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Report

Ying NI 43-101 Technical Report

Silvercorp Metals Inc.

Henan Province, China

In accordance with the requirements of National Instrument 43-101 “Standards of Disclosure for Mineral Projects” of the Canadian Securities Administrators

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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, TLP, LME and LMW underground mines. AMC had previously prepared Technical Reports on the Ying property in 2012 (filed 15 June 2012, effective date 1 May 2012), and in 2013 (minor update to 2012 report, filed 30 April 2013, effective date 1 May 2012).

P R Stephenson, H A Smith and A A Ross visited the Ying property in July 2016. All authors of this report qualify as independent Qualified Persons.

Silvercorp, through wholly owned subsidiaries, has effective interests of 77.5% in the SGX / HZG 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 southwest 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 project areas have good road access and operate year round. The area has a continental sub-tropical climate with four distinct seasons.

Silver-lead-zinc mineralization in the Ying district has been known and intermittently mined for several hundred years. Silvercorp acquired an interest in the SGX project in 2004, the HPG project in 2006, and the TLP / LM projects in late 2007. Annual production has ramped up substantially in recent years, reaching 590,000 tonnes of ore in fiscal year 2016 (end 31 March 2016).

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 centimetres up to a few metres. The fault-fissure zones extend for hundreds to a few thousand metres along strike. To date, significant mineralization has been defined or developed in at least 224 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

From 1 July 2013 to 30 June 2016, Silvercorp drilled 855 underground holes and 41 surface holes, for a total of approximately 225,000 m. Most drill core (core) is NQ-sized. Core recoveries are influenced by lithology and average 98-99%. Core is logged, photographed and sampled in the surface core shack. 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 vein structures along strike, on levels spaced approximately 40 m apart. Chip samples across the structures are collected at 5 m intervals. From 1 July 2013 to 30 June 2016, Silvercorp undertook 128 km of tunnelling, and collected approximately 44,000 channel / chip samples.

Core samples are sent in securely sealed bags to four commercial laboratories: Analytical Lab of Henan Geological Exploration Bureau in Zhengzhou; Analytical Lab of the Institute of Geophysical and Geochemical Exploration of the Chinese Academy of Geosciences in Langfang; The Chengde Huakan 514 Geology and Mineral Testing and Research Institute in Chengde; and Analytical Lab of the Inner Mongolia Geological Exploration Bureau in Hohhot. All laboratories are officially accredited in China. Sample preparation and assaying procedures follow standard practices, although a splitting stage precedes final pulverization.

The sampling and assaying QA / QC program for the 1 July 2013 to 30 June 2016 period comprised 1,735 Certified Reference Material (CRM) samples, 1,542 blanks and 1,272 duplicates inserted with the core and channel / chip samples at a rate of one CRM, one blank and one duplicate per 40 sample batch. Silvercorp also randomly selected rejects of the mineralized samples for rechecking (internal check) at the same laboratory, and randomly selected pulp of the mineralized samples for external check at other laboratories. 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 Mineral 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.

The Mineral Resource estimates for the Ying property were prepared by independent Qualified Person, Dr Adrienne Ross, P.Geo, with the assistance of Ms Kathy Zunica of AMC, and with input from Mr Pat Stephenson, P.Geo, who takes QP responsibility for the additional geological sections in this Technical Report. Datamine software was used, and, as a result of a recommendation in AMC's 2012 Technical Report, the June 2016 Resources were estimated using a block modelling approach, with 3D ordinary kriging and Datamine's™ dynamic anisotropy application[1]. Because of the numerous veins (194) for which Resource estimates were prepared, this proved to be an extremely time-consuming process.

The Mineral Resources include material (approximately 25% of the Indicated Resources) 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 limits, 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

Table 1.1 shows the Mineral Resources and metal content for the property as of 30 June 2016. The Mineral Resources are reported above cut-offs after applying a minimum practical extraction width of 0.3 m. Diluted grades were estimated for blocks with mineralization widths less than 0.3 m by adding a waste envelope with zero grade. Cut-off grades are based on in situ values in silver equivalent (AgEq) terms in grams per tonne and incorporate mining, processing and general & administration (G & A) costs provided by Silvercorp for each mine and reviewed by AMC.

[1] Dynamic anisotropy re-orientates the search ellipsoid for each estimated block based on the local orientation of the mineralization

Table 1.1 Mineral Resource estimates, Ying Property, 30 June 2016

Mine	Resource Category	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Metal Contained in Resource			
							Au (koz)	Ag (Moz)	Pb (kt)	Zn (kt)
SGX	Measured	2.67	-	296	5.71	3.06	-	25.46	152.7	81.71
	Indicated	3.86	-	271	5.06	2.36	-	33.64	195.5	91.19
	Measured + Indicated	6.54	-	281	5.33	2.64	-	59.10	348.2	172.90
	Inferred	3.66	-	268	5.14	2.33	-	31.50	187.8	85.23
HZG	Measured	0.33	-	390	1.20	0.24	-	4.14	4.0	0.78
	Indicated	0.45	-	297	0.91	0.18	-	4.27	4.1	0.80
	Measured + Indicated	0.78	-	336	1.03	0.20	-	8.41	8.0	1.58
	Inferred	0.35	-	231	1.22	0.25	-	2.63	4.3	0.87
HPG	Measured	0.69	1.10	88	3.77	1.15	24	1.95	26.0	7.92
	Indicated	0.63	1.10	85	2.84	1.15	22	1.72	17.9	7.21
	Measured + Indicated	1.32	1.10	87	3.33	1.15	47	3.66	43.8	15.12
	Inferred	1.01	1.21	114	3.88	1.09	39	3.69	39.1	10.98
LME	Measured	0.32	-	348	1.64	0.31	-	3.55	5.2	1.0
	Indicated	0.93	-	312	2.19	0.49	-	9.33	20.3	4.51
	Measured + Indicated	1.25	-	321	2.05	0.44	-	12.88	25.5	5.51
	Inferred	0.65	-	326	1.60	0.42	-	6.79	10.3	2.73
LMW	Measured	0.54	-	329	3.44	0.27	-	5.74	18.7	1.49
	Indicated	1.93	-	239	2.68	0.31	-	14.84	51.7	6.00
	Measured + Indicated	2.47	-	259	2.85	0.30	-	20.58	70.4	7.49
	Inferred	1.36	-	250	2.37	0.32	-	10.95	32.2	4.38
TLP	Measured	1.36	-	222	3.76	0.28	-	9.71	51.1	3.80
	Indicated	2.60	-	167	3.21	0.31	-	13.97	83.5	7.94
	Measured + Indicated	3.96	-	186	3.40	0.30	-	23.68	134.6	11.74
	Inferred	3.44	-	196	3.95	0.32	-	21.69	135.6	11.04
Total	Measured	5.91	0.13	266	4.36	1.64	24	50.55	257.6	96.69
	Indicated	10.40	0.07	233	3.59	1.13	22	77.76	373.0	117.66
	Measured + Indicated	16.31	0.09	245	3.87	1.31	47	128.31	630.6	214.35
	Inferred	10.47	0.12	230	3.91	1.10	39	77.25	409.4	115.22

Notes:
Measured and Indicated Mineral Resources are inclusive of Mineral Resources from which Mineral Reserves are estimated
Metal prices: gold US$1250/troy oz, silver US$19/troy oz, lead US$0.90/lb, zinc US$1.00/lb
Exchange rate: RMB 6.50 : US$1.00
Veins factored to minimum extraction width of 0.3 m
Cut-off grades: SGX 140 g/t AgEq; HZG 125 g/t AgEq; HPG 125 g/t AgEq; LME 125 g/t AgEq; LMW 130 g/t AgEq TLP 120 g/t AgEq
Silver equivalent formulas by mine:
SGX=33.1895*Pb%+23.4590*Zn%+Ag g/t;
HPG=33.9925*Pb%+18.3181*Zn%+55.4773*Au g/t+Ag g/t;
TLP=34.1401*Pb%+Ag g/t;
HZG=31.8736*Pb%+Ag g/t;
LME=34.0436*Pb%+Ag g/t;
LMW=34.6856*Pb%+Ag g/t;
Exclusive of mine production to 30 June 2016
Rounding of some figures may lead to minor discrepancies in totals

Comparison of Mineral Resources, 30 June 2013 and 30 June 2016

A comparison of Mineral Resource estimates between 30 June 2013 and 30 June 2016 indicates the following:

- For Measured plus Indicated Resources, tonnes have increased by 16%, grades have increased by between 3% and 7%, and contained metal has increased by 20% for silver, 23% for lead and 24% for zinc.

- For Inferred Resources, tonnes have increased by 39%, silver grades have decreased by 8%, lead grades have increased by 20%, zinc grades have increased by 11%, and contained metal has increased by 28% for silver, 67% for lead and 54% for zinc.
- The main reasons for the differences are Mineral Resource addition and conversion to higher categories arising from drilling and level development, different cut-off grades, and depletion due to mining.

Mining and Mineral Reserves

The Mineral Reserve estimates for the Ying property were prepared by Silvercorp under the guidance of independent Qualified Person, Mr H A Smith, P.Eng., who takes QP responsibility for those estimates. Table 1.2 summarizes the Mineral Reserve estimates for each Ying mine and for the Ying operation as a whole. Approximately 38% of the Mineral Reserve tonnage is categorized as Proven and approximately 62% is categorized as Probable.

Table 1.2 Mineral Reserve estimates, Ying Property, 30 June 2016

Mines	Categories	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	EQ-Ag(g/t)	Metal Contained in Reserves			
								Au	Ag	Pb	Zn
SGX	Proven	2.32		272	5.25	2.69	509		20.28	121.6	62.21
	Probable	3.18		248	4.86	2.11	459		25.40	154.5	67.06
Total Proven & Probable		5.50		258	5.02	2.35	480		45.68	276.1	129.2
HZG	Proven	0.23		348	1.03	0.20	384		2.60	2.39	0.47
	Probable	0.35		285	0.77	0.15	312		3.23	2.73	0.52
Total Proven & Probable		0.59		310	0.88	0.17	341		5.83	5.12	0.99
HPG	Proven	0.47	1.10	88	3.76	1.13	297	16.43	1.31	17.50	5.26
	Probable	0.29	1.15	108	3.28	1.17	304	10.84	1.02	9.65	3.45
Total Proven & Probable		0.76	1.12	95	3.57	1.15	300	27.27	2.33	27.15	8.71
TLP	Proven	1.00		223	3.45	0.26	341		7.15	34.39	2.62
	Probable	1.48		178	2.91	0.29	277		8.45	43.09	4.31
Total Proven & Probable		2.47		196	3.13	0.28	303		15.60	77.49	6.93
LM-E	Proven	0.20		288	1.45	0.27	337		1.82	2.85	0.54
	Probable	0.75		298	2.11	0.46	370		7.23	15.95	3.48
Total Proven & Probable		0.95		296	1.97	0.42	363		9.06	18.80	4.02
LM-W	Proven	0.46		316	3.29	0.25	428		4.69	15.21	1.14
	Probable	1.57		234	2.61	0.29	323		11.83	41.04	4.63
Total Proven & Probable		2.04		252	2.76	0.28	346		16.52	56.25	5.77
Ying Mine	**Proven**	**4.67**	**0.11**	**252**	**4.15**	**1.55**	**431**	**16.43**	**37.85**	**193.9**	**72.24**
	Probable	**7.63**	**0.04**	**233**	**3.50**	**1.09**	**374**	**10.84**	**57.16**	**267.0**	**83.45**
Total Proven &		**12.30**	**0.07**	**240**	**3.75**	**1.27**	**396**	**27.27**	**95.02**	**460.9**	**155.6**

Notes to Mineral Reserve Statement:
Stope Cut-off grades (Ag/Eq g/t): SGX – 190 Resuing, 170 Shrinkage; HZG – 170 Resuing; HPG – 200 Resuing, 175 Shrinkage; LME -175 Resuing, 145 Shrinkage; LMW -180 Resuing, 135 Shrinkage; TLP - 155 Resuing, 130 Shrinkage.
Vein development cut-off grades of 50 g/t AgEq for all mines.
Unplanned dilution (zero grade) assumed as 0.05m on each wall of a resuing stope and 0.10m on each wall of a shrinkage stope.
Mining recovery factors assumed as 95% for resuing and 92% for shrinkage.
Metal prices: gold US$1,250/troy oz, silver US$19/troy oz, lead US$0.90/lb, zinc US$1.00/lb
Processing recovery factors: SGX – 94.5% Ag, 96.5% Pb, 61.4% Zn; HZG – 95.6% Ag, 93.8% Pb; HPG – 88.9% Ag, 93.1% Pb, 45.1% Zn; LME – 95.2% Ag, 93.2% Pb; LMW – 93.3% Ag, 95.0% Pb; TLP – 92.4% Ag, 93.5% Pb.
Exclusive of mine production to 30 June 2016.
Exchange rate assumed is RMB 6.50 : US$1.00.
Rounding of some figures may lead to minor discrepancies in totals.

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, allow a significant degree of selectivity and control in the stoping process. Minimum extraction (excluding unplanned dilution) widths of 0.3 m for resuing and 0.8 m for shrinkage were 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. Average unplanned dilution factors have been estimated at 17% for both resuing and shrinkage, while assumed mining recovery factors are 95% for resue stopes and 92% for shrinkage stopes.

AMC has tested the sensitivity of the Ying Mineral Reserves to variation in cut-off grade (COG) by applying a 20% increase in COG to Mineral Resources at each of the Ying mines. The highest reduction in contained AgEq ounces of 18.6% is noted at HPG. For Ying as a whole, an approximately 6% reduction in contained AgEq ounces demonstrates relatively low overall COG sensitivity.

For the property as a whole, total Mineral Reserve tonnes are approximately 75% of Mineral Resource (Measured plus Indicated) tonnes. Silver, lead and zinc Mineral Reserve grades are 99%, 97% and 97% respectively of the corresponding Measured plus Indicated Mineral Resource grades.

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). The only shaft to surface is at LM West. It has a current hoisting capacity of 150,000 tpa of combined ore and waste with a standard cage. The mines are developed using trackless equipment – 20 t trucks and one-boom jumbos; and small, conventional tracked equipment – battery / diesel locomotives, rail cars, electric rocker shovels and pneumatic hand-held drills (jacklegs). Since October 2011, Silvercorp has also been developing two approximately 5 km 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. 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), small tricycle trucks (adit), or 20 t trucks (ramp). 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.

Reconciliation

Table 1.3 summarizes the Silvercorp reconciliation between Mineral Reserve estimates and mill feed, including high grade, hand-sorted ore, for the Ying mines from 1 July 2013 to 30 June 2016.

Table 1.3 Mineral Reserve to production reconciliation: July 2013 – June 2016

	Mine	Ore	Grade			Metal		
		(kt)	Ag (g/t)	Pb (%)	Zn (%)	Ag (koz)	Pb (kt)	Zn (kt)
Reserve (Proven + Probable)	SGX	486	380	7.68	3.00	5,951	37.38	14.59
	HZG	95	584	1.37	0.21	1,784	1.30	0.20
	HPG	136	97	3.83	0.97	423	5.22	1.32
	LME	101	405	1.54	0.29	1,318	1.56	0.30
	LMW	264	263	2.41	0.16	2,230	6.34	0.43
	TLP	191	231	3.35	0.21	1,420	6.40	0.40
	Total	1,274	321	4.57	1.35	13,128	58.21	17.24
Reconciled Mine Production*	SGX	662	310	5.94	2.04	6,595	39.33	13.50
	HZG	138	338	1.12		1,506	1.54	
	HPG	188	106	3.46	0.61	642	6.49	1.15
	LME	199	303	1.31		1,942	2.62	
	LMW	242	229	2.22		1,780	5.37	
	TLP	380	165	2.31		2,022	8.78	
	Total	1,809	249	3.54	0.81	14,488	64.13	14.64
Difference: Mill Feed* and Reserve (%)	SGX	36	-19	-23	-32	11	5	-7.47
	HZG	46	-42	-19		-16	19	
	HPG	38	10	-10	-37	52	24	-13.24
	LME	97	-25	-15		47	67	
	LMW	-8	-13	-8		-20	-15	
	TLP	99	-28	-31		42	37	
	Total	42	-22	-22	-40	10	10	-15

*Includes high-grade, hand-sorted ore.

AMC makes the following observations:

- Overall, the mine produced 42% more tonnes at a 22% lower silver grade and a 22% lower lead grade for 10% more contained silver and 10% more contained lead relative to Mineral Reserve estimates[2]. This suggests the mining of substantial unplanned dilution together with mineralization additional to the Mineral Reserve.
- In terms of overall impact relative to silver grade, the poorest performers were HZG, TLP, LME and SGX, in that order.
- In 2014, Silvercorp identified that sub-optimal contractor mining practices were a large contributor to the high levels of unplanned dilution, and took steps to remedy the situation. Comprehensive resolution was not achieved until the 2015 fiscal year, with a significant improvement in mined grade being noted from that point to the present.
- Other factors that may have contributed to the situation include:
  - adverse ground conditions,
  - use of shrinkage stoping in very narrow and / or discontinuous veins,
  - mining of lower grade, but still economic, material outside of the vein proper
  - mis-attribution of feed source to the mill
  - over- and / or under-estimation of Mineral Resource/Reserve tonnes and grades at individual sites

[2] Zinc has minor impact on revenue.

- mill process control issues.

Silvercorp has recently revised its stockpiling and record keeping procedures and has placed a high level of focus on dilution control by implementing a work quality checklist management enhancement program. AMC endorses these actions and also recommends that Silvercorp undertake periodic mill audits aimed at ensuring optimum process control and mill performance.

Comparison of Mineral Reserves, 1 July 2013 to 30 June 2016

A comparison of Mineral Reserve estimates between 1 July 2013 (previous Technical Report) and 30 June 2016 (this Technical Report) indicates the following:

- 3% decrease in total Ying Mineral Reserve tonnage.
- Increase in total Ying Mineral Reserve silver, lead and zinc grades of 18%, 25%, and 26% respectively.
- Increase in total Ying Mineral Reserve metal contents for silver, lead and zinc of 15%, 21% and 22% respectively.
- SGX continues to be the leading contributor to the Ying Mineral Reserves, now accounting for 45% of tonnes, 48% of silver, 60% of lead and 83% of zinc, compared to respective values of 38%, 36%, 43% and 67% in 2013.
- Decrease in TLP Mineral Reserve tonnes of 25% but increase in silver, lead and zinc grades of 30%, 24% and 33% respectively.
- Decrease in HPG Mineral Reserve tonnes of 17%.
- Increase in LM (combined LME and LMW) Mineral Reserve metal contents for silver, lead and zinc of 12%, 43% and 42% respectively.

Life of mine plan

Table 1.4 is a summary of the projected LOM production for each of the Ying mines and for the entire operation based on the 30 June 2016 Mineral Reserve estimates.

Table 1.4 Life of mine production plan, Ying Property

SGX	2016 July-Dec	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Production (kt)	154	263	263	261	266	272	271	271	264	291	298	293	296	295	298	260	264	265	253	236	180	5,514
Ag (g/t)	356	316	322	322	285	290	290	276	267	291	291	262	275	254	225	222	210	187	168	177	156.4	260
Pb (%)	7.36	5.51	6.28	5.87	5.96	5.54	5.54	5.29	5.80	5.22	5.03	4.82	5.01	4.87	3.83	4.69	4.37	3.91	3.66	4.25	4.30	5.06
Zn (%)	2.01	2.41	2.32	2.50	2.56	2.58	2.10	2.32	2.50	2.28	2.06	2.40	2.30	2.34	2.73	2.36	2.16	2.31	2.40	2.30	1.87	2.34
Eq-Ag(g/t)	647	556	585	576	543	535	524	506	518	517	506	479	495	470	416	433	406	371	346	372	343	483
HZG	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**										**Total**
Production (kt)	26	50	55	60	60	60	60	60	60	60	33											586
Ag (g/t)	355	338	329	338	341	327	303	289	284	269	272											312
Pb (%)	1.22	1.04	1.19	0.81	0.54	0.65	0.98	1.17	0.78	0.93	0.47											0.89
Zn (%)		0.21	0.20	0.16	0.16	0.17	0.14	0.16	0.18	0.16	0.14											0.16
Eq-Ag(g/t)	393	371	367	364	358	348	334	327	309	299	287											340
HPG	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**											**Total**
Production (kt)	36	72	74	80	82	82	84	87	83	83												763
Au (g/t)	1.13	1.08	0.93	1.57	1.18	1.23	1.14	1.37	0.82	0.79												1.12
Ag (g/t)	128.18	114	118	116	119	75	96	96	72	57												97
Pb (%)	4.21	4.80	4.90	3.57	3.68	3.71	3.32	2.47	3.27	2.29												3.55
Zn (%)	0.73	0.86	1.20	1.33	1.03	1.59	1.09	0.70	1.10	1.63												1.15
Eq-Ag(g/t)	347	353	357	349	329	298	292	268	249	208												301
TLP	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	64	123	124	120	123	130	129	124	128	126	123	119	120	118	123	117	117	116	119	111	100	2,476
Ag (g/t)	211.1	271	274	255	240	233	219	198	207	197	196	201	188	184	191	184	141	138	120	104	102	195
Pb (%)	2.4	3.84	3.18	2.80	2.70	3.00	3.69	3.17	3.84	3.16	3.00	3.41	3.39	2.99	3.42	2.89	2.66	2.78	2.66	2.40	2.73	3.08
Zn (%)		0.27	0.26	0.34	0.29	0.24	0.24	0.32	0.29	0.26	0.29	0.25	0.22	0.23	0.25	0.26	0.32	0.32	0.40	0.28	0.23	0.27
Eq-Ag(g/t)	291	402	382	351	332	336	345	306	338	305	299	317	303	286	308	283	232	233	211	186	195	300
LM East	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**								**Total**
Production (kt)	21	52	70	81	81	79	85	85	83	83	78	78	76									953
Ag (g/t)	396	355	340	328	320	305	294	292	288	294	266	267	217									298
Pb (%)	1.87	1.88	1.60	1.90	1.86	2.05	2.10	1.97	2.27	1.83	2.23	2.46	1.55									1.98
Zn (%)		0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.3									0.42
Eq-Ag(g/t)	460	419	394	392	383	375	365	359	365	356	342	351	270									365
LM West	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	49	91	90	100	99	98	98	99	100	105	102	100	99	100	100	104	99	110	105	103	90	2,042
Ag (g/t)	313	314	325	362	318	291	352	333	291	298	282	279	295	276	204	179	166	124	103	149	112	253
Pb (%)	3.64	3.71	3.69	2.46	3.30	3.89	2.08	2.25	3.28	2.61	2.94	3.02	2.44	1.90	3.02	3.16	2.40	2.71	2.76	1.76	1.54	2.76
Zn (%)		0.26	0.19	0.18	0.23	0.34	0.22	0.20	0.20	0.28	0.35	0.29	0.26	0.35	0.43	0.51	0.33	0.24	0.30	0.30	0.14	0.28
Eq-Ag(g/t)	439	443	453	447	433	426	424	411	405	388	385	384	379	342	309	289	250	217	199	210	166	349
Ying Mine	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	350	651	677	703	712	721	727	727	718	749	634	590	592	513	520	481	480	491	477	451	370	12,334
Au (g/t)	0.12	0.12	0.10	0.18	0.14	0.14	0.13	0.16	0.10	0.09												0.07
Ag (g/t)	303	289	293	295	272	260	265	252	241	249	267	253	253	242	213	204	184	161	142	153	131	241
Pb (%)	4.81	4.23	4.32	3.70	3.84	3.86	3.71	3.44	3.98	3.46	3.72	3.92	3.80	3.85	3.58	3.92	3.55	3.37	3.21	3.22	3.20	3.75
Zn (%)	0.96	1.07	1.03	1.08	1.07	1.16	0.91	0.95	1.05	1.07	0.97	1.19	1.15	1.34	1.56	1.27	1.19	1.25	1.27	1.21	0.91	1.12
Eq-Ag(g/t)	493	462	467	454	432	423	418	398	404	393	414	412	407	401	367	364	330	302	277	288	259	396

Notes: Rounding of some figures may lead to minor discrepancies in totals. Production from 1 July 2016 to 31 December 2016 is included. Zinc not included in AgEq calculation for HZG, TLP, LME and LMW mines

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. Although on-site plant tuning has been carried out, AMC is not aware of any external testwork programs since the compilation of the original design criteria data.

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. From January 2012, the total design processing capacity is about 2,600 tpd, but the actual capacity can reach 3,000 – 3,200 tpd. Up until now plant capacity has been under-utilized (especially Plant 2) relative to design and ultimate capacity. The LOM plan shows an increase in planned production from 650 kt in 2017 to 749 kt in 2025, then a gradual decrease to less than 370 kt in 2036.

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. In the LOM plan, the majority of ore tonnes will be processed through Plant 2, with Plant 1 being used as a backup to process low grade ore or development ore from LM, HZG, and part of TLP.

To optimize profitability, 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 the very minor production tonnage of low grade zinc concentrate from low Zn ores fed to Plant 1, before shipment to clients.

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 have been exceeding design throughput levels. Lead and silver recovery targets are being met or exceeded, although zinc recovery is lower than design, attributed to low zinc feed grades. Silver grade in lead concentrate meets the design targets, however, the lead grade has, on average, been below target since 2012. These statistics are consistent with an increasing proportion of production from lower grade mines such as TLP, LME and LMW.

Historically, higher-grade feed from SGX has enhanced plant performance but, with the proportion and grade of SGX ore decreasing, the challenge is to maintain similar metallurgical performance on lower grade feedstock. Maintaining recovery seems reasonably achievable, but with a moderately adverse impact on concentrate lead grades, still marketable, but incurring higher treatment charges and lower % payables.

Manpower

Silvercorp operates the Ying mines mainly using contractors for mine development, production, and exploration. The mill plant and surface workshops are operated and maintained using Silvercorp personnel. Silvercorp provides its own management, technical services and supervisory staff to manage the mine operations. In 2012 and 2014, Silvercorp also employed its own hourly workers for underground production and development in parts of HZG, HPG, and TLP. This practice ceased in late 2014. The Ying Mining District has about 2,300 workers in total, comprising approximately 820 Silvercorp staff and 1,480 contract workers.

Main infrastructure, including tailings dams

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 was completed in July 2012, and put into service in April 2013. 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.

About 75% of the process water is recycled to the plants. The TMFs have working volumes of 2.83 Mm^3 (TMF1) and 4.05 Mm^3 (TMF2) and a remaining life at projected production rates of 6.2 years and 7.3 years respectively. The TMFs were designed based on then-current Resource/Reserve estimates and LOM production projections. Subsequent Resource expansion and increased production projections indicate that the current tailings capacity will not be adequate for the full Ying LOM. Additional tailings capacity will thus be required in the later period of the LOM production.

Each mine in the Ying Property has a number of mine waste dumps. Those for HZG and HPG are sufficient for the envisaged life of mine production, while additional waste dumps will be constructed at SGX, LME, LMW and TLP to ensure adequate capacity. Total current capacity is around 2.8 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, one 35kV overhead line supplies main power for all production, and 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 t 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 has constructed a 1.27 km long tunnel in order to transport ore from HZG to SGX, with completion achieved in 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 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 approximately 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.

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. Six safety certificates and six 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 structures 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 at the SGX mine, and several waste rock stockpiles at the TLP mine, have already been covered with soil and vegetation planted.

Process tailings are discharged into purpose built TMFs, 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, TMF embankment and the seepage / return water collection system. After the completion of the TMFs, 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 Ying Property. Monitoring plans include air and dust emissions and noise and waste water monitoring, and are undertaken by qualified persons and licensed institutes. AMC understands that results from 2013 to 2016 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 have been 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 at SGX and HZG 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. A reticulation pipeline from HPG to Plant 2 is under construction to allow mine water to be reused at Plant 2. AMC understands that 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. It is AMC`s understanding that 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 southwest 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 levels. 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. Capital provision is also made for exploration drilling and for sustaining surface facilities and equipment in general. Specific processing plant capital requirements going forward are projected to be minimal as plant capacity has already been expanded to meet the forecast mine production. Projected capital costs are summarized by mine in Table 1.5.

Table 1.5 Total capital cost – Ying property

	Mine	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
RMB (M)	SGX	33.77	31.27	31.58	20.12	14.05	17.03	16.5	18.02	16.12	15.44	17.13	20.44	19.87	19.61	16.29	15.82	17.24	13.4	11.79	6.01	**371.50**
	HZG	9.06	7.09	5.48	6.76	5.95	4.61	4.65	3.08	1.32	0.4											**48.40**
	HPG	7.34	7.29	7.38	7.4	7.52	7.76	7.32	5.5	3.29												**60.80**
	TLP	9.04	9.21	9.04	9.12	8.9	9.03	9.14	9.02	8.78	8.67	7.25	7.15	7.27	7	6.73	5.64	4.1	3.03	2.28	0.55	**140.95**
	LM East	7.23	7.97	5.69	4.34	3.79	4.77	4.51	2.55	2.26	1.48	1.21		0.36								**46.16**
	LM West	11.54	12.12	12.18	12.04	10.84	10.44	13.69	12.51	9.68	9.63	9.59	9.17	9.23	8.69	7.89	7.85	7.71	7.16	7.34		**189.30**
	Total Mining	**77.98**	**74.95**	**71.35**	**59.78**	**51.05**	**53.64**	**55.81**	**50.68**	**41.45**	**35.62**	**35.18**	**36.76**	**36.73**	**35.3**	**30.91**	**29.31**	**29.05**	**23.59**	**21.41**	**6.56**	**857.11**
US$ (M)	SGX	4.89	4.53	4.58	2.92	2.04	2.47	2.39	2.61	2.34	2.24	2.48	2.96	2.88	2.84	2.36	2.29	2.50	1.94	1.71	0.87	**53.84**
	HZG	1.31	1.03	0.79	0.98	0.86	0.67	0.67	0.45	0.19	0.06											**7.01**
	HPG	1.06	1.06	1.07	1.07	1.09	1.12	1.06	0.80	0.48												**8.81**
	TLP	1.31	1.33	1.31	1.32	1.29	1.31	1.32	1.31	1.27	1.26	1.05	1.04	1.05	1.01	0.98	0.82	0.59	0.44	0.33	0.08	**20.43**
	LM East	1.05	1.16	0.82	0.63	0.55	0.69	0.65	0.37	0.33	0.21	0.18		0.05								**6.69**
	LM West	1.67	1.76	1.77	1.74	1.57	1.51	1.98	1.81	1.40	1.40	1.39	1.33	1.34	1.26	1.14	1.14	1.12	1.04	1.06		**27.43**
	Total Mining	**11.30**	**10.86**	**10.34**	**8.66**	**7.40**	**7.77**	**8.09**	**7.34**	**6.01**	**5.16**	**5.10**	**5.33**	**5.32**	**5.12**	**4.48**	**4.25**	**4.21**	**3.42**	**3.10**	**0.95**	**124.22**
	Drilling Program	2.02	2.03	1.93	1.75	1.54	3.59	1.23	1.09	1.01	0.97	0.74	0.62	0.62	0.59	0.63	0.52	0.48	0.41	0.25	0.13	**22.18**
	Surface Facilities	1.02	0.87	0.43	0.58	0.58	0.58	0.43	0.58	0.73	0.43	0.43	0.43	0.43	0.43	0.51	0.29	0.29	0.29	0.14	0.08	**9.58**
	Total	**14.33**	**13.76**	**12.71**	**11.00**	**9.53**	**11.95**	**9.76**	**9.02**	**7.74**	**6.57**	**6.28**	**6.38**	**6.38**	**6.14**	**5.62**	**5.06**	**4.98**	**4.13**	**3.50**	**1.16**	**155.98**

Table 1.5 includes all development costs, exploration drilling costs, and major equipment costs related to surface facilities.

Operating costs are summarized by mine in Table 1.6. AMC considers these costs to be reasonable for the methods and technology used and the scale of the operations.

Table 1.6 Operating cost summary, Ying property (2016 $US)

Cost Item (US$/t ore)	SGX	HZG	HPG	TLP	LME	LMW
Mining cost	48.27	50.97	41.84	46.26	43.60	58.74
Hauling cost	3.87	4.68	3.98	3.10	3.10	3.18
Milling cost	8.90	8.90	8.90	8.90	8.90	8.90
G&A and other cost	8.76	8.76	8.76	8.76	8.76	8.76
Totals	69.80	73.32	63.48	67.03	64.36	79.54

Note: 1 US$ = 6.9 RMB

The principal components of the milling costs are utilities (power and water), consumables (grinding steel and reagents) and labour, each approximately one-third of the total cost. “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 Silvercorp is a producing issuer and, therefore, does not require an economic analysis for the purposes of this report, AMC believes it is reasonable to include a summary-level analysis to illustrate the potential economic impact relative to the latest Mineral Reserve estimations and to the associated production schedules.

The Ying District is largely a mature operation. A 20-year LOM is envisaged for the resource as currently understood, with average silver equivalent grades projected to be greater than or close to 400 g/t for the first 13 years and then to fall steadily through to the end of mine life. Operating costs and capital costs are anticipated to be reasonable. For the summary economic analysis, AMC has used the same metal prices as in the Mineral Resource and Mineral Reserve estimation, namely:

- Gold US$1,250/oz
- Silver US$19/oz
- Lead US$0.90/lb
- Zinc US$1.00/lb

An exchange rate of 1US$ = 6.9RMB has been used for the economic analysis.

Based on the LOM production forecast and the metal price and other assumptions shown above, a base case pre-tax NPV at 8% discount rate of $714M is projected ($535M post-tax). Over the LOM, 63.1% of the net revenue is projected to come from silver, 31.4% from lead and 5.5% from zinc.

A simple economic sensitivity exercise, assuming a 20% adverse change in individual metal prices, operating cost or capital cost, has indicated that most sensitivity is seen in silver price. The NPV is moderately sensitive to lead price and operating cost, and only slightly sensitive to zinc price and capital cost.

AMC observation on current Mineral Resource / Reserve estimation process

As noted above, the June 2016 Mineral Resources were estimated using a 3D block modelling approach. Because of the large number of veins (194) for which estimates were prepared, this was an extremely time-consuming process, particularly for the Resource modelling. The time taken from commencement of the project to completion of the report was seven months. In AMC’s opinion, this is too long a timeframe, and merits a close examination of how Ying Mineral Resource / Reserve estimates are prepared for the purpose of public (NI 43-101) reporting.

Silvercorp has, for the last two years, been employing its own version of block modelling on the mines for the purpose of preparing internal Mineral Resource / Reserve estimates and for short term mine planning. AMC has not reviewed this process in detail, but recommends that Silvercorp and AMC work together to assess whether an alternative modelling approach for external reporting might reduce the time required to more reasonable levels.

Recommendations

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

1. Review the Mineral Resource modelling approach prior to the next NI 43-101 Technical Report, with a specific focus on the respective merits of the AMC block modelling approach and the Silvercorp on-site block modelling approach. The aim should be to appropriately balance the complexity, work and time involved with the estimation accuracy required to (a) correctly report results in the public domain, and (b) provide a sound basis for operational planning and scheduling on a short to long term basis.
2. Depending on the results of Recommendation 1, consider having Silvercorp take Qualified Person responsibility for the next NI 43-101 Technical Report[3], subject to the Mineral Resource and Mineral Reserve estimates being audited by a recognized consultant.
3. For the next NI 43-101 Technical Report, review each section of the current report with a view to reducing the level of detail to that described in Form 43-101F1, bearing mind that "*The objective of the technical report is to provide a summary of material scientific and technical information concerning mineral exploration, development, and production activities ….*" (Instruction (1) in Form 43-101F1).
4. Continue with current efforts to fully integrate the Resource estimation, Reserve estimation and mine planning processes.
5. Maintain particular focus on consistent provision of the skilled resources that will be necessary to achieve targeted production over the LOM.
6. Continue recent and current focus on dilution and grade control via the Mining Quality Control Department.
7. Maintain the highly focused development approach that will be necessary throughout the Ying operation for LOM development targets to be achieved.
8. Continue with a focus on safety improvement, including implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.
9. Consider the application of more bulk-mining methods, such as long-hole benching, where applicable, while recognizing that significant technological change would certainly be required.
10. Place a strong focus on stockpiling and record keeping procedures, and ensure that the summation of individual ore car weights by stope and zone is, as far as practicable, fully integrated into the tracking and reconciliation process.
11. Undertake periodic mill audits aimed at ensuring optimum process control and mill performance.
12. Continue exploration tunnelling and diamond drilling at the Ying Property. The exploration tunnelling is used to upgrade the drill-defined Resources to the Measured category, and the diamond drilling is used to expand and upgrade the previous drill-defined Resources, explore for new mineralized zones within the unexplored portions of vein structures, and test for the down-dip and along-strike extensions of the vein structures. The proposed exploration work is as follows:

SGX

Exploration Tunnelling:

25,000 m exploration tunnelling on vein structures S1, S2, S2W, S4, S6, S6E1, S7, S7-1, S7-2, S7E2, S7W, S8, S8E, S10, S14, S14-1, S14-2, S16E, S19, S21, S21W, and S22 between levels 110 m and 710 m.

Diamond Drilling:

30,000 m underground diamond drilling on vein structures S2, S2W2, S7, S7-1, S8, S10, S11, S12, S16W, S18, S19, S21 and S29.

[3] Since Silvercorp is a "producing issuer" in terms of NI 43-101, it is not necessary for its Technical Reports to be prepared by Independent Qualified Persons unless one of several triggers described in Section 5.3 of NI 43-101 applies.

HZG

Exploration Tunnelling:

5,000 m exploration tunnelling on vein structures HZ20, HZ20E, HZ22, HZ23, and HZ5 and H22 between levels 450 m and 810 m.

Exploration Drilling:

5,000 m underground exploration drilling on vein structures HZ5, HZ22 and HZ22E.

HPG

Exploration Tunnelling:

5,000 m exploration tunnelling on major vein structures H4, H5, H13, H14, H15, H16, H16E and H17 between levels 100 m and 700 m.

Underground Drilling:

9,000 m underground diamond drilling on vein structures H5, H5W, H16 and H17 as well as their subzones.

LMW

Exploration Tunnelling:

6,500 m on vein structures LM7, LM8, LM10, LM11, LM12, LM13, LM16, LM17 and LM19 as well as their parallel subzones between levels 500 m and 900 m. LM2, LM3, LM5 and LM6 between levels 500 m and 750 m at LME, and LM7, LM8, LM10, LM11, LM12, LM13, LM14, LM16, LM19, and LM20 between levels 650 m and 900 m at LMW.

Diamond Drilling:

5,000 m underground drilling on LMW6, LM17, LM19 and W6 and their parallel vein structures.

LME

Exploration Tunnelling:

4,000 m on vein structures LM2, LM2-1, LM4, LM4W2, LM5, LM5E, LM5W, LM5W2, LM6, LM6W, LM6E and LM6E2 between levels 450 m and 790 m.

Diamond Drilling:

6,000 m underground diamond drilling on vein groups LM4, LM5, LM6 and LM21.

TLP

Exploration Tunnelling:

7,500 m exploration tunnelling on vein structures T1 vein group, T2, T3E, T4, T5 vein group, T11 vein group, T14, T14branch, T15 vein group, T16 vein group, T17 vein group, T21 vein group, T22 vein group, T23, T27, T28E, T33 vein group, and T35 vein group between levels 500 m and 790 m.

Diamond Drilling:

12,000 m underground drilling on vein structures T11, T14, T16, T21 and T35E.

The estimated cost for all of the above exploration work is:

- Tunnelling: RMB 63,600,000 (US$9.2M)
- Drilling: RMB 20,100,000 (US$2.9M)

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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 (/HZG), HPG, TLP, LME and LMW underground mines. AMC had previously prepared Technical Reports on the Ying property in 2012 (filed 15 June 2012, effective date 1 May 2012), and in 2013 (minor update to 2012 report, filed 30 April 2013, effective date 1 May 2012).

P R Stephenson, H A Smith and A A Ross visited the Ying property in July 2016. All authors of this report qualify as independent Qualified Persons.

Silvercorp, through wholly owned subsidiaries, has effective interests of 77.5% in the SGX / HZG 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 southwest 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 project areas have good road access and operate year round. The area has a continental sub-tropical climate with four distinct seasons.

Silver-lead-zinc mineralization in the Ying district has been known and intermittently mined for several hundred years. Silvercorp acquired an interest in the SGX project in 2004, the HPG project in 2006, and the TLP / LM projects in late 2007. Annual production has ramped up substantially in recent years, reaching 590,000 735,000 tonnes of ore in fiscal year 2016 (end 31 March 2016).

The current Technical Report is an update to the Mineral Resource and Mineral Reserve estimates, incorporating new drilling and underground channel sample results and updated depletion due to mining. The Mineral Resource and Mineral Reserve are reported with an effective date of the 30 June 2016. Table 2.1 lists the persons who prepared or contributed to this report.

P R Stephenson, H A Smith and A A Ross visited the Ying property in July 2016, in addition to earlier visits by AMC in February 2012 and September 2013. 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.

Unless otherwise stated:

- All currency amounts and commodity prices are in US dollars.
- Quantities are in metric (SI) units.
- Years are Silvercorp fiscal years (1 April to 31 March).
- Tonnes are dry tonnes.

This report includes the tabulation of numerical data which involves a degree of rounding for the purpose of Mineral Resource and Mineral Reserve reporting. AMC does not consider any rounding of the numerical data to be material to the project.

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	Director, Principal Geologist	AMC Mining Consultants (Canada) Ltd	Yes	13-16 July 2016	PGeo (BC), PGeo (Sask), BSc (Hons), FAusIMM (CP), MCIM	1-12, 20, 23, 24, 27 and parts of 1, 25 and 26.
Mr H A Smith	General Manager, Principal Mining Engineer	AMC Mining Consultants (Canada) Ltd	Yes	13-16 July 2016	PEng (BC), PEng (Ontario), PEng (Alberta) MSc, BSc	15, 16,18, 21, 22 and parts of 1, 25 and 26
Dr A Ross	Principal Geologist	AMC Mining Consultants (Canada) Ltd	Yes	13-20 July 2016	PGeo (BC), PGeo (AB), PhD	14
Mr H Muller	Principal Metallurgical Consultant	AMC Mining Consultants (Canada) Ltd	Yes	none	MAusIMM CP	13, 17, 19, parts of 22,

Other experts who assisted the Qualified Persons					
Expert	**Position**	**Employer**	**Independent of Silvercorp?**	**Visited site**	**Sections of report**
Mr A Zhang, P.Geo	Vice-President, Exploration	Silvercorp Metals Inc.	No	Since February, 2015	General
Mr. Luke Liu	Vice President, China Operations	Silvercorp Metals Inc.	No	Since July, 2014	General
Mr R Jiang, P.Geo	Silvercorp consultant	Independent	No	Since January, 2012	General
Mr Z Li, P.Eng	Senior Mining Engineer	Silvercorp Metals Inc.	No	Since April, 2010	Parts of 15 to 21
Mr W Yang	Chief Environment Engineer, Ying Mines	Silvercorp Metals Inc.	No	Since March, 2010	20
Mr JM Shannon	Geology Manager, Principal Geologist	AMC Mining Consultants (Canada) Ltd	Yes	none	Overall compilation
Mr G Methven	Principal Mining Engineer	AMC Mining Consultants (Canada) Ltd	Yes	No	15, 16
Mr A. Riles	Principal Metallurgical Consultant	Riles Integrated Resource Management Ltd	Yes	3-6 September 2013	13, 17, 19, parts of 22,

AMC acknowledges the numerous contributions from Silvercorp in the preparation of this report, and is particularly appreciative of prompt and willing assistance of Mr R Jiang, Mr A Zhang and Mr. L. Liu.

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 this report was provided to Silvercorp for checking for factual accuracy.

This report is dated 15 February 2017 and has an effective date of 31 December 2016.

3 Reliance on other experts

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

- Expert: Audrey Chen, Partner, Jun He Law Offices, Beijing, as advised in a letter of 29 July 2016 to Mr Lorne Waldman, Senior Vice President, Silvercorp Metals Inc.
- 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 Persons.
- Portion of Technical Report to which disclaimer applies: Section 4.

The Qualified Persons have relied, in respect of environmental aspects, upon the work of the issuer's expert listed below. To the extent permitted under NI 43-101, the Qualified Persons disclaim responsibility for the relevant section of the Report.

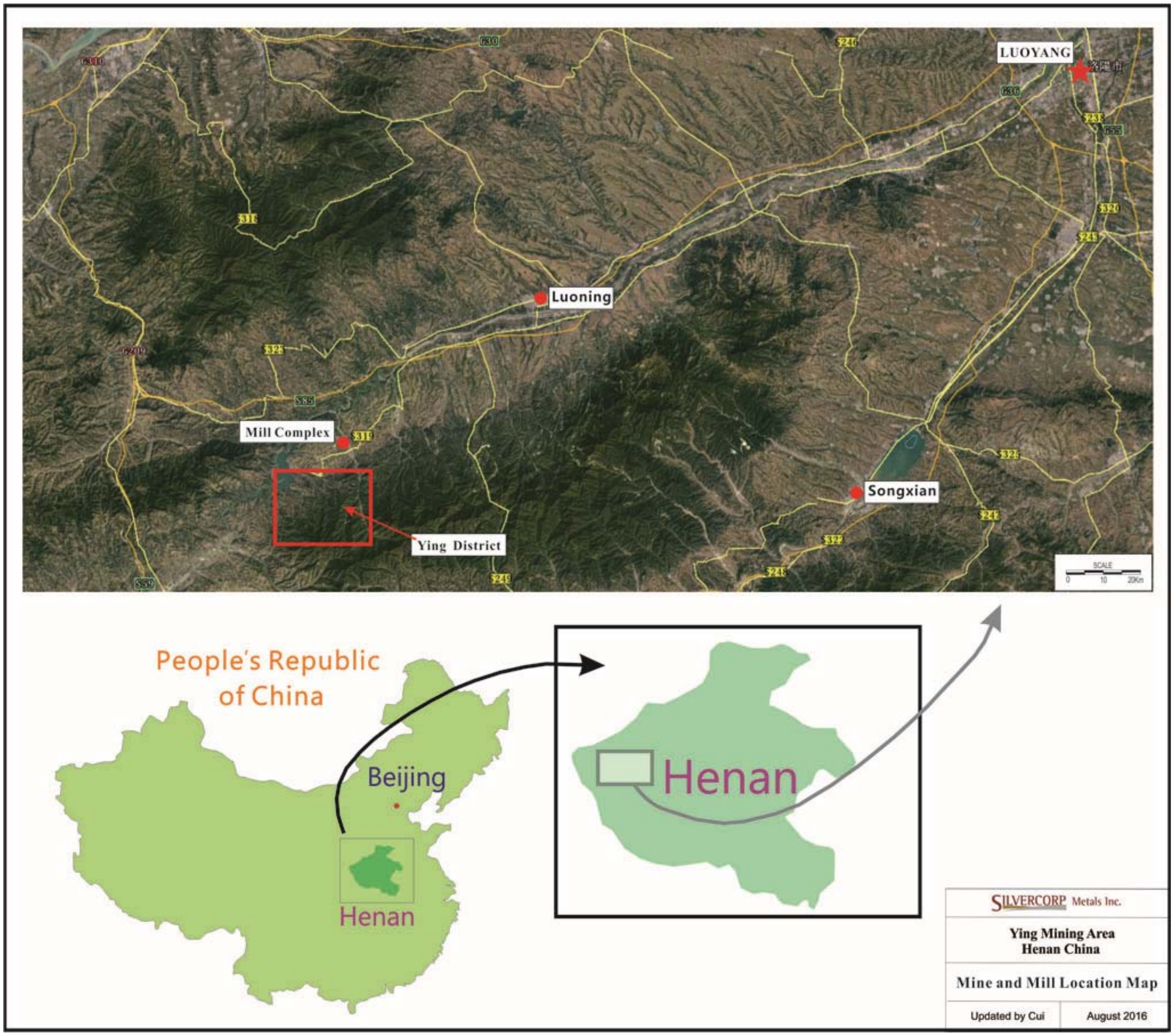
- The following disclosure is made in respect to information provided by Silvercorp personnel led by Wang Yang, Chief Environment Engineer of the Safety and Environment Protection Department of Ying Mines.
- Report, opinion or statement relied upon: information on environmental studies, permitting, social and community impact, site monitoring remediation and reclamation, and closure plan.
- Extent of reliance: full reliance following a review by the Qualified Persons.
- Portion of Technical Report to which disclaimer applies: Section 20.

4 Property description and location

4.1 Property location

The Ying Property is situated in central China in western Henan Province near the town of Luoning (Figure 4.1). The term "Ying District" is used 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 centres of operation, within which six mining projects are located.

Figure 4.1 Location of Ying Property



4.2 Ownership

Silvercorp, through its wholly owned subsidiary Victor Mining Ltd, is party to a cooperative joint venture agreement dated 12 April 2004 under which it earned a 77.5% interest in Henan Found Mining Co. Ltd (Henan Found), the Chinese company holding (with other assets) the Ying silver, lead and zinc project (the Ying Project), and the silver and lead project in Tieluping (the TLP Project). In addition, Silvercorp, through its wholly owned subsidiary Victor Resources Ltd, is party to a cooperative agreement dated 31 March 2006 under which it initially obtained a

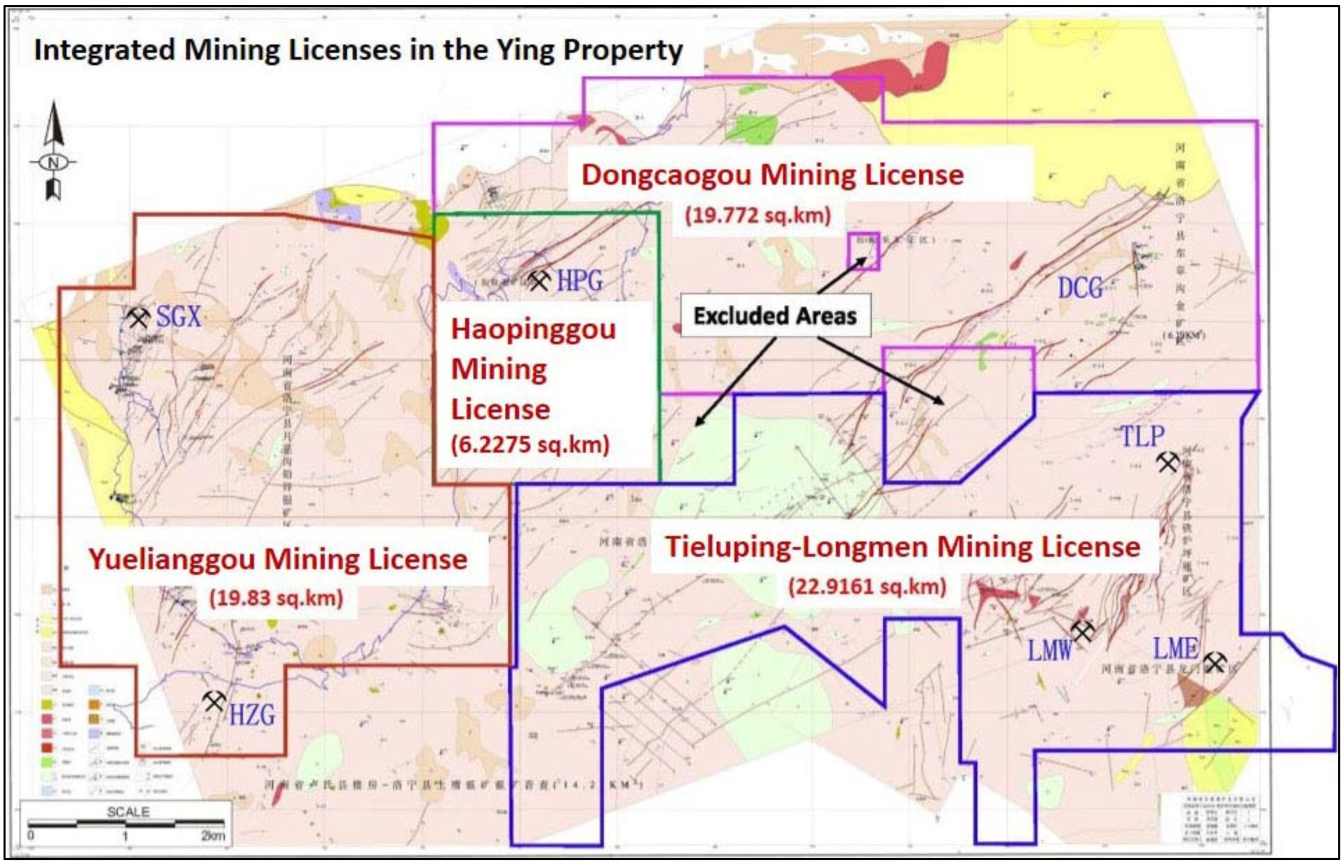
60% interest in Henan Huawei Mining Co. Ltd (Henan Huawei), the Chinese company holding the project in Houpinggou (the HPG Project) and the project in Longmeng (the LM Project). Since that time the Silvercorp's interest in Henan Huawei has increased to 80%.

4.3 Mining licenses

The information supporting Figure 4.2 and Table 4.1 is contained in a letter provided to Silvercorp by Jun He Law Offices in Beijing and referenced in Section 3.

As a nation-wide measure to improve the administrative management of exploration and mining activities in China, the central government and provincial governments have, since 2012, taken actions to consolidate the various small and irregularly-distributed exploration mining permits in major mining areas into large and continuous exploration and mining licenses (See Sections 4.3 and 4.4 of the Ying NI 43-101 technical report dated December 31, 2013). Being a designated sole consolidator to integrate the mining and exploration permits in Ying District, Henan Found submitted a proposal to integrate its four mining permits (except for the Yueliangou mining permit / license) and four exploration permits into three mining licenses, i.e. Haopinggou (HPG), Dongcaogou (DCG) and Tieluping-Longmen mining licenses, in late 2012. As of 7 June 2016, all the three mining licenses had been granted to Henan Found by the Department of Land and Resources of Henan Provincial Government. The Ying property is now covered by four major contiguous mining licenses as shown in Figure 4.2.

Figure 4.2 Location of the approved mining licenses in the Ying Property



The main mines in the Ying property are located as follows:

- The Shagouxi (SGX) and Houzhanggou (HZG) lead-zinc-silver mines are within the Yueliangou Mining License in the western part of the block;

- The HPG lead-zinc-silver-gold mine is within the Haopinggou Mining License in the central western part of the block; and
- The TLP, LME and LMW lead-silver mines are within the Tieluping-Longmen Mining License in the eastern part of the block.

There is currently no producing operation in the Doncaogau Mining License.

The total area of the four mining licenses is 68.74 sq km. Table 4.1 lists their names, license numbers, areas and expiry dates.

Table 4.1 Mining licenses

Area and licence name	Mines	Mining licence #	Sq km	ML Expiry Date
Yuelianggou Lead-zinc-silver Mine	SGX and HZG	C4100002009093210038549	19.83	Sept 2024
Haopinggou Lead-zinc-silver-gold Mine	HPG	C4100002016043210141863	6.2257	29 Apr 2018
Tieluping-Longmen Silver-lead Mine	TLP, LME and LMW	C4100002016064210142239	22.916	7 June 2018
Dongcaogou Gold-silver Mine	none	C4100002015064210138848	19.772	15 June 2025
Total			**68.74**	

In addition, mining is only permitted between prescribed elevations as follows:

- Yuelianggou Mining License – 1060 m and 0 elevations
- Haopinggou Mining License - 955 m and the 365 m elevations
- Tieluping-Longmen Mining License - 1,250 m and the 700 m elevations
- Doncaogau Mining License - 1,087 m and the 605 m elevations

Henan Found will initiate applications to the relevant government departments so that exploration permits are reissued beneath the lower boundary of the mining permit areas in accordance with the “Mineral Resources Law of the People’s Republic of China” and the integration policy of mineral resource development issued by the Ministry of Land and Resources of China and the Henan Provincial Government. This will enable exploration to continue at depth.

4.4 Exploration and mining rights and taxes

The existing mining licenses cover all the active exploration and mining areas discussed in this Technical Report. Mining licenses are subject to mining-right usage fees (a fixed annual charge), mineral resource compensation fees, and applicable mineral resource taxes. The renewal of mining licenses and extending mining depth and boundaries occur in the ordinary course of business as long as mineral resources exist, are defined, the required documentation is submitted, and the applicable government resources taxes and fees are paid. The mining licenses 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 have been issued by the Department of Safety, Production and Inspection of Henan Province. Environmental certificates have been issued by the Department of Environmental Protection of Henan Province.

Surface rights for mining purposes are not included in the licenses, but Silvercorp has acquired surface rights for mining and milling activities by effecting 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.

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 VAT paid on materials purchased for mining is returned to Silvercorp as an incentive to mine in China. There is no VAT on labour. In addition, Silvercorp also pays a VAT surtax which amounts to approximately 1.6% of sales.

Before July 1, 2016, a 2-4% of sales as resources compensation fee and RMB13 (approximately $1.92) per milled tone resource tax are payable by companies to the government. Income tax rate is 25%. Effectively July 1, 2016, the resources compensation fee is revised to be zero, while the resource tax will be levied based on certain percentage of sales. Silvercorp estimates that the resource tax applicable to Silvercorp would be approximately 2- 6% of sales. Income tax rate remains unchanged.

There are no known or recognized environmental issues 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). There are no significant factors and risks that may affect access, title, or the right or ability to perform work on the property known at this time.

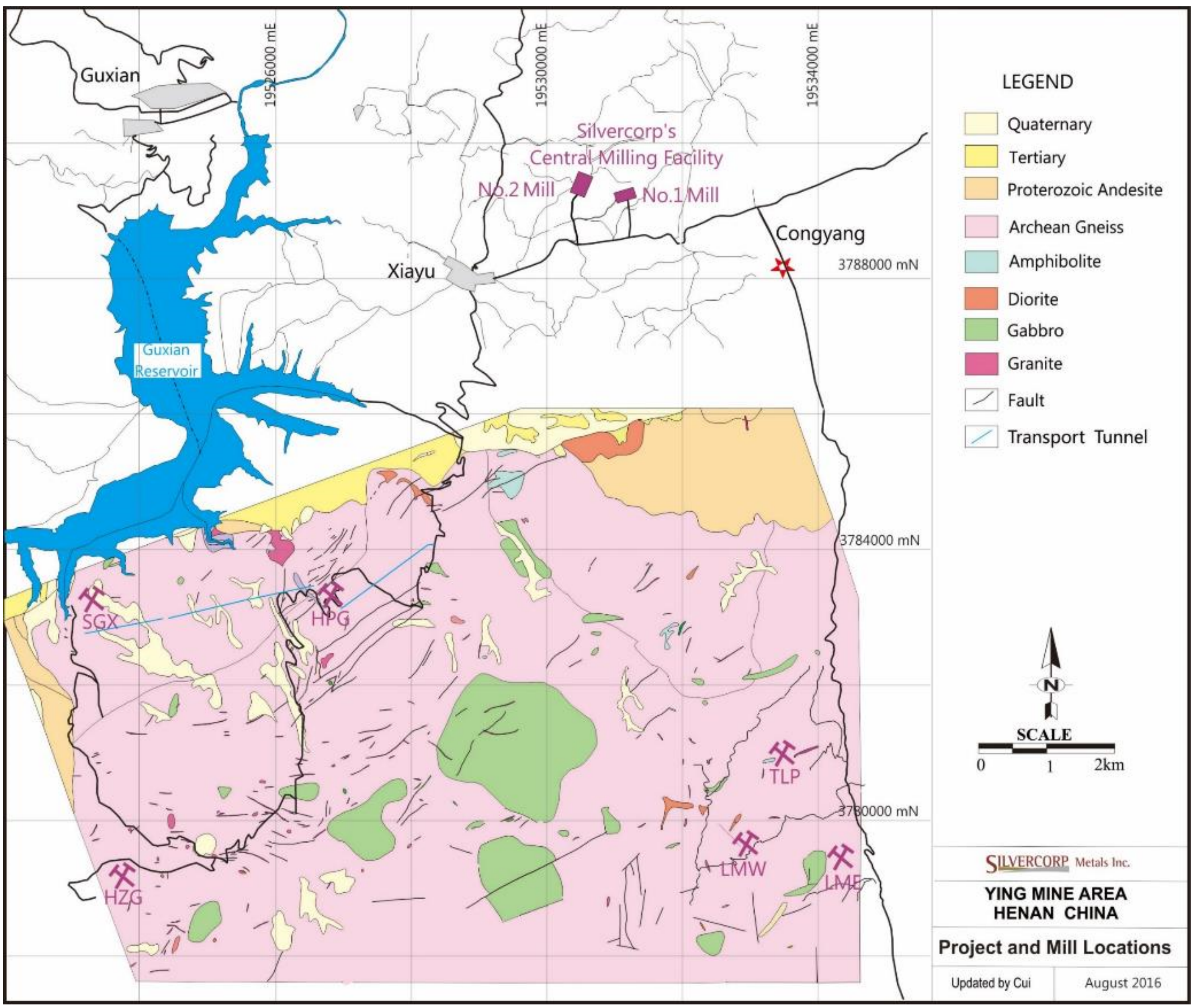
5 Accessibility, climate, local resources, infrastructure and physiography

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 southwest of Luoyang (population 1.4 million), which is the nearest major city (Figure 5.1). 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.

Figure 5.1 Mine and mill locations in the Ying Property



Note in Figure 5.1 the area with the geology drape roughly corresponds to the outline of the mining licences. To date, ore from the SGX and HZG mines has been transported by ferry across the Guxian Reservoir to the mills. Silvercorp is currently driving a haulage tunnel to connect the SGX and HPG mines to increase haulage efficiency and ensure an environment-friendly operation. 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.

6 History

6.1 Introduction

Silver-lead-zinc mineralization in the Ying district has been known and intermittently mined for 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 previous NI 43-101 Technical Reports (see Section 27 – References). The most recent was prepared by AMC dated 29 July 2014 with an effective date of 31 December 2013.

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

6.2 Ownership

See Section 4.2 for ownership description.

6.3 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.

6.4 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 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 per annum (tpa) of ore 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 tonnes per day (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 was 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.

6.5 Historical Resource and Reserve estimates

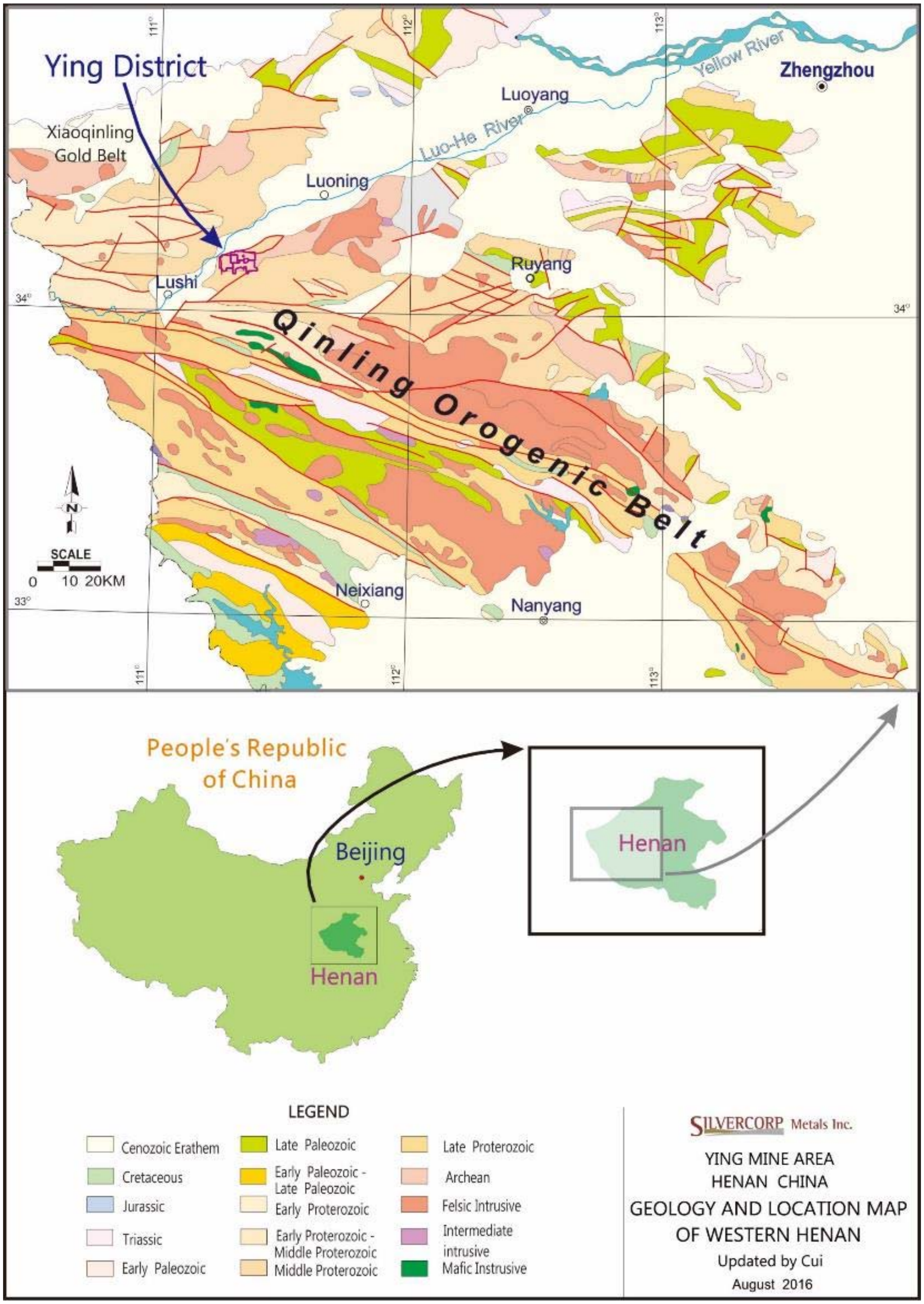
Silvercorp acquired its interests in the Ying Property between 2004 and 2007. Any Mineral Resource or Mineral Reserve estimates that pre-date Silvercorp's involvement are not considered by the Qualified Persons to be material.

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 and most parts of North China, while the southern plate, the Yangtze Plate, covers most part of South China. Rocks along the orogenic belt between the two major tectonic plates 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:

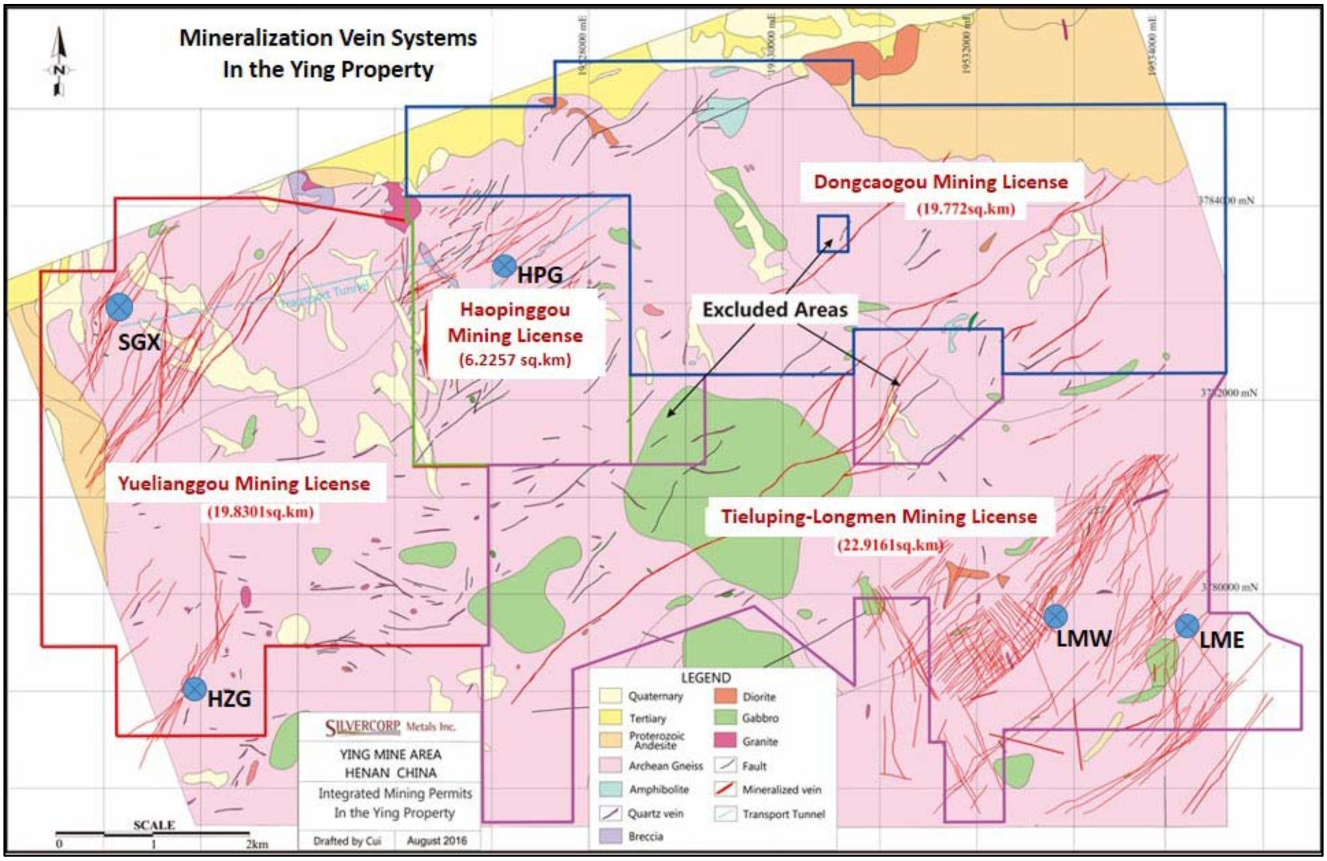
1. Heigou-Luan-Weimosi deep-seated fault zone
2. Waxuezi-Qiaoduan fault zone
3. Zhuyangguan-Xiaguan fault zone

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 30º to 60º 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 northeast 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 mining licenses 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 Archean gneiss and greenstone. To date, significant mineralization has been defined or developed in at least 224 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 metres 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 centimetres up to a few metres. “Swells” formed in structural dilatant zones along the veins often forming mineralized “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 (USA) 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 43 veins which occur in eight major and two minor vein systems. Veins in the five largest vein systems (S7, S2, S7-1, S8 and S19, listed in terms of presently defined Mineral Resources) account for about 40% of this mineralization (Figure 7.3, Figure 7.4, Table 7.1).

The SGX veins have been extensively mapped and sampled at various levels in the underground workings and by drilling. Results show that approximately 30% of the material filling the veins is strongly mineralized with massive, semi-massive, veinlet and disseminated galena and sphalerite over narrow widths ranging from 0.3 m to 5 m or more with a weighted average true width of 0.6 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.

A detailed study on assay results of drillcore and tunnelling samples from major vein structures in 2012 revealed the existence of wide alteration and mineralization zones with lower but economic grades of silver adjacent to some high grade silver-lead-zinc vein structures, such as S7-1, S16W, S16E, S6, and S2. These lower-grade zones have mostly been neglected in previous sampling programs because of a lack of visible sulphides. An improved understanding of the geology, alteration, and mineralization of major vein structures has indicated that contacts between mineralization and wall rocks can no longer based solely on visual geological mapping, but also requires consideration of sampling results because of the silver content in adjoining alteration zones. As a result, average widths of defined mineralized zones have been substantially increased.

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 is recovered from the SGX veins.

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

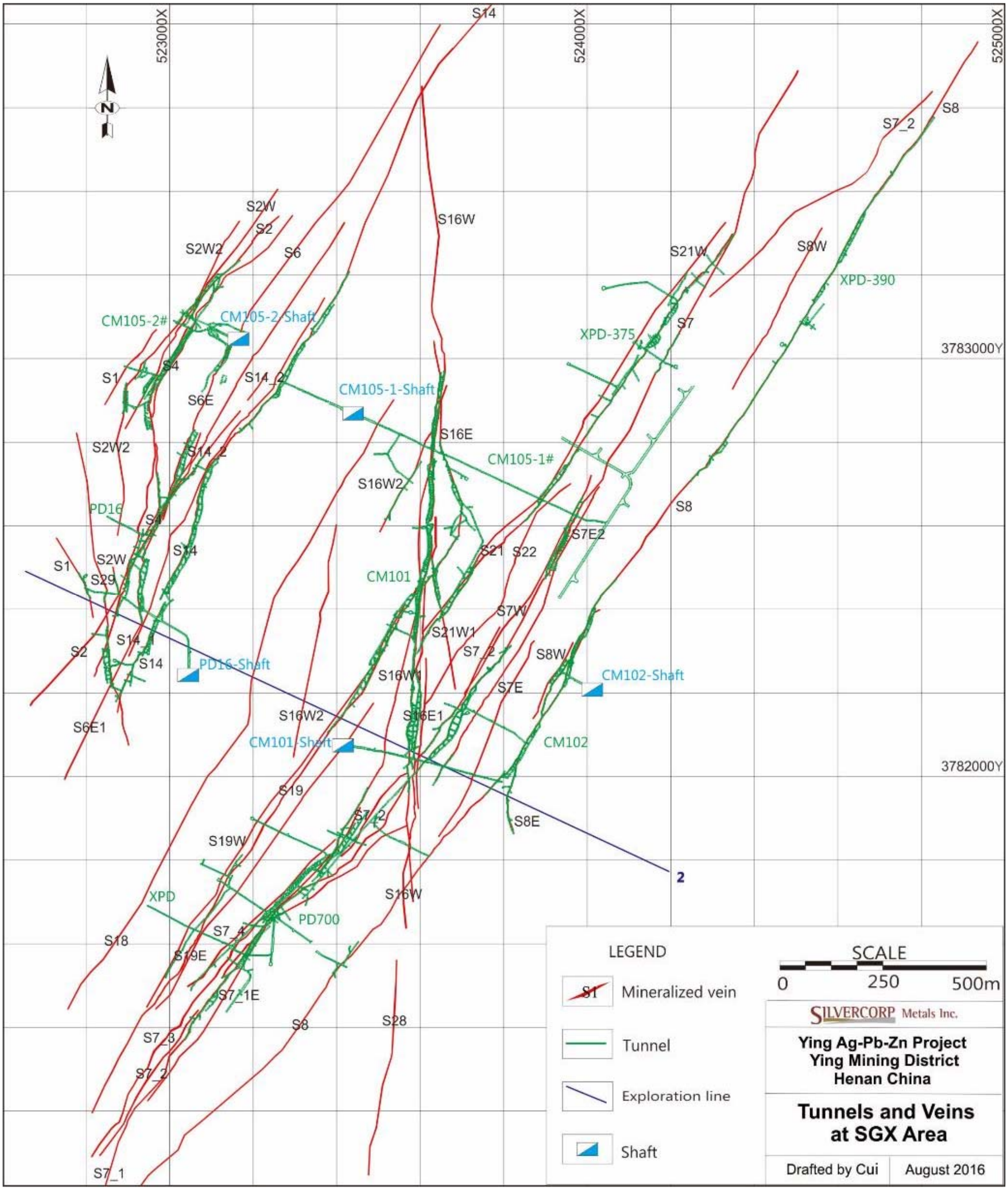


Figure 7.4 Cross section on Line 2, SGX

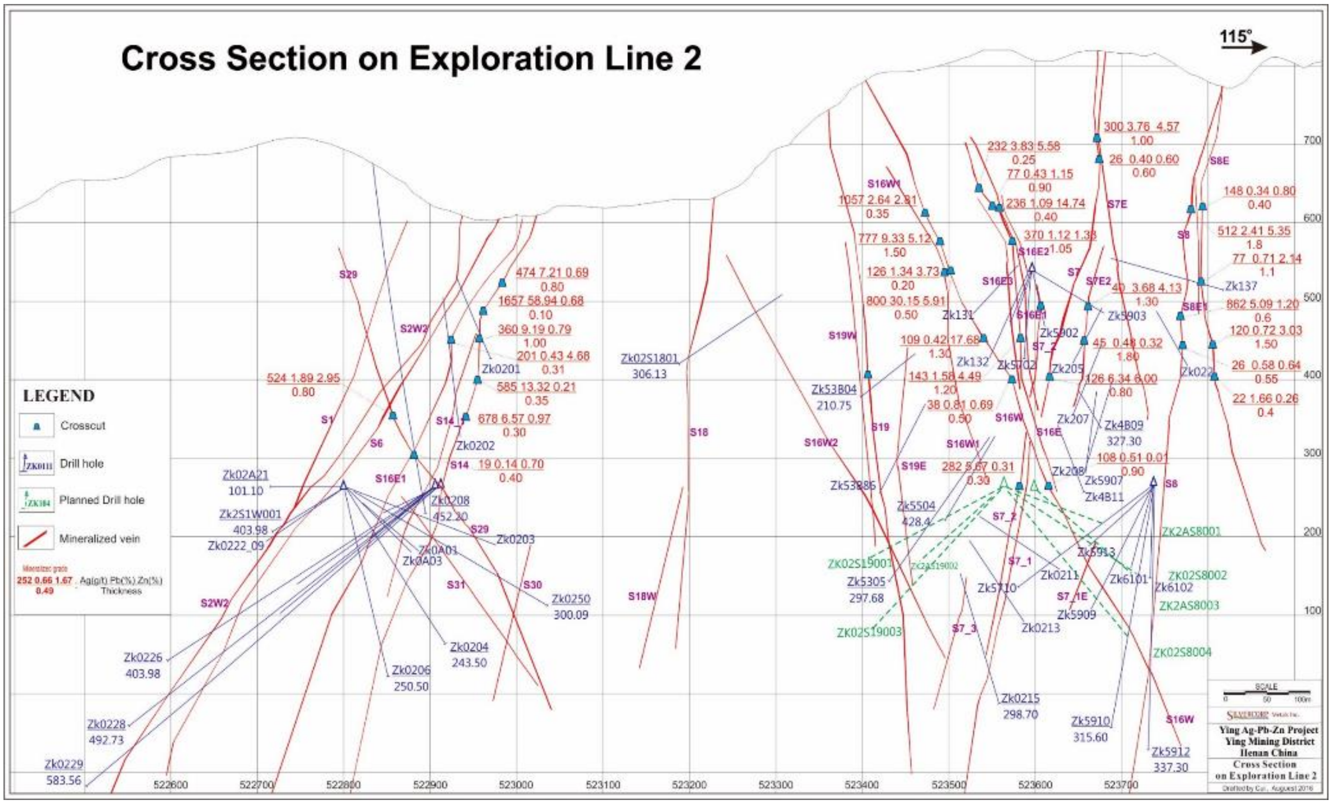


Table 7.1 presents a summary of the characteristics of the major mineralized veins in the SGX area.

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)	Dip direction	Dip angle	Average true thickness / range (m)
S2	1100	806	660-(-140)	265-315°	75-88°	0.51 (0.30-2.07)
S2W	400	192	517-360	310°	80°	0.33 (0.30-0.91)
S4	700	602	516-(-50)	300-320°	55-85°	0.40 (0.30-0.84)
S6	1160	745	600-(-100)	280-305°	65-75°	0.37 (0.30-1.07)
S7	3000	1032	998-(-30)	112-118°	85°	0.62 (0.30-2.37)
S7-1	2337	859	745-(-88)	290-310°	67-85°	0.58 (0.30-5.06)
S8	3330	771	707-(-50)	295-305°	75-82°	0.54 (0.30-2.01)
S14	1300	758	625-(-100)	285-305°	73°	0.44 (0.30-0.96)
S16E	1200	699	661-(-20)	80-115°	70-83°	0.38 (0.30-0.97)
S16W	1890	869	738-(-50)	85-110°	62-68°	0.69 (0.30-1.44)
S19	1800	621	700-100	90-312°	70-90°	1.25 (0.38-6.99)
S21	1300	642	770-150	295-310°	70-80°	0.46 (0.30-1.01)
S21W	1000	402	646-250	130-140°	80°	0.66 (0.30-1.53)
S21W1	200	207	600-400	110-120°	70-80°	0.52 (0.30-0.75)

7.3.2 HZG area

The HZG mine area, south of the SGX area, has 12 Ag-Pb-Zn 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 1.44 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 0.6% 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 centre 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 HZG 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, Table 7.2). To date, mineralization of significance has been defined in 11 veins, HZ5, HZ10, HZ12, HZ20, HZ20E, HZ20W, HZ22, H22E, HZ22W, HZ23 and HZ23-Branch, of the many dozens of veins identified in the HZG area. Two largest veins, HZ22 and HZ20, account for about 47% of the mineralization.

Figure 7.5 Tunnels and veins at HZG area

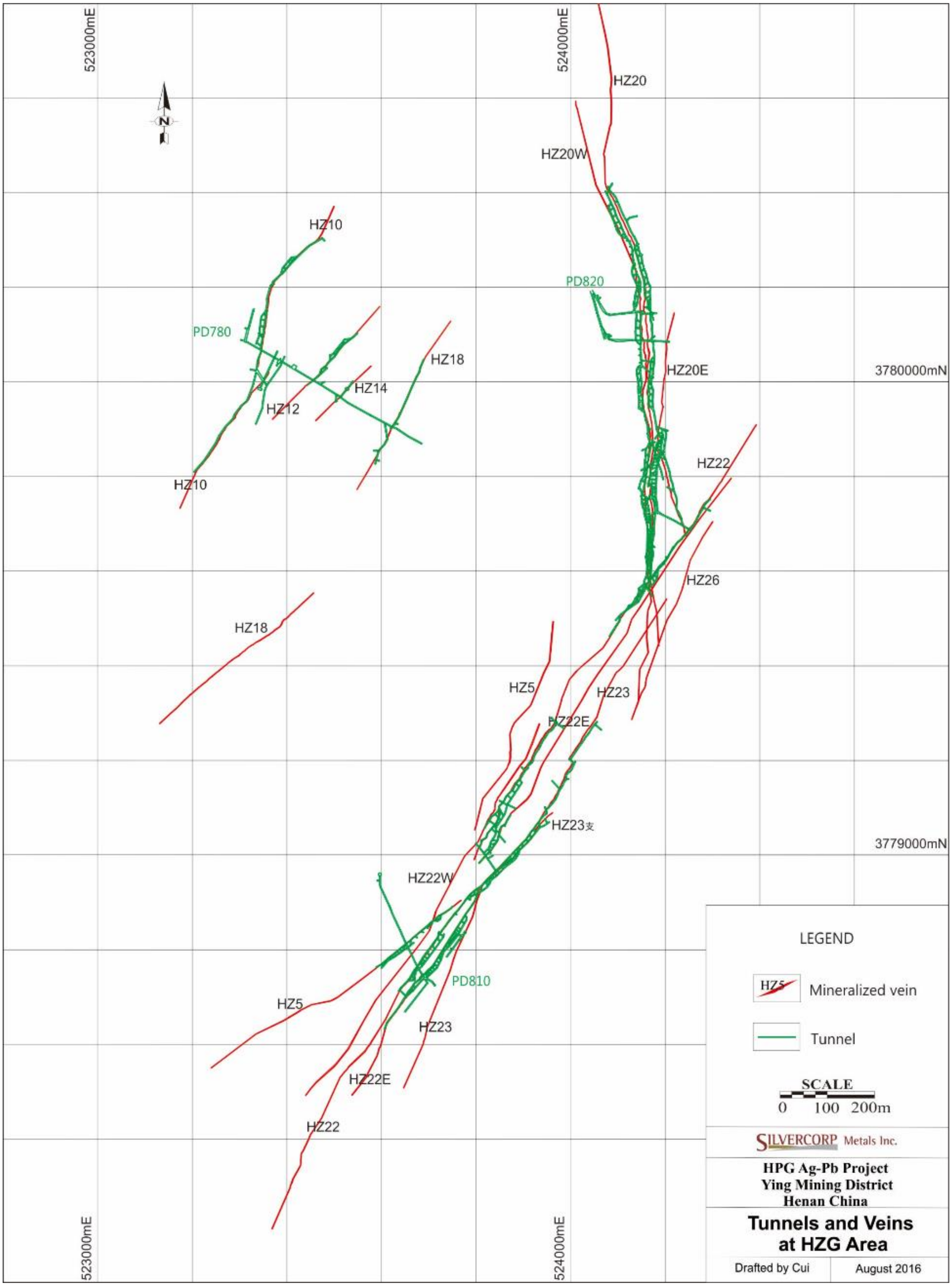


Table 7.2 presents a summary of dimensions and occurrences of major mineralized veins in the HZG area.

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)	Dips to	Dip angle	Average true thickness / range (m)
HZ5	400	128	804-680	120°	75°	0.39 (0.30-0.93)
HZ10	500	172	781-612	90-125°	80°	0.34 (0.30-0.49)
HZ12	260	96	755-664	108°	70°	0.33 (0.30-0.49)
HZ20	1800	577	916-361	100-110°	68-80°	0.48 (0.30-2.27)
HZ22	1800	384	898-550	100-120°	60-70°	0.59 (0.30-1.69)
HZ22E	500	278	800-539	120°	70°	0.32 (0.30-0.41)

7.3.3 HPG area

The HPG mine area is located in the central part of the district, immediately northeast of the SGX mine (Figure 7.6, Table 7.3). Mineralization is currently defined in at least 22 veins, with four major vein systems H17, H16, H15, and H15W containing about 64% of the Mineral 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 0.34 m to 1.73 m in width, averaging 0.63m.

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

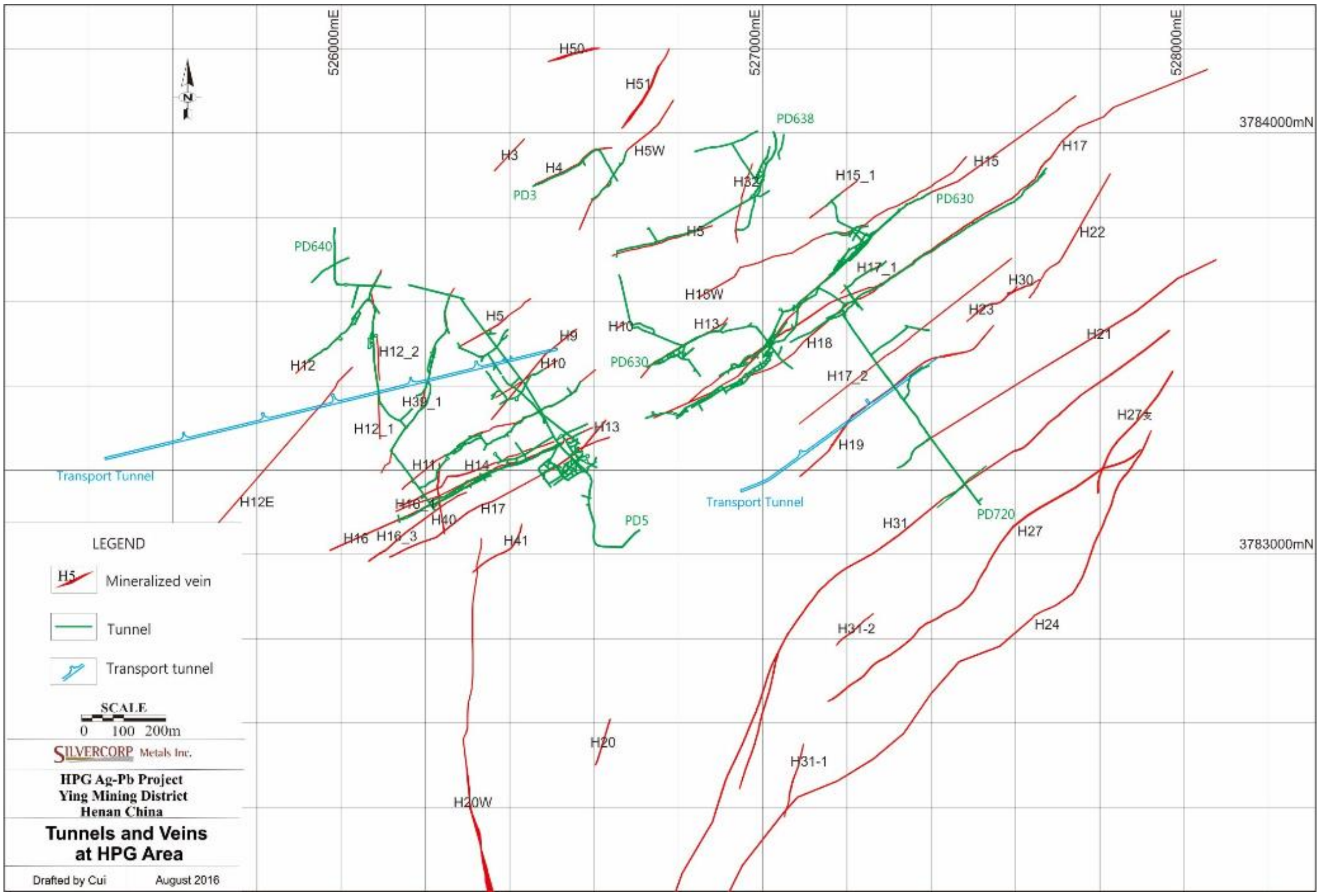


Table 7.3 summarizes features of major veins at the HPG mine.

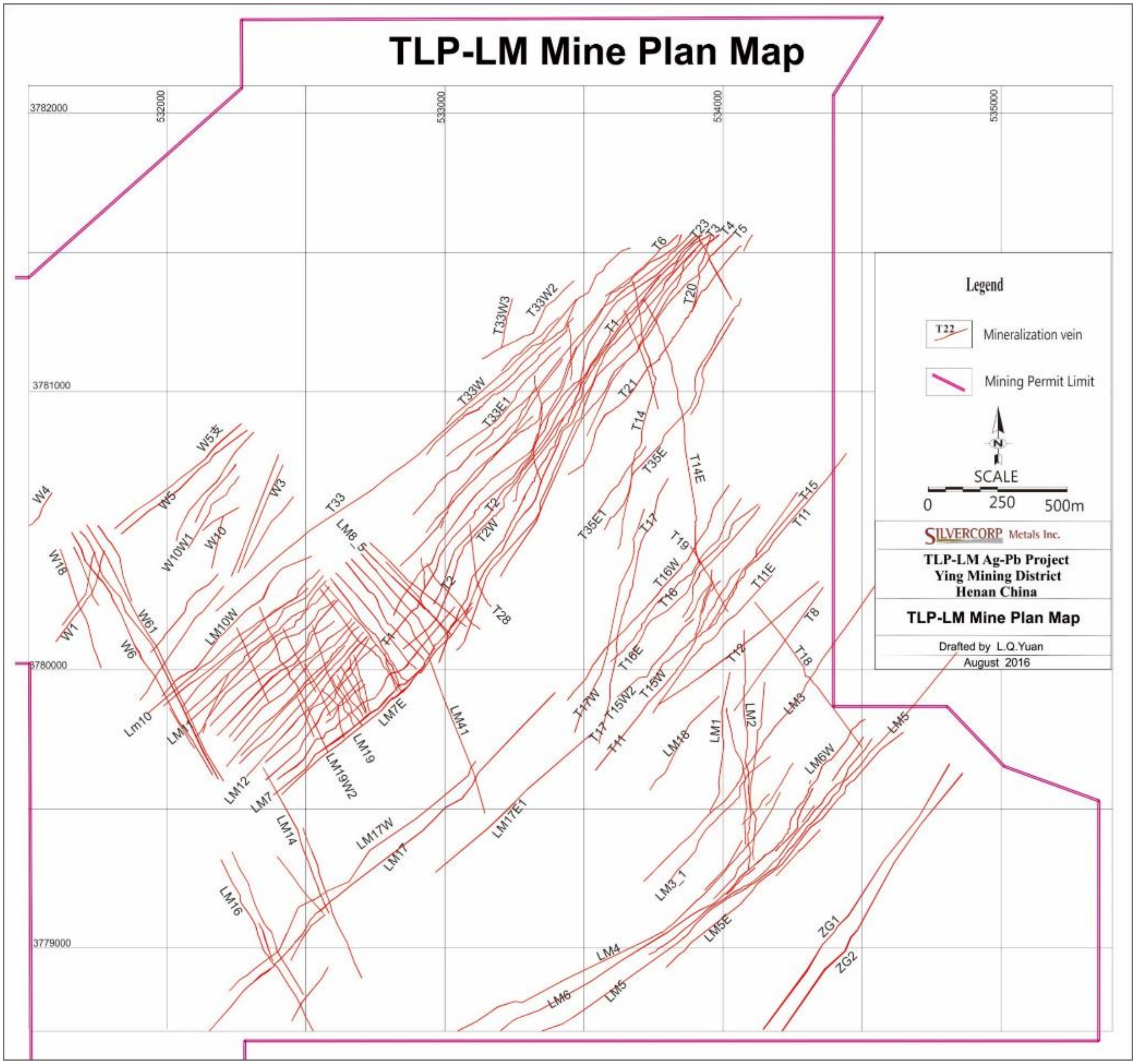
Table 7.3 Dimensions and occurrences of major mineralized veins in the HPG mine

Vein #	Length of vein (m)	Defined inclined depth (m)	Elevation of defined depth (m)	Dips to	Dip angle	Average true thickness / range (m)
H5	550	418	650-250	315-345°	65-80°	0.44 (0.30-0.90)
H11	500	359	670-350	315-330°	68-85°	0.44 (0.30-0.98)
H13	400	512	680-185	310-330°	65-85°	0.54 (0.30-0.89)
H15	1300	819	850-76	295-330°	60-82°	0.51 (0.30-1.81)
H15W	400	726	860-150	300-320°	70-85°	0.38 (0.30-0.58)
H16	600	511	780-280	320-335°	75-80°	0.92 (0.30-1.66)
H17	2000	855	780-(-50)	295-330°	65-87°	0.67 (0.30-2.72)
H18	350	528	780-275	305-330°	65-80°	0.58 (0.30-0.66)

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 54 known veins at TLP and 93 (19 at LME and 74 at LMW) at LM (Figure 7.7, Tables 7.4 to 7.6). The five largest veins at TLP, T3, T2, T1, T3E and T4, contain 45% of the mineralization defined to date, and three largest veins at LME, LM5, LM5E and LM6, constitute 59% of the mineralization defined to date in that mine.

Figure 7.7 Distribution of mineralized veins in the TLP-LM area



Extensive underground sampling at various levels along or across these veins indicates that a significant amount of the vein-filling material is strongly mineralized with massive, semi-massive and disseminated galena as well as minor amount of chalcopyrite and sphalerite over widths of 0.3 m to 10 m or more. Other metallic minerals present in much smaller amounts include pyrite, hematite and very sparse amounts of acanthite.

The veins at TLP mostly dip westward while those at LM dip steeply both east and west. Previous mining and stoping along the T1 and T2 vein structures at TLP indicate that the mineralization plunges shallowly to the north within structural zones extending hundreds of metres to a thousand metres 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 for 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, in contrast to siderite, 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.

Dimensions and occurrences of major mineralized veins at TLP and LM are summarized in Tables 7.4, 7.5 and 7.6.

Table 7.4 Dimensions and occurrences of major mineralized veins in the TLP area

Vein #	Length of vein (m)	Defined inclined depth (m)	Elevation of defined depth (m)	Dips to	Dip angle	Average true thickness / range (m)
T1	1,850	929	1170-350	285-295°	62°	1.10 (0.30-4.6)
T1W	1,400	766	1200-490	315°	65-71°	0.59 (0.30-2.25)
T1W1	650	399	950-580	300°	65-70°	1.32 (0.30-2.95)
T2	2,200	883	1150-350	285-295°	50-80°	1.33 (0.30-12.55)
T2W	1,700	851	1060-260	310	70	0.74 (0.30-1.20)
T3	2,400	1103	1200-200	290-295°	50-80°	1.07 (0.30-4.64)
T3E	2,300	1035	1100-140	310	60-75	0.85 (0.73-0.96)
T4	1,380	883	1100-300	285-295°	50-80°	0.93 (0.30-5.03)
T5	1,095	673	980-370	285-295°	50-80°	0.73 (0.30-2.05)
T11	700	673	980-370	310-325°	55-75°	0.47 (0.30-1.82)
T11E	600	539	900-400	310-325	60-75	0.73 (0.63-0.82)
T21	1,200	495	1000-650	300-320	30-60	0.73 (0.56-1.02)
T23	1,400	585	980-450	310°	60-70°	0.62 (0.30-4.09)
T33	1,100	647	1000-400	310-315°	65-70°	0.62 (0.30-4.09)
T33E	800	738	1000-390	120-320	63-83	0.71 (0.39-1.16)
T35	600	382	800-460	300-310°	55-70°	1.09 (0.30-1.55)
T35E	900	457	950-500	300-321	72-87	0.73 (0.69-0.82)

Table 7.5 Dimensions and occurrences of major mineralized veins in the LME subarea

Vein #	Length of vein (m)	Defined inclined depth (m)	Elevation of defined depth (m)	Dips to	Dip angle	Average true thickness / range (m)
LM2	800	585	1000-450	90°	70°	0.48 (0.30-0.63)
LM4	700	543	980-470	310°	65-75°	0.44 (0.30-0.73)
LM5	1,800	744	980-290	310-315°	60-75°	0.97 (0.30-7.32)
LM5E	1,100	607	880-300	330°	70-75°	0.62 (0.30-2.10)
LM5W	1,100	638	960-350	330°	70-75°	0.80 (0.30-3.45)
LM6	1,200	638	1000-390	310-330°	70-75°	0.69 (0.30-2.39)
LM6E	900	593	850-300	310-325°	60-75°	0.48 (0.30-1.11)
LM6W	900	617	1010-420	325°	70-75°	0.37 (0.30-0.42)

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)	Dips to	Dip angle	Average true thickness/range (m)
LM7	800	802	900-333	310°	40-50°	1.22 (0.30-4.42)
LM11	530	468	950-500	310°	58-70°	1.22 (0.30-2.19)
LM12	800	894	1010-300	300°	65°	0.62 (0.30-2.28)
LM12-1	700	736	950-300	295-305°	57-67°	0.57 (0.30-1.10)
LM12-2	600	681	1000-360	320-325°	65-75°	0.68 (0.30-1.21)
LM17	700	640	1060-480	305-315°	55-75°	1.53 (0.30-4.43)
LM19	500	569	1010-500	50	70-80	1.78 (0.30-3.62)
LM19W2	300	409	900-500	246-260	72-84	0.61 (0.50-1.71)
W5	400	362	950-600	325	75	1.02 (0.62-1.66)
W6	500	305	950-630	60°	65-75°	0.63 (0.30-1.08)

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˚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

9.1 Introduction

From 1 July 2013 to 30 June 2016 (the reporting period), Silvercorp conducted extensive exploration programs on the Ying property that included exploration-development activities in the SGX mine area, including two producing mines (SGX and HZG), the HPG mine area, and the TLP and LM mine areas, including three producing mines (TLP, LME and LMW). The past exploration activities, including surface activities, have been detailed in previous Technical Reports prepared for Ying Property projects.

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 to the relatively inexpensive development costs.

Channel samples across the mineralized structures are collected across the back of the tunnels at 5 m intervals, with the spacing of channel samples increasing to 15 or 25 m in the non-mineralized sections of the vein structures. Individual channels can consist of multiple chip samples, cut across and bracketing the mineralization and associated wall rocks across the tunnel. Assay results of samples are documented on underground level maps and longitudinal sections. Details of the procedures and parameters relating to the underground channel sampling and discussion of the sample quality are given in Section 11.

9.2 Tunnelling progress

The exploration tunnelling and drilling programs were conducted during the reporting period to upgrade the Indicated and Inferred Mineral Resources, to test the down-dip and along-strike extensions of the major mineralized vein structures and their parallel subzones, and to explore new target areas. The programs comprised 128,385 m of tunnelling, including 72,940 m of drifting along mineralized structures and 33,354 m of cross cutting across mineralized structures. Drift and crosscut tunnels have been developed at 30 m to 50 m intervals vertically to delineate higher-category Mineral Resources. A total of 44,166 channel/chip samples were collected from the six mine areas. Details of the tunnelling exploration work completed at each project area are briefly summarized in Table 9.1.

Table 9.1 Tunnelling exploration work completed from July 2013 to June 2016

Area	Tunnelling	Total metres	Channel samples (pcs)
SGX	Drifting	27,238	11,056
	Crosscut	13,670	
	Raise & others	12,203	
	Total	**53,111**	
HZG	Drifting	5,119	3,102
	Crosscut	1,550	
	Raise & others	2,592	
	Total	**9,261**	
HPG	Drifting	7,307	4,386
	Crosscut	3,510	
	Raise & others	2,488	
	Total	**13,305**	
TLP	Drifting	13,729	11,110
	Crosscut	6,193	
	Raise & others	1069	
	Total	**20,992**	
LME	Drifting	5,066	3,448
	Crosscut	1,757	
	Raise & others	1944	
	Total	**8,767**	
LMW	Drifting	14,481	11,064
	Crosscut	6,674	
	Raise & others	1794	
	Total	**22,949**	
Total		**128,385**	**44,166**

On average, the mineralization rate of drift tunnelling at Ying mines varied from 30% to 45% during the reporting period. As an example, Table 9.2 summarizes mineralization structures exposed in drift tunnels developed in the first three quarters of 2015. Note no tunnelling was carried out on HZG during that period.

Table 9.2 Mineralization exposed by drift tunnelling in the first three quarters of 2015

Mine Area	Completed Meterage (m)	Mineralization Exposed (m)	Mineralization Rate	Mineralization Width (m)	Ag g/t	Pb %	Zn %	Au g/t	AgEq g/t
SGX	6,960	2,854	41%	0.74	298	5.70	3.03		575
HPG	2,519	846	34%	1.16	69	2.91	1.07	1.58	292
TLP	3,158	1,414	45%	0.70	406	3.45	0.36		533
LME	1,660	525	32%	0.65	365	1.63	0.46		429
LMW	5,727	1,334	23%	0.67	360	4.08	0.30		519
Total / average	**20,024**	**6,973**	**35%**	**0.76**	**290**	**4.23**	**1.55**		**496**

The results of the 2013-2016 underground tunnelling program demonstrate good down-dip and along-strike consistency in relation to existing production veins, and resulted in the discovery of numerous subzones and splays beside major vein structures in the Property. A new discovery of high-grade zones in the northwest extension of the LM19 vein group at depth in the LMW mine has resulted in the remodelling of some major structures. It also has important implications for the future exploration of northwest-trending mineralized vein structures at the TLP, LME and LMW mines.

The following sections summarize the results of the 2013-2016 tunnelling exploration programs by mine.

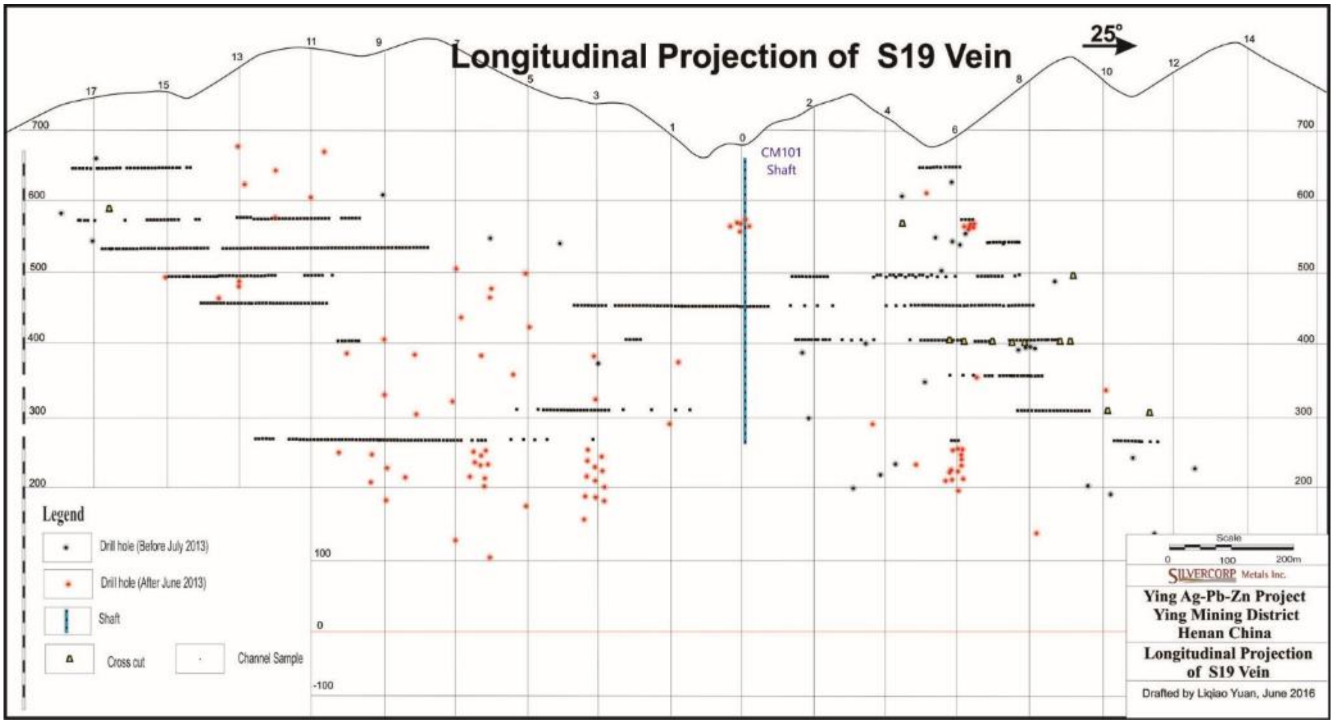
9.3 SGX

A total of 53,111 m of underground exploration tunnelling was completed along and across major production vein structures S2, S2W, S4, S6, S7, S7-1, S7-2, S8, S14, S14-1, S16E, S16W, S19, and S21 between the 750 m and the 160 m elevations. Drift and crosscut tunnels were developed at 30 m to 50 m intervals through eight access tunnels, CM101, CM102, CM103, CM105, PD628, PD690, PD700 and the ramp, to upgrade and expand drill-defined Mineral Resource blocks. A total of 11,056 chip samples were collected during the 2013-2016 program. High grade mineralized zones have been exposed in tunnels on most levels at the SGX mine. Underground channel samples from selected mineralized zones collected during the reporting period are weighted by true thickness and reported in Table 9.3. Figure 9.1 gives an example of the channel sample density and location of drifts on one of the main veins at SGX.

Table 9.3 Selected mineralization zones defined by the 2013 - 2016 tunnelling in SGX area

Tunnel ID	Vein	Level (m)	Length of mineralized Zone along strike (m)	True width (m)	Weighted average grade		
					Ag g/t	Pb %	Zn %
CM105-S2-260-12SYM	S2	260	60	1.10	900	20.05	4.34
CM105-S2-260-14NYM	S2	260	65	0.74	576	7.75	4.90
CM105-S2-220-12SYM	S2	220	75	0.84	663	12.35	1.31
CM105-S2-220-14NYM	S2	220	90	0.87	345	8.70	1.12
CM105-S2W2-260-12ANYM	S2W2	260	62	0.95	143	3.61	3.83
PD16-S4-400-8NYM	S4	400	75	0.45	290	3.55	7.28
PD16-S4-350-8ANYM	S4	350	65	0.50	312	2.43	7.62
PD16-S6-450-10NYM	S6	450	85	0.37	116	1.49	1.46
CM105-2#SJ-S6W2-220SYM	S6	220	75	0.50	352	5.31	4.63
CM105-S6E1-220-12SYM	S6E1	220	55	0.46	201	3.49	2.49
CM105-S6E1-260-12ANYM	S6E1	260	80	0.55	355	5.06	4.77
PD750-S7-750-0SMW-ECM14	S7	750	127	1.13	205	2.44	4.31
CM108-S7-710-NYM	S7	710	53	0.88	595	6.60	3.29
CM105-S7-260-8ANYM	S7	260	65	0.84	187	4.33	0.41
CM105-S7-260-8A#SYM	S7	260	80	1.43	313	6.13	0.41
CM101-S7-1-400-SYM	S7-1	400	55	0.64	496	7.71	5.94
CM101-S7-1-300-SYM	S7-1	300	65	0.61	363	5.61	3.81
XPD-S7-1-300-3SYM	S7-1	300	80	1.13	303	8.91	2.11
XPD-S7-1-260-NYM	S7-1	260	136	1.29	743	11.04	3.86
XPD-S7-1E-300-5SYM	S7-1E	300	45	0.72	218	6.30	6.47
CM102-S7-2-400-4ASYM	S7-2	400	108	0.61	155	3.98	1.70
CM101-S7-2-350-1BSYM	S7-2	350	96	0.80	137	4.34	3.82
CM102-S8-480-14NYM	S8	480	60	0.89	36	4.56	2.16
CM102-S8-440-SYM	S8	440	55	1.41	242	4.26	2.63
CM101-S8-400-NSYM	S8	400	53	0.95	422	7.26	2.29
CM102-S8-400-SYM	S8	400	75	0.85	284	7.76	6.84
CM102-S8E-440-2ASYM	S8E	440	105	0.83	139	1.12	5.40
CM102-S8E-400-4SYM	S8E	400	55	0.57	104	3.65	4.72
XPD-S14-520-2BNYM	S14	520	110	0.58	522	6.59	0.84
CM105-S14-220-12SYM	S14	220	70	0.76	872	8.65	1.05
PD16-S14-2-260-SYM（8#）	S14-2	260	65	0.38	439	5.10	8.44
PD690-S16W2-690-12NYM	S16W2	690	45	0.92	190	4.85	0.83
CM101-S16W2-400-1ANYM	S16W2	400	50	0.52	112	2.10	8.21
PD700-S19-570-13NYM	S19	570	50	0.44	225	7.77	3.72
PD700-S19-530-13ANYM	S19	530	95	0.67	296	5.71	1.46
PD700-S19-490-15NYM	S19	490	100	0.97	430	5.55	3.95
CM101-S19-350-8SYM	S19	350	40	1.02	180	6.96	0.19
XPD-S19-300-3SYM	S19	300	45	0.97	322	7.28	2.06
XPD-S21-375-26SYM	S21	375	55	1.66	454	6.77	5.97
XPD-S21-375-NYM	S21	375	55	1.08	609	6.55	4.42
CM105-S21-300-SYM	S21	300	70	0.76	395	6.68	4.17
CM105-S21W1-400-60SYM	S21W1	400	60	0.97	724	12.01	1.33
CM101-S21W1-350-8ANYM	S21W1	350	40	1.01	371	8.16	1.41
PD16-S29-400-0NYM	S29	400	40	1.01	633	9.29	7.73
PD16-S29-350-0SYM	S29	350	40	0.57	564	3.97	12.99

Figure 9.1 Longitudinal projection of S19 vein, SGX



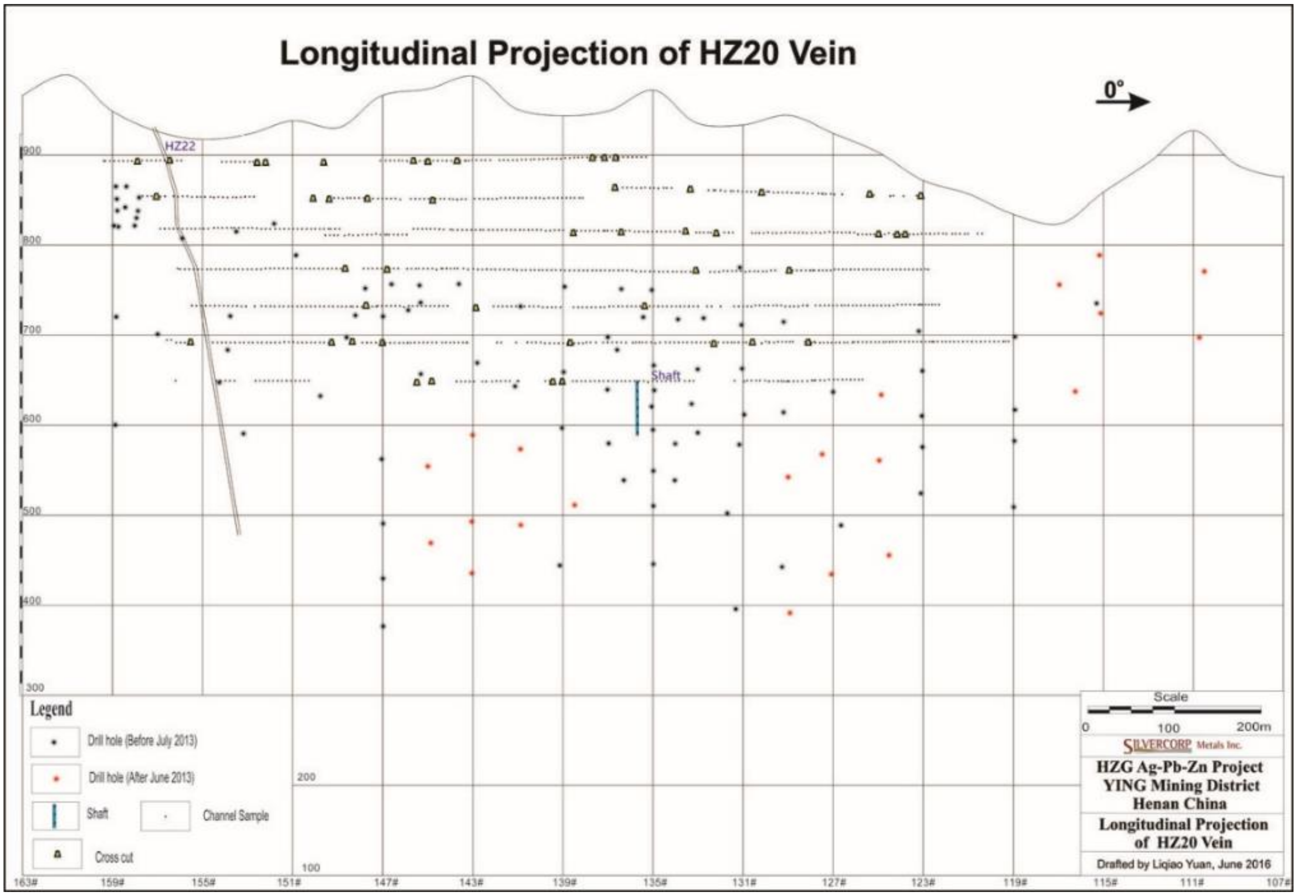
9.4 HZG

The purpose of the underground tunnelling program (including 5,119 m of drifts and 1,550 m of crosscuts) was to delineate and upgrade the previous drill-defined Mineral Resource blocks within the major vein structures HZ20, HZ22 and HZ5 between the 650 m and the 850 m elevations. Drift and crosscut tunnels were developed at 40 m to 50 m intervals through three access tunnels PD810, PD820 and PD890 and are connected with raises, declines, and shafts through different levels. A total of 3,102 chip samples were collected during the 2013-2016 program. High-grade mineralized zones were exposed in tunnels on different levels along major mineralized vein structures HZ20, HZ20W, HZ22 and HZ5. The underground channel samples from selected mineralized zones collected during the reporting period are weighted by true thickness and reported in Table 9.4. Figure 9.2 gives an example of the channel sample density and location of drifts on one of the main veins at HZG.

Table 9.4 Selected mineralization zones defined by the 2013 - 2016 tunnelling in HZG area

Tunnel ID	Level (m)	Vein	Length of Mineralized Zone along strike (m)	True Width (m)	Weighted average grades		
					Ag g/t	Pb%	Zn%
PD820-HZ20-730-149-SYM	730	HZ20	75	0.55	456	2.66	0.17
PD820-HZ20-690-149-SYM	690	HZ20	134	0.50	616	2.91	0.37
PD820-HZ20-650-129-NYM	650	HZ20	25	0.53	567	0.25	0.47
PD820-HZ20-650-139#-NYM	650	HZ20	32	0.45	248	0.25	0.26
PD820-HZ20W-650-131-NYM	650	HZ20W	44	0.86	600	0.27	0.49
PD820-HZ20E-730-33AECM-NYM	730	HZ20E	100	0.52	415	0.73	0.16
PD820-HZ22-770-37#-NYM	770	HZ22	30	0.60	343	3.57	0.24

Figure 9.2 Longitudinal projection of Vein HZ20



9.5 HPG

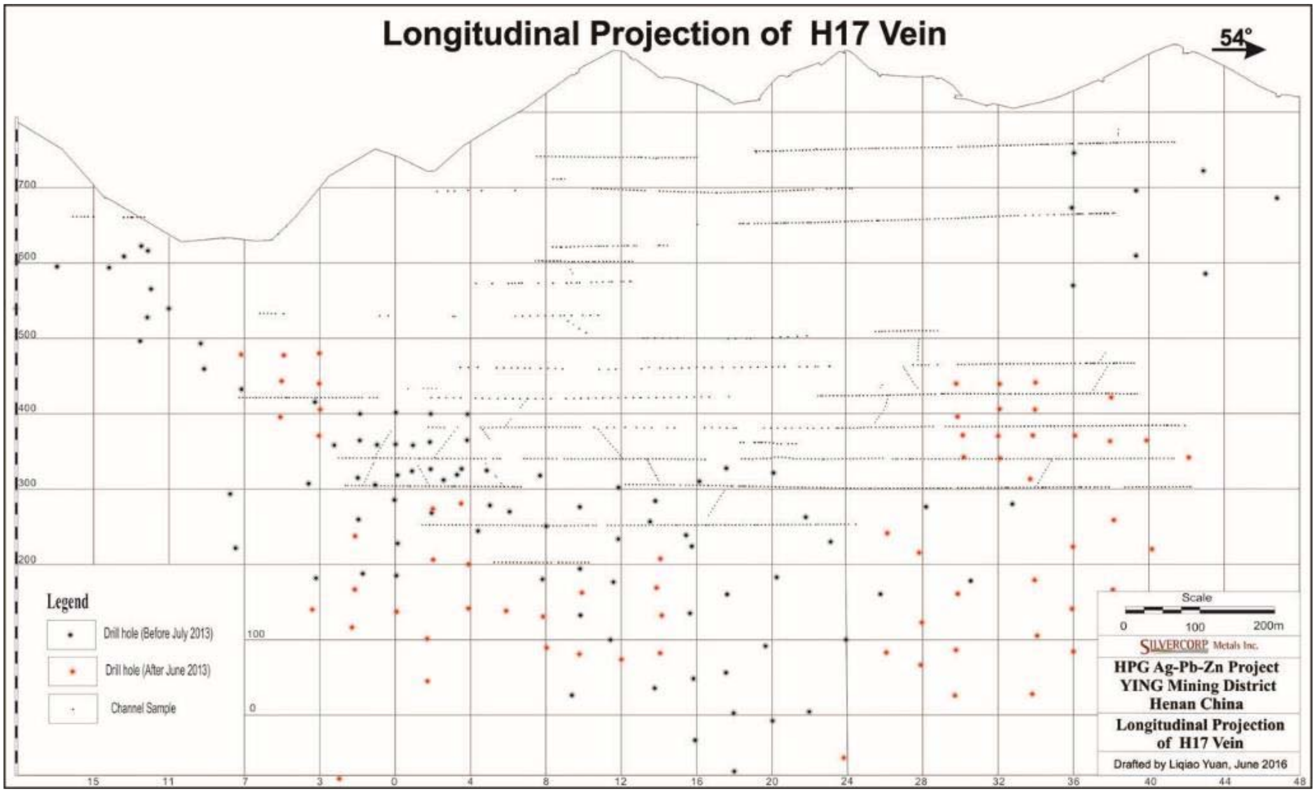
Compared with mineralized vein systems in other areas, mineralization in the HPG area is characterized by significant higher gold grade and lower grades for silver, lead and zinc.

The purpose of the 13,305 m underground tunnelling program was to further delineate and upgrade the previous drill-defined Mineral Resource blocks within major vein structures H4, H5, H15W, H13, H14, H15, H16 and H17 between the 251 m and the 680 m elevations. Drift and crosscut tunnels were developed at 30 m to 50 m intervals through access tunnels PD2, PD3, PD5, PD88, PD600 and PD630. A total of 4,386 chip samples were collected. Significant mineralization zones were exposed in drift tunnels on different levels along the major vein structures. The underground channel samples from selected mineralized zones collected during the reporting period are weighted by true thickness and reported in Table 9.5. Figure 9.3 gives an example of the channel sample density and location of drifts on one of the main veins at HPG.

Table 9.5 Selected mineralization zones defined by the 2013 - 2016 tunnelling in HPG area

Tunnel ID	Vein	Level (m)	Length of Mineralized Zone along strike (m)	True width (m)	Weighted average grades			
					Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)
PD600-H4-510-SYM	H4	510	30	0.68	0.35	103	0.94	1.72
PD3-H5-460-SYM1	H5	460	65	1.01	3.13	151	5.89	1.51
PD600-H5W-510-NYM	H5W	510	55	0.45	0.15	94	5.45	0.58
PD600-H5W-510-N2-TJ	H5W	510	35	0.70	0.28	119	14.22	0.24
PD3-H5W-460-SYM-08TJ	H5W	460	66	0.73	0.11	72	11.99	0.62
PD630-H13-610-SYM	H13	610	45	0.61	0.34	145	3.50	0.27
PD2-H14-530-17YM	H14	530	33	0.73	0.50	76	3.13	1.05
PD2-H14-490-SYM	H14	490	45	0.73	3.75	44	0.88	1.34
SC2-H15-680-NYM	H15	680	32	0.64	0.50	86	8.73	0.04
PD3-H15-340-4SYM	H15	340	81	0.70	0.42	76	3.13	1.30
PD3-H15-300-NYM	H15	300	70	0.85	1.26	94	7.16	0.37
PD88-H16-680-NYM1	H16	680	78	0.93	3.54	85	1.05	0.51
PD2-H16-520-17SYM	H16	520	80	0.88	1.43	32	1.92	1.11
PD88-H16-3-680-SYM	H16-3	680	32	0.66	3.33	7	1.23	0.69
PD3-H17-460-36NYM	H17	460	45	1.30	1.67	154	3.18	4.32
PD3-H17-420-28NYM	H17	420	162	1.50	2.52	50	2.50	1.53
PD3-H17-340-NYM	H17	340	150	1.38	1.57	38	2.22	0.57
PD3-H17-340-SYM2	H17	340	55	1.21	0.83	173	5.04	0.87
PD3-H17-300-NYM	H17	300	85	1.45	1.15	89	5.59	1.86
PD3-H17-300-SYM1	H17	300	153	1.31	0.49	56	5.64	1.20
PD3-H17-251-SYM	H17	251	155	1.34	0.89	92	.61	0.51

Figure 9.3 Longitudinal projection of vein H17



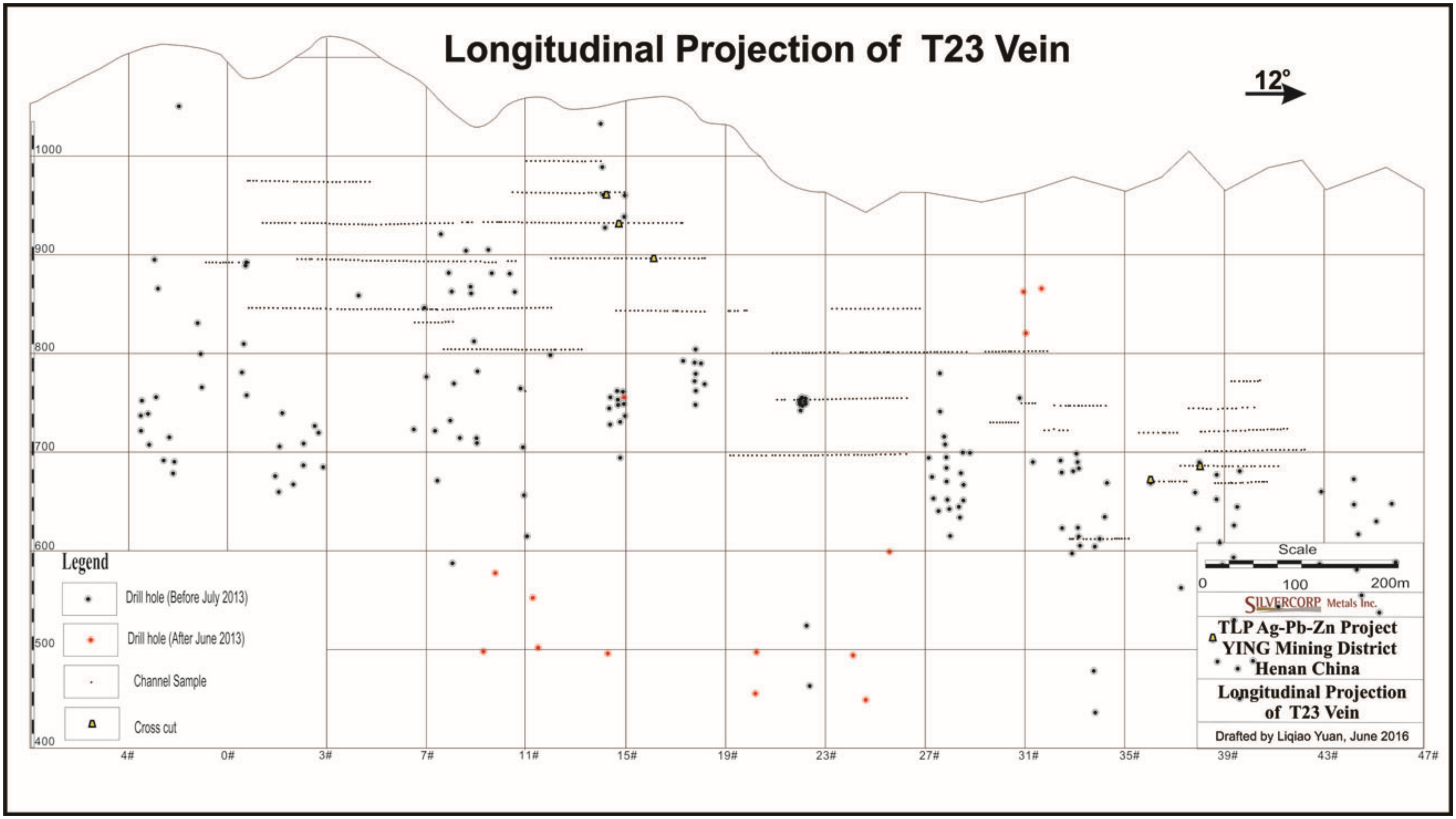
9.6 TLP

The purpose of the 20,992 m underground tunnelling program from 2013 to 2016 was to further delineate and upgrade the previous drill-defined Mineral Resource blocks within major vein structures T1W, T1W2, T3, T5, T15, T23, T33 and T35E between the 650 m and the 960 m elevations. Drift and crosscut tunnels were developed at 30 m to 50 m intervals through seven access tunnels PD730, PD800, PD820, PD890, PD930 and PD960. A total of 11,110 chip samples were collected. Mineralized zones were exposed in drift tunnels on different levels along the major vein structures and numerous new mineralized subzones and splays were discovered. The underground channel samples from selected mineralized zones collected during the reporting period are weighted by true thickness and reported in Table 9.6. Figure 9.4 gives an example of the channel sample density and location of drifts on one of the main veins at TLP.

Table 9.6 Selected mineralization zones defined by the 2013 - 2016 tunnelling in TLP area

Tunnel ID	Vein	Level (m)	Length of Mineralized Zone along strike (m)	True Width (m)	Weighted Average Grade		
					Ag (g/t)	Pb (%)	Zn (%)
PD840-T1W-840-7SYM	T1W	840	70	1.21	368	10.73	0.33
PD800-T1W-800-9SYM	T1W	800	70	0.88	201	5.18	0.76
PD730-647-T1W-39NYM	T1W	647	50	1.5	30	7.53	0.19
PD890-T1W2-890-7SNYM	T1W2	890	80	0.53	195	1.60	0.36
PD840-T1W2-840-7NYM	T1W2	840	94	0.46	284	2.03	0.34
PD800-T5-800-33SYM	T5	800	30	0.84	655	3.45	0.26
PD820-T11-755-4NYM	T11	755	35	1.49	231	9.95	0.63
PD820-T11-801-4SYM	T11	799	40	0.66	335	2.91	0.24
PD890-T14_1-890-5NYM	T14_1	890	68	1.13	185	3.76	0.10
PD820-T15-795-8NYM	T15	795	35	1.10	429	5.63	0.14
PD820-T15W1-795-8NYM	T15W1	795	30	0.71	260	3.71	0.39
PD800-T21-800-33SYM/NYM	T21	800	140	0.83	259	4.66	0.34
PD960-T23-960-15SYM	T23	960	65	0.63	226	1.16	0.13
PD930-T23-930-15SYM	T23	930	93	0.60	614	1.40	0.14
PD890-T23-890-17SYM/NYM	T23	890	85	0.68	1,092	1.45	0.13
PD890-T33-890-9SYM(LCK)	T33	890	75	0.68	246	1.82	0.42
PD840-T33-870-15SYM(FZD)	T33	870	103	0.71	462	1.61	0.36
PD730-T33-780-13SNYM	T33	780	133	0.74	174	5.04	0.34
PD930-T33W1-930-23SYM	T33W1	930	40	1.03	244	3.25	0.71
PD840-T33W2-840-19SYM	T33W1	840	35	0.91	141	5.06	0.25
PD840-T33W3Z-840-19NYM	T33W3 branch	840	70	0.51	284	2.39	0.74
PD800-T35E-800-29SYM	T35E	800	70	1.27	230	2.68	0.60

Figure 9.4 Longitudinal projection of vein T23



9.7 LME

A total of 8,767 m of underground tunnelling was completed from July 2013 to June 2016 at the LME Mine. The purpose of the drifting program was to upgrade existing drill-defined Mineral Resource blocks along mineralized vein structures. Drift and crosscut tunnels were developed at 40 m to 50 m intervals between the 500 m and the 950 m elevations through shaft PD900, and access tunnels PD838 and PD959 respectively. A total of 3,448 chip samples were collected. Drifting was mainly focused on the LM5 and the LM6 veins and successfully extended the strike lengths of known mineralized zones between the 915 m and the 550 m elevations. The underground channel samples from selected mineralized zones collected during the reporting period are weighted by true thickness and reported in Table 9.7. Figure 9.5 gives an example of the channel sample density and location of drifts on one of the main veins at LME.

Table 9.7 Selected mineralization zones defined by the 2013 - 2016 tunnelling at LME

Tunnel ID	Vein	Level (m)	Length of Mineralized Zone along strike (m)	True width (m)	Weighted average grades		
					Ag (g/t)	Pb (%)	Zn (%)
PD838-LM1-750-10NYM	LM1	750	30	0.51	198	3.36	0
PD838-LM1-700-8NYM	LM1	700	25	0.55	772	2.13	0.41
PD838-LM2-750-0SYM	LM2	750	113	0.72	322	3.71	0.57
PD838-LM5-845-51NYM	LM5	845	45	0.69	225	2.24	0.65
PD900-LM5-650-60(N37)NYM	LM5	650	40	0.91	358	1.38	0.63
PD900-LM5-550-50NYM	LM5	550	80	1.29	795	1.93	0.46
PD900-LM6-700-50SYM	LM6	700	69	0.57	404	1.38	0.07
PD900-LM6-650-50SYM	LM6	650	105	0.47	408	1.42	0.22
PD900-LM6-600-50NYM	LM6	600	130	0.53	341	1.93	0.37
PD900-LM6-550-50SYM	LM6	550	55	0.44	718	2.52	1.00

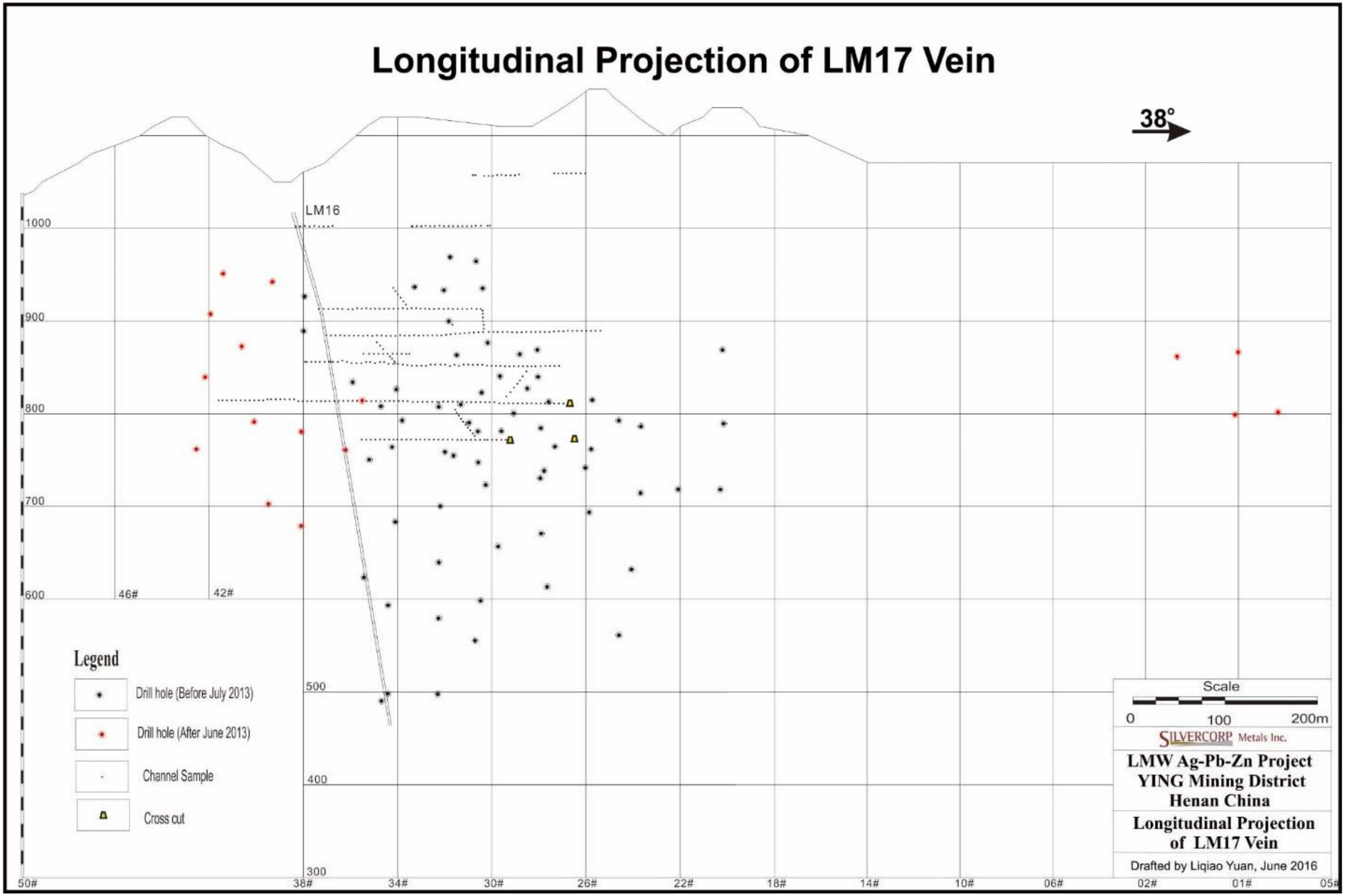
9.8 LMW

The 22,949 m underground tunnelling program completed from July 2013 to June 2016 was focused on vein structures LM7, LM8, LM11, LM12, LM14, LM16, LM17, and LM19 as well as the parallel zones spatially associated with these major structures. Underground tunnelling was conducted on levels between the 550 m and the 1,003 m elevations through shaft SJ969, ramps XPDS and XPDN, and four access tunnels PD1003, PD991, PD969 and PD924. A total of 11,064 chip samples were collected. High-grade mineralized zones from 20 to 144 m in length were exposed in drift tunnels at different levels. The discovery of high-grade zones in the northwest extension of the LM19 vein group has resulted in the re-modelling of some of the major vein structures at LMW. The underground channel samples from selected mineralized zones collected during the reporting period are weighted by true thickness and reported in Table 9.8. Figure 9.6 gives an example of the channel sample density and location of drifts on one of the main veins at LMW.

Table 9.8 Selected mineralization zones defined by the 2013 - 2016 tunnelling at LMW

Tunnel ID	Vein	Level (m)	Length of Mineralized Zone along strike (m)	True width (m)	Weighted average grades		
					Ag (g/t)	Pb (%)	Zn (%)
SJ969-LM7W-750-5NYM	LM7W	750	55	0.84	505	1.59	0.25
PD924-LM8-5-870-108NYM/SYM	LM8_5	870	35	0.63	323	6.07	0.64
SJ969-LM10-800-5NYM	LM10	800	80	0.59	174	1.62	0.01
SJ969-LM11-800-3SYM	LM11	800	55	0.68	118	3.31	0.26
SJ969-LM12-800-3NSYM	LM12	800	105	0.89	172	3.58	0.21
SJ969-LM12-750-3SYM/NYM	LM12	750	50	0.51	128	4.30	0.60
SJ969-LM12-700-3NYM	LM12	700	80	0.70	376	9.12	0.19
SJ969-LM12-2-650-3NYM	LM12-2	650	70	0.68	560	4.95	0
XPD980-LM14-770-105SYM	LM14	770	144	0.92	246	4.15	0.23
XPD980-LM14-770-105SYM	LM14	770	40	0.72	175	2.79	0.36
XPD980-LM14-725-107SYM	LM14	725	115	0.85	433	3.26	0.30
PD991-LM16-810-119NYM	LM16	810	30	0.76	448	4.23	0.28
PD924-LM19-850-102NYM	LM19	850	45	0.83	217	2.72	0.17
SJ969-LM19-800-102SYM	LM19	800	45	0.72	131	5.93	0.10
SJ969-LM19-700-112NYM	LM19	700	40	0.48	325	4.60	0.11
SJ969-LM19W1-600-110SYM/NYM	LM19W1	600	30	0.65	402	1.83	0.36
SJ969-LM19W2-650-110NYM	LM19W2	650	130	0.71	772	6.71	0.51
SJ969-LM19W2-600-110NYM	LM19W2	600	35	0.59	671	6.13	0.23
PD924-LM20-898-3SYM	LM20	898	40	0.6	550	2.66	0.15
PD924-LM20-850-1NYM	LM20	850	70	0.44	779	2.6	0.49
SJ969-LM20W-750-5SYM	LM20W	750	50	0.52	338	10.13	0.47

Figure 9.5 Longitudinal projection of vein LM17



10 Drilling

10.1 Drilling progress

Since acquiring the Ying projects, Silvercorp has initiated systematic drilling programs to test the strike and down-dip extensions of the major mineralized vein structures and explore for new mineralized structures in less-explored or unexplored areas in the Property. Longitudinal sections for the veins are seen in Section 9 and a cross section in Section 7 is back referred to as it demonstrates the drill intersection angles relative to the veins.

Drilling programs undertaken by Silvercorp between 2004 and June 2016 are presented in two tables: Table 10.1 from 2004 to June 2013, and Table 10.2 from July 2013 to June 2016.

Table 10.1 Drilling programs completed by Silvercorp, 2004 to June 2013

Mine	Period	Number of holes		Meterage (m)	Major targets
		Underground	Surface		
SGX	2004-Mar 2005	15	0	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	0	32,573	
	2011	159	0	61,066	S2, S4, S6, S6-Branch, S7, S7E, S7-1, S8, S14, S14-1,S19 and S21
	Jan 2012-June 2013	372	7	86,955	S2, S7, S7-1, S8, S14, S14-1, S16W, S19, S21
HZG	May 2006-Jun 2007	2	18	6,346	HZ10, HZ12, HZ20, and HZ22.
	Jul 2007-Nov 2009	40	41	24,227	
	Jan 2012-June 2013	87	17	29,004	HZ20, HZ22, HZ5
HPG	May 2006-Jun 2007	0	2	760	H15, H17
	Jul 2007-Nov 2009	96	67	38,853	H13, H15, H5, H12-1, H29
	2010	30	0	6,623	
	2011	58	0	16352	H3, H5, H5W, H17, H39-1 and H39-2
	Jan 2012-June 2013	130	0	27,015	H4, H5, H5W, H11, H15, H17, H39-1
TLP	2008-2009	138	18	40,612	Veins T1, T2, T3, T4 and T5
	2010	219	0	38,748	
	2011	123	0	36,638	T1, T1W, T1W3, T2, T3, T11, T16, T17 and T33
	Jan 2012-June 2013	98	0	32,001	T1, T2, T3, T11, T15, T16, T17,T33, T35
LM	2008-2009	125	11	33,701	LM2, LM5, LM8, LM12, and LM14.
	2010	86	0	30,743	
	2011	113	0	50,014	LME: LM2, LM5, LM5E, LM6, LM6E and LM6W, LMW: LM10, LM12-1, LM12-2, LM12-3, LM13, LM13W and LM17
LME	Jan 2012-June 2013	90	0	21,975	LM2, LM5, LM6
LMW	Jan 2012-June 2013	211	0	61,449	LM7, LM8, LM10, LM11, LM12, LM13, LM14, LM16, LM17, LM19, W5, W6
Reconnaissance drilling					
RHW	2006	0	7	1,981	RHW
XM	2006	0	2	479	XM
SDG-LJG	Jul 2007-Nov 2009	11	0	2,205	
	2010	0	9	2,884	
	2011	0	9	3275	SL1, SL1-1, SL2E, and SL3
	Jan 2012-June 2013	25	0	8,787	C29
DCG	2010	0	8	2,284	
	2011	0	17	6742	C4, C4E and W16
Total, 2004-June 2013		2,757	289	858,111	

Table 10.2 Summary of the 2013-2016 drilling program on the Ying Property

Mine area	Exploration	Drill holes completed	Total metres completed	Total Core samples
SGX	Surface Drilling	26	4,312	5,911
	Underground Drilling	345	84,869	
HZG	Surface Drilling	14	2,695	850
	Underground Drilling	38	9,748	
HPG	Surface Drilling	1	288	1,837
	Underground Drilling	147	31,297	
TLP	Surface Drilling	0	0	2,539
	Underground Drilling	134	40,929	
LME	Surface Drilling	0	0	1,280
	Underground Drilling	82	18,419	
LMW	Surface Drilling	0	0	2,027
	Underground Drilling	109	32,172	
Total		**896**	**224,729**	**14,444**

Drilling programs were continuously conducted over the Ying Property from July 2013 to June 2016 (the Reporting Period). Underground and surface drilling was carried out in mining areas to test the down-dip extension of major mineralized vein structures, extend the Indicated and Measured Mineral Resources at or above the current mining depth, and infill the Inferred Mineral Resource blocks defined in previous drilling programs below the current mining depth. Most of the holes were designed as inclined holes to test multiple vein structures. A total of 224,729 m in 896 diamond holes was completed, including 7,295 m in 41 surface holes and 217,434 m in 855 underground holes drilled from at or above the current mining elevations. Results of the diamond drilling program were the down-dip and strike extension of most of the major mineralized veins and the discovery of a number of new mineralized veins in the current mine areas.

10.2 Summary of results

Drilling results from the 2013-2016 drilling program in the Ying Property are briefly summarized in Table 10.3. These results have been incorporated into the mine databases and contribute to the current Mineral Resource update for the six Ying mine areas.

Table 10.3 Brief summary of the 2013-2016 drilling results

Mine Area	Holes Completed	No of Mineralized Intersections (≧120g/t AgEq)	Average Grade of Mineralized Intersections (g/t AgEq)	Average True Width of Mineralized Intersections (m)	Detected Depth (Elevation m)
SGX	371	182	532	1.23	768 - (-71)
HZG	52	13	550	0.68	899 - 361
HPG	148	103	364	0.83	826 - (-56)
TLP	134	115	367	0.96	956 - (-82)
LME	82	68	499	0.91	958 - 276
LMW	109	79	413	1.02	951 - 433

Drilling results of individual mine areas are further discussed in the following sections.

10.3 Discussion of results by mine

10.3.1 SGX

The underground and surface drilling was focused on expanding the known Mineral Resource of major production veins S7, S7-1, S8, S16W and S19. Limited drilling was also conducted on veins S2, S4, S6, S14, S21 and their branch veins. The results from the program added and extended noticeable high-grade mineralized zones within vein structures S19, S8, S7-1, and S16W. The 2013-2016 SGX drilling program is summarized in Table 10.4.

Table 10.4 Summary of the SGX 2013-2016 drilling program

Target Vein	Number of Holes Drilled	Holes Intercepting Mineralization (≧90 g/t Ag equivalent)	Detected Depth (Elevation m)
S2	21	10	231-654
S2W	12	2	141-567
S2W1	3	1	188-247
S2W2	12	6	89-506
S4	18	6	240-510
S6	19	4	241-621
S7	56	11	768-(-28)
S7-1	80	25	636-(-87)
S7-2	20	3	462-(-8)
S7-3	48	12	643-(-76)
S7E2	25	4	345-(-71)
S7W	18	3	411-59
S8	88	17	583-(-29)
S8W	15	3	386-51
S14	21	6	586-(-42)
S14-1	15	4	649-16
S14-2	12	3	604-62
S16E	32	4	724-(-20)
S16W	61	18	718-(-69)
S16W1	28	3	714-(-51)
S18	20	5	690-27
S19	81	31	674-103
S19E	22	5	676-136
S21	45	8	736-74
S21W	29	5	717-30
S29	6	1	331-218

The drillhole intersection angles with the veins are variable, as in the case of underground drillholes they are drilled as fans of multiple holes from one set up. This is best seen in Figure 7.4, which is a cross section on Exploration Line 2 for SGX.

Note that the formula and values used for AgEq calculations for all the mines are discussed in Section 14.

10.3.2 HZG

The diamond drilling program from July 2013 to June 2016 was designed to test the along-strike and down-dip extension of major mineralized vein structures HZ20, HZ22, HZ23 and HZ5 between the 1000 m and the 370 m elevations. The 2013–2016 diamond drilling program added new mineralized zones to major production veins HZ20, HZ22 and HZ5, and expanded the mineralization in vein structures HZ20W, HZ23, HZ22E and HZ22W. The 2013-2016 HZG drilling program is summarized in Table 10.6.

Table 10.5 Summary of the HZG 2013-2015 drilling program

Target Vein	Number of Holes Drilled	Holes Intercepting Mineralization (≧90 g/t Ag equivalent)	Detected Depth (Elevation m)
HZ5	7	3	896-712
HZ20	22	2	789-361
HZ20W	8	1	748-435
HZ22	22	5	899-552
HZ22E	8	3	786-539
HZ23	6	2	760-506

The drillhole intersection angles with the veins are variable, as in the case of underground drillholes they are drilled as fans of multiple holes from one set up. This is best seen in Figure 7.4, which is a cross section on Exploration Line 2 for SGX.

10.3.3 HPG

The underground diamond drilling program was designed to test the along-strike and down-dip extension of the major mineralized vein structures H17, H15, H15W, H16, H13 and H4 between the minus 50 m and the 700 m elevations. Significant new mineralized zones were defined within major vein structures H17, and H15W along strike and downdip directions. The 2013 – 2016 HPG drilling program is summarized in Table 10.8.

Table 10.6 Summary of HPG 2013-2016 drilling program

Target Vein	Number of Holes Drilled	Holes Intercepting Mineralization (≧90 g/t Ag equivalent)	Detected Depth (Elevation m)
H3	14	4	556-213
H4	9	0	577-365
H5	6	3	534-417
H5W	8	2	416-318
H9W	2	1	476-458
H10-2	3	0	473-422
H11	4	0	567-317
H13	21	7	552-185
H14	9	2	826-428
H15	23	5	459-76
H15W	14	9	598-287
H16	20	7	801-490
H17	72	21	682-(-56)
H32	2	1	582-577

The drillhole intersection angles with the veins are variable, as in the case of underground drillholes they are drilled as fans of multiple holes from one set up. This is best seen in Figure 7.4, which is a cross section on Exploration Line 2 for SGX. In addition, Figure 7.7 in the 2014 report shows Exploration line 20 with the attitudes of the veins and underground drilling intersections.

10.3.4 TLP

The 2013 – 2016 underground diamond drilling program was designed to test along-strike and down-dip extensions of the major mineralized vein structures T3, T4, T5, T11, T14E, T16, T17, T21 and T35E and to explore for new vein structures in less-explored areas. Results of the drilling program added significant mineralization zones within major vein structures T3, T3E, T5 and T11. Numerous mineralized parallel and splay structures such as T35E, T14E, T2W, and T2E were discovered beside major vein structures. The 2013 – 2016 drilling program at TLP is summarized in Table 10.10.

Table 10.7 Summary of TLP 2013-2016 drilling program

Target Vein	Number of Holes Drilled	Holes Intercepting Mineralization (≧100 g/t Ag equivalent)	Detected Depth (Elevation m)
T1	9	1	928-397
T1W	2	0	607-582
T1W1	6	3	530-424
T2	15	1	885-(-22)
T3	21	9	881-(-82)
T3E	5	3	837-225
T4	20	6	842-206
T5	17	5	870-703
T5E1	5	5	915-899
T11	25	9	805-533
T11E	14	1	731-513
T14	8	1	906-683
T14E	17	7	913-659
T14-1	7	4	907-709
T15	16	2	818-624
T15W	11	5	820-706
T15W1	6	2	824-718
T16	18	8	923-542
T16W	12	2	845-586
T16E	11	1	815-626
T16E1	4	1	834-712
T17	19	1	860-635
T17E	5	1	850-693
T21	25	7	908-603
T21E	9	3	792-683
T23	8	3	904-501
T24	3	1	956-847
T33	15	3	907-500
T33E	7	3	701-413
T33W	4	2	754-595
T35E	39	11	896-520
T35E1	13	1	810-539
T41	3	1	920-871

The drillhole intersection angles with the veins are variable, as in the case of underground drillholes they are drilled as fans of multiple holes from one set up. This is best seen in Figure 7.4, which is a cross section on Exploration Line 2 for SGX. In addition, Figure 7.9 in the 2014 report shows Exploration line 12 with the attitudes of the veins and underground drilling intersections.

The LM mine will be discussed in terms of the two sub areas LME and LMW.

10.3.5 LME

The 2013-2016 LME underground drilling program was focused on vein structures LM4, LM5, LM6 and their subzones and splay structures. The purpose of the drilling program was to extend known mineralization along-strike and down-dip, and explore for new veins at or above the current mining depth within the mineralized vein structures. The drilling program added remarkable new mineralized zones within major production veins LM5, LM5W, and LM6. The drilling program is summarized in Table 10.12.

Table 10.8 Summary of LME 2013-2016 drilling program

Target Vein	Number of Holes Drilled	Holes Intercepting Mineralization (≧100 g/t Ag equivalent)	Detected Depth (Elevation m)
LM3	6	0	890-627
LM4	19	1	958-644
LM4W	10	3	954-577
LM5	66	20	909-377
LM5E	34	7	862-276
LM5W	31	11	875-381
LM6	63	15	925-425
LM6E	22	7	737-378
LM6W	16	6	885-588

The drillhole intersection angles with the veins are variable, as in the case of underground drillholes they are drilled as fans of multiple holes from one set up. This is best seen in Figure 7.4, which is a cross section on Exploration Line 2 for SGX. In addition, Figure 7.10 in the 2014 report shows Exploration line 50 with the attitudes of the veins and underground drilling intersections.

10.3.6 LMW

The LMW diamond drilling from 2013 to 2016 were designed to extend and expand the known mineralized zones within major vein structures LM7, LM11, LM12, LM13, LM16, LM17, LM19, W1, W4, and W18, and explore for new mineralized structures in less-explored areas. Results of the drilling program successfully expanded mineralization in vein structures LM17, LM12-2, W18 and W1. The 2013–2016 drilling program is summarized in Table 10.14.

Table 10.9 Summary of the LMW 2013-2016 drilling program

Target Vein	Number of Holes Drilled	Holes Intercepting Mineralization (≧100 g/t Ag equivalent)	Detected Depth (Elevation m)
LM7	10	2	795-494
LM8	5	0	809-455
LM8-1	3	1	903-658
LM11	17	2	882-764
LM11E	13	2	874-632
LM12	13	2	779-461
LM12-1	9	1	792-484
LM12-2	16	7	798-465
LM12E	7	1	767-433
LM12E2	4	3	742-718
LM13	10	2	822-531
LM13W	11	3	847-570
LM13W2	10	2	830-607
LM16	6	1	869-666
LM16W	2	1	898-830
LM17	16	3	951-680
LM19	8	3	746-612
LM19E	5	0	748-740
LM19W	7	2	733-590
LM19W1	3	1	636-611
LM19W2	8	2	730-552
LM20	6	2	729-572
LM20W	4	2	734-585
W1	14	5	869-766
W2	2	2	932-925
W4	8	2	864-591
W18	17	8	916-687
W18E	2	1	902-852

The drillhole intersection angles with the veins are variable, as in the case of underground drillholes they are drilled as fans of multiple holes from one set up. This is best seen in Figure 7.4, which is a cross section on Exploration Line 2 for SGX. In addition, Figure 7.11 in the 2014 report shows Exploration line 5 with the attitudes of the veins and underground drilling intersections.

10.4 Drilling procedures

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%. Drill core is moved from drill site to the surface core shack located at the mine camp on daily basis and is logged, photographed and sampled in detail there. Samples are prepared by cutting the core in half with a diamond saw. One half of the core is marked with a 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. A pre-numbered ticket book is used to assign the sample numbers. A ticket from the book is inserted in the bag and the stub of the ticket book is retained for reference. The bagged sample is then shipped to the laboratory for assaying.

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 down-dip. Silvercorp's exploration consists of horizontal tunnelling along and across 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. Channel samples are collected from underground tunnels and other workings, and core samples are collected from altered and mineralized drill cores. The sample collection and preparation follows accepted industry practice.

Channel samples are collected from the roofs of drift tunnels along sample lines perpendicular to the mineralized vein structure and from the walls of crosscut tunnels across the mineralized vein structure as described in Section 9.1. The bagged sample is then shipped to the laboratory for assaying.

NQ-sized drill cores (48 mm in diameter) are recovered from the mineralized zones. Drill core is logged, photographed and sampled in detail at the surface core shack as described in Section 10.4. The bagged sample is then shipped to the laboratory for assaying.

11.2 Sample preparation and analysis

Core samples are shipped or couriered in securely sealed bags to one of the following three reputable commercial laboratories:

- The Analytical Laboratory of Henan Nonferrous Exploration Institute (Zhengzhou Nonferrous Laboratory) in Zhengzhou, Henan Province,
- The Chengde Huakan 514 Geology and Mineral Testing and Research Institute (Chengde Laboratory) in Chengde, Hebei Province,
- The Analytical Laboratory of the Inner Mongolia Geological Exploration Bureau (Inner Mongolia Laboratory) in Hohhot, Inner Mongolia.

All three laboratories are accredited and certified as first class laboratories by the Chinese government. The procedures for sample preparation and quality management in these laboratories are established in accordance with the official Chinese technical standard DZ/T 0130-2006 (The Specification of Testing Quality Management for Geological Laboratories), which is a combination of the basic principles and methodologies of ISO 9000:2000 and ISO/IEC 17025:1999. Their sample preparation procedures consist of drying, crushing, splitting and weighing of a 200-gram sample, followed by pulverizing to 200-mesh size. The 200-mesh sample split is split again with a 100-gram split used for final assay. 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.

Channel samples are prepared and assayed at Silvercorp's mine laboratory (Ying Laboratory) located at the mill complex in Luoning County and referred to in Section 11.3 below. 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 160 mesh (0.1 mm) is prepared for assay. A duplicate sample of minus 1 mm is made and kept at the laboratory 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 laboratory.

11.3 Ying assay laboratory

A brief examination of the Ying Laboratory was made by AMC Qualified Person P Stephenson in September 2013. The assay laboratory is officially accredited by the Quality and Technology Monitoring Bureau of Henan Province and has been used to analyze both channel samples taken from underground workings for Resource estimation purposes, and concentrate produced from the processing plants. Most of the processes for the analysis of channel samples and concentrate are completed within separate buildings, rooms and instruments.

11.4 Quality assurance and quality control

Silvercorp's QA / QC program and results prior to June 2013 have been described in previous Technical Reports.

Silvercorp's QA / QC program in the period from July 2013 to June 2016 comprised the following:

- Regular insertion of Certified Reference Material (CRM) samples, blanks and duplicates at a rate of one CRM, one blank and one duplicate per 40 sample batch.
- Regular review of results, with additional review by independent Qualified Persons.

Silvercorp geologists at each mine and the Exploration Management Department in Silvercorp's Beijing Office 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 Mineral Resource estimation.

In Silvercorp's 2013-2016 QA / QC program at the Ying Property, a total of 453 CRMs, 438 blanks and 422 duplicates were inserted with the 14,444 core samples, and 1,282 CRMs, 1,104 blanks and 850 duplicates were inserted with the 44,166 channel samples. A total of 684 core and channel samples were selected for internal check and 519 core and channel samples were selected for external check.

11.4.1 Assay results of reference materials

Seven CRMs purchased from the CDN Resource Laboratories Ltd in Langley, BC, Canada were used in the 2013-2016 QA / QC program, comprising CDN-ME-1204, CDN-ME-1206, CDN-FCM-7, CDN-ME-1302, CDN-ME-1304, CDN-ME-1305 and CDN-ME-14. The recommended values and the two standard deviations for each CRM are listed in Table 11.1.

Table 11.1 Recommended values and two standard deviations of CRMs

CRM	Element	Unit	Recommended Value	Two Standard Deviation
CDN-ME-1204	Au	g/t	0.975	0.066
	Ag	g/t	58	6
	Pb	%	0.443	0.024
	Zn	%	2.36	0.12
CDN-ME-1206	Ag	g/t	274	14
	Pb	%	0.801	0.044
	Zn	%	2.38	0.15
CDN-ME-1302	Au	g/t	2.412	0.234
	Ag	g/t	418.9	16.3
	Pb	%	4.68	0.24
	Zn	%	1.20	0.04
CDN-ME-1304	Au	g/t	1.80	0.12
	Ag	g/t	34	3.2
	Pb	%	0.258	0.014
	Zn	%	0.220	0.012
CDN-ME-1305	Au	g/t	1.92	0.18
	Ag	g/t	231	12
	Pb	%	3.21	0.09
	Zn	%	1.61	0.05
CDN-ME-14	Ag	g/t	42.3	4.2
	Pb	%	0.495	0.030
	Zn	%	3.10	0.28
CDN-FCM-7	Ag	g/t	64.7	4.1
	Pb	%	0.629	0.042
	Zn	%	3.85	0.19

Quality of assay data is visually reviewed on quality control charts. Assay results of a CRM within ± 2 standard deviations (SD) of the recommended value is considered acceptable, and assay data outside the ±3SD control lines are deemed failed assays. When two or more consecutive assays of CRMs occur outside the control lines in a sample batch, Silvercorp will notify the laboratory immediately to check their internal QA / QC procedures and re-assay samples of the batch with failed CRM assays.

Figure 11.1 shows results of 24 assays from all three laboratories of the lower grade reference material CDN-ME-14 in the 2014 drilling program. The three graphs show the results of silver, lead and zinc respectively.

Figure 11.1 Example results for CDN-ME-14 in the 2014 drilling program

Figure 11.2 shows results of 25 assays from all three laboratories of the intermediate grade reference material CDN-ME-1206 in the 2014 drilling program. The three graphs show the results of silver, lead and zinc respectively.

Figure 11.2 Example results for CDN-ME-1206 in the 2014 drilling program

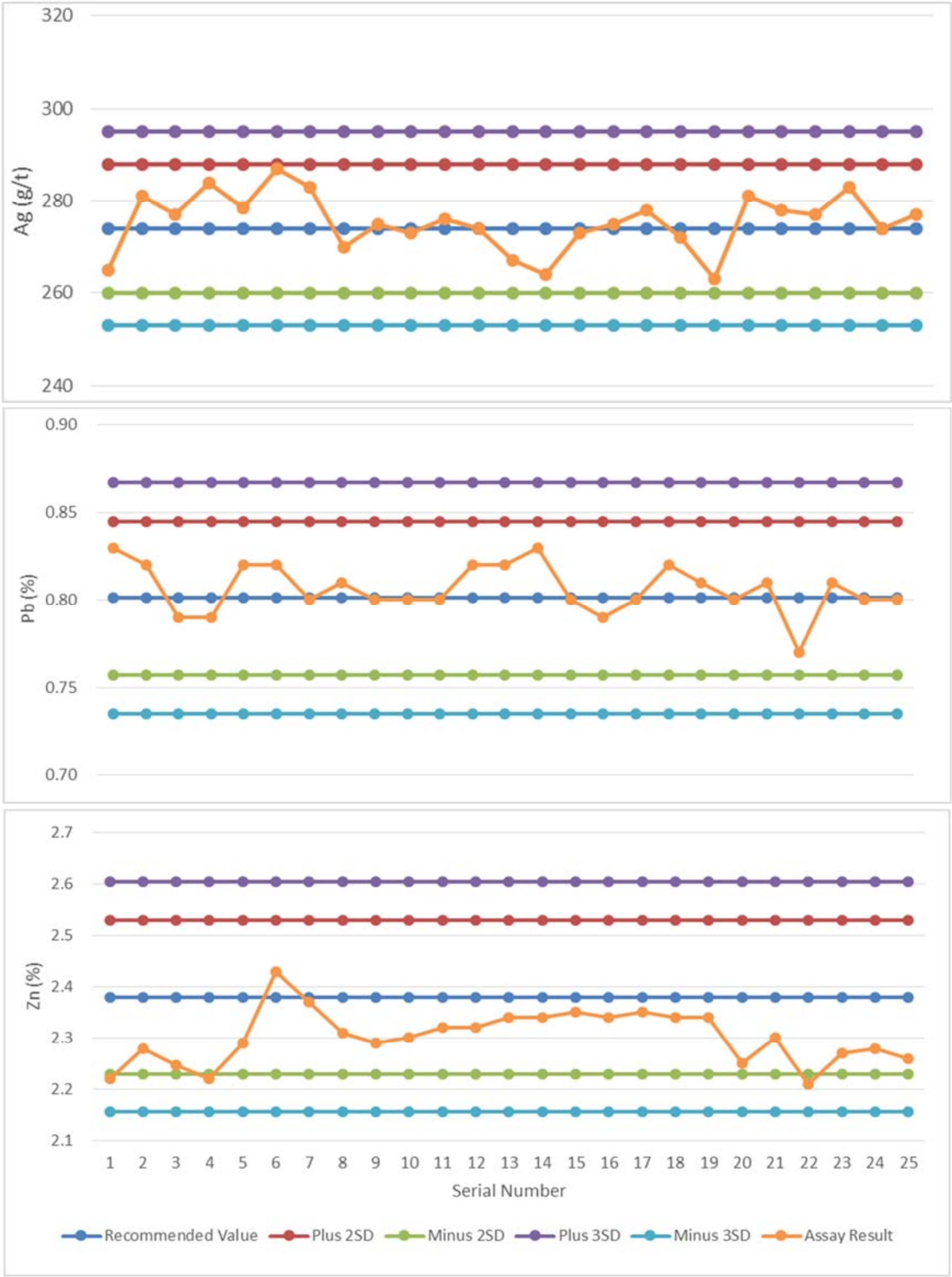


Figure 11.3 shows results of 38 assays from all three laboratories of the higher grade reference material CDN-ME-1302 in the 2015 drilling program. The three graphs show the results of silver, lead and zinc respectively.

Figure 11.3 Example results for CDN-ME-1302 in the 2015 drilling program

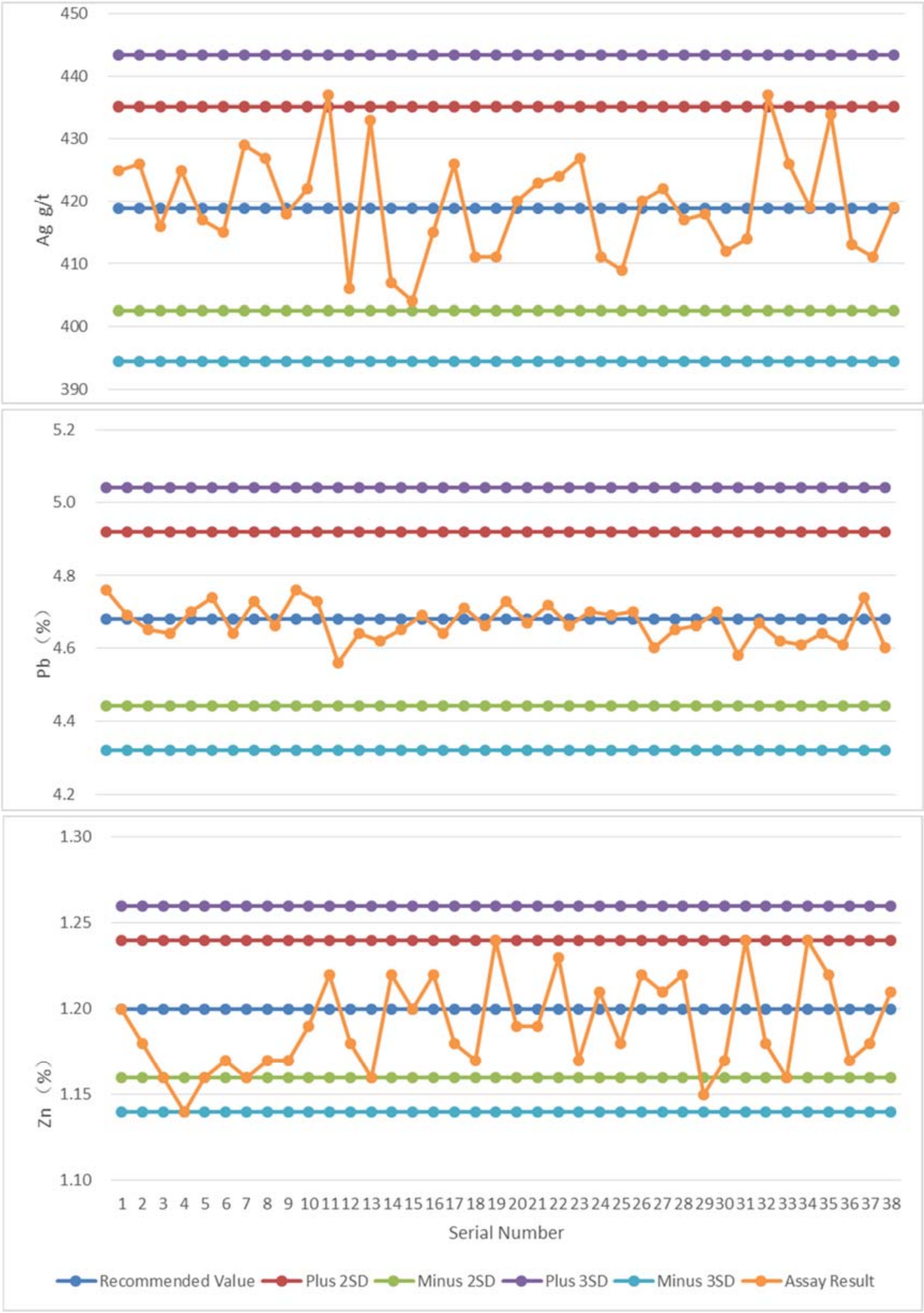
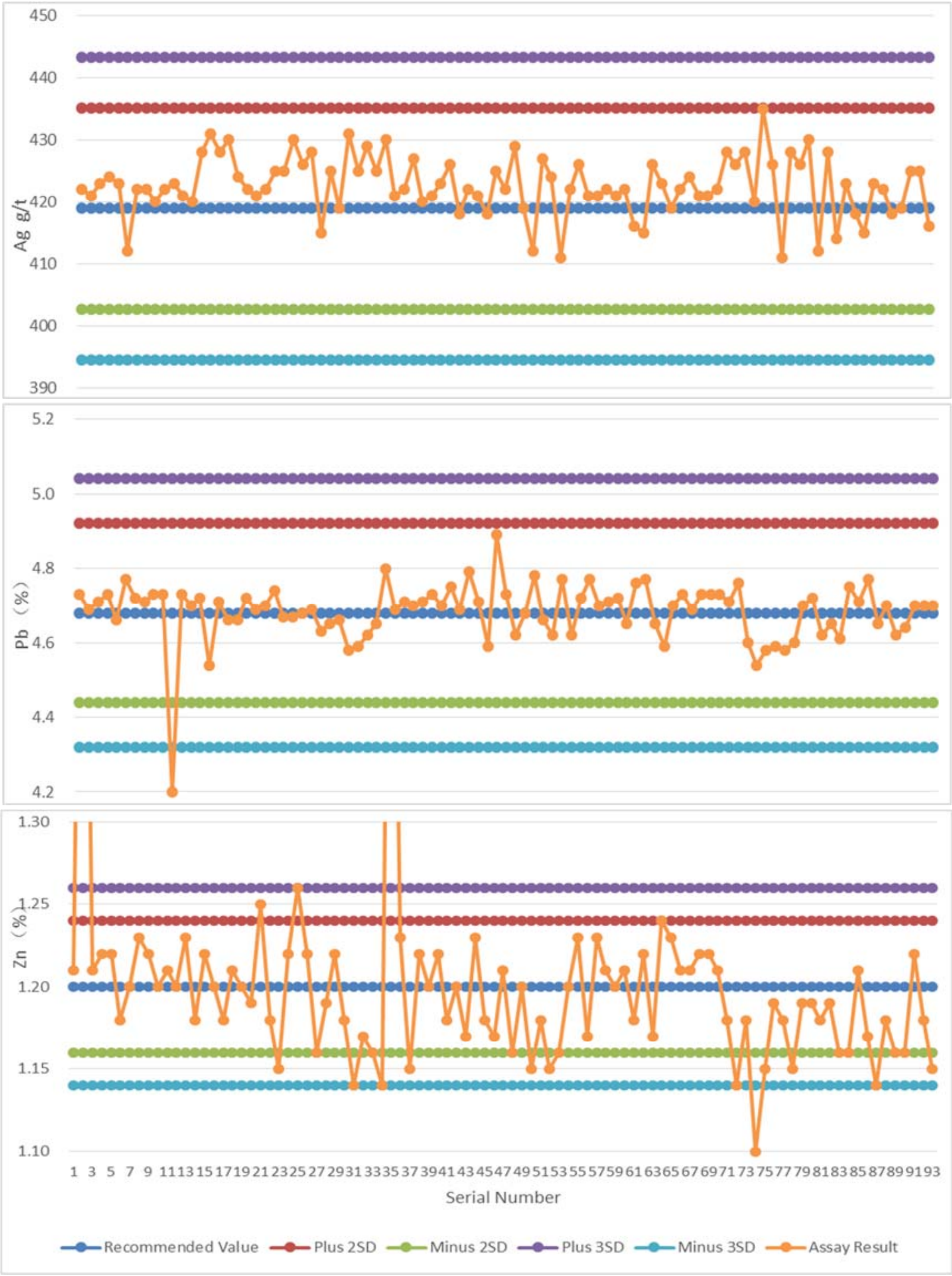


Figure 11.4 shows results of 93 assays of CDN-ME-1302 carried out by the Ying Laboratory in the 2015 tunnelling program. The three graphs show the results of silver, lead and zinc respectively.

Figure 11.4 Example results for CDN-ME-1302 in the 2015 tunnelling program



With the exception of zinc results for CDN-ME-1302, AMC considers that assay results from CRMs for silver, lead and zinc fall within acceptable ranges. AMC does not consider the zinc results for CDN-ME-1302 to be of material concern, since zinc is not a major contributor to revenue at Ying.

11.4.2 Assay results of blank samples

Blank samples were made of barren rocks from the Ying Property. 433 blank samples were inserted into core sample batches and 781 blank samples were inserted into channel sample batches from July 2013 to June 2016 to monitor possible contamination problems in sample preparation procedures. In the 433 blanks in core samples, three blanks were detected with anomalous silver of more than 30 g/t and four blanks with anomalous lead of more than 0.3%. Assay results of three batches of core samples with anomalous blank assays were reported by the Zhengzhou laboratory. The three batches were re-assayed and more intensive QA / QC measures have been practiced by the lab since late 2014. In the 781 blanks in channel samples, twelve were detected with anomalous silver of more than 30 g/t and lead of more than 0.3%, and four were detected with anomalous zinc of more than 0.3%. The Mine Laboratory was notified of possible contamination in sample preparation procedures and the relevant batches were re-assayed. Overall, AMC considers that the assay results for the blank materials are acceptable and corrective action is being taken and batches re-assayed when appropriate.

11.4.3 Assay results of field duplicates

Field duplicates of core samples are prepared by cutting a quarter of a core sample with visible mineralization, and those of channel/chip samples are collected by cutting a sample immediately next to a sampling line across a mineralized vein structure. Assay results of field duplicates are mainly used to evaluate the homogeneity of mineralization and the reliability of field sampling practice.

Figures 11.5 and 11.6 show the reproducibility of field duplicates in core samples and channel/chip samples respectively in the 2014 drilling program. The distribution patterns of silver, lead and zinc in the diagrams coincide with the distribution patterns of native silver, galena and sphalerite in the mineralized veins in the Ying property. The widely scattered feature of silver distribution may reflect the frequent occurrences of large film-like and wire-like native silver in some of the mines like LMW and HZG.

Figure 11.5 Field duplicate assays for core samples in the 2014 drilling program

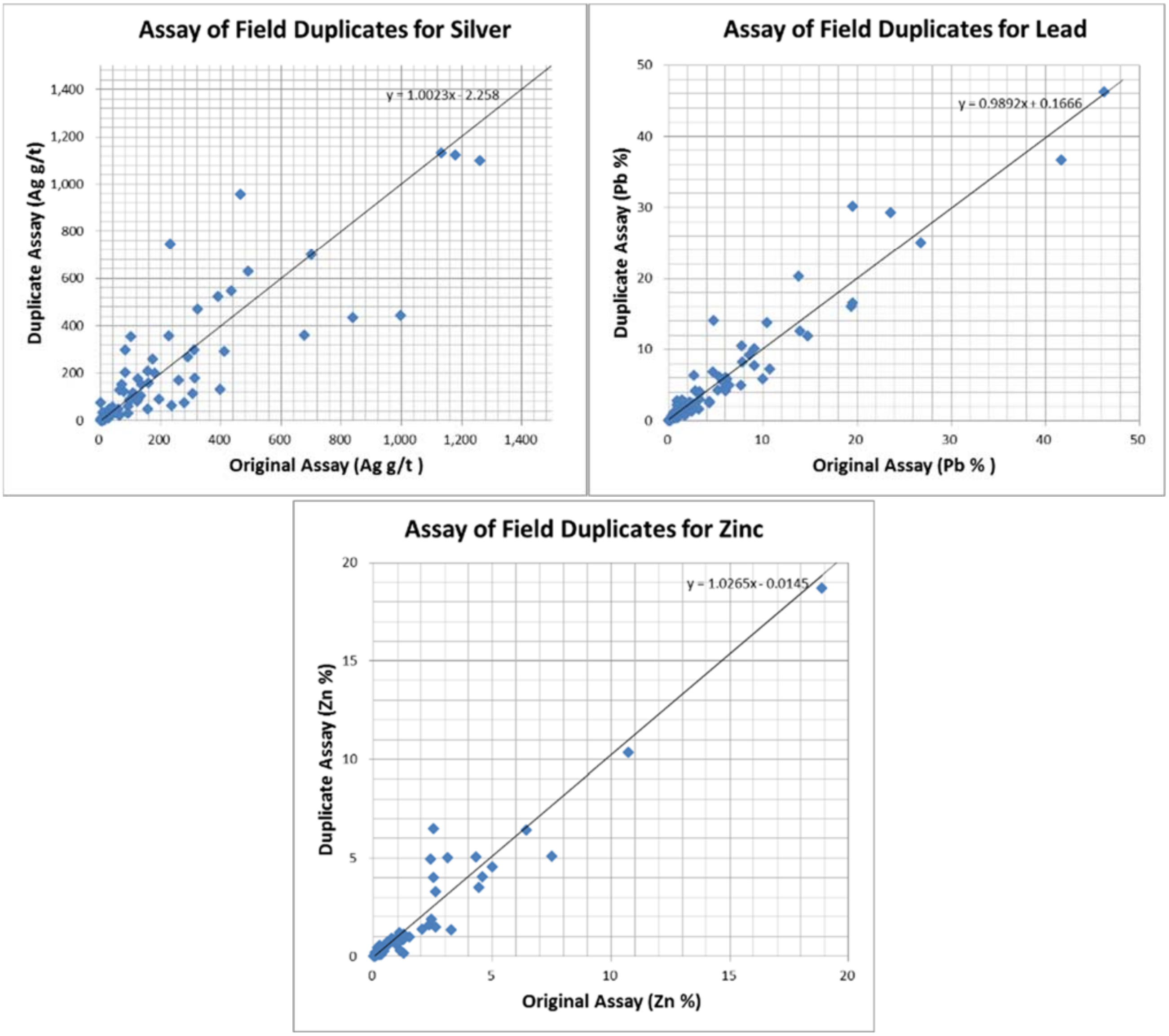
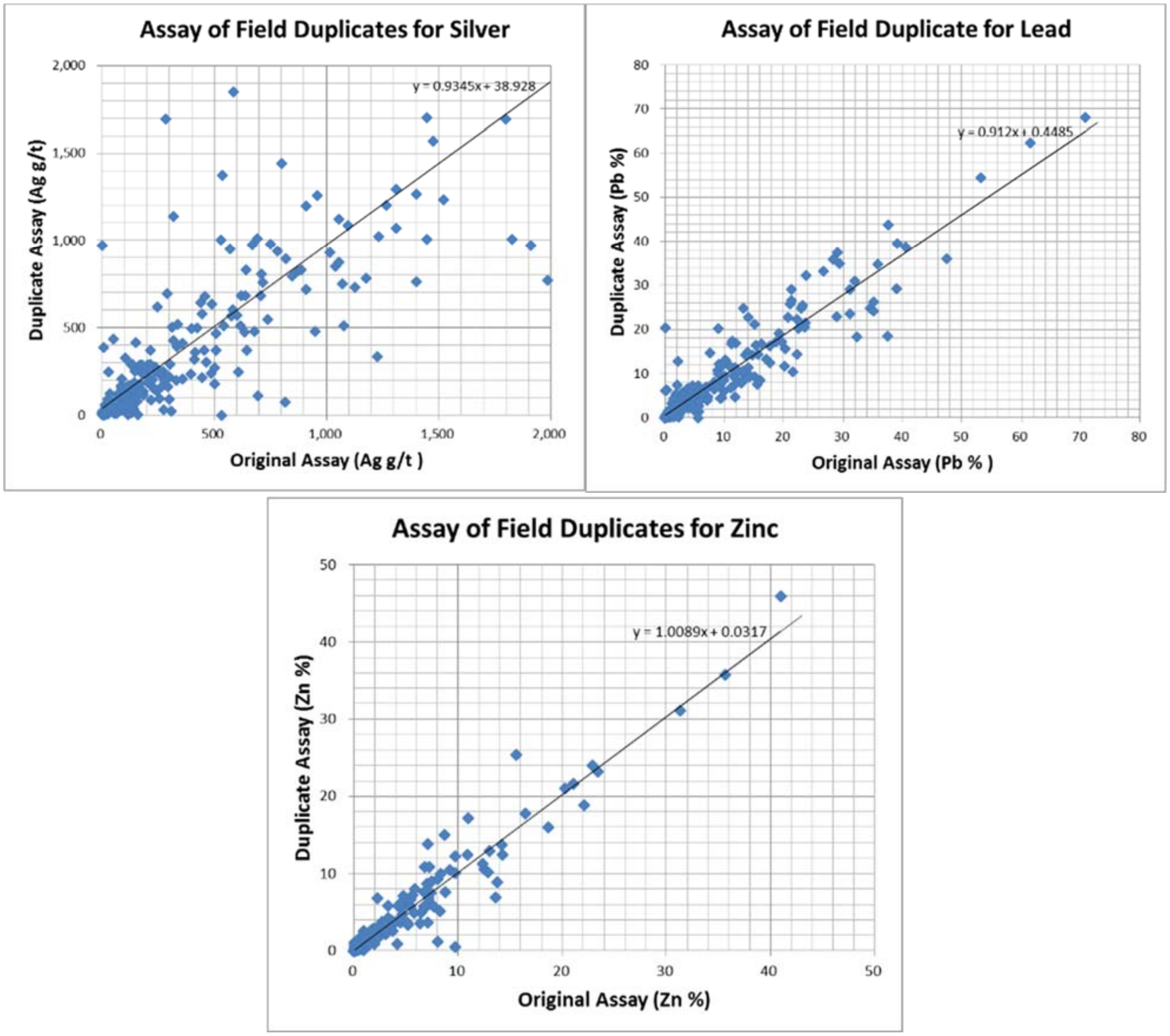


Figure 11.6 Field duplicate assays for channel samples in the 2015 tunnelling program



11.5 Bulk density measurements and results

306 samples for bulk density measurement were collected by Silvercorp from different mine areas in the Ying Property. Samples were 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 were also collected for comparison purpose. The bulk density was measured using the wax-immersion method by the Inner Mongolia Mineral Experiment Research Institute located in Hohhot, Inner Mongolia.

Note that additional bulk density samples were quoted from government reports in the 2012 AMC NI 43-101 Technical Report, but as these samples did not have associated assay data, they were not used in the regression formula below.

A relationship between measured bulk density and the weighted combination of lead and zinc grade was developed using multivariate linear least squares regression. Samples with a relative error > 20 % between the measured and calculated bulk density were removed from the dataset before calculation of the final relationship that was used in the Mineral Resource estimate. Figure 11.7 shows the relationship using all data, while Figure 11.8 shows only the data with < 20 % relative error. Using this formula, the Ying deposit bulk density measurements range from 2.64 t/m^3 to 5.97 t/m^3 with a mean of 2.74 t/m^3. The relationship between bulk density and grade is:

$$\text{Bulk Density} = 2.643339 + 0.047932 \times \text{Pb}\ \% + 0.011367 \times \text{Zn}\ \%$$

Figure 11.7 Combined lead and zinc vs measured bulk density: all data

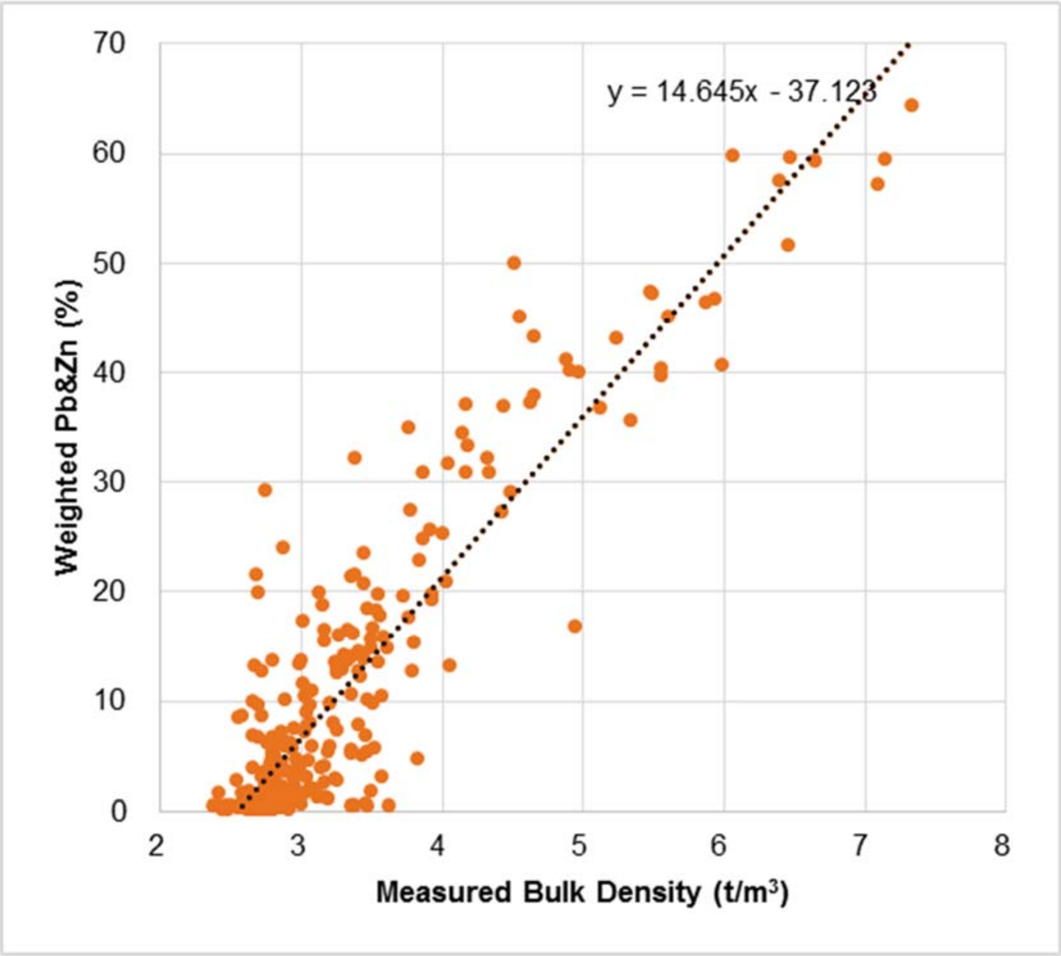
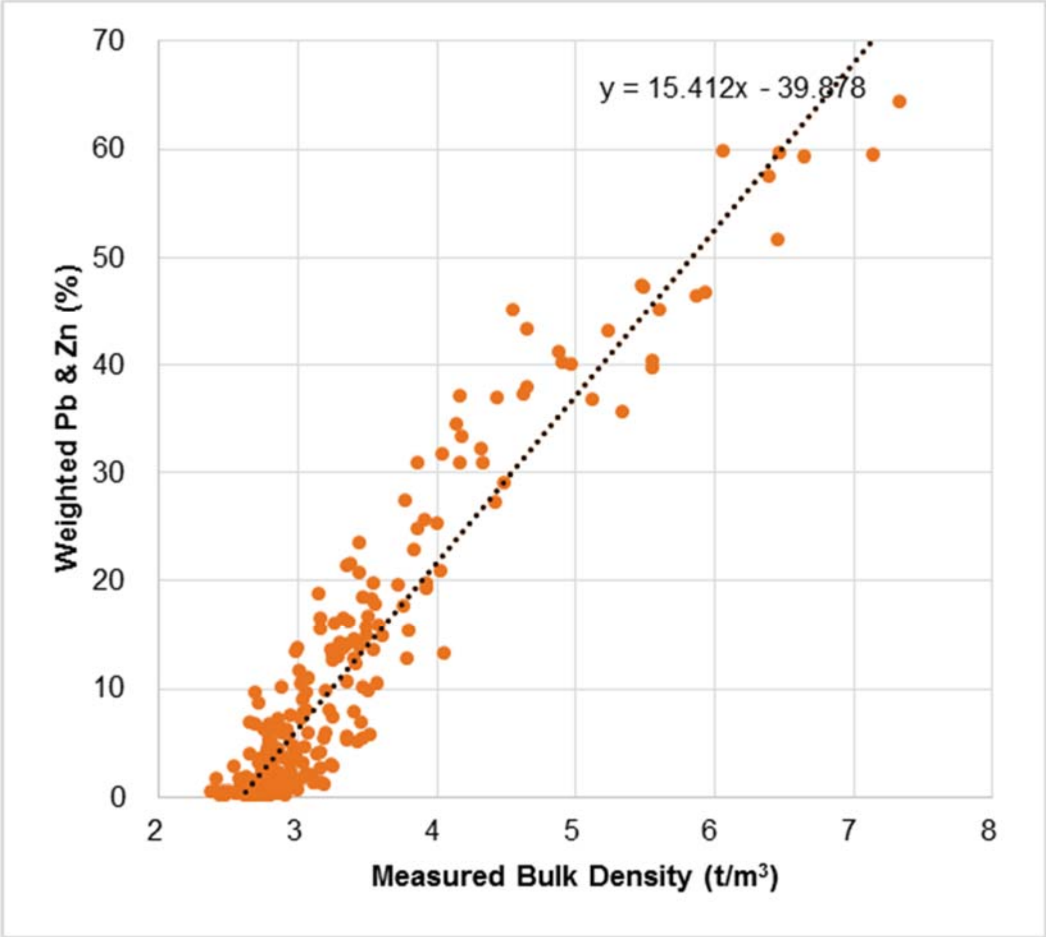


Figure 11.8 Combined lead and zinc vs measured bulk density: < 20 % relative error



In AMC's opinion, the sampling procedures and QA / QC measurements adopted by Silvercorp for its 2013 (second half-year), 2014 and 2015 exploration programs at the Ying Property meet accepted industry standards, and the assay data is suitable for Mineral Resource estimation.

12 Data verification

Between 13-16 July 2016, AMC full-time employees and QPs P R Stephenson, Dr A Ross, and H A Smith visited the Ying Property to undertake the following data verification steps:

- Discussions with site staff regarding:
  - Sample collection
  - Sample preparation
  - Sample storage
  - QA / QC
  - Data validation procedures
  - Underground mapping procedures
  - Survey procedures
  - Geological interpretation
  - Exploration strategy
- A review of underground tunnel roof mapping.
- An inspection of the core sheds and some recent drill core intersections from the property.
- Inspection of underground workings at the SGX, HPG, HZG, LM and TLP mines including active resue and shrinkage stopes.
- Inspection of the mineral processing and tailings facilities.
- Random cross-checks of 10-15% of the mineralized assay results in the database with original assay results from the reporting period.

AMC makes the following observations based on the data verification undertaken:

- Site geologists are appropriately trained and are conscious of the specific sampling requirements of narrow-vein, high-grade deposits.
- Cross-checking the database with the original assay results did not uncover any significant errors.

In AMC's opinion, the geological data used to inform the Ying property block model estimates were collected in line with industry good practice as defined in the Canadian Institute of Mining and Metallurgy and Petroleum (CIM) Exploration Best Practice Guidelines and the CIM Mineral Resource, Mineral Reserve Best Practice Guidelines. As such, the data is suitable for use in the estimation of Mineral Resources.

13 Mineral processing and metallurgical testing

13.1 Introduction

The lab scale mineral processing and metallurgical tests for the Ying Property deposits 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.

AMC is not aware of any subsequent external Design Institute metallurgical testwork having been carried out, although continual on-site "plant-tuning" occurs.

13.2 Mineralogy

Silvercorp has three principal mining operations on the Ying Property:

- SGX, consisting of the SGX and HZG mines in the western part of the block.
- HPG, consisting of the HPG mine, also in the western part of the block.
- TLP / LM, consisting of the TLP and LM mines in the eastern part of the block.

The mineralization in the SGX-HZG deposits and other deposits in the Ying district 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 deposit is described below.

13.2.1 SGX Mineralization

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:

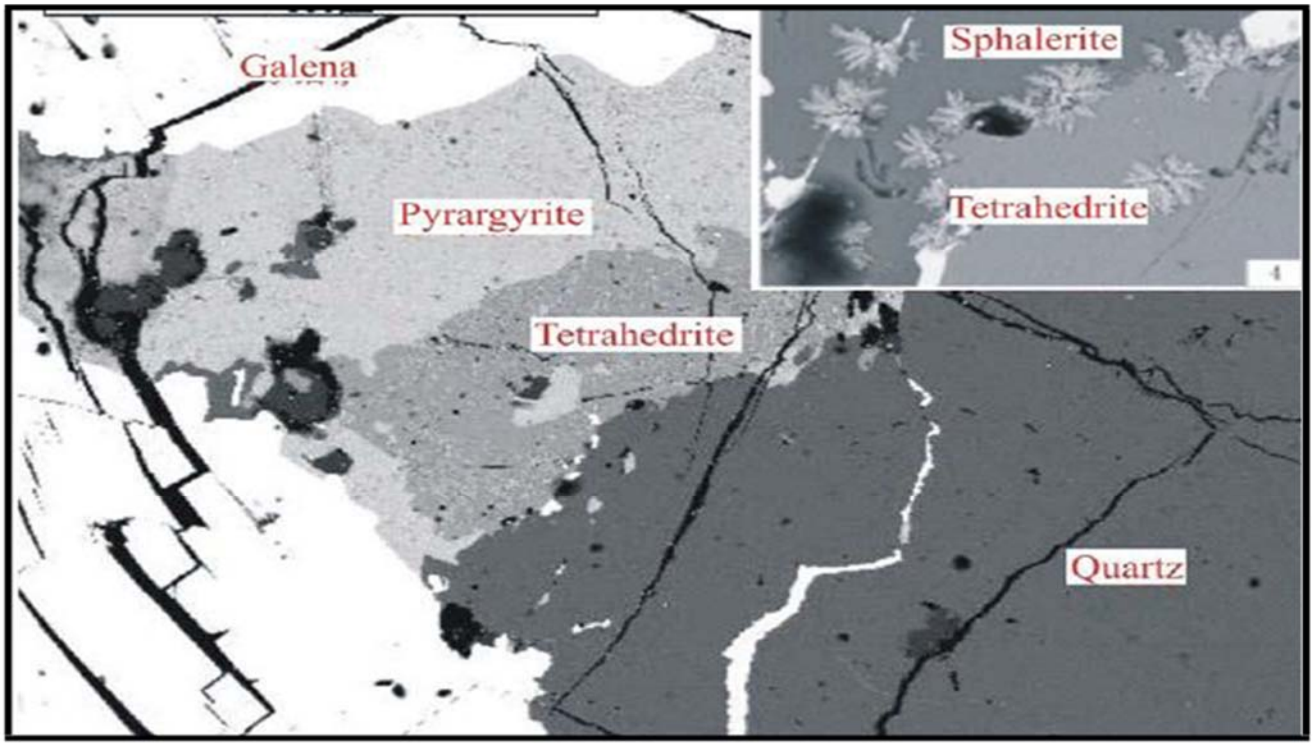
- As silver minerals, including native silver, electrum, tetrahedrite, polybasite, pyrargyrite, and argentite
- As electro-replacement in galena, pyrite, and other sulphides. Native sulphides usually range from 0.01 to 0.07 mm in size
- Only 4.6% of the silver is associated with gangue minerals.

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.

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 (%)	Total Fe (%)
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

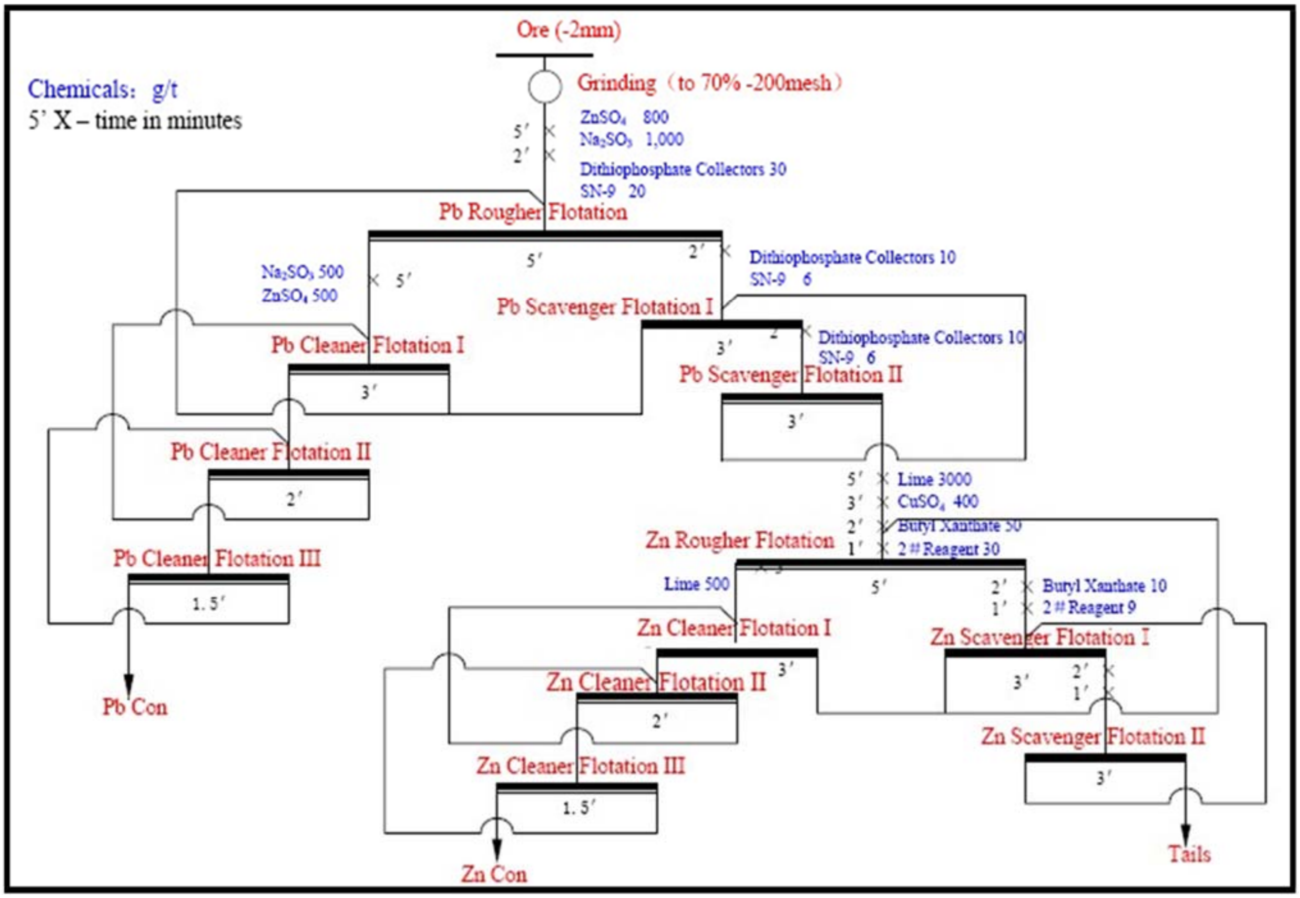
As summarized in previous SGX technical reports, the test work concluded that:

- 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)

			Grade			Recovery	
Product	**Mass Yield (%)**	**Pb (%)**	**Zn (%)**	**Ag (g/t)**	**Pb (%)**	**Zn (%)**	**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 deposit. Silvercorp submitted a development plan to the relevant authority applying for a mining license by using the metallurgical testing results from the TLP silver-lead deposit.

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	Total Fe	
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 levels in the zinc concentrate (0.01% As) are well below the 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

14.1 Introduction

The Mineral Resource estimates for the SGX, HPG, and HZG deposits were carried out by independent Qualified Person, Dr Adrienne Ross, P.Geo of AMC who takes responsibility for these estimates.

The Mineral Resource estimates for the TLP, LMW, and LME deposits were carried out by Ms K. Zunica of AMC under the supervision of Dr Ross who takes responsibility for these estimates.

The June 2016 Mineral Resources were estimated using a block modelling approach, with 3D ordinary kriging and Datamine's™ dynamic anisotropy application[4] being employed.

The Mineral Resources include material (approximately 25% of the total Mineral Resources) below the lower elevation limit of Silvercorp's current mining licenses. However, because of the nature of Chinese regulations governing applications for new or extended mining licenses, 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 licenses to develop these Mineral Resources as and when required

Table 14.1 shows the Mineral Resources and metal content by mine for the Property as of 30 June 2016. The Mineral Resources are reported above cut-offs after applying a minimum practical mining width of 0.3 m. Diluted grades were estimated for blocks with mineralization widths less than 0.3 m by adding a waste envelope with zero grade. Cut-off grades are based on in situ values in silver equivalent (AgEq) terms in grams per tonne and incorporate mining, processing and G & A costs provided by Silvercorp for each mine and reviewed by AMC. AgEq formula by mine are shown in the footnotes of the table below.

[4] Dynamic anisotropy re-orientates the search ellipsoid for each estimated block based on the local orientation of the mineralization

Table 14.1 Mineral Resources and metal content for silver, lead, zinc and gold as of 30 June 2016

Mine	Resource Category	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Metal Contained in Resource			
							Au (koz)	Ag (Moz)	Pb (kt)	Zn (kt)
SGX	Measured	2.67	-	296	5.71	3.06	-	25.46	152.7	81.71
	Indicated	3.86	-	271	5.06	2.36	-	33.64	195.5	91.19
	Measured + Indicated	6.54	-	281	5.33	2.64	-	59.10	348.2	172.90
	Inferred	3.66	-	268	5.14	2.33	-	31.50	187.8	85.23
HZG	Measured	0.33	-	390	1.20	0.24	-	4.14	4.0	0.78
	Indicated	0.45	-	297	0.91	0.18	-	4.27	4.1	0.80
	Measured + Indicated	0.78	-	336	1.03	0.20	-	8.41	8.0	1.58
	Inferred	0.35	-	231	1.22	0.25	-	2.63	4.3	0.87
HPG	Measured	0.69	1.10	88	3.77	1.15	24	1.95	26.0	7.92
	Indicated	0.63	1.10	85	2.84	1.15	22	1.72	17.9	7.21
	Measured + Indicated	1.32	1.10	87	3.33	1.15	47	3.66	43.8	15.12
	Inferred	1.01	1.21	114	3.88	1.09	39	3.69	39.1	10.98
LME	Measured	0.32	-	348	1.64	0.31	-	3.55	5.2	1.0
	Indicated	0.93	-	312	2.19	0.49	-	9.33	20.3	4.51
	Measured + Indicated	1.25	-	321	2.05	0.44	-	12.88	25.5	5.51
	Inferred	0.65	-	326	1.60	0.42	-	6.79	10.3	2.73
LMW	Measured	0.54	-	329	3.44	0.27	-	5.74	18.7	1.49
	Indicated	1.93	-	239	2.68	0.31	-	14.84	51.7	6.00
	Measured + Indicated	2.47	-	259	2.85	0.30	-	20.58	70.4	7.49
	Inferred	1.36	-	250	2.37	0.32	-	10.95	32.2	4.38
TLP	Measured	1.36	-	222	3.76	0.28	-	9.71	51.1	3.80
	Indicated	2.60	-	167	3.21	0.31	-	13.97	83.5	7.94
	Measured + Indicated	3.96	-	186	3.40	0.30	-	23.68	134.6	11.74
	Inferred	3.44	-	196	3.95	0.32	-	21.69	135.6	11.04
Total	Measured	5.91	0.13	266	4.36	1.64	24	50.55	257.6	96.69
	Indicated	10.40	0.07	233	3.59	1.13	22	77.76	373.0	117.66
	Measured + Indicated	16.31	0.09	245	3.87	1.31	47	128.31	630.6	214.35
	Inferred	10.47	0.12	230	3.91	1.10	39	77.25	409.4	115.22

Notes:
Measured and Indicated Mineral Resources are inclusive of Mineral Resources from which Mineral Reserves are estimated
Metal prices: gold US$1250/troy oz, silver US$19/troy oz, lead US$0.90/lb, zinc US$1.00/lb
Exchange rate: RMB 6.50 : US$1.00
Veins factored to minimum extraction width of 0.3 m
Cut-off grades: SGX 140 g/t AgEq; HZG 125 g/t AgEq; HPG 125 g/t AgEq; LME 125 g/t AgEq; LMW 130 g/t AgEq TLP 120 g/t AgEq
Silver equivalent formulas by mine:
SGX=33.1895*Pb%+23.4590*Zn%+Ag g/t;
HPG=33.9925*Pb%+18.3181*Zn%+55.4773*Au g/t+Ag g/t;
TLP=34.1401*Pb%+Ag g/t;
HZG=31.8736*Pb%+Ag g/t;
LME=34.0436*Pb%+Ag g/t;
LMW=34.6856*Pb%+Ag g/t;
Exclusive of mine production to 30 June 2016
Rounding of some figures may lead to minor discrepancies in totals

14.2 Data used

14.2.1 Drillholes and underground channel samples

The drillholes and underground channel sample data were provided as tables in csv format, on the 20 July 2016. The tables comprise collar coordinates, downhole surveys, and assays, and were imported and verified in Datamine software. Table 14.2 is a summary of the data used in the Mineral Resource estimation, as well as the number of veins per mine. The total number of veins that were estimated was 194, and is broken out by mine in Table 14.2.

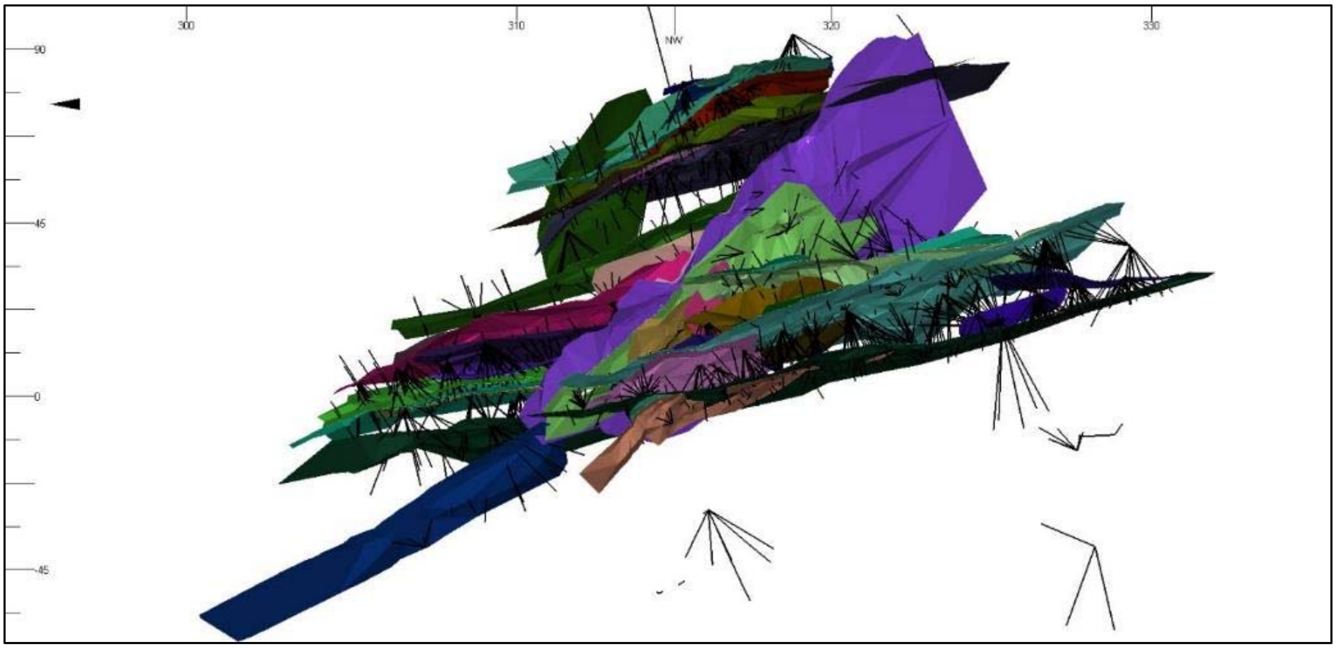
Table 14.2 Summary of data used

Mine	No of veins	No. of channel samples	No. of drillholes	Metres of channel samples	Metres of drillcore samples
SGX	39	19,835	1,667	21,216	415,677
HZG	11	3,523	262	3,432	74,390
HPG	20	6,673	537	6,047	130,798
LMW	58	6,317	568	7,411	180,406
LME	17	3,651	305	3,629	83,684
TLP	49	12,403	894	19,460	208,515
Total	**194**	**52,402**	**4,233**	**61,195**	**1,093,470**

14.3 Geological interpretation

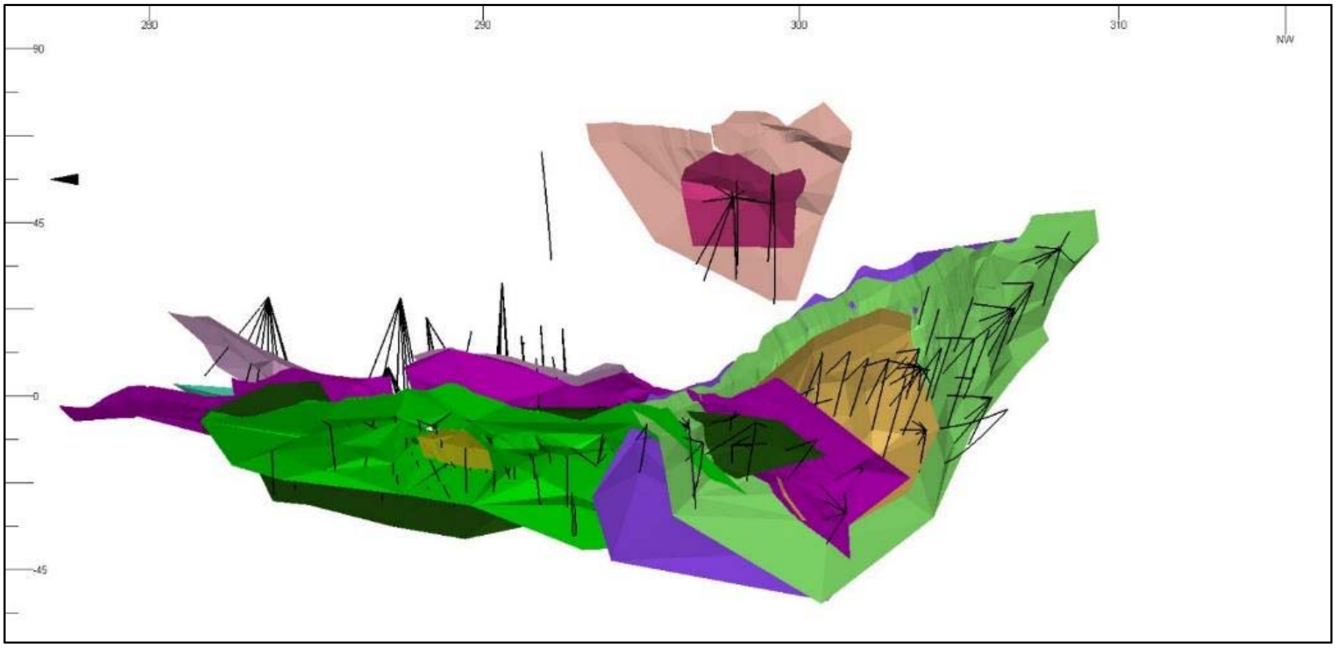
The interpretation of the mineralized domains was provided by Silvercorp. Silver / lead / zinc mineralization was interpreted on cross section and then linked to form 3D closed solids. The nominal thresholds for the mineralization were 140 g/t AgEq for SGX, HZG and HPG mines, and 120 g/t AgEq for LMW, LME and TLP mines. However, drillhole intersections with zero grade were commonly included to aid interpretation. AMC verified the 3D solids provided by Silvercorp. The 3D solids for each mine are shown in Figure 14.1 to Figure 14.6.

Figure 14.1 3D view of the SGX mineralization wireframes



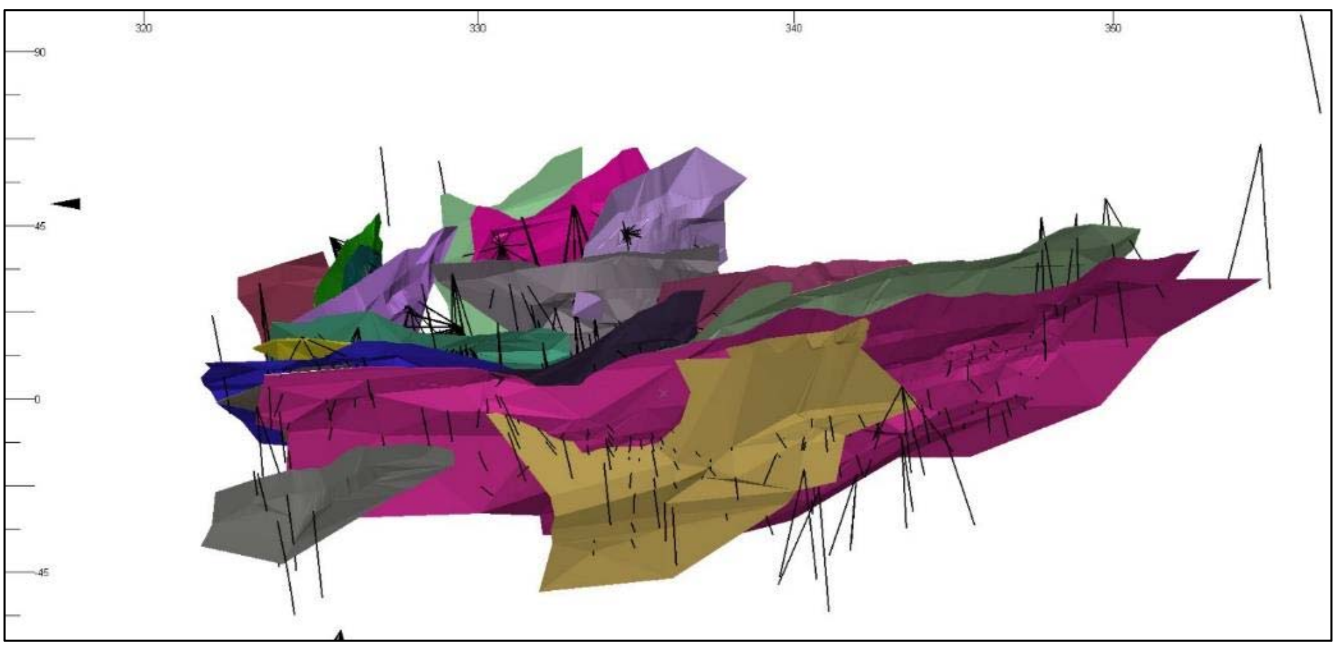
Note: Drillhole traces (black). Individual veins are given unique colours to aid visualization. View is towards the northwest. Not to scale.

Figure 14.2 3D view of the HZG mineralization wireframes



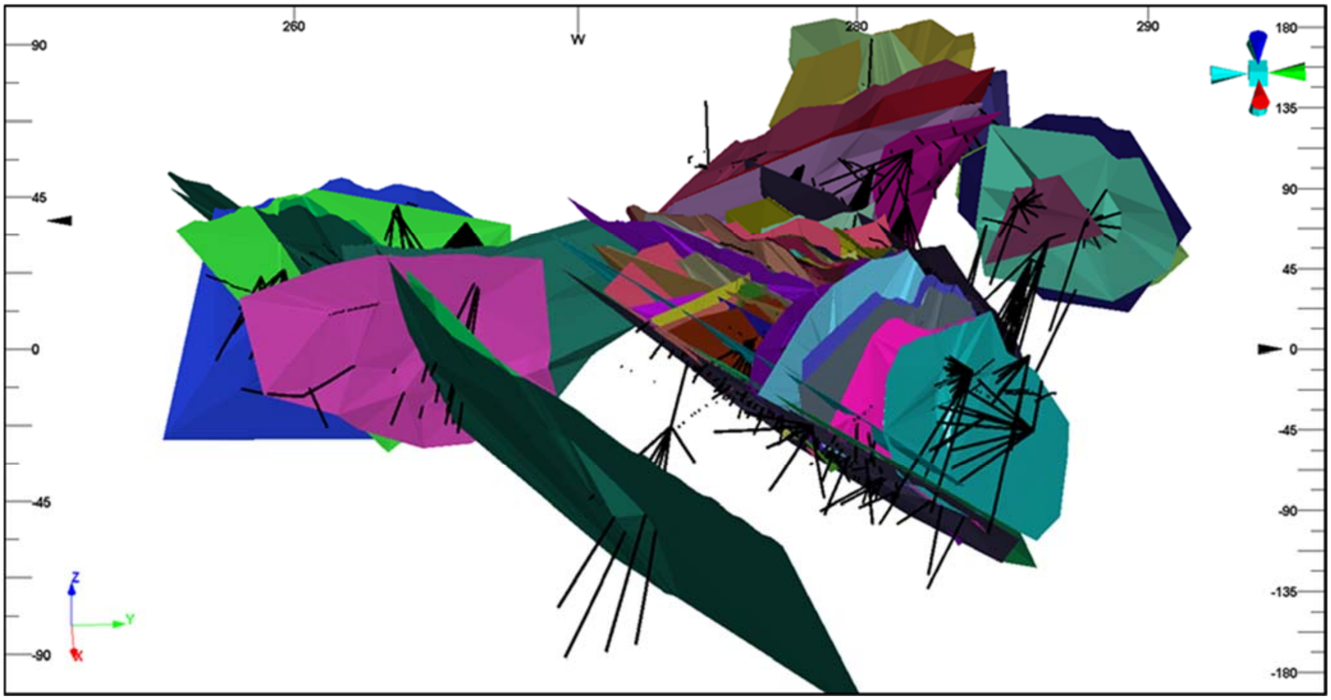
Note: Drillhole traces (black). View is towards the west-northwest. Not to scale.

Figure 14.3 3D view of the HPG mineralization wireframes



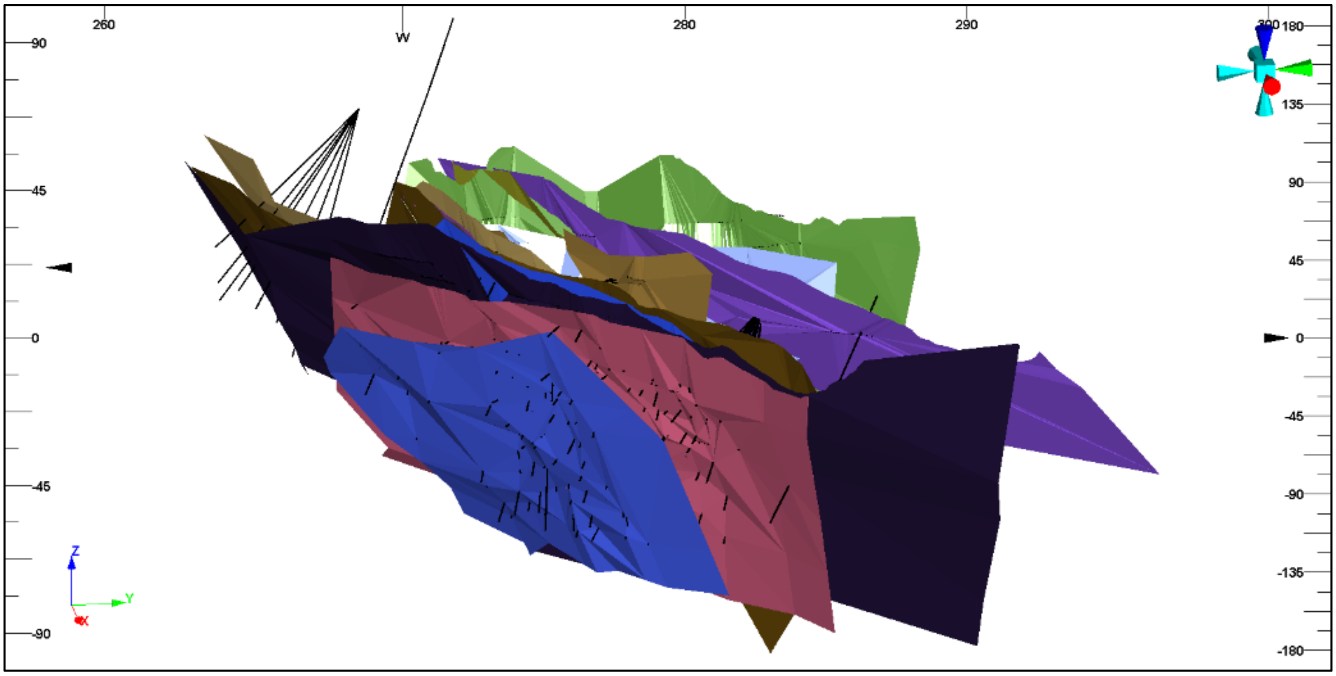
Note: Drillhole traces (black). View is towards the northwest. Not to scale.

Figure 14.4 3D view of the LMW mineralization wireframes



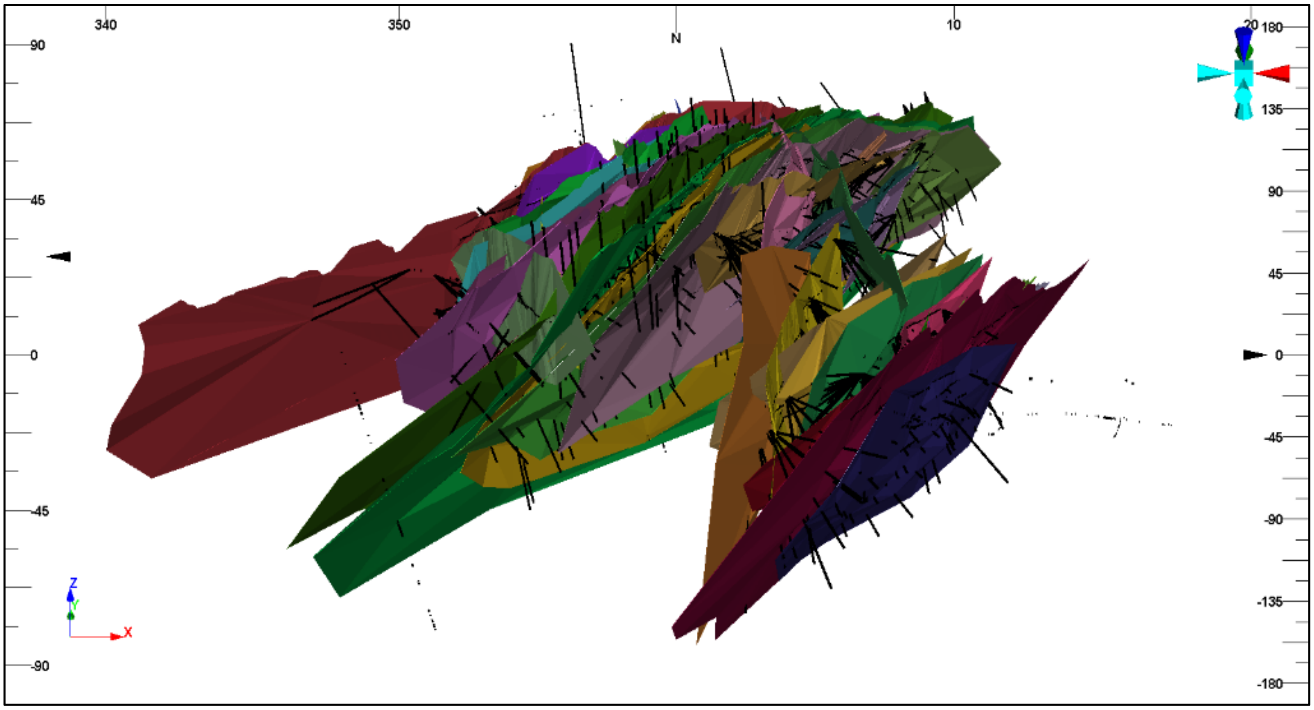
Note: Drillhole traces (black). Individual veins are given unique colours to aid visualization. View is towards the north. Not to scale.

Figure 14.5 3D view of the LME mineralization wireframes



Note: Drillhole traces (black). Individual veins are given unique colours to aid visualization. View is towards the west. Not to scale.

Figure 14.6 3D view of the TLP mineralization wireframes



Note: Drillhole traces (black). Individual veins are given unique colours to aid visualization. View is towards the north. Not to scale.

14.4 Data preparation

14.4.1 Statistics and compositing

Drillhole sample intervals were selected by the 3D solid wireframes and assigned to individual veins for each of the six mines.

AMC selected a compositing interval by reviewing sample length histograms and by comparing length-weighted raw grade statistics with composited grade statistics. Examples of mineralized sample length histograms from the SGX mine are displayed in Figure 14.7 and Figure 14.8 for channel and drillhole samples respectively. A composite length of 0.3 m was chosen as it does not distort the grade distribution for the mines when compared to the length-weighted raw grade statistics and because it is also the minimum mining width.

A study was conducted on the comparison of channel and drillhole statistics. On a mine by mine basis the channel samples had a higher mean than the drillholes, but on a vein by vein basis this was occasionally reversed. For this reason, it was decided to use the channels samples and drillholes separately, and the populations were never mixed. The channels alone were used for a close spaced sample (CSS) model where they were available, and drillholes alone were used to estimate the rest of the model, termed the BH model.

Figure 14.7 SGX mineralized channel sample length histogram

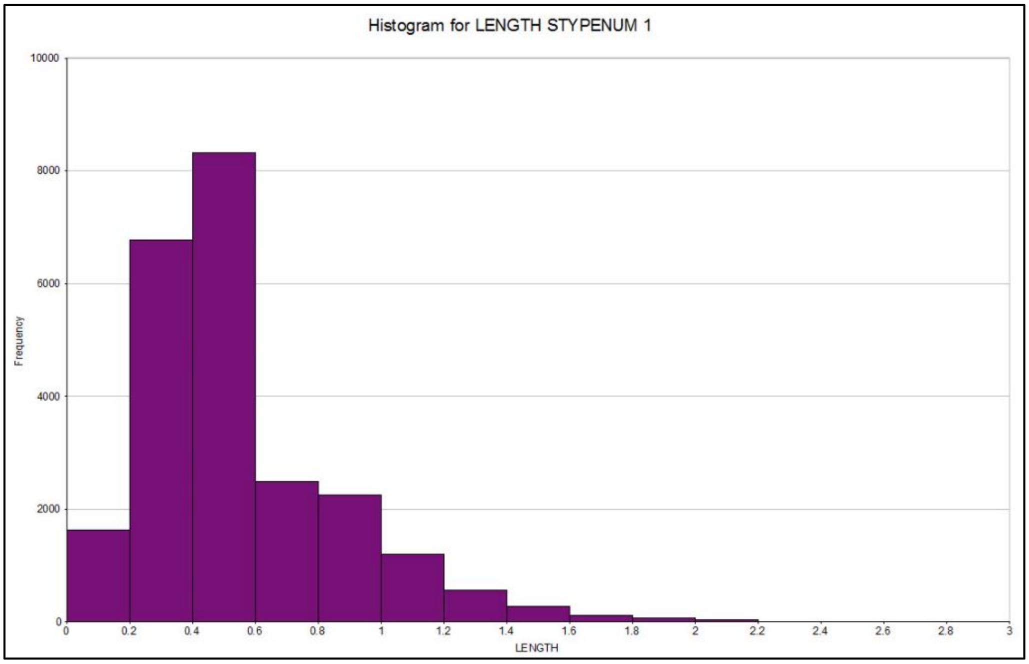
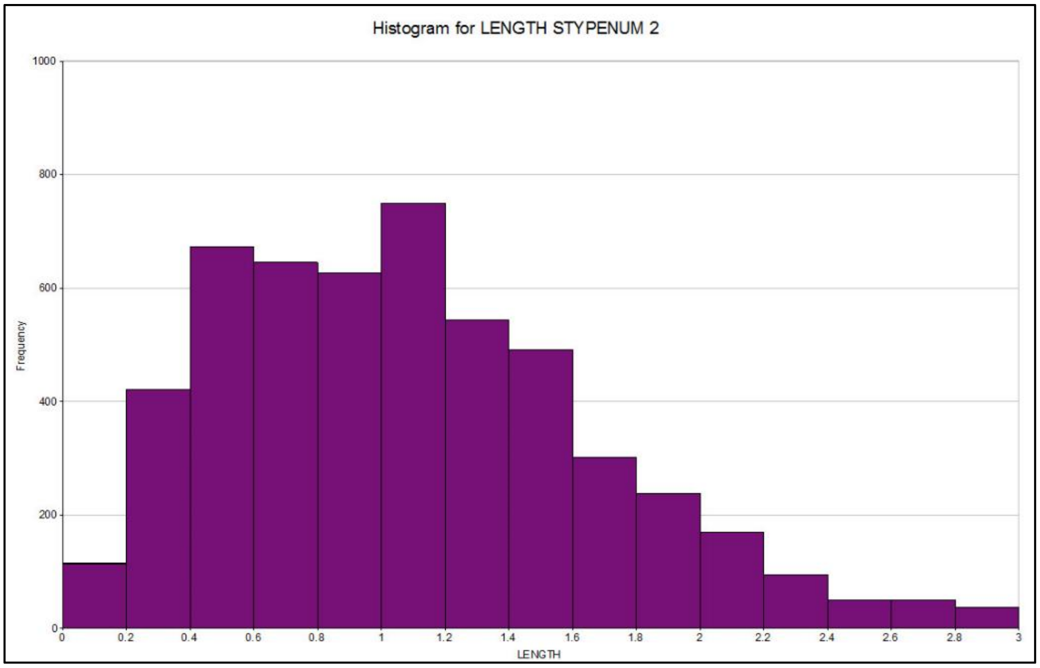


Figure 14.8 SGX mineralized drillhole sample length histogram



14.4.2 Grade capping

Grade capping is the process of reducing the grade of an outlier sample to a value that is considered to be more representative of the surrounding grade distribution, thereby minimizing the overestimation of adjacent blocks in the vicinity of the outlier.

A capped grade value should not result in an excessively large number of values being capped; typically, this should be less than 5% of the total database. The impact of this capping varies depending on the grade distribution, value of the outliers, and the number of samples in the grade domain.

In order to determine the optimal grade capping strategy, the following steps were undertaken on the composited data for each grade cap exercise:

- The skewness of the grade distribution was evaluated by looking at the grade log probability plot and the coefficient of variation statistic. An example of a log probability plot of silver from a domain at the SGX mine is presented in Figure 14.9.
- The spatial location of the outlier values, were visually evaluated in Datamine™ to determine if they are clustered (suggesting the existence of a high grade zone within the domain), or randomly distributed (suggesting the presence of outliers that may need to be capped).
- An appropriate capped grade was interpreted based on the above criteria and in keeping with the surrounding grade distribution.

A summary of the capping grade for the outliers is presented in Table 14.3.

The raw, uncapped composite and final statistics are presented in

Table 14.4 and Table 14.5 for the 16 most significant veins from the six mines.

Table 14.4 summarizes the channel sample data, while Table 14.5 summarizes the drillhole data.

Capping was carried out on the composite data.

Figure 14.9 Probability plot for silver grades in composited channel samples for vein S8 SGX mine

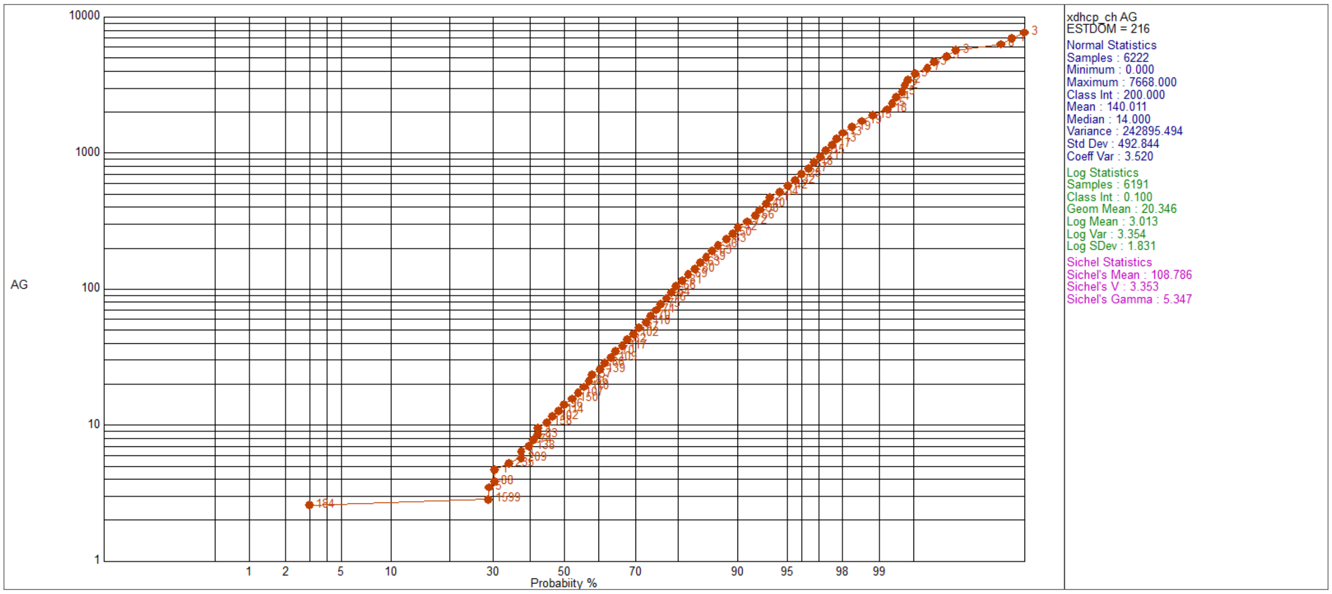


Table 14.3 Grade capping summary

Mine	Sample Type	Element	No of veins top cut	Lowest Top Cut	Highest Top Cut
SGX	Channel	Ag (g/t)	10	500	8900
		Pb (%)	6	10	80
		Zn (%)	7	10	48
	Drillhole	Ag (g/t)	5	500	5000
		Pb (%)	4	5	70
		Zn (%)	4	2	25
HZG*	Area 1	Ag (g/t)	3	3200	3200
		Pb (%)	2	12	12
		Zn (%)	1	4	4
	Area 2	Ag (g/t)	6	4000	4000
		Pb (%)	4	15	15
		Zn (%)	0	N/A	N/A
HPG	Channel	Ag (g/t)	3	800	2900
		Au (g/t)	4	7	30
		Pb (%)	3	5	30
		Zn (%)	5	2	25
	Drillhole	Ag (g/t)	2	60	280
		Au (g/t)	4	0.8	30
		Pb (%)	1	16	16
		Zn (%)	1	2	2
TLP	Channel	Ag (g/t)	6	100	5000
		Pb (%)	2	6	40
		Zn (%)	4	3	10
	Drillhole	Ag (g/t)	2	45	300
		Pb (%)	0	N/A	N/A
		Zn (%)	2	0.2	2
LMW	Channel	Ag (g/t)	0	N/A	N/A
		Pb (%)	1	12	12
		Zn (%)	1	4	4
	Drillhole	Ag (g/t)	2	75	550
		Pb (%)	1	1.5	1.5
		Zn (%)	4	0.2	2.5
LME	Channel	Ag (g/t)	1	1000	1000
		Pb (%)	1	11	11
		Zn (%)	1	6	6
	Drillhole	Ag (g/t)	1	3000	3000
		Pb (%)	1	7	7
		Zn (%)	0	N/A	N/A

Note: Veins of the HZG mine were grouped into two areas on the basis of vein orientation in preparation for variography. Grade caps were determined for each area. Other mines showed increased sensitivity to grade capping and were capped on a vein by vein basis.

Table 14.4 Channel sample summary statistics

Mine	Vein	Statistic	Ag (g/t)			Pb (%)			Zn (%)		
			Raw	Comp	Final	Raw	Comp	Final	Raw	Comp	Final
SGX	S2	No. Samples	937	1934	1934	937	1934	1934	937	1934	1934
		Minimum	2.5	2.5	2.5	0.01	0.01	0.01	0	0	0
		Maximum	8566	8566	7000	79.37	79.37	79.37	44.99	44.99	44.99
		Mean	416	419	418	7.17	7.20	7.20	2.76	2.78	2.78
		Coeff. Var	1.82	1.75	1.72	1.76	1.67	1.67	1.65	1.57	1.57
	S2W2	No. Samples	441	864	864	441	864	864	441	864	864
		Minimum	2.5	2.5	2.5	0.01	0.01	0.01	0.01	0.01	0.01
		Maximum	6354	6354	6354	77.21	77.21	77.21	37.31	37.31	37.31
		Mean	489	492	492	8.38	8.44	8.44	3.04	3.04	3.04
		Coeff. Var	1.83	1.78	1.78	1.64	1.57	1.57	1.52	1.45	1.45
	S7	No. Samples	1688	3665	3665	1688	3665	3665	1688	3665	3665
		Minimum	2.5	2.5	2.5	0	0	0	0	0	0
		Maximum	3765	3765	2700	69.78	69.78	66.00	34.77	34.77	30.00
		Mean	198	199	198	4.15	4.17	4.17	1.72	1.72	1.72
		Coeff. Var	1.96	1.86	1.84	2.11	1.98	1.98	1.90	1.78	1.77
	S7_1	No. Samples	1929	3698	3698	1929	3698	3698	1929	3698	3698
		Minimum	0.0	0	0	0	0	0	0	0	0
		Maximum	3676	3676	3600	74.26	74.26	74.26	56.54	56.54	48.00
		Mean	180	181	181	3.87	3.90	3.90	3.90	3.92	3.91
		Coeff. Var	2.25	2.16	2.16	2.41	2.30	2.30	1.75	1.68	1.68
	S8	No. Samples	2968	6222	6222	2968	6222	6222	2968	6222	6222
		Minimum	0.0	0	0	0	0	0	0	0	0
		Maximum	7668	7668	7668	78.14	78.14	78.14	36.38	36.38	28.00
		Mean	144	144	144	3.29	3.29	3.29	1.42	1.43	1.42
		Coeff. Var	3.56	3.48	3.48	2.43	2.34	2.34	2.23	2.16	2.14
	S14	No. Samples	2490	3714	3714	2490	3714	3714	2490	3714	3714
		Minimum	0.0	0	0	0	0	0	0	0	0
		Maximum	10036	10036	8900	81.85	81.85	80.00	52.96	52.96	32.00
		Mean	461	464	463	8.10	8.15	8.15	1.70	1.70	1.69
		Coeff. Var	2.05	1.91	1.90	1.93	1.81	1.81	1.99	1.92	1.89
	S19	No. Samples	981	2078	2078	981	2078	2078	981	2078	2078
		Minimum	0.0	2.5	2.5	0	0.01	0.01	0	0	0
		Maximum	6824	6824	4400	72.55	61.06	48.00	21.06	21.06	21.06
		Mean	213	214	213	3.73	3.73	3.72	1.38	1.38	1.38
		Coeff. Var	2.42	2.33	2.27	1.94	1.83	1.82	2.06	2.02	2.02
	S21	No. Samples	2338	4071	4071	2338	4071	4071	2338	4071	4071
		Minimum	0.0	0	0	0	0	0	0	0	0
		Maximum	10630	8190	8190	80.20	80.20	70.00	52.15	41.47	41.47
		Mean	210	211	211	3.38	3.40	3.39	2.42	2.42	2.42
		Coeff. Var	2.63	2.49	2.49	2.63	2.51	2.51	2.00	1.89	1.89
HPG	H17	No. Samples	1,741	5275	5275	1,741	5275	5275	1,741	5275	5275
		Minimum	0	0	0	0	0	0	0	0	0
		Maximum	14,212	4894	2,900	67.13	67.13	67.13	30.7	30.7	25
		Mean	56	55	55	2.39	2.39	2.39	0.73	0.73	0.72
		Coeff. Var	3.38	2.68	2.5	2.32	2.28	2.28	2.83	2.77	2.75

Mine	Vein	Statistic	Ag (g/t)			Pb (%)			Zn (%)		
			Raw	Comp	Final	Raw	Comp	Final	Raw	Comp	Final
HZG	HZ22	No. Samples	968	1918	1918	968	1918	1918	968	1918	1918
		Minimum	0	0	0	0	0	0	0	0	0
		Maximum	5674	5674	4000	48.60	48.60	15.00	3.45	3.45	3.45
		Mean	178	178	174	0.82	0.82	0.78	0.14	0.14	0.14
		Coeff. Var	2.70	2.62	2.44	2.72	2.67	2.10	1.77	1.74	1.74
LMW	LM7	No. Samples	286	1060	1060	286	1060	1060	286	1060	1060
		Minimum	0	0	0	0	0	0	0	0	0
		Maximum	1,270	1,270	1,270	10.78	10.78	10.78	0.38	0.38	0.38
		Mean	80	80	80	0.89	0.89	0.89	0.06	0.06	0.06
		Coeff. Var	1.92	1.87	1.87	1.35	1.33	1.33	0.91	0.89	0.89
	LM12_1	No. Samples	50	108	108	50	108	108	50	108	108
		Minimum	3	3	3	0.01	0.01	0.01	0	0.01	0.01
		Maximum	2,106	2,106	2,106	20.65	20.65	20.65	0.84	0.84	0.84
		Mean	176	176	176	0.72	0.72	0.72	0.1	0.1	0.1
		Coeff. Var	2.52	2.50	2.50	2.58	1.96	1.96	1.49	1.49	1.49
LME	LM5E	No. Samples	87	240	240	87	240	240	87	240	240
		Minimum	0	0	0	0	0	0	0	0	0
		Maximum	3,645	3,645	3,645	23.72	23.72	23.72	4.34	4.34	4.34
		Mean	209	209	209	1.51	1.51	1.51	0.26	0.26	0.26
		Coeff. Var	2.27	2.26	2.26	2.41	2.39	2.39	1.98	1.98	1.98
TLP	T11	No. Samples	341	969	969	341	969	969	341	969	969
		Minimum	1	1	1	0.003	0.003	0.003	0.003	0.003	0.003
		Maximum	8,250	8,250	3,000	33	33	33	4.2	4.2	3
		Mean	260	260	239	2.58	2.58	2.58	0.11	0.19	0.19
		Coeff. Var	2.78	2.76	2.26	1.94	1.93	1.93	2.02	1.8	1.74
	T2	No. Samples	2,100	5,252	5,252	2,100	5,252	5,252	2,100	5,252	5,252
		Minimum	2	2	2	0.003	0.003	0.003	0.003	0.003	0.003
		Maximum	6,093	6,093	5,000	69.67	53.36	40	17.5	17.5	10
		Mean	76	76	75	2.49	2.49	2.49	0.18	0.15	0.17
		Coeff. Var	3.39	3.33	3.2	1.87	1.78	1.77	3.36	3.25	2.79
	T3	No. Samples	2,081	5,748	5,748	2,081	5,748	5,748	2,081	5,748	5,748
		Minimum	2	2	2	0.003	0.003	0.003	0.003	0.003	0.003
		Maximum	2,941	1,900	1,900	68	68	68	3.14	3.14	3
		Mean	51	51	51	1.94	1.94	1.94	0.11	0.11	0.11
		Coeff. Var	2.71	2.64	2.64	2.04	1.98	1.98	2.02	1.96	1.96

Table 14.5 Drillhole sample summary statistics

Mine	Vein	Statistic	Ag (g/t)			Pb (%)			Zn (%)		
			Raw	Comp	Final	Raw	Comp	Final	Raw	Comp	Final
SGX	S2	No. Samples	252	734	734	252	734	734	252	734	734
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	3725	3725	2600	62.24	55.11	55.11	15.99	14.70	14.70
		Mean	114	114	109	1.70	1.70	1.70	0.85	0.85	0.85
		Coeff. Var	3.35	3.29	3.06	3.17	2.97	2.97	2.37	2.31	2.31
	S2W2	No. Samples	79	258	258	79	258	258	79	258	258
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	2933	2933	2933	72.88	72.88	72.88	17.84	17.84	17.84
		Mean	245	249	249	5.33	5.42	5.42	1.11	1.11	1.11
		Coeff. Var	2.41	2.34	2.34	2.83	2.74	2.74	2.41	2.38	2.38
	S7	No. Samples	591	1630	1630	591	1630	1630	591	1630	1630
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	1938	1938	1938	61.61	60.08	60.08	13.43	13.43	13.43
		Mean	54	54	54	1.14	1.14	1.14	0.51	0.51	0.51
		Coeff. Var	3.19	3.07	3.07	3.81	3.56	3.56	2.52	2.49	2.49
	S7_1	No. Samples	489	1577	1577	489	1577	1577	489	1577	1577
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	3479	3479	3479	81.45	81.45	70.00	27.40	27.40	27.40
		Mean	140	141	141	2.31	2.32	2.30	1.49	1.49	1.49
		Coeff. Var	2.58	2.50	2.50	3.61	3.51	3.46	2.37	2.30	2.30
	S8	No. Samples	548	1681	1681	548	1681	1681	548	1681	1681
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	1366	1366	1366	62.87	62.87	40.00	24.30	24.30	24.30
		Mean	35	35	35	1.11	1.11	1.09	0.41	0.40	0.40
		Coeff. Var	3.51	3.44	3.44	3.53	3.44	3.31	4.64	4.59	4.59
	S14	No. Samples	306	651	651	306	651	651	306	651	651
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	8205	8205	5000	61.24	58.52	58.52	29.73	29.73	29.73
		Mean	153	153	148	2.05	2.02	2.02	0.51	0.51	0.51
		Coeff. Var	4.02	3.85	3.58	3.73	3.62	3.62	3.37	3.35	3.35
	S19	No. Samples	235	769	769	235	769	769	235	769	769
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	1725	1725	1725	73.94	73.94	73.94	29.15	29.15	29.15
		Mean	102	103	103	2.03	2.04	2.04	0.66	0.66	0.66
		Coeff. Var	2.51	2.45	2.45	3.45	3.29	3.29	2.92	2.81	2.81
	S21	No. Samples	260	932	932	260	932	932	260	932	932
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	5936	5936	5936	65.61	65.61	65.61	21.70	17.50	17.50
		Mean	124	124	124	1.66	1.66	1.66	0.83	0.84	0.84
		Coeff. Var	4.07	3.97	3.97	4.29	4.19	4.19	2.57	2.47	2.47
HPG	H17	No. Samples	257	935	935	257	935	935	257	935	935
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	606	606	606	29.15	29.15	29.15	29.85	29.85	29.85
		Mean	25	25	25	1.04	1.03	1.03	0.90	0.90	0.90
		Coeff. Var	2.34	2.32	2.32	2.80	2.76	2.76	3.50	3.44	3.44

Mine	Vein	Statistic	Ag (g/t)			Pb (%)			Zn (%)		
			Raw	Comp	Final	Raw	Comp	Final	Raw	Comp	Final
HZG	HZ22	No. Samples	161	659	659	161	659	659	161	659	659
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	3339	3339	3339	24.64	24.64	15.00	16.06	16.06	4.00
		Mean	69	69	69	0.36	0.36	0.33	0.10	0.10	0.08
		Coeff. Var	3.12	3.08	3.08	4.54	4.53	3.77	7.58	6.92	3.19
LMW	LM7	No. Samples	297	1,210	1,210	297	1,210	1,210	297	1,210	1,210
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	2,260	1,539	1,539	11.92	11.70	11.70	7.24	7.24	2.50
		Mean	56	55	55	0.68	0.68	0.68	0.11	0.11	0.09
		Coeff. Var	2.91	2.78	2.78	1.82	1.76	1.76	4.83	4.77	2.71
	LM12_1	No. Samples	148	400	400	148	400	400	148	400	400
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	2,250	2,250	2,250	21.28	21.28	21.28	2.01	2.01	2.01
		Mean	66	66	66	0.74	0.70	0.70	0.07	0.06	0.06
		Coeff. Var	3.78	3.84	3.84	3.79	3.74	3.74	3.08	3.03	3.03
LME	LM5E	No. Samples	222	808	808	222	808	808	222	808	808
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	3,720	3,720	3,720	32.45	32.45	32.45	8.94	8.71	8.71
		Mean	110	110	110	1.01	1.01	1.01	0.24	0.24	0.24
		Coeff. Var	3.11	2.92	2.92	3.91	3.71	3.71	3.33	3.13	3.13
TLP	T11	No. Samples	90	304	304	90	304	304	90	304	304
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	4,210	4,210	4,210	18.43	18.43	18.43	2.78	2.78	2.78
		Mean	162	162	162	1.20	1.20	1.20	0.20	0.20	0.20
		Coeff. Var	3.47	3.33	3.33	2.10	2.04	2.04	1.77	1.74	1.74
	T2	No. Samples	566	2,184	2,184	566	2,184	2,184	566	2,546	2,546
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	2,154	2,154	2,154	56.09	56.09	56.09	8.02	7.76	7.76
		Mean	105	2.26	2.26	1.82	1.82	1.82	0.11	0.11	0.11
		Coeff. Var	2.3	12.18	12.18	2.48	2.44	2.44	4.40	4.35	4.35
	T3	No. Samples	718	2,552	2,552	718	2,552	2,552	718	2,552	2,552
		Minimum	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	2,630	2,630	2,630	41.20	41.20	41.20	10.36	10.36	10.36
		Mean	106	106	106	1.96	1.96	1.96	0.10	0.10	0.10
		Coeff. Var	2.73	2.70	2.70	2.23	2.18	2.18	5.26	5.10	5.10

14.5 Block model

14.5.1 Block model parameters

The block models were horizontally rotated to align parallel with the strike of the veins. Two distinct groups of vein orientations are present in each mine and so two different models with different rotations were produced for each mine (Areas 1 and 2 in the following tables). This is addition to the CSS and BH model for each mine making a total of 24 models for the six mines. Parent cell dimensions were determined by the average sample spacing in longitudinal projection. The block models were also regularized for output to Micromine™ mining software after grade estimation. The block model parameters are shown in Table 14.6 and Table 14.7 for the CSS model, BH model. Table 14.8 shows the parameters for regularized block models provided to Silvercorp for use in Micromine™ for internal purposes.

Table 14.6 CSS block model parameters

		SGX		HPG		HZG		LME		LMW		TLP	
	Parameter	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**
	Rotation	0	30	0	54	0	35	40	0	70	-40	40	0
Origin (m)	Easting	522,765	521,720	526,040	525,645	523,144	522,400	532,600	533,870	531,315	532,580	531,977	532,845
	Northing	3,780,200	3,781,440	3,783,155	3,783,420	3,778,201	3,778,880	3,778,285	3,779,000	3,780,555	3,778,575	3,780,305	3,779,772
	RL	-208	-710	275	-537	158	155	-50	285	170	275	50	391
Parent cell dimension (m)	Easting	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Northing	10	10	10	10	10	10	10	10	10	10	10	10
	RL	10	10	10	10	10	10	10	10	10	10	10	10
Number of cells	Easting	1355	1978	873	1167	1489	1407	889	500	2380	1578	1925	1295
	Northing	352	365	99	240	261	255	300	150	180	216	303	189
	RL	105	158	51	144	90	90	135	120	105	90	126	75

Table 14.7 BH block model parameters

		SGX		HPG		HZG		LME		LMW		TLP	
	Parameter	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**
	Rotation	0	30	0	54	0	35	40	0	70	-40	40	0
Origin (m)	Easting	522,250	521,720	526,040	525,645	523,144	522,400	532,600	533,870	531,315	532,580	531,977	532,845
	Northing	3,782,330	3,781,440	3,783,155	3,783,420	3,778,201	3,778,880	3,778,285	3,779,000	3,780,555	3,778,575	3,780,305	3,779,772
	RL	-360	-710	275	-537	158	155	-50	285	170	275	50	391
Parent cell dimension (m)	Easting	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Northing	30	30	30	30	30	30	30	30	30	30	30	30
	RL	30	30	30	30	30	30	30	30	30	30	30	30
Number of cells	Easting	1355	1978	873	1167	1489	1407	889	500	2380	1578	1925	1265
	Northing	117	122	33	80	87	85	100	50	60	72	101	63
	RL	35	53	17	48	30	30	45	40	35	30	42	25

Table 14.8 Regularized block model parameters

		SGX			HPG		HZG		LME		LMW		TLP	
	Parameter	**Area 1**	**Area 2a***	**Area 2b**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**
	Rotation	0	30	30	0	54	0	35	40	0	70	-40	40	0
Origin (m)	Easting	522,765	521,720	522,594.5125	526,040	525,645	524,014	522,400	532,600	533,870	531,315	532,580	531,977	532,845
	Northing	3,780,200	3,781,440	3,780,935	3,783,155	3,783,420	3,779,344	3,778,880	3,778,285	3,779,000	3,780,555	3,778,575	3,780,305	3,779,772
	RL	-208	-710	-710	275	-537	209	155	-50	285	170	275	-50	391
Parent cell dimension (m)	Easting	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Northing	2	2	2	2	2	2	2	2	2	2	2	2	2
	RL	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of cells	Easting	1355	1122	856	275	1667	514	1367	889	500	2380	1578	1925	1295
	Northing	1755	1830	1830	873	1200	710	990	1500	750	900	1080	1515	945
	RL	525	795	795	495	720	375	390	675	600	525	450	630	375

Note: Due to the size of Area 2 of the SGX regularized model, it needed to be split into two separate models Area 2a and 2b.

Table 14.9 lists the block model fields for the regularized block model, which was the final output block model.

Table 14.9 Regularized block model fields

Field	Description
IJK	Identification number
XC	Block's centroid X coordinate
YC	Block's centroid Y coordinate
ZC	Block's centroid Z coordinate
MINED	0 - not mined, 1 - mined out, 2 - tunnel, 3 – write-off
DENSITY	Bulk density calculated from formula
VOL	Volume of cell containing mineralized vein (XINC*YINC*ZINC)
TONNES	Undiluted tonnes
AG	Estimated silver grade undiluted (g/t)
PB	Estimated lead grade undiluted (%)
ZN	Estimated zinc grade undiluted (%)
AU	Estimated gold grade undiluted (g/t) (HPG only)
AQEQ	Silver equivalent grade (g/t)
TRDIP	True dip
TRDIPDIR	True dip direction
MINPROP	Proportion of the cell containing mineralized vein
ESTDOM	Unique code for each vein
RESCAT	Classification (1- measured, 2 - Indicated, 3- Inferred)
XINC	Cell dimension in X
YINC	Cell dimension in Y
ZINC	Cell dimension in Z
XMORIG	X coordinate of model origin in world coordinate system
YMORIG	Y coordinate of model origin in world coordinate system
ZMORIG	Z coordinate of model origin in world coordinate system
NX	Number of cells in X direction
NY	Number of cells in Y direction
NZ	Number of cells in Z direction
X0	X coordinate of model origin in local coordinate system
Y0	Y coordinate of model origin in local coordinate system
Z0	Z coordinate of model origin in local coordinate system
ANGLE1	First rotation angle, in degrees.
ANGLE2	Second rotation angle, in degrees.
ANGLE3	Third rotation angle, in degrees.
ROTAXIS1	Rotation axis 3 means rotation around Z axis
ROTAXIS2	Rotation axis 0 means no rotation
ROTAXIS3	Rotation axis 0 means no rotation

Note: Grey = rotated models only

14.6 Variography and grade estimation

14.6.1 Variography

Variographic analysis characterizes the average spatial continuity for a spatially located variable. An experimental variogram displays the grade continuity in a specified direction and variogram models are manually fitted to the experimental variograms in three orthogonal directions (3D). The 3D variogram models are then used to assign the appropriate kriging weights in the estimation process, taking into account the average spatial characteristics of the underlying grade distribution.

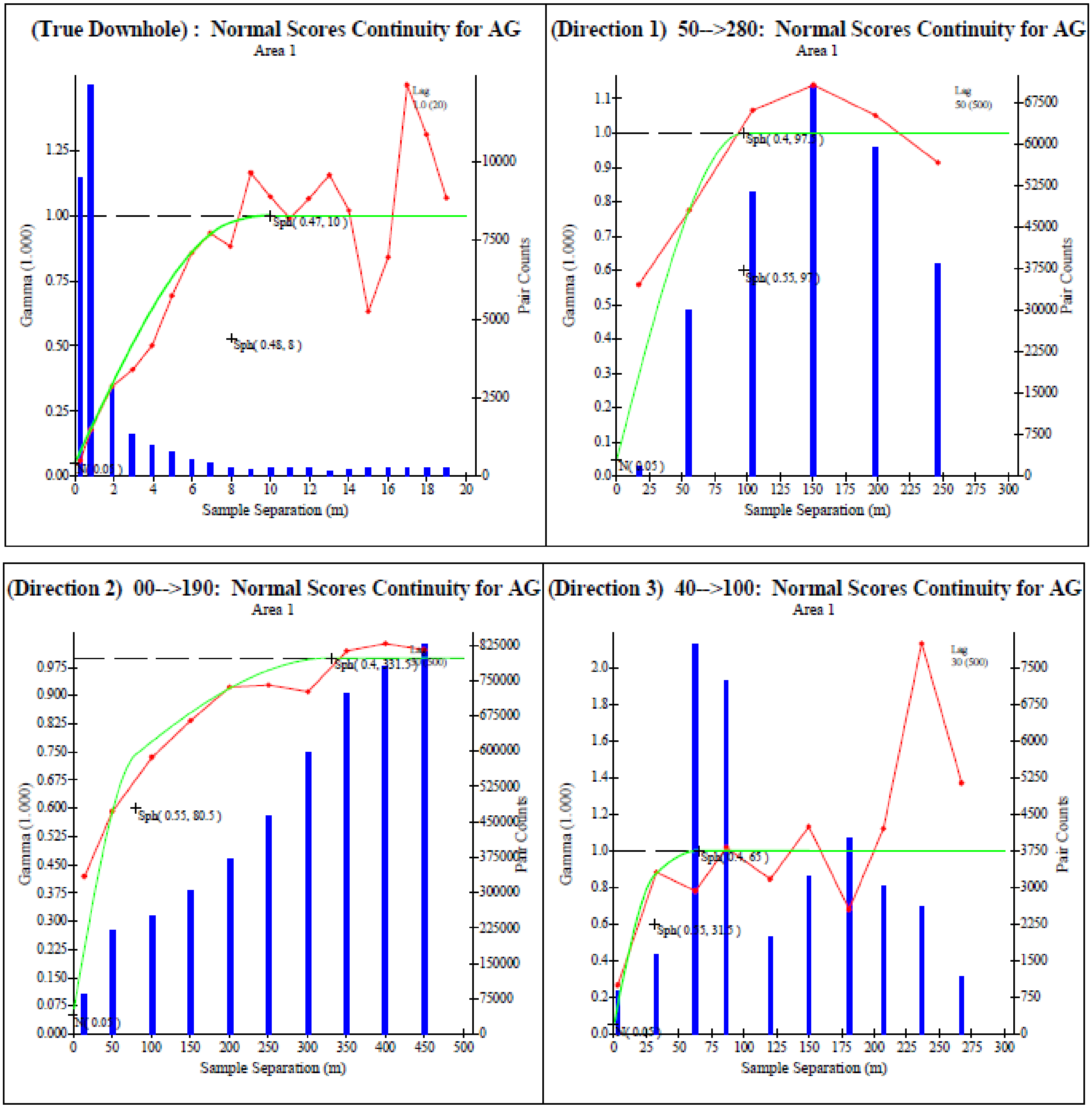
14.6.2 Variography methodology

3D normal score variograms were modelled in Supervisor™ geostatistical software as they were found to give better variogram structures than a traditional variogram. A normal score transform converts the approximately log-normal distribution of the original sample data to a normal distribution with a mean of zero. Original values and their equivalent transformed values are stored in a table to allow the results to be back-transformed after variographic analysis. The following method was applied to all mines:

1. Veins were grouped according to their dip and strike.
2. Experimental variograms were produced in a plane aligned with the mean dip and strike of the vein group for each vein group and each grade variable.
3. Double spherical variogram models were manually fitted to the experimental variograms. The across-strike dimension was sometimes not modelled due to a lack of sample pairs at the appropriate distance. In these cases, reasonable variographic parameters were applied.
4. The normal score variograms were back-transformed to reproduce the raw variogram model for input into Datamine™.

An example of modelled variograms from the SGX mine is displayed in Figure 14.10.

Figure 14.10 Silver variograms: SGX variography Area 1



14.6.3 Estimation method

Silver, lead, and zinc grades were estimated into the block models using 3D ordinary kriging and Datamine's™ dynamic anisotropy application. Dynamic anisotropy re-orientates the search ellipsoid for each estimated block based on the local orientation of the mineralization. Gold was also estimated for HPG. The following summarizes the estimation method:

- Each vein was estimated independently of the other veins.
- Two estimates were run for each vein with different parent cell dimensions.

 - The CSS estimate using only channel samples was run with parent cell dimensions of 0.9 mE × 10 mN × 10 mRL.
 - The BH model estimate using only drillhole samples was run with parent cell dimensions of 0.9mE × 30 mN × 30 mRL.
 - After the estimation was complete, the CSS and BH models were merged with the CSS block model overprinting the BH model.
- Subcells were used to fill the mineralization wireframes with minimum dimensions of 0.075 mE × 2 mN × 2 mRL.
- The BH model estimate and the CSS estimate did not use octant searching.
- Discretization was set to 3 × 3 × 3 (XYZ).

Search parameters are detailed in Tables 14.10 and 14.11 by pass for the CSS model and BH model respectively.

Table 14.10 Search parameters CSS block model

Pass	Search distance down-dip	Search distance along-strike	Search distance across- strike	Minimum number of samples	Maximum number of samples	Octant search	Maximum samples per drillhole
1	60	60	60	6	16	No	2
2	60	60	60	2	16	No	2

Table 14.11 Search parameters BH block model

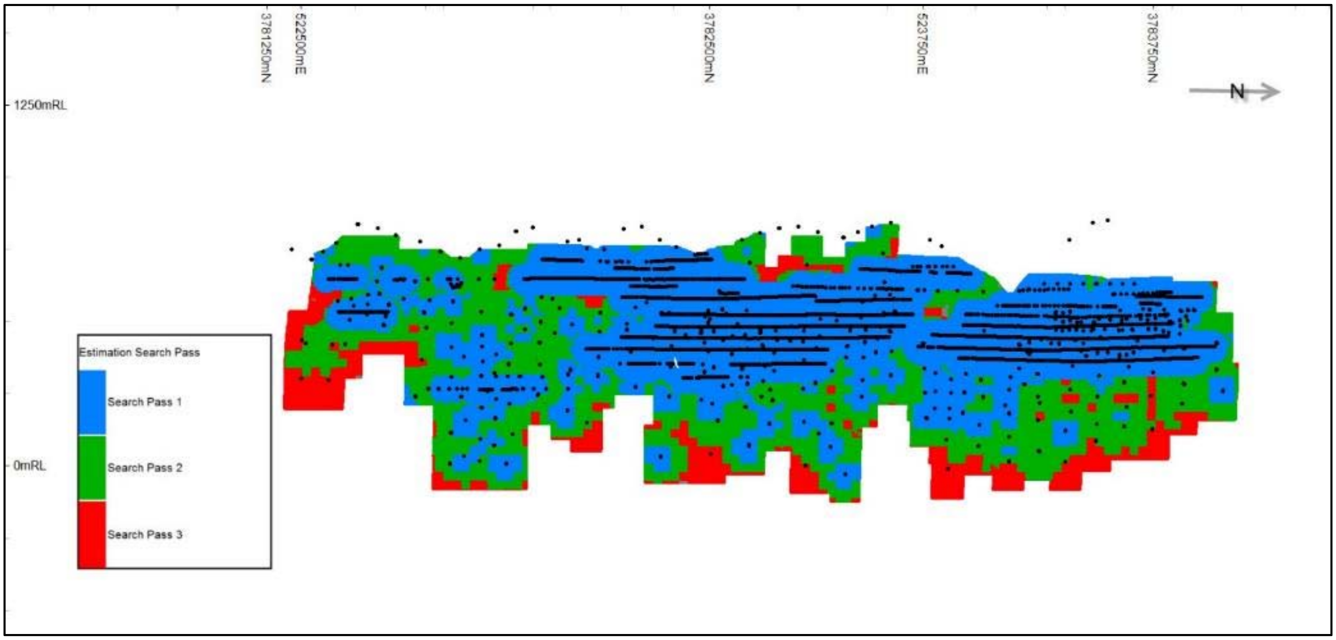
Pass	Search distance down-dip	Search distance along-strike	Search distance across strike	Minimum number of samples	Maximum number of samples	Octant search	Maximum samples per drillhole
1	50	50	75	6	16	No	2
2	100	100	150	6	16	No	2
3	100	100	150	1	16	No	2

To arrive at the above parameters, a study was carried out on the LME mine to assess the results of changing the following: maximum number of samples, octants on or off, search parameter distances.

The results were highly variable demonstrating that the vein characteristics are all different. However, to achieve a reasonable global estimate, the above parameters are fair.

An example of the estimation passes is displayed for the S8 vein of the SGX mine in Figure 14.11.

Figure 14.11 Estimation pass longitudinal projection SGX mine: vein S8

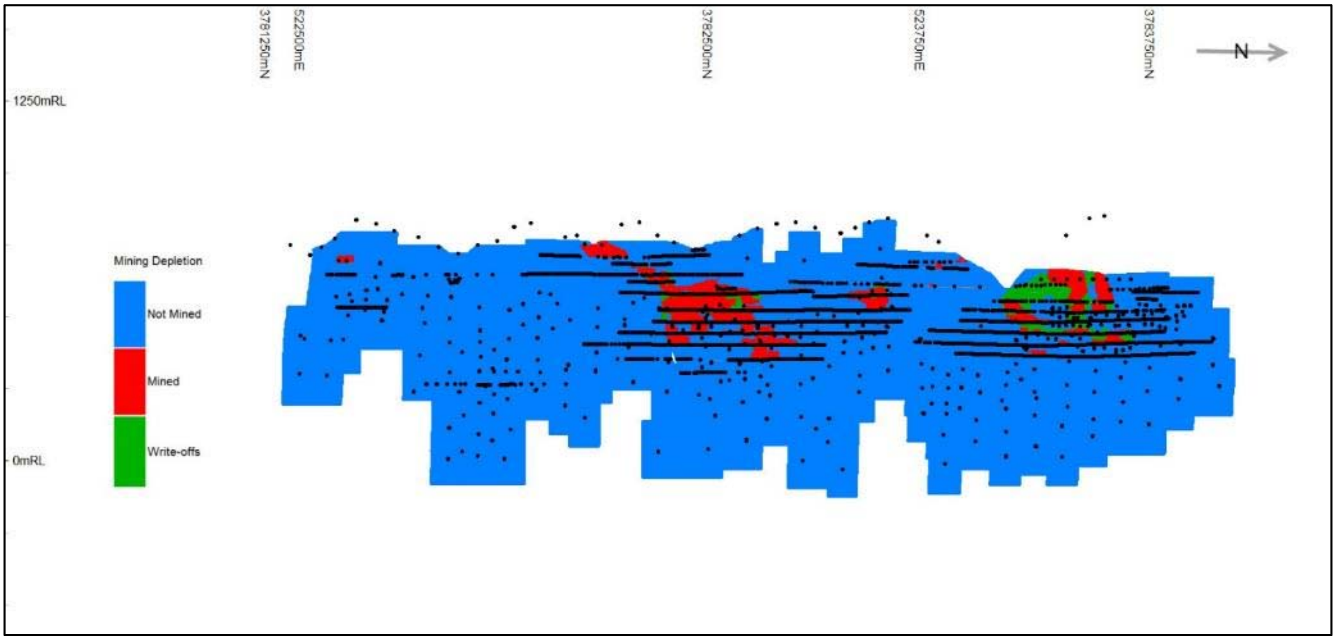


Note: Samples shown as black dots. Model coloured by estimation pass (legend displayed). Not to scale.

14.6.4 Mining depletion

Mining depletion and write offs were coded into the block models using wireframes prepared by Silvercorp, which were based on survey information to 30 June 2016. An example of the depletion coding is displayed for the S8 vein of the SGX mine in Figure 14.12.

Figure 14.12 Mining depletion longitudinal projection SGX mine: vein S8



Note: Samples shown as black dots. Model coloured by depletion code (legend displayed). Not to scale.

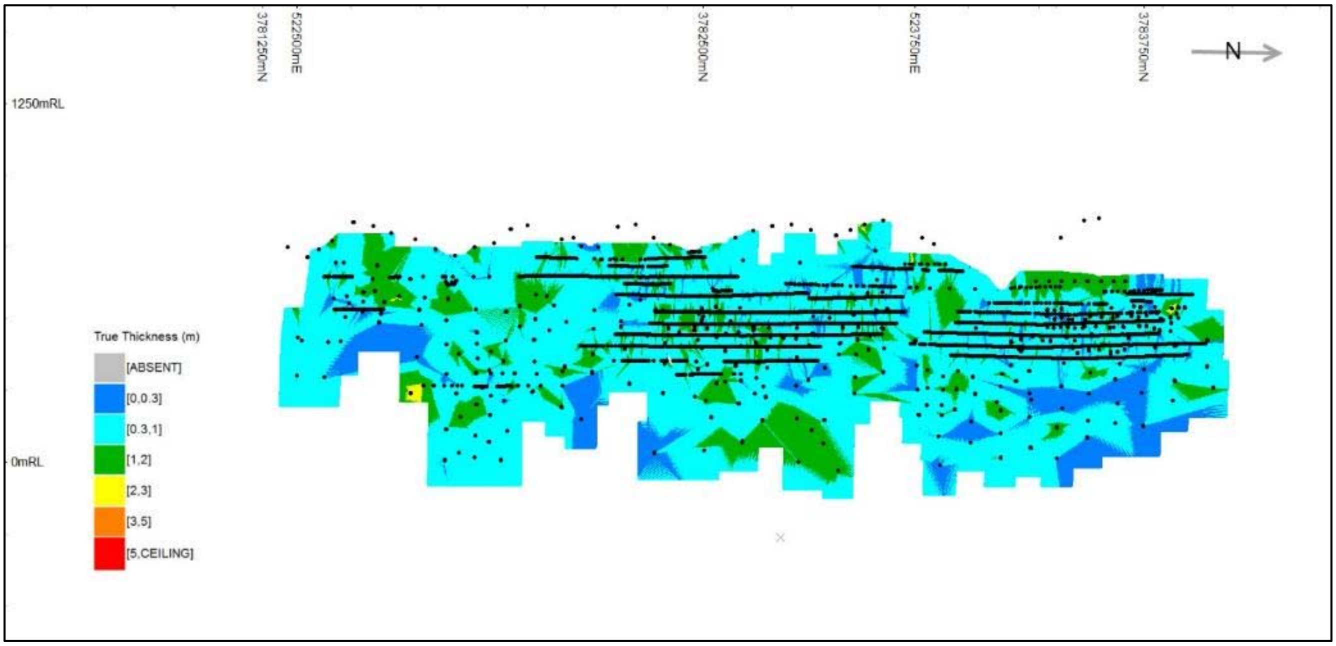
14.6.5 Minimum mining width

A minimum mining width of 0.3 m was coded into the model before applying the cut-off grade and reporting the Mineral Resource to assist in defining reasonable prospects of economic extraction. This was accomplished using the following method:

- Blocks were accumulated in the block model filling direction, which was approximately the across-strike direction of the vein
- True thickness of the vein was found by applying angular corrections that accounted for the differences between the block filling direction and the vein orientation.
- Waste with zero grade was added where the true thickness was <0.3 m to make up the difference, and the diluted grade was calculated.

An example of true thickness coding in the model is shown in Figure 14.13.

Figure 14.13 True thickness longitudinal projection SGX mine: vein S8



Note: Samples shown as black dots. Model coloured by true thickness (legend displayed). Not to scale.

14.7 Resource classification

AMC classified the Mineral Resources with consideration of the narrow-vein style of mineralization, the observed grade continuity, and the sample spacing in longitudinal projection. Smoothing was implemented to remove isolated blocks of one category that were surrounded by blocks of another category. An example of the Mineral Resource classification is displayed in Figure 14.14. The following set of parameters was used as a guide to ensure that the construction of Mineral Resource category wireframes was consistent across the 194 veins that currently comprise the Mineral Resource:

1. Measured Resource
   a. Measured Resources are defined by the presence of exploration tunneling. The boundary of Measured Resources is determined by extrapolating 20-25 m up and down dip from the exploration tunnels.
   b. No Measured Resources are extrapolated along strike from the ends of an exploration tunnel.
2. Indicated Resource
   c. Indicated Resources are defined by either exploration drilling or exploration tunneling.

d. A basic drilling grid of 50 m (along strike) × 100 m (up and down dip) is used to delineate Indicated Resources. A minimum of three holes is required to define an Indicated Resource block. Boundaries of drill-defined Indicated Resource Blocks are determined by extrapolating 25 m along strike and 50 m up and down dip from the hole closest to the boundary.

e. Boundaries of tunnel-defined Indicated Resources are defined by extrapolating 40-50 m up and down dip from the exploration tunnel.

f. No Indicated Resources are extrapolated along strike from the ends of exploration tunnel

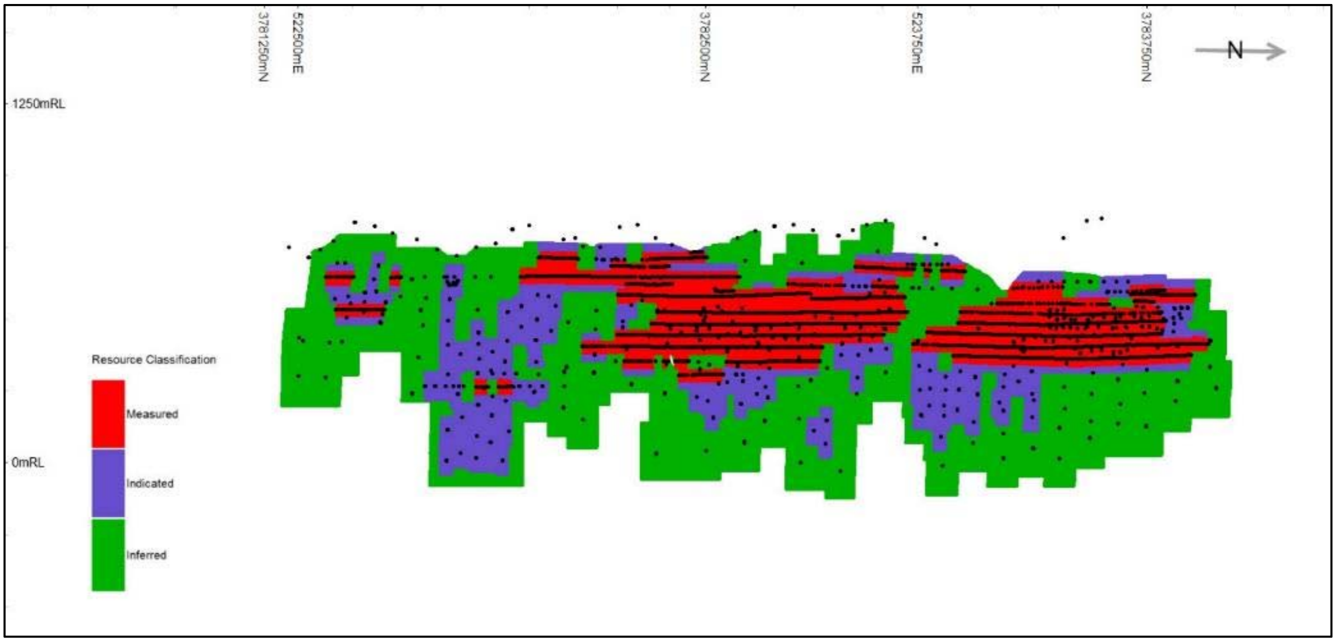
3. Inferred Resource

g. Inferred Resources are either defined by low-density holes or extrapolated from drill-defined Indicated Resource blocks.

h. Boundaries of Inferred Resource are determined by extrapolating 50 m along strike and 100 m up and down dip from the hole closest to the boundary.

i. No Inferred Resources are extrapolated from exploration tunnels.

Figure 14.14 Mineral Resource classification longitudinal projection SGX mine: vein S8



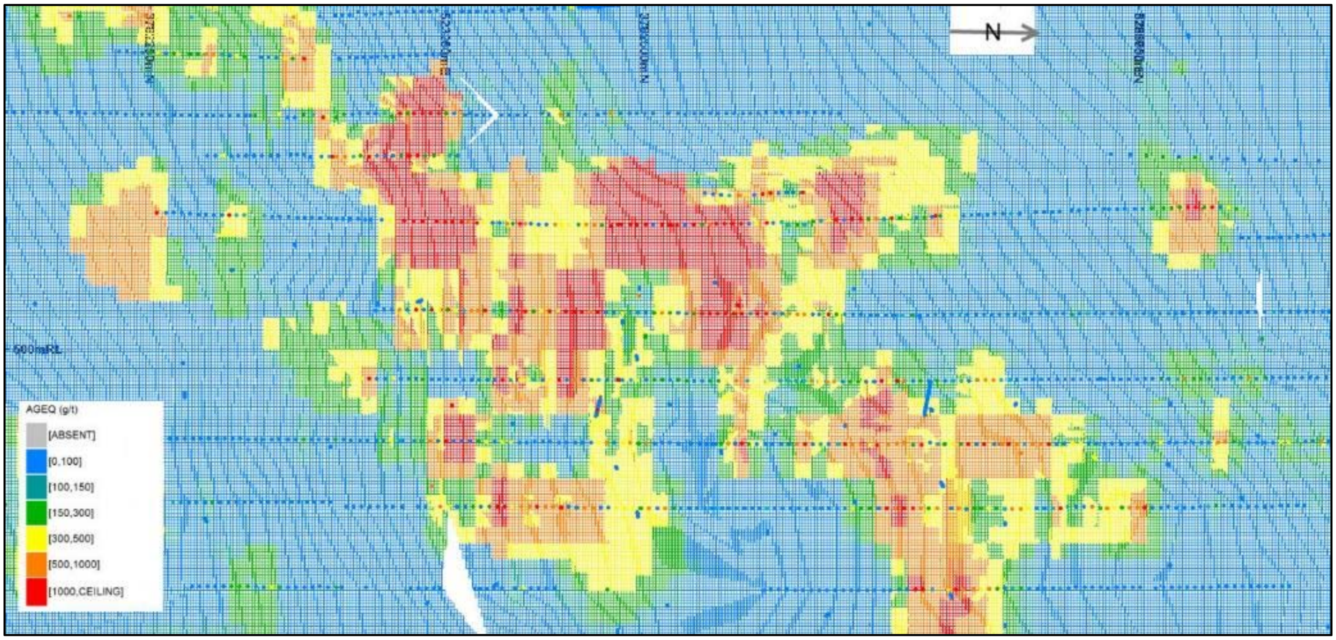
Note: Samples shown as black dots. Model coloured by Mineral Resource category (legend displayed). Not to scale.

14.8 Block model validation

The block models were validated by visual checks, statistical comparisons and swath plots.

Visual checks were carried out to ensure that the estimated grades were consistent with the drillhole grades and to check that the estimated grade distribution was consistent with the style of mineralization. Figure 14.15 shows an example of the drillhole composite silver equivalent grades compared to the block model estimated grades for part of the S8 vein of the SGX mine. The figure shows good agreement between the drillhole composite grades and the estimated block model grades.

Figure 14.15 Silver equivalent grade longitudinal projection SGX mine: vein S8



Note: Drillhole and channel composites: coloured dots, Model: coloured open squares. Drillhole composites and model coloured by silver equivalent grade (legend displayed). White areas are splays and unclassified resources.

Table 14.2 shows the statistical comparison of the channel composites versus the channel block model grades for silver, lead and zinc in the eight largest veins of the SGX deposit. The table shows that the mean grades in the block model are predominantly lower than the composites that were used to inform them. When declustered composites are used for the comparison, the relationship is reversed. The relationships for the other mines are broadly similar. AMC considers that this is a reflection of the high variability of the grades within the deposits. In all cases, when declustering is used for the comparison the results are very sensitive to the declustering grid parameters.

Table 14.12 SGX grade statistics for block model vs composites: eight largest veins

Mine	Vein	Statistic	Ag (g/t)		Pb (%)		Zn (%)	
			Comp	BM	Comp	BM	Comp	BM
SGX	S2	No. Samples	1934	174003	1934	174003	1934	174003
		Minimum	2.5	0	0.01	0	0	0
		Maximum	7000	3363	79.37	46.29	44.99	19.77
		Mean	418	349	7.20	6.65	2.78	2.33
		Coeff. Var	1.72	1.19	1.67	1.19	1.57	0.98
	S2W2	No. Samples	864	78967	864	78967	864	78967
		Minimum	2.5	0	0.01	0	0.01	0
		Maximum	6354	3704	77.21	43.62	37.31	21.34
		Mean	492	471	8.44	7.95	3.04	2.93
		Coeff. Var	1.78	1.20	1.57	1.03	1.45	0.90
	S7	No. Samples	3665	318111	3665	318111	3665	318111
		Minimum	2.5	0	0	0	0	0
		Maximum	2700	2160	66	32.89	30	18.27
		Mean	198	138	4.17	2.67	1.72	1.46
		Coeff. Var	1.84	1.40	1.98	1.42	1.77	1.23
	S7_1	No. Samples	3698	228095	3698	228095	3698	228095
		Minimum	0	0	0	0	0	0
		Maximum	3600	2531	74.26	41.36	48	27.23
		Mean	181	170	3.90	3.96	3.91	3.32
		Coeff. Var	2.16	1.43	2.30	1.38	1.68	1.12
	S8	No. Samples	6222	458043	6222	458043	6222	458043
		Minimum	0	0	0	0	0	0
		Maximum	7668	4246	78.14	40.54	28	18.78
		Mean	144	134	3.29	3.38	1.42	1.13
		Coeff. Var	3.48	2.05	2.34	1.64	2.14	1.6
	S14	No. Samples	3714	241332	3714	241332	3714	241332
		Minimum	0	0	0	0	0	0
		Maximum	8900	3914	80.00	69.39	32	18.96
		Mean	463	375	8.15	6.63	1.69	1.41
		Coeff. Var	1.90	1.38	1.81	1.41	1.89	1.21
	S19	No. Samples	2078	223942	2078	223942	2078	223942
		Minimum	2.5	0	0.005	0	0	0
		Maximum	4400	2780	48.00	31.93	21.06	13.32
		Mean	213	187	3.72	3.54	1.38	1.42
		Coeff. Var	2.27	1.65	1.82	1.20	2.02	1.33
	S21	No. Samples	4071	221303	4071	221303	4071	221303
		Minimum	0	0	0	0	0	0
		Maximum	8190	2978	70.00	39.91	41.47	22.5
		Mean	211	177	3.39	3.01	2.42	2.21
		Coeff. Var	2.49	1.39	2.51	1.54	1.89	1.19

Figure 14.16 S8 silver swath plot by northing

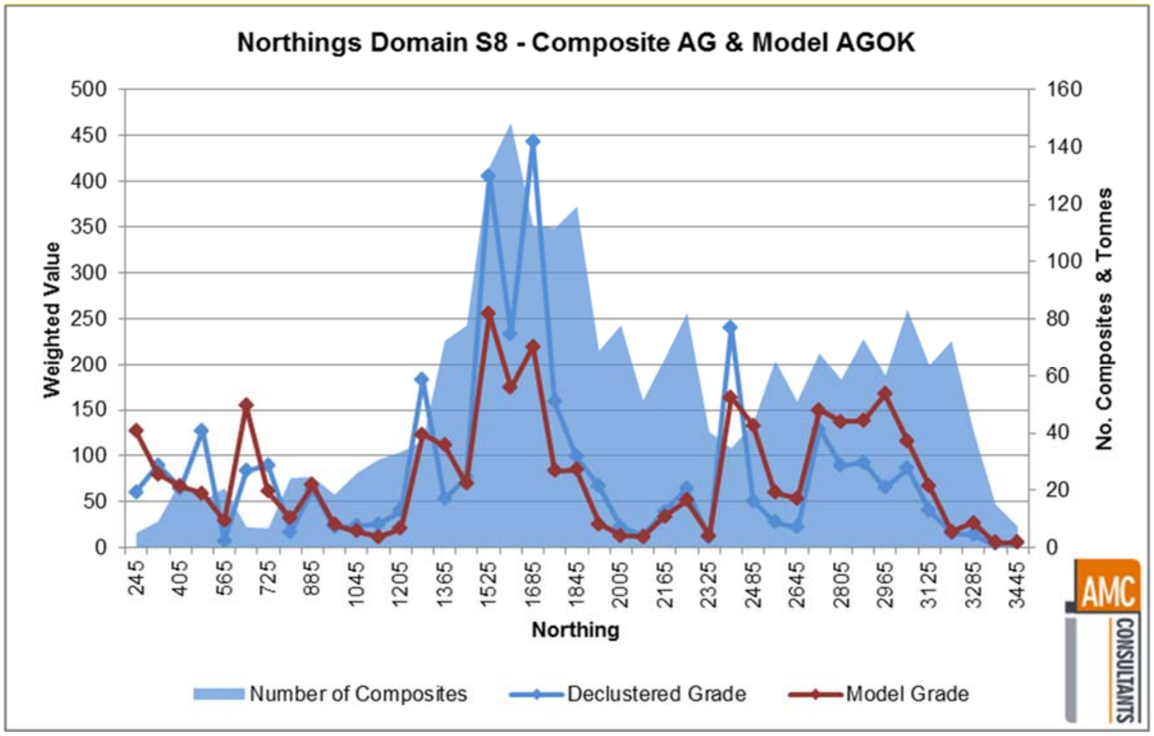


Figure 14.17 S8 silver swath plot by elevation

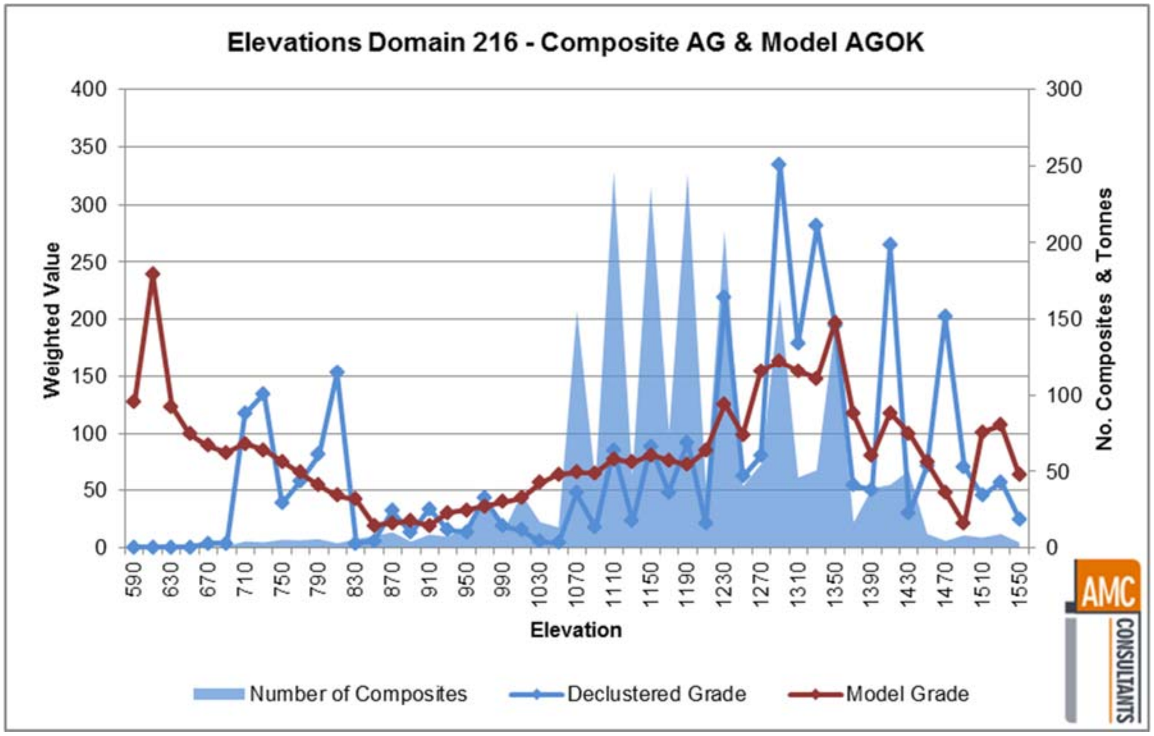


Figure 14.18 S8 lead swath plot by northing

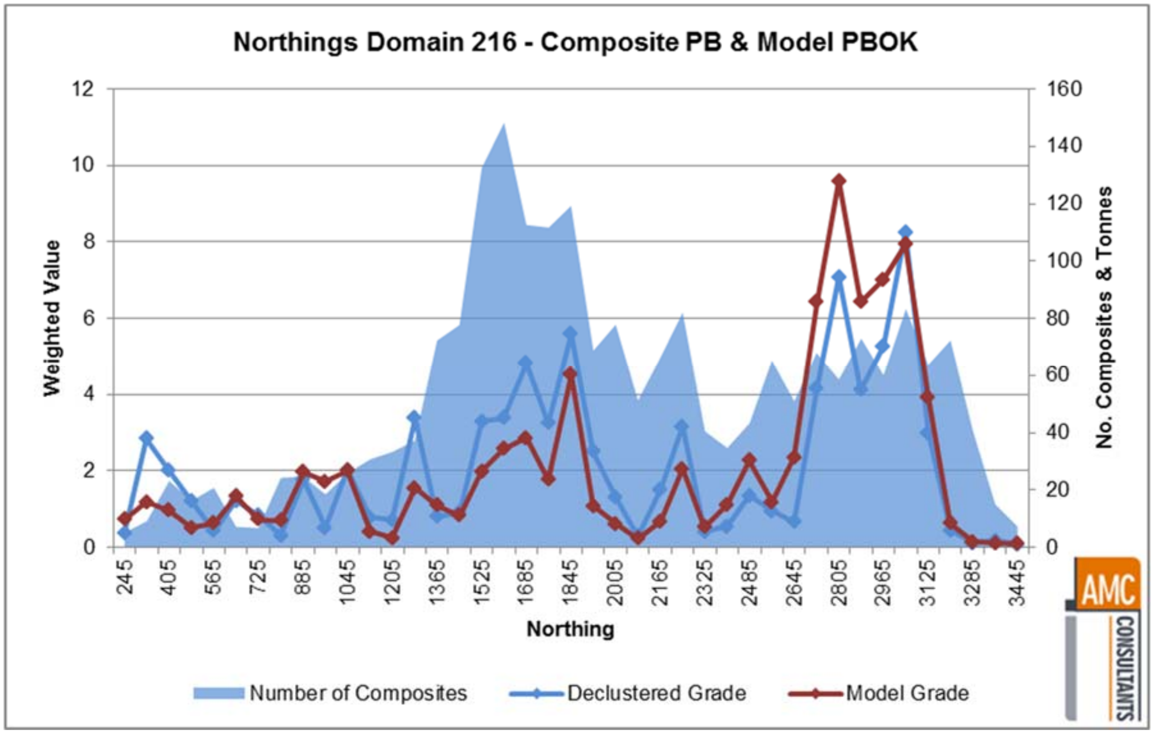


Figure 14.19 S8 lead swath plot by elevation

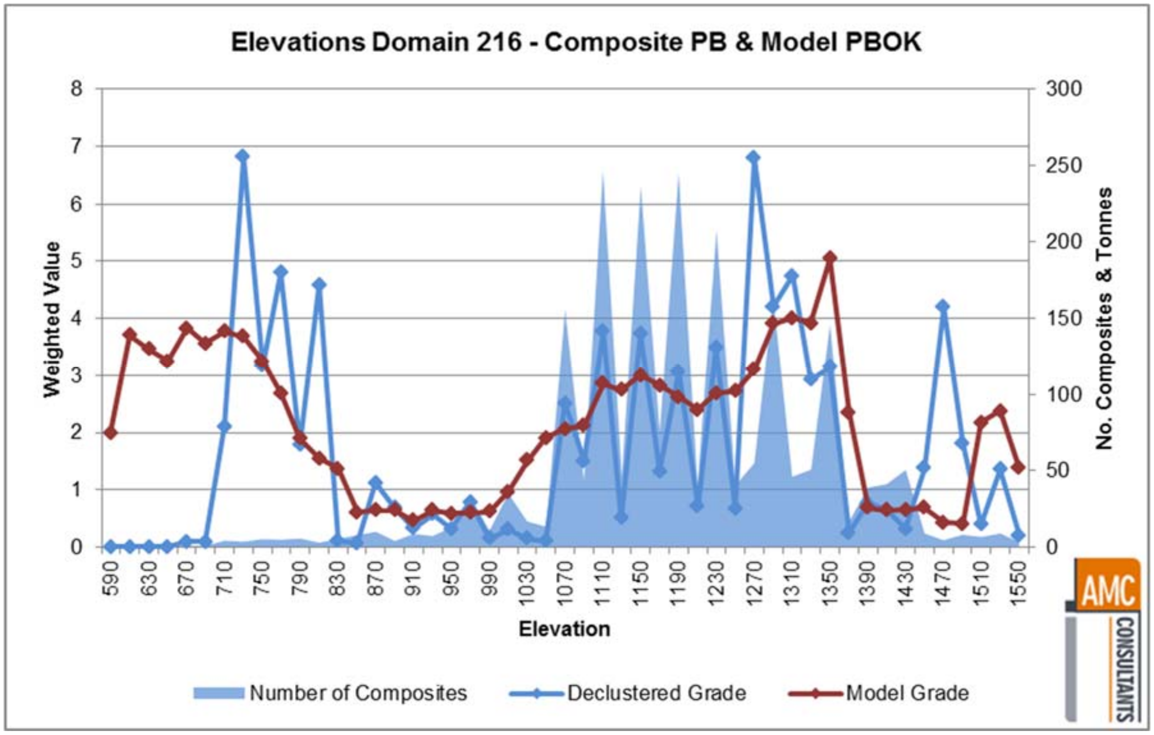


Figure 14.20 S8 zinc swath plot by northing

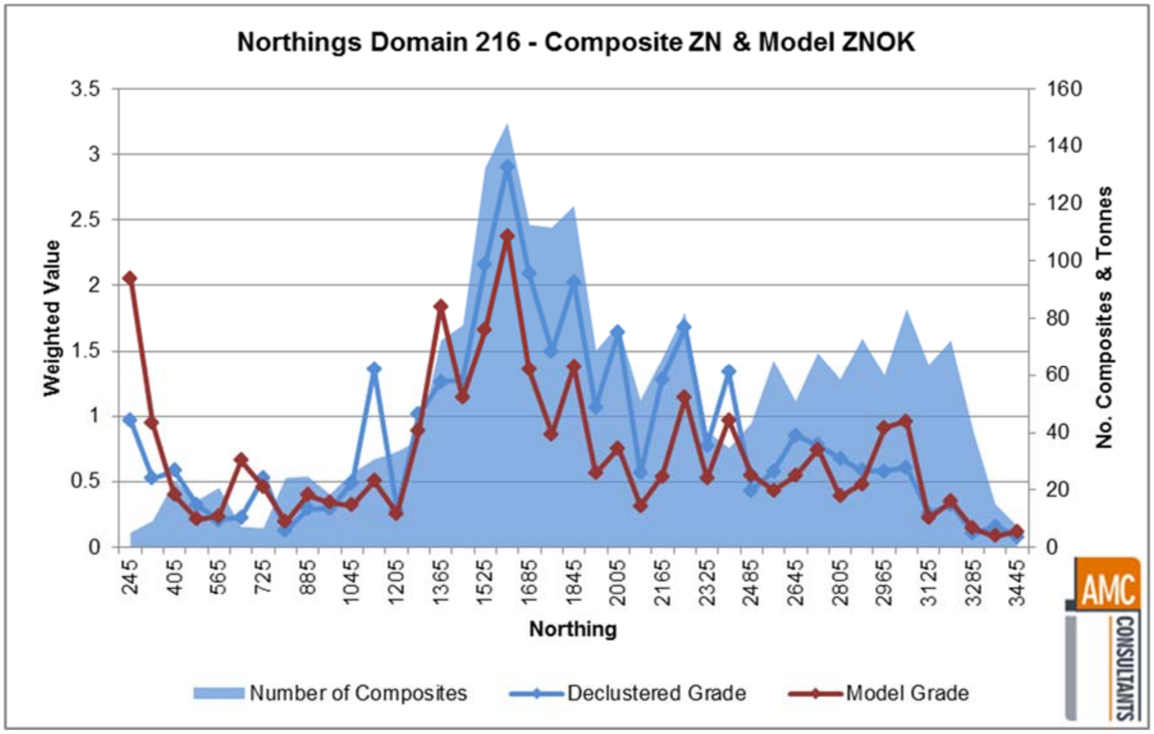


Figure 14.21 S8 zinc swath plot by elevation

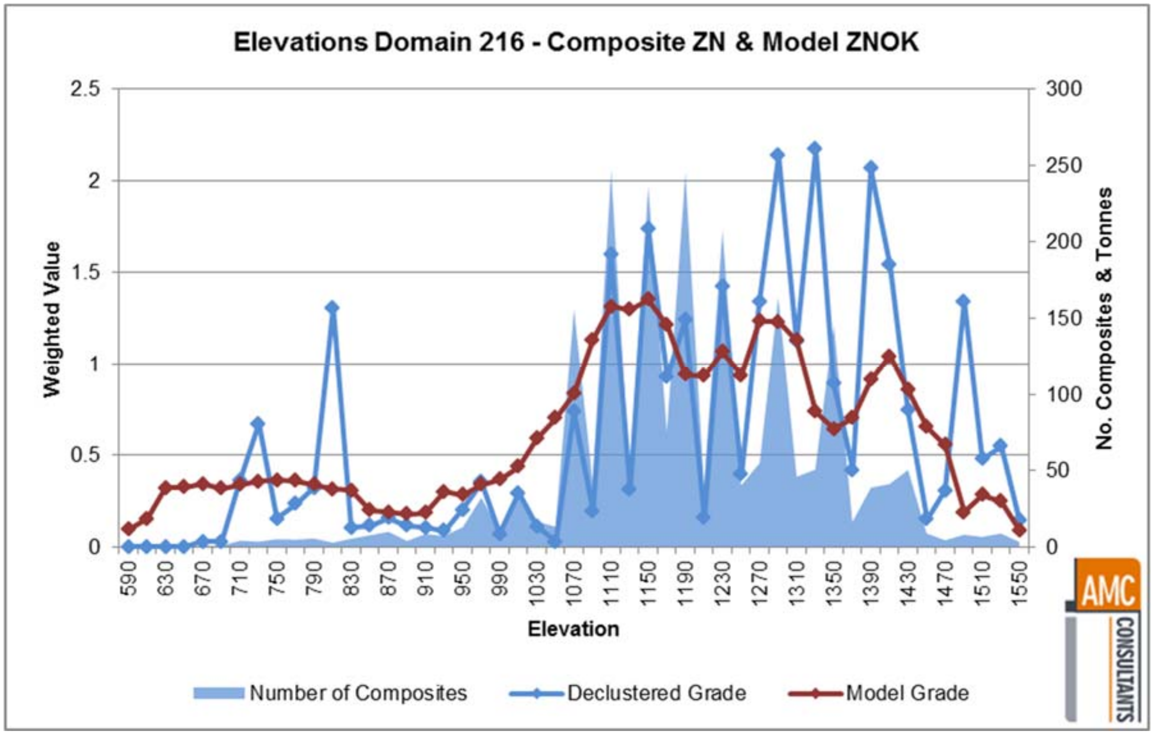


Figure 14.22 T3 silver swath plot by northing

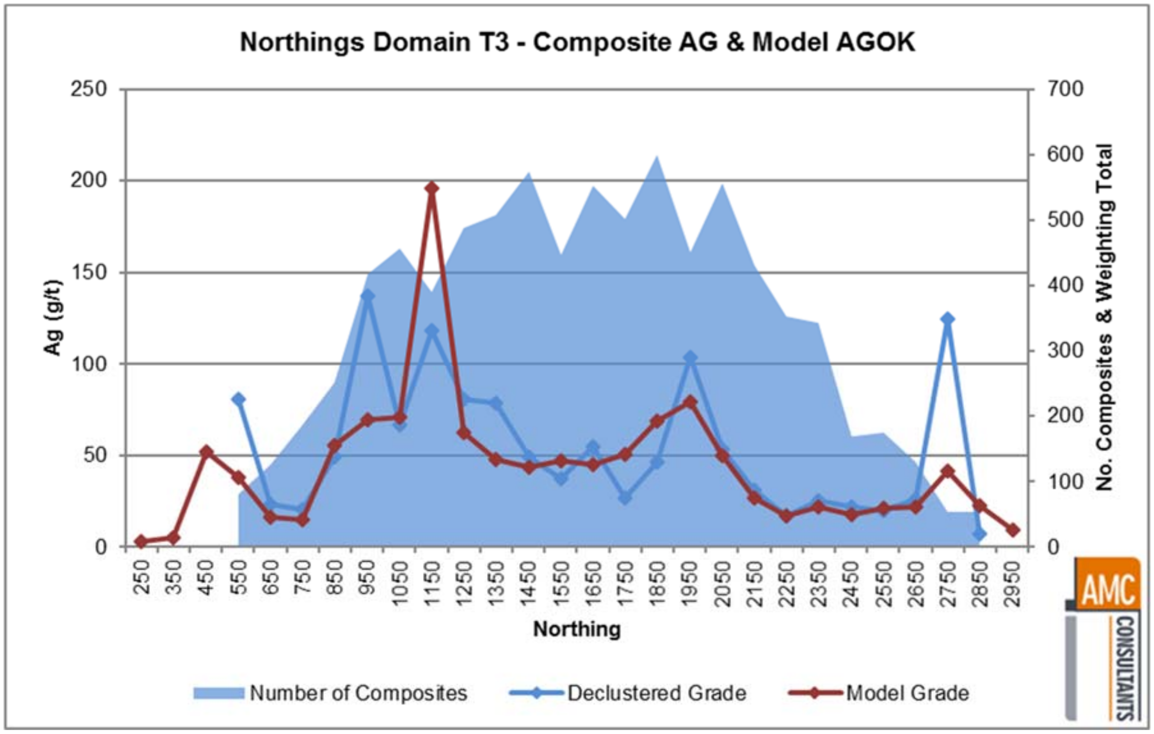


Figure 14.23 T3 silver swath plot by elevation

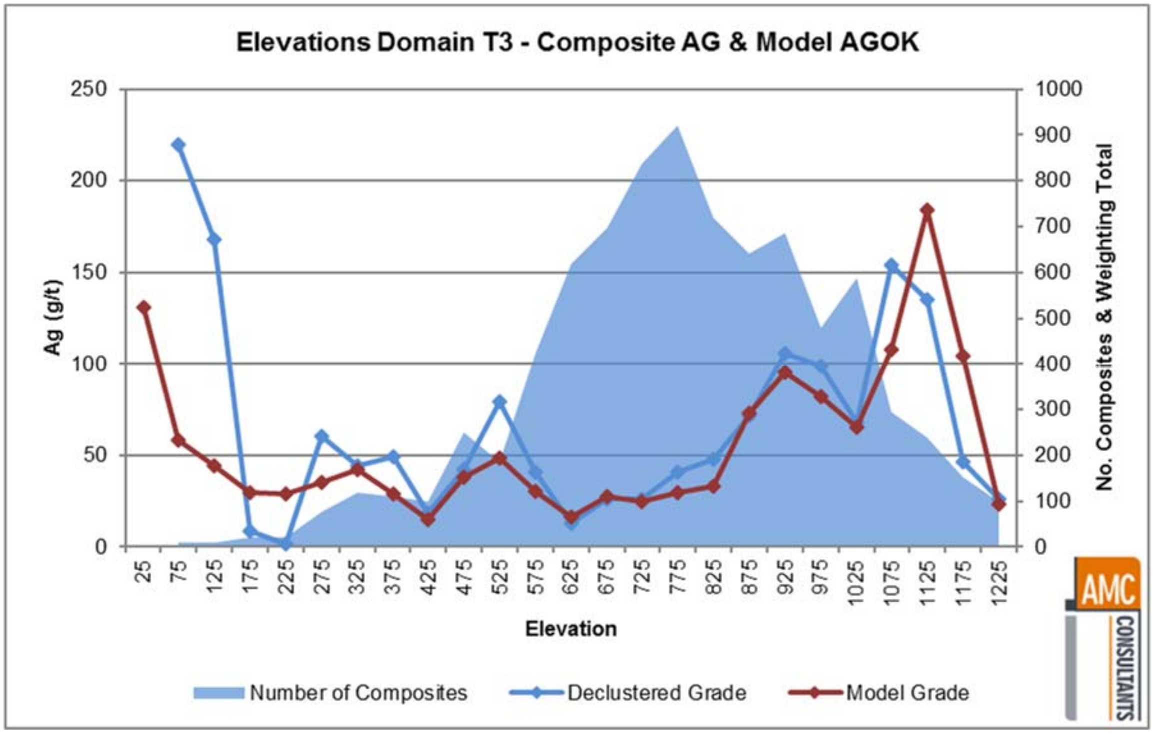


Figure 14.24 T3 lead swath plot by northing

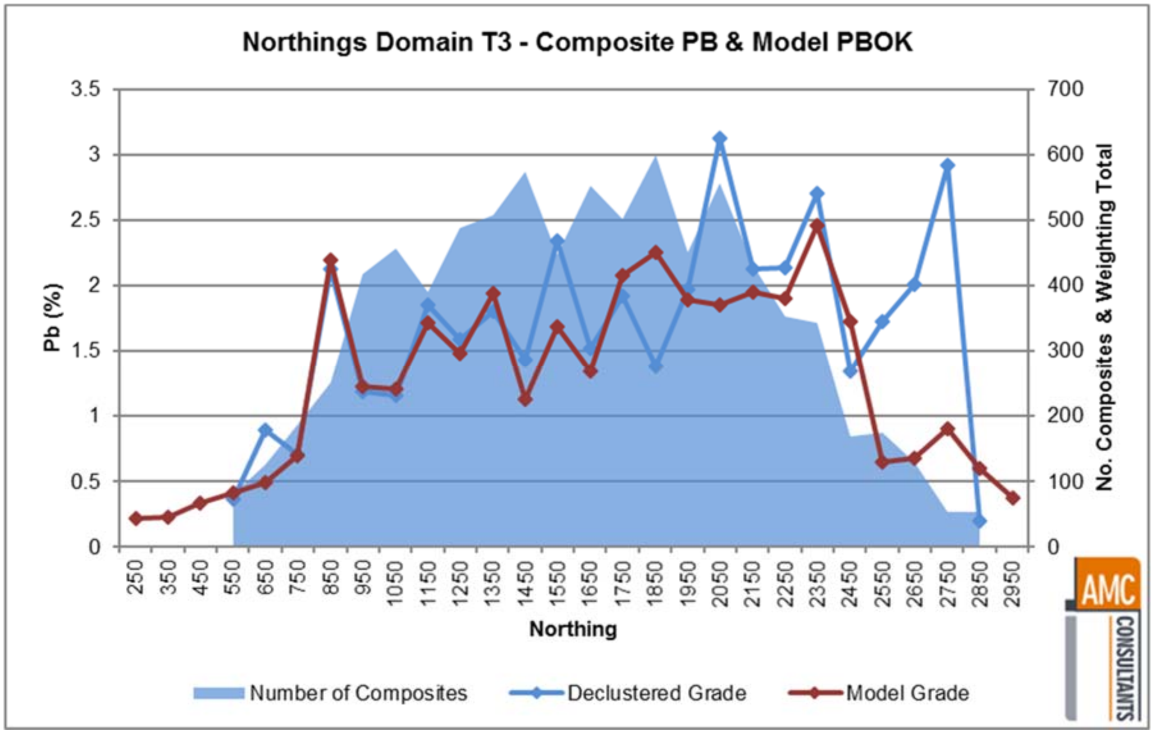


Figure 14.25 T3 lead swath plot by elevation

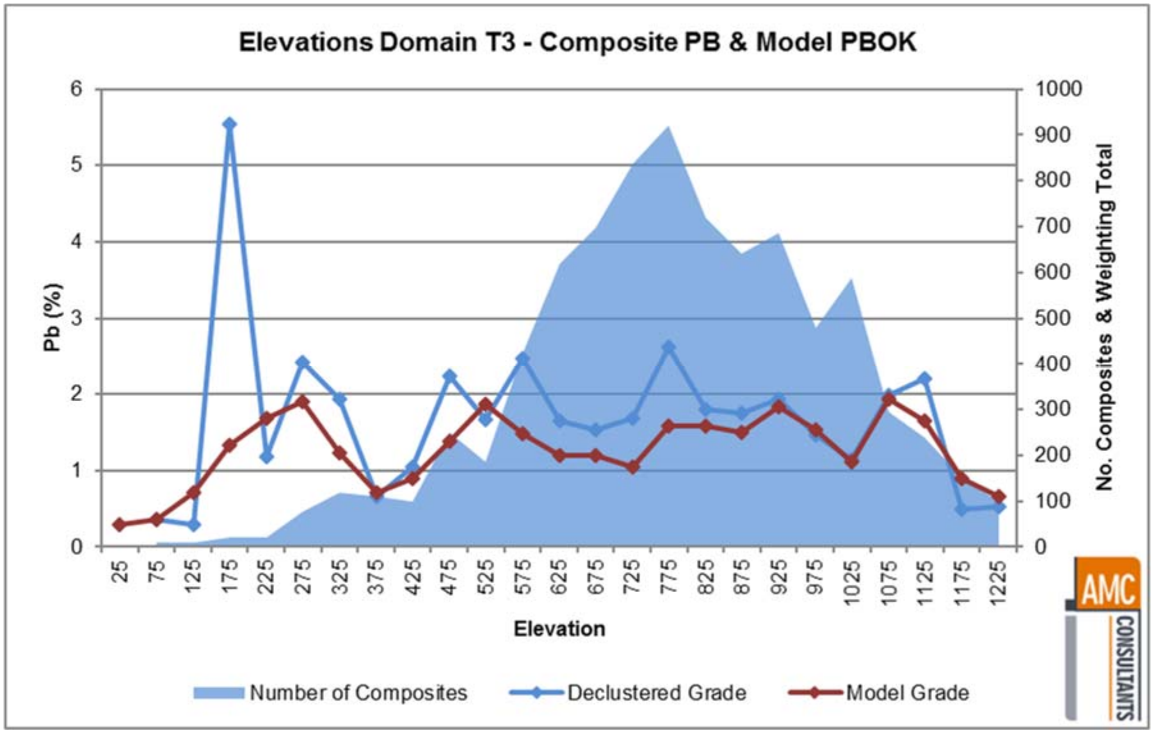


Figure 14.26 T3 zinc swath plot by northing

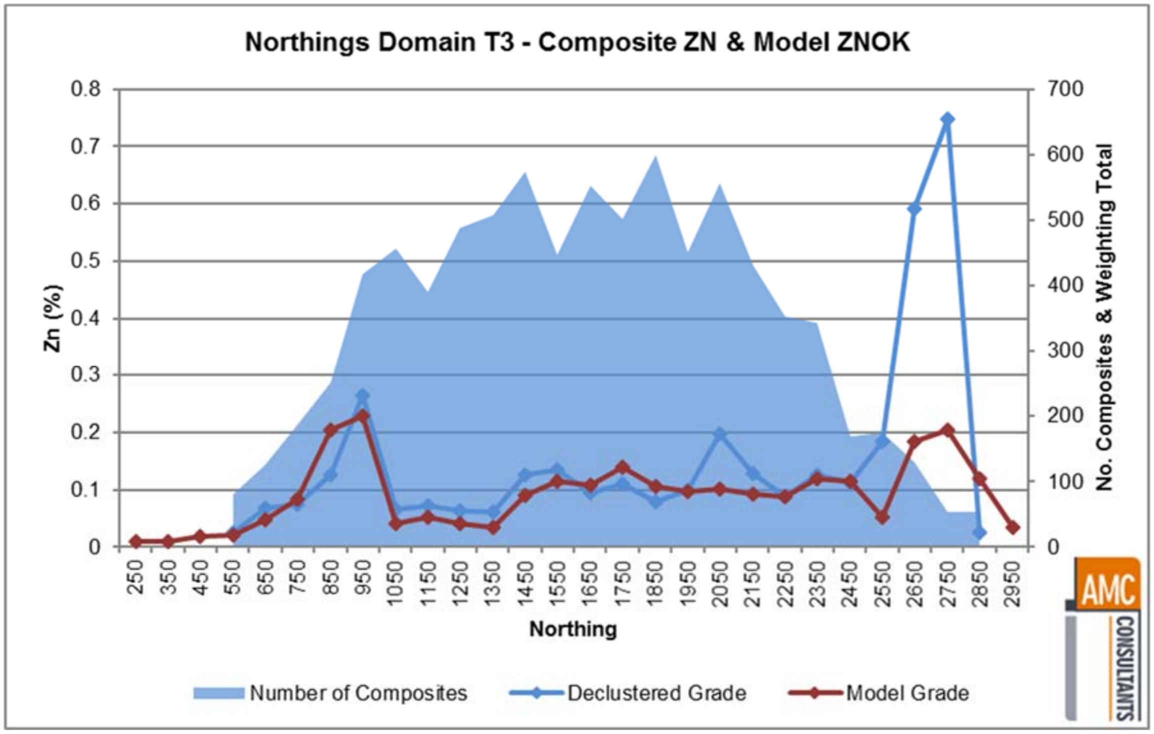
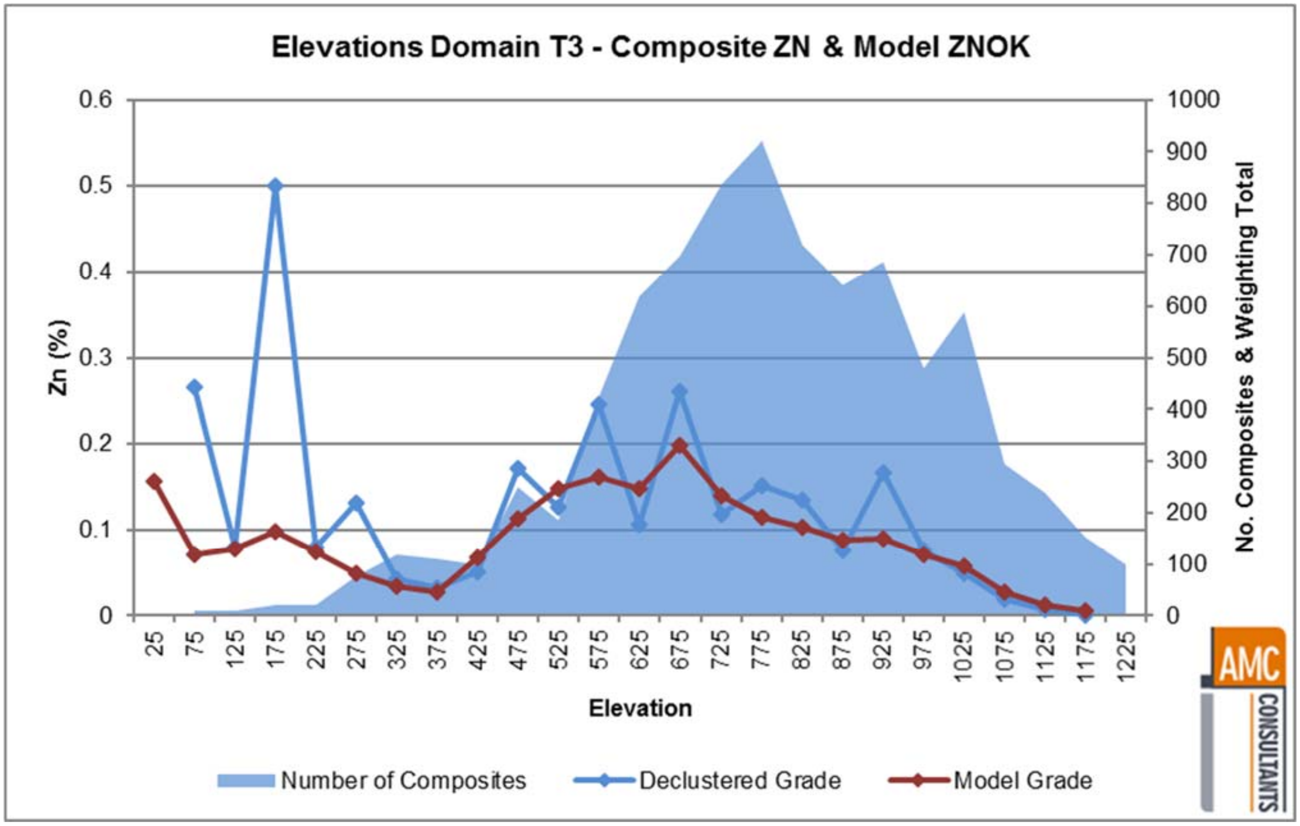


Figure 14.27 T3 zinc swath plot by elevation



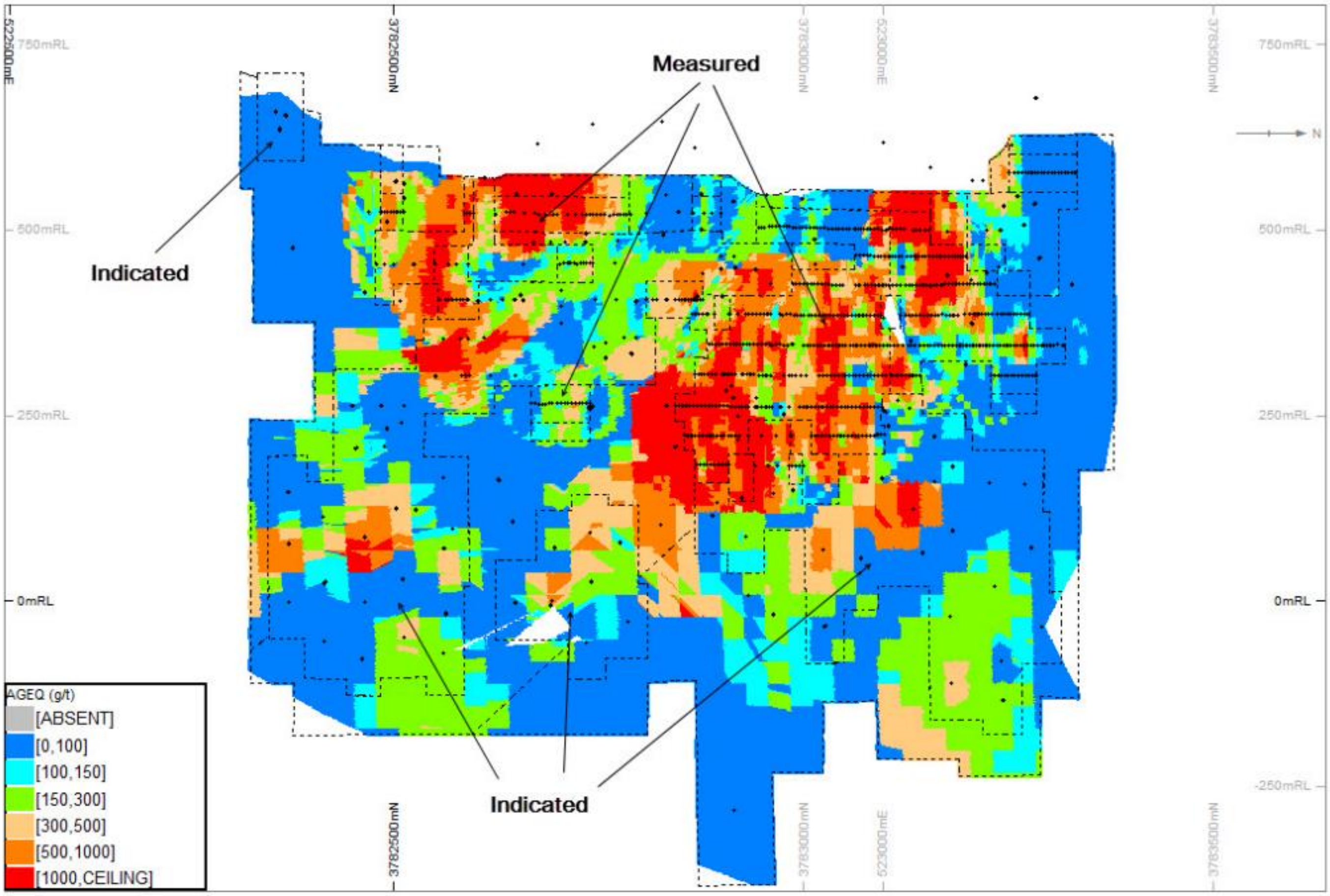
14.9 Mineral Resource estimates

The Mineral Resource estimates for the Ying property as at 30 June 2016 are shown in Table 14.1 at the beginning of this section.

Long projections showing the silver equivalent grades with supporting data and classification for some of the largest veins on the Ying property are displayed in Figure 14.28 to 14.41.

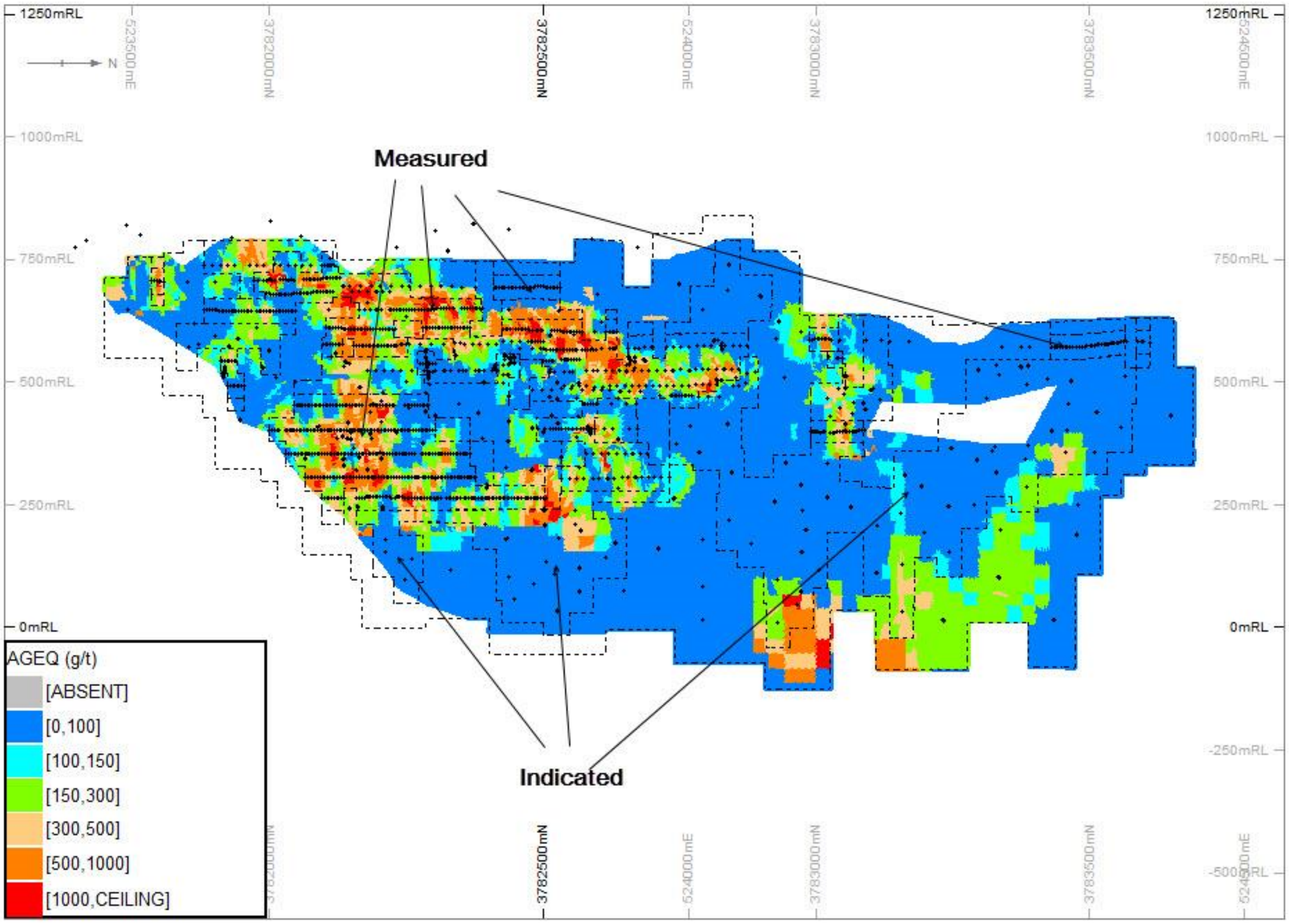
AMC is not aware of any known environmental, permitting, legal, title, taxation, socio economic, marketing, political, or other similar factors which could materially affect the stated Mineral Resource estimates.

Figure 14.28 SGX S2 long projection Mineral Resource



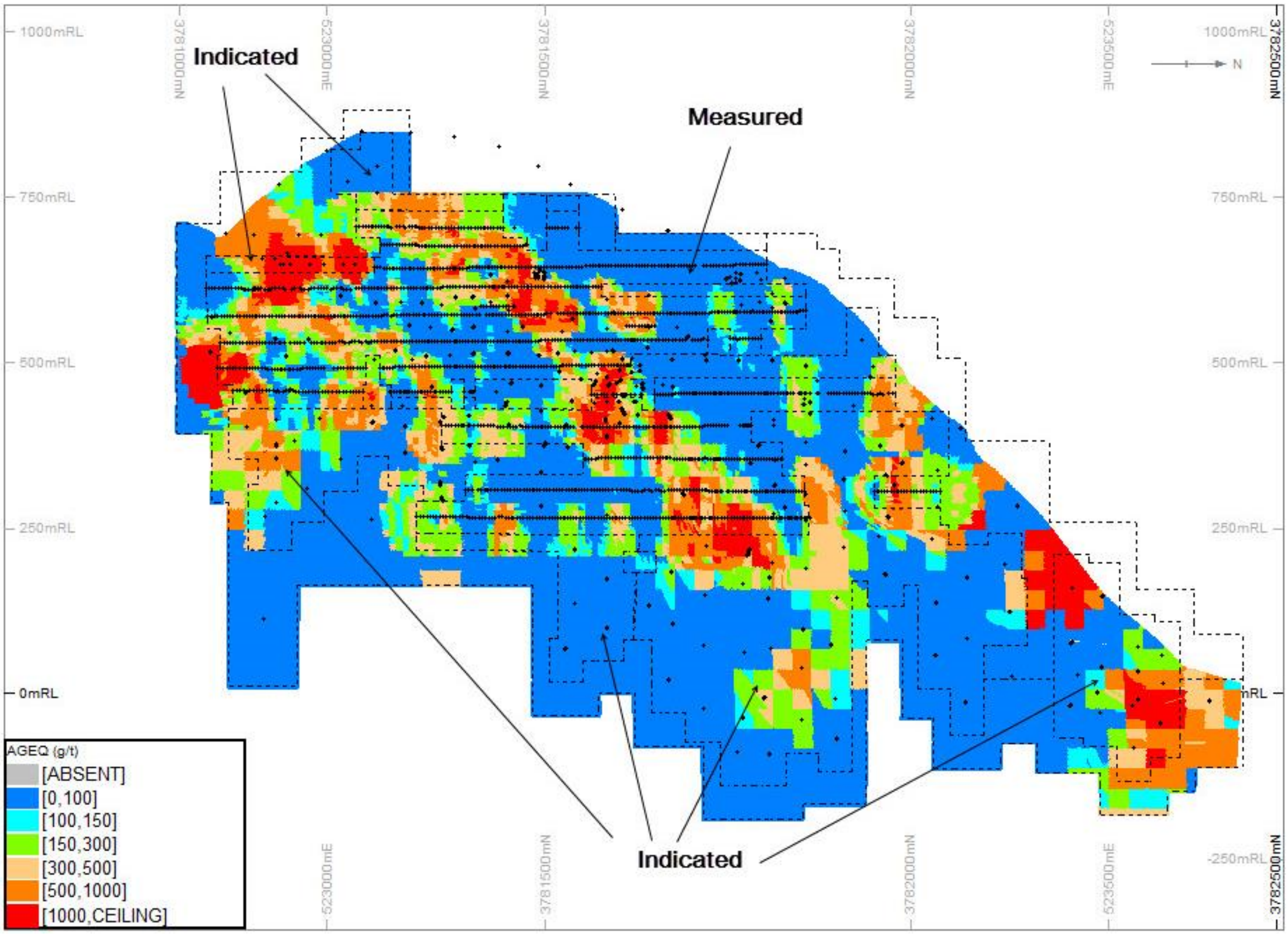
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.29 SGX S7 long projection Mineral Resource



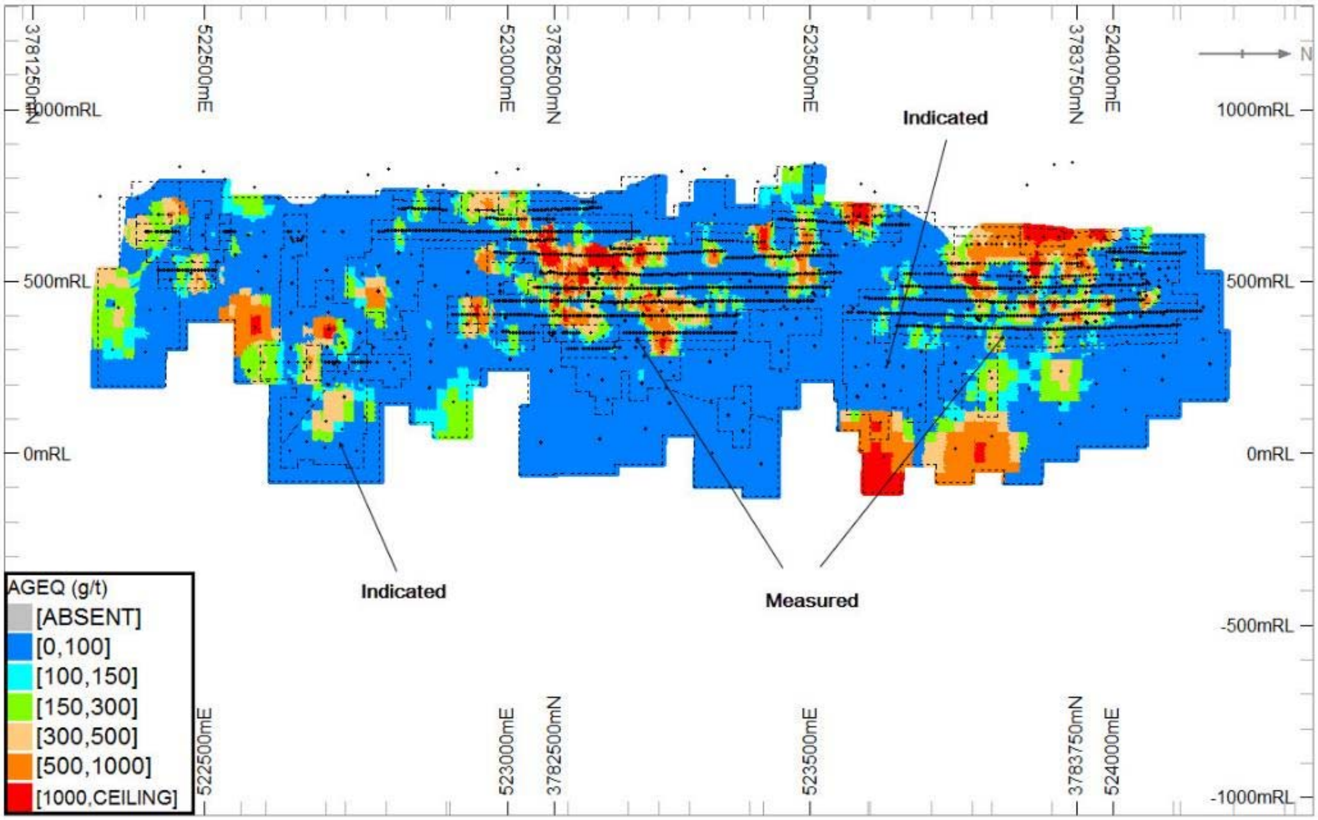
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. White section is a splay. Not to scale.

Figure 14.30 SGX S7_1 long projection Mineral Resource



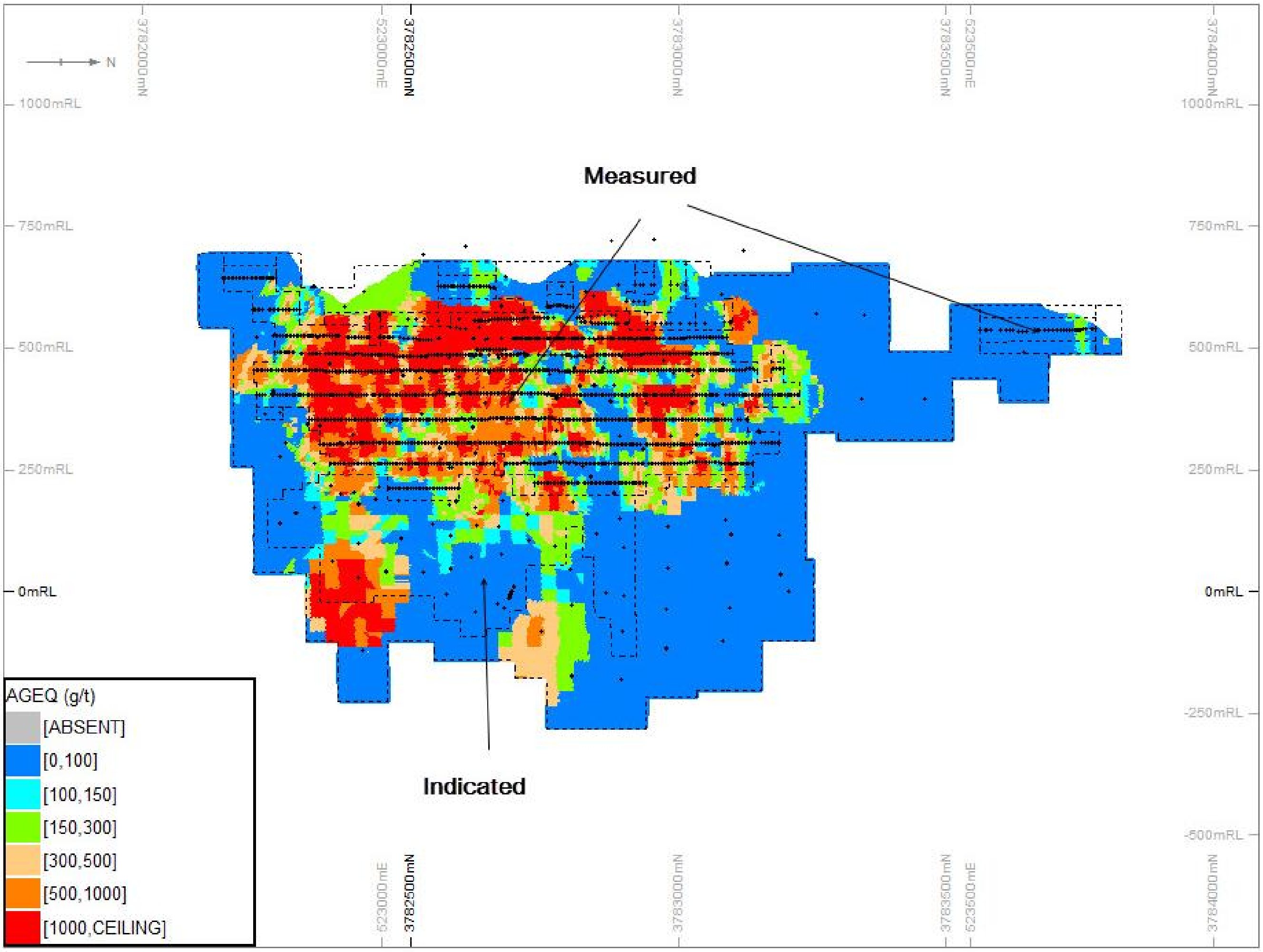
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.31 SGX S8 long projection Mineral Resource



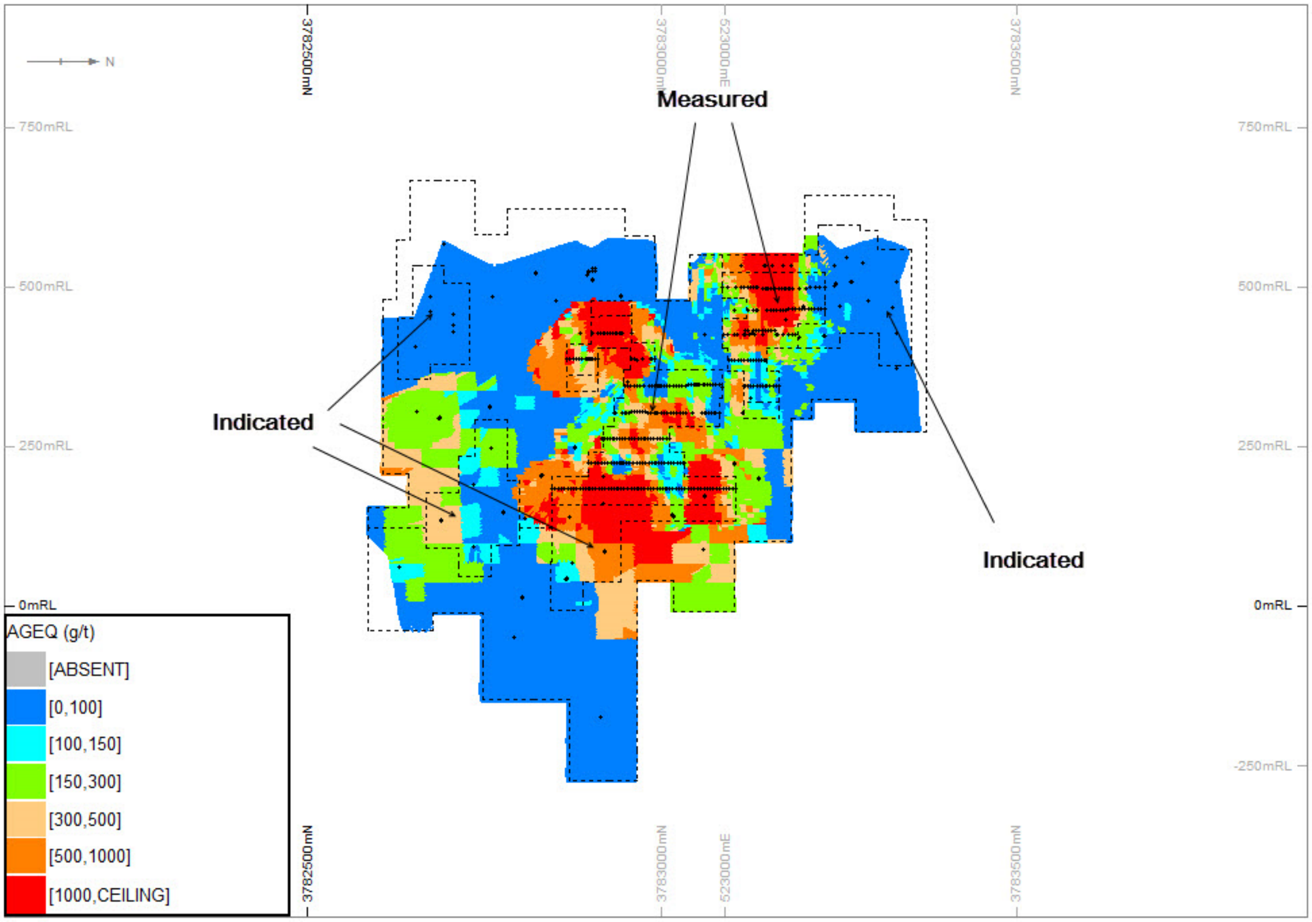
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.32 SGX S14 long projection Mineral Resource



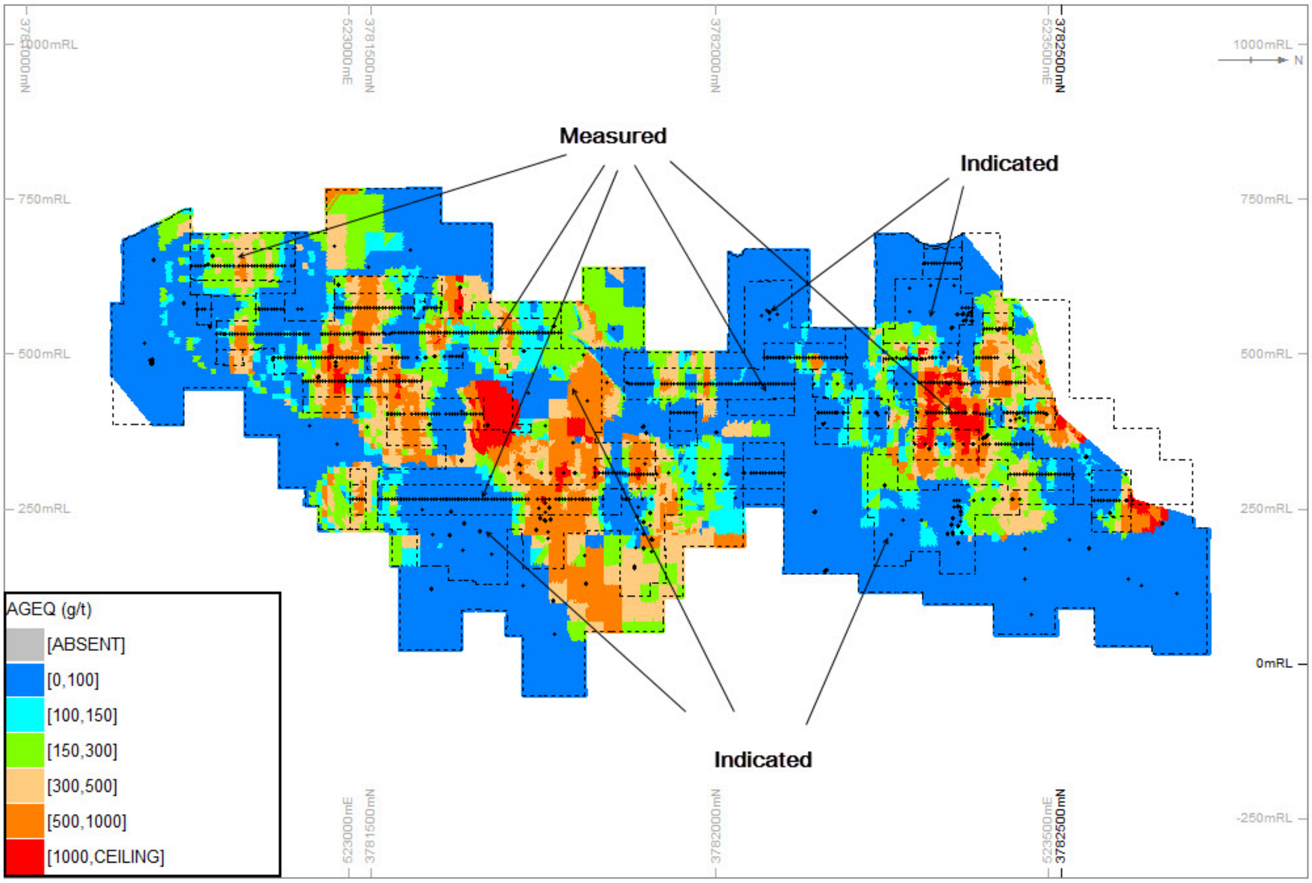
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.33 SGX S2W2 long projection Mineral Resource



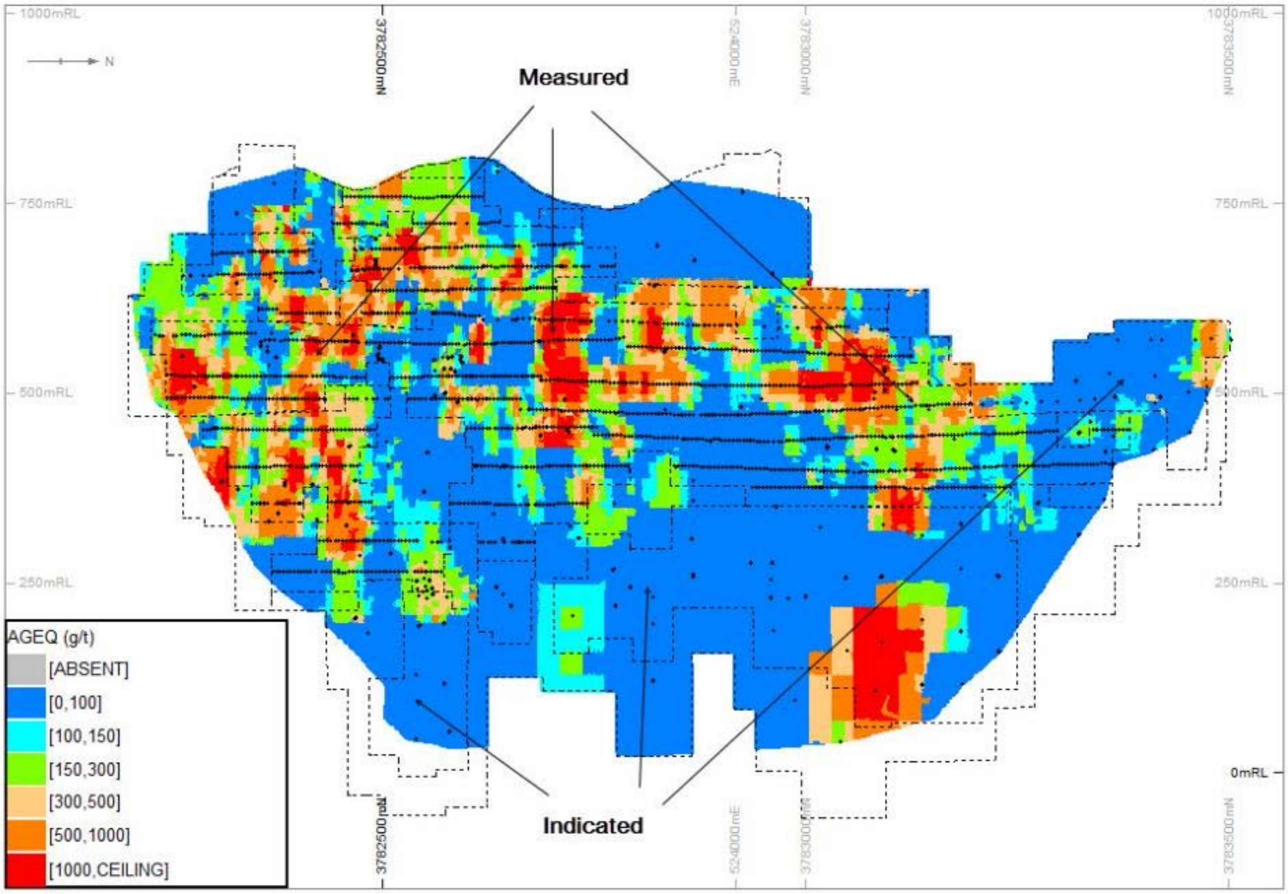
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.34 SGX S19 long projection Mineral Resource



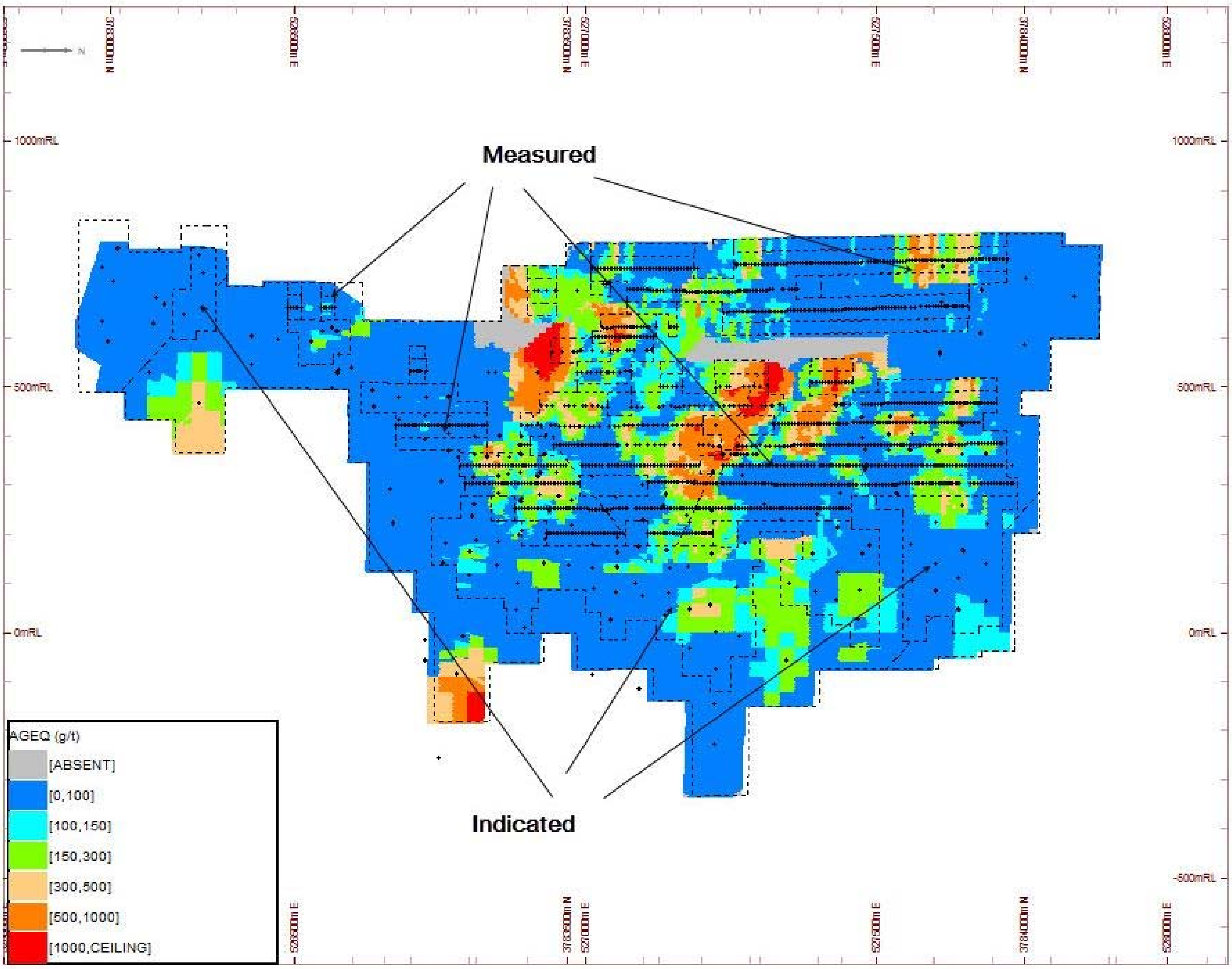
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.35 SGX S21 long projection Mineral Resource



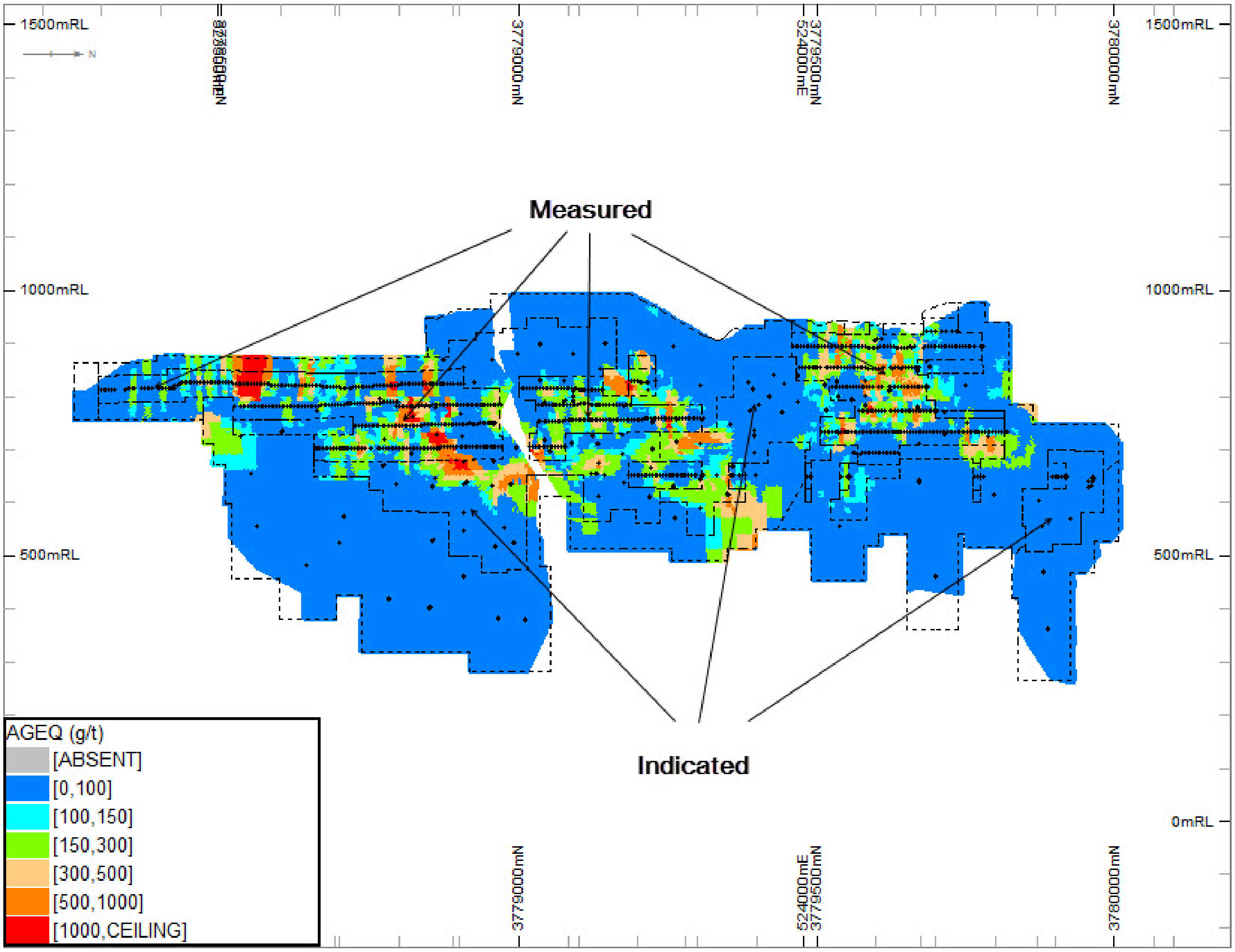
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.36 HPG H17 long projection Mineral Resource



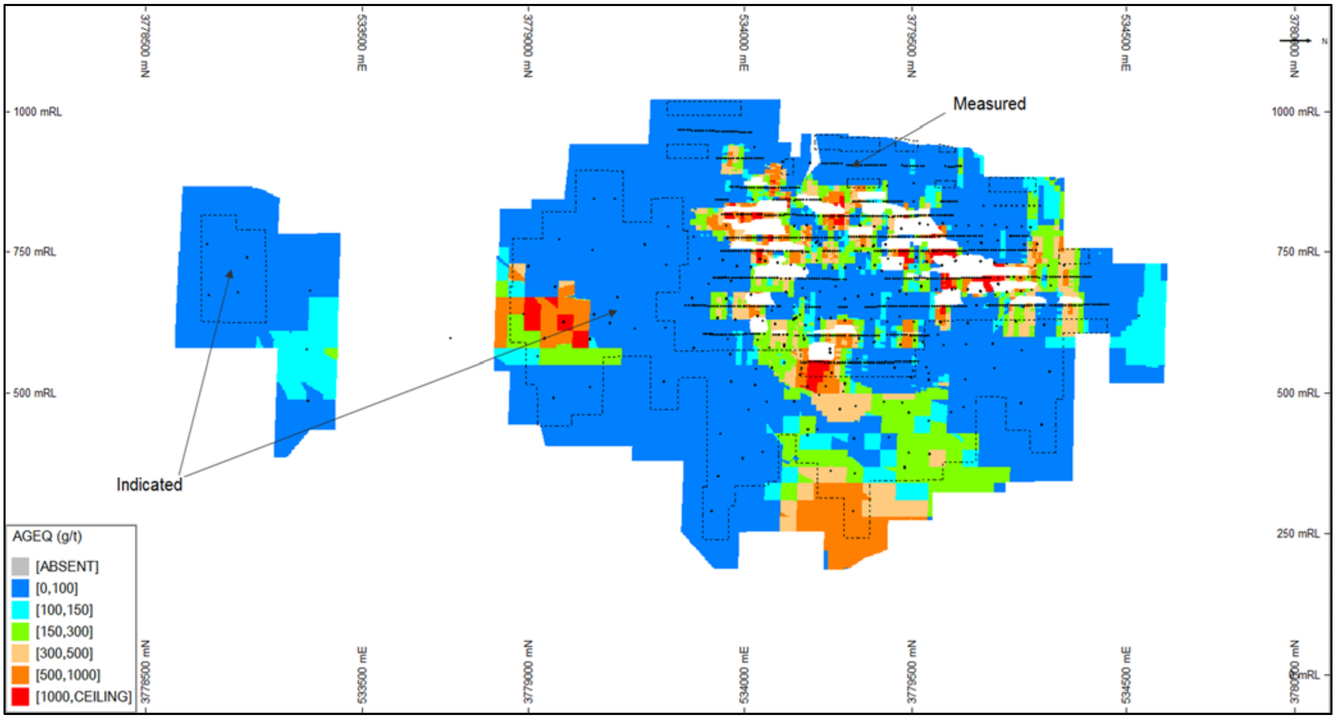
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.37 HZG HZ22 long projection Mineral Resource



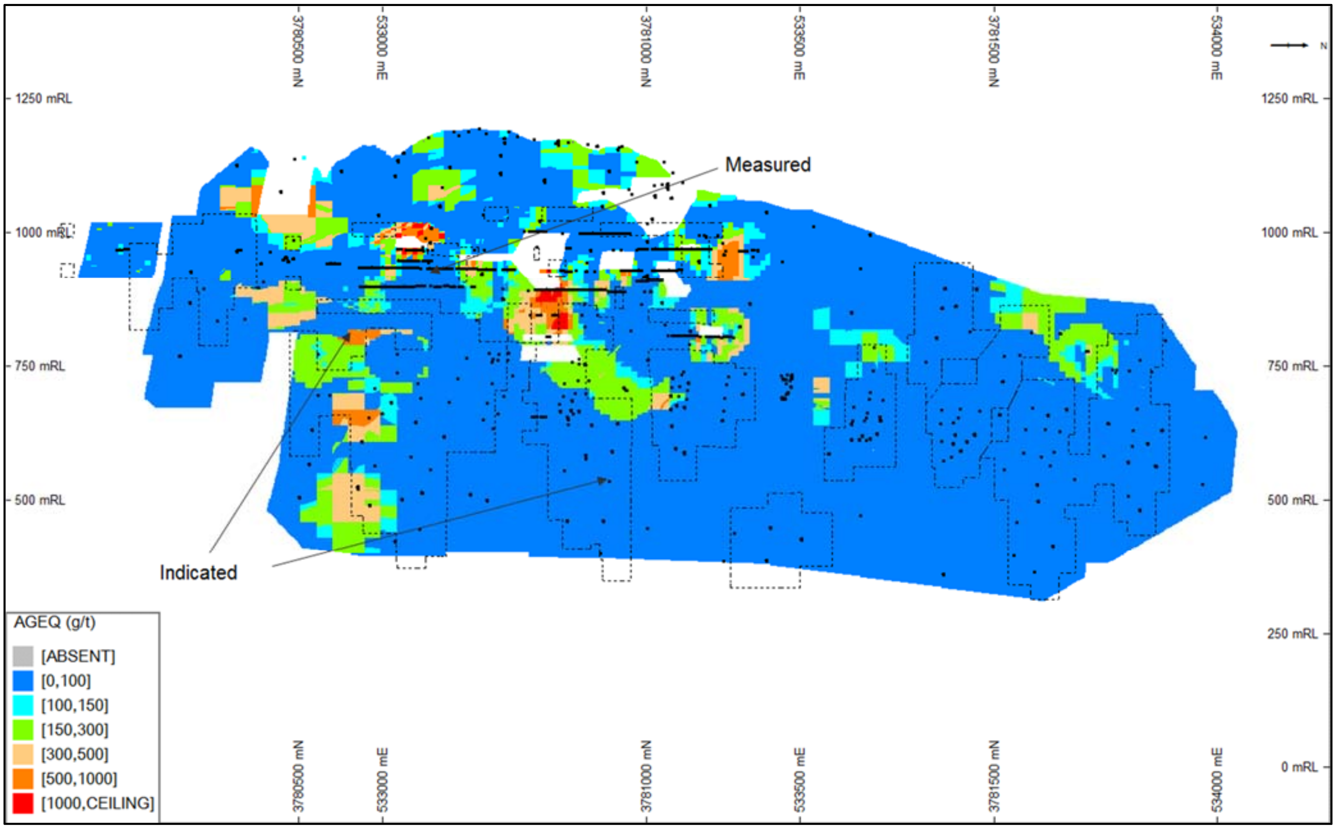
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. Not to scale.

Figure 14.38 LME LM5 long projection Mineral Resource



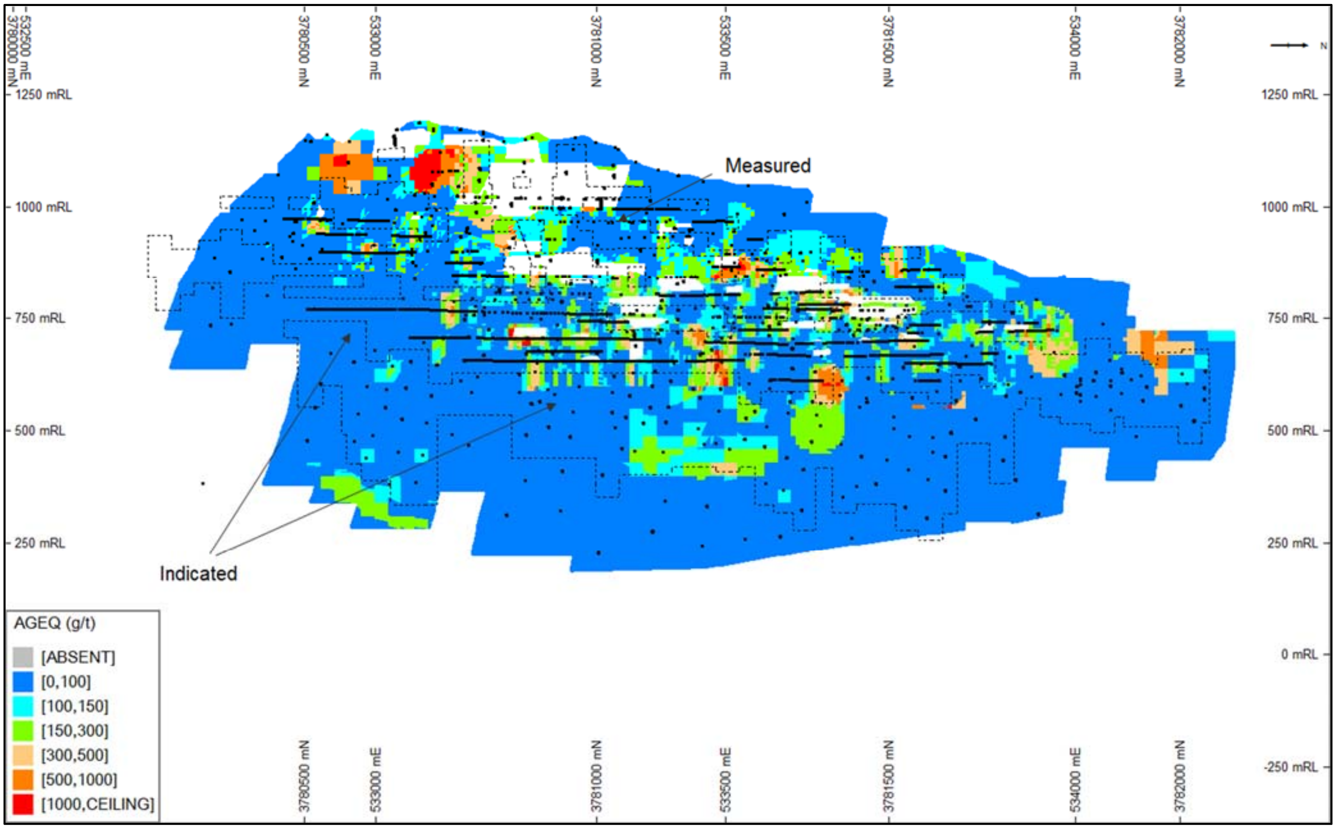
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. White internal to block model is showing depletion. Not to scale.

Figure 14.39 TLP T1 long projection Mineral Resource



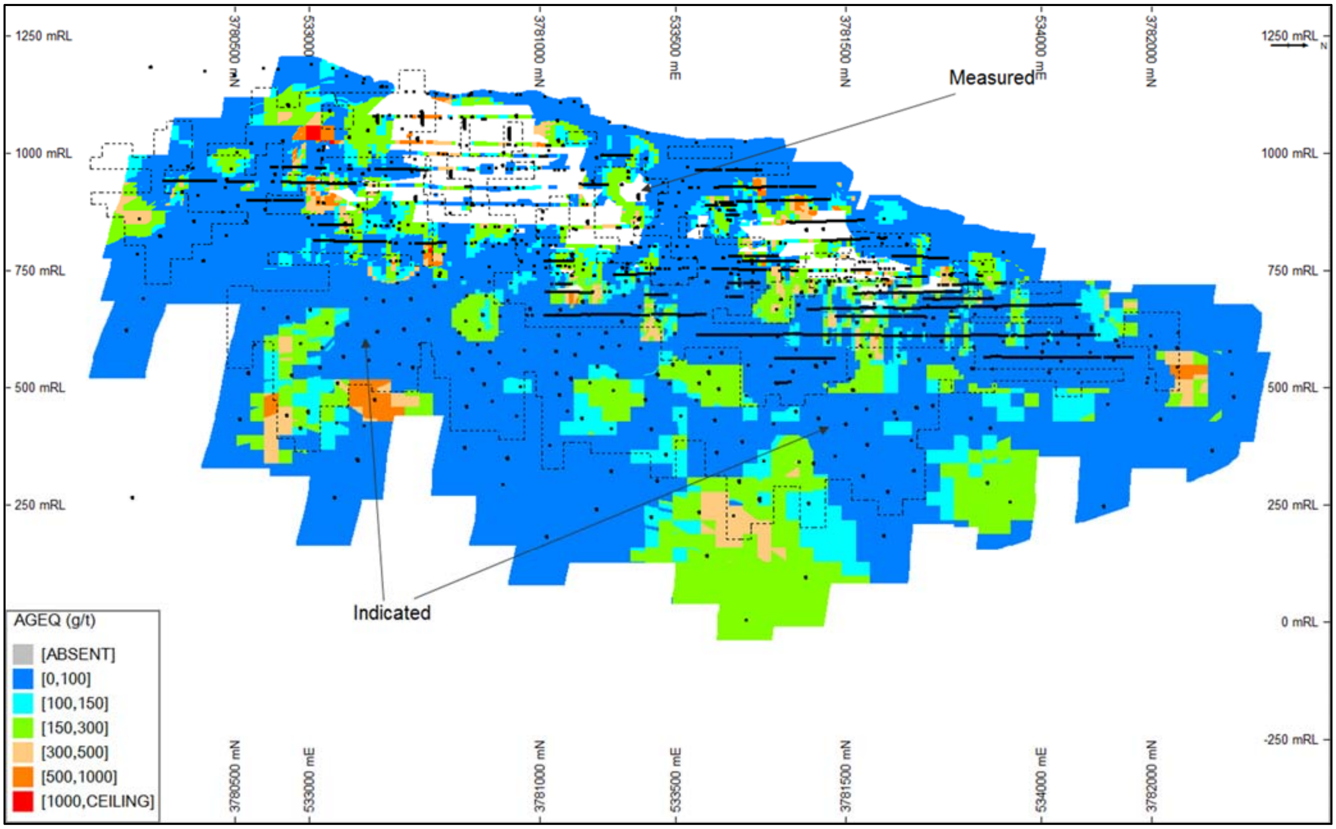
Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. White internal to block model is showing depletion. Not to scale.

Figure 14.40 TLP T2 long projection Mineral Resource



Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. White internal to block model is showing depletion. Not to scale.

Figure 14.41 TLP T3 long projection Mineral Resource



Note: Samples shown as black dots. Model coloured by silver equivalent grade (legend displayed). Resource category outlines displayed as black dashed lines and annotated. White internal to block model is showing depletion. Not to scale.

14.10 Comparison with Resource Estimate as at 31 June 2013

The most recently published Resource estimate on the Property is contained in the June 2012 Technical Report, with Mineral Resources estimated in that report to 31 June 2013. A comparison between the 2013 and 2016 Mineral Resource estimates in shown in Table 14.13. Changes since the 2013 estimate include:

- 224,729 m additional resource-definition drilling.
- 128,385 m additional level development on mineralization.
- Ongoing depletion and sterilization due to mining.
- Updated AgEq formulas and cut-off grades for each mine.

Table 14.13 Comparison of 2013 and 2016 Mineral Resource estimates

Mine	Resource category	Tonnes (Mt)	Ag		Pb		Zn		Au	
			g/t	Metal (Moz)	%	Metal (kt)	%	Metal (kt)	g/t	Metal (koz)
SGX	2016 MS+ID	6.54	281	59.1	5.33	348.2	2.64	172.9	-	-
	2016 IF	3.66	268	31.5	5.14	187.8	2.33	85.23	-	-
	2013 MS+ID	5.07	276	45.06	5.17	262.1	2.71	137.4	-	-
	2013 IF	2.8	282	25.42	4.55	127.5	2.01	56.2	-	-
	Difference MS+ID (%)	29%	2%	31%	3%	33%	-3%	26%		
	Difference IF (%)	31%	-5%	24%	13%	47%	16%	52%		
HZG	2016 MS+ID	0.78	336	8.41	1.03	8	0.2	1.58	-	-
	2016 IF	0.35	231	2.63	1.22	4.3	0.25	0.87	-	-
	2013 MS+ID	0.67	371	7.94	1.5	10	0.2	1.4	-	-
	2013 IF	0.17	374	2.02	1.01	1.7	0.19	0.3	-	-
	Difference MS+ID (%)	16%	-9%	6%	-31%	-20%	0%	13%		
	Difference IF (%)	106%	-38%	30%	21%	153%	32%	190%		
HPG	2016 MS+ID	1.32	87	3.66	3.33	43.8	1.15	15.12	1.1	47
	2016 IF	1.01	114	3.69	3.88	39.1	1.09	10.98	1.21	39
	2013 MS+ID	1.16	107	4	4.71	54.6	1.24	14.3	1.17	43.8
	2013 IF	0.43	77	1.05	3.88	16.5	1.55	6.6	1.07	14.6
	Difference MS+ID (%)	14%	-19%	-9%	-29%	-20%	-7%	6%	-6%	7%
	Difference IF (%)	135%	48%	251%	0%	137%	-30%	66%	13%	167%
LME	2016 MS+ID	1.25	321	12.88	2.05	25.5	0.44	5.51	-	-
	2016 IF	0.65	326	6.79	1.6	10.3	0.42	2.73	-	-
	2013 MS+ID	1.15	327	12.11	1.45	16.7	0.35	4	-	-
	2013 IF	0.6	294	5.67	1.46	8.8	0.45	2.7	-	-
	Difference MS+ID (%)	9%	-2%	6%	41%	53%	26%	38%	-	-
	Difference IF (%)	8%	11%	20%	10%	17%	-7%	1%	-	-
LMW	2016 MS+ID	2.47	259	20.58	2.85	70.4	0.3	7.49	-	-
	2016 IF	1.36	250	10.95	2.37	32.2	0.32	4.38	-	-
	2013 MS+ID	2.08	255	17.1	2.58	53.7	0.27	5.7	-	-
	2013 IF	1.44	313	14.46	2.15	30.9	0.31	4.5	-	-
	Difference MS+ID (%)	19%	2%	20%	10%	31%	11%	31%	-	-
	Difference IF (%)	-6%	-20%	-24%	10%	4%	3%	-3%	-	-
TLP	2016 MS+ID	3.96	186	23.68	3.4	134.6	0.3	11.74	-	-
	2016 IF	3.44	196	21.69	3.95	135.6	0.32	11.04	-	-
	2013 MS+ID	3.88	169	21.1	2.97	115.1	0.25	9.8	-	-
	2013 IF	2.09	176	11.88	2.87	60.1	0.22	4.6	-	-
	Difference MS+ID (%)	2%	10%	12%	14%	17%	20%	20%	-	-
	Difference IF (%)	65%	11%	83%	38%	126%	45%	140%	-	-
Total	2016 MS+ID	16.31	245	128.31	3.87	630.6	1.31	214.35	1.1	47
	2016 IF	10.47	230	77.25	3.91	409.4	1.1	115.22	1.21	39
	2013 MS+ID	14.01	237	107.3	3.64	512.2	1.22	172.6	1.17	43.8
	2013 IF	7.53	251	60.5	3.26	245.5	0.99	74.9	1.07	14.6
	Difference MS+ID (%)	16%	3%	20%	6%	23%	7%	24%	-6%	7%
	Difference IF (%)	39%	-8%	28%	20%	67%	11%	54%	13%	167%

The following observations have been made by the QP from the comparison table:

- Measured plus Indicated tonnes have increased by 16% overall, while the Inferred tonnes have increased by 39% overall between the two estimates.
- Measured plus Indicated grades have increased overall by between 3% and 7%, while Inferred grades for silver have decreased by 8% while other grades increased between 11% and 20% overall between the two estimates (both comparisons excluding gold as it is a very minor contributor).
- The net result in the Measured plus Indicated categories has been an increase in the contained silver metal of 20% and an increase in the contained lead metal of 23%. The increase in zinc content was 24%.
- The net result in the Inferred category has been an increase in the contained silver metal of 28% and a significant increase in both the contained lead metal and zinc metal with increases of 67% and 54% respectively.

Reasons for the differences in grade, tonnes and contained metal include Mineral Resource addition and conversion to higher categories arising from drilling and level development, different cut-off grades and depletion due to mining. As well as additional channel and drillhole samples became available between the two estimates to extend the Mineral Resource along-strike and down-dip, and changed interpretation of the veins, given the greater degree of geological understanding, meant that some parts of a vein were assigned to a different vein between the two estimates.

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 Mineral 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.

The Mineral Reserve estimates for the Ying property were prepared by Silvercorp under the guidance of independent Qualified Person, Mr H A Smith, P.Eng., who takes QP responsibility for those estimates.

15.2 Mineral Reserve estimation methodology

The Mineral 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 hand-held drills 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 mining widths of 0.5 m for resuing and 1.0 m for shrinkage are assumed. AMC has observed the mining methods at the Ying property and considers the minimum extraction and mining width assumptions to be reasonable. Minimum dilution assumptions are 0.10 m of total overbreak for a resuing cut and 0.2 m of total overbreak for a shrinkage stope. Dilution is discussed further in Section 15.4

For the total tonnage estimated as Ying Mineral Reserves, 42% is associated with resuing and 58% with shrinkage.

15.3 Cut-off grades

Mineral Reserves have been estimated using breakeven cut-off values for shrinkage and resuing at each site as appropriate. The cut-off grade basis 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) / (processing recovery x mining recovery x Ag price).

In determining metal prices for use in the cut-off calculation (and Mineral Resource / Mineral Reserve estimation and economic evaluation), AMC has referenced three-year trailing averages, prices current as of 30 June 2016, prices used in recent NI 43-101 reports, and available consensus forecast information. The exchange rate used in the cut-off calculation was arrived at via a similar process.

Table 15.1 Mineral Reserve cut-off grades and key estimation parameters

Item	SGX		HZG	HPG		LME		TLP		LMW	
Foreign exchange rate (RMB:US$)	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
	Resuing	**Shrinkage**	**Resuing**	**Resuing**	**Shrinkage**	**Resuing**	**Shrinkage**	**Resuing**	**Shrinkage**	**Resuing**	**Shrinkage**
Operating costs											
Sustaining Capital ($/t) (mine development & exploration tunnelling cost)	29.09	29.09	32.11	23.05	23.05	18.61	18.61	12.34	12.34	21.96	21.96
Mining Cost ($/t)	51.35	36.49	36.58	55.5	40.58	49.52	29.77	46.4	33.19	55.13	29.77
Hauling cost ($/t)	4.14	4.14	4.60	4.29	4.29	3.24	3.24	3.04	3.04	3.12	3.12
Milling cost ($/t)	8.09	8.09	8.26	8.33	8.33	12.98	12.98	8.20	8.20	5.13	5.13
G&A and product selling cost ($/t)	10.33	10.33	10.33	10.33	10.33	10.33	10.33	10.33	10.33	10.33	10.33
Mineral Resources tax ($/t)	2.42	2.42	2.19	2.04	2.04	2.18	2.18	2.03	2.03	2.22	2.22
Total operating costs (US$/t)*	105.42	90.56	94.07	103.54	88.62	96.86	77.11	82.34	69.13	97.89	72.53
Mining recovery (%)	95	92	95	95	92	95	92	95	92	95	92
Mill recoveries											
Au (%)				75	75						
Ag (%)	94.45	94.45	95.56	88.94	88.94	95.23	95.23	92.39	92.39	93.32	93.32
Pb (%)	96.51	96.51	93.77	93.08	93.08	93.22	93.22	93.48	93.48	94.98	94.98
Zn (%)	61.4	61.4		45.14	45.14						
Breakeven COG (AgEq g/t) = opex $/t / (mining recovery% x processing recovery% x Ag $ value per g*)	190	170	170	200	175	175	145	155	130	180	135

Notes:
Metal price assumptions: Ag $19/oz; Pb $0.90/lb; Zn $1.00/lb.
No Zn value ascribed to ore from HZG, LM, TLP and LMW sites.
Operating costs from 2016 calendar year actuals and projections

Lower cut-off grade values have been used for vein development operations where, effectively, the cost of this development is sunk and the value of the material 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	50.00	50.00	50.00	50.00	50.00

Note: Costs and metal price assumptions as per Table 15.1 above.

15.3.1 AMC comment on cut-off grades

AMC considers that the Mineral Reserve cut-off grades and their supporting parameters are reasonable. AMC also notes that the Ying Mineral Reserves as a whole have limited sensitivity to variation in cut-off grade as discussed in Section 15.6 below.

15.4 Dilution and recovery factors

15.4.1 Dilution

As indicated above, minimum mining widths are assumed as 0.5 m and 1.0 m respectively for resuing and shrinkage. For resuing, a dilution factor has been applied to each true vein width up to a minimum extraction width of 0.5 m or to (vein width plus 0.1 m) where the true width is greater than 0.4 m. For shrinkage, a minimum dilution factor of 0.2 m is added to the minimum vein width of 0.8m. AMC notes that 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 Mineral Reserves assumes that the resulting figures represent the overall tonnes and grade delivered 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.

AMC notes that the projections for dilution in both resuing and shrinkage stopes assume a high degree of process control in terms of design, drilling and blasting, and that such control on an ongoing basis will be critical to achieving dilution targets.

Table 15.3 summarizes average dilution from the Mineral Reserve calculations for each of the Ying mines. There is a significant reduction in estimated dilution for Mineral Reserves compared to the most recent Technical Report (effective date 1 May 2012). AMC considers that the current dilution estimation is reasonable considering the enhanced focus on mining process control and the recently observed results from those efforts.

Table 15.3 Average dilution by mine and method

Mine	Dilution %	
	Resuing	Shrinkage
SGX	17%	15%
HZG	23%	22%
HPG	17%	19%
LM-E	21%	18%
LM-W	13%	14%
TLP	17%	19%
Total Ying	17%	17%

15.4.2 Mining recovery factors

Mining recovery estimates used in the Mineral 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 in sill pillars is allowed for in the respective recovery factors.

15.5 Mineral Reserve Estimate

To convert Mineral Resources to Mineral Reserves, Silvercorp uses the following procedures:

- Selection of Measured and Indicated Resource areas (potential stope blocks) 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
- Reconfirmation that diluted AgEq grade is greater than mine cut-off
- Confirmation as Mineral Reserves 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 Mineral Reserve estimates for each Ying mine and for the Ying operation as a whole. 38% of the Mineral Reserve tonnage is categorized as Proven and 62% is categorized as Probable.

Table 15.4 Ying Mines Mineral Reserve estimates at 30 June 2016

Mines	Categories	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	EQ-Ag(g/t)	Metal Contained in Reserves			
								Au (koz)	Ag (Moz)	Pb (kt)	Zn (kt)
SGX	Proven	2.32		272	5.25	2.69	509		20.28	121.60	62.21
	Probable	3.18		248	4.86	2.11	459		25.40	154.55	67.06
Total Proven & Probable		5.50		258	5.02	2.35	480		45.68	276.15	129.27
HZG	Proven	0.23		348	1.03	0.20	384		2.60	2.39	0.47
	Probable	0.35		285	0.77	0.15	312		3.23	2.73	0.52
Total Proven & Probable		0.59		310	0.88	0.17	341		5.83	5.12	0.99
HPG	Proven	0.47	1.10	88	3.76	1.13	297	16.43	1.31	17.50	5.26
	Probable	0.29	1.15	108	3.28	1.17	304	10.84	1.02	9.65	3.45
Total Proven & Probable		0.76	1.12	95	3.57	1.15	300	27.27	2.33	27.15	8.71
TLP	Proven	1.00		223	3.45	0.26	341		7.15	34.39	2.62
	Probable	1.48		178	2.91	0.29	277		8.45	43.09	4.31
Total Proven & Probable		2.47		196	3.13	0.28	303		15.60	77.49	6.93
LM-E	Proven	0.20		288	1.45	0.27	337		1.82	2.85	0.54
	Probable	0.75		298	2.11	0.46	370		7.23	15.95	3.48
Total Proven & Probable		0.95		296	1.97	0.42	363		9.06	18.80	4.02
LM-W	Proven	0.46		316	3.29	0.25	428		4.69	15.21	1.14
	Probable	1.57		234	2.61	0.29	323		11.83	41.04	4.63
Total Proven & Probable		2.04		252	2.76	0.28	346		16.52	56.25	5.77
Ying Mine	**Proven**	**4.67**	**0.11**	**252**	**4.15**	**1.55**	**431**	**16.43**	**37.85**	**193.95**	**72.24**
	Probable	**7.63**	**0.04**	**233**	**3.50**	**1.09**	**374**	**10.84**	**57.16**	**267.01**	**83.45**
Total Proven & Probable		**12.30**	**0.07**	**240**	**3.75**	**1.27**	**396**	**27.27**	**95.02**	**460.96**	**155.69**

Notes to Mineral Reserve Statement:
Stope Cut-off grades (Ag/Eq g/t): SGX – 190 Resuing, 170 Shrinkage; HZG – 170 Resuing; HPG – 200 Resuing, 175 Shrinkage; LME -175 Resuing, 145 Shrinkage; LMW -180 Resuing, 135 Shrinkage; TLP - 155 Resuing, 130 Shrinkage.
Vein development cut-off grades of 50 g/t AgEq for all mines.
Unplanned dilution (zero grade) assumed as 0.05m on each wall of a resuing stope and 0.10m on each wall of a shrinkage stope.
Mining recovery factors assumed as 95% for resuing and 92% for shrinkage.
Metal prices: gold US$1,250/troy oz, silver US$19/troy oz, lead US$0.90/lb, zinc US$1.00/lb
Processing recovery factors: SGX – 94.5% Ag, 96.5% Pb, 61.4% Zn; HZG – 95.6% Ag, 93.8% Pb; HPG – 88.9% Ag, 93.1% Pb, 45.1% Zn; LME – 95.2% Ag, 93.2% Pb; LMW – 93.3% Ag, 95.0% Pb; TLP – 92.4% Ag, 93.5% Pb.
Exclusive of mine production to 30 June 2016.
Exchange rate assumed is RMB 6.50 : US$1.00.
Rounding of some figures may lead to minor discrepancies in totals.

AMC notes that the average silver and lead grades for the total combined Ying Mines Mineral Reserves are of the order of 20% lower than reported mined grades from operations for January to November 2016. This is consistent with the mining plan generally moving into lower grade areas as the LOM progresses. AMC notes that the grade distribution of the Mineral Reserves and the increased operational focus on minimizing dilution allows a continuing opportunity to mine at above-overall-average grades in at least the early stages of the projected remaining LOM. AMC advises that best mining practices and the focus on tight dilution control will be key to optimizing grade throughout the extraction of the Ying Mineral Reserves.

15.6 Reserves sensitivity to cut-off grade

AMC has tested the sensitivity of the Ying Mineral Reserves to variation in cut-off grade by applying a 20% increase in COG to Mineral Reserves at each of the Ying mines. The approximate 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 Estimated reduction in Contained AgEq Oz in Mineral Reserves for COG increase of 20%

	SGX	HZG	HPG	TLP	LME	LMW
Mine AgEq oz reduction	3.6%	2.4%	18.6%	10.3%	8.00%	7.2%
Ying Total AgEq oz reduction	6.1%					

The lowest sensitivities are seen at SGX and HZG with, respectively, an estimated 3.6% and 2.4% reduction in contained AgEq ounces when the COG is increased by 20%. The highest reduction of 18.6% is noted at HPG. For Ying as a whole, an approximately 6% reduction demonstrates relatively low overall COG sensitivity.

15.7 Conversion of Mineral Resources to Reserves

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 Mt	Au g/t	Ag g/t	Pb %	Zn %	Au koz	Ag Moz	Pb kt	Zn kt
SGX	Resource MS+ID	6.54		281	5.33	2.64		59.1	348.2	172.9
	Reserve Prv + Prb	5.5		258	5.02	2.35		45.68	276.15	129.27
Conversion percentages		84%		92%	94%	89%		77%	79%	75%
HZG	Resource MS+ID	0.78		336	1.03	0.2		8.41	8.034	1.58
	Reserve Prv + Prb	0.59		310	0.88	0.17		5.83	5.12	0.99
Conversion percentages		76%		92%	85%	85%		69%	64%	63%
HPG	Resource MS+ID	1.32	1.1	87	3.33	1.15	47	3.66	43.8	15.12
	Reserve Prv + Prb	0.76	1.12	95	3.57	1.15	27.27	2.33	27.15	8.71
Conversion percentages		58%	102%	109%	107%	100%	58%	64%	62%	58%
TLP	Resource MS+ID	3.96		186	3.4	0.3		23.68	134.6	11.74
	Reserve Prv + Prb	2.47		196	3.13	0.28		15.6	77.49	6.93
Conversion percentages		62%		105%	92%	93%		66%	58%	59%
LM-E	Resource MS+ID	1.25		321	2.05	0.44		12.88	25.5	5.51
	Reserve Prv + Prb	0.95		296	1.97	0.42		9.06	18.8	4.02
Conversion percentages		76%		92%	96%	95%		70%	74%	73%
LM-W	Resource MS+ID	2.47		259	2.85	0.3		20.58	70.4	7.49
	Reserve Prv + Prb	2.04		252	2.76	0.28		16.52	56.25	5.77
Conversion percentages		83%		97%	97%	93%		80%	80%	77%
Total	Resource MS+ID	16.31	0.09	243	3.87	1.31	47	127.42	630.6	214.35
	Reserve Prv + Prb	12.3	0.07	240	3.75	1.27	27.27	95.02	460.96	155.69
Conversion percentages		75%	78%	99%	97%	97%	58%	75%	73%	73%

*Numbers may not compute exactly due to rounding.

For the Property as a whole, total Mineral Reserve tonnes are approximately 75% of Mineral Resource (Measured plus Indicated) tonnes. Silver, lead and zinc Mineral Reserve grades are 99%, 97% and 97% respectively of the corresponding Measured plus Indicated Mineral Resource grades. Metal conversion percentages for silver, lead and zinc are 75%, 73% and 73% respectively.

15.8 Comparison of Mineral Reserves, mid-2013 to mid-2016

Table 15.7 shows Ying Mineral Reserves as of mid-2013 (previous Technical Report) and as of mid-2016 (this Technical Report). The 2016 data is exclusive of ore mined since mid-2013.

Table 15.7 Change in Mineral Reserves, mid-2013 to mid-2016

Mines	Categories	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Metal Contained in Reserves			
							Au (oz)	Ag (Moz)	Pb (kt)	Zn (kt)
SGX 2013	Proven	2.66		230	4.41	2.33		19.64	117.30	61.90
	Probable	2.20		206	3.75	1.90		14.56	82.50	41.90
Total Proven & Probable		4.86		219	4.11	2.14		34.20	199.80	103.80
SGX 2016	Proven	2.32		272	5.25	2.69		20.28	121.60	62.21
	Probable	3.18		248	4.86	2.11		25.4	154.55	67.06
Total Proven & Probable		5.50		258	5.02	2.35		45.68	276.15	129.27
SGX % Change	Proven	-13%		18%	19%	15%		3%	4%	1%
	Probable	45%		20%	30%	11%		74%	87%	60%
Total Proven & Probable		13%		18%	22%	10%		34%	38%	25%
HZG 2013	Proven	0.30		344	1.16	0.19		3.32	3.50	0.60
	Probable	0.39		279	1.12	0.13		3.49	4.40	0.50
Total Proven & Probable		0.69		307	1.14	0.16		6.82	7.80	1.10
HZG 2016	Proven	0.23		348	1.03	0.20		2.60	2.39	0.47
	Probable	0.35		285	0.77	0.15		3.23	2.73	0.52
Total Proven & Probable		0.59		310	0.88	0.17		5.83	5.12	0.99
HZG % Change	Proven	-23%		1%	-11%	5%		-22%	-32%	-22%
	Probable	-10%		2%	-31%	15%		-7%	-38%	4%
Total Proven & Probable		-14%		1%	-23%	6%		-15%	-34%	-10%
HPG 2013	Proven	0.56	0.94	100	4.54	0.81	16,931	1.80	25.40	4.50
	Probable	0.36	1.05	84	3.33	1.14	12,230	0.97	12.10	4.10
Total Proven & Probable		0.92	0.98	94	4.06	0.94	29,160	2.77	37.40	8.70
HPG 2016	Proven	0.47	1.10	88	3.76	1.13	16,430	1.31	17.50	5.26
	Probable	0.29	1.15	108	3.28	1.17	10,840	1.02	9.65	3.45
Total Proven & Probable		0.76	1.12	95	3.57	1.15	27,270	2.33	27.15	8.71
HPG % Change	Proven	-16%	17%	-12%	-17%	40%	-3%	-27%	-31%	17%
	Probable	-19%	10%	29%	-2%	3%	-11%	5%	-20%	-16%
Total Proven & Probable		-17%	14%	1%	-12%	22%	-6%	-16%	-27%	0%
TLP 2013	Proven	1.18		135	2.67	0.18		5.13	31.50	2.10
	Probable	2.10		160	2.45	0.22		10.80	51.30	4.70
Total Proven & Probable		3.28		151	2.52	0.21		15.94	82.80	6.80
TLP 2016	Proven	1.00		223	3.45	0.26		7.15	34.39	2.62
	Probable	1.48		178	2.91	0.29		8.45	43.09	4.31
Total Proven & Probable		2.47		196	3.13	0.28		15.60	77.49	6.93
TLP % Change	Proven	-15%		65%	29%	44%		39%	9%	25%
	Probable	-30%		11%	19%	32%		-22%	-16%	-8%
Total Proven & Probable		-25%		30%	24%	33%		-2%	-6%	2%
LM 2013	Proven	0.54		282	1.67	0.20		4.92	9.10	1.10
	Probable	2.35		236	1.84	0.24		17.89	43.40	5.80

Mines	Categories	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Metal Contained in Reserves			
							Au (oz)	Ag (Moz)	Pb (kt)	Zn (kt)
Total Proven & Probable		2.89		245	1.81	0.24		22.81	52.50	6.90
LM 2016	Proven	0.66		307	2.74	0.25		6.51	18.06	1.68
	Probable	2.33		255	2.45	0.35		19.06	56.99	8.11
Total Proven & Probable		2.99		266	2.51	0.33		25.58	75.05	9.79
LM % Change	Proven	22%		9%	64%	25%		32%	98%	53%
	Probable	-1%		8%	33%	46%		7%	31%	40%
Total Proven & Probable		3%		9%	39%	38%		12%	43%	42%
Ying Mine 2013	Proven	5.24	0.10	207	3.56	1.34	16,931	34.81	186.70	70.20
	Probable	7.40	0.05	200	2.62	0.77	12,230	47.71	193.70	57.00
Total Proven & Probable		12.64	0.07	203	3.01	1.01	29,160	82.52	380.40	127.20
Ying Mine 2016	Proven	4.67	0.11	252	4.15	1.55	16,430	37.85	193.95	72.24
	Probable	7.63	0.04	233	3.50	1.09	10,840	57.16	267.01	83.45
Total Proven & Probable		12.30	0.07	240	3.75	1.27	27,270	95.02	460.96	155.69
Ying % Change	Proven	-11%	10%	22%	17%	16%	-3%	9%	4%	3%
	Probable	3%	-20%	17%	34%	42%	-11%	20%	38%	46%
Total Proven & Probable		-3%	0%	18%	25%	26%	-6%	15%	21%	22%

Some significant aspects of the comparison are:

- 3% decrease in total Ying Mineral Reserve tonnage.
- Increase in total Ying Mineral Reserve silver, lead and zinc grades of 18%, 25%, and 26% respectively.
- Increase in total Ying Mineral Reserve metal content for silver, lead and zinc of 15%, 21% and 22% respectively.
- SGX continues being the leading contributor to the Ying Mineral Reserves, now accounting for 45% of tonnes, 48% of silver, 60% of lead and 83% of zinc, compared to respective values of 38%, 36%, 43% and 67% in 2013.
- Decrease in TLP Mineral Reserve tonnes of 25% but increase in silver, lead and zinc grades of 30%, 24% and 33% respectively.
- Decrease in HPG Mineral Reserve tonnes of 17%.
- Increase in LM (combined LME and LMW) Mineral Reserve metal content for silver, lead and zinc of 12%, 43% and 42% respectively.

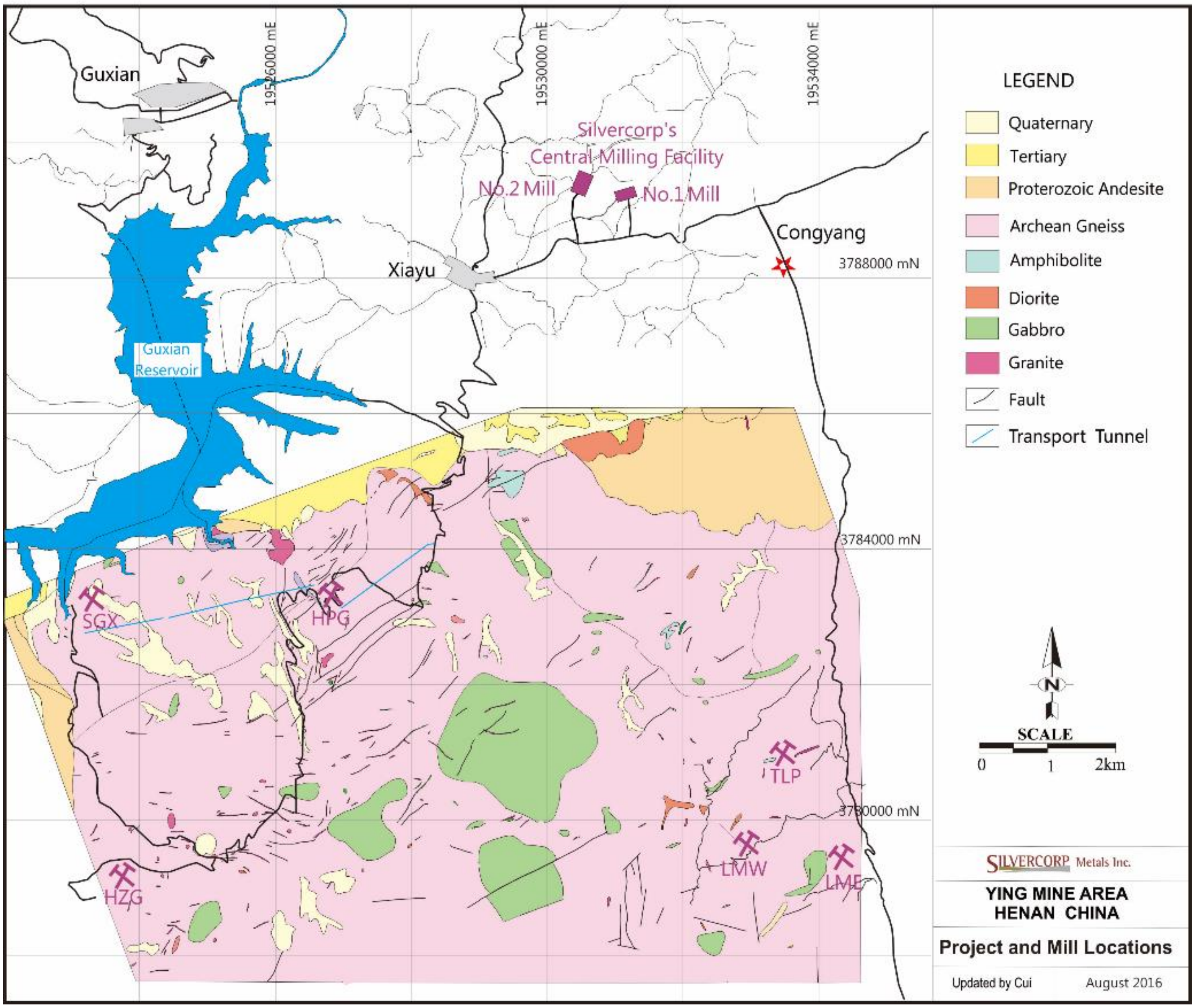
16 Mining methods

16.1 Ying Mining Operations

16.1.1 Introduction

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, LME and LMW 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 district is via adits at various elevations, inclined haulageways, shaft/internal shafts (winzes), and declines (ramps).

The mines are developed using trackless equipment – 20 t trucks and single-boom jumbos, small, conventional tracked equipment – electric / diesel locomotives, rail cars, electric rocker shovels; and pneumatic hand-held drills (jacklegs). At most of TLP, four adits of SGX, part of LME and part of LMW mines, small tricycle trucks with a payload of up to three tonnes each are used to haul ore to surface. These tricycle trucks are being gradually replaced by rail cars in all mines except for TLP.

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. Jacklegs are used in stope blast drilling. In-stope ore handling is by hand-carting/hand-shovelling to specially manufactured steel-lined ore passes for resuing stopes, and by gravity to draw points for shrinkage stopes. Production mucking uses mostly hand shovels or, occasionally, rocker shovels, with rail cars and battery-powered or diesel locomotives transporting ore to the main shaft, inclined haulageway or main loading points in declines. Ore transport to surface is accomplished via skip/cage hoisting (shaft), rail-cars (tracked adit and / or inclined haulageway), small tricycle trucks, or 20 tonne trucks on ramps. Some hand picking of high grade ore and of waste is carried out on surface at either ore pile or sorting belt, 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 located in the western part of the Ying district. It is accessed by eight adits and a ramp to 260 mRL with a total length of 2,955 m. An inclined-haulageway from the ramp at 260 mRL to 210 mRL is currently being developed and scheduled to be completed in 2017. In respect of the existing underground infrastructure and the distribution of Mineral Resources, the whole mining area is divided into 13 production systems. A production system is an independent mining area with an independent transport and muck hoisting system. SGX is the largest of the Silvercorp Ying operations, producing about 36% of tonnes and 45% of silver ounces for the total operation in fiscal 2016. The Ag-Pb-Zn mineralization is found in at least 39 veins with the five largest vein systems (S7, S2, S19, S16 and S14) accounting for over 60% of this mineralization. Vein widths range from around 0.3 m to 5.1 m with 76% mined by resuing and 24% mined by shrinkage in fiscal 2016, on a tonnage basis. Mining is currently planned down to the 10 mRL. 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 mine is a satellite of the SGX mine, with portals located about 4 km to the south of the main SGX site. It is accessed by five adits, and hosts five production systems. There are 11 known veins. The vein widths for mining range from about 0.2 m to 3.0 m, the veins being generally similar to those found throughout the district. The mining method by tonnage was approximately 97% resuing and 3% shrinkage in fiscal 2016, and the mining plan envisages ore being produced from five veins between the 450 mRL and 950 mRL. The first year of production at HZG was 2011. Approximately 9% of Ying ore tonnage and 11% of silver ounces in fiscal 2016 were produced at HZG.

16.1.4 HPG

The HPG mine has been operated since 2007 and is located in the central part of the Ying district, to the northeast of the SGX mine. It is accessed from six adits and mining from 20 veins is projected in the LOM plan between the 800 mRL and 80 mRL. The HPG mine is divided into five production systems. The mining method by tonnage was about 30% resuing and about 70% shrinkage in fiscal 2016, with vein widths projected for mining ranging from less than 0.3 m up to about 2.7 m. About 10% of Ying ore tonnage in fiscal 2016 was produced at HPG (approximately 4% of silver ounces).

16.1.5 TLP

The TLP mine lies about 11 km east–southeast of SGX. There are 49 known veins, all dipping westward. The mine is serviced from eight adits, and hosts seven production systems. The mining plan currently shows production occurring through to 2030 from stopes between 200mRL and 1,100mRL and from vein widths generally between 0.3 m and 5.0 m. The mining method by tonnage was 48% resuing and 52% shrinkage in fiscal 2016. TLP contributed 20% of Ying ore tonnes and 14% of Ying Ag ounces in fiscal 2016.

16.1.6 LME

The LME mine is located just south of the TLP mine and about 12 km from SGX. 17 veins with steep dips to either east or west have been identified. Access is via one adit, three shafts and two inclined haulageways. The mining method by tonnage was 32% resuing and 68% shrinkage in fiscal 2016. LME contributed 12% of Ying ore tonnes and 14% of Ying Ag ounces in fiscal 2016.

16.1.7 LMW

The LMW mine is located just south of the TLP mine and about 12 km from SGX. To date, 59 veins with steep dips to either the north-east or north-west have been identified. Access is via four adits, two shafts, and one ramp. The mining method by tonnage was 91% resuing and 9% shrinkage in fiscal 2016. LMW contributed 13% of Ying ore tonnes and 12% of Ying Ag ounces in fiscal 2016. The ramp developed from surface to 635 mRL is 3,599 m in length.

16.2 Mining methods and mine design

16.2.1 Geotechnical and hydrogeological considerations

No specific geotechnical or hydrogeological study data is available for the Ying mines. In general, the ground at current mining levels is in good condition, similar to development and mining operations to date. The excavation of relatively small openings, both in development and stoping, facilitates ground stability. An increased percentage of resuing mining stopes also means a greater number of smaller rather than larger openings. Support is only installed where deemed to be necessary, with rockbolts being used for hangingwall support on very rare occasion. Timber and steel I-beams are also 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 LMW ramp developed from surface to 635 mRL is 3,599 m in length. The SGX ramp developed from the surface to 260 mRL is 2,955 m in length.

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:

- Adits and portals
- Inclined haulageways
- Decline accesses (ramp)
- Internal shafts (winzes)
- Shaft

Adits are driven at a slight incline at dimensions of approximately 2.2 m x 2.2 m with arch profile. These are the principal 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 transport by railcars. Where there is no rail, tricycle cars are utilized for transport of ore, waste and supplies.

Inclined haulageways are driven at approximately 25^{o} to 30^{o}. Typical dimensions are 2.4 m wide x 2.2 m high. 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 being developed in the SGX and LMW mines are jumbo-driven drifts with dimensions of 4.2 m wide by 3.8 m high at a 12% grade. One daylights at LMW as the 980 Ramp, developed from 980 to 635 m elevation. At the SGX mine, the 560 Ramp starts at 560 m elevation and bottoms at 260 m elevation. The total developed length is just over 6 km.

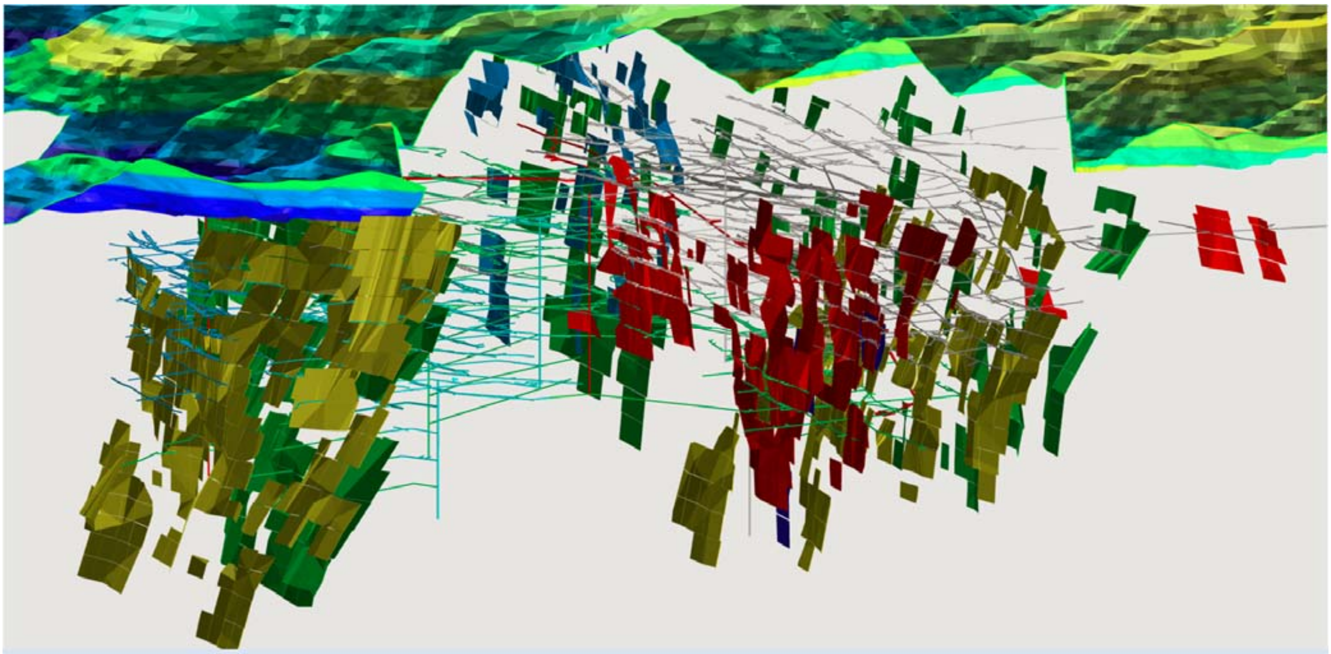
As of June 2016, there were 24 internal shafts (winzes) throughout the Ying Property. The hoisting capacity of these shafts varies from 50,000 tpa to 150,000 tpa (combined ore and waste). Fully-loaded rail cars that bring up ore and waste are cage-transported via these shafts; they are also used for hoisting men and materials.

The only shaft to surface is the 969 shaft at LMW. It has a finished diameter of 3.5 m and is equipped with a ZJK-2×125P hoist winch. The total depth of the shaft is 480 m, and the hoisting capacity is 150,000 tpa of combined ore and waste, with a standard 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. Declines/internal shafts are developed for the SGX, LMW, LME, 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

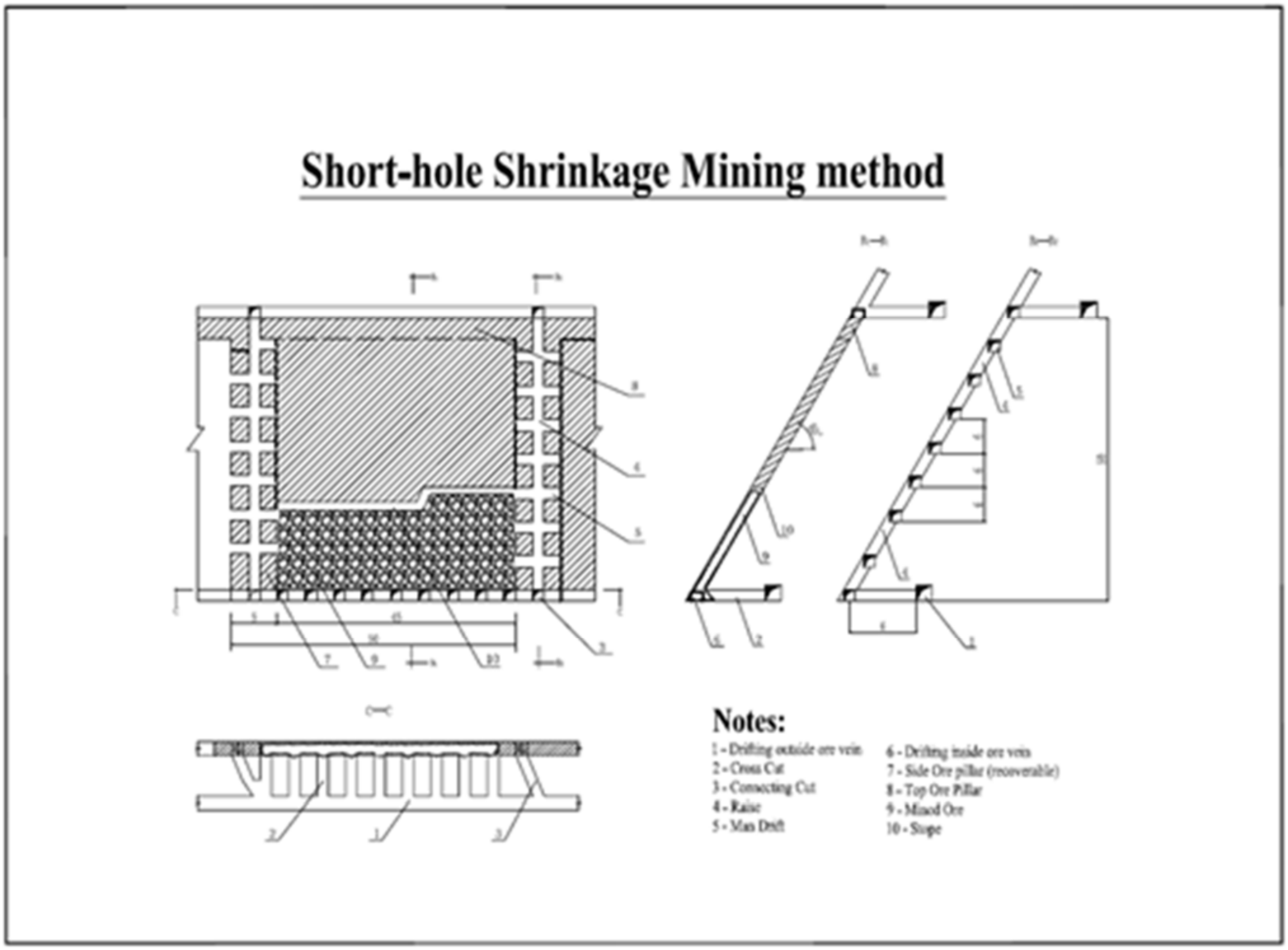
Shrinkage stoping and resue stoping are the mining methods employed at the Ying mines. The LOM plan envisages the continuation of these methods.

16.2.3.1 Shrinkage stoping

A sill drive is initially driven along the vein at 1.8 m height. For typical shrinkage stopes, the lower part of the vein will be mined at 1.2 m width, while the upper part will be mined at 0.8 m width. An access drive at 2 m wide x 2 m high (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. Each stoping block is typically 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 – 75º (“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 generally 0.4 – 0.5 kg/t. Stope blasting fills the void below with ore as mining proceeds upwards. The ore swell is mucked from the drawpoints to maintain a stope working height of about 2 m. While mining is underway, only about 30% of the stope ore may be mucked. When mining is complete, all remaining ore is mucked from the stope, unless significant wall dilution occurs. The stope is left empty beneath a sill (crown) pillar of, typically, around 3 m thickness (adopted thickness ultimately dependent on extraction width). Ventilation, compressed air and water are carried up the travelway raises to the mining horizon. 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 15 m 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 mill holes 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. Typically, 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 extended 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.

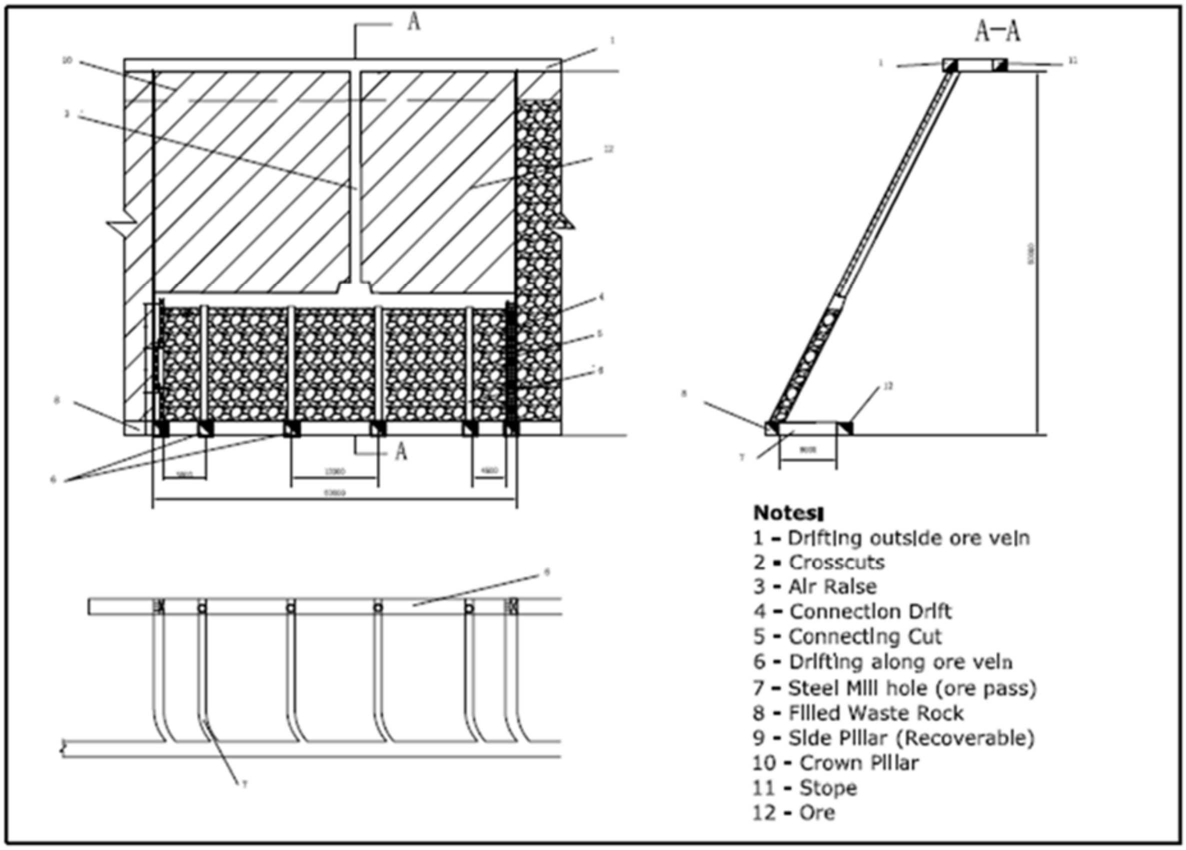
Figure 16.5 Resue stope at SGX mine

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). The rubber mats and / or belting are rolled up and removed prior to slashing the footwall, with that broken material forming the floor for 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 the 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 60º 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 the 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 portals. If weighed ore tonnes are greater than planned ore 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, generally, only blast swell is mucked until the stope nears completion.

16.2.4 Ore and 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 identify 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 haulageways 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. Rail cars are pushed onto the cage for transport to the next level. Only one internal shaft in SGX is equipped with a skip to hoist waste.

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. Auxiliary fans, vent bags, low voltage transformers, rocker shovels, submersible pumps, small winches, etc. are provided and maintained by contractors. Ramp development contractors in SGX and LMW also use their own equipment.

The Silvercorp fixed plant is predominantly domestically manufactured and locally sourced. The equipment manufacturers are well known and commonly used. Tables 16.1 and 16.2 list equipment at the Ying mines.

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	7
	Winch	2JPT-1.6*1.0	132kW	1
	Winch	JTP-1.2*1.2	75 kW	1
	Winch	JTK-1.0*0.8 (to be replaced)	45 kW	1
	Winch	JTK1.2*1.0 (to be replaced)	75 kW	1
	Primary Fan	K45-No.16	35-65 m^3 /s	1
	Primary Fan	FKZ(K45-4-No.14)	35.7 – 67.2 m^3 /s	1
	Primary Fan	FKZ(K45-4-No.15)	43.9-82.6 m^3 /s	1
	Compressor	LG110A/8	Flow: 20 m^3/min; Pressure: 0.8MPa	6
	Compressor	LG-22/8	Flow: 22 m^3/min; Pressure: 0.8MPa	4
	Cage	GS 1-1		3
	Cage	GLM1/6/1/1		7
	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	52
	Auxiliary fan	JK58-4.5	11 kW	36
HZG	Winch	JTP-1.6*1.2P	132 kW	1
	Winch	2JTP-1.6×1.2P	132 kW	1
	Winch	JTK-1.6×1.5	185 kW	1
	Winch	JTK-1X0.8	45 kW	1
	Winch	JTK-0.8×0.6	22kW	5
	Skip		1.5 m^3	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
	Compressor	BJN-22/80	Flow: 22m^3/min; Pressure: 0.7MPa	1
	Compressor	LG132G-8	Flow: 24m^3/min; Pressure: 0.7MPa	1
	Compressor	JG75HA	Flow: 12.5m^3/min; Pressure: 0.7MPa	1
	Compressor	LG75A	Flow: 13.5m^3/min; Pressure: 0.7MPa	1
	Compressor	LG110-8	Flow: 20m^3/min; Pressure: 0.8MPa	2
	Compressor	BJN-10/8G	Flow: 10m^3/min; Pressure: 0.8MPa	1
HPG	Winch	JTP-1.6	132 kW	1
	Winch	JK-2*1.25P	220 kW	1

Mine / Camp	Equipment	Model	Capacity	Quantities
	Winch	JTP-1.2	75 kW	2
	Winch	JTK-1(to be replaced)	45 kW	2
	Winch	JTK-0.8(to be replaced)	45 kW	1
	Compressor	LG110-8	Flow: 20 m^3/min; Pressure: 0.8MPa	2
	Compressor	4L-20/8 (to be replaced)	Flow: 20 m^3/min; Pressure: 0.8MPa	3
	Compressor	L-10/7 (to be replaced)	Flow: 10 m^3/min; Pressure: 0.7MPa	1
	Compressor	BJN-10/8G	Flow: 10 m^3/min; Pressure: 0.8MPa	2
	Cage	GLM-1/6/1/1		1
	Primary Fan	K45-4-No.10	30 kW	1
	Primary Fan	FBCZ-No.11	30 kW	1
	Auxiliary fan	JK 2-2-No.4	5.5 kW	4
	Auxiliary fan	9.19-No.5.6	11 kW	3
	Auxiliary fan	JK255-2	5.8 kW	8
	Auxiliary fan	JK58-4.5	11 kW	4
TLP	Winch	JTP1.2*1P	75 kW	1
	Winch	JTP1.6*1.2P	132 kW	1
	Winch	JTP1.2*1	75 kW	1
	Winch	JTK-1.0*0.8 (to be replaced)	37 kW	1
	Skip		1.2 m^3	1
	Primary Fan	FBCZ-NO11	30 kW	2
	Auxiliary fan	JK 2-2-NO4	5.5 kW	20
	Auxiliary fan	9.19-No.5.6	11 kW	15
	Compressor	LG110SF-22/8	Flow: 22 m^3/min; Pressure: 0.8MPa	2
	Compressor	LG110A-8	Flow: 20 m^3/min; Pressure: 0.8MPa	5
	Compressor	JA75HA	Flow: 12.5 m^3/min; Pressure: 0.8MPa	3
LME	Winch	JTP1.2*1P	75 kW	3
	Winch	2JTP-1.6*0.9	132 kW	1
	Cage	GLM-1/6/1/1		1
	Auxiliary fan	JK2-2-No4	5.5 kW	3
	Compressor	LG110-8	Flow: 20 m^3/min; Pressure: 0.7MPa	5
LMW	Winch	2JK-2.0*1.25P	185 kW	1
	Winch	JTP-1.2*1.0	75 kW	3
	Cage	GLM-1/6/1/1		1
	Primary Fan	BK54-4-No.11	30 kW	1
	Auxiliary fan	Jk58-4	5.5 kW	12
	Auxiliary fan	JK58-4.5	11 kW	13
	Compressor	LG110A-8	Flow: 20 m^3/min; Pressure: 0.7MPa	6

Table 16.2 Ramp contractor equipment list

Contractors	Equipment	Model	Capacity	Quantities
SGX Ramp	One boom Jumbo Drill	CIJ17HT-C	55 kW	1
	Caterpillar Type Loader	LWLX-180	55 kW	2
	Shovel	XG951 III	162 kW	1
	Shotcreter	PC5T	5 m^3/h	2
	Concrete Mixer	JZC350	20 m^3/h	2
	Compressor	LG110A-8/11011	20 m^3/min	3
	Haul Trucks	15t	125 kW	5
	Auxiliary fan	JK58-4	5.5 kW	15
LMW Ramp	Caterpillar Type Loader	LWLX-120	55 kW	2
	Shotcreter	PC5T	5 m^3/h	1
	Concrete Mixer	JZC350	20 m^3/h	1
	Compressor	LG110A-8	110 kW	3
	Auxiliary fan	JK 2-2NO4	5.5 kW	3
	Shovel	LWL180	180t/h	1

16.2.5.1 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	120	Single boom electric-hydraulic
Jackleg – Levels (Hand Mucking)	50	Jackleg (YT-24)
Jackleg – Levels (Mechanical Mucking)	60	Jackleg (YT-24)
Jackleg - Stope Raises	40	Jackleg (YT-24)
Jackleg – Shaft (Mechanical Mucking)	55	Jackleg (YT-24)
Jackleg – Declines (Mechanical Mucking)	60	Jackleg (YT-24)

16.2.6 Manpower

Silvercorp operates the Ying mines mainly using contractors for mine development, production, ore transportation and exploration. The mill plant and surface workshops are operated and maintained using Silvercorp personnel. Silvercorp provides its own management, technical services and supervisory staff to manage the mine operations.

Each mine complex is run by a mine manager and one or two deputy mine managers. Because of their proximity, the SGX and HZG mines have the same management, as do the TLP, LME and LMW mines.

The Ying mines have about 2,300 workers in total. Tables 16.4, 16.5, and 16.6 provide a recent 'snapshot' of the workforce, split by Silvercorp staff, contract workers, and Silvercorp hourly employees.

Table 16.4 Silvercorp staff

Mine	Staff
SGX	244
HGZ	46
HPG	47
TLP / LME	152
LMW	69
Mill Plant	169
Company Administration	95
Total	**822**

Table 16.5 List of contract workers in the Ying district

Mine	Contractors	Workers	Location
SGX	Henan Sanyi Construction Engineering Ltd	300	CM101, PD700
	Lushi Jinsheng Tunneling Engineering Ltd.	274	CM105
	Shangluo Shunan Engineering Ltd	101	CM102
	Henan Sanyi Mining Construction Ltd (Y.D).	105	SGX XPD
	Cangnan County Blasting Engineering Ltd	132	PD16, PD16-SJS2
	Shangluo Shunan Engineering Ltd (L.S)	89	CM103, CM108, PD928, PD690
	Subtotal	1001	
HZG	Lushi Jinsheng Tunneling Engineering Ltd	176	PD820, PD810, PD890
	Subtotal	176	
HPG	Shangluo Shunan Engineering Ltd.(Z)	112	PD3, 600mRL Shaft
	Shangluo Shunan Engineering Ltd.(T)	59	PD5, PD2, PD630
	Subtotal	171	
TLP	Shangluo Shunan Engineering Ltd.(T)	142	PD820, PD846, PD821
	Shangluo Shunan Engineering Ltd. (D.J)	142	PD780, PD800, PD840, PD890
	Shangluo Shunan Engineering Ltd. (W.Y)	152	PD730, PD960, PD930, PD960
	Subtotal	436	
LME	Henan Sanyi Mining Construction	136	PD900, PD900 Shaft, PD838, PD959
	Subtotal	136	
LMW	Zhejiang Nanyuan Construction Group Ltd	49	LMW XPD
	Shangluo Shunan Engineering Ltd.(T)	232	PD969, PD924, PD918, PD991
	Subtotal	281	
Total		**2,201**	

Table 16.6 Silvercorp hourly workers

Mine	Workers	Location
SGX	42	SGX Hand picking, waste sorting
Total	**42**	

16.2.7 Ventilation

Mine ventilation at the Ying mines is planned and set up to be in accordance with 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 SGX primary ventilation

The SGX primary ventilation volume 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 is utilized in the SGX mine.

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

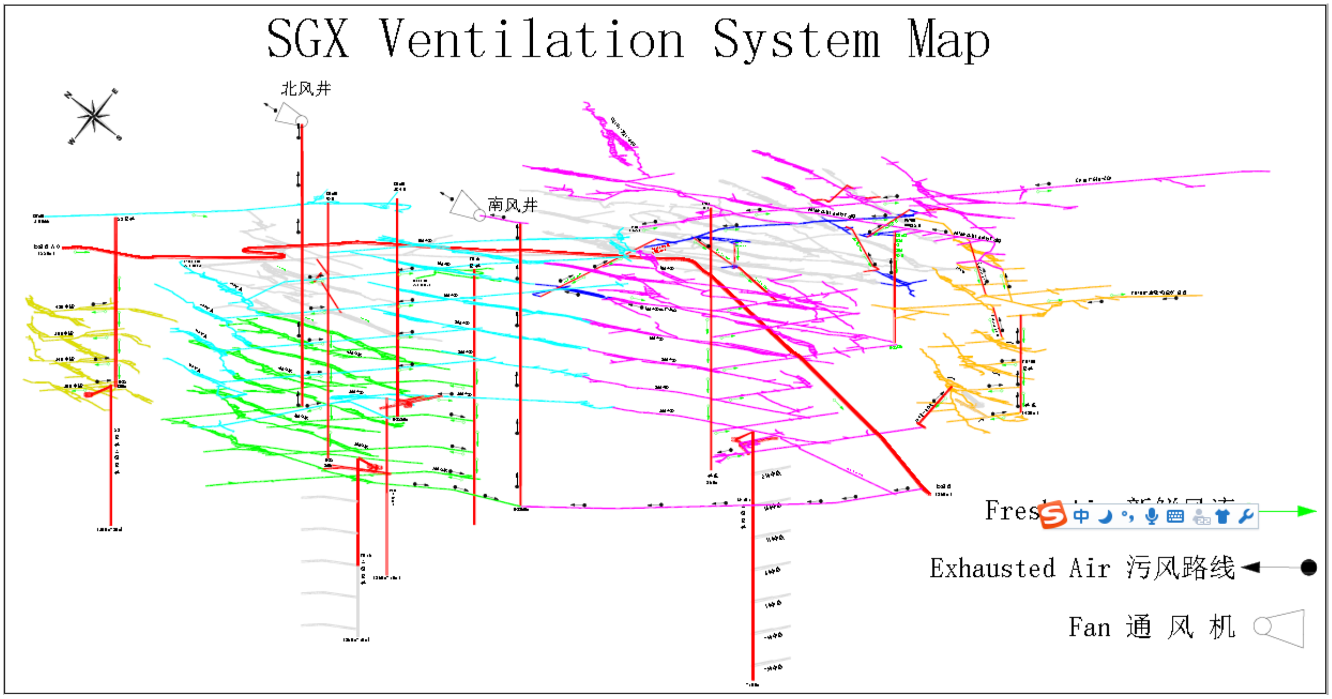
East Wing (Vein S16W, S7, S8, S21 Stopes): fresh air enters 400 mRL, 350 mRL, 300 mRL, and 260 mRL from adit CM101 via No.3 internal shaft, and CM105 via No.1 internal shaft. Exhaust air: part returns to the 650 Adit via 450 mRL, exploration line 70 – 72 internal shaft, and ventilation raises, and then 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 490 mRL 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 570 mRL and 530 mRL 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 75 kW axial ventilation fan is installed in the entrance of PD 650 Adit. One 22 kW axial ventilation fan is installed in the entrance of PD 680 Adit. One 22 kW axial ventilation fan is installed in the entrance of CM108 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 distance 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".

Typical underground water flow from the different mines is listed in Table 16.7 below.

Table 16.7 Mines water flow

Mine	Maximum water flow (m^3/day)	Average water flow (m^3/day)
SGX	27,000	9,000
HPG	1,100	650
TLP	960	360
LM (E&W)	840	600
HZG	560	260

The SGX dewatering system is described in some detail below. The dewatering systems at HZG, HPG, TLP, LME and LMW mines are similar to those at SGX. These systems are briefly described also.

16.2.9.1 SGX dewatering

The pumping system is a dirty water arrangement with a sump and three pumps at each location. In normal circumstances, one pump is running, one is being maintained, and one is on standby. Under conditions of maximum water inflow, all available pumps can be operated, with the exception of pumps that are being maintained. If all pumps operate, they can handle the maximum estimated inflow rate. There are two main pipelines to surface, one of which is 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 connected directly to surface are located at the bottom of internal shafts. Table 16.8 lists station pumps at the bottom of internal shafts.

Table 16.8 Stage 1 water pumps at SGX mine

Portal	Model	Units	Power (kW)	Flow(m^3/h)	Lift (m)
CM101	MD85-45*9	3	160	85	405
	D46-50*9	1	110	46	450
CM105-S1#	MD155-67*6	2	280	155	402
	MD85-45*9	1	160	85	405
CM105-S2#	MD155-67*6	2	280	155	402
	D46-50*9	1	110	46	450
	MD25-50*8	1	75	25	400
PD16	D25-50*8	2	75	25	400
	MD25-50*8	1	90	46	400
PD700	MD46-50*7	3	75	46	350
CM105 Skip shaft	MD155-67*6	3	280	155	402
CM102	MD25-50*5	1	37	50	250
	MD46-50*5	1	55	46	250
CM103	WQX12.5-80/4	2	5.5	12.5	80
YPD	WQX12.5-80/4	2	5.5	12.5	80

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 the 260 m elevation; from here it is pumped to surface through the 1st stage dewatering system. Table 16.9 lists the details of the SGX second stage pumping system.

Table 16.9 Second stage water pumps at SGX mine

Pump Stations	Units	Model	Power (kW)	Flow (m^3/h)	Lift (m)
CM101	7	WQX12.5-120	9.2	12.5	120
CM105-S1	1	MD25-50*6	45	25	300
	1	MD46-50*5	55	46	250
	1	MD46-50*6	75	46	300
	4	WQX20-80	5.5	20	80
CM105-S2	3	MD155-67*5	220	155	335
PD16	5	WQX20-80	5.5	20	80

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

16.2.9.2 HZG dewatering

Dewatering is divided into two stages: the first stage is from 450 mRL to 650 mRL, the second stage is from 650 mRL to 820 mRL. The first stage utilizes three 75 kW D25-50x8 centrifugal pumps. For the second stage, three 75 kW D25-50x5 centrifugal pumps are located at the pump station in a similar set-up to SGX.

16.2.9.3 HPG dewatering

PD3 dewatering is divided into two stages: the first is from 300 mRL to 460 mRL, and the second stage is from 460 mRL to PD3 (600 m) adit level. The sumps at both 300 mRL and 460 mRL have a capacity of 300 m^3. For the first 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. For the second stage, there are three centrifugal pumps: model D85-50X5 with power draw at 75 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 700 m level to the 730 m 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 the second dewatering area, 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 650 mRL, Line 33 internal shaft, PD770 inclined haulageway, and PD 770 adit to surface.

16.2.9.5 LME and LMW dewatering

LMW

Three centrifugal pumps (model MD46-50X11) with a combined power draw of 132 kW, are installed in the 969 shaft 500 mRL bottom pump station. There are two 89 mm pipe lines installed in the 969 shaft, which are then routed via 926 mRL and PD 924 adit to surface.

LME

In LME, three 110 kW MD46-50x8 centrifugal water pumps are installed at 500mRL pump station in the PD900 internal shaft to the surface. The second dewatering area is handled by three 75 kW MD46-50x6 centrifugal water pumps installed in the internal shaft 700mRL bottom pump station. Two 89 mm pipe lines are installed in PD838-700 and then routed via 840mRL and PD 838 adit to surface.

16.2.10 Water supply

Water consumption at SGX area is low and is sourced from the Guxian Reservoir. It is primarily used for drilling 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, with the exception of PD16, where the capacity is 300 m^3. Water supply is via 89 mm diameter pipelines.

The water source for HZG, HPG, TLP, LME, and LMW 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 the 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, with water being delivered via a 107 mm diameter pipeline. An additional water pond 300 m^3 is to be constructed for pumping underground water to No.2 Mill.

TLP Mine requirements are estimated at 556 m^3/d. There is a water pond of 200 m^3 at the mine site, with water being delivered via an 89 mm diameter pipeline.

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, with water being delivered via 89 mm diameter pipelines for LME and 150 mm dimeter pipelines for LMW

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 power source is hydropower, generated at the Guxian Reservoir Dam, and the length of overhead power lines is about 8 km. The third network supply is a 10 kV high-voltage line from the Luoning-Chongyang 35 kV substation, about 12 km from SGX.

A fully automated 35 kV substation in the immediate vicinity of the mine site was built in 2008. The capacity of the main transformers is 6,300 kVA.

The 35 kV overhead line can supply main power for all mine production; and 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 as a back-up supply for the CM101, CM102, CM103, CM105, PD16 and PD700 adits and XPD decline in the event of a power 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. A minor quantity of air is used for shotcrete application and cleaning blast holes.

Compressor plants are located adjacent to each portal; they are of two-stage, electric piston configuration. Air is reticulated via steel pipes of varying sizes, depending on demand, to all levels and is directed to emergency refuge stations. Air lines are progressively sized from 101 mm diameter down to 25 mm diameter 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 volume requirements.

16.2.12.1 Explosives

Refer to 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 service from China Mobile (CMCC) and China Unicom.

Key underground locations such as hoist rooms, shaft stations, transportation dispatching rooms, power substations, pump stations, refuge rooms 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 rooms, which are also connected with communication cables to the local telephone lines.

16.3 Safety

Ying Mine safety is practiced as per Chinese health and safety laws and regulations. The Occupational Health and Safety (OHS) department 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 usage.

Each of the mining contractors is required to appoint safety officers at an average ratio of one safety officer to 20 contractor workers for each portal.

A ten-member safety committee is maintained for each of the SGX (including HZG), HPG, TLP, LME and LMW mines. The committees are led by the Henan Found general manager and include the deputy general manager, mine manager, safety department supervisor, and mining contractor representatives. The committees are coordinated by each mine's safety division, 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 company 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 only requiring first aid treatment at the mine clinic.

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 and including implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.

16.4 Development and Production Quality Control

Since late 2015, Silvercorp has implemented a workplace safety and work quality checklist system to reinforce process control. The significant improvement in the head grades of silver, lead and zinc since the December quarter of 2015 may be attributed in part to this initiative, a feature of which is an internal "Enterprise Blog" system in the management of Mine Production and Safety Information, which the Company implemented in August 2015. The "Enterprise Blog" (EB) is an internet social media system that makes the distribution and flow of work-related knowledge and information easy and transparent for parties at different locations. In the system, for example, each of the mining stopes, development faces, or pieces of equipment is assigned a "blog" name. Daily results of onsite inspection for these stopes or faces by responsible engineers are required to be "published" on their "blogs". The results are listed in a structured data formatted in a "check list table", containing information and supporting photos as required by the Company. Related parties at different levels of the management team can access the daily "blog" directly for each work place, for first-hand information. The EB system will also record if a management person has accessed the "blog" to read or comment on the daily results under his responsibility. With the EB, information collection, distribution, retrieval, and monitoring has become transparent and immediate. The information and knowledge collected by the frontline technicians or engineers freely flows throughout layers of the management structure. The responsible management person has the requirement, incentive, and tools to make prompt and more accurate decisions that can be instantly delivered to responsible parties. From the safety point of view, using the EB enables personnel to be easily informed about any potentially hazardous conditions and mine safety inspectors to collect and analyze the current status and history of stopes and development faces. In summary, some of the benefits of the EB system are:

- Information collection, distribution, retrieval, and monitoring has become transparent and instant.
- Information and knowledge collected by the frontline technicians or engineers freely flows throughout layers of the management structure.
- Safety information is readily shared.
- Structured data format allows statistics to be generated for key management info.
- Management has the requirement, incentive, and tools to make prompt and more accurate decisions.
- Collaboration becomes easy, KPI assessments are fair and timely, and each person is accountable for his work.

16.5 Production and scheduling

16.5.1 Development schedule

Table 16.10 summarizes the LOM development schedule for each of the Ying mines and for the operation as a whole.

Table 16.10 Ying Mines LOM development schedule

SGX	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Capital Lateral (m)	2,880	2,838	1,857	1,354	350	501	664.3	1393.25	642.62	1347.52	320.48	872.4	1092.2	766.84	1265.37	917.43	797.63	653.65	458.71	191	21,164
Capital Vertical (m)	1,003	160		58		58			210			477									1,966
Operating Lateral (m)	23,195	21,356	19,468	11,579	8,344	9,345	8,963	9,255	8,435	8,120	9,381	10,086	9,907	10,329	8,229	8,559	8,848	7,306	5,798	2806	209,311
Operating Vertical (m)	1,097	1,955	4,588	3,379	2,831	3,792	3,673	3,825	3,739	2963	4298	3411	4817	4532	3477	3232	4060	2798	3055	1707	67,229
Total (m)	28,175	26,309	25,913	16,370	11,525	13,697	13,300	14,473	13,027	12,431	14,000	14,847	15,817	15,628	12,971	12,708	13,706	10,758	9,312	4,704	299670
HZG	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Capital Lateral (m)	708	240																			947
Capital Vertical (m)	390	122																			512
Operating Lateral (m)	5594	4243	3823	4262	3973	2844	2897	1879	926	273											30,715
Operating Vertical (m)	793	1171	682	1226	853	901	858	624	164	52											7,324
Total (m)	7484	5775	4505	5488	4826	3745	3755	2503	1090	325											39,498
HPG	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Capital Lateral (m)	327		344	366	280																1,317
Capital Vertical (m)			273																		273
Operating Lateral (m)	3,985	4,341	4,250	4,051	4,327	5,098	4,412	2,879	1,723												35,066
Operating Vertical (m)	1,630	1348	770	1,349	1152	1225	1535	1569	935												11,513
Total (m)	5,942	5,689	5,637	5,766	5,759	6,323	5,947	4,448	2,658												48,169
TLP	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Capital Lateral (m)	1,002	237	30	385	702	266	348	903	381	709	465	971	660	0	350	412	308	78	67	0	8,274
Capital Vertical (m)				200	373																573
Operating Lateral (m)	5,324	5,081	5,976	5,571	4,434	5,810	5,134	4,933	4,920	4,857	3,867	3,791	4,167	4,012	4,010	3,242	2,320	1,662	1,194	274	80,580
Operating Vertical (m)	1,049	1,918	1,502	1,448	1,708	1,405	1,907	1,460	1,505	1,454	1,498	1,173	1,122	1417	1,221	1,019	754	739	593	166	25,052
Total (m)	7,375	7,236	7,507	7,603	7,216	7,481	7,389	7,295	6,806	7,019	5,830	5,934	5,949	5,429	5,580	4,673	3,382	2,479	1,854	440	114,479
LM East	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Capital Lateral (m)	376	810	263	108	340	110	621	40		104											2,772
Capital Vertical (m)	650	85	60	460	323	120	60														1,758
Operating Lateral (m)	4,360	4,256	3,525	2,355	1,806	3,014	2,163	1,593	1,294	678	669										25,714
Operating Vertical (m)	615	1,406	895	640	635	715	840	480	540	420	315										7,501
Total (m)	6,001	6,557	4,743	3,563	3,104	3,959	3,684	2,113	1,834	1,203	984										**37745**
LM West	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Capital Lateral (m)			480	749	277	201		101		239	1220	813	488	69				200			4,837
Capital Vertical (m)		120					300	220	120	360											1,120
Operating Lateral (m)	8,676	7,488	6,505	5,128	5,623	6,107	5,664	5,932	6,050	4,958	3,977	4,840	5,634	4,945	5,089	4,142	4,283	4,021	4,625		103,686
Operating Vertical (m)	1,156	2,364	2,525	3,412	2,996	2,285	2,281	1,904	1,731	2012	2188	1668	1082	2149	1520	2317	2066	1708	1443		38,807
Total (m)	9,832	9,972	9,510	9,289	8,896	8,593	8,245	8,157	7,901	7,570	7,385	7,321	7,204	7,163	6,609	6,459	6,349	5,929	6,068		148,451
Ying Mines	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Capital Lateral (m)	5,293	4,125	2,974	2,962	1,949	1,077	1,633	2,437	1,024	2,400	2,005	2,656	2,241	836	1,615	1,329	1,106	932	526	191	39,312
Capital Vertical (m)	2,043	487	333	718	696	178	360	220	330	360		477									6,202
Operating Lateral (m)	51,134	46,765	43,547	32,947	28,507	32,219	29,233	26,471	23,348	18,887	17,895	18,716	19,709	19,286	17,327	15,943	15,451	12,989	11,617	3,080	485,072
Operating Vertical (m)	6,340	10,161	10,962	11,453	10,175	10,323	11,094	9,862	8,614	6,901	8,299	6,252	7,021	8,098	6,218	6,568	6,880	5,245	5,091	1,873	157,426
Total (m)	64,810	61,538	57,816	48,080	41,327	43,797	42,320	38,990	33,316	28,548	28,198	28,101	28,970	28,220	25,160	23,840	23,437	19,165	17,233	5,144	688,011

Note: Some totals may not compute exactly due to rounding.

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 120 m/month for the main ramp developments at SGX and LMW. AMC also notes the reported fiscal 2016 total development advance of 77,380 m for the Ying mines (not including slashing).

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

16.5.2 Mines production

16.5.2.1 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 16.11 is a general summary of production rates and projected years of operation for the Ying mines.

Table 16.11 Ying mines production rate summary

Mine	Production Rate (t/month)		Typical No. of Stopes in Operation	Annual Production (kt/a)	Estimated Mine Life (years)
	Shrinkage	Resue			
SGX	1200	600	80	268	20
HZG	1200	600	20	56	10
HPG	1200	600	25	81	9
TLP	1200	600	45	121	20
LM East	1200	600	40	78	12
LM West	1200	600	45	100	20

16.5.2.2 Mines production fiscal 2012 to 2016 and Q1 fiscal 2017

Table 16.12 summarizes mine production tonnes and grade from 1 April 2011 to end of June 2016, including high grade, hand-sorted ore (direct shipping ore).

Table 16.12 Ying mines production Run-of-Mine, fiscal 2012 to 2016 and fiscal 2017 Q1 (dry tonnes)

Mine	Ore Type	Unit	2012	2013	2014	2015	2016	2017 1st Qtr (to June 30 2016)
SGX	Ore Mined	t	392,748	335,556	241,065	227,335	208,648	69,491
	Grade	Ag (g/t)	361	279	241	308	330	383
		Pb (%)	6.65	4.74	4.21	5.72	6.66	7.41
		Zn (%)	2.11	2.02	1.85	2.06	1.99	2.29
HZG[1]	Ore Mined	t	53,586	65,248	13,897	25,205	28,612	13,731
	Grade	Ag (g/t)	215	209	187	297	325	353
		Pb (%)	0.89	0.57	0.72	0.99	1.14	1.08
		Zn (%)						
HPG	Ore Mined	t	40,700	65,393	66,358	67,647	56,988	14,668
	Grade	Ag (g/t)	113	115	102	138	104	118
		Pb (%)	5.48	4.4	3.36	6.89	3.34	3.53
		Zn (%)	1.04	1.22	0.84	1.27	0.54	0.95
TLP	Ore Mined	t	98,907	158,108	134,951	134,779	115,243	30,292
	Grade	Ag (g/t)	114	115	137	154	187	206
		Pb (%)	3.05	2.22	2.02	2.41	2.42	2.15
		Zn (%)						
LME	Ore Mined	t	50,442	37,038	59,928	72,308	66,774	13,867
	Grade	Ag (g/t)	319	288	319	263	328	340
		Pb (%)	2.31	1.13	1.21	1.31	1.32	1.33
		Zn (%)						
LMW[2]	Ore Mined	t		65,294	71,476	89,057	77,351	21,899
	Grade	Ag (g/t)		243	216	211	242	287
		Pb (%)		2.09	1.44	2.09	2.63	2.9
		Zn (%)						
Others[3]	Ore Mined	t	13,160	10,597	3,491			
	Grade	Ag (g/t)	103	164	71			
		Pb (%)	6.08	3.34	3.28			
		Zn (%)	1.43	1.02	1.22			
Ying Mines	Ore Mined	t	650,596	757,136	619,499	640,142	573,899	163,948
	Grade	Ag (g/t)	287	220	207	240	268	308
		Pb (%)	5.2	3.29	2.79	3.47	3.85	4.44
		Zn (%)	1.37	1.01	0.82	0.78	0.78	1.06

Notes: Total Ore Mined includes hand-sorted high grade ore
[1] HZG includes ore from BCG (BCG is south portion of HZG)
[2] LMW Includes ore from PD991 (small access tunnel at LM)
[3] "Others" in 2012 to 2014 includes ore from YM01 and YM02, and purchased

16.5.2.3 Production schedule

Table 16.13 is a summary of projected LOM production for each of the Ying mines and for the entire operation based on the mid-2016 Mineral Reserve estimates.

The annual ore production is projected to rise to close to 750 kt by 2025. From 2026, the annual ore production is projected to gradually fall to around 450 kt by 2035 as HZG, HPG and LME mines tails off. AMC notes that the development and infrastructure required to allow the projected production increase over 2013 to 2016 levels 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.

AMC notes that projected metal grades through to around 2023 are largely in-line with grades reported in 2015 and 2016 to June 30. In order to maintain optimum metal grades, AMC recommends that Silvercorp continue its recent and current efforts on dilution and grade control via the Mining Quality Control Department.

Table 16.13 Ying Mines LOM Production

SGX	2016 July-Dec	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Production (kt)	154	263	263	261	266	272	271	271	264	291	298	293	296	295	298	260	264	265	253	236	180	5,514
Ag (g/t)	356	316	322	322	285	290	290	276	267	291	291	262	275	254	225	222	210	187	168	177	156.4	260
Pb (%)	7.36	5.51	6.28	5.87	5.96	5.54	5.54	5.29	5.80	5.22	5.03	4.82	5.01	4.87	3.83	4.69	4.37	3.91	3.66	4.25	4.30	5.06
Zn (%)	2.01	2.41	2.32	2.50	2.56	2.58	2.10	2.32	2.50	2.28	2.06	2.40	2.30	2.34	2.73	2.36	2.16	2.31	2.40	2.30	1.87	2.34
Eq-Ag(g/t)	647	556	585	576	543	535	524	506	518	517	506	479	495	470	416	433	406	371	346	372	343	483
HZG	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**										**Total**
Production (kt)	26	50	55	60	60	60	60	60	60	60	33											586
Ag (g/t)	355	338	329	338	341	327	303	289	284	269	272											312
Pb (%)	1.22	1.04	1.19	0.81	0.54	0.65	0.98	1.17	0.78	0.93	0.47											0.89
Zn (%)		0.21	0.20	0.1	0.16	0.17	0.14	0.16	0.18	0.16	0.14											0.16
Eq-Ag(g/t)	393	371	367	364	358	348	334	327	309	299	287											340
HPG	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**											**Total**
Production (kt)	36	72	74	80	82	82	84	87	83	83												763
Au (g/t)	1.13	1.08	0.93	1.57	1.18	1.23	1.14	1.37	0.82	0.79												1.12
Ag (g/t)	128.18	114	118	116	119	75	96	96	72	57												97
Pb (%)	4.21	4.80	4.90	3.57	3.68	3.71	3.32	2.47	3.27	2.29												3.55
Zn (%)	0.73	0.86	1.20	1.33	1.03	1.59	1.09	0.70	1.10	1.63												1.15
Eq-Ag(g/t)	347	353	357	349	329	298	292	268	249	208												301
TLP	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	64	123	124	120	123	130	129	124	128	126	123	119	120	118	123	117	117	116	119	111	100	2,476
Ag (g/t)	211.1	271	274	255	240	233	219	198	207	197	196	201	188	184	191	184	141	138	120	104	102	195
Pb (%)	2.4	3.84	3.18	2.80	2.70	3.00	3.69	3.17	3.84	3.16	3.00	3.41	3.39	2.99	3.42	2.89	2.66	2.78	2.66	2.40	2.73	3.08
Zn (%)		0.27	0.26	0.34	0.29	0.24	0.24	0.32	0.29	0.26	0.29	0.25	0.22	0.23	0.25	0.26	0.32	0.32	0.40	0.28	0.23	0.27
Eq-Ag(g/t)	291	402	382	351	332	336	345	306	338	305	299	317	303	286	308	283	232	233	211	186	195	300
LM East	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**								**Total**
Production (kt)	21	52	70	81	81	79	85	85	83	83	78	78	76									953
Ag (g/t)	396	355	340	328	320	305	294	292	288	294	266	267	217									298
Pb (%)	1.87	1.88	1.60	1.90	1.86	2.05	2.10	1.97	2.27	1.83	2.23	2.46	1.55									1.98
Zn (%)		0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.3									0.42
Eq-Ag(g/t)	460	419	394	392	383	375	365	359	365	356	342	351	270									365
LM West	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	49	91	90	100	99	98	98	99	100	105	102	100	99	100	100	104	99	110	105	103	90	2,042
Ag (g/t)	313	314	325	362	318	291	352	333	291	298	282	279	295	276	204	179	166	124	103	149	112	253
Pb (%)	3.64	3.71	3.69	2.46	3.30	3.89	2.08	2.25	3.28	2.61	2.94	3.02	2.44	1.90	3.02	3.16	2.40	2.71	2.76	1.76	1.54	2.76
Zn (%)		0.26	0.19	0.18	0.23	0.34	0.22	0.20	0.20	0.28	0.35	0.29	0.26	0.35	0.43	0.51	0.33	0.24	0.30	0.30	0.14	0.28
Eq-Ag(g/t)	439	443	453	447	433	426	424	411	405	388	385	384	379	342	309	289	250	217	199	210	166	349
Ying Mine	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	350	651	677	703	712	721	727	727	718	749	634	590	592	513	520	481	480	491	477	451	370	12,334
Au (g/t)	0.12	0.12	0.10	0.18	0.14	0.14	0.13	0.16	0.10	0.09												0.07
Ag (g/t)	303	289	293	295	272	260	265	252	241	249	267	253	253	242	213	204	184	161	142	153	131	241
Pb (%)	4.81	4.23	4.32	3.70	3.84	3.86	3.71	3.44	3.98	3.46	3.72	3.92	3.80	3.85	3.58	3.92	3.55	3.37	3.21	3.22	3.20	3.75
Zn (%)	0.96	1.07	1.03	1.08	1.07	1.16	0.91	0.95	1.05	1.07	0.97	1.19	1.15	1.34	1.56	1.27	1.19	1.25	1.27	1.21	0.91	1.12
Eq-Ag(g/t)	493	462	467	454	432	423	418	398	404	393	414	412	407	401	367	364	330	302	277	288	259	396

Rounding of some figures may lead to minor discrepancies in totals.
Production from 1 July 2016 to 31 December 2016 is included.
Zinc not included in AgEq calculation for HZG, TLP, LME and LMW mines.

16.6 Reconciliation

Table 16.14 summarizes the Silvercorp reconciliation between Mineral Reserve estimates and mill feed, including high grade, hand-sorted ore, for the Ying mines from 1 July 2013 to 30 June 2016.

Table 16.14 Mineral Reserve to production reconciliation: July 2013 – June 2016

	Mine	Ore	Grade			Metal		
		(kt)	Ag (g/t)	Pb (%)	Zn (%)	Ag (koz)	Pb (kt)	Zn (kt)
Reserve (Proven + Probable)	SGX	486	380	7.68	3.00	5,951	37.38	14.59
	HZG	95	584	1.37	0.21	1,784	1.30	0.20
	HPG	136	97	3.83	0.97	423	5.22	1.32
	LME	101	405	1.54	0.29	1,318	1.56	0.30
	LMW	264	263	2.41	0.16	2,230	6.34	0.43
	TLP	191	231	3.35	0.21	1,420	6.40	0.40
	Total	1,274	321	4.57	1.35	13,128	58.21	17.24
Reconciled Mine Production*	SGX	662	310	5.94	2.04	6,595	39.33	13.50
	HZG	138	338	1.12		1,506	1.54	
	HPG	188	106	3.46	0.61	642	6.49	1.15
	LME	199	303	1.31		1,942	2.62	
	LMW	242	229	2.22		1,780	5.37	
	TLP	380	165	2.31		2,022	8.78	
	Total	1,809	249	3.54	0.81	14,488	64.13	14.64
Difference: Mill Feed* and Reserve (%)	SGX	36	-19	-23	-32	11	5	-7.47
	HZG	46	-42	-19		-16	19	
	HPG	38	10	-10	-37	52	24	-13.24
	LME	97	-25	-15		47	67	
	LMW	-8	-13	-8		-20	-15	
	TLP	99	-28	-31		42	37	
	Total	42	-22	-22	-40	10	10	-15

Note: *Includes high-grade, hand-sorted ore.

AMC makes the following observations relative to the data in Table 16.14:

- Overall, the mine produced 42% more tonnes at a 22% lower silver grade and a 22% lower lead grade for 10% more contained silver and 10% more contained lead relative to Mineral Reserve estimates[5]. This suggests the mining of substantial unplanned dilution together with mineralization additional to the Mineral Reserve.
- In terms of overall impact relative to silver grade, the poorest performers were HZG, TLP, LME and SGX, in that order.
- In 2014, Silvercorp identified that sub-optimal contractor mining practices were a large contributor to the high levels of unplanned dilution and took steps to remedy the situation. Comprehensive resolution was not achieved until the 2015 fiscal year, with a significant improvement in mined grade being noted from that point to the present.
- Other factors that may have contributed to the situation include:
  - adverse ground conditions
  - use of shrinkage stoping in very narrow and / or discontinuous veins

[5] Zinc has a minor impact on revenue.

- mining of lower grade, but still economic, material outside of the vein proper
- mis-attribution of feed source to the mill
- over- and / or under-estimation of Mineral Resource/Reserve tonnes and grades at individual sites
- mill process control issues.

AMC understands that Silvercorp has recently revised its stockpiling and record keeping procedures and, as referenced above, has placed a high level of focus on dilution control in recent months by implementing a work quality checklist management enhancement program. AMC endorses these actions and also recommends that Silvercorp undertake periodic mill audits aimed at ensuring optimum process control and mill performance. AMC also recommends that, as practised at SGX, the summation of individual ore car weights by stope and zone be, as far as practicable, integrated into the tracking and reconciliation process.

16.7 Mining summary

The Ying mine complex is a viable operation with a projected LOM through to 2036 based on Proven and Probable Reserves. The potential exists for an extended LOM via further exploration and development, particularly in areas of Inferred Resources.

The annual ore production is anticipated to be maintained at between 650 kt and 749 kt from 2017 to 2025; then from 2026 to 2036 ore production is projected to gradually fall to around 370 kt per annum as HZG, HPG and LME mines are phased out of production. Development and infrastructure to allow access to, and mining in, the necessary number of working places is either in place, in development or is planned. AMC considers that the projected production 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 development targets to be achieved.

Projected metal grades through to around 2023 are largely in-line with reported production grades in fiscal 2016. The current focus on dilution and grade control will need to be diligently maintained if Mineral Reserve mining grades are to be achieved.

AMC recommends that current efforts to fully integrate the Resource estimation, Reserve estimation and mine planning processes be continued.

AMC also recommends that Silvercorp undertake periodic mill audits aimed at ensuring optimum process control and mill performance; and that the summation of individual ore car weights by stope and zone be fully integrated into the tracking and reconciliation process.

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, including 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 the 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 but recognizes the technological change that would be required for their implementation.

AMC considers that adoption of the above recommendations can form part of the day-to-day running of the Ying mines and that no particular cost provisions need be made in this regard.

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 tpd) has been in production since October 2011 when expansion of another parallel flotation bank was completed. The total design processing capacity is now 2,000 tpd.
- The actual processing capacity for Plants 1 and 2 in 2015 is 2,600 tpd of ore.

In this section, global production data up to June 2016 has generally been referenced. Individual plant performance reconciliation data is based on the full year 2016.

Table 17.1 Summary of processing plants 1 and 2 capacities

Items	Plant 1	Plant 2 (Phase I)	Plant 2 (Phase II)	Plants 1+2
Year in Operation	Mar 2007	Dec 2009	Oct 2011	
Design Capacity (tpd)	600	1000	1000	2600
Actual Capacity (tpd)	800	900	900	2600
Plant Availability (day/yr)	330	330	330	330
Major Ore Feed	LM/TLP/HZG	All	All	All
Tailings Pond	P1-Zhuangtou	P2-Shi W Gou	P2-Shi W Gou	P1+P2

17.2 Ore supply and concentrate production from Ying property mines

17.2.1 Ore supply

Ore from the Ying mines in the district is shipped to the milling flotation Plants 1 and 2:

- SGX / HPG Lumps: Rich large-size galena lumps with characteristic specular silver-grey colour 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 PbS concentrate for sale. The lead lumps bypass the flotation circuit.
- SGX / HZG and HPG ore: Transported using trucks on barges from the SGX / HZG and the HPG mines across the lake, and then trucked to the plant. In addition, an ore transportation tunnel from SGX to HPG has been constructed and the haul road from HPG to plants has been upgraded. As a backup, the ore can be transported through the tunnel and haul road to plants.
- TLP / LM Ores: Transported via truck directly from mine site to the plant.

Table 17.2 summarizes the ore supply from the mines from 2010 to June 2016. Significant aspects are:

- SGX and TLP were the major ore suppliers for the plants, but with an increasing contribution from LM off-setting a decline in TLP production.
- HZG mine started producing in 2011.
- The lower ore production in 2016 is due to a major contractor change over at SGX.

Table 17.2 Ore supply to Plants 1 and 2 from fiscal 2012 to 2016, and fiscal 2017 Q1

Fiscal Year	Unit	SGX	TLP	LME	LMW	HZG	HPG	Others *	Sub-Total
2012	Tonnes	402,899	101,329	51,670		55,974	41,726	13,496	667,094
	Contribution (%)	60	15	8		8	6	2	100
2013	Tonnes	342,938	161,707	37,879	66,804	87,382	66,874	10,884	774,468
	Contribution (%)	44	21	5	9	11	9	1	100
2014	Tonnes	246,785	138,159	61,430	73,189	43,272	68,090	3,569	634,493
	Contribution (%)	39	22	10	11	7	11	1	100
2015	Tonnes	229,681	136,204	73,107	90011	49,525	68,416		655,609
	Contribution (%)	36	21	11	14	8	11		100
2016	Tonnes	213,541	117,947	68,375	79177	50,066	58,345		587,450
	Contribution (%)	36	20	12	13	9	10		100
2017 (Till 30 June)	Tonnes	71,100	30,985	14,185	22402	14,037	15,027		167,735
	Contribution (%)	42	18	8	13	8	9		100
Production Ranking (2016)		**1**	**2**	**4**	**3**	**6**	**5**		

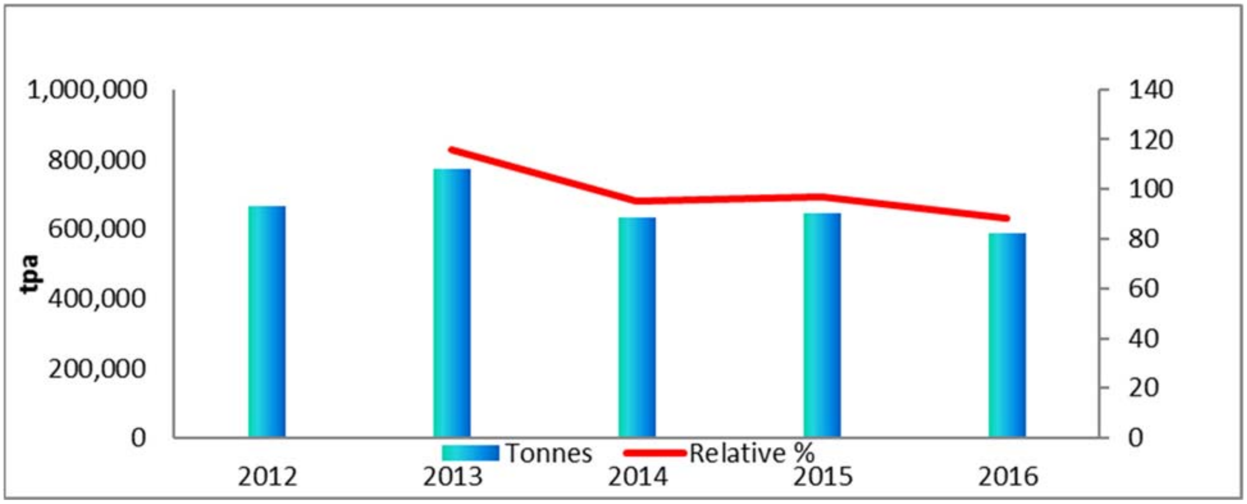
Note: Wet tonnes basis
Numbers may not compute exactly due to rounding.

Table 17.3 shows an initial increase in processed ore tonnes (wet) from 2012 to 2013, which then trend downwards for the subsequent three years to 2016. The trend can also be seen in Figure 17.1.

Table 17.3 Ore supply from fiscal 2012 to 2016 (wet base including lead lumps)

Fiscal Year	2012	2013	2014	2015	2016
Tonnes	667,094	774,468	634,493	655,609	587,450
Relative %	100	116	95	97	88

Figure 17.1 Total ore treated and year on year percentage relative to 2012



17.2.2 Ore composition per mine

Table 17.4 shows average ore composition for fiscal 2016. TLP, LME, LMW and HZG have very low zinc values (shown as 'zero' in the table as processing of zinc from these sites is of little value).

Table 17.4 Average ore composition by mine (dry basis including lead lumps, fiscal 2016)

Unit	SGX	TLP	LME	LMW	HPG	HZG	Average
Ag (g/t)	330	187	328	242	104	325	268
Pb (%)	6.66	2.43	1.34	2.63	3.34	1.14	3.85
Zn (%)	1.99				0.54		0.78

17.2.3 Concentrate production by mine in fiscal 2016

Table 17.5 summarizes the quantity of PbS and ZnS concentrate products produced by mine in fiscal 2016. About 3% of total products were produced by hand-sorting.

Table 17.5 Concentrate production by mine (fiscal 2016)

Products	Wt.	SGX	TLP	LME	LMW	HZG	HPG	Sub-Total
1. Hand-Sorted Concentrate								
	（tonnes）	1,570						1,570
2. Flotation Concentrate								
Pb Float Conc	（tonnes）	21,101	6,518	2,371	4,710	1,605	4,238	40,543
Zn Float Conc	（tonnes）	4,398					225	4,623
3. Hand + Float Concentrate								
Pb+Zn Conc	（tonnes）	27,069	6,518	2,371	4,710	1,605	4,463	46,735
Conc Contribution (%)		58	14	5	10	3	10	
Hand-Sorted Conc (%)		3						3
Flotation Conc (%)		55	14	5	10	3	10	97
Conc. Production Ranking (2012)		1	2	5	4	6	4	

17.2.4 Concentrate quality and metal recovery (average) fiscal 2012-2016

Table 17.6 and Table 17.7 summarize the concentrate quality and recovery (average) by year, with the recovery also shown in Figure 17.2. The results show that:

- Pb and Ag recoveries have shown a gradual increase over years. The average recovery rate for Pb is 95.2% which is significantly higher than designed recovery rate of 90%. The average recovery rate for Ag is 93.7% which is higher than designed recovery rate of 90%.
- Ag grade in PbS concentrate meets the design targets; however, the Pb grade has, on average, been below target since 2012.
- Zn grade and recovery are lower than the target due to lower zinc content in the ore feed.
- The statistics are consistent with an increasing proportion of production from lower grade mines like LM, while over 50% of Pb concentrate is from SGX.

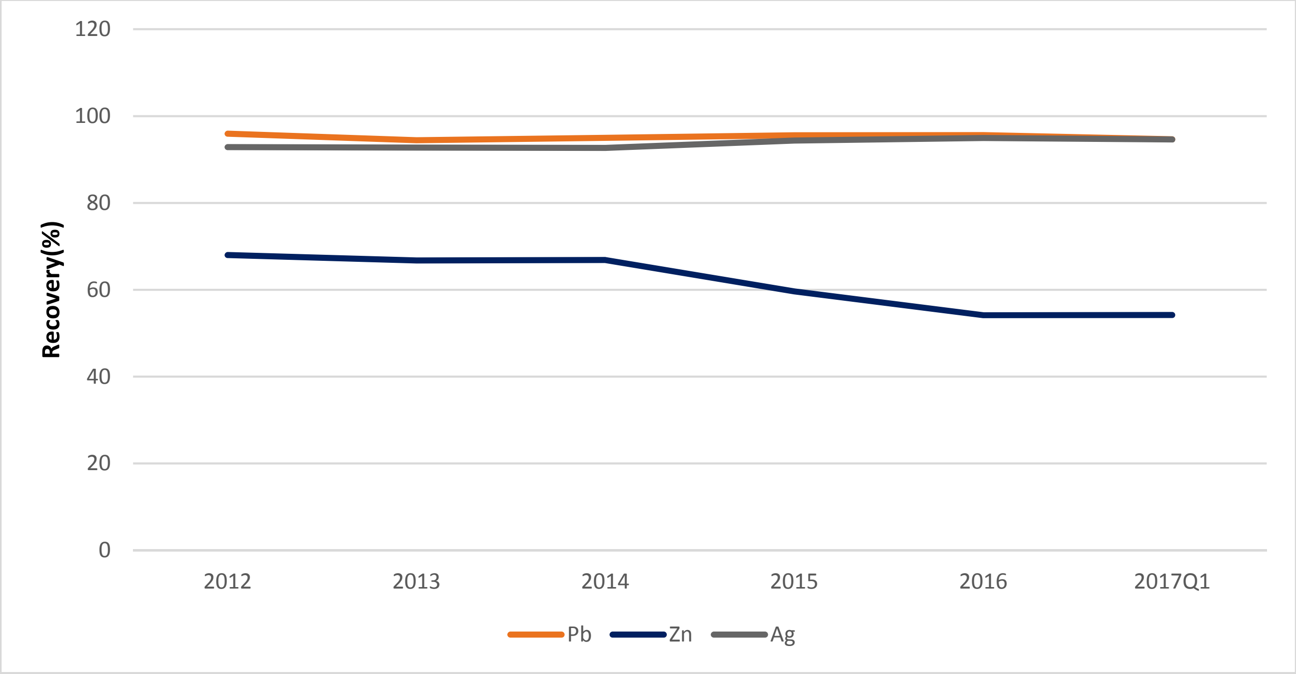
Table 17.6 Concentrate quality by year from fiscal 2012 to 2016, and fiscal 2017 Q1

Product	Yr	Wt (t)	Pb (%)	Zn (%)	Ag (g/t)
PbS	2012	12,566	49.96	4.82	1,641
Lumps	2013	8,201	45.39	6.80	1,672
Hand Sort	2014	2,586	50.93	5.90	1,735
	2015	3,465	49.38	5.58	1,578
	2016	1,570	56.72	5.98	1,756
	2017Q1	215	59.45	4.13	2,123
PbS	2012	43,848	59.71	3.49	3,487
Flotation	2013	39,087	50.73	3.61	3,605
Conc	2014	29,089	51.94	3.90	3,935
	2015	40,053	48.70	3.57	3,479
	2016	40,542	49.88	3.96	3,539
	2017Q1	14,061	49.01	5.22	3,399
Design			60	1.95	
ZnS	2012	11,964	1.24	50.59	424
Flotation	2013	9,806	0.88	52.29	324
Conc	2014	6,606	0.62	51.12	274
	2015	6,208	0.89	47.85	322
	2016	4,622	0.88	52.06	302
	2017Q1	1,595	0.76	52.50	314
Design			0.95	45	

Table 17.7 Overall metal recovery by year from fiscal 2012 to 2016 and fiscal 2017 Q1

Year	Pb (%)	Zn (%)	Ag (g/t)
2012	95.96	67.99	92.86
2013	94.46	66.75	92.76
2014	95.01	66.85	92.67
2015	95.58	59.65	94.36
2016	95.63	54.16	94.96
2017Q1	94.67	54.18	94.64
Av	95.22	61.60	93.71
Design	90	85	90

Figure 17.2 Overall metal recovery to concentrate from 2007 to 2016



17.2.5 Impact of ore type on concentrate quality and metal recovery (fiscal 2016)

Tables 17.8 to 17.12 summarize the concentrate production by mine (SGX, HZG, HPG, TLP, LME and LMW) for fiscal 2016.

Table 17.8 SGX mine – ore processed – actual mass balance (fiscal 2016)

Product	Wt	Mass	Grade			Recovery		
	(tonnes)	Yield (%)	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Wet tonnes	213,541							
Dry tonnes	208,648	100	6.66	1.99	330	100	100	100
Lead Con.	22,671	10.87	59.27	6.83	2894	96.65	37.34	95.42
Zinc Con.	4,398	2.11	0.85	52.10	287	0.27	55.28	1.84
Tails	181,579	87.03	0.24	0.17	10	3.08	7.38	2.75

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

Table 17.9 TLP mine – ore processed – actual mass balance (fiscal 2016)

Product	Wt	Mass	Grade			Recovery		
	(tonnes)	Yield (%)	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Wet tonnes	117,946							
Head	115,243	100	2.42		187	100		100
Lead Con.	6,518	5.66	40.4		3,095	94.36		93.51
Tails	108,725	94.34	0.14		12.7	5.64		6.49

Table 17.10 LME mine – ore processed – actual mass balance (fiscal 2016)

Product	Wt	Mass	Grade			Recovery		
	(tonnes)	Yield (%)	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Wet tonnes	68,375							
Head	66,774	100	1.34		328	100		100
Lead Con.	2,371	3.55	34.87		8,865	92.09		95.93
Tails	64,403	96.45	0.110		14	7.91		4.07

Table 17.11 LMW mine including PD 991-ore processed – actual mass balance (fiscal 2016)

Product	Wt	Mass	Grade			Recovery		
	(tonnes)	Yield (%)	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Wet tonnes	79,176							
Head	77,351	100	2.66		242	100		100
Lead Con.	4,710	6.09	41.75		3,767	95.72		94.66
Tails	72,641	93.91	0.121		14	4.28		5.34

Table 17.12 HPG mine – ore processed – actual mass balance (fiscal 2016)

Product	Wt	Mass	Grade			Recovery		
	(tonnes)	Yield (%)	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Wet tonnes	58,345							
Dry tonnes	56,988	100	3.37	0.54	104	100	100	100
Lead Con.	4,238	7.44	41.85	3.54	1,244	92.23	48.97	89.35
Zinc Con.	225	0.39	1.39	51.42	594	0.16	37.78	2.27
Tails	52,525	92.17	0.28	0.08	9	7.60	13.24	8.381

Table 17.13 HZG mine (including BCG) – ore processed – actual mass balance (fiscal 2016)

Product	Wt	Mass	Grade			Recovery		
	(tonnes)	Yield (%)	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
Wet tonnes	50,066							
Head	48,895	100	1.18		349	100		100
Lead Con.	1,605	3.28	33.30		10,220	92.55		96.01
Tails	47,289	96.72	0.09		14	7.45		3.99

Tables 17.8 to 17.13 indicate that:

- The metal recovery includes hand-sorted PbS lumps and flotation concentrates, and is, therefore, higher than that for the flotation recovery alone, especially for the SGX and HPG cases; however, hand-selected PbS lumps have reduced significantly over the past year.
- PbS grade: only SGX is close to the design expectation of 60 – 65% Pb.
- Pb recovery reached design for all mines, and Pb recoveries for SGX, LME, and LMW are significantly higher than design.
- Ag recovery for SGX, LME, LMW, HZG and TLP ore exceeded the design expectation; HPG recovery of Ag did not meet design expectations due to lower Ag grade ore produced at that mine.

- ZnS grade: Zn grade is lower than the target grade for SGX and HPG.
- Zn recovery for all mines is lower than the design expectation, due to low zinc in the feed, or minimal zinc for TLP, LME, LMW, and HZG.
- Note that, with the exception of HZG (very low lead feed grade), lead concentrates contained more than 33% Pb, which is acceptable within the Chinese domestic smelting market, although higher treatment charges and lower % payables will occur (see terms in Section 19).

17.2.6 Ore supply by plant

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

- High grade lead lumps are hand-sorted at the mine sites and not processed via flotation circuit. This helps to reduce the flotation loading and operating cost.
- Plant 1: mainly processes development low grade ores from LME, LMW, HZG, and part of TLP. It is normally operating once a month or once every two months.
- Plant 2: processes ores from all mines.
- Blending lead concentrates from Plant 1 and Plant 2 to maximize profit.
- For higher Ag grade ore from LME, LMW, HZG, the Pb concentrate product grade is slightly lower in order to maximize the recovery.

Table 17.14 shows the ore feeds by mine for flotation. SGX and HPG are rich in lead; and TLP, LM, and HZG have little zinc. Lead recovery ranges from 92.1% to 96.5% with average 95.4%. Silver recovery ranges from 88.9% to 96.1% with an average 94.9%. Zinc recoveries are 56.5% for SGX and 37.6% for HPG respectively with an average 55.2%.

Table 17.14 Flotation Feeds: Ore Grade and Recovery (fiscal 2016)

Mines	Grade			Recovery		
	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
SGX	6.28	1.96	319	96.47	56.46	95.12
HZG	1.22		356	92.25		96.12
TLP	2.42		187	94.41		93.59
HPG	3.34	0.54	104	92.20	37.60	88.95
LME	1.32		328	92.13		95.97
LMW	2.63		242	95.74		94.78
Avg	3.85	0.78	268	95.40	55.24	94.87

Note: above excludes SGX lumps of 1,575t (Pb：56.7%, recovery 100%；Zn：6.0%, recovery 0%；Ag : 1,756g/t, recovery 100%)

Table 17.15 shows the ore feeds from each mine processed at flotation Plants 1 and 2 in fiscal 2016, excluding high grade lumps from SGX.

Table 17.15 Flotation Feeds: Tonnes to Plants (fiscal 2016)

Mines	Plant 1 (t)	Plant 2 (t)	Subtotal (t)
SGX		211,966	211,966
TLP	9,943	108,003	117,947
LME	8,596	59,779	68,375
LMW	5,662	73,515	79,177
HPG		58,345	58,345
HZG	2,392	47,674	50,066
Sub-Total	26,593	559,282	585,875
Ratio (%)	**4.5**	**95.5**	

Table 17.15 shows that:

- For Plant 2, ore from all mines is used as the feed for flotation.
- For Plant 1, only low grade ores from TLP, LME, LMW and HZG are processed.
- 95.5% of the ore is processed at Plant 2. The daily processing rate is about 1,695 tpd. Plant 2 is currently under-utilized, treating less than its design capacity of 2,000 tpd.
- 4.5% of the ore is processed at Plant 1. The daily processing rate is about 750 tpd.

17.2.7 LOM mill feed schedule

From the mine schedule a mill feed schedule has been derived on the assumption that only low grade ores from LME, LMW, TLP and HZG are fed to Plant 1, while the majority of ore from all mines is fed to Plant 2. This is shown in Table 17.16 below.

Table 17.16 LOM mill feed schedule

Plant	Plant No 1						Plant No 2									Total ktpa
Mine **Year**	**HZG** **ktpa**	**TLP** **ktpa**	**LME** **ktpa**	**LMW** **ktpa**	**Subtotal** **ktpa**	**Rate** **ktpd**	**SGX** **ktpa**	**HZG** **ktpa**	**HPG** **ktpa**	**TLP** **ktpa**	**LME** **ktpa**	**LMW** **ktpa**	**Subtotal** **ktpa**	**Rate** **ktpd**	
2017	20.08	23.40	21.55	35.77	100.80	0.31	262.53	30.00	72.45	100.00	30.00	55.00	549.97	1.67	650.77
2018	25.10	24.28	40.28	37.73	127.38	0.39	263.16	30.00	74.47	100.00	30.00	52.00	549.62	1.67	677.00
2019	20.02	20.27	51.22	61.25	152.76	0.46	261.39	40.00	79.64	100.00	30.00	38.96	550.00	1.67	702.76
2020	20.03	23.21	51.50	67.03	161.77	0.49	266.11	40.00	82.17	100.00	30.00	31.72	550.00	1.67	711.77
2021	20.07	30.05	49.01	72.36	171.49	0.52	271.97	40.00	82.22	100.00	30.00	25.81	550.00	1.67	721.49
2022	20.08	29.10	54.52	73.48	177.19	0.54	271.27	40.00	83.96	100.00	30.00	24.77	550.00	1.67	727.19
2023	20.17	24.11	55.22	77.02	176.51	0.53	271.49	40.00	86.56	100.00	30.00	21.95	550.00	1.67	726.51
2024	20.23	27.94	52.60	67.09	167.86	0.51	264.26	40.00	83.12	100.00	30.00	32.63	550.00	1.67	717.86
2025	20.29	25.70	53.34	99.37	198.70	0.60	291.20	40.00	82.96	100.00	30.00	5.84	550.00	1.67	748.70
2026	13.18	23.25	48.39		84.82	0.26	297.53	20.00		100.00	30.00	101.84	549.37	1.66	634.19
2027		19.36	47.68		67.04	0.20	293.14			100.00	30.00	100.11	523.25	1.59	590.29
2028		19.62	46.34		65.96	0.20	296.11			100.00	30.00	99.50	525.61	1.59	591.57
2029		18.24			18.24	0.06	294.91			100.00		100.16	495.07	1.50	513.31
2030		22.83			22.83	0.07	297.71			100.00		99.79	497.50	1.51	520.34
2031		16.63			16.63	0.05	259.77			100.00		104.16	463.93	1.41	480.56
2032		17.46			17.46	0.05	263.65			100.00		98.80	462.45	1.40	479.90
2033		16.24			16.24	0.05	264.65			100.00		109.86	474.50	1.44	490.74
2034		19.14			19.14	0.06	252.52			100.00		105.43	457.94	1.39	477.09
2035		11.48			11.48	0.03	236.16			100.00		102.94	439.10	1.33	450.58
2036		0.22			0.22	0.00	179.86			100.00		90.39	370.25	1.12	370.46
Total	199	413	572	591	1,775		5,359	360	728	2,000	360	1,402	10,209		11,983

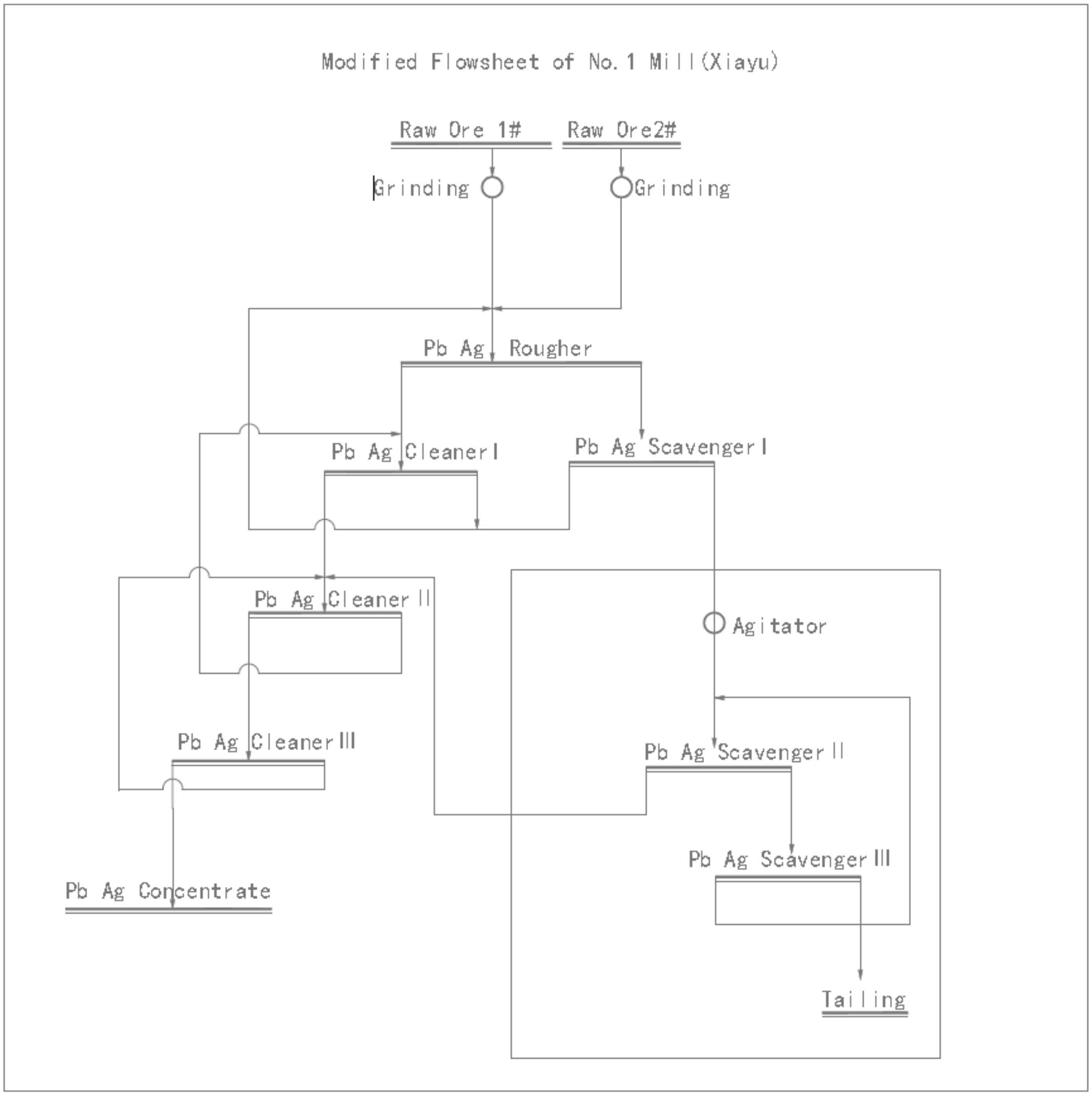
17.3 Mill Plant No.1 (Xiayu)

17.3.1 Process flowsheet

For processing Plant 1, general view photos and the flowsheet are shown in Figures 17.3 and 17.4 respectively.

Figure 17.3 General view photos (Plant 1)

Figure 17.4 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), each train is capable of processing 800 tpd.
- 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: 1x800 tpd).
- Ball mill circuit-spiral classifiers circuit (two trains: 2x800 tpd).
- Two trains at Plant 1 were upgraded, with each train now capable of processing of 800 tpd of ore.
- Flotation circuit (PbS flotation-ZnS flotation circuit: rougher-scavenger-cleaner cells, chemical preparation tanks) (two banks: 2x800 tpd).

- Concentrate thickening-ceramic filtration circuit (PbS filtration, ZnS filtration) (one train for each of 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 800 tpd.
- The original ball mill grinding size target was 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). In 2014, the system was adjusted with the ball mill grinding size target modified from 60% to 61% to 63% (-200 mesh), which resulted in increased Pb recovery of 0.41% and Ag recovery of 2.16 g/t respectively.
- Replacement of lime slurry by $NaOH/Na_2CO_3$ for flotation circuit, with improvements in operability.
- No re-grinding for zinc flotation feed.
- Chemical consumption is 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 being used.

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 the crushing and screening processes is collected under vacuum, captured in a baghouse dust filter and then transferred to a process tank, with the resulting slurry introduced to flotation.

Milling classification (two trains)

- Crushed ore from the live bins is conveyed to a closed milling circuit consisting of two trains, each with a grate-discharge ball mill (Model: MQCG 2100 x 3600) and a screw classifier (Model: FG-200).
- The ball charge is made up of Mn-steel balls, with diameters ranging from 60 mm to 120 mm.
- The target grind size is 61% to 63% 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 the screw classifier flows to the lead rougher conditioning tank, and then to the lead rougher flotation cells. The lead flotation bank consists of one stage of roughing, two stages of scavenging (both BF-4 type cells) and three stages of cleaning (BF-1.2 type cells).
- Lead scavenger tails flow 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.

Product concentrating, filtration and handling

- Both lead and zinc concentrates slurries flow to their respective concrete settling containment structures for settling.
- The settled slurries, containing approximately 50% to 60% solids by weight, are pumped to a ceramic filter for dewatering. The moisture content of dewatered lead and zinc concentrates are 7% to 10% and 9%, 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.

Due to low Zn in the feed ore to Plant 1, the zinc flotation circuit is currently not in operation.

To optimize profitability, high grade PbS (55% to 65% Pb) from Plant 2 is blended with medium grade PbS (40% to 50% Pb) from Plant 1 before shipping the blended concentrate to the clients.

Tailings thickening

- Tailings from the zinc scavenger flotation circuit (when in operation) are directly pumped through up to 4 discharge outlets into to the Zhuangtou tailing dam located at the northern creek located between No.1 Mill and No.2 Mill.
- The plant recirculates the lead and zinc concentrate tailings overflows in addition to the tailings dam supernatant water.
- A crew of two people monitors the tailings dam. Reclaimed process water from the tailings pond is recycled for reuse in the milling process. In addition, a crew of two staff carry out maintenance of the water reclamation circuit and pump stations.

17.3.3 Metallurgical performance (Plant 1)

Table 17.17 lists the mass balance based on design for the No.1 Mill. It is noted that the copper flotation circuit system added in 2009 to handle TLP and HPG ores is no longer in use.

Table 17.17 Design mass balance at the No.1 mill (daily basis)

Product	Quantity (tpd)	Distribution (%)	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 17.10, 17.11 and 17.13 for LME, LMW and HZG ores for fiscal 2016, and ore grade vs recovery for LM, HZG and (part of) TLP is shown in Table 17.18. The processing results show that:

- Pb/Ag recoveries exceed the design expectation for both LM and HZG ores.
- Pb recovery is slightly lower than the design expectation for TLP ores, but the Ag recovery exceeds the design target.
- Since Zn grades are very low, no Zn concentrate is generated from LM, HZG, and TLP ores.

Table 17.18 Flotation feeds: ore grade vs. recovery (fiscal 2016) (Plant 1)

Mines	Grade			Recovery		
	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
HZG	0.84	N/A	292	91.45	N/A	95.76
LME	0.68	N/A	200	86.76	N/A	93.34
LMW	1.81	N/A	227	94.04	N/A	94.73
TLP	2.03	N/A	186	92.87	N/A	93.99

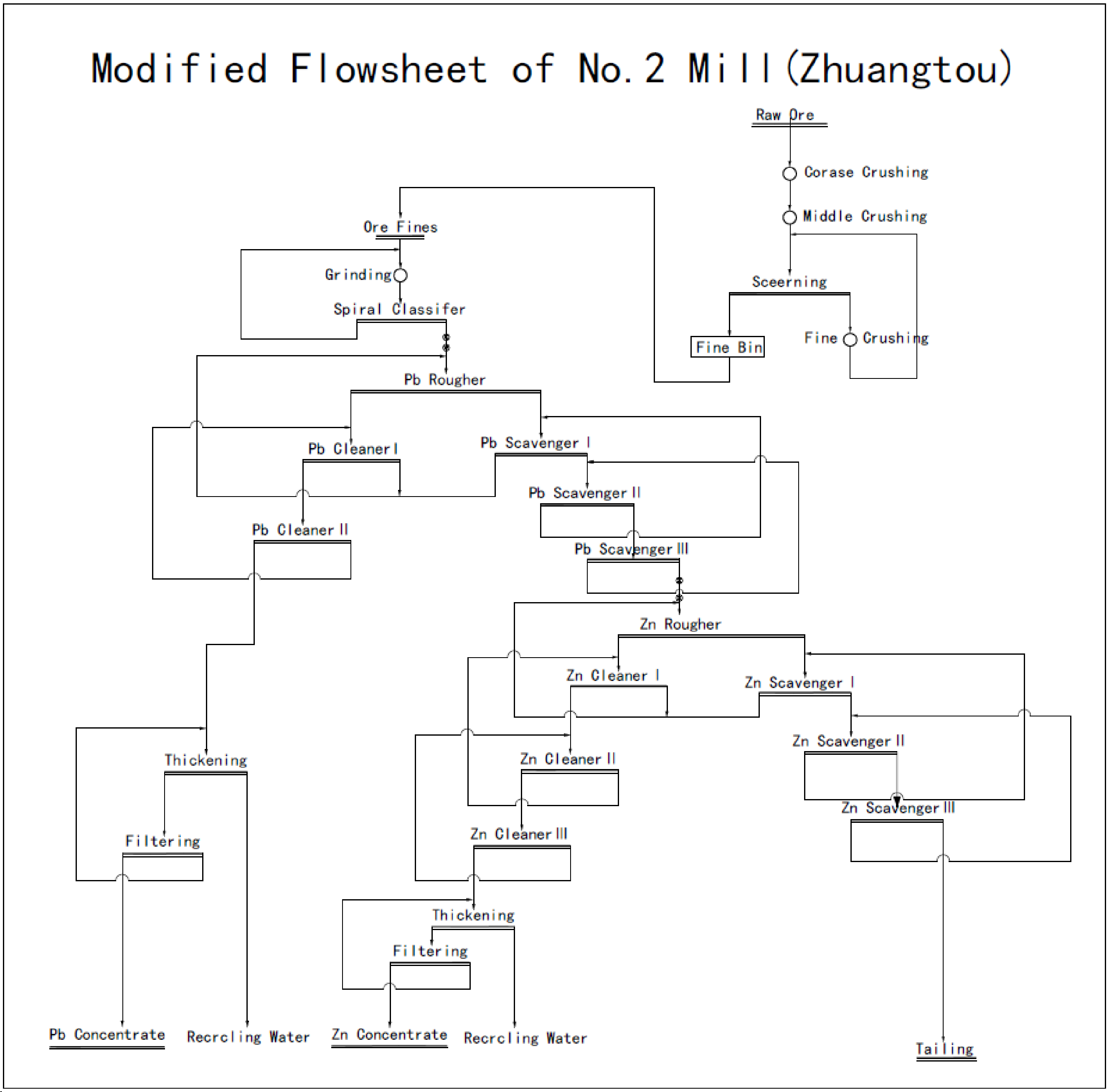
17.4 Mill Plant No. 2 (Zhuangtou)

A general view photo and flowsheet are shown in Figures 17.5 and 17.6, respectively.

Figure 17.5 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 with a design capacity of 1,000 tpd has been operating since December 2009. The second flotation line, also with a design capacity 1,000 tpd, was installed in October 2011.

Figure 17.6 Flowsheet for Plant 2



17.4.1 Flowsheet

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, (Model: ϕ2.7×4.0 15” hydrocylone/spiral classifiers, Model: 2FG2.4) (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 (monitored by 7 people).

The plant design was based on a design document very similar to Plant 1, with 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: PYH-3CC), 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 2.7x4.0) and 15” hydrocylone/spiral classifiers (Model:2FG2.4).

Flotation

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

Product concentrating, filtration and handling

Similar to Plant 1 with larger size thickener, filter and handling system.

To optimize profitability, high grade PbS (55% to 65% Pb) from Plant 2 is blended with medium grade PbS (40% to 50% Pb) from Plant 1 before ore shipping to clients.

Tailings thickening

Tailings from the zinc scavenger flotation circuit are directly pumped into the Shi Wa Gou tailings pond located below No. 2 Mill.

17.4.3 Metallurgical performance (Plant 2)

Originally No.2 Mill was designed to process both Pb and Zn ore as well as Cu, Pb and Zn ore. In practice, however, No.2 Mill currently processes Pb and Zn ore only. The design mass balance for Phase I of the No.2 Mill is shown in Table 17.19.The No.2 mill was subsequently upgraded (Phase II) in 2011. The design mass balance for Phase II is same as those for Phase I.

Table 17.19 Design Mass Balance for No.2 Mill (Pb+Zn Ore) (Phase I and Phase II, 2x1000 tpd)

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

Mass balances are shown in Tables 17.8, 17.9, and 17.12 for SGX, TLP and HPG ores, and grade vs recovery are shown in Table 17.20. The processing results show that:

- Pb / Ag recoveries exceed the design expectation for SGX ores.
- In 2016, some HPG oxidized ore was processed, resulting in lower recoveries for Pb/Ag than designed.
- Pb recovery for LME, LMW and HZG ores are close to design, and for TLP exceeds design expectation. Ag recovery for LME, LMW, HZG and TLP ores exceeds the design expectation.
- Zn recoveries for SGX and HPG ores are 56.7% and 37.8% respectively, lower than the design expectation (81.98%).
- Since Zn grade is very low, no Zn concentrate is generated from LME, LMW, HZG and TLP ores.

Table 17.20 Flotation Feeds: Ore Grade vs. Recovery (fiscal 2016) (Plant 2)

Mines	Grade			Recovery		
	Pb (%)	Zn (%)	Ag (g/t)	Pb (%)	Zn (%)	Ag (%)
SGX	6.35	1.96	319	96.46	56.65	95.22
HPG	3.37	0.54	104	92.23	37.78	89.35
TLP	2.47		187	94.51		93.46
HZG	1.20		352	92.59		96.02
LME	1.44		347	92.45		96.14
LMW	2.72		244	95.81		94.65

17.4.4 Sampling (For Plants 1 and 2)

For metallurgical accounting purposes, a set of five samples is usually taken during 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.

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 by operators 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.
- A central control room in the grinding-flotation building from which TV imaging of key points in the production flow can be monitored.

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

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 equipment. The laboratory generally 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 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 a 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 Chinese national grid. It is transformed from 10,000 V to 400 V by a total of twelve 400 KVA transformers (See also Section 18.3).

Plant 1: Total installed power amounts to 2,295 kW (includes standby equipment), including 189.14 kW for crushing and milling in 2015. The mill power consumption is 26.8 kW/t per tonne of ore,

Plant 2: Total installed power amounts to 7,880 kW (includes standby equipment) including 449.21 kW for crushing and milling in 2015. The mill power consumption is 38.6 kW/t per tonne of ore.

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/d from thickeners and tailings pond. Total water usage is about 3,864 m^3/d, recycle ratio is 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/d from thickeners and tailings pond. Total water usage is about 8,000 m^3/d, recycle ratio is 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 at 1.67 RMB per m3 is at least 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.

- The cost of reclaimed water from tailing dam is 1.1 RMB per m3 and recycled water in the plant is 0.23 RMB per m3. The in-plant recycled water is mainly for milling and flotation.
- With the reuse of recycled water from the tailings pond, there is minimal lock-up of water in tailings and close to 75% of the water is recycled; however, there is a requirement for fresh water, e.g. for pump seals, cooling and reagent mixing, and it is this requirement that sets the overall fresh water demand. The reclaimed water from tailings dam accounts for 65% of total water usage and in-plant recycled water for 10%.
- Upfront water usage is about 3.5-4 m3/t ore processed, but allowing for recycled water, net usage is less than 1 m3/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 as follows:

- 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 Conclusions

Plant 1 is exceeding the design throughput on a daily basis, but is run only in campaigns depending on the ore supply. Plant 2 is operating below the design throughput level.

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

After innovation and modification to both plants over last few years, Pb and Ag recoveries have increased significantly.

Improvements are consistently targeted on process system and other facilities both in Plant 1 and 2 to improve the metal recovery, and reduce energy consumption.

Historically, higher-grade feed from SGX has enhanced plant performance but, with the proportion of SGX ore decreasing, the challenge is to maintain similar metallurgical performance on lower grade feedstock. From recent performance, it appears that recoveries are being maintained but concentrate grades are lower than target, however, not to the extent where there is a major deterioration in smelter terms.

18 Project infrastructure

18.1 Tailings Management Facility (TMF)

18.1.1 Overview

Table 18.1 outlines key parameters for the two TMFs. TMF 1 has served both mill Plant 1 and Plant 2 during the period of 2007-2012. Since TMF 2 was put into operation in April 2013, the two TMFs serve their respective mill plants:

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

The TMFs were designed based on then-current resource/reserve estimations and LOM production projections. Subsequent resource expansion and increased production projections indicate that the current tailings capacity will not be adequate for the full Ying LOM. Additional tailings capacity will thus be required in the later period of the LOM production. There are several options to choose a location of the third TMF. It is expected that there will be no problem to get permission to build the third TMF once it becomes necessary.

Table 18.1 Key Metrics of the two TMFs

	Unit	TMF 1 (Zhuangtou)	TMF 2 (Shiwagou)
Year Built		2006	2011
Start Operation		Mar 2007	April 2013
Total Volume	(Mm^3)	3.32	5.91
Working Volume	(Mm^3)	2.83	4.05
Service Life	(yr, design)	23	11.9
Remaining life	(yr)	6.2	7.3
Production rate[1]	(ore, tpd)	Plant 1 (600tpd)	Plant 2 (2000tpd)
MF Occupation Percentage	(tpa, dry)	85.1%	68.5%

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

TMF Occupation Percentage = working volume divided by total volume

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 component 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 conducted to determine 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 PSD[1] 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**

Note: *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 Composition 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

Note: [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 both 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 the 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, now used fairly generally 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 Sinosteel Institute of Mining Research Co., Ltd (Report dated March 2006) and updated survey data:

- Storage capacity calculations for the valley site indicate an estimated total volume of 3.32 Mm^3 and 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.
- At a rate of deposition of 183,000 tpa, the calculated design service life was approximately 23 years.
- In 2007, the dam elevation was 610 m.
- At the end of June 2016, the dam elevation was 644 m, reflecting the build-up of tailings from the previous nine years of production. Due to a lower tonnage of ore than was initially estimated to be processed from Plant 1, the actual remaining life is longer than the previously estimated 6.2 years.
- At the end of another six years of service, it is expected that the dam's maximum elevation will be 650 m at design production rates. A deposition rate of 1 m per year translates to six additional metres of height. Figures 18.1 to 18.3 show the status of TMF 1 as of mid-February 2012. In the last three years, the dam elevation has risen only three metres.

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 Shiwagou Tailings Storage Facility (TMF 2) was completed by San-Men-Xia Institute of Gold Mining Engineering Co. (Report dated Jan 2011). The final design for Shiwagou Tailings Storage Facility (TMF 2) was completed in 2012.

- The total volume of TMF 2 is 5.91 Mm^3 and the working volume is 4.05 Mm^3. It is assumed that at a dry density of 1.49 t/m^3, this volume is equivalent to 6.03 Mt of tailings.
- At a deposition rate of 500,000 tpa, the designed service life is approximately 12 years. The remaining life is projected to be about 7.3 years.
- This second storage facility was completed at the end of July 2012, and put into service in April 2013. As of the end of June 2016, the dam elevation was at 634.5 m.
- At the end of approximately 7 years of additional service, it is anticipated 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 May 2014.

Figure 18.4 Shiwagou TMF 2 (13 May 2014)

Figure 18.5 Shiwagou TMF 2 Upstream view (12 May 2014)

Figure 18.6 Shiwagou TMF 2 Downstream view of starter dam (14 May 2014)

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 m3）	Dam Height（m）
I	V>10,000 and / or H>100	
II III IV V	V≥10,000 1000≤V＜10,000 100≤V＜1000 V＜100	H≥100 60≤H＜100 30≤H＜60 H＜30

AMC understands that site-specific risk assessment, such as for geotechnical risk, has been carried out by Henan Luoyang Yuxi Hydrological & Geological Reconnaissance Company.

18.1.4.4 Starter dam

Each 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 (approximately 36 m in height) 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 at 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 at 591 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 99 m, to a maximum crest elevation of 690 m. The overall height of the TMF facility will be 135 m (36+99=135 m).

18.1.4.5 Trench design for surface water

Surface water drainage features have been incorporated into the 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). Cut-off trenches (cross section area 1,000 mm x 1,000 mm) have been constructed 2 m above the starter dam embankment to prevent scour of the abutments by rainwater run-off.

18.1.4.6 Water decant system design

The results of a hydrology study have been referenced as part of the design reporting 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 to 29 m^3/s, which is greater than that calculated as required (27.23 m^3/s) to meet a 1 in 500 year recurrence interval (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 geo-membrane 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 TMF 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 each starter dam, 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 tailings 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 also. A safety and reliability analysis for the TMF has been carried out in accordance 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 modelling. 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 have been seen by AMC and it is judged that, at the time of viewing, the observed settlement was consistent with consolidation of a rock fill under its own weight.

18.1.4.11 Tailings pond operation and management

Site management has indicated that each TMF is staffed by a total of 10 people, including a safety manager.

18.1.5 Tailings transfer to the ponds

TMF 1: Tailings (about 3,200 m^3/day) and other water streams (combined total about 3,250 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 (about 6,300 m^3/day) and other water streams (combined total about 6,650m^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 initial 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 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 plans, the mines on the Ying Property will move about 4 million m^3 of waste rock to the surface dumps during the remaining mine life. The remaining capacities of the existing dumps are about 19 million m^3.

Table 18.5 Waste dumps at the Ying project

Mines	No. of Waste Dumps	Remaining Capacity (m^3)	LOM Waste (m^3)	Variance [1]
SGX	4	15,293,530	2,014,127	13,279,402
HZG	2	887,695	276,194	611,501
HPG	1	648,411	159,645	488,766
TLP	8	557,704	465,023	92,681
LME	1	449,761	219,276	230,485
LMW	2	1,412,018	919,154	492,864
Total	18	19,249,118	4,053,419	15,195,699

Note: [1] +ve value indicates dump over capacity.

From Table 18.5 it can be seen that the waste dump capacity at all mines is enough for the anticipated LOM waste rock.

At the SGX mine, there are four existing waste dumps in use:

- Development waste from CM101, PD16 and PD700 will be transported to the Zhaogou waste dump, which has a remaining capacity of approximately 14.17 million m^3.
- Development waste from CM105, CM102, CM103, YPD01 and YPD02 will be transported to the Yueliangou waste dump, which has a remaining capacity of approximately 0.69 million m^3.
- Development waste from XPD will be transported to the 628 mRL waste dump, which has a remaining capacity of approximately 70,000 m^3.
- Hand sorted waste rock will be transported to the CM101 Portal waste dump, which has a remaining capacity of over approximately 0.36 million m^3.

At LM West, there will be a new waste dump built in the Houyangpo Valley near the New Ramp portal. The tip head capacity of this dump (+1100mRL waste dump) is approximately 1.41 million m^3.

At TLP, the waste rock from PD730 can be dumped to the Xigou valley, and it can also be used for planned road construction, which can accommodate about 560,000m^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 35 kV line is connected to the Luoning Guxian 110 kV substation, while the 10 kV line is connected to the Luoning 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 for office and residential use. The main transformers in the 35 kV substation have a total capacity of 6,300 kVA.

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 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 portal 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 35 kV substation, 11 km northeast of the mine, and a second line connects to the SGX 35 kV 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 10 kV 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 10 kV power to an internal shaft hoist chamber in PD3.

18.3.3 TLP / LM Mine

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

Similar to the other mines on the Ying Property, the 10 kV 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 10 kV power to internal shaft hoist chambers of Lines 55, 33, 23, inclined haulageways in PD730 at the TLP mine, and the internal 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 35 kV substation. The 10 kV power from the substation is transformed to 400 V by several transformers for mill operations, water pumps and for 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, in the 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, 6 m 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 that can carry up to five 45-tonne trucks (see Figure 18.7), to ship ore from the SGX / HZG and HPG mines across the reservoir. Mine personnel are transported by 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 main office complex.

The TLP, LME and LMW mines are 15 km southeast of the main 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. Safety barriers are installed in some steep slope areas, and warning signs are posted at steep slopes, sharp turn points, and places with potential traffic risks. The road to the TLP mine was upgraded in 2016.

The Luoyang government has considered a plan to use the Guxian reservoir as a drinking water source, which could affect ore transport by boat. To avoid possible disruption of ore transport, a tunnel and road link from the Mill to SGX via HPG has been constructed as a back-up ore transport route. The total length of three separate tunnels in the link is 5,038 m. In addition, over 10 km of road and three bridges linked to the tunnels have been built. It is anticipated that, using this alternative route, the ore transport cost would increase by between $1 and$2/t.

18.5 Transportation

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

As indicated above, 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 (6 km and 4 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 with railcars in a 2.7 km long tunnel rail system. The tunnel starts at PD700 at 640 mRL 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 has constructed a 1,270 m long tunnel from PD820 that connects the existing tunnel rail system to PD700 at SGX. The tunnel was completed in December 2012, with overhead electrical line installation and narrow gauge railway construction following. This allows ore mined from all the adits at the HZG mine to be transported to the SGX mine stockpile yard via the tunnel rail system by trolley locomotive.

Ore from the TLP, LME and LMW mines is hauled to the central mill using 30- and / or 45-t trucks. All of the ore stockpiled outside of the underground adits is 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 HPG, TLP, LME, LMW and HZG mines is sourced from nearby creeks and springs. Water is regularly tested and AMC understands that its quality and quantity meet 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 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. AMC understands that 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, LME and LMW mines, underground water and domestic sewage are filtered through gravel pits and then discharged to the environment.

At HPG, future underground water will be pumped through a 13.2 km, 150 mm diameter pipeline to Plant No. 2 for reuse. The project includes construction of a 300 m^3 waste water pond and installation of 2 MD155-67x8(p) water pumps. The project is due to be completed in Q2 fiscal 2018.

18.8 Other infrastructure

18.8.1 Mine dewatering

Mine dewatering is described in Section 16.2.9. It is undertaken in accordance with the "Chinese Safety Regulations of Metal and Non-metal Mines".

18.8.2 Site communications

Mine surface communications are by landline and optical fibre 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 and fibre cables are connected to all of the mine sites from Xiayu.

18.8.3 Camp

At each mine and mill site there are dormitory buildings and administration buildings that are equipped with dining rooms and washrooms for Silvercorp's 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 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 to block waste rock and waste materials flow into the Guxian Reservoir. Table 18.6 lists the dam and tunnels at each mine.

Table 18.6 Dams and tunnels in the Ying district

Mine	Tunnel/Dam	Profile (m x m)	Length (m)	Purpose
SGX	PD700-Zhanggou Tunnel	5.0 x 5.0	512	To divert flood to Zhanggou above PD700 (712m Elevation) in the SGX valley
	PD16-Zhaogou Tunnel	2.2 x 2.4	540	To divert flood water to Zhanggou above PD16 (598m elevation) in the SGX valley
	CM101-PD16 Tunnel	2.2 x 2.4	330	To divert flood water from above CM101 (650m Elevation) into PD16-Zhanggou Tunnel (598m elevation)
	CM105 West Tunnel	2.2 x 2.4	580	To divert flood water from above CM105 (570m Elevation) to east site of the Guxian Reservoir
	SGX Dam	50 x 12 x 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 x 3.0	750	To divert the Xigou Creek and prevent PD730 from flooding
LM West	924 West Tunnel	3.0 x 3.0	70	To divert the Xigou Creek and prevent PD924 from flooding
HPG	PD3 Tunnel	3.2 x 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:

- Tire 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 component parts, 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, reserve battery locomotives, and tramcar maintenance workshop and stockpile yard.

AMC notes that working practices and safety equipment standards observed during its site visits were sometimes 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 explosives 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 has 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 day's requirement 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 unit is located 459 m north of PD16 to supply diesel for mobile equipment. The second unit is at the PD700 waste dump, and mainly supplies diesel to the generators.

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

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 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

At each mine site, the dormitory buildings and administration buildings provide showers and washrooms for Silvercorp 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 contractors.

18.8.9 Administration building

At each mine site, there is an administration building that 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 200 staff. The senior management in charge of Ying District sales, purchasing, accounting and technical services are located at the local office.

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 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. Monitoring cameras are installed at the gatehouses, loading point, ore stockpiles and warehouses for additional coverage. There are also personnel 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. The central monitoring room located at the local office is manned round-the-clock.

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 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 and development headings.

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 its 2012 site visit, AMC noted one such unit being installed at SGX. Silvercorp has indicated that systems are now operational in the SGX, TLP, HPG, LME, LMW and HZG mines. The Underground Harmful Gas Monitoring System and Personal Location System should meet the requirements of the Chinese 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 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 detail of 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. All mines also use the tag board system to monitor personnel entering and exiting a portal.

19 Market studies and contracts

19.1 Concentrate marketing

AMC understands that the lead and zinc concentrates are marketed to existing smelters customers in Henan and Shaanxi provinces and appropriate terms have been negotiated as detailed in Section 19.2.

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 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, JiyuanWanyang Smelting (Group) Co. Ltd, JiyuanJinli 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 Shaaxi Shangluo Zinc Smelting Co. Ltd.

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

The key elements of the smelter contracts are subject to change based on market conditions when the contracts are renewed each month. Table 19.1 shows terms most commonly applied.

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	1700	>=5000	91	>=20	87	>=45	Price =<RMB 15000/t:4800
	55-60	1800	4500-5000	90.5	15-20	86		Price > RMB 15000/t:4800+(price-15000)*80%
	50-55	1900	4000-4500	90	10-15	85	40-45	Price =<RMB 15000/t:4800+45 per % lower than 45%
	45-50	2000	3500-4000	89.5	7-10	84		Price > RMB 15000/t:4800+(price-15000)*80%+45 per % lower than 45%
	40-45	2100	3000-3500	89	5-7	83		
	35-40	2600	2500-3000	88.5	3-5	82		
			2000-2500	88	2-3	81		
			1500-2000	87.5	1-2	80		
			1000-1500	87				
			500-1000	86.5				

With respect to lead and zinc terms, the above deductibles 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 approximately 90% are similarly in accord with industry norms.

19.3 Commodity prices

AMC has used the following metal prices for cut-off grade and silver equivalent calculations, Mineral Resource and Mineral Reserve estimation, and its economic analysis in Section 22 of this report, and considers them to be reasonable: Au $1,250/oz, Ag $19.0/oz, Pb $0.90/lb, Zn $1.00/lb. In determining these prices, AMC has referenced three-year trailing averages, prices current as of 30 June 2016, prices used in recent NI 43-101 reports, and available consensus forecast information. The exchange rate used in the cut-off calculation was arrived at via a similar process.

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. Six safety certificates have been issued by the Department of Safety Production and Inspection of Henan Province, covering the SGX mine, Zhuangtou TMF, Shiwagou TMF, HPG mine, TLP mine and LM mine. Five environmental certificates have been issued by the Department of Environmental Protection of Henan Province, covering the Yuelianggou 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 are 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 TMFs. All certificates must be renewed periodically.

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, HZG, TLP, LME, LMW 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 and undertaking projects such as road construction, and school repairs, upgrading and construction. 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

Silvercorp's operations in the Ying Property operate under the following Chinese laws, regulations and guidelines:

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 for the Prevention & Cure of Tailings Pollution (1992)
17. Management Regulations for 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 rock 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 re-vegetated. For stabilization, retaining wall structures will be built downstream of the waste rock site. A diversion channel will be constructed upstream to prevent high flows into the stockpile and the slope surface from washing out. A waste rock stockpile in the main exploration-development camp, Shagouxi (SGX), and PD700 waste dump have already been covered with soil and re-vegetated.

Process tailings are discharged into purpose-built tailings management facilities (TMF1 and TMF2) - that have an effective design capacity of 2.43 Mm^3 and 4.06 Mm^3 respectively, (refer also to Section 18.1). The TMFs have decant and under-drainage systems that provide for flood protection and for the collection of return water. Daily inspections are undertaken of the tailings pipelines, TMF embankment and the seepage/return water collection system. The TMF under-drainage and return water collection system comprise a tunnel discharging directly into an unlined collection pond/pumping station, which is situated just downstream of the TMF embankment. According to the current rehabilitation plan, after the completion of the TMFs, the facility will be covered with soil and re-vegetated. The SGX Environmental Impact Assessment (EIA) Report states that the tailings do not contain sulphide and have no potential for acid generation.

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 Ying Property.

The monitoring plans include air and dust emissions and noise and wastewater 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 Centre, 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	Once/month	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 Guxian Reservoir Upper section of Guxian Reservoir from Shagou Down gradient section of Guxian reservoir (500 m from Shagou entrance)			

AMC understands that monitoring results from 2007 to 2016 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 wastewater results are in compliance with Class I limits of Integrated Wastewater Discharge Standard (GB8978-1996), and mining water results are in compliance with Class I limits of Integrated Wastewater Discharge Standard (GB8978-1996). These standards match the requirements in the EIA approvals. In addition, AMC understands that the project-stage completion inspection results were all compliant for wastewater discharge, air emission, noise and solid waste disposal.

There have been 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, LM, and HZG projects is mainly from mountain spring water near the mines.

Maintaining water quality for Guxian Reservoir, while operating the SGX / HZG 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 wastewater (including tailings water) is not discharged.

Water from mining operations is reused for the same purpose 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 wastewater 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 Centre indicate that water discharged to the surface water body is in compliance. Selected data in Table 20.2 and Table 20.3 show the general level of test results.

Table 20.2 July 2015 to June 2016 monitoring results, SGX 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
Jul 2015	70	15	0.5	0.1	1.0	1.0	0.011	0.005	0.05	0.002
Aug 2015	37	14.4	0.07	<DL	0.0018	0.004	<DL	<DL	<DL	<DL
Sep 2015	30	15.7	0.06	<DL	0.0013	0.001	0.005	0.0005	<DL	<DL
Oct 2015	23	14	0.02	<DL	0.0027	0.002	0.0006	0.00007	<DL	<DL
Nov 2015	30	13.9	0.03	<DL	0.0014	<DL	0.0016	0.00011	<DL	<DL
Dec 2015	14	14	0.01	<DL	0.0026	0.001	<DL	0.00008	<DL	<DL
Jan 2016	17	13.2	0.02	<DL	0.0012	0.002	0.0006	0.00007	<DL	<DL
Feb 2016	28	14.1	0.01	<DL	0.0013	0.002	<DL	<DL	<DL	<DL
Mar 2016	27	14.3	0.01	<DL	0.0018	<DL	<DL	0.00014	<DL	<DL
Apr 2016	30	14.5	0.17	<DL	0.0012	<DL	<DL	0.00015	<DL	<DL
May 2016	29	14.0	0.12	<DL	0.0012	0.001	0.001	0.00022	<DL	<DL
Jun 2016	19	13.8	0.07	<DL	0.0023	0.001	0.0006	0.00022	<DL	<DL

Note: Units – mg/l

Table 20.3 July 2015 to June 2016 monitoring results, surface water

Sampling location	NH_3N	Ag	Cu	Zn	Pb	Cd	As	Hg	Cr
GB3838Limit	0.5	0.1	1.0	1.0	0.011	0.005	0.05	0.002	
200m from Zhuangtou tailing dam	0.496	<DL	0.0014	<DL	<DL	<DL	<DL	0.00008	0.010
SGX Mine	0.01	<DL	0.0017	<DL	<DL	0.00015	0.0009	0.00008	0.005
Yuelianggou Mine	0.145	<DL	0.0018	<DL	<DL	<DL	<DL	0.00006	0.007
HPG Mine	0.07	<DL	0.0016	0.001	0.0005	0.00015	<DL	0.00003	0.002

Note: 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 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 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. 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 January 2013 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
Class III Limit	0.05	0.001	1.0	0.01	1.0	0.05		0.05
SGX Mine	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL
Mill Plant	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL
Mill Plant nearby								
HPG Mine	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL
Chongyang Mine	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL	＜DL
Detection limit (DL)	0.01	0.00005	0.01	0.001	0.01	0.002	0.007	0.004

Note: 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 system of three settlement tanks 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 shows representative mine water and sanitary waste water monitoring results.

Table 20.5 Mining water and sanitary waste water monitoring results

Sampling location	pH	Cd (mg/L)	Pb (mg/L)	Zn (mg/L)	Cu (mg/L)
Industrial wastewater reuse standard (GB / T19923-2005)	6.5-7.5	10	60	20	20
Discharge point after sedimentation treatment	8.4	＜DL	0.0067	0.002	0.0061
Entrance to Guxian Reservoir	8.1	＜DL	0.007	0.001	0.0017
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)

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 Centre, in line with specifications in the site environmental monitoring plan. The monthly monitoring results have so far indicated that water discharged to surface water bodies is in compliance with both standards.

The Ying TMFs under-drainage and return water collection system comprises a tunnel discharging directly into a collection pond/pumping station just downstream of the TMF embankment. This TMF decant and under-drainage system provides a mechanism for the direct discharge of tailings and / or contaminated tailings water from the

TMF. 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 tailings water from the TMF in these dams, is pumped back through a long pipe to the processing plant for reuse. No tailings 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
- Approval of Environmental Impact Assessment Report of TLP / LM Mines, by Henan Environmental Protection Bureau, March 2016
- Approval of Environmental Impact Assessment Report of HPG Mine, by Henan Environmental Protection Bureau, February 2016
- Approval of Environmental Impact Assessment Report of Dongcaogou Mine, by Henan Environmental Protection Bureau, July 2016
- Clean Site Production Auditing Report of Henan Found Mining Ltd, by Luoyang Environmental Protection Bureau, December 2013
- Clean Site Production Auditing Report of Henan Found Mining Ltd, by Luoyang Environmental Protection Bureau, January 2015
- Environment Emergency Management Plan of Henan Found Mining Ltd, filed in Luoyang Environmental Protection Bureau, April 2012
- Environment Emergency Management Plan for Henan Found TLP mine and Shiwagou Tailing Dam. filed in Luoyang Environmental Protection Bureau, January 2014
- Geological Environment Protection and Reclamation Treatment for SGX Mine, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, July, 2012
- Geological Environment Protection and Reclamation Treatment for SGX Mine, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, June, 2014
- Geological Environment Protection and Reclamation Treatment for HPG Mine, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, June, 2014
- Geological Environment Protection and Reclamation Treatment for TLP Mine, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, July, 2012

- Geological Environment Protection and Reclamation Treatment for TLP / LM Mines, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, December, 2014
- Geological Environment Protection and Reclamation Treatment for Dongcaogou Mines, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, January, 2014

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 (XCGL301B) for Henan Found Mining Ltd by Henan Safety Production & Supervision Bureau, valid from 9 May 2016 to 7 March 2019
- Safety Production Permit (XCJC302B) for SGX Mine by Henan Safety Production & Supervision Bureau, valid from 9 May 2016 to 2 March 2018
- Safety Production Permit (XCJC304B) for HPG Mine by Henan Safety Production & Supervision Bureau, valid from 9 May 2016 to 7 July 2017
- Safety Production Permit (XCJC303B) for TLP / LM Mines by Henan Safety Production & Supervision Bureau, valid from 9 May 2016 to 18 January 2018
- Safety Production Permit (XCWK332Y) for SGX Tailing Dam Operation by Henan Safety Production & Supervision Bureau, valid from 28 November 2010 to 27 November 2019
- Safety Production Permit (XCWK331Y) for Shiwagou Tailing Dam Operation by Henan Safety Production & Supervision Bureau, valid from 9 November 2010 to 8 November 2019

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 Sanmenxia 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 Sanmenxia 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 TMF to the Chongyang River by Yellow River Irrigation Work Committee, January 2007
- Land Reclamation Plan for SGX Mine, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, July, 2014
- Land Reclamation Plan for TLP / LM Mines, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, June, 2015
- Land Reclamation Plan for HPG Mine, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, January, 2016

- Land Reclamation Plan for Dongcaogou Mine, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, September, 2014
- Land Reclamation Plan for Shiwagou Tailings Dam, Henan Found Mining Ltd. Filed in Henan Land and Resources Bureau, July, 2014

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 a part of the 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 approved 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 the processing plant and the tailings dam construction.

20.5.8 Water permits

- **Water permits (Ning Water No. 2012-001).** The permit allows the taking of 309,600 m^3 water for mill processing from Chongyang River at the inlet of the Xiashi Valley (downstream of No. 1 TMF) and the Chongyang River and expires on 30 June 2017. The permit was issued and proved by Luoning County Bureau of Water Resources Management on 21 June 2012.
- **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 were renewed in 2013. The permit was 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 southwest of the Ying processing plant. The Luoning County Town is approximately 48 km to the northeast and the Lushi County Town is approximately 30 km to the southwest.

The project area 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, constructing and upgrading schools. Prior to 2016, Silvercorp spent over 17 million RMB in donations. In 2013, Silvercorp spent 2,230,000 RMB in donations (including a donation of 2,000,000 RMB to the China University of Geology), 120,000 RMB in 2014, 71,905 RMB in 2015, and 110,000 RMB in 2016.

In addition to the above donations, in 2012 and 2013, Silvercorp made general contributions to local community support programs of 53,600 RMB, 2,700 RMB, 99,000 RMB and 466,000 RMB to Shagou (SGX), TLP / LM, Chongyang (where the 35 kV substation is located), and Xiayu Villages respectively.

Silvercorp also employs several local contractors and local suppliers where practical. Between 2013 and 2016, Silvercorp sponsored several sections of local roads.

AMC understands that there are no records of public complaints in relation to Silvercorp's Ying Property operations.

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. AMC understands that there are no records of cultural heritage sites located within or near the Ying Property.

20.6.2 Relationships with local government

Silvercorp has indicated that it 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 labour regulations. Formal contracts are signed for all the full time employees with what AMC understands are wages well above minimum. 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 for project construction, operation and closure. The Company spent approximately $6.7 million on environmental protection, including dust control measures, wastewater treatment, solid waste disposal, the under-drainage tunnel, soil and water conservation, noise control, ecosystem rehabilitation, and emergency response plans. From 2007 to March 2016, a land area totalling 56,550 m^2 was planted with trees and grasses as planned in the EIA. From 2013 to 2016, 17,950 m^2 of land was planted with trees and grasses. Unused mining tunnels and the HPG tailings dam have been closed and rehabilitation coverage has been completed. Table 20.6 details expenditures for environmental protection, rehabilitation, reclamation and compensation for land acquisition from 2005 to 2016

Table 20.6 Expenditures on reclamation and remediation from 2005 to 2016 (000 RMB)

Year Item	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Totals
Environmental Protection	116	240	170	852	6,390	6,695	7,000	2,980	7,502	5,121	3,356	3,037	43,459
EIA （）	114			129	78	174		580	390	250	300	400	2,415
Soil & Water Conservation	60	60			90		140	560		277	576	153	1,916
Environmental Equipment			455	998	703	349		170	219				2,894
Tailing Dam		13	4,432	3,975	1,491		22,296	3,440	2,166	136	0	0	37,949
Compensation for land acquisition	739	4,311	2,467	4,811	2,034	1,248	11,676	760	817	50	55	40	29,008
Totals	**1,029**	**4,624**	**7,525**	**10,765**	**10,786**	**8,466**	**41,111**	**8,490**	**11,094**	**5,834**	**4,287**	**3,630**	**117,641**

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 upon 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 the 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 metre 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. Tables 21.1 to 21.3 list the 2015 – 2016 contract rate schedules for the Ying Property in both RMB and US$ (1 US$ = 6.90 RMB). The renewed 2017-2019 contract rates remain the same except for a minor adjustment for mining vein thickness less than 0.3 m. Table 21.4 shows the diamond drilling rate.

Table 21.1 Cost schedule for shafts/drifts driving

General drifting rates under shaft and adit			
Size (m)	**RMB/m**	**US$/m**	**Notes**
2.2x2.0	1,277	185	Major drifting
2.0x2.0	1,215	176	Drifting along veins
2.0x1.8	1,152	167	Drifting along veins
1.8x1.8	1,113	161	Drifting along veins
1.8x1.6	1,088	158	Drifting along veins
2.0x2.0	1,588	230	Raise
1.5x1.5	1,277	185	Raise
2.4x2.2	2,560	371	Declines
φ3.5	13,500	1,957	Shaft, cost including shotcrete

Table 21.2 Basic rates for mining methods

Methods	Rates under shaft or adit	
	RMB/t	**US$/t**
Short-hole shrinkage stope：		
- Vein thickness < 1.5m	103.5	15.00
- Vein thickness >= 1.5m	90.6	13.13
Resuing stope	217.0	31.45

Table 21.3 Ground support rates

Types	Units	Rates under shaft or adit	
		RMB	**US$**
Timber Support	Single Set	78.0	11.30
Steel Support	Single Set	167.0	24.20
Shotcrete	m^2	67.0	9.71
Concrete	m^3	501.0	72.61
Rock Bolt	Piece	33.0	4.78

Table 21.4 2016 diamond drilling rate

Type of Drilling	Metre range	Basic Rates	
		RMB/m	US$/m
Surface drill – short hole (75mm)	0 - 300 m	146.0	21.16
Underground drill - short hole	300 - 500m	175.0	25.36
Underground drill - deep hole	500 – 1,000m	200.0	28.99

21.2 Summary of capital costs

The principal capital requirement in the Ying district is for mine development. Capital provision is also made for exploration drilling and for sustaining surface facilities and equipment in general. Specific processing plant capital requirements going forward are projected to be 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 development capital cost has been described in Section 16, where the projected 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.

Projected LOM mining capital costs are summarized by mine in Table 21.5.

Table 21.5 Total projected LOM mining capital cost – Ying property

	Mine	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
RMB (M)	SGX	33.77	31.27	31.58	20.12	14.05	17.03	16.5	18.02	16.12	15.44	17.13	20.44	19.87	19.61	16.29	15.82	17.24	13.4	11.79	6.01	**371.50**
	HZG	9.06	7.09	5.48	6.76	5.95	4.61	4.65	3.08	1.32	0.4											**48.40**
	HPG	7.34	7.29	7.38	7.4	7.52	7.76	7.32	5.5	3.29												**60.80**
	TLP	9.04	9.21	9.04	9.12	8.9	9.03	9.14	9.02	8.78	8.67	7.25	7.15	7.27	7	6.73	5.64	4.1	3.03	2.28	0.55	**140.95**
	LM East	7.23	7.97	5.69	4.34	3.79	4.77	4.51	2.55	2.26	1.48	1.21		0.36								**46.16**
	LM West	11.54	12.12	12.18	12.04	10.84	10.44	13.69	12.51	9.68	9.63	9.59	9.17	9.23	8.69	7.89	7.85	7.71	7.16	7.34		**189.30**
	Total Mining	**77.98**	**74.95**	**71.35**	**59.78**	**51.05**	**53.64**	**55.81**	**50.68**	**41.45**	**35.62**	**35.18**	**36.76**	**36.73**	**35.3**	**30.91**	**29.31**	**29.05**	**23.59**	**21.41**	**6.56**	**857.11**
US$ (M)	SGX	4.89	4.53	4.58	2.92	2.04	2.47	2.39	2.61	2.34	2.24	2.48	2.96	2.88	2.84	2.36	2.29	2.50	1.94	1.71	0.87	**53.84**
	HZG	1.31	1.03	0.79	0.98	0.86	0.67	0.67	0.45	0.19	0.06											**7.01**
	HPG	1.06	1.06	1.07	1.07	1.09	1.12	1.06	0.80	0.48												**8.81**
	TLP	1.31	1.33	1.31	1.32	1.29	1.31	1.32	1.31	1.27	1.26	1.05	1.04	1.05	1.01	0.98	0.82	0.59	0.44	0.33	0.08	**20.43**
	LM East	1.05	1.16	0.82	0.63	0.55	0.69	0.65	0.37	0.33	0.21	0.18		0.05								**6.69**
	LM West	1.67	1.76	1.77	1.74	1.57	1.51	1.98	1.81	1.40	1.40	1.39	1.33	1.34	1.26	1.14	1.14	1.12	1.04	1.06		**27.43**
	Total Mining	**11.30**	**10.86**	**10.34**	**8.66**	**7.40**	**7.77**	**8.09**	**7.34**	**6.01**	**5.16**	**5.10**	**5.33**	**5.32**	**5.12**	**4.48**	**4.25**	**4.21**	**3.42**	**3.10**	**0.95**	**124.22**
	Drilling Program	2.02	2.03	1.93	1.75	1.54	3.59	1.23	1.09	1.01	0.97	0.74	0.62	0.62	0.59	0.63	0.52	0.48	0.41	0.25	0.13	**22.18**
	Surface Facilities	1.02	0.87	0.43	0.58	0.58	0.58	0.43	0.58	0.73	0.43	0.43	0.43	0.43	0.43	0.51	0.29	0.29	0.29	0.14	0.08	**9.58**
	Total	**14.33**	**13.76**	**12.71**	**11.00**	**9.53**	**11.95**	**9.76**	**9.02**	**7.74**	**6.57**	**6.28**	**6.38**	**6.38**	**6.14**	**5.62**	**5.06**	**4.98**	**4.13**	**3.50**	**1.16**	**155.98**

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.

Table 21.6 Operating cost summary (2016 US$)

Cost Item (US$/t ore)	SGX	HZG	HPG	TLP	LME	LMW
Mining cost	48.27	50.97	41.84	46.26	43.60	58.74
Hauling cost	3.87	4.68	3.98	3.10	3.10	3.18
Milling cost	8.90	8.90	8.90	8.90	8.90	8.90
G&A and other cost	8.76	8.76	8.76	8.76	8.76	8.76
Totals	69.80	73.32	63.48	67.03	64.36	79.54

Note: 1 US$ = 6.9 RMB

The principal components of the milling costs are utilities (power and water), consumables (grinding steel and reagents) and labour, each approximately one third of the total cost.

“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 are regarded as an operating cost.

In addition, effective July 1 2016, the previous mineral resources tax was switched to a levy based on percentage of sales. At the Ying mine, the government fee and other taxes, including mineral resources, are approximately 3% to 4% of the sales. Such costs are not included in Table 21.6 above.

AMC considers the operating costs to be reasonable relative to the methods and technology used and to the scale of the operations.

22 Economic analysis

22.1 Introduction

Although Silvercorp is a producing issuer and, therefore, does not require an economic analysis for the purposes of this report, AMC believes it is reasonable to include a summary-level analysis to illustrate the potential economic impact relative to the latest Mineral Reserve estimations and to the associated production schedules.

The Ying District is largely a mature operation. A 20-year LOM is envisaged for the resource as currently understood, with average silver equivalent grades projected to be greater than or close to 400 g/t for the first 13 years and then to fall steadily through to the end of mine life. Operating and capital costs are anticipated to be reasonable. For the summary economic assessment, AMC has used the same metal prices as in the Mineral Reserve estimation, namely:

- Gold US$1,250/oz
- Silver US$19.0/oz
- Lead US$0.90/lb
- Zinc US$0.1.00/lb

Some alternative price scenarios are considered as part of the sensitivity analysis.

A provision for government fees and mineral resource taxes at 3.5% of net revenue is made in the summary economic analysis.

An exchange rate of 1US$ = 6.90RMB has been used for the economic analysis.

22.2 Annual production schedule

The LOM ore production schedule by mine is shown in Table 22.1.

AMC notes that the gold grade (originating from HPG ore fed through Plant 2) does not reach grades that would normally be payable in a total Pb concentrate product. In practice, and with appropriate blending, AMC considers that a small volume of payable gold concentrate could be produced intermittently; and assuming a conservative 70% Au recovery, an additional product value of up to $12M could be added to the discounted cash flow. As is seen in considering the cash flow forecast in Section 22.3, this would amount to approximately 2% of the total base case pre-tax NPV of the Ying Property.

Table 22.1 Ying property LOM production schedule

SGX	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	154	263	263	261	266	272	271	271	264	291	298	293	296	295	298	260	264	265	253	236	180	5,514
Ag (g/t)	356	316	322	322	285	290	290	276	267	291	291	262	275	254	225	222	210	187	168	177	156.4	260
Pb (%)	7.36	5.51	6.28	5.87	5.96	5.54	5.54	5.29	5.80	5.22	5.03	4.82	5.01	4.87	3.83	4.69	4.37	3.91	3.66	4.25	4.30	5.06
Zn (%)	2.01	2.41	2.32	2.50	2.56	2.58	2.10	2.32	2.50	2.28	2.06	2.40	2.30	2.34	2.73	2.36	2.16	2.31	2.40	2.30	1.87	2.34
Eq-Ag(g/t)	647	556	585	576	543	535	524	506	518	517	506	479	495	470	416	433	406	371	346	372	343	483
HZG	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**										**Total**
Production (kt)	26	50	55	60	60	60	60	60	60	60	33											586
Ag (g/t)	355	338	329	338	341	327	303	289	284	269	272											312
Pb (%)	1.22	1.04	1.19	0.81	0.54	0.65	0.98	1.17	0.78	0.93	0.47											0.89
Zn (%)		0.21	0.20	0.16	0.16	0.17	0.14	0.16	0.18	0.16	0.14											0.16
Eq-Ag(g/t)	393	371	367	364	358	348	334	327	309	299	287											340
HPG	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**											**Total**
Production (kt)	36	72	74	80	82	82	84	87	83	83												763
Au (g/t)	1.13	1.08	0.93	1.57	1.18	1.23	1.14	1.37	0.82	0.79												1.12
Ag (g/t)	128.18	114	118	116	119	75	96	96	72	57												97
Pb (%)	4.21	4.80	4.90	3.57	3.68	3.71	3.32	2.47	3.27	2.29												3.55
Zn (%)	0.73	0.86	1.20	1.33	1.03	1.59	1.09	0.70	1.10	1.63												1.15
Eq-Ag(g/t)	347	353	357	349	329	298	292	268	249	208												301
TLP	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	64	123	124	120	123	130	129	124	128	126	123	119	120	118	123	117	117	116	119	111	100	2,476
Ag (g/t)	211.1	271	274	255	240	233	219	198	207	197	196	201	188	184	191	184	141	138	120	104	102	195
Pb (%)	2.4	3.84	3.18	2.80	2.70	3.00	3.69	3.17	3.84	3.16	3.00	3.41	3.39	2.99	3.42	2.89	2.66	2.78	2.66	2.40	2.73	3.08
Zn (%)		0.27	0.26	0.34	0.29	0.24	0.24	0.32	0.29	0.26	0.29	0.25	0.22	0.23	0.25	0.26	0.32	0.32	0.40	0.28	0.23	0.27
Eq-Ag(g/t)	291	402	382	351	332	336	345	306	338	305	299	317	303	286	308	283	232	233	211	186	195	300
LM East	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**								**Total**
Production (kt)	21	52	70	81	81	79	85	85	83	83	78	78	76									953
Ag (g/t)	396	355	340	328	320	305	294	292	288	294	266	267	217									298
Pb (%)	1.87	1.88	1.60	1.90	1.86	2.05	2.10	1.97	2.27	1.83	2.23	2.46	1.55									1.98
Zn (%)		0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.3									0.42
Eq-Ag(g/t)	460	419	394	392	383	375	365	359	365	356	342	351	270									365
LM West	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	49	91	90	100	99	98	98	99	100	105	102	100	99	100	100	104	99	110	105	103	90	2,042
Ag (g/t)	313	314	325	362	318	291	352	333	291	298	282	279	295	276	204	179	166	124	103	149	112	253
Pb (%)	3.64	3.71	3.69	2.46	3.30	3.89	2.08	2.25	3.28	2.61	2.94	3.02	2.44	1.90	3.02	3.16	2.40	2.71	2.76	1.76	1.54	2.76
Zn (%)		0.26	0.19	0.18	0.23	0.34	0.22	0.20	0.20	0.28	0.35	0.29	0.26	0.35	0.43	0.51	0.33	0.24	0.30	0.30	0.14	0.28
Eq-Ag(g/t)	439	443	453	447	433	426	424	411	405	388	385	384	379	342	309	289	250	217	199	210	166	349
Ying Mine	**2016 July-Dec**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Production (kt)	350	651	677	703	712	721	727	727	718	749	634	590	592	513	520	481	480	491	477	451	370	12,334
Au (g/t)	0.12	0.12	0.10	0.18	0.14	0.14	0.13	0.16	0.10	0.09												0.07
Ag (g/t)	303	289	293	295	272	260	265	252	241	249	267	253	253	242	213	204	184	161	142	153	131	241
Pb (%)	4.81	4.23	4.32	3.70	3.84	3.86	3.71	3.44	3.98	3.46	3.72	3.92	3.80	3.85	3.58	3.92	3.55	3.37	3.21	3.22	3.20	3.75
Zn (%)	0.96	1.07	1.03	1.08	1.07	1.16	0.91	0.95	1.05	1.07	0.97	1.19	1.15	1.34	1.56	1.27	1.19	1.25	1.27	1.21	0.91	1.12
Eq-Ag(g/t)	493	462	467	454	432	423	418	398	404	393	414	412	407	401	367	364	330	302	277	288	259	396

22.3 Cash flow forecast

Based on the LOM production profile and the metal price and other assumptions shown above, pre-tax and post-tax cashflow projections have been generated as presented in Table 22.2. Over the LOM, 63.1% of the net revenue is projected to come from silver, 31.4% from lead and 5.5% from zinc.

A base case NPV at 8% discount rate of $714M (pre-tax), $535M (post-tax) is projected.

Table 22.2 Ying property cash flow projection

Item	Unit / Yr	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Silver Price	US $/oz	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Lead Price (US $0.90/lb)	US $/t	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984	1,984
Zinc Price (US $1.00/lb)	US $/t	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205	2,205
Silver Revenue (gross)	US$M	107.83	113.69	118.70	110.63	107.42	110.32	104.83	98.98	106.53	96.92	85.65	85.72	71.12	63.34	56.07	50.68	45.34	38.68	39.37	27.79	1,639.59
Lead Revenue (gross)	US$M	52.03	55.21	49.18	51.57	52.61	50.98	47.28	54.00	48.91	44.51	43.74	42.49	37.38	35.19	35.61	32.15	31.26	28.94	27.44	22.40	842.87
Zinc Revenue (gross)	US$M	9.45	9.48	10.31	10.39	11.32	8.98	9.36	10.23	10.84	8.33	9.55	9.24	9.38	11.04	8.31	7.73	8.31	8.23	7.38	4.57	182.42
Total Gross Revenue	US$M	169.31	178.38	178.19	172.59	171.35	170.28	161.46	163.20	166.28	149.76	138.94	137.45	117.87	109.57	99.99	90.56	84.91	75.85	74.18	54.76	2,664.88
Silver Net % Payable	%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Lead Net % Payable	%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%
Zinc Net % Payable	%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Silver Revenue (net)	US$M	97.05	102.32	106.83	99.57	96.68	99.29	94.34	89.08	95.88	87.23	77.09	77.15	64.00	57.01	50.46	45.61	40.80	34.81	35.43	25.01	1,475.63
Lead Revenue (net)	US$M	45.27	48.03	42.79	44.87	45.77	44.35	41.13	46.98	42.55	38.73	38.05	36.97	32.52	30.62	30.98	27.97	27.20	25.18	23.87	19.49	733.30
Zinc Revenue (net)	US$M	6.62	6.64	7.21	7.27	7.93	6.29	6.55	7.16	7.59	5.83	6.69	6.47	6.56	7.73	5.82	5.41	5.82	5.76	5.16	3.20	127.70
Total Net Revenue	US$M	148.93	156.99	156.84	151.71	150.37	149.93	142.02	143.22	146.02	131.78	121.83	120.58	103.09	95.35	87.26	78.99	73.82	65.75	64.46	47.70	2,336.62
Operating Costs																						
Mining	US $/t	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63	48.63
Hauling	US $/t	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65
Milling	US $/t	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90
General & Administration	US $/t	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76	8.76
*Gov fees & tax (~3.5% of Net Rev.)	US $/t	6.85	6.94	6.68	6.38	6.23	6.17	5.85	5.97	5.83	6.22	6.17	6.10	6.01	5.48	5.43	4.92	4.50	4.12	4.28	3.85	5.70
Total Operating Cost	US$M	49.97	52.05	53.84	54.32	54.96	55.35	55.06	54.49	56.73	48.30	44.93	44.98	38.99	39.25	36.22	35.93	36.53	35.34	33.44	27.34	908.03
Capital Costs																						
Mining	US$M	11.30	10.86	10.34	8.66	7.40	7.77	8.09	7.34	6.01	5.16	5.10	5.33	5.32	5.12	4.48	4.25	4.21	3.42	3.10	0.95	124.22
Drilling Program	US$M	2.02	2.03	1.93	1.75	1.54	3.59	1.23	1.09	1.01	0.97	0.74	0.62	0.62	0.59	0.63	0.52	0.48	0.41	0.25	0.13	22.18
Surface facilities	US$M	1.02	0.87	0.43	0.58	0.58	0.58	0.43	0.58	0.73	0.43	0.43	0.43	0.43	0.43	0.51	0.29	0.29	0.29	0.14	0.08	9.58
Total Capital Cost	US$M	14.33	13.76	12.71	11.00	9.53	11.95	9.76	9.02	7.74	6.57	6.28	6.38	6.38	6.14	5.62	5.06	4.98	4.13	3.50	1.16	155.98
Undiscounted Pre-tax Cash flow	US$M	84.62	91.18	90.29	86.39	85.88	82.63	77.20	79.70	81.54	76.92	70.62	69.21	57.72	49.96	45.42	38.00	32.30	26.29	27.52	19.20	1,272.61
Undiscounted Post-tax Cash flow	US$M	63.47	68.38	67.72	64.79	64.41	61.97	57.90	59.78	61.16	57.69	52.96	51.91	43.29	37.47	34.06	28.50	24.23	19.72	20.64	14.40	954.46
Pre-tax NPV @ 8%	US$M	713.97																				
Post-tax NPV @ 8%	US$M	535.48																				

Notes: *Exclusive of 17% VAT.

22.4 Sensitivity analysis

Table 22.3 shows impact on pre-tax NPV of a 20% adverse change in individual metal prices, operating cost and capital cost. Most sensitivity is seen in silver price. The NPV is moderately sensitive to lead price and operating cost, and only slightly sensitive to zinc price and capital cost.

Table 22.3 Ying property sensitivity analysis

Item	Variant	Unit	Pre-tax NPV ($US M)
Base Case (Pre-tax NPV @ 8% discount rate)	-	-	714
Lead price - 20% decrease	0.72	US$/lb	638
Zinc price - 20% decrease	0.80	US$/lb	701
Silver price – 20% decrease	15.20	US$/oz	554
Capex increase	20	%	696
Opex increase	20	%	619

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

25.1 General

Silvercorp has been active on the Ying Property, which includes the SGX, HZG, HPG, TLP, LME and LMW mines, since 2004. Annual production has ranged between 574,000 tonnes and 757,000 tonnes in the fiscal years 2012 to 2016.

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. To date, significant mineralization has been defined or developed in at least 224 discrete vein structures, and many other smaller veins have been found but not, as yet, well explored. 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. QA / QC programs have been in place since 2004 and the results are deemed satisfactory by AMC.

Because of the pinch and swell nature of Ying veins, there is often significant uncertainty in location of potentially economic mineralization within the veins, and in the grade and tonnage of that mineralization. However, the large number of veins and active mining areas within each vein means that economic risk related to this uncertainty is likely to be low. Silvercorp has a history of profitable mining, which demonstrates its ability to successfully manage this uncertainty.

The 2016 Mineral Resource estimates for the Ying property were prepared by independent Qualified Person, Dr Adrienne Ross, P.Geo., with the assistance of Ms Kathy Zunica of AMC and with input from Mr Pat Stephenson, P.Geo., who takes QP responsibility for the additional geological sections in this Technical Report. Datamine software was used, and, as a result of a recommendation in AMC's 2012 Technical Report, the June 2016 Resources were estimated using a block modelling approach, with 3D ordinary kriging. Because of the numerous veins (194) for which Resource estimates were prepared, this proved to be an extremely time-consuming process. After interpolation, the grade was averaged across the full width of mineralization and a 0.3 m minimum mining width calculation was applied, whereby mineralization widths < 0.3 m had a dilution envelope of zero grade added to make up the difference. The Mineral Resources were then reported above a cut-off grade.

For the purposes of cut-off grade and silver equivalent calculations, AMC has used recent reported individual metal processing recoveries and operating costs for each site, and the following long-term metal prices for both Mineral Resources and Mineral Reserves: Au US$1,250/oz, Ag US$19/oz, Pb US$0.90/lb, Zn US$1.00/lb.

Measured and Indicated Resources total 16.3 Mt averaging 243 g/t Ag, 3.87% Pb and 1.31% Zn, while Inferred Resources total 10.5 Mt averaging 227 g/t Ag, 3.91% Pb and 1.10% Zn. Mineral Resource cut-off grades are SGX 140 g/t AgEq; HZG 125 g/t AgEq; HPG 125 g/t AgEq; LME 125 g/t AgEq; LMW 130 g/t AgEq; TLP 120 g/t AgEq.

Proven and Probable Reserves total 12.3 Mt averaging 240 g/t Ag, 3.75% Pb and 1.27% Zn. Mineral Reserve cut-off grades are SGX – 190 g/t AgEq resuing, 170 g/t AgEq shrinkage; HZG – 170 g/t AgEq resuing; HPG – 200 g/t AgEq resuing, 175 g/t AgEq shrinkage; LME -175 g/t AgEq resuing, 145 g/t AgEq shrinkage; LMW -180 g/t AgEq resuing, 135 g/t AgEq shrinkage; TLP - 155 g/t AgEq resuing, 130 g/t AgEq shrinkage.

AMC has tested the sensitivity of Mineral Reserve estimates to an increase in cut-off grade, and has found only a 6% decrease in total projected AgEq ounces for a 20% increase in cut-off grades.

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, with 0.8 m being the minimum mining width for both methods. 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, dependent on vein width and mining method. Calculated dilution factors average 17% for both resuing and shrinkage, while assumed recovery factors are 95% for resue stopes and 92% for shrinkage stopes.

Average silver and lead grades for the total combined Ying Mines Mineral Reserves are of the order of 20% lower than reported mined grades from operations for January to November 2016. This is consistent with the mining plan generally moving into lower grade areas as the LOM progresses. AMC notes that the grade distribution of the Mineral Reserves allows opportunity to mine at above-overall-average grades in the first part of the projected remaining LOM. AMC advises that best mining practices and a continuing focus on tight dilution control will be key to optimizing grade throughout the extraction of the Ying Mineral Reserves.

The Ying mine complex has a projected LOM through to 2036 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 to around 750,000 by 2025 is planned, followed by a relatively steady decline to around 450,000 by 2035. 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 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.

AMC notes that projected metal grades through to around 2023 are largely in-line with grades reported in 2015 and 2016 to June 30. In order to maintain optimum metal grades, AMC recommends that Silvercorp continue its recent and current efforts on dilution and grade control via the Mining Quality Control Department.

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 for Plant 1 and 2,000 tpd for Plant 2. Plant 1 feed comprises mainly low grade ore from LM, HPG and HZG, while Plant 2 feed comprises mostly higher grade ore from SGX and TLP. To optimize profitability, 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 by road.

Historically, higher grade feed from SGX has enhanced plant performance but, with the grades of SGX ore gradually decreasing, the challenge will be to maintain a similar metallurgical performance on lower grade feedstock. Maintaining recovery seems achievable but with a moderate adverse impact on concentrate lead grades. These are still marketable, but incur higher treatment charges and lower % payables. Each processing plant has an associated TMF. The TMFs were designed based on then-current Mineral Resource / Mineral Reserve estimates and LOM production projections. Subsequent Mineral Resource expansion indicate that the current tailings capacity will not be adequate for the full Ying LOM. Additional tailings capacity will thus be required in the later period of the LOM production, although Silvercorp anticipates that there will be no problem in receiving necessary approvals for that capacity expansion.

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 practice.

Silvercorp has all the required permits for its operations on the Ying Property. The Mineral Resource and Mineral Reserve estimates include material (about 25% of the Indicated Resources) that is currently below the elevation 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 environmental and rehabilitation management work in the Ying Property. Monitoring results to date indicate, with 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, with the total mining capital over the LOM estimated at approximately US$156M. Future processing plant capital requirements are minimal as plant capacity has already been expanded to meet the forecast mine production. The majority of capital expenditure will be required for continuing mine development ($124M). Exploration drilling and overall surface sustaining capital have been estimated at about $22M and $10M respectively. Estimated site operating costs range from US$63/t of ore mined for HPG to US$80/t of ore mined for LMW. AMC considers both operating and capital cost estimates to be reasonable.

Using long-term metal prices of silver US$19.0/oz, lead US$0.90/lb, zinc US$1.00/lb and gold US$1,250/oz, and a USD: RMB exchange rate of 6.90, AMC has estimated a pre-tax NPV at an 8% discount rate of $714M ($535M post-tax). Over the LOM, 63.1% of the net revenue is projected to come from silver, 31.4% from lead and 5.5% from zinc (gold value has minimal effect). Most sensitivity to NPV is seen in silver price. The NPV is moderately sensitive to lead price and operating cost, and only slightly sensitive to zinc price and capital cost. Ying mines safety is governed by Chinese statutory requirements. 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 should continue with a focus on safety improvement, inclusive of implementation of a policy where the more stringent of either Chinese or Canadian safety standards is employed.

25.2 Mineral Resource / Reserve estimation process

As noted above, the June 2016 Mineral Resources were estimated using a 3D block modelling approach. Because of the large number of veins (194) for which estimates were prepared, this was an extremely time-consuming process, particularly for the Resource modelling. The time taken from commencement of the project to completion of the report was seven months. In AMC's opinion, this is too long a timeframe, and merits a close examination of how Ying Mineral Resource / Reserve estimates are prepared for the purpose of public (NI 43-101) reporting.

Silvercorp has, for the last two years, been employing its own version of block modelling on the mines for the purpose of preparing internal Mineral Resource / Reserve estimates and for short term mine planning. AMC has not reviewed this process in detail, but recommends that Silvercorp and AMC work together to assess whether an alternative modelling approach for external reporting might reduce the time required to more reasonable levels.

26 Recommendations

AMC makes the following recommendations:

1. Review the Mineral Resource modelling approach prior to the next NI 43-101 Technical Report, with a specific focus on the respective merits of the AMC block modelling approach and the Silvercorp on-site block modelling approach. The aim should be to appropriately balance the complexity, work and time involved with the estimation accuracy required to (a) correctly report results in the public domain, and (b) provide a sound basis for operational planning and scheduling on a short to long term basis.
2. Depending on the results of Recommendation 1, consider having Silvercorp take Qualified Person responsibility for the next NI 43-101 Technical Report[6], subject to the Mineral Resource and Mineral Reserve estimates being audited by a recognized consultant.
3. For the next NI 43-101 Technical Report, review each section of the current report with a view to aligning the level of detail to that described in Form 43-101F1, bearing mind that "*The objective of the technical report is to provide a summary of material scientific and technical information concerning mineral exploration, development, and production activities ….*" (Instruction (1) in Form 43-101F1).
4. Continue with current efforts to fully integrate the Resource estimation, Reserve estimation and mine planning processes
5. Maintain particular focus on consistent provision of the skilled resources that will be necessary to achieve targeted production over the LOM.
6. Continue recent and current focus on dilution and grade control via the Mining Quality Control Department.
7. Maintain the highly focused development approach that will be necessary throughout the Ying operation for LOM development targets to be achieved.
8. Continue with a focus on safety improvement, including implementation of a policy where the more stringent of either Chinese or Canadian safety standards are employed.
9. Consider the application of more bulk-mining methods, such as long-hole benching, where applicable, while recognizing that significant technological change would certainly be required.
10. Place a strong focus on stockpiling and record keeping procedures, and ensure that the summation of individual ore car weights by stope and zone is, as far as practicable, fully integrated into the tracking and reconciliation process.
11. Undertake periodic mill audits aimed at ensuring optimum process control and mill performance.
12. Continue exploration tunnelling and diamond drilling at the Ying Property. The exploration tunnelling is used to upgrade the drill-defined Resources to the Measured category, and the diamond drilling is used to expand and upgrade the previous drill-defined Resources, explore for new mineralized zones within the unexplored portions of vein structures, and test for the down-dip and along-strike extensions of the vein structures. The proposed exploration work is as follows:

SGX

Exploration Tunnelling:

25,000 m exploration tunnelling on vein structures S1, S2, S2W, S4, S6, S6E1, S7, S7-1, S7-2, S7E2, S7W, S8, S8E, S10, S14, S14-1, S14-2, S16E, S19, S21, S21W, and S22 between levels 110 m and 710 m.

Diamond Drilling:

30,000 m underground diamond drilling on vein structures S2, S2W2, S7, S7-1, S8, S10, S11, S12, S16W, S18, S19, S21 and S29.

HZG

Exploration Tunnelling:

5,000 m exploration tunnelling on vein structures HZ20, HZ20E, HZ22, HZ23, and HZ5 and H22 between levels 450 m and 810 m.

[6] Since Silvercorp is a "producing issuer" in terms of NI 43-101, it is not necessary for its Technical Reports to be prepared by Independent Qualified Persons unless one of several triggers described in Section 5.3 of NI 43-101 applies.

Exploration Drilling:

5,000 m underground exploration drilling on vein structures HZ5, HZ22 and HZ22E.

HPG

Exploration Tunnelling:

5,000 m exploration tunnelling on major vein structures H4, H5, H13, H14, H15, H16, H16E and H17 between levels 100 m and 700 m.

Underground Drilling:

9,000 m underground diamond drilling on vein structures H5, H5W, H16 and H17 as well as their subzones.

LMW

Exploration Tunnelling:

6,500 m on vein structures LM7, LM8, LM10, LM11, LM12, LM13, LM16, LM17 and LM19 as well as their parallel subzones between levels 500 m and 900 m. LM2, LM3, LM5 and LM6 between levels 500 m and 750 m at LME, and LM7, LM8, LM10, LM11, LM12, LM13, LM14, LM16, LM19, and LM20 between levels 650 m and 900 m at LMW.

Diamond Drilling:

5,000 m underground drilling on LMW6, LM17, LM19 and W6 and their parallel vein structures.

LME

Exploration Tunnelling:

4,000 m on vein structures LM2, LM2-1, LM4, LM4W2, LM5, LM5E, LM5W, LM5W2, LM6, LM6W, LM6E and LM6E2 between levels 450 m and 790 m.

Diamond Drilling:

6,000 m underground diamond drilling on vein groups LM4, LM5, LM6 and LM21.

TLP

Exploration Tunnelling:

7,500 m exploration tunnelling on vein structures T1 vein group, T2, T3E, T4, T5 vein group, T11 vein group, T14, T14branch, T15 vein group, T16 vein group, T17 vein group, T21 vein group, T22 vein group, T23, T27, T28E, T33 vein group, and T35 vein group between levels 500 m and 790 m.

Diamond Drilling:

12,000 m underground drilling on vein structures T11, T14, T16, T21 and T35E.

The estimated cost for all of the above exploration work is:

- Tunnelling: RMB 63,600,000 (US$9.2M)
- Drilling: RMB 20,100,000 (US$2.9M)

27 References

AMC Mining Consultants (Canada) Ltd (2012) Technical Report for Ying Gold-Silver-Lead-Zinc Property, Henan Province, China. Prepared for Silvercorp Metals Inc. Effective date 1 May 2012, signing date 13 June 2012.

AMC Mining Consultants (Canada) Ltd (2012) Technical Report for Ying Gold-Silver-Lead-Zinc Property, Henan Province, China. Prepared for Silvercorp Metals Inc. Effective date 1 May 2012 (Revised 30 April 2013).

AMC Mining Consultants (Canada) Ltd (2012) Technical Report for Ying Gold-Silver-Lead-Zinc Property, Henan Province, China. Prepared for Silvercorp Metals Inc. Effective date 31 December 2013, signing date 29 July 2014.

Broili et al. (2006) Technical Update for Silvercorp Metals Inc. on the Ying Silver-Lead-Zinc Project Henan Province Peoples Republic of China, 18 April 2006

Broili et al. (2006) Technical Update for Silvercorp Metals Inc. on the Ying Silver-Lead-Zinc Project Henan Province Peoples Republic of China, 26 May 2006

Broili et al. (2008) NI 43-101 Technical Report and Pre-Feasibility Study November 2008 for Silvercorp Metals Inc. TP-LM Silver-Lead Project, Henan Province, Peoples Republic of China; prepared for Silvercorp Metals Inc. by BK Exploration Assoc., Washington USA

Broili et al. (2010) Ying District Silver-Lead-Zinc Project for Silvercorp Metals Inc., 26 February 2010

Broili and Klohn (2007) Technical Update on the Ying Silver-Lead-Zinc and the HPG Gold-Silver-Lead Projects, Henan Province, China, 16 August 2007; Report prepared for Silvercorp Metals Inc., by BK Exploration Assoc., Washington USA

Chen A (Jun He Law Offices, Beijing, 2016) Re: Summary of Mining Licenses and Exploration Licenses, Letter to Silvercorp dated 29 July, 2016.

Henan Luoyang (2006) Yuxi Hydrological and Geological Reconnaissance Company, Reconnaissance Report upon Geotechnical Engineering, 4 July 2006

San-Men-Xia Gold Mining Engineering Ltd (Report dated Jan 2011). Original report prepared for Silvercorp Metals Inc., in Mandarin.

Sinosteel Institute of Mining Research Co., Ltd (2006) Report dated March 2006.

Xu et al. (2006) Technical Review on HPG Silver-Lead Project, Luoning County, Henan Province, People's Republic of China; Report prepared for Silvercorp Metals, Inc., by SRK Consulting, Beijing, China.

Various Silvercorp files and documents not specifically referenced

Broili (2004) Technical Report for SKN Resources Ltd on the Ying Silver-Lead-Zinc Project, Henan Province, China, 21 April 2004; Report prepared for Silvercorp Metals Inc., by BK Exploration Assoc., Washington, USA

Broili (2005) Technical Report for SKN Resources Ltd on the Ying Silver-Lead-Zinc Project Henan Province, Shina, 18 April 2005; Report prepared for Silvercorp Metals Inc., by BC Exploration Assoc. Washington USA

Cullen (2011) Technical Report on the BYP Property, Hunan Province, China, Report prepared for Silvercorp Metals Inc., 24 June 2011

Klohn et al. (2011) Technical Report Resources and Reserves Update HPG Mine Ying Silver-Lead-Zinc District Report prepared for Silvercorp Metals Inc., 20 May 2011

Klohn et al. (2011) Technical Report Resources and Reserves Update TLP & LM Mine Ying Silver-Lead-Zinc District Report prepared for Silvercorp Metals Inc., 20 May 2011

Klohn et al. (2011) Technical Report Resources and Reserves Update SGX Mine Ying Silver-Lead-Zinc District Report prepared for Silvercorp Metals Inc., 20 May 2011

Maanshan Engineering Exploration and Design Institute (Report dated March 2006). Original report prepared for Silvercorp Metals Inc., in Mandarin.

28 Certificates

CERTIFICATE OF AUTHOR

I, Patrick R. Stephenson, P.Geo., of Vancouver, British Columbia, do hereby certify that:

1. I am the Principal of P R Stephenson Consulting Inc., with an office at 301, 1490 Pennyfarthing Drive, Vancouver, British Columbia, V6J 4Z3. I am currently employed as a subconsultant by AMC Mining Consultants (Canada) Limited (AMC), with an office at Suite 202, 200 Granville Street, Vancouver British Columbia, V6C 1S4. I was previously, until 16 January 2017, employed by AMC as a Director and Principal Geologist.
2. This certificate applies to the technical report titled “Ying NI 43-101 Technical Report.”, with an effective date of 31 December 2016, (the “Technical Report”) prepared for Silvercorp Metals Inc.(“the Issuer”);
3. I am a graduate of Aberdeen University in Scotland (Bachelors of Science (Hons) in Geology in 1971). I am a registered member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (License #37100) and Saskatchewan (Reg. #28984). I have practiced my profession for a total of 45 years since my graduation and have relevant experience in the preparation of Resource and Reserve statements, due diligence reviews, mining and exploration property valuations, expert witness reports, and independent technical reports across a broad range of metalliferous mining projects.

   I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
4. I visited the Ying Property from 13-16 July 2016 for 3 days;
5. I am responsible for Sections 1-12, 20, 27 and parts of 1, 25 and 26 of the Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had prior involvement with the property that is the subject of the Technical Report in that I was a qualified person for previous AMC Technical Reports on the Ying property in 2012 (filed 15 June 2012, effective date 1 May 2012), and in 2013 (minor update to 2012 report, filed 30 April 2013, effective date 1 May 2012).
8. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
9. As of the effective date of the Technical Report and the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;

Effective 31 December 2016
Signing Date: 15 February 2017

(original signed by) Patrick R. Stephenson, P.Geo.

Patrick R. Stephenson, P.Geo.
Principal – P R Stephenson Consulting Inc.

CERTIFICATE OF AUTHOR

I, Herbert A. Smith, P.Eng. of Vancouver, British Columbia, do hereby certify that:

1. I am currently employed as General Manager / Principal Mining Engineer with AMC Mining Consultants (Canada) Ltd., with an office at Suite 202, 200 Granville Street, Vancouver, British Columbia V6C 1S4;
2. This certificate applies to the technical report titled “Ying NI 43-101 Technical Report.”, with an effective date of 31 December 2016, (the “Technical Report”) prepared for Silvercorp Metals Inc. (“the Issuer”);
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 38 years since my graduation and have relevant experience in underground mining, feasibility studies and technical report preparation for mining projects.

   I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
4. I visited the Ying Property from 13-16 July 2016 for 3 days;
5. I am responsible for Sections 15, 16, 18, 21, 22 and parts of 1, 25 and 26 of the Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of NI 43-101;
7. I have had prior involvement with the property that is the subject of the Technical Report in that I was a qualified person for previous AMC Technical Reports on the Ying property in 2012 (filed 15 June 2012, effective date 1 May 2012), and in 2013 (minor update to 2012 report, filed 30 April 2013, effective date 1 May 2012).
8. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
9. As of the effective date of the Technical Report and the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;

Effective 31 December 2016
Signing Date: 15 February 2017

(original signed by) Herbert A. Smith, P.Eng.

Herbert A. Smith, P. Eng.
General Manager / Principal Mining Engineer
AMC Mining Consultants (Canada) Limited

CERTIFICATE OF AUTHOR

I, Adrienne A Ross, P.Geo., of Vancouver, British Columbia, do hereby certify that:

1. I am currently employed as a Principal Geologist with AMC Mining Consultants (Canada) Limited, with an office at Suite 202, 200 Granville Street, Vancouver British Columbia, V6C 1S4.
2. This certificate applies to the technical report titled "Ying NI 43-101 Technical Report.", with an effective date of 31 December 2016, (the "Technical Report") prepared for Silvercorp Metals Inc.("the Issuer");
3. I am a graduate of the University of Alberta in Edmonton, Canada (Bachelors of Science (Hons) in Geology in 1991). I am a graduate of the University of Western Australia in Perth, Australia (Ph.D. in Geology). I am a registered member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (License #37418) and Alberta (Reg. #52751). I have practiced my profession for a total of 23 years since my graduation and have relevant experience in precious and base metal deposits.

   I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
4. I visited the Ying Property from 13-21 July 2016 for 8 days;
5. I am responsible for Section 14 of the Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had prior involvement with the property that is the subject of the Technical Report in that I assisted the qualified persons with respect to a previous AMC Technical Report on the Ying property in 2013 (filed 30 April 2013, effective date 1 May 2012).
8. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
9. As of the effective date of the Technical Report and the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;

Effective 31 December 2016
Signing Date: 15 February 2017

(original signed by) Adrienne A Ross, P.Geo.

Adrienne Ross, P.Geo.
Principal Geologist
AMC Mining Consultants (Canada) Limited

CERTIFICATE OF AUTHOR

I, Harald Muller, FAusIMM, Queensland, do hereby certify that:

1. I am currently employed as a Principal Consultant with AMC Consultants Pty Ltd, with an office at Level 21, 179 Turbot Street, Brisbane, Queensland, 4000, Australia.
2. This certificate applies to the technical report titled "Ying NI 43-101 Technical Report.", with an effective date of 31 December 2016, (the "Technical Report") prepared for Silvercorp Metals Inc.("the Issuer");
3. I am a graduate of the Pretoria University in South Africa (Bachelors of Engineering (Chemical) in 1983). I am a registered Fellow in good standing of the Australasian Institute of Mining and Metallurgy (Membership #303667), the Institute of Chemical Engineers (British) (Membership #2052 3858) and the South African Institution of Chemical Engineering (Membership #01979). I have practiced my profession for a total of 33 years since my graduation and have relevant experience in minerals processing and extractive metallurgy, including process engineering, technical process design and auditing, project evaluation and development, process plant operations management and maintenance planning, plant start-up and commissioning, technical review, and audits. My experience covers across a broad range of metalliferous mining projects, including gold.

   I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
4. I have not visited the Ying Property;
5. I am responsible for Sections 13, 17, 19 and parts of 22 of the Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of NI 43-101;
7. I have not had prior involvement with the property that is the subject of the Technical Report.
8. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
9. As of the effective date of the Technical Report and the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;

Effective 31 December 2016
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(original signed by) Harald Muller FAusIMM

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