Technical Review (NI 43-101)
Caylloma Project
Peru

Prepared for:
Fortuna Silver Mines Inc.

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097161

Prepared by:
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1.0 SUMMARY

1.1 Introduction

At the request of Fortuna Silver Mines Inc. (FSM), Chlumsky, Armbrust and Meyer, LLC (CAM) conducted a technical due diligence review of the updated mineral resources and reserves at the Caylloma Silver Mine, located north-northwest of Arequipa, Peru. CAM's scope of work for this technical review focused on a new model for the Animas Vein and checks of the updated reserve estimation, based on all available data through 31 December 2008, except for the Bateas vein, which includes all data through 31 March, 2009.

The Caylloma property was previously evaluated by CAM in 2005-2006 through a Technical Report dated 2006, when FSM was in the process of acquiring the property. This report constitutes a substantial update of the previous investigation, and includes a revised resource model for the Animas Vein and changes to the previous resources and reserves in the other veins due to changes in metal prices, operating costs, mining of some previous resources and reserves, and new sampling data.

The property was owned by Compañía Minera Arcata, S.A. prior to 2005. The mine was in production by Arcata until early 2003, when it was shut down due to depletion of accessible mineral reserves. Fortuna Silver Mines Inc. (FSM), formerly Fortuna Ventures Inc., acquired the property in 2005, and placed it into production in September 2006 with a refurbished mill which included separate circuits for silver-lead, for zinc, and later (in 2009) for copper.

Operations at Caylloma are carried out under the name of Minera Bateas S.A.C., a wholly-owned subsidiary of FSM. The current operation exploits the Animas Vein and other polymetallic (Ag-Pb-Zn) veins, rather than the silver-only veins previously exploited by Arcata.

1.2 Property Description

The Caylloma mine is located in the Caylloma Mining District, 225 road-kilometers north-northwest of Arequipa, Peru, and 14 kilometers northwest of the town of Caylloma. It lies at 4,400 to 4,800 meters above sea level in the Peruvian Andes.

The mineral property consists of mineral rights in 3 "a*cumulaciones*" and 26 mining concessions for a total surface area of 8,171.3 hectares. All of the acumulaciones and mining concessions constitute the Unidad Económica Administrativa (UEA) San Cristobal. In addition, FSM owns extensive surface rights.

1.3 Geology and Mineralization

The host rocks for mineralized veins in the district are volcanic rocks of the upper Miocene Tacaza Group, which lie in angular unconformity over a sedimentary sequence of quartzites and shales of the upper Mesozoic Yura Group. Portions of the property area are covered by a variable thickness of post-mineral Plio-Pleistocene volcanic deposits and recent alluvial sediments.

Six major vein systems are recognized in the Caylloma District, all having a general northeast-southwest strike, and mainly dipping to the southeast. The host rocks of the Caylloma vein systems are breccias, lavas and andesitic volcaniclastic units of the Tacaza volcanic group. The Caylloma District is located near the northwestern margin of the Caylloma caldera complex.

The economic mineralization mined in the past come from five of the vein systems, which were all silver-rich with low base metal contents. In contrast, the Animas vein system contains polymetallic silver base-metal mineralization, with minor gold credits. The mineralization in all six vein systems occurs in ore shoots which are up to several hundred meters long, with vertical extents ranging up to 300 meters. Width of the veins varies from a few centimeters to 20 meters, averaging about 1.2 meters for the silver veins, and 2.5 meters for the polymetallic veins.

The geology and mineralization controls are well-understood by FSM geologists, who have several years of operations experience.

The mineral resources as of 31 December 2008 (31 March 2009 for the Bateas Vein) have been estimated in eight different veins on the Caylloma property. CAM believes that there is good potential for the discovery of additional resources and reserves on the property. This added potential is present in:

- Developed veins are open at depth and some potential exists along strike.
- Undeveloped veins identified on surface or in underground workings where only low-grade mineralization has been encountered at a limited number of exposures.
- Undiscovered veins on the remainder of the property.

1.4 Exploration and Data Compilation

Historically, core drilling has been used at Caylloma to determine the locations of extensions for known mineralized structures, which are followed up by underground drifting and development. Both core samples and underground channel samples are used for resource estimation.

As with most high-grade, multi-metal, vein deposits, local variations in metal content are commonly high and large differences can exist between successive sampling campaigns of the same areas. As a check on analytical accuracy and precision, the mine laboratory, which assays channel samples, uses an elaborate and thorough quality assurance/quality control (QA/QC) series of checks, including standards, blanks, preparation duplicates, pulp duplicates, and re-sampling. Core samples are assayed at ALS Chemex, an independent laboratory, and are subject to equally rigid QA/QC procedures. Separate limits of acceptable deviation in values for silver, gold, zinc, lead and copper are applied, and re-assaying is done whenever the limits are exceeded.

It is CAM's opinion that the QA/QC procedures followed by FSM are thorough and appropriate. CAM believes that the assay database is adequate and appropriate for resource estimation.

On the basis of this review, CAM believes that the databases for the polymetallic veins have been assembled according to accepted practices, and are suitable for use in ongoing mine planning for the life of the operation.

1.5 Resource and Reserve Estimation

For the polymetallic Animas Central, Animas NE7, Animas NE8, Santa Catalina, Soledad, Silvia and Bateas veins, three dimensional wireframe models were constructed for each vein system and drill hole and channel sample grades were composited to 2.5meters or to the vein width for veins of less than 2.5 meters. Block models were constructed within each wireframe using the DataMine software package with block sizes varying according to vein dimensions and ranging to a maximum size of 5 by 5 by 2.5 meters. Sub-blocking was used as necessary to more precisely reflect actual vein geometry. Metal grades were estimated using ordinary kriging in sectors with channel sample data from stopes and crosscuts, and using inverse distance squared in sectors with only drillhole data. A density factor of 3.00 grams per cubic centimeter has been used for conversion of block volumes to tonnes. Resource classification was based on the number of composite samples used in estimation of the grade for each block with Measured Resources being estimated by 12 to 20 composite samples, Indicated Resources being estimated by 8 to 11 composite samples and Inferred Resources being estimated by 1 to 7 composite samples. An NSR value of US$37.15 was used as the lower cut-off value for the reporting of mineral resources.

For the silver-bearing San Cristobal, San Pedro, San Carlos, La Plata, Cimoide La Plata, Paralela and Ramal Paralela veins, mineral resources were estimated by inverse distance squared methods using density factors ranging from 2.82 to 2.95 grams per cubic centimeter. Classification of resources was based on distance from development workings with Measured Resources being blocks extending up to 25 meters from horizontal or vertical workings, Indicated Resources are those blocks located beyond 25 meters but within 40 meters of development workings, and Inferred Resources being those blocks located at distances of greater than 40 meters from workings.

Mineral resources are given in Table 1-1 (Measured and Indicated) and Table 1-2 (Inferred), both of which exclude mineral reserves. Mineral resources which have been converted to mineral reserves are given in Table 1-3.

Table 1-1
Measured and Indicated Resources, All Veins, Exclusive of Reserves

Category	Tonnes	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)	Cu (%)	Width (m)
Measured Resources	247,070	63	0.31	1.19	2.23	0.11	1.69
Indicated Resources	20,400	71	0.29	1.00	1.40	0.15	2.74
Measured + Indicated Resources	267,470	64	0.31	1.18	2.17	0.11	1.77

Table 1-2
Inferred Resources, all Veins, Exclusive of Reserves

Category	Tonnes	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)	Cu (%)	Width (m)
Inferred Resources	1,279,000	187	0.29	1.92	3.25	-	2.58

1.6 Mine Operations

Caylloma has been operating normally since October 2006, with mill throughput increasing gradually toward the optimized capacity of 423,600 tonnes per year.

Economic cutoff and dilution factors have been applied to the mineral resource estimates to determine mineable reserves as shown in Table 1-3.

Table 1-3
Diluted Mineable Ore Reserves at Caylloma as of 31 December 2008.

Description	Tonnes	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)
Silver Veins					
Proven	421,320	387	0.83	0.01	0.02
Probable	228,500	369	0.55	0.05	0.09
Total, Silver Veins	649,820	380	0.73	0.02	0.04
Polymetallic Veins					
Proven	3,280,100	103	0.52	2.03	3.09
Probable	103,000	426	0.44	1.74	2,41
Total, Polymetallic	3,383,100	113	0.51	2.02	3.07
All Veins					
Proven	3,701,420	136	0.55	1.80	2.74
Probable	331,500	387	0.51	0.58	0.81
Total All Veins	4,032,920	156	0.55	1.70	2.58

Underground mining is currently focused on the Animas, Santa Catalina, and Soledad veins. These veins are polymetallic veins, containing silver, gold, lead, zinc and copper mineralization. Production from these veins during the year 2008 was 331, 380 tonnes, or about 950 tonnes per day, of which about 95 percent originated in the Animas vein. The veins are accessed from adits driven from the surface.

In the Animas vein, where vein widths reach up to eight meters, the mining method is mechanized ascending cut-and-fill, using hydraulic deslimed mill tailings as backfill. The Soledad vein is much narrower, and is also mined by cut-and-fill methods, but requires the use of micro-scoops for loading of broken ore. Production from the Soledad vein averaged about 5% of total production. Santa Catalina is also a narrow vein, mined by a shrinkage method.

The milling process consists of conventional crushing and grinding, followed by selective flotation, producing concentrates for lead and zinc. The mill is being modified to raise the capacity from 1,000 tonnes per day to 1,200 tonnes per day of silver and polymetallic vein ores, by the year 2010. The mineralogy at Caylloma is relatively straightforward, and mill recoveries have increased steadily since the 2006 start-up. During the fourth quarter of 2008, recoveries were:

- Silver...................... 82.4 percent
- Gold .... 37.5 percent
- Lead .... 93.4 percent
- Zinc .... 87.2 percent

In April 2009, subsequent to the effective date of this Technical Report, a copper-recovery circuit was added to the mill.

FSM has signed contracts for all of its lead and zinc concentrates with AYSSA (GLENCORE's representative in Peru). During 2008, 20,960 wet-tonnes of zinc concentrate and 12,620 wet tonnes of lead concentrate were sold. Transportation of all concentrates from the mine site to the port of Callao is by truck.

1.7 Conclusions

CAM's conclusions regarding the mineral resources and reserves at Caylloma are as follow:

1. It is CAM's opinion that FSM personnel have a clear understanding of the geology and features controlling the distribution of economic-grade mineralization.

2. Considerable potential exists for discovery of additional resources through exploration on extensions of known mineralized structures on the property.
3. CAM has reviewed the methods used by FSM to collect information for the resource database and believes that proper practices have been used in sample collection, sample preparation, and assaying. QA/QC procedures followed by FSM were thorough and appropriate. The bulk-density database is satisfactory, but could be improved.
4. The resource models are constructed according to accepted engineering practice and the acceptability of these models for use in mine planning and financial decisions is confirmed by the reconciliation on the veins with a reasonable amount of production.
5. Mining and milling operations are relatively straightforward, and do not present unusual challenges for profitable operations at current or foreseeable metals prices.

1.8 Recommendations

CAM's recommendations regarding the mineral resources and reserves at Caylloma are as follow:

1. Continuing exploration is recommended to augment the known resources and reserves.
2. There are some minor inconsistencies relating to mined out samples which should be reviewed.
3. Some minor theoretical improvements in statistical and geostatistical analysis are possible. These should be implemented if future reconciliations of reserves versus mill feed are not satisfactory.
4. The practice of reporting precious-metals assays as Troy ounces per metric tonnes should be discontinued, and these results should be reported as grams per metric tonne.
5. Continuation of mining and milling operations is recommended, with recovery of copper and continuing optimization of metals recoveries.

2.0 INTRODUCTION

At the request of Fortuna Silver Mines Inc. (FSM), Chlumsky, Armbrust and Meyer, LLC (CAM) has conducted a technical due diligence review of the mineral resources and mineral reserves for the Caylloma Silver Mine, located approximately 150 kilometers (225 road-kilometers) north-northwest of Arequipa, Peru. FSM is listed on the TSX-V Exchange, and has recently updated of the resource estimate for the polymetallic Animas Vein, and other silver veins such as Bateas, Santa Catalina, Soledad, and Silvia veins.

Under prior ownership, the Caylloma Mine was in production until early 2003 when it was shut down due to depletion of accessible mineral reserves in the silver-bearing veins. In 2005, the mine was acquired by FSM, and exploration and redevelopment activities were initiated. The mill was refurbished and redesigned for base-metals production as well as silver. This included installation of new secondary and tertiary crushing units, a 4-ball-mill grinding circuit, and new flotation cells, thickeners and filters for the silver-lead and zinc circuits. A copper recovery metallurgical circuit became operational in April, 2009, after the effective date of this report.

Production from four stopes on the polymetallic Animas Vein commenced in early September of 2006. As of 31 December 2008, the Caylloma process plant was operating at 994 tonnes per day. Exploration and development are underway, and the property has good potential for discovery of additional resources through exploration of extensions of known mineralized structures on the property.

2.1 Terms of Reference

CAM's scope of work for the technical review focused on a detailed review of the geological interpretation, exploration program, and data compilation, including quality assurance/quality control (QA/QC) procedures, and mineral resources and mineral reserves. This report is an update of a previous technical report by CAM on the Caylloma property (Chlumsky, Armbrust & Meyer, 2006) which was filed on SEDAR. Updated information includes the revision of the Animas vein model and changes to reserves and resources to reflect the latest prices and costs. In addition CAM has reviewed mining activities, mineral processing and economic parameters of the operating mine.

2.2 Purpose of Report

The purpose of this technical report is to serve as an independent review of resources and reserves estimated by FSM personnel and a review of the current status of the project.

This CAM report serves as an independent report prepared by a Qualified Person as defined by Canadian National Instrument 43-101. The mineral resources and reserves in this estimate were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council on Dec 11, 2005.

2.3 Sources of Information

The main sources of information used in preparing this report were obtained from Fortuna Silver Mines, as discussed throughout the report. A list of references is provided in Section 23 of this report.

2.4 Data Gathering and Site Visits by CAM

Robert L. Sandefur, P.E., CAM's principal geostatistician, conducted a site visit to Caylloma including an examination of the underground mine and surface facilities on January 8-10, 2005, and examination of documents in Minera Hochchild's offices in Lima, Peru on January 11, 2005. In addition, he also reviewed the updated Animas Vein model in Lima with FSM and DataMine personnel July 22-24, 2006, and again on-site November 11-12, 2007. By reason of his education, affiliation with a professional association and past relevant experience, Mr. Sandefur fulfills the requirements for conducting a technical review for purposes of NI 43-101.

2.5 Units and Abbreviations

For the purpose of this report, all common measurements are given in metric units. All tonnages shown are in metric tonnes of 1,000 kilograms, and precious metal values are given in grams or grams per metric tonne.

To convert to English units, the following factors should be used:

1 short ton = 0.907 metric tonne (t)
1 troy ounce = 31.103 grams (g)
1 troy ounce/short ton = 34.286 g/t
1 foot = 30.48 centimeters = 0.3048 meters
1 mile = 1.61 kilometer
1 acre = 0.405 hectare

The following is a list of abbreviations used in this report:

Abbreviation	Unit Or Term
°C	degree Celsius
AA	atomic absorption
Ag	Silver
AT	assay-ton
Au	Gold
BO Consulting	Business Optimization Consulting, S.A.
CAM	Chlumsky, Armbrust and Meyer, L.L.C.
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CMA	Compañía Minera Arcata, S.A.
Cu	Copper
FA	Fire assay
ft	Foot
FSM	Fortuna Silver Mines Inc.
FVI	Fortuna Ventures Inc.
g	Gram
gpt or g/t Ag	grams of silver per tonne
gpt or g/t Au	grams of gold per tonne
G&A	general and administrative
ha	Hectare
hr	Hour
kg	Kilogram
km	Kilometer
m	Meter
MHC	Minera Hochschild Compañía
m.a.s.l.	Meters above sea level
NSR	Net smelter return
Pb	Lead
ppb	parts per billion
ppm	parts per million
QA/QC	quality assurance/quality control
oz	Ounce
SGS	SGS Peru analytical laboratory
t	metric ton (tonne)
UEA	Unidad Económico Administrativa Caylloma
US$	United States dollars
yr	Year
Zn	Zinc
/	Per

3.0 RELIANCE ON OTHER EXPERTS

The opinions and conclusions presented in this report are based on data from CAM's site visit, and from CAM's independent review of data provided to CAM by FSM. CAM confirms that standard practices, compliant with NI 43-101, have been used by FSM personnel in preparing the database for resource estimation.

Data on the operational aspects of the Caylloma mine, as presented by FSM, were reviewed by Mr. Steve Milne, P.E., of Tucson, Arizona, a Mining Engineer highly experienced in underground silver and base-metals mines. Mr. Milne verified the reasonable nature of the data supplied by FSM.

CAM received a copy of a letter dated 14 May 2009, from Dr. Ricardo Carrasco Francia, lawyer of a law firm with the same name located in Lima, Peru, indicating that all mineral concessions in the Caylloma district, held by Minera Bateas SAC, subsidiary of Fortuna Silver Mines, Inc. are in good standing and comply will all legal obligations required by Peruvian mining laws and regulations.

4.0 PROPERTY LOCATION AND DESCRIPTION

4.1 Property Location

The Caylloma Silver Mine is located in the Caylloma Mining District, 225 road-kilometers north-northwest of Arequipa, Peru. The property is 14 kilometers northwest of the town of Caylloma. The location of the Mine is shown in Figure 4-1.

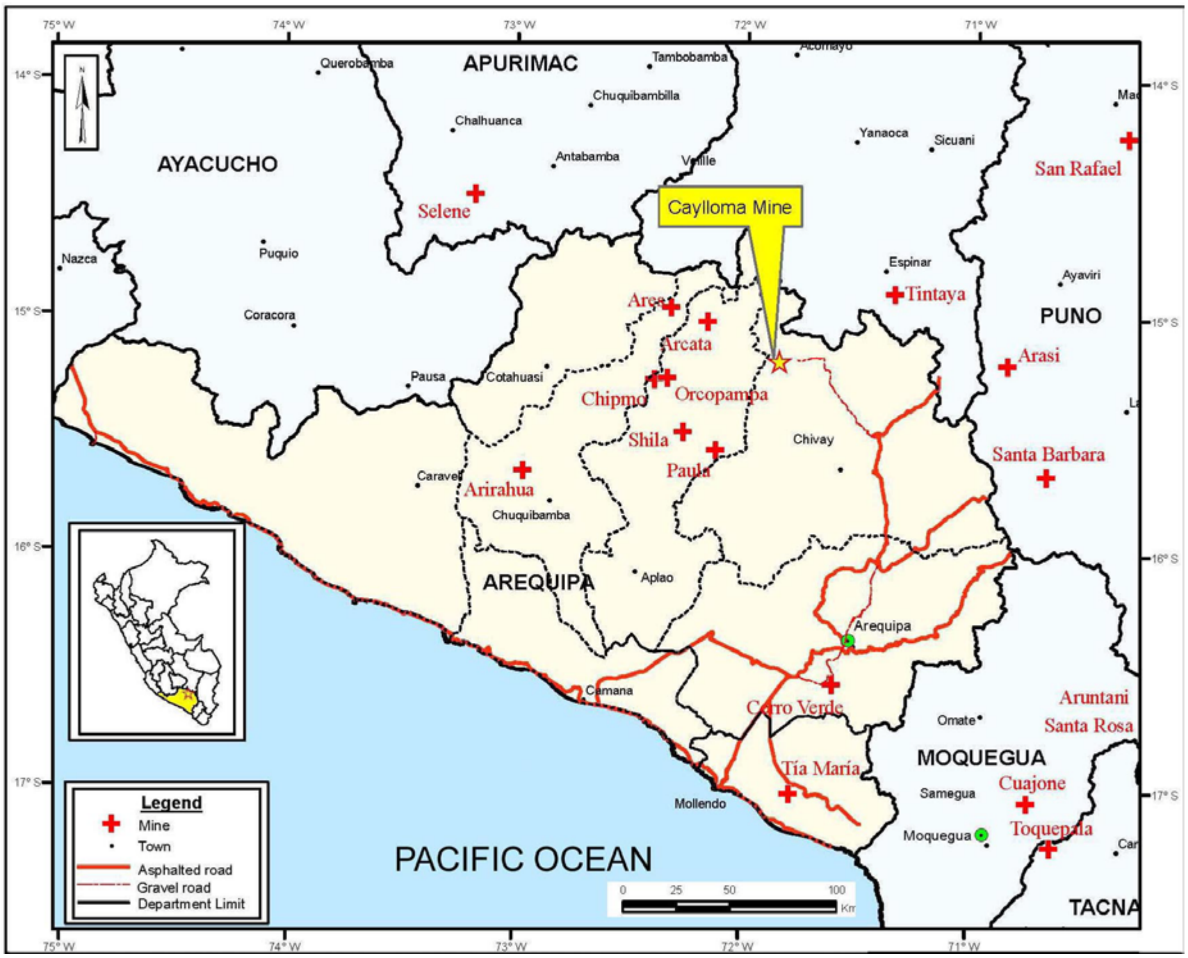

Figure 4-1
Location of the Caylloma Property

4.2 Property Description

4.2.1 Property Ownership

Fortuna Silver Mines Inc. acquired a 100 percent interest in the Caylloma silver mine in June of 2005. The 100 percent Caylloma acquisition comprises: all mining concessions as listed in Table 4-1 and shown on Figure 4-2; owned surface rights as listed on the Table 4-2 and shown in Figure 4-3; a permitted 600 tonnes-per-day flotation plant; connection to the national electric power grid; all permits as listed in Section 4.2.4 below; camp facilities for 350 men as well as all other infrastructure necessary to sustain mining operations.

A letter dated 14 May 2009, addressed to CAM from Dr. Ricardo Carrasco Francia, a lawyer practicing in Lima, Peru indicates that the 30 listed all mineral concessions in the Caylloma district held by Minera Bateas S.A.C., subsidiary of Fortuna Silver Mines, Inc., are in good standing and in compliance with all legal obligations required by Peruvian mining law and regulations. The same is true of the Huayllacho mill-site property.

The Caylloma Mine consists of mineral rights for 3 "acumulaciones" (mining claims) and 26 mining concessions for a total surface area of 8,171.3 hectares. All of the acumulaciones and mining concessions constitute the Unidad Económica Administrativa (UEA) San Cristobal. A list of the acumulaciones and mining concessions showing the names, ID numbers, areas in hectares, and title dates are presented in Tables 4-1. In addition to these, the Huayllacho mill-site (planta de beneficio) concession is titled, and comprises 9.0 hectares.

Table 4-1
Mineral Rights of Unidad Económica Administrativa San Cristobal

NO.	NAME	COD_D_P	HA.	TITULO
1	Acumulación Cailloma Nº1	01005146X01	989.53	R.J.Nº00522-2000-RPM-18-02-2000
2	Acumulación Cailloma Nº2	01005147X01	920.43	R.D. 355190EMIDGMIDCM 23-5-90
3	Acumulación Cailloma Nº3	01005148X01	979.41	R.D. 410190EMIDGMIDCM 07-6-90
4	Corona de Antimonio N.2	01004115X01	84.00	R.J.Nº 8642-96RPM-23-12-96
5	Cailloma 1	010250594	100.00	R.J.Nº 02227-99-RPM-16-08-99
6	Cailloma 2	010250694	300.00	R.J.Nº 03987-2000-RPM-13-10-2000
7	Cailloma 4	010041602	1000.00	R.J.Nº 001391-2002-INACCIJ-12-08-02
8	Cailloma 5	010041702	600.00	R.J.Nº 001405-2002-INACCIJ-12-08-02
9	Cailloma 6	010041802	900.00	R.J.Nº 001401-2002-INACCIJ-12-08-02
10	Cailloma 7	010041902	400.00	R.J.Nº 001268-2002-INACCIJ-23-07-2002
11	Cailloma 8	010058102	100.00	R.J.Nº 002100-2002-INACCIJ-11-11-2002
12	Cailloma 9	010154603	100.00	R.J.Nº 02715-03-INACCIJ-23-09-03
13	Eureka 88	0105789AX01	4.46	R.J.Nº 02782-99-RPM-28-09-99
14	Sandra Nº37	01004076AX01	149.14	R.J.Nº 6918-94RPM-31-10-94

Table 4-1
Mineral Rights of Unidad Económica Administrativa San Cristobal

NO.	NAME	COD_D_P	HA.	TITULO
15	Sandra Nº14	01004072AX01	1.00	R.J.Nº 6946-94RPM-31-10-94
16	Sandra Nº4	01004062AX01	28.00	R.J.Nº 6936-94RPM-31-10-94
17	Sandra Nº5	01004061AX01	6.00	R.J.Nº 6917-94RPM-31-10-94
18	Sandra Nº6	01004063AX01	4.00	R.J.Nº 6920-94RPM-31-10-94
19	Sandra Nº7	01004071AX01	2.00	R.J.Nº 7054-94RPM-31-10-94
20	Sandra Nº9	01004064AX01	9.00	R.J.Nº 6919-94RPM-31-10-94
21	Sandra 120-A	01461ABX01	124.99	R.J.Nº 02811-2000-RPM-31-07-2000
22	Sandra-106	01004872X01	724.00	R.D. 104191 07-06-91
23	Sandra 107	01004873X01	794.00	R.D. 764190 EM-FGM-DCM 27-12-90
24	Sandra 108	01004874X01	614.00	R.D. 73-91 EM-DGM-OCM 21-02-91
25	Sandra-120	01005334X01	4.00	R.D.86-88 EMDGM-DCM
26	Sandra 121	01005335X01	4.00	R.D.173-88 EMDGM-DCM
27	Sandra 123	01005337X01	90.00	R.J.Nº01769-99-RPM-08-07-99
28	Sandra 124	01005338X01	32.00	R.J.Nº 8527-94RPM-30-11-94
29	S.P.Nº16	01000203Y01	0.12	R.M.214210512-41
30	Huayllacho	P0100211	700.00	
	TOTAL		9764.09	

* In Peru, mining concessions do not have expiration dates. An annual fee must be paid to retain the concessions in good standing, and FSM states that all fees are up-to-date. All those listed are in good standing.

The locations of the concessions are shown in Figure 4-3.

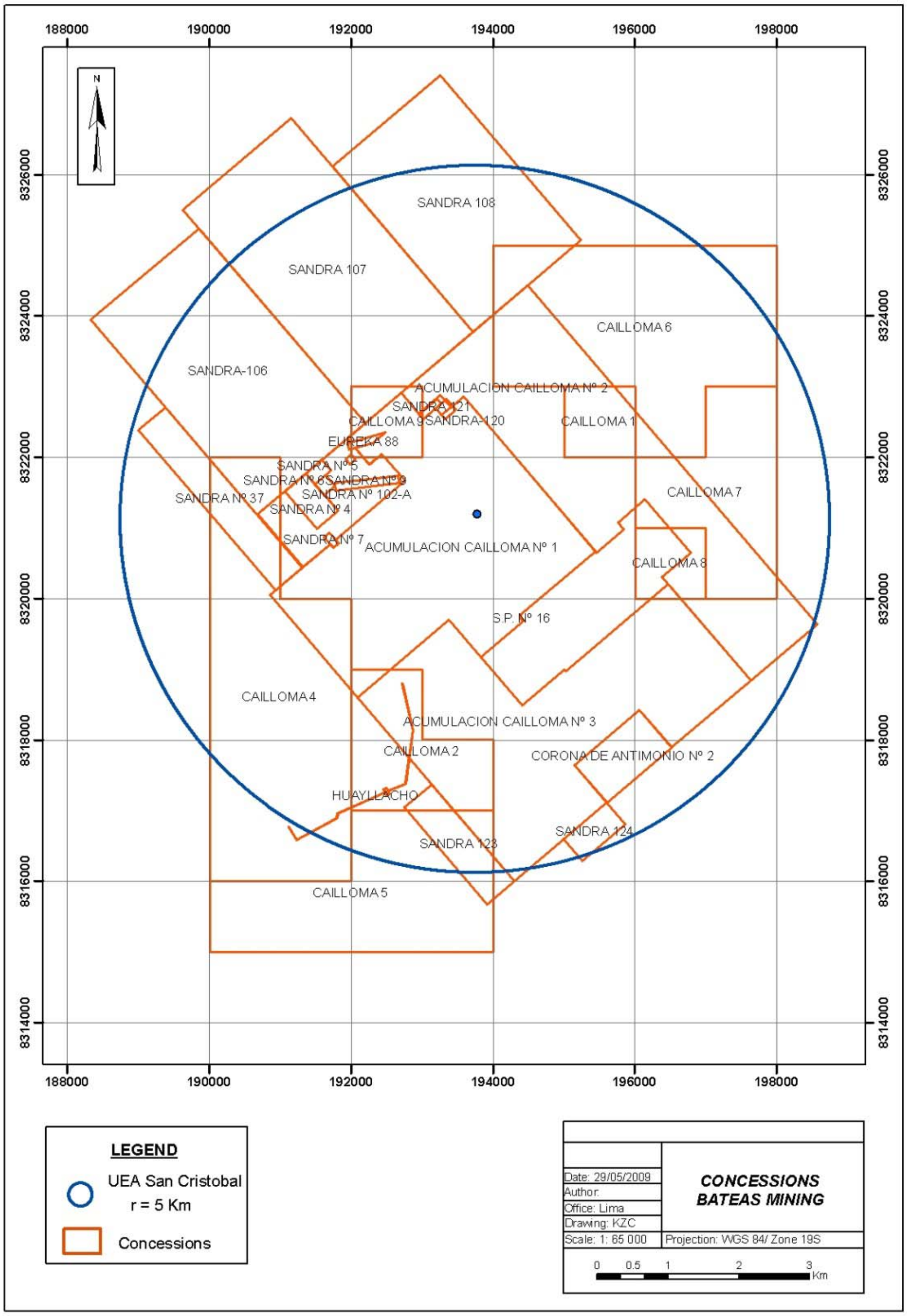

Figure 4-2
Locations of Mineral Rights Concessions

Surface rights held by FSM subsidiaries are listed on Table 4-2 and are shown on Figure 4-3.

Table 4-2
Surface Rights Owned by FSM Subsidiaries

Location	Hectares
Huayllacho-Bateas	186.73
Palcacucho Ichocollo	255.63
Michihuasi y Tolduna-Cancha	214.00
Cuchuquipa	17.50
Carretera veta Animas – La Plata	14.70
Jururuni-Cuchiqura-Vilafro	258.91
Huaraco	1,091.00
Michihuasi-Toldona	192.00
TOTAL	**2,230.47**

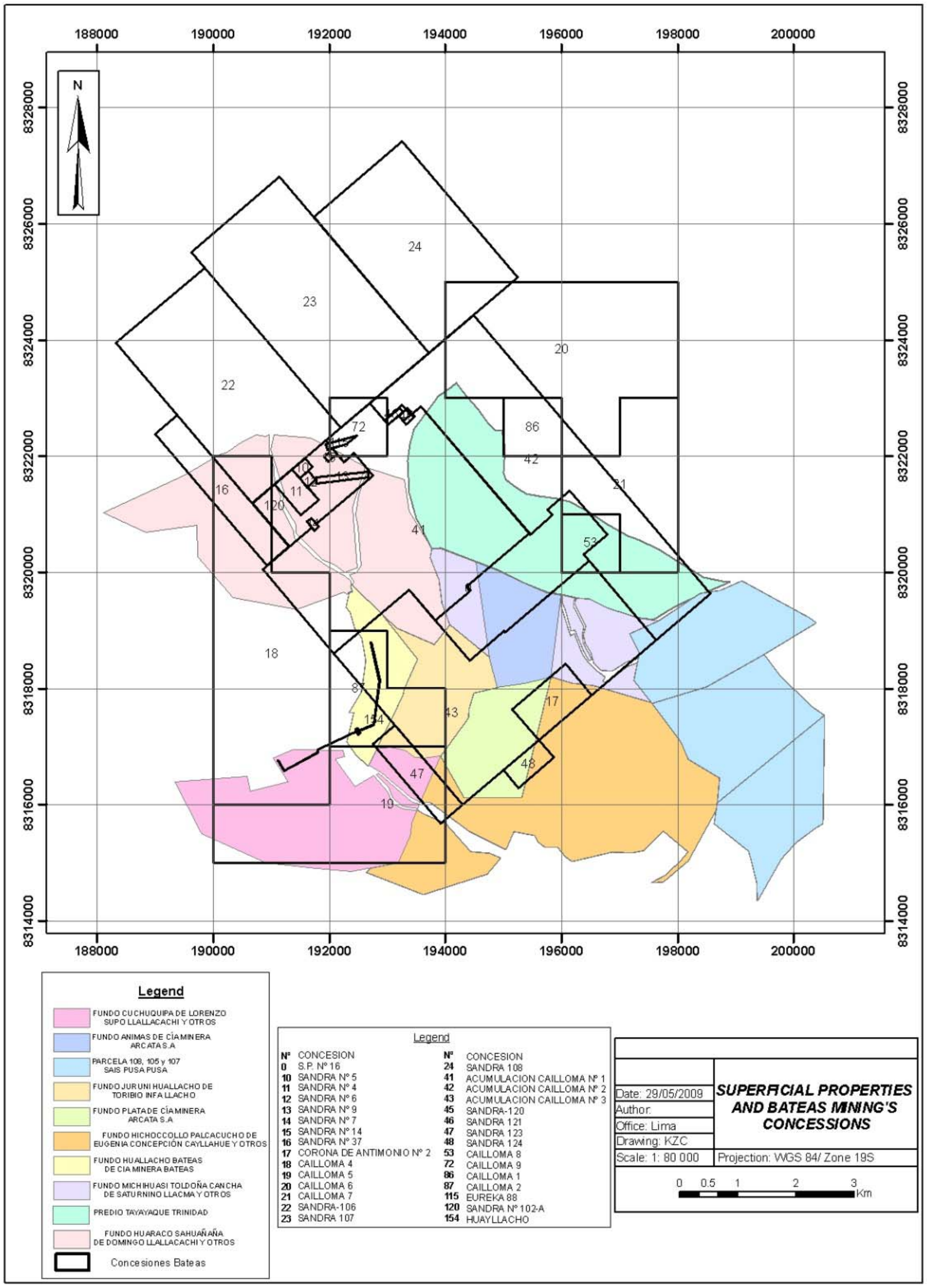

Figure 4-3
Surface Rights Map

CAM believes that mining and surface rights controlled by FSM are sufficient for mining operations, processing plant, tailings storage, waste disposal, and other facilities.

4.2.2 Royalties

The property is not subject of any royalties, back-in rights, payments, or encumbrances, except as follow:

1. The purchase agreement of Minera Bateas, dated 06 May 2005, includes a Royalty Contract with the following terms:

   Minera Bateas S.A.C. grants Minera Arcata S.A. a royalty of 2.0% of the Net Smelter Return which will apply after not less than a total of 21 million ounces of silver have been recovered from the Huayllacho beneficio (mill-site) concession right. This contract is a permanent condition and will remain in total validity as long as a valid mining concession exists.

   To 31 December 2008, Minera Bateas S.A.C. has produced a total of 1.39 million ounces, and the royalty has thus not yet been triggered.

2. The Peruvian Law 28258 of 2004 establishes a metal-mining royalty, the amount dependent on the scale of production value. In the case of Caylloma, the amount is 1% of the international market value of metal in concentrates, less the cost of transport, insurance, and taxes on sales of the concentrate. This 1% has been included in Table 19-7 as "Resource Tax".

4.2.3 Environmental Compliance

Caylloma is in compliance with Environmental Regulations and Standards set in Peruvian Law and has complied with all laws, regulations, norms and standards at every stage of operation of the mine. These are discussed in section 19.6 of this report.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHIC SETTING

5.1 Property Access

Access to the Caylloma Property is by paved and gravel roads for a distance of approximately 225 kilometers from Arequipa, a trip that requires approximately 4 to 5 hours. Access roads are shown on Figure 4-1.

5.2 Physiography and Climate

The Caylloma Project is located in the high-altitude *puna* region of Peru. The elevation on the Caylloma property is between 4,300 and 5,000 meters above sea level (m.a.s.l.). Vegetation is sparse, consisting of grasses (*ichu* and *pajonal*). The climate in the area is characteristic of the *puna*, with rain and snow between December and March, followed by a dry season between April and September. Year-round operations are possible.

Surface topography is generally steep. The camp and process facilities are located on the relatively flat valley floor and the mineral deposits are on the steep valley slopes. Access to the veins is from adits in the valley walls; ore transport is by a combination of rail and rubber-tired scoops and ore haulage trucks.

5.3 Infrastructure

The mine has been in operation intermittently for over 400 years. The mill was constructed in the 1970's, and expanded in 2005-2006 to a capacity of 1,100 tonnes per day (increased to 1,200 tonnes per day in 2009). Experienced underground miners live in the nearby town of Caylloma and other towns in the district.

Sufficient water for the process plant and mining operations is available from the Quebrada Santiago that crosses the property.

The Project is connected to the Electro Sur del Perú electric system, which can supply sufficient power for the operations.

6.0 HISTORY

The spectacular vein mineralization present at Caylloma likely attracted Inca and Pre-Inca miners, but the earliest documented mining activity was in the 1620's by Spanish miners. English miners were active in the late 1800's to early 1900's.

Past production has been from several systems of veins that ranged from centimeters to 20 meters in width. Individual ore shoots were up to several hundred meters long, with vertical extents up to 300 meters. Historic mining took place between elevations of 5,000 to 4,380 meters. The area has been known primarily for silver production.

The property was acquired by Compañía Minera Arcata, S.A. (CMA), a wholly owned subsidiary of the Hochschild Group (MHC) in 1981. FSM acquired the property from CMA in 2005.

Under MHC management, production parameters fluctuated during the late 1990's, as reserves were being exhausted. Owing to low metal prices, funds were not available to develop the resources at depth and along strike extensions of the known veins. Production records from 1998 through 2002 are shown in Table 6-1. FSM reported to CAM that documentation for years prior to 1998 is not available or is incomplete. Table 6-2 shows production since FSM acquired the property in 2005. Some gold was also recovered during 2006-2008. Cumulative historic production from 1620 to 2005 was likely well over 100,000,000 ounces of silver.

Table 6-1
Caylloma Production Data, 1998 - 2002

Description	Units	1998	1999	2000	2001	2002
Ore Processed	Tonnes	125,509	129,187	167,037	180,059	164,580
Head Grade Ag	g/t	307.92	331.25	373.24	405.28	571.68
Head Grade Au	g/t	1.27	0.89	0.67	0.60	0.23
Recovery Ag	%	85.14	87.73	87.01	87.21	87.40
Recovery Au	%	78.88	72.92	61.64	68.15	55.23
Concentrate Grade Ag	g/t	7,115.55	7,913.35	8,096.86	8,234.96	12,209.06
Concentrate Grade Au	g/t	27.29	17.68	10.31	9.45	3.05
Concentrate Production	t	4,623	4,756	6,698	7,725	6,735
Production Ag	kg	132,893.63	37,558.66	54,229.57	63,618.51	82,231.00
Production Au	kg	126	83.89	69.03	73.03	20.52

Table 6-1 Caylloma Production Data, 1998 - 2002						
Description	**Units**	**1998**	**1999**	**2000**	**2001**	**2002**
Plant Concentration Ratio		27	27	25	23	24

Table 6-2 Caylloma Production Data, 2006-2008									
Description	**2008 Q4**	**2008 Q 3**	**2008 Q 2**	**2008 Q 1**	**2007 Q 4**	**2007 Q 3**	**2007 Q 2**	**2007 Q 1**	**2006 Q 4***
Tonnes milled	91,025	89,827	80,121	70,408	68,615	65,806	63,806	52,687	33,460
Average tonnes milled per day	1,023	1,009	910	800	754	715	701	579	372
Grade per tonne									
Silver (g/t)	139	119	104	100	92	93	87	84	93
Lead (%)	2.97	2.58	2.29	1.94	1.87	1.80	1.67	1.39	1.12
Zinc (%)	3.75	3.64	3.75	3.42	3.09	3.01	2.92	2.65	2.33
Recoveries									
Silver (%) **	82.43	80.07	78.12	76.42	77.74	75.75	73.28	71.39	67.58
Lead (%)	93.41	92.19	88.94	87.26	87.51	88.50	89.22	88.59	82.66
Zinc (%)	87.25	88.11	87.58	86.45	85.09	86.51	86.22	84.16	77.30
Production (metal contained)									
Silver (kg)	9,063.74	7,567.50	5,794.33	4,362.29	4,337.22	4,120.01	3,705.05	2,969.8	1,727.45
Lead (tonnes)	2,524	2,139	1,633	1,189	1,124	1,049	952	646	309
Zinc (tonnes)	2,976	2,877	2,629	2,079	1,805	1,712	1,605	1,178	603
Unit cash production cost (US$/tonne)	44.60	44.43	46.92	49.97	52.41	49.15	46.65	42.62	n.a.
Unit Net Smelter Return (US$/tonne)	60.00	80.40	97.79	97.70	118.41	133.70	123.65	90.26	n.a.

* Commercial production began October 2006
** Recovery of silver from lead concentrate

A description of the recent exploration and drilling programs conducted by FSM is presented in Sections 10.0 and 11.0 of this report; while ongoing mine operations are discussed in Section 19.0.

7.0 GEOLOGICAL SETTING

The following description of the regional and property geology is summarized from several reports, including Echavarria (2006), BO Consulting (2004), Cia. Minera Arera, S.A.C, (2004), and Chlumsky, Armbrust & Meyer (2006), as listed in Section 22, References. In addition, information was gathered during the site visits and otherwise from FSM staff.

7.1 Regional Geology

The Caylloma vein district is located to the northwest of the Caylloma caldera complex and to the southwest of the Chonta caldera complex. The host rocks for mineralized veins in the Caylloma district are volcanic rocks of the Tacaza Group, which lie in angular unconformity over a sedimentary sequence of quartzites and shales of the Yura Group. Portions of the property area are covered by a variable thickness of post-mineral Plio-Pleistocene volcanic deposits and recent clastic and alluvial sediments. The regional stratigraphy is shown on Figure 7-1.

7.2 Local and Property Geology

A map showing the rock types and veins for the Caylloma District is presented in Figure 7-2. The district covers an area of approximately 7 by 5 kilometers.

7.2.1 Stratigraphy

A description of the main lithologic units is as follows:

Yura Group

The oldest rocks exposed in the district are the Yura Group, of Upper Jurassic to Lower Cretaceous age composed of white to gray ortho-quartzites, dark gray siltstones, and blackish graywackes, intercalated with thin layers of black shales. The overall thickness of the group is approximately 400 meters.

West of Huayllacho, the Yura Group rocks are folded into an open anticlinal structure with an average strike of N 50°W. The upper rock units form tight recumbent folds.

Tacaza Group

The Tacaza Group consists of a sequence of lavas and volcaniclastics intercalated with ash horizons that rest in angular unconformity over rocks of the Yura Group.

The Tacaza Group volcanics are intermediate to silicic in composition and are generally porphyritic. The dominant color is reddish brown changing to greenish in areas of chloritic alteration. These volcanic rocks locally include a horizon of limestone that grades laterally to mudstone.

Estimated thickness of the Tacaza Group is 900 meters, with some sequences showing thinning of volcanic horizons along strike as well as down dip. The Tacaza Group is of Lower Miocene age.

Recent Volcanic Deposits

Overlying the Tacaza Group with unconformable contacts are andesitic lavas, rhyolites, dacites and tuffs of similar composition. They are generally present in thick outcrops with sub-horizontal pseudo-stratification and range in age from Middle Miocene to Pleistocene.

Recent Clastic Deposits

The valley bottoms and lower slopes are covered by alluvial material, as well as colluvial deposits, moraines, and fluvio-glacial material of variable thickness.

Intrusive Igneous Rocks

Sub-volcanic intrusions of rhyolitic, rhyodacitic and andesitic composition outcrop as dikes and domes.

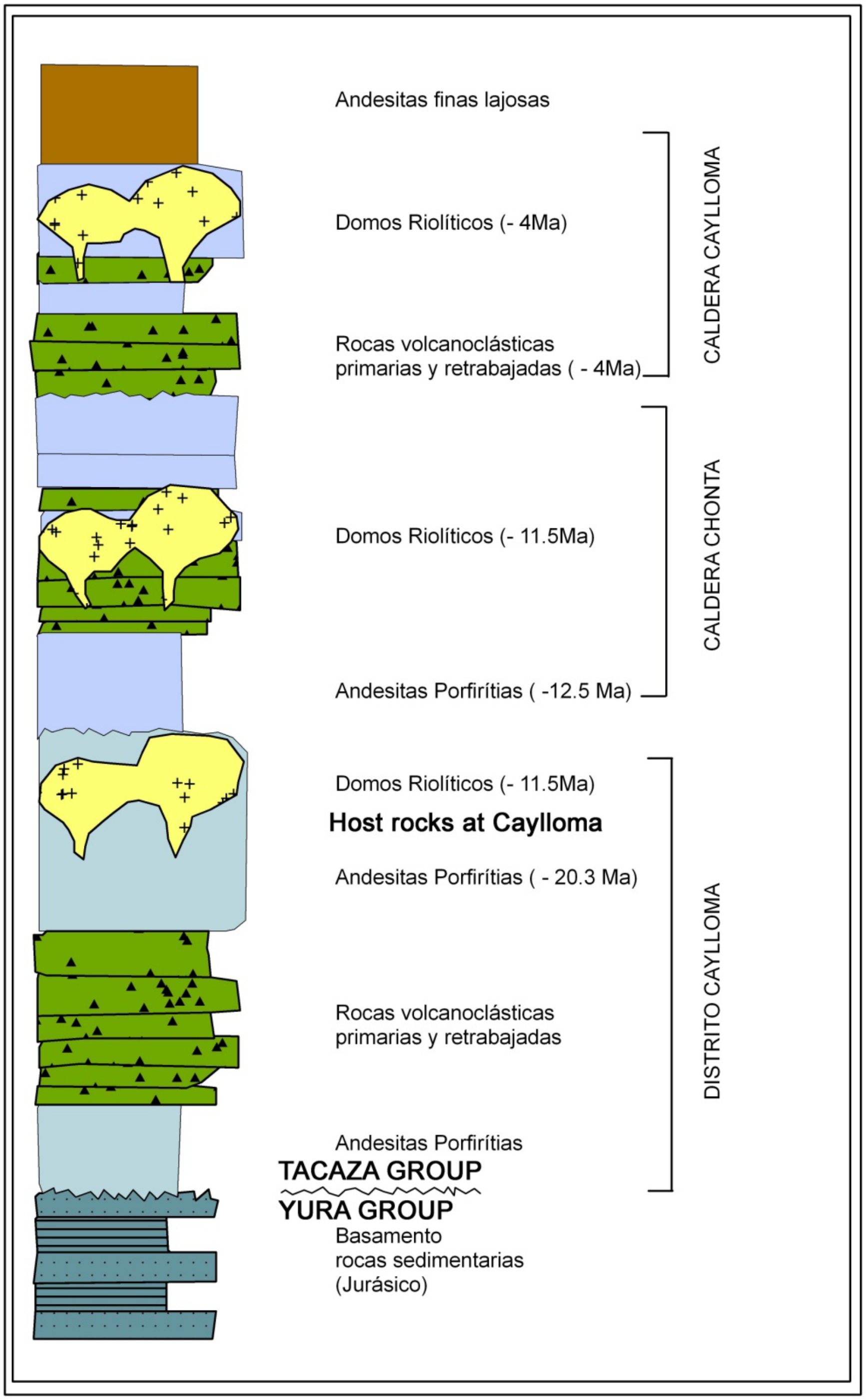

Figure 7-1
Stratigraphic Column for the Caylloma District

A geologic map of the Caylloma district is shown on Figure 7-2.

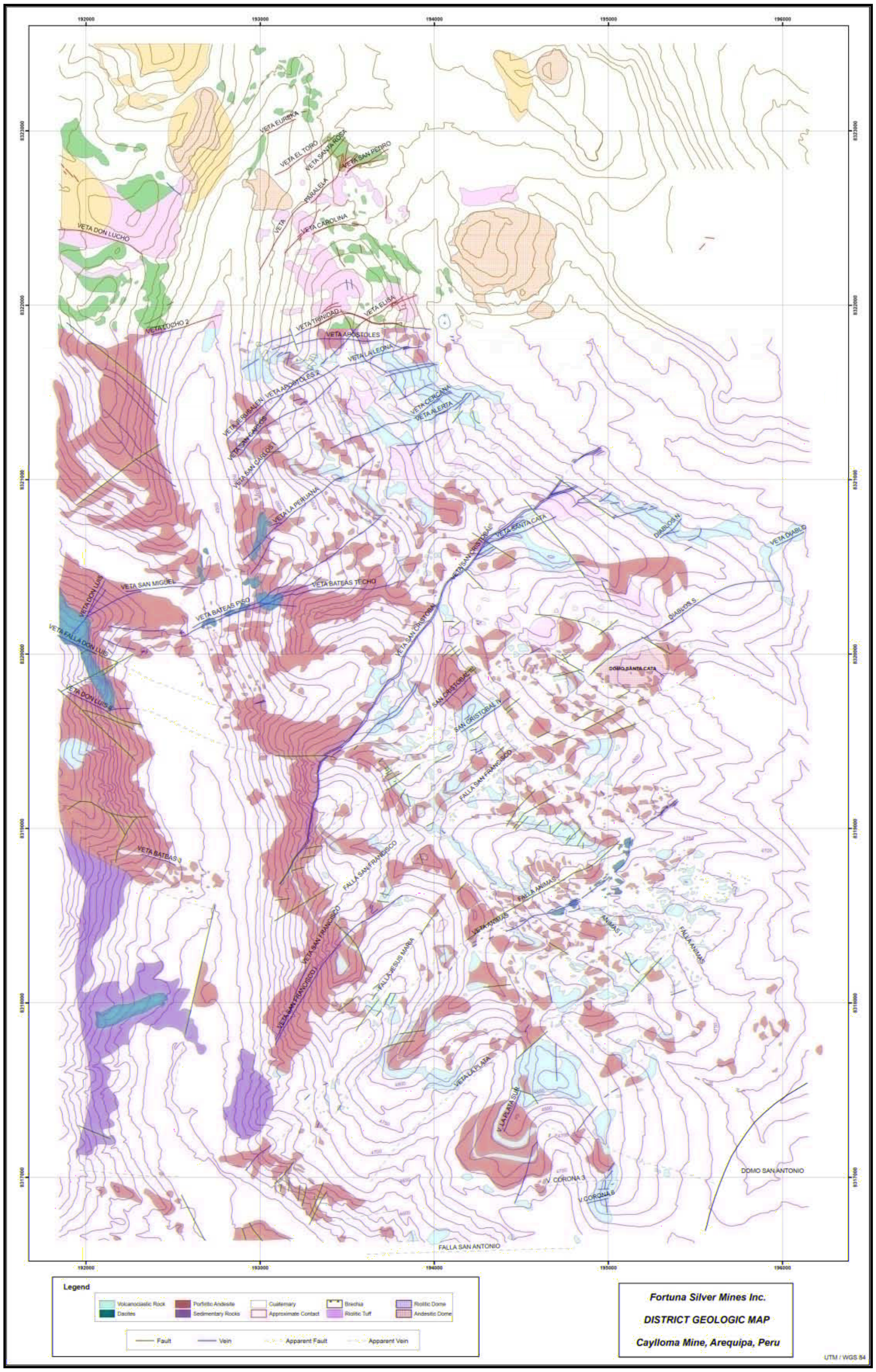

Figure 7-2
Geologic Map of the Caylloma District

8.0 DEPOSIT TYPES

The mineralization at Caylloma is of epithermal type, primarily consisting of silver sulfides and sulfosalts plus Zn-Pb-Cu base metal mineralization deposited in veins. The most abundant gangues are quartz, with some rhodochrosite, rhodonite and calcite.

The features described above serve to classify the Caylloma veins as belonging to a group of epithermal precious metal-bearing quartz-adularia veins similar to those at Creede, Colorado; Casapalca, Peru; Pachuca, Mexico and other districts in late Tertiary volcanic terranes (Cox and Singer, 1992, p. 145-149). They are characterized by silver sulfosalts, base metal sulfides, with gangue of banded or colloform quartz, adularia with carbonates, rhodochrosite, rhodonite and calcite (Echavarria and others, 2006). Wall rock alteration adjacent to the veins is characterized by illite, and propylitic alteration is widespread.

CAM concludes that the FSM has a firm and reasonably accurate knowledge of the geologic setting, both regional and local. Structural setting and controls together with type of mineralization are clearly understood by the company and should provide a basis for continued exploration and development activities.

9.0 MINERALIZATION

9.1 Description of Mineralization

The epithermal veins in the Caylloma district are characterized by minerals such as pyrite, sphalerite, galena, chalcopyrite, marcasite, native gold, stibnite, argentopyrite, and various silver-bearing sulfosalts (tetrahedrite, polybasite, pyrargirite, stefanite, stromeyerite, jalpite, miargyrite, and bournonite). These are accompanied by gangue minerals of quartz, rhodonite, rhodochosite, johannsenite (Mn-pyroxene) and calcite.

There are two distinct types of mineralization in the Caylloma district, one carrying mainly silver values, and the other with polymetallic (silver-lead-zinc-copper-gold) values. It is likely, although not well-documented, that the polymetallic mineralization is related to high-temperature fluids, possibly emanating from a deep skarn system, while the silver-only mineralization is related to cooler, higher-level fluids.

In the oxidation zone, the following secondary minerals can be recognized: psilomelene, pyrolusite, goethite, hematite, chalcocite, covelite, bornite and realgar (Antimonio and Corona vein). The oxide zone is thin, and secondary enrichment of silver does not appear to be of significant economic consequence.

9.2 Hydrothermal Alteration

Three types of hydrothermal alteration are developed in the Caylloma District: (1) quartz-adularia; (2) quartz-illite; and (3) propylitic.

The quartz-adularia (+pyrite, +/-illite) alteration is restricted to the margins of the veins, and the width of the altered zone is generally proportional to the width of the vein. The width varies from a few centimeters to a few meters. Quartz replaces the volcanic matrix in the rocks, and quartz plus adularia occur as irregular veinlets. Pyrite is disseminated in the veinlets and in iron-magnesium minerals in the wall rocks. Illite is an alteration product of plagioclase and the volcanic matrix.

Quartz-adularia is absent in the upper part of the vein system. The alteration assemblage in this upper area consists of a narrow selvage of quartz-illite near the vein. At depth, the zone of quartz-adularia grades outward into quartz-illite.

Propylitic alteration is widespread throughout the district and may be regional in character and perhaps unrelated to the mineralizing event. The alteration is a fine aggregate of chlorite, calcite and pyrite.

9.3 Mineralized Veins

Six major vein systems are recognized in the Caylloma District, all having a general northeast-southwest strike and predominantly dipping to the southeast. They are shown on Figure 7-2. The host rocks are breccias, lavas and andesitic volcaniclastics of the Tacaza volcanic group.

Of the six recognized major vein systems on the property, the northern three systems contain silver mineralization with only traces of base metals or gold, while the southern three systems are polymetallic, with silver-lead-zinc-copper-gold mineralization: From north to south, they are:

Silver Veins

- San Pedro System: Eureka, Copa de Oro, El Toro, San Pedro, Paralela, La Blanca, Santa Rosa, and Santa Isabel veins.
- Trinidad System: Trinidad, Elisa, Leona, Apóstoles, San Carlos, Jerusalen.
- Santo Domingo System: Santo Domingo, La Peruana, Alerta, and Cercana veins.

Polymetallic Veins

- San Cristobal System: San Cristobal, Santa Catalina, Bateas, Soledad and Silvia veins.
- Antimonio System: La Plata and Antimonio veins.
- Animas System: Animas, and El Diablo veins.

Production prior to 2005 came from five of the vein systems, and was based on silver ores, with no payable credits from base metals. Exploration by FSM starting in 2005 on the Animas System defined polymetallic silver plus base-metal mineralization. The mineralization in all six vein systems occurs in steeply dipping ore shoots ranging up to several hundred meters long with vertical extents of up to 300 meters. The widths of the veins range from a few centimeters to 20 meters, averaging approximately 1.5 meters for silver veins and 2.5 meters for the polymetallic veins.

Veins of the Caylloma district show structural patterns and controls typical of other vein systems hosted by Tertiary volcanic rocks in the western cordillera of Peru. The Caylloma vein system developed on a set of NE dilatational structures consequence of tension generated from the main compression forces of the Andes. Veins are very persistent along strike and down dip. Locally veins are displaced by post mineral NNW faulting. Horizontal displacement along these faults is minor and ranges from centimeters up to a few meters. The magnitude of displacement is clearly seen on surface on the San Pedro vein and underground on the Animas vein. In both cases lateral displacement is no more than 1.5 meters. No vertical displacement is observable on the structures. The vein system is not affected by any degree of folding.

The veins are tabular, open-space fillings with episodic deposition. According to a, Hochschild Group internal report (Echavarria and others, 2006) most of the metals, both silver and base metals, are related to the deposition of manganese-bearing minerals, which form bands composed of quartz, rhodonite, rhodochrosite and sulfides.

These veins have been worked at different times in the past, the San Cristobal vein being the most intensely mined prior to FSM involvement. Since 2006, the Animas Vein has been the principal producer. Mining has occurred between 5,000 m.a.s.l. (Upper outcrop of the San Cristobal vein) and 4,380 m.a.s.l. (Level 14A, lower level of the Bateas vein).

Following is a description of the most important characteristics of the principal veins.

9.3.1 San Pedro Vein

The San Pedro vein outcrops for a strike length of 900 meters, with a general strike direction of N45ºE, dipping 85º SE. The width varies from 2 to 3 meters and shows banded mineralization consisting of quartz, rhodonite, and Mn and Fe oxides, with concentrations of ruby silver and native silver. This vein has been recognized and mined down to level 10, and contains local high grade zones of up to 36 ounces Ag per tonne.

San Pedro is classed as a silver vein. The distribution of silver values in the vein shows a gradual decrease with depth; however, drilling shows values ranging from 5 to 21 ounces Ag per tonne.

9.3.2 San Cristobal Vein

The San Cristobal vein has a recognized outcrop of 2.5 kilometers with a N 35 to 55° E strike, and 50 to 80° SE dip; its thickness ranges from 5 to 6 meters at the upper levels to 2 to 2.5 meters at the lower levels. It is classed as a polymetallic vein, with primary sulfides of sphalerite, galena, polybasite, pyrargyrite, chalcopyrite and tetrahedrite distributed in pyrite, quartz, rhodonite and calcite gangue. This is the most extensively developed structure in the district.

The silver values are irregularly distributed along strike and throughout the width of the vein, forming localized enrichments where silver values have a tendency to decrease gradually at depth, as can be observed at Levels 10, 11 and 12.

9.3.3 La Plata Vein

The La Plata vein is a fracture filling along a regional fault extending for more than 4 kilometers between the Santiago and Trinidad creeks. The most representative part has a strike length of 400 meters and consists of quartz, calcite, rhodonite, and abundant manganese oxides in its central part. The eastern portion of the vein consists of quartz with disseminated pyrite, and ruby silver stained with manganese oxides.

La Plata is a polymetallic vein, explored down to Level 7. It presents a cymoid with filling of grey quartz mixed with stibnite, pyrite and tetrahedrite. This cymoid has been explored on Levels 7 and 8.

9.3.4 Animas Vein

The Animas vein is one of the most constant and well-defined structures in the southern portion of the district. It is a base-metal-rich polymetallic vein. It is currently a very important producer and Figure 9-1 shows a longitudinal section along the Animas vein with drillhole pierce points indicated. It is present in the mine from level 7 (4,755 m.a.s.l.) to lower drill intercepts below level 10 (4,595 m.a.s.l.). Several wide zones (greater than 20 meters width) are observed in level 9 especially in lateral exploration drifts.

The vein outcrops along 1.5 kilometers with silicified surface exposures stained with manganese oxides and has been identified by drilling over a total strike length of 3.8 kilometers. Thickness is variable ranging up to 30 meters as observed in diamond drilling.

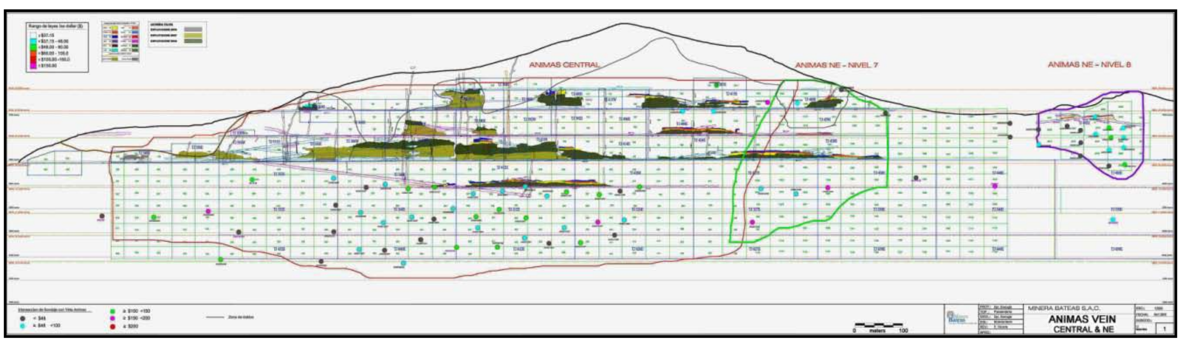

Figure 9-1
Longitudinal Section of Animas Vein

The main outcrop contains multiple quartz-rich structures containing leached iron-manganese oxides and disseminated sulfides. In general the Animas vein strikes N55 to 60ºE and dips SE with at angles between 45 and 55º. The structure shows local flexures that change the strike to almost east-west. Wall rocks at the surface are well defined and do not show significant hydrothermal alteration.

Contact with the hanging wall is abrupt and in some places is a fault plane. The footwall contact is commonly gradual and is characterized by gradually diminishing vein stringers into the wall rock.

Distribution of mineralization across the width of the vein is in bands, patches and disseminations alternating with barren areas (“horses”.) Minerals of the vein are argentiferous galena, sphalerite, marmatite, and chalcopyrite accompanied by minor tetrahedrite and spotty ruby silver. Gangue minerals are pyrite, quartz, calcite, rhodonite, rhodochrosite, and iron-manganese oxides. Banded, colloform and brecciated textures as well as the mineral assemblage are typical of low sulfidation epithermal vein deposits.

9.3.5 Santa Catalina Vein

Surface outcrop of this vein extends for a distance of 700 meters in a N65 to 80º E direction with a dip of 65 to 80º northwest and an average width of 1.90 meters. The vein contains silver sulfosalts (pyragirite and proustite), sphalerite, galena and chalcopyrite in a gangue of quartz, calcite rhodonite and rhodochrosite.

Wall rock is andesite that exhibits pseudo-stratification, banded layering and massive structures. Tectonic breccias are present in the footwall and hanging wall of the vein.

FSM has mined mineralization down to level 8 and drilling has cut the vein on level 9, where economic-grade polymetallic mineralization is present in well-defined segments controlled by faults. A base metal-rich segment is present between levels 8 and 9. The average grade of mineralization is 154 grams silver, 1.49 grams gold, 2 percent lead, 2.89 percent zinc and 0.52 percent copper with an average width of 2.46 meters.

9.3.6 Soledad Vein

This vein is exposed at the surface about 250 meters northeast of the Santa Catalina vein. It has a strike of N68-71ºE, and a dip of 76º NW. Average width is 0.45 meters at the surface.

The vein is present and exploited from level 6 down to level 7 (4,750 m.a.s.l.) and FSM has traced it to level 8 with diamond drill holes and underground workings. The vein has an average width underground of 1.09 meters. It is polymetallic, containing silver sulfosalts, sphalerite, galena, chalcopyrite, gray copper (enargite ?) and disseminated pyrite. The vein is banded with two recognizable mineralization events: (1) an early phase, rich in base metal sulfides and elevated gold values in banded rhodonite, and (2) a second phase of quartz, rhodochrosite, with silver minerals as disseminations and in tiny veinlets that contribute to economic values.

Host rock to the vein is andesite with pseudo-stratification and interbedded volcanic sediment of gray color; layers of fine grained siltstone are present in the andesite.

9.3.7 Silvia Vein

This vein is exposed on the surface as a series of discontinuous exposures that can be traced for 200 meters. It has variable widths of 0.8 to 1.8 meters and its strike is variable from N70º E to S82º E; dip varies from 65 to 82º northwest. It is clearly polymetallic, with sphalerite, galena, chalcopyrite, silver sulfosalts (pyrargirite) in a gangue of quartz, calcite, rhodonite and rhodochrosite. The vein has a banded to massive fabric with bands of base-metal sulfides of variable thickness.

9.3.8 Bateas Vein

The Bateas vein splits into two strands, Bateas Techo is the south split, and Bateas Piso in the northern split. The Bateas Techo vein has a surface outcrop trace 1,800 meters long and can be traced from the scarp of Vilafro Hill extending northeast. At the summit of the hill the vein is covered by flat-lying recent volcanic ash. Host rock for the vein is a volcaniclastic andesite with minor dacite and latite. Host rocks strike N70º E and dip 82º SE.

Mineralization of polymetallic type is present in two very well-defined zones. In the northeast, the vein contains chalcedonic and opaline quartz with disseminated silver sulfosalts, pyrite and calcite. The southwest end of the vein (a.k.a. Rio Santiago) is characterized by a gangue of quartz, rhodonite and rhodochrosite containing veinlets of sphalerite, galena, chalcopyrite and disseminated pyrite.

The northeast split of the Bateas vein is known as Bateas Piso vein. It dips 52º NW and has a strike parallel to the Bateas Techo vein. At its most northeast end it opens into a cymoid loop. Mineralization in the vein is characterized by base metal sulfides, sphalerite, galena and disseminated pyrite in a gangue of quartz, calcite, rhodonite and rhodochrosite.

10.0 EXPLORATION

The following exploration activities were carried out on the Caylloma veins from 2005 to 2008 by FSM personnel. Exploration on the Santa Catalina, Bateas, Soledad and Silvia veins gave encouraging results and justified development on these veins.

10.1 Exploration History of the Animas vein and other cited veins.

The former owners, the Minera Hochschild Compañía (MHC) drilled six holes into the Animas vein with a total of 1,500 meters of core. Results were not attractive, as the company was searching for mineralization containing more than 435 grams per tonne silver. MHC then began an aggressive diamond drilling and underground exploration program from 2002 to 2004. Results demonstrated the presence of resources and potential for additional resources at depth along the Animas vein.

Fortuna Silver Mines (FSM) acquired the property in 2005, and carried out intensive underground exploration aimed at defining resources on the Animas Central and Animas NE veins; and on the Bateas, Santa Catalina, Soledad and Silvia veins. FSM drilled a total of 23,311 meters of core from surface sites, and 18,839 meters from underground workings. Resources in the Animas vein became the mainstay of the company. Figure 9-1 is a long section along the Animas vein and shows pierce points of exploration drill holes drilled by FSM as of April 2009.

The Bateas vein was intensely explored by MHC from level 9 (4,655 m.a.s.l.) to level 14A (4,380 m.a.s.l.) and about 300 meters along strike (Figure 10-1). Limit of exploration on the Bateas vein was halted by a fault that cut and offset the vein structure. Exploration by FSM focused on the area northeast of the fault and this work identified two branches of the Bateas vein: the Techo branch and Piso branch. Surface topography permitted drilling of 11 holes with a total of 4,380 meters of core along a horizontal distance of 400 meters. This drilling proved up continuity northeast of the fault along the Techo branch where an ore shoot was located carrying up to 6,000 grams silver per tonne at elevation of level 12 (4,500 m.a.s.l.).

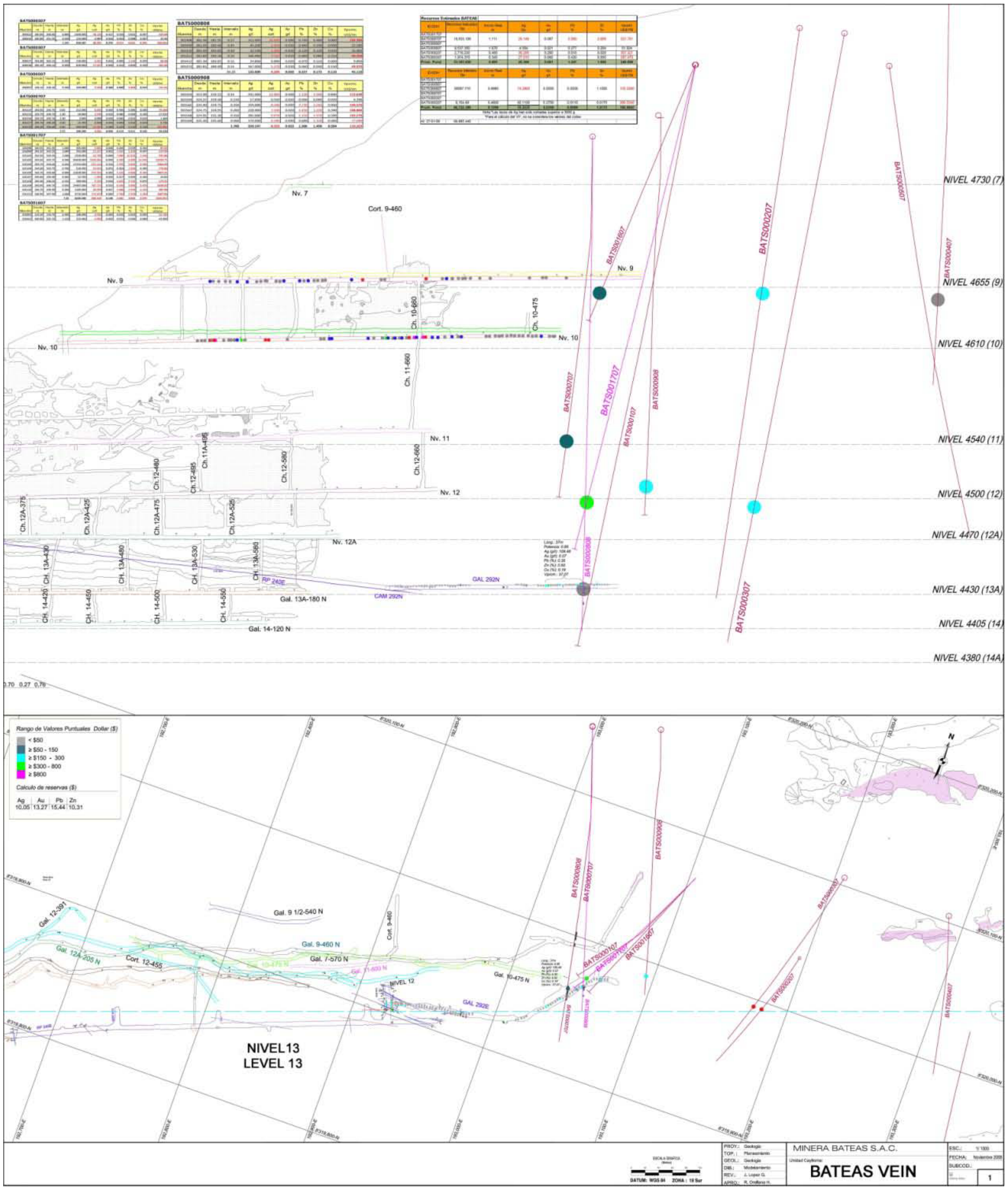

Figure 10-1
Longitudinal Section and Level Plan of Bateas Vein

The Santa Catalina vein was worked by MHC from level 2 (4,850 m.a.s.l.) down to level 4 (4,780 m.a.s.l.) and along strike for about 250 meters. FSM developed the vein from level 4 down to level 7, and then FSM decided to explore mineralized blocks left by MHC below level 7; two drill holes cut the vein on level 8 and level 9 (Figure 10-2). Drill results were positive and there followed a decision to develop mineralization in this vein to levels 8 and 9.

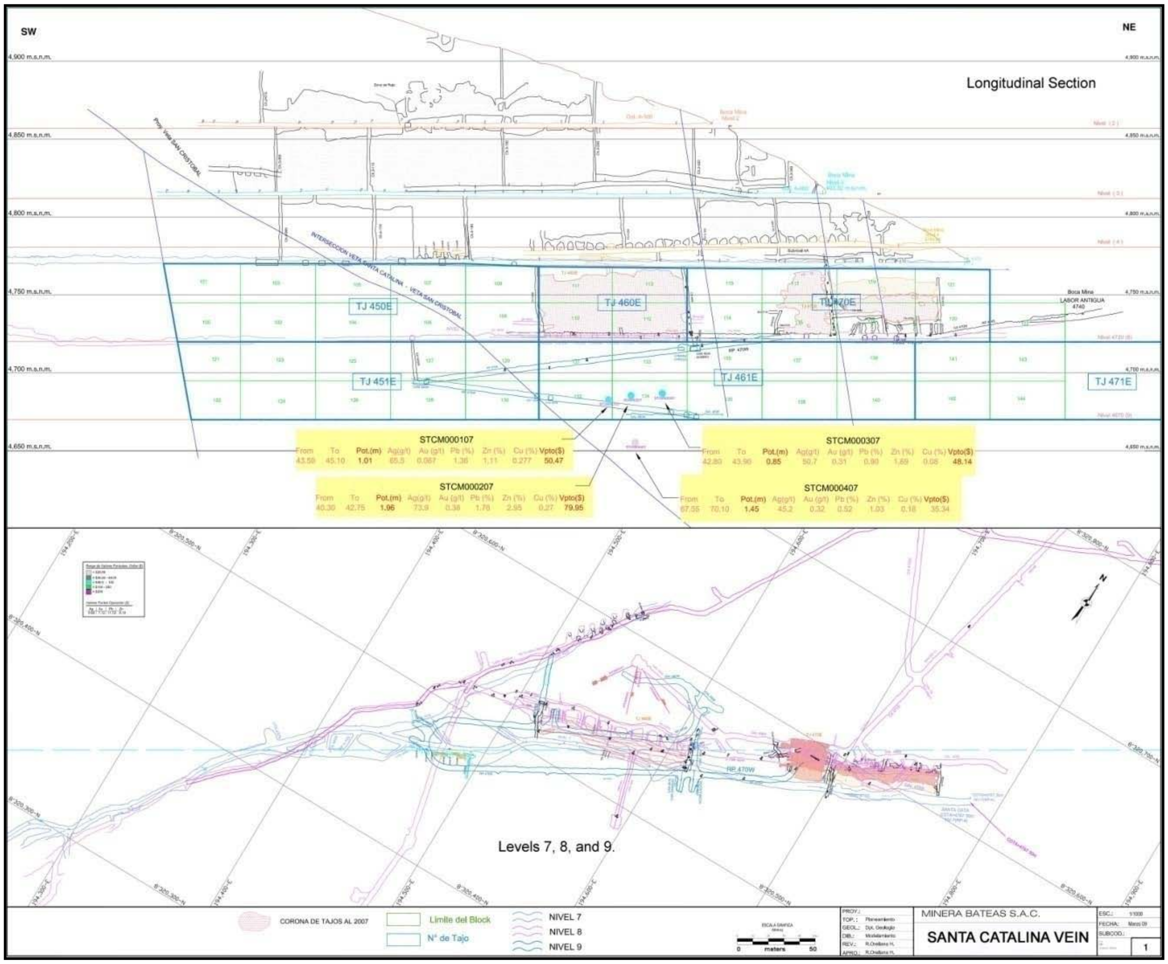

Figure 10-2
Longitudinal Section and Plan of Santa Catalina Vein

The Soledad vein also was developed and mined by MHC on three levels, from level 6 (4,875 m.a.s.l.) down to level 7 (4,750 m.a.s.l.) and for a horizontal distance of 200 meters. FSM recognized the surfaced out crop of the vein and obtained elevated silver values from surface samples. This led to the decision to drill from underground workings and test the vein from level 8 in the Santa Catalina workings. Four holes were drilled with a total of 828 meters and these not only cut the Soledad vein but also cut the Silvia vein (Figure 10-3). These results led to underground development of the Soledad and Silvia vein on level 8.

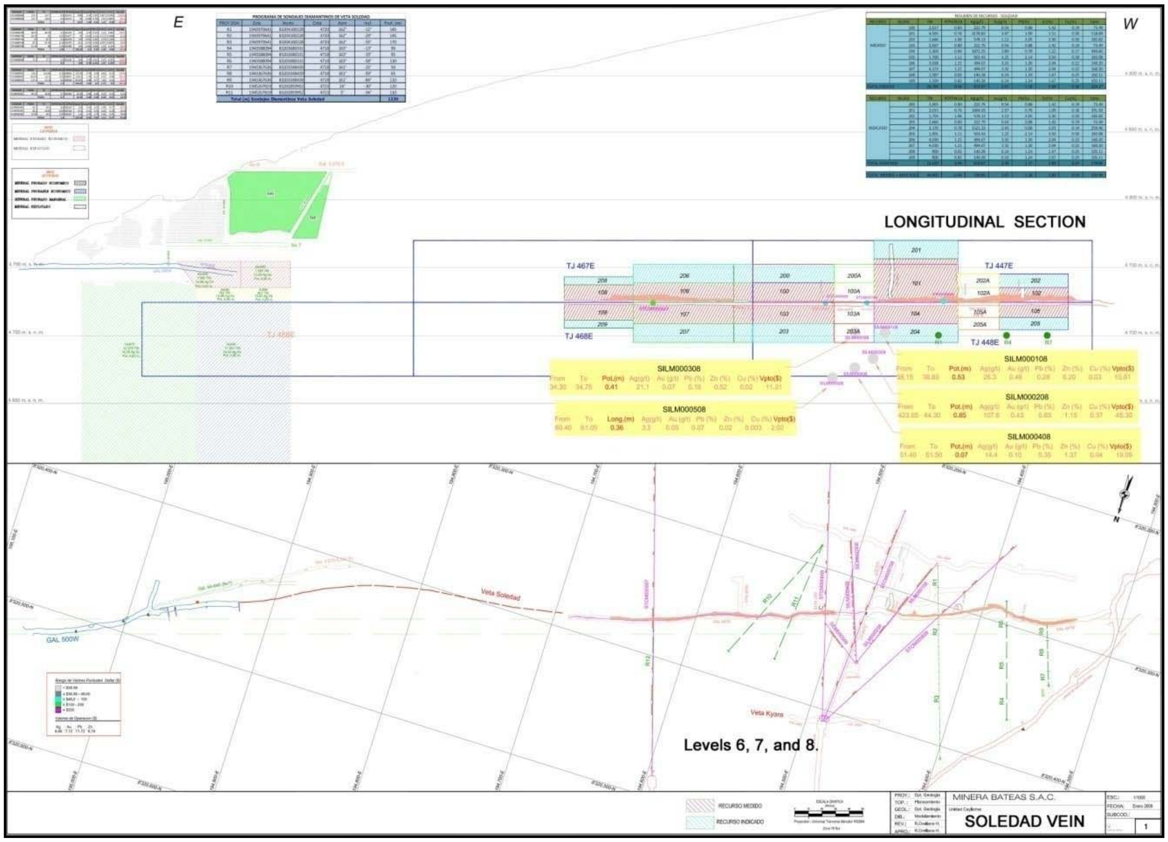

Figure 10-3
Longitudinal Section and Plan of Soledad Vein

10.2 Underground Development and Sampling

Two underground levels, with drift dimensions 2.4 meters by 2.7 meters have been developed along the strike of the Animas vein. Level 7 is located at an elevation of 4,755 m.a.s.l. and approximately one hundred meters below is Level 9 at an elevation of 4,645 m.a.s.l. (Figure 9-1).

Level 7 has been driven from the side of the mountain towards the NE along the strike of the vein for a total length of 900 meters. A total of twenty short cross cuts, eight meters in length on average, have been driven mostly perpendicular to the strike of the vein on both sides. Spacing between cross cuts ranges from 10 to 60 meters. The entire level has been mapped for structure, alteration and rock type. The level has been systematically sampled on the back through the entire strike length every two meters as described in this section of the report. Cross cuts were systematically channel sampled on the walls for their entire length.

Level 9 has been driven from the side of the mountain towards the NE along the strike of the vein for a total length of 1,800 meters. A total of 18 short cross cuts, eight meters in length on average, have been driven mostly perpendicular to the strike of the vein. Spacing between cross cuts ranges from 10 meters to 100 meters. The entire level has been mapped for structure, alteration and rock type. The level has been systematically sampled on the back through the entire strike length every two meters as described in this section of the report. Cross cuts were systematically channel sampled on the walls for their entire length.

One raise interconnects levels 9 and 7 all the way to surface. This raise was developed on the vein and was systematically mapped and sampled as well.

Development work on the Animas vein in 2007 consisted of 4,293 meters of workings on levels 7, 8, and 9, and 4,088 meters of exploration drilling. Development allowed for an annual production of 250,413 tonnes. Continued development on levels 7, 8, 9, and 10 in 2008 consisted of 6,172 meters of drifts and 4,284 meters of exploration drifts. Reserves on the Animas vein were increased to 3.6 million tonnes, annual production was increased to 331,379 tonnes, an increase of 32 percent over production in 2007.

Development work on the Santa Catalina vein in 2007 consisted of development and exploration drifts . Two splits or branches of the vein were recognized and both had high silver, lead and zinc values. Development in 2008 was a 150-meter cross cut across the Soledad and Silvia veins, followed by a drift of 300 meters along the Silvia vein and 500 meters along the Soledad vein. Development and sampling indicated 63,200 tonnes of economic grade mineralization on the Soledad vein and 35,880 tonnes on the Silvia vein.

The Bateas vein was worked on levels 7, 9, 10, 11 12, 13 and 14 by MHC. FSM continued exploration with diamond drilling 2007 and an access ramp 800 meters long was developed in 2008.

10.3 Exploration Potential

The mineral resources reported herein occur in eight different veins on the Caylloma property. CAM examined the longitudinal sections of these veins that show the locations of resource blocks, pierce-points for exploration drill holes, and underground workings (drifts, raises and old stopes.)

It is evident that there are many areas below the current workings along these veins that are unexplored and have the potential for the discovery of additional resources. In addition, some ore shoots in the developed veins are open at depth and some potential exists along strike. The specific areas of untested potential identified by FSM comprise parts of the Bateas, Soledad, Silvia and Santa Catalina veins.

Several undeveloped veins have been identified on surface or in underground workings where only low-grade mineralization has been encountered at a limited number of exposures. These veins remain essentially unexplored. Drilling on these veins has good potential for discovery of ore-grade shoots.

Given the large number of only partially explored veins on the property and the favorable land position, CAM believes that there is good potential for the eventual discovery of additional veins on the property and that there is a high probability that the present resource base at Caylloma can be significantly increased through additional exploration and development.

11.0 DRILLING

11.1 Drilling Database

Exploration holes drilled by FSM from 2005 through 2008 are summarized in Table 11-1. Selected drill intercepts of economic importance from the Animas vein are given in Table 11-2. The drilling was successful in locating mineralization of economic interest.

Drillholes are typically drilled on sections spaced 40 to 60 meters apart. Underground drilling was carried out using a hydraulic-electric drill rig.

Table 11-1
Exploration Drillholes, Caylloma District, 2005-2009

Vein	Year	Surface Drillholes		Underground Drill Holes	
		Number	meters	Number	meters
Animas Central and NE	2005	0	0	94	2,028.00
	2006	37	7,638.75	2	110.65
	2007	34	9,514.85	0	0
	2008	8	2,921.60	0	0
Silvia-Soledad	2007	0	0	7	967.75
	2008	0	0		
	2009	0	0	1	101.00
San Cristobal-Santa Catalina	2006	3	551.00	10	480.55
	2007	0	0	9	992.60
	2008	0	0	3	558.10
Bateas	2007	9	3,605.40	0	0
	2008	2	774.90	0	0
Nancy	2006	1	86.60	0	0
	2007	6	1,205.50	0	0
	2008	12	3,094.00	0	0
ALL VEINS	ALL YRS	112	29,392.60	126	5,238.65

Table 11-2
Principal Drill Intercepts with Economic Grade Mineralization, Animas Vein

Hole ID	From	To	Width	Easting	Northing	Elevation	Ag g/t	Au g/t	Pb %	Zn %	Cu %
ANIS002306	356.90	358.45	1.55	193784.28	8317287.47	4439.59	83	0.09	2.09	1.67	0.06
ANIS002406	316.75	320.00	3.25	193799.57	8317405.40	4542.90	20	0.21	0.91	1.26	0.08
ANIS002606	200.90	205.60	4.70	193770.43	8317528.78	4696.83	41	0.39	1.02	2.51	0.07
ANIS002706	278.30	280.95	2.65	193813.50	8317473.30	4586.25	25	0.28	0.36	1.64	0.05
ANIS002906	292.80	297.60	4.80	193952.79	8317525.62	4552.40	40	0.42	1.61	3.89	0.09
ANIS003006	204.65	215.50	10.85	193975.70	8317704.89	4709.40	46	0.18	1.57	2.02	0.04
ANIS003206	196.30	202.70	6.40	194197.85	8317859.22	4728.38	99	0.63	0.3	1.00	0.02
ANIS003306	289.00	297.50	8.50	194262.17	8317768.59	4593.18	39	0.24	1.23	3.25	0.10
ANIS003406	273.85	276.05	2.20	193555.67	8317193.65	4542.04	28	0.27	1.12	3.85	0.05
ANIS004006	290.45	295.75	5.30	194111.40	8317643.46	4578.29	49	0.29	1.46	3.33	0.09
ANIS005306	199.20	202.20	3.00	193878.11	8317629.13	4714.13	30	0.2	0.64	1.40	0.02
ANIS005606	251.90	253.65	1.75	193444.39	8317152.87	4532.37	72	0.35	1.45	3.14	0.05
ANIS007506	91.40	96.60	5.20	194270.32	8318024.45	4812.23	116	1.03	3.74	5.43	0.29
ANIS008306	133.75	137.85	4.10	194294.78	8317983.41	4757.98	37	0.28	2.45	2.63	0.09
ANIS008406	133.70	136.65	2.95	194242.16	8317944.97	4757.58	24	0.11	0.79	1.86	0.05
ANIS010107	263.50	278.10	14.6	193898.71	8317533.45	4588.01	93	0.16	3.34	8.08	0.09
ANIS010207	320.10	325.40	5.30	193922.27	8317499.04	4525.78	25	0.13	0.44	1.44	0.03
ANIS010307	286.30	297.90	11.6	193965.00	8317581.12	4575.42	37	0.15	0.82	2.77	0.08
ANIS010407	316.05	325.15	9.10	193999.08	8317544.84	4532.18	40	0.11	1.74	2.77	0.03
ANIS010507	316.65	323.80	7.15	194024.55	8317518.33	4510.31	36	0.11	1.85	3.56	0.06
ANIS010707	268.90	277.30	8.40	194070.75	8317632.04	4589.47	30	0.16	0.59	2.44	0.08
ANIS010807	316.00	319.50	3.50	194103.21	8317582.99	4523.48	47	0.32	1.67	5.28	0.06
ANIS010907	340.80	345.30	4.50	194126.68	8317548.50	4484.48	27	0.17	1.14	2.66	0.04
ANIS011007	360.80	363.60	2.80	194181.12	8317565.34	4476.05	53	0.06	0.95	1.46	0.07
ANIS011107	295.90	301.25	5.35	194164.42	8317652.11	4574.68	73	0.18	2.57	5.14	0.21
ANIS011207	346.60	355.30	8.70	194180.72	8317615.92	4514.71	31	0.19	1.62	3.93	0.06
ANIS011307	402.80	409.25	6.45	194241.61	8317611.07	4477.12	125	0.16	5.52	6.26	0.25
ANIS011407	351.00	369.00	4.90	194196.53	8317714.00	4562.38	88	0.13	4.82	3.80	0.04
ANIS011507	377.50	382.05	4.55	194242.79	8317653.07	4520.21	47	0.18	3.78	3.01	0.07
ANIS011708	331.10	333.70	2.60	194262.46	8317747.96	4585.31	20	0.27	0.53	2.34	0.08
ANIS011808	370.40	373.15	2.75	194288.10	8317702.46	4526.57	21	0.44	0.59	3.13	0.09
ANIS011907	284.85	286.50	1.65	193868.09	8317486.16	4570.84	54	0.39	0.44	2.25	0.06
ANIS012007	321.20	325.00	3.80	193912.88	8317458.48	4513.75	38	0.1	0.63	2.20	0.04
ANIS012107	347.80	351.40	3.60	193922.80	8317453.08	4484.89	6	0.09	0.14	1.62	0.01
ANIS012207	323.15	324.75	1.95	193860.82	8317424.07	4518.49	30	0.3	0.65	2.79	0.06
ANIS012507	357.05	360.05	3.00	193838.34	8317360.04	4479.01	14	0.15	0.27	1.63	0.03
ANIS012607	265.70	268.25	2.55	193743.71	8317412.95	4579.98	10	0.21	0.19	1.72	0.02
ANIS012808	344.20	347.55	3.35	193786.51	8317352.03	4489.74	18	0.17	0.64	1.34	0.02

11.2 Drilling Procedures

Drilling contractors employed were Boart Longyear S.A.C. and Geodrill S.A.C. Longyear used a FF70 drill mounted on skids; Geodrill used three different drills: a truck-mounted LY44 drill, and a truck-mounted multipurpose Universal Drill Rig (UDR) were used to drill from surface locations. HQ core, having a diameter of 6.35 centimeters was recovered from drillholes collared at the surface. A Geo-55 drill rig, mainly used to drill holes collared underground, provided core with a diameter of 4.76 centimeters. The first 100 to 200 meters was drilled with NQ; the rest of the hole was drilled at BQ.

Sites of drill holes were selected to intersect and sample mineralization in down-dip extensions of vein structures. Locations of collars were determined by measuring UTM coordinates from geologic maps and cross sections. Actual locations of holes were surveyed using GPS technology and equipment, and this was done before the hole was completed. Surveyed location data for each drill hole was transferred to drillhole data base.

Before the drilling of each hole was initiated, the drill site geologist measured the initial angle of inclination at the hole's collar. The site geologist also measured deviations from the initial angle of inclination at each 100-meter location down hole using a FLEXIT instrument.

Construction of drill platforms of 15 by 10 meters was done with a D7 cat. Care was taken to construct a platform that minimized possibility of slumping and other surface disturbance as required by environmental regulations.

Drill core was immediately placed in a covered waterproof core box; about 3.0 meters of core per box. Care was taken to verify that core boxes were correctly labeled. Measurements of core length were made and checked against records of drill penetration to determine core recoveries. The average recovery for 14,501 logging intervals from the Animas and other veins was 92.5 percent. Core boxes were handled and transported by trained personnel. Care was taken to ensure that core was not lost or misplaced during transport to the core logging facility.

Core was logged by the geologist and measurements were made for geotechnical purposes.

CAM has reviewed the "Manual of Procedures and Protocols for Geologic Exploration" prepared by FSM. This document clearly outlines all procedures and responsibilities of personnel concerned with exploration drilling. Procedures at the drilling site are clearly defined to ensure that essential parameters and data regarding the drillholes were carefully recorded. All environmental regulations are stated and responsibilities assigned.

Drill cores were secured in a temporary storage facility at the drill site and transported only during day light hours to the core shack by designated personnel. Measurements were made and checked against drill records to determine core recovery. Core was first examined for RQD and geotechnical information and procedures were clearly defined and outlined.

The core was then examined for geologic data. First a quick log was prepared to provide a brief description of mineralized zones encountered. Protocols for detailed geologic logs were consistent with industry standards; logging forms were similar to those used industry wide. Columns and spaces were proved to record essential features in graphic form as well as written descriptions. The core was photographed with a digital camera. Sampling of the core is described in the following section 12.0

12.0 SAMPLING METHOD AND APPROACH

CAM has reviewed the methods of sampling that were employed, observed the density and distribution of drill holes and underground sample locations and is of the opinion that the samples collected are adequate for estimate of a mineral resource.

12.1 Underground Samples

Underground sampling was done under supervision of the mine geology department using the channel sampling method, which is most appropriate for vein ore deposits. All exposures of the economic veins in galleries, drifts, shafts and raises were sampled. Samples were taken every two meters along the length of the vein. A channel of 0.02 meters depth and 0.2 to 0.3 meters wide and maximum length of 2 meters was cut across the width of the mineralized structure to obtain the desired weight of material.

The area to be samples was washed in order to have a clear view of the vein, its margins and possible variations within the vein. Exact location of each sample was marked using survey points located at corners of adjacent working. Sample location was marked with paint.

Each channel was perpendicular to the wall rock contact across the width of the vein. Care was taken to prevent contamination by loose wall rock fragments. The channel was between 20 and 30 centimeters wide and about two centimeters deep. Each sample was not more than two meters long. Sample size from each channel was determined by geologic factors such as nature of the vein, presence of horses, and/ or alteration.

Mineralized samples were collected using a bull point and double jack. Care is taken that amount of rock fragments and ore dust are uniform and representative along the sample channel. Several sample traverses through the vein are required to obtain desired sample size. Each sample was cut into a sampling crib and then deposited on the sample sheet.

The sample was crushed at the sample site on the sample sheet using a small double jack. Crushing was done to ensure the sample was homogeneous and particle size was no larger than two centimeters. A frame holds the sample sheet to ensure that sample particles do not leave the sample during crushing.

The crushed sample was mixed and split into four equal parts of about equal amounts. Two sections, located diagonally were accepted as the sample. If more than can be contained in the standard sample bag, the procedure was repeated as necessary until the exact amount to fill a bag was obtained. Each sample weighs 2.5 to 3 kilograms.

A label with appropriate information was placed into the bag and closed. Notes were taken and small diagram or map shows location of the sample in the mine. Information recorded includes a geologic description of the vein, any branches, lenses, inclusions, etc.

12.2 Drill Core Samples

The geologist, as part of the core logging procedures, has responsibility for determining and marking assay sample intervals that are selected to conform to uniform geologic or mineralogic features in the core. Sample intervals or lengths were no larger than one meter or less than 10 centimeters. Care was taken by the geologist to define the line of cutting so both halves of the core are essentially representative. Drill core was split by a diamond saw at the mine site.

Split core samples were placed in sturdy bag, label inserted and the bag was sealed with tape. Up to 10 samples were sealed in a plastic sack for transport to the assay lab and stored in a dry secure storage area. Samples were transported by truck to ALS Chemex's pick-up location in Arequipa and from there transported by ALS Chemex to their Lima facility.

12.3 Bulk Density (Specific Gravity) Measurement

Measurements of the bulk density of selected samples were undertaken at the ALS Chemex laboratory in Lima during 2008. This analysis was done on 54 samples, using ALS's OA–GRA09a procedures. The procedures and statistical treatment are described in a FSM report dated May 2009.

The method consists of weighing of the core or rough rock sample (up to 6 kilograms), coating the sample in paraffin wax, and then immersing it in with water. The displaced volume of water is collected and measured. The density gravity is then calculated as the dry sample weight divided by the volume of displaced water.

The measured samples were distributed as shown in Table 12-1.

Table12-1
Bulk Density Measurements

Vein	Level	No. Samples	avg., g/cc	Std. Dev.
Animas	7	12		
	8	7		
	9	24		
	All	43	3.15*	0.69
Animas NE	7	1	3.24	
San Cristobal	8	1		
	11	1		

Table12-1 Bulk Density Measurements				
Vein	Level	No. Samples	avg., g/cc	Std. Dev.
	All	2	2.78	
Santa Catalina	8	8	3.09	0.36
TOTAL		54		
*after deleting one outlier more than 3 standard deviations from the mean.				

The measured bulk densities represents a mix of lower-density quartz, carbonate, and silicate gangue minerals, wall-rock material (bulk densities generally 2.6 to 2.7) , open spaces, and higher-density sulfide minerals and manganese carbonates and silicates (densities 3.5 to 7.5)

Based on geological considerations, and on reconciliation of production with resource and reserve tonnages, these densities appear to be reasonable for use in resource estimation.

CAM is of the opinion that the density measurements could be improved, at minimal cost, by oven-drying of samples prior to weighing and by increasing the size of the database.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

13.1 Sample Preparation

The following procedures were utilized to prepare ore samples for analysis.

Channel samples from underground workings are prepared and analyzed at the Bateas assay lab that is located on the Caylloma mine property. Samples weighing 4 to 5 kilograms are sent to the mine laboratory in numbered bags. Each sample is dried in a 150°C oven, and then cooled. The entire sample is crushed to 88-percent minus ½-inch size. All crushed sample is passed through a roll crusher to produce a 50-percent minus 10-mesh size sample. The crushed sample is then passed through a Jones splitter to produce a 250-gram sub-sample that is pulverized to 92-percent minus 200-mesh size, and placed in a numbered envelope.

Silver, lead, zinc and copper are assayed by atomic adsorption methods while gold is assayed by fire assay with an atomic adsorption finish. Each month, every 40th sample pulp is submitted to ALS Chemex in Lima for check assays. Additionally, every 40th coarse reject sample is submitted to ALS Chemex to verify the adequacy of sample preparation procedures.

Drill core samples are assayed for silver and base metals by atomic adsorption methods using an aqua regia digestion; plus standard 35 element ICP analyses for other elements. Gold is assayed at ALS Chemex by fire-assay techniques, using a one-assay-ton pulp sample. Coarse rejects and sample pulps are returned and stored at Caylloma.

CAM has reviewed laboratory flowsheets and procedures employed by the Bateas (FSM) laboratory and deems that procedures employed to process the Caylloma assay samples are standard and acceptable. These procedures provide assay data that can confidently be used for resource estimate calculations.

No aspect of the sample preparation at ALS Chemex was conducted by an employee, officer, director or associate of FSM.

13.2 Quality Assurance/Quality Control

In 2007, Bateas implemented a program of QA QC with approximately 32,000 assays from the active mining area (channel samples 19,748 assays, stockpile assays (7286 assays), core assays (3086 assays), and exploration samples (1687 assays). The partial totals are mine: 27,000 assays; total exploration 4,773 assays. The samples were prepared at Bateas and analyzed in the Las Bateas laboratory and the ALS Chemex laboratory in Lima.

Quality control samples consist of blanks, field duplicates, preparation duplicates, and standards. Quality control is satisfactory for Ag-Pb-Zn for blanks and duplicates and very good for standards for Ag – Au – Pb – Zn – Cu.

13.2.1 Blanks

Blanks were acquired from a local aggregate supplier in Peru, and have a silver content of less than 0.35 grams; less than 0.003 percent Pb; and less than 0.003 percent Zn. In calculating averages, samples returning "below detection" were assigned a value equal to one-half the analytical detection limit. Results of 879 assays at the Bateas laboratory and 214 assays at the ALS Chemex laboratory gave the following combined results:

1. ***Ag.*** The results for the blank samples for the channels and stockpiles gave an average value of less than 0.2215 parts per million (ppm), with a minimum value of less than 1 ppm and a maximum value of 2 ppm. The company regards any value less than 1.985 ppm as acceptable.

   For the 214 analysis done at the ALS Chemex laboratory the minimum was less than 0.2 ppm, the maximum was 4.3 ppm and the mean was 0.0287 ppm. Two assays were observed to exceed the critical limit of 1.985 ppm, as shown on Figure 13-1.

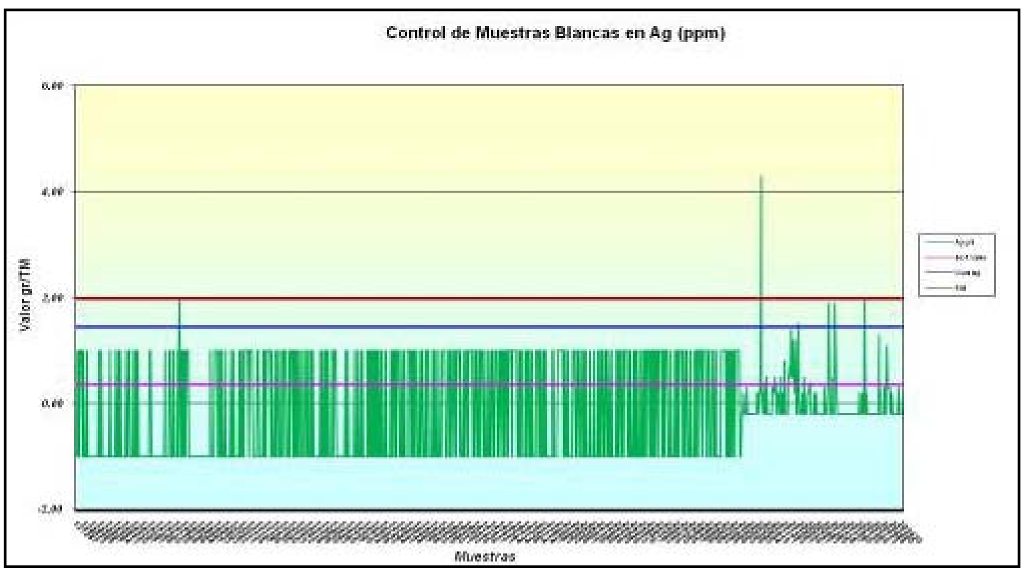

Figure 13-1
ALS Chemex Assay Results for Silver on Blanks Samples

2. ***Pb.*** The results of 879 assays of the blanks from the channels and stockpiles for lead at the Bateas laboratory gave a minimum value of less than 20 ppm, a maximum value of 150 ppm, and average value 29 ppm. The rejection limit for blanks is anything above 180 ppm.

   For the 214 assays done at the ALS Chemex laboratory the minimum was less than 2 ppm, the maximum was 319 ppm, and the mean was 9 ppm. One value was over the rejection limit, as shown on Figure 13-2.

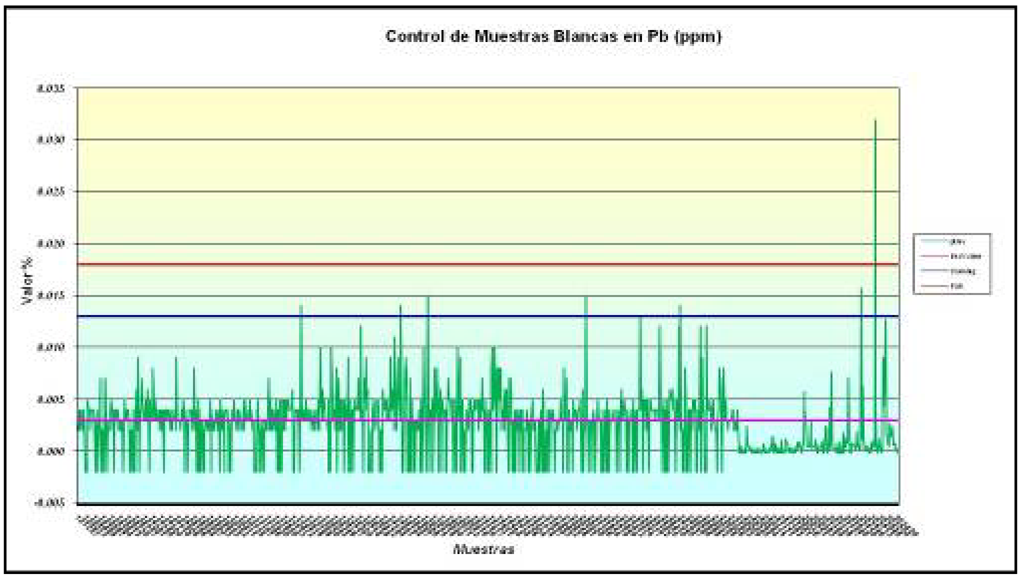

Figure 13-2
ALS Chemex Assay Results for Lead on Blanks Samples

3. ***Zn.*** For the Bateas laboratory zinc analysis of 879 blanks gave a minimum of less than 3 ppm, a maximum of 146 ppm, and the mean of 26 ppm. The rejection limit was 270 ppm and no values exceeded this.

   For the 214 assays done at the ALS Chemex laboratory the minimum value is less than 2 ppm, the maximum value was 448 ppm, and the mean was 18 ppm. Two values exceeded the rejection limit.

4. ***Conclusion:*** Bateas concludes that for the case of blanks QA QC is within permissible limits and CAM concurs with this.

13.2.2 Duplicates

Duplicates may be either from pulps, rejects or field samples. In 2008, 326 duplicates were analyzed at the Bateas laboratory and 38 duplicates were analyzed at ALS Chemex. There is a high degree of correlation between duplicates as discussed below.

1. ***Ag.*** A comparison of duplicates (re-assaying the same sample) gives a measure of the precision of an analysis. Bateas indicates that duplicates should agree with each other by less than 10 or 15 percent. In the case of silver, 57 percent of the assays duplicate within plus or minus 15 percent of the original value. Because of the greater uncertainty associated with low values CAM agrees with this criteria, but believes that it needs to be expanded to be plus or minus 10 to plus or minus 15 percent and plus or minus 2 ppm to plus or minus 5 ppm to allow for the high percentage variability at low assay values. Results are shown in Figure 13-3. The correlation coefficient is 0.886 (note that the limits of the correlation coefficient are between minus 1 and 1). This analysis is based on 326 channel assays at Bateas and 30 assays at ALS Chemex.

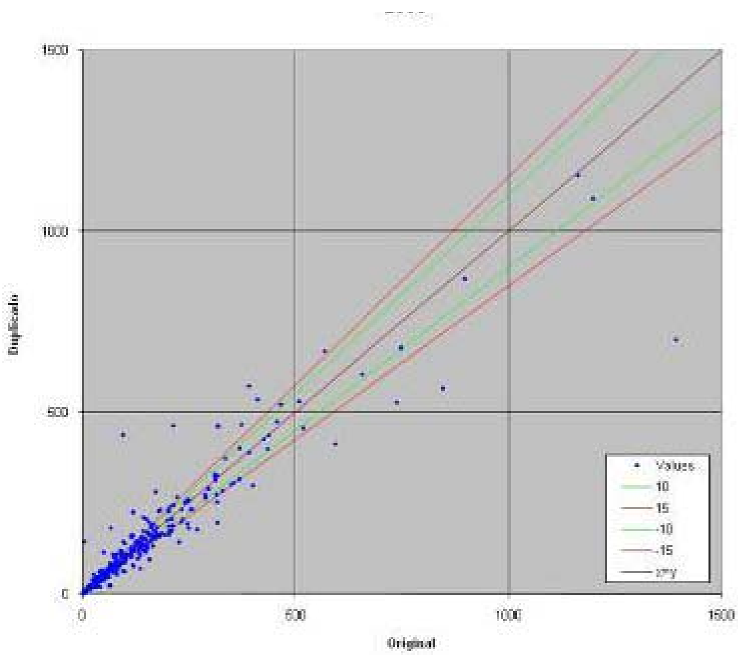

Figure 13-3
Duplicate Analyses for Silver at Bateas and ALS Chemex Laboratories

2. ***Pb.*** The comparison of 326 duplicates at Bateas and 30 at ALS Chemex gives 52 percent within plus or minus 15 percent at a correlation coefficient of 0.917, as shown in Figure 13-4.

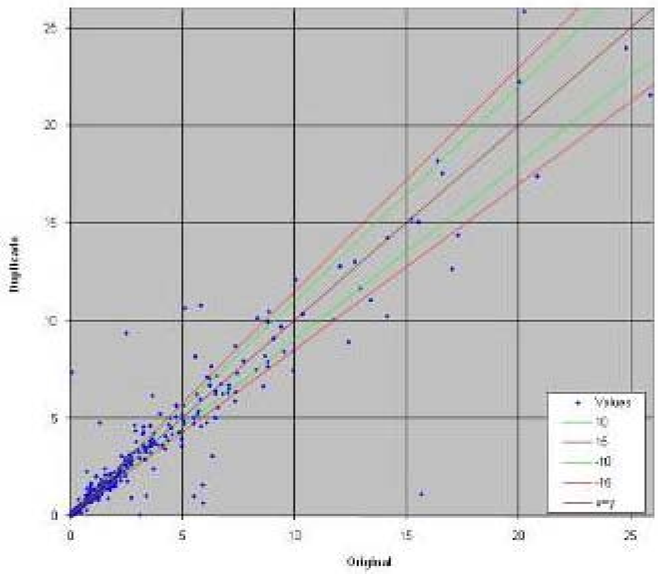

Figure 13-4
Duplicate Analyses for Lead at Bateas and ALS Chemex Laboratories

3. ***Zn.*** For the 326 Bateas duplicates and 30 ALS duplicates 58 percent of the values are within plus or minus 15 percent and the correlation coefficient is 0.938, as shown in Figure 13-5.

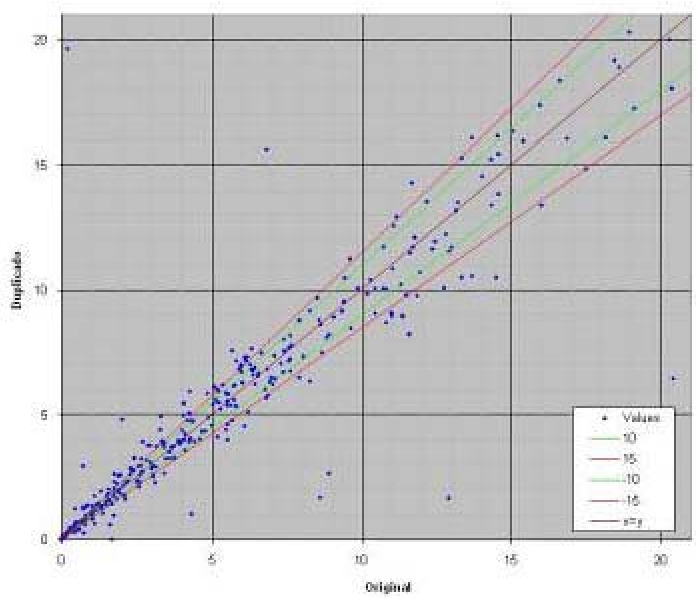

Figure 13-5
Duplicate Analyses for Zinc at Bateas and ALS Chemex Laboratories

4. ***Conclusion:*** Bateas concludes that the duplicate assays are within permissible limits, and CAM concurs. In the future CAM recommends that the standard for acceptability of duplicate assays be expanded to include both a percentage amount and additive amount. CAM suggests that Bateas discuss the limiting amounts to be applied with ALS Chemex.

13.2.3 Standards

The Bateas QA/QC program includes external standards for Ag, Au, Pb, Zn and Cu that cover a range of values and ratios for the various metals of interest.

In 2008, 1095 standards (739 from channels, 102 from stockpiles, 166 from cores and 88 from exploration) were processed; 253 of these were analyzed by ALS Chemex and 842 were analyzed by the Bateas laboratory.

The usual criteria for reviewing the results of standards are:

1. Permissible difference (*Pass*) = <accepted value (VE) ± 2*standard deviations (SD).
2. Cautionary difference (*Warning*) > accepted value (VE)± 2*standard deviations <=(SD) accepted value (VE) ± 3*standard deviations
3. Rejection difference (*Fail*) >(SD) accepted value (VE) ± 3*standard deviations

These criteria are based on the usual statistical standards that anything within two standard deviations of the mean is acceptable, anything between two and three standard deviations of the mean should be checked, and anything beyond three standard deviations from the mean are unacceptable.

Table 13-1 gives the distribution of standard reference material assays by laboratory.

Table 13-1
Summary of Assaying of Laboratory Standards

Standard	ALS Chemex	Bateas	Total
CDN-FCM-2	29	47	76
CDN-HC-2	9	130	139
CDN-HLHC	0	10	10
CDN-HLHZ	33	65	98
CDN-HLLC	28	88	116
CDN-HZ-2	28	219	247
CDN-HZ-3	17	74	91
CDN-SE-1	42	78	120

Table 13-1 Summary of Assaying of Laboratory Standards			
Standard	ALS Chemex	Bateas	Total
CDN-SE-2	67	131	198
Total	253	842	1095

Bateas selected three standards for a more detailed presentation. These were: CDN-FCM-2; CDN-HLHZ and CDN-SE-1. Basic statistics on the 3standards are given below in Table 13-2.

Table 13-2 Results of Assaying of Standards at Bateas Laboratory										
Standard	**Ag**	**Au**	**Pb**	**Zn**	**Cu**	**Standard Deviation**				
	g/t	**g/t**	**%**	**%**	**%**	**Ag**	**Au**	**Pb**	**Zn**	**Cu**
CDN-FCM-2	73.9	1.37	0.479	1.739	0.756	3.56	0.06	0.019	0.052	0.023
CDN-HLHZ	101.2	1.31	0.815	7.66	0.76	5.4	0.08	0.03	0.18	0.015
CDN-SE-1	712	0.48	1.92	2.65	0/097	28.5	0.017	0.045	0.1	0.0025

The graphical results for all three standards presented by Bateas were similar, so CAM selected one (CDM-FCM-2) to present the results, as shown in Figures 13-3, 13-4, and 13-5.

1. Ag standards (Standard CDN–FCM–2)

   0f a total of 76 assays, the 47 analyzed at Bateas were between VE ± 2*SD. Of the 29 analyzed at ALS Chemex, most were between VE+3*SD and VE–2*SD (past cautionary), but nine were greater than VE+3*SD (fail), as shown in Figure 13-6.

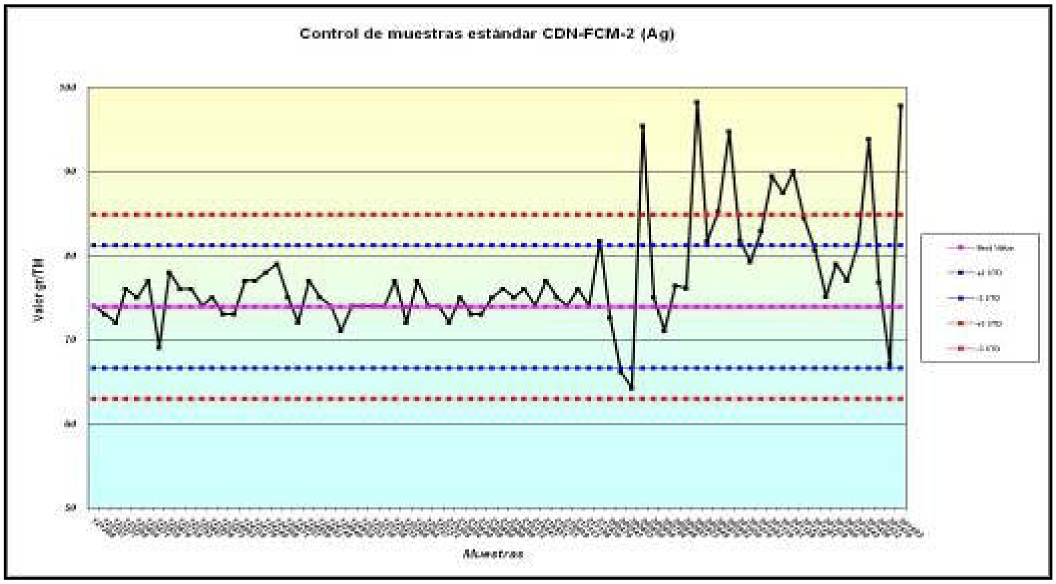

Figure 13-6
Bateas Results for Silver on Standard CDN-FCM-2 over Time

2. Pb standards (Standard CDN–FCM–2)

Of the 76 assays the 47 assayed at the Bateas laboratory were all were within VE ± 2*SD. Of the 29 analyzed at ALS Chemex most were between VE+3*SD and VE-3*SD (past cautionary), but one was greater than VE+3*SD (fail), as shown on Table 13-7.

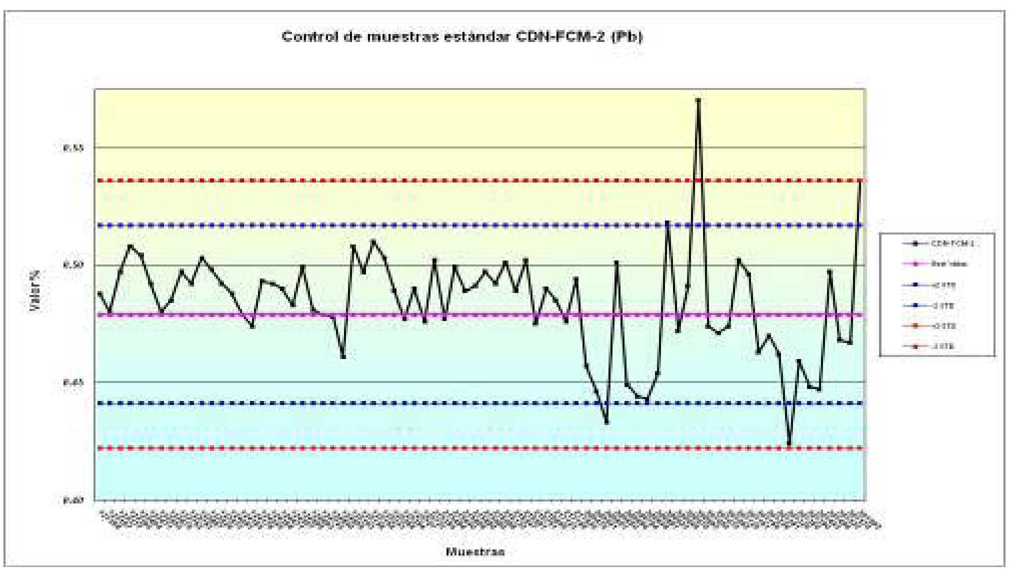

Figure 13-7
Bateas Results for Lead on Standard CDN-FCM-2 over Time

3. Zn standards (Standard CDN–FCM–2)

Of the 76 assays the 47 assayed at the Bateas laboratory were all were within VE ± 2*SD. Of the 29 analyzed at ALS Chemex most were between VE and VE-3*SD, but 2 were less than VE-3*SD, as shown on Table 13-8.

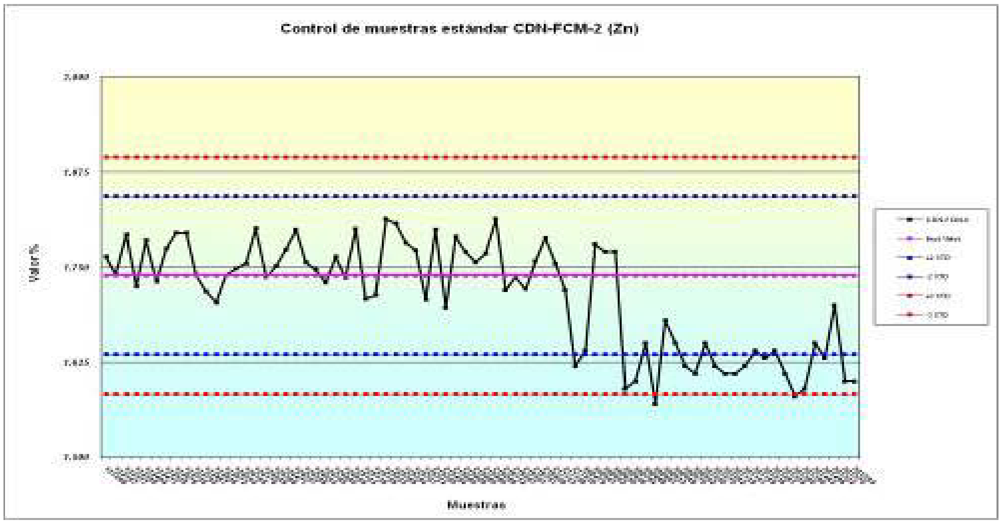

Figure 13-8
Bateas Results for Zinc on Standard CDN-FCM-2 over Time

4. ***Conclusions:*** Bateas concluded that the results of QA/QC on standards was within permissible limits and CAM concurs with this conclusion. CAM also concludes that the analyses of standards at the Bateas laboratory are better than at ALS Chemex. CAM speculates that this may in part be due to the fact that during the site visit to ALS Chemex it was observed that aliquots for assay were scooped directly out of the pulp packet rather than by dumping the entire packet on the blending cloth and rerolling it prior to removing the aliquot for assay. On the basis of blanks and standards CAM complements the Bateas laboratory for having a better aliquot selection and/or assaying procedures than an internationally recognized analytical laboratory.

14.0 DATA VERIFICATION

14.1 Database Validation by CAM

The databases for the polymetallic veins at Caylloma were provided to CAM as a series of Microsoft Access MDBs. There are a total of seven poly metallic veins in this resource estimate. The databases for Animas Central, Animas NE7, and Animas NE8 are combined in the model for each of these vein segments, and are also split between the Fortuna and Minera Arcata (MHC) drilling. Similarly, the databases for Soledad and Sylvia are combined. CAM believes it is acceptable to have the same databases for multiple models but suggests that identical databases be named to reflect the constituent areas.

The MDB files contain the drillhole database with separate tables for exploration drillholes (dh) and underground channel samples (ms). Statistics on the amount of sampling for the five distinct databases for the polymetallic veins are given in Tables 14-1 to 14-5, all based on the assay databases provided. MHC indicates data generated by Minera Arcata (Minera Hochschild Compañía).

In Tables 14-1 through 14-7, a length of zero for downhole surveys indicates only a collar shot was available for the drillhole or channel.

Table 14-1
Fortuna Drilling on Animas Central, Animas NE7, Animas NE8 Veins

Item	Number	Length (m)
Holes	175	22213.8
Holes with non-collar downhole surveys	26	9422.5
Non-collar survey records	119	9419.3
Downhole surveys up	63	0.0
Downhole surveys down	231	9419.3
Assay intervals (m)	4503	3451.1
Intervals actually assayed (m)	4439	3412.7

Table 14-2
MHC Drilling on Animas Central, Animas NE7, Animas NE8 Veins

Item	Number	Length (m)
Holes	40	7606.0
Holes with non-collar downhole surveys	0	0.0
Non-collar survey records	0	0.0
Downhole surveys up	9	0.0
Downhole surveys down	31	0.0

Table 14-2 MHC Drilling on Animas Central, Animas NE7, Animas NE8 Veins		
Item	Number	Length (m)
Assay intervals (m)	1043	515.3
Intervals actually assayed (m)	1009	500.1

Table 14-3
Fortuna Drilling on Bateas Vein

Item	Number	Length (m)
Holes	11	4380.3
Holes with non-collar downhole surveys	11	4380.3
Non-collar survey records	49	4318.4
Downhole surveys up	0	0.0
Downhole surveys down	60	4318.4
Assay intervals (Ag)	194	127.0
Intervals actually assayed (Ag)	194	127.0

Table 14-4
Drilling on Santa Catalina Vein

Item	Number	Length (m)
Holes	11	1673.8
Holes with non-collar downhole surveys	0	0.0
Non-collar survey records	0	0.0
Downhole surveys up	3	0.0
Downhole surveys down	8	0.0
Assay intervals (Ag)	321	229.0
Intervals actually assayed (Ag)	321	229.0

Table 14-5
Fortuna Drilling on Silvia and Soledad Veins

Item	Number	Length (m)
Holes	19	2742.5
Holes with non-collar downhole surveys	0	0.0
Non-collar survey records	0	0.0
Downhole surveys up	6	**0.0**
Downhole surveys down	13	0.0
Assay intervals (Ag)	758	531.6
Intervals actually assayed (Ag)	754	528.4

Statistics on the four distinct channel databases are given in Tables 14-6 to 14-9. The Bateas database did not contain any separate channel-sample data.

Table 14-6
Fortuna Channels in Animas Central, Animas NE7, Animas NE8 Veins

Item	Number	Length (m)
Holes (channels)	12287	28690.2
Holes with non-collar downhole surveys	0	0.0
Non-collar survey records	0	0.0
Downhole surveys up	18	0.0
Downhole surveys down	12269	0.0
Assay intervals (Ag)	27384	28690.2
Intervals actually assayed (Ag)	27339	28652.3

Table 14-7
MHC Channels in Animas Central, Animas NE7, Animas NE8 Veins

Item	Number	Length (m)
Holes (channels)	1378	3021.7
Holes with non-collar downhole surveys	0	0.0
Non-collar survey records	0	0.0
Downhole surveys up	1087	0.0
Downhole surveys down	291	0.0
Assay intervals (Ag)	4865	3021.7
Intervals actually assayed (Ag)	4865	3021.7

Table 14-8
Channels in Santa Catalina Vein

Item	Number	Length (m)
Holes (channels)	1640	3433.2
Holes with non-collar downhole surveys	0	0.0
Non-collar survey records	0	0.0
Downhole surveys up	1638	0.0
Downhole surveys down	2	0.0
Assay intervals (Ag)	3634	3433.2
Intervals actually assayed (Ag)	3629	3431.0

Table 14-9
Channels in Silvia and Soledad Veins

Item	Number	Length (m)
Holes (channels)	240	392.1

Table 14-9 Channels in Silvia and Soledad Veins		
Item	**Number**	**Length (m)**
Holes with non-collar downhole surveys	0	0.0
Non-collar survey records	0	0.0
Downhole surveys up	226	0.0
Downhole surveys down	14	0.0
Assay intervals (Ag)	549	392.1
Intervals actually assayed (Ag)	549	392.1

CAM also noted that there were some inconsistencies in naming tables and fields in the database (e.g. MHC.MHC for Minera Arcata channels, all others are XXX.ms; case inconsistency to To TO; and the mixing of Spanish and English terminology). While none of these items are serious, CAM believes it is best practice to have everything as consistent as possible and suggests that Fortuna adopt consistent standards for all further databases.

CAM uses automated data-processing procedures as much as possible in constructing and auditing geologic databases, in order to assure consistency and minimize errors and costs. These procedures depend heavily on consistent alphanumeric attribute codes, and consistent and non-duplicated field labels and drillhole IDs. While many of the issues flagged by these automated procedures are obvious to a human, CAM requires a clean and consistent database before proceeding with geological modeling. Common inconsistencies include:

- Misspellings.
- Confusion of 0 (zero) and O or o.
- Inconsistent use of upper and lower case.
- Inconsistent usage or space _ and -.
- Trailing, leading or internal blanks. (CAM routinely changes all blanks to _ to positively identify this problem)
- Inconsistent use of leading zeros in hole IDs.
- Inconsistent analytical units (e.g. PPM, PPB, opt %)
- Inconsistent coordinate systems and units (e.g. NAD27 and state plane and mine grid: ft and m

For manually generated databases, CAM generally regards an error rate of less than one in 500 good, an error rate of less than one in 100 acceptable and an error rate greater than two in 100 as unacceptable. The acceptability or unacceptability of the database also depends heavily on the impact of the errors. Hence the values for acceptability or unacceptability may easily change by an order of magnitude depending on the nature of the errors. For example a dropped decimal point in a value of 37 for an actual value is 0.37 is much more serious than the entry of a 0.36 for a 0.37. For computer-generated databases any errors may be indicative of problems in data processing procedures and these require resolution of the source of the problem.

The CAM check procedure generates a number of false positives (possible issue which are actually correct). In general if the number of items flagged is less than 2% of the total records, the database is acceptable.

CAM also reviews the procedures used to prepare the database and is particularly critical of the common practice of cutting and pasting to obtain the database.

Different companies and even geologists within the same company have different methods for drilling, sampling, sample prep and analysis and record-keeping. In some cases it may be necessary to de-weight the results of certain drilling campaigns or types of drilling.

Over the years CAM personnel have developed a procedure for mathematical and statistically validating exploration databases. This check procedure includes:

- Check for duplicate collars.
- Check for twin holes.
- Check of surface collared holes against surface topography
- Check for statistically anomalous downhole surveys.
- Check for overlapping assays
- Check for 0 (zero) length assays
- Review of assay statistics by grade class.
- Review of assay statistics by length class.
- Checks for holes bottomed in ore
- Check for assay values successively the same.
- Check for assay spikes.
- Check for downhole contamination by decay analysis.
- Check of total grade thickness and by mineral zone

In evaluating an existing database CAM uses values flagged by these automated procedures as a starting point for database review and has found that if the error rates in the statistically anomalous values is acceptable then the entire database is generally acceptable.

Some anomalies were noted, and were forwarded to Caylloma, but the number and type of anomalies were within industry norms for databases of this size, and even if the anomalies turn out to be errors, they would have no effect on the overall resource estimate.

On the basis of these statistical checks, and the checks of data entry discussed previously, CAM believes that the exploration database has been prepared according to industry norms and is suitable for the development of geological and grade models.

With the exception of the Arcata (Hochschild) channel database, the anomaly rate indicated by the standard CAM check procedures was lower than usual indicating that Caylloma has been very diligent in data base preparation. All anomalies noted were forwarded to FSM for investigation. In the case of the Hochschild channel database for Animas Central, there were a number of mismatches between IDs for assays and collars. While CAM recommends that these issues be reviewed and resolved CAM is not greatly concerned because of:

- good reconciliation on the Animas Central vein, and
- the fact that most of the channels are in the vicinity of now mined-out areas and do not greatly affect the resource estimate.

On the basis of this review, CAM believes that the databases for the polymetallic veins have been assembled according to accepted engineering practice and are suitable for use in ongoing mine planning for the life of the operation.

15.0 ADJACENT PROPERTIES

No information on properties not controlled by FSM was utilized in preparing this report. All samples from which mineral resources and reserves were prepared were from the subject property, and all resources and reserves are located within the Caylloma property.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The mill at Caylloma has been in continuous production since September 2006. Mineral processing is discussed in Section 19 of this report.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

The resource estimation methodology was provided to CAM by the Caylloma staff in Spanish and has been translated to English by CAM. The original Spanish document provided considerable theoretical background detail on the methodology of resource estimation. This detail has been omitted from this report.

17.1 Models Provided to CAM

The polymetallic vein models were provided to CAM as DataMine binary files and as Microsoft Access MDB files. The MDB files were converted to ASCII for further analysis. As with the assay databases there were some inconsistencies in the naming of files and variables. Basic geometric parameters for the models provided to CAM are given in Table 17-1.

Table 17-1
Geometric Parameters of Polymetallic Vein Models

Vein	Model Origin			Block Size			Number Of Blocks			Model Rotation	
	East	North	Elevation	DX	DY	DZ	NX	NY	NZ	Angle 1	Angle 2
AS*	194376	8318186	4797	5	5	2.5	295	114	45	143	49
ASNE7*	194663	8318243	4806	5	5	5	70	106	14	162	44
ASNE8	194932	8318623	4779	5	5	5	55	50	14	122	52
BA	193096	8320019	4553	1.5	2.5	1.5	141	65	45	160	83
STC	194782	8320682	4608	1.25	1.25	4.18	76	39	8	157	-62
SIL	194568	8320272	4657	0.62	0.62	2.5	95	51	17	175	-75
SOL	194672	8320377	4647	0.62	0.62	1.99	156	58	19	163	-78

* includes oxide material as well as sulfides

The block size as given in the table above is the maximum block size; there is sub-blocking as necessary to more precisely reflect the actual vein geometry.

CAM constructed cumulative frequency plots of all five metals for each model. Typical plots are shown below in Figure 17-1:

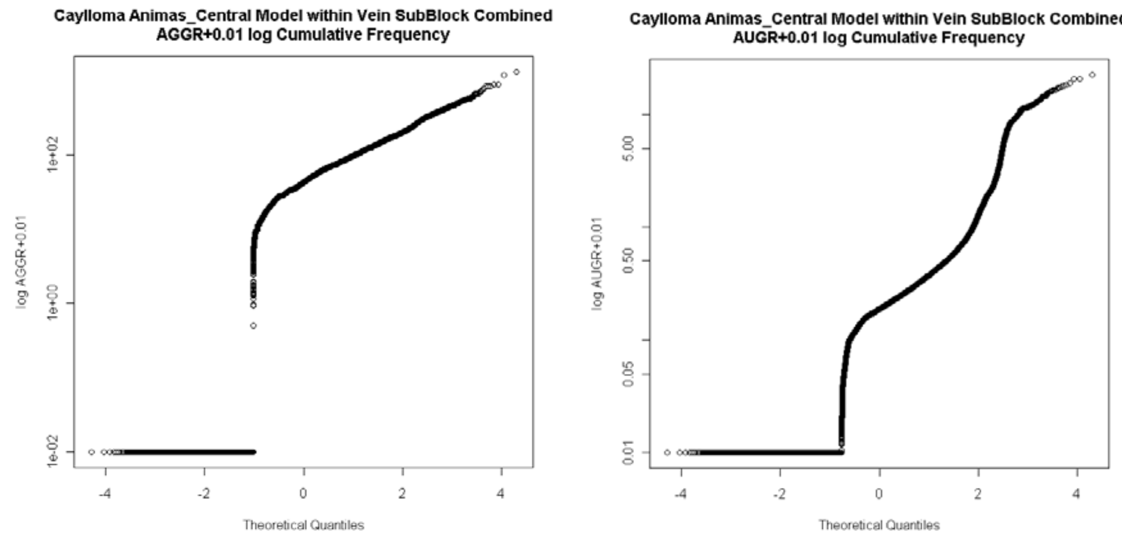

Figure 17-1
Typical Cumulative-Frequency Plots for Silver and Gold

The first plot shows a low-grade tail corresponding to low-grade or on estimated blocks and a log normal distribution for the remainder of the blocks. Other plots show a mixture of two or more log normal distributions as illustrated in the right-hand [portion of Figure 17-1.

The high-grade tail as noted in the second plot above is quite common in these types of deposits and in many cases corresponds to high-grade ore shoots. However, there are occasional cases where isolated groups of high-grade result in this tail. For this reason, CAM recommends review of all of the high-grade tails for the models and has provided Fortuna cumulative frequency plots of all veins/metals with the high-grade tail.

In one case there were physically impossible zinc values (over 100 percent Zn) for 12 blocks. While these 12 blocks do not affect the overall resource estimate CAM recommends that they be corrected.

17.2 Resource Estimation

17.2.1 Procedures

The resource estimate for Caylloma is done in several steps with verification and any necessary revision after each step.

Geostatistical methods are used for the resource calculation and the resource is calculated by both kriging and inverse distance. This section discusses the calculation of the resource for the Animas Central vein but the same procedure is used for the other polymetallic veins of Animas NE7, Animas NE8, Bateas, Santa Catalina, Silvia and Soledad.

The first step is verification of the data, as discussed in Section 14. Specifics for the Animas database provided by FSM are as follow: there are a total of 27,384 assays in the interior of the mine, when the MHC assays are added there are 32,249. Many of the channels contain multiple assays, and the total number of channels is 13,665. In the database there were three assays without gold values and 2 high silver assays which were reviewed.

The second step in construction of the resource model is construction of a wireframe showing the area of potential economic interest within the vein. The construction of the wireframe first requires that intervals above cutoff in the chain be defined. This was done using the following metal prices calculated by CAM as the average of three-year past prices and two years of futures prices, as of 31 October 2008. Results were as follow:

Ag .... 11.88 US$/oz
Au .... 723.31 US$/oz
Pb ....0.82 US$/lb
Zn ....1.04 US$/lb

For the actual resource and reserve calculations, the 60-month average past and forward metals prices as of 31 December 2008 were used.

These market prices are then adjusted for operating costs and metallurgical recoveries. After these adjustments and conversion to grams and percent, the value used were zinc US$10.90 per percent, lead US$11.51 per percent, silver US$0.27 per gram, and gold US$10.79 per gram. These values are summed to provide the total economic value of the interval, referred to as the “point value”, which is essentially an NSR (Net Smelter Return) value.

In three dimensions the channel samples and drill holes are series of straight-line segments, referred to as strings. Strings above the economic cutoff are color-coded and interpreted first on the primary levels (six, seven, eight, nine and 10 for Animas Central), and then resolved in three dimensions to form a 3-D solid representing the economic portion of the vein. This solid, referred to as a wireframe, consists of a series of connected triangles sharing sides.

The wireframe is verified by reviewing it in plan, section, and three dimensions. Construction of the wireframe is done under the supervision of the superintendent of geology at the mine.

The next step is creation of the block model covering the area of the wireframe. Although the wireframe gives a 3-D geometry of the vein, it is necessary to estimate the grade at points within the wireframe for mine planning and resource calculation. This is almost always done by creating a group of small rectangular blocks which completely fill the wireframe. Because of the complexity of vein geometry it is necessary to split the small rectangular blocks into even smaller blocks (sub-blocking).

Resource modeling is done in DataMine, which allows variable block size within a primary block and the models are rotated to match the strike and average inclination of the veins.

17.2.2 Resource Estimation for Animas Central, Animas NE7, and Animas NE8

Mineral resources for these veins were calculated using geostatistical methods; ordinary kriging in the sectors with channel data, and inverse distance squared outside of the sectors with channels.

Compositing

Compositing of the assays in the Animas area yielded 13,665 composites, of which fewer than one percent (122 data points) have lengths (*pot*) greater than 6.4 meters. The mean composite length is 2.192 meters, as illustrated in Figure 17-2. This figure shows very few very high values and can be approximated by a normal distribution. A cumulative frequency plot of the same data is shown in Figure 17-3.

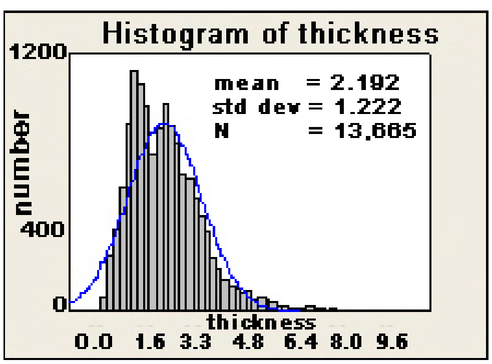

Figure 17-2
Histogram of Thickness

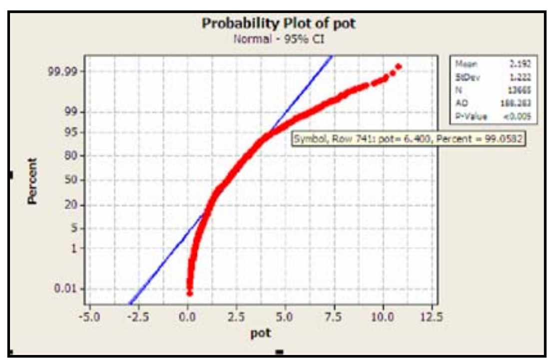

Figure 17-3
Thickness Frequency

Statistical Analysis

The metals in the Animas vein system show a log normal distribution, whereas a normal distribution is theoretically required for kriging. However, it is accepted practice to use kriging in the estimation of resources in this type of log-normal deposit.

Unless samples are of constant widths, grade is not an additive variable and best practice is to work with the product of grade and length (grade and potencia). This is referred to as grade- thickness, or accumulation, and is abbreviated Ac_Metal (e.g. Ac_Ag).

Basic statistics for the relevant variables are given in Tables 17-2 to 17-4 below, for each of the three domain areas in the Animas vein

Table 17-2
Statistical Data for Animas Central (AS) Composites

Variable	Mean	StDev	CoefVar	Minimum	Q1	Median	Q3	Maximum	Range
Pot (length)	2.32	1.38	59.56	0.06	1.30	2.10	2.99	12.64	12.58
Ag g/t	95.10	161.50	169.76	0.50	31.70	63.50	116.00	12261.00	12260.50
Au g/t	0.55	3.45	627.38	0.00	0.14	0.26	0.43	168.36	168.36
Cu %	0.13	0.22	160.80	0.00	0.03	0.07	0.16	6.58	6.58
Pb %	1.92	2.43	126.82	0.00	0.42	1.15	2.51	38.23	38.23
Zn %	3.25	3.05	93.83	0.00	1.01	2.46	4.56	31.13	31.13

Table 17-3
Statistical Data for Animas NE7 Composites

Variable	Mean	StDev	CoefVar	Minimum	Q1	Median	Q3	Maximum	Range
Pot (length)	1.45	0.7	48.36	0.01	0.9	1.5	2.1	12.7	12.69
Ag g/t	121.41	142.04	117	0.5	38.29	83.44	152.9	2297.56	2297.06
Au g/t	0.69	8.97	1297.35	0	0.14	0.27	0.5	393.75	393.75
Cu %	0.23	0.32	139.29	0	0.05	0.14	0.29	5.84	5.84
Pb %	3.17	4.25	134.2	0.02	0.59	1.76	4.01	35.13	35.11
Zn %	3.75	3.53	94.08	0.01	1.11	2.95	5.35	29.69	29.68

Table 17-4
Statistical Data for Animas NE8 Composites

Variable	Mean	StDev	CoefVar	Minimum	Q1	Median	Q3	Maximum	Range
Pot (length)	1.49	0.65	43.69	0.01	0.95	1.65	2.10	2.1	2.09
Ag g/t	166.70	423.50	254.06	2.00	33.50	87.00	160.20	6583	6581
Au g/t	1.35	6.30	465.59	0.02	0.23	0.54	0.94	112.1	112.08
Cu %	0.36	0.48	133.29	0.00	0.09	0.21	0.45	6.79	6.79
Pb %	2.05	2.07	100.71	0.02	0.43	1.39	2.94	10.22	10.2
Zn %	1.91	1.53	80.40	0.05	0.78	1.55	2.62	10.55	10.5

The above tables indicate that gold and silver increase toward the Northeast. However the same trend is not observed for lead and zinc, which increase in NE7 and decrease in NE8. This is illustrated graphically in the next four figures, 17-4 to 17-7.

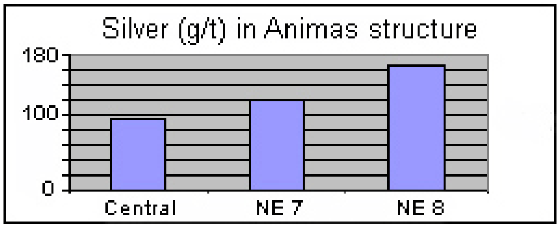

Figure 17-4
Grade-Thickness Trend
For Composite Silver Values

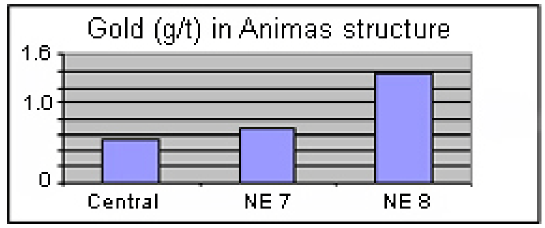

Figure 17-5
Grade-Thickness Trend
for Composite Gold Values

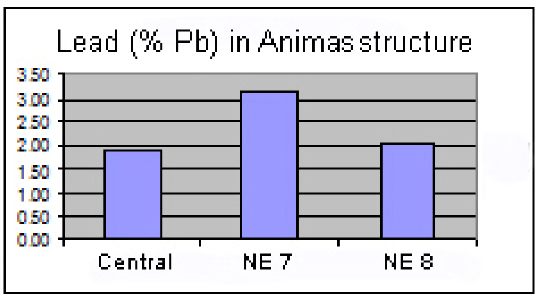

Figure 17-6
Grade-Thickness Trend
for Composite Lead Values

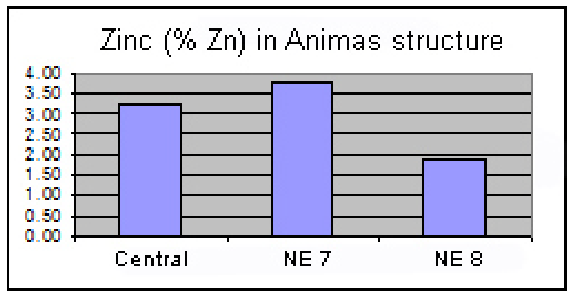

Figure 17-7
Grade-Thickness Trend
for Composite Zinc Values

The Fortuna staff suggests further investigation of the trends in grades. CAM concurs with this, and recommends that these trends be investigated in the plane of the vein vertically and along strike. The modeling procedure used by Fortuna rotates the block model to match the approximate overall dip and strike of each vein.

The Fortuna staff investigated the log-normal nature of the metals distributions by constructing both histograms and cumulative frequency plots for all five metals in Animas Central, as shown in Figures 17-8 to 17-12.

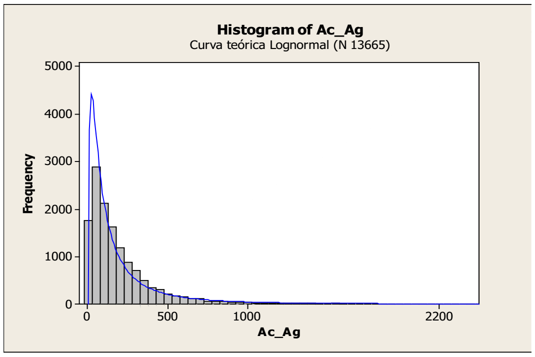

Figure 17-8
Cumulative Frequency (Ag)

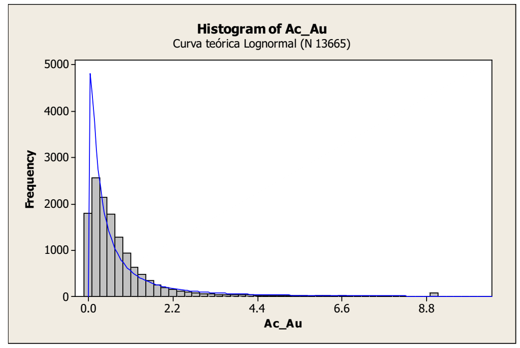

Figure 17-9
Cumulative Frequency (Au)

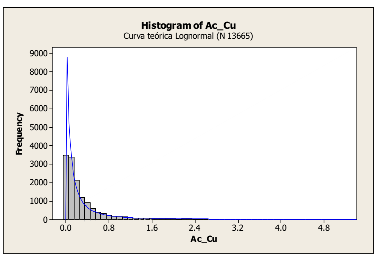

Figure 17-10
Cumulative Frequency (Cu)

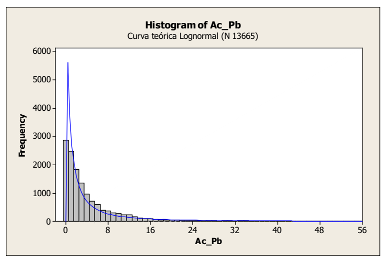

Figure 17-11
Cumulative Frequency (Pb)

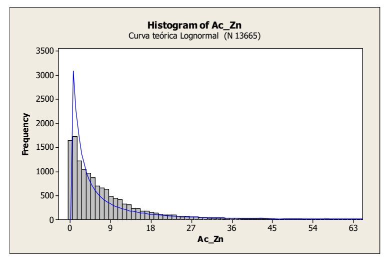

Figure 17-12
Cumulative Frequency (Zn)

Probability plots for five metals are shown in Figures 17-13 to 17-17, below.

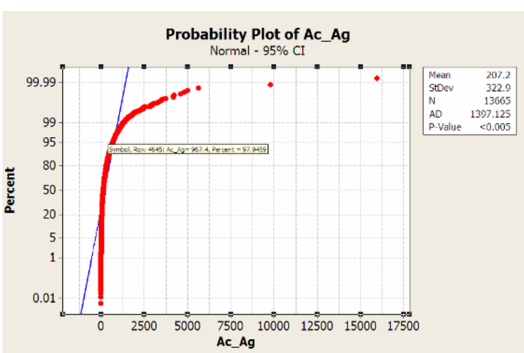

Figure 17-13
Probability Plot (Ac_Ag)

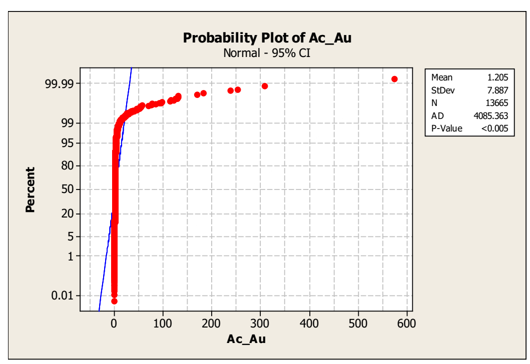

Figure 17-14
Probability Plot (Ac_Au)

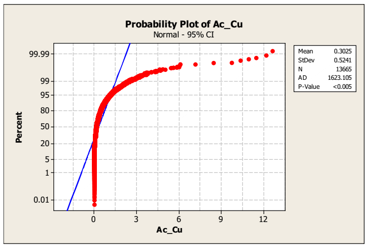

Figure 17-15
Probability Plot (Ac_Cu)

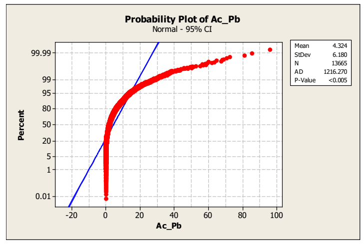

Figure 17-16
Probability Plot (Ac_Pb)

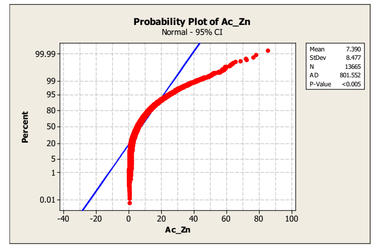

Figure 17-17
Probability Plot (Ac_Zn)

CAM has reviewed these plots and notes the following:

1. In some cases the histogram does not include the high data points.
2. The scale is in raw assays units, whereas a log normal-scale is preferable for a log-normal distribution.

Despite these observations, CAM concurs that the data is log-normally distributed but suggests that future data review also be done on a log scale.

Top Cutting

In theory, variograms should be calculated from normally distributed data and the data for these veins with the exception of Pot (thickness) is log-normally distributed. Erratic results may occur if very high values are associated with a log normal distribution, since the variogram is a squared measure. To handle this problem, Fortuna assigned values greater than the mean plus 2 standard deviations the mean plus one standard deviation. CAM believes this is acceptable but suggests that Fortuna look at log-normal variograms back-transformed to relative, or correlograms for the next resource update. If Fortuna elects to keep this same procedure, they should evaluate the effect of cutting back anything more than two standard deviations above the mean to one standard deviation above the mean. Reducing the values prior to variography lowers the variance and the nugget effect. The critical values, and the value to which higher values above are reduced, are given in Table 17-5.

Table 17-5
Top-Cutting Values

Variable	Thickness X grade	StdDev
Ac_Ag	853.00	530.10
Ac_Au	16.98	9.09
Ac_Cu	1.35	0.83
Ac_Pb	16.68	10.50

Table 17-5 Top-Cutting Values		
Variable	**Thickness X grade**	**StdDev**
Ac_Zn	24.34	15.87

Calculation of Variograms

Variograms are easier to interpret in the directions with the greatest amount of data which are sub-parallel to the mine workings. The Animas vein has on average a dip of 49° towards the southeast, and an azimuth of 053°, as shown graphically in Figure 17-18. Variograms were plotted along these principal directions, and it was found that two structures were needed to model the variogram. These are described in Table 17-6.

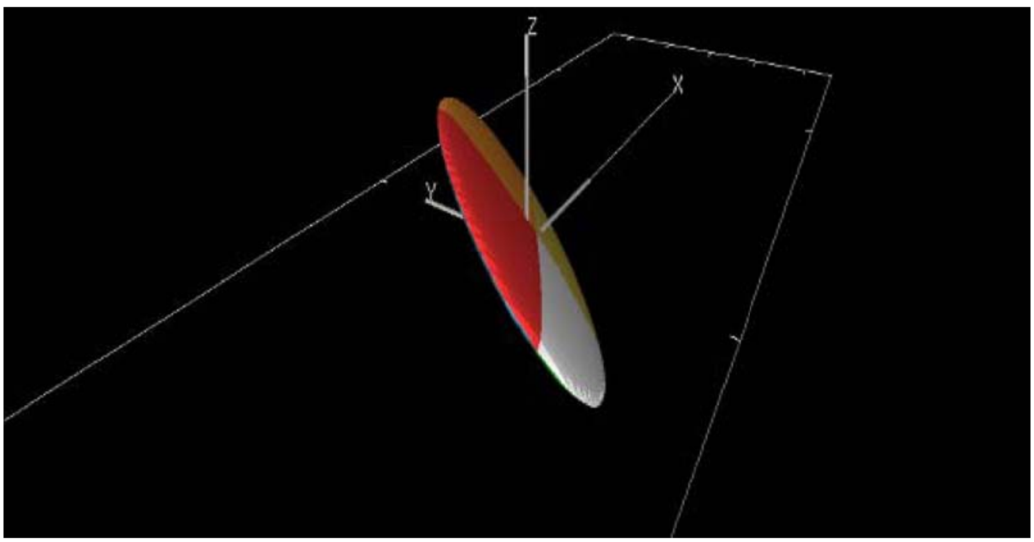

Figure 17-18
Orientation of Animas Veins

Table 17-6
Variogram Parameters (All Sills Relative to 1)

VARIABLE		AZIMUTH = 53, DIP = 0.0	AZIMUTH = 143, DIP = 49		AZIMUTH = 53, DIP = 0.0	AZIMUTH = 143, DIP = 49		
	c0	EST1	EST1	c1	EST2	EST2	c2	c1+c2
Pot (thickness)	0.043	23.9	19.31	0.531	28.26	32.28	0.426	0.957
Ac_Ag	0.526	11.96	11.96	0.207	30.44	31.5	0.267	0.474
Ac_Au	0.425	24.24	1.41	0.120	18.16	16.55	0.455	0.575
Ac_Cu	0.414	13.23	12.47	0.364	30.21	30.9	0.222	0.586
Ac_Pb	0.284	8.18	10.01	0.211	33.08	41.34	0.505	0.716

VARIABLE		AZIMUTH = 53, DIP = 0.0	AZIMUTH = 143, DIP = 49		AZIMUTH = 53, DIP = 0.0	AZIMUTH = 143, DIP = 49		
	c0	EST1	EST1	c1	EST2	EST2	c2	c1+c2
Ac_Zn	0.206	9.32	10.93	0.327	35.83	33.08	0.467	0.794

Table 17-6
Variogram Parameters (All Sills Relative to 1)

CAM notes that the variogram parameters are as would be expected for a deposit of this type, with a very low nugget associated with vein thickness (Pot), a somewhat higher nugget associated with the more significant base metals (lead and zinc), and the highest nugget effects being associated with copper, which is present in only small amounts.

17.2.3 Model Validation for Animas Central, Animas NE7, and Animas NE8

As noted above, for this review CAM only checked the resource estimation methodology for the polymetallic veins, since the estimation methodology for the traditional silver veins was relatively unchanged.

CAM has reviewed the resource estimation methodology described above, and believes that it conforms to accepted engineering practice. In addition to this CAM, reviewed the reconciliation of this model (in Section 19) and performed additional checks on the provided models.

For a mine that is in actual production CAM relies primarily on the reconciliation of the model to actual production. Reconciliation is discussed in Section 19, and is acceptable in terms of tonnage and contained metal except where there is relative low production.

Despite the issues raised above, which might possibly impact the model and mine planning on a short-term basis, on the basis of the reconciliation review in Section 19, CAM believes the polymetallic vein models are suitable for use in mine planning and financial projections. The individual resource models may have to be adjusted as actual production data are obtained.

17.2.4 Resource Classification (Measured, Indicated and Inferred)

To calculate the cutoff for the resource grade shell, the criteria in Table 17-7 were applied, as derived from operational results in 2008.

Table 17-7 Cost Input to Cutoff Calculation	
Item	**Cost (US$/t)**
Mine	23.46
Plant	7.90
Energy	3.92
Maintenance	1.04
Administration Mine	0.83
Other Operating expenses*	4.48
Shipping	6.17
Direct Cost	47.80

*** Represents direct cost for geology, laboratory and planning departments at mine site.**

The cutoff of US$37.15 per tonne was applied to establish a grade shell for resources, but the blocks within that shell were valued according to the prices for metals based on the three year prior and two-year future averages, as of 31 December, 2008.

Resources were classified as measured, indicated or inferred, based on the number of composites used to estimate the block. This classification criteria was selected based on a graph of the kriging variance versus number of composites as shown in Figure 17-19.

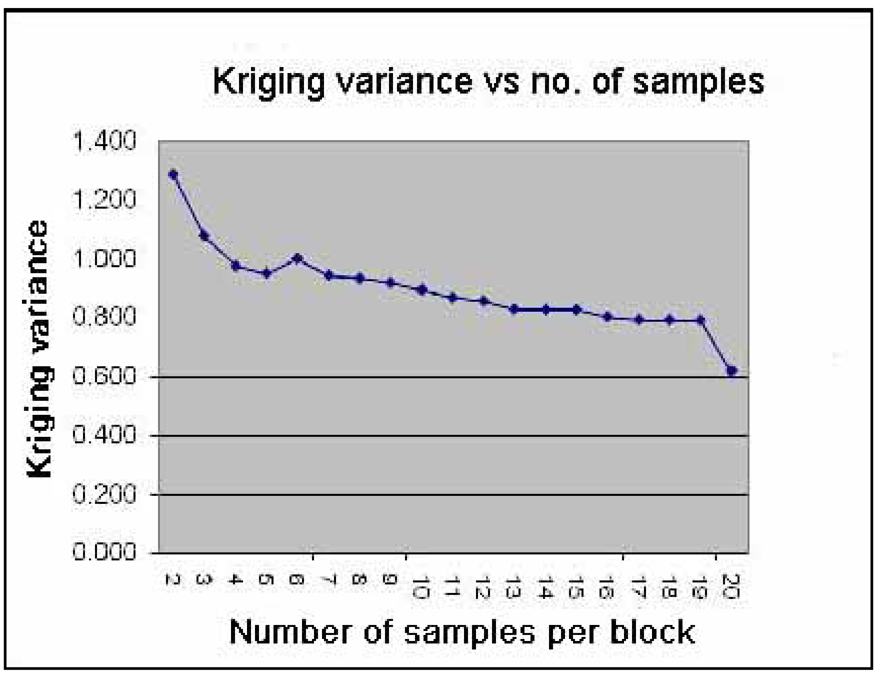

Figure 17-19
Kriging Variance versus Number of Composites per Block

Based on this plot, Fortuna selected the criteria in Table 17-8 for measured, indicated, and inferred resource categories.

Table 17-8 Criteria for Resource Categories	
Composites	**Category**
12 or more	Measured
8 to 11	Indicated
1 to 7	Inferred

CAM believes this is accepted engineering practice, noting that there are no precise numerical statutory definitions for resource categories, since every deposit is different.

The resource model gives the expected position and grade of all material within the vein. While a tabulation of tonnes and grade within such a model is sometimes referred to as a resource, Fortuna has applied some minor ability criteria to the resource model before reporting resources. Reserves are then derived from this model (see Section 17.3).

Resources for the polymetallic veins are reported in the Tables 17-12 along with reserves.

17.3 Reserve Estimation for Polymetallic Veins

17.3.1 Definition of reserves for Polymetallic Veins

Reserves are defined as the economically-exploitable portion of the deposit which has had its economic and commercial value demonstrated by at least preliminary feasibility study or by mining experience. Caylloma has been in operation for 2.5 years. The classification of the reserve is based on its type, value, certainty and accessibility.

Reserves are reported as of a specific date (in this case 31 December 2008) and include average grades and tonnages for each vein.

Mineral reserves are based on published international metals prices. The inventory of reserves and resources allows the value of the deposit to be established relative to prices and costs. Reserves and resources constitute the most valuable assets of most mining companies.

Proven reserves.-Those blocks of mineralization, which have a high certainty of mineability and are economically extractable, including development.

Probable reserves.- Those blocks, which while not as certain as proven, have a reasonable certainty of being economically extractable. The majority of the time probable blocks surround proven blocks but in other cases they may occur in areas where there is sufficient sampling for probable but insufficient for proven.

Generation of proven and probable reserves from resources depends upon the application of an economic test, including operational parameters such as cutoff, minimum mining width, dilution and economic values. Only measured and indicated resources can be converted to reserves.

Economic parameters include:

- Mining (minimum mining width. dilution)
- Metallurgical (plant recovery)
- Market (metal prices)
- Marketing (concentrate selling price)

Reserves are classed in the order of confidence of their economic viability:

- **probable reserves** are that part of the indicated (and in some cases measured) resource which can be economically mined, taking into account ore loss and dilution.
- **proven reserves** are that part of the measured resource which can be economically mined including ore loss and dilution.

17.3.2 Method of Reserve Calculation for Polymetallic Veins.

Reserves were estimated using the DataMine software package to build the wireframes, composite assays, perform statistical and geostatistical analyses and develop a block model for each vein using kriging and inverse distance squared. Economic parameters were applied to each block and mine design was done in DataMine as well.

Determination of Point Value and Cutoff

In order to determine the portion of the measured and indicated resources that might qualify for proven and probable mining reserves, it is necessary to plan minable shapes along the vein(s), based on minimum mining widths and the deposit geometry that can be economically extracted. This economic justification is arrived at by the application of a breakeven cutoff grade. When the economic portion of the resource has been defined, factors for mining recovery and mining dilution are applied. These factors are based on the mining method(s), rock strengths and equipment used to extract the ore.

The veins at Caylloma include; both primarily silver and silver-base metal reserves. As such, it is easier to express the breakeven cutoff grade as a net smelter value that equals or exceeds the total operating costs at the property.

Metals prices to be used in reserve calculations are set each year by FSM in Lima. For 2009 a 3-year past and 2-year futures market average was used. These metal prices, combined with recoveries, are used to assign a dollar value to each block. This price is referred to as the "point value" and is applied to each block in the model based on its estimated grades.

Prices as of December 31, 2008, which were used for the year-end 2008 reserves, are shown in Table 17-9.

Table 17-9
Metal Prices used in Reserve Definition.

Metal	Price per Metal Unit	Price per Assay Unit
Gold:	US$ 795.04 / oz	10.79 US$/g
Silver:	US$ 12.54 / oz	0.29 US$/g
Lead:	US$ 1609 /t	10.20 US$/%
Zinc:	US$ 2161 /t	10.24 US$/%

The total unit direct operating costs experienced in 2008, totaling US$47.80, were shown in Table 17-8.

FSM used the values in Table 17-10 to determine mining criteria.

Table 17-10
Point Values for Classification of Mineralization

Class	Point Value ($ NSR/t)
Ore	> 47.80
Low-grade	37.15 to 47.80
Waste	< 37.15

CAM has reviewed the total unit operating costs, metal prices, and other data used in calculating the NSR value, along with the methodology for calculating the minable reserves at Caylloma, and believes that they are reasonably stated.

Dilution and minimum mining width

Dilution and ore loss: Dilution is the extra material below cutoff which is taken during mining of a block. Mining dilution was set at 10 centimeters of waste, at zero-grade, on each side of the veins. No mining loss has been included (i.e. 100 percent mining recovery is assumed, as is typical for narrow, high-grade veins with dilution allowances). This is applied to all veins.

Minimum mining width: Most of the mineable veins at Caylloma have widths between 2 and 3.5 meters. A minimum mining width of 2.1 meters has been used.

Reserves for the polymetallic veins are reported in the Tables 17-11.

17.4 Resource and Reserve Estimation for Traditional Silver Veins

In terms of the resource model there has not been a substantive change in the total since the CAM October 2006 Technical Report. Total resources have increased 14 percent in terms of tonnes and 13 percent in terms of contained silver metal, which is consistent with the more favorable silver economics in this report. In general, resource estimation methodology is unchanged: resources were estimated by inverse distance squared methods using density factors ranging from 2.82 to 2.95 grams per cubic centimeter. Classification of resources was based on distance from development workings, with Measured Resources being blocks extending up to 25 meters from horizontal or vertical workings, Indicated Resources are those blocks located beyond 25 meters but within 40 meters of development workings, and Inferred Resources being those blocks located at distances of greater than 40 meters from workings.

CAM believes this new resource is acceptable, but notes that resource classification and estimation methodology for the silver veins may have to be changed when actual production data is available after the resumption of mining of the silver veins. Resources and reserves for the traditional silver veins are given in Table 17-11.

17.5 Resource and Reserve Statement

Resources and reserves are summarized in Table 17-11. Mineral resources are exclusive of reserves. This resource and reserve estimate is based on all data available through December 31, 2008 for all reported veins with the exception of the Bateas Vein which includes all data through March 31, 2009.

The Mineral Resources and Reserves reported herein were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and

Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council on December 11, 2005.

Reported mineral resources are exclusive of reported mineral reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of the Inferred resources reported in this estimation are conceptual in nature, and it is uncertain if further exploration will result in upgrading of the Inferred resources to Indicated or Measured resources.

Note that resources exclude reserves.

Table 17-11
Caylloma Resource and Reserve Summary as of December 31, 2008

Vein	type*	Category	Tonnes	NSR US$/tonne	Ag g/t	Au g/t	Pb %	Zn %	Cu %	Width m
Animas Central	P	Proven	2,162,200	79.10	76	0.48	1.80	3.27	0.12	2.83
Animas NE7	P	Proven	732,680	99.95	106	0.49	2.91	3.35	0.22	4.91
Animas NE8	P	Proven	231,080	94.69	176	0.77	1.95	1.51	0.38	4.90
Santa Catalina	P	Proven	48,470	61.94	94	0.55	1.13	1.70	0.26	2.04
Soledad	P	Proven	63,260	175.57	491	1.37	0.74	1.06	0.13	1.09
Silvia	P	Proven	35,880	75.67	99	0.24	1.79	2.54	0.43	1.74
Bateas	P	Proven	6,530	790.98	2620	0.10	1.13	1.82	0.92	1.65
Cimoide La Plata	S	Proven	46,790	244.92	671	4.64	0.01	0.01	**	1.24
La Plata	S	Proven	9,150	149.69	461	1.46	0.02	0.00	**	1.10
Paralela	S	Proven	22,340	122.35	419	0.07	0.01	0.01	**	1.36
San Carlos	S	Proven	11,400	118.89	390	0.10	0.13	0.34	0.01	1.10
San Cristobal	S	Proven	256,620	103.19	342	0.23	0.00	0.01	**	1.60
San Pedro	S	Proven	75,020	107.82	344	0.75	0.00	0.01	**	1.43
Total Proven Reserves			3,701,420	91.75	136	0.55	1.80	2.74	**	3.17
Animas Central	P	Probable	39,800	78.01	85	0.39	1.72	3.09	0.13	2.95
Animas NE7	P	Probable	23,300	87.98	105	0.63	2.12	2.85	0.20	4.32
Animas NE8	P	Probable	17,300	81.14	140	0.31	2.24	1.40	0.36	6.36
Santa Catalina	P	Probable	700	60.95	109	0.20	1.34	1.32	0.22	1.77
Soledad	P	Probable	5,300	164.95	466	1.31	0.61	0.90	0.10	1.01
Silvia	P	Probable	5,900	72.15	92	0.31	1.51	2.60	0.38	1.61
Bateas	P	Probable	10,700	906.15	3043	0.06	0.94	1.30	1.02	1.65
Cimoide La Plata	S	Probable	20,400	204.45	614	2.43	0.01	0.02	**	1.22
La Plata	S	Probable	7,600	120.15	375	1.00	0.04	0.03	**	1.10
Paralela	S	Probable	22,800	103.00	353	0.02	0.02	0.03	0.01	1.36
San Carlos	S	Probable	7,900	200.78	656	0.12	0.26	0.65	0.02	1.10
San Cristobal	S	Probable	116,500	104.66	345	0.30	0.06	0.07	**	1.55
San Pedro	S	Probable	53,300	91.81	290	0.58	0.04	0.10	0.02	1.43

Table 17-11
Caylloma Resource and Reserve Summary as of December 31, 2008

Vein	type*	Category	Tonnes	NSR US$/tonne	Ag g/t	Au g/t	Pb %	Zn %	Cu %	Width m
Total Probable Reserves			331,500	131.83	387	0.51	0.58	0.81	**	2.09
Total Proven + Probable Reserves			4,032,920	95.05	156	0.55	1.70	2.58	**	3.08
Animas Central	P	Measured	206,960	57.81	59	0.30	1.24	2.44	0.09	1.62
Animas NE7	P	Measured	9,810	44.69	79	0.42	0.96	0.74	0.07	4.31
Animas NE8	P	Measured	350	41.60	36	0.78	0.54	1.67	0.12	2.71
Santa Catalina	P	Measured	25,930	53.04	86	0.34	1.04	1.36	0.23	1.34
Soledad	P	Measured	1,320	46.60	118	0.38	0.23	0.60	0.04	0.84
Bateas	P	Measured	2,700	47.30	121	0.05	0.49	0.66	0.20	0.93
Total Measured Resources			247,070	56.59	63	0.31	1.19	2.23	0.11	1.69
Animas Central	P	Indicated	6,300	49.59	40	0.20	1.05	2.45	0.07	2.15
Animas NE7	P	Indicated	5,300	43.65	82	0.39	0.99	0.55	0.06	4.00
Animas NE8	P	Indicated	2,800	48.49	38	0.58	1.32	1.72	0.18	5.63
Santa Catalina	P	Indicated	2,000	53.38	85	0.35	1.00	1.46	0.26	1.16
Silvia	P	Indicated	200	53.75	70	0.36	1.14	1.74	0.39	0.97
Bateas	P	Indicated	3,800	49.67	127	0.04	0.66	0.56	0.32	0.77
Total Indicated Resources			20,400	48.32	71	0.29	1.00	1.40	0.15	2.74
Total Measured + Indicated Resources			267,470	55.96	64	0.31	1.18	2.17	0.11	1.77
Animas Central	P	Inferred	741,000	75.94	52	0.15	1.92	3.88	0.08	2.45
Animas NE7	P	Inferred	178,000	115.01	99	0.29	3.79	4.36	0.27	4.05
Animas NE8	P	Inferred	97,000	64.48	86	0.41	1.88	1.54	0.28	5.07
Santa Catalina	P	Inferred	3,000	62.78	102	0.43	1.28	1.52	0.24	1.30
Soledad	P	Inferred	8,000	200.30	571	1.52	0.70	1.09	0.17	0.82
Silvia	P	Inferred	6,000	113.40	112	0.27	1.55	6.08	0.69	
Bateas	P	Inferred	9,000	767.74	2515	0.06	1.60	2.09	1.34	0.85
Cimoide La Plata	S	Inferred	32,000	121.17	313	2.65	0.05	0.14	**	1.39
La Plata	S	Inferred	39,000	138.87	415	1.25	0.09	0.40	**	1.96
Paralela	S	Inferred	50,000	194.99	652	0.01	0.20	0.37	0.11	0.86
Ramal Paralela	S	Inferred	32,000	324.37	1013	0.19	0.70	1.93	0.20	0.39
San Carlos	S	Inferred	7,000	600.71	1907	0.56	1.14	2.92	0.09	0.47
San Cristobal	S	Inferred	17,000	195.51	525	0.01	1.94	2.28	**	0.94
San Pedro	S	Inferred	60,000	194.46	552	0.23	1.01	2.11	0.22	0.75
Total Inferred Resources			1,279,000	110.24	187	0.29	1.92	3.25	**	2.57

*Vein Types: P denotes Polymetallic Veins, S denotes Silver Veins.
** Indicates that the % Cu is either less than 0.01, or cannot be calculated due to insufficient assays.

18.0 OTHER RELEVANT DATA AND INFORMATION

The Caylloma silver-lead-zinc mine is presently in profitable operation. All additional information relevant to production properties is described in Section 19.

The undersigned are not aware of any additional information, the exclusion of which would tend to make this report misleading.

19.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

Caylloma is a producing mine with several years of successful operating history. The summary below has been prepared from extensive information provided by FSM and reviewed and queried by CAM.

19.1 Mineable Reserves

As discussed in Section 17, an economic cutoff and dilution factors have been applied to the resource blocks to determine the mineable reserves. These are shown in Table 19-1.

Table 19-1
Diluted Mineable Ore Reserves at Caylloma as of 31 December 2008

Silver Veins	Tonnes	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)
Proven	421,320	387	0.83	0.01	0.02
Probable	228,500	369	0.55	0.05	0.09
Total P+P, Ag Veins	**649,820**	**380**	**0.73**	**0.02**	**0.04**
Polymetallic Veins					
Proven	3,280,100	103	0.52	2.03	3.09
Probable	103,000	426	0.44	1.74	2.41
Total P+P, Polymetallic	**3,383,100**	**113**	**0.51**	**2.02**	**3.07**
All Veins					
Proven	3,701,420	136	0.55	1.80	2.74
Probable	331,500	387	0.51	0.58	0.81
Total P+P, All Veins	**4,032,920**	**156**	**0.55**	**1.70**	**2.58**

19.2 Mining Operations

Underground mining operations at Caylloma are currently focused on the Animas, Santa Catalina, and Soledad veins. These are polymetallic veins, containing silver, gold, lead, zinc and copper mineralization. Production from these veins during the year 2008 was 331,380 tonnes, or about 950 tonnes per day, of which about 95 percent originated in the Animas vein. The veins are accessed from tunnels, or adits, driven from the surface.

In the Animas vein, where vein widths reach up to 8 meters, the mining method is mechanized ascending cut-and-fill, using hydraulic deslimed mill tailings as backfill. The principal operating levels are levels 7, 8, 9, and 10. The wide vein widths and mechanized equipment used in the Animas stopes allows a high productivity to be reached. Level 7, for example, has a cross section of 2.13 meters by 2.44 meters. Level 9 of Las Animas has rail haulage, accounting for about 40 percent of ore production.

The Soledad vein is much narrower and also mined by cut-and-fill methods, but requires the use of 1-cubic yard, micro-scoops for loading the broken ore. This lowers the productivity, but allows extraction of the vein with less dilution. Production from the Soledad vein averaged about 1,500 tonnes per month, or about 5 percent of total production.

Santa Catalina is also a narrow vein with strong wall rocks that is mined by a shrinkage mining method. Due to the presence of copper, production from this vein was suspended during part of 2008, while a copper circuit was installed in the mill. This new circuit will improve silver and gold recoveries from all veins in the future.

Ore haulage from all working areas to the surface is performed with low-profile haulage trucks. All of the mining methods and equipment used to extract the ore are well adapted to the ground conditions and vein widths at Caylloma.

During 2007 and 2008, 25,838 meters of new drifting for exploration, development, and stope preparation were performed, along with 23,311 meters of exploration diamond drilling.

Ore production and grade forecasts for years 2009 to 2013 are summarized in the following Table 19-2.

Table 19-2
Caylloma Ore Production Forecast

Description	2009	2010	2011	2012	2013	Total
Ore Mined and Milled, tonnes	394,350	423,600	423,600	423,600	423,600	2,088,750
Grade						
Silver (g/t)	156	164	160	154	146	156
Lead (%)	2.39%	2.14%	1.74%	1.60%	1.63%	1.89%
Zinc (%)	3.22%	3.16%	2.80%	2.64%	2.72%	2.90%
Copper (%)	0.19%	0.19%	0.15%	0.14%	0.15%	0.16%
Gold (g/t)	0.42	0.47	0.85	0.66	0.66	0.62

19.3 Reconciliation of Mine Production to Block Model

For a mine which is an actual production, CAM relies heavily on the reconciliation between the model and actual production. The reconciliation provided by Fortuna against the 2009 model for Animas and Santa Catalina are given below in Table 19-3.

VEIN	% Error (Muck In Stope)- ModBlk)/ Modblk (Tonnes and Grade)								% Error (Muck In Stope)- ModBlk)/Modblk (Cont. Metal)					
	t	Ag	Au	Pb	Zn	Cu	thick-ness.		Ag	Au	Pb	Zn	Cu	thick-ness.
Animas Central	-7%	4%	-1%	3%	4%	-5%	4%		-4%	-8%	-4%	-4%	-12%	-4%
Animas Ne7	-19%	0%	-14%	8%	5%	7%	-11%		-19%	-30%	-12%	-15%	-13%	-28%
Animas Ne8	-50%	1%	17%	9%	2%	2%	-32%		-50%	-42%	-46%	-49%	-49%	-66%
Santa Catalina	-7%	8%	4%	17%	16%	21%	14%		1%	-3%	9%	8%	13%	7%

Table 19-3
Reconciliations of Muck in Stope to Block Model

CAM's comments on the reconciliation, based on total contained metal, are as follows:

1. For the large-tonnage Animas Central Vein, the reconciliation is good to excellent with the exception of copper which is acceptable.
2. For Santa Catalina the reconciliation is excellent to good with the exception of copper which is acceptable.
3. Animas NE7 is unacceptable mostly on tonnage but given the small tonnage involved CAM is not concerned.
4. Animas NE8 is borderline primarily on tonnage and gold grade and hence *potencia* (NSR.)
5. CAM added the columns on contained metal reconciliation and recommends that Fortuna do this in the future.

In summary, CAM believes that while there are local issues for individual stopes and veins, this is normal, given the statistical uncertainty for this type of deposit. CAM believes that the model is suitable for future mine planning and forecasting financial results.

19.4 Milling Operations

The current processing plant is located near the mine, at an altitude of 4,450 m.a.s.l. The plant is currently undergoing modifications to raise the capacity from 1,000 tonnes per day to 1,200 tonnes per day of silver and polymetallic vein ores, by the year 2010.

The process consists of conventional crushing and grinding, followed by selective flotation. Concentrates for lead and zinc are produced. FSM have supplied a detailed description of the mill equipment and operations. In April 2009, subsequent to the effective date of this Technical Report, a copper-recovery circuit was added to the mill.

19.5 Recoverability

The sulfide mineralogy at Caylloma is relatively straightforward, as discussed in Section 9, and there are no unusually-complicating factors present. Average mill recoveries for the various recoverable metals have increased steadily since the 2006 start-up, and during the fourth quarter of 2008, recoveries were at these levels:

Silver................................82.4%
Gold 37.5%
Lead 93.4%
Zinc 87.2%
Copper (Cu circuit started operation in April 2009, expect 60 percent initially)

19.6 Markets and Contracts

FSM has signed contracts for all of its lead and zinc concentrates with AYSSA (GLENCORE's representative in Peru). During 2008, 20,960 wet-tonnes of zinc concentrate and 12,620 wet tonnes of lead concentrate were sold. Transportation of all concentrates from the mine site to Callao is by truck. The terms in effect for 2008 are shown in Table 19-4.

Table 19-4
Concentrate Sales Terms

Parameter	Zinc Concentrate	Lead Concentrate
Grade	54% Zn	63% Pb
Payable Metals	85% for Zn 65% for Ag over 109 g/t	95% for Pb 95 % for Ag
Smelter Charges (CIP El Callao)	US$420/t	US$460/mt
Refining Charges		US$ 0.90/oz Ag US$10.00/oz Au

CAM considers that the cited smelting contract is conformable to world-wide norms, and is reasonable.

19.7 Environmental Considerations

The Caylloma operation is in full compliance with environmental regulations and standards in Peruvian Law and has complied with all laws, regulations norms and standards at every stage of operation.

The Caylloma operation (legally Unidad Económica Administrativa San Cristobal) has had its PAMA (Adaptation and Environmental Program) approved, by Ministry of Mine Directorial Resolution No. RD 087-97-EM/DGM dated 03/06/1997. The PAMA sets out a series of programs budgeted at US$ 365,000 to make the operation comply with environmental regulations and standards. The main projects outlined in the PAMA programs were; the construction of a containment wall at the base of the old tailings pile, the vegetation of the old tailings pile, the construction of a containment wall at the base of the active tailings pile, and channeling and treatment of mine water. In 2002 The Ministry of Mines through its department of Mining Inspection conducted an audit of the programs set out in the PAMA and approved it on November 8th, 2002 with official resolution RD 309-2002-EM/DGM.

Regulations require the approval of Mine Closing Plan at a conceptual level, which FSM had approved by Ministry of Mine Directorial Resolution No. 328-207 MEM/AAM dated 10/12/2007. Presently, the Mine Closing Plan at a Feasibility Level has been presented and is pending approval.

A notice of compliance with Controls for compliment with Regulation for Environmental Protection and Conservation is issued each year. The Caylloma mine has received said notice or Years 2004-1, 2004-11, 2005-1, 2005-11, 2006-1, 2006-11, 2007-1; years 2007 and 2008.

The permits required to conduct operations at Caylloma are as follows:

- The Incorporation of the Caylloma Mining Unit (Unidad Económica Administrativa San Cristobal) was done under Ministry of Mines resolution No. 139-89-EM-DGM/DCM. A minimum investment has been complied with and the permit is permanent in nature.
- The Ore Processing concession was granted with through a Ministry of Mines resolution dated October 21, 1908. It is permanent.
- The Processing Plant authorization for operation was granted by resolution Nº 102-80-EM/DCFM, dated 07/07/1980. It is permanent.
- Authorization to restart activities at the processing plant was granted through Resolution No. 1078-2006-MEM-DGM/V, dated 09/06/2006. It is permanent.
- Annual Consolidated Declaration 2007 (DAC) was granted as Document No. 1804608, dated 07/18/2008.
- Approval was granted for a 10-year period for the investment program in the Technical-Economic Feasibility Study (Tax Stability) through Ministry of Mines Directorial Resolution No. 370-2006 MEM-DGM, dated 08/21/2006
- The Certificate for Mining Operations has reference number C.O.M. Nº 049-2009-C, dated 12/16/2008. This permit is renewed annually.
- Authorization for development of thermoelectric generation activities with power over 500 KW was granted through Ministry of Mines Resolution No. 391-2005-MEM/DM, dated 09/12/2005. It is permanent.
- A six month permit for use of explosives, supplies and related items (Global Authorization) was granted through Ministry of Mines Directorial Resolution No. 2314-2008-IN-1703-2, dated/20/2008. The permit expires December 31, 2009.

- A License for operation of the powder magazine was granted by Ministry of Mines Directorial Resolution No. 00641/2006-IN-1703-2, dated 03/10/2006. It is valid until 03/10/2011.

- The License for the use of water for mining activities was granted by Administrative Resolution Nº 013-2006, GRA/PR-DRAG-ATDR.CSCH, dated 02/13/2006. The license is permanent.
- An IQPF User Certificate, No. 20510704291-DICQ (DIRANDRO-PNP), was issued, dated 07/13/2006.
- The authorization for discharge and handling of solids and effluents was granted on June 252004, by resolution Nº 0744-2004-DIGESA/SA has been issued and is permanent.
- The authorization for the use of gasoline and diesel storage tanks was granted with registry No. 001-CDFJ-04-2004, dated 05/26/2006. It is permanent.
- The license for use of controlled chemical products was granted with registry No. 20510704291-DICIQ (DINANDRO PNP). The permit is permanent. .

19.8 Capital and Operating Costs

The estimated capital expenditures at Caylloma for the next five years are summarized in the following Table 19-5.

Table 19-5
5-Year Capital Expenditure Summary (US$)

Cost Center	2009	2010	2011	2012	2013
Exploration and Development	1,361,275	2,255,673	1,769,671	1,536,523	1,236,891
Dia. Drilling	55,560	-	-	-	-
Mine	84,000	380,000	-	670,000	320,000
Plant	867,000	-	-	-	-
Maintenance, Energy	60,000	-	-	-	-
Environment	280,000	2,370,000	250,000	250,000	250,000
Comm. Relations	136,749	-	-	-	-
Total	**2,845,383**	**5,005,673**	**2,019,671**	**2,456,523**	**1,833,891**

The estimated total unit operating costs forecast for the year 2009, are shown in Table 19-6.

Table 19-6 Estimate Caylloma Unit Operating Costs for 2009	
Cost Center	**Unit Cost (US$ per tonne)**
Mine	19.60
Mill	7.90
Power	4.07
Maintenance	0.72
Operating Expenses	3.75
Administration	0.55
Shipping	7.03
Total	**43.62**

CAM has reviewed the capital and operating cost and found them to be consistent with the production rates, mining methods, and equipment currently in use at the Caylloma mines.

19.9 Taxes

Peruvian tax laws make allowance for 10-year and 15-year tax stability contracts. In the case of Caylloma, the 10-year stability contract applies, and the tax rate is 32 percent. Caylloma's 10-year stability period started with the 2008 fiscal year.

Allowances for depreciation and amortization deductions for income tax purposes are covered under Article 75, which specifies as follows:

Exploration expenditures incurred once the concession is at the production phase at the minimum mandatory rate by law, are entirely deductible in that fiscal period, or amortized startling in such period, as an annual percentage according to the expected mine life as established at the end of those periods and is determined based on the volume of the proven and probable reserves and the minimum production rate allowed by law

Development and preparation expenditures for the exploitation of the ore deposit for longer than one fiscal period will be entirely deductible in the period in which it occurred, or amortized in such period, up to a maximum of two additional periods.

In each case, the company will opt for one of the systems for deductions referred to in the above paragraphs at the end of the period, where the expenditures were incurred.

In the case of reserves being exhausted or cancellation of the concession prior to the total amortization of the investment in exploration, development, or preparation, the company may choose to immediately amortize the balance, or continue at the previously established rate.

According to FSM accountants, capital mining and processing are eligible for depreciation, as are mine development and exploration, together with mine infrastructure (additional development) costs.

19.10 Mine Life

With the current proven and probable minable reserve of 4,032,920 tonnes, and a scheduled production rate of 423,600 tonnes per year, the mine life would be 9.5 years. However, with continued exploration, through direct development and diamond drilling, it is expected that current inferred resources will be converted to reserves and new reserves will be delineated. These efforts have potential of lengthening the mine life significantly.

19.11 Economic Analysis

According to FSM's published financial statements for 2007 and 2008 net cash from operating activities at Caylloma was $Canadian 13.24 million in 2007, and $Canadian 8.85 million in 2008, the decrease being due to sharply low metals prices in late 2008.

An economic analysis, showing cash-flow forecasts on an annual basis using proven mineral reserves and probable mineral reserves only, is presented in Table 19-7 for the years 2009 to 2013, The cash flow is positive in every year. Because Caylloma has been in operation for nearly 3 years, CAM did not review the start-up capital costs, nor calculate the NPV or IRR, which are dependent on the capital account at the beginning of the evaluation period. Existing proven and probable mineral reserves would be exhausted in 2018.

Table 19-7
Cash-Flow Analysis of Caylloma Mine Operation, 2009-2013

Description	2009	2010	2011	2012	2013	Total
Ore Mined and Milled (tonnes)	394,350	423,600	423,600	423,600	423,600	2,088,750
Grade						
Silver (g/t)	156	164	160	154	146	156
Lead (%)	2.39%	2.14%	1.74%	1.60%	1.63%	1.89%
Zinc (%)	3.22%	3.16%	2.80%	2.64%	2.72%	2.90%
Copper (%)	0.19%	0.19%	0.15%	0.14%	0.15%	0.16%
Gold (g/t)	0.42	0.47	0.85	0.66	0.66	0.62
Milling Recovery Rate						
Silver	82%	82%	82%	82%	82%	82%

Table 19-7 Cash-Flow Analysis of Caylloma Mine Operation, 2009-2013						
Description	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
Lead	91%	91%	91%	91%	91%	91%
Zinc	86%	86%	86%	86%	86%	86%
Copper	46%	60%	60%	60%	60%	57%
Gold	48%	48%	48%	48%	48%	48%
Metal Products Payable						
Total Silver Produced (oz)	1,620,720	1,827,445	1,790,052	1,722,981	1,629,817	8,591,014
Total Lead Produced (lb)	18,773,817	18,122,841	14,670,093	13,527,483	13,770,946	78,865,182
Total Zinc Produced (lb)	24,153,926	25,490,929	22,533,430	21,258,009	21,880,625	115,316,920
Total Copper Produced (lb)	772,340	1,042,913	845,626	787,822	828,255	4,276,956
Total Gold Produced (oz)	2,818	3,402	6,118	4,699	4,722	21,758
Metal Prices (US$) (net of smelter charges)						
Silver (US$/oz)	11.25	11.25	11.25	11.25	11.25	11.25
Lead (US$/lb)	0.53	0.53	0.53	0.53	0.53	0.53
Zinc (US$/lb)	0.60	0.60	0.60	0.60	0.60	0.60
Copper (US$/lb)	1.60	1.60	1.60	1.60	1.60	1.60
Gold (US$/oz)	545	545	545	545	545	545
Revenue (US$)						
Silver	18,236,540	20,562,635	20,141,886	19,387,196	18,338,910	96,667,168
Lead	9,975,226	9,629,339	7,794,765	7,187,654	7,317,015	41,904,000
Zinc	14,485,867	15,287,710	13,514,004	12,749,095	13,122,497	69,159,173
Copper	1,234,684	1,667,230	1,351,841	1,259,435	1,324,071	6,837,261
Gold	1,535,664	1,854,048	3,334,282	2,561,046	2,573,825	11,858,865
Total Revenue (US$)	45,467,982	49,000,961	46,136,779	43,144,427	42,676,318	226,426,467
Mine Cost (US$19.60/t)	7,729,260	8,302,560	8,302,560	8,302,560	8,302,560	40,939,500
Plant Cost (US$7.90/t)	3,115,365	3,346,440	3,346,440	3,346,440	3,346,440	16,501,125
Energy Cost (US$4.07/t)	1,605,660	1,724,756	1,724,756	1,724,756	1,724,756	8,504,684
Maintenance Cost (US$0.72/t)	283,598	304,633	304,633	304,633	304,633	1,502,131
Administration Mine (US$0.55/t)	215,518	231,504	231,504	231,504	231,504	1,141,532
Operating expenses (US$3.75/t)	1,479,916	1,589,685	1,589,685	1,589,685	1,589,685	7,838,657
Shipping Cost (US$7.03/t)	2,771,574	2,977,149	2,977,149	2,977,149	2,977,149	14,680,170
Total Production Cost (US$43.62/t)	**17,200,891**	**18,476,727**	**18,476,727**	**18,476,727**	**18,476,727**	**91,107,800**
Depreciation & amortization (US$)	4,886,343	5,519,533	6,071,297	6,190,408	5,872,851	28,540,432
Administrative expenses (US$)	3,739,094	3,739,094	3,739,094	3,739,094	3,739,094	18,695,470
Total Production Cost & Exp.(US$)	**25,826,328**	**27,735,354**	**28,287,118**	**28,406,229**	**28,088,673**	**138,343,702**
Resource Tax, US$ @ 1.00%	454,680	490,010	461,368	431,444	426,763	2,264,265
Pre-Income tax net profit (US$)	19,186,974	20,775,597	17,388,293	14,306,753	14,160,882	85,818,500
Effective Income Tax Rate	37.44%	37.44%	37.44%	37.44%	37.44%	37.44%
Income Tax Payable (US$)	7,183,603	7,778,384	6,510,177	5,356,448	5,301,834	32,130,447
Net Profit after income tax (US$)	12,003,371	12,997,214	10,878,116	8,950,305	8,859,048	53,688,054
Less: Capital Expenditure for Mine Development (US$)	2,845,383	5,005,673	2,019,671	2,456,523	1,833,891	14,161,141
Net Cash Flow (US$)	**9,157,988**	**7,991,541**	**8,858,445**	**6,493,782**	**7,025,157**	**39,526,913**
Unit Silver equivalent production cost	6.39	6.37	6.90	7.41	7.41	6.87
Unit Silver equivalent production cost adjusted for by-product credit	-0.35	-0.16	0.56	1.21	0.99	0.43

Table 19-7 Cash-Flow Analysis of Caylloma Mine Operation, 2009-2013						
Description	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
Unit Silver production Cost	15.94	15.18	15.80	16.49	17.23	16.10
Unit Silver production Cost adjusted for by-product credit	-0.87	-0.38	1.28	2.70	2.30	1.00

A cash-flow sensitivity analysis, showing changes in cash flow due to 10% variations in key economic parameters, is shown in Table 19-8. The cash flow remains positive in all cases.

Table 19-8 Sensitivity Analysis					
Item	**Net Cash Flow (Millions US $)**				
	2009	**2010**	**2011**	**2012**	**2013**
Increase Silver Price by 10%	10.29	9.27	10.11	7.69	8.16
Decrease Silver Price by 10%	9.05	7.86	8.73	6.37	6.91
Increase Operating Cost by 10%	8.08	6.84	7.70	5.34	5.87
Decrease Operating Cost by 10%	9.27	8.11	8.97	6.61	7.14
Increase Capital Expenditures by 10%	8.87	7.49	8.66	6.25	6.84
Decrease Capital Expenditures by 10%	9.19	8.04	8.88	6.52	7.04

20.0 INTERPRETATION AND CONCLUSIONS

1. It is CAM's opinion that FSM personnel have a clear understanding of the geology and features controlling the distribution of economic-grade mineralization.
2. CAM has reviewed the methods used by FSM to collect information for the resource database and believes that proper practices have been used in sample collection, sample preparation, and assaying. QA/QC procedures followed by FSM were thorough and appropriate.
3. The ore bulk-density database could be improved, at minimal cost, by oven-drying of samples prior to weighing, by increasing the size of the database, and by seeking correlations of density with metal contents.
4. Exploration and development work during the period 2006-2008 has focused on defining economic resources and reserves in known veins. CAM believes that geologic data gathered during this effort indicates good potential exists for discovery of additional resources and reserves on the property either as extensions of known veins or discovery of new veins.
5. The methodology used by FSM in assembling a database and in preparing mineral Resource and Reserve estimates are appropriate.
6. Mining and milling operations are relatively straightforward, and do not present unusual challenges for profitable operations at current or foreseeable metals prices.

21.0 RECOMMENDATIONS

1. CAM considers potential for discovery of new veins and additional resources on known veins is very good. Continued exploration of extensions of known veins and exploration drilling to test for mineralization along structures defined by surface exploration is recommended. This includes further investigation of the trends in metals grades. in the plane of the vein, both vertically and along strike.
2. The ore bulk-density database should be improved, by:
   a) oven-drying a set of samples prior to weighing to determine whether significant moisture is retained in air-dried samples;
   b) by increasing the number of samples in the database, and
   c) by investigating for correlations of density with metal contents.
3. Results for precious metals should be uniformly reported as grams per metric tonne.
4. Exploration and development work during the period 2006-2008 has focused on defining economic resources and reserves in known veins. CAM believes that geologic data gathered during this effort indicates good potential exists for discovery of additional resources and reserves on the property either as extensions of known veins or discovery of new veins.
5. Continuation of mining and milling operations is recommended, with recovery of copper and continuing optimization of metals recoveries.

22.0 REFERENCES

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23.0 DATE AND SIGNATURE PAGE

23.1 Certificate of Author Steve L. Milne

I, Steve L. Milne, P.E.
1651 Calle El Cid
Tucson, Arizona 85718

hereby attest that:

a) I am a Consulting Mining Engineer and Associate of the mining consulting firm Chlumsky, Armbrust and Meyer LLC (CAM) located at 12600 W. Colfax Ave., Suite A-250, Lakewood, Colorado 80215, USA.
b) I am Professional Engineer #25589 in the state of Colorado, in good standing.
c) I was awarded an E.M. degree in Mining Engineering from the Colorado School of Mines at Golden, Colorado in 1959.
d) Since 1959 I have practiced continuously for the past 50 years as a mining engineer, supervisor, mine manager, corporate officer, and consultant for mining firms and other mining consulting firms. This work has concentrated primarily on underground mines; encompassing a wide variety of underground conditions, metals, reserve evaluations, production rates, mining planning , equipment selection, and cost analyses throughout the world. I am the author of several publications on subjects relating to the underground mining industry.
e) 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 professional associations (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.
f) I am responsible for the preparation of Section 19 of the report entitled NI 43-101 Technical Report, Caylloma Mine, Peru, dated 11 August, 2009.
g) I am independent of the issuer, Fortuna Silver Mines, applying all of the tests in section 1.4 of National Instrument 43-101.
h) I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the exclusion of which would make the Technical Report misleading.
i) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that Instrument and Form.
j) I hereby notify the British Columbia Securities Commission of my consent to the filing of this Technical report with stock exchanges and other regulatory authorities in Canada, and any

publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

Dated this 11th day of August, 2009

____

Steve L. Milne, P.E.

23.2 Certificate of Author Richard L. Nielsen

I, Richard L. Nielsen PhD

13741 Braun Drive
Golden, Colorado, 80401 USA

hereby attest that:

a) I am a consulting minerals geologist, affiliated with Chlumsky, Ambrust and Meyer, LLC at 12600 W. Colfax Ave., Suite A-250, Lakewood, Colorado, 80215, USA.

b) I am Professional Geologist #4405 in the state of California, in good standing.

c) I earned B.S. and M.S. degrees from the California Institute of Technology, Pasadena in 1955 and 1957, respectively; and a PhD degree in Geology from the University of California, Berkeley in 1964.

d) Since 1957 I have worked as a geologist in the mining industry, as a corporate employee of Kennecott Copper Corp., Anaconda Minerals and ARCO, and subsequently since 1980 as an independent consultant. I taught geology courses at the University of Nevada, Reno, in 1963-1964. I have been involved in the geology, exploration, and evaluation of metallic and some non-metallic mineral deposits in about 40 countries.

e) I am a member of the American Institute of Professional Geologists, a Senior Fellow of the Society of Economic Geologists, and a Senior Fellow of the Geological Society of America. My professional work has included field visits to epithermal silver and base-metals throughout the USA, Canada, Mexico, Chile, Argentina, and elsewhere for the purposes of carrying out or reviewing exploration, geology, sampling programs, project evaluation, and/or resource/reserve validation.

g) I am a Qualified Person with regard to epithermal silver-base-metals deposits, within the meaning of National Instrument 43-101, based on my education, professional registration, and experience with these deposits.

h) I am responsible for the preparation of sections 2 to 13, 15, 16, 18, and 22, and relevant portions of sections 1, 20, and 21 of the report entitled "NI 43-101 Technical Report, Caylloma Mine, Peru, dated 11 August, 2009.

i) I am not aware of any material fact or change with respect to the subjects of this report which is not reflected in this report, the exclusion of which would make this report misleading.

j) As defined in Section 1.4 of National Instrument 43-101, I am independent of the issuer, Fortuna Silver Mines.

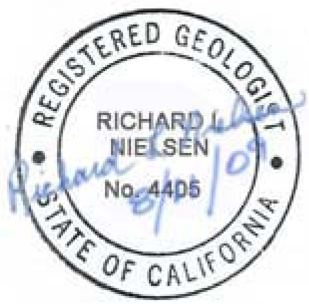
k) I have read National Instrument 43-101 and Form 43-101F1, and have prepared this report in compliance with those documents.

l) I hereby notify the British Columbia Securities Commission of my consent to the filing of this Technical report with stock exchanges and other regulatory authorities in Canada, and any publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

Dated this 11th day of August, 2009

Signed ___________________________

Richard L. Nielsen,



23.3 Certificate of Author Robert L. Sandefur

I, Robert L. Sandefur
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Denver, CO 80224

hereby attest that:

a) I am a Consulting Geostatistician, affiliated with Chlumsky, Armbrust and Meyer LLC at 12600 W. Colfax Ave., Suite A-250, Lakewood, Colorado 80215, USA.

b) I am a Certified Professional Engineer (Number 11370) in the state of Colorado, USA, and a member of the Society for Mining, Metallurgy, and Exploration (SME).

c) I graduated from the Colorado School of Mines with a Professional (BS) degree in engineering physics (geophysics minor) in 1966 and subsequently obtained a Master of Science degree in physics from the Colorado School of Mines in 1973.

d) I have practiced my profession as a geostatistical resource analyst continuously since 1969. From 1969 to present, I have worked on mining projects in over 20 countries, have statistically analyzed more than 400 mineral deposits, and have personally visited more than 50 operating metal mines.

e) 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.

f) I am responsible for the preparation of sections 14 and 17 and the relevant portions of sections 1, 20, and 21, of the report entitled "NI 43-101 Technical Report, Caylloma Mine, Peru, dated 11 August 2009.

g) I visited the Caylloma property; including an examination of the underground mine and surface facilities on January 8-10, 2005, and in addition reviewed the updated Animas Vein model in Lima with FSM and DataMine personnel July 22-24, 2006, and again on-site on November 11-12, 2007.

h) As defined in Section 1.4 of National Instrument 43-101, I am independent of the issuer, Fortuna Silver Mines.

i) I am not aware of any material fact or change with respect to the subjects of this report which is not reflected in this report, the exclusion of which would make this report misleading.

j) I have read National Instrument 43-101 and Form 43-101F1, and the report has been prepared in compliance with that Instrument and Form.

k) I hereby notify the British Columbia Securities Commission of my consent to the filing of this Technical Report with stock exchanges and other regulatory authorities in Canada, and any publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

Dated this 11th of August, 2009

Signed ________________________

Robert L. Sandefur, P.E.