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TECHNICAL REPORT FOR YING GOLD-SILVER-LEAD-ZINC PROPERTY, HENAN PROVINCE, CHINA

for

SILVERCORP METALS INC

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1 SUMMARY

Introduction

AMC Mining Consultants (Canada) Ltd (AMC) was commissioned by Silvercorp Metals Inc. (Silvercorp) to prepare a Technical Report on the Ying gold-silver-lead-zinc property in Henan Province, China, encompassing the SGX (/HZG), HPG and TLP / LM underground mines. The previous publicly released Technical Reports were prepared by other parties, were dated 20 May 2011, and covered the SGX, HPG and TLP / LM mines in three separate reports.

The Technical Report was filed on 15 June 2012, with an effective date of 1 May 2012. This document is a revised version of that report, with a revision date of 30 April 2013. None of the changes made in this revision to the 15 June 2012 filing materially affect AMC's opinions, conclusions or recommendations, and the effective date remains 1 May 2012. The revision has been made, in the interests of transparency, to show the inclusion of hand-sorted ore in the production reporting for years 2009 to 2011 (not done in the 15 June 2012 filing); also to correct minor, non-material tonnes and grade errors in the reporting of some resource, reserve and Life of Mine (LOM) production estimates. A summary paragraph describing the factors involved in the conversion of Mineral Resources to Mineral Reserves has also been added, along with a mineral resources to mineral reserves conversion breakdown table for the SGX mine.

The four authors of this report all qualify as independent Qualified Persons. Three visited the Ying Property in February 2012, with additional visits made by another AMC Qualified Person[1] in February and April 2012, and examined all aspects of the project, including drill core, exploration sites, underground workings, processing plant and surface infrastructure.

Silvercorp, through wholly owned subsidiaries, has effective interests of 77.5% in the Ying (SGX) and TLP projects, and 80% in the HPG and LM projects. It has all the exploration and mining permits necessary to cover its mining and exploration activities. There are no known or recognized environmental problems that might preclude or inhibit a mining operation in this area.

The Ying Property is about 240 km west-southwest of Zhengzhou, the capital city of Henan Province, and 145 km west of Luoyang, which is the nearest major city. The nearest small city to the project area is Luoning, about 56 km by paved roads from Silvercorp's Ying mill site. The HPG, TLP and LM projects have good road access. The area has a continental sub-tropical climate with four distinct seasons. The projects operate year round.

Silver-lead-zinc mineralization in the Ying district has been known and intermittently mined for the last several hundred years. Silvercorp acquired an interest in the Ying / SGX project in 2004,

[1] B O'Connor was a signatory to the 2012 report but has since left AMC. P R Stephenson supervised Mr O'Connor's work in 2012 and takes responsibility for the areas of the April 2013 report that were previously Mr O'Connor's responsibility.

the HPG project in 2006, and the TLP / LM projects in late 2007. Annual production has ramped up substantially in recent years, reaching 647,000t of ore in 2011.

Geology, Exploration and Mineral Resources

Geologically, the Ying Property 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. Rocks along the orogenic belt are severely folded and faulted, offering optimal structural conditions for the emplacement of mineral deposits. Several operating silver-lead-zinc mines, including those in the Ying district, occur along this belt. The dominant structures in the region are west-northwest trending folds and faults, the faults comprising numerous thrusts with sets of conjugate shear structures trending either northwest or northeast. These shear zones are associated with all the important mineralization in the district.

Mineralization comprises numerous mesothermal, silver-lead-zinc-rich, quartz-carbonate veins in steeply-dipping fault-fissure zones which cut Precambrian gneiss and greenstone. 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. The fault-fissure zones extend for hundreds to a few thousand meters along strike. To date, significant mineralization has been defined or developed in at least 131 discrete vein structures, and many other smaller veins have been found but not, as yet, well explored. The vein systems of the various mine areas in the district are generally similar in mineralogy, with slight differences between some of the separate mine areas and between the different vein systems within each area

Between 2004 and 2010, Silvercorp drilled 1,291 underground holes and 239 surface holes, for a total of approximately 417,000 m. In 2011, an additional 453 underground holes and 16 surface holes were drilled for a total of approximately 175,000 m. Most drill core (core) is NQ-sized. Core recoveries are influenced by lithology and average 98-99%. Core is logged initially at the drill sites and the mineralized or favourably altered intervals are moved to the surface core shack where they are logged, photographed and sampled in detail. Samples are prepared by cutting the core in half with a diamond saw. One half of the core is marked with sample number and sample boundary and then returned to the core box for archival storage. The other half is placed in a labelled cotton cloth bag with sample number marked on the bag. The bagged sample is then shipped to the laboratory for assaying.

Other than drilling, the projects have been explored primarily from underground workings. The workings follow the vein structures along strike, on levels spaced approximately 40 m apart. Chip samples across the structures are collected at 5 m intervals. In 2011, Silvercorp conducted a major exploration program with the objective of upgrading confidence in the Indicated and Inferred Resources, to test the down-dip extension of the major mineralized vein structures, and to explore new target areas. It included 41 km of tunnelling and the collection of over 10,000 channel / chip samples.

Core samples are sent in securely sealed bags to four commercial laboratories: Analytical Lab of Henan Non-Ferrous Metals Geological and Exploitation Institute in Zhengzhou; Analytical Lab of the 6th Nonferrous Geo-exploration Team in Luoyang; ALS-Chemex Lab in Guangzhou, and

SGS lab in Tianjin. All labs are officially accredited in China. Sample preparation and assaying procedures follow standard practices, although a splitting stage precedes final pulverization.

For its major 2011 exploration programs at the Ying Property, Silvercorp adopted a comprehensive QA / QC program comprising 1,768 samples, including 810 Reference Material Samples (RMS), 168 blank samples, 247 external check samples, and 543 internal check samples. RMS and blanks were inserted into each batch of samples at a rate of about 4% to monitor for possible contamination in sample preparation, accuracy and precision of assay results and lab bias. Silvercorp also randomly selected 3% of the pulp samples prepared at the Luoyang and Zhengzhou labs for external checking at ALS-Chemex, and about 12% of the pulp samples for internal checking at the original lab. Silvercorp geologists at each mine review QA / QC data on a regular basis. Any batch that reaches warning threshold or fails the QA / QC program is automatically notified for investigation or re-assayed, and only approved assay results are used for resource estimation.

AMC is satisfied that drilling, sampling, sample security, sub-sampling, analyzing and QA / QC procedures meet accepted industry standards, that the QA / QC results show no material bias or imprecision and that the assay results may be relied upon for mineral resource estimation.

Current mineral resource estimates have been prepared by Mr Housheng Xu, Chief Geologist of Henan Found, and Mr Ruijin Jiang, P.Geo., Vice President Exploration of Silvercorp, who is a Qualified Person, as defined by NI 43-101. P.R. Stephenson, P.Geo of AMC, who qualifies as an independent Qualified Person, has reviewed the estimation procedures and results, and takes responsibility for the estimates.

A polygonal method has been used for resource estimation, which is a common approach in China and is based on detailed long-sections constructed for each of the veins. The minimum cut-off thickness used is 0.30 m. Silvercorp has experience mining to such widths using the resue mining method, a highly selective extraction method. Silvercorp uses a “silver equivalent” value (AgEq), which takes into account metallurgical recoveries, to assess and compare the vein resources.

The lower cut-off grades are 150 g/t AgEq for SGX, and 100 g/t AgEq for HZG, HPG, LM and TLP. Top-cuts are based on statistical analysis of assay data for each metal on a vein-by-vein basis, with outliers being replaced by the highest value of the dataset after the top-cuts. Dilution at zero grade has been applied to those resource blocks less than 0.30 m in horizontal width. Resource classification is based primarily on the type of samples and distance beyond underground vein exposure or drillhole samples.

The independent QP is satisfied that the resource estimates comply with reasonable industry practice, subject to a qualification with respect to use of the polygonal method. Although this is a common estimation method in China, the technique tends to produce estimates that are higher in grade and lower in tonnage than methods in common use in Canada, such as kriging. However, the independent QP does not consider that any differences from a likely block model estimate would be material to the project.

Table 1 Measured and Indicated Resources, Ying Property, 31 December 2011

Resource Category	Resource (Mt)	Average Grades in Resource					Metals contained in Resource				
		Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	Au (oz)	Ag (Moz)	Pb (t)	Zn (t)	Cu (t)
SGX Ag Equiv. Grade≥150 g/t											
Measured	1.43	-	430	8.26	4.33	-	-	19.81	118,400	62,100	-
Indicated	2.12	-	422	7.45	3.67	-	-	28.78	158,100	77,800	-
Total	**3.56**	**-**	**425**	**7.78**	**3.93**	**-**	**-**	**48.59**	**276,500**	**139,900**	**-**
HZG (Cu), Ag Equiv. Grade≥100 g/t											
Measured	0.13	-	473	1.25	0.36	0.61	-	2.03	1,700	500	800
Indicated	0.28	-	347	1.13	0.21	0.38	-	3.13	3,200	600	1,100
Total	**0.41**	**-**	**388**	**1.17**	**0.26**	**0.46**	**-**	**5.16**	**4,800**	**1,100**	**1,900**
HPG Ag Equiv. Grade≥100 g/t											
Measured	0.23	0.87	110	5.98	1.37	-	6,400	0.81	13,600	3,100	-
Indicated	0.34	1.50	94	3.54	2.29	-	16,600	1.04	12,100	7,800	-
Total	**0.57**	**1.25**	**101**	**4.51**	**1.92**	**-**	**23,000**	**1.84**	**25,700**	**11,000**	**-**
TLP Ag Equiv. Grade≥100 g/t											
Measured	0.45	-	195	4.83	0.31	-	-	2.85	22,000	1,400	-
Indicated	2.17	-	189	3.65	0.29	-	-	13.20	79,200	6,200	-
Total	**2.62**	**-**	**190**	**3.86**	**0.29**	**-**	**-**	**16.05**	**101,200**	**7,600**	**-**
LM Ag Equiv. Grade≥100 g/t											
Measured	0.17	-	452	3.45	0.36	-	-	2.52	6,000	600	-
Indicated	1.86	-	363	3.17	0.47	-	-	21.71	58,900	8,700	-
Total	**2.03**	**-**	**371**	**3.19**	**0.46**	**-**	**-**	**24.23**	**64,900**	**9,300**	**-**
LM (Au), Ag Equiv. Grade≥100 g/t											
Indicated	0.02	48.04	27	0.08	0.04	2.87	23,400	0.01	<100	<100	400
Total	**0.02**	**48.04**	**27**	**0.08**	**0.04**	**2.87**	**23,400**	**0.01**	**<100**	**<100**	**400**
TOTALS FOR YING PROPERTY											
Measured	2.42	0.08	360	6.67	2.80	0.03	6,400	28.02	161,600	67,700	800
Indicated	6.79	0.18	311	4.59	1.49	0.02	40,000	67.88	311,600	101,100	1,500
Total	**9.21**	**0.16**	**324**	**5.14**	**1.83**	**0.03**	**46,300**	**95.89**	**473,200**	**168,800**	**2,300**

Table 2 Inferred Resources, Ying Property, 31 December 2011

Resource Category	Resource (Mt)	Average Grades in Resource					Metals contained in Resource				
		Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	Au (oz)	Ag (Moz)	Pb (t)	Zn (t)	Cu (t)
SGX , Ag Equiv. Grade≥150 g/t											
Inferred	1.51	-	328	6.76	3.78	-	-	15.88	101,800	57,000	-
HZG (Cu), Ag Equiv. Grade≥100 g/t											
Inferred	0.17	-	282	1.26	0.28	0.32	-	1.57	2,200	500	600
HPG, Ag Equiv. Grade≥100 g/t											
Inferred	0.14	1.1	105	3.79	1.15	-	5,100	0.49	5,500	1,700	-
TLP, Ag Equiv. Grade≥100 g/t											
Inferred	1.43	-	207	3.24	0.45	-	-	9.53	46,500	6,500	-
LM, Ag Equiv. Grade≥100 g/t											
Inferred	1.49	-	365	2.31	0.52	-	-	17.41	34,400	7,700	-
TOTAL FOR YING PROPERTY											
Inferred	**4.74**	**0.03**	**295**	**4.01**	**1.55**	**0.01**	**5,100**	**44.88**	**190,300**	**73,300**	**600**

Notes to Tables 1 and 2:
1. Metal prices used: gold US1,250/troy oz, silver US$19.00/troy oz, lead US$1.00/lb, zinc US$1.00/lb
2. Inclusive of resources converted to mineral reserves
3. Lower cut-off grade, 150 g/t AgEq for SGX, 100 g/t AgEq for HZG, HPG, LM and TLP
4. Exclusive of mine production to 31 December 2011
5. Rounding of some figures may lead to minor discrepancies in some totals

A review of reconciliation between mineral resource estimates and mill feed for Ying mines for the period 2009-2011 suggests that there are substantial overcalls (mill greater than predicted) for silver and lead grades for HPG and LM (although these are the smallest producers), and undercalls for silver and lead grades for SGX. With SGX accounting for 74% of total production, the undercall at SGX is notable. Some reasonable explanations have been advanced for this undercall; however AMC believes that although the differences do not constitute a material risk to the project, further investigations are required. Silvercorp`s current approach to reconciliation compares mineral resources (rather than mineral reserves) to mill feed and assumes that the difference between predicted and milled tonnages is due only to mine dilution. This is not industry good practice and AMC recommends that reconciliation in future be based on comparisons between mineral reserve estimates and mill feed.

Mining and Mineral Reserves

Table 3 Mineral Reserves, Ying Property, 31 December 2011

Mines	Categories	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Metal Contained in Reserves			
							Au (oz)	Ag (Moz)	Pb (t)	Zn (t)
SGX	Proven	1.56		331	6.33	3.34		16.61	98,800	52,100
	Probable	2.16		352	6.22	2.74		24.47	134,400	59,100
Total Proven & Probable		3.72		343	6.27	2.99		41.08	233,300	111,200
HZG	Proven	0.13		384	0.96	0.27		1.66	1,300	400
	Probable	0.25		297	0.95	0.19		2.37	2,400	500
Total Proven & Probable		0.38		327	0.96	0.22		4.02	3,700	800
HPG	Proven	0.24	0.63	90	5.05	1.11	4,900	0.69	12,100	2,700
	Probable	0.39	1.14	73	2.83	1.87	14,300	0.92	11,000	7,300
Total Proven & Probable		0.63	0.95	79	3.67	1.58	19,200	1.60	23,100	10,000
TLP	Proven	0.45		135	3.48	0.23		1.97	15,800	1,000
	Probable	2.10		124	2.87	0.25		8.37	60,300	5,300
Total Proven & Probable		2.55		126	2.98	0.25		10.35	76,100	6,400
LM	Proven	0.23		283	1.96	0.23		2.09	4,500	500
	Probable	2.27		268	2.39	0.35		19.59	54,300	8,000
Total Proven & Probable		2.50		269	2.35	0.34		21.65	58,800	8,500
Ying Mine	**Proven**	**2.62**	**0.06**	**273**	**5.06**	**2.16**	**4,900**	**23.02**	**132,500**	**56,700**
	Probable	**7.17**	**0.06**	**242**	**3.66**	**1.12**	**14,300**	**55.72**	**262,400**	**80,200**
Total Proven & Probable		**9.79**	**0.06**	**250**	**4.03**	**1.40**	**19,200**	**78.70**	**395,000**	**136,900**

Notes
1. Metal prices used: gold US1,250/troy oz, silver US$19.00/troy oz, lead US$1.00/lb, zinc US$1.00/lb
2. Exchange rate 6.35 RMB : US$1.00
3. Lower stope cut-off grade, 120 g/t AgEq for SGX, 110 g/t AgEq for HZG, HPG, LM and TLP
4. Exclusive of mine production to 31 December 2011
5. Rounding of some figures may lead to minor discrepancies in totals

The differences between the cut-off grades for resources and reserves as noted in the footnotes to Tables 1, 2 and 3 are, to some degree, related to the compartmentalizing of the two processes within Silvercorp. AMC recommends a greater degree of collaboration between the responsible teams. However, AMC tested the sensitivity of estimates to variations in cut-off grades and found very little impact.

Mineral reserve estimates are based on the assumption that the current stoping practices of cut and fill resuing and shrinkage stoping will continue to be predominant. The sub-vertical veins, generally competent ground, reasonably regular vein width, and hand-mining techniques using short rounds, allows a significant degree of selectivity and control in the stoping process. Minimum extraction widths of 0.3 m for resuing and 0.8 m for shrinkage are assumed. AMC has observed the mining methods at Ying and considers these widths to be reasonable.

Mining dilution and recovery factors vary from mine to mine and with mining method. Unplanned dilution factors calculated by AMC average 41% for resuing and 28% for shrinkage, while assumed mining recovery factors are 95% for resue stopes and 92% for shrinkage stopes.

The average Ying mines total mineral reserve silver and lead grades are somewhat lower than reported mined grades for 2011 and for the last three years. This is a reflection of the mining plan moving into lower grade areas. AMC believes that best mining practices and tight dilution control will be key to maintaining grades at projected reserve levels.

Silvercorp’s current mining activities continue to be focused at the SGX mine, but now also include the HZG (a satellite deposit to SGX), HPG, TLP and LM mines.

Underground access to each of the mines in the steeply-sloped, mountainous area is generally via adits at various elevations, inclined haulageways, and internal shafts (winzes). A shaft is also being sunk from surface at the LM Mine.

The mines are developed using small, conventional tracked equipment - electric/diesel locomotives, rail cars, electric rocker shovels and pneumatic hand-held drills (jacklegs). At the TLP mine and at four adits of the SGX mine, small tricycle trucks with a payload of up to 3 t each are used to haul ore to surface. Since October 2011, Silvercorp has also been developing two 4.5 km long ramps at the LM and SGX mines. The ramps will facilitate transport of men and materials, ventilation, and further development for access and exploration. In particular, the ramp at the SGX mine will be used to access mineralized areas below zero m RL.

The global extraction sequence is top-down between levels, and generally outwards from the central shaft or main access location. The stope extraction sequence is bottom-up, with shrinkage and resuing being the main mining methods. Stope production drilling is by jackleg. In-stope rock movement is by gravity to draw points or by hand-carting to steel ore passes or chutes. Production mucking uses mostly hand shovels or, occasionally, rocker shovels, with rail cars and electric or diesel locomotives transporting ore to the main shaft or inclined haulageway. Ore transport to surface is via skip/cage hoisting (shaft), rail-cars (tracked adit and/or inclined haulageway), or small tricycle trucks. Some hand picking of high grade ore and waste is done on surface, with transport to the centralized processing plants being via 30 t or 45 t trucks or barge and truck combination.

Table 4 is a summary of projected LOM production for each of the Ying mines and for the entire operation.

A significant aspect of the production profile is the ramp up to just under one million tonnes per annum by 2014, an approximately 50% increase over the production achieved in 2011. AMC notes that the development and infrastructure required to allow the projected production increases is either already in-place, is in development, or has been planned. AMC also notes that the ability to achieve the projected production increases will, to a large degree, be dependent on the consistent availability of resources, particularly skilled manpower.

A further key aspect of the LOM profile is that the major part of the production increase will come from the TLP and LM mines, which together will provide over 50% of production by 2017.

Consequent with the increased production from TLP/LM is a gradual decrease in projected mined Ag grade, relative to, particularly, the lower in-situ Ag grade at TLP.

Metallurgical Testwork and Processing

Prior to operation of the mines and the construction of Silvercorp's mills, metallurgical tests had been conducted by various labs to address the recoveries of the different types of mineralization. TLP mineralization was tested by the Changsha Design and Research Institute (CDRI) in 1994, SGX mineralization was tested by Hunan Non-ferrous Metals Research Institute (HNMRI) in May 2005, and HZG mineralization was tested by Tongling Nonferrous Metals Design Institute (TNMDI) in 2006.

The results predicted a metallurgically amenable ore with clean lead-zinc separation by differential flotation and, with the possible exception of silver halides in the upper zones of the TLP deposit, high silver recoveries.

Silvercorp runs two processing plants, Plants 1 and 2, at the Ying Mine with a total current design capacity of 2,600 tpd. The two plants are situated within 2 km of each other. Both were designed based on the lab tests completed by HNMRI in 2005. Plant 1 (Xiayu Plant, 600 tpd) has been in operation since March, 2007. Plant 2 (Zhuangtou Plant) has been in production since December 2009, with an expansion from 1,000 tpd to 2,000 tpd completed in October 2011. It is expected that, for 2012, the actual capacity will reach 3,000 – 3,350 tpd.

The overall processes of the two plants are similar and comprise crushing, grinding, flotation of lead and zinc concentrates, and concentrate dewatering. Plant 1 also has a lead / copper flotation separation circuit for use when treating high grade copper ore. Plant 1 feed (37% of combined Plant 1/2 feed) comprises mainly low grade ore from LM, HPG and HZG, while Plant 2 feed (63% of combined Plant 1/2 feed) comprises mostly high lead grade ore from SGX and TLP.

To maximize profits, high grade lead concentrate from Plant 2 is blended with middle grade lead concentrate from Plant 1, and high grade zinc concentrate from Plant 2 is blended with low grade zinc concentrate from Plant 1 before shipment to clients.

Table 4 Ying Mines LOM Production*

SGX	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	400,821	401,704	400,382	400,611	400,631	401,025	401,641	305,145	194,693	199,216	216,922	0	3,722,791
Ag(g/t）	367	356	339	340	339	341	339	338	336	328	340	0	343
Pb（%）	6.64	6.46	6.04	7.05	6.44	5.73	5.88	5.91	6.22	6.50	6.05	0.00	6.27
Zn（%）	3.24	3.62	3.23	2.75	3.18	3.43	2.83	2.48	2.03	1.96	3.01	0.00	2.99
HZG	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	75589	102809	127407	44895	31738								382,437
Ag (g/t）	414	352	305	297	172								327
Pb (%)	0.80	1.21	0.73	1.43	0.77								0.96
Zn (%)	0.31	0.21	0.22	0.12	0.13								0.22
HPG	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	50,032	70,485	80,078	80,799	80,135	80,556	80,106	80,113	27,760				630,064
Ag (g/t)	85	101	97	71	84	64	73	66	76				79
Pb (%)	8.20	4.81	3.39	3.48	2.74	2.61	2.60	2.77	5.50				3.67
Zn (%)	0.96	0.98	1.46	1.28	1.65	2.04	1.98	2.30	0.69				1.58
Au(g/t)	0.40	0.80	0.82	0.71	1.20	1.62	1.16	0.91					0.94
TLP	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	120,154	150,134	180,036	199,979	230,195	250,113	249,674	249,549	250,508	250,372	249,949	173,580	2,554,243
Ag (g/t）	132	135	135	137	136	130	131	128	129	132	129	47	126
Pb (%)	3.20	3.31	3.50	3.56	3.91	4.80	2.90	3.07	3.73	1.70	0.94	1.10	2.98
Zn (%)	0.22	0.25	0.25	0.42	0.39	0.53	0.28	0.16	0.32	0.07	0.00	0.09	0.25
LM	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	69,964	110,047	200,009	220,146	250,285	250,766	250,087	250,019	250,197	250,095	246,373	155,594	2,503,582
Ag (g/t）	295	294	294	293	294	292	291	293	290	277	173	128	269
Pb (%)	2.13	2.41	2.80	2.04	2.40	2.32	2.48	2.52	2.41	2.70	2.38	1.12	2.35
Zn (%)	0.28	0.39	0.27	0.29	0.32	0.41	0.40	0.39	0.42	0.31	0.34	0.16	0.34
Ying Mine	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	716,559	835,179	987,912	946,430	992,983	982,460	981,508	884,826	723,158	699,683	713,244	329,174	9,793,118
Ag (g/t）	306	286	269	261	255	252	252	241	239	240	214	85	250
Pb (%)	5.12	4.57	4.02	4.58	4.36	4.37	3.99	3.87	4.01	3.43	3.16	1.11	4.03
Zn (%)	1.98	1.95	1.56	1.43	1.59	1.81	1.49	1.22	0.83	0.69	1.07	0.13	1.40
Au (g/t)	0.03	0.07	0.07	0.06	0.10	0.13	0.10	0.08					0.06

*Rounding of some figures may lead to minor discrepancies in totals.

SGX/HPG ores also contain high grade, large-size galena lumps with characteristic specular silver-grey colour. These are hand-sorted at the mine sites, crushed, and then shipped by dedicated trucks to Plant 1. The lumps are milled in a dedicated facility, and then sold directly or mixed with flotation lead concentrate for sale.

Both Plants 1 and 2 are exceeding design throughput levels. Lead and silver recovery targets are being met, although zinc recovery is lower than design, attributed to low zinc feed grades. Similarly, concentrate grades from the lower grade ores fed to Plant 1 are below design targets; however blending with Plant 2 concentrates enables commercial targets to be met.

Historically the high feed grades from SGX have enhanced plant performance but with the proportion of SGX ore decreasing the challenge is to maintain superior metallurgical performance on lower grade feedstock.

Main Infrastructure, including Tailings Dam

There are two tailings management facilities (TMF); TMF1, adjacent to and serving Plant 1, and TMF 2, adjacent to and serving Plant 2. TMF 2 is new and construction was not fully complete at the end of 2011. Design of the dams was undertaken by Chinese design / engineering institutes and site-specific risk assessment such as geotechnical risk was carried out by Henan Luoyang Yuxi Hydrological & Geological Reconnaissance Company. Flood and safety calculations have been performed in accordance with Chinese standards which require flood control measures to meet a 1 in 100 year recurrence interval with a 1 in 500 year probable maximum flood criterion. The calculated factors of safety are consistent with Chinese practice requirements, although they are lower than those required by international practices.

The TMFs have working volumes of 2.4 Mm^3 and 5.4 Mm^3 respectively and a remaining life of 16 years and 14 years. The tailings capacities are more than adequate for the tonnage of tailings in the production schedule proposed in this report. About 75% of the process water is recycled to the plants.

Each mine in the Ying Property has a number of mine waste dumps. Those for SGX, HZG and HPG are sufficient for the envisaged life of mine production, while additional waste dumps will be constructed at LM and TLP to ensure adequate capacity. Total current capacity is around 3 Mm^3.

Power for the Ying Property is drawn from Chinese National Grids with high-voltage lines to the different mine camps and mill plants. At SGX, two 10 kV lines act mainly as a standby source of power in case of disruption. In addition, two 1,500 kW and one 1,200 kW diesel generators installed at one of the substations act as backup power supply in the event of a grid power outage.

Access to the SGX/HZG mine from Silvercorp's mill office complex is via a 7 km paved road to the Hedong wharf of the Guxian Reservoir, and then across the reservoir by boat to the mine site. Two large barges carry up to five 45 tonne ore trucks from the SGX/HZG and HPG mines to the plants. At the SGX mines, ore for hand-sorting is transported to a facility at the north side of the mine by diesel powered locomotive railcars in a 2.69 km long tunnel rail system.

Silvercorp is currently constructing a 1,270 m long tunnel in order to transport ore from HZG to SGX, with completion expected by December 2012. Ore from the TLP and LM mines is hauled to the Silvercorp central mill using 30 and 45 t truck fleets.

Domestic water for SGX mine is drawn from the Guxian Reservoir, while water for the HPG, TLP, LM, and HZG mines comes from nearby creeks and springs. Mine production water for drilling and dust suppression is sourced from underground.

Market Studies and Contracts

AMC understands that the lead and zinc concentrates will be marketed to existing smelter customers in Henan and Shaanxi provinces. Appropriate terms have been negotiated as outlined in Section 19.1 of this report, and calculate out to 85-90% payable for the lead concentrate and approximately 70% for zinc, at long-term prices. AMC considers these to be favourable terms relative to global smelter industry norms. Silver payables of approx 90% are similarly in accord with industry norms.

Monthly sales contracts are in place for the lead concentrates with leading smelters mostly located in Henan province. For the zinc concentrate, sales contracts are in place with two smelters. The contracts are renewed on a monthly basis.

With respect to copper, testwork has so far been unsuccessful in producing a saleable copper concentrate, but copper levels in the ore are low and this is not a material commercial issue, nor does it materially impact on lead concentrate quality.

For commodity prices, AMC has referenced several sources including an internationally respected monthly publication of consensus metal price forecasts. For the purposes of cut-off grade and NSR calculations, AMC has used long-term prices of $19/oz for silver, $1.00/lb for lead and $1.00/lb for zinc.

Environmental, Permitting, Social / Community Impact

Silvercorp has all the required permits for its operations on the Ying Property. The existing mining permits cover all the active mining areas and, in conjunction with safety and environmental certificates, give Silvercorp the right to carry out full mining and mineral processing operations. Five safety certificates and five environmental certificates have been issued by the relevant government departments, for each of which there is a related mine development/utilization and soil/water conservation program, and rehabilitation plan.

There are no cultural minority groups within the area surrounding the general project and no records of cultural heritage sites exist within or near the SGX and HPG project areas. The mining areas do not cover any natural conservation, ecological forests or strict land control zones, current vegetation being mainly secondary, including farm plantings. Larger wild mammals have not been found in the region.

Silvercorp has made a range of cash donations and contributions to local capital projects and community support programs, sponsoring university students as well as the undertaking of projects such as road construction, school construction and school repairs and upgrading. Silvercorp has also made economic contributions in the form of direct hiring and retention of local contractors, suppliers and service providers.

Silvercorp's main waste by-products are waste rocks produced during mining operations and mine tailings produced during processing. Waste rock is deposited in various waste rock stockpiles adjacent to the mine portals and is utilized for construction around the site. Once the stockpile is full (or at the time of site closure), the waste rock stockpiles will be covered with soil and replanted with vegetation. For stabilization, retaining wall spats will be built downstream of the waste rock site. An interception ditch will be constructed upstream to prevent the slope surface from washing out. A waste rock stockpile in the main exploration-development camp, Shagouxi (SGX), has already been covered with soil and vegetation planted.

Process tailings are discharged into purpose built TSFs, which have decant and under-drainage systems to provide for flood protection and for the collection of return water. Daily inspections are undertaken for the tailings pipelines, TSF embankment and the seepage / return water collection system. After the completion of the TSFs, the facilities will be covered with soil and vegetation will be replanted. The SGX Environmental Impact Assessment (EIA) Report states that the tailings do not contain significant sulphides and have no material potential for acid generation.

Silvercorp has established an environmental protection department consisting of five full time staff, which is responsible for environment / rehabilitation management work in the mining area. Monitoring plans include air and dust emissions and noise and waste water monitoring, and are undertaken by qualified persons and licensed institutes. Results from 2007 to 2011 indicate that surface water, sanitary / process plant waste water and mining water are in compliance with the required standards. In addition, project completion inspection results were all compliant for waste water discharge, air emission, noise and solid waste disposal. There were a few exceptional cases in which pH values of the discharged mining water were slightly over 9.0 and Pb concentrations slightly exceeded the permitted limit of 0.011 mg/l at the general discharge point after sedimentation tank for both SGX and TLP mines.

Maintaining water quality for the Guxian Reservoir while operating the SGX and HPG projects is a key requirement in the project environmental approvals. Silvercorp has created a SGX / HPG surface water discharge management plan which comprises collection and sedimentation treatment of mine water combined with a containment system (i.e. zero surface water discharge), and installation of a stormwater drainage bypass system. Overflow water from the mill process, and water generated from the tailings by the pressure filter, are returned to the milling process to ensure that waste water (including tailings water) is not discharged.

Water from mining operations is reused for mining operations and the remaining water is treated according to the required standards before being discharged into the Guxian Reservoir at approved discharge points. Monthly monitoring results by independent organizations have indicated that water discharged to the Guxian Reservoir is in compliance.

With the exception of one small creek, there are no surface water sources near the TLP and LM mines, and no mining water is discharged to this creek from the mines. There is a limited volume of mining water generated from the lower sections of the TLP and LM mines, most of which is used in the mining activities, and none generated from the upper sections.

There is a groundwater monitoring program for the processing plant area, but not for the mining areas. It is recognized that there is no requirement under the Chinese environmental approval to monitor this potential impact. Test results indicate that groundwater quality is in compliance with the required standard.

The nearest significant community to the Ying projects is the Xia Yu Township, located 2 km to the south west of the Ying processing plant. Silvercorp has provided several donations and contributions to communities within the Luoning County, comprising a range of cash donations to local capital projects and community support programs. Silvercorp also employs several local contractors and local suppliers where practical. AMC is not aware of any complaints in relation to Silvercorp's Ying Property operations.

Silvercorp`s production activities are in compliance with Chinese and international labour regulations. Formal contracts are signed for all the full time employees with wages that AMC understands are well above minimum wages. The company provides annual medical surveillance and checks are conducted for its employees before, during and after their employment with the Company. The Company does not use child or under-aged labour.

In accordance with Chinese national regulatory requirements Silvercorp will complete a site decommissioning plan at least one year before mine closure. Site rehabilitation and closure cost estimates will be made at that time.

Capital and Operating Costs

The principal capital requirement in the Ying district is for mine development. Projected processing plant capital requirements are minimal as plant capacity has already been expanded to meet the forecast mine production.

Mining LOM capital costs are summarized by mine in Table 5; the processing LOM sustaining capital is also included as the final line in this table.

Table 5 Total LOM Capital Cost – Ying Property

	Mine	Total (M)
RMB	SGX	27.2
	HZG	33.6
	HPG	12.5
	TLP	12.1
	LM	50.0
	Total Mining	135.5
US$	SGX	4.3
	HZG	5.3
	HPG	2.0
	TLP	1.9
	LM	7.9
	Total Mining	21.3
	Processing Sustaining	0.5

Projected 2012 operating costs are summarized by mine in Table 6. AMC considers these costs to be reasonable for the methods and technology used and the scale of the operations.

Table 6 Operating Cost Summary (2012 US$)

Cost Item (US$/t ore)	SGX	HZG	HPG	LM	TLP
Mining Cost	40.68	40.67	40.50	39.88	34.75
Hauling cost	3.95	4.04	4.23	3.08	3.12
Milling cost	10.68	11.20	10.67	10.59	10.56
G&A and Other Cost	3.72	3.56	4.00	5.24	5.49
Mineral resources tax	1.95	1.95	1.95	1.95	1.95

The principal components of the milling costs are utilities (power and water), consumables (grinding steel and reagents) and labour in approximate proportion of 40/40/20 respectively. “G&A and Other” cost includes an allowance for tailings dam and other environmental costs. The major capital expenditure on the two tailings storage facilities has already been expended and the ongoing costs associated with progressively raising the dam with tailings are regarded as an operating cost.

Economic Analysis

Although Ying is a producing property and therefore does not automatically require an economic analysis to be compliant with NI 43-101, AMC believes it appropriate to include a summary economic analysis because of the material changes to Mineral Reserve estimations and to the LOM production schedule, with some mines undergoing significant expansion.

The Ying District is largely a mature operation and capital requirements are relatively low. The key parameter in producing a cash flow forecast is therefore the metal price forecast. AMC has used the same metal prices for the forecast as used in the reserve estimate (see above).

Operating costs are assumed to be subject to a 5% annual escalation factor on the 2012 operating costs tabulated above, due largely to an expectation of rising labour costs in China. The only tax considered in the cash flow forecast is the Mineral Resources Tax, equivalent to US$1.95/tonne of ore. As this tax is equivalent to a royalty, the cash flow forecast is essentially pre-tax. An exchange rate US$: RMB of 6.3 has been used.

Based on the metal price assumptions and other considerations above, the base case NPV at 8% discount rate is US$897M. There are no expected negative cash flow years and most project capital is already sunk. Over the life of the mines, 60% of the net revenue comes from silver, 34% from lead and only 6% from zinc.

As the capital cost component is small, the main sensitivities arise from metal prices and potential operating costs increases. Some plausible price and cost scenarios have been analyzed and the resultant NPVs at an 8% discount rate range from US$760M to US$1,132M, demonstrating that the project is extremely robust.

Recommendations

(Costs are estimated for those recommendations not covered by operational activities).

- With respect to the SGX assay laboratory:
  - Crush the chip samples to a finer grain size, approximately minimum 75% passing 2 mm.
  - Conduct a daily sieve analysis to determine if the crushing and pulverizing is meeting specification.
  - Install exhaust fans over each crusher to minimize dust contamination.
  - Install compressed air to clean the crushers and pulverizers between samples.
  - Dry samples in a drying oven rather than using hot plates.
  - Use a blank sample between the crushing of all samples, particularly high grade samples.
  - Post the government certificates of inspection either on the device itself or in the room containing the device.
  - Take a second sample at regular intervals at the grinding / pulverizing stages of the preparation analysis as a check on the process.

Cost estimated to be US$130,000.

- Undertake variography studies on the deposits to refine the understanding of the grade distribution and utilize a kriging or inverse distance weighting approach to grade interpolation prior to future resource and reserve estimations.

- Review other possible contributing factors to the apparent overestimation of some resource grades, such as quality of chip sampling and top-cutting.
- Review current reconciliation practices, and reconcile mill feed with mineral reserves (inclusive of mine dilution estimated from first principles) rather than with mineral resources.
- Investigate in more detail the reasons for the undercall of silver and lead grades for SGX.
- Effect full integration of the processes of mineral resource estimation, mineral reserve estimation, and mine planning (both short and long-term).
- Investigate definition for, and use of, sustaining capital in cut-off grade calculations.
- Clarify seismic ratings and design peak acceleration parameters. (Cost estimate US$35,000).
- Place a particular focus on ensuring that sufficient skilled mining labour is consistently available throughout the LOM.
- Maintain the highly focused development approach that will be necessary throughout the Ying operation for 2012 and 2013 development targets to be achieved.
- Continue to pursue the implementation of best mining practices with regard to dilution and grade control.
- Continue with a focus on safety improvement that would include implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.
- Investigate the use of portable compressors in mining areas with a view to minimizing power costs.
- Investigate the benefits of a wider application of slushers for muck movement in stopes.
- Consider the application of more bulk-mining methods such as long-hole benching.

  Estimated study cost for the above three items is $100,000.
- Carry out planned exploration activities as follows:
  - For SGX and HZG:
    - A 13,075 m tunneling program to upgrade inferred blocks on major mineralized structures.
    - 56,170 m of underground drilling key vein structures at SGX.
    - 16,805 m of underground drilling and 4160 m surface drilling on key vein structures in the HZG area.
  - For HPG:
    - A 6,935 m exploration tunnelling program above the 300 m elevation.
    - 15,000 m of underground drilling to infill and extend key vein structures.

- For TLP and LM:
    - A 9,890 m exploration tunnelling program at TLP.
    - 2,100 m on key vein structures between 650L and 750L in the LME area, 2290 m on key vein structures between 846L and 916L in the LMW area.
    - 25,000 m of underground drilling on key vein structures at TLP and similar programs of 5,400 m and 22,600 m at LME and LMW respectively.

AMC understands that the above items are accounted for in the Silvercorp 2012 exploration budget, with total costs estimated at $US9.65M, split between drilling at $US5.6M and tunnelling at $US4.05M

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TABLES

FIGURES

DISTRIBUTION LIST

1 hard copy:	Mr M Gao, Silvercorp Metals Inc, Vancouver
1 digital copy:	Mr M Gao, Silvercorp Metals Inc, Vancouver
1 digital copy:	Mr P Torn, Silvercorp Metals Inc, Vancouver
1 hard copy, stamped and sealed:	AMC Vancouver office

2 INTRODUCTION

AMC Mining Consultants (Canada) Ltd (AMC) was commissioned by Silvercorp Metals Inc. (Silvercorp) to prepare a Technical Report on the Ying gold-silver-lead-zinc property in Henan Province, China, encompassing the SGX, HPG and TLP / LM mines. The previous publicly released Technical Reports were prepared by other parties, were dated 20 May 2011, and covered the SGX, HPG and TLP / LM mines in three separate reports.

The Technical Report was filed on 15 June 2012, with an effective date of 1 May 2012. This document is a revised version of that report, with a revision date of 30 April 2013. None of the changes made in this revision to the 15 June 2012 filing materially affect AMC's opinions, conclusions or recommendations and the effective date remains 1 May 2012. The revision has been made, in the interests of transparency, to show the inclusion of hand-sorted ore in the production reporting for years 2009 to 2011 (not done in the 15 June 2012 filing); also to correct minor, non-material tonnes and grade errors in the reporting of some resource, reserve and Life of Mine (LOM) production estimates. A summary paragraph describing the factors involved in the conversion of mineral resources to mineral reserves has also been added, along with a mineral resources to mineral reserves conversion breakdown table for the SGX mine.

Table 2.1 Persons Who Prepared or Contributed to this Technical Report

Qualified Persons responsible for the preparation of this Technical Report						
Qualified Person	**Position**	**Employer**	**Independent of Silvercorp?**	**Date of Last Site Visit**	**Professional Designation**	**Sections of Report**
Mr P R Stephenson	General Manager	AMC Mining Consultants (Canada) Ltd	Yes	No visit	PGeo, BSc (Hons), FAusIMM (CP), MAIG, MCIM	1 to 12, 14, 20, 23 to 26
Mr H A Smith	Principal Mining Engineer	AMC Mining Consultants (Canada) Ltd	Yes	16-19 February 2012	PEng (BC), PEng (Ontario), PEng (Alberta) MSc, BSc	15, parts of 16, 21, and 22
Mr A Riles	Principal Metallurgical Consultant	Riles Integrated Resource Management Ltd	Yes	16-19 February 2012	B.Met (Hons) Grad Dipl Professional Management, MAIG	13, 17, 19, parts of 18, 21 and 22,
Mr M Molavi	Principal Mining Engineer	AMC Mining Consultants (Canada) Ltd	Yes	16-19 February 2012	PEng, M Eng, B Eng	Parts of 16, 18, 21 and 22
Other Experts who assisted the Qualified Persons						
Expert	**Position**	**Employer**	**Independent of Silvercorp**	**Visited Site**	**Sections of Report**	
Mr B O'Connor	Principal Geologist	Independent Consultant	Yes	16-21 February and 14-20 April 2012	2 to 12, part 14, 20, 23, 24	
Mr J Zhang, P.Eng	Metallurgical Consultant	Self Employed	Yes	May, 2011	Parts of 13, 17 and 18	
Mr A Li, P.Eng	Senior Mining Engineer	Silvercorp Metals Inc.	No	Since April, 2010	Parts of 15, 16 and 18	

Dr. M Liang	Environmental Consultant	ESD China Ltd.	Yes	8-9 February, 2012	Part of 20
Mr M Gao, P.Geo	President and Chief Operating Officer	Silvercorp Metals Inc	No	Since 2004	General
Mr R Jiang, P.Geo	Vice-President, Exploration	Silvercorp Metals Inc	No	Since January 2012	5 to 11, 14

H A Smith, B O'Connor, A Riles and M Molavi visited the Ying property in February 2012 and B O'Connor made an additional visit in April 2012. All aspects of the project were examined by the Qualified Persons, including drill core, exploration sites, underground workings, processing plant and surface infrastructure.

In preparing this report, AMC relied on various geological maps, reports and other technical information provided by Silvercorp. AMC reviewed and analyzed the data provided and drew its own conclusions augmented by its direct field observations. The key information used in this report is listed in Section 27, References.

Much of the geological information in this report was originally written in Chinese. Translations of key technical documents and data into English were provided by Silvercorp. The Qualified Persons have no reason to believe that the translations are not credible and believe they are generally reliable but cannot attest to their absolute accuracy.

All currency amounts and commodity prices are stated in US dollars. Quantities are stated in metric (SI) units. Commodity weights of measure are in grams (g) or percent (%) unless otherwise stated.

This report includes the tabulation of numerical data which involves a degree of rounding for the purpose of resource estimation. AMC does not consider any rounding of the numerical data to be material to the project.

This report has been produced in accordance with the Standards of Disclosure for Mineral Projects as contained in NI 43-101 and accompanying policies and documents. NI 43-101 utilizes the definitions and categories of mineral resources and mineral reserves as set out in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Mineral Reserves Definitions and Guidelines (CIM Standards).

A draft of the original report was provided to Silvercorp for checking for factual accuracy. The original report is effective at 1 May 2012. This revised report has a revision date of 30 April 2013, and the effective date remains at 1 May 2012 since the revision is not based on new or updated data.

Adjustments made as of 30 April 2013 were as follows:

- Average grades for silver and lead for total Ying Measured Resources in Tables 1 and 14.3 were reduced by around 3% relative (e.g. 369 g/t Ag was reduced to 360 g/t Ag). The average zinc grade for total Ying Measured Resources in Tables 1 and 14.3 was reduced from 3.22% to 2.80% (AMC notes that zinc only accounts for around 6% of net revenue). These corrections did not affect total Measured plus Indicated Resource grades.
- Very minor reductions (less than 1% relative) were made to SGX mineral reserve grades in Tables 3 and 15.4 and, as a consequence, to total Ying mineral reserve grades. Similar minor changes, consequential on the mineral reserve grade corrections, were made to life-of-mine production grades in Tables 4 and 16.12, and to resource to reserve comparisons in Table 15.6.
- Table 16.11 was modified to include mine production referred to as Direct Shipping Ore, and to correct some tonnages which had previously been reported as wet tonnes.
- Table 14.5 was modified to agree with Table 16.11 with respect to past mine production.
- A summary paragraph was added in Section 15.7 describing the factors involved in the conversion of mineral resources to mineral reserves, along with a mineral resources to mineral reserves conversion breakdown table (Table 15.7) for the SGX mine.

None of these changes materially affected AMC’s opinions, conclusions or recommendations.

3 RELIANCE ON OTHER EXPERTS

The Qualified Persons have relied, in respect of legal aspects, upon the work of an Expert listed below. To the extent permitted under NI 43-101, the Qualified Persons disclaim responsibility for the relevant section of the Report.

The following disclosure is made in respect of this Expert:

Audrey Chen, Partner, Jun He Law Offices, Beijing.

Report, opinion or statement relied upon: information on mineral tenure and status, title issues, royalty obligations, etc.

Extent of reliance: full reliance following a review by the Qualified Person(s).

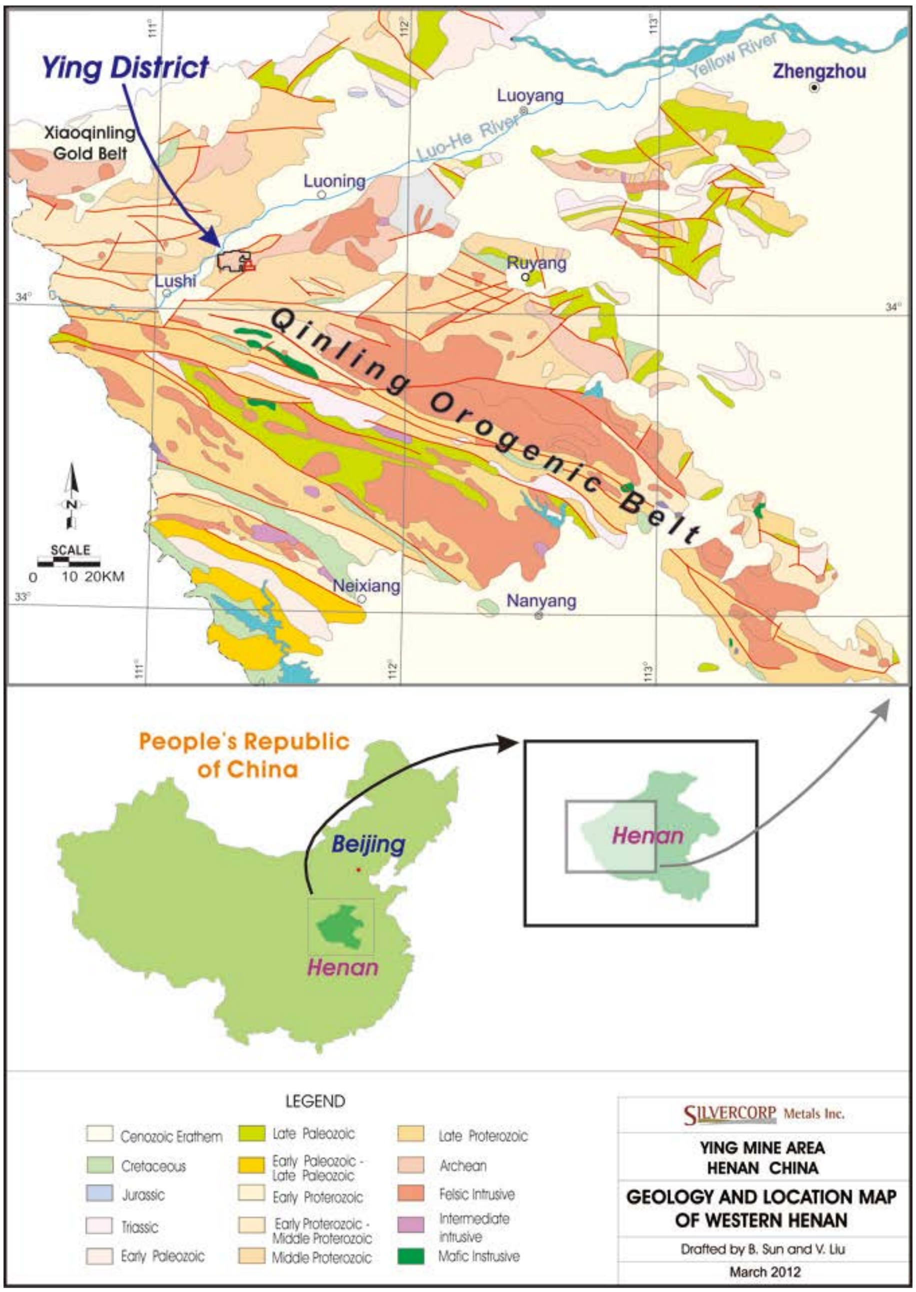
Portion of Technical Report to which disclaimer applies: Section 4.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Location

The Ying Property is situated in western Henan Province near the town of Luoning in central China. 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, as described in Section 4.2.

Figure 4.1 Geology of Western Henan Province and Location of Ying Property



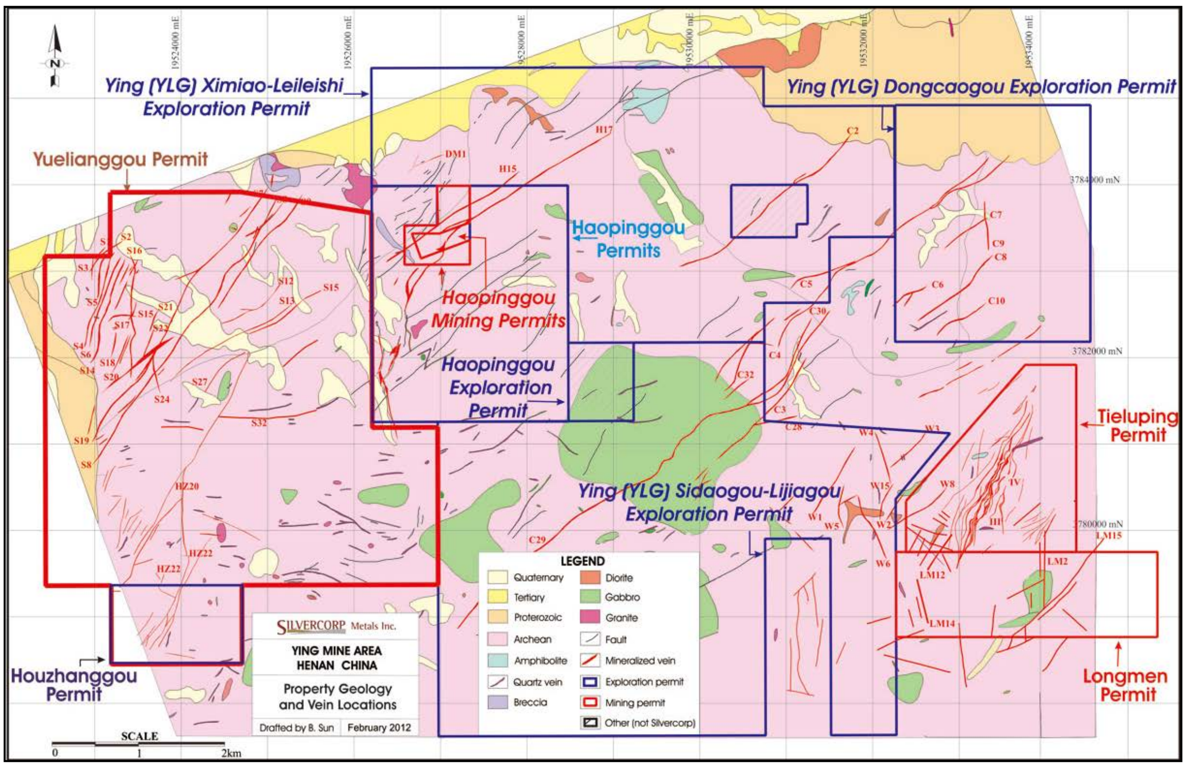
4.2 Exploration and Mining Permits

Silvercorp has three principal operations comprised of five mining projects:

- the SGX area (also termed the Ying silver, lead and zinc project), consisting of the Shagouxi (SGX) and Houzhanggou (HZG) mines in the western part of the block
- the HPG area consisting of the Haopinggou (HPG) mine, also in the western part of the block
- the TLP/LM area consisting of the Tieluping (TLP) and Longmeng (LM) mines in the eastern part of the block (Figure 4.2)

These project areas are shown in Figure 4.2.

Figure 4.2 Ying Exploration, Mining Permits and Mineralization Vein Systems



Silvercorp, through its wholly owned subsidiary Victor Mining Ltd., is a party to a cooperative joint venture agreement dated 15 April 2004 under which it earned a 77.5% interest in Henan Found Mining Co. Ltd. (Henan Found), the Chinese company holding, among other assets the Ying silver, lead and zinc project (the Ying Project), and the silver and lead project in Tieluping (the TLP Project). Silvercorp, through its wholly owned subsidiary Victor Resources Ltd., is a party to a cooperative agreement dated 31 March 2006 under which it obtained a 60% interest in Henan Huawei Mining Co. Ltd. (Henan Huawei), the Chinese company holding the project in Houpinggou (the HPG Project) and the project in Longmeng (the LM Project) in the Henan Province. Silvercorp's interest in Henan Huawei has subsequently been increased to 80%.

The Ying Project is covered by exploration and mining permits totalling approximately 58 sq. km, as listed in the following table.

Table 4.1 Exploration and Mining Permits, Ying Project

Permit type	Permit No.	Expiration Date	Sq. km
Mining	C4100002009093210038549 Yuelianggou (SGX)	September 2014 [1]	19.83
Exploration	T01120090602030965 Ximiao-Leileisi Au project	6 June 2012[2]	12.34
Exploration	T41120080102001028 Luoning County Sidaogou – Lushi County Lijiagou Ag project	29 January 2013 [3]	19.70
Exploration	T41120080802013284 Dong Cao Gou Au project	1 October 2010 [4]	6.39
		Mining Permit total	19.83
		Exploration Permit total	38.43
		Total	**58.26**

Notes:
[1] Department of Land and Resources of Henan Province approved an application by Henan Found on 30 September 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. It allows for mining of 198,000 tonnes/annum (tpa) from 1,060 m to 0 m.
[2] Exploration License was issued to the Licensee by the Department of Land and Resources of Henan Province on 29 January 2011. The Licensee intends to apply for an extension in the Exploration Licence as expiry approaches.
[3] Exploration License was issued to the Licensee by the Department of Land and Resources of Henan Province on May 18, 2010.
[4] The Exploration License is currently expired, but the Licensee received a valid approval letter for designating this as a mining area. The reserved term now extends until the end of October 2012. Key information in the approval letter includes mining from 1,020 m to 680 m and a planning production capacity of 30,000 tpa.

The HPG Project is covered by mining and exploration permits totalling approximately 6.39 sq. km, as listed in the following table.

Table 4.2 Exploration and Mining Permits, HPG Project

Permit type	Permit No.	Expiration Date	Sq. km
Mining	4100000820036 Haopinggou Lead Mine	August 2015 [5]	0.1452
Mining	C4100002010124110093569 Haopinggou Ximiao Silver Mine	June 2017 [6]	0.3878
		Mining Permit total:	0.53
Exploration	T41520080502006711 Haopinggou Silver Mine	2 May 2009 [7]	5.86
		Total	**6.39**

Notes:
[5] Mining License was issued to the Licensee by the Department of Land and Resources of Henan Province on 22 January 2008. It allows for mining from the 830 m to 440 m Level at a production scale of 5,000 tpa.
[6] Mining License was issued to the Licensee by the Department of Land and Resources of Henan Province on 23 December 2010. It allows for mining from the 640 m to 365 m Level at a production scale of 30,000 tpa.
[7] The HPG exploration permit encompassing 5.86 sq. km is held by Luoning Huatai Mining Development Co., Ltd. the joint venture partner in Henan Huawei but will be transferred to Huawei when the application for a mining permit is approved and the mining permit issued. The Exploration License is currently expired, but the Licensee received a valid approval letter for designating this as a mining area. The reserved term now extends until the end of July 2012. Key information in the approval letter includes mining from 955 m to 590 m and a planning production capacity of 30,000 tpa.

The TLP and LM projects are covered by mining permits totalling 6.37 sq. km as listed in the following table.

Table 4.3 Exploration and Mining Permits, TLP and LM Projects

Permit type	Permit No.	Expiration Date	Sq. km
Mining	C4100002009103220041332 TLP Project	October 2019 [8]	3.28
Mining	C4100002009014120010157 LM Project	January 2016	3.07
		Mining Permit Total	**6.37**

Notes:
[8] Mining License was issued to the Licensee by the Department of Land and Resources of Henan Province on 26 August 2010. It allows for mining from the 1,140 m to 700 m Level at a production scale of 180,000 tpa.
[9] Mining License was issued to the Licensee by the Department of Land and Resources of Henan Province on 30 March 2102. It allows for a 30,000 tpa production scale with a mining depth from 1,250 m to 730 m.

The existing exploration and mining permits cover all the active exploration and mining areas discussed in this Technical Report. The exploration permits give the right to carry out all contemplated exploration activities with no additional permitting required. Exploration Licenses are subject to charges for exploration rights usage fees, a fixed annual charge, and applicable taxes. Mining Licenses are subject to charges for Mining-right usage fees, a fixed annual charge, mineral resource compensation fee and applicable mineral resource taxes. Renewing of mining licenses and extending mining depth and boundaries are an ordinary business process as long as mineral resources exist and are defined, the required documentation is submitted and government resources royalty is paid. 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.

Surface rights for mining purposes are not included in the permits but Silvercorp has acquired surface rights for mining and milling activities 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, offices and accommodations).

4.3 Exploration and Mining Rights and Taxes

China has an established Mining Code which 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. According to China's mining law, a 2% resources tax is payable by companies as a royalty to the government. Income tax rate is 25%. In addition the Company pays a VAT surtax which amounts to approximately 1.6% of sales.

Other taxes such as Business, City Construction, and school taxes are exempted for foreign invested companies.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The district lies within rugged, deeply dissected mountainous terrain of the Xionger Mountain Range. Elevations range from 300 m to 1,200 m above sea level. Hill slopes are steep, commonly exceeding 25°, and have good bedrock exposure.

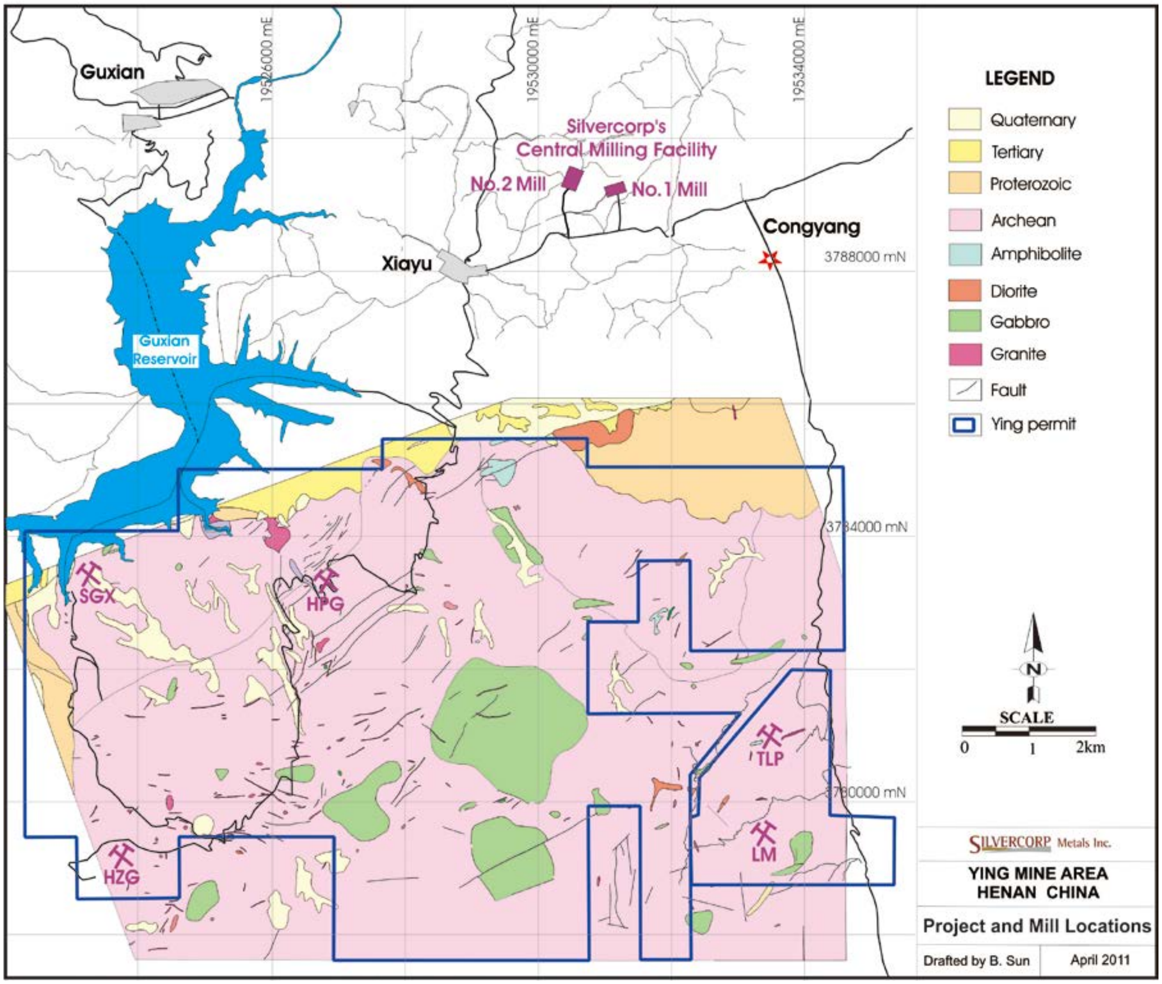
The area is sparsely vegetated, consisting mostly of bushes, shrubs, ferns and small trees. At higher elevations the vegetation is denser and the trees are larger. The local economy is based on agriculture (wheat, corn, tobacco, medicinal herbs) and mining. Agriculture is confined to the bottoms of the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

The Ying Property is about 240 km west-southwest of Zhengzhou (population 7.0 million), the capital city of Henan Province, and 145 km west of Luoyang (population 1.4 million), which is the nearest major city (Figure 4.1). Zhengzhou, the largest industrial city in the region, offers full service facilities and daily air flights to Beijing, the capital of China, as well 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 (Figure 5.1). The SGX exploration-development camp is accessed via a 10 minute ferry ride across the Reservoir. The HPG, TLP and LM projects have good road access.

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 projects operate year round.

Silvercorp has sufficient surface rights to operate the projects. There are major power grids adjacent to the properties, including a power line extending to the SGX Area. Adjacent to the Ying Property is a hydropower generating station at the dam that forms the Guxian Reservoir. This reservoir is on the Luo River, a tributary of the Yellow River. Sufficient manpower is available to serve most exploration or mining operations. The steep valleys form natural reservoirs for mine tailings and waste dumps. See Section 18 for further discussion of project infrastructure.

Figure 5.1 HPG Project and Mill Locations



6 HISTORY

6.1 Introduction

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; and Klohn, Ni and Broili, 2011) available on www.sedar.com.

Silvercorp acquired an interest in the Ying / SGX Mine Project in 2004. Subsequently, Silvercorp acquired the HZG, HPG and LM mines, all of which were previously held and operated by private Chinese companies.

6.2 Production

The underground mine at HPG was initially constructed in April 1995, with a mining license issued in June 1996 to Huatai #1 company. The mine was shut down during 1997 and 1998, and in 2001, new mining licenses were re-issued by the Henan Bureau of Land and Resources to Huatai #2 company (changing names on a mine license in China is difficult so the same name is used even though they are different companies). In 2004, Huatai #3 company acquired the mine, which reportedly produced 70,000 tonnes of ore per year from four principal underground levels. Ore was shipped to Guxian Ore Processing Plant, owned by Huatai. In 2006, Silvercorp reached an agreement with Huatai which included both the mine and the plant.

In 1998, a mining permit was issued for the TLP area to Tieluping Silver and Lead Mine of Luoning County. The mine produced 450 tpd of ore using shrinkage stoping methods. Ore was shipped to five small mills; lead concentrates were produced by conventional flotation methods. The government closed the mine in December 2006 due to health, safety and environment concerns. The operation is thought to have produced about 1.55 million tonnes of ore, although actual production and grades are unknown. Silvercorp acquired the TLP project from the owners in late 2007.

In 2002, a mining permit was issued for the LM area to Luoning Xinda Mineral Products Trade Co. Ltd. which allowed Xinda to mine 30,000 tonnes of silver-lead ore using shrinkage stoping methods. Ore was mined mainly from the 990 m to 838 m levels and shipped to a local custom mill for processing by conventional flotation. Reported production for the operation is 120,206 tonnes of ore averaging 257.06 g/t Ag and 7.04 % Pb. Silvercorp acquired the LM project from the owners in late 2007.

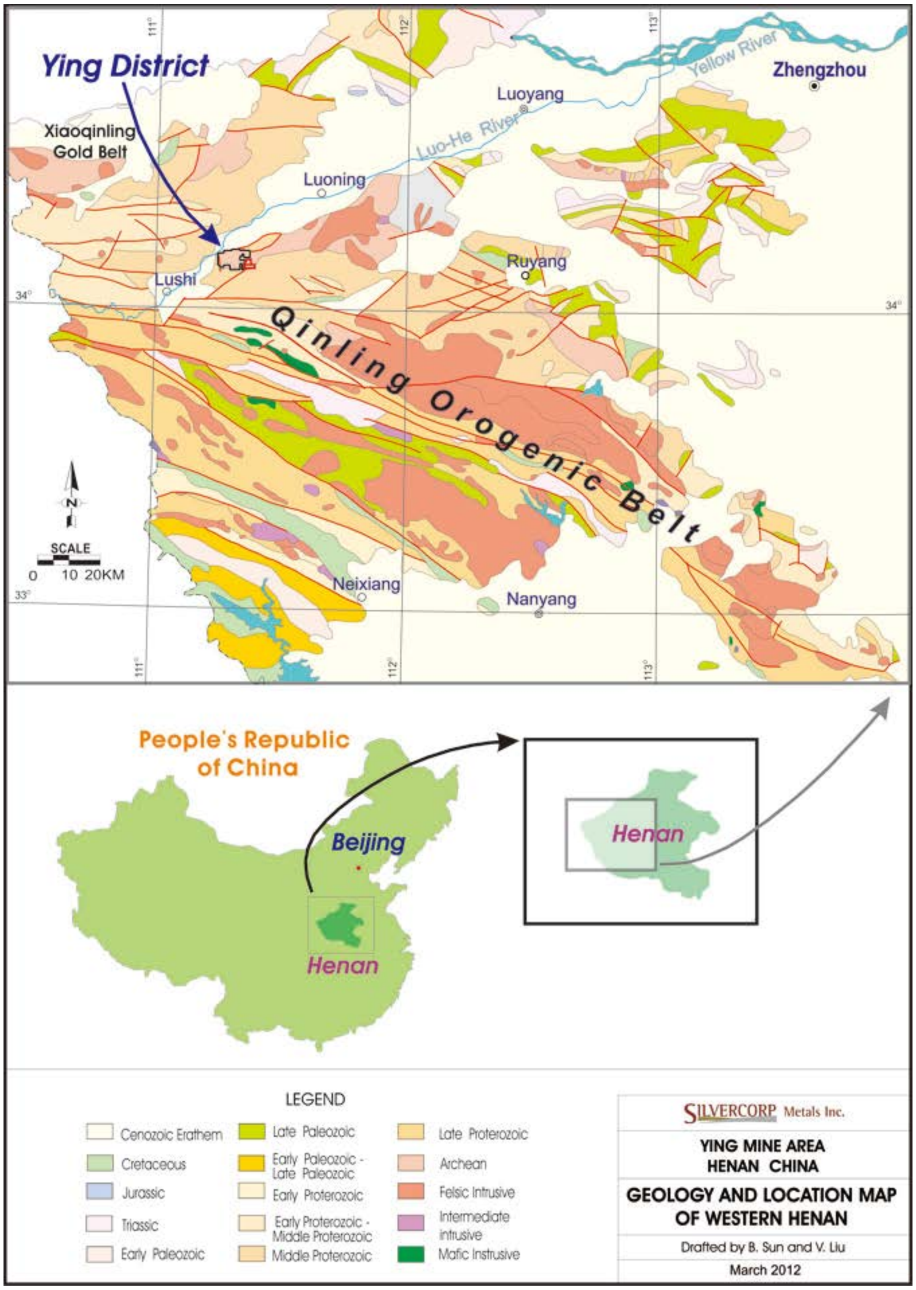
A summary of mineral resource estimation undertaken since Silvercorp acquired the Ying Property is provided in Section 9.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Ying Property is situated 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 7.1).

Figure 7.1 Geology of Western Henan Province and Location of Ying Property



The northern continental plate, the North China Plate, covers all of Henan Province, while 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 Property, 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 Property:

1 Heigou-Luan-Weimosi, deep-seated fault zone

2 Waxuezi-Qiaoduan fault zone

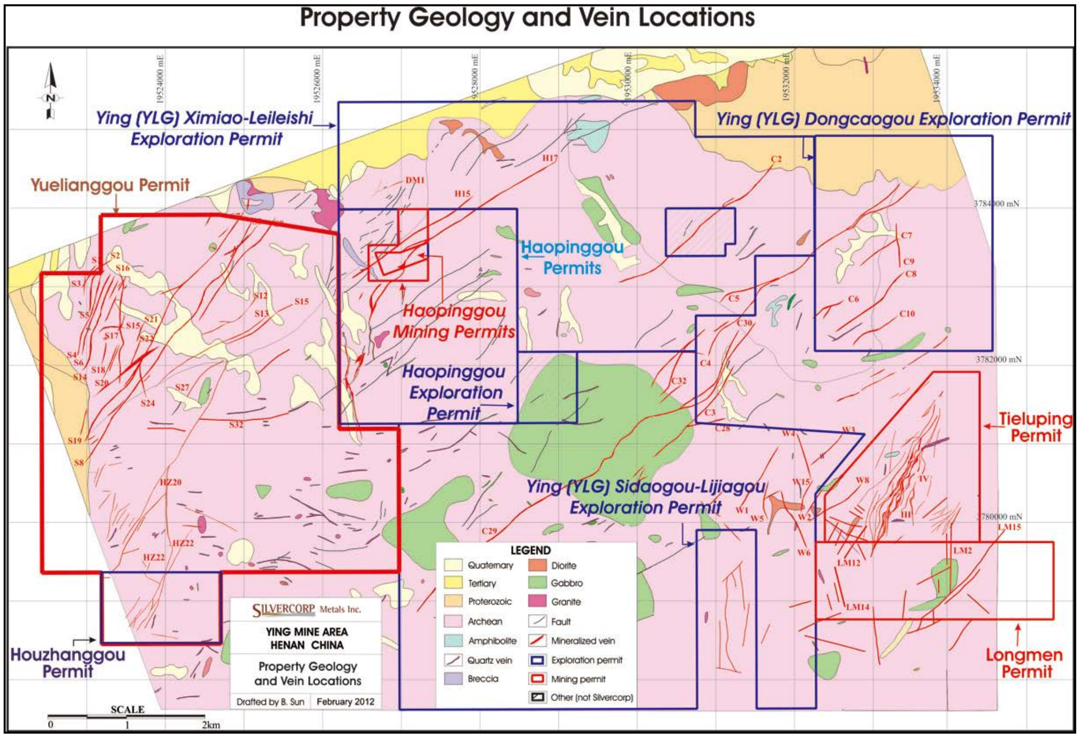
3 Zhuyangguan-Xiaguan fault zone

7.2 Property 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 7.2). The lowest part of the basement sequence is a 1 km thick mafic gneiss with local gabbroic dikes and sills that trend north-northeast and dip 30^o to 60^o 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.

Figure 7.2 Ying Exploration, Mining Permits and Mineralization Vein Systems



7.3 Mineralization

The Ying Property contains multiple 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 131 discrete 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 as sets 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 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).

7.3.1 SGX Area

Currently defined Ag-Pb-Zn mineralization in the SGX area is carried by at least 27 veins which occur in 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) account for slightly more than 75% of this mineralization (Figure 7.3).

The SGX veins have been extensively mapped and sampled at various levels in the underground workings and by drilling. Results show that approximately 27% of the material filling the veins is strongly mineralized, averaging about 25% galena and 12% sphalerite 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 sulphide).

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, in its dark-coloured, 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.

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-coloured 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.

Wall rock alteration is commonly marked as a myriad of quartz veinlets 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.

Figure 7.3 Tunnels and Veins at SGX Area

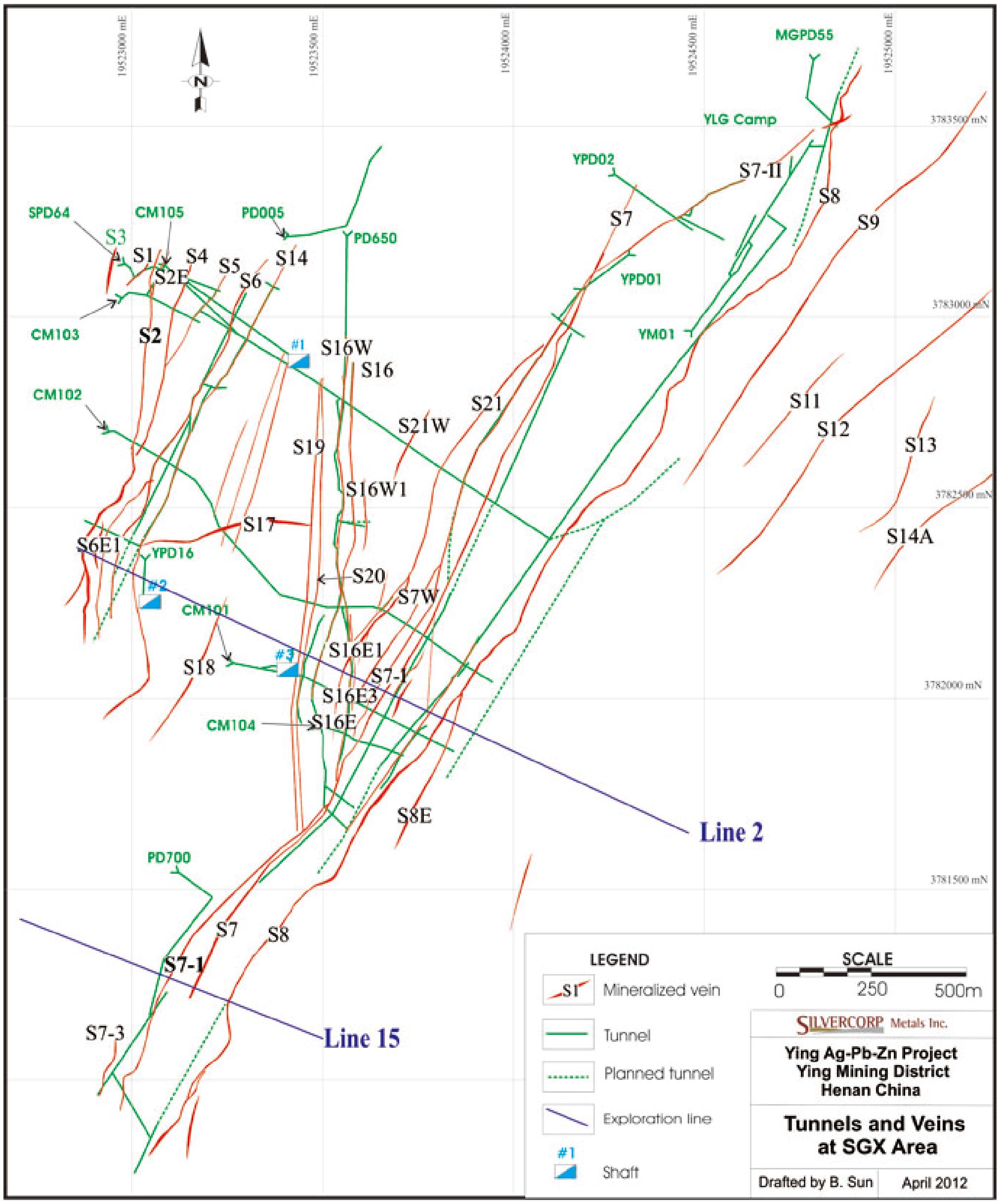


Figure 7.4 Cross Section on Line 12, SGX

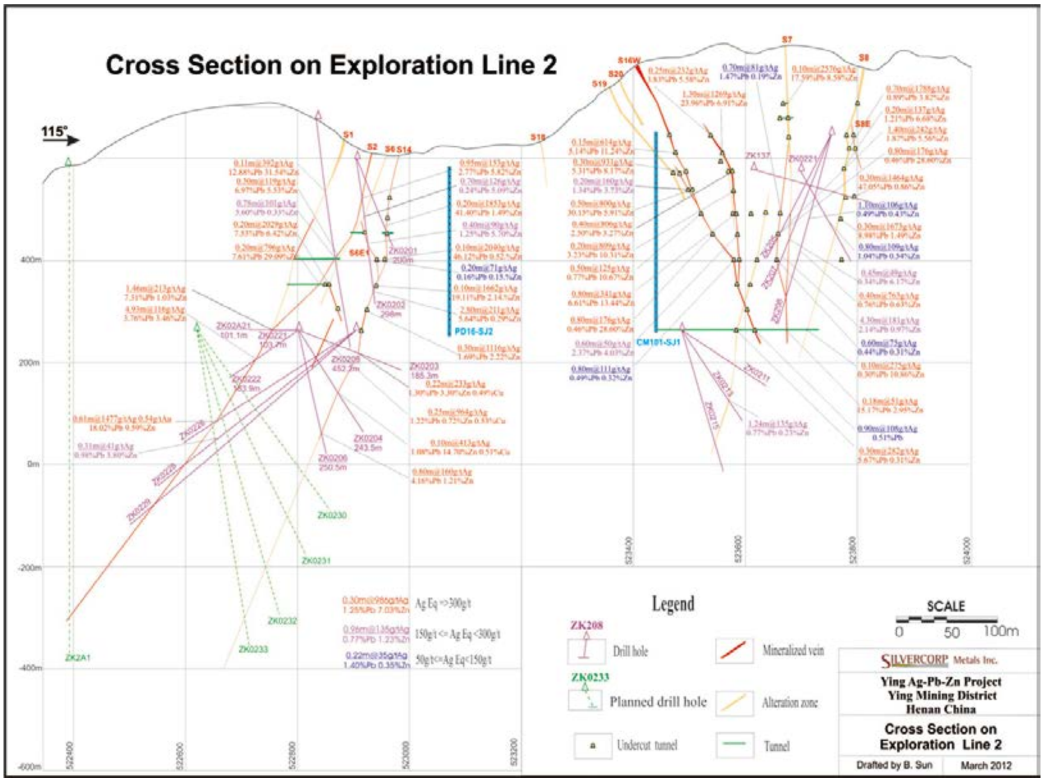


Table 7.1 presents a summary of the characteristics of the major mineralized veins in SGX area.

Table 7.1 Dimensions and Occurrences of Mineralized Veins at SGX Mine

Vein #	Length of Vein (m)	Defined Inclined Depth (m)	Elevation of Defined Depth (m)	Strike	Dip	Dip Angle	Average True Thickness (m)
S2	1100	720	563-(-140)	15-40°	285-310°	75-88°	0.56
S2W	1120	189	517-420	40-90°	310°	80°	0.39
S4	700	240	516-6	30-50°	300-320°	55-85°	0.35
S6	1160	469	600-83	10-35°	280-305°	65-75°	0.38
S7	3000	309	998-224	22-28°	112-118°	85°	0.67
S7-1	2337	473	745-144	20-40°	290-310 *	67-85°	0.74
S8	3330	523	707-192	25-35°	295-305°	75-82°	0.56
S14	1300	657	625-(-12)	15-35°	285-305°	73°	0.38
S16E	990	302	661-230	350-25°	80-115°	70-83°	0.48
S16W	1890	686	738-34	355-20°	85-110°	62-68°	0.62
S21	1170	523	770-255	25-40°	295-310°	70-80°	0.46
S21W	720	213	646-430	40-50°	130-140°	80°	0.39
S21W1	115	112	522-454	330-340°	60-70°	70-80°	0.38

7.3.2 HZG 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% 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 but lower zinc 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 sulphides 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 Property, although it is a common alteration product in many greenstone-related mesothermal gold districts throughout the world.

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 7.5). To date, mineralization of significance has been defined in only four veins, HZ16, HZ18, HZ20 and HZ22, of the many dozens of veins identified in the HZG area. The HZ20 vein is by far the largest of these four known mineralized veins.

Figure 7.5 Tunnels and Veins at HZG Area

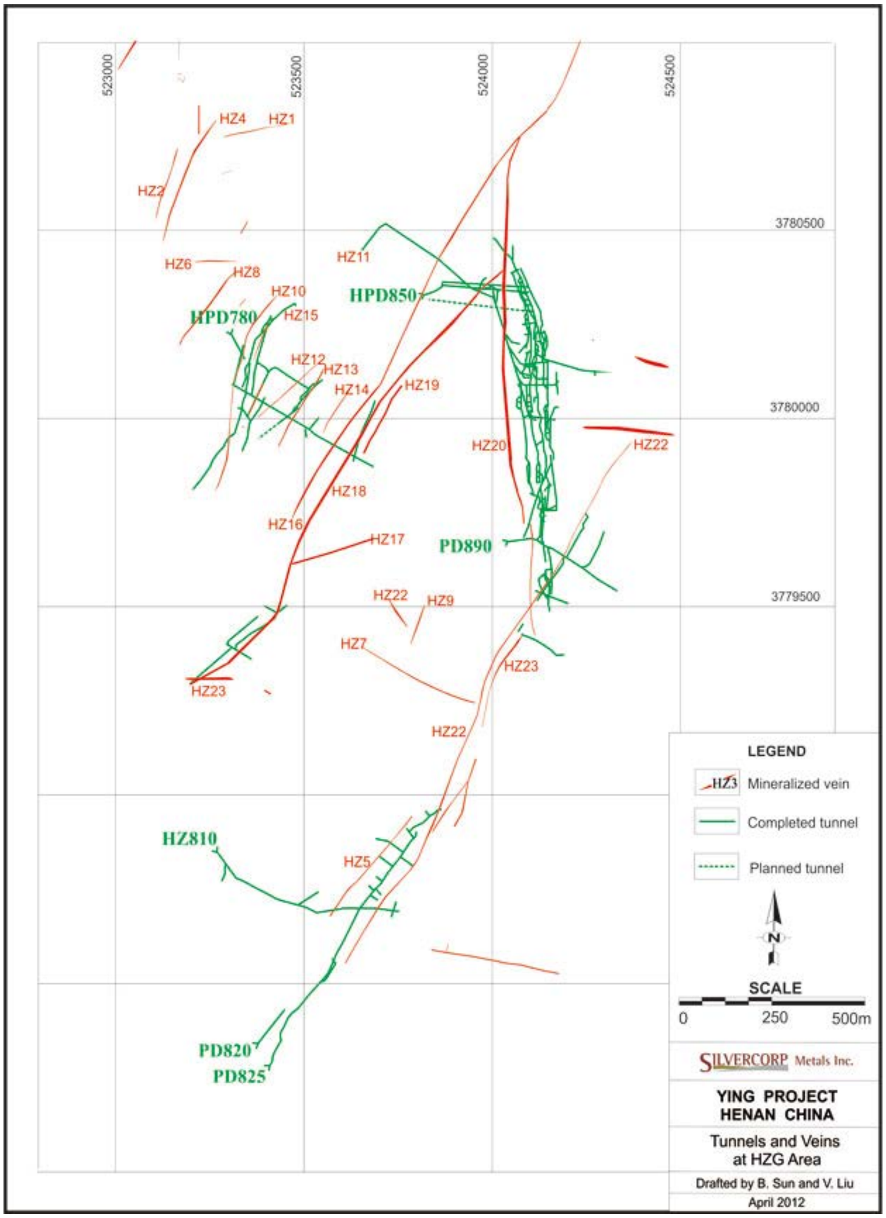


Table 7.2 presents a summary of dimensions and occurrences of major mineralized veins in the HZG area.

Table 7.2 Dimensions and Occurrences of Major Mineralized Veins in the HZG Area

Vein #	Length of Vein (m)	Defined Inclined Depth (m)	Elevation of Defined Depth (m)	Strike	Dip	Dip Angle	Average True Thickness (m)
HZ5	350	96	804-718	30°	120°	75°	0.61
HZ10	500	195	781-612	0-35°	90-125°	80°	0.45
HZ12	260	120	755-664	18°	108°	70°	0.32
HZ20	1800	509	916-442	10-20°	100-110°	68-80°	0.57
HZ22	1800	350	898-586	10-30°	100-120° *	60-70°	0.51
HZ22E		50	780-740	30°	120°	70°	0.38

7.3.3 HPG Area

The HPG mine area, which accounts for slightly less than 10% of the currently defined mineralization in the Ying Property, is located in the central part of the district, immediately northeast of the SGX mine area, which is presently the most prolific mine area in the district (Figure 7.6). Mineralization is currently defined in least 18 veins in the HPG Area, with four major veins H17, H16, H15W, and H15 containing about 75% of the resources defined to date. Sampling at various levels in workings along these vein structures indicates that from 27% to 50% or more of the vein material is mineralized, ranging from 0.2 m to 5.2 m in width, averaging 0.81 m.

The veins occur in relatively permeable fault-fissure zones and are extensively oxidized from the surface to depths of about 80 m. Within this zone, the veins show many open spaces with conspicuous box-work lattice textures resulting from the leaching and oxidation of sulphide minerals. Secondary minerals present in varying amounts in this zone include cerussite (lead carbonate), malachite (copper carbonate) and limonite (hydrous iron oxide). Beneath this oxide zone, sulphide minerals are mixed with secondary oxide minerals in the vein, with sulphides becoming increasingly abundant downward to about 150 m depth, beyond which fresh sulphides are present with little or no oxidation.

The dominant sulphides are galena, typically comprising a few percent to 10% of the vein, together with a few percent sphalerite, pyrite, chalcopyrite and freibergite-tetrahedrite. Other metallic minerals in much smaller amounts include argentite, native silver, native gold, bornite and various sulfosalts. The minerals occur in narrow massive bands, veinlets or as disseminations in the gangue, which consists of quartz, sericite and carbonate, occurring as dolomite and calcite with some ankerite.

Figure 7.6 Tunnels and Veins at HPG Area

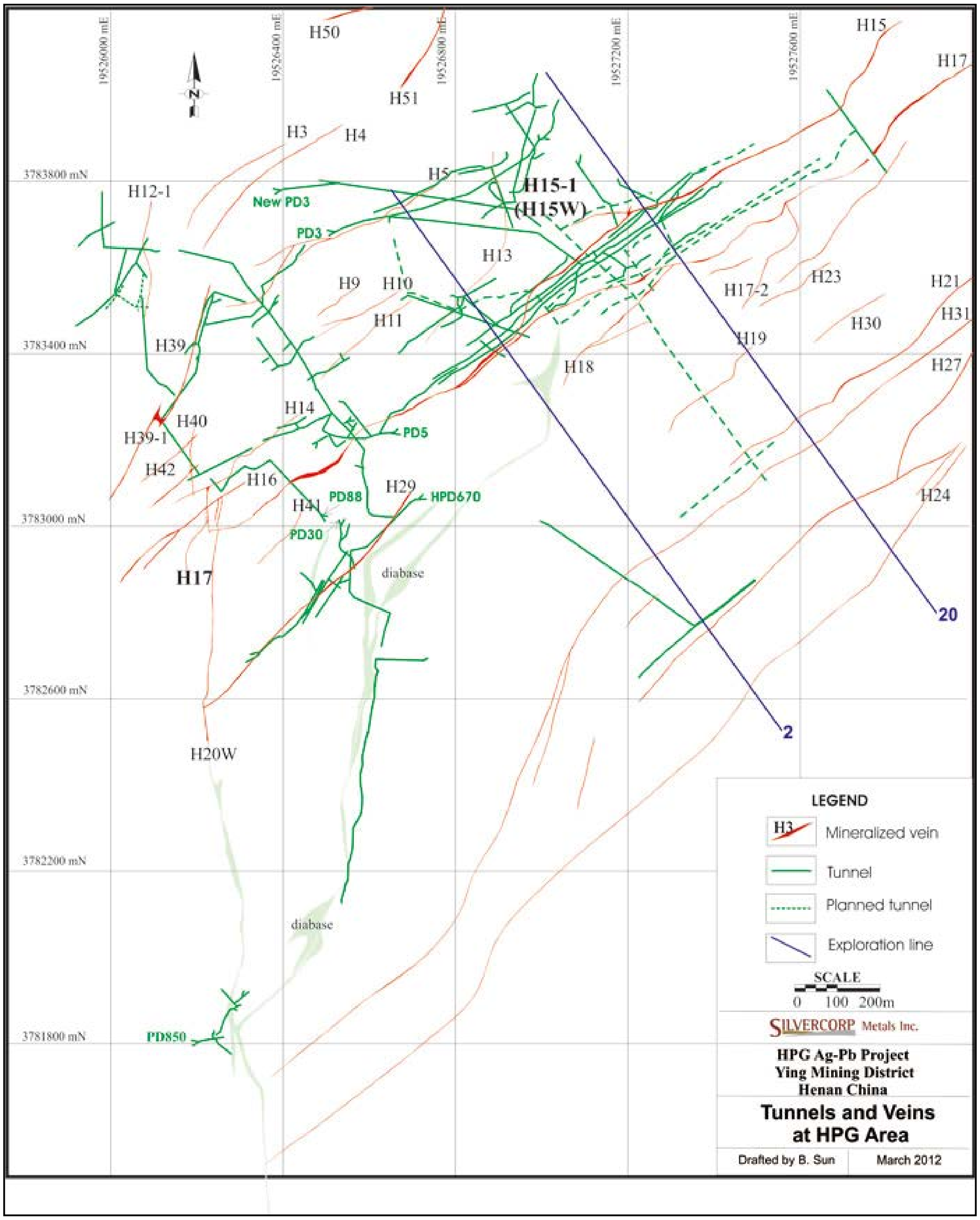


Figure 7.7 Cross section on Line 0, HPG

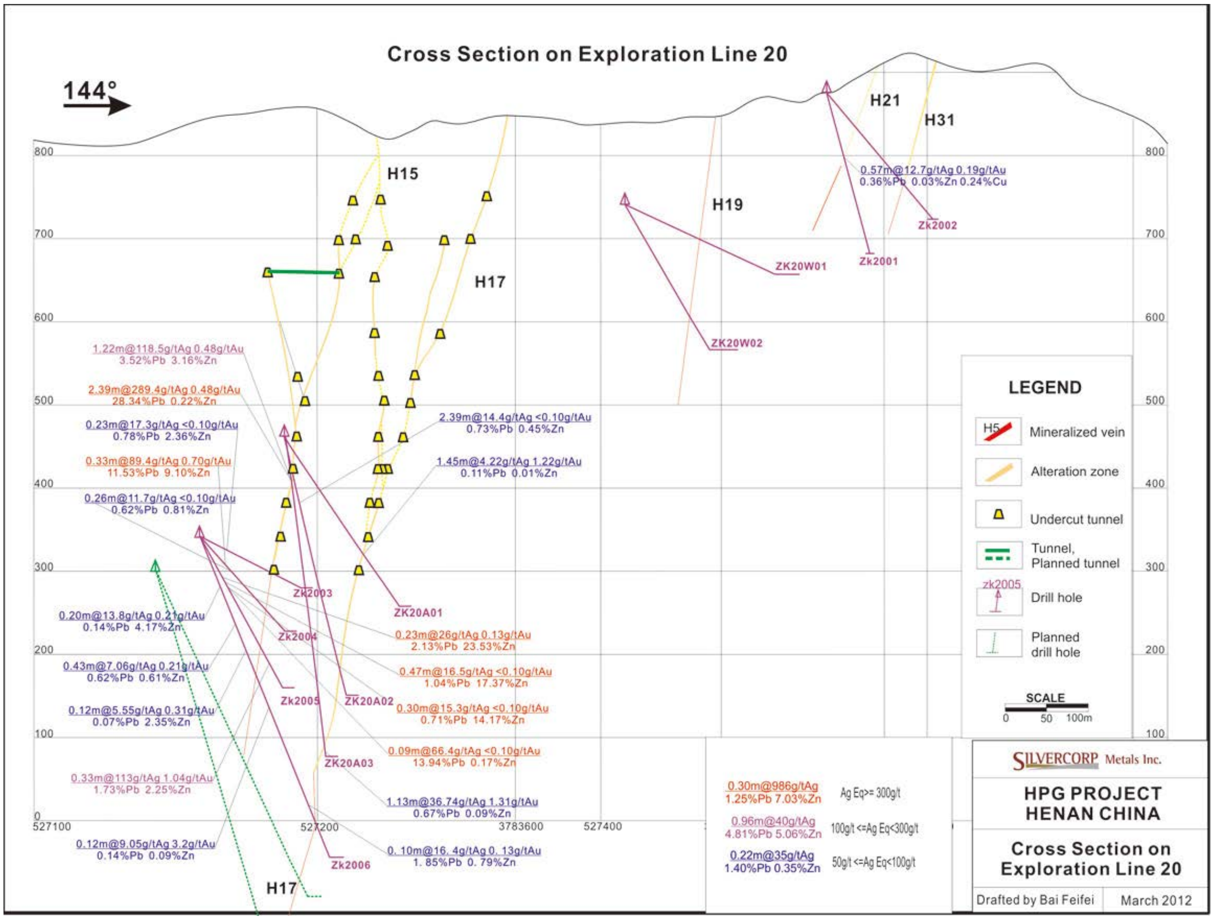


Table 7.3 summarizes features of major veins at the HPG mine.

Table 7.3 Dimensions and Occurrences of Major Mineralized Veins in the HPG Mine

Vein #	Length of Vein (m)	Defined Inclined Depth (m)	Elevation of Defined Depth (m)	Strike	Dip	Dip Angle	Average True Thickness (m)
H5	400	188	460	45-75°	315-345°	65-80°	0.54
H6	200	50	650	50-75°	320-345°	65-80°	0.17
H10	240	20	640	40-60°	310-330°	70-85°	0.14
H11	280	40	460	45-60°	315-330°	68-85°	0.27
H12	200	65	610	40-75°	310-345°	65-80°	0.34
H12-1	280	200	560	350-10°	260-280°	70-80°	0.60
H13	300	105	300	40-60°	310-330°	65-85°	0.72
H15	1300	280	160	25-60°	295-330°	60-82°	0.55
H15-1	250	65	710	30-75°	300-345°	70-88°	0.36
H15W	400	130	300	30-50°	300-320°	70-85°	0.44
H16	600	50	570	50-65°	320-335°	75-80°	1.22
H17	2000	380	0	25-60°	295-330°	65-87°	0.85
H18	350	30	300	35-60°	305-330°	65-80°	0.49
H29	700	80	750	30-70°	300-340°	75-85°	0.23
H39-1	250	75	650	15-45°	285-315°	65-80°	0.31

7.3.4 TLP and LM Area

About one-third of the currently defined vein mineralization in the Ying Property occurs in veins of the TLP and LM mine areas, with 36 known veins at TLP and 46 at LM. Extensive underground sampling at various levels along or across these veins indicates that a significant amount of the vein-filling material is strongly mineralized, often averaging about 30% galena, 1% chalcopyrite and 1% sphalerite over narrow widths of 0.2 m to 1.0 m. Other metallic minerals present in much smaller amounts include pyrite, hematite and very sparse amounts of acanthite.

The veins at TLP all dip westward while those at LM dip steeply both east and west. Previous mining and stoping along the I and II veins at TLP indicate that the mineralization plunges shallowly to the north within structural zones extending hundreds of meters to a thousand meters or more along strike. The mineralization occurs as massive accumulations or disseminations in the veins. 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.

Most of the silver in the TLP-LM veins is present as microscopic inclusions in the galena. It appears that Ag:Pb ratios are distinctly different between veins of the northern TLP area (North Zone) and the southern TLP and LM area (South Zone). Based upon 15 verification samples collected in a previous Technical Report (Broili, et al., 2008), veins in the South Zone appear to have much higher zinc contents and higher Ag:Pb ratios (90 to 130 grams silver for each percent lead) than veins from the North Zone (5 to 15 grams silver for each percent lead), as well as proportionally less gold. It is thought this difference is the result of zonation or reflects differences in the level of exposure.

Gangue in the TLP–LM vein systems is mostly fine-grained silica with zones of quartz-carbonate minerals and occasional inclusions of altered wall-rock. The carbonate is dominantly ankerite (calcium-iron-magnesium carbonate), in contrast to siderite (iron carbonate), which is the most common carbonate gangue mineral in many mesothermal silver-lead-zinc districts.

The veins occur in relatively permeable fault-fissure zones and are extensively oxidized from the surface to depths of about 80 m. Within this zone, the veins show many open spaces with conspicuous box-work lattice textures resulting from the leaching and oxidation of sulphide minerals. Secondary minerals present in varying amounts in this zone include cerussite, malachite and limonite. Beneath this oxide zone, sulphide minerals are mixed with secondary oxide minerals in the vein, with sulphides becoming increasingly abundant downward to about 150 m depth, beyond which fresh sulphides are present with little or no oxidation.

Wall rock alteration consists of numerous quartz veinlets accompanied by sericite, chlorite, silicification and ankerite on fractures. The vein systems appear to have better continuity and increasing mineralization at depth, and many veins exposed in the underground workings are often significantly richer in silver-lead-zinc than the same veins exposed at the surface. This suggests that the mineralization is either leached from the surface outcroppings or more likely becomes richer at depth due to primary mineral zoning (Broili, et. al., 2006).

The TLP system also contains some epithermal veins and veinlets. These veins contain abundant large vugs lined with carbonate and they either crosscut or follow some of the mesothermal filled structures.

Figure 7.8 Distribution of Mineralized Veins in the TLP-LM Area

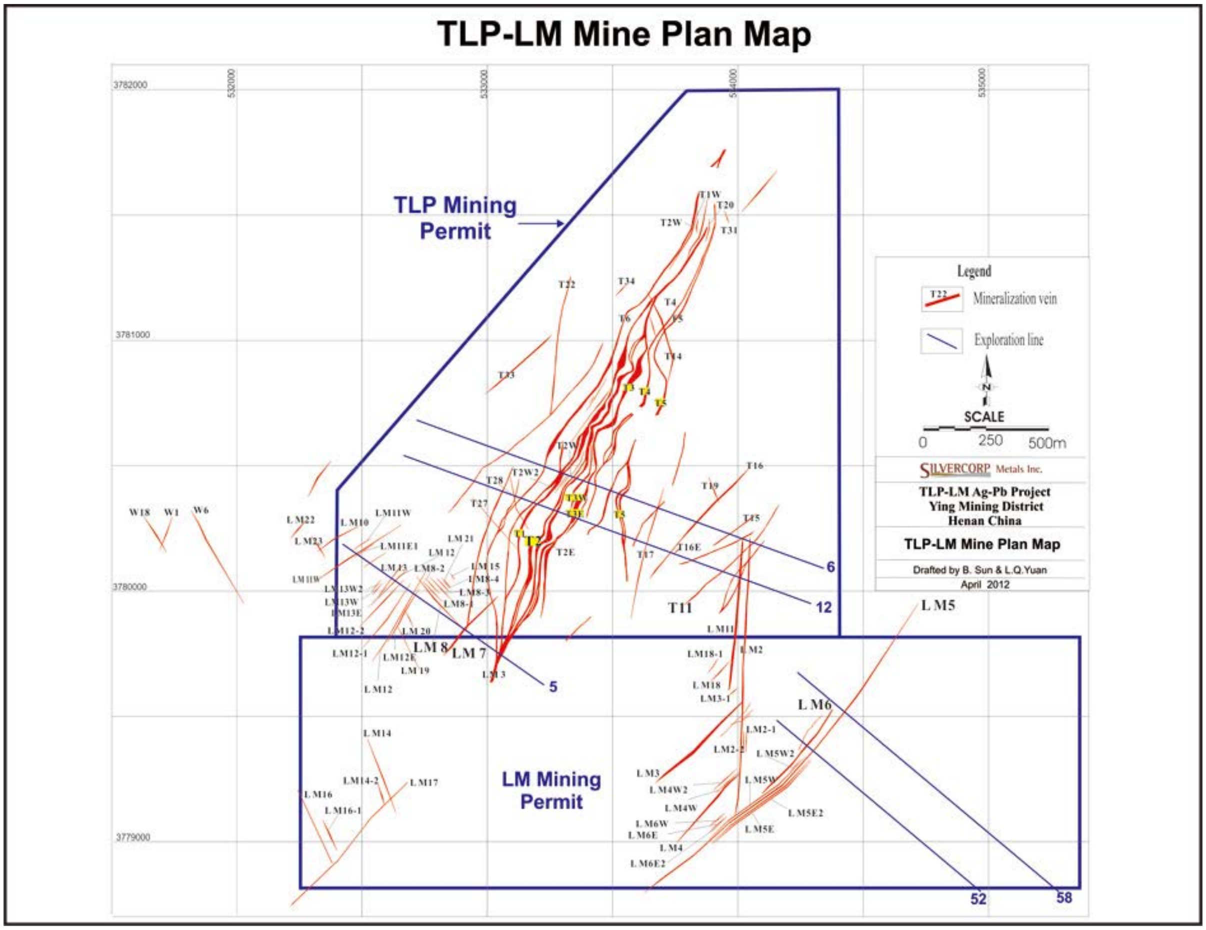


Figure 7.9 Cross Section on Exploration Line 12, TLP

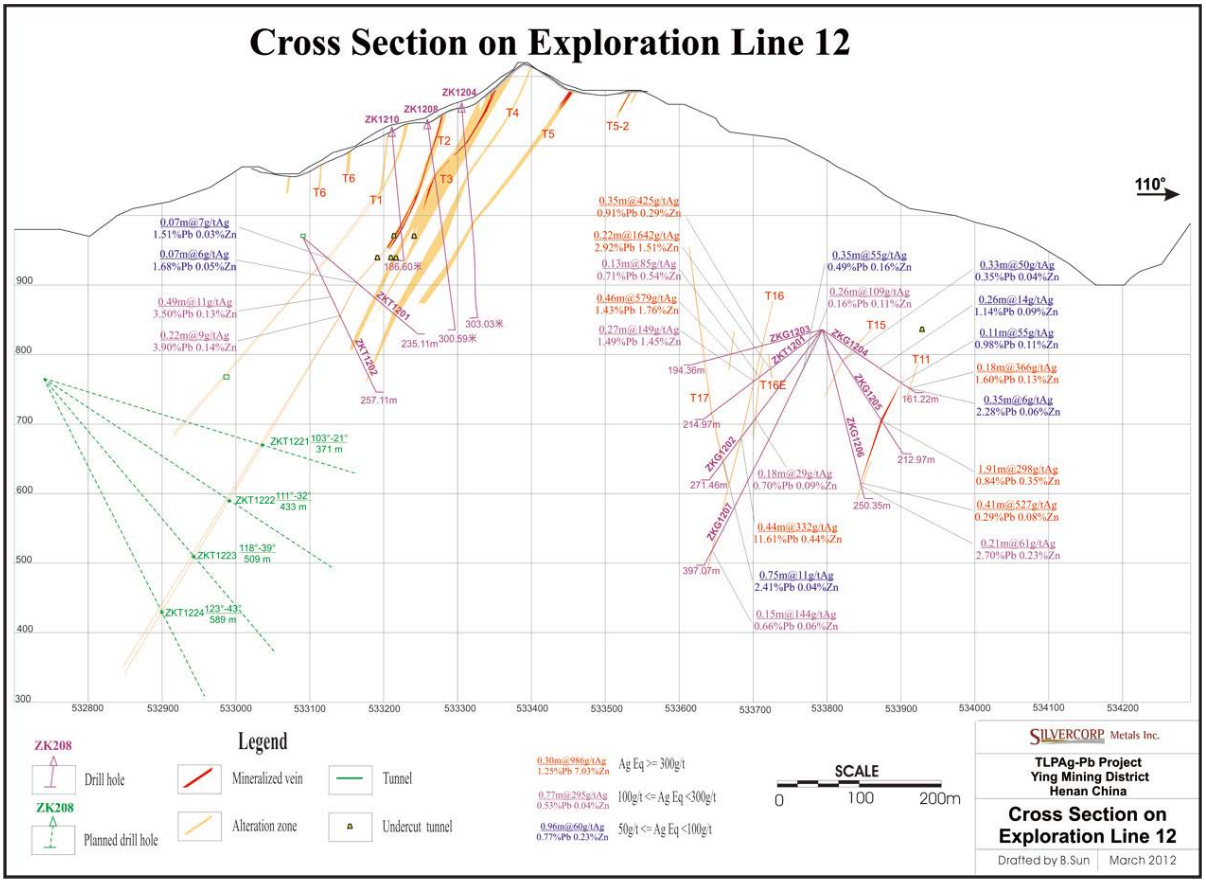


Figure 7.10 Cross Section on Exploration Line 50, LM East

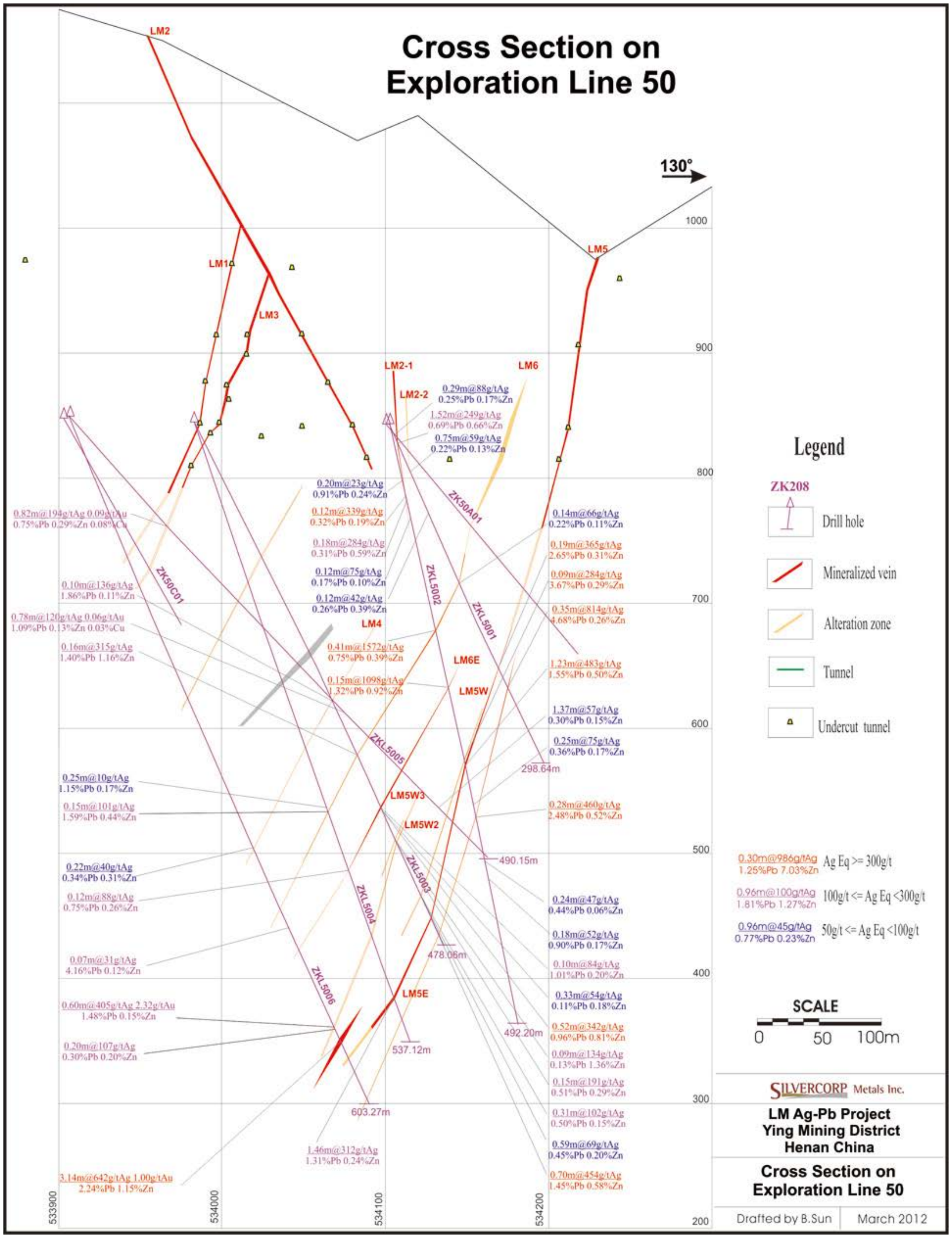
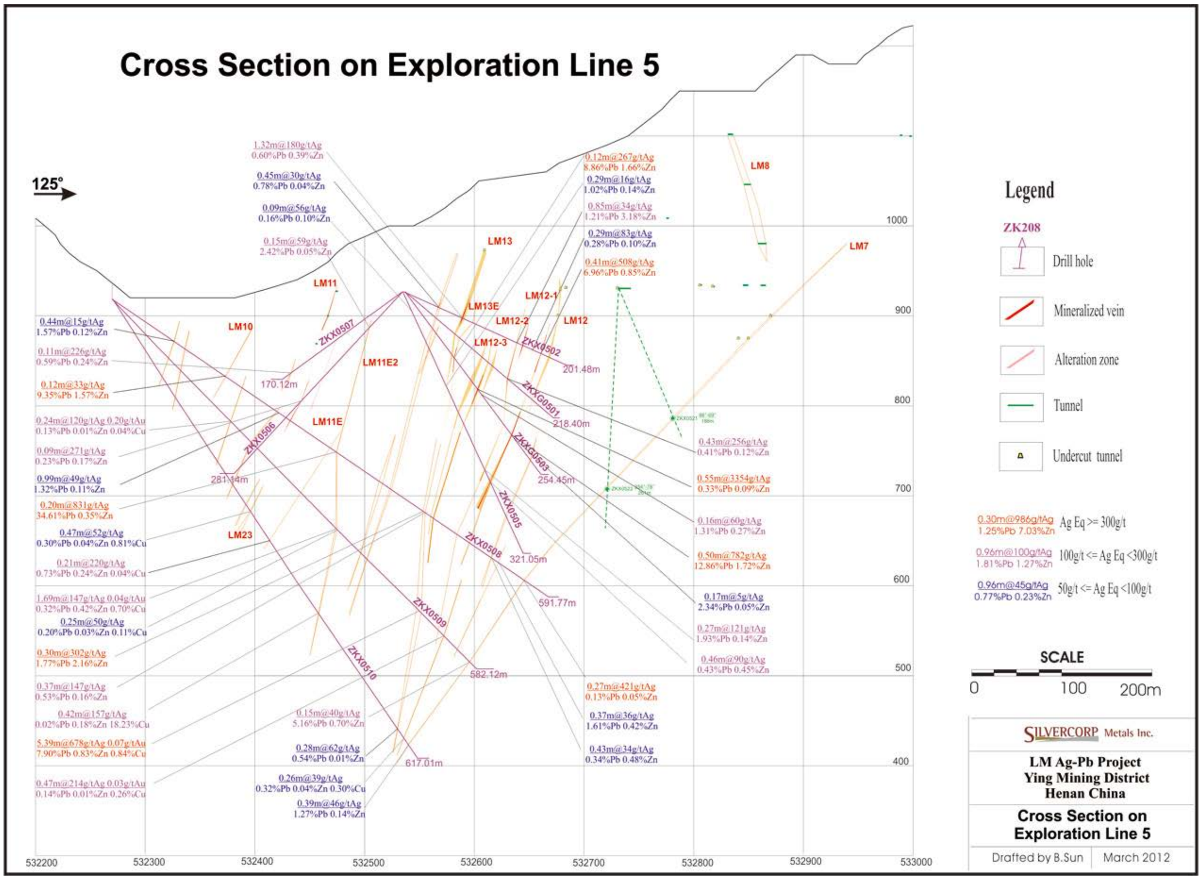


Figure 7.11 Cross Section on Exploration Line 5, LM West



Dimensions and occurrences of major mineralized veins are summarized in Table 7.4.

Table 7.4 Dimensions and Occurrences of Major Mineralized Veins in the TLP Area

Vein #	Length(m)	Defined Inclined Depth (m)	Elevation of Defined Depth (m)	Strike	Dips To	Dip Angle	Average True Thickness (m)
T1	1,580	92	1170-511	15-25°	285-295°	62°	0.26
T1W	135	92	929-600	45°	315°	65-71°	0.47
T1W1	250	300	790-506	30°	300°	65-70°	0.71
T1W3	360	250	960-729	30°	300°	65-70°	0.59
T2	2,040	831	1000-400	15-25°	285-295°	50-80°	1.43
T3	2,103	850	900-400	20-25°	290-295°	50-80°	1.18
T4	1,380	81	1100-540	15-25°	285-295°	50-80°	1.22
T5	1,095	164	900-585	15-25°	285-295°	50-80°	0.90
T11	235	313	850-400	40-55°	310-325°	55-75°	0.47
T14	590	84	980-820	160°	70°	60°	0.96
T14-Branch	130	47	982-820	325°	55°	65-70°	0.57
T15	344	80	860-720	40-55°	310-325°	55-75°	1.47

Vein #	Length(m)	Defined Inclined Depth (m)	Elevation of Defined Depth (m)	Strike	Dips To	Dip Angle	Average True Thickness (m)
T16	460	200	850-513	40-45°	310-315°	70-80°	0.51
T16W	135	83	838-620	40°	310°	65-75°	0.50
T17	520	79	866-645	10°	100°	84°	0.64
T20	147	51	816-734	2-25°	92-115°	52-60°	0.23
T22	443	84	912-840	350-355°	80-85°	76-80°	0.62
T23	50	69	943-882	40°	310°	60-70°	0.69
T24	150	147	946-801	320°	230°	70-80°	0.14
T27	245	74	936-867	320°	50°	75-80°	0.37
T30	108	64	692-630	2-31°	92-121°	54-60°	0.88
T31	118	23	793-751	330-350°	60-80°	58°	0.73
T33	1,030	192	857-506	40-45°	310-315°	65-70°	0.52
T33W	720	135	857-652	50°	320°	65-75°	0.26
T34	25	43	740-709	5°	95°	67°	0.30
T35	242	113	804-632	30-40°	300-310°	55-70°	0.74

Table 7.5 Dimensions and Occurrences of Major Mineralized Veins in the LME Subarea

Vein #	Length (m)	Defined Inclined Depth (m)	Elevation of Defined Depth (m)	Strike	Dip	Dip Angle	Average True Thickness (m)
LM2	1,100	106	985-650	0°	90°	70°	0.48
LM3	500	22	750-770	40°	310°	60-75°	0.86
LM3-1	50	121	740-850	40°	310°	65°	0.98
LM4	350	85	920-605	40°	310°	65-75°	0.22
LM5	1,530	419	815-341	40-45°	310-315°	60-75°	0.89
LM5E	850	155	520-670	60°	330°	70-75°	0.60
LM5W	750	140	770-255	60°	330°	70-75°	0.69
LM6	1,400	160	835-510	40-60°	310-330°	70-75°	0.60
LM6E	750	170	666-551	40-55°	310-325°	60-75°	0.44
LM6E2	650	106	675-614	55°	325°	60-75°	0.30

Table 7.6 Dimensions and Occurrences of Major Mineralized Veins in the LMW Subarea

Vein #	Length of Vein (m)	Defined Inclined Depth (m)	Elevation of Defined Depth (m)	Strike	Dips To	Dip Angle	Average True Thickness (m)
LM7	678	164	887-333	40°	310°	40-50°	1.94
LM8	278	123	819-580	310°	240-250°	78-85°	0.77
LM8-1	165	139	903-626	320°	50°	77°	0.51
LM8-2	152	181	900-700	320°	50°	80-85°	0.45
LM8-3	145	115	898-695	320°	50°	80-85°	0.38
LM8-4	90	110	874-746	310-320°	40-50°	80-85°	0.48
LM10	470	59	875-758	65°	335°	75°	0.60
LM11	530	130	900-529	40°	310°	58-70°	0.47
LM11E1	350	120	738-564	50°	320°	70-75°	0.65
LM11E2	100	224	784-530	50°	320°	70-75°	0.89
LM11W	145	110	874-617	55°	325°	74°	0.21
LM12	680	210	948-400	30°	300°	65°	0.63
LM12-1	480	204	920-446	25-35°	295-305°	57-67°	0.63
LM12-2	433	228	920-525	50-55°	320-325°	65-75°	0.64
LM12-3	380	97	900-500	50-55°	320-325°	45-65°	0.74
LM12E	507	186	920-516	35°	305°	60-70°	0.80
LM13	363	399	900-400	40°	310°	65-70°	0.82
LM13W	247	120	940-539	40°	310°	65°	1.09
LM14	477	252	887-536	340°	250°	70°	0.72
LM14-2	140	85	900-805	340°	250°	73°	0.75
LM14-3	100	160	945-778	330°	60°	73°	0.38
LM16	436	188	931-613	337°	67°	83-85°	0.50
LM16-1	306	104	880-670	335°	245°	71°	0.70
LM17	445	690	934-167	35-45°	305-315°	55-75°	0.94
LM19	220	98	956-746	320°	50°	70-80°	1.97
LM20	113	102	911-847	320°	50°	75-83°	0.64
LM21	50	75	830-755	315°	45°	85°	0.16
LM25	60	34	895-857	320°	230°	62°	0.74
W1	155	72	926-817	20°	290°	65-75°	1.54
W18	104	77	929-844	330°	60°	65-75°	0.69
W6	342	165	917-739	330°	60°	65-75°	0.54

8 DEPOSIT TYPES

The deposits of concern in this report are epigenetic vein deposits that have mesothermal characteristics. Mesothermal vein systems typically occur in rocks associated with orogenic belts, in the case of the Ying district, the Qinling orogenic belt. Mineralization is associated with deep-seated shear zones that cut the metamorphic rocks. The veins form in a temperature range of 200-300^{0}C at pressure depths from 600 m to 5,000 m. The veins occur in sets with the major veins in the system tending to be continuous for over 1,000 m in lateral and vertical sense.

9 EXPLORATION

Silvercorp initiated exploration-development activities in the SGX area including HZG (immediately south of SGX), HPG (northeast of SGX) and LJG, an exploration area covered by the SDG-LJG exploration permit between the SGX-HZG mine area and the TLP-LM mine area, in July 2007, and in the TLP-LM mine areas in December 2007. The past exploration activities, including surface activities, have been detailed in previous technical reports prepared for Ying Property projects (Broili et al., 2006; Xu, 2006; Broili et al., 2008; Broili and Klohn, 2007; Broili et al., 2008; Broili et al. 2010; Klohn et al. 2011).

Other than drilling, the projects have been explored primarily from underground workings. The workings follow the vein structures along strike, on levels spaced approximately 40 m apart. Silvercorp has found this method of underground exploration an effective and efficient way to define the geometry of the mineralized structures, in part due to the discontinuous character of the high-grade mineralization but also the relatively inexpensive development costs.

Chip samples across the structures are collected at 5 m intervals. Assay results of samples are documented on underground level maps and longitudinal sections.

In 2011, Silvercorp conducted an exploration program with the objective of upgrading confidence in the Indicated and Inferred Resources, to test the down-dip extension of the major mineralized vein structures, and to explore new target areas in the Ying property. The 2011 exploration program comprised 40,827 m tunnelling, including 25,450 m of drifting tunnels driven along mineralized structures. A total of 10,730 channel/chip samples were collected from different mine areas. Details of the exploration work completed at each project area are briefly summarized in Table 9.1.

Table 9.1 Tunnelling Exploration Work Completed in 2011

Area	Tunnelling	Total Meters in 2011	Chip Samples in 2011 (pcs)
SGX	Drifting	5,389	1,965
	Crosscut	3,227	
	Raise	2,569	
	Total	11,186	
HZG	Drifting	2,204	1,369
	Crosscut	1,089	
	Raise	710	
	Total	4,002	
HPG	Drifting	4,278	760
	Crosscut	1,638	
	Raise	674	
	Total	6,589	
TLP	Drifting	9,531	4522
	Crosscut	3,159	
	Raise	382	
	Tunnel Expanding	563	
	Total	13,635	
LME	Drifting	969	562
	Crosscut	273	
	Raise	102	
	Tunnel Expanding	45	
	Total	1,381	
LMW	Drifting	3,080	1552
	Crosscut	591	
	Raise	247	
	Tunnel Expanding	125	
	Total	4,044	

The following sections summarize the results of the 2011 tunnelling exploration programs.

9.1 SGX Area

Table 9.2 Significant Mineralization Defined by 2011 Tunnelling in SGX Area

Vein	Zones Exposed	Length (m)	Wtd. Avg. Width (m)	Elevation Levels	Exploration Lines	Weighted Average Grade		
						Ag (g/t)	Pb (%)	Zn (%)
S2	#1	50	0.47	340	12-14	1435	19.42	3.63
	#2	50	0.69	340	18-20	72	2.11	1.17
	#3	20	0.28	380	14-16	169	3.17	4.40
S4	#1	84	0.3	420	16-18	217	6.20	16.50
S6	#1	104.4	0.41	350	8-10	552	12.79	2.25
	#2	100	0.33	300	8-10	1136	16.28	3.79
S7	#1	40	0.44	395	24-26	91	3.04	0.82
	#2	176	0.49	490	16-20	464	4.54	2.85
S7-1	#1	170	0.59	675	11-15	215	3.34	11.85
	#2	40	0.62	570	9-13	396	3.77	2.78
	#3	30	0.61	570	9-13	506	6.06	14.76
	#4	50	0.73	570	9-13	539	11.94	16.05
	#5	45	0.53	530	9-11	368	0.47	7.77
	#6	30	0.23	450	13-15	100	4.65	8.82
	#7	30	0.47	300	4-6	912	25.75	0.97
S7-4	#1	65	0.25	640	17-15	161	4.13	2.21
	#2	30	0.26	640	17-15	86	3.19	4.20
S8	#1	51	0.36	350	32	55	6.90	2.26
	#2	23.8	0.47	350	28	93	15.3	0.91
S14	#8	75	0.26	560	8-10	1177	19.15	2.46
	#81-1	25	0.53	450	20-22	169	2.71	4.72
	#60	29	0.56	300	12	572	7.65	2.50
S16W1	#34	30	0.43	450	50-54	911	12.80	2.07
	#8	40	0.34	490	54-58	409	11.72	3.98
S21	#19	20	0.56	395	22-24	82	3.41	2.01
	#33-2	110	0.53	395	26-28	264	6.45	5.85
	#34-2	45	0.44	395	24-26	288	1.48	3.14
	#39	40	0.69	400	16-18	275	4.49	1.17
	#35	20	0.68	400	14-16	117	2.19	1.90
	#21-2	50	0.69	400	8-10	659	21.8	2.32
S28	#1	10	0.6	640	97-101	72	0.93	4.84
	#2	15	0.48	640	97-101	260	6.66	2.46
	#3	10	0.83	640	105	111	8.92	1.05

Figure 9.1 Longitudinal Projection of Vein S2

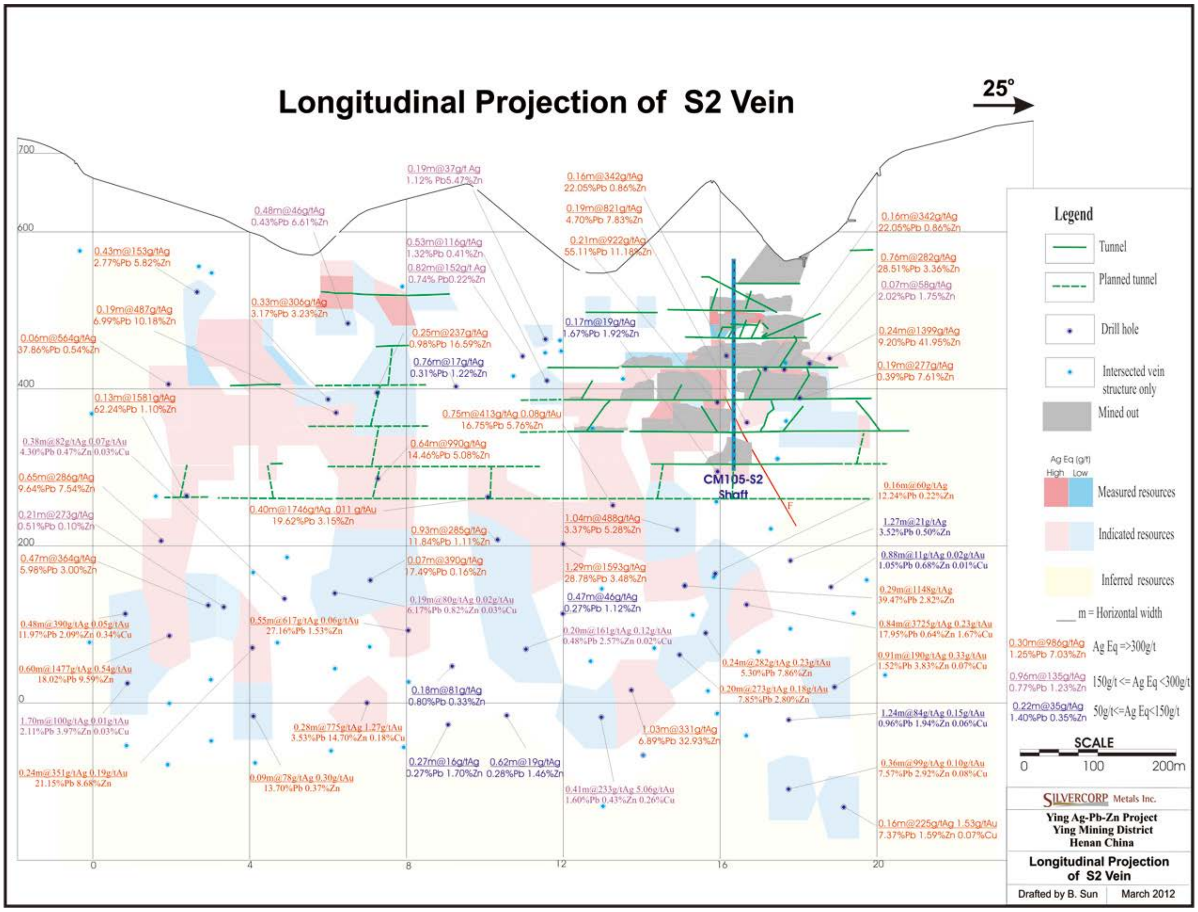
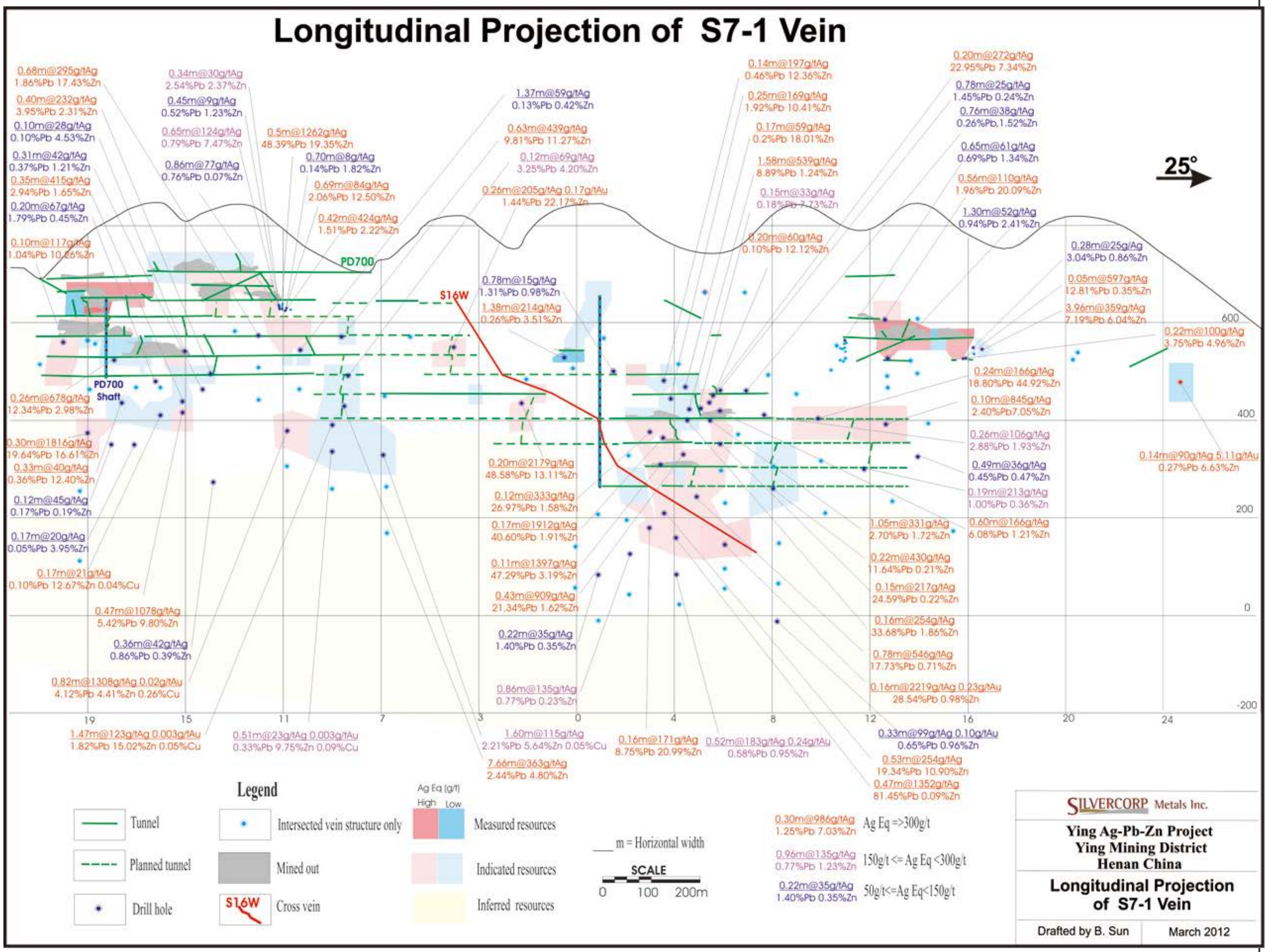


Figure 9.2 Longitudinal Projection of Vein S7-1



In addition to the major vein systems described above, there are 17 minor vein systems currently identified in the SGX area. Many of these have not yet been thoroughly evaluated and are potential targets for future exploration.

9.2 HZG Area

In 2011, underground tunnelling exploration in HZG Area was mainly focused on vein HZ20 and vein HZ22.

Table 9.3 Significant Mineralization Defined by 2011 Tunnelling in HZG Area

Vein	Zones Exposed	Length (m)	Wtd. Avg. Width (m)	Elevation Levels	Exploration Lines	Weighted Average Grade			
						Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)
HZ20	#1	25	0.42	810		1053	6.51	0.18	
	#2	40	0.64	810		623	3.34	0.21	
	#3	50	0.42	770		344	0.50	0.64	
	#4	20	0.6	770		1314	0.73	0.53	
	#5	110	0.48	730		886	0.88	0.44	
	#6	80	0.57	730		1105	0.64	0.79	
	#7	35	0.5	730		1011	0.27	1.02	
	#8	100	0.48	690		587	0.23	0.35	
	#9	55	0.35	690		667	0.27	0.30	
	#10	20	0.53	690		272	0.45	0.52	
	#11	100	0.56	690		314	0.61	0.61	
	#12	20	0.3	690		247	0.28	0.18	
	#13	20	0.35	650		806	1.20	0.35	
	#14	30	0.51	650		407	1.64	0.29	
	#15	49	0.3	650		982	0.75	0.27	
HZ22	#1	55	0.32	780	53-57	951	3.11	0.17	0.43
	#2	60	0.34	780	57-61	104	0.72	0.13	0.01
	#3	35	0.46	740	55-57	374	0.89	0.15	0.17
HZ22E	#1	55	0.42	780	53-55	789	4.57	0.10	0.30
HZ5	#1	75	0.6	780	53-55	727	1.70	0.12	0.25

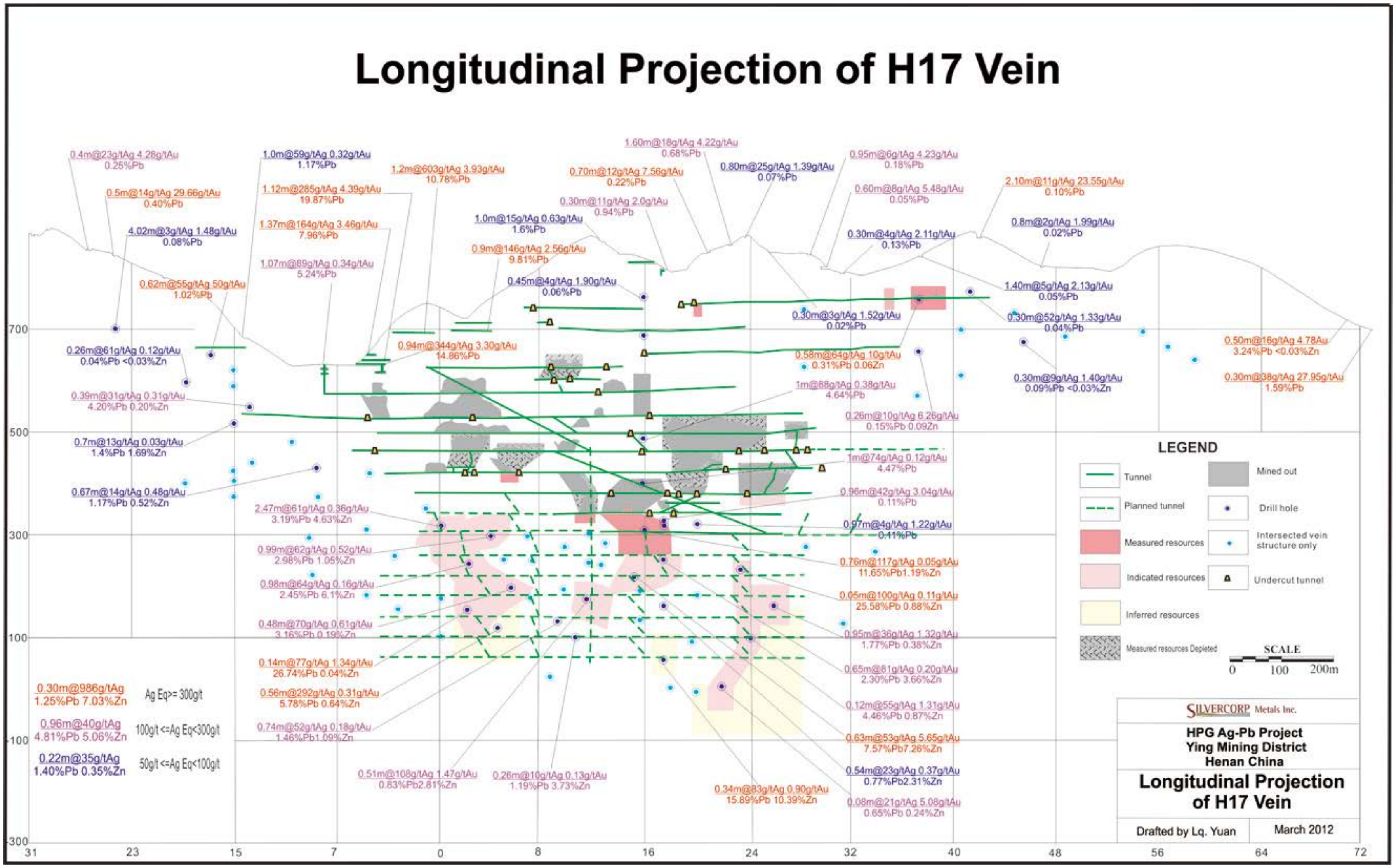
9.3 HPG Area

Compared with mineralized vein systems in other areas, mineralization in the HPG area is characterized with significant higher gold grade and lower grades for silver, lead and zinc.

Table 9.4 Significant Mineralization Defined by 2011 Tunnelling in HPG Area

Vein	Zones Exposed	Length (m)	Wtd. Avg. Width (m)	Elevation Levels	Weighted Average Grade			
					Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)
H15	#1	35	0.49	424	141	7.40	2.07	
	#2	18	0.2	383	166	12.18	1.25	
	#3	25	0.33	305	95	5.12	0.33	0.54
H15W	#1	25	0.43	300	30	3.04	9.32	0.87
H17	#1	30	1.27	306	201	14.00	2.38	2.05
H16	#1	32	1.18	610	48	0.60	0.67	1.64
	#2	116	1.15	570	59	5.96	1.34	1.62
	#3	16	1.08	530	38	3.76	2.28	1.36
	#4	24	1.13	530	5	0.66	1.18	3.75
H12-1	#1	64	0.85	560	71	7.13	0.70	0.29
H12-2	#1	40	0.35	600	63	12.00	0.12	0.47
H13		40	0.5	570	255	3.48	2.63	NSV
		35	0.66	630	478	9.16	0.54	0.47
H11	#1	45	0.6	640	32	6.07	1.16	2.69
	#2	65	0.61	610	27	4.61	0.31	0.33
H4	#1	100	0.43	600	95	6.47	0.64	

Figure 9.3 Longitudinal Projection of Vein H17



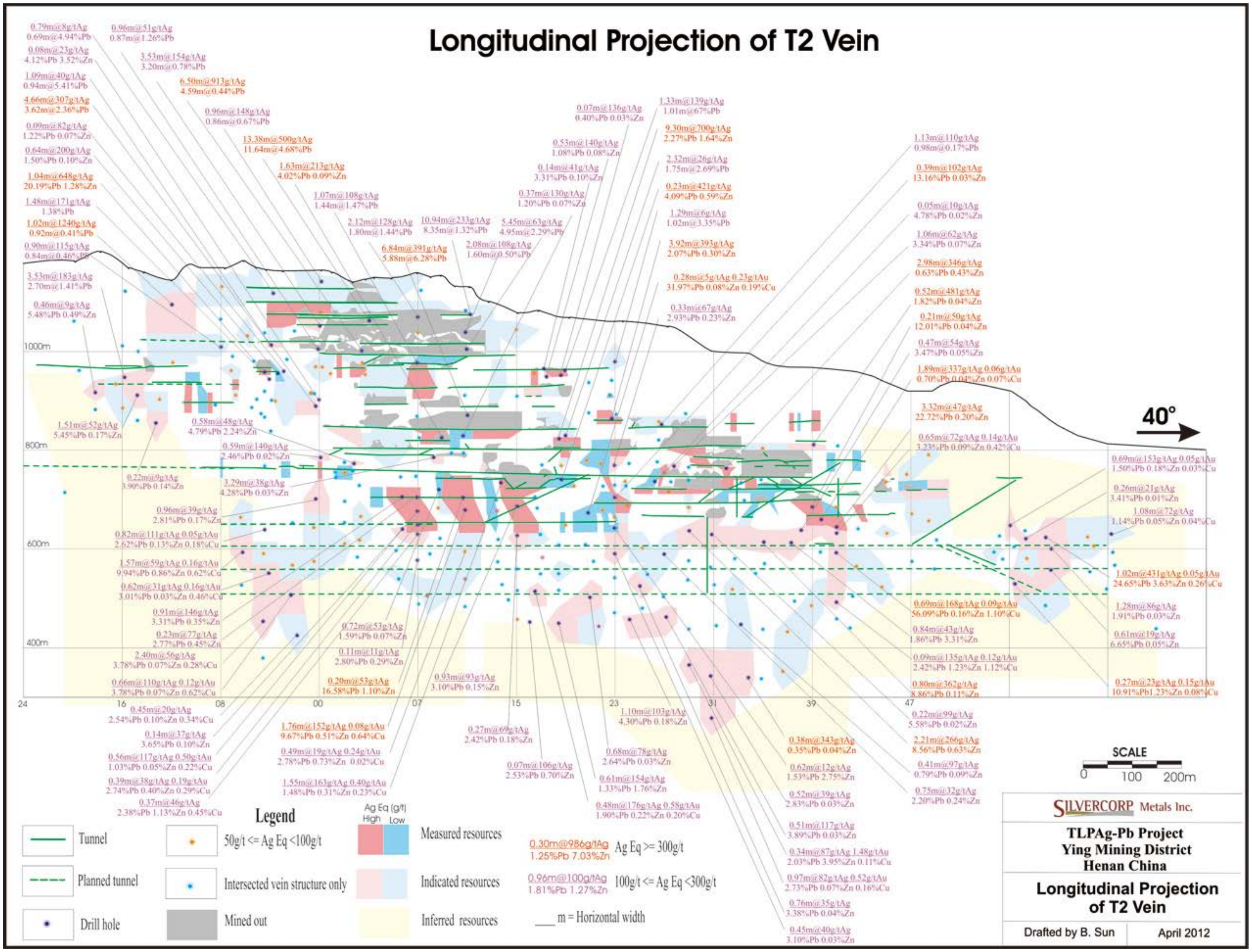
9.4 TLP Area

Table 9.5 Significant Mineralization Defined by 2011 Tunnelling in TLP Area

Vein	Tunnel	Elevation (m)	Exploration Lines #	Length Exposed (m)	Horizontal Width (m)	Weighted Average Grade				
						Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)	Cu (%)
T1	PD890	890	8	20	0.48	116	5.25	0.31		
T1W	PD930	930	3-5	65	0.85	83	7.06	0.28		
	PD890	890	5	45	0.6	642	34.26	0.91		
	PD840	840	5-7	25	0.75	64	4.92	0.11		
	PD730	700	11	10	0.75	305	0.22	-		
	PD730	700	13	40	0.62	184	1.21	0.38		
	PD730	699	41-43	60.5	0.89	49	7.47	0.88		
	PD730	699	45	20.7	0.68	10	3.49	0.08		
T1W1 (IW1)	PD890	890	7	35	1.01	265	4.36	0.06		
	PD840	840	7	86	0.52	197	4.12	0.42		
	PD800	800	5-7	100	0.6	116	6.91	0.49		
	PD800	800	1-3	75	1.1	293	8.55	0.67		
	PD730	730	9	40	0.49	245	7.60	0.20		
	PD730	730	3-5	58.5	0.55	57	2.08	0.09		
T1W3 (IW3)	PD840	840	7	100	0.61	483	4.86	0.61		
	PD800	800	7-9	70	0.61	532	2.21	0.85		
T2 (II)	PD730	650	21-25	80	0.77	292	7.39	0.70		0.23
	PD730	700	11	81.3	0.6	222	3.70	0.41	0.04	0.29
	PD730	700	5-9	80	1.24	286	7.77	0.50		1.04
	PD780	770	31-33	84.9	1.58	174	3.16	0.40		
	PD890	890	8	35	0.62	296	3.82	0.19		
T3 (III)	PD780	780	29-31	20	0.72	154	6.32	0.16		
	PD800	800	2-4	20	0.86	114	2.99	0.15		
T5	PD930	930	21-19	30	0.3	341	10.45	0.07		
	PD930	930	17-15	65	1.04	178	3.13	0.54		
	PD960	960	17-19	15	0.45	221	9.58	0.25		
T11	PD820	820	12	35	0.23	93	2.35	0.19		
	PD820	820	10	15	0.37	128	1.48	0.21		
T16	PD820	691	0-1	30	0.89	737	9.15	1.06		
	PD820	691	2-6	80	0.61	208	2.69	0.47		
	PD820	798	14-16	42	0.34	644	2.7	0.57		
T17	PD820	798	14-12	15	0.55	182	3.39	0.19		
	PD820	798	12-8	110	0.6	256	4.78	0.59		

Vein	Tunnel	Elevation (m)	Exploration Lines #	Length Exposed (m)	Horizontal Width (m)	Weighted Average Grade				
						Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)	Cu (%)
	PD960	960	5	69.5	0.94	178	4.85	0.58		
	PD960	960	3	45	0.9	213	7.23	0.21		
	PD890	890	11-13	35	0.79	119	1.14	0.35		
T33	PD800	730	11-13	40	0.33	64	13.74	0.2		
	PD800	730	13-17	90	0.61	519	8.81	1.10		
	PD800	730	17-19	45	0.39	568	2.95	0.56		
	PD730	730	17-19	35	0.49	392	2.85	0.23		
T35	PD730	730	49	10	1.1	219	1.38	0.40		0.33
	PD730	665	49	50	0.74	82	9.25	0.08		
	PD730	610	49	65	0.78	41	7.36	0.11		
	PD780	780	49	18	1.55	166	5.70	0.30		
T16W	PD820			10	0.33	537	0.74	1.59		
T24	PD820		106-110	20	0.5	1,056	6.22	1.66		

Figure 9.4 Longitudinal Projection of Vein T2



9.5 LM Area

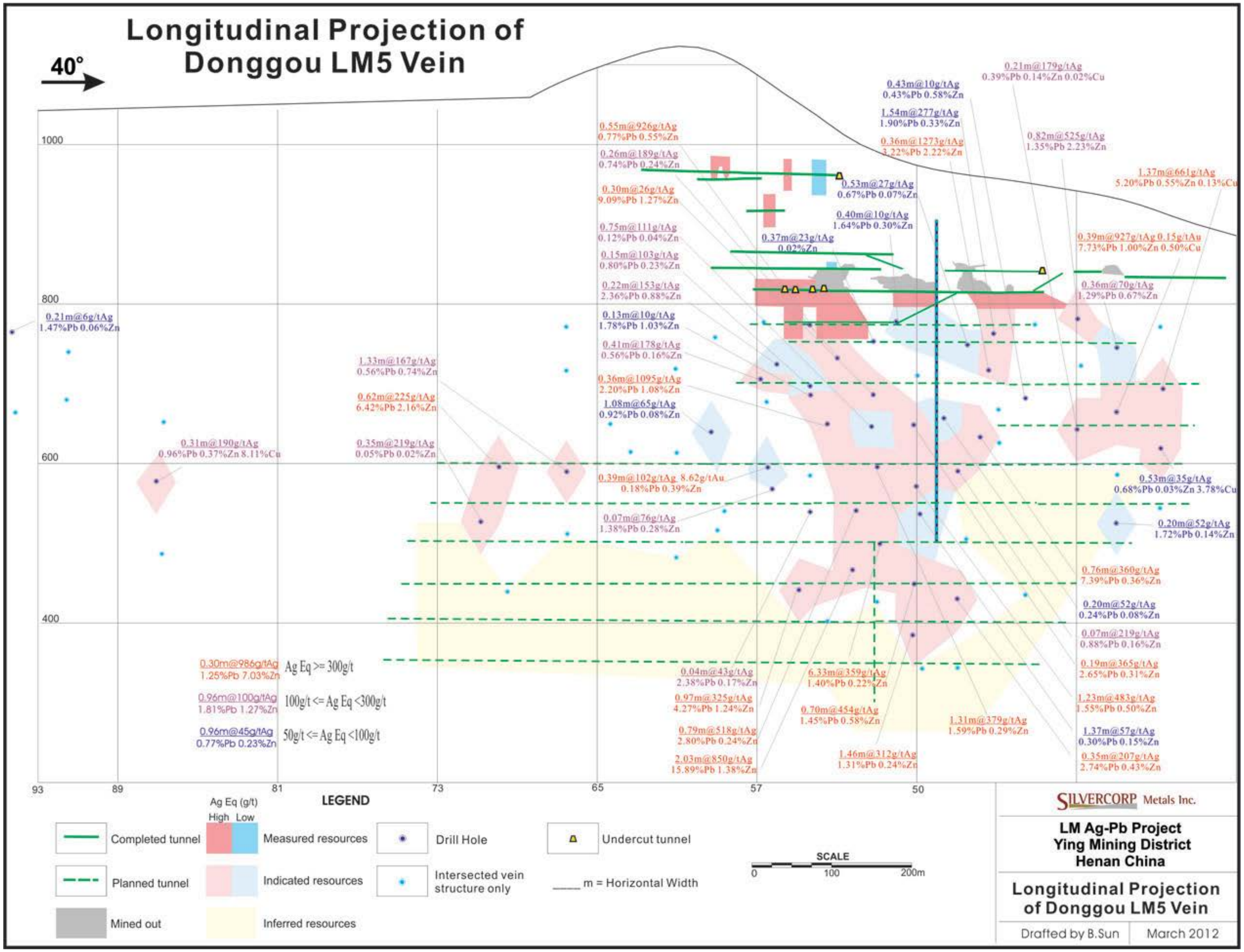
The LM area is divided into two subareas, the LM West and the LM East, according to the distribution of known mineralized veins.

LME (East) Sub-area

Table 9.6 Selected Mineralization Zones Defined by 2011 Tunnelling in LM Area

Vein	Tunnel	Elevation (m)	Exploration Lines #	Length Exposed (m)	Horizontal Width (m)	Weighted Average Grade		
						Ag (g/t)	Pb (%)	Zn (%)
LM5 (East)	PD900	900	57	25	0.53	288	1.51	0.54
	PD838	775	51-53	60	1.06	513	2.91	0.39
	PD838	775	55	25	1.23	424	3.8	0.38
LM12-2 (West)	PD924	898	4	34	0.83	235	1.18	0.12
	PD924	924	0	55	0.89	469	4.94	0.26
	PD924	924	2-4	55	0.8	390	3.34	0.29
LM17 (West)	PD991	916	30-34	85	0.73	395	2.49	<0.05
	PD991	880	34-36	20	1.06	298	2.11	<0.05
	PD991	880	32-34	60	0.57	425	2.75	<0.05
	PD991	846	28	15	1.28	267	1.45	0.52
LM19 (West)	PD924	898	102	35	0.36	300	8.42	0.88

Figure 9.5 Longitudinal Projection of Vein LM5



9.6 History of Ying Resource Estimation

When Silvercorp acquired its interest in the Ying Project in 2004, the resource estimate for the project was contained solely within the SGX Area. This resource was reviewed and reported in a Technical Report (Broili, 2004).

From 2004 to March 2005, Silvercorp expanded the underground workings on five of the veins in the SGX area, and upgraded and expanded the resources. A revised resource estimate was reported in a Technical Report (Broili, 2005).

From March 2005 to April 2006, Silvercorp continued to carry out underground exploration on 14 veins in the SGX area. A revised resource estimate was reported in a 2006 NI43-101 report. The new estimate included 14 veins versus only five veins in the previous report.

The 2007 exploration work on the Ying Property defined silver-lead-zinc mineral resources at SGX, silver-lead-zinc-gold resource at HPG and silver-lead-copper-gold resource at HZG. The estimated resource (measured plus indicated) in 2007 was 30% more than the resource reported in the previous resource estimation. This was largely due to the fact that the new estimation was based on 18 veins at SGX as compared to only 14 veins in the 2006 Report, and two new areas, HPG and HZG added eight veins and four veins respectively.

Silvercorp began production and shipping ore from the mines in 2007 and subsequently constructed two mills in the district to process the mined ore into shippable concentrates. With production underway in the operating mines, exploration was expanding into other parts of the Ying project. Since December 2007, Silvercorp undertook exploration and development in the TLP-LM area, focusing on three target areas: north TLP, south TLP and LM. Underground exploration efforts were carried out on four mine areas (SGX/HZG, HPG, TLP and LM). In May 20 of 2011, a revised resource estimate on the Ying property was further updated in three NI 43-101 Technical Reports (Klohn et al) (Table 9.7).

Table 9.7 Resource Estimates for Ying Property, December 2010

YING DISTRICT TOTAL MINERAL RESOURCES AS OF 31 DECEMBER 2010*													
Mine Area	Tonnage (000t)	Weighted Average Grade						Contained Metal Resources					
		Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	Au (g/t)	AgEq (g/t)	Ag (t)	Pb (t)	Zn (t)	Cu (t)	Au (kg)	AgEq (000 oz)
Measured Mineral Resources (SGX/HZG ≥300, HPG/TLP/LM ≥150 g/t Ag-Equiv.)													
SGX	500.6	774	14.27	5.49	-	-	1,463	388	71,437	27,464	-	-	23,555
HZG	-	-	-	-	-	-	-	-	-	-	-	-	-
HPG	68.8	147.5	10.04	1.97		0.9	616	10.2	6,909	1,352	-	61.6	1,363
TLP	395.9	170	4.72	0.25	0.07	-	323	67.2	18,703	979	36	24	4,110
LME	60	458	2.47	0.36	-	-	523	27.5	1,481	217	-	-	1,008
LMW	83.3	457	3.24	0.34	-	-	552	38.1	2,698	285	-	-	1,477
TOTAL	**1,108,6**	**479**	**9.13**	**2.73**	**0.02**	**0.08**	**884**	**530.9**	**101,228**	**30,297**	**36**	**85.6**	**31,514**
Indicated Mineral Resources (SGX/HZG ≥300; HPG/TLP/LM ≥150 g/t Ag-Equiv.)													
SGX	1,765.2	550	11.47	5.64	-	-	1,155	971.0	202,412	99,470	-	-	65,543
HZG	295.7	481	1.35	0.51	0.65	-	507	142.0	3,991	1,507	1,878	-	4,822
HPG	483.3	86.6	3.62	1.71	-	1.44	333	41.9	17,475	8,288	-	698.3	5,174
TLP	1,636.9	227	4.13	0.32	0.13	0.14	351	372	67,558	5,271	212	225	18,495
LME	334.1	475	2.97	0.65	-	-	558	158.7	9,934	2,163	-	-	5,997
LMW	305.8	382	3.61	0.37	-	-	496	116.9	11,047	1,128	-	-	4,881
TOTAL	**4,821.0**	**374**	**6.48**	**2.44**	**0.08**	**0.19**	**677**	**1,803**	**312,417**	**117,827**	**2,090**	**923**	**104,912**
Measured + Indicated Mineral Resources (SGX/HZG ≥300; HPG/TLP/LM ≥150 g/t Ag-Equiv.)													
SGX	2,265.8	599	12.09	5.61	-	-	1223	1,359.0	273,849	126,934	-	-	89,098
HZG	295.7	481	1.35	0.51	0.65	-	507	142.0	3,991	1,507	1,878	-	4,822
HPG	552.1	94	4.42	1.74	0.00	1.37	368	52.1	24,384	9,640	-	759.9	6,537
TLP	2,032.8	216	4.24	0.31	0.12	0.11	346	439.2	86,261	6,250	248	249	22,605
LME	394.1	472	2.89	0.61	-	-	553	186.2	11,415	2,380	-	-	7,005
LMW	389.1	398	3.53	0.36	-	-	508	155.0	13,745	1,413	-	-	6,358
TOTAL	**5,929.6**	**393**	**6.98**	**2.50**	**0.07**	**0.17**	**715**	**2,334**	**413,645**	**148,124**	**2,126**	**1,009**	**136,425**
Inferred Mineral Resources (SGX/HZG ≥300; HPG/TLP/LM ≥150 g/t Ag-Equiv.)													
SGX	2,970.0	796	16.39	6.72	-	-	1,612	2,364.0	486,720	199,677	-	-	153,892
HZG	113.9	512	16.46	1.62	0.55	-	548	58	1,843	624	681	-	2,005
HPG	373.4	86.5	3.3	1.83	-	1.5	683	32.3	12,325	6,848	-	560.2	8,194
TLP	2,564.2	144	2.82	0.21	0.08	0.08	230	369	70,892	5,553	195	217	18,969
LME	132.5	454	2.91	0.6	-	-	536	60.1	3,856	789	-	-	2,282
LMW	117.5	302	3.29	0.27	-	-	409	35.5	3,869	323	-	-	1,546
TOTAL	**6,271.5**	**466**	**9.53**	**3.42**	**0.04**	**0.12**	**927**	**2,919**	**579,505**	**213,814**	**876**	**777**	**186,888**

*Notes:
Resource estimates adopt from three NI43-101 Technical Reports for SGX, HPG and TLP-LM dated 20 May 2011; all available on the SEDAR website.
In preparing this table, minor errors were noted and corrected

10 DRILLING

Prior to Silvercorp obtaining the rights to the SGX mine in 2004, there was little drilling work completed on the Ying Property. Drilling programs conducted by previous operators include a 10,736 m surface drilling program in the TLP-LM area by the No. 6 Nonferrous Geological Exploration Team from 1991 to 1994 and a test drilling program of two holes in the SGX area by the Henan Nonferrous Geological Exploration Bureau in 2003. Since acquiring the projects, Silvercorp has initiated systematic drilling programs to test the strike and down-dip extensions of the major mineralized vein structures. Drilling procedures are described in the next section of this report. Drill plans and representative examples of drill sections are provided in Sections 7 and 9. Table 10.1 summarizes drilling programs conducted by Silvercorp from 2004 to 2010.

Table 10.1 Drilling Programs Completed by Silvercorp, 2004 to 2010

Mine	**Period**	**Number of Holes**		**Meterage (m)**	**Major Targets**
		Underground	Surface		
SGX	2004-Mar 2005	15		1,376	
	Mar 2005-Apr 2006	79	12	17,697	S2, S6, S14, S16E, S16W
	May 2006-Jun 2007	134	18	52,403	
	Jul 2007-2009	223	26	82,343	
	2010	93		32,572.66	
HZG	May 2006-Jun 2007	2	18	6,346	HZ10, HZ12, HZ20, and HZ22.
	Jul 2007-Nov 2009	40	41	24,227	
LJG	Jul 2007-Nov 2009	11		2,205	
HPG	May 2006-Jun 2007		2	760	H15, H17
	Jul 2007-Nov 2009	96	67	38,853	H13, H15, H5, H12-1, H29
	2010	30		6,623	
TLP	2008-2009	138	18	40,612	Veins I, II, III, IV, and V.
	2010	219		38,748	
LM	2008-2009	125	11	33,701	LM2, LM5, LM8, LM12, and LM14.
	2010	86		30,743	
Reconnaissance Drilling	2006		7	1,981	RHW
	2006		2	479	XM
	2010		9	2,884	SDG-LJG
	2010		8	2,284	DCG
Total, 2004-2010		**1,291**	**239**	**416,837**	

A major drilling program was conducted across the Ying Property in 2011. Underground drilling was carried out in mining areas to test the down-dip extension of major mineralized vein structures and infill the Inferred Resource blocks defined in previous drilling programs. Surface drilling was implemented in two exploration permit areas to test the deep exploration potential of some mineralized structures recognized at surface. Most of the underground holes were designed as inclined holes to test multiple vein structures. The general purpose of the drill program was to expand and upgrade the available resource in the major mining areas. The result of the underground drill program was the down-dip extension of some major mineralized veins and the discovery of a number of new high-grade veins in the current mine areas. Table 10.2 summarizes the total number of holes drilled and total meterage of core drilling completed in 2011.

Table 10.2 Summary of the 2011 Drilling Program on the Ying Property

Mine Area		Exploration		Drill Holes Completed	Total Meters Completed	Accumulated To Date (m)
SGX		Surface Drilling		-	-	-
		Underground Drilling		159	61,066	235,902.0
HZG		Surface Drilling		-	-	-
		Underground Drilling		-	-	29,619.8
HPG		Surface Drilling		-	-	-
		Underground Drilling		58	16,352	65,956.4
TLP		Surface Drilling		-	-	-
		Underground Drilling		123	36,638	121,961.3
LM		Surface Drilling	LME	-	-	-
			LMW	-	-	-
		Underground Drilling	LME	35	12,655	113,765.6
			LMW	78	37,359	
EXPLORATION AREAS	LJG	Surface Drilling		9	3,274	3,274
		Underground Drilling		-	-	-
	DCG	Surface Drilling		17	6,742	6,742
		Underground Drilling		-	-	-

10.1 SGX

The underground drilling program consisted of 61,066 m of NQ diamond drilling in 159 holes. 72 of the holes were drilled as a follow-up drill program on veins S2 and S7-1 where high-grade intersections were discovered in 2010 (Press Releases dated on 21 January and 31 January 2011). The other 87 holes were designed either to test the down-dip extensions below the 260 m elevation or to explore the untested portions above the 260 m elevation of the known mineralized vein structures. As of 31 December 2011, the Company received assay results for 1,037 core samples for 126 holes completed in 2011 and 17 holes completed in late 2010.

The underground drilling program was successful in tracing the down-dip extensions of the known vein structures S2, S4, S6, S7, S7E, S7-1, S8, S14, S14-1, S19, and S21. Most of the tested known vein structures have now been extended to depth of about 0 m elevation. Exploration results from the drill program are briefly summarized in the following tables. Additional information is available on Silvercorp's web site.

Table 10.3 Summary of SGX 2011 Drilling Program Below 260 Elevation

Target Vein	Number of Holes Drilled	Holes Intercepted Mineralization (≧100 g/t Ag equivalent)	Controlled Downdip Extension (Elevation m)	Controlled structure Length (m)	Occurrence (Dip /Angle)
S2	40	18	180 - -133		285-310° /75-88°
S4	7[1]	5	196 - 8	300	300-320° /55-85°
S6	34[1]	20	275 - -5	1,000	280-305° /50-80°
S6-branches	7[1]	7	199 - 49		
S7	18	8	517 - 15	900	114-125° /85-88°
S7E	4[1]	4	149 - -9	50	
S7-1	27	10	463 - -10	1,500	295-310° /67-85°
S8	16	1[2]	492 - 68	400	295-320° /75-82°
S14	11	3	186 - -181	500	285-305° /60-80°
S14-1	25[1]	17	281 - -58	700	
S19	7	3	348 - 196	300	
S21	11	2	358 - 177	300	295-310° /70-80°

1 Holes designed to test multiple mineralized structures.
2 Assays pending for 10 additional holes

Table 10.4 Significant Intersections, SGX Drilling below 260m Elevation

Vein	Hole No.	Elevation (m)	Interval (m)	Ag (g/t)	Pb (%)	Zn (%)
S4	ZK12A32	170	0.35	1,155	6.75	0.001
S4	ZK1237	85	0.95	643	7.46	2.36
S6	ZK10A02	191	1.86	1,297	17.47	7.15
	including		0.68	3,158	45.40	19.20
S6	ZK1237	173	1.00	1,015	31.61	0.001
S6	ZK0A28	11	0.49	1,177	47.31	9.28
S7	ZK0616	103	0.35	1,072	24.51	0.001

S7E	ZK0618	9	1.80	1,562	64.21	0.001
S14	ZK10A02	83	0.60	390	10.08	0.001
S14-1	ZK04A10	237	1.20	851	7.10	4.22
	including		0.49	1,289	16.79	9.19
S21	ZKY1805	188	1.31	429	10.69	6.24

12 holes were aimed to explore the untested portions above the 260 m elevation of vein structures S7-3, S16W1, S18 and S28. New mineralized bodies were intercepted in all these tested vein structures. Exploration results from these veins are summarized in the following table:

Table 10.5 Summary of SGX 2011 Drilling Program Above 260 Elevation

Target Vein	Number of Holes Drilled	Holes Intercepted Mineralization (≧100 g/t Ag equivalent)	Controlled Downdip Extension (Elevation m)	Controlled Structure Length (m)	Occurrence (Dip /Angle)
S7-3	5[1]	2	502 - 424	200	
S16W1	3+2[1]	2	353 - 394		
S18	4	1	552 - 359		
S28	5	1[2]	487 – 490)		80-95° /55-65

[1] Drilled through by the passing holes, which were designated to test multiple veins.
[2] Assays pending for 3 additional holes

Table 10.6 Significant Intersections, SGX 2011 Drilling Above 260 m Elevation

Vein	Hole No.	Elevation (m)	Interval (m)	Ag (g/t)	Pb (%)	Zn (%)
S7-3	ZK15A08	424	11.24	190	0.83	1.67
	including		0.98	506	2.88	12.70
S16W1	ZK5111	353	0.47	1405	13.00	0.05
	ZK5421	393	2.83	298	8.75	0.17
	Including		0.57	1,081	36.18	0.14

Results of the 2011 underground drilling program show that most of the major mineralized vein structures at the SGX area are still open at depth.

10.2 HPG AREA

The underground drilling program was designed to test the down-dip extension of the mineralized vein structures and infill the known areas with Inferred Resource with two underground rigs. A total of 16,352 m in 58 holes was drilled and 543 core samples were collected.

Results of the underground drilling program are summarized in the following tables. Additional information is available on Silvercorp's web site.

Table 10.7 Summary of HPG 2011 Drilling Program

Target Vein	Number of Holes Drilled	Holes Intercepted Mineralization (≧100 g/t Ag equivalent)	Controlled Downdip Extension (Elevation m)
H3	1		
H5	11	5	415
H5W	2		
H11	13+1*	4	415
H15		1	289
H15W	15	2	385
H17	3+1*	6	153
H39-1	10		
H39-2	2	3	433

Significant intersections are shown in following tables:

Table 10.8 Significant Intersections, HPG 2011 Drilling

Vein	Drill Hole	From (m)	To (m)	Elevation (m)	Down-hole width (m)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)
H15W	ZK0804	88.34	88.64		0.3	0.49	103.5	1.11	1.72
	ZK2005	181.72	182.05		0.33	1.04	113	1.73	2.25
H17	ZK0007	152.96	155.94	316	2.98	0.36	61	3.19	4.63
	ZK0201	222.98	224.72	242	1.74	0.16	64.37	2.45	6.1
	ZK0201	163.88	164.56	289	0.68	<0.1	48.69	1.69	17.2
	ZK0202	296.99	297.3	153	0.31	1.34	77	26.74	0.04
	ZK0401	203.14	204.54	298	1.4	0.52	61.9	2.98	1.05
	ZK0402	290.8	291.71	196	0.91	0.61	70.4	3.16	0.19
H5	ZK0103	16.91	17.21		0.3	0.32	268	3.87	3.12
	ZK0103	258.86	259.69		0.83	0.42	259	2.41	8.49
	ZK0808	124.52	124.83		0.31	0.3	29.87	7.43	15.09
	ZK0809	168.52	169.22		0.7	7.17	73.3	2.39	3.51
	ZK0809	169.95	170.52		0.57	0.65	65.27	7.5	11.01
	ZK0810	193.28	194.14		0.86	0.23	41	1.84	4.36
	ZK0810	195.71	196.76		1.05	0.5	69	3.45	7.95
	ZK2510	198.03	198.56		0.53	4.62	424	1.66	3.42
H11	ZK2106	28.05	28.27		0.22	1.64	65	1.66	0.25
	ZK2106	146.95	147.23		0.28	0.46	70	0.83	2.86
	ZK2107	194.27	194.67		0.4	2.3	8	0.73	0.31
	ZK2108	257.75	258.05		0.3	0.38	32	12	0.32
	ZK2510	76.85	77.07		0.22	1.14	7	0.2	0.24
	ZK2510	93.89	94.05		0.16	3.83	2	0.01	0.06
	ZK2510	159.72	160.16		0.44	1.22	4	0.18	0.15
	ZK2510	198.03	198.56		0.53	4.62	424	1.66	3.42
	ZK2510	198.56	199.33		0.77	1.04	14	0.19	0.49
	ZK2510	227.37	227.84		0.47	2.49	22	1.06	0.37
	ZK2510	228.9	229.35		0.45	1.01	6	0.13	0.3

10.3 TLP Area

A total of 36,637 m in 123 holes was completed with eight underground rigs at the TLP area in 2011. 95 of the 123 completed holes intercepted silver, lead and zinc mineralization with a few holes intercepted gold (Au) mineralization at depth. Highlights of 2011 underground drilling program are summarized in the following tables. Additional information is available on Silvercorp’s web site.

Table 10.9 Summary of TLP 2011 Drilling Program

Target Vein	Number of Holes Drilled*	Holes Intercepted Mineralization (≧100 g/t Ag equivalent)	Downdip Extension (Elevation m)	Defined Structure Length (m)	Occurrence (Dip /Angle)
I	22	5	942-651	1580	290° /62°
IW	17	6	900-450	1200	315° /65-71°
IW1	13	8	900-500	250	300° /65-70°
IW3	6	4	950-700		300° /65-70°
II	27	12	950-350	2040	290° /50-80°
III	30	7	950-350	2103	290-295° /50-85 °
T11	11	8	800-400	200	310-325° /55-75 °
T16	5	3	800-600	400	310-315° /70-80 °
T17	7	2	900-600	600	100-105° /80-87 °
T33	43	11	800-600	900	310° /65-70°

*Some holes were designed to test multiple vein structures.

Table 10.10 Significant Intersections, TLP 2011 Drilling

Vein	Hole No.	Elevation (m)	Interval (m)	Ag (g/t)	Pb (%)	Zn (%)
1	ZKT07S31	942	0.49	286	9.2	8.57
	ZKT0603	651	0.32	688	10.68	4.27
T16	ZKG1203	813	0.37	424	0.90	0.29
T17	ZKT0051	826	1.60	545	1.35	0.16
	Including		0.30	1990	6.16	0.65
T17	ZKG0803	716	1.85	141	4.39	0.39

The 2011 drilling program also discovered zones of high-grade mineralization in 32 additional veins.

10.4 LM AREA

10.4.1 LME Sub-area

The 2011 drill program at the LM mine totalled 12,655 m of diamond core drilling in 35 holes utilizing two underground rigs. Twenty five out of 35 completed drill holes encountered high-grade silver-lead-zinc mineralization and the remaining holes intersected vein structures with weak mineralization. The drilling significantly extended veins LM5, LM5W, and LM6 over 600 m in depth (from surface) to below the 400 m elevation.

The drilling also revealed a possibly trend of the gold grade increasing with depth. Four out of five holes that intersected the veins below 400 m elevation contained greater than 1 g/t gold (Au) with the deepest interception at 332 m elevation (Vein LM6 in Hole ZKL5206) yielding 314 g/t Ag and 7.95 g/t Au over a 0.66 m interval. Highlights of 2011 underground drilling program are summarized in the following tables. Additional information is available on Silvercorp's web site.

Table 10.11 Summary of LME 2011 Drilling Program

Target Vein	Defined Down-dip Extension (Elevation)	Known Structure Length (m)	Occurrence (Dip /Angle)	Number of Holes Drilled	Holes Intercepted Mineralization (≧100 g/t Ag equivalent)
LM2	750-450	1,100	90° /45-80°	10	3
LM5	800-300	>1,000	NW/60-75°	14	9
LM5E	800-300		330° /70-75°	9	2
LM5W	800-289		330° /70-75°	7	4
LM6	800-300	550	310-330° /70-75°	15	7
LM6E	800-300		NNW/60-75°	5	5
LM6W	800-300		NNW/85°	7	1

Table 10.12 Significant Intersections, LME 2011 Drilling

Vein	Hole No.	Elevation (m)	Interval (m)	Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)
LM5	ZKL5401	762	1.60	276	1.9	0.33	0.00
	ZKL5004	383	2.59	312	1.31	0.24	0.42
	ZKL5402	716	0.40	1273	3.22	2.22	0.07
	ZKL5801	781	0.86	525	1.35	2.23	0.07
	ZKL6201	692	1.64	661	5.2	0.55	0.03
	including		0.35	2016	16.87	1.86	0.16
LM5E	ZKL5802	683	0.40	771	7.77	0.29	0.26
LM5W	ZKL5006	348	4.34	642	2.24	1.15	1.00
	including		0.55	3720	7.13	5.19	1.77
	including		0.67	609	2.6	1.40	4.51
	ZKL5206	289	0.70	702	0.96	1.35	0.02

10.4.2 LMW Sub-area

A total of 37,359 m of underground diamond drilling in 78 holes were completed with six underground drill rigs at the LM Mine West in 2011. The drill program has successfully extended the existing veins further to down dip and striking directions, and has discovered four additional new high grade silver-lead veins, increasing the total number of mineralized veins ay the LM West Mine to 31 veins.

Selected significant intercepts are as follows.

Table 10.13 Significant Intersections, LMW 2011 Drilling

Vein	Hole No.	Elevation (m)	Interval (m)	Ag (g/t)	Pb (%)	Zn (%)
LM13	ZKX0509	572	7.39	678	7.9	0.85
	including		4.75	863	12.01	1.16
LM12-3	ZKX0001	637	2.52	963	1.31	0.15
	including		1.63	1430	2.00	0.22
LM12-1	ZKX0001	629	1.03	572	7.09	0.09
LM17	ZKX2801	840	4.22	327	0.54	0.09
	including		1.03	982	0.65	0.13
	ZKX1705	724	4.20	314	0.45	0.14
	including		2.10	554	0.36	0.14
LM13W	ZKX0002	632	1.70	688	2.96	0.54
	including		0.55	1,981	8.20	1.50
LM12-2	ZKX0902	699	1.20	1,137	0.36	0.54
	including		0.52	2,525	0.32	0.74
LM10	ZKX0903	867	2.67	899	5.52	0.17
	including		2.03	1,128	6.88	0.09

Four new veins were discovered during the drilling program, LM12E, W1, W6 and W18. Vein LM12E is a blind zone parallel to vein LM12, whiles the other three veins occur as blind zones at an area about 600m west of the major known vein systems in the TLP Southwest area (Silvercorp press release dated 26 January 2012).

10.5 Exploration Drilling in Areas Covered by Exploration Permits

A surface drilling program was carried out in 2011 to test the deep potential of the mineralized vein structures recognized at surface and explore for new mineralized vein structures over the untested areas in two exploration permit areas of the Ying property. Silvercorp drilled 26 surface drill holes with a total meterage of 10,016.38 m, and discovered three new mineralized vein structures in the LJG area and one new mineralized structure in the DCG area.

10.5.1 LJG Area

In 2011, Silvercorp completed nine drill holes in total of 3,274.56 meters. The surface drilling program was designed to trace the down-dip extensions of vein SL1 and SL1-1 over exploration lines #4, #11, #12, #15 and #16, and vein SL2 between exploration lines 12 and 20.

Table 10.14 Summary of LJG 2011 Drilling Program

Drill Hole	Vein	Samples	From (m)	To (m)	Horizontal Width (m)	True Width (m)	Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)	Cu (%)
ZK1101	SL3	K666158	155.03	155.63	0.36	0.35	28.7	0.04	0.02	0.00	1.73
ZK1101	SL3	K666159	155.63	156.46	0.49	0.49	6.6	0.02	0.03	0.00	0.36
ZK1101	SL1	K666176	251.01	251.46	0.33	0.32	35.2	0.46	0.76	0.00	0.11
ZK1102	SL3	G997767	226.39	226.79	0.17	0.17	4.2	0.01	0.04	0.00	0.29
ZK1501	SL3	G860816	75.39	76.79	0.85	0.84	21.2	0.08	0.06	0.00	1.5
ZK1501	SL1-1	G860820	193.59	195.02	1.49	1.23	12	0.04	0.07	0.00	0.27
ZK1502	SL1-1	G997785	225.42	226.19	0.68	0.57	0.0	0.00	0.00	0.00	0.72
ZK403	SL1	K666141	423.52	424.32	0.72	0.68	6.4	0.07	0.09	0.16	0.44
ZK404	SL2E	K670018	51.99	52.68	0.74	0.59	19.7	0.02	0.07	0.15	2.16
ZK404	SL2E	K670019	52.68	52.98	0.32	0.26	41.92	0.02	0.22	0.18	4.84

The surface drilling program successfully traced the down-dip extensions of the above tabled mineralized structures. There were no significant silver, lead and zinc intercepts from core samples. However some of the exploration holes intercepted copper values.

10.5.2 DCG Area

In 2011, Silvercorp drilled 17 core holes totalling 6,742 m to define veins C4 and C2 and to test geophysical anomaly and detachment fault zones. The surface drilling program was successful in tracing the down-dip extension of the known mineralized structures with significant intersection of vein C4.

The following table summarized the 2011 drilling result for DCG area:

Table 10.15 Summarized Results of 2011 Drilling Program in DCG Area

Drill Hole	Vein	Samples	From (m)	To (m)	Horizontal Width (m)	True Width (m)	Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)	Cu (%)
ZK16001	W16	K676471-K676473	236.34	239.44	2.97	2.76	82.8	0.3	0.5	0.00	0.00
ZK4051	C4	K670232-K670234	85.16	86.89	1.44	1.42	23.54	1.08	0.07	0.00	0.07
ZK4051	C4E	K670238	138.28	139.02	0.61	0.6	17.4	4.3	0.09	0.00	0.04
ZK4052	C4	K666191	106.94	107.44	0.34	0.32	770.7	0.4	0.08	0.12	0.3
ZK4052	C4E	G860358	180.79	181.54	0.50	0.47	13.0	1.5	0.07	0.00	0.02
ZK4053	C4E	K676458	403.88	404.41	0.46	0.43	80.2	9.21	0.07	0.85	0.00
ZK4071	C4	G860752	135.21	135.57	0.35	0.33	52.2	10.54	0.14	0.00	0.00
ZK4111	C4	G860784	66.23	67.05	0.79	0.74	6.8	1.9	0.11	0.00	0.01

Locally gouge and broken ground is associated with the mineralized zones. Although locally significant, the QP does not believe it to material to the global DCG resource.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sampling

The numerous fault-fissure structures that cut the gneissic bedrock of the Ying Property are not continuously mineralized. Veins occur intermittently along these structures, appearing and disappearing along strike and dip. Silvercorp's exploration consists of horizontal tunnelling along the veins, in addition to 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. Continuous chip samples are collected from underground tunnels and other workings, and core samples are collected from altered and mineralized drill cores.

11.1.1 Core Samples

NQ-sized drill cores (48 mm in diameter) are recovered from the mineralized zones. Drill core recoveries are influenced by lithology and average 98-99%. The Archean gneissic wall rocks appear competent.

Drill core is logged initially at the drill sites and the mineralized or favourably altered intervals are moved to the surface core shack where they are logged, photographed and sampled in detail. Samples are prepared by cutting the core in half with a diamond saw. One half of the core is marked with sample number and sample boundary and then returned to the core box for archival storage. The other half is placed in a labeled cotton cloth bag with sample number marked on the bag. The bagged sample is then shipped to the laboratory for assaying.

11.1.2 Chip Samples

Chip samples are collected along sample lines perpendicular to the mineralized vein structure in exploration tunnels. Spacing between sampling lines is typically 5 m along strike. Both the mineralized vein and the altered wall rocks are cut with continuous chisel chipping. Sample length ranges from 0.2 m to more than 1 m, depending on the width of the mineralized vein and the mineralization type.

11.2 Sample Preparation & Analysis

Core samples are shipped or couriered in securely sealed bags to one of four reputable commercial labs, the Analytical Lab of Henan Non-Ferrous Metals Geological and Exploitation Institute in Zhengzhou (Zhengzhou Lab), the Analytical Lab of the 6th Nonferrous Geo-exploration Team in Luoyang (Luoyang Lab), the ALS-Chemex Lab in Guangzhou, and the SGS lab in Tianjin. All labs are officially accredited in China.

Zhengzhou Lab and Luoyang Lab:

Sample preparation consists of drying, crushing and splitting of the sample to 250 grams (g), and then the sample is pulverized to minus 200 mesh. Two-acid digestion and AAS finish are utilized on a 0.5 g sample for lead and zinc assay. Titration is utilized as a modified process for higher grade materials. Silver is also analyzed using a two-acid digestion on a 0.5 g sample and AAS finish.

ALS Chemex:

Samples are dried, crushed and split to a 250 g sub-sample which is further pulverized to 85% passing 200 mesh. Four-acid digestion and ICP-AES finish are utilized on a 1 g sample for analyzing silver, lead, zinc and copper. For samples containing more than 1,500 g/t silver, fire assay and gravimetric finish is utilized. Titration method is utilized as a modified process for samples with more than 10% Pb.

SGS Lab:

Samples are dried, crushed and split to a 250 g sub-sample which is further pulverized to 85% passing 200 mesh. Fire assay and AAS finish are utilized for gold assay. Four-acid digestion and ICP-AES finish are used in analyzing silver, lead, zinc and copper.

Chip samples are prepared and assayed with AAS at Silvercorp's mine lab located at the mill complex in Luoning County and referred to in Section 11.3. Samples are dried at 100° to 105° C in an oven and are then crushed and pulverized through three procedures, preliminary crushing, intermediate crushing and final pulverizing. Sample splitting is conducted at each procedure. A 200 g sample of minus 150 mesh (0.1 mm) is prepared for assay. A duplicate sample of minus 1 mm is made and kept at the lab for archives. A 0.5 g pulp sample is treated with two-acid digestion and assayed for silver, lead, zinc and copper with AAS at the lab.

11.3 SGX Assay Laboratory

A brief examination of the SGX assay laboratory was made by the AMC QP. The assay lab is used to analyze both chip samples taken from underground workings for resource estimation purposes, and concentrate produced from the processing plants. Most of the processes for the analysis of chips and concentrate is completed within separate buildings, rooms and instruments.

While aspects of the lab were considered to be satisfactory, the QP made the following recommendations:

- Crush the chip samples to a finer grain size, say minimum 75% passing 2 mm.
- Conduct a daily sieve analysis to determine if the crushing and pulverizing is meeting specification.
- Install exhaust fans over each crusher to minimize dust contamination.
- Install compressed air to clean the crushers and pulverizers between samples.
- Dry samples in a drying oven rather than using hot plates.
- Use a blank sample between the crushing of all samples, particularly high grade samples.
- Post the government certificates of inspection either on the device itself or in the room containing the device.
- Take a second sample at regular intervals at the grinding / pulverizing stages of the preparation analysis as a check on the process.

11.4 Quality Assurance & Quality Control

Silvercorp`s QA / QC program during the period 2004 to 2010 comprised the following:

- Regular insertion of Reference Material Samples (RMS) at a rate of one RMS per 30-50 sample batch
- Sending 3-5% of pulp samples to other senior labs for external check
- Selection of about 10% of pulp samples (sometimes rejects) for rechecking at the same lab
- Regular review of results, with additional review by independent Qualified Persons

Silvercorp adopted a comprehensive QA / QC program for its 2011 exploration programs at the Ying Property.

Silvercorp's project geologists routinely insert RMSs and blanks to each batch of samples at a rate of about 4% to monitor for possible contamination in sample preparation, accuracy and precision of assay results and lab bias. As an enhanced measure for quality assurance and quality control on the Luoyang and Zhengzhou labs, Silvercorp randomly selected 3% of the pulp samples for external checking at ALS-Chemex, and about 12% of the pulp samples for internal checking at the original lab. Silvercorp geologists at each mine review QA / QC data on a regular basis. Any batch that reaches warning threshold or fails the QA / QC program is automatically notified for investigation or re-assayed, and only approved assay results are used for resource estimation.

Silvercorp's 2011 QA / QC program at Ying comprised 1,768 QA / QC samples which were inserted into 27,604 core and chip samples collected from different mines, including 810 RMSs, 168 blank samples, 247 external check samples, and 543 internal check samples.

11.4.1 Assay Results of Reference Materials

Thirteen RMSs (China's national standards) were used in the 2011 QA / QC program, comprising GBW07257, GBW07286, GBW07171, GBW07807, GBW07808, YSD2-08, YSD2-09, GBW(E)070075, GBW(E)070077, GBW(E)070078, GBW(E)070079, GBW(E)070021, and GBW(E)070023. The RMSs were prepared by the Measuration Center of the Shaanxi Provincial Geological Exploration Bureau in Xi'an, Shaanxi Province and the Analytical Research Institute of the Chinese Academy of Geosciences in Beijing, both being authorized and certified for reference material preparation by China's State Administration Bureau of Technical Monitoring. Except for a few samples, relative errors between the recommended values and assay results of the RMSs are less than 10% which AMC considers acceptable.

Taking RMS GBW(E)070079 as an example, results of 70 assays on the RMS by the Zhenzhou Lab are shown in Figure 11.1. Assay data within ± 2 standard deviations of the recommended value is considered acceptable. It can be seen that all the assay results of silver fall into the acceptable range, although averaging somewhat higher than the RMS value suggesting a slight tendency for the Zhenzhou to be biased high. Some results of lead and zinc lie somewhat outside the upper acceptable limit and again, the results for zinc indicate a slight tendency for the Zhenzhou to be biased high.

Figure 11.1 Results for Reference Material GBW(E)070079

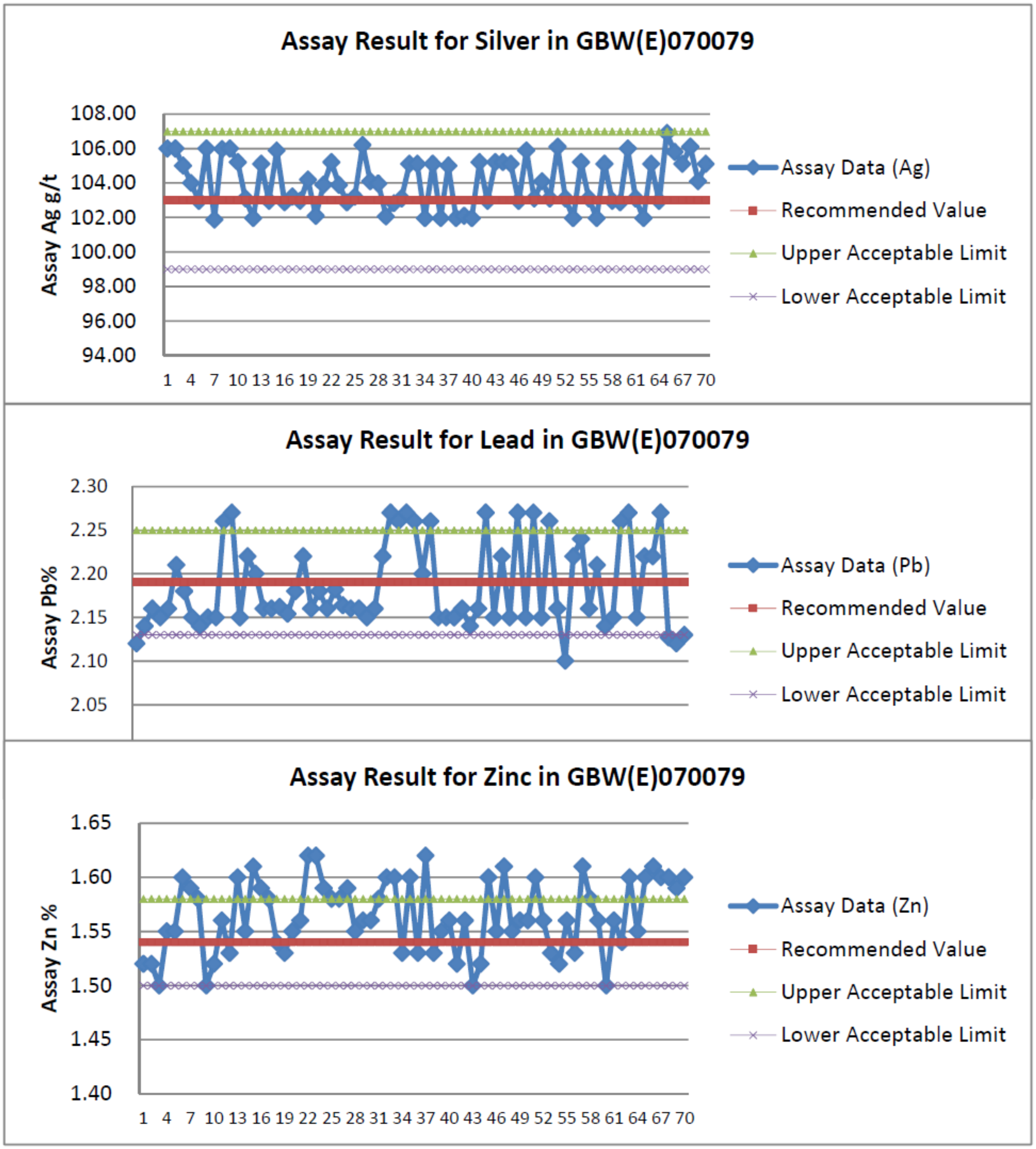


Figure 11.2, Figure 11.3 and Figure 11.4 show results of 29 assays for silver, lead and zinc in reference material GBW07171 by the Luoyang Lab. It can be seen that almost all the assay values are within the acceptable range (± 2 standard deviations) of the recommended value although zinc and silver values average lower than the RMS values.

Figure 11.2 Results of 29 Assays for Silver in Reference Material GBW07171

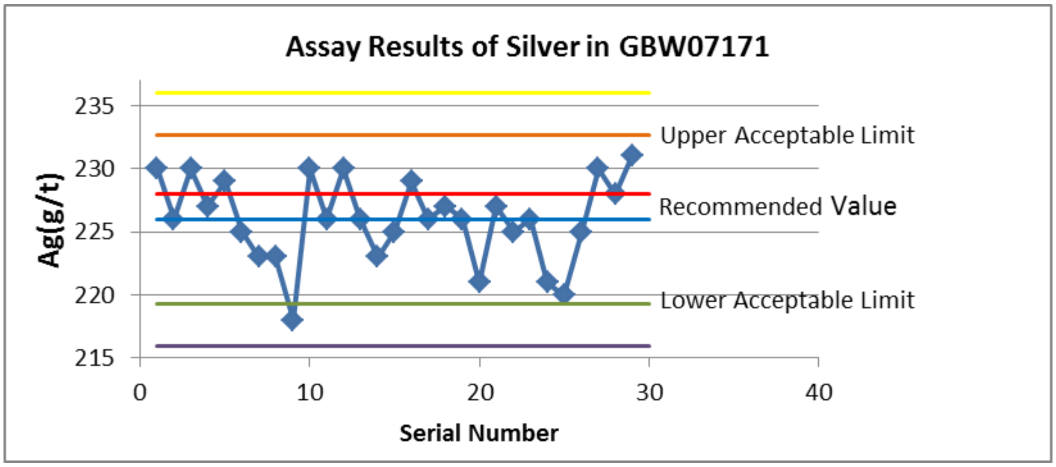


Figure 11.3 Results of 29 Assays for Lead in Reference Material GBW07171

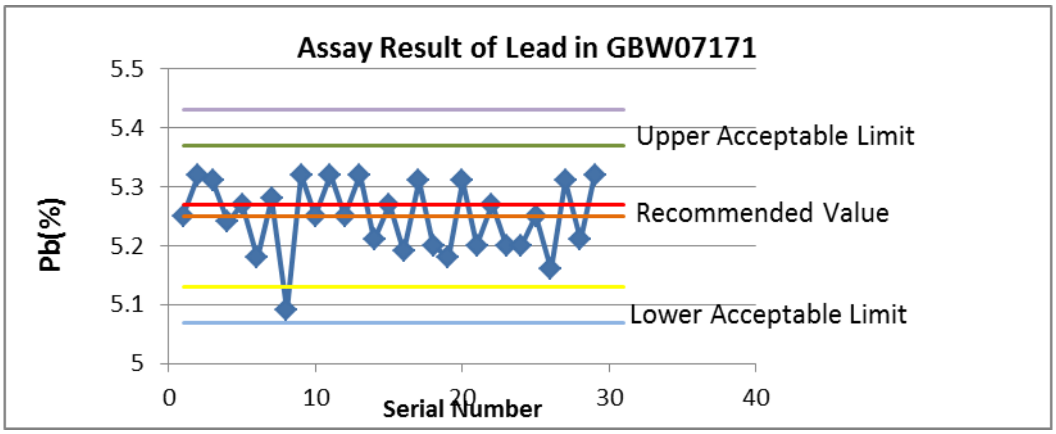
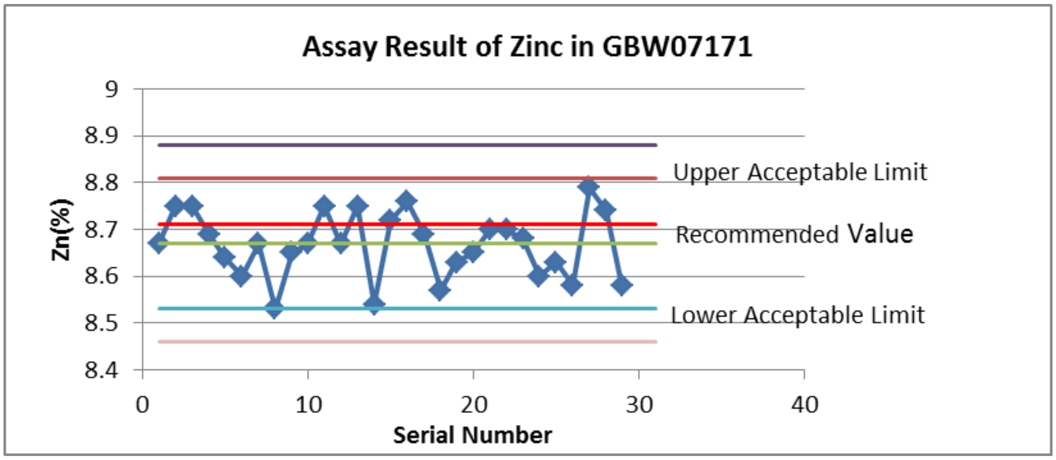


Figure 11.4 Results of 29 Assays for Zinc in Reference Material GBW07171



11.4.2 Assay Results of Blank Samples

Blank materials were made of barren rocks from the Ying Property. The barren rocks were crushed and pulverized at the Luoyang Lab and then sent to the Zhengzhou Lab, the ALS-Chemex Lab and the Ying Mine Lab for analysis of Ag, Pb, Zn and Cu. Averages of the assay results from four labs are used as reference values. 168 blank samples were inserted into sample batches in 2011 to monitor possible contamination problems in sample preparation procedures. Two samples from the Zhengzhou Lab and one sample from the Luoyang Lab were detected with anomalous values of Ag, Pb and Zn. Overall the assay results of the blank materials are considered acceptable.

11.4.3 Results of Internal Check Assays

543 pulp duplicates were assayed as internal checks to evaluate precision of the adopted assay methods in labs. Figure 11.5 and Figure 11.6 show the reproducibility of the internal checks on 305 samples from the Luoyang Lab and 238 samples from the Mine Lab. The reproducibility for silver, lead and zinc of the original assays by the internal checks is considered acceptable.

Figure 11.5 Results of Internal Check Assays for the Luoyang Lab

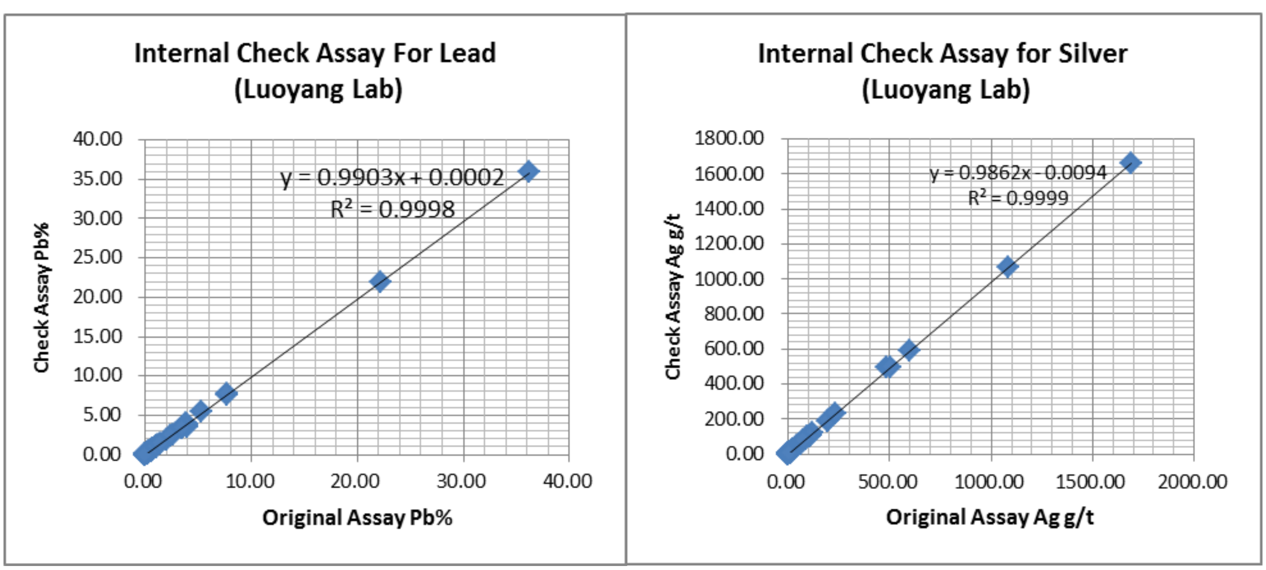
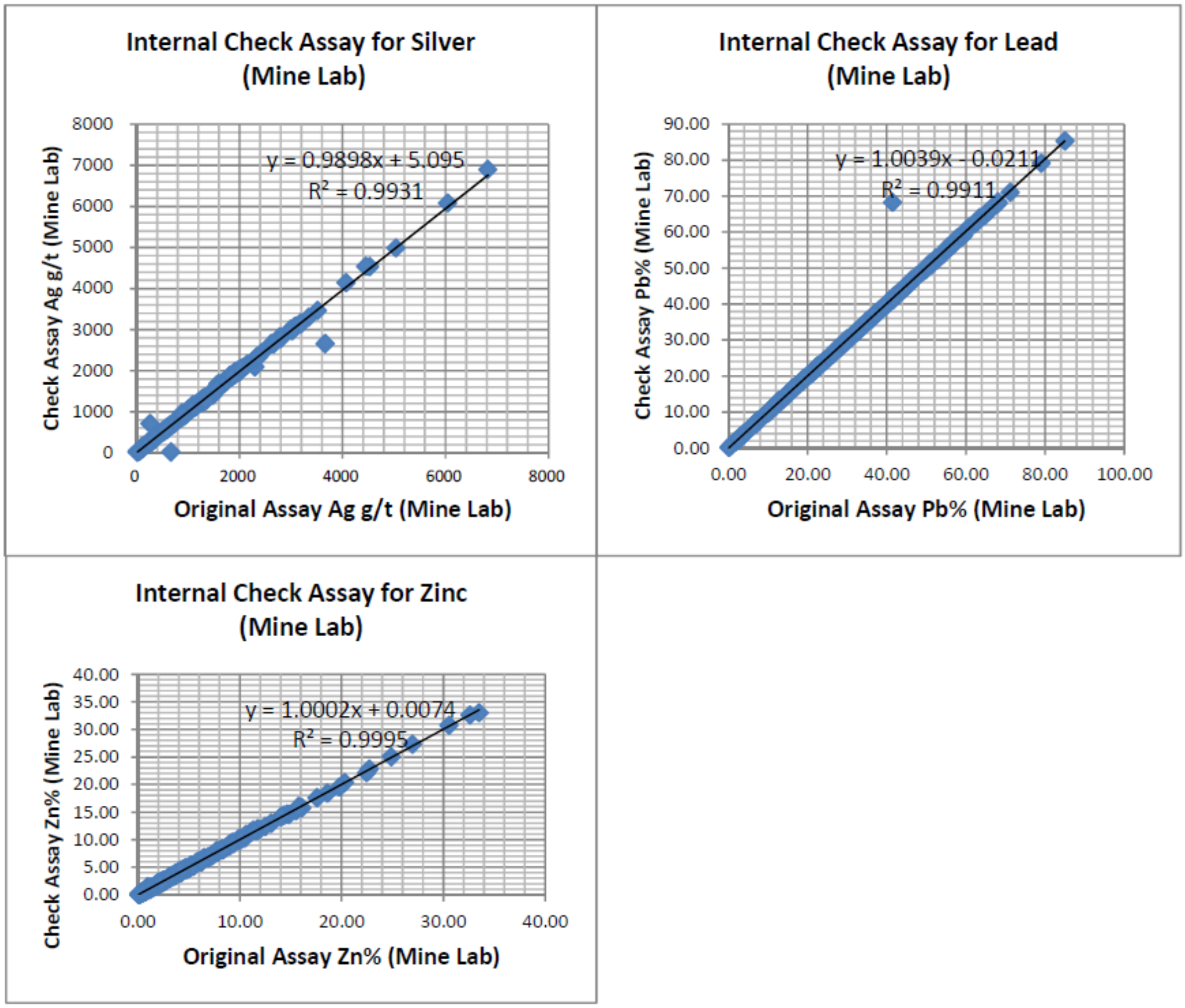


Figure 11.6 Results of Internal Check Assays at the Mine Lab



11.4.4 Results of External Check Assays

247 external check samples, comprising 65 randomly selected pulp samples from the Luoyang Lab and 182 pulp samples from the Zhengzhou Lab, were re-assayed at ALS-Chemex Guangzhou lab as external check. Figure 11.7 shows the results for the Luoyang Lab. It can be seen that there is an obvious linear relationship for sample pairs with grades less than 1,500 g/t Ag and assay results for sample pairs with more than 2,000 g/t Ag are less stable in the chart. External check results for zinc show a similar pattern.

Figure 11.7 Results of External Check for the Luoyang Lab

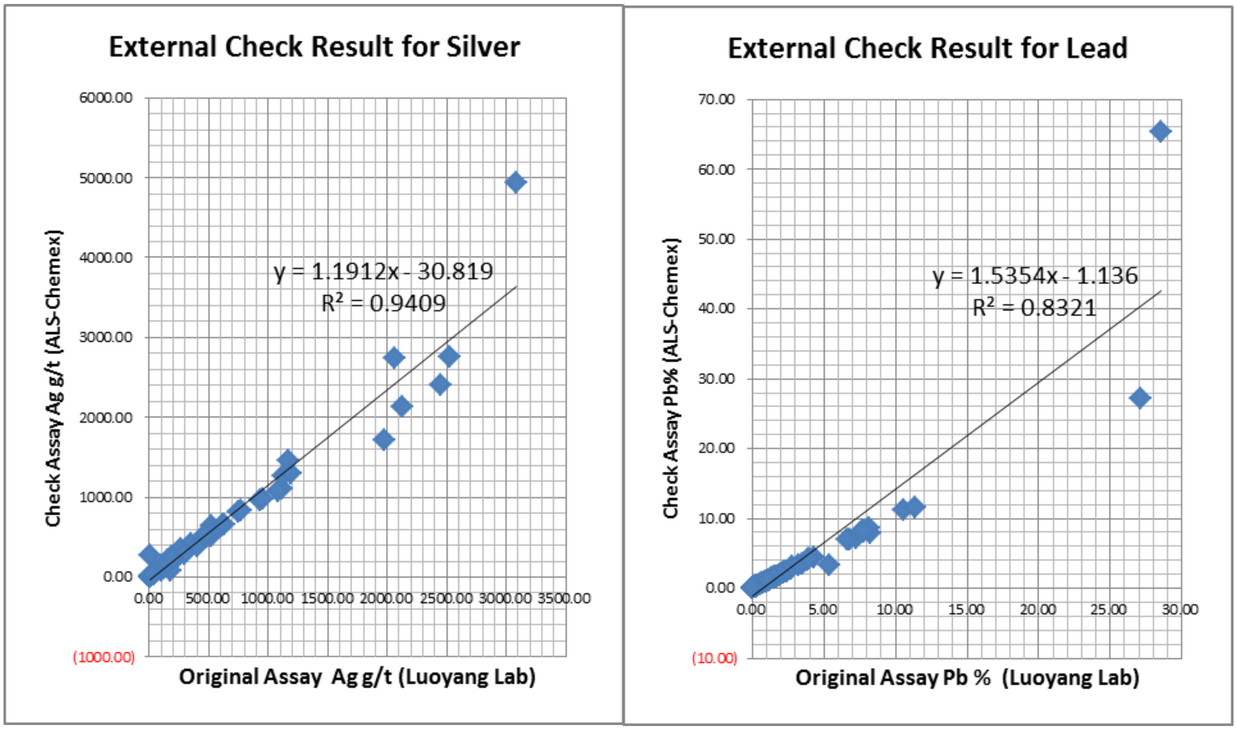
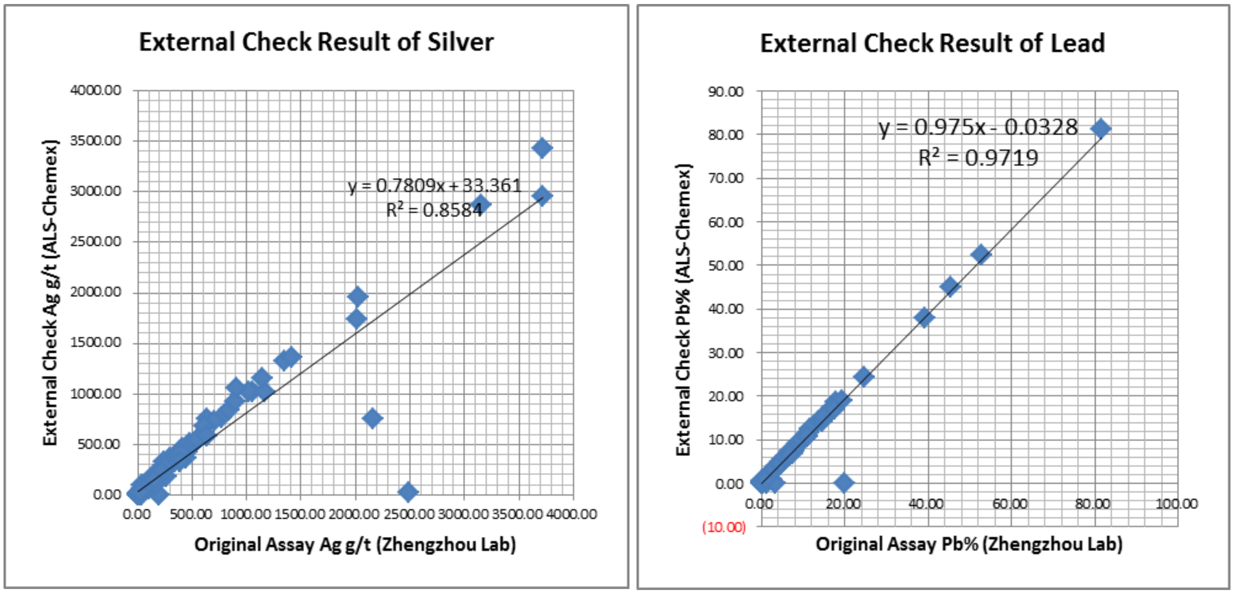


Figure 11.8 shows results for the Zhengzhou Lab. Silver results show good agreement for sample pairs with grades less than 1,500 g/t Ag and greater variability for higher grade sample pairs. Two outlier pairs are detected for silver. Lead results show a perfect linear relationship between the original assay and the check assays except for one outlier pair.

Overall, assay results from the Luoyang Lab and the Zhengzhou Lab are considered reliable.

Figure 11.8 Results of External Check for the Zhengzhou Lab



11.5 Bulk Density Measurements and Results

521 samples for bulk density measurement have been collected from different mine areas in the Ying Property. Samples are cut as an individual block of about 1 kg from different mineralization types at each mine area. A small amount of altered wall rock samples are also collected for comparison purpose. The bulk density is measured using the wax-immersion method by the Inner Mongolia Mineral Experiment Research Institute located in Hohhot, Inner Mongolia. Table 11.11 shows the average bulk densities for each mine.

Table 11.1 Average Bulk Densities for Individual Mines in the Ying Property

Mines	Samples Collected	# of Samples for Bulk Density Calculation	Avg BD	Remarks
SGX	104	98	3.66	3 highest values and 3 lowest values were removed from the data set.
TLP	186	186	2.92	Adopted from previous government exploration reports.
HPG	91	89	3.16	1 highest value and 1 lowest value were removed from the data set.
HZG	17	17	2.70	
LM	100	98	2.93	1 highest value and 1 lowest value were removed from the data set.
Wall Rock	23	23	2.76	5 from SGX, 10 from LM and 8 from HZG.

In AMC`s opinion, the sampling procedures and QA / QC measurements adopted by Silvercorp for its 2011 exploration programs at the Ying Property meet accepted industry standards.

12 DATA VERIFICATION

AMC's site visit was conducted by M Molavi, B Smith and A Riles in February 2012 (B O'Connor also visited in February 2012 and re-visited to undertake check sampling in April 2012). All aspects of the project were examined and verified during the visit, including drill core, exploration sites, resource and reserve estimates, data collection and verification procedures, data storage, underground workings, processing plant and surface infrastructure. Discussions were held with Silvercorp personnel, using an interpreter as required.

B O'Connor and A Riles conducted a detailed inspection of core intersections chosen by them to represent the major veins and/or current production from all the mines. They were satisfied that the observed mineralization was generally consistent with the assays reported.

During B O'Connor's second site visit, he collected at random 30 quarter core samples representing underground exposures of mineralization for check assaying. The samples were prepared and assayed at ALS Chemex laboratory in Guanzhou and the relevant Certificate authenticating the sample preparation and assaying procedures has been sighted by AMC. The results are listed in Table 12.1. Note that where assays were reported as less than detection limit (in the single instance for Ag the limit is 1 g/t) or greater than the maximum (several instances for lead where 20% is the maximum) the limit value is cited in the table and used for the calculation of the relative error.

Table 12.1 Independent Sample Verification

Detailed Information of Check Samples from Ying Property

Vein ID	Hole ID	Sample Number		Length	Original Sampling	Original Assay			Check Assay			Relative Error		
		Original	Check			Ag	Pb	Zn	Ag	Pb	Zn	Ag	Pb	Zn
LME_LM5E	ZKL5102	I902763	K588651	1.45	2010/08/20	245.94	0.58	0.41	263	0.581	0.376	6.703318	0.794885	9.233891
LME_LM5	ZKL5707	ZD10220	K588652	0.52	2010/11/26	272.91	0.13	0.04	1	0.010	0.018	198.5397	170.5774	81.93818
TLP_ Ⅱ	ZKT0603	ZT1108300	K588653	0.76	07/10/2011	102.00	18.53	1.68	65	13.70	0.735	44.31138	29.97208	78.37167
TLP_ Ⅱ	ZKT0603	ZT1108299	K588654	0.56	07/10/2011	27.40	3.14	0.24	20	2.31	0.361	31.22363	30.45872	39.9867
LME_LM5	ZKL5303	H329259	K588655	1.23	28/11/2008	929.87	22.98	1.16	924	20.000	1.535	0.633777	13.86951	27.66036
LME_LM5	ZKL5303	H329260	K588656	1.60	28/11/2008	1014.77	17.17	2.13	3860	6.92	0.800	116.7332	85.11052	90.71038
TLP_ Ⅱ	ZKT0603	ZT1108301	K588657	0.47	07/10/2011	27.20	4.17	0.27	128	20.000	1.190	129.8969	130.9888	125.1144
SGX_S4	ZK1235	I899509	K588658	0.60	18/07/2010	1161.27	28.08	1.26	1930	20.000	0.875	49.73555	33.61065	36.06557
SGX_S2	ZK0A24	K670995	K588659	0.49	31/10/2011	390.00	11.97	2.09	554	10.10	7.18	34.74576	16.94608	109.8166
TLP_ Ⅱ	ZKT0704	I901104	K588660	0.78	01/06/2010	45.98	2.38	1.13	10	1.130	0.350	128.5472	71.37166	105.5968
SGX_S2E	ZK14A07	I901911	K588661	2.00	31/03/2010	372.09	10.48	37.40	523	19.90	29.4	33.71847	62.01448	23.9521
SGX_S7-1	ZK08A03	K670263	K588662	0.18	19/04/2011	98.86	7.22	0.25	169	8.06	0.316	52.37535	10.99476	21.52121
SGX_S7-1	ZK08A03	K670264	K588663	0.73	19/04/2011	11.80	0.69	0.15	19	0.665	0.097	46.72121	3.057787	42.34051
SGX_S7-1	ZK08A03	K670265	K588664	0.68	19/04/2011	569.19	27.86	0.33	888	20.000	0.373	43.75715	32.82834	12.06737
TLP_ Ⅱ	ZKT1903	H331648	K588665	1.40	15/08/2008	154.40	1.33	1.76	56	0.724	0.847	93.53612	59.29521	69.81148
SGX_S16W	ZK0814	K670716	K588666	1.72	04/08/2011	**605.00**	14.01	5	155	3.27	9.80	118.4211	124.3056	64.86486

		Sample Number			Original Sampling	Original Assay			Check Assay			Relative Error		
Vein ID	Hole ID	Original	Check	Length		Ag	Pb	Zn	Ag	Pb	Zn	Ag	Pb	Zn
SGX_S16W	ZK0814	K670714	K588667	1.28	04/08/2011	446.00	1.94	0.172	449	14.45	0.194	0.670391	152.6541	12.02186
SGX_S16W	ZK0814	K670715	K588668	1.60	04/08/2011	51.50	0.118	0.031	130	2.28	8.04	86.50138	180.3169	198.4636
SGX_S16W	ZK08A03	K670256	K588669	2.01	19/04/2011	2199.65	4.43	1.86	1645	1.950	1.035	28.85308	77.70461	57.0442
SGX_S16W	ZK08A03	K670257	K588670	0.68	19/04/2011	1419.50	12.73	1.22	3270	20.000	2.28	78.92099	44.46142	60.31112
TLP_ Ⅱ	ZKT3505	H327340	K588671	1.04	18/06/2009	362.00	8.86	0.11	275	8.31	0.181	27.31554	6.406523	48.79725
TLP_ Ⅱ	ZKT2901	H302660	K588672	0.61	13/07/2009	46.97	7.40	2.45	30	1.255	0.068	44.09139	142.0156	189.1978
TLP_ Ⅱ	ZKT2901	H302661	K588673	0.77	13/07/2009	100.72	7.44	0.02	51	4.93	0.084	65.53804	40.52017	128.3623
TLP_ Ⅱ	ZKT2901	H302662	K588674	1.16	13/07/2009	491.44	9.90	0.08	393	10.40	0.086	22.26088	4.876151	2.056987
SGX_S14	ZK1207	B747287	K588675	0.70	20/06/2006	3084.00	25.35	5.02	1480	20.000	4.25	70.28922	23.59427	16.61273
SGX_S2	ZK0607	G992858	K588676	1.10	01/08/2008	13.65	0.48	0.91	12	0.239	0.708	12.84564	67.44106	25.16359
SGX_S7-1Branch	ZK1104	K666271	K588677	0.94	31/10/2011	361	12.13	13.56	35	1.930	5.95	164.6465	145.0925	78.01128
TLP_ Ⅱ	ZKT2703	H313098	K588678	0.95	31/10/2009	116.93	3.89	0.03	92	2.92	0.029	23.86235	28.38672	8.352043
TLP_ Ⅱ	ZKT0402	K673562	K588679	1.08	17/07/2011	145.10	6.86	0.15	131	5.25	0.141	10.21369	26.5896	3.484321

The results are somewhat variable, which is not unexpected given the nature of the mineralization and the condition of the cores, which were partly oxidized as a result of sulphides being exposed to the atmosphere over a number of years. Some of the differences (both plus and minus) between original and check assays have been attributed to a "nugget" effect with native silver and to the core condition. However, in general, high grade mineralization re-assays as such, as does lower grade mineralization. Although this was an interesting exercise, the information available from resource to mill feed reconciliation (Section 14) provides a better measure of the reliability of the resource estimates than this type of re-sampling exercise.

Based on AMC's independent reviews and validations of information and data provided, AMC is satisfied that the data is acceptable for the purposes of this report.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The lab scale mineral processing and metallurgical tests for the Ying Property mines were done by three laboratories in China:

- Hunan Nonferrous Metal Research Institute (HNMRI) using SGX mineralization in 2005.
- Tongling Nonferrous Metals Design Institute (TNMDI) using HZG mineralization in 2006.
- Changsha Design and Research Institute (CDRI) using TLP mineralization in 1994.

The objectives of the lab mineral processing testwork were:

- To maximize silver recovery to the lead concentrate.
- To develop a process flow sheet with appropriate operating parameters as a basis for the industrial scale implementation of lead, zinc and silver recovery.
- To determine the product quality characteristics relative to the relevant national standards.

The metallurgical testing consisted of mineralogical assessment, flotation tests and specific gravity measurements of the mineralized veins.

SGX is the main deposit and the HNMRI work is the most comprehensive; therefore the lab test results from HNMRI’s study (2005) on SGX mineralization were used for both mill Plant 1 (2005) and Plant 2 (2008) design.

13.2 Mineralogy

Silvercorp has three principal mining operations on the Ying Property:

- SGX, consisting of the Shagouxi (SGX) and Houzhanggou (HZG) mines in the western part of the block.
- HPG, consisting of the Haopinggou (HPG) mine, also in the western part of the block.
- TLP/LM, consisting of the Tieluping (TLP) and Longmeng (LM) mines in the eastern part of the block.

The mineralization in the SGX-HZG mines and other mines in the Ying district (which includes SGX, HZG, HPG, HPG (Au), TLP and LM mines) occurs as relatively narrow tabular veins that pinch-and-swell along fault-fissure structures.

The mineralogy generally consists of galena and sphalerite plus a variety of silver minerals from native silver to silver sulphides and sulphosalts, some rare, and in the case of TLP/LM mine some silver halides in the upper zones.

The mineralogy specific to each mine is described below.

13.2.1 SGX

In 2005, 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 main mineral occurrences:

- Polymetallic sulphide minerals: galena, sphalerite with trace amounts of chalcopyrite, pyrrhotite, hematite, magnetite and arsenopyrite.
- Silver minerals: native-silver, B-argentite, and the antimonial sulphosalts: pyrargyrite and stephanite.

Table 13.1 summarizes the mineralogical compositions of blended cores, as feed for flotation tests.

Table 13.1 Mineral Composition of the SGX Mineralization

Sulphides Minerals	%	Gangue Minerals	%
Pyrite, pyrrhotite	2.54	Quartz	40
Galena	6.8	Chlorite and sericite	22.5
Sphalerite	7.8	Kaolin and clay minerals	15
Arsenopyrite	0.06	Hornblende and feldspars	4
Chalcopyrite etc.	0.2	Iron oxides, others	1.1

The mineralogical study results show that:

- 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.

Table 13.2 summarizes the distribution of silver minerals. Silver appears in two forms:

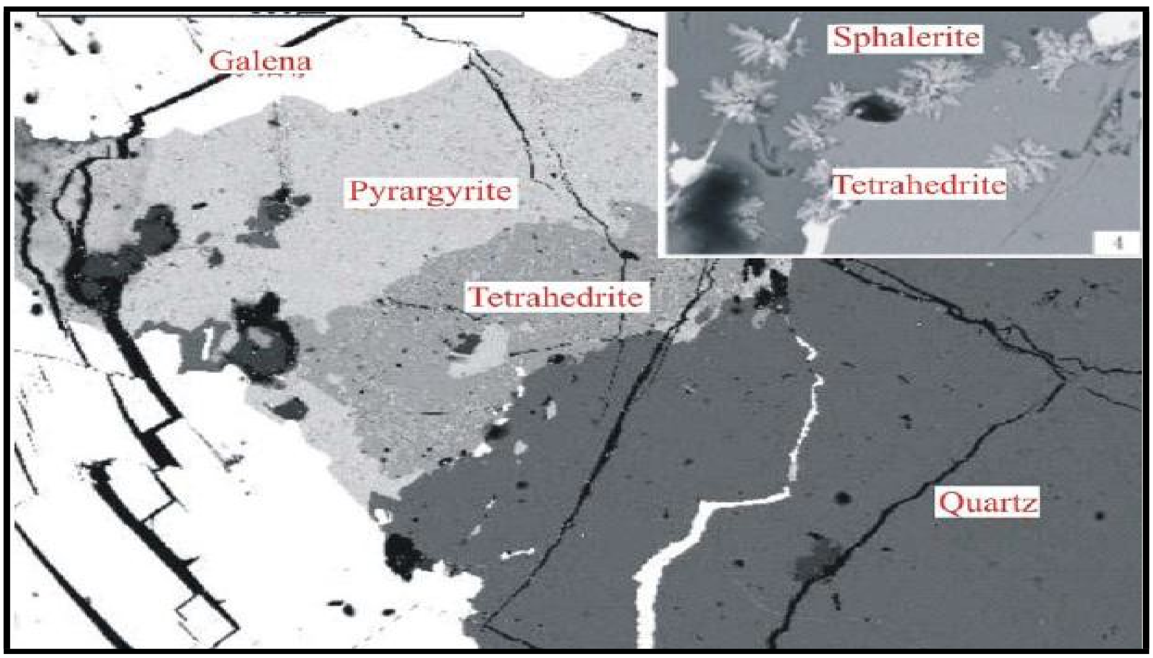
- As silver minerals, including native silver, electrum, tetrahedrite, polybasite, pyrargyrite, and argentite
- As electro-replacement in galena, pyrite, and other sulphides. Native sulphides usually range from 0.01 to 0.07 mm in size
- Only 4.6% of the silver is associated with gangue minerals.

Table 13.2 Phase Distribution of Silver (SGX Mineralization)

Occurrence	g/t	%	Comments
Native Silver	89.45	23.32	Free silver
Silver Sulphides	136.32	35.54	In tetrahedrite, polybasite, pyrargyrite, and argentite
Silver in Sulphides	140.04	36.51	In galena, sphalerite, pyrite, and chalcopyrite
Enclosed in gangue minerals	17.76	4.63	In quartz etc.
Total		**100**	

An example of the distribution of silver minerals and silver bearing minerals is shown in Figure 13.1.

Figure 13.1 Distribution of Silver Minerals and Silver-Bearing Minerals



13.2.2 TLP Mineralization

The mineralogical assessment was carried out by the No. 6 Brigade, a China-based Exploration Company, and the main mineral occurrences are:

- Metallic sulphide minerals: galena, sphalerite, pyrite and chalcopyrite.
- Silver minerals: native silver, argentite-acanthite, freibergite, polybasite, cerargyrite-bromochlorargyrite and canfieldite (a rare silver tin sulphide).
- Gangue minerals: quartz, sericite, chlorite, hornblende, feldspars and others.

The composition of the minerals in the blended sample is listed in Table 13.3.

Table 13.3 Mineral Composition of the TLP-LM Mineralization

Sulphides & Iron Minerals	%	Gangue Minerals	%
Galena	2.1	Carbonate	42.5
Cerusite	0.5	Quartz	30
Anglesite	0.2	Biotite	4.5
Sphalerite	0.2	Chlorite	4.5
Chalcopyrite	0.1	Sericite	2.5
Covellite	0.1	Hornblende	2
Pyrite	0.1	Isiganeite	1.5
Hematite Limonite	6.0	Feldspars	1.4
		Clay	2.1

A detailed phase distribution of silver is listed in Table 13.4. Although only 12.7% of the silver is associated with oxides and gangue minerals, 30.9% is as halides; thus only 56.4% is as free silver or associated with sulphide minerals — much lower than was found for SGX.

AMC considers that this could result in lower recoveries for TLP mineralization, although the occurrence of halides is related to surface oxidation and would be expected to decrease at depth.

Table 13.4 Phase Distribution of Silver (TLP-LM Mineralization)

Occurrence	g/t	%	Comments
Native Silver	18.7	13.61	Free silver
Silver Sulphides	42.9	31.22	In freibergite, argentite-acanthite, polybasite
Silver in Sulphides	15.9	11.57	In galena
Absorbed by Fe and Mn Oxides	15.5	11.28	N/A
Silver in Halides	42.4	30.86	In bromochlorargyrite
Enclosed in gangue minerals	2	1.46	N/A
Total		**100.00**	

13.2.3 HPG Mineralization

Mineralogical analysis of HPG mineralization shows that:

- Common sulphide minerals are galena sphalerite and tetrahedrite with lesser amounts of chalcopyrite, pyrargyrite, and other sulfosalts.
- Small amounts of acanthite and native silver may occur, but most silver in the veins is present as inclusions in galena or tetrahedrite (silver-bearing tetrahedrite is also known as freibergite).
- Copper and gold may increase at depth.

- Common gangue minerals are quartz, pyrite, and carbonate, usually siderite or ankerite with distal calcite (Park and MacDiarmid, 1970; Lefebure and Church, 1996).

13.3 Metallurgical Samples

Samples sent for metallurgical tests are as follows.

13.3.1 SGX Mineralization

Blends of the core samples from veins S14, S16E, and S16W in adit CM102 at the SGX mine were used. Compositions of these core samples are listed in Table 13.5.

Table 13.5 Core Samples Used for Ore Blending Test

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 mineralization, HNMRI blended these core 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 mineralization and it would represent the expected mill grade. The head grade result of this blended sample is provided in Table 13.6.

Table 13.6 Head Grade of Blended Sample

Pb (%)	Zn (%)	Cu (%)	S (%)	As (%)	TFe (%)
5.88	5.21	0.063	4.02	0.001	2.83
Au (g/t)	**Ag (g/t)**	**CaO (%)**	**MgO (%)**	**SiO (%)**	**Al2O3 (%)**
5.88	386.5	0.063	4.02	0.001	2.83

13.3.2 TLP Mineralization

CDRI did some metallurgical work for silver and lead materials on the TLP project in 1994. Two representative bulk samples (Table 13.7) consisting of 110 kg of high-grade mineralization, 111 kg of wall rocks and 304.5 kg of medium grade mineralization, totalling 525.5 kilograms, were collected from several crosscuts and undercut drifts for metallurgical testing. The samples consisted of mainly transition mineralization but also included a small amount of oxide and sulphide materials. Sample No.1 contained more carbonate rock than Sample No.2, which had higher silicate content.

Table 13.7 TLP Mineralization Samples for Metallurgical Tests

Samples	Ag Grade (g/t)	Pb Grade (%)
Sample 1	187.1	2.37
Sample 2	204.9	2.66

13.4 Metallurgical Testwork

Prior to operation of the mines and the construction of Silvercorp's mills, metallurgical tests by HNMRI and other labs were conducted to address the recoveries of the different types of mineralization (Broili, et al, 2006, Xu et al, 2006, Broili & Klohn, 2007, Broili et al 2008):

- TLP mineralization was tested by the CDRI in 1994.
- SGX mineralization was tested by HNMRI in May 2005.
- HZG mineralization was tested by TNMDI in 2006.
- HPG mineralization: No test was done.

Some initial size by size analysis work is summarized in Table 13.8 which shows the grade and distribution of Pb, Zn and Ag vs size fractions for a ball mill stream of 70% -200 mesh. The results indicate that liberation of Pb, Zn and Ag at the grinding target of 70% -200 mesh are sufficient for desired flotation recovery.

Table 13.8 Liberation of Pb, Zn and Ag vs Size Fractions (70% -200 mesh)

Size (mm)	Yield (%)	Grade			Distribution (%)		
		Pb (%)	Zn (%)	Ag(g/t)	Pb	Zn	Ag
+0.150	5.59	1.80	4.21	151	1.71	4.45	2.19
-0.150+0.100	12.22	3.99	5.94	278	8.31	13.72	8.78
-0.100+0.074	12.01	5.14	5.95	384	10.51	13.50	11.91
-0.074+0.037	22.43	5.76	6.60	387	22.01	27.98	22.45
-0.037+0.019	21.65	8.93	5.24	511	32.94	21.45	28.56
-0.019+0.010	14.29	7.05	4.03	441	17.16	10.89	16.28
-0.010	11.81	3.66	3.59	322	7.36	8.01	9.83
Total	100.00	5.87	5.29	387	100.00	100.00	100.00

HNMRI's evaluation did not find any difficulty with gangue minerals associated with the base and precious metal mineralization, but they did find a small fraction of encapsulation of the barren sulphide minerals (pyrite, etc.) with silver, lead, and zinc sulphide minerals. Due to the coarseness of these minerals, it is expected that adequate liberation during processing will occur to maintain high recoveries.

Thereafter, the main focus was on flotation testwork to maximize lead and, therefore, silver recovery. Both open circuit and closed circuit flotation tests were conducted to derive the final metallurgical performance predictions in line with normal practice.

13.4.1 SGX Mineralization

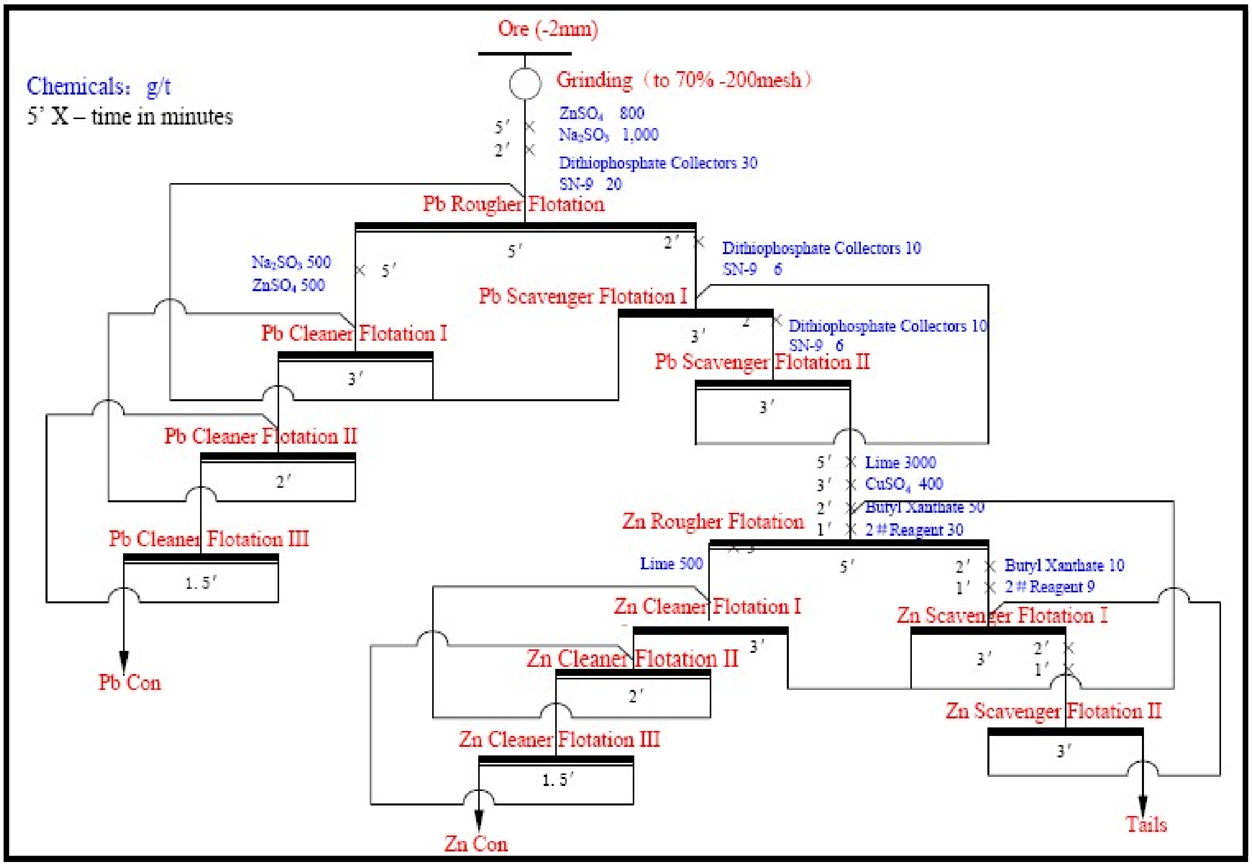
As summarized in previous SGX NI43-101 reports, the test work concluded that:

- A conventional Pb/Zn separation process by differential flotation (Figure 13.2, closed loop) was developed.
- The optimum grinding target for the ore was 70% passing 200 mesh.
- The optimum reagent dosage at different addition locations (as shown in Figure 13.2), gives the best metal recovery (refer to Table 13.9) under recommended operating conditions.

Table 13.9 Mass Balance for Locked Cycle Test (SGX Mineralization)

Product	Mass Yield (%)	Grade Pb (%)	Grade Zn (%)	Grade Ag (g/t)	Recovery Pb (%)	Recovery Zn (%)	Recovery Ag (%)
Head		5.88	5.21	386.5			
Lead Con.	7.84	68.18	6.24	4,197	90.89	9.39	85.12
Zinc Con.	7.49	2.10	59.61	453.8	2.67	85.67	8.79
Tails	84.67	0.45	0.30	27.8	6.44	4.94	6.09
Total	**100**				**100**	**100**	**100**

Figure 13.2 Locked Cycle Flotation Flow Sheet (SGX Mineralization)



13.4.2 TLP Mineralization

Under closed conditions and using an 80% -200 mesh feed the CDRI's lab performed conventional flotation tests and reported the following results (Table 13.10). The test work demonstrates that silver and lead can be easily extracted from the mineralized vein material using a conventional flotation process. AMC notes that silver recovery did not in fact appear to be impacted by the presence of halides.

Table 13.10 Mass Balance for Locked Cycle Test (TLP Mineralization)

Samples		Ag Grade (g/t)	Pb Grade (%)	Ag Recovery (%)	Pb Recovery (%)
Sample 1	Head	187.1	2.37		
	Conc	5274	66.94	94.71	94.96
	Tails	10.25	0.124	5.29	5.04
	Total			**100**	**100**
Sample 2	Head	204.89	2.66		
	Conc	5432	61.65	94.12	82.24
	Tails	12.5	0.49	5.88	17.76
	Total			**100**	**100**

13.4.3 HPG Mineralization

No mineral processing and metallurgical tests were conducted for the HPG mine. Silvercorp submitted a development plan to the relevant authority applying for a mining license by using the metallurgical testing results from TLP Silver-Lead Mine.

13.4.4 HZG Mineralization

TNMDI tested the HZG mineralization which contains low level of copper and zinc. The mass balance is summarized in Table 13.11.

Table 13.11 Mass Balance for Locked Cycle Test (HZG Mineralization)

Product	Mass Yield (%)	Grade				Recovery (%)			
		Ag (g/t)	Pb (%)	Cu (%)	Au (%)	Ag (%)	Pb (%)	Cu (%)	Au (%)
Copper Conc	1.53	22026	16.4	19.44	0.29	85.82	9.67	89.98	3.12
Lead Conc	4.39	895.2	50.23	0.433	0.14	10.01	85.03	5.75	4.32
Tailings	94.08	17.4	0.146	0.015	0.14	4.14	5.3	4.27	92.56
Total	**100**	**392.7**	**2.59**	**0.33**	**0.14**	**100**	**100**	**100**	**100**

13.4.5 Grind Size Optimization

Table 13.12 shows the grade and distribution of Pb, Zn and Ag vs size fractions for a ball mill stream under different grinding targets. The results indicate that:

- The minimum grinding target of 65% -200 mesh gave sufficient liberation of Pb, Zn and Ag
- The grade recovery performance was relatively insensitive to grind size in the 65-75% -200 mesh range, although some small (1%) improvement in silver recovery could be expected at the fine end of this range.

Table 13.12 Grind Size Optimization Test Results

Product	Yield	Grade (%)			Recovery (%)			-200 mesh
	(%)	Pb	Zn	Ag(g/t)	Pb	Zn	Ag	(%)
Lead Conc	11.84	43.1	8.61	2,726.8	86.75	19.42	84.65	60
Lead Tails	88.16	0.88	4.80	66.41	13.25	80.58	15.35	
Feed Ore	100.00	5.88	5.25	381.4	100.00	100.00	100.00	
Lead Conc	11.72	44.19	7.89	2,876.4	88.68	17.65	86.55	65
Lead Tails	88.28	0.75	4.89	59.34	11.32	82.35	13.45	
Feed Ore	100.00	5.84	5.24	389.5	100.00	100.00	100.00	
Lead Conc	11.3	45.99	7.01	2,965.2	88.69	15.21	87.19	70
Lead Tails	88.7	0.75	4.98	55.5	11.31	84.79	12.81	
Feed Ore	100.00	5.86	5.21	384.3	100.00	100.00	100.00	
Lead Conc	11.15	46.55	7.15	2,986.0	88.1	15.21	87.5	75
Lead Tails	88.85	0.79	5.00	53.53	11.9	84.79	12.5	
Feed Ore	100.00	5.89	5.24	380.5	100.00	100.00	100.00	

13.5 Concentrate Quality Considerations

Table 13.13 shows the product quality expected from both plants.

Table 13.13 Product Quality (Blends of Plants 1 & 2)

Product	Content (% unless stated otherwise)					
	Cu	Pb	Zn	As	Fe(T)	
Lead Conc	0.36	68.1	6.24	0.015	-	
Zinc Conc	0.33	2.10	50.00	0.010	1.61	
	Au (g/t)	Ag (g/t)	MgO	Al2O3	SiO2	F
Lead Conc	0.20	4196	0.13	1.13	-	-
Zinc Conc	0.10	454	-	-	2.87	0.10

Table 13.13 shows the product chemical composition which indicates that:

- The PbS concentrate product is high grade (68-70%Pb). Copper (0.36%) and zinc (6.24%) levels in the lead concentrate are acceptable.
- Arsenic (0.01%As) levels in the zinc concentrate are much lower than 0.4% As level for a clean grade 3 concentrate.
- The product moisture (8%) will be low due to the coarse grind (65% -200 mesh) and therefore efficient filtration.
- Both lead and zinc concentrate quality are acceptable for the commercial market.

13.6 Summary of Testwork Outcomes

The mineralogy predicts a metallurgically amenable ore with clean lead-zinc separation by differential flotation and, with the possible exception of silver halides in the upper zones of the TLP deposit, high silver recoveries.

This is confirmed by the metallurgical testwork, and expected performance indices would be:

- >90% lead recovery to a high grade (>65%Pb) lead concentrate with >85% silver recoveries.
- 85% zinc recovery to an acceptable (>50%Zn) zinc concentrate.
- Low Cu and acceptable Zn impurity levels in lead concentrates and very low As impurity levels in both concentrates.

No grindability testwork has been carried out but mill throughput has been within or exceeding expectations (see Section 17).

14 MINERAL RESOURCE ESTIMATES

The mineral resource categories used in this report are those established by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) in the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines (CIM Standards) as adopted by the CIM Council dated December 2005.

The resource estimates reported herein were prepared using polygonal estimation techniques by Mr Housheng Xu, Chief Geologist of Henan Found, and Mr Ruijin Jiang, P.Geo., Vice President, Exploration of Silvercorp, who is a non-independent Qualified Person, as defined by NI 43-101. P.R. Stephenson, P.Geo of AMC has reviewed Silvercorp's methodologies and data used to prepare the resource estimates and is satisfied that they comply with reasonable industry practice, subject to a qualification with respect to use of the polygonal method. Although this is a common estimation method in China and its use by Silvercorp therefore accords with common industry practice in that country, the technique tends to produce estimates that are higher in grade and lower in tonnage than interpolation methods in common use in Canada, such as kriging or inverse distance weighting.

The mineral resources include material (approximately 27% of Measured and Indicated Resources) that is below the lower limit of Silvercorp's current mining permits. However, because of the nature of Chinese regulations governing applications for new or extended mining permits, and because mineral resources have been shown to extend below the current lower limit, AMC is satisfied that there is no material risk of Silvercorp not being granted approval to extend the lower depth limit of its permits to develop these resources as and when required.

14.1 Resource Database

The information used to construct the resource block polygons is maintained in a complete ArcGis database for all exploration and mine areas in the Ying Property. The database contains a large 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 easily used to construct longitudinal section and estimate resources for each individual vein with ArcGis. The information can be readily retrieved and verified, with 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.

There are about 100,000 individual samples in the database and 35,194 individual samples are intersections of mineralization veins, which form the basis for resource estimation in this report. Channel or chip samples of mineralization intersections collected along sampling lines across a mineralization zone are combined into one composite sample. Mineralization intersections in drill core from an individual zone are also combined into one composite sample for resource estimation. A total of 28,017 composite samples were produced from the 35,194 individual samples and used for resource estimation.

14.2 Silver Equivalent Grades

The veins in the Ying District are polymetallic veins that contain several potentially payable metals, specifically silver, gold, lead, zinc and copper, although at the time of writing, copper and gold were not recovered from the SGX and HZG operations. Silvercorp uses "silver-equivalent" (AgEq) values as a convenient way to assess cut-off grades and compare the tenor of these polymetallic veins. The AgEq formula is as follows:

AgEq (g/t) = (Ag g/t * Ag recovery) + ((Au g/t * Au price per g * Au recovery) / Ag price per g) + ((Pb% * Pb price * Pb recovery * 22.0462) / Ag price per g) + ((Zn% * Zn price * Zn recovery * 22.0462) / Ag price per g)

In calculating AgEq grades, Silvercorp used long-term prices for Ag, Pb and Zn suggested by AMC and the actual mill recoveries for Ag, Au, Pb and Zn of the company's plants in 2011. Note that copper is not a contributor and gold only contributes when there is a recovery value.

Metal prices used:

Au: US$1,250/troy ounce = US$40.19/g

Ag: US$19.00/troy ounce = US$0.61/g

Pb: US$1.00/pound

Zn: US$1.00/pound

The metal recoveries used are based on Silvercorp's plant operating data for the individual ores, as summarized for 2011 in Table 17.13

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

1 troy ounce = 31.1035 grams
1 tonne = 2204.62 pounds

14.3 Parameters and Assumptions

Polygonal resource blocks are constructed on longitudinal projections with ArcGis software using the following parameters and assumptions:

- Thicknesses used for block calculations represent the arithmetical averages of the horizontal widths of all samples included in the block area.
- Cut-off grades for resource blocks are determined having regard to long-term metal prices, operating costs and metallurgical recovery. The adopted cut-off grades are 150 g/t AgEq for SGX, and 100 g/t AgEq for HZG, HPG, LM and TLP.
- The minimum cut-off thickness for mineralization is 0.3m, applicable because resue mining is one of the methods used at the mines. For high grade zones less than 0.3m, grade times width calculations are undertaken to determine the minimum grade.
- Top-cuts are based on statistical analysis of assay data for each metal on a vein-by-vein basis. Outliers identified with statistical analysis are replaced with the highest value of the dataset after the top-cuts. Most cuts are at the 99% level, with some at around 98%.
- The grades of Measured Resource and Indicated Resource blocks are weighted average values.

- Bulk densities used in calculating tonnages of the various resource blocks vary from mine to mine, dependent in part on the grade or characteristics of the mineralization. 521 representative samples were collected from different mines for bulk density determinations. The results are listed in Table 14.1 (see also Section 11.4).

Table 14.1 Bulk Densities

Mine	Bulk Density t/m^3
SGX	3.66
HPG	3.16
HZG	2.70
TLP	2.92
LM	2.93
Wall rock	2.76

- No dilution and depletion factors have been applied.
- Mined out areas as of 31 December 2011 are excluded from the resource estimation.

14.4 Resource Classification

Inferred Resource: When there are drill holes outside an Indicated Resource block, the boundary of the Inferred block is extrapolated from the hole closest to the boundary of the Indicated block to the middle point between the hole within the Indicated block and the nearby hole outside the Indicated block. When there is no drill hole available outside an Indicated Resource block, unlimited extrapolation is adopted. Boundaries of Inferred blocks are determined by extrapolating 100 m along the dip direction and 50 m along strike from holes closest to the boundary of Indicated Resource blocks. The geological understanding of the mineralization must be incorporated into the blocks, and the geologists must use geological knowledge not just make 50 x 100 m outlines.

Indicated Resource: A basic sample grid of 50x100 m is applied in delineating Indicated Resource blocks.

Measured Resource: when two or more tunnels are developed within an Indicated block, the Indicated Resource block is upgraded to the Measured category between levels. If only one tunnel has been excavated then the boundary of the block is made half way between levels. Polygon boundaries must honour the surrounding holes within the 50 x 100 m limit.

Table 14.2 lists veins in which Measured and Indicated Resources have been categorized.

Table 14.2 Ying Veins Containing Measured and Indicated Resources

Mine	Veins
SGX	S2, S2W, S4, S6, S6E1, S6W, S7, S7_1, S7_3, S7_4, S7E, S7W, S8, S8E, S8E1, S14, S14_1, S16E, S16E1, S16E3, S16W, S16W1, S19, S21, S21W, S21W1, S22, S28.
HZG	HZ5, HZ10, HZ12, HZ20, HZ22, HZ22E.
HPG	B, H4, H5, H6, H10, H11, H12, H12_1, H12_2, H13, H15, H15_1, H15W, H16, H17, H18, H29, H39_1.
TLP	T1, T1E, T1W, T1W1, T1W2, T1W3, T2, T2E, T2W, T2W2, T2 branch, T3, T3_1, T3E, T3E2, T3 branch, T4, T5, T5E, T6, T8, T11, T14, T14_1, T14 branch, T15, T16, T16E, T16W, T17, T19, T20, T22, T23, T24, T27, T28, T30, T31, T32, T33, T33E, T33W, T34, T35.
LM	LM1, LM2, LM2_1, LM2_2, LM3, LM3_1, LM3-Branch, LM4, LM4W, LM4W2, LM5, LM5E, LM5E2, LM5W, LM5W2, LM6, LM6E, LM6E2, LM6W, LM7, LM8, LM8_1, LM8_2, LM8_3, LM8_4, LM10, LM11, LM11E1, LM11E2, LM11W, LM11W2, LM12, LM12_1, LM12_2, LM12_3, LM12E, LM13, LM13E, LM13W, LM13W2, LM14, LM14_2, LM14_3, LM15, LM16, LM16_1, LM17 LM18, LM19, LM20, LM21, LM21W, LM22, LM23, LM25; W1, W3, W6, W18.

14.5 Mineral Resource Estimates

The total estimated mineral resources for the SGX, HZG, HPG, TLP and LM mines, reported by category, are summarized in the following tables. The mineral resource estimates tabled in this section are inclusive of those resources converted to mineral reserves and are exclusive of mine production to 31 December 2011. They are reported to a minimum mining width of 0.3 m and, while they can include dilution to make up to 0.3 m, do not take into account the mining dilution that is discussed in Section 15.4.1.

Table 14.3 Measured and Indicated Mineral Resources in the Ying Property as of 31 December 2011

Resource Category	Resource (Mt)	Average Grades in Resource					Metals contained in Resource				
		Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	Au (oz)	Ag (Moz)	Pb (t)	Zn (t)	Cu (t)
SGX , Ag Equiv. Grade≥150 g/t											
Measured	1.43	-	430	8.26	4.33	-	-	19.81	118,400	62,100	-
Indicated	2.12	-	422	7.45	3.67	-	-	28.78	158,100	77,800	-
Total	**3.56**	**-**	**425**	**7.78**	**3.93**	**-**	**-**	**48.59**	**276,500**	**139,900**	**-**
HZG (Cu), Ag Equiv. Grade≥100 g/t											
Measured	0.13	-	473	1.25	0.36	0.61	-	2.03	1,700	500	800
Indicated	0.28	-	347	1.13	0.21	0.38	-	3.13	3,200	600	1,100
Total	**0.41**	**-**	**388**	**1.17**	**0.26**	**0.46**	**-**	**5.16**	**4,800**	**1,100**	**1,900**
HPG, Ag Equiv. Grade≥100 g/t											
Measured	0.23	0.87	110	5.98	1.37	-	6,400	0.81	13,600	3,100	-
Indicated	0.34	1.5	94	3.54	2.29	-	16,600	1.04	12,100	7,800	-
Total	**0.57**	**1.25**	**101**	**4.51**	**1.92**	**-**	**23,000**	**1.84**	**25,700**	**11,000**	**-**
TLP, Ag Equiv. Grade≥100 g/t											
Measured	0.45	-	195	4.83	0.31	-	-	2.85	22,000	1,400	-
Indicated	2.17	-	189	3.65	0.29	-	-	13.20	79,200	6,200	-
Total	**2.62**	**-**	**190**	**3.86**	**0.29**	**-**	**-**	**16.05**	**101,200**	**7,600**	**-**
LM, Ag Equiv. Grade≥100 g/t											
Measured	0.17	-	452	3.45	0.36	-	-	2.52	6,000	600	-
Indicated	1.86	-	363	3.17	0.47	-	-	21.71	58,900	8,700	-
Total	**2.03**	**-**	**371**	**3.19**	**0.46**	**-**	**-**	**24.23**	**64,900**	**9,300**	**-**
LM（Au）, Ag Equiv. Grade≥100 g/t											
Indicated	0.02	48.04	27	0.08	0.04	2.87	23,400	0.01	<100	<100	400
Total	**0.02**	**48.04**	**27**	**0.08**	**0.04**	**2.87**	**23,400**	**0.01**	**<100**	**<100**	**400**
TOTALS											
Measured	2.42	0.08	360	6.67	2.80	0.03	6,400	28.02	161,600	67,700	800
Indicated	6.79	0.18	311	4.59	1.49	0.02	40,000	67.88	311,600	101,100	1,500
Total	**9.21**	**0.16**	**324**	**5.14**	**1.83**	0.03	**46,300**	**95.89**	**473,200**	**168,800**	**2,300**

Table 14.4 Inferred Mineral Resource Estimates in the Ying Property

Resource Category	Resource (Mt)	Average Grades in Resource					Metals contained in Resource				
		Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	Au (oz)	Ag (Moz)	Pb (t)	Zn (t)	Cu (t)
SGX , Ag Equiv. Grade≥150 g/t											
Inferred	1.51	-	328	6.76	3.78	-	-	15.88	101,800	57,000	-
HZG (Cu), Ag Equiv. Grade≥100 g/t											
Inferred	0.17	-	282	1.26	0.28	0.32	-	1.57	2,200	500	600
HPG, Ag Equiv. Grade≥100 g/t											
Inferred	0.14	1.1	105	3.79	1.15	-	5,100	0.49	5,500	1,700	-
TLP, Ag Equiv. Grade≥100 g/t											
Inferred	1.43	-	207	3.24	0.45	-	-	9.53	46,500	6,500	-
LM, Ag Equiv. Grade≥100 g/t											
Inferred	1.49	-	365	2.31	0.52	-	-	17.41	34,400	7,700	-
Total for Ying Property											
Inferred	**4.74**	**0.03**	**295**	**4.01**	**1.55**	**0.01**	**5,100**	**44.88**	**190,300**	**73,300**	**600**

Notes to Tables 14.3 and 14.4:

1. Metal prices used: gold US1,250/troy oz, silver US$19.00/troy oz, lead US$1.00/lb, zinc US$1.00/lb
2. Inclusive of resources converted to mineral reserves
3. Lower cut-off grade, 150 g/t AgEq for SGX, 100 g/t AgEq for HZG, HPG, LM and TLP
4. Exclusive of mine production to 31 December 2011
5. Rounding of some figures may lead to minor discrepancies in some totals

14.6 Reconciliation

Table 14-5 summarizes reconciliation between mineral resource estimates and mill feed, including high grade, hand-sorted ore, for the Ying mines for 2009-2011 (excluding HZG). Because the dilution tonnages in this table are not calculated from first principles, tonnages of expected mine production and reconciled mine production (mill feed) compare exactly. This is not advisable as it assumes that the difference between predicted and milled tonnages is due only to mine dilution, which may not be the case. AMC recommends that reconciliation in future be based on comparisons between mineral reserve estimates, which by definition include anticipated mine dilution, and mill feed.

Table 14.5 Reconciliation, Mineral Resources to Mine Production, 2009-2011

	Mine	Tonnes	Ag (g/t)	Pb (%)	Zn (%)
Resource (M+I)	SGX *	639,312	744	14.37	5.39
	HPG	60,477	152	7.65	2.05
	LM	74,965	382	2.17	0.00
	TLP	164,710	141	3.76	0.00
	Total *	**939,464**	**571**	**11.10**	**3.80**
Dilution	SGX *	449,479	0	0	0
	HPG	39,189	0	0	0
	LM	32,625	0	0	0
	TLP	60,359	0	0	0
	Total *	**581,653**	**0**	**0**	**0**
Expected Mine Production	SGX *	1,088,791	441	8.52	3.20
	HPG	99,666	92	4.63	1.24
	LM	107,590	265	1.50	0.00
	TLP	225,069	103	2.75	0.00
	Total *	**1,521,117**	**355**	**6.90**	**2.36**
Reconciled Mine Production	SGX *	1,088,791	411	7.37	2,61
	HPG	99,666	131	6.31	1.15
	LM	107,590	277	1.87	0.00
	TLP	225,069	105	2.92	0.00
	Total *	**1,521,117**	**338**	**6.26**	**1.94**
Difference in %	SGX *	0.00%	-6.8	-13.5	-18.4
	HPG	0.00%	42.4	36.3	-7.3
	LM	0.00%	4.5	24.7	0.0
	TLP	0.00%	1.9	6.2	0.0
	Total *	**0.00%**	**-4.8**	**-9.3**	**-17.8**

* Excluding HZG (milled 45,788 t at 216 g/t Ag, 0.93% Pb in 2009-2011)

Zinc accounts for only around 6% of total net revenue, so reconciliation results for zinc are not of material concern. On the assumption that mine dilution accounts for all the difference between predicted and milled tonnages and that mine dilution has zero grade, there are substantial overcalls (mill greater than predicted) for silver and lead for HPG and LM (although these are the smallest producers), and undercalls for silver and lead for SGX. With SGX accounting for 74% of total production, there is some concern with the undercall for silver and lead. However, AMC does not consider that the differences represent a material risk to the project.

Possible reasons for the undercall at SGX include:

- A possible tendency for chip sample grades to be biased high
- A possible mill recovery overestimation
- Hand-sorting losing some finely disseminated high grade values to waste
- Top-cutting values possibly being slightly too high

AMC recommends that the reasons for the undercall of silver and lead grades at SGX be more fully investigated.

15 MINERAL RESERVE ESTIMATES

15.1 Introduction and Mineral Resources Base

The mineral resources upon which the Ying mineral reserves are based have been discussed in detail in Section 14. The mineral resources are located in, or adjacent to, areas where Silvercorp has mining permits. The permitting issue has also been discussed in Section 14. AMC considers that it is reasonable to include all of the current mineral resources, including those located below the current lower limit of Silvercorp's mining permits, in the reserve estimation.

To convert mineral resources to mineral reserves, mining cut-off grades have been applied, mining dilution has been added and mining recovery factors assessed on an individual vein mining block basis. Only Measured and Indicated Resources have been used for mineral reserves estimation.

15.2 Reserve Estimation Methodology

The reserve estimation is based on the assumption that current stoping practices will continue to be predominant at the Ying property, namely cut and fill resuing and shrinkage stoping, using jacklegs and hand-mucking within stopes, and loading to mine cars by rocker-shovel or by hand. The largely sub-vertical veins, generally competent ground, reasonably regular vein width, and hand-mining techniques using short rounds, allows a significant degree of selectivity and control in the stoping process. Minimum extraction widths of 0.3 m for resuing and 0.8 m for shrinkage are assumed, with both methods having a minimum mining width of 0.8 m; again as per current practice at Ying. AMC has observed the mining methods at the Ying property and considers the minimum extraction and mining width assumptions to be reasonable. General dilution assumptions are 0.08 m on each wall of a resuing cut and 0.15 m on each wall of a shrinkage stope. Dilution is discussed further in Section 15.4

For the total tonnage estimated as Ying reserves, 41% is associated with resuing and 59% with shrinkage.

15.3 Cut-off Grades

Mineral reserves have been estimated by Silvercorp using breakeven cut-off values of 120 g/t AgEq for SGX and 110 g/t for the HZG, HPG, LM and TLP mines. The cut-off grade basis provided by Silvercorp is summarized below and in Table 15.1.

Cut-off grade AgEq (g/t) = (mining cost + sustaining capital + milling cost + hauling cost + G&A cost + selling cost + mineral resources tax) / Ag price.

Table 15.1 Mineral Reserve Cut-off Grades and Key Estimation Parameters

Item	SGX	HZG	HPG	LM	TLP
Foreign Exchange Rate (RMB:US$)	6.35	6.35	6.35	6.35	6.35
Operating Costs					
Sustaining Capital ($/t)	8.71	5.49	6.59	4.49	5.69
Mining Cost ($/t)	40.68	40.67	40.50	39.88	34.75
Hauling cost ($/t)	3.95	4.04	4.23	3.08	3.12
Milling cost ($/t)	10.68	11.20	10.67	10.59	10.56
G&A and Product Selling Cost ($/t)	3.72	3.56	4.00	5.24	5.49
Mineral resources tax ($/t)	1.95	1.95	1.95	1.95	1.95
Total Operating Costs (US$/t)	69.69	66.91	67.94	65.23	61.56
Mill Recoveries					
Au (%)					86.2
Ag (%)	92.4	94.6	90.4	93.4	87.0
Pb (%)	96.3	92.1	91.3	93.4	93.2
Zn (%)	75.7				57.9
Cut-off Grades Used (AgEq g/t)	120	110	110	110	110

Metal prices used are Ag - $19/oz, Au - $1250/oz, Pb - $1/lb, Zn - $1/lb.

No Zn value has been ascribed to ore from the HZG, HPG and LM sites

Operating costs are derived from 2011 results; for HPG, costs have been normalized to 80,000 tpa from 43,000 tpa.

Lower cut-off grade values have been calculated for vein development operations, where the value of the material being mined has only to bear the cost of hauling, milling, G&A, selling and tax. These values are shown in Table 15.2.

Table 15.2 Vein Development Cut-off Grades

Vein Development Cut-off Estimates	SGX	HZG	HPG	LM	TLP
AgEq Cut-off g/t	45.00	50.00	55.00	50.00	50.00

Costs and metal prices as per Table 15.1 above.

15.3.1 AMC Comment on Cut-off Grades

AMC has examined the cut-off grades and their supporting parameters and considers that they are reasonable, although probably not optimal for all sites. AMC particularly recommends that Silvercorp examine its definition for, and use of, sustaining capital in the cut-off grade calculation. AMC has recognized, however, that the Ying resources have limited sensitivity to variation in cut-off grade as discussed in Section 15.5 below.

15.4 Dilution and Recovery Factors

15.4.1 Dilution

As indicated above, minimum stoping extraction widths are 0.3 m and 0.8 m respectively for resuing and shrinkage; minimum mining widths are 0.8 m for both methods. Unplanned dilution has been applied to the actual extraction width for resuing (resource grades already factored to 0.3 m minimum mining width) and to the greater of 0.8 m or actual mining width for shrinkage.

AMC has calculated unplanned dilution based on 0.08 m of waste break on each wall of a resued vein, and 0.15 m of waste break outside the design mining width of a shrinkage stope. A key strategy used at Ying for minimizing floor dilution is the placement of rubber mats and/or conveyor belting over the waste fill floor in resuing stopes immediately before each resuing blast. This effectively serves as a barrier between ore and waste.

The dilution calculation process used for the reserves assumes that the resulting figures represent the overall tonnes and grade delivery to surface. There is a small degree of waste hand sorting, and therefore upgrading, that occurs underground, depending on the mine and mining method. AMC considers that the resulting impact of this hand-sorting on the delivered product is not significant enough to be material.

Table 15.3 summarizes dilution factors used in the reserve calculations for each of the Ying mines. The lower percentages for shrinkage stoping are a reflection of mining wider veins.

Table 15.3 Average Dilution by Mine and Method

Mine	Dilution %	
	Resuing	Shrinkage
HPG	37	28
HZG	33	
LM	40	23
TLP	56	29
SGX	43	32
Total Ying	41	28

15.4.1 Mining Recovery Factors

Mining recovery estimates used in the reserve calculations are based on experience at each of the Ying operations and for each mining method. For resuing stopes, 95% total recovery is assumed; for shrinkage stopes, 92% total recovery is assumed. Minimal pillars are anticipated to remain between adjacent mining blocks in the same vein and partial recovery is anticipated in sill pillars. A 70% recovery factor is applied to irregular ore blocks in remnant areas mined by local miners prior to Silvercorp acquiring the Ying properties.

15.5 Mineral Reserve Estimate

To convert mineral resources to mineral reserves, Silvercorp uses the following procedures:

- Selection of Measured and Indicated Resource polygons for which the average AgEq grade is greater than the mine cut-off AgEq grade
- Application of minimum extraction and mining width criteria and calculation of dilution at zero grade
- Estimation of mineral reserve potential by applying relevant mining loss factors
- Confirmation as mining reserve by considering any other significant cost factors such as additional waste development required to gain access to the block in question

Table 15.4 summarizes the reserve estimates for each Ying mine and for the Ying operation as a whole. Approximately 27% of the mineral reserve estimate tonnage is categorized as Proven and approximately 73% is categorized as Probable.

Table 15.4 Ying Mines Mineral Reserve Estimates

Mines	Categories	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Metal Contained in Reserves			
							Au (oz)	Ag (Moz)	Pb (t)	Zn (t)
SGX	Proven	1.56		331	6.33	3.34		16.61	98,800	52,100
	Probable	2.16		352	6.22	2.74		24.47	134,400	59,100
Total Proven & Probable		3.72		343	6.27	2.99		41.08	233,300	111,200
HZG	Proven	0.13		384	0.96	0.27		1.66	1,300	400
	Probable	0.25		297	0.95	0.19		2.37	2,400	500
Total Proven & Probable		0.38		327	0.96	0.22		4.02	3,700	800
HPG	Proven	0.24	0.63	90	5.05	1.11	4,900	0.69	12,100	2,700
	Probable	0.39	1.14	73	2.83	1.87	14,300	0.92	11,000	7,300
Total Proven & Probable		0.63	0.95	79	3.67	1.58	19,200	1.60	23,100	10,000
TLP	Proven	0.45		135	3.48	0.23		1.97	15,800	1,000
	Probable	2.10		124	2.87	0.25		8.37	60,300	5,300
Total Proven & Probable		2.55		126	2.98	0.25		10.35	76,100	6,400
LM	Proven	0.23		283	1.96	0.23		2.09	4,500	500
	Probable	2.27		268	2.39	0.35		19.59	54,300	8,000
Total Proven & Probable		2.50		269	2.35	0.34		21.65	58,800	8,500
Ying Mine	**Proven**	**2.62**	**0.06**	**273**	**5.06**	**2.16**	**4,900**	**23.02**	**132,500**	**56,700**
	Probable	**7.17**	**0.06**	**242**	**3.66**	**1.12**	**14,300**	**55.72**	**262,400**	**80,200**
Total Proven & Probable		**9.79**	**0.06**	**250**	**4.03**	**1.40**	**19,200**	**78.70**	**395,000**	**136,900**

Notes to Reserve Statement:

1. Stope Cut-off grades of 120 g/t AgEq for SGX and 110 g/t for all other mines.
2. Vein development cut-off grades of 45 g/t AgEq for SGX, 50 g/t AgEq for HZG, LM and TLP, and 55 g/t AgEq for HPG.
3. Operating costs of $61/t other than $56/t for TLP mine.
4. Metal prices assumed are Ag - US$19 troy ounce, Au - US$1250 per troy ounce, Pb - US$1 per pound, Zn - $US1 per pound.
5. No value ascribed to Zn at HZG, HPG and LM mines.
6. Processing recovery factors as in Table 15.1 above.
7. Exclusive of mine production to 31 December 2011.

8. Exchange rate assumed is 6.35 RMB : US$1.00.
9. Rounding of some figures may lead to minor discrepancies in totals.

AMC notes that the average silver and lead reserve grades for the combined Ying Mines mineral reserves are about 6% and 8% respectively lower than reported mined grades for 2011 alone, and about 15% and 18% respectively lower than reported mined grades for the three years 2009 to 2011. This is a reflection of the mining plan moving into lower grade areas and AMC advises that best mining practices and tight dilution control will be key to maintaining grades at projected reserve levels.

15.6 Reserves Sensitivity to Cut-off Grade

AMC has examined the sensitivity of the Ying reserves to variation in cut-off grade by comparing the results of estimation at a COG of 100 g/t AgEq against those of estimation at a COG of 150 g/t AgEq for all mines. The approximate estimated percentage differences in contained AgEq ounces for each of the Ying mines and for the property as a whole are shown in Table 15.5.

Table 15.5 Reduction in Contained AgEq Oz, COG 100 g/t to 150 g/t

	SGX	HZG	HPG	TLP	LM
Mine reduction	0.3%	2.2%	3.0%	5.4%	3.5%
Ying Property reduction	2.0%				

The lowest sensitivity is seen at SGX, where there is only a 0.3% difference between contained AgEq ounces for the two cut-off grades examined. The highest differential is noted for TLP at 5.4%. For Ying as a whole, a 2% difference demonstrates very low overall COG sensitivity.

AMC also notes that, assuming a breakeven cut-off scenario and a silver price of $19/oz, cut-off grades of 100 g/t and 150 g/t can be equated to respective operating costs of around $61/t and $92/t. A COG of 150 g/t with an operating cost of $61/t also indicates a breakeven silver price of around $13.

15.7 Conversion of Mineral Resources to Reserves

In summary, the process for conversion of Mineral Resources to Mineral Reserves involves:

- Only Measured and Indicated Resources used for Mineral Reserves estimation
- The following factors considered for each potential mining block:
  - Grade, location and accessibility in terms of economic mining viability
  - Mining method (resuing or shrinkage stoping)
  - Minimum mining width (0.3m resuing, 0.8m shrinkage)
  - Mining dilution (generally 0.08m and 0.15m respectively at zero grade on each side wall for resuing and shrinkage)
  - Mining recovery (95% resuing and 92% shrinkage)
  - Mining cut-off grade

Table 15.6 compares the respective sums of Measured plus Indicated Resources and Proven plus Probable Reserves for each of the Ying mines and the entire Ying operation.

Table 15.6 Resources and Reserves Comparison

Mine		Tonnes kt	Au g/t	Ag g/t	Pb %	Zn %	Au koz	Ag koz	Pb t	Zn t
SGX	**Resource**	3,556		425	7.78	3.93		48,588	276,523	139,870
	Reserve	3,723		343	6.27	2.99		41,085	233,266	111,238
Conversion percentage		105		81	81	76		85	84	80
HZG	**Resource**	414		388	1.17	0.26		5,163	4,838	1,069
	Reserve	382		327	0.96	0.22		4,026	3,657	825
Conversion percentage		92		84	82	85		78	76	77
HPG	**Resource**	570	1.3	101	4.51	1.92	24	1,844	25,734	10,960
	Reserve	630	0.9	79	3.67	1.58	19	1,609	23,155	9,957
Conversion percentage		111	72	78	81	82	80	87	90	91
TLP	**Resource**	2,622		190	3.86	0.29		16,050	101,192	7,569
	Reserve	2,554		126	2.98	0.25		10,349	76,011	6,390
Conversion percentage		97		66	77	86		64	75	84
LM	**Resource***	2,034		371	3.19	0.46		24,234	64,932	9,293
	Reserve	2,504		269	2.35	0.34		21,652	58,955	8,521
Conversion percentage		123		73	74	74		89	91	92
Total	**Resource**	9,195	0.08	324	5.15	1.83	24	95,874	473,263	168,713
	Reserve	9,793	0.06	250	4.03	1.40	19	78,720	395,044	136,931
Conversion percentage		107	74	77	78	76	80	82	83	81

*Not including LM Indicated Resource of 15,136 t at 48.04 g/t Au, 27 g/t Ag, 0.08% Pb, 0.04% Zn

For the property as a whole, total Reserve tonnes are noted to be 107% of Resource tonnes. Silver, lead and zinc grades show a conversion percentage between 76% and 78%. Metal content conversion for silver, lead and zinc is between 81% and 83%.

Table 15.7 shows the detailed conversion from Mineral Resources to Mineral Reserves at the SGX Mine (SGX accounts for approximately 52% of total silver Mineral Reserves for the Ying property).

Table 15.7 SGX Mine – Conversion of Mineral Resources to Mineral Reserves

	Tonnes t	Ag g/t	Pb %	Zn %	Ag koz	Pb t	Zn t
Measured + Indicated Mineral Resources *	3,555,559	425	7.78	3.93	48,588	276,523	139,870
Less Resources below the current mining permit	118,264	194	4.22	8.66	737	4,995	10,240
Less currently inaccessible or non-viable Resources†	375,174	347	6.36	3.03	4,187	23,770	11,500
Resources currently available for mining *	3,062,121	444	8.09	3.86	43,664	247,758	118,130
Plus mining dilution (assumed zero grade)	892,200	0	0	0	0	0	0
Less mining recovery losses	231,529	343	6.27	2.99	2,555	14,507	6,918
Proven + Probable Mineral Reserves	3,722,791	343	6.27	2.99	41,085	233,266	111,238

*Blocks less than 0.3 m in width widened out to 0.3 m.

†Resources not yet in mine plan and/or resources in areas with, currently, insufficient total metal value to carry both operating and development access costs; however, these resources are considered to have reasonable prospects for ultimate economic extraction.

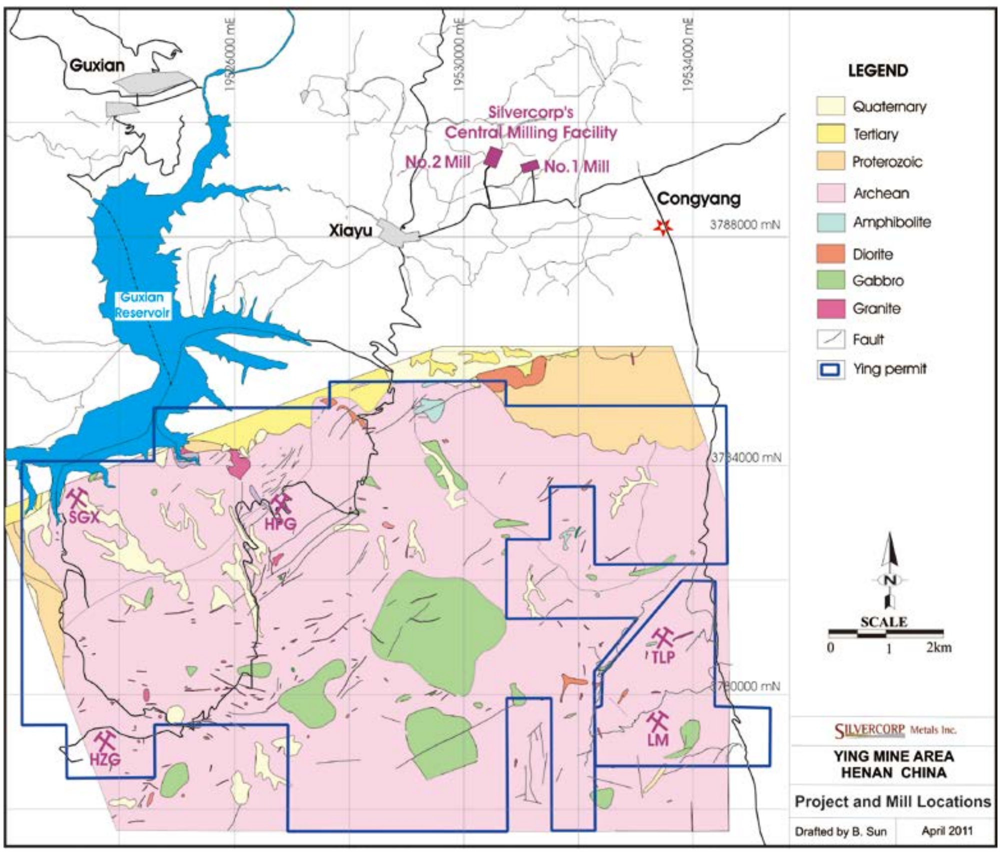
16 MINING METHODS

16.1 Ying Mining Operations

16.1.1 Introduction & Mines General Description

The Ying Mining District has been intermittently mined over many years by small-scale, local miners. Silvercorp commenced mining at its Ying property (SGX mine) in April 2006. Its current mining activities continue to be focused at the SGX mine, but now also include the HZG (a satellite deposit to SGX), HPG, TLP and LM mines. Figure 16.1 is a plan view showing the relative location of the mines.

Figure 16.1 Ying Mines Locations



Underground access to each of the mines in the steeply-sloped, mountainous area is generally via adits at various elevations, inclined haulageways, and internal shafts (winzes). A shaft is also being sunk from surface at the LM Mine.

The mines are developed using small, conventional tracked equipment – electric / diesel locomotives, rail cars, electric rocker shovels and using pneumatic hand-held drills (jacklegs). At the TLP mine and at four adits of the SGX mine, small tricycle trucks with a payload of up to 3 t each are used to haul ore to surface. Since October 2011, Silvercorp has also been developing two 4.5 km long ramps at the LM and SGX mines. The ramps will facilitate transport of men and materials, ventilation, and further development for access and exploration. In particular, the ramp at the SGX mine will be used to access mineralized areas below zero mRL.

The global extraction sequence is top-down between levels, and generally outwards from the central shaft or main access location. The stope extraction sequence is bottom-up, with shrinkage and resuing being the main mining methods. Stope production drilling is by jackleg. In-stope rock movement is by gravity to draw points or by hand-carting to steel ore passes or chutes. Production mucking uses mostly hand shovels or, occasionally, rocker shovels, with rail cars and electric or diesel locomotives transporting ore to the main shaft or inclined haulageway. Ore transport to surface is via skip/cage hoisting (shaft), rail-cars (tracked adit and/or inclined haulageway), or small tricycle trucks. Some hand picking of high grade ore and waste is done on surface, with transport to the centralized processing plants being via 30 t and 45 t trucks or barge and truck combination.

16.1.2 SGX

The SGX mine is in the western part of the Ying district. It is accessed by a total of 10 adits and is the largest of the Silvercorp Ying operations, producing about 63% of tonnes and 76% of Ag ounces for the total operation in 2011. The Ag-Pb-Zn mineralization is found in at least 27 veins with the four largest veins systems (S7, S2, S16 and S14) accounting for over 75% of this mineralization. Vein widths range from around 0.2 m to 3.0 m with about 70% mined by resuing and about 30% mined by shrinkage. Mining is currently planned down to the 10 Level. Adjacent to the SGX mine are the ore and waste sorting facilities, and main office, engineering and administration buildings.

16.1.3 HZG

The HZG area is a satellite to the SGX mine, with portals located about 4 km to the south of the main SGX site. It is accessed by five adits, with vein widths projected for mining ranging from about 0.2 m to 2.0 m, the veins being generally similar to those found throughout the district. Mining is 100% resuing, and the mining plan envisages ore being produced from five veins between the 300 and 890 levels. 2001 was the first year of production at HZG; about 7% of Ying 2011 ore tonnage was produced (about 6% of Ag ounces).

16.1.4 HPG

The HPG mine area has been operated since 2007 and is located in the central part of the district, to the northeast of the SGX mine. It is accessed from four adits and mining from 10 veins is projected in the LOM plan between the 60 and 650 levels. Production is about 50% resuing and about 50% shrinkage, with vein widths projected for mining ranging from less than 0.2 m up to about 2.0 m. About 7% of Ying 2011 ore tonnage was produced at HPG (about 3% of Ag ounces).

16.1.5 TLP

The TLP mine lies about 11 km east – southeast of SGX. There are 36 known veins, all dipping westward. The mine is serviced from 10 adits and the mining plan currently shows production occurring through to 2023 from stopes between the 200 and 1100 levels and from vein widths generally between 0.3 m and 3.3 m. Over 95% of stoping is envisaged as being by shrinkage, the remainder by resuing. About 16% of Ying 2011 production tonnes (6% of Ag ounces) came from TLP.

16.1.6 LM

The LM mine is located just south of the TLP mine and about 12 km from SGX. 46 veins with steep dips to either east or west are known at LM. Access is via seven adits and a shaft from surface is currently being sunk. LOM production is envisaged through to 2023 from veins lying between the 970 and 210 levels that are largely 1 m or less in width, although some are up 6.7 m. About 8% of Ying 2011 production tonnes (9% of Ag ounces) came from LM.

16.2 Mining Methods & Mine Design

16.2.1 Geotechnical and Hydrogeological Considerations

No specific geotechnical or hydrogeological study data is available for the Ying mines.

Development and mining operations to date have encountered generally good ground conditions. The excavation of relatively small openings, both in development and stoping, facilitates ground stability. Support is only installed where deemed to be necessary, with rockbolts being used for hangingwall support on occasion. Timber and steel I-beams may also be used where unstable ground is encountered.

AMC is not aware that water in-flow to date at the Ying mines has created any significant problems. Section 16.2.9 discusses mine dewatering.

16.2.2 Development and Access

As referenced above, the mines in the Ying District are located in narrow valleys, and a series of adits at each mine provides access from the surface to the mining areas. Most of the operational levels do not have their own access portal and must connect to internal shafts or inclined haulageways. The development of two 4.5 km ramps at the SGX and LM mines will provide connection between most of the underground operations in the district.

Mine access for rock transportation, materials supply and personnel is provided by five different means and, in combination, they form the access systems for the Ying District mines.

1. Adits and Portals
2. Inclined haulageways
3. Decline accesses (ramp).
4. Internal shafts
5. Shaft

Adits are driven slightly to the rise from surface at a size of approximately 2.2 m x 2.2 m. These are the main means of access for men and materials and transport of ore and waste. All services such as electrical, compressed air, drill water and dewatering lines are located in the adits. In many instances, they are also used for delivery and removal of fresh and return air respectively. Most of the adits are equipped with narrow gauge rail for the transport of railcars. Where there is no rail, tricycle cars are utilized for transport of ore, waste and supplies.

Inclined haulageways are driven at approximately 25 to 30°. Typical dimensions are 2.4 m W x 2.2 m H. They are equipped with narrow gauge rail and steps on one side for foot travel. The main purpose of these drives is haulage of ore and waste, and delivery of ventilation and other services such as water, compressed air, communications and electricity. Figure 16.2 shows an inclined haulageway at the SGX mine.

Figure 16.2 Inclined Haulageway at SGX Mine

The main ramps that are being developed in the SGX and LM mines are jumbo-driven drifts with dimensions of 4.5 m wide by 4.0 m high at 12% grade. One daylights at LM West as the 980 Ramp, developed from 980 to 500 m elevation. At the SGX mine, the 560 Ramp starts at 560 m elevation and bottoms at zero m elevation. The total planned length is 9,720 m. Progress at the end of 2011 from SGX was at 400 m and from LM was at 250 m.

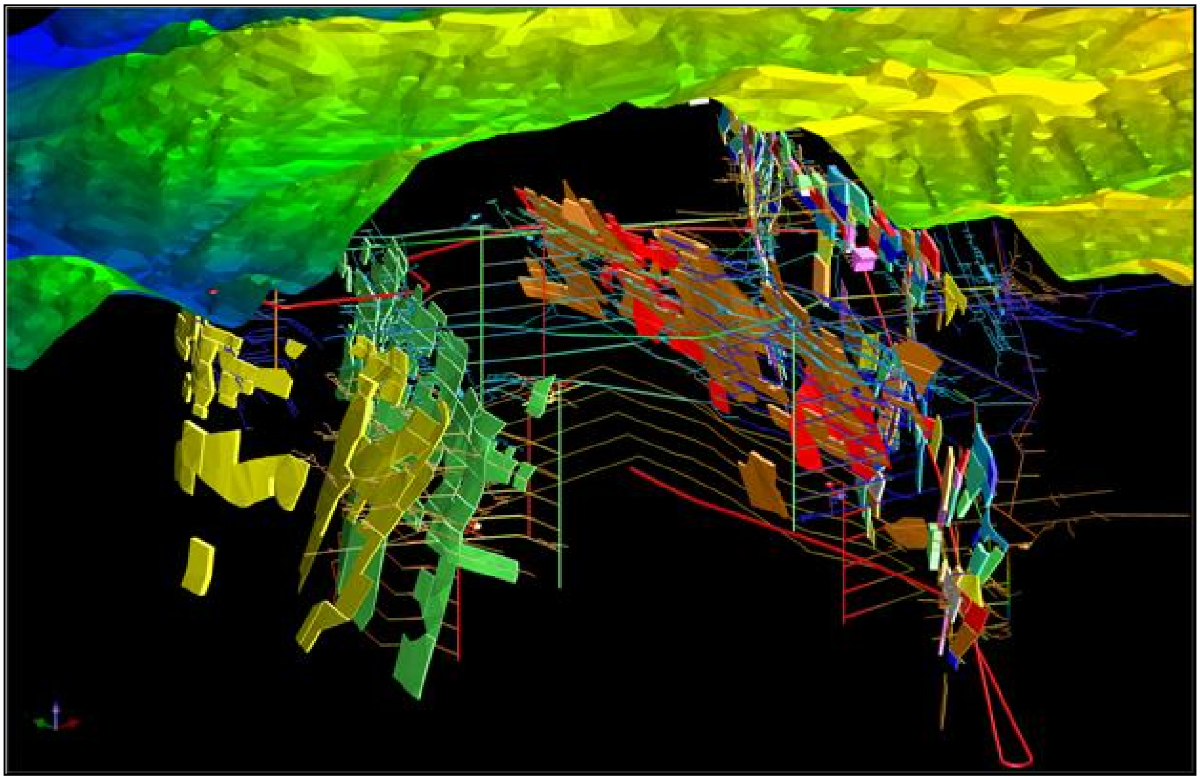
As of December 2011 there were 16 internal shafts (winzes) throughout the Ying property. The hoisting capacity of these shafts varies from 50,000 tpa combined ore and waste to 150,000 tpa. Fully loaded rail cars that bring up ore and waste are cage-transported via these shafts; they are also used for hoisting men and materials. There is one shaft in the SGX mine to load waste using a skip.

The only shaft to surface is the 969 shaft, currently being sunk at LM West. It will have a finished diameter of 3.5 m and will be equipped with a 2.5 m double drum hoist. The planned depth of the shaft is 480m. Planned hoisting capacity is 300,000 tpa of ore and waste with a double-deck cage. This shaft works in tandem with PD900 winze in the LM East area.

At SGX, only the adit portals and one ramp connect the mine workings to surface. Inclined haulageways and internal shafts provide access to the ore, which is generally located at elevations below the level of portal entrances. Further declines are planned for the HZG and HPG mines.

Figure 16.3 is an orthogonal view of the SGX mine design.

Figure 16.3 SGX Mine Design



16.2.3 Mining Methods

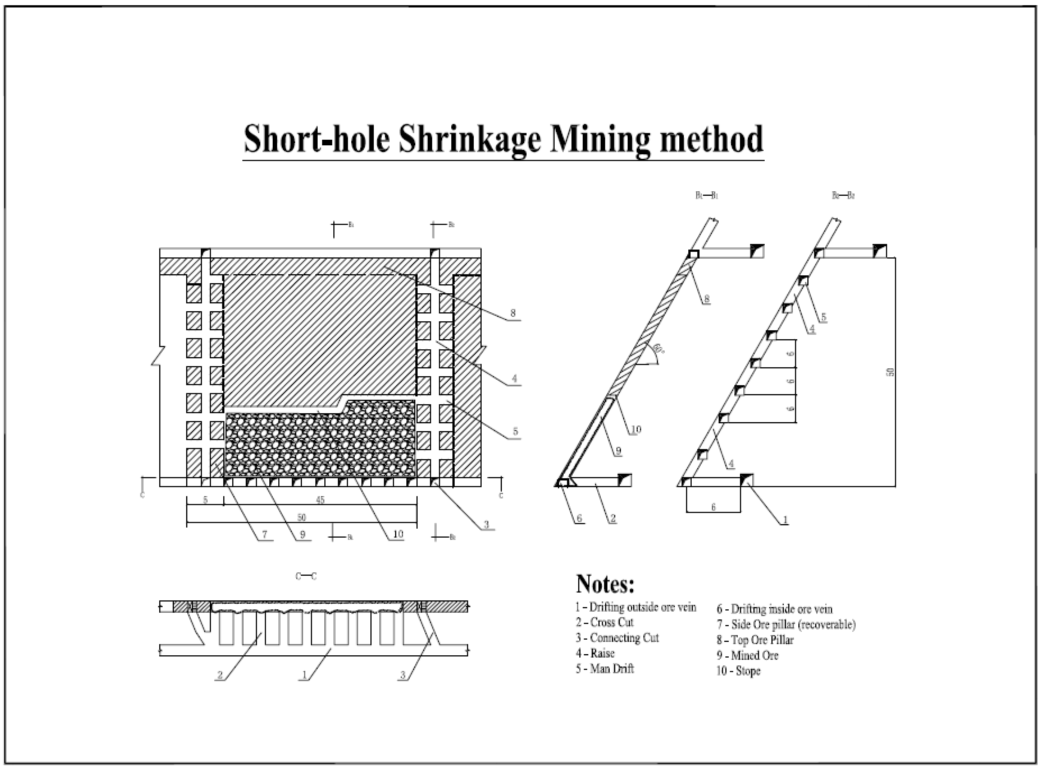
Shrinkage stoping and resuing stoping are the mining methods employed at the Ying mines. The LOM plan envisages continuation of these methods.

16.2.3.1 Shrinkage Stoping

A sill drive is initially driven along the vein at minimum extraction width and 1.8 m height. An access drive at 2 m W x 2 m H (conventionally a footwall drive) is also developed parallel to the vein at a stand-off distance of about 6 m. Crosscuts for ore mucking from draw points are driven between the vein and the strike drives at approximately 5 m spacing. The crosscuts act as draw points for the mucking of the stope ore. Each stoping block is usually 40 m to 60 m in strike length by 40 m to 50 m in height. Travelway raises that are also used for services are established between the levels at each end of the stope block. Waste packs are built on each void side of the raise as stoping proceeds upwards.

Jacklegs are used to drill a 1.8 – 2.0 m stope lift that is drilled and blasted as inclined up-holes with a forward inclination of 65 - 75^{o} (“half-uppers”). The typical drill pattern has a burden of 0.6 – 0.8 m and spacing of 0.8 – 1.2 m, dependent on vein width. Holes are charged with cartridge explosives and ignited with tape fuse. The powder factor is expected to be 0.4 – 0.5 kg/t. Stope blasting fills the void below with ore as mining proceeds upwards. Mucking from drawpoints occurs to maintain a stope working height of about 2 m. While mining is underway, only 30 - 40% of the stope ore may be mucked. When mining is complete, all ore is mucked from the stope, unless significant wall dilution occurs. The stope is left empty beneath a sill (crown) pillar of around 2 m thickness. Ventilation, compressed air and water are carried up the travelway raises to the stoping level. Loading of the ore from the draw points is by miners into rail cars, either using rocker-shovels or by hand. Figure 16.4 is a schematic of the shrinkage stoping method.

Figure 16.4 Shrinkage Stoping Method



16.2.3.2 Resue Stoping

Resue stoping veins are typically high-grade and generally between 0.1 m (minimum extraction 0.3 m) and 0.80 m width. Resue stoping involves separately blasting and mucking the vein and adjoining waste to achieve a minimum stope mining width.

Vein and access development preparation is essentially the same as for shrinkage stoping, other than draw points being established at approximately 15m spacing along strike. Blasted ore is mucked into steel lined mill holes that are carried up with the stope and feed to the draw points. The base of the steel pass is held in place with a timber set.

Half-upper lifts are drilled with jacklegs and blasted in essentially the same manner as for shrinkage stoping. After a lift in the vein is blasted and mucked, the footwall is blasted and the ensuing waste is used to fill the space mined out and to provide a working floor. This process is repeated until the stope sill (crown) pillar is reached. The entire stope is left filled with waste from the slashing of the footwall.

The blasted ore is transported by wheel barrow and/or hand shovelled to the mill hole, which is constructed in lift segments as the stope is mined upwards. The footwall waste is slashed (blasted) to maintain a minimum mining width (typically 0.8 m).

The order of vein extraction and footwall slashing is generally dependent on the condition of the vein hangingwall contact. Where the contact is distinct and stable, the vein is extracted first; otherwise the footwall waste is extracted first followed by vein slashing.

Figure 16.5 shows the back of a resue stope at the SGX mine. Excavation width at the back is about 0.4 m.

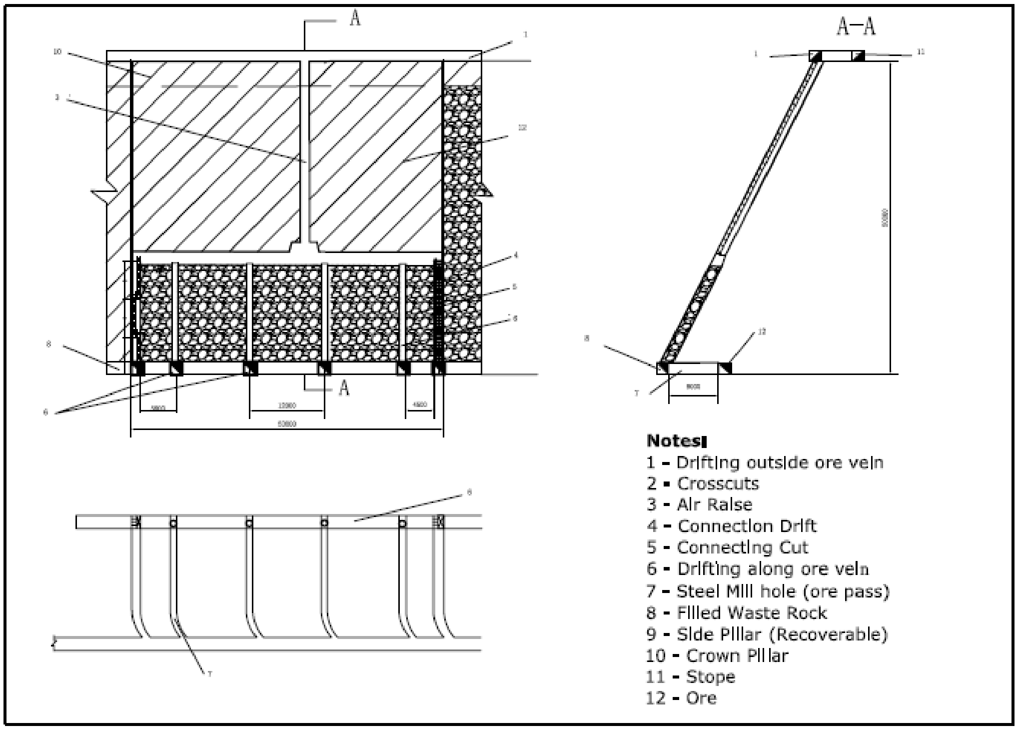
Figure 16.5 Resue Stope at SGX Mine

Rubber mats and/or belting are placed on top of the waste after each waste lift to minimize ore intermingling with the waste (ore losses) and also to minimize over-mucking of the waste (dilution). Mucking of the ore consists of hand lashing (shovelling) and hand carting to the mill hole. The rubber mats and/or belting are rolled up and removed prior to slashing the footwall forming the next platform lift.

Silvercorp acknowledges that in-stope ore movement may potentially be improved by using scraper winches with small buckets.

Figure 16.6 is a schematic of the resue stoping method.

Figure 16.6 Resue Stoping Method



16.2.3.3 Stope Management and Grade Control

Silvercorp has developed a stope management protocol and stope management manual at the Ying operations. The purpose of stope management is to implement stope operation procedures for dilution reduction via the Mining Quality Control Department. The department has a total of 22 technical staff, including management, mine engineers, geologists and technicians, and reports directly to Silvercorp’s HQ in Beijing. The mine engineers in the group are responsible for supervising the stope operation procedure, with stope inspection occurring at least once per day to check that mine contractors are following procedure guidelines. The geologists and geological technicians are responsible for stope geological mapping and sampling, which occurs every 3 - 5m of stope lift. The department also measures actually mined area of a stope at the end of each month for mine contract payment purposes.

Key aspects of the stope inspection are as follows:

- Ensuring that the back and floor of the stope are flat prior to drilling blasting holes.
- Checking to ensure the boundary of the mineralization and drill hole locations are correctly marked with red paint before drilling.

- Ensuring drill holes are inclined not less than 60^{o} to the horizontal, are not longer than 2 m, and are drilled optimally relative to vein and excavation width to minimize dilution.
- In a resuing stope, checking if the stope floor is covered with rubber mat/belt before blasting.
- In a resuing stope, checking to make sure that waste is sorted first and left in the stope before mucking ore to the mill holes after blasting; also ensuring that the floor and walls are cleaned with a broom to minimize ore losses before footwall slashing.
- After blasting, checking that the stope back is not more than 3.5 m high and the steel mill holes in a resue stope are properly covered with timbers.

Regarding contract payments, a mine contractor is paid based on amount of ore mined. As it may be seen as an incentive for the contractor to maximize material removed from the stope, contractor payments are governed by a specific formula that calculates planned ore tonnes based on extraction to design and a planned dilution factor. During mine operations, each rail car or small tricycle load of ore is weighed at a weigh station outside the mine adits. If weighed ore tonnes are greater than planned tonnes from a given stoping area, the mine contractor is paid solely based on the planned tonnes. For shrinkage stopes, an adjustment for paid tonnes is required to be made since a stope usually takes several months to complete and only blast swell is mucked most of time.

16.2.4 Ore & Waste Haulage

As described above, ore from the resue or shrinkage stopes, and waste from development, are loaded by hand or rocker shovel into 0.7 m^3 rail cars. Each ore car is tagged to indicate the stope from which the ore has been mined. The cars are pushed by hand or by loco along the rail on the production level to the bottom of the inclined haulageway, where they are hoisted to the next level. If this level is the adit level, the cars are parked until sufficient numbers have been accumulated to form a train for the locomotive to bring to the portal. The dimensions of the adits and inclined haulage-ways are referenced above. Some of the mines in the Ying District have internal shafts (winzes). These shafts are used in the same manner as the inclined haulageways. The conveyances are not equipped with skips. Rail cars are pushed onto the cage for transport to the next level.

Figure 16.7 shows a typical Ying loco with rail cars.

Figure 16.7 Ying Loco and Rail Cars

16.2.5 Equipment

16.2.5.1 Mine Equipment

Most of the key mining equipment is provided by Silvercorp and is maintained by contractors. Exceptions to this are the air compressors at small adits such as CM103 and CM102 at the SGX mine, which are provided by the mining contractors. The ramp development contractors in SGX and LM West also use their own equipment.

The Silvercorp fixed plant is predominantly domestically manufactured and locally sourced (Henan Province). The equipment manufacturers are well known and commonly used. Tables 16.1 and 16.2 list equipment in the Ying district

Table 16.1 Ying Mines Current Equipment List

Mine / Camp	Equipment	Model	Capacity	Quantities
SGX	Winch	2JTP-1.6*0.9	95 kW	3
	Winch	2JTP-1.6*0.9	132 kW	9
	Winch	JT-0.8*0.6	45 kW	2
	Winch	JTK1.2*1.2	75 kW	1
	Primary Fan	K45-No.16	35-65 m^3/s	1
	Primary Fan	K45-No.11	12-25 m^3/s	2
	Cage	GS 1-1		11
	Skip		1.5 M^3	1
	Shotcreter	HPS-5	5 m^3/h	2
	Shotcreter	JG-150	3.5 m^3/h	2
	Auxiliary fan	JK58-4	5.5 kW	32
	Auxiliary fan	JK58-4.5	11 kW	36
HZG	Winch	YR335M1-6	185 kW	1
	Winch	YRT200M-6	30 kW	1
	Winch	YR335M1-6	18.5 kW	1
	Winch	JKL	15 kW	1
	Winch	2JTP-1.6*0.9	132 kW	1
	Cage	GS 1-1		1
	Primary Fan	K45-4-No.10	30 kW	1
	Auxiliary fan	JK58-4	5.5 kW	10
	Auxiliary fan	JK58-4.5	11 kW	6
HPG	Winch	JTK-1	45 kW	2
	Winch	JTK-1	37 kW	1
	Winch	JTK-0.8	75 kW	1
	Winch	JTK-0.8	37 kW	1
	Winch	JT-1	37 kW	1
	Winch	JTP-1.6	132 kW	1
	Winch	JTK-1.2	75 kW	1
	Winch	JTK-0.8	45 kW	1
	Primary Fan	K45-4-No.10	30 kW	1
	Auxiliary fan	JK255-2	5.8 kW	8
	Auxiliary fan	JK58-4.5	11 kW	10
TLP	Winch	JTP-1.6*1.5	132 kW	1
	Winch	JTP-1.2*1.0	75 kW	2
	Winch	2JTP-1.6*1.2P	132 kW	1
	Winch	JK-2.0*1.5	260 kW	1
	Winch	JTK-1.2*1.0	75 kW	2
	Winch	JTK-1.0*0.8	37 kW	2
	Primary Fan	BK54-4-No.11	30 kW	1
	Auxiliary fan	JK255-2	5.8 kW	14
	Auxiliary fan	9.19No.5.6	11 kW	16

Mine / Camp	Equipment	Model	Capacity	Quantities
LM	Winch	JT-1	37 kW	1
	Winch	2JTP-1.6*0.9	132 kW	1
	Winch	JTK-1.0*0.8	37 kW	3
	Winch	2JK-2.0*1.25P	185 kW	1
	Winch	JTK-1.2*1.0	75 kW	1
	Primary Fan	BK54-4-No.11	30 kW	3
	Auxiliary fan	JK58-4	5.5 kW	20
	Auxiliary fan	JK58-4.5	11 kW	22

Table 16.2 Ramp Contractor Equipment List

Contractors	Equipment	Model	Capacity	Quantities
SGX Ramp	One boomer Jumbo Drill	CIJ17HT-C	55 kW	1
	Slusher	LWLX-180	55 kW	1
	Loader	XG951 III	162 kW	1
	Shotcreter	PC5T	35 m^3 /h	1
	Compressor	LG110A-8/11011	21 m^3/min	2
	Haul Trucks	15t	125 kW	5
	Auxiliary fan	FD-Ⅱ	30	1
LM West Ramp	One boomer Jumbo Drill	HT81A	60 kW	1
	Caterpillar Type Loader	LWL-120	55 kW	1
	Concrete Pump	40.13.55S	55 kW	1
	Compressor	LG110A-8	110 kW	2
	Auxiliary fan	SF-G	11.5	1
	Auxiliary fan	FD-Ⅱ	30	1
	Shovel	XG951	2.7 m^3	1
	Haul Trucks	10t	**100** kW	3

16.2.5.2 Equipment Advance Rates

Table 16.3 summarizes advance rates assumed for development and production activities.

Table 16.3 Equipment Advance Rates

Development or Production Activity	Rate (m / month)	Machine Type
Jumbo - Ramp	200	Single Boom Electric-Hydraulic
Jackleg – Levels (Hand Mucking)	50	Jackleg (YT-24)
Jackleg – Levels (Mechanical Mucking)	120	Jackleg (YT-24)
Jackleg - Stope Raises	40	Jackleg (YT-24)
Jackleg – Shaft (Mechanical Mucking)	55	Jackleg (YT-24)
Jackleg – Declines (Mechanical Mucking)	70	Jackleg (YT-24)

16.2.6 Manpower

Silvercorp operates the Ying mines using contractors for mine development, production, and exploration. The mill plant, and surface workshops are operated and maintained using Silvercorp personnel. Silvercorp also provides its own management, technical services and supervision staff to manage the mine operations. Each mine complex is run by a mine manager and several deputy mine managers. Because of proximity, the SGX and HZG mines have the same management, as do the TLP and LM mines.

The Ying Mining District has about 2,712 workers in total, including 952 Silvercorp staff and 1,760 contract workers. Tables 16.4 and 16.5 summarize Ying staff and contract workers.

Table 16.4 Silvercorp Staff

Mine	Staff
SGX/HZG	411
HPG	63
TLP/LM	148
Mill Plant	202
Company Administration	128
Total	**952**

Table 16.5 List of Contract Workers in the Ying District

Mine	Contractors	Workers	Location
SGX/HZG	Henan Mining Construction Group	404	CM101,CM105,PD700
	Shaanxi Shunan Engineering Ltd	48	CM103
	Daqian Engineering Inc	107	CM102
	Shanyi Engineering Ltd	262	PD16, HZG
	Tianzhu Engineering Ltd	71	YPD01, YPD02
	Wenzhou Mining Construction Ltd	38	New Ramp.
	Subtotal	930	
HPG	Shanyi Engineering Ltd	109	PD3
	Wenzhou Engineering Ltd	66	PD5, PD640
	Luoning Xinsheng Engineering Ltd	44	PD2, PD630
	Subtotal	219	
TLP/LM	Luoning Xinsheng Engineering Ltd	156	PD820, PD 924, 969 Shaft, PD918,PD991
	Luoning Daqian Engineering Ltd	101	PD780 , PD800, PD840, and PD890
	Yunping Engineering Ltd	52	PD930, and PD960
	Shanyi Engineering Ltd	260	PD730, PD900
	China 12 Metallurgy Construction Company	40	LM West Ramp 980
	Subtotal	611	
Total		1760	

16.2.7 Ventilation

Mine ventilation is set up to be practiced as per Chinese laws and regulations. Among the key ventilation requirements are: minimum ventilation volume per person (4 m^3/min/person), minimum ventilation velocity (typically 0.25 - 0.50 m/sec dependent on location or activity), and minimum diluting volume for diesel emissions (4 m^3/min/kW). The following section describes the ventilation system at SGX. Other mines have a similar network of fans, entries and face ventilation.

16.2.7.1 Stage 1 Primary Ventilation

The ventilation volume for Stage 1 is predominantly influenced by the minimum air velocity for the various development and production activities. The peak ventilation volume is estimated to be 63.6 m^3/sec, which is inclusive of 15% air leakage.

A diagonal ventilation system with double wings is utilized in the SGX mine.

West Wing (vein S14, S6, S2 Stopes): fresh air enters 400mRL, 350mRL, 300mRL, and 260mRL from adit PD16 via No.2 internal shaft and CM105 via No.1 internal shaft. Exhaust air returns to the 650 Adit via 450mRL, exploration line 70-72 internal shaft, and ventilation raises, and then is exhausted to surface by a main axial fan.

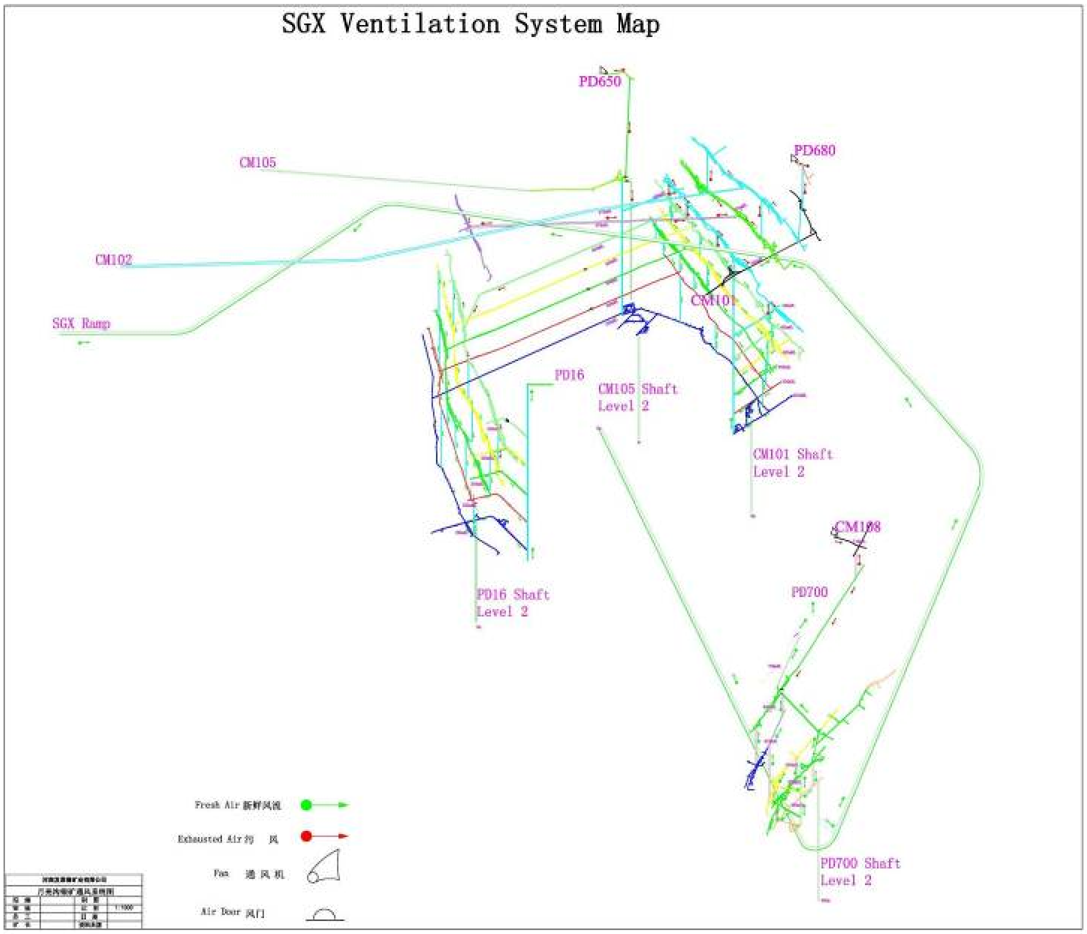
East Wing (vein S16W, S7, S8, S21 Stopes): fresh air enters 400mRL, 350mRL, 300mRL, and 260mRL from adit CM101 via No.3 internal shaft, and CM105 via No.1 internal shaft. Exhaust air: part returns to the 650 Adit via 450mRL, exploration line 70-72 internal shaft, and ventilation raises, and then is exhausted to surface by a main axial fan, which is located at PD650 entrance. The remainder of the exhaust air returns to the 680 Adit via 490mRL and ventilation raises, and then is exhausted to surface by a main axial fan.

The PD700 adit uses a separate ventilation system: fresh air enters 570mRL and 530mRL from adit PD700 via the inclined haulageway and internal shaft. Exhaust air returns to the CM108 Adit via 640 mRL and ventilation raises, and then is exhausted to surface by a main axial fan.

One 55 kWA axial ventilation fan is installed in the entrance of PD 650 Adit. One 22 kWA axial ventilation fan is installed in the entrance of PD 680 Adit. One 22 kWA axial ventilation fan is installed in the entrance of CM 108 Adit. All these fans have spare motors for back-up.

Figure 16.8 is a ventilation system diagram for the SGX mine.

Figure 16.8 SGX Ventilation System Diagram



16.2.7.2 Secondary Ventilation

The secondary ventilation system consists of auxiliary fans for ventilating production faces, development faces and infrastructure chambers.

Development faces are ventilated using domestically manufactured fans (5.5 to 11 kW – 380V). A combination of forced and exhaust ventilation is applied for long blind-headings.

Stopes are force ventilated using domestically manufactured fans via the timber cribbed access. The stope air returns to the upper level via a raise.

16.2.8 Backfill

Backfill such as tailings or development waste is not required for shrinkage mining, where blasted ore provides a working platform for each stope lift. The ore is removed on completion of stope mining leaving an empty void. There is potential to opportunistically dispose of development waste into these voids, but current mine plans do not make allowance for this.

The resue stoping method uses blasted waste from the footwall (to achieve the minimum mining width) as the working platform for each stope lift. The waste remains in the stope at completion of stope mining.

16.2.9 Dewatering

Mine dewatering is effected under the requirement from the "Chinese Safety Regulations of Metal and Non-metal Mines".

Underground water flow from the different mines is listed in Table 16.6 below.

Table 16.6 Mines Water Flow

Mine	Maximum water flow (m^3/day)	Average water flow (m^3/day)
SGX	27,068	9,023
HPG	1100	650
TLP	960	360
LM	840	600
HZG	560	260

16.2.9.1 SGX Dewatering

The pumping system is a dirty water arrangement with a sump and 3 pumps at each location. In normal circumstances, one pump is running, one is being maintained, and one is on standby. Under the maximum water inflow, all available pumps can be operated with the exceptions of pumps that are being maintained. If all pumps operate, they can handle the maxiumum estimated inflow rate. There are two main pipelines to surface, with one pipeline on standby. The underground sump capacity is 6 - 8 hours at the average water yield.

Stage 1 Dewatering

Pump stations equipped with three or more pumps connecting to surface are in place at the bottom of internal shafts. Table 16.7 lists station pumps at the bottom of internal shafts.

Table 16.7 Stage 1 Water Pumps at SGX Mine

Pump Stations	Units	Model	Power (kW)	Flow (m^3/h)	Lift (m)
CM105, CM101	4	MD85-45*9	160	85	405
CM105, PD16, PD700	6	D25-50*8	75	25	400
CM105	1	MD46-50*9	90	46	400
CM101, CM105, PD16	4	MD46-50*9	110	46	450
CM105	4	MD155-45*9	280	155	405
CM102	3	MD12-50*3	18.5	12.5	150
CM105 No.6 Internal Shaft	3	MD155-67*6	280	155	402

Stage 2 Dewatering

Mining level accesses have been designed with a 0.3% gradient to allow proper drainage. The pump and piping arrangements are similar to Stage 1.The inflow collected from various mining levels is then pumped to 260 m elevation; from here it is pumped to surface through the 1st stage dewatering system. Table 16.8 lists the details of the SGX second stage pumping system.

Table 16.8 2nd Stage Water Pumps at SGX Mine

Pump Stations	Units	Model	Power (kW)	Flow (m^3/h)	Lift (m)
CM101	3	MD85-45*7	132	85	315
CM105	3	MD155-67*5	220	155	335
CM105-S2	3	MD155-67*5	220	155	335
PD16	3	MD46-50*6	75	46	300
CM102-S8 Internal shaft	3	MD25-50*4	30	25	200
PD700	3	MD46-50*7	90	46	350

In case of a flood, water dams are set up at the entrance to shaft stations and pump houses in order to protect the safety of personnel and equipment.

Development Face Dewatering

Conventional electric submersible pumps are used for development ramp and decline face dewatering on an as-needed basis. Water is stage discharged to the nearest level pump station.

The dewatering systems at HZG, HPG, TLP, and LM mines are somewhat similar to the SGX mines. Following is a brief description of these systems.

16.2.9.2 HZG Dewatering

Dewatering is divided into two stages: the first stage is from 650 mRL to 820 mRL; the second stage is from 300 mRL to 650 mRL. The sumps at both 300 mRL and 650 mRL have a capacity of 150 m^3 each. For the first stages, there are three centrifugal pumps at the pump station in a similar set-up as SGX. Pump model is D25-50X5, power is 37 kW. For the 2nd stage, there are three centrifugal pumps, model D25-50X8, power 75 kW. Two 89 mm pipelines installed in inclined haulageways take the water to surface. One line is on standby.

16.2.9.3 HPG Dewatering

PD3 dewatering is divided into two stages: the first is from 300 mRL to 460 mRL, the second is from 460 mRL to PD3 (600m) adit level. The sumps at both 300mRL and 460 mRL have a capacity of 300 m^3. For the first stages, there are three centrifugal pumps at the pump station in a similar arrangement as SGX. The pump model is D25-50X5, power is 37 kW. For the 2nd stage, there are two centrifugal pumps, model D85-50X4 with power draw 75 kW, and one centrifugal pump D46-50X4 model with power draw at 45 kW. Two

108 mm pipelines installed in inclined haulageways take the water to surface. One line is on standby.

16.2.9.4 TLP Dewatering

Water discharge is currently from the 700m level to the 730m level, and then via the PD730 adit to surface. The pump model is WQ40—80/4—15, head is 80 m, designed discharge capacity is 40 m^3/h and power is 15 kW. For 2nd stage dewatering, there are three centrifugal pumps installed in Line 31 internal shaft at 510 mRL bottom pump station. The model is MD46-50X6, power is 75 kW. Two 89 mm pipe lines are installed along Line 31 internal shaft, via 650mRL, Line 33 internal shaft, PD770 inclined haulageway, and PD 770 adit to surface.

16.2.9.5 LM Dewatering

LM West

There are plans for three centrifugal pumps, model MD46-50X10, to be installed at 969 shaft 400mRL bottom pump station; power draw is 132 kW. Two 89 mm pipe lines will be installed in the 969 shaft and then via 926mRL and PD 924 to surface.

Three centrifugal water pumps are planned for installation in 500 mRL pump station at the PD900 shaft. The model will be MD46-50X8, power draw at 90 kW. For the 2nd stage, there will be three centrifugal water pumps installed in the internal shaft 250 mRL bottom pump station, model MD46-50X6, power 75 kW. Two 89mm pipe lines will be installed along PD900 internal shaft, then via 840 mRL and PD 838 to surface.

16.2.10 Water Supply

Water consumption at SGX area is minimal and is sourced from the Guxian Reservoir. It is primarily used for drilling, clearing the drill bits and dust suppression. Water consumption is rated at 19.3 m^3/h for each portal. As per safety regulations, a fire-prevention system with 27 m^3/h is required. To meet safety and production needs, there is a 200 m^3 water pond at each portal, other than at PD16 where the capacity is 300 m^3. Water supply pipe diameter is 89mm.

The water source for HZG, HPG, TLP, and LM mines is from nearby creeks and springs and underground sources. A water pond of 100~200 m^3 capacity is established at each adit portal. Both water quality and quantity from local creeks is sufficient to meet mine requirements.

HZG requirements are estimated at 330 m^3/d. There is a water pond of 100 m^3 at each portal.

HPG requirements are estimated at 310 m^3/d. There is a water pond of 200 m^3 at the mine site. The diameter of the supply pipe is 107 mm.

TLP Mine requirements are estimated at 556 m^3/d. There is a water pond of 200 m^3 at the mine site. The supply pipe diameter is 89 mm.

LM Mine requirements are estimated at 320 m^3/d for LM East and 400 m^3/d for LM West. There is a water pond of 200 m^3 at each portal. The diameter of the water pipe is 89 mm.

16.2.11 Power Supply

Power for the SGX mine is supplied from the local government network by three lines. One is a 35 kV high-voltage line that is connected from Luoning Guxian 110 kV substation; the second is a 10 kV high-voltage line that is connected from Luoning Guxian 35 kV substation; the third is a 10 kV high-voltage line from the Chongyang 35 kV substation, about 12 km from SGX.The power source is hydropower, generated at the Guxian Reservoir Dam. A fully automated 35 kV substation in the immediate vicinity of the mine site was built in 2008. The length of overhead power lines is about 8 km, the capacity of the main transformers is 6,300 kVA.

The 35 kV overhead line can supply main power for all mine production; the 10 kV overhead line is maintained as a standby. Two 1,500 kW and one 1,200 kW generators are installed in the fully automated 35 kV substation for back-up supply for the CM101, CM102, CM103, CM105, PD16 and PD700 adits 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 10 kV power lines, one for operation, and the other 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 are only required to guarantee service of the first class power load.

See also Section 18.3.

16.2.12 Compressed Air

Compressed air is primarily used for drilling. Jacklegs are used in all stopes and conventional development faces. There are some minor uses for shotcreting and blast hole cleaning.

Compressor plants are located adjacent to each portal. They are of a two-stage electric piston configuration. Compressed air is reticulated via steel pipes of varying sizes, depending on demand, to all levels and will also be directed to emergency refuge stations. Air lines are progressively sized from 4 inch down to 1 inch at the stopes.

Compressed air consumption is estimated for each mine operating system (usually differentiated by adits), based on mine production and number of development faces. Suitable air compressors are installed to satisfy consumption at each adit.

16.2.12.1 Explosives

Covered in section 18.8.6

16.2.13 Communications

Mine surface communication is available by landline service from China Network Company (CNC) and by mobile phone services from China Mobile (CMCC) and China Unicom.

Key underground locations such as hoist rooms, shaft stations, transportation dispatching rooms, power substations, pump stations, refugee rooms, blast evacuation concentrating stations, and the highest point of each level are equipped with telephones. Communication cables to underground are connected via internal shafts and declines. Internal telephones are installed in operating areas and dispatching room, which are also connected with communication cables to the local telephone lines. Hsin Yeong An (HYA) cable is used for surface and HUVV cable is used for underground tunnels. HUVV cable has PVC insulation and is flame-retardent. PVC jacket phone cable is used for mining applications.

16.2.14 Safety

Ying Mine safety is practiced as per Chinese health and safety laws and regulations, with all associated requirements to be followed during operation. The Occupational Health and Safety (OHS) department's role is to provide safety training, enforce OHS policies and procedures, make mine safety recommendations and carry out daily inspections of the underground workings and explosive usages.

Each of the mining contractors is required to appoint one or two safety officers.

A ten-member safety committee is maintained for each of the SGX, HPG and TLP/LM mines. The committees are led by the Henan Found general manager and include deputy general manager, mine manager, safety department supervisor, and mining contractor representatives. The committees are coordinated by each 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 contractor workers in the mines.

The mine and contractors supply Personal Protective Equipment (PPE) to their own personnel.

A contract with the Luoning County General Hospital is in place to take and treat injured workers from all mines, except those treated at the mine clinic.

In 2011, there were five lost time injuries in the Ying District, three to contract workers, and two to Silvercorp employees. Other than an ear injury, all were foot or leg injuries.

AMC notes that Silvercorp has gone beyond Chinese statutory requirements in certain areas of safety but also recognizes that some operating practices and procedures fall short of more international standards. AMC recommends that Silvercorp continue with a focus of improving mine and site safety that would include implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.

16.3 Production & Scheduling

16.3.1 Development Schedule

Table 16.9 summarizes the LOM development schedule for each of the Ying mines and for the operation as a whole.

Table 16.9 Ying Mines LOM Development Schedule

SGX	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Capital Lateral (m)	6,452	4,159	2,501	1,970	400						15,482
Capital Vertical (m)	1,023	160									1,183
Operating Lateral (m)	26,662	24,498	17,438	16,981	10,452	5,177	6,688	3,958	1,373	503	113,729
Operating Vertical (m)	9,396	4,256	3,988	2,337	2,023	893	753	573	51	55	24,325
Total (m)	43,533	33,073	23,927	21,288	12,875	6,070	7,441	4,531	1,424	558	154,719
HZG	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Capital Lateral (m)	1,835	1,167	70								3,072
Capital Vertical (m)	490	110									600
Operating Lateral (m)	7,536	9,511	6,884	771							24,703
Operating Vertical (m)	2,218	1,135	634								3,987
Total (m)	12,079	11,923	7,588	771							32,362
HPG	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Capital Lateral(m)	860	681	1,382	540			45				3,508
Capital Vertical(m)	260	200									460
Operating Lateral(m)	3,530	4,895	5,705	6,278	5,534	3,221	3,109	1,954			34,226
Operating Vertical(m)	801	1,248	1,186	1,216	1,236	447	534	316			6,984
Total(m)	5,451	7,024	8,273	8,034	6,770	3,668	3,688	2,270			45,178
TLP	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Capital Lateral (m)	1,289	1,340	300	400	880	300	1,270	400	200	200	6,579
Capital Vertical (m)				300							300
Operating Lateral (m)	18,707	15,234	16,203	14,296	7,178	5,082	7,774	6,321	8,302	1,649	100,746
Operating Vertical (m)	4,997	1,984	2,841	2,562	1,286	577	1,033	846	760	246	17,132
Total (m)	24,993	18,558	19,344	17,558	9,344	5,959	10,077	7,567	9,262	2,095	124,757
LM	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Capital Lateral (m)	3,023	5,510	2,185	1,622	1,410	410	240	160	750		15,310
Capital Vertical (m)	225	560	300	290							1,375
Operating Lateral (m)	5,083	12,102	14,033	14,907	13,808	7,561	6,702	2,033	2,563	754	79,546
Operating Vertical (m)	899	2,834	3,496	3,317	2,996	1,763	1,533	865	407	182	18,292
Total (m)	9,230	21,006	20,014	20,136	18,214	9,734	8,475	3,058	3,720	936	114,523
Ying Mines	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Capital Lateral (m)	13,459	12,857	6,438	4,532	2,690	710	1,555	560	950	200	43,951
Capital Vertical (m)	1,998	1,030	300	590							3,918
Operating Lateral (m)	61,518	66,240	60,263	53,233	36,972	21,041	24,273	14,266	12,238	2,906	352,950
Operating Vertical (m)	18,311	11,457	12,145	9,432	7,541	3,680	3,853	2,600	1,218	483	70,720
Total (m)	95,286	91,584	79,146	67,787	47,203	25,431	29,681	17,426	14,406	3,589	471,539

Development is characterized as either operating or capital, and includes vein exploration, stope preparation, level development, decline and shaft excavation, and underground infrastructure development. Capital development is notionally that associated with ramp excavation, level access and level rock transportation routes. Operating development is notionally the portions of the level access that provide immediate access to a stope, draw point accesses, and vein development including exploration vein development.

AMC notes the projected advance rate of 200 m/month for the main ramp developments at SGX and LM West. Over a three month period ending April 30, 2012, reported advance for these two developments was 651 and 371 m respectively, with adverse ground conditions being an inhibiting factor for the latter.

AMC also notes the reported 2011 total development advance of 87,808 m (not including 47,055 m^3 of slashing).

AMC considers that the projected development totals for 2012 and 2013 are achievable but that a continuing high degree of development focus will be necessary throughout the Ying operation.

16.3.2 Mines Production

16.3.2.1 Production Rate

Mine operations are scheduled for 365 days of the year, but with production on a 330 days per year basis. Nominal production rates for shrinkage and resuing stopes are around 1200 and 600 tonnes per month respectively, but with the actual rate from each stope being dependent on realized vein and excavation widths.

Table 16.10 is a general summary of production rates and projected years of operation for the Ying mines.

Table 16.10 Ying Mines Production Rate Summary

Mine	Production Rate (t/month)		Total Stope No.	Annual Production (kt/a)	Estimated Mine Life (years)
	Shrinkage	Resue			
SGX	1200	600	52	400	10
HZG	n/a	600	19	100	5
HPG	1200	600	10	80	9
TLP	1200	600	18	250	11
LM	1200	600	22	250	11

16.3.2.2 Mines Production 2009 to 2011

Table 16.11 summarizes mine production tonnes and grade from 2009 to 2011, including high grade, hand-sorted ore, referred to as Direct Shipping Ore in Table 16.11. Production is noted to have increased by almost 50% since 2009 but with some decrease in grades. The SGX mine has generated 69% of total production tonnes over the three-year period.

Table 16.11 Ying Mines Production – 2009 to 2011

Mine	Ore Type	Unit	2009	2010	2011	Total
SGX	Milled Ore	t	281,374	373,602	395,747	1,050,724
	Grade	Ag (g/t)	403	358	325	357
		Pb (%)	6.62	5.45	5.34	5.72
		Zn (%)	3.02	2.54	2.14	2.51
	Direct Shipping Ore	t	13,290	12,412	12,365	38,068
	Grade	Ag (g/t)	2,075	1,915	1,728	1,910
		Pb (%)	55.06	52.12	51.21	52.85
		Zn (%)	5.80	5.62	4.88	5.44
	Total Ore Mined	t	294,665	386,015	408,112	1,088,791
	Grade	Ag (g/t)	478.39	408.08	367.51	411.30
		Pb (%)	8.80	6.95	6.73	7.37
		Zn (%)	3.15	2.64	2.22	2.61
HZG	Milled Ore	t	-	-	45,788	45,788
	Grade	Ag (g/t)	-	-	216	216
		Pb (%)	-	-	0.93	0.93
		Zn (%)	-	-	-	0
HPG	Milled Ore	t	24,111	32,704	42,399	99,213
	Grade	Ag (g/t)	155	133	111	129
		Pb (%)	6.45	6.46	5.54	6.06
		Zn (%)	1.20	1.27	1.03	1.15
	Direct Shipping Ore	t	-	260	193	453
	Grade	Ag (g/t)	-	710	456	602
		Pb (%)	-	61.29	61.65	61.44
		Zn (%)	-	1.53	1.42	1.48
	Total Ore Mined	t	24,111	32,964	42,592	99,666
	Grade	Ag (g/t)	155.00	137.55	112.56	131.15
		Pb (%)	6.45	6.89	5.79	6.31
		Zn (%)	1.20	1.27	1.03	1.15
TLP	Milled Ore	t	9,469	115,041	100,546	225,055
	Grade	Ag (g/t)	136	102	106	105
		Pb (%)	2.64	2.99	2.86	2.92
		Zn (%)			0.00	0.00
	Direct Shipping Ore	t	7.86	6.08	-	14
	Grade	Ag (g/t)	2,084	1,265	-	1,727
		Pb (%)	54.59	59.78	-	56.85
		Zn (%)	-	-	-	0.00
	Total Ore Mined	t	9,477	115,047	100,546	225,069
	Grade	Ag (g/t)	137.62	102.06	106.00	105.10
		Pb (%)	2.68	2.99	2.86	2.92
		Zn (%)			-	-
LM	Milled Ore	t	11,569	46,150	49,871	107,590
	Grade	Ag (g/t)	267	240	313	277
		Pb (%)	2.14	1.67	1.98	1.87
		Zn (%)	0.00	0.00	0.00	0.00
Ying Mines	Milled Ore	t	326,523	567,497	634,350	1,528,370
	Grade	Ag (g/t)	372	283	267	295
		Pb (%)	6.33	4.70	4.38	4.92
		Zn (%)	2.69	1.74	1.40	1.80
	Direct Shipping Ore	t	13,298	12,678	12,559	38,535
	Grade	Ag (g/t)	2,075	1,890	1,709	1,895
		Pb (%)	55.06	52.31	51.37	52.95
		Zn (%)	5.80	5.53	4.83	5.40
	Total Ore Mined	**t**	**339,821**	**580,175**	**646,909**	**1,566,905**
		Ag (g/t)	**439**	**318**	**295**	**335**
		Pb (%)	**8.24**	**5.74**	**5.29**	**6.10**
		Zn (%)	**2.81**	**1.82**	**1.47**	**1.89**

16.3.2.3 Production Schedule

Table 16.12 is a summary of projected LOM production for each of the Ying mines and for the entire operation.

A particularly significant aspect of the production profile is the ramp up to just under 1 M tonnes per annum in 2014, an approximately 50% increase over the production achieved in 2011. The ramp-up begins with a 10% production increase in 2012. AMC notes that the development and infrastructure required to allow the projected production increases is either already in-place, is in development, or has been planned. AMC also notes that the ability to achieve the projected production increases will, to a large degree, be dependent on the consistent availability of resources, particularly skilled manpower. AMC considers that there is a certain amount of risk associated with the provision of those resources and recommends that Silvercorp maintain particular focus in this area.

A further key aspect of the LOM profile is that the major part of the increased production will come from the TLP and LM mines. Together they will provide over 50% of the Ying production by 2017. Consequent with the increased production from TLP/LM is a gradual decrease in projected mined Ag grade, relative to, particularly, the lower in-situ Ag grade at TLP. In order to maintain optimum metal grades, AMC recommends that Silvercorp continue its current efforts on dilution and grade control via the Mining Quality Control Department.

Table 16.12 Ying Mines LOM Production*

SGX	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Production (t)	400,821	401,704	400,382	400,611	400,631	401,025	401,641	305,145	194,693	199,216	216,922	0	3,722,791
Ag(g/t）	367	356	339	340	339	341	339	338	336	328	340	0	343
Pb（%）	6.64	6.46	6.04	7.05	6.44	5.73	5.88	5.91	6.22	6.50	6.05	0.00	6.27
Zn（%）	3.24	3.62	3.23	2.75	3.18	3.43	2.83	2.48	2.03	1.96	3.01	0.00	2.99
HZG	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	75589	102809	127407	44895	31738								382,437
Ag (g/t）	414	352	305	297	172								327
Pb (%)	0.80	1.21	0.73	1.43	0.77								0.96
Zn (%)	0.31	0.21	0.22	0.12	0.13								0.22
HPG	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	50,032	70,485	80,078	80,799	80,135	80,556	80,106	80,113	27,760				630,064
Ag (g/t)	85	101	97	71	84	64	73	66	76				79
Pb (%)	8.20	4.81	3.39	3.48	2.74	2.61	2.60	2.77	5.50				3.67
Zn (%)	0.96	0.98	1.46	1.28	1.65	2.04	1.98	2.30	0.69				1.58
Au(g/t)	0.40	0.80	0.82	0.71	1.20	1.62	1.16	0.91					0.94
TLP	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	120,154	150,134	180,036	199,979	230,195	250,113	249,674	249,549	250,508	250,372	249,949	173,580	2,554,243
Ag (g/t）	132	135	135	137	136	130	131	128	129	132	129	47	126
Pb (%)	3.20	3.31	3.50	3.56	3.91	4.80	2.90	3.07	3.73	1.70	0.94	1.10	2.98
Zn (%)	0.22	0.25	0.25	0.42	0.39	0.53	0.28	0.16	0.32	0.07	0.00	0.09	0.25
LM	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	69,964	110,047	200,009	220,146	250,285	250,766	250,087	250,019	250,197	250,095	246,373	155,594	2,503,582
Ag (g/t）	295	294	294	293	294	292	291	293	290	277	173	128	269
Pb (%)	2.13	2.41	2.80	2.04	2.40	2.32	2.48	2.52	2.41	2.70	2.38	1.12	2.35
Zn (%)	0.28	0.39	0.27	0.29	0.32	0.41	0.40	0.39	0.42	0.31	0.34	0.16	0.34
Ying Mine	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Production (t)	716,559	835,179	987,912	946,430	992,983	982,460	981,508	884,826	723,158	699,683	713,244	329,174	9,793,118
Ag (g/t）	306	286	269	261	255	252	252	241	239	240	214	85	250
Pb (%)	5.12	4.57	4.02	4.58	4.36	4.37	3.99	3.87	4.01	3.43	3.16	1.11	4.03
Zn (%)	1.98	1.95	1.56	1.43	1.59	1.81	1.49	1.22	0.83	0.69	1.07	0.13	1.40
Au (g/t)	0.03	0.07	0.07	0.06	0.10	0.13	0.10	0.08					0.06

*Rounding of some figures may lead to minor discrepancies in totals.

16.4 Mining Summary

The Ying mine complex is a viable operation with a projected LOM through to 2023 based on Proven and Probable reserves. The potential exists for an extended LOM via further exploration and development, particularly in areas of Inferred Resources.

An increase in annual production of about 50% is planned between 2012 and 2014. Development and infrastructure to allow access to, and mining in, a greater number of working places is either in place, in development or is planned. AMC considers that the projected production increase can be achieved but that there is a degree of risk associated with having sufficient skilled mining labour consistently available. AMC also notes that a continuing high degree of focus will be necessary throughout the Ying operation for planned 2012 and 2013 development targets to be achieved.

Consequent with the projected increase in production tonnes will be a gradual reduction in grade as mining activity increases in the lower grade TLP and LM areas.

The current focus on dilution and grade control will need to be diligently maintained if reserve mining grades are to be achieved.

In the past there has been a separation between the processes of resource estimation, reserve estimation and mine planning. AMC strongly recommends that recent efforts to fully integrate these processes be continued.

AMC recommends that Silvercorp examine its definition for, and use of, sustaining capital in its cut-off grade calculations.

The Ying mines safety is governed by Chinese statutory requirements and AMC understands that, in certain areas, those requirements are exceeded. AMC advises, however, that Silvercorp should continue with a focus on safety improvement that would include implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.

AMC recommends that Silvercorp investigate the use of portable compressors in mining areas with a view to minimizing power costs.

AMC recommends the investigation of the benefits of a wider application of slushers for muck movement in stopes.

The generally good ground conditions, and the regularity and sub-vertical nature of the Ying district veins, may provide an opportunity to effectively employ more bulk-mining methods such as long-hole benching, and still with reasonable dilution. AMC recommends that Silvercorp consider the application of such methods.

17 RECOVERY METHODS

17.1 Introduction

Silvercorp runs two processing plants, Plant 1 and Plant 2, for the Ying operations, with a total design capacity of 1,600 tpd (prior to October 2011), and then 2,600 tpd after October 2011 when expansion phase II was completed. The two plants are situated within a distance of 2 km from each other. The development history is described below and summarized in Table 17.1:

- Both plants were designed based on the lab tests completed by HNMRI in 2005.
- Plant 1 (Xiayu Plant, 600 tpd) has been in operation since March, 2007.
- Plant 2 (Zhuangtou Plant): (1) Phase I (1,000 tpd) has been in production since December 2009; (2) Phase II (1,000 tph) has been in production since October 2011 when expansion of another parallel flotation bank was completed. Now, the total design processing capacity has reached 2,000 tpd.
- From January 2012, the total design processing capacity for Plants 1 and 2 is about 2,600 tpd of ore, it is expected that for 2012 the actual capacity will reach 3,000-3,350 tpd.

Table 17.1 Summary of Processing Plants 1 & 2's Capacities

Items	Plant 1	Plant 2 (Phase I)	Plant 2 (Phase II)	Plants 1+2 (2012)
Year in Operation	**Mar 2007**	**Dec 2009**	**Oct 2011**	
Design Capacity (tpd)	600	1000	1000	2600
Actual Capacity (tpd)	850	1250	1250	3350
Plant Availability (day/yr)	330	330	330	330
Major Ore Feed	HPG/TLP/SGX	SGX	SGX	All
Tailings Pond	P1-Zhuangtou	P2-Shi Y Gou	P2-Shi Y Gou	P1+P2

The plants process ore from a number of mines in the Ying district and the following section describes the various feeds and products.

17.2 Ore Supply and Concentrate Production from Ying Property Mines

17.2.1 Ore Supply (SGX, HPG, TLP, LM etc)

Mined ore from the various mines in the district are shipped to the mill-flotation Plants 1 and 2:

- SGX/HPG Lumps: Rich large size galena lumps with characteristic specular silver-grey colour are hand-sorted out at the mine sites, crushed, and then shipped by dedicated trucks to Plant 1. The lumps are milled in a dedicated facility, and then sold directly or mixed with flotation PbS concentrate for sale. The lead lumps bypass flotation circuit.
- SGX/HPG ore: using trucks on barges from the SGX/HPG mines to cross the lake, and then trucked to the plant.
- TLP/LM Ores: using truck shipping directly from mine site to the plant.

Table 17.2 summarizes the ore supply from the mines for 2010 and 2011. It shows that:

- SGX (HG), SGX (LG) and TLP were the major ore suppliers for the plants.
- HZG and other trial mines came online to produce in 2011.
- Ore supply from 2010 to 2011 increased by 10.3%.

Table 17.2 Ore Supply to the Processing Plants 1 & 2 (2010, 2011, dry base including lead lumps)

Year	Unit	SGX (HG)	TLP	LM	HPG	SGX (LG)	HZG	Others	Sub-Total
2010	Wt (tonnes)	318,156	115,047	46,150	32,964	67,858	0	0	580,175
	Contribution (%)	54.84	19.83	7.95	5.68	11.70	0.00	0.00	100
2011	Wt (tonnes)	287,832	100,546	49,871	42,592	109,228	45,788	11,052	646,909
	Contribution (%)	44.49	15.54	7.71	6.58	16.88	7.08	1.71	100
Ranking (2011)		1	3	4	6	2	5	7	

*SGX (HG: high grade ore); SGX (LG: low grade ore); Other mines includes: BCG, and test pit YM01, YM02

Table 17.3 shows a dramatic increase of mined ore weight (dry) from 2007 to 2011, driven by the increase in processing plant capacity.

Table 17.3 Ore Supply Increased from 2007 to 2011 (dry base including lead lumps)

Year	2007	2008	2009	2010	2011
Wt (tonnes)	254,153	428,906	340,590	580,175	646,909
Increase (%)	Base	68.76	34.01	128.28	154.54

17.2.2 Ore Composition per Mine (SGX, HPG, TLP, LM etc)

Table 17.4 shows average ore composition for 2011. It indicates that SGX (HG), HPG, and TLP ore are much richer in Pb/Ag than the rest. TLP, LM and HZG have no zinc.

Table 17.4 Average Ore Compositions vs. Mines (dry base including lead lumps, 2011)

Unit	SGX (HG)	TLP	LM	HPG	SGX (LG)	HZG	Others
Pb (%)	6.18	2.86	1.98	5.54	2.40	0.93	N/A
Zn (%)	2.34	0.00	0.00	1.03	1.59	0.00	N/A
Ag (g/t)	389	106	313	111	155	216	N/A

17.2.3 Concentrate Production from Different Mines (SGX, HPG, TLP, LM, etc.) in 2011

Table 17.5 summarizes the volume of PbS and ZnS concentrate products produced from different mines in 2011. 18.38% of total products are produced by hand sorting.

Table 17.5 Concentrate Production from Different Mines (2011)

Products	Wt.	SGX (HG)	TLP	LM	HPG	SGX (LG)	HZG	Others	Sub-Total
1. Hand Sorted Concentrate									
	（tonnes）	12,363	0	0	193	3	0	0	12,559
2. Flotation Concentrate									
Pb Float Conc	（tonnes）	25,147	5,705	2,118	3,799	3,844	1,386	814	42,814
Zn Float Conc	（tonnes）	9,463	0	0	828	2421	0	233	12,945
3. Hand +Float Concentrate									
Pb+Zn Conc wt	（tonnes）	46,974	5,705	2,118	4,821	6,266	1,386	1,047	68,317
Conc Contribution	(%)	68.76	8.35	3.10	7.06	9.17	2.03	1.53	100.00
Hand Sorted Conc	(%)								18.38
Flotation Conc	(%)								81.62
Ranking (2011)		1	3	5	4	2	6	7	

*SGX (HG: high grade ore); SGX (LG: low grade ore)

17.2.4 Concentrate Quality and Metal Recovery (Average) in 2007-2011

Table 17.6 and Table 17.7 summarize the concentrate quality and recovery (average) vs. years. The results show that:

- Pb & Ag grade and recovery in PbS concentrate meet the design targets.
- Zn grade and recovery are slightly lower than the target due to lower zinc content in the ore feed.

Table 17.6 Concentrate Quality vs. Years

Product	Yr	Wt (t)	Pb (%)	Zn (%)	Ag (g/t)
PbS	2007	10,208	56.67	7.18	2,223
Lumps	2008	12,482	55.16	6.12	2,007
Hand Sort	2009	13,493	55.00	5.72	2,051
	2010	12,678	52.31	5.53	1,890
	2011	12,559	51.37	4.83	1,709
PbS	2007	18,992	67.27	6.83	4,382
Flotation	2008	27,382	60.79	4.36	3,626
Conc	2009	29,853	66.18	5.30	3,712
	2010	39,963	62.67	4.02	3,619
	2011	42,814	61.17	3.61	3,556
Design			60.00	1.95	
ZnS	2007	13,577	1.64	49.47	444
Flotation	2008	12,209	1.56	48.61	459
Conc	2009	13,707	1.48	48.57	453
	2010	15,001	1.50	49.10	446
	2011	12,945	1.50	49.66	433
Design			0.95	45.00	

Table 17.7 Overall Metal Recovery vs. Years

Year	Pb (%)	Zn (%)	Ag (g/t)
2007	95.57	72.88	90.95
2008	94.67	70.11	90.31
2009	96.32	69.54	92.60
2010	95.07	69.52	91.21
2011	95.81	68.59	92.59
Av	**95.49**	**70.13**	**91.53**
Design	**90.00**	**85.00**	**90.00**

17.2.5 Impact of Ore Type on Concentrates Quality and Metal Recovery (Lead Lumps Included) 2010

Tables 17.8 to 17.12 summarize the concentrate production from different mines (SGX, HPG, TLP, LM etc.) for year 2010.

Table 17.8 SGX (HG: High Grade) Mine – Ore Processed – Actual Mass Balance (2010)

Product	Wt (tonnes)	Mass Yield (%)	Grade			Recovery		
			Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Head	305,744	100	6.18	2.71	407	100	100	100
Lead Con.	25,961	8.49	69.31	5.1	4,353	95.16	15.97	90.73
Zinc Con.	12,467	4.08	1.46	50.24	465	0.96	75.51	4.66
Tails	267,316	87.43	0.27	0.26	21	3.88	8.52	4.61

Table 17.9 Other Mines SGX (LG: Low Grade) etc – Ore Processed – Actual Mass Balance (2010)

Product	Wt (tonnes)	Mass Yield (%)	Grade			Recovery		
			Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Head	67,858	100	2.14	1.75	135	100	100	100
Lead Con.	2,282	3.36	57.44	7.26	3383	90.43	13.98	84.24
Zinc Con.	1,697	2.50	1.46	49.15	384	1.71	70.36	7.11
Tails	63,879	94.14	0.18	0.29	12	7.86	15.66	8.65
Total		100				100	100	100

Zinc grade and recovery are slightly lower than the target due to lower zinc content in the ore feed.

Table 17.10 TLP Mine – Ore Processed – Actual Mass Balance (2010)

Product	Wt (tonnes)	Mass Yield (%)	Grade			Recovery		
			Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Head	115,041	100	2.99		102	100	100	100
Lead Con.	6,520	5.67	46.57		1571	88.13		87.28
Tails	108,521	94.33	0.38		14	11.87		12.72

Table 17.11 LM Mine – Ore Processed – Actual Mass Balance (2010)

Product	Wt (tonnes)	Mass Yield (%)	Grade			Recovery		
			Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Head	46,150	100	1.67		240	100	100	100
Lead Con.	1,649	3.57	43.06		6003	92.0		89.5
Tails	44,501	96.43	0.14		26	8.0		10.6

Table 17.12 HPG Mine – Ore Processed – Actual Mass Balance (2010)

Product	Wt (tonnes)	Mass Yield (%)	Grade			Recovery		
			Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Head	32,704	100	6.46	1.27	133	100	100	100
Lead Con.	3,551	10.86	56.17	3.23	1058	94.42	27.73	86.15
Zinc Con.	838	2.56	2.18	32.09	287	0.86	64.88	5.51
Tails	28,316	86.58	0.35	0.11	13	4.72	7.39	8.34

Tables 17.8 to 17.12 show the concentrate grade and recovery vs. mines. The processing tables show that:

- The metal recovery includes hand sorted PbS lumps and flotation concentrates, and should therefore be higher than the flotation recovery alone, especially for the SGX (HG) and HPG cases.
- PbS grade: only SGX exceeded the design expectation.
- Pb recovery for SGX and HPG ore but not TLP exceeded the design expectation.
- ZnS grade: only SGX grade is close to the target grade.
- Zn recovery for all mines is lower than the design expectation, due to low zinc in the feed, or no zinc (for TLP, LM).

17.2.6 Ore Supply by Plant

Silvercorp adopted the following strategies to maximize the metal recovery and plant processing throughput:

- High grade lead lumps will be hand-sorted at the mine sites, and then not processed via flotation circuit. This helps to reduce the flotation loading and operating cost.
- Plant 1: mainly processes low grade/oxidized ore like TLP/LM, and low zinc ores.
- Plant 2: mainly processes high grade ores like SGX.
- Concentrate blend: to combine zinc and lead concentrates from Plant 1 and Plant 2, respectively.

Table 17.13 shows the ore feeds from different mines for flotation. As previously mentioned, SGX and HPG are rich in lead; TLP/LM have no zinc. Lead/Silver Recoveries: are quite high (91-96%). Zinc Recovery: is in the range of 56-75%.

Table 17.13 Flotation Feeds: Ore Grade and Recovery (2011)

Mines	Grade			Recovery		
	Pb(%)	Zn(%)	Ag(g/t)	Pb(%)	Zn(%)	Ag(%)
SGX (HG)	6.17	2.24	373	96.45	75.05	92.45
HZG	0.93	0.00	216	91.47		94.70
SGX (LG)	2.40	1.59	155	90.78	71.42	86.09
TLP	2.86	0.00	106	90.54		89.95
HPG	5.52	1.03	111	93.17	56.36	86.16
LM	1.98	0.00	313	93.63		92.93
Avg	4.27	1.36	257	94.84	73.34	91.63

Table 17.14 shows the ore feeds from different mines being processed at flotation Plant 1 and Plant 2 for 2011.

Table 17.14 Flotation Feeds: Tonnes to Plants (2011)

Mines	Plant 1 (t)	Plant 2 (t)	Subtotal (t)
TLP (I)	80,456	14,352	94,808
LM	51,107	0	51,107
HPG	40,920	2,570	43,490
HZG	40,790	6,119	46,910
TLP (II)	8,266	0	8,266
YM01	7,068	0	7,068
YM02	2,916	0	2,916
BZG	1,352	0	1,352
SGX (HG II)	1,364	273,260	274,624
SGX (LG)	6,087	105,884	111,971
SGX (HG I)	642	7,114	7,756
Sub-Total	240,968	409,300	650,268
Ratio (%)	37.1	62.9	

Table 17.14 shows that:

- For Plant 2, most of the high grade SGX and part of TLP ores are used as the feed for flotation.
- For Plant 1, most of the low grade ores like LM, HPG and HZG are processed.
- 63% of the ore is processed at Plant 2. The daily processing rate is about 409300/330= 1,240 tpd.
- 37% of the ore is processed at Plant 1. The daily processing rate is about 240968/330=730 tpd.

17.2.7 LOM Mill Feed Schedule

From the mine schedule a mill feed schedule has been derived on the assumption that lower grade ores continue to feed Plant 1 and the higher grade (while still available) Plant 2. This is shown in Table 17.15 below.

Table 17.15 LOM Mill Feed Schedule

	Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total（t）
By Plant and Mine														
TLP	tpa	0	150,134	180,036	199,979	230,195	250,113	249,674	249,549	0	0	0	0	1,509,680
HZG	tpa		102,809	100,464	44,895	31,738	0	0	0	0	0	0	0	279,906
Total	tpa	0	252,943	280,500	244,874	261,933	250,113	249,674	249,549	0	0	0	0	1,789,586
Rate	tpd	0	766	850	742	794	758	757	756	0	0	0	0	
SGX	tpa	400,821	401,704	400,382	400,611	40,0631	401,025	401,641	305,145	194,693	199,216	216,922	0	3,722,791
LM	tpa	69,964	110,047	200,009	220,146	250,285	250,766	250,087	250,019	250,197	250,095	246,373	155,594	2,503,582
TLP	tpa	120,154	0	0	0	0	0	0	0	250,508	250,372	249,949	173,580	1,044,563
HZG	tpa	75,589	0	26,943	0	0	0	0	0	0	0	0	0	102,532
HPG	tpa	50,032	70,485	80,078	80,799	80,135	80,556	80,106	80,113	27,760	0	0	0	630,064
Total	tpa	716,560	582,236	707,412	701,556	731,051	732,347	731,834	635,277	723,158	699,683	713,244	329,174	8,003,532
Rate	tpd	2,171	1,764	2,144	2,126	2,215	2,219	2,218	1,925	2,191	2,120	2,161	997	
Grand Total	tpa	716,560	835,179	987,912	946,430	992,984	982,460	981,508	884,826	723,158	699,683	713,244	329,174	9,793,118

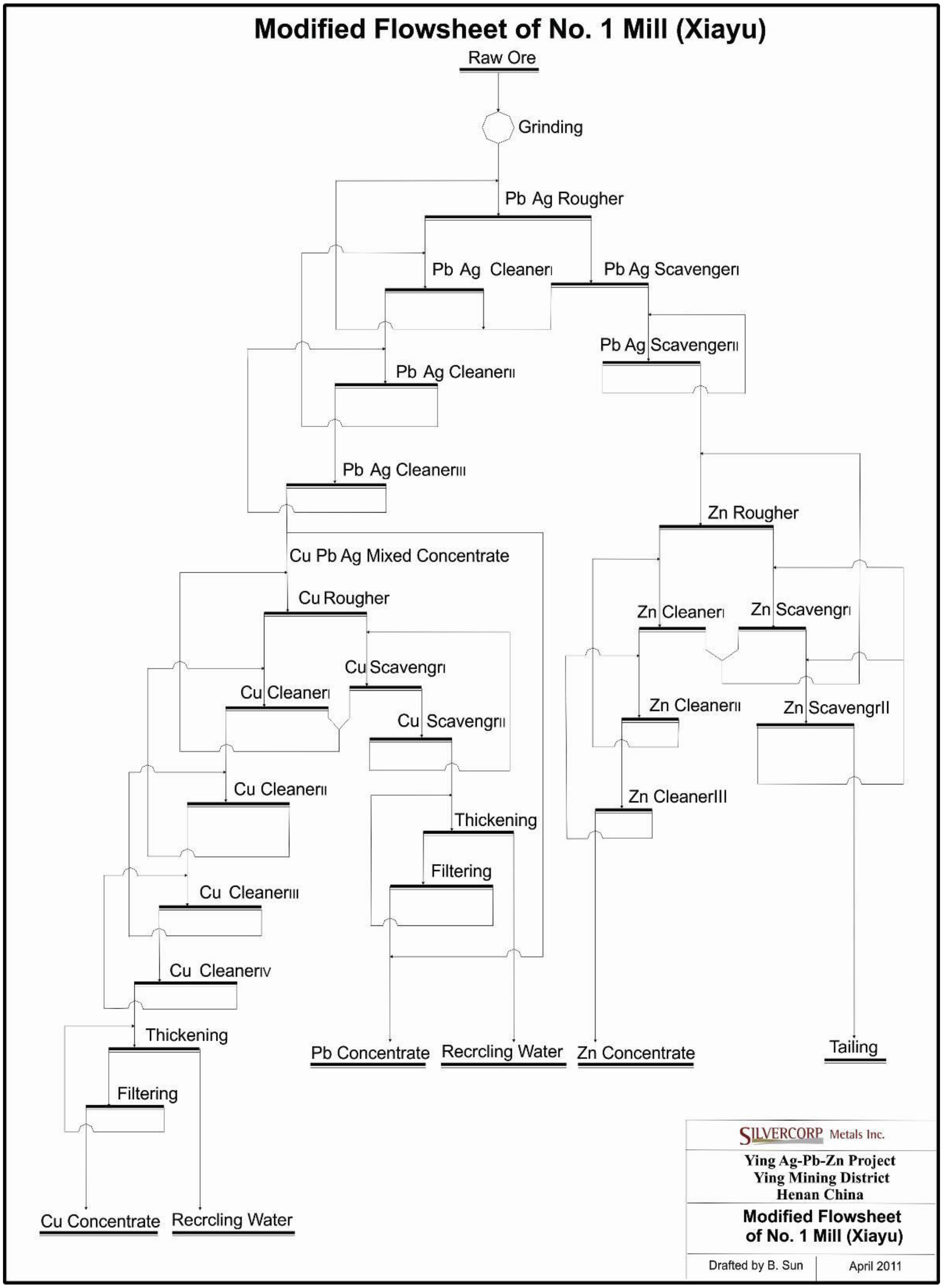
17.3 Mill Plant No.1 (Xiayu)

17.3.1 Process Flowsheet

For processing Plant 1, general view photos and the flowsheet are shown in Figure 17.1 and Figure 17.2, respectively.

Figure 17.1 General View Photos (Plant 1)

Figure 17.2 Flowsheet (Plant 1)



The flowsheet includes the following major unit operations:

- Crusher circuit (one train)
- Ball mill and Pb/Zn/Cu flotation circuit (two trains)
- Filtration and product handling circuit (one train)

17.3.2 Process Description

The overall process consists of crushing, grinding, flotation of lead and zinc concentrates, and concentrate dewatering unit operations:

- Ore crusher circuit (closed circuit with two-stage crushers-screen: jaw crusher, one cone crusher, vibrating screen, dust collectors, two ore storage bins) (one train 1x1,000 tpd).
- Ball mill circuit-spiral classifiers circuit (two trains: 2x500 tpd).
- Flotation circuit (PbS flotation-ZnS flotation circuit: rougher-scavenger-cleaner cells, chemical preparation tanks) (two banks-2x500 tpd).
- Concentrate thickening-ceramic filtration circuit (PbS filtration, ZnS filtration) (one train for each Pb, Zn).
- Water make-up system.
- Tailings pond.

The following minor changes have been made to the original Plant 1 design:

- Addition of one cone crusher to reduce ball mill feed size and thus to increase ball mill capacity from 600 to 1,000 tpd.
- Ball mill grinding size target coarsened from 70 to 60% (-200 mesh), which helps to reduce energy consumption, mill grinding time and filtration time; with only a small recovery loss (see Section 13).
- Replacement of lime slurry by $NaOH/Na_2CO_3$ for flotation circuit, with improvements in operability.
- No re-grinding for zinc flotation feed.
- Chemical consumptions are slightly higher than that determined by the lab work.
- No water treatment plant is required with recycle water from pond and fresh water from the reservoir.

Crushing

The crushing is a closed circuit, consisting of jaw-cone crushers with a vibrating screen. The primary jaw crusher (Model: PEF 500x750) has a closed side setting of 80 mm. Discharge from the primary jaw crusher is conveyed to the 15 mm aperture vibrating screen. Ore larger than 15 mm is conveyed to the secondary cone crusher (Model: PYH-2X cone crusher), which has a close side setting of 15 mm. 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 100t.

Dust from crushing and screening processes is collected under vacuum, captured in a baghouse and then transferred to a process tank for feeding as a slurry to flotation.

Milling Classification

- Crushed ore from the live bins is conveyed to a closed milling circuit consisting of two trains, each a grate-discharge ball mill (Model: MQCG 2100 x 3600) and a screw classifier (Model: FG-200).
- The ball charge is made of Mn-steel balls, with diameters ranging from 60 mm to 120 mm.
- The target grind size is 60-70% passing 200 mesh and the overflow density is maintained at 40% solids by weight when introduced to the conditioning tanks ahead of lead flotation.

Flotation (two trains)

- The O/F from classifier flows to the lead rougher conditioning tank, and then to lead rougher flotation cells. The lead flotation bank consists of one stage of roughing, two stages of scavenging (both BF-4 cells) and three stages of cleaning (BF-1.2 cells).
- Lead scavenger tails flows to zinc flotation. The zinc flotation bank consists of one stage of roughing, two stages of scavenging and three stages of cleaning, cells being the same size as in the lead circuit.
- In the case of high copper ore being processed, the lead-copper rougher froth concentrate will be sent to lead/copper flotation separation circuit. The copper flotation bank consists of one stage of roughing, two stages of scavenging and four stages of cleaning (optional at Plant 1).

Product Concentrating, Filtration and Handling

- Both lead and zinc concentrates are diluted to 15% solids by adding water for natural settling. The diluted slurries flow to their respective settling containment concrete structures for settling.
- The settled slurries at the bottom (with approximately 50-60% solids by weight) are pumped to a ceramic filter for dewatering. The moisture content of dewatered lead and zinc concentrates are 5% and 7%, respectively.
- The filter cake products are sent to Plant 2 for concentrate blending. Blended concentrate products are then sold and shipped by truck to the clients.

To optimize the economic potential, the following two products are blended in Plant 2 before ore shipping to clients, respectively:

- High grade PbS (70%Pb) from Plant 2 is blended with middle grade PbS (50%Pb) from Plant 1.
- High grade ZnS (50%Zn) from Plant 2 is blended with low grade ZnS (30-40%Zn) from Plant 1.

Tailings Thickening

- Tailings from the zinc scavenger flotation circuit are pumped into the tailings thickener, and then the thickener U/F to the pond (Dong Zi Gou 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^3, with an effective capacity of 2,830,000 m^3 or 4,215,000 tonnes of tailings. The current elevation of the tailings dam is 626.5 m, and capacity is as high as 650 m.
- The plant recirculates the lead and zinc concentrate thickener overflows in addition to the tailings dam supernatant water.
- A crew of 11 people monitor the tailings dam. Reclaimed process water from the tailings pond is pumped for reuse in the milling process.

17.3.3 Metallurgical Performance (Plant 1)

Table 17.16 lists the mass balance based on design for the No.1 Mill. It is necessary to note that a copper flotation system was added in year 2009 to handle TLP and HPG ores.

Table 17.16 Designed Mass Balance at the No.1 Mill (Daily Based)

Product	Quantity (t)	Product Rate (%)	Pb (%)	Zn (%)	Pb Recovery (%)	Zn Recovery (%)
Ore	600	100	3.18	1.73	100	100
Pb Conc	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

Mass balances have been shown in Tables 17.9, 17.10, 17.11 for TLP, LM and HPG ores for 2010, and are shown in Table 17.17 for 2011. The processing results show that:

- Pb/Ag recoveries are close to the design expectation for TLP, and/or exceed the design expectation for LM ores.
- Since Zn grades are very low, no Zn concentrate is generated from TLP.LM or HZG ores.

Table 17.17 Flotation Feeds: Ore Grade vs. Recovery (2011) (Plant 1)

Mines	Feed Grade			Recovery		
	Pb(%)	Zn(%)	Ag(g/t)	Pb(%)	Zn(%)	Ag(%)
HZG	0.93	0.00	216	91.47		94.70
TLP	2.86	0.00	106	90.54		89.95
HPG	5.52	1.03	111	93.17	56.36	86.16
LM	1.98	0.00	313	93.63		92.93

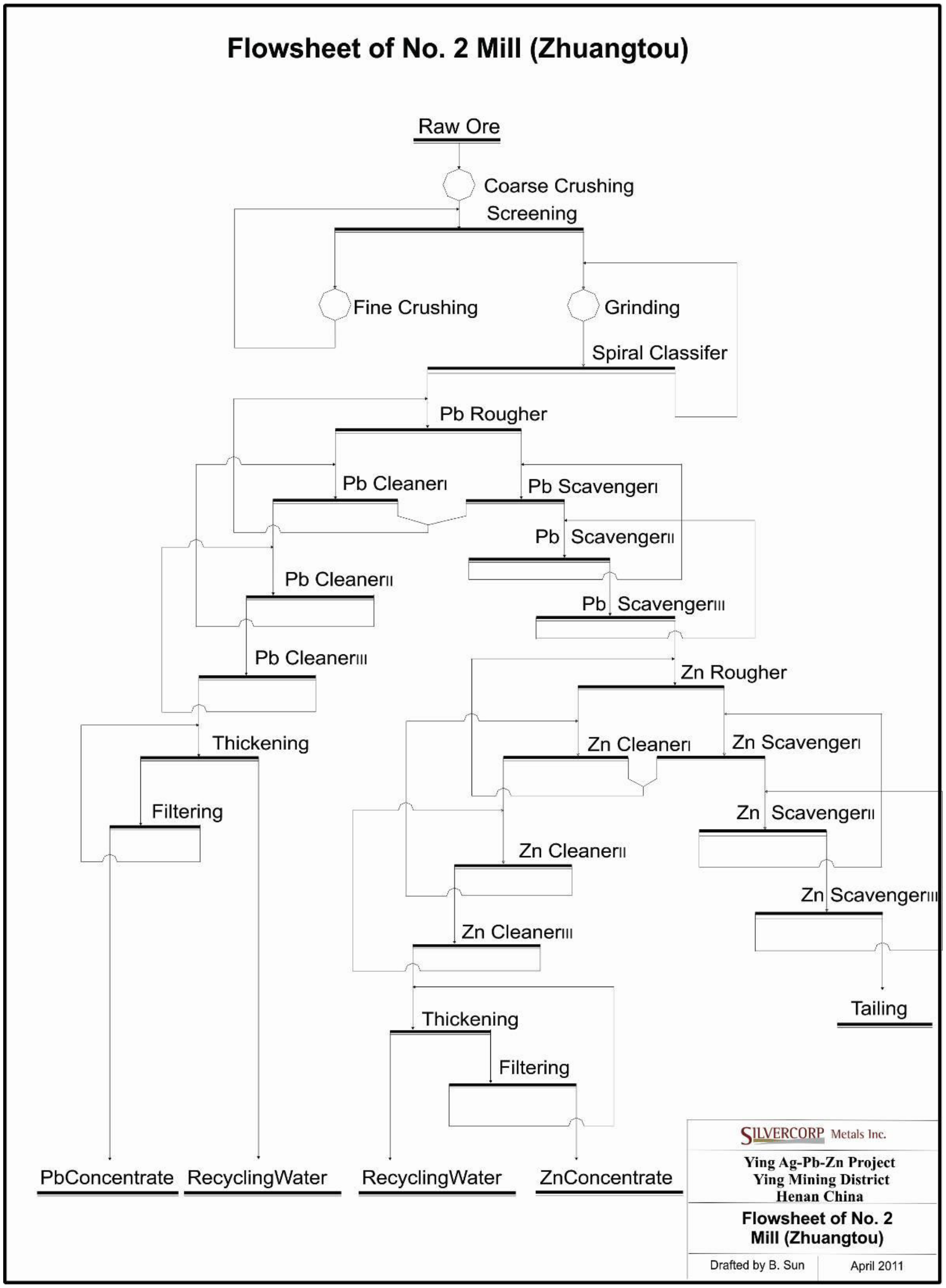
17.4 Mill Plant 2 (Zhuangtou)

A general view photo and flowsheet are shown in Figures 17.3 and 17.4, respectively.

Figure 17.3 General View Photos (Plant 2)

No.2 Mill (Zhuangtou) is located 2 km to the west of No.1 Mill; No.2 Mill also includes two parallel processing lines. The first line of capacity 1,000 tpd has been operating since December 2009. The second flotation line of capacity 1000 tpd was installed in October 2011.

Figure 17.4 Flowsheet for Plant 2



17.4.1 Flowsheet

Figure 17.4 presents the modified flow sheet of No.2 Mill. The flowsheet includes the following major unit operations:

- Crusher circuit (one train)
- Ball mill and Pb/Zn flotation circuit (two trains)
- Filtration and product handling circuit (one train)

17.4.2 Process Description

The process for Plant 2 is very similar to that for Plant 1, except for the larger size equipment and consists of the following:

- Ore crusher circuit (closed circuit with three-stage crushers-screen: one jaw crusher, two cone crushers, vibration screen, dust collectors, ore storage bins) (one train 1x2,500 tpd).
- Ball mill circuit (two-stages ball mill -15” hydrocylone/spiral classifiers) (Two trains: 2x1,000 tpd).
- Flotation circuit (PbS flotation-ZnS flotation: rougher-scavenger-cleaner cells, chemical preparation tanks) (2x1,000 tpd). No copper flotation.
- Product thickening-Ceramic filtration circuit (PbS filtration, ZnS filtration).
- Water make-up system.
- A new tailings pond.

The plant was built based on the design document with the very similar minor changes to those implemented in Plant 1.

Crushing

The crushing is a closed circuit, consisting of two jaw-cone crushers with a vibrating screen. The primary jaw crusher (Model: PEF 800x1000) has a closed side setting of 80 mm. Discharge from the primary jaw crusher is conveyed to the 15 mm aperture vibrating screen. Ore larger than 15 mm is conveyed to the secondary cone (Model: PYHD-3CC) and tertiary cone crusher (Model: PYHD-5C) which has a close side setting of 15 mm. 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 1,000t.

Milling Classification

Crushed ore from the live bins is conveyed to a closed milling circuit consisting of a two trains each of grate-discharge ball mill (Model: MQG 2700 x 4000) and classifier (Model: TG-200), plus 15” cyclones.

Flotation

- Similar to Plant 1, but with larger cells (BF-16 and BF-4).
- No copper flotation.

Product Concentrating, Filtration and Handling

It is similar to Plant 1 with larger size thickener, filter and handling system. To maximize the profits, the following two products are blended in Plant 2 before ore shipping to clients, respectively:

- High grade PbS (68-70%Pb) from Plant 2 is blended with middle grade PbS (50%Pb) from Plant 1.
- High grade ZnS (50%Zn) from Plant 2 is blended with low grade ZnS (30-40%Zn) from Plant 1.

Tailings Thickening

Tailings from the zinc scavenger flotation circuit are pumped into the tailings thickener, and thickener U/F to the new tailings pond located under the Mill 2.

17.4.3 Metallurgical Performance (Plant 2)

According to the original design, No.2 Mill can process both Pb and Zn ore and also Cu, Pb and Zn ore. However, in practice, No.2 Mill currently processes Pb and Zn ore only. Designed mass balance at the No.2 Mill is shown in Table 17.18.

Table 17.18 Designed Mass Balance for No.2 Mill (Pb+Zn Ore) (phase I, 1000tpd)

Product	Quantity (t)	Product Rate (%)	Pb (%)	Zn (%)	Pb Recovery (%)	Zn Recovery (%)
Ore	1000	100	4.75	3.63	100	100
Pb Conc	64.4	6.44	65	1.95	93.11	9.39
Zn Conc	59.1	5.91	0.45	50.57	2.67	81.98
Tailings	876.5	87.65	0.35	0.24	6.44	4.94

Since most of the feed is high grade SGX ore, the metal recovery and concentrate grades achieved (Table 17.19) are closer to the design targets and are better than for Plant 1.

Table 17.19 Actual Mass Balance at the No.2 Mill (Pb+Zn Ore) (SGX Ore, 2011)

Yield			Grade			Recovery		
Product	Yield (tpd)	Rate (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)	Pb (%)	Zn (%)
Ore	1,250	100	373	6.17	2.24	100	100	100
Pb Conc	106	8.49	4,353	69.31	5.10	90.73	96.45	15.97
Zn Conc	51.3	4.08	465	1.46	50.24	4.66	0.96	75.05
Tailings	1,092.5	87.43	21	0.27	0.26	4.61	2.59	8.98

17.4.4 Sampling (For Plants 1 and 2)

For metallurgical accounting purposes, 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.

17.5 Process Control and Automation

There is no centralized automation station or control room for overall plant process monitoring or control. Operation control is done locally:

- Ore feed to ball mill is controlled via an electronic scale, water addition is controlled via slurry density and experience.
- Chemical dosages are controlled via a localized PLC system for each set of equipment. Chemical dosage is adjusted in a narrow range (around the default target or setting value), based on assay feedback (each half hour) to handle process upsets such as ore feed changes.
- Automatic sampling of key metallurgical accounting streams e.g. flotation feed, concentrates and tailings.
- A central control room in the grinding-flotation building from which TV imaging of key points in the production flow can be monitored.
- To help process monitoring and control, samples are taken every 0.5 hr for the purpose of quality control, mass balance and recovery calculation.

The planned level of process control and automation is basic but adequate, recognizing that the process separation is complex and that operating labour to monitor process variables is low cost and plentiful.

17.6 Ancillary Facilities

17.6.1 Laboratory

The laboratory is equipped with the usual sample preparation, and fire assay, wet chemistry and basic photometric analytical equipment, as well as crushing, grinding, flotation, and gravity separation, and metallurgical testing equipment. The laboratory processes up to 100 samples per day.

It also conducts routine analysis of ores and concentrates as well as water quality and other environmental testing. It also provides a technical service to the processing plant in monitoring plant conditions, and solving production problems and investigating processes to assist with the improvement efforts.

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.

17.6.2 Maintenance Workshop(s)

Daily maintenance requirements are serviced through section specific workshops, each equipped with crane, welding capability and basic machine-shop facilities. More extensive maintenance and major overhaul needs are met through use of appropriate contractors.

17.7 Key Inputs

17.7.1 Power

- Mill power is drawn from the Henan Province power authority grid. It is transformed from 10,000 V to 400 V by a 400 KVA transformer.
- Total mill power consumption is 44.4 kWh per tonne of ore.
- Plant 1: Total installed power amounts to 2,043 kW (includes standby equipment) and the estimate for actual power drawn is 3,007 kW which corresponds to $1.5x10^7$ kWh per annum.
- Plant 2: Total installed power amounts to 9,081.3 kW (includes standby equipment) and the estimate for actual power drawn is 6,190.8 kW which corresponds to $2.93x10^7$ kWh per annum.

17.7.2 Water Usage and Mass Balance for Plant 1 and Plant 2

The water usage includes:

- Fresh make-up water used for cooling, reagent preparation and flotation.
- Recycle water used for ball mill and flotation.
- Water recycle from the tailings pond back to the recycle water tank.

Water for Plant 1

The fresh makeup water usage is around 909 m^3/d, while the rest is made up by recycle water 2,956 m^3/h from thickeners and tailings pond. Total water usage is about 3,864 m^3/hr, recycle ratio is 2956/3864= 76.5%.

Water for Plant 2

The fresh makeup water usage is around 2,089 m^3/d, while the rest is made up by recycle water 5,911 m^3/h from thickeners and tailings pond. Total water usage is about 8,000 m^3/hr, recycle ratio is 5,911/8,000=73.9%.

Strategy to Reduce Fresh Water Usage

To reduce water consumption, and achieve zero discharge for non-rainy seasons, the following practices have been implemented:

- Reclaimed water from the tailings ponds and overflows from the two concentrators is recycled to minimize fresh water requirements. The raw water cost was 1.3 RMB per m^3 (250,000 RMB per annum at the current production rate). Water is piped to the raw water tank from a river source adjacent to the concentrator property, a distance of 2.5 km.
- With the reuse of recycled water from the tailings pond, there is minimal lock-up of water in tailings and a close to 75% recycling of water; however there is a requirement for fresh water for e.g. pump seals, cooling and reagent mixing and it is this requirement that sets the overall fresh water demand.
- Upfront water usage is about 3.5-4 m^3/t ore processed, but allowing for recycled water net usage is less than 1 m^3/t ore processed.

17.7.3 Reagents

The reagents used in both plants include:

- Depressant / modifiers: 1-Sodium sulphide, 2-Zinc sulphate, 3-Sodium sulphite, 4-Copper sulphate.
- Collectors: 1-Di-ethyl dithiocarbamate, 2-Ammonium dibutyl dithiophosphate, 3-Butyl xanthate.
- Frother: no. 2 oil (added directly).

Reagent preparation and application of chemicals are described:

- Reagent storage and mixing is located adjacent to the grinding/flotation plant and comprises a storage area with hoisting equipment to lift bags and drums through into the mixing area.
- From the mixing area the reagents are pumped up to the dosing station located above the flotation section for dosing and gravity feeding to the various addition points.

17.8 Summary

Both Plants 1 and 2 are exceeding design throughput levels.

Lead and silver recovery targets are being met, although zinc recovery is lower than design, attributed to low zinc feed grades.

Similarly, concentrate grades from the lower grade ores fed to Plant 1 are below design targets; however blending with Plant 2 concentrates enables commercial targets to be met.

Historically the exceptional feed grades from SGX have enhanced plant performance but with the proportion of SGX decreasing, the challenge is to maintain superior metallurgical performance on lower grade feedstock.

18 PROJECT INFRASTRUCTURE

18.1 Tailings Management Facility (TMF)

18.1.1 Overview

Table 18.1 outlines the two TMF's. TMF 1 has served both mill Plant 1 and Plant 2 during the period of 2007-2011. After the new TMF 2 was built in 2011, the two TMFs now serve their respective mill plants:

- TMF 1 (Zhuangtou tailings pond, built 2006, designed by Sinosteel Maanshan Institute Of Mining Research Co., Ltd) serves mill Plant 1.
- TMF 2 (Shi-Wa-Gou tailings pond, built 2011, designed by San-Men-Xia Institute of Gold Mining Engineering Co) serves mill Plant 2.

Table 18.1 Outline of the Two TMFs

	Unit	TMF 1 (Zhuangtou)	TMF 2 (Shi-Wa-Gou)
Year Built		2006	2011
Start Operation		Dec 2006	Mar 2012
Total Volume	(Mm^3)	2.95	6.71
Working Volume	(Mm^3)	2.43	5.36
Service Life	(yr, design)	23	14
Remaining life	(yr)	16	14
Production rate[1]	(ore, tpd)	Plant 1 (600 tpd)	Plant 2 (2000 tpd)
Tailings Rate	(tpa, dry)	182,000	574,200

The rates for production and tailings deposition mentioned in this table are as per original design. Average daily production rates in the LOM plan fall within the rates indicated above.

This section describes the site, tailings properties, TMF sizing and design, tailings transfer, and water balance – recycle. The TMF design covers:

- Starter dam
- Trench, seepage collection, water decant system
- Reclaiming and water recycle system
- Geotechnical, safety and risk assessment, etc.

18.1.2 Tailings Properties

Tailings from the two mill-flotation plants are similar in terms of properties. Tailings properties (mainly from zinc rougher flotation circuit) are summarized below:

- Dry solids: true density 2.94 t/m^3, bulk density 1.64 t/m^3.
- Tailings slurry: before deposition - weight percent solids of 21.8% with slurry density of 1.16 t/m^3; after deposition in the pond - solids density 49% by weight; S.G. 1.49 t/m^3.
- Tailings particle sizing: 70% -75 µm (200 mesh), average diameter 49-50 µm. A detailed particle size distribution (PSD) analysis is summarized in Table 18.2.
- Clay content is about 15% by weight.

The compaction and ultimate density is normally quite sensitive to the moisture content. The optimum moisture can be fairly tightly constrained in the +/- 1-2% range. Shear tests are used for the internal strength of the tailings, which is important for the stability analysis.

Geochemical properties of the tailings were assessed by a multi-element analysis (Pb and Zn). No leaching tests have been carried out to determine the potential for metal leaching.

Table 18.2 Tailings PSD1 and Compositions

Size Range（mm）	Yield (%)	Composition （%）			Distribution （%）		
		Pb	Zn	Ag (g/t)	Pb	Zn	Ag
+0.100	14.73	0.20	0.19	21.25	6.85	9.03	11.12
-0.100+0.074	15.18	0.27	0.23	27.28	9.49	11.11	14.71
-0.074+0.037	21.31	0.36	0.27	22.10	17.81	18.73	16.73
-0.037+0.019	21.57	0.62	0.40	31.43	31.10	27.83	24.08
-0.019+0.010	14.90	0.57	0.38	34.77	19.75	18.26	18.40
-0.010	12.31	0.52	0.38	34.21	15.00	15.04	14.96
Total	100.00	0.43	0.31	28.15	100.00	100.00	100.00

*Measured by the Hunan Institute of Metallurgy, [1]Particle size distribution (PSD)

Water chemistry is shown in Table 18.3. About 75% of the process water is recycled back to the plant (refer to Section 17.7.2).

Table 18.3 Chemical Compositions for Pond Recycle Water

Element	Pb	Zn	Cu	S2-	Sulphate	COD[1]	Org carbon	pH
Level (mg/l)	0.95	1.94	0.06	0.35	68	38.8	4.03	7.5

[1]Chemical oxygen demand (COD)

18.1.3 Site Description

TMF 1 is located adjacent to Plant 1, and TMF 2 is located adjacent to Plant 2. The distance between the two plants is about 3 km, and the distance between the two TMFs is less than 2 km. All four facilities are within a 4-5 km radius:

- TMF 1: The TMF starter dam is located within the lower reaches of Donggou valley.
- TMF 2: The TMF starter dam is located within the lower reaches of Shi-Wa-Gou valley.
- TMF 1 and 2 are about 1.5 km from Zhuangtou Village and about 600 m from the entry of Xiashi Gully.

TMF 1 and 2 are located on the south edge of North China Platform, within the Xiaoshan-Lushan arch fault fold cluster area and the Feiwei Earthquake Zone. Historically the area has been subjected to earthquakes with recorded magnitudes of less than five. Luoning County has been classified as grade 6 in terms of seismicity, and as such a basic design seismic acceleration of 0.05 g is required to be taken into consideration in the design.

AMC's understanding is that the seismic rating is in accordance with the China Seismic Intensity Scale (CSIS), which is similar to the Modified Mercali Intensity (MMI) scale used fairly generally now and which measures the effect of an earthquake at the surface, as opposed to the now obsolete Richter magnitude scale which measures the energy released at source. In effect, CSIS grade 6 is similar to VI (Strong) on the MMI, although the CSIS scale also specifies peak acceleration and peak velocity. The 0.05 g acceleration cited above for design purposes would correlate more with MMI V (Moderate) according to the United States Geological Service (USGS) Earthquakes Hazard Program. AMC recommends that this be clarified.

18.1.4 TMF Design, Construction, Operation and Safety Study

18.1.4.1 Design: TMF 1

The following criteria and parameters are based on the design done by the Maanshan Engineering Exploration and Design Institute (Report dated March 2006):

- Storage capacity calculations for the valley site indicate an estimated available volume of 2.83 Mm^3. It is assumed that, at the dry density of 1.49 t/m^3, this volume is equivalent to 4.2 Mt of tailings. This is more than adequate for the tonnage of tailings in the production schedule proposed in this report.
- At a rate of deposition of 183,000 tpa, the calculated service life is approximately 23 years.
- In 2007, the dam elevation was 610 m.
- At the end of 2011, the dam elevation was 626.5 m with the build-up of tailings from the previous five years of production.
- At the end of another 16 years of service, it is expected that the dam's maximum elevation will be 660 m at design production rates. At a deposition rate of 2 m per year, this translates to 32 additional meters of available height. Figures 18.1 to 18.3 show the status of TMF 1 as of mid-February 2012.

Figure 18.1 Zhuangtou TMF 1 (17 Feb 2012)

Figure 18.2 Zhuangtou TMF 1 Tailings Discharge (17 Feb 2012)

Figure 18.3 Zhuangtou TMF 1 Downstream View of Starter Dam (17 Feb 2012)

18.1.4.2 Design: TMF 2

The preliminary design for the Shi-Wa-Gou Tailings Storage Facility (TMF 2) was completed by the San-Men-Xia Gold Mining Engineering Ltd. (Report dated Jan 2011).

- Storage capacity calculations for the valley site indicate an estimated available volume of 5.36 Mm^3. It is assumed that at a dry density of 1.49 t/m^3, this volume is equivalent to 7.98 Mt of tailings.
- At a deposition rate of 574,200 tpa, the designed service life is approximately 14 years.
- This is a new storage facility, not completed at the time of AMC's site visit, but completed prior to release of this report. As of the end of 2011, the dam elevation was at 578 m.
- At the end of another 14 years of service, it is expected that the maximum dam elevation will be 690 m at design production rates.
- Figures 18.4 to 18.6 show the status of TMF 2 as of mid-February 2012.

Figure 18.4 Shi-Wa-Gou TMF 2 (18 Feb 2012)

Figure 18.5 Shi-Wa-Gou TMF 2 Upstream View No Tails Deposited Yet (18 Feb 2012)

Figure 18.6 Shi-Wa-Gou TMF 2 Downstream View of Starter Dam (18 Feb 2012)

18.1.4.3 Dam Classifications

Table 18.4 shows the Chinese system of dam classifications. This system is based on height and volume of the dam. Both TMF 1 and TMF 2 are classified as Grade III facilities.

Table 18.4 Criteria for Dam Grade Definition (PRC)

Dam Grade Level	Volume V（x10,000 m^3）	Dam Height（m）
I	V>10,000 and/or H>100	
II	V≥10000	H≥100
III	1000≤V＜10000	60≤H＜100
IV	100≤V＜1000	30≤H＜60
V	V＜100	H＜30

Site-specific risk assessment such as geotechnical risk has been carried out by Henan Luoyang Yuxi Hydrological & Geological Reconnaissance Company.

18.1.4.4 Starter Dam

The TMF consists of an initial earth retaining dam, behind which the tailings are stored. These tailings are delivered via a pipeline. The tailings are allowed to drain to the desired dry density. The same tailings are used to raise the dam gradually until the allowable height and volume is reached.

The starter dam is a homogeneous rock-filled dam. Starter dam embankment slopes are designed at 1:2. Construction lifts are to be 2 m high. The preliminary design requires the downstream slope of the tailings to be formed at an overall slope of 1:5.

- TMF 1: The starter dam crest elevation is 606 m. The design information indicates that the crest design width is 4 m, and that it has a length of 97.2 m. The TMF is to be constructed by the upstream method of construction to a maximum crest elevation of 650 m and the overall height of the TMF facility will be 70 m.
- TMF 2: The starter dam crest elevation is 578 m. The design information indicates that the crest design width is 4 m, and that it has a length of 101.7 m. The TMF is to be constructed by the upstream method of construction with a height of 112 m, to a maximum crest elevation of 690 m. The overall height of the TMF facility will be 148 m (36+112=148 m).

18.1.4.5 Trench Design for Surface Water

Surface water drainage features have been incorporated into the preliminary design of the TMF. Immediately downstream of the starter dam embankment there is a surface water cut-off trench (cross section area 400 mm x 400 mm). There is provision in the preliminary design for the construction of cut-off trenches (cross section area 1,000 mm x 1,000 mm) 2 m above the starter dam embankment to prevent scour of the abutments by rainwater run-off. At the time of the site visit in February, 2012, the surface water cut-off drains were not observed to be in place for TMF 2.

18.1.4.6 Water Decant System Design

The results of a hydrology study are presented in the Preliminary Design report, and the water balance has been evaluated.

- TMF 1: Provision has been made to remove supernatant water from the TMF via five vertical reinforced concrete decant structures. Water from the decant structures is diverted around the starter embankment via a 2.0 m diameter by 1,093 m long reinforced concrete lined drainage culvert with a 5.71% grade.
- TMF 2: Provision has been made to remove supernatant water from the TMF via ten vertical reinforced concrete decant structures. Water from the decant structures is diverted around the starter embankment via a 2.5 m diameter by 1,400 m long reinforced concrete lined drainage culvert with a 5.71% grade. The water discharge flow capacity is about 28.33-29.37 m^3/s, which is higher than that required (27.23 m^3/s) to meet a 1 in 500 year recurrence interval for design purposes (probable maximum flood criterion).
- The fact that the water diversion does not pass through the starter dam embankment is considered to be a positive feature.

18.1.4.7 Seepage Collection Design

Seepage control is effected by geomembrane and geo-textile impervious layers together with an intercepting drain and collector system discharging into a downstream water storage dam for pumping to the concentrator.

The preliminary TMF design provides for a cut-off drain to be constructed 150 m downstream of the starter dam embankment at an elevation of 610 m. High strength nylon injection moulded 300 mm diameter seepage collector pipes, at a spacing of 15 m and inclined upwards at 1%, have been incorporated into the design of the cut-off drain. The cut-off drain design includes provision for a gravel (15 mm to 50 mm particle size) pack filter encased in a geo-fabric (400 g/m^2). The intention of this cut-off drain is to capture seepage from the TMF and also to improve stability under dynamic conditions by lowering the phreatic surface.

18.1.4.8 Reclaim Pond Design

A "reclaim pond" was constructed below the starter dam. This is a water reclaim pond formed by the construction of an earth embankment. The stated intention of the water reclaim pond is to intercept all the seepage and discharge water of the tailing reservoir dam during normal operation to realize zero discharge for no rainfall seasons. About 75% of water is recycled back to the mill plant:

- TMF 1: The reclaim and settling pond size is about 4x150 m^3=600 m^3 (four cells in series for water clarification). Two pumps (one spare pump) are used to pump the recycle water back to the plant.
- TMF 2: The reclaim and settling pond is designed to process recycle water (input 6,635 m^3/day). Two pumps (one spare or standby pump) are used to pump the recycle water back to the plant (5,021 m^3/day, net water recycle with evaporation losses excluded).

18.1.4.9 Geotechnical Stability, Safety and Risk Assessment Study

The Henan Luoyang Yuxi Hydrological and Geological Reconnaissance Company prepared a geotechnical report titled Reconnaissance Report upon Geotechnical Engineering (4 July 2006). This report was prepared during the construction of the tailings starter embankment, when the foundation had been prepared and in accordance with recommendations given in the Preliminary Design report.

Flood calculations have been performed appropriate to the Grade III classification of the TMFs, which requires the flood control measures to meet a 1 in 100 year recurrence interval for design purposes with a 1 in 500 year probable maximum flood criterion too. A safety and reliability analysis for the TMF has been carried out in accord with the Safety Technical Regulations for Tailings Ponds (AQ2006-2005) and under the Grade III requirements. These stipulate minimum Factors of Safety, as determined by the Swedish Circular Arc Method for assessing the potential for slip rotation failure, in the 1.05-1.20 range. Although the calculated factors of safety are generally around 1.3 (minimum), the method used is now considered outdated and industry practice would be to conduct finite element numerical modeling, even if just in two-dimensions. It is noted that the quoted factors of safety are consistent with Chinese practice requirements. However, they are lower than those required by International Practices.

18.1.4.10 Site Monitor Stations

For each TMF, survey monitoring stations have been established at regular intervals along the embankment crest. The results of monitoring were sighted by AMC, and it is judged that the observed settlement is consistent with consolidation of a rock fill under its own weight.

18.1.4.11 Tailings Pond Operation and Management

According to mine management, each TMF is staffed by a total of 11 people, including a safety manager and two tailings engineers. The staffing level is more than adequate, and the inclusion of tailings engineers is consistent with good practice.

18.1.5 Tailings Transfer to the Ponds

TMF 1: Tailings (3,179 m^3/day) and other water streams (totaling 3,244 m^3/day, 135 m^3/hr) from Plant 1 are being discharged into the TMF 1 via three PVC pipes under gravity from the crest of the starter dam.

TMF 2: Tailings (6,298 m^3/day) and other water streams (totaling 6,635 m^3/day, 276.5 m^3/hr: refer to Section 17.7.2) from Plant 2 are being discharged into TMF 2 via three PVC pipes under gravity from the crest of the starter dam.

The velocity of discharge at the time of the site visit was variable along the length of the abutment, with discharge velocity being the lowest at the discharge nearest the right abutment. Discharge direction at the discharge near the left abutment was also approximately parallel to the starter dam crest alignment. Discharge described in the above manner is not optimal in that it has potential to allow accumulation of fine material adjacent to the starter dam embankment, and this may have an adverse effect on the phreatic surface.

18.1.6 Water Balance Considerations

Water usage and mass balance for Plant 1-TMF 1 and Plant 2-TMF 2 have been respectively discussed in section 17.7.2. About 75% of the process water is recycled back to the plant. Zero discharge is the production target for no rainfall seasons.

18.2 Waste Rock Dump

Waste dumps for the Ying project are listed in Table 18.5 and locations of the dumps are marked on the surface layout maps of the different mines. Based on mine and development plan, the five mines on the Ying Property will move 2,158,667 million m^3 of waste rock to the surface dumps during the remaining mine life. The remaining capacities of the existing dumps are about 869,753 million m^3.

Table 18.5 Waste Dumps at the Ying Project

Mines	No. of Waste Dumps	Total Capacity (m^3)	LOM Waste ($m^{3)}$	Variance [1]
SGX	6	836,700	**703,954**	+132,746
HZG	5	865,150	**165,266**	+699,884
HPG	2	730,000	**193,813**	+536,187
TLP	7	192,370	**564,550**	-372,180
LM	5	404,200	**531,084**	-126,884
Total	26	3,028,420	**2,158,667**	869,753

[1] + indicates dump over capacity. – indicates extra space required.

From Table 18.5 it can be seen that the waste dumps capacity in SGX, HZG, and HPG is enough for the LOM waste rocks, but the waste dumps in TLP, and LM West do not have enough capacity for LOM.

In LM West, there will be a new waste dump built in Houyangpo Valley near the New Ramp portal. The +1100 mRL waste dump tip head capacity is 750,000 m^3.

In TLP, the waste rock from PD730 can be dumped to Xigou valley, and it can also be used to construct the road that can accommodate about 300,000 m^3 of waste.

Waste may also be opportunistically placed into the shrinkage stope voids, although this is not in the current mine plan.

Waste can also be consumed for local construction works such as hardstand areas, retainer walls and other miscellaneous infrastructure foundations.

18.3 Power Supply

The power supply for the Ying property is from Chinese National Grids with various high voltage power lines and distances to the different mine camps and mill plants.

18.3.1 SGX and HZG Mines

Three power lines supply electricity to the SGX/HZG camps:

- The 35 kV and 10 kV power lines are from nearby Guxian Hydropower Station, 7.85 km northwest of the SGX mine where the hydropower is generated by the Guxian Dam and there are two substations one with 110 kV and another with 35 kV capacity.
- The SGX's 35 kV line is connected to the Louning Guxian 110 kV Substation while the 10 kV line is connected to the Louning Guxian 35 kV Substation.
- The third line is a 10 kV line that is connected from the Chongyang 35 kV Substation, about 12.1 km northeast of the SGX mine.

At the SGX mine, a fully automated 35 kV transformer station in the immediate vicinity of the mine site was built in 2008. This connects to the 35 kV line from Guxian and provides main electricity for the mine production and office and residential use. The 35 kV transformer station has up to 10,000 kVA power capacity.

Two 10 kV lines mainly act as a standby source of power in case of disruption of the 35 kV line. Two 1,500 kW and one 1,200 kW diesel generators are installed at the 35 kV substation and are connected to local mine power grids acting as a backup power supply in the event of a grid power outage.

Underground water pumps, primary fans and shaft hoists are major pieces of equipment that require a guaranteed power supply, so two 10 kV power lines (one for normal operation and another one for backup) from different sources are installed to connect to this equipment.

Power from the 35 kV substation is transformed to 10 kV and is delivered to each adit by overhead lines that mostly follow the access roads. The overhead lines terminate at transformers outside each adit portal, shaft or decline. The transmission cables are 105 to 150 mm^2 size.

18.3.2 HPG Mine

Two high voltage 10 kV lines supply electricity to the HPG mine site. The main power supply line is from the Chongyang 35kV Substation, 11 km northeast of the mine and a second line connects to the SGX 35kV Substation that is used as a standby line. One 400 kW diesel generator is installed outside of the HPG PD3 tunnel, acting as backup power supply.
The 10kV line terminates at the transformers outside each adit portal. The office buildings and camp areas for mine operations are connected to the same power line. A 105 mm^2 cable is used to connect 10kV power to an internal shaft hoist chamber in the decline in PD3.

18.3.3 TLP/LM Mine

At the TLP and LM mines, Two 10 KV power lines provide electricity for TLP and LM mine, and both of them are from Chongyang 35 kV Substation, 8 km north of the TLP mine.

Similar to the other mines on the Ying Property, the 10kV line terminates directly to transformers outside of adit portals. The office buildings and camp areas for mine operations are connected to the same power line. The 105 to 150 mm^2 cables are used to connect 10kV power to internal shaft hoist chambers of Lines 55, 33, 23, Declines in PD730 at the TLP mine and the PD900 shaft hoist chamber in PD900 at the LM East camp.

18.3.4 No. 1 and No. 2 Mills and Office/Camp Complex

Power for the No. 1 and No. 2 Plants and Silvercorp's site administration office building and camp complex is drawn from the Chongyang 35kV substation. The 10kV power from the substation is transformed to 400 V by several 400 kVA transformers for mill operations and water pumps and office and camp uses.

The total power consumptions for No. 1 and No. 2 Plants, including associated water pumps, are 2,500 kVA and 6,500 kVA respectively.

18.3.5 Underground Lighting

A number of 400 V to 230 V and 400 V to 127 V transformers are used to transform high voltage to low voltage power for underground lighting purpose. Mining level lights run on a 36 V system. Step down transformers are used in many locations as required.

18.4 Roads

The central mills and mine administration office and camp complex are located 3 km northeast of the town of Xiayu, southwest of the Luoning County. Luoning to Xiayu is connected by a 7 m wide and 48 km long paved road called the Yi-Gu Way. The company has built a 2 km long 6m wide concrete road to link the mill/office complex to the Yi-Gu Way.

Access to the SGX/HZG mine from the mill-office complex is via a 7 km paved hilly road to the Hedong wharf of the Guxian Reservoir, and then across the reservoir by boat to the mine site. Silvercorp has built two large barges as shown in Figure 18.7 that can carry up to five 45 tonne trucks to ship ore from the SGX/HZG and HPG mines across the reservoir. Mine personnel are transported by fast motor boats. Mine supplies are usually hauled by small barges owned and operated by local villagers.

Figure 18.7 Silvercorp Barge with Five Loaded Trucks.

The HPG mine can be accessed either by boat or 12 km paved road, southwest of the office complex.

The TLP/LM mines are 15 km southeast of the office complex and are accessed by paved road along the Chongyang River.

Gravel roads link to all adits from the mine camps. Drainage ditches with trees are formed along the roads. The roads are regularly repaired and maintained by designated workers. Warning signs may be posted at steep slopes, sharp turn points, and places with traffic risks for transportation safety. AMC recommends that safety barriers be installed in all steep slope areas as appropriate.

18.5 Transportation

Heavy-duty trucks are used to transport ore, mine supplies, and concentrates.

Ore produced at the SGX/HZG and HPG mines is loaded onto 45-tonne trucks, with the trucks being transported by barge across the Guxian Reservoir (4 km and 6 km across from SGX and HPG respectively). The trucks then continue a further 7 km by road to Silvercorp's central mills.

At the SGX mines, ore from adits PD700, CM101, PD16, and CM105 is transported to a hand-sorting facility at the north side of the mine by diesel powered locomotive railcars in a 2.7 km long tunnel rail system. The tunnel starts at PD700 at 640 m RL and then extends north-easterly for 1,245 m to CM101. From CM101, the tunnel extends north-westerly for 365 m to PD16 where an ore bin was built to transfer ore from 640 m to 565 m elevation. From PD16, the rail goes north about 810 m to the ore bin at the hand-sorting facility. Ore from CM102, CM103, YPD01 and YPD02 of the SGX mine and from all adits of the HZG mine is hauled to the ore stockpile yard at the SGX site using 6-tonne tricycle trucks.

In order to efficiently and safely transport ore from HZG to SGX, Silvercorp is currently constructing a 1,270 m long tunnel from PD820 that connects the existing tunnel rail system to PD700 of the SGX. The tunnel is expected to be completed by December 2012, after which ore mined from all the adits at the HZG mine will be transported to the SXG mine stockpile yard via the tunnel rail system.

Ore from the TLP and LM mines is hauled to the central mill using 30 and 45-tonne truck fleets. All of the ore stockpiles outside of the underground adits are accessible by the trucks.

The final products from the mill plants are lead and zinc concentrates, which are transported by trucks to local smelters located within a 210 km radius.

18.6 Water Supply

Domestic water for the SGX mine is sourced from the Guxian Reservoir, while water for the the HPG, TLP, LM and HZG mines is sourced from nearby creeks and springs. Water is regularly tested and reports indicate that its quality and quantity meets the camp's requirements.

Mine production water for drilling and dust suppression is sourced from underground at all the mines.

18.7 Waste Water and Sewage treatment

Waste water is generated from mining activities, mineral processing and domestic sewage.

At the SGX mine, underground water is pumped to surface via the mine portals, and then pumped to Sedimentation Pond 1. At this pond, lime is added to assist flocculation. Further sedimentation occurs in Pond 2. The overflow is then allowed to drain to another three settlement tanks before it is discharged into the Guxian Reservoir through a discharge point near CM102 that has been approved by the Yellow River Management Committee.

The Ying TMF tailings water is collected using four dams under the TMF embankment over a 1 km range. The collected tailings water from the TMF is piped back to the processing plant for reuse. No tailings water is discharged to the environment.

Sewage from mining areas is collected and treated by a biological and artificial wetland treatment system. Reports indicate that the treated water meets all the criteria of water reuse, with 100% being reused for landscape watering. There is no discharge to the reservoir.

At the HZG, HPG, TLP and LM mines, underground water and domestic sewage are filtered through gravel pits and then discharged to the environment.

18.8 Other Infrastructure

18.8.1 Mine Dewatering

Mine dewatering is undertaken in accordance with the "Chinese Safety Regulations of Metal and Non-metal Mines". Underground water flows from the different mines is listed in Table 18.6 below.

Table 18.6 Estimated Water Inflow from Each Mine in Ying District

Mines	Maximum water flow (m^3/day)	Average water flow (m^3/day)
SGX	27,068	9,023
HPG	1100	650
TLP	960	360
LM	840	600
HZG	560	260

Water pumps can discharge the normal daily water inflow within 20 hours, and can discharge the maximum daily inflow within 20 hours except when being maintained.

Two pipe lines with the same size are installed in a shaft or decline, one in use and the second for standby. Underground sump capacity is 6-8 hours at the average water yield.

18.8.2 Site communications

Mine surface communications are by landline service from CNC and with mobile phone services from China Mobile and China Unicom. Internal telephones are installed in active mining areas and the dispatch room and are connected with local communication cable nets. An HYA cable is used for surface and an HUVV cable is used for underground tunnels.

High speed internet cables are connected to all of the mine sites from Xiayu.

18.8.3 Camp

In each mine and mill site, there are dormitory buildings and administration buildings that are equipped with dining rooms and washrooms for Silvercorp's own management, technical personnel and hourly workers. Colour-coded steel housing structures are built adjacent to each portal as living facilities for the mine contractor workers. These additional buildings also include dining rooms and washrooms.

18.8.4 Dams and Tunnels

Dam and diversion tunnels have been constructed to prevent storm and heavy rainfall from washing out surface infrastructures, and also block waste rock and waste materials flow into the Guxian Reservoir. The following table lists the dam and tunnels at each mine.

Table 18.7 Dams and Tunnels in the Ying District

Mine	Tunnel/Dam	Profile (m*m)	Length (m)	Purpose
SGX	PD700-Zhanggou Tunnel	3.5 * 3.2	512	To divert flood to Zhanggou above PD700 (712 m Elevation) in the SGX valley
	PD16-Zhaogou Tunnel	2.2 * 2.4	540	To divert flood water to Zhanggou above PD16 (598 m elevation) in the SGX valley
	CM101-PD16 Tunnel	2.2 * 2.4	330	To divert flood water from above CM101 (650 m Elevation) into PD16-Zhanggou Tunnel (598 m elevation)
	CM105 West Tunnel	2.2 * 2.4	580	To divert flood water from above CM105 (570 m Elevation) to east site of the Guxian Reservoir
	SGX Dam	50 * 12 * 55 (bottom width top width Height)	90	To prevent waste rock and waste material from washing into the Guxian Reservoir
TLP	PD770-Chongyang River	3.0 * 3.0	750	To divert the Xigou Creek and prevent PD730 from flooding
LM West	924 West Tunnel	3.0 * 3.0	70	To divert the Xigou Creek and prevent PD924 from flooding
HPG	PD3 Tunnel	3.2 * 3.5	80	To divert HPG creek and prevent PD3 from flooding

18.8.5 Surface Maintenance Workshop

Each mine has a maintenance workshop in which the following auxiliary services are provided:

- Tyre processing, maintenance and servicing
- Welding
- Electrical
- Hydraulic
- Tools, parts and material warehouse

The repair workshop is mainly responsible for maintenance of large-scale production equipment, vehicle repair, processing and repair of partial components, and the processing of emergency parts. All necessary equipment is available. Mechanical Maintenance Facilities are composed of mining equipment maintenance workshop, equipment and spare parts store, dump oil depot, reserved electric locomotives and tramcars maintenance workshop and stockpile yard.

AMC noted working practices and safety equipment standards during its site visit that were less than would be anticipated in North America in similar mining operations.

The mining contractor generally has its own maintenance workshops adjacent to adit portals. Tricycle trucks, electric locomotive and rail cars, minor equipment (such as jacklegs, secondary fans, development pumps, etc) are serviced in these workshops.

All maintenance work at the Ying camp is performed on surface and there are no workshops located underground.

18.8.6 Explosives magazines

Each mine has an explosive magazine and detonator storage house with strict security. The magazines are gated and are guarded by two gate keepers and a dog. Surveillance cameras are installed in the magazine areas. All explosive tubes and detonators are labeled with barcodes, which are scanned before release from the magazine for security audit purposes. AMC noted that these magazines were well constructed and maintained.

Underground working party magazines are located adjacent to each level’s return air shaft or decline and are limited to one day’s requirement for bulk explosives and three days requirements for blasting ancillaries.

18.8.7 Fuel farm

Diesel fuel is used for mobile mine equipment, some small trucks, and surface vehicles. There are two fuel farms at the SGX mine, with a total capacity of 60 tonnes. The first is located 459 m north of PD16 to supply diesel for mobile equipment. The second unit is next to the 35 kV power substation, which mainly supplies diesel to the generators.

Fuel storage tanks are also installed in the TLP, LM and HPG mines to provide diesel for surface mobile equipments.

Each of two large truck-carrying barges has two diesel fuel tanks that can store up to 7.5 t of diesel. Full tanks of diesel can keep the barges operating for about 10 days.

The contractors have their own small fuel tankers near the portals, and provide fuel for underground diesel locomotives, tricycle trucks and mobile equipment.

There are up to ten 200 L gasoline tanks stored in an underground tunnel at about 450 m east of the SGX wharf to supply gasoline for surface personnel-carrying vehicles and motor boats.

Containment for storage of fuel is constructed in the vicinity of the diesel generators and fuel dispensing facilities. The storage facility must be located down-wind from the mine air intake fans and a reasonable distance from buildings, camp and mine portal (dependent upon local occupational health and safety regulations and fire fighting requirements). The lined containment area is constructed such that spills are confined and can readily be cleaned, and so that the need for extensive and costly remediation work can be avoided during site closure.

18.8.8 Mine Dry

In each mine site, the dormitory buildings and administration buildings provide showers and washrooms for Silvercorp's employees. There are showers and washrooms near each adit portal for contract workers. Provisions for personal protective equipment such as gloves, safety glasses, hard hats and cap lamps / batteries are made by Silvercorp or its contractor.

18.8.9 Administration Building

At each mine site, there is an administration building, which provides working space for management, supervision, geology, engineering, and other operations support staff. Silvercorp's local office is located at the central mill site; this building can accommodate over 150 staff. The senior management in charge of Ying Districts sales, purchasing, accounting and technical service are located here.

18.8.10 Warehouse and Open Area Storage

There are warehouses at each mine site that are designed for materials and equipment inventory storage. In addition, there are also open storage areas that can be used for the same purpose.

18.8.11 Assay Laboratory

The assay laboratory is located in a separate building at the northwest side of the No.1 Plant. The laboratory is a two-storey structure equipped to perform daily analyses of mine and process samples.

18.8.12 Security / Gatehouse

There is a designated security department at each mine site and mill plant that is responsible for daily security tasks. A security gatehouse is located at each mine site access road with personnel on round-the-clock duty. Additionally, monitoring cameras are installed at the gatehouses for additional coverage. There are also people on duty at all times at each access road. The night shift is responsible for patrol of the key areas. In terms of the ore transportation, there are dedicated personnel in charge of inspection for the transportation process.

18.8.13 Compressed Air

Compressed air is primarily used for drilling blast holes. Jacklegs are used in all stopes and conventional development faces. There are some minor uses for shotcreting, and blast hole cleaning.

Compressor plants are located adjacent to every portal. These compressors are of a two-stage electric piston configuration. Compressed air is reticulated via steel pipes of varying sizes depending on demand to all levels and to the emergency refuge stations. Air lines are progressively sized from 4 inch to 1 inch at the stopes.

18.8.14 Underground Harmful Gas Monitoring System

Each mine in the Ying District has or is planned to have underground Harmful Gas Monitoring and Personal Location Systems. At the time of the site visit, AMC noted one such unit being installed at SGX. Silvercorp has subsequently indicated that systems are now operational in the SGX and HPG mines and are being installed in the TLP, LM, and HZG mines. The Underground Harmful Gas Monitoring System and Personal Location System should meet the requirements of the Coal Mine Safety Regulation (Version 2006). All of the underground areas must be covered.

The system is used to monitor the underground ventilation network. Data such as air velocity and CO concentration can be collected, processed, and reported instantly. When any item is above the threshold limit value (TLV), the mine control room is notified immediately. The sub-system of safety monitoring, which has a routine inspection cycle of less than 30 seconds, can exchange data with the Automation Integrated Software Platform instantly.

The underground monitoring substation has two-way communication with transmission interfaces. It has a simulation data collector for CH_4, air speed, air pressure, CO and temperature, and can collect information on power status, ventilator switch, air door switch and smoke. The system is supported by a computer in the central office.

18.8.15 Underground Personal Location System

The underground personal location system can indicate the exact time that each miner enters or exits underground. The system can provide the total number of miners going underground, with detailed names and working durations, and can print out daily and monthly time sheets. It can instantly report the number of workers working underground and their location.

19 MARKET STUDIES AND CONTRACTS

19.1 Concentrate Marketing

AMC understands that the lead and zinc concentrates will be marketed to existing smelter customers in Henan and Shaanxi provinces and appropriate terms have been negotiated as detailed in Section 19.1 below.

With respect to copper, testwork has so far been unsuccessful in producing a saleable copper concentrate, but copper levels in the ore are low and this is not a material commercial issue, nor does it materially impact on lead concentrate quality.

19.2 Smelter Contracts

Monthly sales contracts are in place for the lead concentrates with leading smelters mostly located in Henan province, among them are Henan Yuguang Gold and Lead Smelting Co., Ltd, Jiyuan Wanyang Smelting (Group) Co., Ltd, Jiyuan Jinli Smelting (Group) Co., and Luoning Yongning Gold and Lead Smelting Co., Ltd. For the zinc concentrate, sales contracts are in place with Henan Yuguang Zinc Industry Co., Ltd and Shaanxi Shangluo Zinc Smelting Co. Ltd. The contracts are renewed on a monthly basis.

All contracts have freight and related expenses to be paid by the smelter customers themselves.

The key elements of the contracts are summarized in Table 19.1 below:

Table 19.1 Key Elements of Smelter Contracts

	Pb Concentrate & Direct Smelting Ore						Zn Concentrate	
	% Pb	**Deduction RMB/T Pb**	**Ag (g/t)**	**% payable**	**Au (g/t)**	**% payable**	**% Zn**	**Deduction RMB/T Zn**
Minimum Quality	35		500		1		40	
Payment Scales	>=60	1800	>=5000	91	>=20	87	>=45	Price =<RMB 15000/T:4400
	55-60	1900	4500-5000	90.5	15-20	86		Price > RMB 15000/T:4400+(price-15000)*20%
	50-55	2000	4000-4500	90	10-15	85	40-45	Price =<RMB 15000/T:4400+45 per % lower than 45%
	45-50	2100	3500-4000	89.5	7-10	84		Price > RMB 15000/T:4400+(price-15000)*20%+45 per % lower than 45%
	40-45	2200	3000-3500	89	5-7	83		
	35-40	2700	2500-3000	88.5	3-5	82		
			2000-2500	88	2-3	81		
			1500-2000	87	1-2	80		
			1000-1500	85				
			500-1000	83				

With respect to lead and zinc terms, the above deductibles calculate out to 85-90% payable for the lead concentrate and approx 70% for zinc, at long-term prices. AMC considers these to be favourable terms relative to global smelter industry norms. Silver payables of approx 90% are similarly in accord with industry norms.

19.3 Commodity Prices

AMC has referenced an internationally respected monthly publication of consensus metal price forecasts and has used the prices shown in Table 22.1 for its economic analysis.

For the purposes of cut-off grade and silver equivalent calculations AMC has used the following long-term prices: Ag $19/oz, Pb $1.00/lb, Zn $1.00/lb.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Introduction

Silvercorp has all the required permits for its operations on the Ying Property. The exploration and mining permits are described in Section 4.1 of this report.

The existing mining permits cover all the active mining areas and give Silvercorp the right to carry out full mining and mineral processing operations in conjunction with safety and environmental certificates. Five safety certificates have been issued by the Department of Safety Production and Inspection of Henan Province, covering the SGX mine, Zhuangtou TSF, HPG mine, TLP mine and LM mine. Five environmental certificates have been issued by the Department of Environmental Protection of Henan Province, covering for Yueliangou project (SGX mine and 1,000 tpd mill plant), HPG mine, TLP mine, LM mine and the 2,000 tpd mill plant built in 2009. For each of these certificates, there is a related mine development/utilization and soil/water conservation program, and rehabilitation plan reports. Silvercorp has also obtained approvals and certificates for wastewater discharge locations at the SGX mine, the HPG mine, and the two TSFs.

There are no cultural minority groups within the area surrounding the general project. The culture of the broader Luoning County is predominantly Han Chinese. No records of cultural heritage sites exist within or near the SGX and HPG project areas. The surrounding land near the SGX Mining Area is used predominantly for agriculture. The mining area does not cover any natural conservation, ecological forests or strict land control zones. The current vegetation within the project area is mainly secondary, including farm plantings. Larger wild mammals have not been found in the region. Small birds nesting and moving in the woodland are observed occasionally. The surrounding villagers raise domestic animals, such as chickens, ducks, pigs, sheep, goats, dogs, etc.

Silvercorp has made a range of cash donations and contributions to local capital projects and community support programs, sponsoring university students as well as the undertaking of projects such as road construction, school construction and school repairs and upgrading. Silvercorp has also made economic contributions in the form of direct hiring and retention of local contractors, suppliers and service providers.

20.2 Laws and Regulations

The Silvercorp operations in the Ying Property operate under the following Chinese laws, regulations and guidelines as set out below:

Laws

1. Law of Environmental Protection PRC (1989)
2. Law of Minerals Resources of PRC (1996)
3. Production Safety Law of the PRC (2002)
4. Law of Occupational Disease Prevention (2001-Amended 2011)
5. Environmental Impact Assessment (EIA) Law (2002)

6. Law on Prevention & Control of Atmospheric Pollution (2000)
7. Law on Prevention & Control of Noise Pollution (1996)
8. Law on Prevention & Control of Water Pollution (1996, amended in 2008)
9. Law on Prevention & Control Environmental Pollution by Solid Waste (2002)
10. Forestry Law (1998)
11. Water Law (1988)
12. Water & Soil Conservancy Law (1991)
13. Land Administration Law (1999)
14. Protection of Wildlife Law (1989)
15. Energy Conservation Law (1998)
16. Management Regulations of Prevention & Cure of Tailings Pollution (1992)
17. Management Regulations of Dangerous Chemical Materials (1987)

Regulation Guidelines

1. Environment Protection Design Regulations of Construction Project (No.002) by Environment Protection Committee of State Council of PRC (1987)
2. Regulations on the Administration of Construction Project Environmental Protection (1998)
3. Regulations for Environmental Monitoring (1983)
4. Regulations on Nature Reserves (1994)
5. Regulations on Administration of Chemicals Subject to Supervision & Control (1995)
6. Regulations on Management of Chemicals Subject to Supervision & Control (1995)
7. Environment Protection Design Regulations of Metallurgical Industry (YB9066-55)
8. Comprehensive Emission Standard of Wastewater (GB8978-1996)
9. Environmental Quality Standard for Surface Water (GB3838-1988)
10. Environmental Quality Standard for Groundwater (GB/T14848-1993)
11. Ambient Air Quality Standard (GB3095-1996)
12. Comprehensive Emission Standard of Atmospheric Pollutants (GB16297-1996)
13. Environmental Quality Standard for Soils (GB15618-1995)
14. Standard of Boundary Noise of Industrial Enterprise (GB12348-90)
15. Emissions Standard for Pollution from Heavy Industry; Non-Ferrous Metals (GB4913-1985)
16. Control Standard on Cyanide for Waste Slugs (GB12502-1990)
17. Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001)
18. Identification Standard for Hazardous Wastes-Identification for Extraction Procedure-Toxicity (GB5085.3-1996)
19. Standard of Landfill and Pollution Control of Hazardous Waste (GB 18598-2001)

20. Environmental Quality Standard for Noise (GB3096-2008)
21. Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008)
22. Evaluating Indicator System for Lead and Zinc Industry Cleaner Production (Trial) (2007)

20.3 Waste and Tailings Disposal Management

Silvercorp's main waste by-products are waste rocks produced during mining operations and the mine tailings produced during processing. There is also minor sanitation waste produced.

Waste rock is deposited in various waste rock stockpiles adjacent to the mine portals and is utilized for construction around the site. The waste rock is mainly comprised of quartz, chlorite and sericite, kaolin and clay minerals and is non-acid generating.

Once the stockpile is full (or at the time of site closure), the waste rock stockpiles will be covered with soil and replanted with vegetation. For stabilization, retaining wall spats will be built downstream of the waste rock site. An interception ditch will be constructed upstream to prevent the slope surface from washing out. A waste rock stockpile in the main exploration-development camp, Shagouxi (SGX), has already been covered with soil and vegetation planted.

Process tailings are discharged into a purpose built TSF (TSF1) that has an effective design capacity of 2.43 (Mm^3) (refer also to Section 18). The TSF has a decant and under-drainage system which provides for flood protection and for the collection of return water. Daily inspections are undertaken for the tailings pipelines, TSF embankment and the seepage / return water collection system. The TSF under-drainage and return water collection system comprises a tunnel discharging directly into an unlined collection pond / pumping station which is situated just downstream of the TSF embankment. According to the current rehabilitation plan, after the completion of the TSF, the facility will be covered with soil and vegetation will be replanted. The SGX Environmental Impact Assessment (EIA) Report states that the tailings do not contain sulphide and have no potential for acid generation.

A new 2,000 tpd mill plant (No. 2 Mill), was built close to the No. 1 Plant and commenced operations in January 2010. A new TSF (Shiwagou) with an effective design storage capacity of 5.36 Mm^3 was built for the No. 2 Mill. Tailings generated from the new mill plant can be discharged to both TSFs. Currently tailings are discharged to the No. 1 TSF.

20.4 Site Monitoring

20.4.1 Monitoring Plan

Silvercorp developed comprehensive monitoring plans during the EIA stage, including monitoring plans during the construction period. An environmental protection department consisting of five full time staff was set up for this project. The full time environment management personnel are mainly responsible for the environment management and rehabilitation management work in the mining area.

The monitoring plans include air and dust emissions and noise and waste water monitoring. The monitoring work is completed by qualified persons and licensed institutes. For water environment monitoring, an intensive program has been developed and implemented, including twice a month testing of sanitary waste-water and surface water by the Luoning County Environmental Protection Bureau. Mine water discharge and surface water is tested monthly by the Yellow River Basin Environmental Monitoring Center, an inter-provincial government organization. Detailed monitoring plans are shown in Table 20.1.

Table 20.1 Water Environmental Monitoring Plan for Ying Mining Area

Items	Monitoring Points (section)	Monitoring Parameters	Frequency	Monitored by
Sanitary Wastewater	Final discharge point	pH, NH3-N, CODcr, BOD, TSS	Twice/month	Luoyang Environmental Monitoring Centre
Surface water	Shagou Yueliangou	pH, Cr6+, NH3-N, Cd Pb, Ag, CODcr and Cu	Twice/month	
Process wastewater	Discharge point after sedimentation treatment	pH	Often	Luoyang Environmental Monitoring Centre
		Pb, CODcr, NH3-N and SS	Once/month	
		Cd,S2-,As, phenol, Zn, Ag and TPH	Once/quarter	
Mining water	Discharge point after Sedimentation tank	Temperature, pH, SS, CODcr, NH3-N, total P, N, SO4, Ag Cu, Zn, Pb, Cd, Hg, phenol and TPH	Once/month	Yellow River Basin Monitoring Centre
Surface water	Sections at Shagou to Guxia Reservoir Upper section of Guxia Reservoir from Shagou Down gradient section of Guxia reservoir (500 m from Shagou entrance)			

Monitoring results from 2007 to 2011 indicate that the surface water results are in compliance with Class II and III limits of Surface Water Environmental Quality Standards (GB3838-2002), sanitary and process plant waste water results are in compliance with Class I limit of Integrated Wastewater Discharge Standard (GB8978-1996), and mining water results are in compliance Class I limit of Integrated Wastewater Discharge Standard (GB8978-1996). These standards match the requirements in the EIA approvals. In addition, the project completion inspection results were all compliant for waste water discharge, air emission, noise and solid waste disposal.

There were a few exceptional cases in which pH values of the discharged mining water were slightly over 9.0 and Pb concentrations slightly exceeded the permitted limit 0.011 mg/l at the general discharge point after sedimentation tank for both SGX and TLP mines.

20.4.2 Water Management

The water supply for the SGX and HPG projects is sourced mainly from the Guxian Reservoir and mountain spring water. Water supply for the TLP and LM projects is mainly from mountain spring water near the mines.

Maintaining water quality for the Guxian Reservoir while operating the SGX and HPG projects is a key requirement in the project environmental approvals. Silvercorp has created a SGX and HPG surface water discharge management plan. This comprises collection and sedimentation treatment of mine water combined with a containment system (i.e. zero surface water discharge), and installation of a stormwater drainage bypass system for the segregation and diversion of clean stormwater and for flood protection.

Prior to completion of the stormwater drainage bypass system, drainage construction in the project water catchment area was completed. Overflow water from the mill process (which is segregated by the thickener), and water generated from the tailings by the pressure filter, are returned to the milling process to ensure that waste water (including tailings water) is not discharged.

Water from mining operations is reused for mining operations and the remaining water is treated according to the Surface Water Quality Standards (GB3838-2002) and Integrated Wastewater Discharge Standard (GB8978-1996) to meet the Class III requirements of surface water quality and Class I waste water quality before being discharged to Guxian Reservoir at discharge points approved by the Yellow River Management Committee in Luoning County.

Monthly monitoring results by the Luoyang Environmental Monitoring Station and Yellow River Basin Environmental Monitoring Center indicate that water discharged to the surface water body is in compliance. Selected results in Table 20.2 and Table 20.3 show the general level of test results.

Table 20.2 Selected (2009) Monitoring Results, Shagou Mine Surface Water

Sampling Date	SS	COD	NH3-N	Ag	Cu	Zn	Pb	Cd	TPH	Phenol
GB3838 Limit	**70**	**15**	**0.5**	**0.1**	**1.0**	**1.0**	**0.011**	**0.005**	**0.05**	**0.002**
2009/1/22	61	<10	0.24	<Dl	0.010	0.023	<DL	<DL	<DL	<DL
2009/2/22	48	<10	0.47	<DL	0.006	0.089	0.008	<DL	<DL	<DL
2009/3/22	52	14.8	0.38	<DL	<DL	0.117	<DL	<DL	<DL	<DL
2009/4/22	62	12.5	0.47	<DL	<DL	0.034	<DL	<DL	<DL	<DL
2009/5/22	61	13.5	0.13	<DL	0.007	0.072	<DL	<DL	<DL	0.002
2009/6/22	29	13.5	0.20	<DL	0.020	0.028	<DL	<DL	<DL	<DL
2009/7/22	21	12.2	0.34	<DL	<DL	0.04	<DL	<DL	<DL	<DL
2009/8/27	39	<10	0.17	<DL	<DL	<DL	0.0107	<DL	<DL	<DL
2009/9/20	32	13.9	0.22	<DL	<DL	0.021	0.0106	<DL	<DL	<DL
2009/11/5	21	13.1	0.42	<DL	0.008	0.018	0.0090	<DL	<DL	<DL
2009/12/5	37	<10	0.33	<DL	0.006	0.026	0.0050	<DL	<DL	<DL
2009/12/15	45	10.9	0.13	<DL	<DL	0.018	0.0110	<DL	<DL	<DL

Units – mg/l

Table 20.3 Selected Monitoring Results (2011.8) Surface Water

Sampling location	NH3-N	Ag	Cu	Zn	Pb	Cd	As	Hg	Cr
GB3838 Limit	**0.5**	**0.1**	**1.0**	**1.0**	**0.011**	**0.005**	**0.05**	**0.002**	
200m from Zhuangtou tailing dam	0.075	<Dl	<Dl	<DL	<DL	<DL	0.0005	<DL	<DL
Shagou Mine	0.075	<DL	<DL	<DL	<DL	<DL	0.0006	<DL	<DL
Yueliangou Mine	0.093	<DL	<DL	0.070	<DL	<DL	0.0006	<DL	<DL
HPG Mine	0.111	<DL	<DL	0.247	0.0109	0.0023	0.0003	<DL	<DL
Chongyanggou Mine	0.095	<DL	<DL	<DL	<DL	<DL	0.0004	<DL	<DL

Units – mg/l

With the exception of one small creek, there are no surface water sources near the TLP and LM mines, and no mining water is discharged to this creek from the mines. There is a limited volume of mining water generated from the lower sections of the TLP and LM mines, most of which is used in the mining activities, and none generated from the upper sections.

20.4.3 Groundwater

Groundwater guidelines are contained in the Groundwater Environmental Quality Standards (GB/T14848-93). There is groundwater monitoring program for the processing plant area, but not for the mining areas. It is recognized that there is no requirement under the Chinese environmental approval to monitor this potential impact. Groundwater (the main drinking water sources) monitoring results of tested parameters including pH, Pb, Hg, Zn, Cd, Cu, As, cyanide, and sulphate conducted by the Luoyang Environmental Monitoring Station in September 2011 at different areas indicated that groundwater quality is in compliance with Class III of GB/T14848-93. The results are summarized in the Table 20.4 below:

Table 20.4 Results Summary of Drinking Water (Groundwater)

Location	Pb	Hg	Zn	Cd	Cu	As	Ag	CN
Shagou Mine	<DL	<DL	0.022	<DL	<DL	0.0009	<DL	<DL
Mill Plant	<DL	<DL	0.484	<DL	<DL	<DL	<DL	<DL
Mill Plant nearby resident	<DL	<DL	<DL	0.0042	<DL	0.0004	<DL	<DL
HPG Mine	<DL	<DL	0.288	<DL	<DL	<DL	<DL	<DL
Chongyang Mine	<DL	<DL	0.016	<DL	<DL	<DL	<DL	<DL
Chongyang Mine resident	<DL	<DL	<DL	<DL	<DL	0.0003	<DL	<DL
Yuelianggou Mine	<DL	<DL	0.015	<DL	<DL	0.0002	<DL	<DL
Detection limit (DL)	0.01	0.00005	0.01	0.001	0.01	0.0002	0.007	0.004
Class III Limit	0.05	0.001	1.0	0.01	1.0	0.05		0.05

Units – mg/l

20.4.4 Waste Water

There are three sources of waste water; mining activities, mineral processing and domestic sewage. Mine water is pumped to surface via the mine portals, and then pumped to Sedimentation Pond 1 via a lime dosing system to assist in flocculation. The settled water is then drained to Sedimentation Pond 2, where the overflow is allowed to drain to another three settlement tanks system before being discharged to Guxian Reservoir through a discharge point approved by the Yellow River Management Committee at an elevation of 549.5 m above sea level. Sewage from mining areas is collected and treated by a biological and artificial wetland treatment system. The treated water meets the criteria for water reuse and is applied 100% to landscape watering with no discharge to the public water body.

Table 20.5 Mining Water & Sanitary Waste Water Monitoring Results

Sampling location	pH	Cd (mg/L)	Pb (mg/L)	Zn (mg/L)	Cu (mg/L)
Discharge point after sedimentation treatment	7.92	<DL	<DL	<DL	0.255
Entrance to Guxian Reservoir	8.18	<DL	<DL	<DL	<DL
Integrated wastewater discharge standards （GB 8978-1996）Class I Limit	**6～9**	**0.1**	**1.0**	**2.0**	**0.5**
Sanitary Wastewater treatment	pH	NH3-N (mg/L)	COD (mg/L)	BOD (mg/L)	SS (mg/L)
After biological and wetland treatment	7.9	0.4	24	19.2	13.1
Industrial wastewater reuse standard (GB / T 19923-2005)	**6.5-7.5**	**10**	**60**	**20**	**20**

According to the EIA approval, water quality protection for the Guxian Reservoir and the SGX project area is subject to Chinese National Standard Environmental Quality Standard for Surface Water (GB3838-1988 – Class II) and the mine discharge water quality is to meet Class I of the Integrated Wastewater Discharge Standard (i.e. at the point of discharge). Quality monitoring of the mine waters and the surrounding receiving surface waters is carried out under contract by the Luoning County Environmental Protection Bureau and the Yellow River Basin Environmental Monitoring Center, in line with specifications in the site environmental monitoring plan. The monthly monitoring results have so far indicated that waters discharged to surface water bodies are in compliance with both standards.

The Ying TSF under-drainage and return water collection system comprises a tunnel discharging directly into a collection pond / pumping station just downstream of the TSF embankment. This TSF decant and under-drainage system provides a mechanism for the direct discharge of tailings and / or contaminated tailings water from the TSF. This existing collection pond is designed to overflow into a second containment / seepage dam. There are two further containment dams downstream, with a fourth dam, approximately 1 km downstream, also acting as another pumping station and emergency containment system. The collected tailing water from the TSF in these dams is pumped back through a long pipe to the processing plant for reuse. No tailing water is discharged to the public water body.

20.5 Permitting Requirements

The following permits and approvals have been obtained by Silvercorp for the Ying operation.

20.5.1 Environmental Impact Assessment Reports & Approvals

- Environmental Impact Assessment Report of SGX Mine Project, by Luoyang Environmental Protection & Design Institute, January 2006
- Approval of Environmental Impact Assessment Report of SGX Mine Project by Henan Environmental Protection Bureau, February 2006

- SGX Mine Project Trial Production Completion Acceptance Inspection Approval by Henan Environmental Protection Bureau, January 2009
- Environmental Impact Assessment Report of HPG Mine, by Luoyang Environmental Protection & Design Institute, November 2002
- Approval of Environmental Impact Assessment Report of HPG Mine by Henan Environmental Protection Bureau, January 2003
- Approval of Environmental Impact Assessment Report of TLP Mine by Henan Environmental Protection Bureau, November 1998
- Approval of Environmental Impact Assessment of LM Mine Expansion by Henan Environmental Protection Bureau, May 2010
- Environmental Impact Assessment Report of 2000 t/d processing plant and tailings storage facility, by Luoyang Environmental Protection & Design Institute, May 2009
- Approval of Environmental Impact Assessment Report for 2000 t/d Processing Plant and Tailings Storage Facility, by Henan Environmental Protection Bureau, July 2009

20.5.2 Project Safety Pre-assessments Reports and Safety Production Permits

- Yuelianggou (SGX Mine) Project Safety Pre-assessment Report & Registration by Henan Tiantai Mining Safety Engineering Company, December 2008
- HPG Mine Safety Pre-assessment Report & Registration by Henan Minerals Test Centre, April 2010
- TLP Mine Safety Pre-assessment Report & Registration by Henan Tiantai Mining Safety Engineering Company, December 2008
- LM Mine Safety Pre-assessment Report & Registration by Henan Minerals Test Centre, January 2011
- Safety Production Permit (XCJC309Y) for SGX Mine by Henan Safety Production & Supervision Bureau, valid from 1 March 2012 to 28 February 2015
- Safety Production Permit (XCJC307) for HPG Mine by Henan Safety Production & Supervision Bureau, valid from 26 July 2011 to 25 July 2014
- Safety Production Permit (XCJC301) for TLP Mine by Henan Safety Production & Supervision Bureau, valid from 11 January 2012 to 10 January 2015
- Safety Production Permit (XCJC303YB) for LM Mine by Henan Safety Production & Supervision Bureau, valid from 29 March 2011 to 28 March 2014
- Safety Production Permit (XCWK333Y) for Yuelianggou Tailing Dam Operation by Henan Safety Production & Supervision Bureau, valid from 31 December 2010 to 29 December 2013

20.5.3 Resource Utilization Plan (RUP) Reports & Approvals

- RUP Report and Approval for SGX Mine by China Steel Group Design Institute
- RUP Report and Approval for HPG Mine by Sanmenshe Gold Design Institute February 2010

- RUP Report and Approval for TLP Mine by China Steel Group Design Institute
- RUP Report and Approval for LM Mine by Sanmenshe Gold Design Institute April 2010

20.5.4 Soil and Water Conservation Plan and Approvals

- Soil and Water Conservation Plan for the SGX Mine by Luoyang Soil and Water Conservation Supervision Station and approved by Luoyang Water Resources Management Bureau May 2009
- Soil and Water Conservation Plan for HPG Mine by Luoyang Soil and Water Conservation Supervision Station and approved by Luoyang Water Resources Management Bureau May 2008
- Soil and Water Conservation Plan for LM Mine by Luoyang Soil and Water Conservation Supervision Station and approved by Luoyang Water Resources Management Bureau January 2007
- Approval of Wastewater Discharge at the SGX mine and HPG mines to the Guxian Reservoir by Yellow River Irrigation Work Committee, January 2007
- Approval of Wastewater Discharge in the Ying TSF to the Chongyang River by Yellow River Irrigation Work Committee, January 2007

20.5.5 The Geological Hazards Assessment Report and Approval

- The Geological Hazards Assessment Report for the SGX mine by Henan Provincial Science and Research Institute of Land and Resources January 2009
- Geological Hazards Assessment Report is part of documents for the mining permit application that was implemented in March 2004. This report was not required for HPG, LM, and TLP mines since the original mining permits were issued before March 2004

20.5.6 Mining Permits

See Section 4.1.

20.5.7 Land Use Right Permits

- **Land use right certificate No 0032 (Luoning County Guoyong (2011) No 0032).** The certificate covers a land area of 98,667 m^2 located in Shagou Village, Xiayu Town, Luoning County and will expire in 2061; issued and proved by Luoning County Government, Luoning County Land and Resources Bureau and Ministry of Land and Resources of PRC.
- **Forest land use right permit (Yulinzixu 2008 No 170),** issued by Henan Forest Bureau in November 2008. The permit covers a forest land area of 12.8064 hectares located in Zhuangtou Village, Xiayu Township, Luoning County for processing plant and tailing dam’s construction.

20.5.8 1.5.8 Water Permits

- **Water Permits (Ning Water No. 2007-001).** The permit allows the taking of 6,000 m^3 water for mill processing from Chongyang River at the inlet of the Xiashi Valley (downstream of No. 1 TSF) and the Chongyang River and expired on 25 April 2012 [2]; issued and proved by Luoning County Bureau of Water Resources Management on 25 April 2007.
- **Water Permits (Ning Water No. 2008-001).** The permit allows the taking of 823,100 m^3 of water for mill processing from Luo River at the inlet of the Chongyang River, 7 km north of the No. 2 mill and will expire in 30 November 2013; issued and proved by Luoning County Bureau of Water Resources Management on 13 August 2008.

20.6 Social and Community Interaction

The nearest significant community to the Ying projects is the Xia Yu Township, which is approximately 2 km to the south west of the Ying processing plant. The Luoning County is approximately 40 km to the north east and the town of Lushi is approximately 30 km to the south east.

The project area's surrounding land is predominantly agricultural.

Silvercorp has provided several donations and contributions to communities within the Luoning County; these comprise a range of cash donations, to local capital projects and community support programs, and capital projects such as road construction and repairing, school construction and upgrading. Silvercorp has spent to date 12,517,000 RMB in donations.

In addition, to the above donations, in 2011, Silvercorp made annual general contributions to local community support programs of 180,000 RMB, 500,000 RMB, 100,000 RMB and 100,000 RMB to Shagou (SGX), TLP/LM, Zhuangtou (Mills No. 1 & 2 located), and Xaiyu Villages respectively.

Silvercorp also employs several local contractors and local suppliers where practical.

No records of public complaints in relation to Silvercorp's Ying Property operations were sighted.

20.6.1 Cultural Minorities and Heritages

There are no cultural minority groups within the general project area. The cultural make-up of the broader Luoning County is predominantly Han Chinese No records of cultural heritage sites located within or near the Ying Property have been sighted.

[2] Silvercorp has submitted an application for renewing the Water Permits (Ning Water No. 2007-001). The permit has been temporally extended to June 25th, 2012 as the Water Resources Bureau is reviewing the quantity of water that will be permitted to be used.

20.6.2 Relationships with Local Government

Silvercorp has close relationships with the local Luoning County and Luoyang City, evidenced by the following:

- The Company consults with the Luoning County on local issues.
- The Luoning County is utilized to undertake regular water quality monitoring for the SGX and HPG Projects.
- Relations with statutory bodies are positive and Silvercorp has received no notices of breaches of environmental conditions.

20.6.3 Labour Practices

Silvercorp`s production activities are in compliance with Chinese and international labour regulations. Formal contracts are signed for all the full time employees with wages well above minimum wages. The company provides annual medical surveillance and checks are conducted for its employees before, during and after their employment with the Company. The Company does not use child or under-aged labour.

20.7 Remediation and Reclamation

Silvercorp developed remediation and reclamation plans during the project approval stage, including measures during project construction, operation and closure. The Company has spent approximately $4.0 million on environmental protection, including dust control measures, waste water treatment, solid waste disposal, the under-drainage tunnel, soil and water conservation, noise control, ecosystem rehabilitation, and emergency response plans. From 2007 to March 2011, a land area totalling 31,200 m^2 was planted with trees and grasses as planned in the EIA. Unused mining tunnels and the HPG tailings dam have been closed and rehabilitation coverage has been completed. The reclamation cost is estimated to be around $1.5 million. Table 20.6 details expenditures for environmental protection, rehabilitation, reclamation and compensation for land acquisition from 2005 to 2011.

Table 20.6 Expenditure on Land Acquisition from 2005 to 2011

Year Item	2005	2006	2007	2008	2009	2010	2011	Totals
Environmental Protection	116	240	170	852	6,390	6,695	7,000	21,463
EIA	114			129	78	174		495
Soil & Water Conservation	60	60			90		140	350
Environmental Equipment			455	998	703	349		2,505
Tailing Dam		13	4,432	3,975	1,491		22,296	32,207
Compensation for land acquisition	739	4,311	2,467	4,811	2,034	1,248	11,676	27,287
Totals	**1,029**	**4,624**	**7,525**	**10,765**	**10,786**	**8,466**	**41,111**	**84,307**

Note: Costs in 1,000 RMB

20.8 Site Closure Plan

Mine closure will comply with the Chinese National regulatory requirements. These comprise of Article 21 (Closure Requirements) of the Mineral Resources Law (1996), and Articles 33 and 34 of the Rules of Implementation Procedures of the Mineral Resources Law of the People's Republic of China (2006).

The site closure planning process will include the following components:

- Identify all site closure stakeholders (e.g. government, employees, community etc.).
- Undertake stakeholder consultation to develop agreed site closure criteria and post-operational land use.
- Maintain records of stakeholder consultation.
- Establish a site rehabilitation objective in line with the agreed post-operational land use.
- Describe / define the site closure liabilities (i.e. determined against agreed closure criteria).
- Establish site closure management strategies and cost estimates (i.e. to address / reduce site closure liabilities).
- Establish a financial accrual process for site closure.
- Describe the post-site closure monitoring activities / program (i.e. to demonstrate compliance with the rehabilitation objective / closure criteria).

Based on the Chinese national regulatory requirements Silvercorp will complete a site decommissioning plan at least one year before mine closure. Site rehabilitation and closure cost estimates will be made at that time.

21 CAPITAL AND OPERATING COSTS

21.1 Key Unit Operating Cost Parameters

21.1.1 Mining Contract Rates

Silvercorp utilizes contract labour for mining on a rate per tonne or a rate per meter basis. The contract includes all labour, 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 21.1, Table 21.2 and Table 21.3 list the 2011–2012 contract rate schedule for the Ying Property.

Table 21.1 Cost Schedule for Shafts / Drifts Driving

Drifting Rates Under shaft			
Size (m)	**RMB/m**	**US$/m**	**Notes**
2.2x2.0	1,148	180.8	Major drifting
2.0x2.0	1,091	171.8	Drifting along veins
2.0x1.8	1,034	162.8	Drifting along veins
1.8x1.8	1,000	157.5	Drifting along veins
1.8x1.6	977	153.9	Drifting along veins
2.0x2.0	1,400	220.5	Raise
1.5x1.5	1,148	180.8	Raise
2.4x2.2	2,300	362.2	Declines
φ3.5	12,000	1,889.8	Shaft, Cost include shotcrete
Drifting Rates Under adit			
Size (m)	**RMB/m**	**US$/m**	**Notes**
2.2x2.0	866	136.4	Major drifting
2.0x2.0	*809*	127.4	Drifting along veins
2.0x1.8	752	118.4	Drifting along veins
1.8x1.8	713	112.3	Drifting along veins
1.8x1.6	684	107.7	Drifting along veins
2.0x2.0	1,200	189.0	Raise
1.5x1.5	866	136.4	Raise
2.0x1.8	4,500	708.7	Small Shaft
4.2x3.8	6,337	998.0	Ramp
4.7x3.8	6,614	1041.6	Ramp

Table 21.2 Basic Rates for Mining Methods

Methods	Under shaft		Under adit	
	RMB/t	US$/t	RMB/t	US$/t
Short-hole shrinkage stope	81	12.8	76	12.0
Resuing stope	208	32.8	202	31.8

Table 21.3 Ground Support Rates

Types	Units	Rates under Shaft		Rates under Adit	
		RMB	US$	RMB	US$
Timber Support	Single Set	78	12.3	78	12.3
Steel Support	Single Set	156	24.6	156	24.6
Shot Crete	m^2	56	8.8	56	8.8
Concrete	m^3	468	73.8	468	73.8
Rock Bolt	Piece	33	5.2	33	5.2

1 US$ = 6.35 RMB

In addition, Table 21.4 shows the contract rates of diamond drilling in Ying District:

Table 21.4 2011 Diamond Drilling Rate

		Basic Rates	
Type of Drilling	Metre range	RMB/m	US$/m
Surface Drill (75 mm)	0-500 m	500	78.7
	500-800 m	600	94.5
	800-1,000 m	800	126.0
	1,000 m plus	1,000	157.5
Underground drill-short hole	0 - 300m)	162.5	25.6
Underground drill-deep hole	>300m	216	34.0

21.2 Summary of Capital Costs

The principal capital requirement in the Ying district is for mine development. Processing plant capital requirements from here on are minimal as plant capacity has already been expanded as described in Section 17 to meet the forecast mine production.

The basis for calculating the mine capital cost has been described in Section 16 where the horizontal and vertical mine development meterage is presented for each mine. The table rates in Section 21.1 provide the unit cost basis for mine development capital cost.

An allowance for processing sustaining capital has been included in the economic evaluation, based on 5% of processing operating costs, an industry standard method for estimating sustaining capital costs applied to fixed assets.

Mining capital costs are summarized by mine in Table 21.5, and the processing sustaining capital is also included as the final line in this table.

Table 21.5 Total Capital Cost – Ying Property

	Mine	Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
RMB (M)	SGX	27.22	16.72	5.52	1.86	2.57	0.55	0	0	0	0	0	0
	HZG	33.61	16.42	10.8	5.79	0.6	0	0	0	0	0	0	0
	HPG	12.49	4.26	4.51	1.95	1.73	0	0	<0.01	0	0	0	0
	TLP	12.13	1.88	1.55	0.28	3.92	1.01	1.14	1.39	0.48	0.24	0.24	0
	LM	50	14.69	20.2	5.13	5.56	1.45	0.37	0.22	0.15	1.73	0.48	0
	Total Mining	**135.45**	**53.97**	**42.58**	**15.01**	**14.38**	**3.01**	**1.51**	**1.61**	**0.63**	**1.97**	**0.72**	**0**
US$ (M)	SGX	4.29	2.63	0.87	0.29	0.4	0.09	0	0	0	0	0	0
	HZG	5.29	2.59	1.7	0.91	0.1	0	0	0	0	0	0	0
	HPG	1.97	0.67	0.71	0.31	0.27	0	0	<0.01	0	0	0	0
	TLP	1.91	0.3	0.24	0.04	0.62	0.16	0.18	0.22	0.08	0.04	0.04	0
	LM	7.87	2.31	3.18	0.81	0.88	0.23	0.06	<0.01	0.02	0.27	0.08	0
	Total Mining	**21.33**	**8.5**	**6.7**	**2.36**	**2.27**	**0.48**	**0.24**	**0.22**	**0.1**	**0.31**	**0.12**	**0**
	Processing Sustaining	0.53	0.62	0.74	0.72	0.75	0.75	0.75	0.68	0.56	0.54	0.55	0.53

21.3 Summary of Operating Costs

Operating costs are summarized by mine in Table 21.6. In a similar fashion to the mining capital costs, the mining method and quantities described in Section 16 together with the contract rates tabulated above provide the basis for the mining operating costs.

AMC considers these costs to be appropriate to the methods and technology used and to the scale of the operations.

Table 21.6 Operating Cost Summary (2012 $)

Cost Item (US$/t ore)	SGX	HZG	HPG	LM	TLP
Mining Cost	40.68	40.67	40.50	39.88	34.75
Hauling cost	3.95	4.04	4.23	3.08	3.12
Milling cost	10.68	11.20	10.67	10.59	10.56
G&A and Other Cost	3.72	3.56	4.00	5.24	5.49
Mineral resources tax	1.95	1.95	1.95	1.95	1.95

The principal components of the milling costs are utilities (power and water), consumables (grinding steel and reagents) and labour in approximate proportion of 40/40/20, respectively.

"G&A and Other" cost includes an allowance for tailings dam and other environmental costs. The major capital expenditure on the two tailings storage facilities has already been expended and the ongoing costs associated with progressively raising the dam with tailings as described in Section 18 is regarded as an operating cost.

22 ECONOMIC ANALYSIS

22.1 Introduction

Although Ying is a producing property and therefore does not automatically require an economic analysis, AMC believes it appropriate to include a summary economic analysis because of the material changes to reserve estimations and to the subsequent production schedules, with some mines undergoing significant expansion.

The Ying District is largely a mature operation, and average grades, especially from the SGX mine, would be considered high. Capital requirements are relatively low. The key parameter in producing a cash flow forecast is therefore the metal price forecast. AMC has used for the forecast the same metal prices as in the reserve estimate, namely:

Gold US$1,250/oz

Silver US$19/oz

Lead US$1/lb

Zinc US$1/lb

Some alternative price scenarios are considered as part of the sensitivity analysis.

Operating costs are assumed to be subject to a 5% annual escalation factor, due largely to an expectation of rising labour costs in China.

The only tax considered in the cash flow forecast is the Mineral Resources Tax, equivalent to US$1.95/ tonne of ore. As this tax is equivalent to a royalty, the cash flow forecast is essentially pre-tax.

An exchange rate US$: RMB of 6.3 has been used (trading range in last three months 6.28-6.33; currently 6.31)

22.2 Annual Production Schedule

The ore production schedule by mine and by plant of destination was shown in Table 17.15. Table 22.1 presents a more detailed schedule by tonnes and metal grades and also accounts for the hand-sorted Direct Shipping Ore (DSO) as a mine product because it bypasses the plant flotation process. Also shown in Table 22.1 are the flotation products from each plant (Pb only from Plant 1, Pb and Zn from Plant 2). Finally the concentrates sold are tabulated and the DSO ore is then added back in with the Pb concentrate.

As a check and to make sure the complication of the DSO product direct from the mine has not introduced a metal accounting error, the total metal content in mine ore production, that is feeds to both plants plus the DSO contribution, has been reconciled against the Mineral Reserve Summary from Table 15.4 and found to agree exactly. .

AMC also notes that the gold grade (originating from HPG ore fed through Plant 2) does not reach payable grades in a total Pb concentrate product. In practice and with appropriate blending, AMC acknowledges that a small volume payable gold concentrate could be produced intermittently and assuming, in the absence of metallurgical data, a notional and conservative 70% recovery, an additional product value of up to $17M could be added to the cash flow. As will be seen in considering the cash flow forecast in Section 22.3, this amounts to 2% of the total base case NPV of the Ying Property.

Table 22.1 Ying Property Production Schedule

			Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total（t）
Mine Ore Production																
for Plant 1			tpa	0	252943	280500	244874	261933	250113	249674	249549	0	0	0	0	**1789586**
			Ag(g/t)	0	223	196	166	140	130	131	128	0	0	0	0	
			Pb（%）	0	2.46	2.51	3.17	3.53	4.80	2.90	3.07	0	0	0	0	
			Zn（%）	0	0.23	0.24	0.36	0.36	0.53	0.28	0.16	0	0	0	0	
for Plant 2			tpa	698,924	564,561	689,795	683,929	713,423	714,702	714,162	621,851	714,592	690,917	703,699	329,174	**7,839,729**
			Ag(g/t)	276	278	270	266	269	267	266	262	225	226	198	85	
			Pb（%）	3.93	4.04	3.41	3.86	3.48	3.04	3.18	3.15	3.44	2.81	2.50	1.11	
			Zn（%）	1.90	2.62	2.00	1.73	1.96	2.17	1.83	1.56	0.78	0.64	1.02	0.12	
Direct Shipping Ore (DSO)			tpa	17636	17675	17617	17627	17628	17645	17672	13426	8566	8766	9545		**163803**
			Ag(g/t)	1501	1456	1387	1391	1387	1395	1387	1383	1375	1342	1477		
			Pb（%）	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00		
			Zn（%）	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00		
Mill Flotation Products																
Plant 1	Pb Conc		tpa		12454	14086	15537	18495	24011	14481	15322					**114387**
			Ag (g/t)		4196	3598	2394	1801	1219	2033	1876					
			Pb (%)		45	45	45	45	45	45	45					
Plant 2	Pb Conc		tpa	44778	35966	38749	42211	40694	35965	37647	33097	45245	35014	30716	7463	**427545**
			Au (g/t)	0.31	1.10	1.19	0.95	1.65	2.54	1.73	1.54	0.00	0.00	0.00	0.00	
			Ag (g/t)	3979	4006	4426	3972	4342	4885	4660	4547	3294	4135	4201	3510	
			Pb (%)	58.1	60.4	57.6	59.5	58.0	57.3	57.3	56.0	50.6	52.1	54.0	45.0	
	Zn Conc		tpa	19054	21776	20260	17134	20256	22377	18685	13784	5643	5200	9501		**173670**
			Zn (%)	49.1	48.8	47.8	47.7	47.6	47.3	46.8	45.0	48.7	50.0	50.0		
Concentrate Sold																
Pb Conc (incl DSO)			tpa	62414	66095	70451	75375	76818	77621	69800	61845	53812	43780	40261	7463	**705734**
			Au (g/t)	0.22	0.60	0.65	0.53	0.88	1.18	0.93	0.83	0.00	0.00	0.00	0.00	
			Ag (g/t)	3279	3360	3500	3043	3052	2958	3286	3198	2988	3576	3555	3510	
			Pb (%)	56.34	55.23	53.70	54.74	53.49	52.30	53.38	52.41	50.80	52.09	53.54	45.00	
		TC	Rmb/t Pb	1900	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2100	
			US$/t Zn	301.6	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	333.3	
			Ag % payable	88.5	90	89.5	89	89	89	89	89	89	89.5	89.5	89.5	
			Ag k oz	6578.9	7140.5	7928.2	7374.9	7537.2	7381.0	7374.4	6359.3	5169.7	5033.2	4601.4	842.0	**73321**
			Pb mT	35167	36504	37833	41263	41087	40597	37261	32410	27334	22805	21555	3358	**377174**
Zn Conc			tpa	19054	21776	20260	17134	20256	22377	18685	13784	5643	5200	9501	0	**173670**
			Zn %	49.1	48.8	47.8	47.7	47.6	47.3	46.8	45.0	48.7	50.0	50.0	0.0	
		TC	Rmb/t Zn	4400	4400	4400	4400	4400	4400	4400	4400	4400	4400	4400		
			US$/t Zn	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4		
			Zn mT	9347.6	10630.3	9693.3	8180.8	9634.5	10574.9	8750.3	6204.1	2750.2	2599.8	4750.6		**83116**

22.3 Cash Flow Forecast

Based on the metal price assumptions and other considerations above, the cash flow forecast is presented in Table 22.2. Over the life of the mine, 60% of the net revenue comes from silver, 34% from lead and only 6% from zinc.

A base case NPV at 8% discount rate is US$M896.6.

Table 22.2 Ying Property Cash Flow Forecast

			Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Revenue																
Gross		US$M	Ag	125.000	135.670	150.635	140.123	143.207	140.238	140.114	120.826	98.224	95.630	87.427	15.999	1393.094
		US$M	Pb	77.531	80.477	83.406	90.970	90.580	89.502	82.146	71.452	60.262	50.276	47.520	7.404	831.525
		US$M	Zn	20.608	23.436	21.370	18.035	21.240	23.314	19.291	13.678	6.063	5.732	10.473		183.240
Net		US$M	Ag	110.625	122.103	134.819	124.709	127.454	124.812	124.702	107.536	87.419	85.589	78.247	14.319	1242.334
		US$M	Pb	66.925	68.888	71.396	77.870	77.537	76.614	70.317	61.163	51.584	43.036	40.677	6.284	712.292
		US$M	Zn	14.079	16.011	14.600	12.322	14.511	15.928	13.180	9.345	4.142	3.916	7.155		125.190
Overall % netback		%	Ag	88.5%	90.0%	89.5%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.5%	89.5%	89.5%	89.2%
		%	Pb	86.3%	85.6%	85.6%	85.6%	85.6%	85.6%	85.6%	85.6%	85.6%	85.6%	85.6%	84.9%	85.7%
		%	Zn	68.3%	68.3%	68.3%	68.3%	68.3%	68.3%	68.3%	68.3%	68.3%	68.3%	68.3%		68.3%
TOTAL Net Revenue		**US$M**		**191.629**	**207.003**	**220.815**	**214.901**	**219.503**	**217.354**	**208.199**	**178.043**	**143.146**	**132.541**	**126.080**	**20.603**	**2079.817**
Costs																
Opex:	Mine	Mill +G&A														
	US$/T															
SGX	*44.6*	*14.4*	US$M	23.660	24.898	26.057	27.376	28.746	30.213	31.772	25.346	16.980	18.243	20.858	0.000	274.149
LM	*43.0*	*15.8*	US$M	4.113	6.793	12.964	14.982	17.885	18.816	19.703	20.682	21.732	22.809	23.593	15.645	199.719
TLP	*37.9*	*16.1*	US$M	6.479	8.500	10.703	12.483	15.087	17.212	18.041	18.933	19.957	20.943	21.953	16.008	186.298
HZG	*44.7*	*14.8*	US$M	4.495	6.420	8.354	3.091	2.294	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.654
HPG	*44.7*	*14.7*	US$M	2.972	4.396	5.244	5.556	5.786	6.107	6.377	6.696	2.436	0.000	0.000	0.000	45.570
Resource tax	*1.95*		US$M	1.397	1.629	1.926	1.846	1.936	1.916	1.914	1.725	1.410	1.364	1.391	0.642	19.097
	from Table 15.2															
Total opex			US$M	43.117	52.636	65.248	65.333	71.734	74.263	77.807	73.383	62.515	63.360	67.795	32.295	749.485
Capex:																
Total Mine (incl Sustaining)				8.5	6.705	2.364	2.286	0.474	0.238	0.078	0.061	0.347	0.151			21.204
Mill (Sustaining as % of opex)		5%		0.533	0.624	0.744	0.716	0.753	0.747	0.746	0.677	0.560	0.542	0.552	0.262	7.456
Net Cash Flow																
Undiscounted		US$M		139.479	147.038	152.460	146.567	146.541	142.106	129.568	103.923	79.724	68.488	57.733	-11.954	1301.671
NPV @	**8%**	**US$M896.617**														

22.4 Sensitivity Analysis

As the capital cost component is small, the main sensitivities arise from metal prices and potential operating costs increases. The impact of these is tabulated in Table 22.3.

Table 22.3 Ying Property Sensitivity Analysis

		NPV (8%)
Base Case		**US$M896.617**
Item	**Variant**	
Pb, Zn price (US$/lb)	0.8	US$M760.104
Ag price 2012-2015 (US$/oz)	30	US$M1,131.556
Ag price long-term "real" (US$/oz)	16	US$M830.479
Opex increase	20%	US$M805.474

23 ADJACENT PROPERTIES

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

24 OTHER RELEVANT DATA AND INFORMATION

AMC is not aware of any additional information or explanation that is necessary to make the technical report understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

Silvercorp has been active on the Ying Property, which includes the SGX, HPG, TLP and LM mines, since 2004. Annual production has ramped up substantially in recent years, reaching 647,000t of ore in 2011.

Mineralization in the Ying district comprises numerous steeply-dipping silver-lead-zinc veins with widths varying from a few centimetres to a few metres and with strike lengths up to a few thousand metres. Exploration is by underground drilling, surface drilling and chip sampling of underground workings. Silvercorp's logging, surveying, sampling, sub-sampling and assaying procedures follow common industry practice, although a splitting stage precedes final pulverization, which is not considered by AMC to be of material concern. QA / QC programs have been in place since 2004 and the results are deemed satisfactory by AMC.

Mineral resource and mineral reserve estimates have been prepared by Silvercorp and reviewed by AMC Qualified Persons (QPs), who accept responsibility. A polygonal method has been used for resource estimation based in part on a minimum cut-off excavation width of 0.30 m, made possible by use of the resue mining method. The polygonal method is commonly used in China, but it can result in estimates that are higher in grade and lower in tonnage than more widely used methods such as kriging or inverse distance weighting. However, the AMC QPs are satisfied that the resource and reserve estimates are of acceptable quality and may be relied upon as a basis for technical and economic projections.

Current reconciliation practice whereby the difference between predicted tonnes and mill feed tonnes is assumed to be entirely due to mine dilution, rather than estimating mine dilution from first principles, is not in accordance with good industry practice and should be reviewed.

Measured and Indicated Resources total 9.2 Mt averaging 324 g/t Ag, 5.14% Pb and 1.83% Zn, while Proven and Probable Reserves total 9.8 Mt averaging 250 g/t Ag, 4.0% Pb and 1.4% Zn. Mineral resource cut-off grades are 150 g/t AgEq for SGX and 100 g/t AgEq for the other mines, while mineral reserve cut-off grades are 120 g/t AgEq for SGX and 110 g/t AgEq for the other mines. The differences between the cut-off grades for resources and reserves reflect, to some degree, a compartmentalizing of the two processes which should be addressed. However, AMC tested the sensitivity of estimates to variations in cut-off grades and found very little impact.

Mineral reserve estimates are based on the assumption that the current stoping practices of cut and fill resuing and shrinkage stoping will continue to be predominant. The sub-vertical veins, generally competent ground, reasonably regular vein width, and hand-mining techniques using short rounds, allows a significant degree of selectivity and control in the stoping process. Minimum extraction widths of 0.3 m for resuing and 0.8 m for shrinkage are assumed. AMC has observed the mining methods at Ying and considers these widths to be reasonable.

Mining dilution and recovery factors vary from mine to mine and with mining method. Dilution factors calculated by AMC average 41% for resuing and 28% for shrinkage, while assumed recovery factors are 95% for resue stopes and 92% for shrinkage stopes.

The average Ying mines total mineral reserve silver and lead grades are somewhat lower than reported mined grades for 2011 and for the last three years. This is a reflection of the mining plan moving into lower grade areas. AMC believes that best mining practices and tight dilution control will be key to maintaining grades at projected reserve levels.

The Ying mine complex has a projected LOM through to 2023 based on Proven and Probable reserves. The potential exists for an extended LOM via further exploration and development, particularly in areas of inferred resources.

An increase in annual production of about 50% is planned between 2012 and 2014. Development and infrastructure to allow access to, and mining in, a greater number of working places is either in place, in development or is planned. AMC considers that the projected production increase can be achieved but that there is a degree of risk associated with having sufficient skilled mining labour consistently available. AMC also notes that a continuing high degree of focus will be necessary throughout the Ying operation for 2012 and 2013 development targets to be achieved.

Consequent with the projected increase in production tonnes will be a gradual reduction in grade as mining activity increases in the lower grade TLP and LM areas.

Recent efforts to fully integrate the processes of resource estimation, reserve estimation and mine planning should be continued.

The two processing plants, Plant 1 and Plant 2, are situated within 2 km of each other and have a total current design capacity of 2,600 tpd, comprising 600 tpd Plant 1 and 2,000 tpd Plant 2. It is expected that, for 2012, the actual capacity will reach 3,000 – 3,350 tpd. Plant 1 feed comprises mainly low grade ore from LM, HPG and HZG, while Plant 2 feed comprises mostly high grade ore from SGX and TLP. To maximize profits, blending of concentrates is practiced. SGX/HPG also contains high grade ore which is hand-sorted at the mine sites, milled in a dedicated facility, and then sold directly or mixed with flotation lead concentrate for sale. Ore from the SGX/HZG mine is carried in trucks by boat across the Guxian Reservoir to the mills. Other ore is trucked.

Historically the exceptional feed grades from SGX have enhanced plant performance but, with the proportion of SGX decreasing, the challenge will be to maintain superior metallurgical performance on lower grade feedstock.

Each processing plant has an associated TMF, with TMF 2 having only just been completed. The tailings capacities are more than adequate for the tonnage of tailings in the production schedule proposed in this report. Flood and safety calculations have been performed in accordance with Chinese standards. While the calculated factors of safety are consistent with Chinese practice requirements, they are somewhat lower than those required by international practices.

There is a potential inconsistency in the TMF seismicity ratings with regard to design peak acceleration parameters which requires clarification.

Silvercorp has all the required permits for its operations on the Ying Property. The mineral resource and mineral reserve estimates include material that is currently below the level approved in the mining permits. However, AMC is satisfied that there is no material risk of

Silvercorp not receiving approval to mine these resources when access is required in the future.

Silvercorp has established an environmental protection department which is responsible for environment / rehabilitation management work in the mining area. Monitoring results to date indicate, which relatively minor exceptions, that discharges have met required standards. In accordance with Chinese national regulatory requirements Silvercorp will complete a site decommissioning plan at least one year before mine closure.

The principal capital cost requirement is for continued mine development, and has been estimated at approximately US$21M. Future processing plant capital requirements are minimal as plant capacity has already been expanded to meet the forecast mine production. Processing life of mine sustaining capital has been estimated as US$0.5M. Estimated operating costs range from US$55.9/t or ore for TLP to US$61.4/t of ore for HZG. AMC considers both operating and capital costs to be reasonable.

Using long-term metal prices of silver $19/oz, lead $1.00/lb, zinc $1.00/lb and gold US$1,250/oz, and a USD:RMB exchange rate of 6.3, AMC has estimated an NPV at an 8% discount rate of $897M. There are no expected negative cash flow years and most project capital is already sunk. Over the life of the mines, 60% of the net revenue comes from silver, 34% from lead and 6% from zinc. As the capital cost component is small, the main sensitivities arise from metal prices and potential operating costs increases. Reasonable variants to these result in NPVs at an 8% discount rate from US$760M to US$1,132M, demonstrating that the project is extremely financially robust.

The Ying mines safety is governed by Chinese statutory requirements and, AMC understands that, in certain areas, Silvercorp has moved above and beyond those requirements. AMC advises, however, that to minimize both personnel and corporate risk, Silvercorp continue with a focus on safety improvement that would include implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.

26 RECOMMENDATIONS

(Stated costs are estimated for those recommendations not covered by operational activities).

- With respect to the SGX assay laboratory:
  - Crush the chip samples to a finer grain size, say minimum 75% passing 2 mm.
  - Conduct a daily sieve analysis to determine if the crushing and pulverizing is meeting specification.
  - Install exhaust fans over each crusher to minimize dust contamination.
  - Install compressed air to clean the crushers and pulverizers between samples.
  - Dry samples in a drying oven rather than using hot plates.
  - Use a blank sample between the crushing of all samples, particularly high grade samples.
  - Post the government certificates of inspection either on the device itself or in the room containing the device.
  - Take a second sample at regular intervals at the grinding / pulverizing stages of the preparation analysis as a check on the process.

Cost estimated to be US$130,000

- Undertake variography studies on the deposits to refine the understanding of the grade distribution and utilize a kriging or inverse distance weighting approach to grade interpolation prior to future resource and reserve estimations.
- Review other possible contributing factors to the apparent overestimation of some resource grades, such as quality of chip sampling and top-cutting.
- Review current reconciliation practices, and reconcile mill feed with mineral reserves (inclusive of mine dilution estimated from first principles) rather than with mineral resources.
- Investigate in more detail the reasons for the undercall of silver and lead grades for SGX.
- Effect full integration of the processes of mineral resource estimation, mineral reserve estimation, and mine planning (both short and long-term).
- Investigate definition for, and use of, sustaining capital in cut-off grade calculations.
- Clarify seismic ratings and design peak acceleration parameters. (Cost estimate US$35,000)
- Place a particular focus on ensuring that sufficient skilled mining labour is consistently available throughout the LOM.
- Maintain the highly focused development approach that will be necessary throughout the Ying operation for 2012 and 2013 development targets to be achieved.

- Continue to pursue the implementation of best mining practices with regard to dilution and grade control.
- Continue with a focus on safety improvement that would include implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.
- Investigate the use of portable compressors in mining areas with a view to minimizing power costs.
- Investigate the benefits of a wider application of slushers for muck movement in stopes.
- Consider the application of more bulk-mining methods such as long-hole benching.

Estimated study cost for the above three items is US$100,000

- Carry out planned exploration activities as follows:
  - For SGX and HZG:
    - A 13,075 m tunneling program to upgrade inferred blocks on major mineralized structures.
    - 56,170 m of underground drilling key vein structures at SGX.
    - 16,805 m of underground drilling and 4160m surface drilling on key vein structures in the HZG area.
  - For HPG:
    - A 6,935 m exploration tunneling program above the 300m elevation.
    - 15,000 m of underground drilling to infill and extend key vein structures.
  - For TLP and LM:
    - A 9,890 m exploration tunneling program at TLP
    - 2,100 m on key vein structures between 650L and 750L in the LME area, 2290 m on key vein structures between 846L and 916L in the LMW area.
    - 25,000 m of underground drilling on key vein structures at TLP and similar programs of 5,400 m and 22,600 m at LME and LMW respectively.

AMC understands that the above exploration items are accounted for in the Silvercorp 2012 exploration budget, with total costs estimated at $US9.65M, split between drilling at $US5.6M and tunnelling at $US4.05M.

27 REFERENCES

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28 QUALIFIED PERSONS' CERTIFICATES

A Riles

1. I, Alan Riles, MAIG, BMet (Hons), Grad Dipl Professional Management, do hereby certify that I am Associate Principal Consultant Metallurgist with AMC Mining Consultants (Canada) Ltd, Suite 1330, 200 Granville Street, Vancouver, British Columbia V6C 1S4, Canada.
2. The Technical Report to which this certificate applies is entitled "Technical Report for Ying Gold-Silver-Lead-Zinc Property, Henan Province, China" and is effective 1 May 2012 (the "Technical Report").
3. I graduated with a Bachelor of Metallurgy (Hons Class 1) from Sheffield University, UK in 1974. I am a registered member of the Australian Institute of Geoscientists. I have practiced my profession continuously since 1974, with particular experience in study management and both operational and project experience in precious and base metal deposits. I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
4. I visited the Ying property in February 2012 for three days.
5. I am responsible for the preparation of Sections 13, 17, 19 and part of Sections 18, 21 and 22 of the Technical Report.
6. I am independent of the issuer as described in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Ying property.
8. I have read NI 43-101 and certify that the parts of the Technical Report for which I am responsible have been prepared in compliance with the Instrument.
9. As at the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 30th day of April 2013

Original signed by:

____

Alan Riles, B.Met, MAIG

M Molavi

1. I, Mo Molavi P. Eng., M Eng, B Eng, of Vancouver, British Columbia do hereby certify that I am a Principal Mining Engineer with AMC Mining Consultants (Canada) Limited, Suite 1330, 200 Granville Street, Vancouver, British Columbia V6C 1S4.
2. The Technical Report to which this certificate applies is entitled "Technical Report for Ying Gold-Silver-Lead-Zinc Property, Henan Province, China" and is effective 1 May 2012 (the "Technical Report").
3. I graduated with a B Eng in Mining Engineering from the Laurentian University in Sudbury Ontario in 1979 and an M Eng in Mining Engineering specializing in Rock Mechanics and mining methods from the McGill University of Montreal in 1987. I am a registered member in good standing of the Association of Professional Engineers and Geoscientists of Saskatchewan and a Member of the Canadian Institute of Mining, Metallurgy and Petroleum. I have worked as a Mining Engineer for a total of 30 years since my graduation from university and have relevant experience in project management, feasibility studies and technical report preparations for mining projects in North America. I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
4. I visited the Ying property in February 2012 for three days.
5. I am responsible for the preparation of parts of Sections 16, 18, 21 and 22 of the Technical Report.
6. I am independent of the issuer as described in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Ying property.
8. I have read NI 43-101 and certify that the part of the Technical Report for which I am responsible has been prepared in compliance with the Instrument.
9. As at the effective date of the Technical Report, to the best of my knowledge, information, and belief, the part of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 30th day of April 2013

Original signed and sealed by:

____

Mo Molavi P. Eng

P R Stephenson

1. I, Patrick R Stephenson, P. Geo, BSc (Hons), FAusIMM (CP), MAIG, MCIM, of Vancouver, British Columbia, do hereby certify that I am General Manager and a Principal Geologist with AMC Mining Consultants (Canada) Limited, Suite 1330, 200 Granville Street, Vancouver, British Columbia V6C 1S4.
2. The Technical Report to which this certificate applies is entitled "Technical Report for Ying Gold-Silver-Lead-Zinc Property, Henan Province, China" and is effective 1 May 2012 (the "Technical Report").
3. I graduated with a BSc (Hons) in Geology from Aberdeen University in Scotland in 1971. I am a registered member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia. I have worked as a Geologist and Manager for a total of 40 years since my graduation from university and have relevant experience in geology, exploration and mineral resource estimation for base and precious metal deposits and in public reporting of mineral assets. I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
4. I have not visited the Ying property.
5. I am responsible for the preparation of Sections 1 to 12, 14, 20 and 23 to 26 of the Technical Report.
6. I am independent of the issuer as described in section 1.5 of NI 43-101.
7. I have had no prior involvement with the Ying property.
8. I have read NI 43-101 and certify that the parts of the Technical Report for which I am responsible have been prepared in compliance with the Instrument.
9. As at the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 30th day of April 2013

Original signed and sealed by:

____

Patrick Stephenson, P.Geo

H A Smith

1. I, Herbert A Smith, P.Eng, of Vancouver, British Columbia do hereby certify that I am a Principal Mining Engineer with AMC Mining Consultants (Canada) Limited, Suite 1330, 200 Granville Street, Vancouver, British Columbia V6C 1S4.
2. The Technical Report to which this certificate applies is entitled "Technical Report for Ying Gold-Silver-Lead-Zinc Property, Henan Province, China" and is effective 1 May 2012 (the "Technical Report").
3. I graduated with a degree of B.Sc in Mining Engineering in 1972 and a degree of M.Sc in Rock Mechanics and Excavation Engineering in 1983, both from the University of Newcastle upon Tyne, England. I have worked as a Mining Engineer for a total of 35 years since my graduation and have relevant experience in underground mining, feasibility studies and technical report preparation for mining projects. I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
4. I visited the Ying property in February 2012 for three days.
5. I am responsible for the preparation of Section 15 and parts of Sections 16, 21 and 22 of the Technical Report.
6. I am independent of the issuer as described in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Ying property.
8. I have read NI 43-101 and certify that the parts of the Technical Report for which I am responsible have been prepared in compliance with the Instrument.
9. As at the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 30th day of April 2013

Original signed and sealed by:

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Herbert A Smith, P.Eng