond this point the combined lodes have been traced up the hill northeasterly in line with the Ashman lode for a distance of 1,500 feet to an elevation of 4,450 feet. The Henderson lode has an average strike of about north 65 degrees east and a dip that varies from 50 degrees southeast to 80 degrees northwest. The Ashman lode has been traced for about 1,700 feet to the southwest of its junction with the Henderson. As exposed in surface cuts this lode is not sliced or brecciated as severely as the Henderson and the vein deposits that occur along it are relatively small.

At an elevation of 3,575 feet northeast of the No. 1 fault, and just below the Compressor level, the Henderson vein-lode is joined by the Fault Plane vein-lode. The line of junction of these two lodes plunges at a low angle to the southwest. The stronger, Henderson vein-lode has a vertical dip below the junction, whereas the Fault Plane vein-lode strikes roughly parallel with the Henderson but dips at 55 to 60 degrees to the southeast.

A fourth vein-lode, the Dome, lies 1,350 feet southeast of the Henderson. It strikes N65°E, dips 75-85° northwest and is well defined for a distance of 700 feet. The Dome Extension claim (Lot 7261) was Crown-granted to the Estate of J.A. Aldrich in 1931.

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

Smithers Mines, Limited leased the property in October 1939 and small scale mining operations continued into 1942. Duthie Mines (1946), Limited was incorporated in May 1946 to acquire the assets of Smithers Mines, Limited. Work on the property began in June 1946. Surface diamond drilling was done to explore the central section of the Henderson and related zones, and for their northeastern and southwestern extensions. Geological mapping was carried out, the Mac-Pherson level was advanced 450 feet, and underground diamond drilling done from the new workings. Work on the property ceased in 1948.

Most of the exploration work to 1948 was confined to the principal vein-lodes, known as the Ashman, Henderson, and Fault Plane. These were developed by several miles of underground workings and furnished all the ore taken from the mine. Eleven levels were driven, six of which are drift adits.

Sil-Van Consolidated Mining and Milling Company, Ltd., was incorporated in September 1950 to acquire the property. A new adit was begun on the Humming Bird claim and 1,912 feet of drifting and crosscutting, and 505 feet of raising was carried out on 2 levels. A 150 ton-per-day mill was installed. Milling began on June 1, 1953, and was suspended on April 16, 1954.

In the fall of 1956 an agreement was reached with Silver Standard Mines Limited for further exploration and development. Work by Silver Standard to August 1957 included 790 feet of drifting and raising, and 3,627 feet of surface and underground diamond drilling. Reserves were reported in the November 1957 Annual Report as follows:

Category	Tons	GRADE				
		AU ozs/t	AG ozs/t	PB %	ZN %	CU %
Proven	21,700	.09	7.3	5.0	7.5	
Probable	6,500	0.09	7.3	5.0	7.5	
Probable	10,000	0.035	5.6	2.8	5.7	
Indicated	39,700	0.037	2.5		6.7	0.4

(Sil-Van Ms L Rept. & Balance sheet 30/11/64).

Under the terms of the agreement Silver Standard received a 36½% interest in Sil-Van Consolidated. The company name was changed in May 1957 to Sil-Van Mines Limited.

continued reverse Card 2

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

An electromagnetic survey was carried out in 1963 in an attempt to find an extension of the Henderson vein. Surface diamond drilling totalling 2,221 feet in 3 holes was carried out in 1968 to test anomalies found in the vicinity of the old millsite.

The company name (Sil-Van) was changed in 1969 to Dorita Silver Mines Ltd. Maintenance of the property over the years was financed mainly by Silver Standard. In October 1978 Dorita sold all of its mineral properties to Silver Standard Mines Limited.