# NI 43-101 TECHNICAL REPORT

### **Resources and Reserves Update**

# **SGX MINE**

# YING SILVER-LEAD-ZINC DISTRICT

Henan Province People's Republic of China For Silvercorp Metals Inc.

May 20, 2011



Prepared by

Mel Klohn, L.P. Geol. BK Exploration Associates Wenchang Ni, P. Eng Silvercorp Metals Inc. Chris Broili, L.P. Geol., C.P. Geol. BK Exploration Associates

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### 1.0 SUMMARY

#### Location, Infrastructure and History

The SGX Mine is the largest of three significant producing underground mining operations of Silvercorp Metals. Inc. ("Silvercorp") in the Ying Ag-Pb-Zn District of western Henan Province, China. The district, a 100 sq. km. sized area largely controlled by Silvercorp, offers adequate access to nearby service centers, labor, and power. It is also the site of two mills constructed in recent years by Silvercorp to process ore from the several mines. The SGX mine area, which includes a smaller satellite deposit, the HZG mine, is in the western part of the district. The project area is covered by one mining permit and three exploration permits, together totaling 58.26 sq. km. in size. Silvercorp first acquired the SGX project in 2004 and has since consolidated the remainder of the district. The company has been producing and shipping ore from the SGX mine since 2007.

#### Geology and Ore Deposit Type

The district lies in a major deformed mountain belt consisting of intensely folded, faulted and mineralized gneiss and greenstone of Precambrian age. Mineralization occurs as numerous polymetallic quartz-carbonate veins that fill fault-fissure zones of varying strikes and dips. The fault-fissure zones extend for hundreds to a few thousand meters along strike, enclosing steeply-dipping narrow tabular or splayed sets of veins that "pinch-and-swell" along strike and to depth. The character, mineralization and alteration and of the vein systems are quite similar to many other deposits found throughout the world which are often referred to as "mesothermal" or "polymetallic" silver-lead-zinc deposits. Important examples include the Coeur d'Alene silver district in northern Idaho, U.S.A., Kokanee Range and Keno Hill, Canada, Harz Mountains and Freiberg, Germany, and Pribram, Czechoslovakia. The mineralization in these deposits is thought to have formed by hydrothermal processes at considerable depth, and for this reason the deposits may have great vertical extents, commonly a few kilometers or more.

#### **Mineralization and Exploration**

The SGX-HZG mine areas have a myriad of known mineralized veins – 27 total at SGX and 4 at HZG. The veins are generally similar to those found throughout the district, occurring as sets of veins of similar orientation enclosed by steeply-dipping fault-fissure zones which extend for hundreds to a few thousand meters along strike. In the SGX Mine, approximately 27% of the material filling the veins is strongly mineralized, with the richest mineralization often occurring in pockets or "ore shoots" having vertical and horizontal lengths measured in several tens of meters or more and widths ranging from 0.4 to 3.0 m. The mineralization consists mainly of galena (lead sulfide) and sphalerite (zinc sulfide), with small amounts of pyrite (iron sulfide) and other metallic minerals. The metallic minerals occur as disseminations or massive accumulations in a gangue of quartz and carbonate minerals. Silver is present mostly as microscopic inclusions in the galena.

Exploration and delineation of the mineralized veins is done primarily from underground workings – tunnels, drifts, crosscuts and declines, typically about  $2 \times 2 \text{ m}$  in size – and by extensive underground long-hole core drilling. Tunneling, typically at levels 40 to 50 m apart in elevation, is done along strike of the veins to define character and tenor of mineralization in the

veins, and holes are drilled at 50-100 m spacings along strike to delimit extent of the veins at depth. To date, approximately 53,749 m of exploration tunnels together with 356 underground drill holes (112,695 m) and 67 surface drill holes (26,448 m) have been completed in the SGX and HZG mine areas.

The collecting and assaying of channel samples across vein exposures in the tunnels and in splits of drill core intersecting the veins at depth is one of the primary tasks in exploring and developing the mineralization found in the veins. The sampling methods and assaying procedures used by Silvercorp appear to meet the standards used by the industry elsewhere in world for exploring and developing similar underground vein systems.

#### Mineral Processing

Ore from the SGX-HZG veins is transported to Silvercorp's central mills for processing. Silvercorp has two mills in the district, the No. 1 mill (600 tpd, in operation since March 2007) and the No. 2 mill (2,000 tpd, in operation since January 2010). Head grades of SGX ore sent to the No. 1 mill in 2010 (305,744 tonnes total) averaged 407 g/t Ag, 6.18% Pb, and 2.71% Zn with mill recoveries of 85.0% for Ag, 90.8% for Pb, and 70.5% for Zn.

#### Mineral Resource and Reserve Estimates

Estimates of Mineral Resources and Mineral Reserves for Silvercorp's SGX and HZG mine projects have been prepared using the standards and categories established by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM). The term "Mineral Resource" covers mineralization of *intrinsic economic interest* which has been identified and estimated through exploration and sampling. The estimation of mineral resources involves greater uncertainty as to their existence and economic viability than the estimation of mineral reserves and it should not be assumed that any or all of mineral resources will be converted into reserves.

The mineralization in the SGX-HZG mine areas – and other mines in the Ying District (includes SGX, HZG, HPG, HPG(Au), TLP and LM mines) – occurs as relatively narrow tabular veins that pinch-and-swell along fault-fissure structures. A polygonal block model using detailed longitudinal and cross-sections constructed for each vein is used to estimate the mineral resources present in each vein and is considered an acceptable and applicable method for the pocket-like type of mineralization present in narrow veins such as these. The resource blocks are defined and constrained using a set of 12 stringent parameters for calculating the dimensions, widths, grades and specific gravities of the blocks, and other items necessary to categorize the resources and provide reasonable estimations of tonnage and grade for each block.

The resource tables categorize the currently defined estimated mineral resources in Silvercorp's various mine areas as "measured," "indicated," and "inferred." Mineral resources in the "measured" and "indicated" mineral resource categories have much higher levels of confidence than the "inferred" category, which is separately reported. The estimation of inferred resources involves far greater uncertainty as to their existence and economic viability than the estimation of other categories of resources. It should not be assumed that inferred mineral resources exist or will be upgraded into the higher resource categories.

Additionally, it is important to note that the estimated "measured" and "indicated" mineral resources tabled in this report are *inclusive* of mineral reserves, which are separately reported in a

SGX Mine Ying Silver-Lead-Zinc District Silvercorp Metals Inc.

subsequent section of this report. Additionally, "silver-equivalency" (Ag-equiv) values are reported in the resource and reserve tables in addition to the actual metal values. Because these are polymetallic veins containing several potentially payable metals, Silvercorp uses silver-equivalencies to designate resource cutoff grades and as a way to quickly compare the tenor and magnitude of mineralization in the veins. The "Ag-equiv" values reported in the tables below are calculated using assumed metal prices and known metal recoveries as detailed in Chapter 17 of this report.

#### SGX & HZG MINE AREAS Measured & Indicated Mineral Resource Estimates Inclusive of Mineral Reserves

(as of December 31, 2010)

Mine	Wtd. Horiz.			Ag			Cu	Au	Ag-eq		Conta	ained Metal	Resource		
Area	Width (m)	Tonnes (t)	Ag (g/t)	(oz/st)	Pb (%)	Zn (%)	(%)	(g/t)	(g/t)	Ag(t)	Ag(oz)	Pb(t)	Zn(t)	Cu(t) Au(kg)	Ag-equiv (oz)
	MEASURED MINERAL RESOURCES ≥ 300 G/T AG-EQUIV.														
SGX	0.55	500.641	774	22.6	14.27	5.49		RESU	1.469	388	12.459.666	<b>v.</b> 71.437	27 464		23,637,618
HZG	0.55	500,641	//4	22.0	14.27	5.49			1,469	300	12,459,000	71,437	27,464		23,037,010
tota	0.55	500,641	774	23.0	14.27	5.49			1,469	388	12,459,666	71,437	27,464		23,637,618
	INDICATED MINERAL RESOURCES ≥ 300 G/T AG-EQUIV.														
SGX	0.57	1,765,200	550	16.1	11.47	5.64			1,155	971	31,233,388	202,412	99,470		65,556,953
HZG	0.58	295,673	481	14.0	1.35	0.51	0.64		477	142	4,569,103	3,991	1,507	1,878	4,537,483
tota	0.57	2,060,873	540	15.8	10.02	4.90			1,058	1,114	35,802,491	206,402	100,977	1,878	70,094,436
			м	EASUR	ED + IND			ERAL	RESO	URCES	≥ 300 G/T AG	-EQUIV.			
SGX	0.57	2,265,841	600	17.5	17.51	12.09			1,224	1,359	43,693,054	273,849	126,934		89,194,571
HZG	0.58	295,673	481	14.0	1.35	0.51	0.64		507	142	4,569,103	3,991	1,507	1,878	4,821,718
tota	0.57	2,561,514	586	17.1	15.65	10.75			1,142	1,501	48,262,157	277,840	128,441	1,878	94,016,289
					-			-	INE A	-					
				I							mates				
						(as of	Dec	emb	er 31, 2	2010)					
Mine	Wtd. Horiz.			Ag			Cu	Au	Ag-eq		Conta	ained Metal	Resource		
Area	Width (m)	Tonnes (t)	Ag (g/t)	(oz/st)	Pb (%)	Zn (%)	(%)	(g/t)	(g/t)	Ag(t)	Ag(oz)	Pb(t)	Zn(t)	Cu(t) Au(kg)	Ag-equiv (oz)
_															
							AL R	ESOL			TAG-EQUI	-	100.077		1
SGX	0.57	2,970,032	796	23.2	16.39	6.72			1,615	2,364	76,018,088	,	,	004	154,260,886
HZG	0.55	113,856	512	14.9	1.62	0.55	0.60		515	58	1,873,972	1,843	624	681	1,886,969
total	0.57	3,083,887	786	22.9	15.84	6.50			1,575	2,423	77,892,060	488,562	200,301	681	156,147,854

#### **Reserve Estimates**

According to the CIM definitions and guidelines, Mineral Reserves are those parts of Mineral Resources that can be mined economically after considering mining dilution, processing, metallurgical, economic, marketing, legal, environment, socio-economic and government factors. Based on these guidelines and more than 4 years of mining history in the Ying District, Silvercorp has converted Measured and Indicated Mineral Resources in the HPG Mine area to Proven and Probable Reserves using factors described in detail in Chapter 17 of this report.

### SGX and HZG MINES **Summary of Mineral Reserve Estimates**

	Mine	Tonnes		weighted avg. grade				Ag-equiv In Situ Metal Reserve [2]					Ag-equiv	
	Area	(t)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	(g/t) [1]	Au (oz)	Ag (oz)	Pb (t)	Zn (t)	Cu (t)	(oz) [2]
	SGX (High Grade)	539,316		482	8.87	3.16		901		8,357,590	47,837	17,042		15,627,465
Proven	SGX (Low Grade)	105,417		163	2.93	1.25		308		550,988	3,089	1,318		1,044,289
Proven	HZG	8,879		262	1.75	0.45	0.37	356		74,792	155	40	33	101,503
	Total	653,612		427	7.82	2.82	0.01	798		8,983,370	51,081	18,400		16,773,256
	SGX (High Grade)	2,008,940		391	6.85	2.84		727		25,254,249	137,612	57,054		46,975,702
Probable	SGX (Low Grade)	215,808		152	2.53	1.07		276		1,055,606	5,460	2,309		1,917,600
Probable	HZG	286,622		212	0.61	0.34	0.69	289		1,953,602	1,748	975	1,978	2,667,754
	Total	2,511,370		350	5.77	2.40	0.08	639		28,263,457	144,821	60,338		51,561,056
	SGX (High Grade)	2,548,256		410	7.28	2.91	-	764		33,611,840	185,450	74,096		62,603,166
Proven+Probable	SGX (Low Grade)	321,225		156	2.66	1.13	-	287		1,606,593	8,549	3,627		2,961,889
FIOVENTPRODADIe	HZG	295,501		214	0.64	0.34	0.68	291		2,028,394	1,904	1,014	2,011	2,769,257
	Total	3,164,982		366	6.19	2.49	0.06	672		37,246,827	195,902	78,738	2,011	68,334,312

(as of December 31, 2010)

Note: [1] Ag-equiv grades and [2] contained metal guantities consider the actual metallurgical metal recoveries

#### Mineral Development and Production

The SGX mine area is in narrow valleys adjacent to the Guxian Reservoir. Ore from the mine is loaded in 30 ton trucks which are then transported by barges across the reservoir where they connect with a road to Silvercorp's central mills, 12 km away. The narrow valleys with steep hill slopes in the mine area allow the mineralized veins to be easily accessed by horizontal adits driven into the hillsides. The ground conditions in the mine area are quite good – the host rocks are competent, require minimal ground support, and have no major groundwater flows.

The mines use a combination of adits, blind declines and blind shafts to access mineralization. Various levels of adits from the surface and tunnels at depth, spaced 20 to 50 m apart, provide access to the veins over a vertical range of more than 550 m at the SGX Mine. Underground mining methods consist of both short-hole shrinkage stoping and resuing stoping. The short-hole shrinkage stope method is employed worldwide as one of the most successful methods for narrow veins, with the result the result with the result of the term of term width, Silvercorp has gained 90-97% mining recoveries of in-situ resources using these methods. Current operational costs (mining, sustaining capital, milling, shipping, G&A) range from US\$ 65.19 to US\$ 50-73.42 per tonne, depending on grade and other known factors.

Mining plans at Silvercorp's various operations in the Ying District are developed taking into account vein characteristics, ore reserves, mining conditions, and the timeline for preparing mine stopes. At the SGX Mine, mine development has been designed to allow ore production levels starting in 2011 to be maintained at planned capacities without any ramping-upperiod. The ccurrent proven and probable reserves at the mine are sufficient to support a 10-year mine life at a planned production rate of 362,000 tonnes per year.

To achieve this plan will require capital expenditures of about US \$44.2 million for the combined SGX and HZG operations. Assuming total production costs and mill recoveries as noted previously, Silvercorp's 77.5% share of net cash flows from the SGX mine operations will be US\$ 430 million, with a payback period of less than one year for the major SGX Mine itself and less than three years for the much smaller HZG Mine.

#### **Conclusions and Recommendations**

Each of Silvercorp's producing mine areas in the Ying District, including the SGX-HZG area, have defined Ag-Pb-Zn resources and reserves that are currently large enough to support profitable operations for a decade or more. None of the mine areas, however, have as yet been fully explored or delimited, especially to the depths typical of many similar Ag-Pb-Zn mesothermal vein districts elsewhere in the world. Each mine area in the Ying District has a large number of already identified veins that have not been explored in detail, and exploration to date has been quite successful in discovering many new veins that have not been explored at all. There are also a number of promising outlying intermediate stage exploration target areas, any of which could well become future additional "fast-track" mining developments.

Silvercorp will continue to invest substantial capital on the operating mines with the object being to extend the mine life by upgrading inferred mineral resources to indicated and measured and adding new resources by extending the known vein systems along strike and to depth. To accomplish this objective, an underground drilling program of 75,000 m and a surface drilling program of 10,000 m, together costing US\$ 4.5 million is proposed for the SGX-HZG mine area.

### 2.0 INTRODUCTION AND TERMS OF REFERENCE

During January 2011, Silvercorp Metals Inc. ("Silvercorp") commissioned BK Exploration Associates (Mel Klohn and Chris Broili), to provide an independent review and NI 43-101 Technical Report update on the Ying District of western Henan Province, China (Figure 2-1). Because the project now consists of three significant, but separate, producing operations (Figure 4-1), it was decided to treat each producing area in a separate Technical Report unlike the previous Technical Report which collectively discussed all three areas in a single large report (Broili, Klohn, and Ni, 2010). This report focuses on the SGX mine area, which includes the large Ying/SGX mine and a smaller satellite deposit, the HZG mine. The SGX mine area is currently the largest of the three producing operations in the Ying District.

The purpose of this report is to provide not only an exploration and mineral resource update of the SGX area, but also to offer an update of reserves and mining plans. For this reason Mr. Wenchang Ni, a mining engineer employed by Silvercorp, was engaged to serve as a co-author responsible for preparing all or portions of the chapters relevant to reporting mining reserves, operations and plans. All three co-authors – Mr. Klohn, Mr. Broili, and Mr. Ni – are Qualified Persons as defined in Canadian National Instrument 43-101. Additionally, Mr. Klohn and Mr. Broiliare both Independent Qualified Persons with no direct interest in Silvercorp, its associated companies, or its projects. The consulting fees paid to Mr. Klohn and Mr. Broili for this Technical Report are standard industry fees for work of this nature and not dependent in whole or in part on any prior or future engagement or understanding resulting from the conclusions of this report.

This Technical Report is prepared in compliance with Form 43-101F and is based on information known and current as of January 01, 2011. Silvercorp a publicly traded resource company (TSX:SVM and NYSE:SVM) engaged in the production, exploration and development of base and precious metal projects in the Henan Province of central China and exploration in other parts of China. The authors understand that Silvercorp will use this Technical Report for purposes of compliance with NI 43-101 reporting requirements.

The information reviewed for this Technical Report consists of voluminous geological, sampling, drilling and mining data collected by Silvercorp, together with other information previously reviewed and cited in a series of earlier NI 43-101 Technical Reports prepared on the district. Key documents for purposes of this current report are cited at appropriate places in the report and listed in the References chapter at the end of the report. Additionally, Mr. Klohn and Mr. Broili, the independent authors of this report, have together authored or co-authored seven previous 43-101 Technical Reports on Silvercorp's projects in the Ying District and thereby have made numerous trips to the district and gained considerable experience in the region. Information from the authors' personal notes and experience have been incorporated into the descriptions regarding regional history, general geology and deposit types.

Mr. Ni was resident at the Ying Project for most of 2010 and also for much of the early months in 2011.During these periods, Mr. Ni spent much of his time at the project sites reviewing and auditing project data in considerable detail, becoming familiar with all of Silvercorp's underground and surface operations in the district. Subsequently, Mr. Klohn and Mr. Broili spent considerable time reviewing and auditing the project information prepared on-site by Mr. Ni and

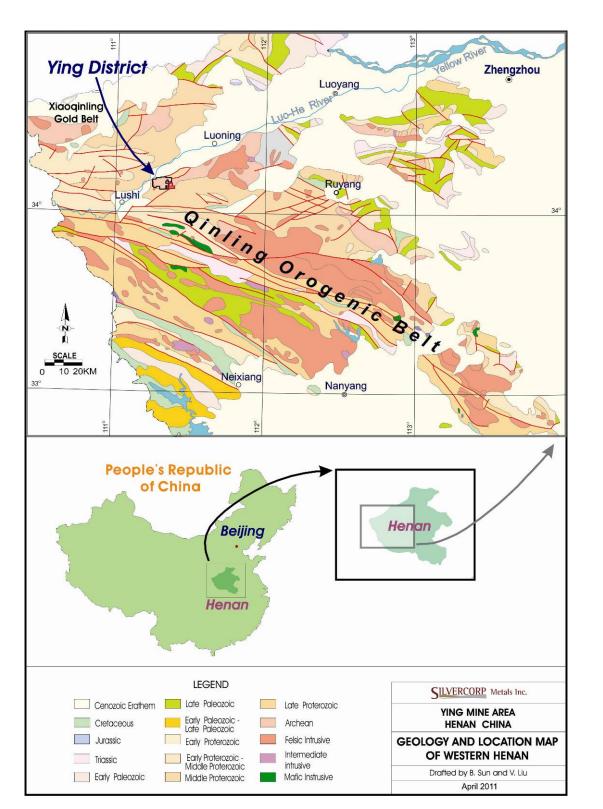


Figure 2-1: Geology of Western Henan Province and Location of Ying District

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also information provided by Silvercorp's mine geologists. A final data review was carried out by Mr. Klohn from April 15-24, 2011, at Silvercorp's office in Vancouver, BC, Canada.

All measurement units in this report are metric, with the exception of total contained metals which in addition to metric units are often also reported as total troy ounces of equivalent-silver ("Ag-equiv" or "Ag-eq") and precious metals grades (or equivalencies) which may also be reported in troy ounces per short ton ("oz/t"). The conversions are as follows:

1 troy ounce ("oz") = 31.1035 grams ("g") 1 troy ounce/short ton ("oz/t") = 34.286 grams/metric tonne ("g/t")

Monetary units are expressed in U.S. dollars (US\$) unless stated otherwise. The currency used in China is the Yuan (CNY) with the exchange rate as of March 1, 2011, being approximately US\$1.00 equal to CNY6.57.

# 3.0 RELIANCE ON OTHER EXPERTS

The authors of this report are Qualified Persons for those areas as identified in the Certificates of Qualified Person attached to this report. In preparing this report, the authors relied heavily on various geological maps, reports and other technical information, mostly unpublished proprietary information collected on-site and provided to the authors by Silvercorp.

Much of the original information is in Chinese, with translations from Chinese to English of key and relevant technical documents provided by Silvercorp. For this current report, most of the technical information was translated by Jin Zhang, an experienced bilingual geologist employed by Silvercorp, although legends and annotations on many of the maps and sections were translated by Bei Sun, a bilingual draftsperson employed by Silvercorp. We occasionally checked a few key parts of the translations using non-technical persons and an online translation application offered by Google. From our experience on this report and the many previous reports we have done for Silvercorp, we believe the translations provided to us are credible and generally reliable, but we cannot attest to their absolute accuracy.

Overall, the technical information we reviewed is very well-documented, comprehensive and of good technical quality. It clearly was gathered, prepared and compiled by various competent technical persons, but not necessarily Qualified Persons as currently defined by NI 43-101. In recent years, the voluminous information collected by Silvercorp has been carefully monitored and supervised by Mr. Myles Gao, President of Silvercorp, an experienced hands-on geologist who is a Qualified Person as defined by NI 43-101.

Because we are not experts in land, legal, environmental and related matters, we have relied (and believe there is a reasonable basis for this reliance) on various other individuals who contributed the information regarding legal, land tenure, corporate structure, permitting, land tenure and environmental issues discussed in this report. Specifically, Myles Gao, President of Silvercorp and a Qualified Person as defined by NI 43-101, contributed the information in Chapter 4 of this report. Likewise, information regarding the environmental status of the property, particularly the mining permit, was contributed by Silvercorp.

# 4.0 PROPERTY DESCRIPTION AND LOCATION

The Ying District is in western Henan Province near the town of Luoning in central China (Figure 2-1). Silvercorp uses the term "Ying District" to describe a 100 sq. km size rectangular area bounded by latitude 34°07'N to 34°12'N and longitude 111°14'E to 111°23'E. Within this district block, Silvercorp has three principal operations comprised of five mining projects: (1) the SGX area, consisting of the Shagouxi (SGX) and Houzhanggou (HZG) mines in the western part of the block; (2) the HPGarea consisting of the Haopinggou (HPG) mine, also in the western part of the block, and (3) the TLP/LM area consisting of the Tieluping (TLP) and Longmeng (LM) mines in the eastern part of the block (Figure 4-1).

The SGX/HZG project is covered by exploration and mining permits totaling approximately 58 sq. km., as listed in the following table:

Permit type	Permit No.	Expiration Date	Sq. km
Mining	C4100002009093210038549	September 2014 [1]	19.83
Exploration	T01120090602030965 Ximiao-Leileisi Au project	June 6, 2012	12.34
Exploration	T41120080102001028 Luoning County Sidaogou – Lushi County Lijiagou Ag project	January 29, 2011 [2]	19.70
Exploration	T41120080802013284 Dong Cao Gou Au project	October 1, 2010 [3]	6.39
		Mining Permit total	19.83
		Exploration Permit total	38.43
		Total	58.26

- [1] Henan BOLAR approved an application by the Company in 2009 for an integrated mining license to combine three Exploration Permits, namely Exploration Permit No. 4100000740232 (Qiaogoubei Ag Project), Exploration Permit No. 4100000640561 (Qiaogou Ag Project) and Exploration Permit No. 0100000520145 (Shagou Ag Project) with Mining Permit No. 4100000610045 (Yuelianggou Ag Project), to form one larger integrated mining area under one Mining Permit No. C4100002009093210038549.
- [2] This permit is currently being renewed.
- [3] This permit is currently being renewed.

**NOTE:** The above table and notes were prepared by Mr. Myles J. Gao, P.Geo., President and Chief Operating Officer of Silvercorp, a Qualified Person as defined in NI 43-101.

The existing exploration and mining permits cover all the active exploration and mining areas discussed in this Technical Report. Permits can be renewed by submitting an application together with required technical documents. The exploration permits give the right to carry out all contemplated exploration activities with no additional permitting required. The mining permits give the right to carry out full mining and mineral processing operations in conjunction with safety and environmental certificates. The safety certificates for Silvercorp's mining activities were issued by the Department of Safety, Production and Inspection of Henan Province. Environmental certificates were issued by the Department of Environmental Protection of Henan Province.

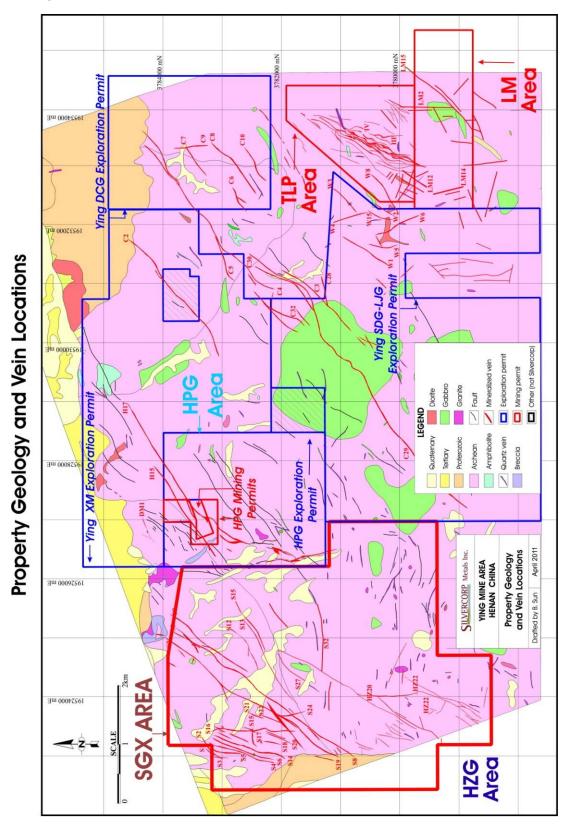


Figure 4-1: Ying Exploration, Mining Permits and Mineralization Vein Systems

Surface rights for mining purposes are not included in the permits but can be acquired by payment of a purchase fee based on the appraised value of the land. Subject to negotiation, some land use compensation fees may also be due to the local farmers if their agricultural land is disturbed by exploratory work.

There are no known or recognized environmental problems that might preclude or inhibit a mining operation in this area. Some major land purchases may be required in the future for mine infrastructure purposes (processing plant, waste disposal, office and accommodations).

Silvercorp's Ying (SGX) project is subject to existing JV agreements as follows:

A co-operative joint venture contract dated April 15, 2004 was consummated between Victor Mining Ltd. ("Victor"), the wholly owned British Virgin Islands subsidiary of Silvercorp Metals Inc., and Henan Non-Ferrous Geological & Mineral Resources Co. Ltd. ("HNGMR"). Pursuant to the joint venture contract, a Chinese cooperative joint venture company, Henan Found Mining Ltd. ("Found"), was established to hold 100% of the Ying Project. Victor consummated the obligation and now owns 77.5% interest in Found. The Ying mining permit controlled by Found totals 19.83 sq. km and the three Ying exploration permits total 38.43 sq. km.

#### **Exploration and Mining Rights**

China, which is the most populous country – and the second largest economy – in the world, has a strong national policy encouraging foreign investment. It ranks as one of the world's leading jurisdictions for mining investment owing to an advanced infrastructure, a large pool of skilled technical and professional personnel and, most importantly, to having an established Mining Code which clearly defines the mining rights guaranteed by the government of China.

China has a 17% Value Added Tax (VAT) on sales of concentrates and on articles such as materials and supplies. The 17% VAT paid on materials purchased for mining is returned to the company as an incentive to mine in China. There is no VAT on labor or services. A 2% resources tax is payable by companies as a royalty to the government.

For foreign invested companies such as Silvercorp, income tax is zero for the first two years, then 12.5% for years three to five, and 25% thereafter. Starting in 2010, Henan Found entered its fifth year of operation, and as such enjoys a 12.5% income tax rate on profit until the end of 2010 at which time the rate doubles to 25% for the life of the mine.

According to China's mining law, mining companies are required to pay 2% resource tax or government royalty. Other taxes such as Business, City Construction, and school taxes are exempted for foreign invested companies.

### 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Ying District is about 240 km west-southwest of Zhengzhou (population 7.0 million), the capital city of Henan Province, and 80 km west of Luoyang (population 1.4 million), which is the nearest major city (Figure 2-1). Zhengzhou, the largest industrial city in the region, offers full service facilities and daily air flights to Beijing, capital of China, and other major population centers such as Shanghai and Hong Kong. The nearest small city to the project area is Luoning (population >80,000), about 56 km by paved roads from Silvercorp's Ying mill site which is located centrally to the projects. The mill site is about 15 km by paved road from the Guxian Reservoir. The main exploration-development camp, Shagouxi (SGX), is accessed via a 10-minute ferry ride across the Reservoir (Figure 5-1).

The district lies within rugged, deeply dissected mountainous terrain of the Funiu Mountain Range. Elevations range from 300to 1200m above sea level. Hill slopes are steep, commonly exceeding 25°, with bedrock best exposed on these steep hillsides. Almost all of the district's significant discoveries of surface mineralization, together with the important geochemical and geophysical anomalies, were made on the hillsides.

The area has a continental sub-tropical climate with four distinct seasons. Temperature changes are dependent on elevation, with an annual range of -10°C to 38°C and annual average of 15°C. The annual precipitation averages 900 mm, occurring mostly in the July to September rainy season and supplemented by snow and frost occurring from November to March.

The area is sparsely vegetated, consisting mostly of bushes, shrubs, ferns and small trees. At higher elevations the vegetation is denser and the trees are larger. The local economy is based on agriculture (wheat, corn, tobacco, medicinal herbs) and mining. Agriculture is confined to the bottoms of the larger stream valleys and to the many terraced hillsides.

There are major power grids adjacent to the properties, including a power line extending to the SGX Area. Adjacent to the Ying District is a hydropower generating station at the dam that forms the Guxian Reservoir (Figure 5-1). This reservoir is on the Luo River, a tributary to the Yellow River. Sufficient manpower is available to serve most exploration or mining operations.

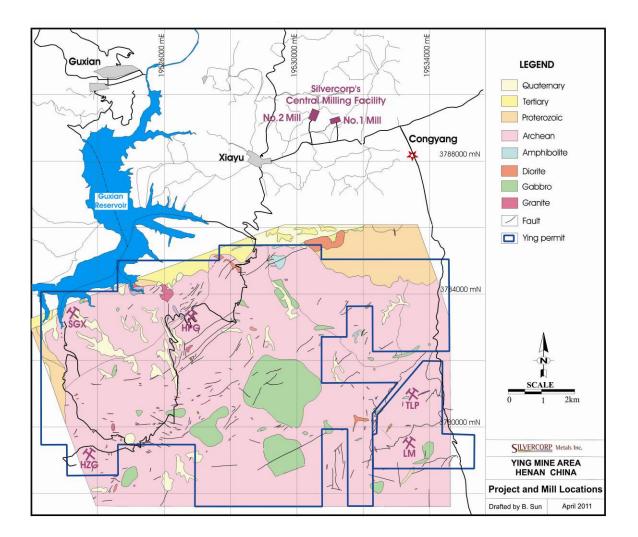


Figure 5-1: SGX/HZG Project and Mill Locations

# 6.0 HISTORY

Silver-lead-zinc mineralization in the Ying District has been known and intermittently mined for the last several hundred years. The first systematic geological prospecting and exploration was initiated in 1956 by the Chinese government. Detailed summaries of the district's historical activities from 1956 to 2004, when Silvercorp first acquired interests in the area, are described in seven previous NI 43-101 technical reports prepared for Silvercorp (Broili, 2004; Broili, 2005; Broili et al., 2006, 2008; Broili and Klohn, 2007; Xu et al., 2006; Broili, Klohn and Ni, 2010) which are publicly available on <u>www.sedar.com</u>. For that reason, historical highlights are only briefly summarized in the following sections.

### 6.1 YING/SGX MINE PROJECT

Silvercorp acquired its interest in the Ying/SGX Mine Project in 2004. At that time the mine was being operated by artisanal "trespass miners." Subsequently, Silvercorp consolidated the entire Ying District by acquiring the HZG, HPG, and LM mines, all of which were held and operated by Chinese companies. Work carried out since 2004 consists of a series of exploration campaigns, driving declines, undercut drifts, raises and ventilation raises, sinking shafts, enlarging and extending tunnels, underground and surface drilling, sampling, and metallurgical work, all leading to the definition and expansion of resources and ultimately to defining and mining reserves. Silvercorp began producing and shipping ore from the mine in 2007 and has since constructed two mills in the district to process the mined ore into shippable concentrates.

### 6.2 PRIOR RESOURCES

Silvercorp's underground exploration efforts on the four principal mine areas in the district has significantly increased and upgraded defined mineral resources. The most recent resource data prior to this current report were reported in a February, 2010, NI 43-101 Technical Report (Broili, Klohn and Ni, 2010). The 2009 resources for the SGX and satellite HZG areas were as follows:

			Grade In Situ Contained Metal Resources							
Resource Type	Mine	Tonnes	Ag g/t	Pb %	Zn %	Ag (oz)	Pb (t)	Zn (t)	Cu (t)	Ag-equiv (oz)
	SGX	561,328	845	15.5	5.8	15,250,789	86,901	32,330		29,431,685
Measured	HZG	-	-	-	-	-	-	-		-
	total	561,328				15,250,789	86,901	32,330		29,431,685
r	1	r	1	1		ſ	r	r		
	SGX	1,619,839	584	12.8	5.4	30,431,202	207,475	87,602		66,007,950
Indicated	HZG	248,484	598	1.8	0.4	4,777,173	4,487	903	2,181	5,832,965
	total	1,868,323	586	11.3	4.7	35,208,375	211,962	88,505	2,181	71,840,915
	1								-	
	SGX	2,619,972	814	18.0	6.6	68,577,693	471,605	173,933	511	146,396,20
	HZG	271,042	552	1.4	0.3	4,806,976	3,867	864	1,791	5,621,829
Inferred	total	2,891,014	789	16.4	6.0	73,384,669	475,472	174,797	2,302	152,018,029

#### 2009 Resource Estimates for the SGX/HZG Mine

\***Notes:** The preceding resource estimates are from the February, 2010, NI43-101 Report. "Agequiv" is based on metal prices of Ag US\$6.50/oz, Pb US\$0.40/lb, Zn US\$0.45/lb and is reported without consideration of metallurgical factors or recoveries. For a complete discussion of reporting parameters used in the earlier and current resource tables please refer to Chapter 17 of this current Technical Report.

## 7.0 GEOLOGICAL SETTING

### 7.1 REGIONAL GEOLOGY

The Ying District occurs in the 300 km-long west-northwest trending Qinling orogenic belt, a major structural belt formed by the collision of two large continental tectonic plates in Paleozoic time (Figure 2-1). The northern continental plate – the North China Plate – covers all of Henan Province, the southern plate – the Yangtze Plate – covers the south half of Hubei Province (Henan's southern neighbor). Rocks along the orogenic belt are severely folded and faulted, offering optimal structural conditions for the emplacement of a myriad of mineral deposits. Several operating silver-lead-zinc mines, including those in the Ying District, occur along this belt.

The Qinling orogenic belt is comprised largely of Proterozoic- to Paleozoic-age rock sequences consisting of mafic to felsic volcanic rocks with variable amounts of interbedded clastic and carbonate sedimentary rocks. The rocks are weakly metamorphosed to lower greenschist facies, with local areas of strongly metamorphosed lower amphibolite facies. The basement of the belt is comprised of highly metamorphosed Archean-age rocks of the North China plate, dominantly felsic to mafic gneisses with minor amphibolites, intrusive gabbros and diabases. The metamorphosed Qinling belt sequence and the underlying Archean basement rocks are intruded by mafic to felsic dikes and stocks of Proterozoic and Mesozoic ages. They are overlain by non-metamorphosed sedimentary rock sequences of Mesozoic- to Cenozoic-age, primarily marls and carbonaceous argillites, which are in turn overlain locally by sandstone-conglomerate sequences.

The dominant structures in the Qinling orogenic belt are west-northwest trending folds and faults generated during the collision of the two major tectonic plates in Paleozoic time. The faults consist of numerous thrusts having a component of oblique movement with sets of conjugate shear structures trending either northwest or northeast. These conjugate shear zones, which display features of brittle fracturing such as fault gouge, brecciation and well-defined slickensides, are associated with all the important mineralization recognized along the 300 km-long orogenic belt. At least three important north-northeast trending mineralized fault zones are identified in the Ying District: 1) the Heigou-Luan-Weimosi, deep-seated fault zone, 2) the Waxuezi-Qiaoduan fault zone, and 3) the Zhuyangguan-Xiaguan fault zone.

### 7.2 LOCAL GEOLOGY

The Archean basement that underlies the district consists primarily of highly metamorphosed mafic to felsic gneisses derived from mafic to felsic volcanic and sedimentary rock units (Figure 4-2). The lowest part of the basement sequence is a 1-kilometre thick mafic gneiss with local gabbroic dikes and sills that trend north-northeast and dip  $30^{\circ}$  to  $60^{\circ}$  southeast. This sequence is overlain by a much thicker sequence of thin-bedded quartz-feldspathic gneiss, which is bounded on the north and west by Proterozoic-age andesitic greenstones along a very high-angle (>70°) "detachment" fault-shear zone. The greenstones have been folded and dip steeply toward the northeast and southwest. The basement gneisses are commonly tightly-folded with boudins abundant near the mafic gneiss-feldspathic gneiss contact. Small granite porphyry stocks of Proterozoic to Paleozoic age locally intrude the gneisses.

All of these lithologies are extensively cut by high-angle, mostly west-dipping conjugate faults. These faults trend generally northeast, varying from mostly north to north-northeast on the west side of the district, to northwest with occasional north and rare northwest on the east side of the district. The faults are commonly near-vertical, with steep dips in either direction, and they are

occasionally filled with swarms of younger andesitic to basaltic diabase dikes. Repeated movement on the faults has offered the openings which host all of the district's important silver-lead-zinc veins.

# 8.0 DEPOSIT TYPES

The deposits of importance in the Ying District are variously classified as "mesothermal silverlead-zinc veins" (Lindgren , 1933), "Cordilleran vein type deposits" (Guilbert and Park, 1986), "silver-lead-zinc veins in clastic metasedimentary terranes" (Beaudoin and Sangster, 1992), or "polymetallic Ag-Pb-Zn±Au veins" (Lefebure and Church, 1996). For this report, the term "mesothermal" will be used to denote the district's silver-lead-zinc veins systems.

Mesothermal vein systems typically occur in mid-crustal metamorphic rocks associated with major crustal structures in orogenic belts of almost any age. Mineralization is associated with major deep-seated shear zones that cut the metamorphic rocks and is thought to have formed by hydrothermal processes in a temperature range of 200 to 300° C at considerable depth (from 600 m to 4000 m or more). For this reason, the deposits may have great vertical extents, commonly a few kilometers or more.

Classic deposits of this type include the Coeur d'Alene silver district in northern Idaho, U.S.A., one of the largest silver-lead-zinc districts in the world (Park and MacDiarmid, 1970). Other examples include the Kokanee Range and Keno Hill, Canada; the Harz Mountains and Freiberg, Germany; and Príbram, Czechoslovakia (Beaudoin and Sangster, 1992).

Common characteristics of these mesothermal silver-lead-zinc vein systems are as follows:

- Occur in almost any type of host rock, but typically in thick sequences of metamorphosed clastic sedimentary rocks or intermediate to felsic volcanic rocks (Lefebure and Church, 1996).
- Usually occur in areas of strong structural deformation in brittle and brecciated rock units with mineralization in altered country rock parallel to anticlinal axes and faults (Park and MacDiarmid, 1970; Sorenson, 1951; McKinstry and Svendsen, 1942).
- Often spatially or genetically proximal to igneous rocks, but not to intrusions related to porphyry-copper mineralization (Beaudoin and Sangster, 1992). Many veins are associated with dikes that follow the same structures (Lefebure and Church, 1996).
- Exhibit strong structural control, generally occurring as steeply-dipping, narrow, tabular or splayed fissure veins, commonly as sets of parallel and offset veins. Individual veins range in width from centimeters up to more than 3 m, and are generally continuous for a few hundred meters to more than 1,000 m along strike and to depth. Widths can be up to 10 m or more in stockwork zones (Lefebure and Church, 1996).
- Veins often display crustiform textures (mineral banding) (Bateman, 1951), locally with open space drusy quartz, cockade and/or colloform textures. Sulfides are confined to the veins and occur as granular masses, coarse-grained patches and/or disseminations.
- Wall rock alteration is typically limited in extent usually only a few to several meters and consists of sericite, quartz, siderite, ankerite, pyrite and K-feldspar within or proximate to the veins, and chlorite, clay and calcite more distal to the veins.
- Common ore minerals are galena (PbS), sphalerite (ZnS) and tetrahedrite (Cu,Fe)<sub>12</sub>Sb<sub>4</sub>S<sub>13</sub> with lesser amounts of chalcopyrite (CuFeS<sub>2</sub>), pyrargyrite (Ag<sub>3</sub>SbS<sub>3</sub>), and other sulfosalts. Small amounts of acanthite (Ag<sub>2</sub>S) and native silver may occur,

but most silver in the veins is present as inclusions in galena or tetrahedrite (silverbearing tetrahedrite is also known as freibergite). Copper and gold may increase at depth. Common gangue minerals are quartz, pyrite (FeS<sub>2</sub>), and carbonate – usually siderite (FeCO<sub>3</sub>) or ankerite [Ca (Fe, Mg, Mn) (CO<sub>3</sub>)<sub>2</sub>] with distal calcite (Park and MacDiarmid, 1970; Lefebure and Church, 1996).

- In some cases mineral zones are formed by multiple hydrothermal events or by a telescoped single event, rather than zoning about a single point (Beaudoin and Sangster, 1992).
- Individual vein systems range from several hundred to several million tonnes grading from 5 to 1,500 g/t Ag, 0.5 to 20.0% Pb and 0.5 to 8.0% Zn, with exceptional veins being even richer. The larger vein systems are attractive targets because of their high grades and relatively easy metallurgical recovery (Lefebure and Church, 1996).

### 9.0 MINERALIZATION AND ALTERATION

The Ying District contains a myriad of mesothermal silver-lead-zinc-rich quartz-carbonate veins in steeply-dipping fault-fissure zones which cut Precambrian gneiss and greenstone. To date, significant mineralization has been defined or developed in at least 131discrete vein structures, and many other smaller veins have been found but not as yet well explored.

Structurally, the vein systems throughout the district are all somewhat similar in that they occur assets of veins of generally similar orientation enclosed by fault-fissure zones which trend most commonly northeast-southwest, less commonly north-south, and rarely northwest-southeast. The structures extend for hundreds to a few thousand meters along strike. They are often filled by altered andesite or diabase dikes together with quartz-carbonate veins or discerned as discrete zones of altered bedrock (mainly gneiss) associated with local selvages of quartz-carbonate veinlets. From one-third to one-half of the structures exposed at the surface are conspicuously mineralized as well as altered.

The vein systems consist of narrow, tabular or splayed veins, often occurring as sets of parallel and offset veins. The veins thin and thicken abruptly along the structures in classic "pinch-and-swell" fashion with widths varying from a few centimeters up to a few meters. "Swells" formed in structural dilatant zones along the veins are often sites of rich pockets of mineralization known as "ore shoots." At the SGX mine, these shoots range from 30 m to more than 60 m in vertical and horizontal dimensions over true vein widths of 0.4 m to 3.0 m. The vertical dimension of the SGX shoots is commonly twice or more the horizontal dimension. Longitudinal sections constructed along the veins indicate that many of the shoots have a steep, non-vertical rake.

The vein systems of the various mine areas in the district are also generally similar in mineralogy, with slight differences between some of the separate mine areas and between the different vein systems within each area. These differences have been attributed to district-scale mineral zonation at different levels of exposure. This subtle zonation is thought to be perhaps analogous to the broad-scale zonation patterns observed in the Coeur d'Alene District (U.S.A.) and characteristic of many other significant mesothermal silver-lead-zinc camps in the world (Broili et al., 2008, Broili et al., 2010).

### 9.1 VEINS OF THE SGX MINE AREA

The SGX mine area is to date the most extensively explored and mined area in the Ying District, containing 27 veins having defined mineralization, accounting for more than 60 percent of the district's total currently identified mineral resources (see Chapter 17 for a detailed summary of the currently defined mineral resources and reserves in the SGX-HGZ mine areas).

The SGX veins have been extensively mapped and sampled at various levels in the underground workings and by drilling. Results show that approximately 27 percent of the material filling the veins is strongly mineralized, averaging about 25% galena (lead sulfide) and 12% sphalerite (zinc sulfide) over narrow widths ranging from 0.2 m to 1.0 m or more with a weighted average true width of 0.48 m. Other than galena and sphalerite, the most common metallic minerals are small amounts of pyrite, chalcopyrite, hematite, and very small amounts of wire silver, silver-bearing sulfosalts (mainly pyrargyrite), silver-bearing tetrahedrite (known as freibergite) and possibly acanthite (silver sulfide).

The metallic minerals are confined to the veins where they occur as massive accumulations or disseminations. The galena often occurs as massive tabular lenses comprised of coarsely crystalline aggregates or fine-grained granular "steel galena" bodies, which can be up to 1.0 m thick and 100 m or more in vertical and horizontal dimensions. Sphalerite–a dark-colored, iron-rich variety often known as "blackjack" – occurs with the galena as coarse bands or aggregates. Alternating bands of galena, sphalerite, pyrite and quartz are common near the vein margins.

Silver is apparently present in the veins mostly as microscopic inclusions in galena. The silver content occurs at a reasonably consistent ratio with the lead content, ranging from 45 to 65 grams of silver (1.4 to 2.1 troy ounces) for each percent of lead. The respective Ag:Pb and Pb:Zn metal ratios for the SGX veins –calculated as (Ag\*100)/((Ag\*100)+Pb) and Pb/(Pb+Zn)using tonnes of contained metal – are 0.36 and 0.74, very close to the 0.29 and 0.72 ratios for Coeur d'Alene ores and generally within the 0.22–0.63 and 0.51–0.72 ratio ranges characteristic of the mesothermal silver-lead-zinc vein deposit model of Beaudoin and Sangster (1992).

Several shoots in some of the SGX veins are unusually rich in silver relative to lead, containing from 92 to 165 grams silver for each percent lead. This is a much greater amount of silver to lead than most other SGX veins. The silver in these shoots is thought to be carried mostly as a silver-rich, non-lead-bearing mineral such as freibergite, which is a dark-colored metallic mineral that could easily be hidden within metallic granular masses of galena. Freibergite is also a copper-bearing mineral, so it is not surprising that these same shoots also contain up to several percent of potentially valuable copper. Very little gold has been found in the SGX veins to date, an exception being the short S7-2 vein in the eastern part of the target area which contains from 4.4 to 8.9 g/t gold but very little silver, lead or zinc. At present, neither gold nor copper are recovered from the SGX vein ores.

Gangue in the vein systems consists mostly of quartz-carbonate minerals with occasional inclusions of altered wall-rock. The carbonate gangue mineral is dominantly ankerite, whereas siderite is the most common carbonate gangue mineral in many other mesothermal silver-lead-zinc districts. In the Coeur d'Alene district, siderite is closely associated with the sulfide ore, ankerite occurs farther away, and calcite is present only as a distal carbonate gangue mineral.

Wall rock alteration is commonly marked as a myriad of quartz veinlet which are accompanied by sericite, chlorite, silicification, and ankerite on fractures. Some retrograde alteration is present as epidote along fractures. Underground drilling suggests that many of the vein systems appear to either persist or strengthen at depth. Additionally, Broili et.al.(2006) notes that many of the veins exposed in underground workings are often significantly richer in Ag-Pb-Zn than the same veins exposed at the surface.

### 9.2 VEINS OF THE HZG MINE AREA

The HZG mine area, south of the SGX area, has only four veins in which mineralization has been defined to date. Underground and surface sampling and drilling indicates that 14 to 23 percent of the vein-filling material in these veins is strongly mineralized over a true weighted average width of 0.55 m(ranging from 0.3 to 0.8 m). The veins contain distinctly more copper than the district's many other veins. The largest HZG vein defined to date, HZ20, contains an average of 0.72% copper, which occurs mostly in chalcopyrite and tetrahedrite. The tetrahedrite commonly forms massive lenses, probably filling tension gashes that are distributed in relay-like fashion near the vein margins and in ladder-like fashion near the center of the veins. The chalcopyrite occurs as disseminated crystals in the gangue and in the tetrahedrite. Other sulfides include galena (up to several percent locally) and pyrite.

The contact of the HGZ veins with the wall-rock is sharply marked by shearing and gouge. The gangue is predominantly quartz-ankerite with conspicuous amounts of bright green fuchsite, a chrome-bearing muscovite alteration product that is especially abundant near the HZG vein margins. Fuchsite apparently occurs nowhere else in the Ying District, although it is a common alteration product in many greenstone-related mesothermal gold districts throughout the world.

# **10.0 EXPLORATION**

Silvercorp initiated exploration and development activities in the SGX area (including HZG immediately south of the SGX mine) during July 2007. Surface exploration in the district proved difficult because of the high topographic relief and lack of good or accessible outcrops. Very little surface exploration is now being done. The prospects are instead now being explored primarily from underground workings – tunnels, drifts, crosscuts and declines, typically about 2x2 m in size – and by extensive underground long-hole drilling. This underground exploration has proven to be quite effective and efficient due to the pinch-and-swell character of the mineralization and inexpensive labor costs.

This chapter primarily discusses vein-by-vein exploration activities and results carried out during the past year (2010). The activities, methods and results of exploration work carried out in earlier years have been summarized in detail in the earlier technical reports prepared for the Ying District projects (e.g., Broili and Klohn, 2007; Broili et al., 2008; Broili et al. 2010).

### 10.1 PRINCIPAL VEINS IN THE SGX MINE AREA

The SGX area, in the western part of the Ying District, is currently the most abundantly mineralized mine area in the district. The area is crossed by several large, evenly-spaced elongate vein systems which mostly trend northeast-southwest and bend north-northeast-south-southwest toward the western margin of the area. An exception is the important S16 vein system with its complement of sub-parallel adjacent veins which all trend approximately north-south.

The vein systems in the SGX area are rather complex, typically consisting of multiple individual veins that split or splay off the main vein (Figure 10-1). Currently defined Ag-Pb-Zn mineralization in the SGX area is carried by at least 27 total veins which are distributed among eight major and two minor vein systems. Veins in the four largest veins systems (S7, S2, S16 and S14 – listed in terms of presently defined resources; q.v. Chapter 17) account for slightly more than three-fourths (76.5 percent) of this mineralization (Figure 10-2, 10-3).

#### S7 vein system

The S7 vein system is the most abundantly mineralized vein system in the SGX area, carrying almost one-fourth (23 percent) of the mineralization currently defined in the SGX area (q.v., Chapter 7). The system is part of a dominant NE-SW structural zone that extends entirely across the SGX area. Most of the known mineralization occurs either within this structural zone or in N-S trending possible antithetic structures on the northwest side of the zone (e.g., the S16 and S14 vein systems). Mineralization of potential importance has been defined in at least four separate veins, S7-1, S7, S7-3, and S7-4. The first two are currently by far the most important in the S7 vein system, as briefly discussed below:

*S7-1 vein* – The S7-1 vein is a northwestern splay of the main S7 vein. It is exposed for 0.9 km along strike at the surface. The 2010 drill program extended the known strike length of the vein from 1,400 to 2,000 m, and to 620 m down-dip to an elevation of 200 m above sea level. The mineralization in the vein is defined by trenching, tunneling and drilling, and is best exposed by tunneling and drifting on the 700, 520, 490, 450, 400, 350, and 300 m levels accessed by tunnels PD700, CM103, and CM101, and drilling (Figure 10-4).

		•			
level	length(m)	Wtd.avg. width (m)	Wtd.avg. Ag (g/t)	Wtd.avg. Pb (%)	Wtd.avg. Zn (%)
700 m	40	0.54	42	1.03	14.80
570 m	185	0.48	486	7.76	10.13
530 m	160	0.37	261	11.00	11.80
490 m	120	0.39	590	6.41	10.77
300 m	85	0.70	558	15.22	1.29
260 m	125	0.44	373	9.13	0.89

#### S7-1 vein mineralization exposed in tunnels at various levels

In 2010, Silvercorp drilled 15 new exploration holes through the vein, of which 6 were significantly mineralized:

Drill Hole	From (m)	To (m)	Horiz. width (m)	True width (m)	Ag (g/t)	Pb (%)	Zn (%)	
ZK5514	96.58	96.83	0.16	0.14	171	8.8	21.0	
ZK6713	219.44	219.72	0.26	0.25	205	1.4	22.2	
ZK9B04	274.85	275.05	0.12	0.11	69	3.2	4.2	
ZK9B06	320.89	335.51	7.66	7.40	363	2.5	4.8	
ZK13B02	205.35	206.27	0.68	0.64	295	1.9	17.4	
ZK9B02	196.56	197.52	0.63	0.59	440	9.8	11.3	

#### Mineralized drill hole intersections in S7-1 vein

Hole ZK9B06, reported above, is considered to be especially important, intersecting a 7.40 m true-width interval grading 363 g/t Ag, 2.45% Pb, and 4.80% Zn, including a 1.5 m interval with 1,960 g/t Ag, 13.25% Pb, and 27.06% Zn at the 428 m elevation level. This is one of the wider intervals of higher-grade material yet intersected by drilling in the vein system.

*S7 vein* – The main S7 vein itself is a structurally-controlled, narrow brecciated vein traceable at the surface for more than 3 km along strike. Massive and veinlet mineralization in the S7 vein is well-defined by drilling, tunneling and undercut drifting on the 710, 680, 640, 585, 570, 520, 490, 450, and 400 m levels from tunnels CM108, PD680, CM101, CM102, and CM103. Vein mineralization intersected in 2010 in the S7 vein by tunneling at the 490 m level is as follows:

S7 vein mineralization in 490 m level tunnel										
level	Length (m)	Wtd.avg. width (m)	Wtd.avg. Ag (g/t)	Wtd.avg. Pb (%)	Wtd.avg. Zn (%)					
490 m	136	0.55	326	5.92	3.14					

# In 2010, Silvercorp drilled 13 new exploration holes through the S7 vein;, but the assay results for this drilling are as yet incomplete.

#### S2 vein system

The S2 vein system is a NNE-SSW trending system very near the current western edge of the SGX area. The S2 vein system is abundantly mineralized, carrying one-fifth (20 percent) of the mineralization currently defined in the SGX mine area (q.v., Chapter 7), almost as much as the S7 vein system. Most of the mineralization is in the main S2 vein itself with a much smaller amount in the S2W vein split. Previous exploration of the S2 vein was mostly from limited mining and

drilling above the 300 m elevation level. Development tunnels along the nearby S14 vein have now made it possible to drill the down-dip extension of the vein(Figure 10-5).

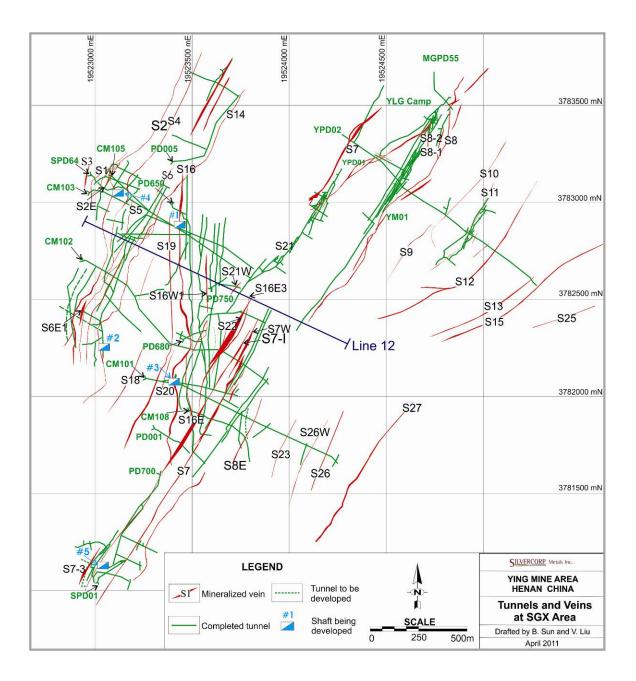


Figure 10-1: Tunnels and Veins at SGX Area

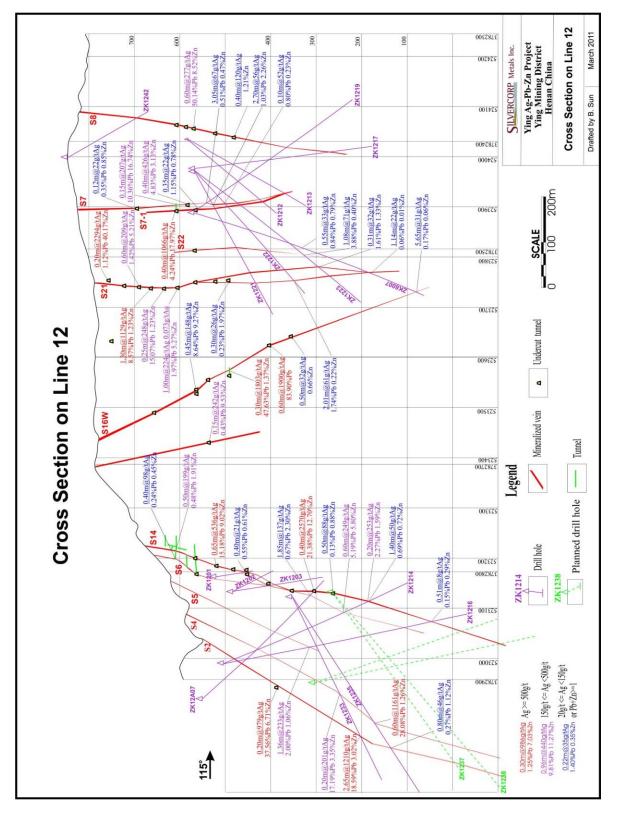


Figure 10-2: SGX Cross Section on Line 12

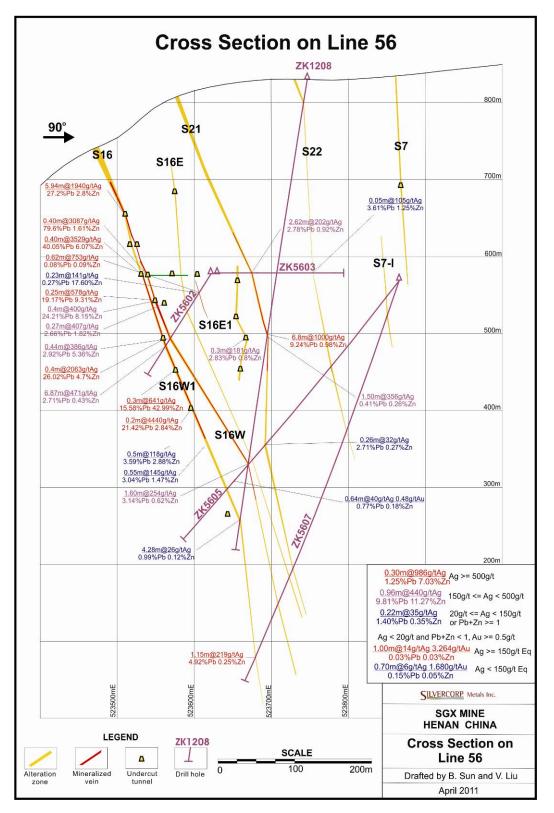


Figure 10-3: SGX Cross Section on Line 56

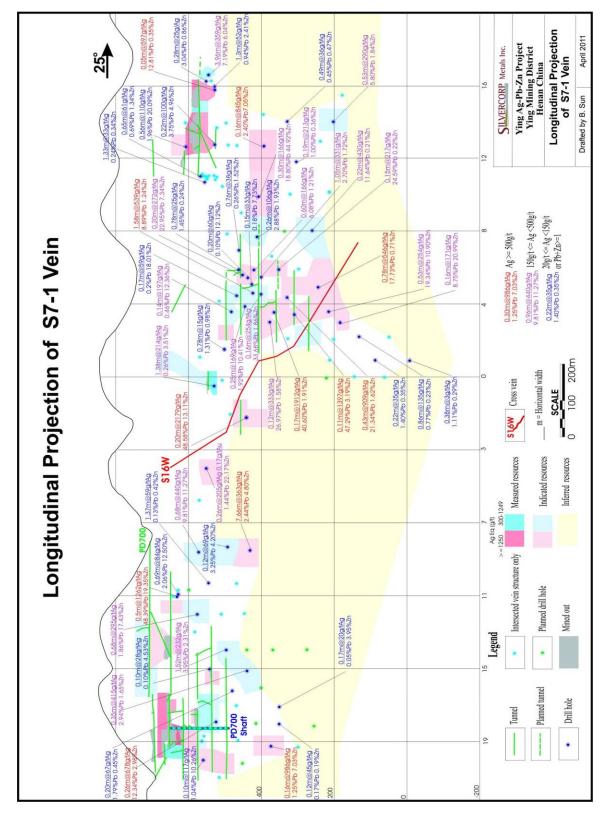


Figure 10-4: SGX Longitudinal Projection of S7-1 Vein

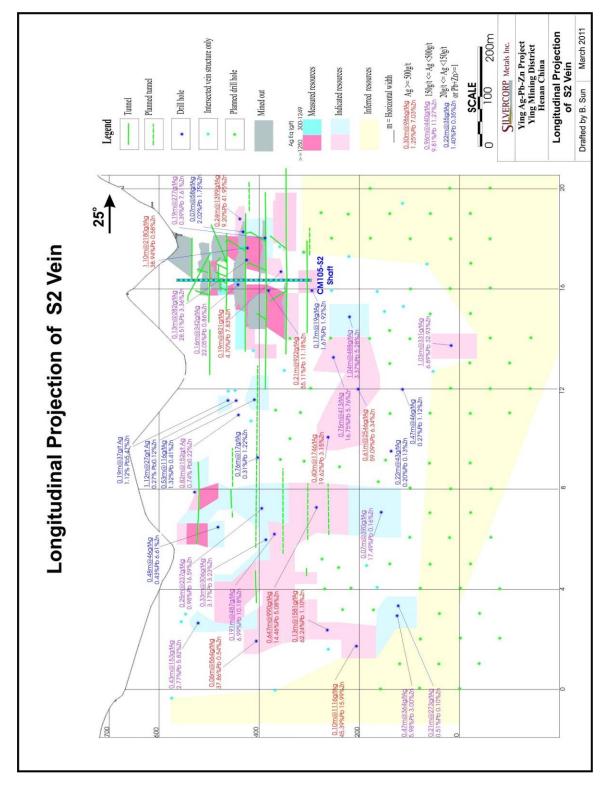
During 2010, 51 holes totaling 11,377 m in 51 holes were drilled into the S2 vein from the 570m, 490m, 350m, 300m, and 260m levels. Most of this drilling was on a 1,000-meter strike length below the 300m elevation. The program was successful in extending the vein 285 m down-dip (from the 300m to 15m elevation levels), hitting several highly mineralized shoots. As these shoots are close to the existing S14 mining and development tunnels, Silvercorp expects these new discoveries can be quickly developed. The S2 mineralization remains open to depth. Of the 51 exploration holes drilled through the vein in 2010, seven were successful in defining or extending significant mineralization to depth:

# Significant drill hole intersections defining S2 vein mineralization at depth

Drill Hole	From (m)	To (m)	Horiz. width (m)	True width (m)	Ag (g/t)	Pb (%)	Zn (%)
ZK14A05	180.15	180.60	0.19	0.18	130	6.6	15.4
ZK1233	343.45	345.45	1.29	1.12	1,593	28.8	3.5
ZK1033	242.9	243.80	0.40	0.36	1,746	19.6	3.2
ZK1609	155.86	156.17	0.16	0.16	60	12.2	0.2
ZK14A09	177.35	178.05	0.29	0.28	1,148	39.5	2.8
ZK14A07	321.15	325.50	1.03	1.03	331	6.9	32.9
ZK1435	232.36	233.37	0.75	0.72	413	16.8	5.8

#### Mineralization in S2 vein intersected in various levels of tunnels

level	length(m)	Wtd.avg. width(m)	Wtd.avg. Ag(g.t)	Wtd.avg. Pb(%)	Wtd.avg. Zn(%)
420 m	248	0.73	694	11.66	5.53
380 m	245	0.75	627	9.03	6.65
340 m	230	0.64	456	10.87	4.12
300 m	160	0.62	694	12.61	4.10



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## S16 vein system

The S16 vein system, in the central part of the SGX area, contains slightly less than one-fifth (18.5 percent) of the currently defined mineralization in the SGX mine area. The mineralization is hosted by five significant veins: S16W, S16W1, S16E, S16E1, and S16E3. The first three are by far the most important, with the S16W vein alone containing more than one-half of the known mineralization in the S16 system (q.v., Chapter 17). The S16 veins all strike approximately N-S and dip moderately to steeply east (50-83°), in sharp contrast to other SGX vein systems which strike generally NE-SW and are more steeply dipping.

S16W – The S16W vein, exposed for 1.9 km along strike at the surface, contains significant mineralization in five major bodies and several smaller outlying bodies along a 1.3 km length of the vein in the subsurface (Figure 10-6). Underground drilling together with tunnels, undercut drifts and raises, mainly on the 490, 450, and 400 m levels from the CM101 and CM105 tunnels – mostly done in previous years – was used to define the mineralization in the vein. During 2010, 12 exploration holes were drilled to further test the vein, one of which (ZK5710) hit "significant" mineralization (i.e.,  $\geq 150$  g/t equivalent-silver, which Silvercorp defines as the lower limit of "low-grade" mineralization in the SGX area):

Drill Hole	From (m)	To (m)	Horizontal width (m)	True width (m)	Ag (g/t)	Pb (%)	Zn (%)
ZK5710	131.09	131.29	0.20	0.18	145	15.8	35.4

#### Mineralization in S16W vein intersected in 2010 drilling

**S16W1** – The S16W1 vein, which is currently the fourth most heavily mineralized vein in the SGX area, is a split of S16 lying just west of S16W. The vein has a known strike extent of 1.3 km. The mineralization, as defined by tunneling (mainly on the 534, 570, 610 and 680 m levels) and 14 drill holes occurs in four major and two smaller outlying bodies along a 1 km length of the vein (Figure 10-4). Drill hole penetrations confirm that mineralization extends 150 m below the deepest existing tunnel level.

In 2010, mineralization was intersected in tunneling on the S16W1 vein at the 450 m level:

MI	neralization i	n S16W1 vei	n intersected	in 450 m lev	el tunnel
level	longth(m)	Wtd.avg.	Wtd.avg.	Wtd.avg.	Wtd.avg.
level	length(m)	width(m)	Ag(g.t)	Pb(%)	Zn(%)
450 m	70	0.49	1200	19.67	1.43

#### . . . . . . . . . ..... . . .

S16E, S16E1, S16E3 – S16E and its splays (S16E1, S16E3) are less important mineralized components of the S16 vein system. They are defined strictly by underground drilling and tunneling, mainly drifts and undercuts on the 490, 450, and 400 m levels from the CM101 and CM105 tunnels. The S16E vein extends for almost 1 km along strike with mineralization currently defined in four bodies.

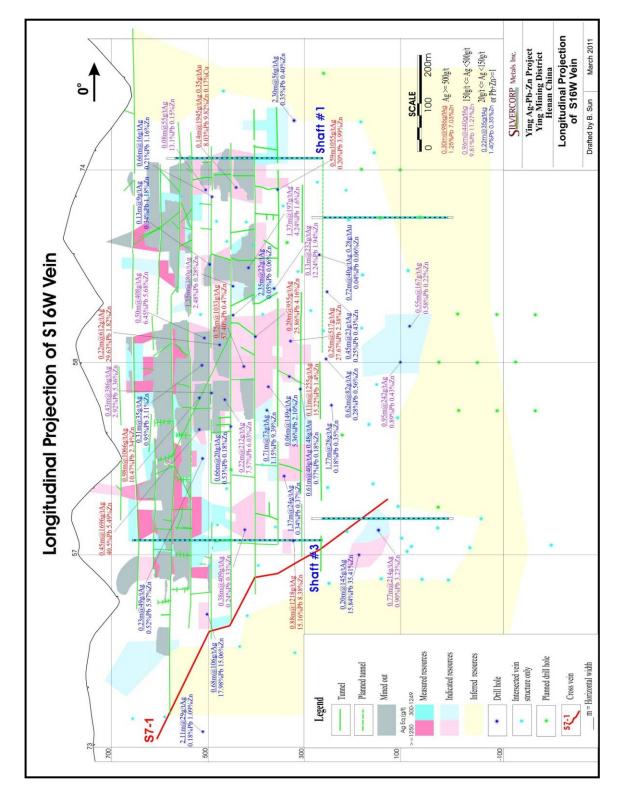


Figure 10-6: SGX Longitudinal Projection of S16W Vein

## S14 Vein System

The S14 vein system accounts for about 15 percent of currently defined mineralization in the SGX mine area (q.v., Chapter 17). The system consists of one dominant vein, the main S14 vein itself, and a less important vein split (S14-1). S14 is the second most abundantly mineralized vein in the mine area (based on currently defined resources; q.v., Chapter 17). It is located only a few hundred meters west of the major N-S trending S16 vein system, and is exposed for 1.3 km along the surface, It strikes NNE and dips steeply (75-78°) NW (Figure 10-7).

The S14 vein is higher-grade than typical SGX veins and has been explored in considerable detail in previous years. Mineralization was delineated by underground drilling, tunneling, undercut and drifting on the 580, 480, 450, 400, 350, 300, and 260 m levels from the CM102, CM105, and PD16 tunnels. In late-2010, ten core holes were drilled in the S14 vein; assay results are pending. Tunneling in 2010 at various levels exposed mineralization in the S14 vein as follows:

IVIIIIE		iter secteu m	314 vein in v	anous levels		
level	longth(m)	Wtd.avg.	Wtd.avg.	Wtd.avg.	Wtd.avg.	
level	length(m)	width(m)	Ag (g/t)	Pb (%)	Zn (%)	
450 m	30	0.65	135	3.14	11.41	
400 m	20	0.68	1152	34.69	4.79	
300 m 305		0.48	976	15.57	5.51	

## Mineralization intersected in S14 voin in various levels of tunnels

#### S6 vein system

The S6 vein system is a NNE trending system that lies a short distance west of, and parallel to, the S14 system discussed above. The main S6 vein itself is abundantly mineralized, with less important mineralization also defined in the S16E1 and S6W splits of the S6 vein. The S6 vein is exposed for 1.2 km along strike at the surface (Figure 10-8). Exploration, mostly trenching, tunneling and drilling carried out in previous years, has defined the mineralization. In 2010, two core holes were drilled to intersect the vein, of which one was mineralized:

	Mineralized	l intersec	tions in S6	vein 20	10 drillin	g	
Drill Hole	From (m)	To (m)	Horizontal width (m)	True width (m)	Ag (g/t)	Pb (%)	Zn (%)
ZK1826	175.4	175.65	0.24	0.23	1397	7.7	0.7

The S6 vein is primarily accessed underground via the CM102 tunnel for the 555 m level, and via PD16 for the four levels between 450 and 300 m with mineralization. Mineralization intersected by tunneling in 2010 is as follows:

viineraliz		Sected III	So vein in v	anous leve	ers of turnner	5
level	longth(m)	Wtd.avg.	Wtd.avg.	Wtd.avg.	Wtd.avg.	
level	length(m)	width(m)	Ag(g.t)	Pb(%)	Zn(%)	
518 m	95	0.29	430	7.86	1.64	
350 m	80	0.24	752	14.59	6.96	
300 m	105	0.34	845	9.93	4.45	

## Mineralization intersected in S6 vein in various levels of tunnels

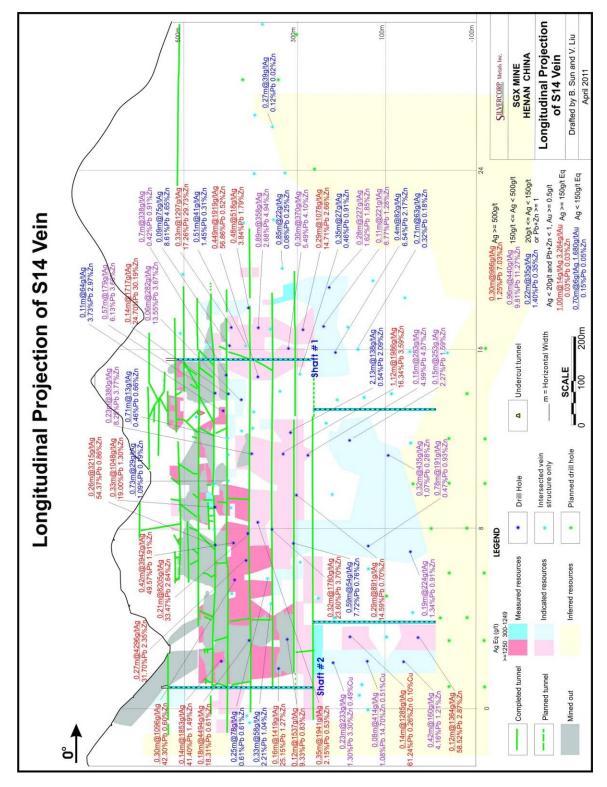


Figure 10-7: SGX Longitudinal Projection of S14 Vein

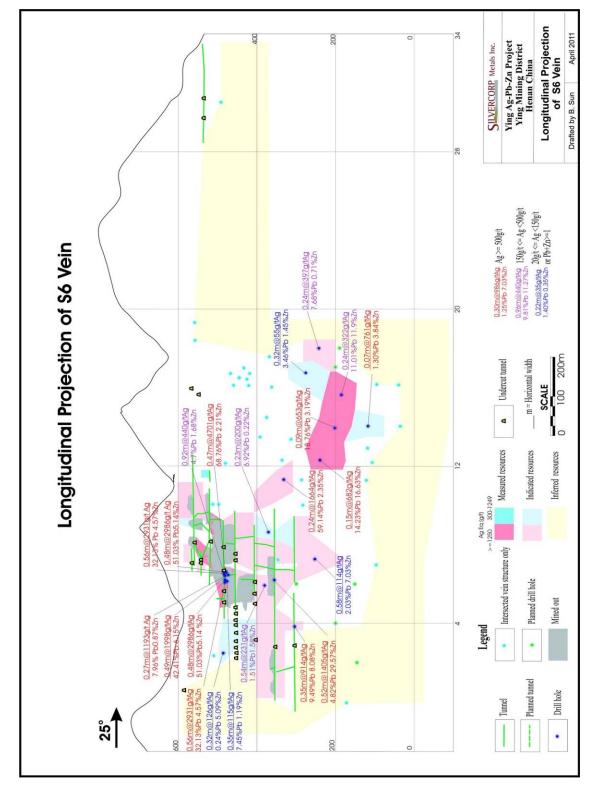


Figure 10-8: SGX Longitudinal Projection of S6 Vein

#### S21 vein system

The northeast-trending S21 vein system lies between the S16 and S7 vein systems in the eastern part of the SGX area. Previous exploration work defined significant mineralization in the main S21 vein itself and lesser mineralization in the S21W and S21W1 vein splits. The S21vein is exposed for about 350 m along strike at the surface (Figure 10-9). Previous underground exploration exposed and defined mineralization by undercut drifting and tunneling on the 750, 720, 650, 630, 520, and 510 m levels from the CM101, CM103, and PD680 tunnels. No new drilling was done on the vein in 2010, but two new crosscuts were driven on the 450 m level with the following results:

*Cross-cut 105*: Extended known mineralization by length of 90 m, with weighted average true width of 0.68 m and weighted average grades of 1,031 g/t Ag, 23.09% Pb, and 3.08% Zn.

*Cross-cut 101*: Extended known mineralization by length of 40 m, with weighted average true width of 0.30 m and weighted average grades of 484 g/t Ag, 16.02% Pb, and 0.71% Zn.

#### S8 vein system

The S8 vein system follows a major NE-SW structural zone across the SGX area, from 100 to 250 m southeast of, and parallel to, the S7 vein system. The main S8 vein is significantly mineralized, with less important mineralization defined in the S8E and S8E1 veins. The S8 vein is exposed for about 3 km along strike at the surface where it is mineralized only very locally. The S8 vein has been extensively mined, but tunneling, drifting and cross-cuts on the 680, 620, 570, 520, and 470 m levels from tunnels CM108, CM101, CM102, and CM103 carried out in previous years has defined significant remaining mineralization (q.v., Chapter 17). In 2010, ten new holes were drilled to intersect the vein; assay results are still pending. Mineralization was encountered in two new tunnels driven in 2010 with the following results:

wineralization intersected in So vein in two levers of turners								
level	length(m)	Wtd.avg.	Wtd.avg.	Wtd.avg.	Wtd.avg.			
level	length(m)	width(m)	Ag(g.t)	Pb(%)	Zn(%)			
480 m	203	0.61	489	10.43	5.05			
390 m	130	0.64	125	15.67	0.71			

#### Mineralization intersected in S8 vein in two levels of tunnels

#### S5 vein system

The S5 vein, northwest of the S6 vein, contains four zones of mineralization defined by previous trenching, tunneling and drilling. The vein is best exposed in three levels accessed from tunnel CM105. In 2010, the S5 vein was intersected with 14 new exploration drill holes, of which 7 were significantly mineralized (i.e., intersected  $\geq$ 150 g/t equivalent-silver) and 7 were only weakly mineralized (<150 g/t equivalent silver). The seven mineralized holes are as follows:

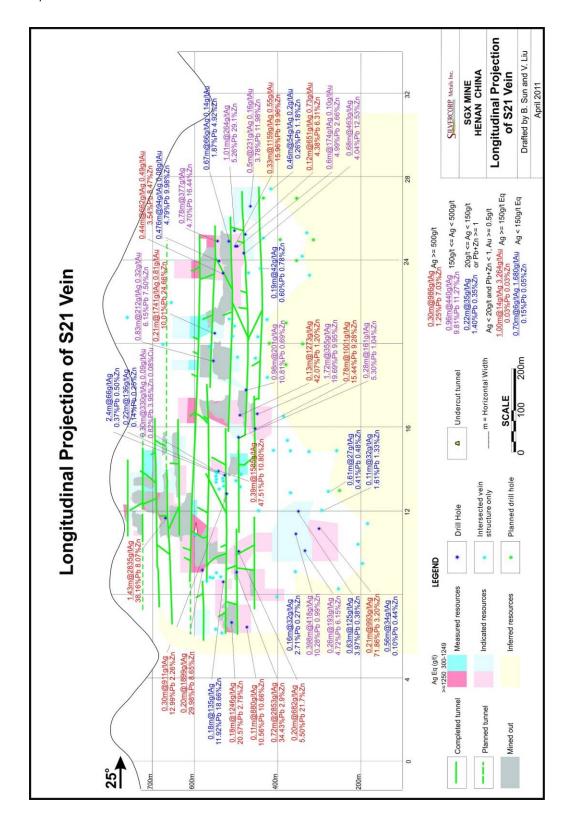


Figure 10-9: SGX Longitudinal Projection of S21 Vein

May 20, 2011

Drill Hole	From (m)	To (m)	Horizontal width (m)	True width (m)	Ag (g/t)	Pb (%)	Zn (%)
ZK1035	271.3	272.55	0.93	0.93	285	11.8	1.1
ZK1441	87.35	87.75	0.19	0.18	522	9.9	0.7
ZK1233	239.85	240.05	0.17	0.17	201	17.2	3.3
ZK1235	352.9	353.50	0.47	0.47	1161	28.1	1.3
ZK1033	144.5	144.85	0.28	0.28	738	18.9	14.8
ZK1826	35.05	35.30	0.24	0.23	648	0.9	9.2
ZK1829	40.6	41.30	0.60	0.21	804	8.9	6.6

#### Mineralized intersections in S5 vein 2010 drilling

Underground tunneling in 2010 along the S5 vein at two different levels produced the following results:

loval	length(m)	Wtd.avg.	Wtd.avg.	Wtd.avg.	Wtd.avg.
level		width(m)	Ag(g.t)	Pb(%)	Zn(%)
340 m	20	0.23	1249	16.50	11.88
300 m	195	0.35	519	8.18	8.15

#### Other SGX veins

In addition to the 10 significant vein systems discussed above, the SGX mine area contains 17 lesser vein systems with currently defined mineralization (see vein-by-vein resource tables in Appendix). Collectively, these lesser veins account for less than 8 percent of the currently defined mineralization in the mine area. Many of these have not yet been thoroughly evaluated and are interesting targets for future exploration.

## 10.2 PRINCIPAL VEINS IN THE HZG MINE AREA

The HZG mine area lies immediately south of the SGX area on the western margin of the Ying District. It is the least explored and developed of the Ying District mine areas. It has many more veins than the SGX area, but the veins are smaller, shorter and much closer spaced. The HZG veins mostly trend NE-SW, bending NNE-SSW toward the western margin, although there are a few vein systems that trend approximately N-S (Figure 10-10). The veins typically contain lower zinc and higher copper values than veins from other areas in the district. To date, mineralization of significance has been defined in only four of the many dozens of veins identified in the HZG area. The HZ20 vein, discussed below, is by far the largest of these four known mineralized veins.

**HZ20 Vein** –The HZ20 vein extends along N-S strike for more than 1.85 km, dips steeply east, and extends to a known depth of at least 300 m. It was explored in previous years by 22 surface drill holes, 3 underground drill holes, and by tunnels on the 840 m and 890 m levels (Figure 10-11). This work defined two mineralized zones. The first extends 85 m along strike and 310 m down dip, with an weighted average true width of 1.39 m carrying weighted average grades of 385 g/t Ag, 0.14% Pb, 0.32% Zn, and 1.11% Cu. The second extends 290 m along strike and 230 m down dip, with a weighted weighted true width of 0.31 m carrying weighted average grades of 1107 g/t Ag, 3.03% Pb, 0.47% Zn, 1.25% Cu. No drilling was done on the HZ20 vein in 2010.

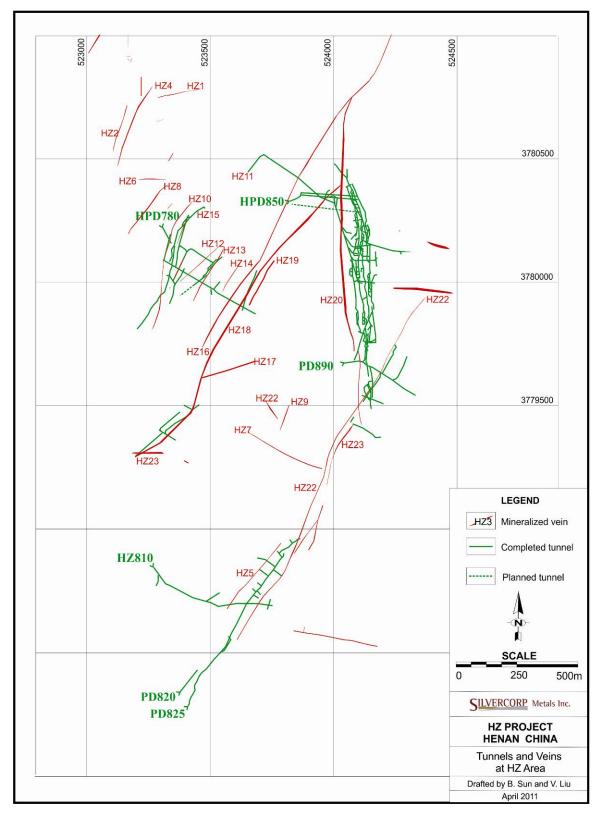
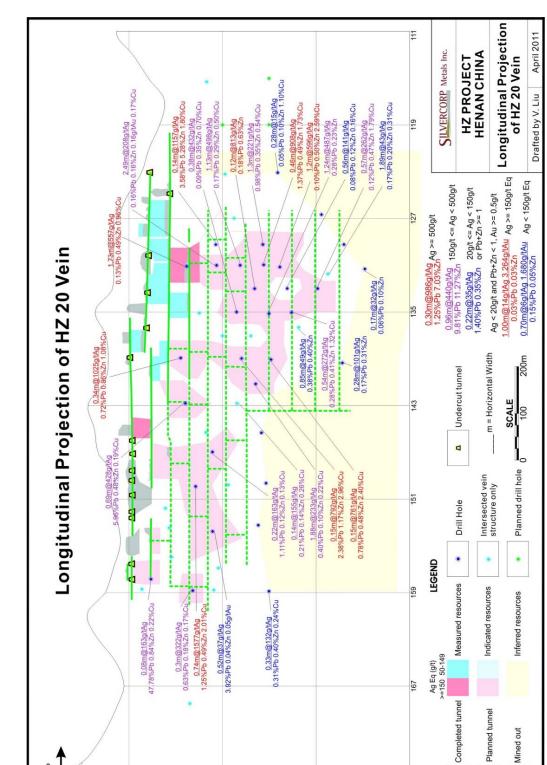


Figure 10-10: Tunnels and Veins at HZG Area



SGX Mine Ying Silver-Lead-Zinc District Silvercorp Metals Inc.

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1000

006

800

700

Figure 10-11: HZG Longitudinal Projection of HZ20 Vein

600

500

400

300

In 2010, a tunneling program was carried out on the HZ20 vein on the 770 m and 810 m levels. On the 810 m elevation level, the program extended the vein by 50 m along strike, with a weighted average true width of 0.24 m which carries weighted average grades of 159 g/t Ag, 5.0% Pb, and 0.29% Zn. On the 770 m level, the vein was extended 98 m to the south with a weighted average true width of 0.33 m and weighted average grades of 393 g/t Ag, 5.0% Pb%, and 0.29 %Zn. It was also extended to the north by 120 m where the weighted average true width was 0.35 m with weighted average grades of 797 g/t Ag, 1.67% Pb, and 1.33% Zn.

## **10.3 EXPLORATION IN OUTLYING AREAS**

The 2010 exploration program focused on two "frontier" areas within the Ying District, the SDG-LJG and DCG areas. The SDG-LJG exploration permitting area is adjacent to the southeast boundary of the SGX mining permit west of the TLP and LM permits, the DCG area is 3 km north of TLP, adjacent to the northeast boundary of the Ying exploration permit.

## SDG-LJG Area

Mineralization in the SDG-LJG exploration area is associated with structurally controlled alteration zones (fault zones) (Figure 10-12). Surface mapping, geochemical anomaly checking, and drilling started in March, 2010, in order to explore mineralization in two principal veins, SL1 and SL1-1. In 2010, Silvercorp drilled 9 NQ-size core holes, totaling 2883.77 m, to explore these veins, with several of the 9 holes intersecting mineralization in both veins.

*SL1 Vein* – The SL1 vein in the northwest portion of the permit area, extends in a NE-SW direction for 1,700m along the surface (Figure 10-13). Six of the nine holes drilled in the 2010 program intersected mineralization in this vein, as listed below:

					cotions					
					True					
	Drill	From		Horizontal	width	Ag	Pb	Zn	Au	Cu
_	Hole	(m)	To (m)	width (m)	(m)	(g/t)	(%)	(%)	(g/t)	(%)
	ZK001	198.58	198.90	0.26	0.26	237.34	1.05	1.31	0.48	0.00
	ZK002	273.44	274.37	0.51	0.49	3.60	0.00	0.02	0.00	0.50
	ZK401	224.17	226.73	1.97	1.85	67.41	0.32	0.67	0	2.14
	ZK402	245.90	247.89	1.31	1.23	10.61	0.01	0.02	0.00	1.61
	ZK701	236.81	237.41	0.52	0.49	30.85	1.19	0.46	0.00	0.034
	ZK802	186.00	186.44	0.36	0.35	3.43	0.00	0.02	0.00	0.41

## Drill Hole intersections in the SL1 Vein

*SL1-1 Vein* – The SL1-1 vein, 100 m west of SL1, has a known strike length of 380 m. Five of the nine holes drilled in the 2010 program intersected mineralization in this vein, as listed below:

		Drill H	lole interse	ctions i	in the SL	.1-1 Vei	in		
				True					
Drill	From		Horizontal	width	Ag	Pb	Zn	Au	Cu
Hole	(m)	To (m)	width (m)	(m)	(g/t)	(%)	(%)	(g/t)	(%)
ZK301	191.30	193.30	1.30	1.22	60.8	0.03	0.09	0.07	1.814
ZK002	203.22	204.13	0.5	0.48	20.49	0.04	0.16	0.00	0.97
ZK402	231.33	233.48	1.42	1.33	26.31	0.01	0.05	0.00	2.61
ZK801	131.26	132.23	0.8	0.77	24.55	0.01	0.14	0.00	2.79
ZK702	195.78	196.1	0.24	0.22	5.4	0.28	0.012	2.99	0.36

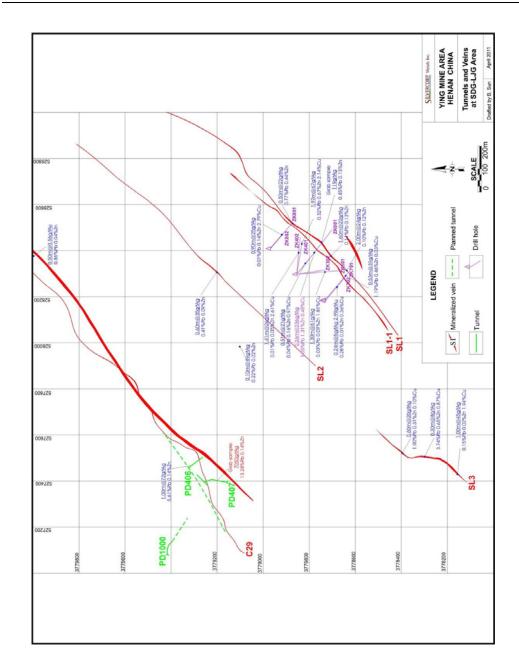


Figure 10-12: Tunnels and Veins at SDG-LJG Area

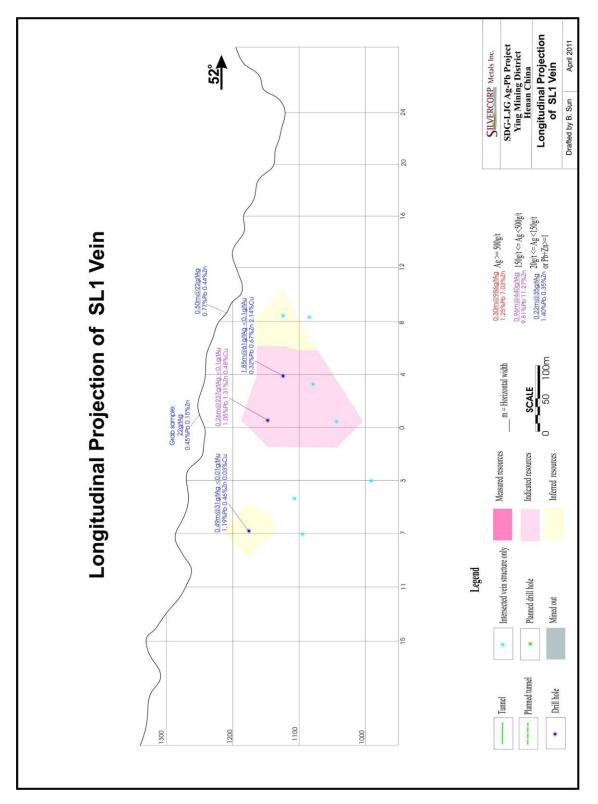


Figure 10-13: SDG-LJG Longitudinal Projection of SL1 Vein

## **DCG** Area

The DCG area, adjacent to the northeast boundary of the Ying exploration permit, 3 km north of TLP, includes 6.4 km<sup>2</sup> of very rugged, forested hills. Surface mapping, trenching and limited tunneling by previous workers defined five NE-trending mineralized veins and one N-S mineralized vein (Figure 10-14). The veins range from 460 m to 3600 m in length and are 0.3m to 2.0m wide. In 2010, Silvercorp drilled 8 NQ-size core holes (2,283.77 m) focused mainly on two veins – C4 and C4E – with several of the 8 holes intersecting mineralization in both veins..

C4 Vein – The C4 vein, in the northern part of the area, strikes NE-SW for more than 1000 m along strike. Massive galena occurs locally along the outcrop. Two of the 8 holes drilled through this vein in the 2010 campaign intersected mineralization in the vein, as follows:

		2010	Drill Hole in	tersections	s in the	C4 vei	n			
Drill	From		Horizontal	True	Ag	Pb	Zn	Au	Cu	
Hole	(m)	To (m)	width (m)	width (m)	(g/t)	(%)	(%)	(g/t)	(%)	
ZK4002	192.2	194.16	1.02	0.96	7	1.6	0.1	0.00	0.0	
ZK4042	60.54	61.86	1.17	0.96	42	2.4	1.4	0.73	0.0	

## C4E Vein - The C4E vein has a known length of 600 m. Three of the 8 holes drilled through this vein in the 2010 campaign intersected mineralization in the vein, as follows:

2010 Drill Hole intersections in the C4E vein									
Drill	From		Horizontal	True	Ag	Pb	Zn	Au	
Hole	(m)	To (m)	width (m)	width (m)	(g/t)	(%)	(%)	(g/t)	Cu (%)
ZK4001	202.34	202.88	0.5	0.47	57	7.8	0.6	0.56	0.1
ZK4002	234.69	235.90	0.84	0.79	12	3.9	0.4	0.05	0.0
ZK4042	214.38	214.74	0.35	0.29	19	4.9	0.0	0.13	0.0

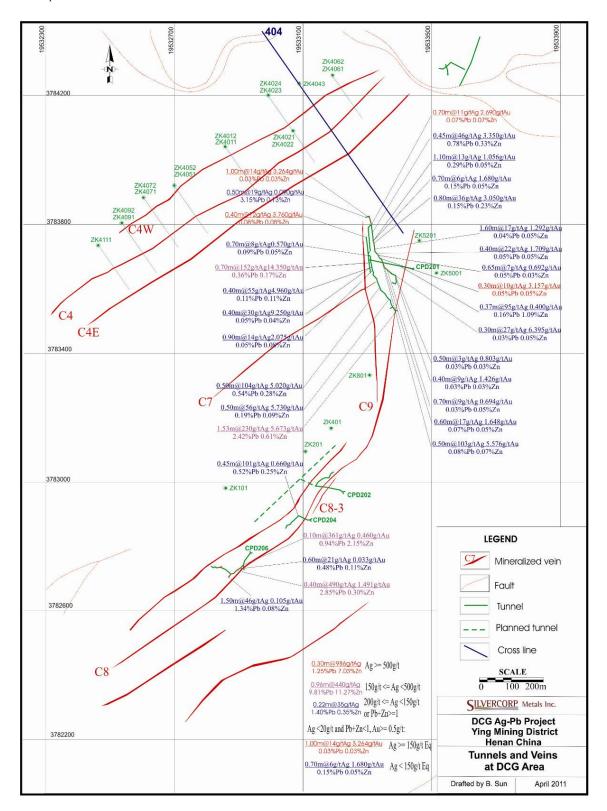


Figure 10-14: Tunnels and Veins at DCG Area

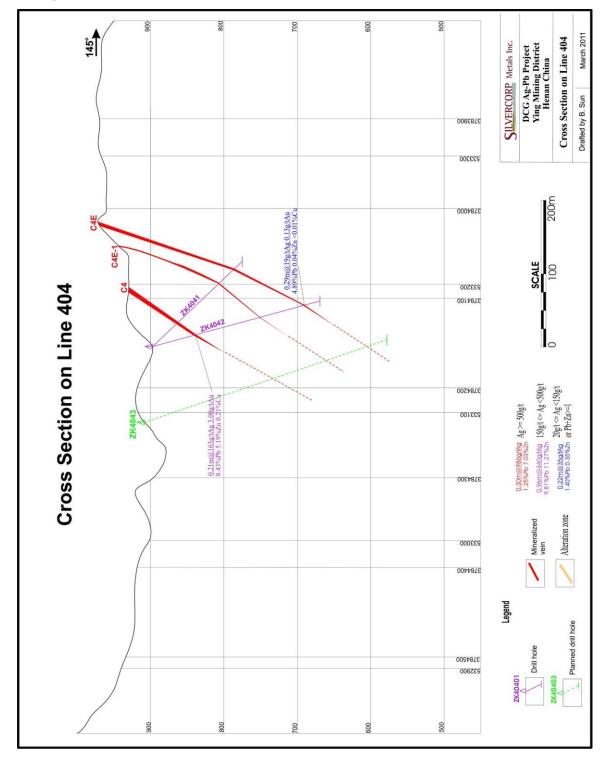


Figure 10-15: DCG Cross Section on Line 404

## 11.0 TUNNELING AND DRILLING

The Ying District projects have been explored principally from underground workings – tunnels, drifts, crosscuts and declines, typically about  $2 \times 2 \text{ m}$  in size – and by underground long-hole drilling. The workings follow the veins along strike, intersect them at different depth levels, and provide stations for underground diamond core holes. This underground exploration has proved to be the most effective and efficient way to explore and define mineralization in veins due to the pocket-like character of the higher-grade zones and to inexpensive labor costs,

Exploration completed in the SGX/HZG and outlying "frontier" areas from January 1, 2010 to December 31, 2010, consists of the following:

Mine	Explo	oration Method	# of holes	Total length (m)
	Surface drilling		0	0
SCY	Unde	erground drilling	93	32,572.66
		Drift		8,886.70
SGX	bu	Crosscut		2,849.60
	Tunneling	Raise		2,588.00
	Tun	Total		14,324.30
	Surface drilling		0	0
	Unde	erground drilling	0	0
1170	Tunneling	Drift		45.40
HZG		Crosscut		589.00
		Raise		237.50
		Total	0	871.90
AS 5)	Surfa	ace drilling	0	0
RE	Unde	erground drilling	17	5,167.54
G A .	g	Drift	0	0
	elin	Crosscut	0	0
OUTLYING AREAS (SDG-LJG, DCG)	Tunneling	Raise	0	0
(s) Or		Total		0

## 12.0 SAMPLING METHOD AND APPROACH

Silvercorp carefully documents all sampling and assay results on surface maps, underground level maps and longitudinal sections for all the mining and other target areas in Ying District. Locations and widths of mineralized veins in the underground workings are posted on the maps and sections. The maps are generally also annotated with assay results (Ag-Pb-Zn) from sampling along the veins in order to help characterize and predict mineralization.

The myriad of fault-fissure structures that cut the gneissic bedrock of the Ying Mining Camp are not continuously mineralized. Veins occur intermittently along these structures, appearing and disappearing along strike and dip. Silvercorp's exploration consists of horizontal tunneling along the veins, driving raises or declines to access the veins at other levels. Core drilling is designed to intersect the veins in other locations both laterally and vertically. Such methods are typical of those used elsewhere in the world to explore for vein deposits.

The sampling and assaying of outcrops, drill core, and underground workings is one of the primary tasks in all project areas for the exploration team. The principal sampling method consists of channel samples collected from surface trenches, bedrock outcrops, and underground tunnels and other workings. Samples along veins and outcrops are typically taken at 5 m intervals with the samples cut across the true width of the vein in channels 10 cm wide and 5 cm deep. This yields approximately 3 to 15 kg of material for each 0.3 m to 1.2 m interval, depending on width of the mineralized vein. In some locations the samples are continuous chip samples across the true width of the veins.

Drilling is also used, collecting NQ-sized drill cores (4.8 cm in diameter) from the mineralized zones. Cores are split by sawing with one half retained in the core box for archival purposes and the other half bagged for shipment to the analytical laboratory. Drill core recoveries are influenced by lithology. The rock appears competent, as the mines require no artificial support for underground adits, drifts, inclines, stopes or raises, even over several large expanses. One exception is wide fault zones where wood timbering is necessary to support the broken rock. This considerable rock strength makes drill core recoveries quite good.

During our several site visits to the various project areas in the Ying District, we observed core drilling underway at the surface and in the underground workings, and tunnel sampling underway at numerous places in the workings. We repeatedly reviewed the collection of drill core data, the recording of drill and tunnel assays, and the posting of such information on maps and sections. We conclude that the sampling methods and the handling of sample assay is being carried out in a competent and very professional manner.

## 13.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

Channel or surface trench samples are not split prior to being sent to the analytical laboratory. Drill core samples are split by a diamond saw with one half retained for archive, the other half secured in sample bags and shipped to the laboratory. Employees of Found and Huawei, the subsidiaries of Silvercorp, collect the tunnel samples and split the core for sampling.

Sample preparation and analysis of the historical and current samples is done by one of three chosen labs:

- ALS Laboratory in Guangzhou, China, near Hong Kong, an ISO 9001-accredited facility (used for check assays only in 2010)
- Number 6 Lab of the Non-Ferrous Metals Geology Prospect Bureau of the Chinese government, located in Luoyang, Henan Province (not used in 2010)
- Analytical Lab of Henan Non-Ferrous Metals Geological and Exploitation Institute (ALHN)in Zhengzhou, located 225 km by road northeast of the Ying Mine (served as the primary Lab in 2010)

All three labs are accredited and certified by the Chinese government and are well known and respected for their analytical work in China. Their sample preparation procedures consist of drying, crushing, splitting and weighing of a 200-gram sample, followed by pulverizing to 200-mesh size. The 200-mesh sample split is split again with a 100-gram split used for final assay.

The Number 6 Lab and the Analytical Lab of Henan Non-Ferrous Metals Geological and Exploitation Institute utilize a two-acid digestion and Atomic Absorption Spectrometry (AAS finish) as an assay method on a 0.5 gram sample split for analyzing silver, lead and zinc. This method has a maximum published 500 ppm (g/t) detection limit for silver. For samples above that limit, the sample pulp is re-analyzed using a 5 g sample aliquot in a less dilute two-acid digestion and analyzed by AAS. ALHN believes this method has a silver detection limit of 4000 ppm (g/t). The ALS Laboratory utilizes aqua regia digestion before analysis by ICP-AES for lead, zinc and silver. Samples with more than 500 ppm (g/t) silver are analyzed using conventional Fire Assay methods with a silver detection limit of 10,000 ppm (g/).

Silvercorp's QA/QC check procedures include inserting standards in the sample batches submitted to the labs on a regular basis and submitting duplicate pulps to an independent external lab on an intermittent basis. Silvercorp does not include "blank" samples. Basic procedures and results are as follows:

- Standards are included in samples sent to ALS. Results have been within 3% for the lead, zinc and silver values.
- Duplicate pulps are sent to the ALS lab for samples also shipped to the other two labs for samples containing more than 50 g/t Ag, 0.5% Pb and/or 0.5% Zn. Duplicate pulps are also selected at random intervals for check analyses to the ALS Chemex lab. Results in 2010 are listed in the following table:

In 2010, 17 duplicates from the SGX mine area sample pulps and 16 duplicates of sample pulps from the SDG/JLG and DCG outlying exploration areas were sent to ALS for check against results returned by ALHN. The average differences between the ALHN analyses and the check

analyses were less than 5% for silver, lead and zinc, returning correlation coefficients of 96% to 99%. Although the number of samples sent for duplicate analysis is statistically small, these results suggest that the ALHN silver-lead-zinc analyses are probably quite reliable.

In general, the procedures used by Silvercorp for the preparation, security, analysis and checking of samples and sample results appear to be adequate and closely conform to standard industry practices. Nevertheless, it is recommended that Silvercorp insert sample blanks at random into the stream of samples submitted for analysis as a way to monitor possible contamination during the sample preparation stage at the laboratory.

## 14.0 DATA VERIFICATION

Previous site visits to the Ying District were conducted by the independent authors of the many technical reports completed on the project at various times starting in 2003 and continuing through 2008 (Broili, 2004; Broili, 2005;Xu et al., 2006, Broili and Klohn, 2007,Broili et al., 2006, 2008). In each of these reports, verification samples were collected from the various projects to confirm the presence of mineralization and validity of Silvercorp sampling and data recording. Further verification samples were not collected for this report because (1) the previous verification sampling has confirmed the presence of mineralization comparable in grade to that being reported by Silvercorp, and (2) all four of the mine target areas have now been producing, shipping and selling commercial ore for periods ranging from one to four years.

To verify the data used in this current Technical Report, the senior independent author (Mr. Klohn) met with company representatives during a 15-day period (April 15 to 27, 2011)at Silvercorp's office in Vancouver, B.C., Canada. The representatives traveled to Vancouver direct from the project sites bringing with them a vast array of technical information. The information was reviewed and audited in considerable detail. As always, Silvercorp offered unrestricted access to information and responded candidly to all questions and inquiries. In addition, much of this information was sent in digital format to the second independent author of this report (Mr. Broili) who further reviewed and audited the data. The information reviewed by the authors included assay data, maps, long-sections, cross-sections, and a plethora of spreadsheet information relevant to mineral resource and reserve estimations, were closely examined for data entry, calculation and posting errors. Mr. Ni, the qualified engineer and non-independent author responsible for the mineral reserves, mining plans and mining economics information included in this report, has been onsite at Silvercorp's project operations for most of 2010. He is thoroughly familiar with the site details and vast project data.

The information reviewed for this report consists of various reports, maps, surveying data, and geological and geochemical technical data collected by drilling, trenching, tunneling and vein sampling. Much of the information was in Chinese and required translation. Any inconsistencies in the information, data or translations were reconciled to our satisfaction.

Production records confirm that silver, lead and zinc minerals from all four mine sites are being concentrated at the Ying mill sites and subsequently economically recovered at the smelter. The mills use crushing, grinding and spiral separators to liberate minerals containing lead, zinc, copper, gold and silver values with final recovery of the valuable mineral products by concentration in the mill's zinc and lead froth flotation circuits. The froth flotation concentrate is then dried using disk filters, followed by shipment to a smelter in Zhengzhou where the metals are recovered.

The purpose of our data verification was to verify results of Silvercorp's exploration activities and confirm resource and production information. It is our opinion that the technical information presented by the company and documented here has been effectively verified for purposes of this report.

## **15.0 ADJACENT PROPERTIES**

Silvercorp now controls all the silver-lead-zinc properties and known mineralized occurrences within the Ying District. There are no known adjacent properties with similar types of mineralization.

## **16.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

## **16.1 MINERALOGY**

Henan Non-ferrous Metals Research Institute (HNMRI) performed petrographic analysis on samples collected for metallurgical test work from veins S14, S16E, and S16W in adit CM102. HNMRI's study identified the following polymetallic sulfide minerals: galena, sphalerite with trace amounts of chalcopyrite, pyrrhotite, hematite, and magnetite and arsenopyrite. Silver minerals included native-silver, B-argentite, cupargyrite, and stephanite. The main gangue minerals in the blended ore sample are listed below in Table 16-1.

Sulfides and Iron Minerals	%	Gangue Minerals	%
Pyrite, pyrrhotite	2.54	Quartz	40.00
Galena	6.80	Chlorite and sericite	22.50
Sphalerite	7.80	Kaolin and clay minerals	15.00
arsenopyrite	0.06	Hornblende and feldspars	4.00
Chalcopyrite etc.	0.20	others	0.50
Hematite, Magnetite etc.	0.60		

#### Table 16-1: Mineral Composition of the SGX Ore

Galena is fine to coarse-grained (0.05 to 0.5 mm) and commonly occurs as a replacement of pyrite. The galena is distributed along the fractures of quartz or other gangue minerals and commonly interlocked with sphalerite and pyrite.

Sphalerite is commonly coarse-grained and ranges from 0.2 to 2.0 mm in size. It is formed by replacing pyrite and enclosed in a skeleton of remaining pyrite.

Silver appears in two forms, as silver minerals such as native silver, electrum, tetrahedrite, polybsite, pyrargyrite, and argentite, and as electro-replacement in galena, pyrite, and other sulfide. Native sulfides usually range from 0.01 to 0.07 mm in size. An example of the distribution of silver minerals and silver bearing minerals is shown in Figure 16-1 below and the detailed phase distribution of silver is listed in Table 16-2 below.

Occurrence	g/t	%	Comments
Native Silver	89.45	23.32	Free silver
Silver Sulfides	136.32	35.54	In tetrahedrite, polybasite, pyrargyrite, and argentite
Silver in Sulfides	140.04	36.51	In galena, sphalerite, pyrite, and chalcopyrite
Silver enclosed in			
gangue minerals	17.76	4.63	In quartz etc.
Total	383.57	100.00	

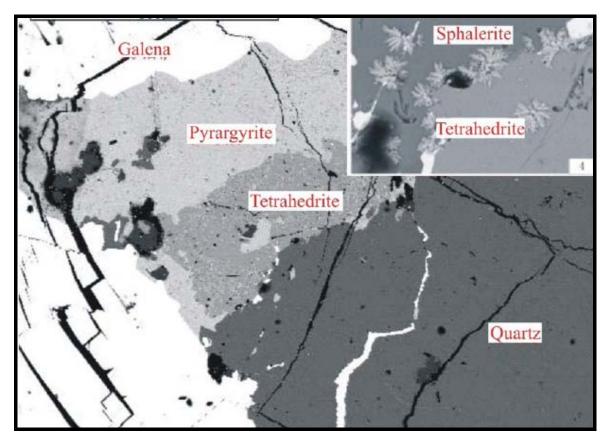


Figure 16-1: Distribution of Silver Minerals and Silver-Bearing Minerals

## **16.2 METALLURGICAL TESTING**

Metallurgical testing for the SGX ore body was performed by Henan Non-ferrous Metals Research Institute (HNMRI) in July 2005. Samples and blends of these samples from veins S14, S16E, and S16W in adit CM102 at the SGX mine were used. Head grades of these samples are listed in Table 16-3.

Sample	Ag (g/t)	Pb (%)	Zn (%)
No. 1	436.45	0.72	0.87
No. 3	659.75	2.66	13.34
No. 5	314.65	9.67	4.20

In order to better understand the metallurgical characteristics of the SGX's ore, HNMRI blended these samples based on the following ratios of No.1: No.3: No.5 of 2.5: 2: 5.55. It was assumed that this blend would be representative of the SGX's ore and it would represent the expected mill grade. The head grade result of this blended sample is provided in Table 16-4.

Pb (%)	Zn (%)	Cu (%)	S (%)	As (%)	TFe (%)
5.88	5.23	0.063	4.02	0.001	2.83
Au (g/t)	Ag (g/t)	CaO (%)	MgO (%)	SiO (%)	Al <sub>2</sub> O <sub>3</sub> (%)
5.88	5.23	0.063	4.02	0.001	2.83

 Table 16-4: Head Grade of Blended Sample

The test work concluded that the optimum grind for the ore was 70% passing 200 mesh and the flow sheet shown in Figure 16-2 gave the best results. This flow sheet contains test information on the optimum reagent dosages and their points of addition. The results of this locked cycle test are listed in Table 16-5.

#### Table 16-5: Locked Cycle Test Results

	Grade				Recovery			
	Weight	Pb	Zn	Ag	Pb	Zn	Ag	
Product	(%)	(%)	(%)	(g/t)	(%)	(%)	(%)	
Head	100.00	5.88	5.21	386.50	100.00	100.00	100.00	
Lead Con.	7.84	68.18	6.24	4,196.52	90.89	9.39	85.12	
Zinc Con.	7.49	2.10	59.61	453.80	2.67	85.67	8.79	
Tails	84.67	0.45	0.30	27.80	6.44	4.94	6.09	

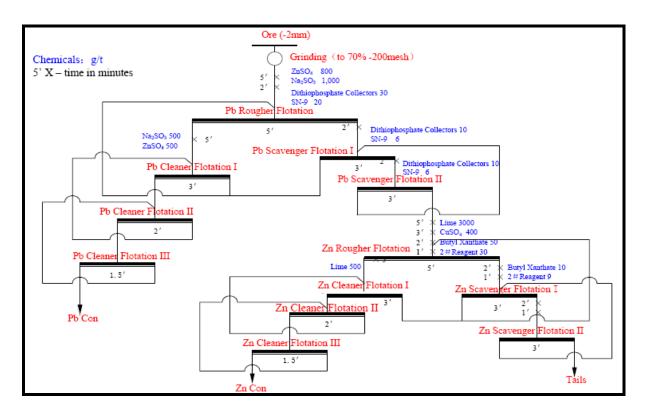


Figure 16-2: Locked Cycle Flow sheet

## **16.3 SPECIFIC GRAVITY**

A total of 60 samples were taken for specific gravity (SG) measurements using the waximmersion method by the Analytical Lab of No.6 Brigade of Henan Non-Ferrous Metals Geological and Mineral Resources Bureau in Luoyang. Samples ranged in size from 470 to 2,690 grams. Based on the cut-off grade for "high grade" vein material (>1,250 g/t equivalent-Ag), results of 45 samples were used to calculate the average SG for each vein on the SGX property, as summarized in Table 16-6 below:

Veins	Ag (g/t)	Pb (%)	Zn (%)	Ag Equiv.	SG	Samples
Average	1,994	37.55	10.05	4,055	4.28	45
Dissem Average	1,791	19.42	12.65	3,211	3.47	13
Massive Average	2,076	44.91	9.00	4,398	4.61	32
S14 Average	2,380	40.51	4.96	4,325	4.21	17
S16E Average	1,755	31.88	15.82	3,851	4.18	7
S16W Average	1,865	42.44	13.42	4,293	4.60	9
S2 Average	1,564	30.22	12.95	3,454	4.19	10
S6 Average	2,275	46.28	3.43	4,413	4.25	2

#### Table 16-6: Specific Gravity of Different Mineralization Veins

The average SG of the 45 high grade vein samples was 4.28. Based on this, Silvercorp has used a safely conservative SG of 4.2 in calculating the tonnage of the high-grade vein resource blocks. Lower-grade vein material (i.e., 300 to 1,250 g/t equivalent-silver) contains substantially lesser amounts of dense metallic minerals, especially galena; this material is assigned a reasonable and conservative SG of 3.0 by Silvercorp in calculating tonnages of the SGX low-grade resource blocks.

## **16.4 MINERAL PROCESSING**

Silvercorp's Central Mills include the No.1 Mill ("Xiayu Mill") and the No.2 Mill ("Zhuangtou Mill"). The No. 1 Mill has a capacity of about 600 tpd and has been in operation since March, 2007. The No.2.No.2 Mill has a capacity of 2,000 tpd and started operations in January, 2010.

#### 16.4.1 Milling Process – No.1 Mill (Xiayu)

The No. 1 Mill was developed based on a comprehensive testwork program on composite mine samples completed by the Hunan Research Institute of Non Ferrous Metals. The designed mass balances at the mill are listed in the following Table 16-7:

	Quantity	Product Rate	Pb	Zn	Recover	ry, (%)
Product	(t)	(%)	(%)	(%)	Pb	Zn
Ore	600	100	3.18	1.73	100	100
PbConc	28.62	4.77	60.00	1.95	90.00	5.38
Zn Conc	19.62	3.27	0.95	45.00	0.98	85.00
Tailings	551.76	91.96	0.31	0.18	9.02	9.62

#### Table 16-7: Designed Mass Balance at the No.1 Mill

It is necessary to note that a copper flotation system was added in the last year. The modified flow sheet of the No. 1 Mill is presented in Figure 16-3:

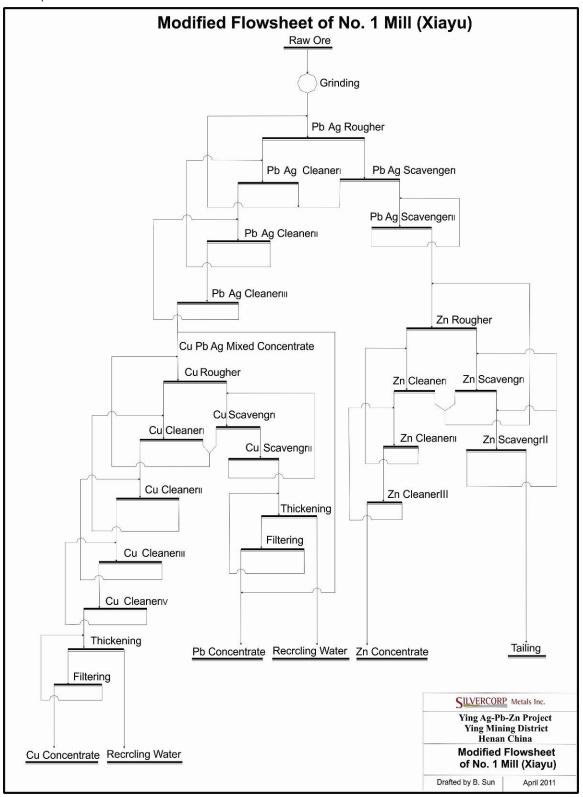


Figure 16-3: Modified flow sheet of No.1 Mill (Xiayu)

## Crushing

The crushing is a closed circuit, consisting of two jaw crushers with an oscillating screen. The primary jaw crusher (Model: PEF 500x750) has a closed side setting of 80mm. Discharge from the primary jaw crusher is conveyed to the 15 mm aperture oscillating screen. Ore with a size of larger than 15mm is conveyed to the secondary jaw crusher (Model: PYH-2X cone crusher) which has a close side setting of 15mm. Discharge from the secondary crusher is conveyed back to the 15 mm aperture screen. Discharge from the screen feeds ore bins with a live capacity of 100 tonnes.

Dust from crushing and screening processes is collected by vacuums, captured in cloth bags, then transferred to a process tank. Water is added to the tank to make slurry that is pumped into a pre-flotation tank together with overflow from a ball mill circuit as described below.

## Milling

Crushed ore from the live bins is conveyed to a closed milling circuit consisting of a ball mill (Model: TMQG 2100 x 600) and classifier (Model: TG-200). The ball charge is made of Mn-steel balls, with diameters ranging from 60mm to 120mm. The target grind size is 70% passing 200 mesh and the overflow density is maintained at 40% solids by weight when introduced to the flotation cells.

## Flotation

- The lead flotation bank consists of one stage of roughing, two stages of scavenging and three stages of cleaning.
- The zinc flotation bank consists of one stage of roughing, two stages of scavenging and three stages of cleaning.
- The copper flotation bank consists of one stage of roughing, two stages of scavenging and four stages of cleaning.

## Concentrating

Both lead and zinc concentrates are diluted to 15% solids by weight by adding water for natural settling. The diluted slurries flow to their respective settling containment concrete structure for settling. The settled slurries at the bottom (with approximately 80% solids by weight) are pulped into a ceramic filter setup under the settling structure for dewatering. The moisture content of dewatered lead and zinc concentrates are 5% and 7%, respectively.

Tailings from the zinc flotation circuit are pumped into the tailings dam located at the northern creek located between No.1 Mill and No.2 Mill. The total tailing capacity of this dam is 3,330,000 m<sup>3</sup>, with an effective capacity of 2,830,000 m<sup>3</sup> or 4,215,000 tonnes of tailings. The current elevation of the tailings dam is 626.5 m, and can be reached as high as 650 m. A crew of 11 people monitors the tailings dam. Reclaimed process water from the tailings pond is pumped for reuse in the milling process.

To check the result, a set of five samples are usually taken every eight hour shift for a total of 15 samples per 24 hour day. The shift samples include flotation feed from the classifier overflow, lead and zinc concentrates from the 3rd cleaners, and lead and zinc tailings from the last scavengers, respectively. Lead, zinc and silver assays are determined by EDTA (ethylenediaminetetraacetic acid) titration following acid digestion. This method is normally used

for high concentration of lead and zinc and moderate silver samples, while an AA finish is used for the lower grade samples.

### 16.4.2 Milling Process – No.2 Mill (Zhuangtou)

The No.2 Mill (Zhuangtou), 2 km west of the No.1 Mill, includes two parallel processing lines: (1) a 1000 t/d capacity line that has operated since January, 2010, and (2) a second 1000/t/d capacity line that is being installed and will be operational very soon. According to the original design, the No.2 Mill can process both Pb and Zn ore and Cu, Pb and Zn ore, however at this time the Cu flotation system has not been implemented, so the mill can currently only process Pb and Zn ore.

The flow sheet of No.2 Mill, as shown in Figure 16-4, was developed based on a comprehensive testwork program on composite mine samples completed by the Hunan Research Institute of Non Ferrous Metals. The Designed mass balance at the No.2 Mill is shown in Table 16-8, below:

		( )		- /		
	Quantity	Product Rate	Pb	Zn		Zn Recovery
Product	(t)	(%)	(%)	(%)	Pb Recovery (%)	(%)
Ore	1000	100	5.88	5.21	100	100
PbConc	67.2	7.84	2.10	59.61	90.89	9.39
Zn Conc	58.7	7.49	0.45	0.30	2.67	85.67
Tailings	874.1	84.67	0.35	0.23	6.44	4.94

# Table 16-8: Designed Mass Balance at the No.2 Mill (Pb and Zn ore)

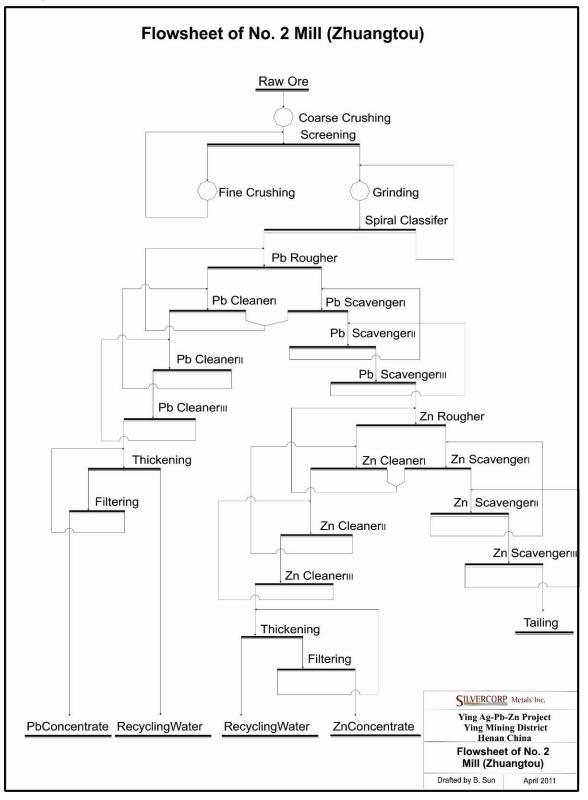


Figure 16-4: Flow sheet of No.2 Mill (Zhuangtou)

A general view of the No.2 Mill is shown as the Appendix -1; a view of the crushing, milling and flotation setups of the No.2 Mill is shown in Appendix -2.

#### **16.4.3 Metallurgical Performance**

The No.1 Mill has been operating continuously since being commissioned in March, 2007. According to systematical statistical data in 2010, the processing results reveal that Pb recoveries from SGX ore exceeded the design expectation, but Zn recoveries were lower than expected.

The actual mass balances at the No.1 Mill are presented in the Table 16-9.

	Quantity	Product	Ag	Pb	Zn	Recovery, %		%
Product	(t)	Rate (%)	(g/t)	(%)	(%)	Ag	Pb	Zn
Ore	305744	100.0	407	6.18	2.71	100.00	100.00	100.00
PbConc	25961	8.49	4353	69.31	5.10	90.73	95.16	15.97
Zn Conc	12467	4.08	465	1.46	50.24	4.66	0.96	75.51
Tailings	267316	87.43	21	0.27	0.26	4.61	3.88	8.52

#### Table 16-9: Actual Mass Balance at the No.1 Mill (SGX ore)

## 17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

This chapter presents estimates of Mineral Resources and Mineral Reserves for the SGX and HZG mine areas of the Ying District using the standards and categories established by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) in the *CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines* as adopted by the CIM Council on August 20, 2000, and as required by Canadian National Instrument 43-101.

The term "**Mineral Resource**" covers mineralization of *intrinsic economic interest* which has been identified and estimated through exploration and sampling, whereas the term "**Mineral Reserve**" is used for those parts of Mineral Resources whose *probable economic viability* has been demonstrated after considering and applying all mining factors such as technical, economic, legal, environmental, socio-economic and governmental factors. The current Mineral Resource Estimates are discussed in sections 17.1, 17.2 and 17.3 of this chapter; current Mineral Reserves Estimates are presented in section 17.4.

*Note:* It is important to point out that the "Mineral Resources" defined and presented in sections 17.1 through 17.3 of this chapter are *inclusive* of the "Mineral Reserves" which are defined and presented in section 17.4 of this chapter.

## 17.1 MINERAL RESOURCE CATEGORIES

The mineral resource categories used in this report are those established in the *CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines* as referenced above. These resource definitions are summarized as follows:

"A **Mineral Resource** is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

"A **Measured Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

"An **Indicated Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

"An **Inferred Mineral Resource** is that part of a Mineral Resource, for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes."

## 17.2 RESOURCE BLOCK MODEL AND GEOLOGY

The mining and exploration areas of the Ying District all consists of mineralized veins that closely follow fault structures. The veins along the plane of these structures – and the mineralized bodies they enclose – pinch-and-swell both laterally and to depth. The polygonal block model used in this resource estimation is considered acceptable and applicable for the pocket-like mineralization present in narrow veins of this type. The polygonal block model utilizes detailed cross-sections and longitudinal-sections constructed for each vein. Surface topographic control is taken from 1:10,000 government topographic maps and subsurface control is taken from accurate underground surveys.

The "pocket" character of higher-grade mineralization occurring in swells along the veins is readily observed in underground workings and can be graphically demonstrated in grade variation plots of channel samples taken across the vein at regular intervals along the vein, as shown in the two figures below where "high-grade" denotes samples with more than 1,250 g/t silver-equivalent. (*Note:* the term "silver-equivalent" is explained in the section below.)



#### Grade Variation Plots Along S14 and 16W Veins SGX Mine Area, Ying District



### Silver-equivalencies

The veins in the Ying District are polymetallic veins that contain several potentially payable metals, specifically silver, gold, lead, zinc and copper, although at this time copper and gold are not recovered from SGX and HZG operations. As required by NI 43-101, the grade and quantity of each potentially payable metal are separately reported in the resource tables presented in this report.

Also included in this report are "silver-equivalent" (Ag-equiv) values used by Silvercorp as a convenient way to assess the cutoff grades and quickly compare the tenor and magnitude of these polymetallic veins. The silver-equivalent formula is as follows:

g/t Ag-equiv = + g/t Ag x Ag Recovery

- + g/t Au x Au Price/Ag price x Au Recovery
- + %Pb x Pb price x Pb Recovery x 22.0462 x 31.1035 / Ag price
- + %Zn x Zn price x Zn Recovery x 22.0462 x 31.1035 / Ag price
- + %Cu x Cu price x Cu Recovery x 22.0462 x 31.1035 / Ag price

The *metal prices* currently used in the equivalency calculations for purposes of exploration and comparing estimates of mineral resources are as follows:

US\$ 6.50/troy ounce
US\$ 350.00/troy ounce
US\$ 0.40/pound
US\$ 0.45/pound
US\$ 1.50/pound

These metals prices are substantially below current market prices for the respective metals, however the prices have approximately the same relative value to each other as the current prices with the exception of silver.

The *metal recoveries* used in the equivalency calculations are based on Silvercorp's experience to date for the processing of ores from the SGX and HZG areas and are as follows:

	SGX Area	HZG Area
Silver (Ag)	91.6%	85.0%
Lead (Pb)	95.9%	90.8%
Zinc (Zn)	69.9%	70.5%

Standard *unit conversions* used in the resource calculations and reporting are as follows:

1 troy ounce =	31.1035 grams
1 tonne =	2204.62 pounds

#### **Resource data**

The information used to construct the resource block polygons is maintained in a series of complexly linked Excel worksheets maintained for all exploration and mine areas. The worksheets contain a vast amount of individual sample information such as sampling dates, locations, sample numbers, elevations, widths, and assay results, and additionally for drill holes, collar information, down hole survey data, and down hole sample intervals. The data are organized in a manner such that the information can be plotted on vein long-sections and is used to constrain boundaries of the resource block polygons. The information can be readily retrieved and verified – samples on a vein-by-vein basis, and within each vein on a pocket-by-pocket basis – such that widths, grades and tonnages can be calculated if necessary down to very small blocks or areas within each vein.

### **Resource block parameters**

Polygonal resource blocks are constructed on the longitudinal veins sections using the following parameters and procedures:

- 1. *Thickness* Thicknesses used for resource block calculations represent weighted average of the *horizontal widths* of all samples included in the block area.
- 2. *Minimum cutoff thickness* for mineralization is 0.10 m. Underground channel samples, collected across the veins every 5 to 7 m along the vein, are composited in groups of 5 to represent approximately 25 m of section along the vein.
- 3. *Cutoff grades* The silver-equivalent cutoff grade for the SGX and HZG areas the cutoff grade is 300 g/t. (*Note:* The silver-equivalent cutoff grades do not consider metal recoveries).
- 4. *Top cut* A statistically determined 9,019 g/t Ag value is used as a top cut for extremely high silver assay values, however only a handful of assays have to date exceeded that value. No top cut is applied to lead, zinc, copper or gold.
- 5. *Measured resource blocks* defined *strictly* by continuous channel or chip samples taken from tunnels and drifts and projected 20m above and below the tunnels and 20m along strike for the SGX mine. Measured blocks are not defined by drill holes.
- 6. *Indicated resource blocks* defined as being above and below a measured resource block and are projected no further than 40m away, or they can be defined by drill holes, in which case the blocks are projected up to 80m away to block boundaries defined as mid-points between drill holes.
- 7. Inferred resource blocks Block projections are limited to 160m where veins have been intersected by deep holes, and limited to 80m where the blocks have not been intersected by drill holes. Resource estimate is calculated by applying a "mineralization ratio" (MR). This ratio is based upon the length of the adjacent tunnel or drift along the vein having values above the equivalent-silver cutoff grade divided by the total length of the tunnel or drift. The MR is used to estimate the portion (tonnage) of the inferred resource block above the cutoff grades.
- 8. *Weighted averages* The estimated grades and thicknesses reported for the vein-by-vein resource estimations in this current report are derived from the weighted average of all measured and indicated blocks on the vein.
- 9. *Specific gravities* used in calculating tonnages of the various resource blocks vary from area-to-area, dependent in part on the grade or character of the mineralization. At SGX, a specific gravity of 4.2 is used for the "high-grade" mineralization (≥ 1250 g/t Ag-equiv) and 3.0 is used for the "low-grade" mineralization (300-1250 g/t Ag-equiv). At HZG, a specific gravity of 2.8 is used for all mineralization ≥ 150 g/t Ag-equiv.
- 10. *No mining dilution applied* The "estimated mineral resources" reported herein are insitu estimates for which no internal or external dilution has been applied. However, the wall rock surrounding the veins is commonly silicified and usually breaks clean from the wall rock, thus minimizing dilution. Further, the method employed for mining these narrow veins is resuingstoping which separately breaks and removes ore from the wallrock.

- 11. *Excludes mined-out areas* Areas mined-out as of November 30, 2009, are excluded from the resource blocks.
- 12. *Includes mineral reserves* The "estimated mineral resources" reported herein *are inclusive* of the "estimated mineral reserves" which are separately reported in Section 17.4 of this chapter.

# 17.3 MINERAL RESOURCE ESTIMATES

The total estimated mineral resources of the SGX and HZG area, reported by category, are summarized in the following tables. Subsequent tables (in the Appendices) present detailed veinby-vein resources for each of the mine areas. The following notes/comments are of particular importance as regarding the resources reported in the tables:

- 1. Note 1: As mentioned previously, the mineral resource estimates tabled in this section are *inclusive of mineral reserve estimates* which are presented in section 17.4 of this Chapter.
- 2. *Note 2:* As mentioned previously, the mineral resource estimates tabled in this section report total estimated in-situ tonnes *without taking into account mining dilution*.
- 3. *Note 3:* As mentioned previously, the mineral resource estimates tabled in this section also report "*Ag-equiv.*" (silver-equivalent) grades and quantities as a convenient way to compare tenor and magnitude of these polymetallic veins. Gold and copper, where reported in the tables, are not currently recovered from these two operations and are therefore excluded from the reported equivalency calculations. The recovery factors used are:

	SGX Area	HZG Area
Silver (Ag)	91.6%	85.0%
Lead (Pb)	95.9%	90.8%
Zinc (Zn)	69.9%	70.5%

4. *Note 4:* The mineral resource estimates tabled in this section separately report the grades of each potentially payable metal as required by NI 43-101. The tables also report the estimated quantities of each potentially payable metal as *"contained metals."* These "contained metal" estimates assume the same metallurgical recoveries which are used in the silver-equivalency calculations as listed above.

## 17.3.1 Measured and Indicated Mineral Resource Estimates

Cautionary Note to U.S. Investors concerning estimates of Measured and Indicated Resources: The following resource tables use the terms "measured" and "indicated." U.S. investors are advised that these terms are not recognized by U.S. Securities and Exchange Commission. The estimation of measured resources and indicated resources involves greater uncertainty as to their existence and economic viability than the estimation of proven and probable reserves. U.S. investors are cautioned not to assume that mineral resources in these categories will be converted into reserves.

## SGX & HZG MINE AREAS Measured & Indicated Mineral Resource Estimates Inclusive of Mineral Reserves

(as of December 31, 2010)

Mine Area	Wtd. Horiz. Width (m)	Tonnes (t)	Ag (g/t)	Ag (oz/st)	Pb (%)	Zn (%)	Cu (%)	Au (g/t)	Ag-eq (g/t)	Ag(t)	Cont: Ag(oz)	ained Metal Pb(t)	Resource Zn(t)	Cu(t) Au(kg	) Ag-equiv (oz)
				ME	ASURE		RALF	RESO	URCES	≥ 300 0	G/T AG-EQUI	<b>V</b> .			
SGX HZG	0.55	500,641	774	22.6	14.27	5.49			1,469	388	12,459,666	71,437	27,464		23,637,618
total	0.55	500,641	774	23.0	14.27	5.49			1,469	388	12,459,666	71,437	27,464		23,637,618
				INI				ESO		> 300 G	/T AG-EQUI	,			
SGX	0.57	1,765,200	550	16.1	11.47	5.64			1.155	971	31.233.388		99,470		65,556,953
HZG	0.58	295,673	481	14.0	1.35		0.64		477	142	4,569,103	3,991	1,507	1,878	4,537,483
total	0.57	2,060,873	540	15.8	10.02	4.90			1,058	1,114	35,802,491	206,402	100,977	1,878	70,094,436
			м	EASURE	D + IND			ERAL	RESOL	JRCES	≥ 300 G/T A0	S-EQUIV.			
SGX	0.57	2,265,841	600	17.5	17.51	12.09			1,224	1,359	43,693,054	273,849	126,934		89,194,571
HZG	0.58	295,673	481	14.0	1.35	0.51	0.64		507	142	4,569,103	3,991	1,507	1,878	4,821,718
total	0.57	2,561,514	586	17.1	15.65	10.75			1,142	1,501	48,262,157	277,840	128,441	1,878	94,016,289

A vein-by-vein breakdown of the Mineral Resource Estimates in the SGX and HZG mine areas is provided in the Appendix attached to this report.

#### 17.3.2 Inferred Mineral Resource Estimates

*Cautionary Note to U.S. Investors concerning estimates of Inferred Resources:* The following resource tables use the term "inferred." U.S. investors are advised that this term is not recognized by U.S. Securities and Exchange Commission. The estimation of inferred resources involves far greater uncertainty as to their existence and economic viability than the estimation of other categories of resources. U.S. investors are cautioned not to assume that estimates of inferred mineral resources exist, are economically mineable, or will be upgraded into measured or indicated mineral resources.

# SGX & HZG MINE AREAS Inferred Mineral Resource Estimates

(as of December 31, 2010)

Mine	Wtd. Horiz.			Ag			Cu	Au	Ag-eq		Conta	ained Metal	Resource			
Area	Width (m)	Tonnes (t)	Ag (g/t)	(oz/st)	Pb (%)	Zn (%)	(%)	(g/t)	(g/t)	Ag(t)	Ag(oz)	Pb(t)	Zn(t)	Cu(t)	Au(kg)	Ag-equiv (oz)
				IN	FERRED	MINER	AL R	ESOL	JRCES	≥ 300 G	/T AG-EQUIV	Ι.				
SGX	0.57	2,970,032	796	23.2	16.39	6.72			1,615	2,364	76,018,088	486,720	199,677			154,260,886
HZG	0.55	113,856	512	14.9	1.62	0.55	0.60		515	58	1,873,972	1,843	624	681		1,886,969
total	0.57	3,083,887	786	22.9	15.84	6.50			1,575	2,423	77,892,060	488,562	200,301	681		156,147,854

# **17.4 RESERVE ESTIMATES**

The mineral reserve categories used in this report are those established in the *CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines* as referenced above. The reserve definitions and categories are as follows:

## Mineral Reserve

"Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.

"A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

"Mineral Reserves are those parts of Mineral Resources which, after the application of all mining factors, result in an estimated tonnage and grade which, in the opinion of the Qualified Person(s) making the estimates, is the basis of an economically viable project after taking account of all relevant processing, metallurgical, economic, marketing, legal, environment, socio-economic and government factors. Mineral Reserves are inclusive of diluting material that will be mined in conjunction with the Mineral Reserves and delivered to the treatment plant or equivalent facility. The term 'Mineral Reserve' need not necessarily signify that extraction facilities are in place or operative or that all governmental approvals have been received. It does signify that there are reasonable expectations of such approvals."

## **Probable Mineral Reserve**

"A 'Probable Mineral Reserve' is the economically mineable part of an Indicated and, in some circumstances, a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified."

#### **Proven Mineral Reserve**

"A 'Proven Mineral Reserve' is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

"Application of the Proven Mineral Reserve category implies that the Qualified Person has the highest degree of confidence in the estimate with the consequent expectation in the minds of the readers of the report. The term should be restricted to that part of the deposit where production planning is taking place and for which any variation in the estimate would not significantly affect potential economic viability."

## 17.4.1 Cut-off Grade Determination

Cut-off grades for the deposit were calculated using the financial model. The following definitions were used:

- **Mineral Reserve** = mineral resource \* mining recovery/mining dilution;
- **Gross Revenue** = mineral reserve\* metallurgical recovery \* metal price;

- **Off-site Costs** = concentrate transport, insurance, bagging;
- **On-site Direct Operating Costs** = mining, hauling, milling, general and administrative costs;
- Total Cash Operating Cost = off-site and on-site direct operating costs;
- **Capital Expenditure** = capital costs required for construction and project start-up and ramp up;
- Sustaining Capital Cost = capital costs incurred after capital expenditure;
- **Break Even Grade** = (gross revenue) (total cash operation operating costs) (sustaining capital cost);
- Mine Cut-off Grade = (gross revenue) (total cash operation operating costs);
- Mill Cut-off Grade = (gross revenue) (off-site costs) (milling cost) (G&A cost)

The following cut-off grade (Ag Equiv.) in Table 17-1 uses an average selling price, milling recoveries and operational costs of 2010 in the 2011 Silvecorp fiscal year.

	Items	Units	SGX	HZG
	Au	US\$/OZ	900.00	900.00
Metal prices	Ag	US\$/OZ	18.00	18.00
•	Pb	US \$ /pd	0.83	0.83
(2010)	Zn	US \$ /pd	0.67	0.67
	Cu	US \$ /pd	2.40	2.40
	Mining cost	US \$ /t	45.00	45.00
	Sustainable capital	US \$ /t	21.36	21.36
Operation costs	Hauling cost	US \$ /t	3.60	3.60
(2010)	Milling cost	US \$ /t	12.50	12.50
	G&A cost	US \$ /t	2.00	2.00
	Subtotal	US \$ /t	84.46	84.46
	Au	%		
Mill receiver	Ag	%	90.57	90.57
Mill recovery	Pb	%	93.98	93.98
(2010)	Zn	%	75.30	75.30
	Cu	%		70.00
Cutoff grade	Ag Equiv	g/t	161.14	161.14

## 17-1: Parameters of Cutoff Grade calculation (2010)

## 17.4.2 Mining Dilution

Dilution is the ratio of waste to ore. The following three types of dilution were considered, and are shown in Figure 17-1:

**Internal dilution:** dilution within the vein is the volume of material inside the vein that is below the mine cut-off grade. This may be referred to as incremental ore tonnage that will be recovered in the mining operation.

**External dilution:** dilution outside the vein is the volume of material recovered outside the vein, which is unavoidable for maintaining a minimum mining width.

Mining dilution: dilution outside the vein is the overbreaking and caving due to mining operation.

Based on actual mining data from the SGX mine, the Shrinkage stope's dilution rate is about 30%; the Resuing stope's dilution rate is about 35%; Residual-recovering stope's dilution rate is about 30%.

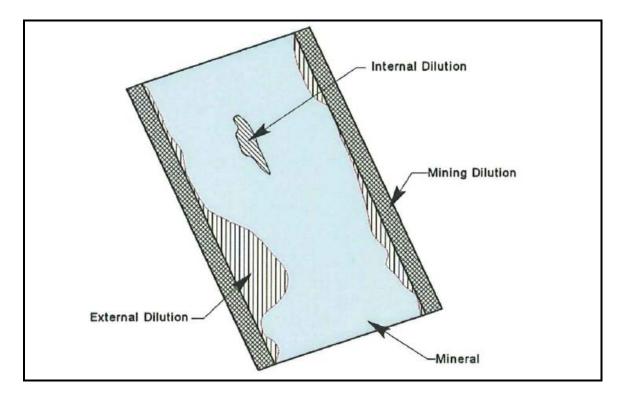


Figure 17-1: Dilution by Type

## 17.4.3 Mining Recovery

The mining recovery assumes that minimal pillars will remain in the veins. The stope's crown pillar is unlikely to be recovered. There is the potential to recover the stope's side pillar at the end of stope mining, but part of the ore is lost in stope during mining operations.

Based on actual mining data from the SGX mine, the Shrinkage stope's recovery rate is about 92%; the Resuing stope's recovery rate is about 95%; Residual-recovering stope's recovery rate is about 70%.

## 17.4.4 Ag Equivalent Calculation

The silver equivalent (Ag Equiv.) determination is performed based on the individual grades calculated after applying mining recovery and dilution factors. Table 17-2 presents long term metal prices and actual milling recoveries used in this formula.

## g/t Ag-equiv = + g/t Ag x Ag Recovery

- + g/t Au x Au Price/Ag price x Au Recovery
- + %Pb x Pb price x Pb Recovery x 22.0462 x 31.1035 / Ag price
- + %Zn x Zn price x Zn Recovery x 22.0462 x 31.1035 / Ag price
- + %Cu x Cu price x Cu Recovery x 22.0462 x 31.1035 / Ag price

## Where: 1 metric tonne = 2204.622 pounds

1 troy ounce = 31.1035 grams

## Table 17-2: Ag Equivalent, Metal Prices, and Milling Recoveries

			Milling Re	covery, %
Metals	Unites	Metal Prices	SGX	HZG
Silver	US\$/oz	6.5	90.57	90.57
Lead	US\$/lb	0.4	93.98	93.98
Zinc	US\$/lb	0.45	75.30	75.30
Copper	US\$/lb	1.20		70.00

*Note: metal prices use a long term projected numbers.* 

## 17.4.5 Mineral reserve estimates

To convert mineral resource to mineral reserve, Silvercorp uses the following procedures:

- 1. Select the resource polygons whose average Ag Equiv. grade is greater than the mine cutoff grade;
- 2. Calculate the utilizable resources by subtracting: (a) the mine pillars including the safety pillar; (b) the resources below the mine cut-off grade, and (c) the resources that cannot be utilized at 2010 average metal prices.
- 3. Estimate the mineral reserve by applying appropriate mining recoveries and dilutions.

The Mineral Reserve Estimate of the SGX mine on December 31, 2010 is summarized in Table 17-3, presented in the following page.

May 20, 2011

	Mine	Tonnes		weighted avg. grade A			Ag-equiv		In Situ M	etal Reserv	/e [2]		Ag-equiv	
	Area	(t)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	(g/t) [1]	Au (oz)	Ag (oz)	Pb (t)	Zn (t)	Cu (t)	(oz) [2]
	SGX (High Grade)	539,316		482	8.87	3.16		901		8,357,590	47,837	17,042		15,627,465
Proven	SGX (Low Grade)	105,417		163	2.93	1.25		308		550,988	3,089	1,318		1,044,289
Proven	HZG	8,879		262	1.75	0.45	0.37	356		74,792	155	40	33	101,503
	Total	653,612		427	7.82	2.82	0.01	798		8,983,370	51,081	18,400		16,773,256
	SGX (High Grade)	2,008,940		391	6.85	2.84		727		25,254,249	137,612	57,054		46,975,702
Probable	SGX (Low Grade)	215,808		152	2.53	1.07		276		1,055,606	5,460	2,309		1,917,600
FIODADIe	HZG	286,622		212	0.61	0.34	0.69	289		1,953,602	1,748	975	1,978	2,667,754
	Total	2,511,370		350	5.77	2.40	0.08	639		28,263,457	144,821	60,338		51,561,056
	SGX (High Grade)	2,548,256		410	7.28	2.91	-	764		33,611,840	185,450	74,096		62,603,166
Proven+Probable	SGX (Low Grade)	321,225		156	2.66	1.13	-	287		1,606,593	8,549	3,627		2,961,889
FIOVENTPRODADIE	HZG	295,501		214	0.64	0.34	0.68	291		2,028,394	1,904	1,014	2,011	2,769,257
	Total	3,164,982		366	6.19	2.49	0.06	672		37,246,827	195,902	78,738	2,011	68,334,312

## Table 17-3: Summary of Mineral Reserve in the SGX Mine (December 31, 2010)

Note: [1] Ag-equiv grades and [2] contained metal quantities consider the actual metallurgical metal recoveries

# **18. MINERAL DEVELOPMENT AND PRODUCTION ANALYSIS**

# 18.1 MINE ACCESS, INFRASTRUCTURE, MANPOWER, SAFETY, ENVIRONMENT

#### Mine Site Access

The SGX mine is located in Luoning County, the Henan province, about 10 km South-East of Xiayu and about 60km South-East of Luoning. A paved road connects Xiayu and Luoning, but does not extend to the mine sites due to the presence of the Guxian Reservoir.

At the mine site, stockpiled ore is loaded onto 30 ton trucks. The trucks drive onto a barge for a 3 km trip across the Guxian Reservoir and then continue a further 12 km by road to Silvercorp's central mills. Figure 5-1 in Chapter 5 shows the local transport routes.

#### Infrastructure

Major mine surface infrastructures include:

- An office and accommodation facility
- Power transformer stations
- Explosive magazines
- Maintenance workshops
- Air compressor stations
- Ore stockpiles
- Ore sorting plant
- Crusher plant
- Water treatment areas
- Waste dumps
- Barge loading-out area.

No significant geotechnical issues were observed with respect to the surface infrastructure. General views of mine surface infrastructures are shown in the Appendix 18-1; General View of the office and accommodation facilities is presented in the Appendix 18-2

The preliminary design for the Zhuangtou Tailings Storage Facility (TSF) was done by the Maanshan Engineering Exploration and Design Institute (Report dated March 2006). Its capacity is about 2,830,000 m<sup>3</sup>; designed maximum elevation is 650 m.

Currently, The Zhuangtou TSF (located within the Donggou valley) provides tailings disposal for all mines in the Ying District. Its level has reached 626.5 m. Based on production capacity -2600 tpd of the Ying district, service life of the Zhuangtou TSF is just a few more years, so Silvercorp is building the second Tailing Storage Facility near the No. 2 Mill. General condition of the Zhuangtou TSF is shown in Appendix 18-3.

#### **Ore Sorting**

Hand sorting facility is located between Portals CM 103 and CM 105. Run of mine ore is trucked and dumped into a bin fitted with a vibrating feeder. A wide flat and slow moving sorting belt located approximately 4 m above ground level has been specified for this application. This belt can be serviceable from either side or a partition (see Appendix 18-4) where high grade ore pieces are removed by operators and placed in separate storage bins. This ore, grading > 60% Pb, is transferred to a small crushing plant and crushed to minus 25mm before shipping by truck via barge and road to client smelters. The capacity of the

sorting operation is 25~50 tpd of product. The non-selected ore is transported by truck and barge to the Silvercorp's central mill for processing.

#### Manpower

The SGX mine has approximately 1287 workers at the site. The mine itself employs a staff of 350 people. This includes 1 superintendent, 2 executive superintendents, 29 mining engineers, 14 geologists, 6 surveyor, 10 safety engineers, and 3 ore sorting controllers, etc.

The mine is operated by the following five mining contractors that have totally hired 937 workers:

- Tiancheng Construction Group, employs 448 workers and operates at Adit CM101, PD700, and CM105.
- Shunan Engineering Ltd., employs 46 workers and operates at adit CM103;
- Daqian Engineering Inc, employs 120 workers and operates in adit CM102;
- Sanyi Engineering Ltd., employs 227 workers and operates in PD16 and HZG camp;
- Tianzhu Engineering Ltd, employs 96 workers and operates at adit YM01, YPD02 at the YLG camp.

## **Occupational Health and Safety**

The following Occupational Health and Safety (OHS) management components are in place for the SGX mine:

- There is OHS department for the SGX mine, staffed with 10 safety officers.
- The OHS departments is to provide safety training, enforce the OHS policies and procedures, makes recommendations on mine safety issues and carry out daily inspections of the underground workings and explosive usages.
- Each of the mining contractors is required to appoint one to two safety officers of their own.
- Safety committees comprising of 10 members are maintained for the SGX Mine. These safety committees are headed by the General Manager and made up of Deputy General Manager, Mine Superintendent, Safety Department Supervisor, and representatives of mining contractors. The committees are coordinated by mine's Safety Department and the mine management and the safety officers are required to have valid mine safety training certificates issued by the Provincial Bureau of Safe Production and Inspection.
- Insurance policies covering death and injury have been purchased for all of the staff and workers in the mines.
- The mine and mining contractors supply Personal Protective Equipment (PPE) to their own staff or miners. The PPE includes hard hats, safety boots, work gloves, face masks, and ear plugs.
- A contract with the Luoning County General Hospital to take and treat injured workers from all mines, except those treated at the mine clinic.

The following OHS policies and procedures have been established for the SGX mine, in line with the Chinese health and safety laws and regulations:

- Personal responsibilities of safe production for all management, staff and contractors
- Policies for daily, monthly and quarterly safety inspections.
- Safety training policies.
- Accident reporting policies.
- High-risk source monitoring policies.
- Correction policies of safety rule breaches.
- Safety management policies for equipment.

- Safety incentives and punishment policies.
- OHS record-filing policies.
- Operating procedures for underground mining equipment.
- •

## **Environmental Protection**

Valid environmental permits exist for the SGX mine. The mining permit and environmental permit are viewed as one document by the Chinese authorities that grant the right to mine. A compliant mining permit is composed of a "Resource Utilization Plan" (RUP), an "Environmental Impact Study" and a "Geological Hazards Assessment Report".

Potential Environmental Management Liabilities mainly include:

- Dust generation and management;
- Mine water discharge;
- Tailing storage management; and
- Waste rock management.

#### **Dust Emissions**

Dust generating sources are primarily from vehicle movements and materials handling. Operational dust management measures mainly include:

- Regular wetting of roads, waste rock stockpiles and underground mucking sites.
- Dust suppression and collection equipment on material handling.

#### Mine Waste Water Discharge

The mine discharge water is required to be settled and treated in settling ponds to allow discharged water to contain less than 0.012 mg/l Pb and less than 1.02 mg/l Zn to satisfy "National Surface Water Quality Standard", GB3838-2002II water discharge standard.

Waste Water from the milling process is recycled, but if discharged, must be treated to satisfy the above standard.

#### **Tailing Storage Management**

Tailings from the milling process are required to be disposed in the tailing dam. As most local people live above the tailing dam, tailing in the tailing dam does not impact on the local population's drinking water.

#### Waste Rock Management

Waste rock management includes ensuring that waste rocks do not contain unacceptable level of lead and zinc. The piling of the waste rock is permitted. However, it is necessary to perform effective rehabilitation for waste rock dumps.

#### Water Quality Management

A key component that has been identified in SGX mine is the management potential impacts from the operation of the SGX mine on the Guxian Reservoir water quality.

The management of surface water discharges for the SGX area comprises:

• Collection and sedimentation of mine dewatering, and a containment system(i.e. zero surface water discharge).

• Installation of a storm water drainage bypass system for the segregation/diversion of clean storm water and for flood protection.

After underground water is pumped to surface, it is collected to a pond at each adit portal for sedimentation, and then is pumped to the central treatment station.

In the central treatment station, a lime dosing system is used to assist flocculation and to adjust the chemical balance of underground water to meet national standards. See Appendix 18-5 for details.

Quality monitoring of the mine waters and the surrounding receiving surface waters is carried out under a contract with the qualified unit - Luoning County Environment Institute.

## **18.2 GEOTECHNICAL AND HYDROLOGY**

#### Geotechnical

Ore bodies occur in the structural alteration broken zones. Hanging-wall and Foot-wall are predominantly comprised of altered gneiss, cataclastic rocks and tectonic breccias. Strength of altered gneiss is lower than that of un-altered rock, but higher than the tectonic breccias and cataclastic rocks. Also it is controlled with geological structures. There are potential engineering problems in some areas, but the rock condition is generally favorable from a stability perspective.

Rock mechanics studies show that the host rocks in the SGX mine are competent and require minimal ground support. In general, the mine development and stopes are left unsupported. Those sections of regular tunnels with well-developed shear zones and faults are timbered to provide ground support. To date, these sections are short and of minor importance in relation to the overall mine development. If ground condition is poor in shafts and service chambers, shotcrete, shotcrete with rock bolts or shotcrete with rock bolts and steel-mesh-screen is applied to provide support.

#### Hydrology

#### Water inflow factors

At SGX mine, the east, south and west sides of the mine form a surface watershed. The Guxian Reservoir, whose capacity is  $12 \times 10^8$  m<sup>3</sup>, located about 100 m North-West of the mine may provide a limited amount of water via weathered fractures and structural weakness zones.

#### Water inflow forecast

Water inflow is mainly derived from groundwater hosted in the altered structural zone, which would flow into mining tunnels. Impermeable gneiss beyond the structural zone constitutes the hydrogeological lateral border.

Water inflow forecast is based on the hydrogeological conditions of the mine. The hydrogeological data acquired in the tunnel on the 518 m level of CM102 was used to forecast inflow on 490m, 450m, 400m, 350m, 300m, and 260m levels through hydrogeologic comparison method, which is shown in Table 18-1.

Level	Projected	Projected	Q (	(m <sup>3</sup> /d)
(m)	Development Area (m <sup>2</sup> )	Water Drop Depth (m)	Normal Inflow	Maximum Inflow
500	226,650	35	1,052	3,157
460	247,310	75	2,461	7,382
410	247,310	125	4,101	12,304
360	247,310	175	5,742	17,225
310	247,310	225	7,382	22,146
260	247,310	275	9,023	27,068

#### Table 18-1: Water Inflow Forecast Results

#### Guxian Reservoir's influence

There is an issue as to what effect inflows from the Guxian Reservoir may have on the mine as its mining depth increases. An independent review of the site hydrogeology was conducted by the Zhengzhou Geological Engineering Exploitation Institute of Henan Province. The report dated May 2006 concluded that there is little hydrological connection between the mine and the Guxian Reservoir.

On December 20, 2009, the hydrogeological investigation was conducted by the mine engineers. The water level of Guxian Reservoir is 532.98 m whose alert level is 543.8 m; it was the highest water level since the property was acquired. Through a comprehensive analysis regarding water inflow data of individual drifting and tunnels, water pumped from these tunnels suggests that the amount of water inflow has not significantly increased, compared to previous hydrogeological data. The water level of the Guxian Reservoir appears to have no direct effect on water inflows of the mine.

## **18.3 POWER AND WATER SUPPLY**

#### **Power Supply**

Power for the SGX mine is supplied from the local government network by two lines. One is a 35kV high-voltage power line that is connected from Luoning Guxian 110KV Substation; the other one is a 10kV high-voltage power line that is connected from Luoning Guxian 35KV Substation. The power source is hydropower, generated at the Guxian Reservoir Dam. A fully automated 35KV substation in the immediate vicinity of mine site was built in 2008. The length of overhead wire lines is about 8 km, and the capacity of the main transformers is 6300KVA.

The 35kV overhead line can provide main power supply for all mine production, and the additional 10kV overhead line is maintained as a standby line. Four sets of 400kW diesel generators and a set of 1500kW diesel generators are installed in the fully automated 35KV substation to supply back-up power for the CM101, CM102, CM103, CM105, PD16 and PD700 in the event of a hydropower outage.

Underground water pumping stations and hoist winches belong to the first class power load, and require two independent 10kV power lines as stated, one for operation, and the other one for backup. During normal operation, they can maintain stope operation in addition to meeting the requirement of the first class power load. In case of emergencies, including underground flooding, they only need to guarantee service of the first class power load.

#### Water Supply

Water consumption at the mines of the SGX mine is minimal. It is primarily used for drilling, clearing the drill bits and suppressing dust. At present, the source of water is from local creeks, and established  $100 \sim 200 \text{ m}^3$  water ponds at each adit portal. Both water quality and quantity from local creeks is sufficient to meet the mine's requirements.

## **18.4 MINE DEVELOPMENT**

An efficient underground mine development system is the key to reducing capital investment, lowering production cost, and increasing profitability. Each individual mine site must utilize a reliable and cost-effective underground development design based on geometry of ore veins, mining techniques, and mining/transport equipment.

Since the SGX mine is located in narrow side valleys, horizontal adits provide easy access from the surface to the veins. Most of the operational levels don't have their own access portal, and must connect with blind shafts or blind declines.

#### **Development System**

A combination of adit blind shaft development systems and adit blind decline development systems are effectively utilized at the SGX mine. Adit CM101, CM105, and PD16 use adit blind shaft design, while adits CM102 and CM103 make use of adit blind decline design. Adit PD700 is unique, mixing adit, blind decline and blind shaft design. Typical level interval is about 50m.

Major ore veins being extracted at the SGX mine are S2, S4, S5, S6, S14, S16, S7, S8, S19, S21, and S22. In plain view, the entire mine development covers an area approximately 1,000 m by 1,200 m between exploration line 0 and exploration line 20.See Figure 18-1 for details.

Development in Phase 1 is designed to access the listed veins from the 490m level to the 260m level in a total of six levels at approximately 50m intervals (490m, 450m, 400m, 350m, 300m, and 260m level). In Phase 2, development is planned to sink three blind shafts from the 260m level to the 10m level. See Figure 18-2 and figure 18-3 for details.

Mining sequence is carried out from the top level to lower levels. Stoping operations were first commenced at 490m level, and then extended to deeper levels.

Over the past few years, the SGX mine was developed primarily based on engineering designs completed by Sinosteel Ma'anshan Institute of Mining Research, which is a well-known engineering consulting firm in China. A total of five blind shafts have been constructed. To access the ore veins, drifting connecting blind shafts, blind declines, and ventilation raises at different levels (490m, 450m, 400m, 350m, 300m, 260m) are nearly completed, providing a comprehensive underground development and ventilation system. Figure 18-4 presents a 3D View of the Mine Development at the SGX Mine.

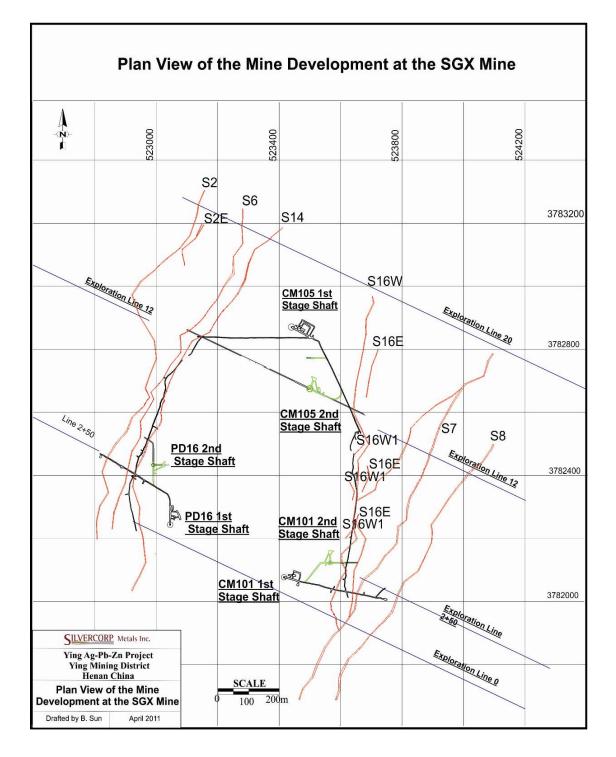


Figure 18-1: Plain View of the Mine Development at the SGX Mine

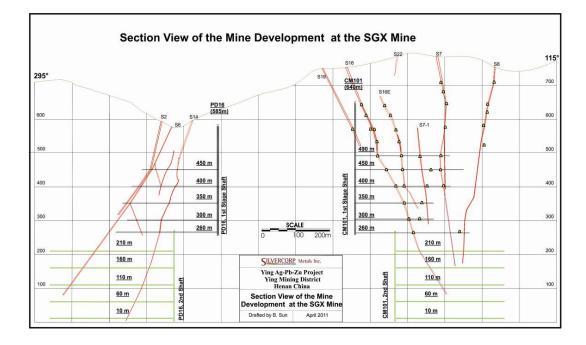


Figure 18-2: Section View of the Mine Development at the SGX Mine

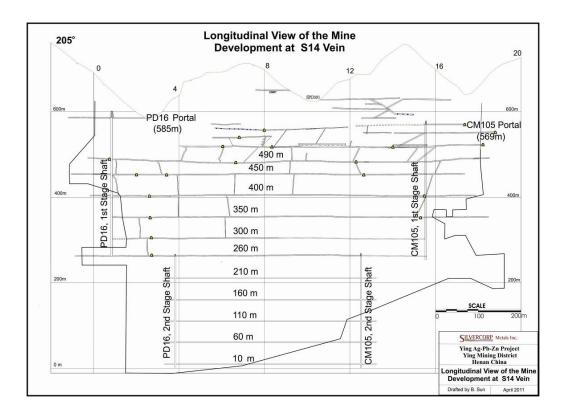


Figure 18-3: Longitudinal View of the Mine Development at the S14 Vein

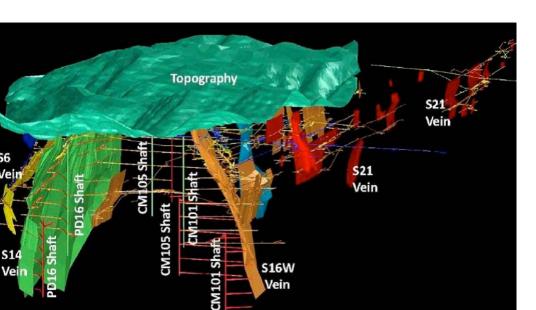


Figure 18-4: 3D View of the Mine Development at the SGX Mine

## Shaft Engineering

All existing blind shafts have mixed uses, including hoisting ore, waste rock, materials, equipment, and personnel. In addition, they are utilized for ventilation. The bottom of three blind shafts reach 260m elevation, which are No.1 shaft in CM105, No.2 shaft in PD16 and No.3 shaft in CM101, and which are designed to be 3.8 m in finished diameter. Each shaft is equipped with a No.2 standard cage with a counter-weighted guided by four steel cables. Cages are pulled by 1.6 m diameter winches and each is capable of hoisting 150,000 tonnes of material per year.

No.4 shaft reaches the 300m elevation from adit CM105 level; No.5 shaft reaches the 490m elevation from the 640m level that is located at the low base of the adit PD700's decline. Both No.4 and No.5 shafts are designed to be 3.5 m in finished diameter. Each shaft is equipped with a No.2 standard cage with a counter-weighted guided by two steel-wood combined guides.

Inter-level access within each adit is summarized in Table 18-2;

Adit	Adit		Level Elevation
Name	Elevation (m)	Inter-Level Access	(m)
CM101	640	Blind Shaft No.3	640, 490, 450, 400, 350, 300, 260
CM105	569	Blind Shaft No.1	569, 490, 450, 400, 350, 300, 260
PD16	585	Blind Shaft No.2	585, 450, 400, 350, 300, 260
CM102	570	Blind Incline	570, 534, 518, 480, 450
CM103	555	Blind Incline	610, 555, 534, 518, 480, 460
CM105-S2	570	Blind Shaft No.4	460, 420, 380, 340, 300
PD700	700	Blind Incline, Blind Shaft No.5	700, 640, 600, 570, 530, 490
YPD01	585	Blind Incline	585, 550, 510, 470, 430
YPD02	565	Blind Incline, Blind Shaft	545, 510, 470, 430, 390
HZG	820	Blind Incline	770, 730, 690, 650

 Table 18-2: Adits, Levels and Inter-Level Access Systems in the SGX mine

#### **Exploration and Development Strategies**

Mining development in the SGX mine was started before it was acquired in 2004. Since that time, a number of adits, shafts, declines, drifts and raises have been constructed based on the detailed engineering designs.

The key exploration and development strategies are:

- Drifting along all mineralized veins accessed by the adit blind decline and adit blind shaft system to discover high-grade pockets on multiple levels from 800m to 260m elevations;
- Underground drilling focusing on delineating the down-dip extension of high-grade pockets;
- Once a high-grade pocket is encountered and delineated, preparation of stopes starts by developing a footwall parallel drift and a series of cross-cuts and draw points;
- Keep rolling development path: milling of by-product ore extracted from exploration and development drifting to finance future tunneling;
- The production is mainly carried out through No. 1, No. 2, No. 3, No. 4 and No. 5 shafts. Three extension shafts from the 260m level to 0m level are been sinking for sustainable operation.

#### **18.5 MINING METHOD**

Both Short-Hole Shrinkage Stoping and Re-Suing Stoping have been successfully applied at the SGX mine. Surface collapsing is permitted as no agriculture or other industrial infrastructure or habitation is located in the vicinity of the mine sites

#### 18.5.1 Short-Hole Shrinkage Stoping

This mining method has been employed world widely as one of the most successful mining methods for narrow veins. The system begins with drifting along the vein to expose the vein. Another parallel drift outside the vein is then driven. Crosscuts between two parallel drifts are driven at approximately 5 m spacing. The crosscuts which intersect the vein act as draw points for the loading out of ore. Two raises are driven at each end of the stope block.

#### Stope structure parameters

As shown in Figure 18-5, the typical size of a stope is 50 m along the strike of the vein and approximately 40 m in height. Two access raises approximately 1.8 m by 1.8 m are driven providing access to the stope and for air, water and ventilation services. Veins which are less than 0.8 m thick must be diluted to 0.8 m with the assumption that the waste contains no grade. It is possible to gain 90% ~ 95% mining recovery of in situ resources by this method.

Figure 18-5 below shows typical expected dilution when mining veins less than 0.8 meters thick. Both ore and waste must be mined to open a minimal mining width. This method leaves no bottom pillar; part of side pillars is recoverable; a 3m crown pillar is left in situ for safety purposes.

## **Blasting and mucking**

The mining crew normally consists of two Jack Leg miners using YT-24 pneumatic drills. A 1.8 m round is blasted filling the void below as the mining proceeds upwards. While the crew is mining upwards only approximately 30% of the ore may be extracted from the stope until the entire stope is mined at which point all ore may be extracted. During the initial phase of mining, expected production is 50-75 tons per day per stope. The crew charges the holes with cartridge explosives and ignites the blast with tape fuse. The second crew will return to the stope after the smoke has cleared from the previous round. Ventilation air and water are carried up the raises to the stoping level. Loading of the ore from the draw points is by hand to railcars, diesel tricycle carts or handcarts.

#### **Dilution and Recovery**

Shrinkage stoping is calculated to a minimum mining width of 0.8 m. The Proven and Probable reserves are calculated using a dilution ratio, ranging from 25% to 75%, and mining recoveries ranging from 90% to 95%. The calculation formula of dilution factor is as follows.

$$DF = \frac{(0.8 - V) \times SGwaste}{V \times SGore + (0.8 - V) \times SGwaste} \times 100$$

Where:

V - Width of vein (m); SGwaste - special gravity of waste; SGore - special gravity of vein ore.

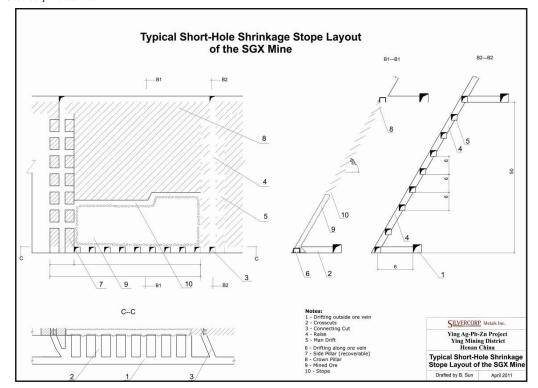


Figure 18-5: Typical short-hole shrinkage Stope Layout of the SGX Mine

#### 18.5.2 Re-Suing Stoping

The Re-Suing stopes involve first blasting narrow veins between 0.1 and 0.40 m in width. After the ore is blasted and loaded via steel mill holes which are constructed as the stope is mined upwards, the waste on the footwall is blasted to maintain a minimum mining width of 0.8 m. The stope will not contain ore when mining is complete in contrast to the Shrinkage stope. The stope is left filled with waste from the slashing of the footwall necessary to maintain a minimum mining thickness.

#### Stope structure parameters

As shown in Figure 18-6, ore bodies are divided along vein strike with length about  $50m \sim 80m$  and height between 20m and 50m. At the bottom of blocks, a series of parallel crosscuts and connecting cuts intersect with two drifts along and outside the ore vein, which are driven for ore haulage and equipments/personnel access. Two access raises approximately 1.8 m by 1.8 m are driven providing access to the stope and supplying air, water and ventilation services. Veins which are less than 0.3 m must be diluted to 0.3 m with the assumption that the waste contains no grade. It is expected that 93-95% mining recovery of in-situ resources is possible.

Figure 18-6 below is typical of the expected dilution of veins less than 0.3 meters thick where both ore and waste must be mined to open a minimal mining width. Re-Suing uses no bottom pillar structure; part of side pillars is recoverable when mined out in the stope and a crown pillar is left in-situ for safety purpose.

#### Mining sequence

The mining crew normally consists of two Jack Leg miners who usually use YT-24 drills. A 1.8 m round is blasted and mucked as the mining proceeds upwards. After two rounds are

blasted and mucked, the footwall should be blasted and be used to fill the space mined out. This process is repeated until the crown pillar is reached. The entire stope is left filled with waste from slashing of the footwall.

#### Blasting and mucking

Blasting uses single-row or diagonal layout hole patterns. Drill hole's depth is about 2 m, and transverse spacing is 0.8 to 1 m. The crew drills and charges the holes with cartridge explosives and ignites the blast with tape fuse. A second crew returns to the stope after smoke has cleared from the previous round. Ventilation air and water are carried up the raises to the stoping level. Blasted ore is mucked manually by using handcarts, and is dumped into a steel mill hole. Loading of the ore from the draw points at the bottom end of the steel mill hole is by hand to railcars, diesel tricycle carts or handcarts. Rubber belt is laid on the blast rock floor before drilling and blasting narrow ore veins to prevent mixing of new blasted ore at the top of stop filling waste rock. The rubber beltis rolled up and removed before slashing footwall.

#### **Dilution and Recovery**

Re-Suing stoping is calculated to a minimum blasting width of 0.3 m. The Proven and Probable reserves are calculated using dilution ratios ranging from 25% to 35%, and mining recoveries ranging from 93% to 97%. The calculation formula of dilution factor is as follows.

$$DF = \frac{(0.3 - V) \times SGwaste}{V \times SGore + (0.3 - V) \times SGwaste} \times 100$$

Where:

V - Width of vein (m); SGwaste - special gravity of waste; SGore - special gravity of vein ore.

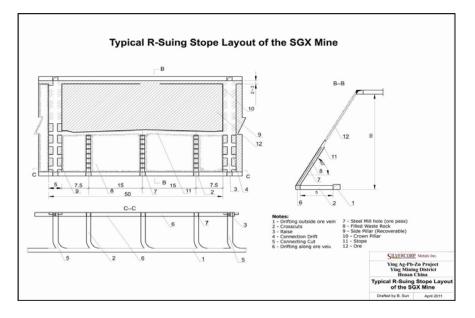


Figure 18-6: Typical R-Suing Stope Layout of the SGX Mine

## **18.6 MINING PLAN AND MINE LIFE**

#### **Mining Plans**

The mining plan was developed considering vein characteristics, ore reserves, mining conditions, and the time line to prepare mine stopes. SGX mine has been properly developed, allowing for their ore production levels to maintain planned capacity starting from 2011 without any ramping-up period.

Table 18-3 lists the tonnes and grades in the production schedule for the SGX mine. The production is projected based on Proven and Probable mineral reserves using the 161.14 g/t mine cut-off (Ag equivalent) with a planned 94% mining recovery rate and 33% dilution rate. The HZG camp is a part of the SGX mine. Its mineralization contains Cu in addition to Ag, Pb and Zn. This is unique, requiring a separate production schedule for the HZG camp.

Mining sequence follows an advance method that mining activity is from the blind shafts and blind declines to mining boundaries, from top level down to lower levels. Due to the limited ore reserve at each level, it is necessary to extract ore from two or more levels at the same time, in order to meet an annual production of 362,000 tonnes.

For the SGX, a total of 24 ore veins are involved, and are divided into 521stopes, including 403 Resuing (77%), 115 Short-hole shrinkage (22%) and 3 Residual-recovering stopes(1%). For the HZG camp, only 1 ore veins (H20) is involved, and are divided into 48 stopes, including 39 Resuing (81%), 9 short-hole shrinkage (19%).

According to the mining plan, the reserve accessed by No.1, No.2 and No.3 blind shafts can be mined in about  $5\sim6$  years. To sustain production, construction of three blind shafts below the 260m level is being accelerated.

#### Mine Life

The total of current proven and Probable reserve is 3, 164, 00 tonnes. The production target of the SGX mine is about 362,000 tonnes per year. The mine life is planned to be about ten years. As shown in Table 18-3.

Silvercorp will continue to maintain its rolling development strategy, and invest about US\$ 4,500,000 in sustaining capital on the operating mines. The purpose is to upgrade inferred resource to Indicted and Measured mineral resource through drifting exploration and drilling exploration, to extend the mine life.

May 20, 2011

## Table 18-3: Production Summary over Mine Life of the SGX Mine

years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Tonnage	387,000	362,000	362,000	362,000	361,000	297,000	297,000	301,000	260,000	175,000	3,164,000
					SGX (Hi	gh Grad	.e)				
years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Tonnage	290,196	260,002	260,049	260,677	260,172	260,959	260,614	260,303	260,216	175,067	2,548,256
Au (g/t)											
Ag (g/t)	476	456	439	417	408	402	393	376	362	345	410
Pb (%)	8.48	8.53	7.53	7.10	7.08	7.05	7.01	7.45	6.57	5.14	7.28
Zn (%)	3.04	2.97	2.83	2.75	3.08	3.11	3.13	2.99	2.57	2.40	2.91
Cu (%)											
	SGX (Low Grade)										
years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Tonnage	60,325	65,870	65,683	65,000	64,348						321,225
Au (g/t)											
Ag (g/t)	152	158	163	151	153						156
Pb (%)	2.99	2.60	2.33	2.48	2.91						2.66
Zn (%)	1.10	1.03	1.29	0.99	1.24						1.13
Cu (%)											
					I	HZG					
years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Tonnage	36,246	36,257	36,244	36,341	36,385	36,284	36,730	41,014			295,501
Au (g/t)											
Ag (g/t)	232	233	212	206	223	224	189	195			214
Pb (%)	1.11	0.92	1.01	1.12	0.60	0.24	0.13	0.11			0.64
Zn (%)	0.38	0.45	0.42	0.34	0.25	0.26	0.27	0.31			0.34
Cu (%)	0.34	0.39	0.68	0.71	0.58	0.71	0.91	1.09			0.68

# **18.7 ROCK CONVEYANCE**

#### Haulage

Three major types of haulage systems are employed in the SGX Mine based on the requirements of mine developments.

- 1. The complete handcart haulage system: Rock haulage from the stopes and development faces to the surface is performed by the one-axle handcarts with pneumatic tires. One person can pull a handcart along both drifting and Adit levels, which contains about 800 kg of ore when loaded. Electric winches assist the haulage miners pulling the handcarts on the inter-level decline. It is used in YPD01 and YPD02.
- 2. The complete railcar haulage system: The material haulage is track-bound with 0.7 m<sup>3</sup> side-tipper railcars. The cars, usually in groups of up to 10, are pushed by an electrical locomotive on the Adit level to the surface. For adit level and below, the ore and development waste is track-bound with 0.7 m<sup>3</sup> side-tipper mine railcars. The railcars are pushed manually in the drifting. However, the railcars are pushed by a single cylinder diesel locomotive in the main drifting. The railcars will be loaded into a shaft cage and then will be hoisted through blind shaft. It is used in CM101, CM105, PD16, PD700, and HZG camp;
- 3. The mixing haulage system with railcars and tricycle trucks. Ore and development waste are loaded into 0.7 m<sup>3</sup> side-tipper railcar, which on track is pushed by miners along drifting. The declines are equipped with electric winches, which are able to pull two railcars at a time. And then, these rocks are hauled to a transfer station where the materials are unloaded into motorized tricycle trucks. The tricycle trucks haul the material to the surface and dump either to ore stockpiles or to the waste dump. It is used in CM102, CM103.

#### Hoisting

Based on hoisting requirements, No.1, No.2, No.3 blind shafts are equipped with a 1.6m diameter winches with double drums; whose power is 95 KW. No.4 and No.5 blind shafts are also equipped with 1.6m diameter winches with double drums, but with power of 132 kW. Table 18-4 presents the main parameters of the shafts and the winches.

All winches are equipped a single No.2 standard cage with a count-weighted, and hoist ore, waste, personnel, materials and explosives.

Portal	Shaft	Diameter	Bottom	Тор	Height	Model	Power
CM101	No.3	3.8m	260m	640m	380m	2JTP-1.6*0.9	95KW
CM105	No.1	3.8m	260m	569m	309m	2JTP-1.6*0.9	95KW
PD16	No.2	3.8m	260m	585m	325m	2JTP-1.6*0.9	95KW
PD700	No.5	3.5m	490m	640m	150m	2JTP-1.6*0.9	132KW

#### Table 18-4: Major Parameters of Shafts and Winches

## **18.8 VENTILATION**

To safely and efficiently extract major ore veins (e.g. S14); a diagonal ventilation system with the single wing is utilized in the SGX mine. Fresh air enters 490m, 450m, 400m, 350m, 300m

and 260m levels from adit PD16 via No.2 blind shaft. Contaminated air returns to the 650m tunnel via No.1 blind shaft and ventilation raises, and then is exhausted to surface by a main axial fan.

For the air requirements of stopes, working faces and chambers, the total volume of air flow was determined at  $63m^3$ /s when an air leakage coefficient of 1.5 was taken into account. Ventilation resistance of the tunnel system was calculated at 90.3 mmH<sub>2</sub>O. A unit of K45-6-NO16 axial ventilation fan was selected. Two 75kW motors are also in place; one in active use and one for backup.

Reversing air current is generated by the installed fan counter-rotating in SGX mine. A reversing switch is found on the fan's control panel. Emergency exits and underground ventilation doors can be opened in both ways to permit reverse air current.

A series of air doors, air windows and sealed walls have been installed in the ventilation system. Unused tunnels, drifts, mill holes were sealed to enhance the ventilation.

## **18.9 COMPRESSED AIR**

Compressed air facilities at the SGX mine are provided by utilizing electrically powered twostage piston compressors. They connect with steel and plastic piping for air distribution. A typical energy-saving compressor at the adit CM105 portal is shown in Appendix 18-6.

Compressed air is mainly used for drilling blast holes. Currently, YT-24 jack leg drilling is used in stopes and working faces. Selection of compressor model, capacity and units is based on actual air volume consumed in each adit. The following is compressor capacities adit by adit:

CM101:	3×22m3/min	1×10m3/min
CM102:	2×22m3/min	1×10m3/min
CM103:	3×10m3/min	
CM105:	4×22m3/min	1×10m3/min
PD16:	4×22m3/min	
PD700:	1×10m3/min	
YPD01:	3×10m3/min	
YPD02:	3×10m3/min	
HZG:	2×10m3/min	

## **18.10 WATER DISCHARGE**

Water discharge is safely facilitated under the requirement from "Chinese Safety regulations of Metal and Non-metal mines". The following relative requirements are observed in the SGX mine:

- The capacity of working water pumps should discharge the normal water inflow of the day within 20 hours;
- The capacity of all water pumps should discharge the maximum water inflow of the day within 20 hours, with the exception of when pumps are being maintained;
- Two pipe lines with the same size are installed in a shaft or decline, one for working and the other for standby;
- The sump should store 6~8 hours of normal water inflow.

According to water inflow forecast at the 260m level, the normal water inflow is  $376 \text{ m}^3/\text{h}$ , and the maximum water inflow is  $1128 \text{ m}^3/\text{h}$ .

Pump chambers and sumps are in place at the bottoms of blind shafts. Underground water is discharged to surface using pumps via pipe lines installed in the blind shafts. According to design, three or more units of water pumps are installed in each of pump chamber. Under the normal water inflow, one unit is running, one unit is being maintained, and the other is on standby. Under the maximum water inflow, all available pumps can be run, with the exceptions of pumps being maintained.

Table 18-5 lists pump quantity and parameters in pump chambers at the bottom of blind shafts.

Pump Chambers	Units	Models	Power	Major Parameters
CM105, CM101	4	MD85-45*9	160KW	Q=85m3/h, H=405m
CM105, PD16, PD700	6	D25-50*8	75KW	Q=25m3/h, H=400m
CM105	1	MD46-50*9	90KW	Q=46m3/h, H=400m
CM101, CM105, PD16	4	MD46-50*9	110KW	Q=46m3/h, H=450m
CM105	4	MD155-45*9	280KW	Q=155m3/h, H=405m

#### Table 18-5: Water Pump Parameters of SGX Mine

## **18.11 CONTRACT MINING**

#### **Mining Contracts**

The SGX mine utilizes contract labor for mining on a rate per ton or a rate per meter basis. The contract includes all labor, all fixed and mobile equipment, materials, and consumables including fuel and explosives which are purchased through the company. Ground support consumables such as timber and power to the portal areas are the responsibility of the company. Table 18-6, Table 18-7 and Table 18-8 list 2010 cost schedule at the SGX mine.

		Drifting Rates Under shaft	
Size (m)	RMB/m	US\$/m	Notes
2.2x2.0	1007	154.92	Major drifting
2.0x2.0	957	147.23	Drifting along veins
2.0x1.8	907	139.54	Drifting along veins
1.8x1.8	877	134.92	Drifting along veins
1.8x1.6	857	131.85	Drifting along veins
2.2x2.0	1107	170.31	Sump drifting
1.8x1.6	1007	154.92	Raise
		Drifting Rates Under adit	
Size (m)	RMB/m	US\$/m	Notes
2.2x2.0	730	112.31	Major drifting
2.0x2.0	680	104.62	Drifting along veins
2.0x1.8	630	96.92	Drifting along veins
1.8x1.8	595	91.54	Drifting along veins
1.8x1.6	570	87.69	Drifting along veins
2.2x2.0	830	127.69	Sump drifting
1.8x1.6	720	110.77	Raise

# Table 18-6: 2010 Cost Schedule for Mining at the SGX Mine

	Under	shaft	Under adit		
Methods	RMB/t	US\$/t	RMB/t	US\$/t	
Short-hole shrinkage stope	74	11.38	69.5	10.69	
Resuing stope	169	26.00	161.5	24.85	

## Table 18-7: 2010 Basic Rates for Mining Methods

#### Table 18-8: 2010 Ground Support Rates

		Rates und	er Shaft	Rates	s under Adit
Types	Units	RMB	US\$	RMB	US\$
Timber Support	Frame	70.00	10.77	70.00	10.77
Steel Support	Frame	110.00	16.92	100.00	15.38
Shot Crete	m²	60.00	9.23	50.00	7.69
Concrete	m <sup>3</sup>	850.00	130.77	650.00	100.00
Rock Bolt	Piece	20.00	3.08	20.00	3.08

## **Diamond Drilling Contracts**

Table 18-9 shows the contract rates of diamond drilling in the SGX mine.

#### Table 18-9: 2008 Diamond Drilling Rate

				E	Basic Rates						
Type of Drill		RME	8/m			US\$/					
Surface Drill	PQ	HQ	NQ	BQ	PQ	HQ	NQ	BQ			
<200m	640	550	500		94.12	80.88	73.53				
200m-400m	750	610	560		110.29	89.71	82.35				
400m-600m		680	630			100	92.65				
600m-800m		750	700	630		110.29	102.94	92.65			
Underground	drill-short hole	(1 to									
300m)			200			29.4	1				
Underground	drill-deep	hole									
(>=300m)			260			38.24	4				

Note: PQ, HQ, NQ and BQ are representative of different core diameters.

#### **Ore Shipping Contracts**

Ore shipping from the mine sites to the Silvercorp's Central Mill utilizes trucks and a barge for the SGX mine. Trucks are owned by people from nearby villages, and the barge is owned by a local contractor. The all-in cost for shipping is US\$3.6 per ton for the SGX mine.

#### **Concentrate Sales Contracts**

As a general practice, Silvercorp sells its lead and zinc concentrates directly to local smelters instead of paying treatment charges and selling metals on the markets. Silvercorp is responsible only for packaging and uploading of concentrates. Concentrate sales prices in December of 2010 are shown in Table 18-10 and Table 18-11.

				ates in Decenn	
Pb	Price	Ag	Price factor	Au	Price factor
content	( RMB/t )	(g/t)	(RMB/g)	(g/t)	(RMB/g)
≥60%	A - 2000	≥5000	B * 89%	≥1.0	C * 80%
≥55%	A - 2100	≥4500	B * 88.5%	≥2.0	C * 81%
≥50%	A - 2200	≥4000	B * 88%	≥3.0	C *82%
≥45%	A - 2300	≥3500	B * 87.5%	≥5.0	C *83%
≥40%	A - 2400	≥3000	B * 87%	≥7.0	C *84%
≥35%	A - 2900	≥2500	B * 86.5%	≥10.0	C *85%
		≥2000	B * 86%	≥15.0	C *86%
		≥1500	B * 85.5%	≥20.0	C *87%
		≥1000	B * 85%		
		≥500	B * 82%		

## Table 18-10: Sale Prices of Pb Concentrates in December of 2010

Notes: A, B and C are online prices of Pb, Ag and Au respectively; A and B price have included 17% "added value tax".

Iak		nces of Zil Concentrates in December of 2010					
Zinc	Online Price	Sale Price					
Content	( RMB/t )	( RMB/t )					
≥45%	≤ 15,000	D – 5,200					
243%	>15,000	(D – 5,200) + (D – 15,000)x20%					
40 450/	≤ 15,000	(D–5800) – (45-Grade)*45					
40 ~ 45%	>15,000	(D – 5,200) + (D – 15,000)x20% – (45-Grade)*45					

## Table 18-11: Sale Prices of Zn Concentrates in December of 2010

Notes: D is online price that has included 17% "added value tax". Grade is Zinc content in the concentrate.

## **18.12 MARKETS**

Within a 300 km range from the SGX mine, there are more than five lead smelters with a combined smelting capacity of 1,000,000 tonnes of lead metal. While the smelters purchase the majority of the lead concentrate feed in the domestic market, many of them have to import from overseas. Silvercorp has therefore been able to negotiate favorable payment terms for its domestic produced concentrates.

Currently, the Company sells its lead concentrate to five lead producers, and its zinc concentrate to two zinc producers.

## **18.13 CAPITAL AND OPERATION COSTS**

#### **Capital Costs**

Capital costs are used for major mine development, including shaft sinking, equipment purchase, installation, main access drifting, etc. The Table 18-12 is an estimate of the capital costs for SGX and HZG mines combined. Estimates are based on the current mine contract rates.

	SGX	SGX		
Year	(High Grade)	(Low Grade)	HZG	Total
2011	8,457	198	929	9,584
2012	5,837	198	549	6,584
2013	5,325	197	501	6,023
2014	3,844	66	390	4,300
2015	3,364	-	292	3,656
2016	3,379	-	231	3,610
2017	2,626	-	231	2,857
2018	2,706	-	-	2,706
2019	2,315	-	-	2,315
2020	2,531	-	-	2,531
Total	\$ 40,384	\$ 659	\$ 3,123	\$ 44,166

#### Table 18-12: Capital Cost at SGX and HZG mines ('000US\$)

## **Operation Costs**

The Table 18-13 summarizes the operational costs. Mining, Milling, Shipping and General & admin costs are based on historical production figures. Sustaining capital costs are estimated based on the current mine contract rates.

#### Table 18-13: Operational costs (US\$/tonne)

	SGX	SGX	
Year	(High Grade)	(Low Grade)	HZG
Mining	45.00	45.00	45.00
Average sustaining capital	10.32	3.40	2.09
Milling	12.50	12.50	12.50
Shipping	3.60	3.60	3.60
G&A	2.00	2.00	2.00
Total	\$ 73.42	\$ 66.50	\$ 65.19

#### Taxes

China levies 17% Value-Added Tax ("VAT") on goods. 17% VAT input credit on purchased materials, power and machineries can be used to offset 17% VAT levied on silver, lead, zinc and copper products. No VAT is charged for selling gold. Income tax rate is 25% flat for Henan Found. Mining companies in China are required to pay 2% Resource tax on revenue for metal products sold. In addition, city construction taxes and education taxes are levied on approximately 10% of VAT.

## **18.14 ECONOMIC ANALYSIS**

#### **Financial Summary**

The Table 18-14 to Table 18-17 show the cash flow analysis of each mine over its mine life. Metal prices used are NSR which is average selling price, net of VAT and smelter charges).

**Summary**: Silvercorp's share of net cash flows from SGX and HZG mines combined is \$430 million.

**SGX (High Grade) Mine:** assuming total production cost of \$73.42 per tonne and using metal recoveries of 92.4%, 96.5% and 69.8% for silver, lead and zinc, respectively, Silvercorp's share (77.5%) of projected net cash flows is \$408 million over its ten years mine life.

**SGX (Low Grade) Mine:** assuming total production cost of \$66.50 per tonne and using metal recoveries of 85.0%, 90.8% and 70.5% for silver, lead and zinc, respectively, Silvercorp's share (77.5%) of projected net cash flows is \$11.3 million over its five years mine life.

**HZG Mine:** assuming total production cost of \$65.19 per tonne and using metal recoveries of 85.0%, 90.8% and 70.5% for silver, lead and zinc, respectively, Silvercorp's share (77.5%) of projected net cash flows is \$10.7 million over its eight years mine life.

The expected capital expenditures are \$40 million, \$0.7 million and \$3 million for SGX (High Grade), SGX (Low Grade) and HZG mines, respectively. The payback periods are \$0.6 year, 0.2 year and 2.3 years, respectively.

#### May 20, 2011

## Table 18-14: SGX and HZG Mines Combined – Cash Flow Analysis Summary

Table 18-14: SGX and HZG mines Combined - Cash Flow Analysis Summary

		Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Total
Ore mined/milled (tonne)		386,767	362,129	361,976	362,018	360,905	297,243	297,344	301,317	260,216	175,067	3,164,982
Metal Production:												
Au (ounces)		-	-	-	-	-	-	-	-	-	-	-
Ag (ounces)		4,585,854	4,036,180	3,895,225	3,702,075	3,644,615	3,338,872	3,232,849	3,125,646	2,798,368	1,794,262	34,153,946
Pb (pounds)		56,742,089	51,267,736	45,467,902	43,405,566	43,354,768	39,304,341	38,931,003	41,353,896	36,361,161	19,156,827	415,345,289
Zn (pounds)		14,834,957	13,189,604	12,877,271	12,222,179	13,706,073	12,629,675	12,716,808	12,160,149	10,288,063	6,463,717	121,088,495
Cu (pounds)		189,057	220,418	379,509	399,405	327,801	395,587	513,808	691,524	-	-	3,117,108
Metal price (net of smelter charges and value added tax)												
Au (US\$/oz) (\$1,400US/oz*65%)	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00	
Ag (US\$/oz) (\$24US\$/oz*87.5%/1.17)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	
Pb (US\$/lb) (\$1.12US\$/lb*87%/1.17)	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	
Zn (US\$/lb) (\$1.14US\$/lb*68%/1.17)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	
Cu (US\$/lb) (\$4.00US\$/lb*70%/1.17)	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	
Revenue												
Au (US\$)		-	-	-	-	-	-	-	-	-	-	-
Ag (US\$)		82,545,375	72,651,245	70,114,055	66,637,345	65,603,076	60,099,689	58,191,279	56,261,629	50,370,615	32,296,716	614,771,024
Pb (US\$)		47,095,934	42,552,221	37,738,359	36,026,620	35,984,457	32,622,603	32,312,733	34,323,734	30,179,764	15,900,166	344,736,590
Zn (US\$)		9,939,421	8,837,035	8,627,771	8,188,860	9,183,069	8,461,882	8,520,261	8,147,300	6,893,002	4,330,690	81,129,292
Cu (US\$)		453,737	529,003	910,823	958,571	786,721	949,408	1,233,138	1,659,658	-	-	7,481,060
Total (US\$)		140,034,467	124,569,504	117,391,008	111,811,396	111,557,324	102,133,583	100,257,411	100,392,320	87,443,381	52,527,572	1,048,117,966
Oprational costs												
Mining costs (US\$)		17,404,531	16,295,816	16,288,902	16,290,805	16,240,704	13,375,955	13,380,486	13,559,262	11,709,706	7,878,011	142,424,178
Sustaining capital costs (US\$)		3,147,262	2,897,836	3,099,236	4,100,814	3,826,600	3,050,435	2,567,075	2,193,711	1,739,786	1,386,562	28,009,318
Milling costs		4,834,592	4,526,616	4,524,695	4,525,224	4,511,307	3,715,543	3,716,802	3,766,462	3,252,696	2,188,336	39,562,272
Shipping cost		1,392,362	1,303,665	1,303,112	1,303,264	1,299,256	1,070,076	1,070,439	1,084,741	936,776	630,241	11,393,934
General and admin expenses (US\$)		773,535	724,258	723,951	724,036	721,809	594,487	594,688	602,634	520,431	350,134	6,329,963
Total production costs		27,552,282	25,748,192	25,939,896	26,944,142	26,599,677	21,806,497	21,329,491	21,206,810	18,159,396	12,433,283	227,719,665
Resource tax (US\$, 2% of total revenue)	2%	2,800,689	2,491,390	2,347,820	2,236,228	2,231,146	2,042,672	2,005,148	2,007,846	1,748,868	1,050,551	20,962,359
Pre-income tax net profit (US\$)		109,681,496	96,329,922	89,103,292	82,631,026	82,726,500	78,284,414	76,922,772	77,177,664	67,535,117	39,043,737	799,435,941
Income taxes		27,420,374	24,082,480	22,275,823	20,657,756	20,681,625	19,571,103	19,230,693	19,294,416	16,883,779	9,760,934	199,858,985
Net profit after income taxes (US\$)		82,261,122	72,247,441	66,827,469	61,973,269	62,044,875	58,713,310	57,692,079	57,883,248	50,651,338	29,282,803	599,576,956
Capital expenditures (US\$)		9,584,268	6,583,436	6,024,233	4,299,442	3,655,906	3,609,649	2,857,112	2,706,149	2,314,938	2,531,092	44,166,227
Net cash flows 100% (US\$)		72,676,854	65,664,005	60,803,236	57,673,827	58,388,969	55,103,661	54,834,967	55,177,099	48,336,400	26,751,711	555,410,729
Silvercorp's share of net cash flows (US\$)		56,324,562	50,889,604	47,122,508	44,697,216	45,251,451	42,705,337	42,497,099	42,762,252	37,460,710	20,732,576	430,443,315
Unit silver production costs, adjusted for by-product credits		(6.53)	(6.48)	(5.48)	(4.92)	(5.31)	(6.06)	(6.41)	(7.33)	(6.76)	(4.35)	(6.02)

## Table 18-15: Cash Flow Analysis for Mine Plan at the SGX Mine (High Grade)

Table 18-15: Cash Flow Analysis for Mine Plan at the SGX Mine (High Grade)

		Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Total
Ore mined/milled (tonne)		290,196	260,002	260,049	260,677	260,172	260,959	260,614	260,303	260,216	175,067	2,548,256
Grade:												
Au (g/t)		-	-	-	-	-	-	-	-	-	-	
Ag (g/t)		476.25	456.00	439.00	417.00	408.00	402.00	393.00	376.00	362.00	345.00	
Pb (%)		8.48%	8.53%	7.53%	7.10%	7.08%	7.05%	7.01%	7.45%	6.57%	5.14%	
Zn (%)		3.04%	2.97%	2.83%	2.75%	3.08%	3.11%	3.13%	2.99%	2.57%	2.40%	
Cu (%)		-	-	-	-	-	-	-	-	-	-	
Recovery rate:												
Ац (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Ag (%)		92.4%	92.4%	92.4%	92.4%	92.4%	92.4%	92.4%	92.4%	92.4%	92.4%	
Pb (%)		96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	
Zn (%)		69.8%	69.8%	69.8%	69.8%	69.8%	69.8%	69.8%	69.8%	69.8%	69.8%	
Cu (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Metal Production:												
Metal Production: Au (ounces)												
					-					-	-	-
Ag (ounces)		4,105,734	3,522,123	3,391,424	3,229,251	3,153,432	3,116,460	3,042,659	2,907,567	2,798,368	1,794,262	31,061,279
Pb (pounds)		52,323,900 13,584,868	47,169,892 11,879,561	41,669,764 11,321,612	39,364,097 11,028,152	39,177,143 12,327,594	39,129,189	38,833,209 12,561,598	41,266,616 11,960,220	36,361,161 10,288,063	19,156,827 6,463,717	394,451,797 113,900,721
Zn (pounds) Cu (pounds)		13,564,666	11,679,561	11,321,612	11,028,152	12,327,594	12,485,336	12,561,596	11,960,220	10,288,063	6,463,717	113,900,721
Metal price (net of smelter charges and value added tax)	000.00	000.00	000.00	000.00	000.00	000.00	000.00	000.00	900.00	900.000	000.00	
Au (US\$/oz) (\$1,400US/oz*65%)	900.00	900.00	00.00	900.00	900.00	900.00	900.00	900.00			900.00	
Ag (US\$/oz) (\$24US\$/oz*87.5%/1.17)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	
Pb (US\$/lb) (\$1.12US\$/lb*87%/1.17)	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	
Zn (US\$/lb) (\$1.14US\$/lb*68%/1.17)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	
Cu (US\$/b) (\$4.00US\$/b*70%/1.17)	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	
Revenue												
Au (US\$)		-	-	-	-	-	-	-	-	-	-	-
Ag (US\$)		73,903,211	63,398,211	61,045,625	58,126,519	56,761,777	56,096,283	54,767,856	52,336,214	50,370,615	32,296,716	559,103,026
Pb (US\$)		43,428,837	39,151,010	34,585,904	32,672,201	32,517,029	32,477,227	32,231,564	34,251,291	30,179,764	15,900,166	327,394,992
Zn (US\$)		9,101,862	7,959,306	7,585,480	7,388,862	8,259,488	8,365,175	8,416,271	8,013,348	6,893,002	4,330,690	76,313,483
Cu (US\$)		-	-	-	-	-	-	-	-	-	-	-
Total (US\$)		126,433,910	110,508,527	103,217,009	98,187,581	97,538,294	96,938,685	95,415,690	94,600,852	87,443,381	52,527,572	962,811,501
Oprational costs												
Mining costs (US\$)	45.00 US\$/tonne	13,058,839	11,700,097	11,702,195	11,730,474	11,707,741	11,743,170	11,727,636	11,713,637	11,709,706	7,878,011	114,671,505
Sustaining capital costs (US\$)	-	2,615,102	2,391,238	2,722,773	3,814,206	3,818,854	3,050,435	2,567,075	2,193,711	1,739,786	1,386,562	26,299,742
Milling costs	12.50 US\$/tonne	3,627,455	3,250,027	3,250,610	3,258,465	3,252,150	3,261,992	3,257,677	3,253,788	3,252,696	2,188,336	31,853,196
Shipping cost	3.60 US\$/tonne	1,044,707	936,008	936,176	938,438	936,619	939,454	938,211	937,091	936,776	630,241	9,173,720
General and admin expenses (US\$)	2.00 US\$/tonne	580,393	520,004	520,098	521,354	520,344	521,919	521,228	520,606	520,431	350,134	5,096,511
Total production costs		20,926,496	18,797,374	19,131,851	20,262,937	20,235,709	19,516,969	19,011,828	18,618,833	18,159,396	12,433,283	187,094,674
Resource tax (US\$, 2% of total revenue)	2%	2,528,678	2,210,171	2,064,340	1,963,752	1,950,766	1,938,774	1,908,314	1,892,017	1,748,868	1,050,551	19,256,230
Pre-income tax net profit (US\$)		102,978,736	89,500,983	82,020,818	75,960,892	75,351,819	75,482,942	74,495,549	74,090,003	67,535,117	39,043,737	756,460,597
Income tax rate		25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Income taxes		25,744,684	22,375,246	20,505,205	18,990,223	18,837,955	18,870,736	18,623,887	18,522,501	16,883,779	9,760,934	189,115,149
Net profit after income taxes (US\$)		77,234,052	67,125,737	61,515,614	56,970,669	56,513,865	56,612,207	55,871,661	55,567,502	50,651,338	29,282,803	567,345,448
Capital expenditures (US\$)		8,457,117	5,836,856	5,325,215	3,843,645	3,363,598	3,378,880	2,626,343	2,706,149	2,314,938	2,531,092	40,383,835
Net cash flows 100% (US\$)		68,776,935	61,288,881	56,190,399	53,127,024	53,150,266	53,233,327	53,245,318	52,861,353	48,336,400	26,751,711	526,961,613
Silvercorp's share of net cash flows (US\$) (77.5%)		53,302,125	47,498,883	43,547,559	41,173,444	41,191,456	41,255,828	41,265,122	40,967,548	37,460,710	20,732,576	408,395,250
Unit silver production costs, adjusted for by-product credits		(7.70)	(8.04)	(6.79)	(6.13)	(6.51)	(6.84)	(7.11)	(8.13)	(6.76)	(4.35)	(6.97)
		(, 0)	(====+)	(	()	(2.51)	(+)	()	(20)	(2 0)	(	()

#### May 20, 2011

## Table 18-16: Cash Flow Analysis for Mine Plan at the SGX Mine (Low Grade)

Table 18-16: Cash Flow Analysis for Mine Plan at the SGX Mine (Low Grade)

		Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020
Ore mined/milled (tonne)		60,325	65,870	65,683	65,000	64,348	-	-	-	-	-
Grade:											
Au (g/t)		-	-	-	-	-	-	-	-	-	-
Ag (g/t)		151.96	157.51	163.44	151.25	153.27	-	-	-	-	-
Pb (%)		2.99%	2.60%	2.33%	2.48%	2.91%	-	-	-	-	-
Zn (%)		1.10%	1.03%	1.29%	0.99%	1.24%	-	-	-	-	-
Cu (%)		-	-	-	-	-	-	-	-	-	-
Recovery rate:											
Au (%)		0.0%	0.0%	0.0%	0.0%	0.0%	_	_	_		_
Ag (%)		85.0%	85.0%	85.0%	85.0%	85.0%	_	_	_	-	
Pb (%)		90.8%	90.8%	90.8%	90.8%	90.8%					
Zn (%)		70.5%	70.5%	70.5%	70.5%	70.5%	-	-	-	-	-
Cu (%)		0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-
		0.078	0.078	0.078	0.078	0.0%	-	-	-	-	-
Metal Production:											
Au (ounces)		-	-	-	-	-	-	-	-	-	-
Ag (ounces)		250,517	283,526	293,379	268,676	269,521	-	-	-	-	-
Pb (pounds)		3,611,686	3,429,554	3,067,880	3,229,109	3,742,957	-	-	-	-	-
Zn (pounds)		1,035,040	1,058,719	1,316,995	1,001,027	1,235,379	-	-	-	-	-
Cu (pounds)		-	-	-	-	-	-	-	-	-	-
Metal price (net of smelter charges and value added ta:	x)										
Au (US\$/oz) (\$1,400US/oz*65%)	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.00
Ag (US\$/oz) (\$24US\$/oz*87.5%/1.17)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
Pb (US\$/lb) (\$1.12US\$/lb*87%/1.17)	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Zn (US\$/lb) (\$1.14US\$/lb*68%/1.17)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Cu (US\$/Ib) (\$4.00US\$/Ib*70%/1.17)	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Revenue											
Au (US\$)		_	_	-	-	_	_	_	_	_	-
Ag (US\$)		4,509,298	5,103,459	5,280,829	4,836,176	4,851,378	_	-	_	-	-
Pb (US\$)		2,997,699	2,846,530	2,546,341	2,680,160	3,106,654	_	_	_	_	_
Zn (US\$)		693,477	709,342	882,387	670,688	827,704	-	_	_		_
Cu (US\$)		-	-	-	-	-	_	_	_	_	-
Total (US\$)	-	8,200,474	8,659,330	8,709,556	8,187,025	8,785,736	-	-	-	-	-
Oprational costs	45.00 US\$/tonne	2,714,625	2,964,146	2,955,725	2,925,008	2,895,638					
Mining costs (US\$)	45.00 US\$/tonne						-	-	-	-	-
Sustaining capital costs (US\$)	-	309,846	309,846	309,846	154,923	7,746	-	-	-	-	-
Milling costs	12.50 US\$/tonne	754,063	823,374	821,035	812,502	804,344	-	-	-	-	-
Shipping cost	3.60 US\$/tonne	217,170	237,132	236,458	234,001	231,651	-	-	-	-	-
General and admin expenses (US\$)	2.00 US\$/tonne	120,650	131,740	131,366	130,000	128,695	-	-	-	-	
Total production costs		4,116,354	4,466,237	4,454,430	4,256,435	4,068,074	-	-	-	-	-
Resource tax (US\$, 2% of total revenue)	2%	164,009	173,187	174,191	163,740	175,715	-	-	-	-	-
Pre-income tax net profit (US\$)		3,920,110	4,019,907	4,080,935	3,766,849	4,541,947	-	-	-	-	-
Income tax rate		25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Income taxes		980,028	1,004,977	1,020,234	941,712	1,135,487	-	-	-	-	-
Net profit after income taxes (US\$)		2,940,083	3,014,930	3,060,701	2,825,137	3,406,460	-	-	-	-	-
Capital expenditures (US\$)		197,769	197,769	197,769	65,923	-	-	-	-	-	-
Netcash flows 100% (US\$)		2,742,314	2,817,161	2,862,932	2,759,214	3,406,460	-	-	-	-	-
Silvercorp's share of net cash flows (US\$) (77.5%)		2,125,293	2,183,300	2,218,772	2,138,391	2,640,007	-	-	-	-	-
Unit silver production costs, adjusted for by-product cre	dits	1.70	3.21	3.50	3.37	0.50	-	-	-	-	-

#### May 20, 2011

## Table 18-17: Cash Flow Analysis for Mine Plan at the HZG Mine

Table 18-17: Cash Flow Analysis for Mine Plan at the HZG Mine

		Year	Year	Year	Total							
Ore mined/milled (tonne)		2011 36,246	2012 36,257	2013 36,244	2014 36,341	2015 36,385	2016 36,284	2017 36,730	2018 41,014	2019	2020	295,501
Cre miled/miled (tonne)		30,240	30,237	30,244	30,341	30,385	50,204	30,730	41,014			285,501
Grade:												
Au (g/t)		-	-	-	-	-	-	-	-	-	-	
Ag (g/t)		231.80	232.66	212.44	205.56	222.93	224.30	189.48	194.57	-	-	
Pb (%)		1.11%	0.92%	1.01%	1.12%	0.60%	0.24%	0.13%	0.11%	-	-	
Zn (%)		0.38%	0.45%	0.42%	0.34%	0.25%	0.26%	0.27%	0.31%	-	-	
Сц (%)		0.34%	0.39%	0.68%	0.71%	0.58%	0.71%	0.91%	1.09%	-	-	
Recovery rate:												
Au (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Ag (%)		85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%	
Pb (%)		90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	
Zn (%)		70.5%	70.5%	70.5%	70.5%	70.5%	70.5%	70.5%	70.5%	70.5%	70.5%	
Cu (%)		70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	
Metal Production:												
Au (ounces)							-	-		-	-	-
Ag (ounces)		229,604	230,532	210,422	204,147	221,662	222,411	190,190	218,079	-	-	1,727,048
Pb (pounds)		806,503	668,290	730,258	812,360	434,668	175,153	97,794	87,280	-	-	3,812,306
Zn (pounds)		215,049	251,324	238,664	193,000	143,100	144,339	155,210	199,928	-	-	1,540,614
Cu (pounds)		189,057	220,418	379,509	399,405	327,801	395,587	513,808	691,524	-	-	3,117,108
Metal price (net of smelter charges and value added ta:	~											
Au (US\$/oz) (\$1,400US/oz*65%)	×) 900.00	900.00	900.00	900.00	900.00	900.00	900.00	900.000	900.00	900.00	900.00	
Ag (US\$/oz) (\$24US\$/oz*87.5%/1.17)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	
Pb (US\$/b) (\$1.12US\$/b*87%/1.17)	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	
Zn (US\$/lb) (\$1.14US\$/lb*68%/1.17)	0.67	0.83	0.67	0.83	0.67	0.83	0.83	0.83	0.67	0.67	0.83	
Cu (US\$/Ib) (\$4.00US\$/Ib*70%/1.17)	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	
()(+)												
Revenue												
Au (US\$)		-	-	-	-	-	-	-	-	-	-	-
Ag (US\$)		4,132,866	4,149,575	3,787,602	3,674,650	3,989,921	4,003,405	3,423,424	3,925,415	-	-	31,086,859
Pb (US\$)		669,398	554,681	606,114	674,259	360,774	145,377	81,169	72,442	-	-	3,164,214
Zn (US\$)		144,083	168,387	159,905	129,310	95,877	96,707	103,991	133,952	-	-	1,032,212
Cu (US\$)		453,737	529,003	910,823	958,571	786,721	949,408	1,233,138	1,659,658	-	-	7,481,060
Total (US\$)	-	5,400,084	5,401,647	5,464,443	5,436,790	5,233,294	5,194,898	4,841,721	5,791,468	-	-	42,764,344
Oprational costs												
Mining costs (US\$)	45.00 US\$/tonne	1,631,067	1,631,574	1,630,982	1,635,323	1,637,325	1,632,786	1,652,850	1,845,626	-	-	13,297,531
Sustaining capital costs (US\$)		222,315	196,752	66,617	131,685	-	-	-	-	-	-	617,368
Milling costs	12.50 US\$/tonne	453,074	453,215	453,050	454,256	454,813	453,552	459,125	512,674	-	-	3,693,759
Shipping cost	3.60 US\$/tonne	130,485	130,526	130,479	130,826	130,986	130,623	132,228	147,650	-	-	1,063,802
General and admin expenses (US\$)	2.00 US\$/tonne	72,492	72,514	72,488	72,681	72,770	72,568	73,460	82,028	-	-	591,001
Total production costs		2,509,432	2,484,581	2,353,616	2,424,770	2,295,894	2,289,528	2,317,663	2,587,977	-	-	19,263,462
Resource tax (US\$, 2% of total revenue)	2%	108,002	108,033	109,289	108,736	104,666	103,898	96,834	115,829			855,287
	276	2,782,649	2,809,032	3,001,539	2,903,284	2,832,734	2,801,472	2,427,224	3,087,662	-	-	22,645,596
Pre-income tax net profit (US\$) Income tax rate		2,782,849	2,809,032	25%	2,903,284	2,832,734	2,801,472	2,427,224	25%	- 25%	- 25%	22,645,596
Income tax rate Income taxes		695,662	702,258	25% 750,385	25% 725,821	25% 708,184	25% 700,368	25% 606,806	25% 771,915	25%	25%	25% 5,661,399
		2,086,987								-	-	
Net profit after income taxes (US\$)			2,106,774	2,251,154	2,177,463	2,124,551	2,101,104	1,820,418	2,315,746	-	-	16,984,197
Capital expenditures (US\$)		929,382	548,811	501,249	389,874	292,308	230,769	230,769		-	-	3,123,162
Net cash flows 100% (US\$)		1,157,606	1,557,963	1,749,905	1,787,589	1,832,243	1,870,334	1,589,649	2,315,746	-	-	13,861,035
Silvercorp's share of net cash flows (US\$) (77.5%)		897,144	1,207,422	1,356,176	1,385,382	1,419,988	1,449,509	1,231,978	1,794,703	-	-	10,742,302
Unit silver production costs, adjusted for by-product cre	runs	5.41	5.35	3.22	3.25	4.75	4.94	4.73	3.31	-	-	4.39

## Sensitivity

The financial results are most sensitive to the fluctuation of silver and lead prices. The Table 18-18 to 18-20 show the net cash flows for each mine under different silver and lead price. The prices showed are NSR, which is the net selling price, net of VAT and smelter charges.

#### Table 18-18: Sensitivity Analysis: New Cash Flows vs. NSR for SGX (High Grade)

		Silver NSR (US\$/oz)										
Net cash flows (million US\$)			\$	14.00	\$	16.00	\$	18.00	\$	20.00	\$	22.00
	\$ (	0.63	\$	378	\$	423	\$	469	\$	515	\$	560
I NSR (US\$/lb)	\$ (	0.73	\$	407	\$	452	\$	498	\$	544	\$	589
	\$ (	0.83	\$	436	\$	481	\$	527	\$	573	\$	618
	\$ (	0.93	\$	465	\$	510	\$	556	\$	602	\$	647
Lead	\$	1.03	\$	494	\$	539	\$	585	\$	631	\$	676

Table 18-18: Sensitivity analysis: net cash flows vs. NSR for SGX (High Grade)

#### Table 18-19: Sensitivity Analysis: Net Cash Flows vs. NSR for SGX (Low Grade)

				Silver NSR (US\$/oz)										
Net cash flows (million US\$)				14.00	\$	16.00	\$	18.00	\$	20.00	\$	22.00		
	\$	0.63	\$	8.1	\$	10.1	\$	12.1	\$	14.1	\$	16.1		
(dl/\$	\$	0.73	\$	9.3	\$	11.3	\$	13.3	\$	15.3	\$	17.3		
(ql/\$SU) ;	\$	0.83	\$	10.6	\$	12.6	\$	14.6	\$	16.6	\$	18.6		
Lead NSR	\$	0.93	\$	11.8	\$	13.8	\$	15.8	\$	17.9	\$	19.9		
Leac	\$	1.03	\$	13.1	\$	15.1	\$	17.1	\$	19.1	\$	21.1		

Table 18-19: Sensitivity analysis: net cash flows vs. NSR for SGX (Low Grade)

#### Table 18-20: Sensitivity Analysis: Net Cash Flows vs. NSR for HZG

Table 18-20: Sensitivity analysis: net cash flows vs. NSR for HZG

			Silver NSR (US\$/oz)										
Net cash flows (million US\$)			\$	14.00	\$	16.00	\$	18.00	\$	20.00	\$	22.00	
	\$	0.63	\$	8.2	\$	10.8	\$	13.3	\$	15.8	\$	18.4	
(ql/\$	\$	0.73	\$	8.5	\$	11.0	\$	13.6	\$	16.1	\$	18.7	
(US	\$	0.83	\$	8.8	\$	11.3	\$	13.9	\$	16.4	\$	18.9	
Lead NSR (US\$/lb)	\$	0.93	\$	9.1	\$	11.6	\$	14.1	\$	16.7	\$	19.2	
Leac	\$	1.03	\$	9.3	\$	11.9	\$	14.4	\$	17.0	\$	19.5	

# **19.0 OTHER RELEVANT DATA AND INFORMATION**

Other information of relevance includes knowledge and data pertaining to various operational issues such as mine site access, mine permitting, mining methods, mine design, mine ventilation, hydrology, ore sorting, ore haulage, ore milling, direct shipping ore, power supplies, manpower, metal markets, environmental permitting and similar issues, health and safety, capital costs, and operating costs. Some of the more positive relevant features in the Ying District operation are:

- Locally available power supply for the mine and mill facilities,
- Abundant low-cost labor supply offers a major economic advantage over similar deposits in other parts of the world,
- Proximity to a number of existing custom mills and smelters, as well as to Silvercorp's own fully operational 1000 tpd mill,
- Topography that favors access to the veins by driving horizontal tunnels from the sides of the narrow valleys,
- Ground conditions which allow the use of shrinkage stopes, providing 95% ore recoveries with minimum dilution,
- Wall rock in the workings is competent and blocky Archean gneiss that acts as an aquiclude; seepage from groundwater is low.
- Several horizontal portals created for exploration are used to provide fast and effective access for moving ore from the underground workings,
- Prices for silver, lead and zinc quoted on the Shanghai Metal Exchange are about 13% above world prices due to a 13% Value Added Tax on metal imports levied by the Chinese government,
- Silvercorp's safety program, which exceeds Chinese standards and has to date recorded no serious injuries or death.

The only issue of minor concern is the unlikely event of a natural catastrophe such as a major flood or earthquake that could impact safety or the environment.

# 20.0 INTERPRETATION AND CONCLUSIONS

Silvercorp's operations in the Ying District consist of several producing projects containing significant defined silver-lead-zinc resources and reserves. Additionally the project has a number of interesting to promising outlying targets that have not yet been thoroughly explored. The district lies in one of China's most densely populated provinces, albeit currently only a minor mining province. The mine areas and outlying occurrences are mesothermal-type mineral deposits typical of the world's prolific orogenic structural-lithologic belts.

The underground operations in the district include five mining permits and a substantial current mining infrastructure, the largest being the SGX mine project. The information presented in Chapter 17 (Mineral Resources and Reserves) of this 43-101 Technical Report indicates there are significant Ag-Pb-Zn resources and reserves for the SGX mine area which are adjacent to existing underground mine workings, and the many Ag-Pb-Zn veins that cross the district have potential to host additional deposits of similar size and quality to those already defined or mined. Silvercorp's exploration and development efforts to date suggest that new discoveries in the district can probably be brought into production rather quickly.

The known geology and existing data indicate that in-fill and step-out tunneling and underground drilling campaigns stand a very good chance of significantly extending and expanding the known mineral resources as well as discovering new areas or pockets of vein mineralization along strike and to depth. None of the mine areas have yet been explored to great depth. The mesothermal Ag-Pb-Zn vein model predicts that some, perhaps many, of the vein systems in the Ying District could persist with mineable widths and grades to considerable depth, perhaps to depths of 2,000 meters or more, as currently being mined in the Coeur d'Alene District in Idaho, U.S.A. It appears the Ying District may be poised to become an increasingly important, long-lived silver-lead-zinc producing district.

Silvercorp's mining experience to date suggests that the resources categorized as measured and indicated in Chapter 17 of this Technical Report can in large part be upgraded to reserves. The mineral reserves as in this chapter appear to include reasonable dilution and recovery factors. For these reasons, the current reserves and any new reserves defined in the future will likely be reasonably recoverable and present no significant processing issues. Silvercorp's excellent existing infrastructure combined with favorable metal prices suggests that the Ying District offers excellent opportunities for potentially profitable "fast-track" mining developments.

The silver-lead-zinc targets on the additional veins or in outlying "frontier" areas require further exploration. The targets have had a moderate amount of previous work, but none have yet been fully explored. Several interesting targets include:

In summary, we believe the Ying District offers the opportunity for several new mines with potential to significantly expand the known resources. Additionally, there many interesting exploration targets that promise potential for future viable discoveries. And equally important is the potential to extend the mineralized vein systems to depths far greater than those yet tested.

# 21.0 RECOMMENDATIONS

An intensive program to further develop and expand exploration is recommended for all the Ying District mines and mine areas. Approximately 75,000 m of underground drilling is suggested to define down-dip and strike extensions of the S2 and S7-1 veins, with the objective to define significant new mineralization. Additionally, the S16, S145, S8, S7 and S5 vein should be drilled to test for mineralization at depth. Also recommend is 10,000 m of surface drilling is suggested to test several veins that are not currently being mined or developed.

Exploration on the S2 and S7-1 veins if successful could significantly upgrade and expand the defined mineralization, and extend the mine life.

The approximate for budget for this work is as follows:

	Meters	Cost
UG Drilling	75,000	\$ 3.3 million
Surface drilling	10,000	\$ 1.2 million
Total	85,000	\$ 4.5 million

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# 23.0 DATE AND SIGNATURE PAGE

Spokane Valley, Washington, U.S.A. May 20, 2011

"*Mel Klohn*" Mel Klohn,, L.P. Geo. Senior Consultant BK Exploration Associates

Vancouver, British Columbia, CANADA May 20, 2011 "Wenchang Ni" Wenchang Ni,,P. Eng. Senior Engineer Silvercorp Metals Inc.

Centralia, Washington, U.S.A. May 20, 2011 "*Chris Broili*" Chris Broili,C.P. Geo.& L.P. Geo. Exploration Geologist BK Exploration Associates

### **CERTIFICATE OF QUALIFIED PERSON**

Mel Klohn, L.P. Geo.

I, Mel Klohn, of 11309 E. 48th Ave., Spokane Valley, Washington, U.S.A., am currently a Senior Consulting Geologist for BK Exploration Associates, a director of Elissa Resources Ltd., and Technical Advisor to Rio Novo Gold Inc. and to Hunt Mining Corp.

- 1. I am a co-author responsible for the preparation of the Technical Report titled "NI 43-101 Technical Report, Resources and Reserves Update, SGX Mines, Ying District Silver-Lead-Zinc Project, Henan Province, People's Republic of China, for Silvercorp Metals Inc." and dated May 20, 2011.
- 2. I graduated with B.Sc. and M.Sc. degrees in Geology from the University of Oregon. I am a licensed Professional Geologist (#830) with the State of Washington, a member of the Society of Economic Geologists, the Canadian Institute for Mining and Metallurgy, and the Society for Mining Metallurgy and Exploration. I have been directly involved in resource exploration for the 44 years since my graduation, serving 25 years as a Professional Geologist and Senior Research Geoscientist for Exxon Corporation, and subsequently as Vice President of Exploration for Yamana Resources Inc., Yamana Gold Inc., Samba Gold Inc., Aura Gold Inc., and most recently Nevoro Inc. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association as defined in NI 43-101, and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 3. I first visited the Ying properties from July 15 through 23, 2007, and have since reviewed the Ying project data in detail on an annual basis, both electronically and in Silvercorp's office in Vancouver, for NI 43-101 reporting purposes. I reviewed the project data for this current report in Silvercorp's Vancouver office from April 15 to 25, 2011.
- 4. I am responsible for Chapters 1 through 15, sections 17.1 through 17.3 of Chapter 17, and Chapters 19 and 20 of this report.
- 5. I am independent of the issuer applying all of the tests in Section 1.5 of NI 43-101.
- 6. I have read National Instrument 43-101 and Form 43-101F, and the Technical Report has been prepared in compliance with that instrument and form.
- 7. I certify that, as of the date of this Certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 20<sup>th</sup> day of May, 2011, Spokane Valley, Washington, U.S.A.

"Mel Klohn"

Mel Klohn, L.P.Geo.

#### **CERTIFICATE OF QUALIFIED PERSON**

Wenchang Ni, P.Eng.

- 1. I, Wenchang Ni, P.Eng, am a Professional Engineer, and employed as a Senior Mining Engineer with Silvercorp Metals Inc. of Suite 1378 200 Granville Street in the City of Vancouver in the Province of British Columbia.
- I am a co-author responsible for the preparation of the Technical Report titled "NI 43-101 Technical Report, Resources and Reserves Update, SGX Mines, Ying District Silver-Lead-Zinc Project, Henan Province, People's Republic of China, for Silvercorp Metals Inc." and dated May 20, 2011.
- 3. I graduated with Bachelor's degree in Mining Engineering from the Henan Polytechnic University in 1982 and a Master's degree in Mineral Resource Engineering from the Laurentian University in 2007. I am a licensed Professional Engineer (#32078) in the Province of British Colombia. I have conducted mining operations and consulting for the past 29 years with Wuhan Design and Research Institute of Sinocoal International Engineering Group, PT. Bukit Sunur, Huckleberry Mines Ltd, and Wardrop Engineering Inc. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association as defined in NI 43-101, and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 4. I worked in Ying District from February to May, 2011, and was responsible for mining plans and ore quality control. For preparing this technical report, I personally inspected the Silvercorp's central Mills, tailings dam and toured the surface and underground facilities of the Ying District properties between February 28th and March 4th, 2011. I have reviewed the mining plans and mineral reserve estimates.
- 5. I am not independent of Silvercorp Metals Inc. as defined in Section 1.4 of National Instrument 43-101, as I have been a full time employee of the company for the past few months, I own shares of Silvercorp and have been granted employee options to purchase shares in the company.
- 6. I am responsible for Chapters 16, 17.4, and 18 of this report.
- 7. I have read National Instrument 43-101 and Form 43-101F, and the Technical Report has been prepared in compliance with that instrument and form.
- 8. I certify that, as of the date of this Certificate, to the best of my knowledge, information, and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 20<sup>th</sup> day of May, 2011, Vancouver, British Colombia, Canada

"Wenchang Ni"

Wenchang Ni, P.Eng,

#### **CERTIFICATE OF QUALIFIED PERSON**

Chris Broili, C.P. Geo. & L.P. Geo.

I, Chris Broili, of 2104 Graf Road, Centralia, Washington, U.S.A., am currently an Exploration Geologist with BK Exploration Associates.

- I am a co-author responsible for the preparation of the Technical Report titled "NI 43-101 Technical Report, Resources and Reserves Update, SGX Mines, Ying District Silver-Lead-Zinc Project, Henan Province, People's Republic of China, for Silvercorp Metals Inc." and dated May 20, 2011.
- 2. I graduated with a B.Sc. degree in Geology from Oregon State University and a M.Sc. degree in Economic Geology from the University of Idaho, College of Mines. I am a licensed Professional Geologist in the State of Washington (#547), a Certified Professional Geologist (#7937) with the American Institute of Professional Geologists, a Fellow of the Society of Economic Geologists, and a member of the American Institute of Mining and Metallurgy. My relevant experience for purposes of this Technical Report include Senior Minerals Geologist with Union Carbide Corp. and Atlas Precious Metals Inc., Vice President of Exploration for Yamana Resources Inc., Vice President of Exploration for Senior Geological Consultant for numerous junior and senior mining companies. I have been directly involved in mining exploration for the past 40 years. I have read the definition of "qualified person" set out in NI 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 3. I visited Silvercorp's Ying District properties many times from 2004 through 2008, and have reviewed the Ying project data in detail since on an annual basis, both electronically and in Silvercorp's office in Vancouver, for NI 43-101 reporting purposes. I reviewed electronic project data for this current report intermittently from March 9 through April 4, 2011.
- 4. I reviewed many of the chapters in this report with special emphasis on the longitudinal and cross-sections presented in Chapter 10 of this report.
- 5. I am independent of the issuer applying all of the tests in Section 1.5 of NI 43-101.
- 6. I have read National Instrument 43-101 and Form 43-101F, and the Technical Report has been prepared in compliance with that instrument and form.
- 7. I certify that, as of the date of this Certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 20<sup>th</sup> day of May, 2011, Centralia, Washington, U.S.A.

"Chris Broili"

Chris Broili, C.P. Geo. and L.P.Geo.

## **CONSENT OF AUTHORS**

TO: Toronto Stock Exchange Ontario Securities Commission British Columbia Securities Commission Alberta Securities Commission Saskatchewan Securities Commission Manitoba Securities Commission New Brunswick Securities Commission Nova Scotia Securities Commission

We, **Mel Klohn**, L.P. Geo., of 11309 E. 48th Ave., Spokane Valley, Washington, U.S.A. **Wenchang Ni**, P. Eng., of Suite 1378-200 Granville St., Vancouver, B.C., and **Chris Broili**, C.P. Geo. & L.P. Geo., of 2104 Graf Road, Centralia, Washington, U.S.A., do hereby consent to the filing, with the regulatory authorities referred to above, of the technical report titled "NI 43-101 Technical Report, Resources and Reserves Update, SGX Mines, Ying District Silver-Lead-Zinc Project, Henan Province, People's Republic of China, for Silvercorp Metals Inc." and dated May 20, 2011, (the "Technical Report") and to the written disclosure of the Technical Report and of extracts from or a summary of the Technical Report in the written disclosure in the Annual Information Form of Silvercorp Metals Inc. being filed.

Dated this 20th day of May, 2011

"*MelKlohni*" Mel Klohn,L.P. Geo.

"Wenchang Ni" Wenchang Ni,P. Eng

"*Chris Broili*" Chris Broili,C.P. Geo.& L.P. Geo.

## **APPENDIX**

#### Appendix 16-1: General View of No.2 Mill



Appendix 16-2: Milling and flotation Setup of No.2 Mill





Appendix 18-1: General View of Mine Surface Infrastructures

Appendix 18-2: General View of the office and accommodation facilities





Appendix 18-3: General Condition of the Zhuangtou TSF

Appendix 18-4: Hand Sorting Ore from both sides of a slow moving belt



Underground water							
Element	Unit	Value				Value	Required
pH		7.9		pH		8.6	6-9
O <sub>2</sub>	mg/L	54.3	<ul> <li>Mixing with lime</li> <li>Sediment pond #1</li> <li>Sediment pond #2</li> <li>Sediment pond #3</li> <li>Filtering</li> </ul>	<b>O</b> <sub>2</sub>	mg/L	20	20
Pb	mg/L	2.08		Pb	mg/L	0.008	<0.05
An+N	mg/L	0.51		An+N	mg/L	0.043	<1
Cadmium	mg/L	0.09		Cadmium	mg/L	0.06	0.1
Oil	mg/L	0.05		Oil	mg/L	<mark>0.05</mark>	0.05

#### Appendix 18-5: Central Treatment Station for the Underground Water

Appendix 18-6: A typical energy-saving compressor at the adit CM105 portal



SGX Mine Ying Silver-Lead-Zinc District Silvercorp Metals Inc.