Location/Identification

MINFILE Number: 104O 038
National Mineral Inventory Number: 104O16 Ag4
Name(s): **SILVERTIP**
MIDWAY, SILVER CREEK, DISCOVERY, DISCOVERY NORTH, SILVER CREEK EXTENSION

Status: Past Producer
Mining Method Underground
Regions: British Columbia
BCGS Map: 104O099
NTS Map: 104O16W
Latitude: 59 55 38 N
Longitude: 130 20 32 W
Elevation: 1250 metres
Location Accuracy: Within 500M
Mining Division: Liard
Electoral District: Stikine
Resource District: Skeena Stikine Natural Resource District
UTM Zone: 09 (NAD 83)
Northing: 6644067
Easting: 424973
Comments: Mine portal, located near the Tootsee River in the Cassiar Mountains just south of the Yukon-British Columbia border. See also Silvertip Hill (104O 003).

Mineral Occurrence

Commodities: Zinc, Silver, Lead, Gold, Tin, Copper, Antimony

Minerals
Significant: Galena, Sphalerite, Freibergite, Pyrargyrite, Stannite, Argentite, Boulangerite, Cassiterite, Chalcopyrite, Geocronite, Franckeite
Associated: Quartz, Calcite, Barite, Pyrite, Arsenopyrite, Marcasite, Pyrrhotite
Alteration: Quartz, Dolomite, Sericite
Alteration Type: Silicific'n, Sericitic
Mineralization Age: Unknown

Deposit
Character: Massive, Stratabound, Vein, Breccia
Classification: Sedimentary, Replacement
Type: J01: Polymetallic manto Ag-Pb-Zn, E14: Sedimentary exhalative Zn-Pb-Ag
Shape: Irregular **Modifier:** Faulted
Dimension: 600x300x11 metres
Comments: Discovery zone.

Host Rock

Dominant Host Rock: Sedimentary

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Middle Devonian	McDame	Undefined Formation	------
Devonian-Mississipp.	Earn	Undefined Formation	------

Isotopic Age	Dating Method	Material Dated
------	Fossil	------
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Lithology: Limestone, Dolomite, Mudstone, Wacke, Breccia, Mafic Dike

Geological Setting

Tectonic Belt: Omineca
Physiographic Area: Cassiar Mountains
Terrane: Cassiar
Comments: Miogeoclinal wedge.

Inventory

Ore Zone: SILVERTIP
Year: 2018
Category: Combined
Report On: Y
Quantity: 1,610,849 tonnes
NI 43-101: Y

Commodity	Grade
Silver	289 grams per tonne
Lead	5.6 per cent
Zinc	8.24 per cent

Comments: proven and probable
Reference: Bolu, H.M. (2019-02-08): Technical Report for the Silvertip Property

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Ore Zone: SILVERTIP
Year: 2018
Category: Combined
Report On: Y
Quantity: 1,176,000 tonnes
NI 43-101: Y

Commodity	Grade
Silver	222.73 grams per tonne
Lead	4.09 per cent
Zinc	8.58 per cent

Comments: measured and indicated
Reference: Bolu, H.M. (2019-02-08): Technical Report for the Silvertip Property

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Ore Zone: SILVERTIP
Year: 2018
Category: Inferred
Report On: Y
Quantity: 529,000 tonnes
NI 43-101: Y

Commodity	Grade
Silver	271.04 grams per tonne
Lead	5.02 per cent
Zinc	9.31 per cent

Comments:
Reference: Bolu, H.M. (2019-02-08): Technical Report for the Silvertip Property

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Ore Zone: SILVERTIP
Year: 2017
Category: Indicated
Report On: Y
Quantity: 2,349,000 tonnes
NI 43-101: Y

Commodity	Grade
Silver	352 grams per tonne
Lead	6.73 per cent
Zinc	9.41 per cent

Comments: Calculated at a cut-off grade of 200 grams per tonne silver equivalent (AgEq).
Reference: News Release - Coeur Mining Inc. September 11, 2017.

Ore Zone: SILVERTIP
Year: 2017
Category: Inferred
Report On: Y
Quantity: 460,000 tonnes
NI 43-101: Y

Commodity	Grade
Silver	343 grams per tonne
Zinc	9.81 per cent

Comments: Calculated at a cut-off grade of 200 grams per tonne silver equivalent (AgEq).

Reference: News Release - Coeur Mining Inc. September 11, 2017.

Summary Production

		Metric		Imperial	
Mined:		78,132	tonnes	86,125	tons
Milled:		78,132	tonnes	86,125	tons
Recovery	Silver	10,560	grams	340	ounces
	Zinc	3,075,000	kilograms	6,779,215	pounds
	Lead	1,775,000	kilograms	3,913,205	pounds

Capsule Geology

The Silvertip deposit is located near the Tootsee River in the Cassiar Mountains just south of the Yukon-British Columbia border.

The deposits occur in a carbonate and clastic sedimentary sequence of the Cassiar terrane, which has been intruded into the west by the mid-Cretaceous Cassiar batholith. The sediments include the Kechika, Sandpile, McDame and Earn groups. The deposits are situated on the west limb of a broad, open, northwest trending synclinorium, the core of which is occupied by volcanics, sediments and ultramafic rocks of the Devonian-Triassic Sylvester Allochthon. Massive sulphide zones in the Midway deposits occur in limestones of the upper part (Unit MLS) of the Middle-Upper Devonian McDame Group. This unit is unconformably overlain by clastic sediments of the Upper Devonian-Lower Mississippian Earn Group, which consists of two upward-coarsening sequences of turbiditic flows.

Mineralization is hosted within two deposits types: 1) the Lower Zone (LZ), stratigraphically and structurally controlled cap-like bodies or 'mantos-type' deposits of pyrite-sphalerite-galena-sulphosalt massive sulphide at, or near the carbonates of the middle Paleozoic McDame Group and its unconformatble contact with overlying argillaceous clastic sediments; and 2) the Upper Zone (UZ) which comprises stratabound pods of sphalerite-galena with sulphide exhalate mineralization (SEDEX-type deposit) hosted in the overlying Upper Devonian to Lower Mississippian Earn Group sediments. The LZ mantos-type mineralization is of indeterminate age and accounts for the majority of the mineralization, while the UZ exhalite-type mineralization is syn-sedimentary and of Devonian age.

Several exhalative horizons, consisting of fine grained massive to laminated silica and/or barite with pyrite, sphalerite and minor galena occur in the Earn Group sediments. Two of these, the Upper and Discovery zones, occur near the base of the second cycle, and contain lead-zinc-silver mineralization. Sulphides within the exhalite zones are restricted in extent although exhalites are widespread and may be stratigraphically correlatable.

The McDame/Earn groups contact is a pronounced erosional surface, with carbonates below the contact strongly affected by Late Devonian karstification. The unconformity cuts across 165 metres of McDame limestone stratigraphy near the deposit. Uplift and erosion and karst development in Late Devonian time was accompanied by high-angle block faulting, which made the carbonates a better aquifer for meteoric waters. Breccias at Midway include carbonate mosaic breccias, and solution-collapse breccias which include Earn Group clasts. Vein mineralization occurs throughout the McDame and Earn groups. Veins vary from hairline fractures to 20 centimetre widths, and consist of quartz, calcite, pyrite, galena and sphalerite.

Mafic dikes of unknown age occur in the Midway area, and are commonly sericitized in the vicinity of the deposits. Potassium-argon dating of sericitized Earn Group sediments and quartz feldspar porphyry dikes about two kilometres southeast of the deposit, give ages of about 66 million years. The source of mineralizing fluids has not been identified, although the high silver content of the deposits and tin mineralization indicate a probable magmatic origin. Earn Group mudstones above the unconformity locally confined mineralizing fluids to the underlying limestones, with sulphide deposition occurring as open-space filling and replacement of carbonates.

The Silver Creek zone contains two high-grade core zones, Silver Creek North and Silver Creek South. Massive sulphide mineralization consists of pyrite (and associated marcasite and pyrrhotite), sphalerite and galena, with lesser freibergite, pyrargyrite, argentite, boulangerite, stannite, arsenopyrite, cassiterite, chalcopyrite and quartz-carbonate gangue. Lead sulphantimonides have also been identified. Sulphide textures indicate several phases of brecciation, replacement and open-space drusy growth. The southern part of the zone is characterized by freibergite and pyrargyrite and very fine grained colloform pyrite, while the northern part is marked by abundant lead sulphantimonides and by the absence of freibergite, pyrargyrite, pyrrhotite and colliform pyrite. Indicated ore reserves for the Silver Creek zone, in 1985, were 2,847,920 tonnes grading 446.4 grams per tonne silver, 8.45 per cent lead and 10.21 per cent zinc (Assessment Report 13259).

The Discovery deposit occurs about 300 metres east of the Silver Creek North core zone. Massive and brecciated sulphides occur in several zones in the McDame limestones. Mineralization consists of pyritic, pyrrhotitic and base metal massive sulphide (greater than 50 per cent sphalerite and galena) zones. These zones vary in thickness from 0.2 to 2.3 metres. Sulphides also occur as matrix to both sulphide and carbonate clast breccias. "Trash" breccias commonly occur toward the base of mineralized intersections. Metal distribution relations are not well known for the Discovery deposit. The Discovery zone, in 1985, was thought to contain 3,813,307 tonnes of indicated ore grading 371.7 grams per tonne silver, 13.34 per cent zinc and 5.4 per cent lead (Assessment Report 13259).

It is now known that the Silver Creek and Discovery zones are actually the same with a lower grade mineralized zone in between.

Silvercorp Metals Inc. acquired the property in February 2010 and released an updated resource estimate as follows:

Classification	Amount (tonnes)	Grade Ag(g/t)	Pb(%)	Zn(%)	Au(g/t)
Indicated	1,976,664	398	7.65	10.35	0.58
Inferred	357,713	413	7.50	11.05	0.26

Silvertip NI43-101 Technical Report dated February 19, 2010 (http://silvercorpmetals.com)
Calculated using a greater than 400 grams per tonne Ag equivalent cut-off.

In 1955, galena-rich float was discovered by prospectors on Silvertip Hill. In late 1956 and 1957, Conwest Exploration Company explored gossanous zones in the McDame Group limestone by drilling and surface and underground workings. Zones of galena and silver-rich values were found but most of the sulphides were thoroughly oxidized. In 1958, drilling was continued by a joint venture between Noranda Mines Limited, Canex Aerial Exploration Limited and Bralorne Mines Limited. A number of other companies optioned the property between 1960 and 1966, conducting AFMAG and induced polarization (IP) surveys over Silvertip Hill to identify drill targets. Other work included photo and geological mapping, rock and soil sampling, and trenching and stripping. Some good anomalies were found, but follow-up drilling found only deeply oxidized mineralization with generally uneconomic silver grades. Silverknife Mines Limited owned the Silvertip claims from 1966 until the claims lapsed in the early 1970s. During this time, four rotary holes were drilled (1966) to test IP anomalies, and two diamond-drill holes were targeted on electromagnetic (EM) survey targets (1967). Two diamond-drill holes tested geophysical anomalies in 1968. By this time, the idea that silver-lead mineralization was related to replacement of limestone at its contact with overlying ‘shale’ was the dominant exploration model for the Silvertip Hill area. However, results were still not encouraging due to various drilling problems, weak mineralization, or deep oxidation. Very little work was done in the 1970s.

In 1980, the main phase of exploration began when Cordilleran Engineering, on behalf of subsequent property owner Regional Resources Limited, was conducting regional reconnaissance in search of shale-hosted, lead-zinc Sedex deposits. The property was then known as Midway. They found base metal anomalies in soils and stream sediments about 1500 metres northeast of Silvertip Hill, which led to the discovery of baritic and siliceous gossans of exhalite origin within the Earn Group. Regional mapping, soil and EM surveys followed in 1981, with six diamond-drill holes around the exhalite showings. Four of these unexpectedly intersected massive sulphide below the base of the Earn Group, at the top of the McDame Group limestone, and by the end of 1982 the exploration focus had again shifted back to limestone-hosted replacement mineralization. An aggressive surface drill program was conducted between 1982 and 1984, along with geophysics and petrographic and metallurgical research. Two main, blind areas of mineralization were outlined, Silver Creek and Discovery, and a manto-type deposit model was formulated. Encouraged by the apparent size of the mineralized area and the good grade and thickness of sulphides, the company began underground exploration development in the Silver Creek area (1984), followed by 12,383 metres of underground drilling over 170 holes, in fans spaced 20 metres apart. The results showed that the mineralization was more erratic and discontinuous than had been modeled from the widely spaced surface drill pattern, leading to a reduced estimate of the size of the resource.

A new underground development initiative was carried out between 1989 and 1991 by operator Strathcona Mineral Services, with the opening of a decline to the east towards the Discovery area, and completion of 9620 metres of underground drilling. In 1996, Imperial Metals Corporation of Vancouver acquired Regional Resources and renamed the company Silvertip Mining Corporation (SMC). A large exploration program in 1997 comprising diamond drilling, seismic surveying, and surface geological mapping resulted in the discovery of a new zone, the Silver Creek Extension, now part of the Silver Creek zone. The high grade, near-surface Silver Creek Extension zone mineralization was intersected immediately north of the Silver Creek zone. A second new zone, Discovery North, is 150 metres north of the Discovery zone (T. Schroeter, personal communication, 1997). This added significantly to the total geological resource, which was subsequently recalculated at 2.57 million tonnes grading 325 grams per tonne silver, 6.4 per cent lead, 8.8 per cent zinc and 0.63 gram per tonne gold.

In 1998, SMC entered the Environmental Assessment review process with the provincial government for project certification. That year, various environmental baseline studies were done and monitoring procedures instigated, along with a reconnaissance CSAMT (Controlled Source Audio Frequency Magneto Telluric) geophysical survey. This survey revealed a large, vertically oriented low-resistivity anomaly between the Silver Creek South area and the Camp Creek fault, suspected of indicating a sulphide chimney. A more detailed, follow-up CSAMT survey was done in 1999, and

the best three geophysical targets were drilled. One hole (99-65) intersected thick, feeder-style mineralization. This intersection prompted the re-opening of a portion of the existing underground workings by de-watering and refurbishment of decline and tunnels in the fall of 1999. This was followed by 3210 metres of underground diamond drilling in January-February 2000, centred on drillhole 99-65. This drilling identified the Zone 65 area of the deposit in sufficient detail to support a resource calculation for the 65 Zone but this was not done. The 65 Zone had failed to live up to the company's hopes for the addition of significant additional high grade mineralization in the form of a feeder pipe or chimney.

A 14 line, 8.85 line-kilometre natural source Audio Frequency Telluric (AMT) geophysical survey was conducted in the summer of 2001. The grid was installed to the north of the previously known mineralization, in an area where the McDame limestone is not under the cover of the typically graphitic Earn Group sedimentary rocks. The AMT survey was successful in defining previously known geological features that confirmed the techniques effectiveness. At least one strong anomaly evident in the survey data was recommended for drilling, that target is as yet untested.

In 2002, Silver Standard acquired the Silvertip Project from Imperial Metals and put further work on the property on hold.

Silvercorp subsequently purchased the property from Silver Standard in February, 2010 and completed an NI 43-101 compliant report on the resources and work to date on the property. Silvercorp Metals Inc. conducted exploration and development work which included a VTEM geophysical survey, core drilling, a brief exploration and mapping program, claim staking and studies related to environmental impact including wildlife, fisheries, plants, air quality, noise and archaeology. Work began in July with a 4113 line-kilometre VTEM airborne geophysical survey over the entire property. This program was not successful in identifying the Silvertip deposit proper or in repeating some previously identified high priority AMT geophysical anomalies. The survey did identify a number of VTEM anomalies on the property. Drilling began in August and totalled 10,913.36 metres of NQ coring in 36 drillholes. Of the 36 drillholes attempted, 12 were abandoned before completion for various reasons including broken ground, drill rods getting stuck in the hole and inexperienced operators. Eighteen out of 24 completed drillholes intersected mineralization, and 17 of these drillholes intersected significant mineralization. Field exploration investigated the DM zone at Donegal Mountain, 8 kilometres south of the Silvertip deposit where previous work had identified high grade silver-lead-zinc mineralization at the Earn/McDame contact. Geological mapping at 1:1000 scale and collection of 14 mineralized rock samples for geochemical analysis were undertaken in September and October and traced mineralization for over 300 metres along this contact. The area is targeted for drill testing to define the potential for economic mineral

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Date Coded:	1985/07/24	**Coded By:**	BC Geological Survey (BCGS)	**Field Check:**	Y
Date Revised:	2020/08/11	**Revised By:**	Karl A. Flower (KAF)	**Field Check:**	Y