ATLAS MOLY INVESTMENTS CORP.

RESOURCE ESTIMATE FOR THE TRES CHORRERAS PROJECT

COPPER-MOLYBDENUM-GOLD-SILVER OCCURENCE

Azuay Province, Ecuador

9650200N 663500E (PSAD South America Differential 56)

Submitted to:

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1 SUMMARY

Kirkham Geosystems Ltd. and Moose Mountain Technical Services (MMTS) were retained by Darren Lindsay, Director of Atlas Moly Investments Corp., to prepare an independent Technical Report on the Tres Chorreras copper, molybdenum, gold, and silver occurrences (Tres Chorreras Project) in southern Ecuador. The purpose of this report is to document a mineral resource estimate for the Tres Chorreras Project. This Technical Report conforms to Canadian Securities Administrators National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101). The author conducted a site visit on April 2-4, 2008. Drill core, underground workings, surface exposures, and exploration techniques were examined by the author and significant sulphide mineralization was observed.

The Tres Chorreras Project (663500E, 9650200N) is located in the western part of Azuay Province, southwestern Ecuador, 55 km east of the coastal city of Machala, and 70 km southwest of the city of Cuenca. The Tres Chorreras Concessions total 43,860 ha which are either registered or under application in the name of Atlas Moly S.A. (AMSA)

Land Status

The Tres Chorreras Project consists of one inscribed titled mining concession with an area of 49 ha and 19 requested mining concession applications comprising a total area of 43,860 ha. The Tres Chorreras Concession, which hosts the 3C deposit, is located central to Atlas Mineral Inc.'s (AMI) Tres Chorreras Project. The Tres Chorreras Concession was purchased in September, 2006 and registered in the name of AMSA on October 6, 2006. The Narihuiña-1 Concession application encompasses the Tres Chorreras Concession and is also registered in the name of AMSA. This concession right was purchased in June, 2006. The remaining 18 concession applications were acquired by map-staking. These concessions are also held by, or are in transfer to, AMSA and are under application subject to possible Government cancellation pending an approved review process with the AMSA.

Title to the Tres Chorreras Concession, the subject of this report, is held by AMSA, the company authorized to conduct business in Ecuador. AMSA is a wholly owned subsidiary of Atlas Moly Investments Corp. (AMIC). AMIC is in turn a wholly owned subsidiary of AMI, a public Alberta corporation listed on the TSX.

Environmental Impact Studies: Environmental Planning and Impact Assessments (EPIA) and Environmental Impact Assessments (EIA) for most of the concessions making up the Tres Chorreras Project, developed in accordance with the requirements of Ecuador's environmental legislation and Mining Laws, and accounting for the site's Bosque Protector (protected forest) status, have been prepared and submitted by Whistler Consulting Services of Quito, Ecuador. They include environmental and social baseline studies, impact analyses, and reclamation and closure plans. These studies must be approved and environmental permits issued prior to initiating exploration on the concessions in application. In late 2007, an EIA for Advanced Exploration was approved specifically for the Tres Chorreras Concession.

Apart from the 3C and Narihuiñia-1 concessions, the remaining 18 concessions were acquired by map-staking and their applications are registered in the name of AMSA mining concessions in Ecuador are map-staked and defined by UTM coordinates; field staking, blazing of lines, or erection of posts are not required.

Ownership of surface rights are alienated from the underlying mineral rights as related to mining concessions in Ecuador. AMSA has purchased surface rights to 6.6 ha within the Tres Chorreras Concession and one hectare within the contiguous Narihuiña-1 Concession as part of the mineral title purchase. Access to the Tres Chorreras Concession is gained by an intersecting property belonging to a former miner and current shareholder of AMSA with whom negotiations formalized an agreement covering the location of a camp and proposed road. AMSA does not currently own any other surface rights within the other Tres Chorreras Project concessions, but does have informal land use agreements with owners of surface rights in the vicinity. Depending on exploration results, additional more surface rights may be purchased to support a production facility.

AMIC's subsidiary, AMSA, has completed all approvals required to receive the back to work authorization and will receive the back to work authorization when the required Environmental Guarantee payment is made to the Ministry of the Environment. This will secure the approved Environmental Licence for exploration according to the updated regulations on August 26, 2010.

Exploration History

Gold-copper mineralization on the Tres Chorreras Concession was discovered by a group of high school students during a geological field trip in 1985. Artisanal miners occupied the Tres Chorreras Concession in 1987 and began surface prospecting and underground tunnelling exploration for gold-copper targets. To September 2006, when the concession was transferred to AMSA, the miners had completed in excess of 5,000 m of tunnelling. Between 1989 and 1990, the first systematic exploration program was undertaken by Rio Tinto Zinc (RTZ) and included ground geological, geochemical, and geophysical surveys; stream sediment sampling; soil and rock sampling; mechanical trenching; road building; and magnetometer surveys.

Between 1994 and 1995, the artisanal miners entered into an agreement with Ecuadorian Minerals Corp. who subsequently carried out detailed mapping, rock sampling, and diamond drilling of 15 drill holes totalling 1,945 m. Subsequently, Grantham Resources Inc. acquired the Tres Chorreras Concession, and, between 1996 and 1997, conducted an exploration program consisting of gridding, ground magnetometer survey, soil geochemistry survey, and approximately 400 m of trenching and rock sampling.

Surrounding concessions were applied for by map-staking. A base camp for exploration activities was established and surveying, mapping, and sampling of the tunnelling operations were initiated.

To December 31, 2006, approximately US$3,530,962 was spent on acquisition costs and US$68,810 on environmental studies; US$375,674 has been spent on direct exploration, including compilation work, underground mapping and sampling, surveying, and establishing a ten-man camp.

In 2008, exploration work on the property included 5,997 m of diamond drilling. The 24-hole diamond drill program was successful in intersecting high grade mineralization as well as contributing to the understanding of the geology of the area. Results included hole 3C-08-24 grading 0.042% Mo over its entire length (481.89 m), including 79 m at 0.068% Mo, and hole 32C-08-17 grading 56 m at 0.281% Mo and 0.52% Cu, including 10 m at 0.63% Mo and 1.32% Cu along the contact zone of the quartz monzonite intrusive body. The drill program also provided valuable information pertaining to the geometry and magmatic evolution of the intrusive system.

Geology and Mineralization

The 3C polymetallic copper-molybdenum-gold-silver (Cu-Mo-Au-Ag) deposit lies at the southern extremity of the Inter-Andean Graben which is bounded by the northeast-trending Bulubulu Fault System on the northwest side and the Giron Fault on the southeast side. The Inter-Andean Graben is an emerging mineral-rich belt which also hosts: the Quimsacocha, a high sulphidation epithermal Au-Cu-Ag deposit; the Rio Blanco, a low sulphidation Au-Ag deposit; the Chaucha porphyry-copper deposit; and, the Gaby porphyry Au-Cu-Mo deposit. None of these deposits have achieved commercial production to date.

The Tres Chorreras Project is located on the western flank of the Miocene to Oligocene Jubones Caldera and underlain by Eocene to Oligocene Saraguro Group volcanic rocks. These volcanic rocks are cut by a generally sub-circular, quartz-phyric diatreme breccia about 600 m in diameter. The volcanic clasts (fragments) are typically sub-rounded to rounded and occur up to a metre in size. These rocks are friable, porous, and host the majority of the disseminated, semi-massive to massive polymetallic mineralization on the Tres Chorreras Concession. Several small (200 m to 300 m), irregular fine-grained diorite plugs and dykes cut the volcanic rocks and the diatreme. The diorite is feldspar-phyric with amphibole and lesser quartz eyes. These intrusive rocks are interpreted to postdate diatreme emplacement.

Two principle fault directions have either been mapped or interpreted. The principle structure trends 30º and dips about 60º southeast and is the locus of the polymetallic (Cu-

Mo-Au-Ag) mineralization on the Tres Chorreras Concession. The north-northwest contact between the diorite and the diatreme/ignimbrite is commonly faulted and mineralized. This structure may be related to the Bulubulu Fault System. The second structural trend is represented by the transverse Galena Fault that strikes 130º.

Mineralization typically consists of chalcopyrite, molybdenite, pyrite, specular hematite, and magnetite, with lesser galena, sphalerite, arsenopyrite, gold, and silver. The mineralization is spatially associated with the contact between diorite and the diatreme and occurs in both rock types.

The Tres Chorreras copper-molybdenite-gold-silver (Cu-Mo-Au-Ag) mineral deposits, the 3C Breccia Deposit, and the Epithermal Deposit have been defined by 42 diamond drill holes for a total of 7,942 m of drilling and consists of a tabular, steeply dipping Cretaceous quartz monzonite intrusive body with a thickness of over to 100 m and a strike length of at least 250 m. A pervasive phyllic + local potassic alteration system, 700 m by 350 m in size, is developed in the intrusive itself. Mineralization, open to depth and to the northeast, is hosted in a quartz-pyrite stockwork and fractures within the alteration zone with the best grades located along the contact zone of the intrusive.

The Tres Chorreras occurrence is one of numerous such deposits and occurrences in the area.

Interpretation and Conclusions

To date, Atlas has spent over $1- million in exploration on the concession.

A total of 42 drill holes totalling 7,940.7 m were drilled in two campaigns. In addition, 1,027 underground chip samples were incorporated into the database. The drill holes were composited to 2.5 m within geology domains and block modelling was employed to estimate grades into 10 x 10 x 10 m blocks.

The purpose of this Technical Report was to upgrade and present the mineral resource estimate for the Tres Chorreras Project taking into account the current metal prices and shown in Tables 1.1 and 1.2. Calculated on a base case of US$20 net value cut-off for potentially open-pittable resources and US$50 net value cut-off for potentially underground mineable resources, the total Indicated resources are estimated to be 17.2 million tonnes with a net value of $60 per tonne and grades of 0.047% molybdenum, 0.0105% copper, 0.739 g/t gold and 7.2 g/t silver along with 1.40 g/t gold equivalent. Total Inferred resources are estimated to be 26.5 million tonnes with a net value of $56 per tonne and grades of 0.047% molybdenum, 0.105% copper, 0.684 g/t gold and 8.6 g/t silver along with 1.32 g/t gold equivalent.

The gold equivalent calculation is based on the following metal prices: gold, US$1,450/ounce; silver, US$28.00/ounce; molybdenum, US$15.00 per pound; and, copper, US$3.60 per pound, which represents the 3-year trailing averages. The US$80 underground case is presented in order to give the reader an appreciation of the sensitivity of the underground component in the case of higher cost mining methods.

In-situ (i.e. in the ground) metal content is calculated and listed as the number of pounds of molybdenum and copper, and the number of ounces of gold and silver; these are calculated in an effort to give the reader an appreciation of each metal at cut-off. Note that recoveries are assumed to be, at this early stage and lacking any definitive metallurgical recovery data, 100%. The total Indicated metal is estimated to be 17.8 million pounds of molybdenum, 40.1 million pounds of copper, 0.41 million ounces of gold, and 4.0 million ounces of silver, or 0.77 million gold equivalent ounces. The total Inferred metal is estimated to be 23.1 million pounds of molybdenum, 61.3 million pounds of copper, 0.58 million ounces of gold, and 7.3 million ounces of silver, or 1.12 million gold equivalent ounces.

TABLE 1.1 INDICATED AND INFERRED TRES CHORRERAS RESOURCES

OPEN PIT	CUTOFF	TONNES	NET$	MO	CU	AU	AG	AUEQ	MO	CU	AU	AG	AUEQ
CLASS	NET$			%	%	g/t	g/t	g/t	Mlbs	Mlbs	K Ounces	K Ounces	K Ounces
Indicated	20	12,680,000	52	0.023%	0.073%	0.770	7.0	1.20	6.5	20.4	313.9	2,855.0	490
Inferred	20	19,464,000	47	0.025%	0.082%	0.616	7.5	1.09	10.9	35.1	385.5	4,669.2	680
UNDERGROUND													
Indicated	50	4,566,000	81	0.112%	0.195%	0.652	7.9	1.96	11.3	19.6	95.6	1,161.4	287
Inferred	50	7,021,000	83	0.079%	0.169%	0.872	11.6	1.96	12.2	26.2	196.8	2,627.5	443
UNDERGROUND													
Indicated	80	1,495,000	121	0.205%	0.283%	0.810	9.7	2.97	6.7	9.3	38.9	466.6	143
Inferred	80	2,789,000	114	0.117%	0.218%	1.187	14.8	2.70	7.2	13.4	106.4	1,325.9	242

TABLE 1.2 COMBINED INDICATED AND INFERRED TRES CHORRERAS RESOURCES

	TONNES	NET$	MO	CU	AU	AG	AUEQ
	US$20 and US$50 Cut-off		%	%	g/t	g/t	g/t
Indicated	17,246,000	60	0.047%	0.105%	0.739	7.2	1.40
Inferred	26,485,000	56	0.040%	0.105%	0.684	8.6	1.32
	US$20 and US$80 Cut-off						
Indicated	14,175,000	59	0.042%	0.095%	0.774	7.3	1.39
Inferred	22,253,000	55	0.037%	0.099%	0.688	8.4	1.29

The current work assumes that Tres Chorreras would be mined using a bulk mining method followed with a smaller underground component of extraction.

Tres Chorreras Concession hosts a significant resource which warrants further exploration. Additional drilling and metallurgical testing are required to increase the confidence in the Indicated and Inferred Mineral Resources. More drilling is required particularly at the northeast of the 3C Breccia Deposit and the southern extension of the Epithermal Deposit.

Pending positive results of the proposed metallurgical testing and additional drilling, a preliminary economic assessment (PEA) would be the next step in determining the economic potential of the deposit.

Recommendations

The following actions are recommended to further evaluate the resource potential and evaluate the economic viability of the Tres Chorrera Project:

- Additional drilling on the concession: a minimum 15 hole program, totalling 3,000 m, to expand the resource base with in-fill drilling to up-grade the classification of the Inferred mineral resources to the Indicated category.
- Metallurgical testing of typical material from both the 3C Breccia Deposit and the Epithermal Deposit to determine preliminary applicable milling methods, recoveries, and configurations for the initial underground and surface facilities. This testing will provide initial parameters for mining and milling the deposits which are required to complete a PEA (preliminary economic assessment).
- Conduct a PEA after the results of the recommended drilling and metallurgical work are complete.
- Perform an audit of preparation facilities and the assay laboratory.
- Continue with the QA/QC of the master database.
- Continue density measurements and analysis.
- Perform geostatistical evaluation to support of future resource estimates.
- Generate an updated mineral reserve estimate and Technical Report.

It is recommended that AMIC dedicate a total budget of US$2.04 million to accomplish the activities outlined in the 2013-2014 proposed budget shown in Table 1.3.

A proposed budget for 2013-2014 is shown in Table 1.3.

TABLE 1.3: BUDGET FOR PROPOSED 2013-2014 WORK PROGRAM (US$)

Item	Comment	Total (US$)
Drilling	3,000 m DDH	600,000
Geology, GIS, and General Labour		60,000
Geochemistry/Analytical	soil, rock, and core samples	80,000
Metallurgical Testing and Report		200,000
Resource Estimate and Report		60,000
Preliminary Economic Assessment	technical report	210,000
TOTAL CONTRACT COSTS		1,210,000
Field Costs		60,000
Government Fees, Licenses, Permits, and Tenure		150,000
Community and Environment		100,000
Legal		100,000
Communications		4,000
Hotel, Travel, and Transportation		80,000
TOTAL DIRECT COSTS		494,000
TOTAL PROJECT COSTS		1,704,000
Salary		150,000
NET COSTS		1,854,000
Contingency	10%	185,400
TOTAL		**2,039,400**

2 INTRODUCTION

Atlas Moly Investment Corp. (AMIC), through its Ecuadorian subsidiary, Atlas Moly S.A. (AMSA), holds 100% of the mineral rights to the Tres Chorreras molybdenum-copper-gold-silver occurrence (Tres Chorreras Project) in southern Ecuador.

Moose Mountain Technical Services (MMTS) was retained by AMIC to evaluate the property, create a geological model, produce a resource estimate, and prepare a Technical Report compliant with National Instrument 43-101 (NI 43-101) and Form 43-101F1.

Portions of the material in this report were originally published in *Technical Report on the Tres Chorreras Polymetallic Copper-Molybdenum-Gold-Silver Project, Azuay Province, Ecuador* (Melling et al., 2007) and in *Resource Estimate for the Tres Chorreras Copper Molybdenum, Gold, Silver Occurrence, Azuay Province, Ecuador* (Morris and Kirkham, 2008). Both reports were prepared for the previous owner of the Project, Atlas Minerals Inc. (AMI).

AMIC has consolidated more than twenty years of the property's exploration history. Robert J. Morris, MMTS, completed a site visit from April 2-4, 2008. Morris examined drill core (at site and at a Cuenca warehouse); toured underground workings and surface exposures; and, reviewed exploration procedures used at the site. Based on his experience and qualifications, and a review of the data, the author believes that the drilling programs were conducted in a professional manner and the quality of data and information produced meets or exceeds accepted industry standards. The author also believes that, for the most part, the work has been directed or supervised by individuals who would fit the definition of a Qualified Person in their particular areas of responsibility as set out by NI 43-101. A site visit was not done in 2012 due to the presence of illegal artisanal miners on site and a potential risk to safety as perceived by the author. There has been no exploration or development work on the property since the 2008 resource estimate.

Although MMTS was actively involved in the preparation of this report, it was not directly involved in or responsible for the collection of data and information, and it did not have a role in the execution or direction of the Project's work programs conducted on the property or off. Much of the data has undergone thorough scrutiny by AMIC, as well as MMTS's data verification procedures as described in Section 12 (Data Verification). Information sources are listed in Section 27 (References).

2.1 FREQUENTLY USED ACRONYMS AND ABBREVIATIONS

°C	degree Celsius
3D	three-dimensional
Ag	Silver
AMI	Atlas Minerals Inc.
AMIC	Atlas Moly Investments Corp.
AMSA	Atlas Moly S.A.
ARCOM	Agencia de Regulación y Control Minero
Au	Gold
AuEq	gold equivalent
BFS	bankable feasibility study
Bondar-Clegg	Bondar-Clegg & Co. Ltd.
BQ	drill hole core size (approx 46 mm diam.)
Buscore	Buscore International Consulting
BVI	British Virgin Islands
Ca	Calcium
Cu	Copper
CV	coefficient of variation
DDH	diamond drill hole
EIA	de Impacto Ambiental (environmental impact assessment
EIS	environmental impact statement
EM	electromagnetic
g	gram
g/t	grams per tonne
gpt	grams per tonne
Geotech	Geotech Ltd.
GIS	geographical information system
Global Minerals	Global Minerals Corp.
Ha	hectare
HQ	drill hole core size (approx. 78 mm diam.)
HS	high sulphidation
Kirkham Geosystems	Kirkham Geosystems Ltd.
km	kilometre
LHD	left hand drive
LS	low sulphidation
M	metre
Ma	million years
MAE	Ministry of the Environment of Ecuador
mm	millimetre
MMTS	Moose Mountain Technical Services
Mo	molybdenum

MoEq	molybdenum equivalent
NI 43-101	National Instrument 43-101
Ni	nickel
NPV	net present value
NQ	drill hole core size (approx. 60 mm diam.)
NSR	net smelter return
oz	ounce
Pb	lead
Pd	palladium
ppb	parts per billion
ppm	parts per million
Project	Tres Chorreras Copper-Molybdenum-Gold-Silver-Project
Pt	platinum
QA/QC	quality assurance/quality control
QFP	quartz-feldspar-porphyry
RVI	Relative Variability Index
s	second
Societies	Asociacion de Mineros Autonomos La Chorrera (3C Socios)
T	tonne (metric ton)
TULAS	Secondary Legislation Unified Text
US$	United States dollar
Zn	zinc

3 RELIANCE ON OTHER EXPERTS

Some of the content used in this report was originally published in the following Atlas Minerals Inc. (AMI) reports: *Technical Report on the Tres Chorreras Polymetallic Copper-Molybdenum-Gold-Silver Project, Azuay Province, Ecuador* (Melling et al., 2007) and *Resource Estimate for the Tres Chorreras Copper, Molybdenum, Gold, Silver Occurrence, Azuay Province, Ecuador* (Morris and Kirkham, 2008). AMI was the previous owner of the Tres Chorreras Project.

Moose Mountain Technical Services (MMTS) prepared this report for Atlas Moly Investment Corp. (AMIC). The quality of information, conclusions, and estimates contained herein are based on industry standards for engineering and the evaluation of a mineral project. The report is based on: information available at the time of preparation; data supplied by outside sources: engineering, evaluation, and costing by other technical specialists; and, the assumptions, conditions, and qualifications set forth in this Technical Report.

Section 14 (Updated Mineral Resource Estimate) was completed by Garth Kirkham, Kirkham Geosystems Ltd., Burnaby, BC.

This report is intended for use by AMIC, subject to the terms and conditions of AMIC's contract with MMTS. MMTS disclaims any liability to a third party with respect to any reliance on this document without MMTS's written consent.

MMTS has not verified the legal aspects of the ownership of the mineral claims or the rights granted by the Government of Ecuador. MMTS has also not verified any environmental, social, or political issues.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The Tres Chorreras Concession (centre point 663500 E, 9650200 N, UTM projection PSAD 56, zone 17) is located in the western part of Azuay Province, in southwestern Ecuador, approximately 400 km south-southwest of Quito, Ecuador's capital city; 70 km southwest of Cuenca, Ecuador's third largest city; and, 55 km east of the port city of Machala (Figure 4-1).

Figure 4-1: Location and Access Map (Melling et al., 2007)

The Project consists of a single registered mining concession, Tres Chorreras, in southwestern Ecuador and comprises a total area of 49 ha (Figure 4-2). The Tres Chorreras

Concession hosts the 3C deposit. Table 4.1 summarizes the concession as of October 15, 2012.

TABLE 4.1: CONCESSION CONTROLLED BY ATLAS MOLY INVESTMENT CORP.

Concession	Concession Number	Area	Expiration Date	Status
Tres Chorreras	2202.1	49 ha	April 30, 2031	registered mining concession

The Tres Chorreras Concession and mineral title rights were purchased by AMSA from the Asociacion de Mineros Autonomos La Chorrera (3C Socios) on September 6, 2006 for US$301,500. The concession was registered in the name of Atlas Moly S.A. on October 8, 2006 with the Dirección Nacional de Minería, currently known as Agencia de Regulación y Control Minero (ARCOM). Full title is secured.

In 2007, this sale/purchase agreement was reviewed by the independent law firm, Vivanco & Vivanco (V&V) of Quito, Ecuador and a written legal opinion confirmed that the purchase and the transfer of the title to the Tres Chorreras Concession was legal and valid. The sale/purchase agreement established that 134 shares of the Asociación de Mineros Autónomos La Chorrera were purchased by AMSA under separate individual agreements with various shareholders for US$2,250 per share, bringing the total value of these shares to US$301,500.

In addition to the purchase of the mineral title to the Tres Chorreras Concession, additional sale/purchase agreements were reached between the various Mining Societies (Societies), that comprise the Asociación de Mineros Autónomos La Chorrera, and other individual shareholders who were actively mining at Tres Chorreras in 2006. At that time, AMSA purchased select equipment, buildings, and tunnels through a series of staggered payments and share issues between September 22, 2006 and May 1, 2007. As of the effective date of this report, AMSA has complied with all the agreements and payment terms, or negotiated specific mutually agreeable alternate agreements with each Society or individual. As of the date of this report, AMSA had honoured the individual payment plans with each of the previous owners as required in the agreements. These agreements were also reviewed by V&V and a written legal opinion confirmed that these agreements were legal and valid.

AMSA's purchase of the Tres Chorreras Concession title, mining equipment, buildings, and tunnels from the Societies, including provision for the final payment mentioned here, totalled US$2.64 million and is registered as part of the 2006 consolidated audited accounts of AMI. Additionally, the issue of 1,491,371 shares (valued at US$0.60 per share) of AMI was included in the sale/purchase agreements.

Several, but not all, of the Societies retained the right to continue mining operations for up to six months following the approval of an Environmental License for Production and a Production Contract permit mining; AMSA is responsible for preparing these documents at the appropriate time. In the meantime, AMSA has initiated talks to retain the option of an economic settlement with these same Societies in lieu of the 6-month work period.

The Narihuiña-1 Concession surrounds the Tres Chorreras Concession and has an area of 190 ha. This concession application is also registered to AMSA. The Narihuiña-1 Concession is currently in litigation with the Government of Ecuador due to its 'in process' status when Mandate 06, the "Mining Mandate", was applied in April, 2008, but it is under legal appeal by AMSA. The term of the concession, if retained, will be 360 months (30 years), after which it can be renewed.

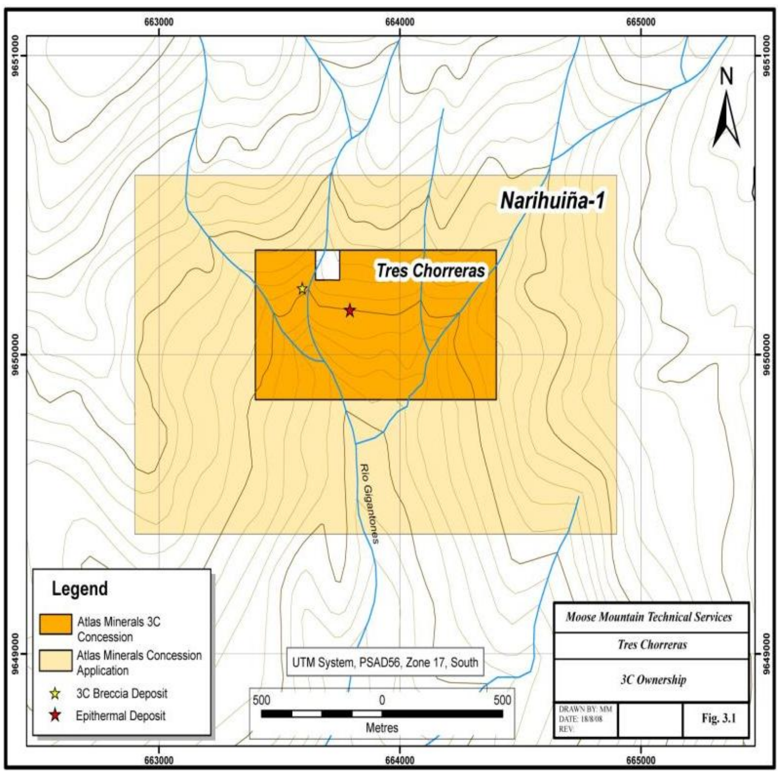


FIGURE 4-2: TRES CHORRERAS BLOCK MINERAL OWNERSHIP

AMIC holds 100% of the mineral rights to the Tres Chorreras Concession through AMSA (Code 2202.1).

By purchasing the Tres Chorreras Concession, AMIC has assumed the underlying liability of a 6-month production option or a payment option to the original mining societies who sold the project, as well as a 2.5% NSR that can be purchased at the rate of US$1.0 million for each 1% NSR. The NSR holder is Cliffmont Resources Ltd. (ex-Atlas Minerals Inc.) who was the original owner of the project.

In the vicinity of the project area, AMSA owns 7.6 ha of surface rights and maintains legally negotiated, right-of-way agreements with landowners securing access the project area as required.

According to Ecuadorian Mining Law, as published in the official register on January 29, 2009, exploration projects must comply with the following: concessions registered against title to mining properties have a term of 25 years and may be approved for renewal for successive 25-year periods provided that a notice of work is submitted and an investment plan is filed by the registered concession holder before the expiry date. Mineral concession rights holders must pay an "annual conservation patent fee" for each hectare of area that is covered by their concessions; this fee must be paid by the end of March within the given year. When the appropriate fees are paid, the registration of each concession is renewed in the name of the present holder for an additional one-year term.

To retain 100% mineral rights to the Tres Chorreras Concession, AMIC was required to pay the "annual conservation patent fee" as described in Article 34 of the Mining Law (2009); Table 4.2 summarizes these patent fees. According to AMIC, the Tres Chorreras Concession is in good standing and AMIC has paid its annual conservation patent fees.

TABLE 4.2: ANNUAL CONSERVATION PATENT FEES

Conservation Patent Fee per ha per year

Stage of Investigation	(% of Basic Wage per Hectare per Year*)
Prospecting	0
Initial Exploration (4 yrs)	2.5
Advanced Exploration (4 yrs)	5
Technical Studies (2 yrs)	5
Exploitation (25 yrs; renewable)	10

*Current basic wage is $292.00

On April 18, 2008 the National Constitutional Assembly put forth Mandate 06, known as the "Mining Mandate" which halted all exploration activities in Ecuador. In 2008-2009, the Ecuadorian Mining Laws and associated regulations, including the environmental regulations, were rewritten and passed into law in January 2009 (Mining Law) and November 2009 (Mining Regulations and Environmental Regulations).

AMSA, AMIC's subsidiary, has completed all required approvals and will receive the 'back to work' authorization after paying the required Environmental Guarantee to the Ministry of the Environment. This will secure the approved Environmental Licence for exploration according to the updated regulations dated August 26, 2010.

4.2 PERMITS

A set of permits, as outlined in the Mining Law, is required before any exploration activities can begin; these permits include: an Environmental Impact Assessment (EIA), an archaeological/cultural patrimony permit, and a water use permit. Table 4.3 lists the permits required prior to any exploration activity on a mineral concession and the date each permit was received by AMSA.

TABLE 4.3: PERMIT STATUS FOR THE TRES CHORRERAS CONCESSION

DATE	ITEM
November 20, 2007	Approval of EIA for exploration stage
December 20, 2007	Permit for archaeological research and rescue
March 18, 2010	Certificate of intersection with National Protected Areas
April 23,2010 (Title substitution)	Mining rights
January 20, 2011	Water use permit for exploration and development activities
February 2, 2011	Ministry of Electricity and Renewable Resources
February 7, 2011	Telecommunications approval (Senatel)
February 23, 2011	Military approval
April 5, 2011	Civil Aviation certification
April 25, 2012	Environmental Audit
Pending payment of guarantee bond	Environmental License
Paid up to 2012	Municipal of Quito Patents
	National Highways authority approval

Comment [LB1]: Date for this?

The Tres Chorreras Concession was settled under the guidelines of the Mining Mandate of April 2008, and, at the time, AMIC presented all the required studies and documentation.

The Project's EIA was prepared according to the requirements of Ecuador's environmental legislation and Mining Law and, accounting for the site's *Bosque Protector* (protected forest) status, has been completed and submitted by Whistler Consultores Cia. Ltda. (Whistler), Quito, Ecuador.

AMSA's EIA includes the following:

- a project description based on technical information presented in this feasibility study;
- a detailed baseline analysis, including meteorology, hydrology, hydrogeology, geology, soils, archaeology, flora and fauna, and socio-demography.;
- an analysis of project impacts;
- an environmental management plan; and,
- a provisional reclamation/closure plan.

As part of the Mining Mandate, the Ministry of Environment of Ecuador (MAE) required all concession title holders to present an environmental audit. This audit was initially prepared by Whistler in 2010, and was updated and completed by Terrambiente Consultores Cia. Ltda. (Terrambiente). MAE approved the environmental audit n April 25, 2012.

According to mining regulations (Article 26), all exploration and mining concession holders in Ecuador must present an Environmental Impact Study (EIS), in addition to favourable "administrative acts" which are defined as permits or certifications from competent authorities; these administrative acts can include authorizations from the following government departments:

- Municipal Councils, within urban areas in accordance with territorial organization and economic development of the County
- Ministry of Transportation and Public Works, in relation to buildings, public roads, and railroads
- National Telecommunications Bureau, with respect to radio-communication stations, antennas, and related infrastructure
- Ministry of Defense
- Water Authorities (SENAGUA)
- National Hydrocarbons Direction
- National Direction of Civil Aviation
- Ministry of Electricity and Renewable Resources
- National Institute of Cultural Patrimony

AMSA has received these permits.

To complete the environmental process, AMSA is required to issue an environmental guarantee bond which is equivalent to the Project Environmental Management Plan budget

($46,717.37) that is included in its approved Environmental Audit. When AMSA issues this bond, they can obtain an Environmental License for advanced exploration.

Under the current legislation, once operations are re-initiated, an Environmental Audit is required every two years. This audit should reflect all compliances and non-compliances of the operation based on the Environmental Management Plan and on regulations set forth in the Secondary Legislation Unified Text (TULAS) Texto Unificado de Legislación Secundaria. These audits will include addendums to the schedule and environmental budget as required to estimate the environmental guarantee bond, which shall be in force at all times.

After a company decides to initiate production operations, they are required to present a new Environmental Impact Study (EIS) covering this phase of the operation. In addition to the EIS, the company must submit a schedule and environmental budget which will define the amount required for the environmental guarantee bond and trigger an updated environmental license for production. This document may contain addendums to the project description as well as new operations within the exploration studies such as new tunnels or metallurgic studies.

4.3 Royalties

At the time of this report, a minimum of 5% Net Smelter Return (NSR) royalty, as stated in the Mining Law, is payable to the government with respect to the projected output of the Tres Chorreras copper-molybdenum-gold-silver Project. IT should be noted that NSR royalty may change on approval of the future Mining Permit because of the requirement for negotiation of the royalty rate as a part of the process related to Mining Approval.

A 2.5% NSR is payable to Cliffmont Resources Ltd. with respect to the Project; however, AMIC has the contractual right, in exchange for a payment of $1.0 million per 1% NSR, to purchase this NSR outright. AMIC intends to re-evaluate this option after a formal decision has been made to proceed.

MMTS has not verified the legal aspects of the mineral claims ownership or the rights granted by the Government of Ecuador. MMTS has not verified environmental, social or political issues.

5 ACCESSIBILITY, CLIMATE, INFRASTRUCTURE AND PHYSIOGRAPHY

The property lies on the western slopes of the Western Andean Cordillera and elevations in the region range from 2,800 m to 3,300 m. The topography on the Tres Chorreras Concession is rugged and very steep. To the south and west, the topography becomes more subdued. . The topography slopes to the south which is lightly treed and well drained with several creeks; waterfalls are common. Low brush and scrub forest covers 50-60% of the area. There is light farming activity with small pasture areas cleared for cattle grazing.

The Tres Chorreras Concession is located in the western part of Azuay Province, in southwestern Ecuador, approximately 400 km south-southwest of Quito, Ecuador's capital city; 70 km southwest of Cuenca, Ecuador's third largest city; and, 55 km east of the port city of Machala. Several daily flights service Cuenca from Quito. The Project can be accessed by road from Cuenca to Santa Isabel (65 km) on a paved highway, then on a third-order road from Santa Isabel to the town of Pucara (59 km), and finally from Pucara to the village of Quinoas (11 km). The final 70 km of road access (from Santa Isabel to Quinoas) is on dirt/gravel roads. Driving from Cuenca to Quinoas takes about 3.5 hours. Travelling from Quinoas to the property takes about 1.5 hours on a 3 km horse trail located directly to the south. Local access to the property is on foot.

Electrical power is available in Quinoas; however, power for the exploration project is generated on-site with diesel generators. In 2007-2008, a 40-person camp was built as a base for exploration activities.

The local climate is variable. Average daily temperatures range from 7ºC to 11ºC.

Annual rainfall on the property varies between 1,000 mm and 1,250 mm. The driest period occurs between June and September, and the wettest period occurs between February and April; during the rainy season, periods of fog, low cloud and wind are common. Humidity averages about 90% at higher elevations. The prevailing wind direction is east-northeast and wind speeds commonly range from 1.1 m/s to 3.5 m/s. The maximum recorded wind speeds are 16.0 m/s. Exploration activities on the Tres Chorreras Project can be conducted year round (Melling et al., 2007).

PHOTO 5-1: VIEW OF THE TRES CHORRERAS AREA FROM THE EASTERN ACCESS ROAD
(THE CAMP IS VISIBLE IN THE LARGE VALLEY NEAR THE CENTRE OF THE PHOTO)

PHOTO 5-2: VIEW OF THE NEW TRES CHORRERAS CAMP

6 HISTORY

This section documents the chronological history of the Tres Chorreras property.

1985

Gold-copper mineralization on the Tres Chorreras Concession was discovered by a group of high school students during a geological field trip (Yacoub, 1999).

1987

Local miners of the Pucara Canton began surface prospecting and underground tunnel exploration for gold-copper targets located on and around the Tres Chorreras Concession. Until the mid-90s, over 30,000 oz of gold was reported to have been produced on the property using basic and small scale techniques (Yacoub, 1999).

1988

Regional geological mapping was completed by Ecuadorian government geologists at scale 1:100,000 (Yacoub, 1999).

1989-1990

A systematic exploration program by Rio Tinto Zinc included ground geological, geochemical, and geophysical surveys; stream sediment sampling; soil and rock sampling; dozer trenching; road building; and, magnetometer surveys. This program was terminated after disagreements between the Pucara Mining Association and Rio Tinto Zinc (Yacoub, 1999). This data has not been reviewed by MMTS.

1994-1995

The Pucara Mining Association entered into an agreement with Ecuadorian Minerals Corp. who subsequently carried out detailed mapping, rock sampling, and diamond drilling of 15 drill holes. This agreement was terminated in 1995 (Yacoub, 1999). AMSA obtained the drill logs, sections, and plans developed during this time.

1996-1997

Grantham Resources Inc. (Grantham) acquired the Tres Chorreras Concession, and conducted an exploration program consisting of gridding, ground magnetometer survey, soil geochemistry survey, and approximately 400 m of trenching and rock sampling. This work program led to the discovery of two additional prospects: Cuy and Arsenic (Yacoub, 1999). AMSA obtained this data (excluding the magnetometer survey).

1999

Yacoub prepared an evaluation report on the geology, geochemistry, and geophysics of the Tres Chorreras Concession for Global Minerals Corp. (Global Minerals). Yacoub recommended a US$50,000 preliminary exploration program with a follow-up underground development project. It is not known why Global Minerals did not proceed with the project.

2005

Buscore International Consulting (Buscore) obtained most of the historical data from Grantham. Schultz, a consultant with Buscore, compiled some of the data into a digital format. Preliminary field investigation of the Tres Chorreras Concession was completed: this included sampling of the underground workings, muck piles, and tailings.

2006

Atlas Moly Investment Corp. (AMIC) and Atlas Moly S.A. (AMSA) were formed to complete negotiations with the Asociación de Mineros Autónomos La Chorrera to acquire the mineral title for the Tres Chorreras Concession.

Surrounding concessions were acquired by map-staking and later terminated by the Mining Mandate of 2008. AMI (Calgary) assumed 100% ownership of AMIC, AMSA, and the Tres Chorreras Project. A base camp for exploration activities was established and surveying, mapping, and sampling of the tunnelling operations were initiated.

2007-2008

Work by AMI included camp and trail construction; drill site preparation; removal of approximately 22 tonnes of accumulated trash from informal mining activities; drilling of 27 holes totalling 5,996.7 m; and, underground mapping, surveying and sampling of 2,212 m of drill core.

2009-2010

AMIC, with control of AMSA and the Tres Chorreras Concession, was purchased by private individuals. AMIC has since continued business in Ontario, Canada and controls all activities for AMSA and the Tres Chorreras Concession (Code 2202.1).

There has been limited production from the property. It was estimated that between 5,000 and 50,000 tonnes of material had been removed from the tunnels since the artisanal production was halted in September 2006. Recent surveys of the underground workings suggest that only 4,000 tonnes were removed.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 GEOLOGICAL SETTING

7.1.1 Regional Geology

Ecuador is comprised of five north-south, elongated physio-geographic regions separated by north-northeast trending faults (Figure 7-1). They include: a wide coastal plain in the west, underlain by accreted Cretaceous oceanic crust; the Western Cordillera, underlain by accreted Cretaceous to Eocene oceanic terranes; the Inter-Andean Graben, flanked by active volcanoes; the Eastern Cordillera (Cordillera Real), metamorphic rocks of Precambrian to Cretaceous age; and, the Oriente Basin, flat-lying Mesozoic to Tertiary sedimentary rocks. The collage of basement terranes is overlain in the southwest by an Eocene to Recent calc-alkaline volcanic arc (Saraguro Group) with numerous Tertiary granitoid intrusions. The Tertiary volcanic rocks, in particular the voluminous Early Miocene ignimbrites (20-22 Ma), host many of the mineral deposits.

Metalliferous mineralization in the region is generally controlled by regional basement structures of Andean trend (north-northeast) which also controlled Tertiary volcanism, emplacement of dome complexes, and calderas. Styles of mineralization include gold skarn, high-sulphidation and low-sulphidation epithermal, and gold (copper) and copper (molybdenum) porphyries. An important Jurassic copper porphyry-epithermal gold district (Zambora Copper Gold Belt) occurs on the eastern flank of the Cordillera Real.

The Tres Chorreras polymetallic (Cu-Mo-Au-Ag) deposit lies at the southern extremity of the Inter-Andean Graben which is bound by the northeast-trending Bulubulu Fault System on the northwest side and the Giron Fault on the southeast side (Figure 7-1). Several other significant mineral deposits occur within boundaries of the Inter-Andean Graben which are also subject to active exploration programs; these include the Quimsacocha, a high sulphidation epithermal gold-copper-silver deposit; the Rio Blanco, a low sulphidation gold-silver deposit; and, the Gaby, a porphyry gold-copper-molybdenum deposit.

Nearly all of Ecuador's current and historical gold production has come from informal, artisanal underground and placer operations which makes it difficult to estimate true gold production for Ecuador. No large scale mining projects have been developed to date.

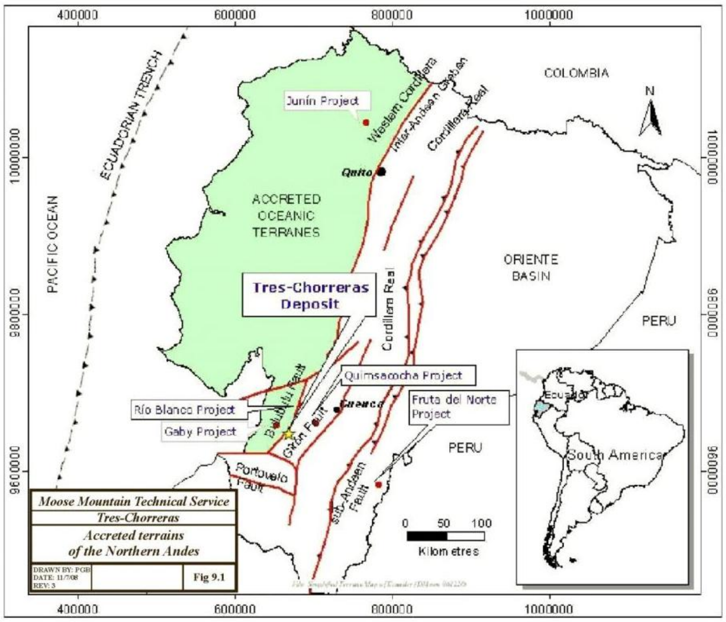


FIGURE 7-1: ACCRETED TERRANES OF THE NORTHERN ANDES (MELLING ET AL., 2007)

7.1.2 Local Geology

The geology of the area encompassing the Tres Chorreras Project was mapped by Pratt, Figueroa, and Flores (1997) at a scale of 1:200,000.

The Tres Chorreras Project is located on the western flank of the Miocene to Oligocene Jubones Caldera (Figures 7-2 and 7-3). The oldest rocks exposed in the area are part of the Triassic-Jurassic El Oro Metamorphic Complex. This complex is interpreted to underlie most of the area and consists primarily of metamorphosed sedimentary rocks which range from sub to lower greenschist facies. The El Oro Metamorphic Complex is exposed in structural panels in the southern and northern parts of the concession.

The unconformably overlying Cretaceous rocks consist of oceanic basalts (ophiolites) and turbidites which are best exposed over a large area to the northwest of the concessions. Toward the east, is an island arc sequence known as the Paleocene-Eocene Sacapaica Unit.

Oligocene volcanic rocks (Saraguro Group) represent the first product of large scale, voluminous, explosive dacitic to rhyolitic volcanism. The final stages of these eruptive events resulted in the formation of the Jubones Caldera, a circular volcanic feature some 15 km to 20 km in diameter. Rhyolitic phases (stocks, domes, and flows) associated with the final stages of the Jubones Caldera are present. The entire stratigraphic package is cut by various intrusive phases including granodiorite, quartz diorite, diorite, and gabbros.

The north-northeast trending El Cinturon-Ganarin Fault System and related structures are interpreted as being syndepositional structures. The east-west trending Jubones Fault System traverses the southern part of the map area. This fault system is interpreted as a reverse fault juxtaposing the Triassic-Jurassic El Oro Metamorphic Complex onto the Oligocene volcanic rocks of the Saraguro Group.

The 3C polymetallic (Cu-Mo-Au-Ag) deposit lies at the southern extremity of the Inter-Andean Graben which is bound by the northeast-trending Bulubulu Fault System on the northwest side and the Giron Fault on the southeast side. These fault systems are interpreted as regional basement fractures which controlled Tertiary volcanism, emplacement of dome complexes, calderas, and metalliferous mineralization in the area.

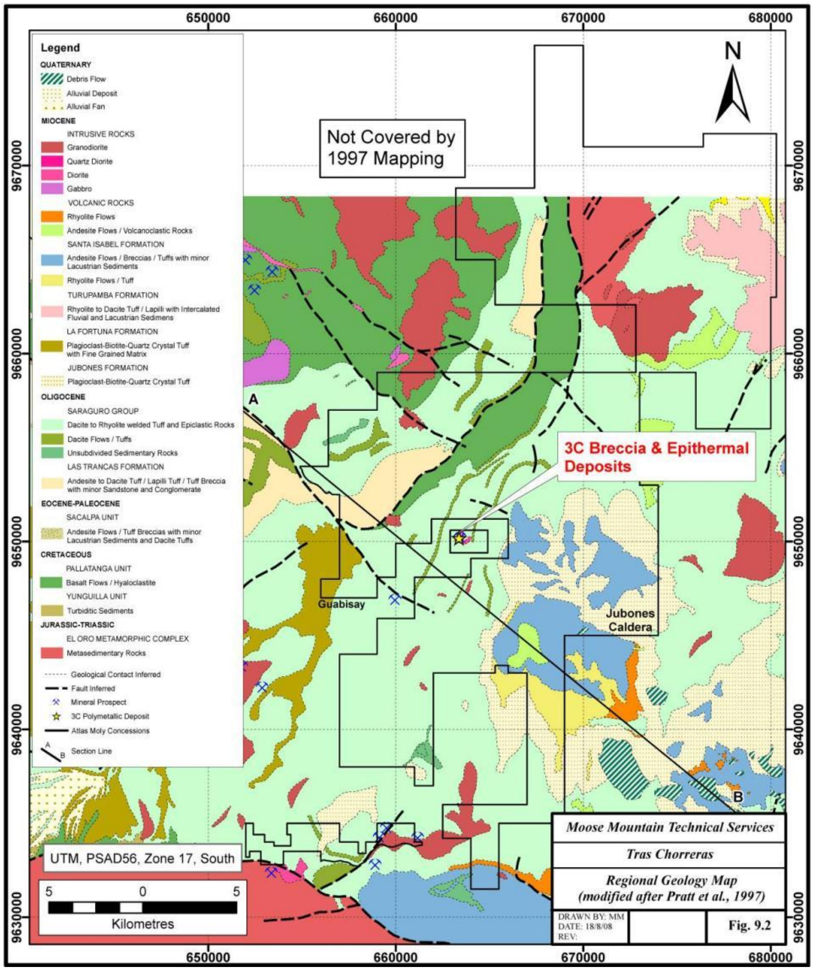


FIGURE 7-2: REGIONAL GEOLOGY MAP (MELLING ET AL., 2007)

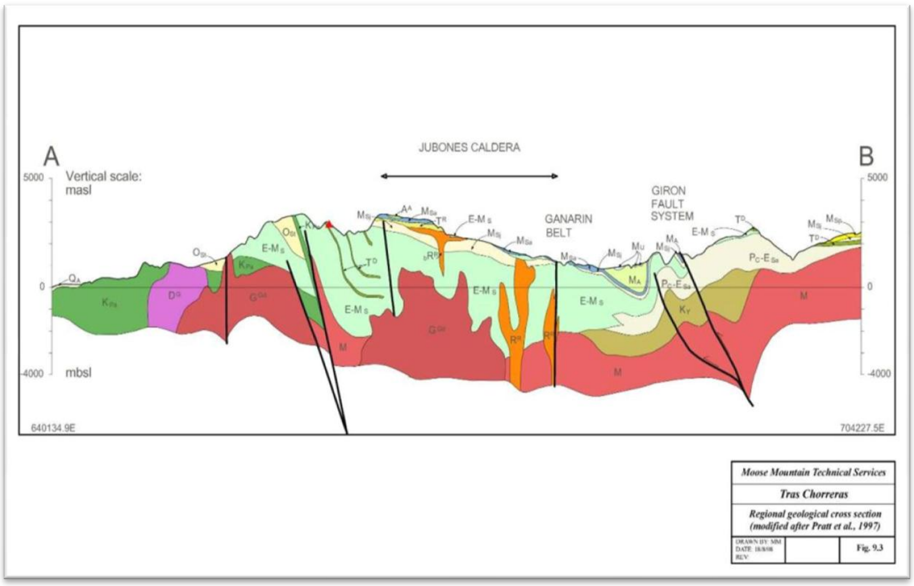


FIGURE 7-3 REGIONAL GEOLOGICAL CROSS SECTION (MELLING ET AL., 2007)

7.1.3 Geology of the Tres Chorreras Concession

The geology of the Tres Chorreras Concession is shown in Figure 7-4. The concession is underlain by Eocene to Oligocene Saraguro Group that, at the regional scale, is comprised of andesitic flows, tuff breccias, and lesser quartz latites and dacitic tuffs. Locally, these rocks have been mapped as a welded ignimbrite sequence consisting of compact, cream, grey or purplish, dacitic to rhyolitic, poorly sorted tuff breccias, with lithic and pumice fragments up to 4 cm long in a ash/crystal matrix. Eutaxitic textures are common. These rocks strike northeast and dip moderately 60º southeast in the west and 20º to 25º southeast in the vicinity of the Quebrada Quinuas.

Within these Saraguro Group, volcanic rocks are several small dacite/microdiorite intrusions. These small, 200 m to 300 m, irregular grey-green, fine-grained diorite plugs and dykes intrude the volcanic rocks. The intrusions are feldspar-phyric with amphibole and lesser quartz eyes and, within the dacite/microdiorite intrusions, are a series of sulphide rich breccia chimneys containing the 3C Breccia Deposit. These rocks are friable and porous, and host the majority of the disseminated, semi-massive, and massive polymetallic (Cu-Mo-Au-Ag) mineralization on the Tres Chorreras Concession.

Two principle fault directions have either been mapped or interpreted. The principle structure trends 30º and dips about 60º southeast, and is the locus of the polymetallic (Cu-

Mo-Au-Ag) mineralization on the Tres Chorreras Concession. The north-northwest contact between the diorite and the diatreme/ignimbrite is commonly faulted and mineralized. This structure may be related to the Bulubulu Fault System. The second structural trend is represented by the transverse Galena Fault that strikes 130º.

MMTS believes that the geology, as described in this section, is appropriate for the Tres Chorreras property.

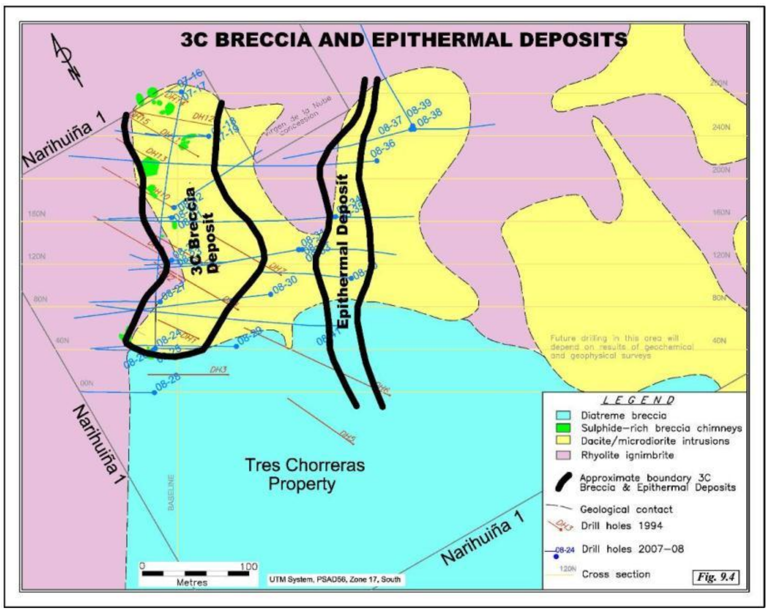


FIGURE 7-4: GEOLOGY MAP OF PART OF THE TRES CHORRERAS AND NARIHUIÑA-1 CONCESSIONS

7.2 MINERALIZATION

Exploration on the Tres Chorreras Concession has discovered two distinct styles of mineralized systems: the 3C Breccia Deposit is characterized by polymetallic copper-molybdenum-gold-silver porphyry-related mineralization, and the 3C Epithermal Deposit is characterized by low sulphidation epithermal gold-silver-lead-zinc veins (Photos 7-1, 7-2, and 7-3).

7.2.1 3C Breccia Deposit

The 3C Breccia Deposit, is located in the northwest corner of the Tres Chorreras Concession (Figure 7-4). The mineralization typically consists of chalcopyrite, molybdenite, pyrite, specular hematite and magnetite, with lesser scheelite, galena, sphalerite, and arsenopyrite. The mineralization is spatially associated with the contact between diorite and the diatreme. It is structurally controlled and occurs in both rock types.

Within the 3C deposit area, previous authors (Bingham, 1997; Bolaños, 1997; Jemielita, 2004; Smith and Allen, 1997; Snow and Adair, 1997; and, Yacoub, 1999) have described the polymetallic mineralization as “skarns”, “tourmaline breccia pipes”, and as “carapace breccias”. Tourmaline, although documented by previous authors, was not identified with certainty by all. This brings into question whether tourmaline is a significant component of the alteration assemblage.

Four types of porphyry-related polymetallic mineralization have been identified by the authors that define the 3C deposit. These include the following:

- decimetre-scale, branching, sulphide-bearing fault zones that are developed proximal to diatreme/diorite contacts (Photo 7-1);
- centimetre-scale, planar, brittle sulphide veins developed in the diorite (Photo 7-2);
- semi-massive to massive sulphide bodies containing irregular replacement textures developed in the diatreme (Photo 7-3); and,
- wide spread disseminated mineralization in both the diatreme and diorite.

7.2.2 3C Epithermal Deposit

A northeast trending gold-silver vein system containing centimetre-scale quartz veinlets, disseminated pyrite, and free gold (Photo 7-4) is located in the north-central part of the Tres Chorreras Concession: it is called the 3C Epithermal Deposit and is included in the resource calculation of this report.

Previous authors have described this deposit as consisting of the Agglomerate, Cuy, and Arsenic zones. The Cuy and Arsenic zones occur within the diorite and the Agglomerate zone occurs in the diatreme. These three zones are interpreted to represent different areas on the same mineralized structure and are referred collectively as the 3C Epithermal deposit.

This phase has been characterized as late stage epithermal-style mineralization (Bingham 1997; Bolaños 1997; Smith and Allen 1997; and Snow and Adair, 1997). This zone consists of a swarm of sub-parallel, coxcomb textured or banded, quartz veinlets that range in size from sub-millimetre to 15 cm wide. The mineral assemblage is dominated by quartz-pyrite-sphalerite-galena and rare visible gold. Overall, the vein structures strike northeast at 30° to 35° and dip sub-vertically. Individual veins are up to tens of metres long and are commonly separated by several metres of host rock that may also be anomalous in gold.

7.2.3 Pucara Prospect

The Pucara prospect is approximately 140 m southeast of the Cuy-Agglomerate prospect and is a similar northeast trending, gold-bearing quartz vein system. The Pucara prospect is sub-parallel to the Cuy and Galena prospects and contains similar vein type epithermal mineralization. A limited amount of sampling in some of the underground workings was conducted under the supervision AMSA.

7.2.4 Galena Prospect

The Galena prospect is located approximately 270 m southeast of the Cuy-Agglomerate prospect and is a similar northeast trending, steeply dipping, gold-bearing quartz vein system. The mineral assemblage within the veins consists of disseminated pyrite, sphalerite, and galena. This vein system is hosted by the diatreme breccia. A limited amount of sampling in some of the underground workings was conducted under the supervision of Dale Schultz, Buscore International Consulting.

7.2.5 Alteration

Three types of alteration have been identified on the Tres Chorreras Concession; these include propylitic, argillic, and silicic types. The spatial distribution of the alteration types has not been well mapped in the field. Photo 7-5 shows a panoramic view of the different alteration styles roughly mapped on surface.

Silicification is restricted to a prominent ridge of diorite in the hanging wall (east) of the 3C polymetallic deposit. This type of alteration is also common in the diorite proximal to zones of mineralization on surface and underground. Argillic (clay) alteration is widespread within the diatreme breccia and is common to both the 3C Breccia Deposit and to the east enveloping the 3C Epithermal Deposit and the Pucara and Galena prospects. Disseminated pyrite is a ubiquitous component of the argillic type of alteration. Further to the east in the diorite, argillic alteration is dominant and contains carbonate locally. Tourmaline, specular hematite, and minor amounts of sulphides have been observed as scattered patches in rhyodacite and rhyolite ignimbrites to the north of the 3C Deposit. Weak propylitic alteration occurs as a distal alteration product.

PHOTO 7-1: MASSIVE SULPHIDE MATERIAL, LOS HUMILDES ADIT.

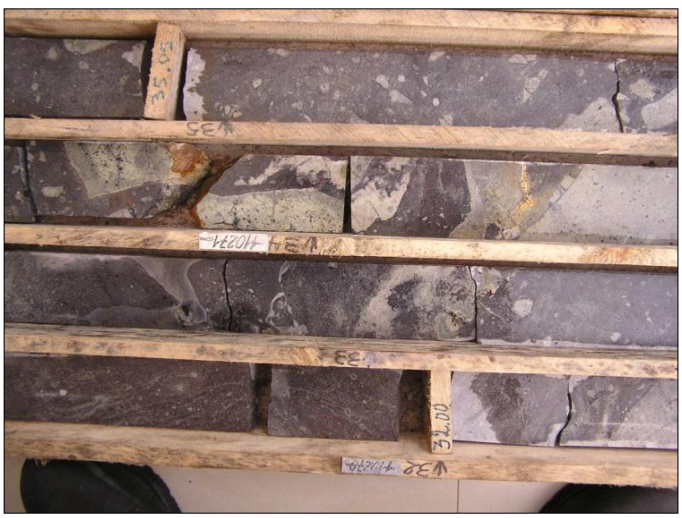


PHOTO 7-2: MASSIVE SULPHIDE VEIN, DH 08-31

PHOTO 7-3: DIATREME BRECCIA COMPLETELY REPLACED BY MASSIVE SULPHIDES, LOS HUMILDES ADIT

PHOTO 7-4: VEINLET WITH VISIBLE GOLD, DH 08-41

PHOTO 7-5: PANORAMIC VIEW OF THE DISTRIBUTION OF ALTERATION TYPES (MELLING ET AL., 2007)
(RELATIVE TO THE 3C POLYMETALLIC DEPOSIT AND THE AGGLOMERATE-CUY-ARSENIC PROSPECT)

8 DEPOSIT TYPES

Two styles of mineralization have been identified on the Tres Chorreras Concession. These include an early porphyry-style, diatreme-related, polymetallic Cu-Mo-Au-Ag breccia pipe, and related deposits such as the 3C Breccia Deposit, and a possibly later, low sulphidation epithermal gold-silver-zinc-lead mineralization such as the 3C Epithermal Deposit. The deposit types related to these two styles of mineralization are summarized in this section.

8.1 PORPHYRY-RELATED BRECCIA PIPE DEPOSITS

Breccia pipes are irregular, cylindrical masses of breccia that range from a few metres to several hundred metres in diameter. They may or may not be mineralized. The breccias are generally composed of altered, sub-angular to rounded fragments of the host rock that may be cemented by silica. Since breccia pipes often have good porosity and permeability when first formed, they commonly serve as conduits for mineralizing fluids. The origin of breccia pipes has been controversial and is the subject of much debate. The accepted concept is that they form at the intersections of fracture sets or along fractures where hydrothermal solutions have forced their way, possibly explosively, toward the surface.

Typically breccia pipes are carrot-shaped and taper downward. Breccia pipes are commonly found in many mining districts and may contain rich mineral deposits. The distribution of the mineralization tends to be found in peripheral contact zones at shallower depths, but with increased depth the mineralization tends to be located within the core. Breccia deposits can vary from an entire breccia mass being mineralized, to an entire mass being barren. Isolated zones of enrichment are commonly present within many pipes. Other examples include deposits that grade laterally into stockworks and then to barren country rock.

The Cripple Creek Mining District of Teller County in Colorado is an example of a world class breccia pipe deposit. This district consists of a nested diatreme of volcanic origin that possesses all the characteristics of breccia pipe deposits. Many of the rock fragments have come from considerable depths. The most spectacular feature within the centre of the district is the “Cresson Blowout”. The blowout is up to 150 m in diameter and extends to depths of great than 800 m. Angular to rounded fragments of altered basalt are cemented with sericite and iron oxides. At shallower depths, less than 500 m, the mineralized bodies occur along the periphery of the pipe while, at depth, the mineralization merges to form a central mineralized core. The Cresson “Vug,” located at the periphery of the pipe, consists of a mass of solid gold tellurides. This type of mineralization can yield assays of greater than 4,000 oz/tonne of gold. The stoping blocks can reach heights upwards of 100 m. Approximately 22 million ounces of gold have been produced from the Cripple Creek Mining District as a whole since 1891 (Heylmun, 2001).

A geologic comparison can also be made with the Mount Emmons-Redwell basin deposits in Colorado (Sharp, 1978 and Thomas and Galey, 1982). At Redwell, a breccia pipe approximately 300 m by 450 m in diameter extends from surface to a depth of about 600 m where it thins and fades out in the upper reaches of molybdenum-bearing rhyolite stock. The breccia has been mined for copper, lead, and zinc, but overlapping tungsten and molybdenum mineralization occurs in the lower part of the pipe. Three stockwork molybdenite deposits have been discovered by drilling underneath Redwell Basin. Two are centred directly below the breccia pipe and are low grade compared to the third, Lucky Jack, previously known as Mount Emmons The top of the Lucky Jack deposit is approximately 270 m below surface and is centred about 1,000 m southwest of the breccia.

Breccia pipe deposits are widespread in the Andes and many of them are interpreted to be related to porphyry-copper systems. These deposits also exhibit significant variety in size and the number of deposits within a given district. The deposits are generally copper-rich with gold, or polymetallic. Jemelita (2004) suggests that the 3C deposit belongs to this class of deposits, and that these deposits are typically small (2-5 million tonne range), but are high grade. Sillitoe and Sawkins (1971) described this type of mineralization in detail based on investigations conducted in Chile.

8.2 EPITHERMAL DEPOSITS

Epithermal gold deposits occur largely in volcano-plutonic arcs (island and continental arcs) associated with subduction zones and form contemporaneously with volcanism. These deposits form at shallow depths, generally < 1 km, and are hosted mainly by volcanic rocks.

There are two end-member styles of epithermal gold deposits: high sulphidation (HS) and low sulphidation (LS). The two deposit styles form from fluids of distinctly different chemical composition in contrasting volcanic environments. The mineralization in HS deposits is hosted by leached silicic rock associated with acidic fluids generated in the volcanic-hydrothermal environment. In contrast, the fluid responsible for the formation of LS ore veins is similar to waters tapped by drilling beneath hot springs into geothermal systems. These waters are reduced and neutral-pH. Boiling of liquid in a LS geothermal environment leads to precipitation of gold in veins, accompanied by a variety of features, such as adularia and bladed calcite cementing colloform and brecciated quartz; silica sinters may be the surface expression of such veins, and may be accompanied by nearby zones of surficial, steam-heated, acid alteration.

MMTS considers the deposit type and model for the Tres Chorreras Concession, as described in this report, to be appropriate: porphyry-style, diatreme-related, polymetallic Cu-Mo-Au-Ag mineralization (3C Breccia Deposit) and, possibly later, low sulphidation epithermal gold-silver-zinc-lead mineralization (3C Epithermal Deposit).

9 EXPLORATION

9.1 SOIL GEOCHEMISTRY

In 1997, Grantham completed the initial soil geochemical survey over a 550 m by 450 m area southeast of the 3C deposit. The soils were analyzed for gold, silver, copper, molybdenum, lead, and zinc by Bondar-Clegg & Co. Ltd. (Bondar-Clegg), North Vancouver, Canada. A total of 125 samples were taken on 50 m spaced, east-west grid lines at 40 m stations. The soil survey successfully delineated four northeast trending gold anomalies coinciding with the Cuy-Agglomerate-Arsenic anomaly (now called the 3C Epithermal Deposit), and the Pucara and Galena prospects. The core of the northeast trending Agglomerate-Cuy-Arsenic anomaly measures 150 m long and 60 m wide with gold values greater than 1,000 ppb. This area is encompassed by a zone that measures 260 m by 100 m with anomalous values of between 100 ppb and 1,000 ppb. The Agglomerate-Cuy-Arsenic anomaly is also associated with elevated values of gold, copper, molybdenum, lead, and zinc. The Pucara, Galena, and Quinoas anomalies also trend toward the northeast and are associated with anomalous values of gold, lead, and zinc.

The soil geochemistry work described here was not completed by AMSA and is, therefore, considered historical. In 2008, AMI completed a soil geochemistry survey across the entire Tres Chorreras Concession; this survey confirmed the following:

- 3C Breccia Deposit is cut off at the boundary with the barren breccia to the south as indicated by drilling;
- 3C Epithermal Deposit continues to the south beyond the limit of drilling; and,
- Pucara anomaly may be contiguous with the 3C Epithermal Deposit.

9.2 TRENCHING

In 1997, Grantham completed a 27 m long trench (Trench 8) over the highly anomalous soils survey at the Cuy prospect exposing ten mineralized veins. Gold values ranged from 0.19 g/t to 90.0 g/t and yielded a composite average of 13.36 g/t Au over 24 m. In 1999, Yacoub, as a consultant for Global Minerals, completed a series of chip channels in the same area as Grantham and generated a composite interval of 22.39 g/t Au and 38.3 g/t Ag over 10 m. From the Agglomerate zone, Yacoub (1999) reported intersections of 2.2 g/t over 15 m and 0.56 g/t Au over 20 m. From the Arsenic zone, Yacoub (1999) also reported values of 5 g/t Au over widths of 12 m collected by Grantham during their 1997 exploration campaign. He also reported 0.50 g/t Au over 12 m and 0.25 g/t Au over 10 m from the same zone during the 1999 evaluation he conducted for Global Minerals. From the Galena zone, Yacoub (1999) reported values of 1.6 g/t over 17 m collected by Grantham in 1997. Yacoub collected several chip channel samples of his own over the area and reported values of 0.51 g/t Au over a width of 50 m. This data has not been verified by the authors. The trenching work described here was not completed by AMSA and is, therefore, considered historical. The trenching results have not been confirmed by the authors of this report and are not necessarily indicative of what may actually be confirmed by future work.

9.3 Artisanal Mining

The Tres Chorreras Concession has been mined by the Asociación de Mineros Autónomos La Chorreras for approximately 20 years. In August 2006, there were at least 11 active tunnelling operations which had either gained access to or were being driven toward the 3C Breccia Deposit or the 3C Epithermal Deposit. As well, numerous additional abandoned tunnels and pits occur on the concession. During various site visits to the concession, at least four operating mills were documented. The artisanal mining work described here was not completed by AMSA and is, therefore, considered historical. The artisanal mining results have been only partially confirmed by the author of this report and are not necessarily indicative of what may actually be confirmed by future work.

The tunnelling operations, as summarized in Table 9.1, consist of drilling and blasting openings that measure about 1.0 m by 1.5 m. These tunnels are typically driven on weakly mineralized fault zones. No exploration drilling, mapping, or chip sampling data are available to guide the tunnelling efforts. Locally, several back slashes have been removed on these fault zones, but clearly this type of mineralization is of marginal economic value. The semi-massive to massive polymetallic mineralization is exploited from a network of sill drifts and cross-cuts. In at least three locations, stoping blocks have been exploited at the scale of 5,000 tonnes to 50,000 tonnes on this mineralization. In some of these stoping blocks, a system of declines, inclines, and raises have been developed to link levels and more efficiently exploit the mineralized bodies in a co-operative manner. Both waste and mineralized rock are transported to surface using small (one tonne) hand-pushed LHD carts. In some of the operations, the mineralized rock is transported from the tunnel entrances to the mills by hand tramming.

The milling operations are typically trapiche (Chilean) mills which are basically 8 ft diameter steel cylinders that contain a rotating grinding wheel which crushes the rock. The crushed rock is mixed with water forming a slurry which is then passed over a simple series of sluice mats collecting coarse gold. The concentrate collected during this phase is further refined by using panning techniques and a mercury amalgamation process. In addition, some of the tailings are collected, placed in rice bags, and shipped out for further processing. The milling process described here is very inefficient; this probably results in poor gold recovery and no recovery of copper and molybdenum.

Chip and channel sampling and mapping were conducted in the accessible tunnels. In addition, samples were obtained from mineralized muck piles, mill circuits, and tailings ponds. In 2007, a total of seven artisanal tailing ponds were sampled, under the supervision of the AMSA's geological staff, to quantify the content of various elements for the purpose of environmental monitoring. Considering the range of values encountered, the tailings may hold some economic value.

TABLE 9.1: SUMMARY OF TUNNELLING OPERATIONS TRES CHORRERAS CONCESSION

Tunnel ID	Name	Principal Axis (m)	Cross-cuts (m)	Elevation (m)	Stoping	Zone/Prospect
B0	Los Incas	423	**140**	2985	Yes	3C-B, 3C-C
B1	Chorrones (L. Molina)	300	70	2959	Yes	3C-A, 3C-B
B2	Los Tigres B2	147	130	2979	Yes	3C-B, 3C-C
B3	Wilson Redrovan	118	28	2898	Yes	Cuy
B4	El Cisne	126	24	2860	Yes	Cuy
B5	Los Humildes	647	299	2968	Yes	3C-A, 3C-B, 3A-C
B6	Los Gansos	250	37	2885	Yes	3C-C
B7	La Union 1	48		3051	No	3C-A
B8	La Union 2	76		3032	No	3C-A
B9	La Union 3	64	59	3075	Yes	3C-A
B10	La Union 4	63	11	3092	No	3C-B
B11	Mano de Dios	154	32	3060	Yes	3C-A
B12	Hipolito Pesantez	77	78	3077	Yes	3C-A
B13	Los Alcaldes 1	145		3099	Yes	3C-A
B14	Los Alcaldes 2	104		3074	Yes	3C-A
B15	Los Alcaldes 3	42	14	3060	No	3C-B
B16	Los Alcaldes 4	26		3040	Yes	3C-B
B17	Tarquino Pesantez 1	52	-	2970	Yes	Cuy
B18	Tarquino Pesantez 2	156	34	3027	No	Cuy
B19	Nueva Esperanza 1	22		2827	No	Cuy
B20	Nueva Esperanza 2	27	6	2841	No	Cuy
B21	Nueva Esperanza 3	10		2837	No	Cuy
B22	Nueva Esperanza 4	13		2780	No	Cuy
B23	Seg Carmona 1	10		2810	No	Pucará
B24	Seg Carmona 2	186	65	2860	No	Agglomerate
B25	Los Tigres B25	43	7	2979	No	3C-C
B26	Los Tigres B26	122	61	2994	Yes	3C-C
B27	F. Segundo Carmona 3	42	10	2894	?	Cuy
B28	F. Segundo Carmona 4	25	-	2899	?	Cuy
B29	David Reyes	13		2909	No	Pucará
B30	Filormo Carmona	57	23	3120	Yes	3C-C
B31	A3C-1(Cachon)	38		3000	No	3C-A
	Aucay	17		3154	Yes	3C-A
	A3C-6 (Los Chilqueños)	105		2860	No	Pucará
	Bolivar 1	11		3140	No	3C-A
	Bolivar 2	15		3095	No	3C-B
	Total (m)	**3,774**	**1,128**			

Note: Tunnel lengths were determined by underground surveying conducted for AMI.

9.3.1 Los Incas Tunnelling Operation

AMSA conducted a preliminary field investigation of the Los Incas tunnel and milling operation. Semi-massive, polymetallic (Cu-Mo-Ag-Au) mineralization in two active mining faces were examined and chip sampled. Chip sample DJS511124 yielded 5.65% Cu, 6.100% Mo, 61.30 g/t Ag, and 30.50 g/t Au over 1.1 m. Three composited chip samples: DJS511125, DJS511126, and DJS511127 yielded 2.94% Cu, 0.123% Mo, 34.01 g/t Ag, and 15.32 g/t Au over 1.4 m. One grab sample of well-mineralized muck (DJS511128) taken from the mill feed yielded 5.18% Cu, 1.855% Mo, 54.4 g/t Ag, and 1.885 g/t Au. In addition, one sample, DJS511123, from the tailings area yielded 2.47% Cu, 3.02% Mo, 51.5 g/t Ag, and 5.20 g/t Au. Los Incas tunnelling operations are summarized in Table 9.2.

TABLE 9.2: SAMPLE LOCATIONS, DESCRIPTIONS, AND RESULTS FROM LOS INCAS (NOVEMBER 2005)

Sample #	East	North	Description	Note	Au g/t	Ag g/t	Cu %	Mo %
DJS511121	663659	9650012	Diatreme with argillic and sericite alteration with 2-3% disseminated pyrite	Grab sample obtained at an abandoned tunnel, Cuy prospect	8.580	21.6	0.0124	0.0633
DJS511122	663709	9649991	Pyrite-molybdenite rich concentrate collected from an abandoned tunnel/ milling complex area	Grab sample of tails was obtained near an abandoned tunnel where the walls of the entrance contained strong malachite staining	14.85	75.7	4.89	2.18
DJS511123	663610	9650134	Pyrite-molybdenite rich concentrate collected from the tails of an active milling circuit	Grab sample of tails from Los Incas Tunnel	5.200	51.5	2.47	3.02
DJS511124	N/A	N/A	Polymetallic mineralization with massive chalcopyrite and molybdenite	Chip sample along face #1, 1 m wide. Sample was obtained 30 m inside Los Incas Tunnel	30.50	61.3	5.65	6.13
DJS511125	N/A	N/A	Silicified and sericitic alteration with mm-scale veinlets containing chalcopyrite and molybdenite mineralization	Chip sample along face #2, 0.65 m wide. Sample was obtained 30 m inside Los Incas tunnel	25.50	43.6	3.05	0.132
DJS511126	N/A	N/A	Similar to above, but with 2-3% specular hematite	Chip sample along the face #2, 0.10 metres wide. Sample was obtained 30 m inside Los Incas tunnel	6.030	34.2	1.96	0.1075
DJS511127	N/A	N/A	Silicified and sericitic alteration with mm-scale veinlets containing chalcopyrite and pyrite with trace molybdenite mineralization	Chip sample along face #2, 0.65 m wide. Sample was obtained 30 m inside Los Incas Tunnel	6.570	24.4	2.98	0.117
DJS511128	663610	9650134	Massive molybdenite mineralization hosted by a sericitic/silicified diatreme	Grab sample of mineralization from Los Incas mill muck pile	1.885	54.4	5.18	1.855
DJS511131	663685	9650124	Sericitic/silicified ± minor argillic alteration with trace to 1% pyrite	Cuy Zone – Grab sample taken from small surface pit	6.790	28.7	0.0688	0.0537
DJS511132	663604	9650143	Massive specular hematite	Grab sample taken near the Columbia Tunnel	2.230	46.3	1.15	0.165
DJS511133	663797	9650204	Sericitic/argillic diatreme with large fragments containing quartz eyes, trace to 1% pyrite	Cuy/Arsenic Zone - Grab sample taken next to abandoned tunnel	0.159	1.6	0.0614	0.0948

9.3.2 Los Humildes Tunnelling Operation

AMIC conducted a preliminary field investigation of the Los Humildes milling operation. A single grab sample, BW070706-1, of well-mineralized muck taken from the mill feed yielded 12.15% Cu, 0.64% Mo, 140.0 g/t Ag, and 7.30 g/t Au. In addition, two grab samples, BW070706-6 and BW070706-7, taken from the waste pile yielded 2.59% Cu, 0.18% Mo, 61.2 g/t Ag and 2.41 g/t Au, and 1.05% Cu, 0.10% Mo, 28.3 g/t Ag, and 1.80 g/t Au, respectively. A single sample, BW070706-3, taken from the crushed slurry material coming out of the Chileno mill yielded 9.94% Cu, 0.70% Mo, 102.0 g/t Ag, and 5.61 g/t Au. A single sample, BW070706-4, of concentrate collected from the sluice mats prior to gold extraction yielded 13.80% Cu, 0.78% Mo, 241.0 g/t Ag, and 104.0 g/t Au. In addition, two tailings samples were taken: sample BW070706-2 taken from the tailings pile at the end of the mill circuit yielded 10.30% Cu, 0.37% Mo, 161.0 g/t Ag, and 16.30 g/t Au, and sample LM080706-1 from an abandoned tailings pile located below the Humildes camp yielded 10.85% Cu, 0.38% Mo, 166.0 g/t Ag, and 2.57 g/t Au. Los Humildes tunnelling operations are summarized in Table 9.3.

TABLE 9.2: LOS HUMILDES OPERATION SAMPLE LOCATIONS, DESCRIPTIONS, AND RESULTS (JULY 2006)

Sample #	Lab #	Description	Note	Au g/t	Ag g/t	Cu%	Mo%
BW070706-1	177101	Massive polymetallic mineralization	Collected with shovel from mineralized muck pile roughly 5 x 5 m in size.	7.30	140.0	12.15	0.64
BW070706-2	177103	Tailings taken after the rock had been crushed and run over the sluice mat	Collected using a post hole auger. Material was gathered from five different holes.	16.30	161.0	10.30	0.37
BW070706-3	177105	Crushed slurry material coming out of the trapiche Mill	Collected after bucket was placed at one of three exit ports and the crushed slurry material was allowed to pour into the bucket for 10 minutes.	5.61	102.0	9.94	0.70
BW070706-4	177107	Concentrate material	The carpets at the mill are occasionally washed of free gold. Sample collected from their barrels. A pipe was used to sample the complete depth of the barrel.	104.0	241.00	13.8	0.78
BW070706-5	177109	Waste development muck from tunnels	Collected from the northeast side of the waste pile.	2.41	61.2	2.59	0.18
BW070706-6	177110	Waste development muck from tunnels	Collected from the southeast part of the waste pile.	1.80	28.3	1.05	0.10
LM080706-1	177111	Abandon tailings dam	Collected below the Humildes camp.	2.57	166.0	10.85	0.38

9.4 UNDERGROUND MAPPING AND SAMPLING PROGRAM OF THE 3C BRECCIA DEPOSIT

AMSA's technical staff supervised a program of geologic mapping and sampling of the tunnels that access the 3C Breccia Deposit. Approximately 1,000 channel samples were obtained from the backs and ribs of 20 tunnels which included: Los Humildes, Los Incas, A3C-1, La Union #1-4, Mano de Dios 1 and 2, Los Alcaldes #1-4, Bolivar 1 and 2, H. Pesantez, Los Tigres #1-4, and Aucay tunnels. This data has been compiled and is summarized here. Fill-in sampling is incomplete for some tunnels and additional tunnels still need to be surveyed, mapped, and sampled.

Principal rock types encountered in the underground workings are: fine-grained diorite/dacite stocks and dikes; rhyolite and rhyodacite ignimbrite of the Saraguro Group; and, breccia of the 3C diatreme. In the underground workings, these rocks are moderately to intensely silicified, so it is often difficult to identify the original rock type. These rocks are locally fractured, brecciated, and mineralized to varying degrees. In general, it appears that the 3C polymetallic zone can be described as a zone of hydrothermal fracturing and brecciation lying to the north of a diatreme breccia with a matrix of pulverized rock. The breccia/diorite contacts are typically faulted.

The mineralization is localized within and adjacent to a 50 m thick unit of breccia bound by diorite to the north and south. Surveying and mapping of the tunnels has documented three separate areas of previously unrecognized semi-massive to massive, high grade copper-molybdenum-gold-silver mineralization which have been partially mined. The stoping areas with the highest grade clusters were named 3C-A, 3C-B, and 3C-C and occur within a broader envelope of disseminated mineralization. The middle and southern areas trend sub-parallel to the axis of breccia, whereas the northern area is transverse, possibly related to a structural trend. This area is now called the 3C Breccia Deposit.

The best zones of mineralization are interpreted as replacement bodies and/or open space filling in the matrix of the breccia. Highest grades are found in a breccia characterized by rock fragments in-filled with massive to semi-massive hematite, magnetite, chalcopyrite, and molybdenite with minor amounts of tourmaline, galena, sphalerite, and scheelite.

Based primarily on the spatial distribution of the stoped areas surveyed to date, the semi-massive to massive sulphide bodies appear to plunge steeply toward the south-southeast within the overall plane of the fault zone. In addition to the semi-massive to massive mineralization, there are zones of millimetre- to centimetre-scale sheeted and stockwork sulphide veins and fracture coatings. South of the diatreme, there is another broad zone of disseminated mineralization occurring within the diorite.

In general, a tentative interpretation of the 3C zone shows it occurring along, and probably controlled by, the northeast trending faulted and fractured contact between the diorite/dacite and the rhyolite volcanics of the Saraguro group. The 3C-A zone appears to be a zone of fracturing that cuts across this trend. The principal structures mapped in the 3C-B and 3-C zone trend north-easterly, but there is no obvious cross-cutting structural trend or any obvious explanation as to why the best grades and stoped areas of the 3C-C zone cluster along a northwest trend. Geological mapping by the various geologists in the latter area show irregular bodies of variably silicified dacite which are possibly dikes or ring dikes. Alongside and within are small shoots or dikes of diatreme and mineralized hydrothermal breccias. The morphological expression of the 3C-C zone suggests that it may have developed as a result of local, more forceful, upward pressure of intrusive and hydrothermal activity.

A total of 71 tailings samples were collected under the supervision of AMSA and SYR-Whistler Consultants from seven tailings dams around the workings of the 3C areas. Analytical results indicate that recovery of gold by the informal miners is very poor. Gold values range from 2.3 g/t to 12.0 g/t. Silver values range from 19 g/t to 372 g/t. Copper values range from 2.2% to 12.8%. Molybdenum values range from 0.3% to 5.0%.

9.5 Underground Mapping and Sampling Program for the Epithermal Deposit, and the Pucura and Galena Zones

In addition to work carried out on the 3C Breccia Deposit, a limited amount of sampling was conducted to preliminary evaluate the epithermal-style mineralization of the Epithermal Deposit and the Pucara and Galena prospects. These zones comprise a system of northeast trending pyrite-(+/- sphalerite and galena and, in several hand specimens, minor amounts of stibnite and arsenopyrite)-quartz veinlets. A total of 114 samples were collected from the following tunnels: Redrovan, A3C-6, Nuevo Esperanza #1-4, Segundo Carmona 2, and D. Reyes. The Nuevo Esperanza #1-4, Segundo Carmona 2, and D. Reyes tunnels are relatively short, and most of the samples represent channel samples, across the narrow veins, that were exploited by the informal miners. Grades across the observed mining widths (0.35 m to 2.0 m) range from negligible to 25.4 g/t Au and 75 g/t Ag.

The best overall interval was obtained from a series of continuous channel samples from the Redrovan tunnel, which cuts across the predominant vein trend at an angle of about 45°. This interval of 22.8 m yielded a weighted average grade of 10.7 g/t Au and 21.3 g/t Ag. It occurs in a zone of locally intense fracturing, faulting, and sulphide veining in silicified dacite/diorite along the contact with the diatreme breccia. The true thickness of this zone, considering the northeast structural trend, is about 16 m.

Elsewhere, channel sampling of intervals, which cross the structural trend and which may cross a series of quartz veinlets, yield the following weakly anomalous to significant gold and silver values:

- A3C-6: 0.3 g/t Au and 2.2 g/t Ag over 39.7 m;
- David Reyes portal: 0.9 g/t Au and 8.6 g/t Ag over 15 m;
- Redrovan: 1.6 g/t Au and 15.2 g/t Ag over 12.4 m; and
- Nuevo Esperanza 2: 0.7 g/t Au and 68.0 g/t Ag over 11.2 m.

To some extent, this data validate the previous work by Grantham and indicate that additional sampling to evaluate the Cuy-Agglomerate (now called Epithermal Zone) and the Pucara and Galena prospects is warranted .

In addition, four samples contain lead values greater than 1% and eight samples contain zinc values greater than 1%. Considering the associated elevated values of arsenic, antimony, bismuth, and mercury, it is apparent that the association is characteristic of low sulphidation epithermal mineralization.

The assay database for underground sampling includes 1,027 samples. Sample lengths vary from 0.3 m to 5.0 m, with 54% of the sample lengths between 2 m and 3 m, and 39% of the sample lengths between 3 m and 4 m. Approximately 5% of the samples are less than 2 m long and only 1% of the samples are greater than 4 m.

10 DRILLING

There were two separate drilling campaigns at Tres Chorreras: in 1994, Ecuadorian Minerals Corp. drilled 15 drill holes, totalling 1,945 m, and in 2007-2008, AMSA drilled 27 holes, totalling 5,996.7 m).

10.1 1994 DRILLING

In 1994, Ecuadorian Minerals Corp. (Ecuadorian Minerals) completed a drill program consisting of 15 holes totalling 1,945 m of BQ-sized core on the Tres Chorreras Concession. Drilling operations were completed by Connors Drilling Ltd. between July and August. The core was logged and sampled by S. Bigham, L. Toinga, R. Bermudez, and I. Leiva. All the drill logs, cross sections, and assay certificates were obtained by AMI and compiled into a digital format. The drill logs recorded lithology, alteration, and mineralization types qualitatively and presented the results graphically; however, the records were too brief in terms of structural elements and descriptive terminology. Core recoveries were documented and typically ranged from 80-100% in the diatreme, but were significantly better (95-100%) in the diorite. Each hole was sampled over its entire length. Each sample was taken over a 2 m interval width, with rare intervals of 4 m being sampled. Sample widths did not vary with respect to changes in rock type or mineralization. Core samples were analyzed for copper, molybdenum, gold, silver, and arsenic by Bondar-Clegg, Vancouver, Canada. No report documenting the drilling program has been obtained by AMIC. The drill core from this program was not available for re-logging or re-sampling during the site visit. The drill hole collars were surveyed, but surface casing was removed from the holes. Some of the drill platforms were located in the field during the site visits by the authors, and many were used for lay down areas or sites for mining infrastructure.

Two drill holes, TCD-94-05 and TCD-94-06, totalling 300 m, were completed on the Epithermal zone. Both these holes were drilled on 325^o azimuth at -60^o, roughly perpendicular to the strike of the mineralization, and intersected a broad zone of low grade gold mineralization hosted by argillicly-altered diatreme. Several higher grade intervals were intersected in hole TCD-94-06 which reflect narrow, sub-centimetre-scale, coxcomb textured veins also exploited from surface workings. Copper and molybdenum mineralization are not significant components in this style of mineralization and are not common in the area. Neither holes tested the entire width of the Epithermal Zone.

The remaining 13 drill holes, totalling 1,625 m, were completed on the 3C Breccia Deposit. The holes were drilled on sections at roughly 50 m intervals. The majority of the holes were drilled on 330^o azimuth at -60^o, roughly perpendicular to the strike of the mineralization. Most of these holes intersected broad zones of low grade, disseminated, copper-molybdenum-gold-silver mineralization localized adjacent to the faulted contacts between the argillicly-altered diatreme and silicified diorite. Two of the 13 holes failed to intersect any significant mineralization. At the deposit scale, the mineralized zone trends roughly 30º and dips between 70º southeast and vertical. The 1994 drilling program traced the mineralization from surface for 300 m down the dip and for 250 m along strike. The mineralized zone remained open along strike in both directions and down dip.

The thickest mineralized interval was intersected by drill hole TCD-94-12 which yielded 98.0 m grading 0.32% Cu, 0.17% Mo, 0.41 g/t Au, and 8.69 g/t Ag. The highest grade mineralization was intersected by drill hole TCD-94-01 which yielded 4.0 m grading 1.17% Cu, 1.44% Mo, 2.18 g/t Au, and 48.69 g/t Ag. Analysis of the drilling data integrated with mapping of the Los Humildes tunnel suggests that, at best, only the peripheries of the semi-massive to massive polymetallic mineralization exposed in the 3C-A and 3C-B stopes may have been clipped by drill holes TCD-94-11 and TCD-94-10, respectively.

10.2 2007-2008 DRILLING

In 2007-2008, AMSA drilled 27 holes, totalling 5,996.7 m, and mapped and sampled some old underground workings. The results of this work, and the previous drilling and tunnel sampling are incorporated into the resource estimate in Section 14 (Updated Mineral Resource Estimate). In total, there are currently 42 drill holes on the property with a total length of 7,941.71 m; 2,112 m of the underground tunnels have been mapped and sampled.

Table 10.1 lists all drill holes with their collar coordinates and total length.

TABLE 10.1: SUMMARY OF DRILLING AT TRES CHORRERAS CONCESSION

Hole ID	East	North	Elevation	Length
94-01	663520.6	9650135	3005.78	83
94-02	663533.8	9650190	3045.72	62
94-03	663528	9650092	3005.52	150
94-04	663568.6	9650179	3002.59	150
94-05	663596.7	9649977	2917.65	150
94-06	663649	9649999	2884.97	150
94-07	663617.6	9650148	2953.98	150
94-08	663566.3	9650140	2963.63	150
94-09	663530.9	9650218	3075.21	150
94-10	663560.7	9650254	3071.97	150
94-11	663605.9	9650283	3073.65	150
94-12	663634.5	9650299	3075.23	150
94-13	663566.7	9650303	3113.62	75
94-14	663623	9650332	3126.01	150
94-15	663580.7	9650342	3131.4	75
3C-07-16	663622.4	9650343	3136.48	120.39
3C-07-17	663622.2	9650343	3136.48	160.02
3C-07-18	663623.9	9650294	3076.74	135.63
3C-08-19	663623.7	9650294	3076.72	154.83
3C-08-20	663555.6	9650245	3071.88	149.04
3C-08-21	663555.8	9650245	3071.89	228.9
3C-08-22	663535.9	9650211	3065.93	150.05
3C-08-23	663538.1	9650209	3065.89	120.39
3C-08-24	663481.4	9650147	3034.13	624.84
3C-08-25	663480.8	9650146	3034.04	112.7
3C-08-26	663478.7	9650147	3034.17	125.48
3C-08-27	663505	9650183	3034.02	152.4
3C-08-28	663459.8	9650111	3036.69	152.4
3C-08-29	663547.7	9650111	2980.53	214.06
3C-08-30	663600.1	9650137	2948.69	286.29
3C-08-31	663643.6	9650160	2966.94	251
3C-08-32	663644	9650160	2966.92	302.66
3C-08-33	663646.5	9650159	2966.72	201.16
3C-08-34	663689	9650170	2989.03	323.08
3C-08-35	663686	9650171	2989.04	120.39
3C-08-36	663748.5	9650196	3028.93	414.43
3C-08-37	663791	9650205	3026.516	189.79
3C-08-38	663793.6	9650204	3026.371	121.24
3C-08-39	663793.9	9650207	3026.52	181.35
3C-08-40	663672.7	9650112	2932.528	129.54
3C-08-41	663644	9650077	2904.814	590.7
3C-08-42	663562.5	9650252	3071.968	283.95

In total, there are 3,832 samples in the drill hole database. Sample length varies from 0.25 m to 8.0 m, although more than 95% of the samples are 2.0 m long. Only 0.2% of the samples are less than 1 m long, and slightly more than 4% of the samples are longer than 2 m.

Despite the extensive network of tunnels that access the 3C deposit, the Tres Chorreras Project is at an early stage of modern systematic exploration. To-date, AMSA's approach has been to conduct preliminary sampling to evaluate both the grade and elemental associates of the mineralization. Rock chips and grab samples have been taken at sites of visible mineralization and alteration on surface, and from tunnels located on the Tres Chorreras Concession. In addition, grab samples from the muck piles and mill circuits were taken to evaluate the efficiencies of current mining operations. Material sampled from the Humildes mill and tailings were coned and quartered into representative samples. All of the samples listed in Section 10 (Drilling) were taken under the supervision of AMSA technical staff. Drill core from Ecuadorian Minerals' 1994 exploration program was not available for re-sampling.

In 2007 and 2008, AMI completed 5,996.7 m of drilling in 27 holes. The holes were designed to verify previous drilling and extend known mineralization.

Samples used in the resource estimate are from drill holes, surface channel samples, and underground channel sampling. Samples are continuous within mineralized zones as well as into the surrounding host rock. Drill core was cut with a diamond saw (Photo 10-1) and packaged for transport to the lab (Photo 10-2). Core was transported to a warehouse in Cuenca for permanent storage (Photo 10-3). In the underground sampling process, the walls were well-cleaned and as channel samples were taken, the sample sites were marked (Photo 10-4).

All core from the 2007-2008 program was NQ-sized (~50 mm) and core recovery was very good, approaching 100%. Samples were high quality and represented the intervals drilled.

The relationship to true thickness is difficult to determine with porphyry and epithermal deposits because the deposit is generally represented as a *massive* body: the mineralization is modelled as massive with no internal barren zones. The outside edges of the deposits are modelled very generally with known zones of mineralization included within broad boundaries. Mineralized zone grades are determined by proximity to samples in 3D space. Tables 10.2 and 10.3 highlight some of the higher-grade intercepts from the drilling and underground sampling.

TABLE 10.2: HIGH GRADE INTERCEPTS FROM DRILLING OF THE 3C BRECCIA DEPOSIT

Hole ID	Width(m)	Mo (ppm)	Cu (ppm)	Au (ppm)	Ag (ppm)
3C-08-19	2	52000	17500	5.2	18.5
3C-08-31	2	33210	4838.9	0.27	17.5
3C-08-25	2	31850	14490	3.07	54.6
3C-08-31	2	29260	13550	0.5	42
94-11	2	20000	19029	3.15	26.5
94-04	2	20000	5547	0.64	101.1
94-08	2	19231	956	2.31	10
94-01	2	18190	7696	2.32	50
3C-08-31	2	17860	2029.5	0.18	19
94-04	2	17069	588	0.2	33.2
3C-08-42	2	15800	307	0.1	1.5
3C-08-30	2	12520	2313.2	6.39	33.7
94-12	2	11934	771	0.75	5.2
94-04	2	11808	7029	0.24	18.3
3C-08-24	2	11610	140.1	0.02	3.7
3C-08-31	2	11380	2712.3	0.17	26.9
94-12	2	11308	12327	0.8	50
3C-08-24	2	10810	3264	1.91	8.1
3C-08-30	2	10610	257.7	1.67	17.4
94-01	2	10550	15680	2.01	47.3
3C-08-36	2	10350	10960	0.46	31.4
94-02	2	10330	10820	0.64	15.5
3C-08-19	2	10300	20400	1.98	154
94-14	2	10094	13075	4.02	26.3
3C-08-25	2	10060	2921.5	0.32	8.6
94-14	2	9759	14491	3.18	9.5
3C-08-36	2	9550	2101	0.11	5.6
94-08	2	9415	399	0.26	1.7
3C-08-30	2	9410	815.5	2.31	14.2
3C-08-19	2	9162	3068	0.15	1.5
3C-07-17	2	9066	24500	1.48	36.7
94-11	2	7806	663	0.43	2.6
94-14	2	7792	11660	2.77	10.3
3C-08-19	2	7520	840	0.06	1.2
94-12	2	7461	16137	3.69	50

TABLE 10.3: HIGH GRADE INTERCEPTS FROM UNDERGROUND SAMPLING IN THE 3C BRECCIA DEPOSIT

Sample	Length (m)	Mo (ppm)	Cu (ppm)	Au (ppm)	Ag (ppm)
T101289	3	4790	378.3	0.08	0.9
V-1620	2	4531	29000	2.64	14.9
T101698	1	1773	1075	7.55	2.2
T101694	3	1432	1517	6.32	2
T101696	3	1186	789.7	0.03	1.2
T101689	3	1095	1761	0.04	0.5
T101693	3	1086	1929	0.91	8
V-2011	2	922	490	1.53	5.6
T101685	3	827.7	611.9	0.29	6.1
T101691	2	813.3	149.6	0.15	0.8
T101687	3	767.4	402.6	0.21	2.4
T101686	3	654.5	279.4	2.01	30.7
T101290	3	583	178.6	0.16	0.7
T101266	3	565.9	540	0.08	1.2
T101692	3	538.5	402	0.03	0.7
T101688	3	416.4	473.4	4.16	1.2
T101341	3	401.1	862.5	0.23	3.1
T101279	3	379.3	224.5	0.01	0.5
T101335	3	363.2	1817	31.53	28.2
V-2008	2	345	672	0.07	0.9
T101695	3	339.3	277.5	0.78	9.4
T101291	3	327.4	433.8	0.32	2.4
V-2009	2	314	151	0.03	0.7

MMTS has not been involved in any sampling work on the property.

PHOTO 10-1: CUTTING CORE WITH A DIAMOND SAW

PHOTO 10-2: SAMPLES WAITING TO BE HAULED OUT OF CAMP

PHOTO 10-3: CORE STORAGE AREA IN CUENCA

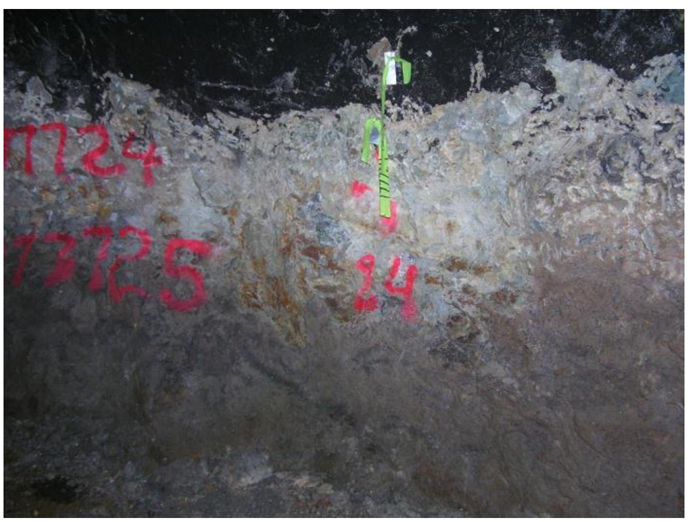


PHOTO 10-4: UNDERGROUND SAMPLING

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

The sample preparation and assay results for the historical (pre-Atlas) soil sampling, trenching, and drilling programs were completed by Bondar-Clegg, Vancouver, Canada. The documentation of Bondar-Clegg's analytical protocols was not available for the author of this report to review; however, they are believed to conform to accepted industry standards and are, therefore, deemed reliable.

The sample preparation and primary assaying for the initial tunnel sampling programs was performed at ALS Chemex, Quito; ALS Chemex Canada Limited (ALS Chemex), North Vancouver, Canada; and, ALS Chemex, Lima, Peru. ALS Chemex guarantees that the quality assurance system in place at its laboratories "complies with the requirements of the international standards ISO 9001:2000 and ISO 17025:1999 and operates in all laboratory sites" (ALS Chemex, 2004a).

Samples were prepared using the following protocol:

- weigh, dry and reweigh;
- crush to -2 mm;
- riffle split to 250 g;
- mill split fraction to < 75 µ (-200 mesh) in chrome steel pulverizer; and,
- bag and ship approximately 100-150 g to ALS Chemex, North Vancouver, Canada or ALS Chemex, Lima, Peru

Samples were analyzed for gold by fire assay with an instrumental ICP-AES finish using a 30 g aliquot (ALS Chemex, Code Au-ICP21). The detection limit range for this method is 0.001 ppm to 10 ppm Au. Over-limit samples were re-assayed by fire assay with gravimetric finish with a 30 g aliquot (ALS Chemex, Code Au-GRA21). The detection limit range for this method is 0.05 ppm to 1,000 ppm Au.

A portion of the pulverized fraction was subjected to aqua regia digestion and analyzed for 34 elements by ICP-AES methods (inductively coupled plasma-atomic emission spectroscopy, ALS Chemex, Code ME-ICP41). The rock matrix material will only partially dissolve in aqua regia, but most sulphides and other metallic minerals are dissolved using this technique. Over-limit samples for silver, copper, and molybdenite were repeated by aqua regia digestion with AAS finish (ALS Chemex, Codes Ag-AA46, Cu-AA46, and Mo-AA46) with a detection limit range of 1 ppm to 1,500 ppm.

All the samples were kept in the custody of AMI consultant personnel until they were received by the ALS Chemex prep facility in Quito.

The sample preparation and primary assaying for the 2007-2008 drilling program samples were performed at ACME Analytical Laboratories Ltd., Cuenca, and ACME Analytical Laboratories Ltd. (ACME), Vancouver, Canada.

ACME guarantees that the quality assurance system in place at its laboratories complies with the requirements of the international standards ISO 9001:2000 operated in all laboratory sites.

Samples were prepared using the following protocol:

- dry and weigh at 60°C;
- crush to -2 mm;
- riffle split to 250 g;
- mill split fraction to < 100 µm (-150 mesh) in milled-steel, ring-and-puck mill; and,
- bag and ship approximately 100-150 g to ACME, Vancouver, Canada.

A portion of the pulverized fraction was subjected to aqua regia digestion and analyzed for 36 elements by ICP-MS method (inductively coupled plasma–mass spectrometer, ACME code GROUP 1DX). The rock matrix material will only partially dissolve in aqua regia, but most sulphides and other metallic minerals are dissolved using this technique. The detection limit range for this method is 0.05 ppb to 400,000 ppm (40%).

Over-limits for gold and silver (> 1,000 ppb) were analyzed for gold by fire assay with an instrumental ICP-AES finish using a 29.2 g aliquot (ACME, Code GROUP-6). The detection limit range for this method is 0.01 ppm to 30 g/t Au and 2-300 g/t Ag. Gold in excess of 30 g/t is weighed as a gravimetric finish. Silver in excess of 300 g/t is reported from fire assay solution; otherwise, a separate split is digested in aqua regia and analyzed by ICP-ES.

Over-limit samples for copper, molybdenum, lead, and zinc were analyzed by aqua regia digestion with AAS or ICP-AES finish (ACME, Code GROUP 7AR) with a low detection limit of 0.01% for lead and zinc, and 0.001% for copper and molybdenum.

All the samples were kept in the custody of AMI's consultants and personnel until they were received by the ACME, Cuenca.

The samples that were held in storage in the warehouse in Cuenca were transported to the ACME Laboratory by AMSA personnel under the supervision of Don Allen. Allen is a Qualified Person under NI 43-101 guidelines, but was not independent of AMI. Samples were treated in a similar manner as described here.

During the 2007-2008 programs, AMI carried out a comprehensive QA/QC program for drill core samples, including blank samples and duplicate samples. Blank samples were inserted into the sample stream to test whether the lab cleans its equipment after each sample. Figures 11-1 to 11-4 show the assay results of blank samples for copper, molybdenum, gold, and silver.

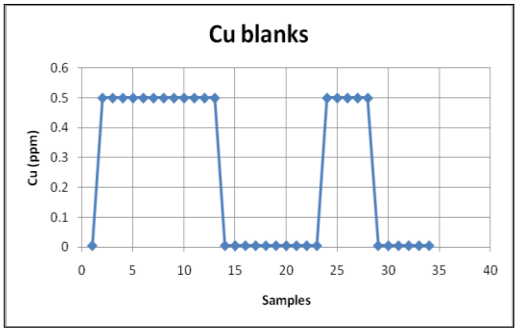


FIGURE 11-1: COPPER VALUES FROM BLANK SAMPLES

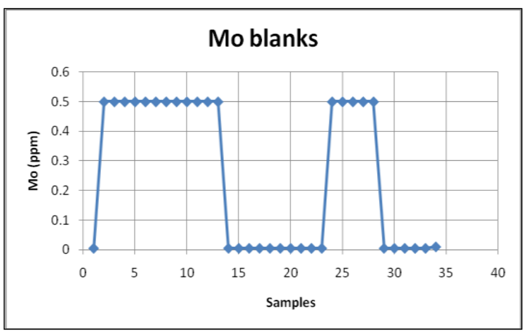


FIGURE 11-2: MOLYBDENUM VALUES FROM BLANK SAMPLES

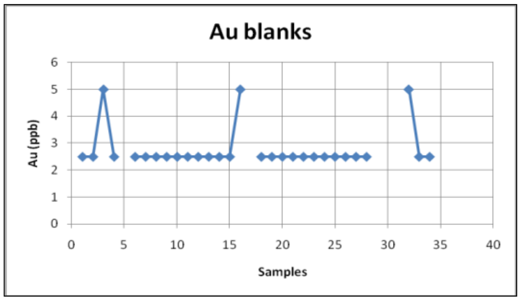


FIGURE 11-3: GOLD VALUES FROM BLANK SAMPLES

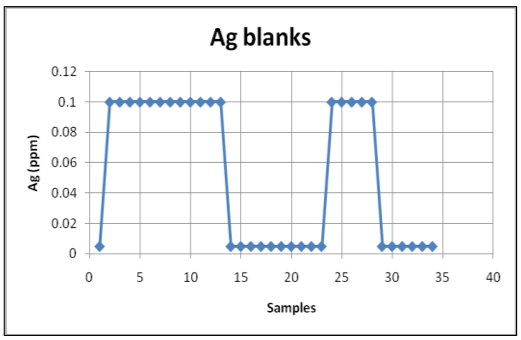


FIGURE 11-4: SILVER VALUES FROM BLANK SAMPLES

In all cases, the blank samples returned very low metal values indicating good laboratory procedures.

A duplicate sampling program was also completed where samples were split in the field and sent to the laboratory. Duplicate samples are used to test the lab's precision or reproducibility. Figures 11-5 to 11-8 show the results of the duplicate sampling program.

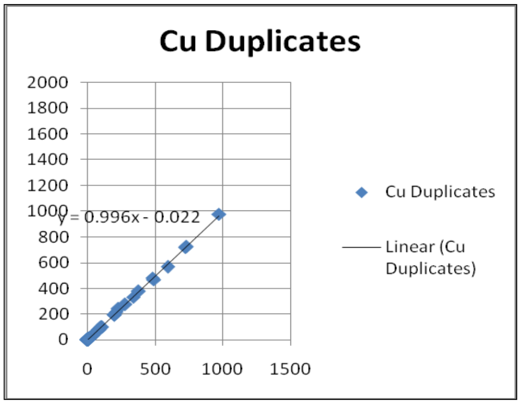


FIGURE 11-5: COPPER DUPLICATE SAMPLE RESULTS

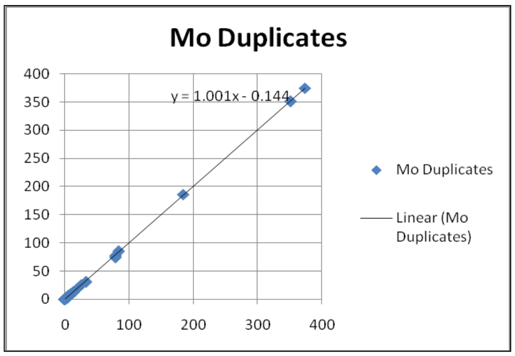


FIGURE 11-6: MOLYBDENUM DUPLICATE SAMPLE RESULTS

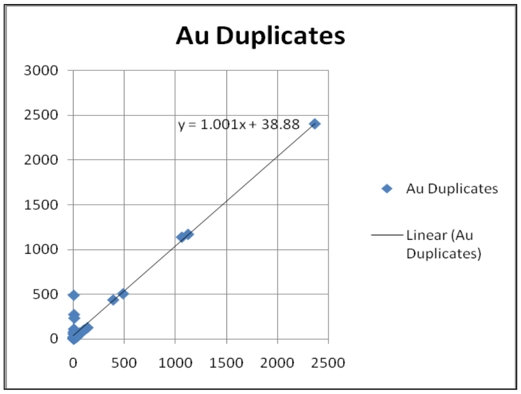


FIGURE 11-7: GOLD DUPLICATE SAMPLE RESULTS

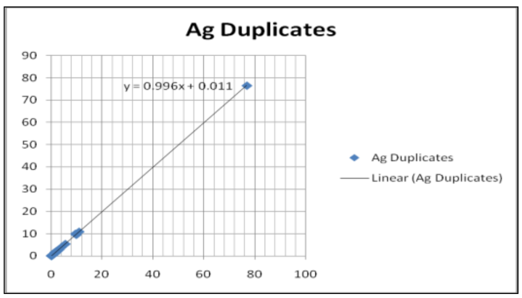


FIGURE 11-8: SILVER DUPLICATE SAMPLE RESULTS

Two tests were completed on each of the four elements: copper, molybdenum, gold, and silver, including an F-test which is a comparison of variances, and a Student's t-test which is a comparison of means. For copper, the duplicate samples show that both the variance and means indicate different sample populations. The test failed because there were three samples with high copper values in one population that were not assayed in the duplicate set. Both tests for molybdenum indicate that the populations are likely the same. The variance test for gold indicates that the populations are likely the same, though the test for the means indicates different populations. For silver, both tests indicate that the populations are likely the same.

Numerous standard samples were run by the lab testing a wide range of metal values. At least one standard was run for each batch of 25 samples. Standard samples are used as a test of the lab's accuracy: its ability to determine the true metal value of the sample. Figures 11-9 to 11-16 show the results of the standards program; the graphs show the expected value as a green line and the standard deviation as two purple lines.

The PB 120 standard (Figure 11-9) shows that copper may be reported low with some of the sample batches. Standard DS 7 (Figure 11-10) appears to be always reporting on the low side of the expected value of 109 ppm

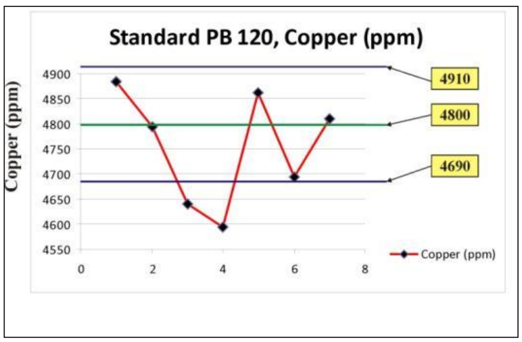


FIGURE 11-9: COPPER, STANDARD PB 120

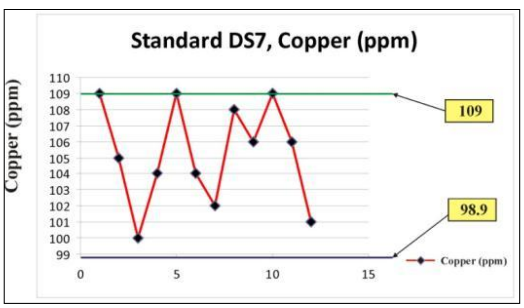


FIGURE 11-10: COPPER, STANDARD DS 7

The single molybdenum standard (Figure 11-11) shows that the majority of the tests are reporting on the low side of the expected value.

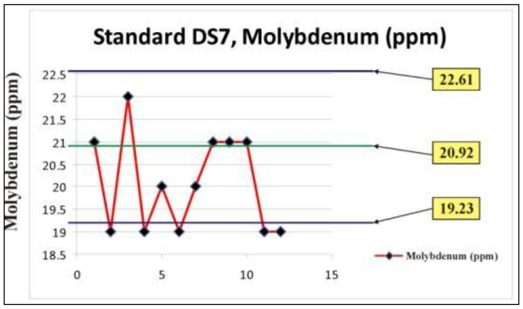


FIGURE 11-5: MOLYBDENUM, STANDARD DS 7

All three of the gold standards (Figures 11-12, 11-13, and 11-4) show considerable variance with results being reported on both the high and low sides of the expected value.

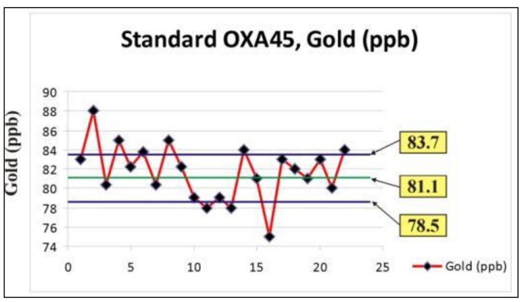


FIGURE 11-6: GOLD, STANDARD OXA 45

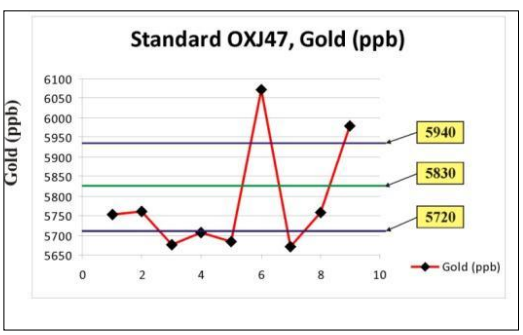


FIGURE 11-7: GOLD, STANDARD OXJ 47

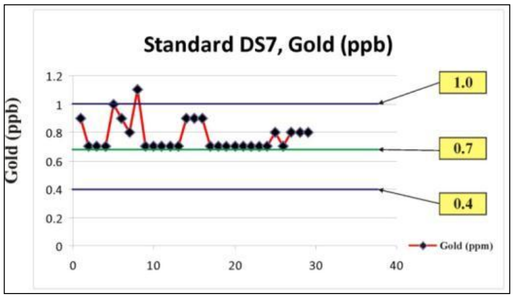


FIGURE 11-8: GOLD, STANDARD DS 7

The silver standard PB 120 (Figure 11-15) reports all results higher than the expected value plus one standard deviation (19 +/- 1.456), while standard DS 7 (Figure 11-16) shows both higher and lower values.

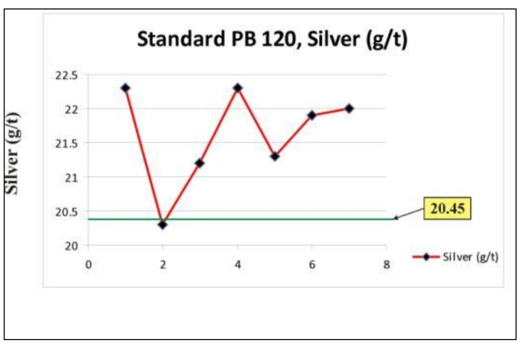


FIGURE 11-9: SILVER, STANDARD PB 120

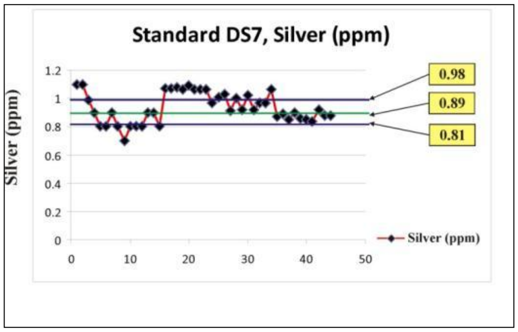


FIGURE 11-10: SILVER, STANDARD DS 7

It is MMTS's opinion that the blank, duplicate, and standard sample program, and the security and analytical procedures followed during the work on the property are acceptable and reliable, although a more thorough review of the lab's results will keep the variation to a minimum.

MMTS was not involved in any sampling on the property.

12 DATA VERIFICATION

12.1 TECHNICAL REVIEW BY QUALIFIED PERSONS

Robert J. Morris, MMTS, completed a site visit from April 2-4, 2008. Morris examined drill core (at site and at a Cuenca warehouse); toured underground workings and surface exposures; and reviewed exploration procedures used at the site. Based on his experience, qualifications and a review of the data, the author believes that the drilling programs were conducted in a professional manner and the quality of data and information produced meets or exceeds accepted industry standards. The author also believes that, for the most part, the work has been directed or supervised by individuals who would fit the definition of a Qualified Person in their particular areas of responsibility as set out by NI 43-101.

A site visit was not done in 2012 due to the presence of illegal artisanal miners and the potential risk to safety, as perceived by the author. However, apart from the small scale artisanal activity, there has been no exploration or development work done on the property since the 2008 resource estimate and so a site visit was deemed unnecessary.

The following is adapted from Melling et al. (2007):

> During the 1994 diamond drill campaign conducted by Ecuadorian Minerals, two different types of standards reference material were inserted approximately one every 20 samples into the samples stream and analyzed for gold only. These samples were given the suffix designation letter "A". Blank material was also inserted at a rate of one per 20 samples and analyzed for gold only. These samples were given the suffix designation letter "B". No documentation was available for review by the authors detailing the types of standard reference material used or any analysis on the quality control data. The data verification work described here was not completed by Atlas and is considered historical. The data verification has not been confirmed by the authors and is not necessarily indicative of what may actually be confirmed by future work.
>
> For the preliminary tunnel sampling, no sample duplicates, blanks or company standards were inserted into the sample stream by Melling and Schultz because of the relatively few numbers of samples being analyzed. For the detailed tunnel sampling both company blanks and company duplicates were inserted into the sample stream. A suitable company standard that adequately reflects both the tenor of the mineralization and the silicate mineralogy of the 3C deposit have not yet been identified or procured.

> For quality assurance for the 2006-2007 sampling program, repeat samples and blanks were included among the samples submitted to Acme. Acme inserts its own standards as a quality check. In addition AMI has its own standards which were included among the requested over limit assays. Inspection of the analytical results of the standards and repeats indicates that the data is trustworthy, except that there are differences of as much as 48% in a small percentage of the repeat gold analyses. This suggests that coarse gold may be present locally and a "nugget effect" may have to be considered in evaluating data received in the future. As recommended by the chief assayer of Acme Laboratories, screen metallic assays will be requested to provide a more precise determination of gold content.

MMTS completed its own verification on the project, including a site visit and a review of the database.

The database check included a complete review of six drill holes: five from the 2008 program and one from 2007. Drill hole collar coordinates (Photo 12-1), downhole surveys, geology, and assays were checked. The assay database for 13 drill holes was checked and deemed to be very good. Only one discrepancy was found between the assay sheets from the lab and the database in drill hole, 3C-08-42: molybdenum values < 1 ppm from the lab were recorded as 0.1 ppm in the database; gold values < 5 ppb from the lab were recorded as 0.01 ppb in the database; and, silver values < 0.3 ppm from the lab were recorded as 0.3 ppm in the database.

In general, the database was considered good and the errors noted were insignificant.

PHOTO 12-1: DRILL SITE WITH THREE COLLARS
DRILL HOLE DH 08-24 (RIGHT), 25 (FOREGROUND), AND 26 (BACKGROUND)

13 MINERAL PROCESSING AND METALLURGICAL TESTING

To-date, AMIC has not carried out any formal mineral processing or metallurgical testing which may be reported under NI 43-101.

14 UPDATED MINERAL RESOURCE ESTIMATE

14.1 INTRODUCTION

The following sections detail the methods, processes, and strategies used to generate the mineral resource estimate for the Tres Chorreras (3C) Polymetallic Copper-Molybdenum-Gold-Silver Project (Tres Chorreras Project), Azuay Province, Ecuador.

14.2 DATA EVALUATION

A total of 42 drill holes were supplied for the Tres-Chorreras Project. In addition, 1,027 underground channel samples, mostly historical, were supplied and included as composites in the resource estimate. The drill hole data and the underground data have been verified and validated as described in Section 12 (Data Verification). The drill hole information within the database included collars, downhole surveys, assays, and lithology. The channel samples were supplied as point data and included northing, easting, elevation, length, and assays.

REF#	FROM	-TO-	-AI-	MOPPM	CUPPM	AUPPM	AGPPM	NET	AUOZ	AUGM	MO%	ROCKA	ROCK	MOORG	CUORG	AUORG	AGORG
41	0.00	4.00	4.00	203	942	0.20	3.0	16.01	0.027	0.830	0.048	DIAB	13	203	942	0.20	3.0
41	4.00	8.00	4.00	960	712	1.30	3.0	61.46	0.102	3.186	0.186	DIAB	13	960	712	1.30	3.0
41	8.00	12.00	4.00	29	427	0.40	3.0	10.84	0.018	0.562	0.033	DIAB	13	29	427	0.40	3.0
41	12.00	16.00	4.00	1	7	0.40	0.6	8.58	0.014	0.445	0.026	DIAB	13	1	7	0.40	0.6
41	16.00	18.90	2.90	6	163	0.50	3.1	12.10	0.020	0.627	0.037	DIAB	13	6	163	0.50	3.1
41	18.90	19.19	0.29	8	1150	10.10	100.0	227.50	0.379	11.793	0.688	DIAB	13	8	1150	10.10	100.0
41	19.19	21.00	1.81	9	96	0.20	1.2	5.12	0.009	0.265	0.015	DIAB	13	9	96	0.20	1.2
41	21.00	23.00	2.00	6	118	1.20	3.2	24.65	0.041	1.278	0.075	DIAB	13	6	118	1.20	3.2
41	23.00	25.30	2.30	5	29	0.60	2.5	12.80	0.021	0.664	0.039	DIAB	13	5	29	0.60	2.5
41	25.30	26.50	1.20	11	81	2.80	22.8	60.97	0.102	3.160	0.184	DIAB	13	11	81	2.80	22.8
41	26.50	28.00	1.50	7	68	1.60	2.4	31.67	0.053	1.642	0.096	DIAB	13	7	68	1.60	2.4
41	28.00	31.00	3.00	30	99	1.40	1.8	28.73	0.048	1.490	0.087	DIAB	13	30	99	1.40	1.8
41	31.00	32.70	1.70	5	75	0.40	1.5	8.47	0.014	0.439	0.026	DIAB	13	5	75	0.40	1.5
41	32.70	33.00	0.30	3	105	18.60	6.0	361.01	0.602	18.714	1.092	DIAB	13	3	105	18.60	6.0
41	33.00	33.60	0.60	3	38	2.50	1.6	48.93	0.082	2.536	0.148	DIAB	13	3	38	2.50	1.6
41	33.60	36.00	2.40	4	50	0.40	1.3	7.59	0.013	0.394	0.023	DIAB	13	4	50	0.40	1.3
41	36.00	39.00	3.00	6	33	0.10	0.5	1.75	0.003	0.091	0.005	DIAB	13	6	33	0.10	0.5
41	39.00	41.00	2.00	8	50	0.30	0.9	6.15	0.010	0.319	0.019	DIAB	13	8	50	0.30	0.9

FIGURE 14-1: EXAMPLE OF DRILL HOLE DATABASE SHOWING GRADES AND LITHOLOGY CODES

AMIC provided the drill hole database (metric units) in an electronic format. The database included collars, downhole surveys, lithology data, (Table 14.1), and assay data including molybdenum ppm, copper ppm, gold ppm, silver ppm, and net present value (calculated), with downhole from and to intervals in metric units.

The drill hole database was numerically coded by mineralized zone solids: 3C Breccia is codedas the number 3, and Epithermal is coded as the number 1. The database was manually adjusted drill hole by drill hole to ensure the accuracy of zonal intercepts.

Simple statistics for the assay data are shown in Tables 14.2 and 14.3, which show statistics for molybdenum, copper, gold, and silver assays weighted and un-weighted by assay interval, respectively. Table 14.1 shows the rock codes and descriptions used.

TABLE 14.1: ROCK DESCRIPTIONS AND CODES

Abbreviation	CODE	Rock Description
OVB	1	Overburden
BREC	11	Breccia
HYBR	12	Hydrothermal Breccia
DIAB	13	Diatreme breccia
BRCR	14	Breccia Crackle
DACI	21	Dacite
DCSI	22	Dacite silicified
DIOR	31	Diorite
MDIO	32	Microdiorite
MDSI	33	Microdiorite Silicified
RHYO	41	Rhyolite
RYSI	42	Rhyolite Silicified
SULF	51	Semi-massive Sulfides
COLR	61	Colluvium-rubble
FLT	71	Fault
NORC	99	No recovery

TABLE 14.2: STATISTICS FOR MOLYBDENUM, COPPER, GOLD, AND SILVER ASSAYS WEIGHTED BY ASSAY INTERVAL

Molybdenum	Interval	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	2.0	160	160	160	183	183	183	0	0
BREC	518.9	3	52000	1746	79	547	2107	3907	2.2
HYBR	58.0	1	7430	1264	79	391	1847	1781	1.4
DIAB	833.7	1	2948	50	27	27	27	208	4.1
BRCR	48.0	104	3500	722	131	339	495	954	1.3
DACI	1635.5	1	20000	553	27	79	287	1873	3.4
DCSI	94.8	5	155	52	27	27	79	41	0.8
DIOR	438.4	1	4381	91	27	27	27	439	4.8
MDIO	1634.8	1	31850	281	27	27	131	1432	5.1
MDSI	331.7	1	15800	613	27	27	391	1644	2.7
RHYO	1500.8	1	10330	220	27	79	131	703	3.2
RYSI	575.9	1	4441	173	27	79	131	381	2.2
SULF	32.0	49	33210	6845	183	755	4187	10421	1.5
COLR	90.0	4	861	112	27	27	131	206	1.8
FLT	49.0	4	2981	303	27	27	183	650	2.1
NORC	44.5	7	864	356	27	131	703	354	1
Total	7888.1	1	52000	426	27	27	183	1788	4.2
All	7914.1	1	52000	424	27	27	183	1785	4.2

TABLE 14.2
CONTINUED

Copper	Interval	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	2.0	784	784	784	816	816	816	0	0
BREC	518.9	3	54990	3402	178	816	3227	6912	2
HYBR	58.0	35	34630	2641	107	178	1100	7508	2.8
DIAB	833.7	7	46300	344	36	107	107	2430	7.1
BRCR	48.0	14	9824	1775	107	1171	1596	2379	1.3
DACI	1635.5	3	20000	1262	178	462	1100	2549	2
DCSI	94.8	43	3272	452	107	178	604	565	1.2
DIOR	438.4	5	6542	434	107	249	462	731	1.7
MDIO	1634.8	1	15600	746	107	249	675	1521	2
MDSI	331.7	3	13340	740	107	178	391	1757	2.4
RHYO	1500.8	2	20000	913	249	462	1029	1508	1.7
RYSI	575.9	36	70900	1057	249	391	887	4346	4.1
SULF	32.0	36	13550	4269	320	2305	5638	4216	1
COLR	90.0	12	2905	650	178	320	887	751	1.2
FLT	49.0	39	9500	1361	249	533	887	2282	1.7
NORC	44.5	107	10088	1508	462	887	2022	2192	1.5
Total	7888.1	1	70900	1060	107	320	887	2950	2.8
All	7914.1	1	70900	1059	107	320	887	2945	2.8

TABLE 14.2
CONTINUED

Gold	Interval	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	2.0	0.18	0.18	0.18	0.21	0.21	0.21	0.00	0.00
BREC	518.9	0	26.7	1.00	0.07	0.21	0.77	2.52	2.53
HYBR	58.0	0	5.01	0.43	0.07	0.07	0.35	0.99	2.31
DIAB	833.7	0	139.3	0.35	0.07	0.07	0.35	2.65	7.58
BRCR	48.0	0	2.49	0.36	0.07	0.21	0.35	0.56	1.55
DACI	1633.5	0	6.03	0.21	0.07	0.07	0.21	0.56	2.66
DCSI	94.8	0	0.28	0.03	0.07	0.07	0.07	0.05	1.47
DIOR	438.4	0	11.1	0.30	0.07	0.07	0.21	1.06	3.53
MDIO	1626.8	0	12	0.28	0.07	0.07	0.21	0.96	3.47
MDSI	331.7	0	6.39	0.16	0.07	0.07	0.21	0.54	3.33
RHYO	1492.8	0	10.15	0.17	0.07	0.07	0.07	0.64	3.66
RYSI	569.9	0	4.05	0.12	0.07	0.07	0.07	0.30	2.57
SULF	32.0	0	12.87	1.83	0.21	0.49	1.32	3.22	1.76
COLR	90.0	0	1.95	0.31	0.07	0.21	0.35	0.47	1.50
FLT	49.0	0	0.86	0.14	0.07	0.07	0.21	0.19	1.31
NORC	44.5	0.02	2.79	0.59	0.07	0.07	0.49	0.92	1.58
Total	7864.1	0	139.3	0.29	0.07	0.07	0.21	1.30	4.49
All	7890.1	0	139.3	0.29	0.07	0.07	0.21	1.30	4.49

TABLE 14.2
CONTINUED

Silver	Interval	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	2.0	2	2	2.00	1.90	1.90	1.90	0.00	0.00
BREC	518.9	0.1	422	10.02	1.06	2.32	8.23	32.83	3.28
HYBR	58.0	0.3	175	10.44	0.21	1.48	4.43	31.96	3.06
DIAB	833.7	0	110	2.28	0.21	0.63	2.32	7.82	3.43
BRCR	48.0	0.1	11.7	3.59	0.63	2.32	4.43	3.46	0.96
DACI	1633.5	0.1	101.1	3.26	0.63	1.06	2.32	8.26	2.53
DCSI	94.8	0.1	4.2	0.68	0.21	0.21	0.63	0.75	1.11
DIOR	438.4	0.2	25.6	2.77	0.63	1.06	2.32	4.41	1.59
MDIO	1634.8	0.1	165	3.92	0.21	1.06	3.17	11.79	3.01
MDSI	331.7	0.1	105	3.74	0.21	0.63	2.74	10.57	2.83
RHYO	1492.8	0.1	408	3.27	0.63	1.06	3.17	15.48	4.74
RYSI	573.9	0.1	155.1	2.67	0.63	0.63	1.90	10.28	3.85
SULF	32.0	0.1	44.2	17.84	4.01	15.83	24.27	14.28	0.80
COLR	90.0	0.2	16.7	3.44	0.63	1.06	4.43	5.02	1.46
FLT	49.0	0.3	30.8	5.02	1.06	1.48	3.59	7.79	1.55
NORC	44.5	0.5	35.7	5.77	1.06	1.90	7.81	7.80	1.35
Total	7876.1	0	422	3.80	0.63	1.06	2.74	13.90	3.66
All	7902.1	0	422	3.80	0.63	1.06	2.74	13.88	3.65

TABLE 14.3: STATISTICS FOR MOLYBDENUM, COPPER, GOLD, AND SILVER ASSAYS UN-WEIGHTED BY ASSAY INTERVAL

Molybdenum	#	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	1	160	160	160	183	183	183	0	0
BREC	263	3	52000	1757	79	547	2107	3889	2.2
HYBR	29	1	7430	1264	79	391	1847	1781	1.4
DIAB	356	1	2948	54	27	27	27	219	4
BRCR	24	104	3500	722	131	339	495	954	1.3
DACI	826	1	20000	548	27	79	287	1864	3.4
DCSI	48	5	155	53	27	27	79	41	0.8
DIOR	213	1	4381	93	27	27	27	446	4.8
MDIO	800	1	31850	285	27	27	131	1447	5.1
MDSI	169	1	15800	634	27	27	391	1652	2.6
RHYO	752	1	10330	219	27	79	131	702	3.2
RYSI	291	1	4441	171	27	79	131	379	2.2
SULF	16	49	33210	6845	183	755	4187	10421	1.5
COLR	26	4	861	111	27	27	131	196	1.8
FLT	24	4	2981	307	27	27	183	656	2.1
NORC	15	7	864	307	27	131	703	327	1.1
Total	3853	1	52000	437	27	27	183	1811	4.1
All	3866	1	52000	436	27	27	183	1808	4.1

TABLE 14.3
CONTINUED

Copper	#	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	1	784	784	784	816	816	816	0	0
BREC	263	3	54990	3369	178	816	3227	6871	2
HYBR	29	35	34630	2641	107	178	1100	7508	2.8
DIAB	356	7	46300	384	36	107	107	2627	6.8
BRCR	24	14	9824	1775	107	1171	1596	2379	1.3
DACI	826	3	20000	1253	178	462	1100	2538	2
DCSI	48	43	3272	451	107	178	604	561	1.2
DIOR	213	5	6542	444	107	249	462	738	1.7
MDIO	800	1	15600	757	107	249	675	1536	2
MDSI	169	3	13340	744	107	178	391	1751	2.4
RHYO	752	2	20000	909	249	462	1029	1506	1.7
RYSI	291	36	70900	1044	249	391	887	4324	4.1
SULF	16	36	13550	4269	320	2305	5638	4216	1
COLR	26	12	2905	641	178	320	887	706	1.1
FLT	24	39	9500	1375	249	533	887	2304	1.7
NORC	15	107	10088	1760	462	887	2022	2460	1.4
Total	3853	1	70900	1079	107	320	887	2981	2.8
All	3866	1	70900	1077	107	320	887	2976	2.8

TABLE 14.3
CONTINUED

Gold	#	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	1	0.18	0.18	0.18	0.21	0.21	0.21	0.00	0.00
BREC	263	0	26.70	0.99	0.07	0.21	0.77	2.50	2.53
HYBR	29	0	5.01	0.43	0.07	0.07	0.35	0.99	2.31
DIAB	356	0	139.30	0.82	0.07	0.07	0.35	7.52	9.18
BRCR	24	0	2.49	0.36	0.07	0.21	0.35	0.56	1.55
DACI	825	0	6.03	0.21	0.07	0.07	0.21	0.55	2.66
DCSI	48	0	0.28	0.03	0.07	0.07	0.07	0.05	1.47
DIOR	213	0	11.10	0.31	0.07	0.07	0.21	1.08	3.50
MDIO	796	0	12.00	0.28	0.07	0.07	0.21	0.97	3.47
MDSI	169	0	6.39	0.16	0.07	0.07	0.21	0.54	3.28
RHYO	748	0	10.15	0.17	0.07	0.07	0.07	0.64	3.66
RYSI	288	0	4.05	0.11	0.07	0.07	0.07	0.29	2.59
SULF	16	0	12.87	1.83	0.21	0.49	1.32	3.22	1.76
COLR	26	0	1.95	0.30	0.07	0.21	0.35	0.44	1.46
FLT	24	0	0.86	0.15	0.07	0.07	0.21	0.19	1.30
NORC	15	0.02	2.79	0.45	0.07	0.07	0.49	0.75	1.68
Total	3841	0	139.30	0.33	0.07	0.07	0.21	2.49	7.53
All	3854	0	139.30	0.33	0.07	0.07	0.21	2.49	7.54

TABLE 14.3
CONTINUED

Silver	#	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
OVB	1	2	2.00	2.00	1.90	1.90	1.90	0.00	0.00
BREC	263	0.1	422.00	9.91	1.06	2.32	8.23	32.62	3.29
HYBR	29	0.3	175.00	10.44	0.21	1.48	4.43	31.96	3.06
DIAB	356	0	110.00	2.99	0.21	0.63	2.32	10.60	3.54
BRCR	24	0.1	11.70	3.59	0.63	2.32	4.43	3.46	0.96
DACI	825	0.1	101.10	3.24	0.63	1.06	2.32	8.22	2.54
DCSI	48	0.1	4.20	0.68	0.21	0.21	0.63	0.74	1.10
DIOR	213	0.2	25.60	2.78	0.63	1.06	2.32	4.43	1.60
MDIO	800	0.1	165.00	3.97	0.21	1.06	3.17	11.92	3.00
MDSI	169	0.1	105.00	3.72	0.21	0.63	2.74	10.48	2.82
RHYO	748	0.1	408.00	3.26	0.63	1.06	3.17	15.47	4.74
RYSI	290	0.1	155.10	2.65	0.63	0.63	1.90	10.22	3.86
SULF	16	0.1	44.20	17.84	4.01	15.83	24.27	14.28	0.80
COLR	26	0.2	16.70	3.75	0.63	1.06	4.43	5.09	1.36
FLT	24	0.3	30.80	5.00	1.06	1.48	3.59	7.87	1.57
NORC	15	0.5	35.70	5.69	1.06	1.90	7.81	8.62	1.51
Total	3847	0	422.00	3.89	0.63	1.06	2.74	14.18	3.65
All	3860	0	422.00	3.89	0.63	1.06	2.74	14.16	3.64

The assay database shows that molybdenum, copper, gold, and silver distributions are very well behaved (when compared with other deposits), with only a few samples, in each case, representing an outlier population. The respective, overall mean molybdenum, copper, gold, and silver grades (weighted by sample length) are 424 ppm, 1,059 ppm, 0.29 g/t, and 3.80 g/t, respectively, with standard deviations of 1,785, 2,945, 1.30, and 13.88, respectively.

Molybdenum, copper, gold, and silver assays have relatively high coefficients of variation (CV): 4.2, 2.8, 4.49, and 3.65, respectively (weighted by sample length shown in Table 14.3). This indicates a relatively modest scatter of raw data values.

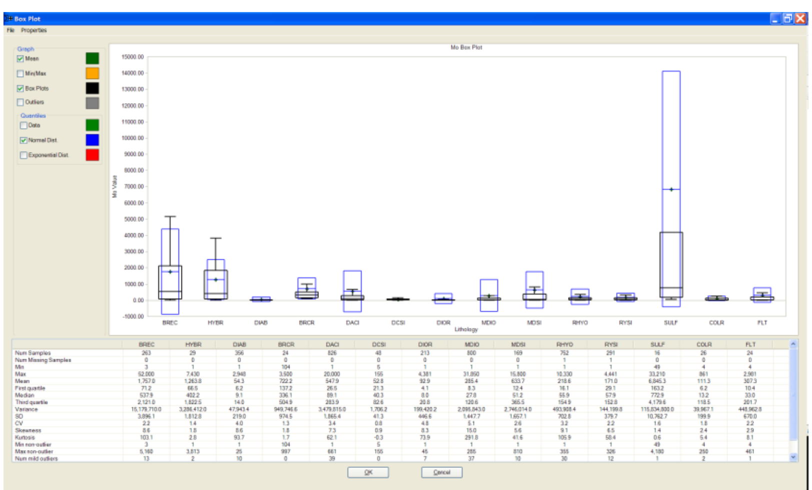
The coefficient of variation is defined as:

$CV = \sigma/m$ where:

σ is the standard deviation
m is the mean

Standard deviation divided by the mean represents a measure of variability that is unit-independent. This is a variability index that can be used to compare different and unrelated distributions.

Figures 14-2 through 14-5 show the box plots for molybdenum, copper, gold, and silver, respectively, by rock type. Figures 14-6 through 14-9 show the histograms weighted by assay interval length for all available molybdenum, copper, gold, and silver assays, respectively, including the corresponding probability plots, shown in Figures 14-10 through 14-13, respectively. The histograms and cumulative probability plots show that the assay data demonstrates log normal distributions with a small population of evident outliers. Figure 14-14 shows a plan view of the 3C Breccia zone (red) and Epithermal zone (blue) geology solids. Figures 14-15 through 14-17 show plan section and long section views of the drill holes used in the resource estimate.



	BREC	HYBR	DIAB	BRCR	DACI	DCSI	DIOR	MDIO	MDSI	RHYO	RYSI	SULF	COLR	FLT
Num Samples	263	29	356	24	826	48	213	800	169	752	291	16	26	24
Num Missing Samples	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Min	3	1	1	104	1	5	1	1	1	1	1	49	4	4
Max	52,000	7,430	2,948	3,500	20,000	155	4,381	31,850	15,800	10,330	4,441	33,210	861	2,981
Mean	1,757.0	1,263.8	54.3	722.2	547.9	52.8	92.9	285.4	633.7	218.6	171.0	6,845.3	111.3	307.3
First quartile	71.2	66.5	6.2	137.2	26.5	21.3	4.1	8.3	12.4	16.1	29.1	163.2	6.2	10.4
Median	537.9	402.2	9.1	336.1	89.1	40.3	8.0	27.8	51.2	55.9	57.9	772.9	13.2	33.0
Third quartile	2,121.0	1,822.5	14.0	504.9	283.9	82.6	20.8	120.6	365.5	154.9	152.8	4,179.6	118.5	201.7
Variance	15,179,710.0	3,286,412.0	47,943.4	949,746.6	3,479,815.0	1,706.2	199,420.2	2,095,843.0	2,746,014.0	493,908.4	144,199.8	115,834,800.0	39,967.1	448,962.8
SD	3,896.1	1,812.8	219.0	974.5	1,865.4	41.3	446.6	1,447.7	1,657.1	702.8	379.7	10,762.7	199.9	670.0
CV	2.2	1.4	4.0	1.3	3.4	0.8	4.8	5.1	2.6	3.2	2.2	1.6	1.8	2.2
Skewness	8.6	1.8	8.6	1.8	7.3	0.9	8.3	15.0	5.6	9.1	6.5	1.4	2.4	2.9
Kurtosis	103.1	2.8	93.7	1.7	62.1	-0.3	73.9	291.8	41.6	105.9	58.4	0.6	5.4	8.1
Min non-outlier	3	1	1	104	1	5	1	1	1	1	1	49	4	4
Max non-outlier	5,160	3,813	25	997	661	155	45	285	810	355	326	4,180	250	461
Num mild outliers	13	2	10	0	39	0	7	37	10	30	12	1	2	1

FIGURE 14-2: BOX PLOT FOR MOLYBDENUM ASSAYS

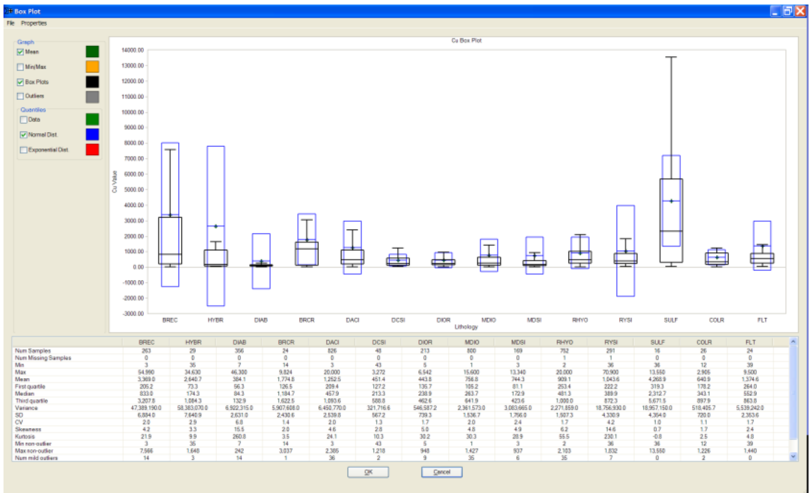


FIGURE 14-3: BOX PLOT FOR COPPER ASSAYS

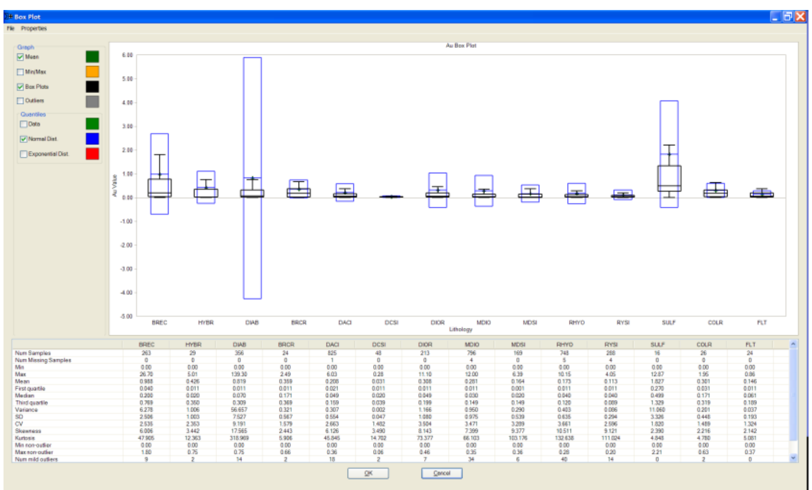


FIGURE 14-4: BOX PLOT FOR GOLD ASSAYS

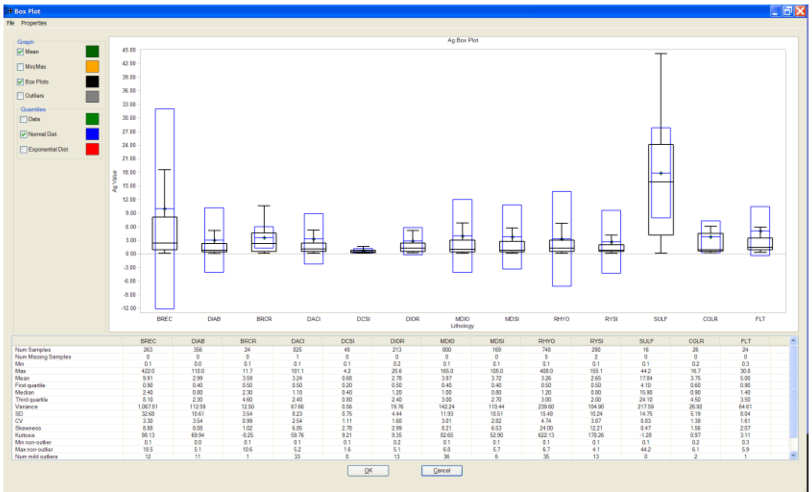


FIGURE 14-5: BOX PLOT FOR SILVER ASSAYS

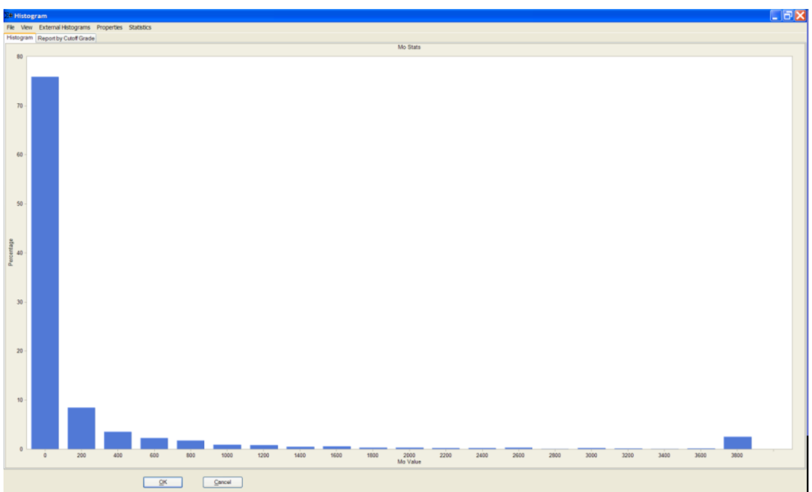


FIGURE 14-6: HISTOGRAM FOR MOLYBDENUM ASSAYS WEIGHTED BY ASSAY INTERVAL

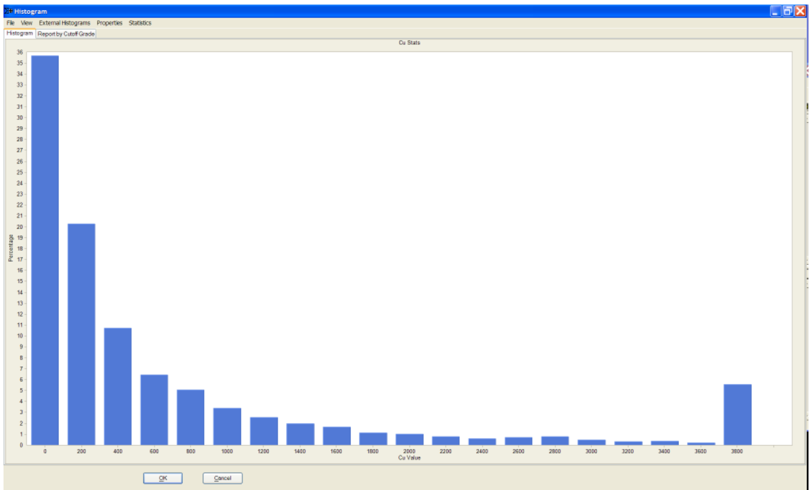


FIGURE 14-7: HISTOGRAM FOR COPPER ASSAYS WEIGHTED BY ASSAY INTERVAL

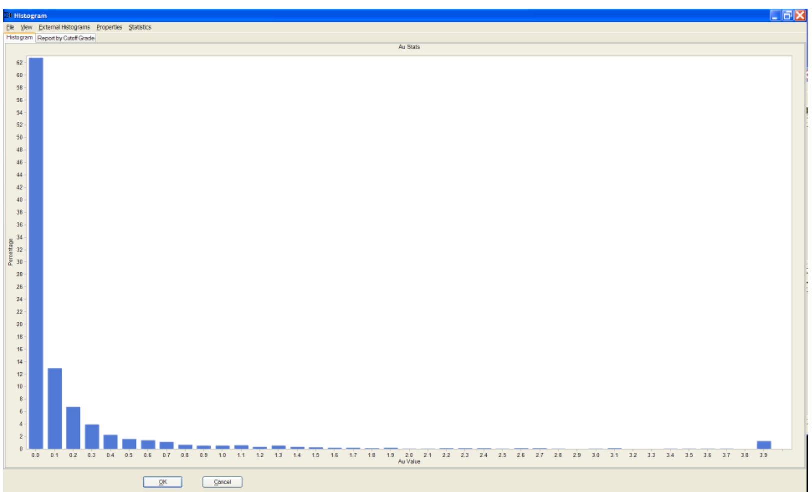


FIGURE 14-8: HISTOGRAM FOR GOLD ASSAYS WEIGHTED BY ASSAY INTERVAL

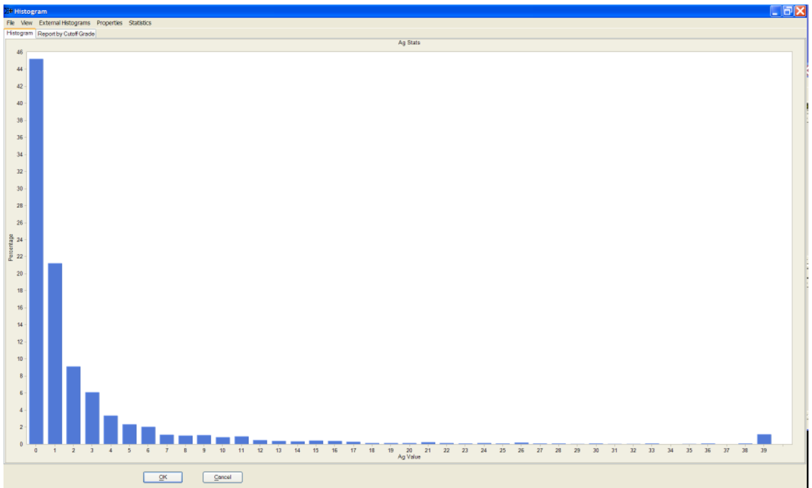


FIGURE 14-9: HISTOGRAM FOR SILVER ASSAYS WEIGHTED BY ASSAY INTERVAL

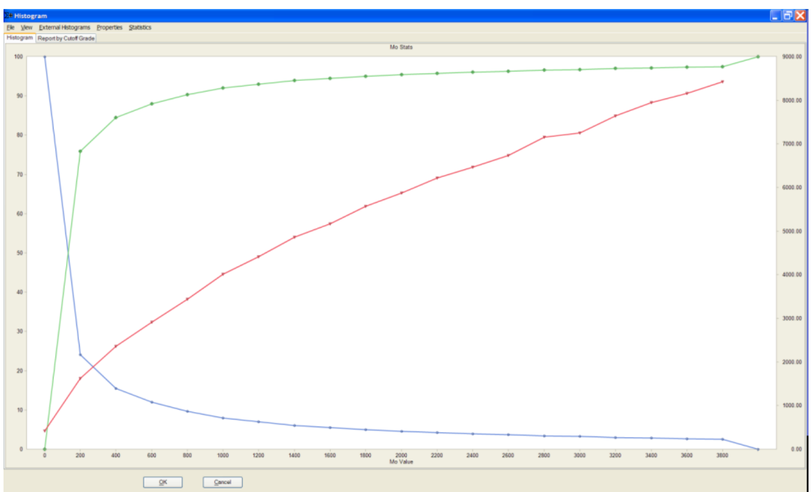


FIGURE 14-10: CUMULATIVE DISTRIBUTION PLOT AND GRADE-TONNAGE CURVE FOR MOLYBDENUM ASSAYS

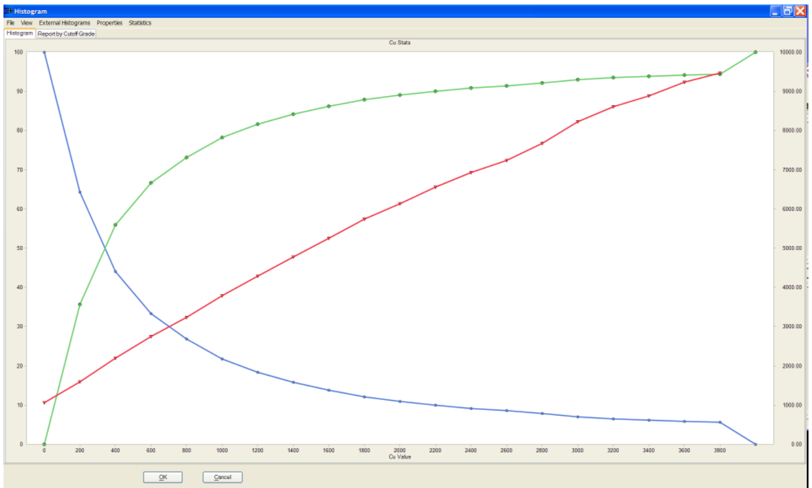


FIGURE 14-11: CUMULATIVE DISTRIBUTION PLOT AND GRADE-TONNAGE CURVE FOR COPPER ASSAYS

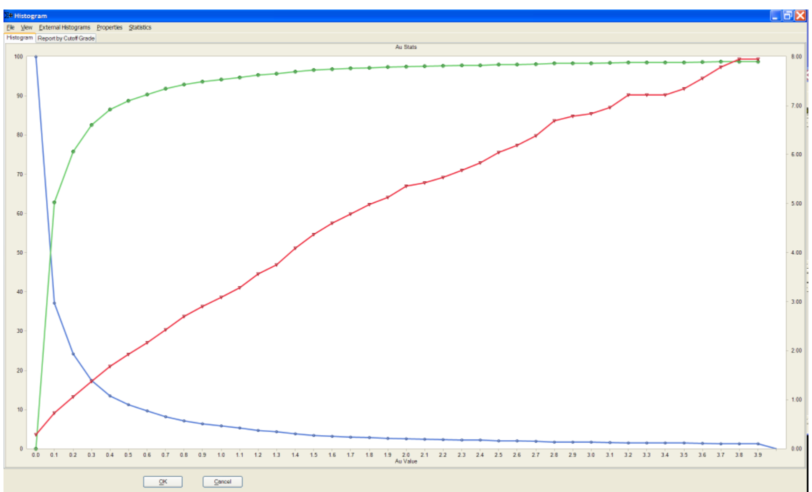


FIGURE 14-12: CUMULATIVE DISTRIBUTION PLOT AND GRADE-TONNAGE CURVE FOR GOLD ASSAYS

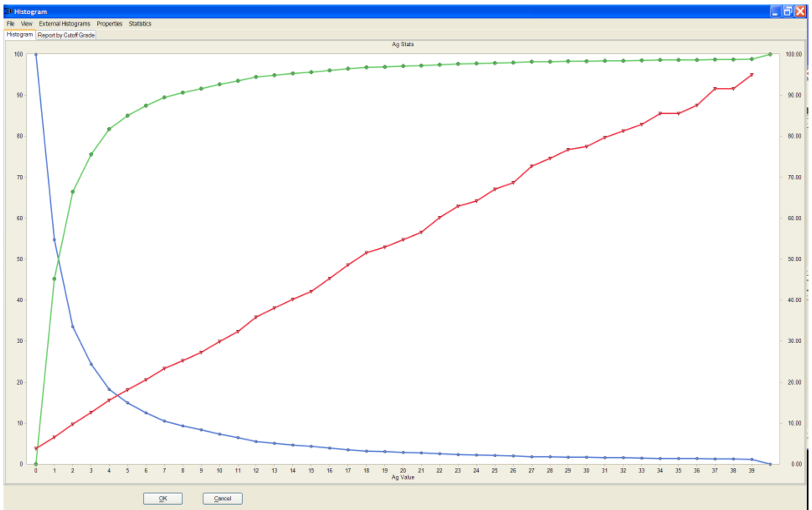


FIGURE 14-13: CUMULATIVE DISTRIBUTION PLOT AND GRADE-TONNAGE CURVE FOR SILVER ASSAYS

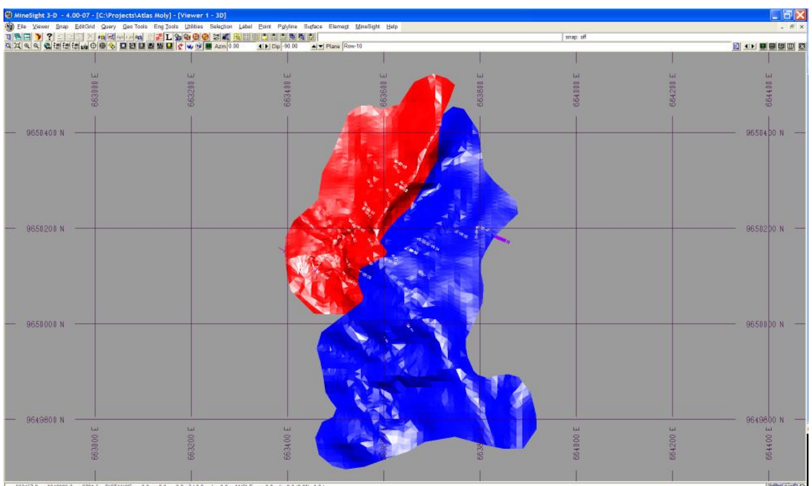


FIGURE 14-14: PLAN VIEW SHOWING DRILL HOLES AND THE TWO DEPOSITS
(3C BRECCIA IN RED, EPITHERMAL IN BLUE)

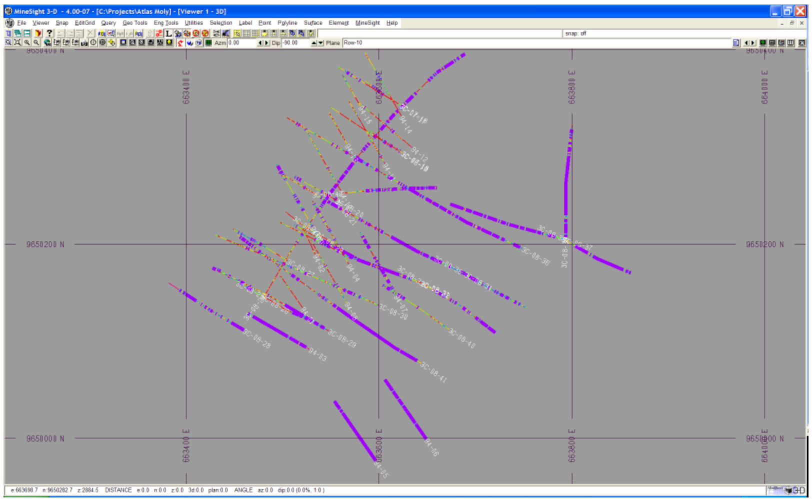


FIGURE 14-15: PLAN VIEW OF MINE GRID SHOWING DRILL HOLES USED IN RESOURCE ESTIMATE FOR THE 3C BRECCIA AND EPITHERMAL DEPOSITS

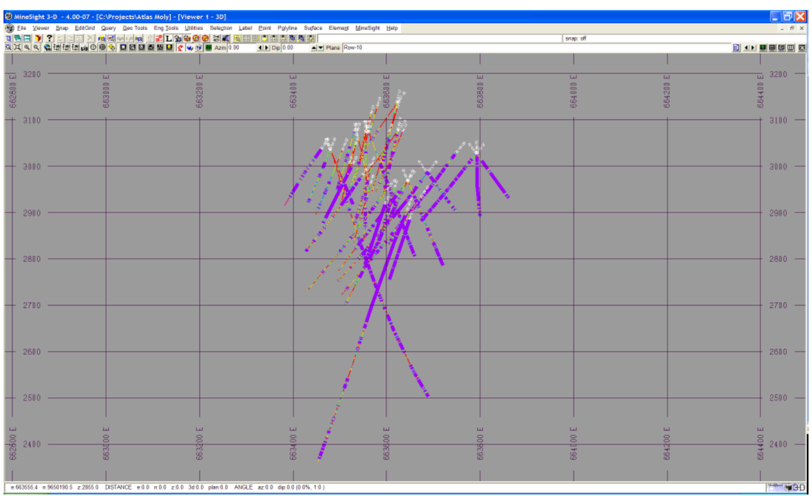


FIGURE 14-16: SECTION VIEW SHOWING ALL DRILL HOLES USED IN RESOURCE ESTIMATE FOR THE 3C BRECCIA AND EPITHERMAL DEPOSITS

(LOOKING NORTH)

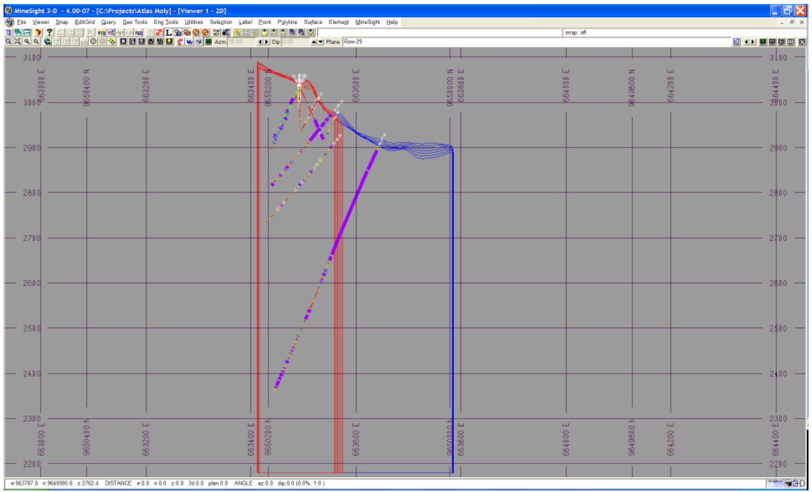


FIGURE 14-17: CROSS SECTIONAL VIEW OF DRILL HOLES WITH INTERPRETATION OF THE MINERALIZED ZONE AND TOPOGRAPHY
(3C BRECCIA IN RED, EPITHERMAL IN BLUE)

14.3 TOPOGRAPHY

Topography was imported from an AutoCAD topographic map supplied by AMIC in DXF® format. The topography was surveyed and is believed to be accurate. Checks against drill hole collars show excellent agreement, with the exception of two holes with discrepancies greater than 5 m. The author recommends that these holes be resurveyed and corrected, or the topography results should be adjusted. Figure 14-18 shows the solid topographic survey that is used to clip the geology solids. Figure 14-19 shows the gridded topographic surface.

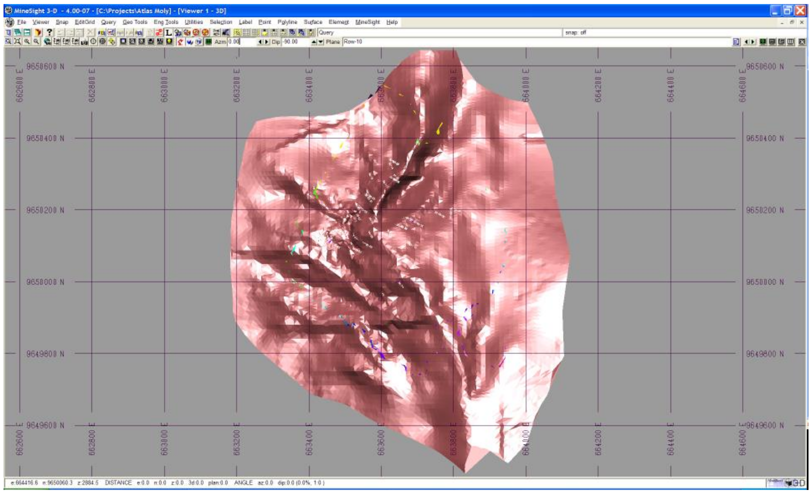


FIGURE 14-18: PLAN VIEW OF TOPOGRAPHIC SOLIDS

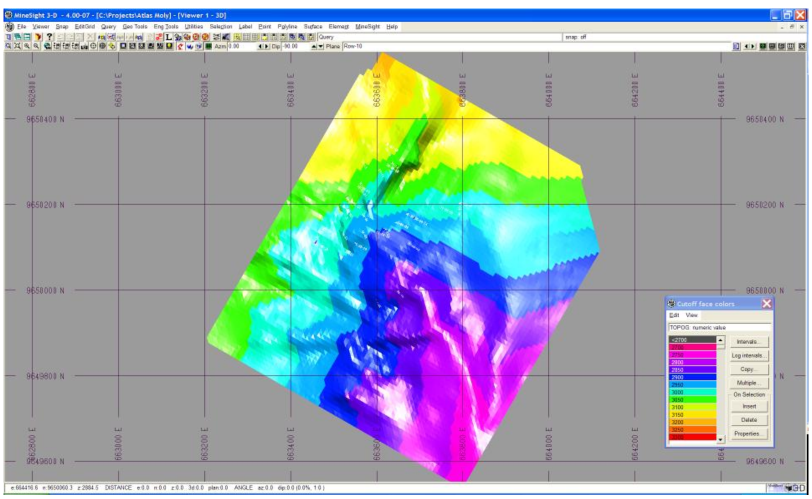


FIGURE 14-19: PLAN VIEW OF THE 3D GRIDDED TOPOGRAPHIC

14.4 COMPUTERIZED GEOLOGIC AND DOMAIN MODELLING

Solid models were created for the 3C Breccia and Epithermal zones from plan polylines that were based on lithology. The ore zone solids models were then used to constrain the interpolation procedure.

Once the solids models were created, they were used to code the drill hole assays and composites for subsequent statistical and geostatistical analysis. For the purpose of the resource model, the solid zone was used to constrain the block model by matching assays to those within the zones so that only composites that lie within a particular zone are used to interpolate the blocks within that same zone; this process is called *geologic matching*. The geostatistical parameters used in the estimation process were derived from geostatistical analysis.

Figures 14-20 through 14-22 show the completed zone solids model for the 3C Breccia zone (in red) and the Epithermal zone (in blue).

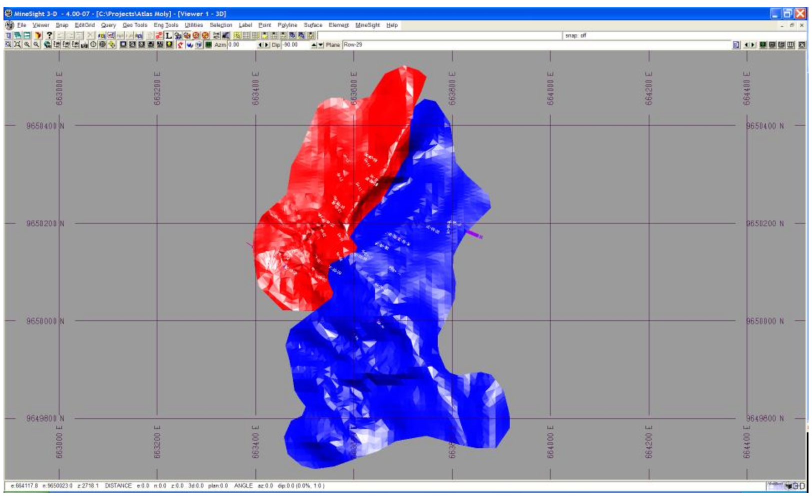


FIGURE 14-20: 3D PLAN VIEW OF DRILL HOLES AND GEOLOGY SOLIDS FOR 3C BRECCIA (RED) AND EPITHERMAL (BLUE) ZONES
(NORTH TO TOP OF PAGE)

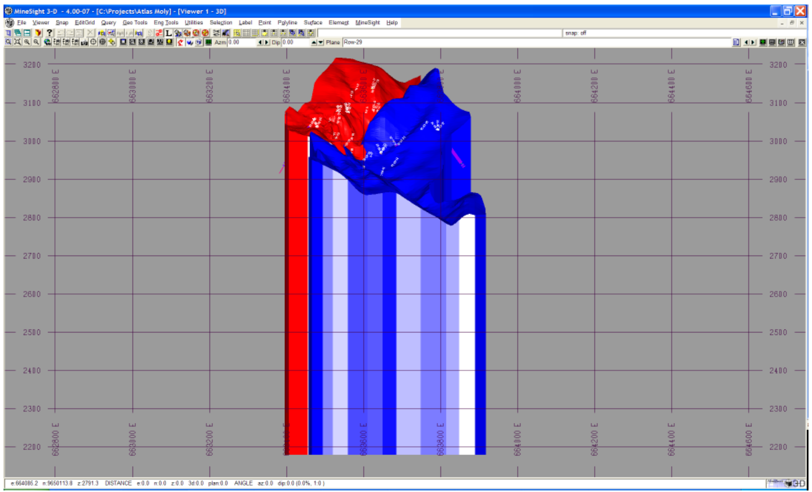


FIGURE 14-21: 3D SECTIONAL VIEW OF GEOLOGY SOLIDS FOR 3C BRECCIA (RED) AND EPITHERMAL (BLUE) ZONES
(NORTH INTO PAGE)

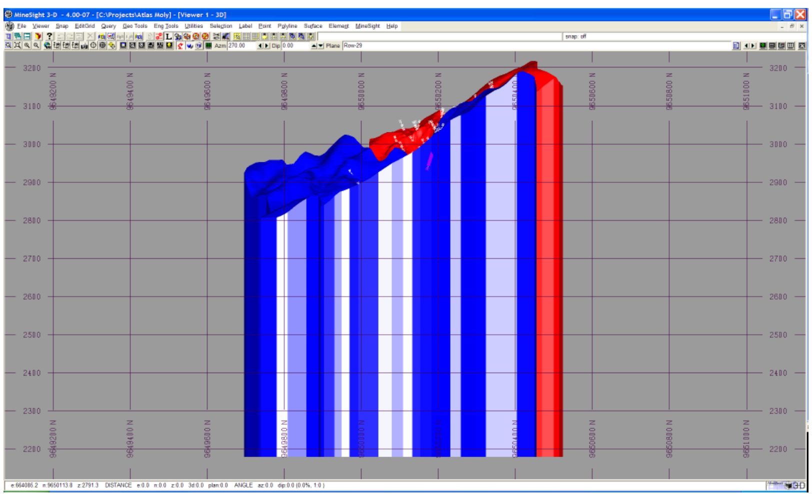


FIGURE 14-22: LONG SECTION VIEW OF DRILL HOLES AND GEOLOGY SOLIDS FOR 3C BRECCIA (RED) AND EPITHERMAL (BLUE) ZONES
(NORTH TO RIGHT OF PAGE)

14.5 COMPOSITES

The composite database is comprised of: molybdenum ppm (MOPPM), copper ppm (CUPPM), gold ppm (AUPPM), and silver ppm (AGPPM), including composited calculated fields for net present value (NET), gold equivalent in ounces (AUGM), gold equivalent in grams (AUOZ), and molybdenum equivalent (MO%). There is an addition numerical code field (XTRA1) for the zone solids (Figure 14-23). It was determined that a 2.5 m composite length produced the best balance to supply common support for samples and minimize the smoothing of the grades, in addition to reducing the effect of high grades to a minimum.

In addition, Figure 14-24 shows an analysis of all assay interval lengths and those within the ore zone; overall, 2.5 m appears to be the optimal interval length. It should be noted that the drill hole data was composited and the underground channel data was imported directly into the composited database because the underground data is essentially individual composites.

Figure 14-25 shows the histogram for all composites. A small number of composites are outside of the 2.5 m length; these are mainly underground samples. Therefore, for the interpolation process, the composites are length-weighted to ensure that the composites are adequately weighted.

Table 14.4 shows the basic statistics for the molybdenum, copper, gold, and silver composites, respectively. Figures 14-26 through 14-33 show the histograms for molybdenum, copper, gold, and silver for the 3C Breccia and Epithermal zones, respectively.

EAST	NORTH	ELEV.	-TO-	LNGTH	MOPPM	CUPPM	AUPPM	AGPPM	NET	AUOZ	AUGM	MO%	XTRA1
663481.69	9650147.34	3033.05	2.50	2.50	325	1060	2.20	8.8	60.23	0.100	3.122	0.182	3
663482.32	9650148.42	3030.88	5.00	2.50	184	700	1.17	1.7	32.21	0.054	1.669	0.098	3
663482.96	9650149.49	3028.72	7.50	2.50	196	1293	0.82	2.4	28.71	0.048	1.488	0.087	3
663483.59	9650150.57	3026.55	10.00	2.50	381	1968	0.24	2.7	26.64	0.045	1.381	0.081	3
663484.23	9650151.65	3024.39	12.50	2.50	134	1931	0.21	4.3	18.10	0.030	0.938	0.055	3
663484.86	9650152.72	3022.22	15.00	2.50	144	1403	0.20	4.9	16.17	0.027	0.838	0.049	3
663485.49	9650153.80	3020.06	17.50	2.50	267	929	0.14	2.9	16.50	0.027	0.855	0.050	3
663486.13	9650154.88	3017.89	20.00	2.50	396	4168	0.33	7.2	39.69	0.066	2.057	0.120	3
663486.76	9650155.96	3015.73	22.50	2.50	389	1440	0.16	1.9	22.80	0.038	1.182	0.069	3
663487.40	9650157.03	3013.56	25.00	2.50	284	1469	0.20	3.3	20.60	0.035	1.068	0.062	3
663488.03	9650158.11	3011.40	27.50	2.50	446	2969	0.44	5.9	38.00	0.063	1.970	0.115	3
663488.67	9650159.19	3009.23	30.00	2.50	636	3751	1.08	3.4	59.41	0.099	3.080	0.179	3
663489.30	9650160.26	3007.07	32.50	2.50	563	1466	1.54	2.1	55.44	0.093	2.874	0.168	3
663489.93	9650161.34	3004.90	35.00	2.50	908	2171	0.50	3.5	50.33	0.084	2.609	0.152	3
663490.57	9650162.42	3002.74	37.50	2.50	364	731	0.27	0.6	20.66	0.034	1.071	0.063	3
663491.20	9650163.49	3000.57	40.00	2.50	657	567	0.49	0.4	33.75	0.056	1.750	0.102	3
663491.84	9650164.57	2998.41	42.50	2.50	788	1579	0.80	1.6	48.98	0.082	2.539	0.148	3
663492.47	9650165.65	2996.24	45.00	2.50	307	5882	3.58	5.5	106.64	0.178	5.528	0.323	3

FIGURE 14-23: COMPOSITE DATABASE FIELDS

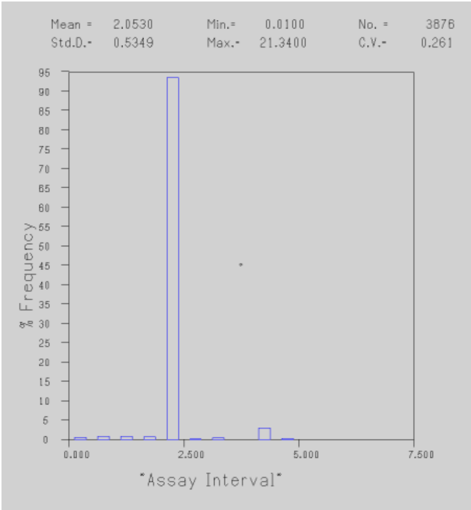


FIGURE 14-24: ANALYSIS OF ALL ASSAY INTERVAL LENGTHS

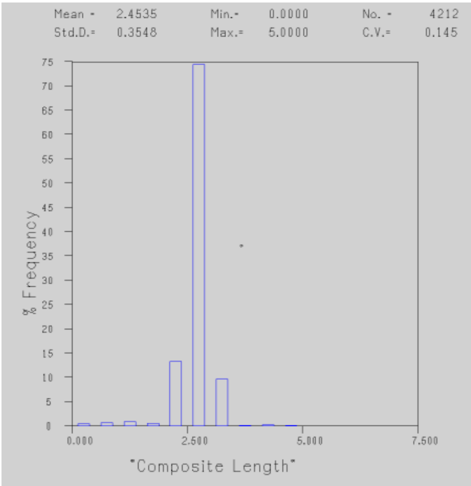


FIGURE 14-25: ANALYSIS OF COMPOSITE INTERVAL LENGTHS WITHIN THE ORE ZONES

TABLE 14.4: COMPOSITE STATISTICS WEIGHTED BY LENGTH

Epithermal	Length	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
MO	1,970.5	1	2,186	32	23	23	23	114	3.6
CU	1,970.5	3	10,462	266	68	111	284	531	2
AU	1,970.5	0	22.34	0.379	0.011	0.101	0.324	1.244	3.282
AG	1,970.5	0.1	73.6	4.04	0.48	1.5	3.54	8.49	2.1

3C Breccia	Length	MIN	MAX	Mean	1Q	Median	3Q	SD	CV
MO	5,857.3	1	43,104	563	23	109	324	1,887	3.4
CU	5,857.3	3	43,226	1,337	241	500	1,235	2,811	2.1
AU	5,857.3	0	12	0.262	0.011	0.056	0.19	0.801	3.058
AG	5,852.3	0.1	254.8	3.71	0.48	1.25	3.03	11.09	2.99

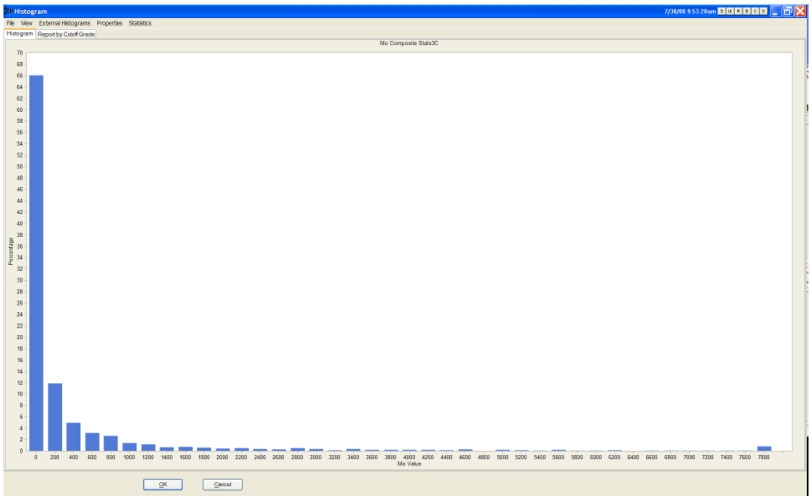


FIGURE 14-26: HISTOGRAM FOR MOLYBDENUM COMPOSITES FOR 3C BRECCIA

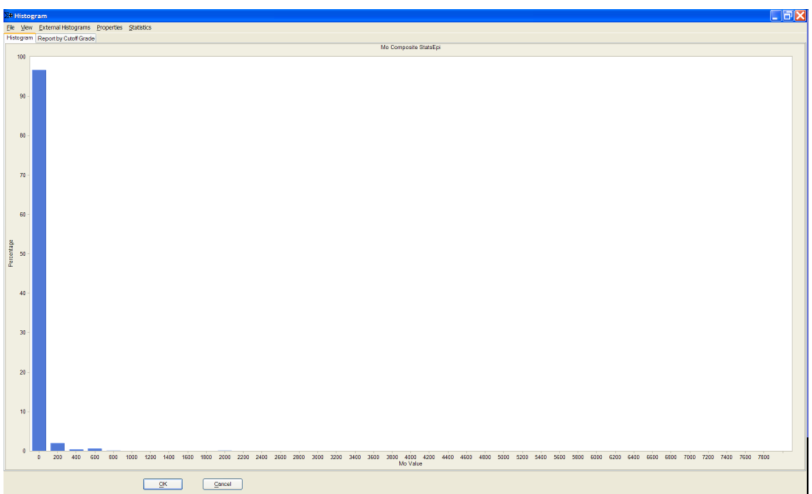


FIGURE 14-27: HISTOGRAM FOR MOLYBDENUM COMPOSITES FOR EPITHERMAL

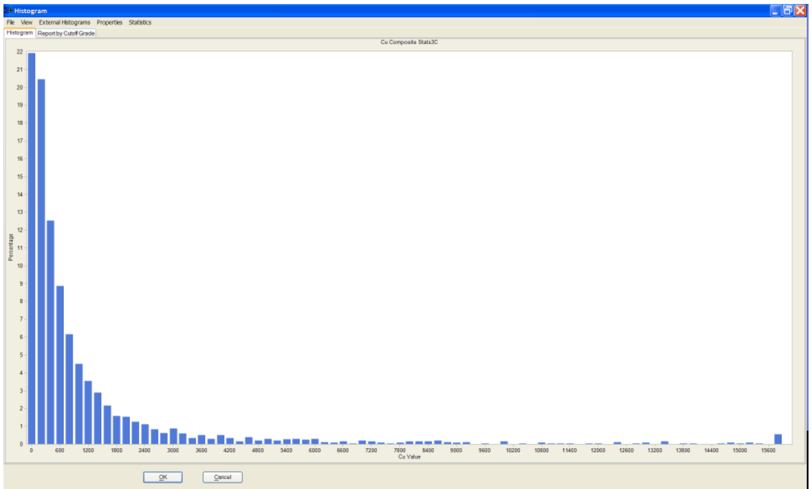


FIGURE 14-28: HISTOGRAM FOR COPPER COMPOSITES FOR 3C BRECCIA

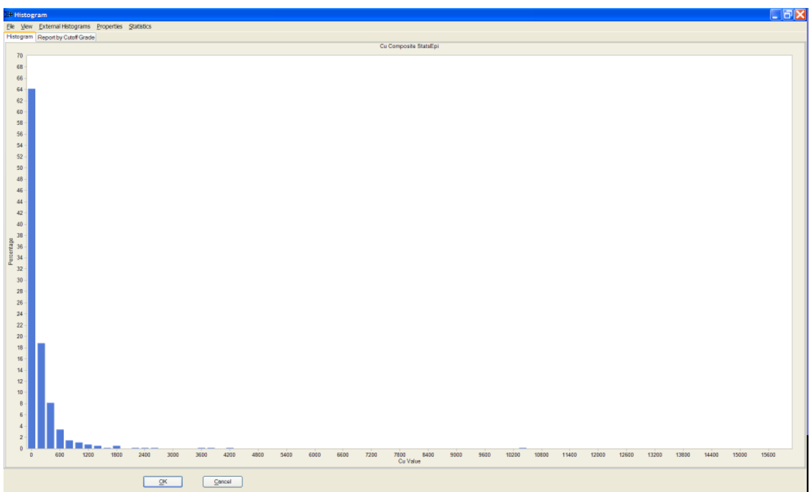


FIGURE 14-29: HISTOGRAM FOR COPPER COMPOSITES FOR EPITHERMAL

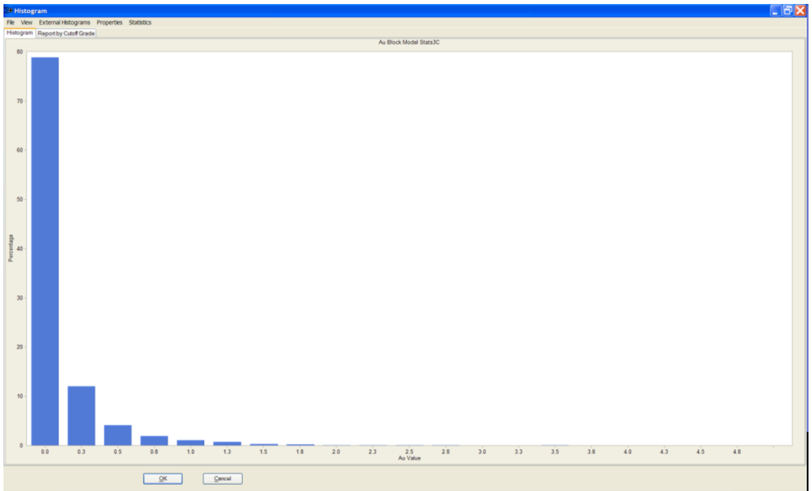


FIGURE 14-30: HISTOGRAM FOR GOLD COMPOSITES FOR 3C BRECCIA

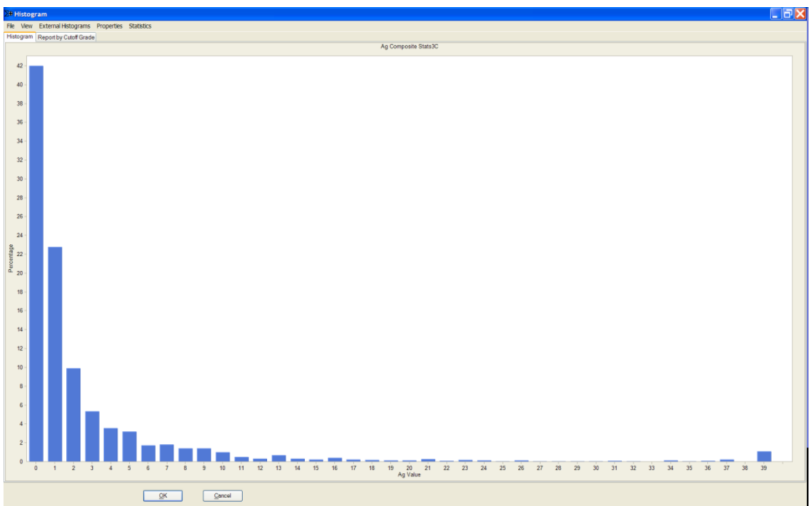


FIGURE 14-31: HISTOGRAM FOR GOLD COMPOSITES FOR EPITHERMAL

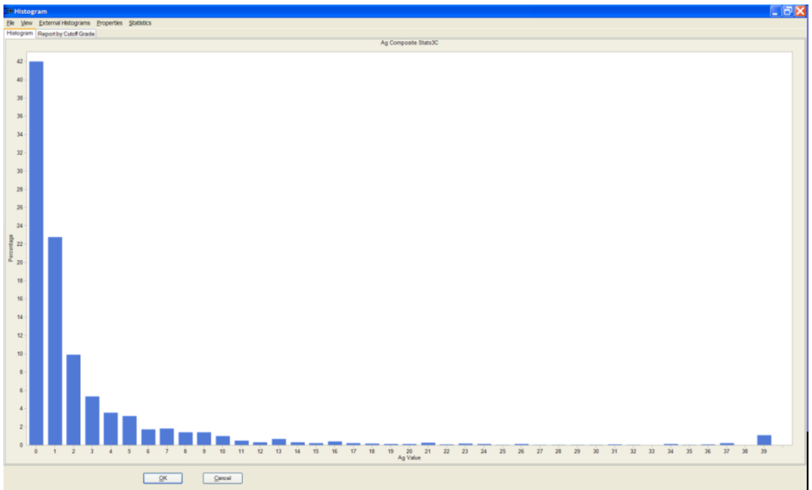


FIGURE 14-32: HISTOGRAM FOR SILVER COMPOSITES FOR 3C BRECCIA

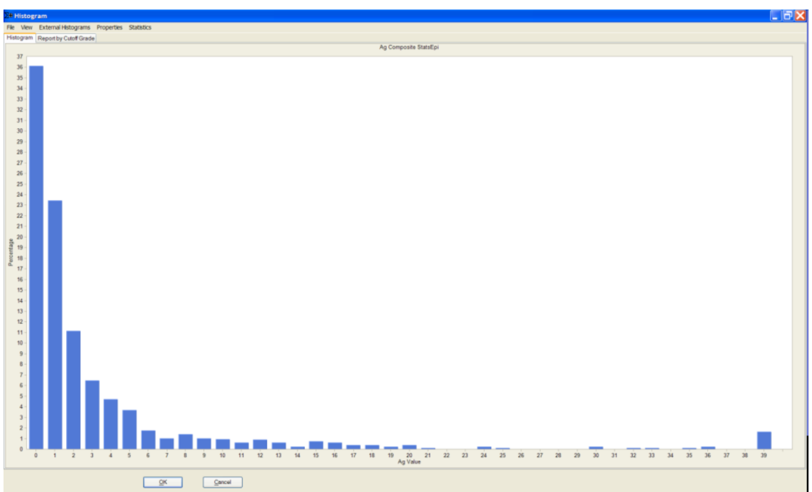


FIGURE 14-33: HISTOGRAM FOR SILVER COMPOSITES FOR 3C EPITHERMAL

14.6 OUTLIERS

Instead of capping the molybdenum, copper, gold, and silver composites, the influence of the composites was limited. Although the distribution of grades followed a log normal distribution, the probability plots showed *breaks* which indicate multiple populations.

The grade distributions for molybdenum, copper, gold, and silver are skewed and, like many polymetallic deposits, resemble a log normal distribution. Consequently, the mineral resource estimate may be vulnerable to overestimation due to the disproportionate impact of the highest grade samples and to *outliers*, from the distribution. It is recommended that high grades be limited after compositing, but prior to grade estimation.

An analysis was carried out to evaluate the statistics of the composited samples located within the 3C Breccia and Epithermal zone shells over a range of capping values. Figures 14-34 through 14-37 show the mean sample grades plotted against the capping value for molybdenum, copper, gold, and silver, respectively. The curve is relatively flat at higher capping levels, gradually become steep with a reduction in the cap, until it curves abruptly downward, becoming almost asymptotic to the y-axis. In the authors' opinion, for most deposits, a reasonable range for the capping level is usually in the flatter portion of the curve just to the right of where it steepens. Results for the Tres Chorreras are: 2.1% Mo, 3% Cu, 16 g/t Au, and 150 g/t Ag. In the author's opinion, these high grade caps are within the acceptable range and are, therefore, considered to be reasonable.

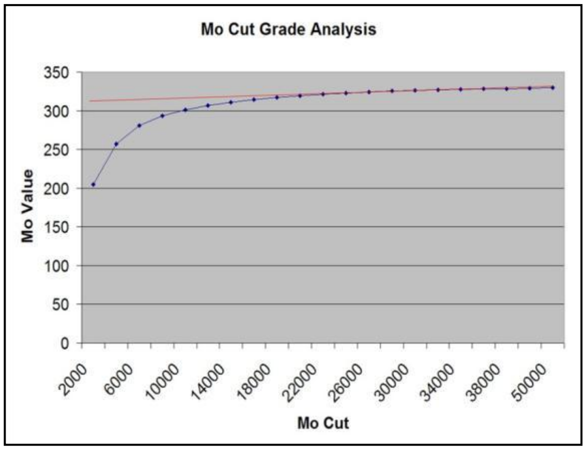


FIGURE 14-34: GRADE LIMITING CURVE FOR MOLYBDENUM, 2.5 M COMPOSITES

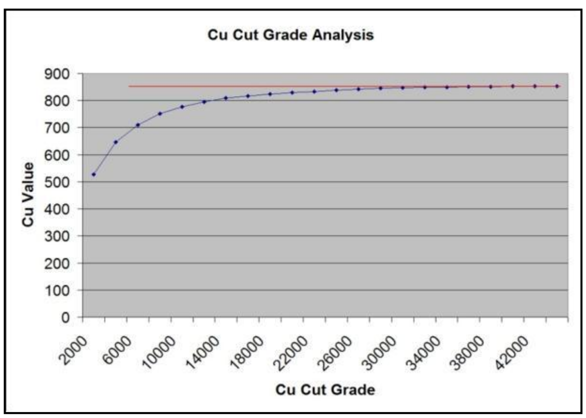


FIGURE 14-35: GRADE LIMITING CURVE FOR COPPER, 2.5 M COMPOSITES

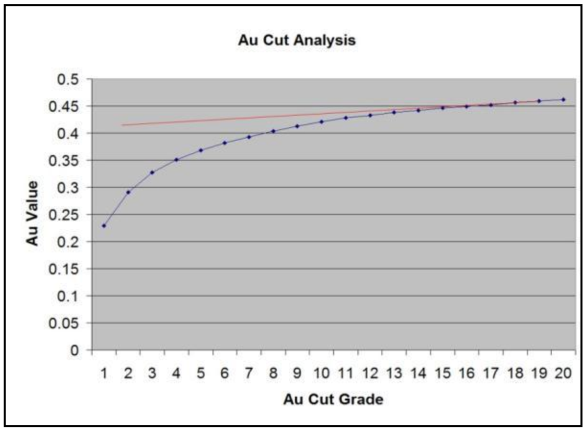


FIGURE 14-36: GRADE LIMITING CURVE FOR GOLD, 2.5 M COMPOSITES

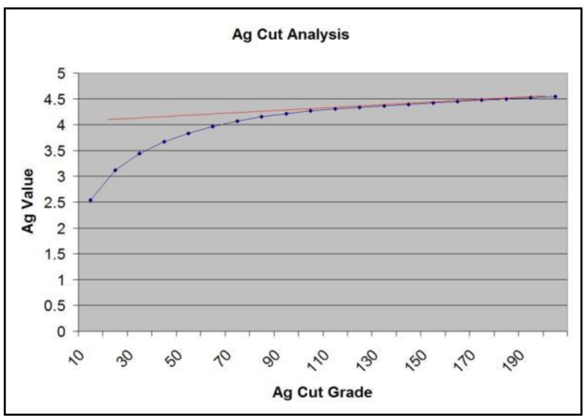


FIGURE 14-37: GRADE LIMITING CURVE FOR SILVER, 2.5 M COMPOSITES

The outlier strategy was based on a metal-at-risk strategy. It was determined that values greater than 2.1% Mo, 3% Cu, 16 g/t Au, and 150 g/t Ag be restricted by limiting the distance which the high grade composites could contribute to the estimation of a block. The range at which to limit grades greater than the outlier cut-off was determined to be 30 m for the 3C Breccia zone and 10 m for the Epithermal zone. These ranges were derived from running the ordinary kriged model numerous times for ranges of 1 m, 5 m, 10 m, 15 m, 20 m, 30 m, 50 m, and 100 m as shown in Tables 14.5 and 14.6 for the 3C Breccia and Epithermal zones, respectively. In other words, composite grades greater than the threshold amounts would not be used in the estimation of blocks if those high grade composites are outside the respective distance from that block.

TABLE 14.4: CHANGE IN TONNES AND GRADE (NET $) BY GRADE LIMITING DISTANCE FOR 3D BRECCIA

Distance	Tonnes	Net$
1	0.0%	0.0%
5	0.0%	0.1%
10	0.0%	0.4%
15	0.1%	0.8%
20	0.1%	1.6%
30	0.5%	2.7%
50	1.5%	3.9%
100	4.8%	6.9%

TABLE 14.5: CHANGE IN TONNES AND GRADE (NET$) BY GRADE LIMITING DISTANCE FOR EPITHERMAL

Distance	Tonnes	Net$
1	0.0%	0.0%
5	2.2%	3.7%
10	14.2%	15.1%
15	37.3%	22.8%
20	72.0%	29.7%

14.7 SPECIFIC GRAVITY

AMIC supplied 293 specific gravity (SG) determinations in an Excel spreadsheet. After review, the SG measurements for drill hole number 3C-08-25 appeared to be skewed to greater than 30% of the acceptable limits and, therefore, were removed. The resulting SG database was then comprised of 282 SG measurements as shown in Table 14.7.

TABLE 14.6: STATISTICS FOR SPECIFIC GRAVITY MEASUREMENTS

Analysis	Value
Count	282
Median	2.83
Mean	2.68
Kurtosis	12.78
Min	1.56
Max	4.84
Range	3.28
Standard Deviation	0.31
Variance	0.10

14.8 VARIOGRAPHY

The grade estimation methodology involved ordinary kriging so geostatistics was relevant. The author carried out geostatistical analysis on the composites to evaluate the search parameters to be used in the grade estimate.

Downhole correlograms, shown in Figures 14-38 through 14-41, were generated for molybdenum, copper, gold, and silver, respectively. This was done to estimate the nugget effect: that is the direction in which there is the most abundant data. Geostatistical analyses were performed on the assays and composites using no constraints in addition to the coded intervals within the zone solid.

The ellipsoid dimension and orientation chosen for the estimation process was an omni-directional, 100 m ellipse or 0° azimuth and -90 degrees dip. The predominant direction for mineralization has been noted as 30° and dips to the southeast at 70 ° to vertical (Melling et al., 2007). This direction follows the orientation of the solids which are the major mineralized structures modelled as solids for the 3C Breccia and Epithermal zones.

The spatial continuity estimator chosen for this study was the correlogram, which has been shown in previous work to be more robust with respect to drift and data variability, therefore, allowing a better estimate of the observed continuity (Parker and Srivastava, 1987). Note that the sill of the variograms has been standardized to one, and, therefore, they are in fact relative variograms.

Tables 14.8 and 14.9 summarize the correlogram models used to guide the estimate for the 3C Breccia and Epithermal zone resources, respectively. In these tables, the angle rotations are given according to the conventions used by GSLib in MineSight® Compass.

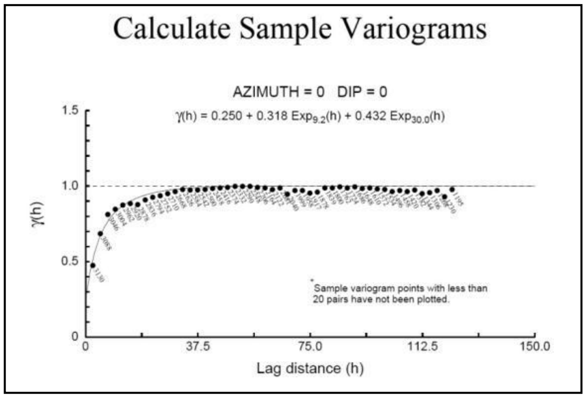


FIGURE 14-38: DOWNHOLE CORRELOGRAM MODEL FOR MOLYBDENUM

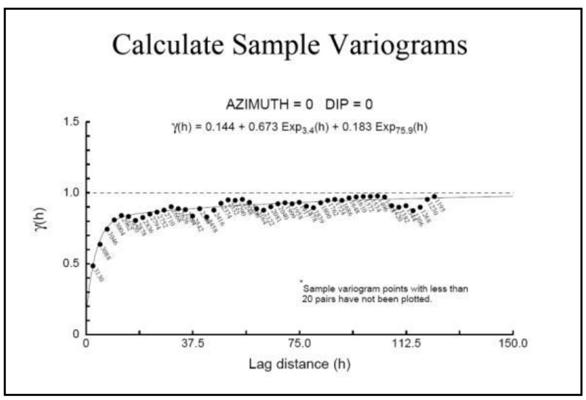


FIGURE 14-39: DOWNHOLE CORRELOGRAM MODEL FOR COPPER

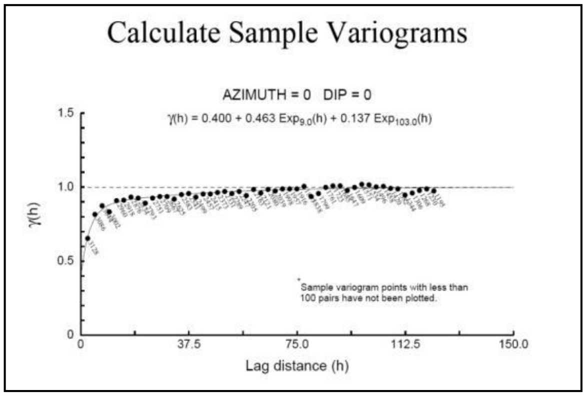


FIGURE 14-38: DOWNHOLE CORRELOGRAM MODEL FOR GOLD

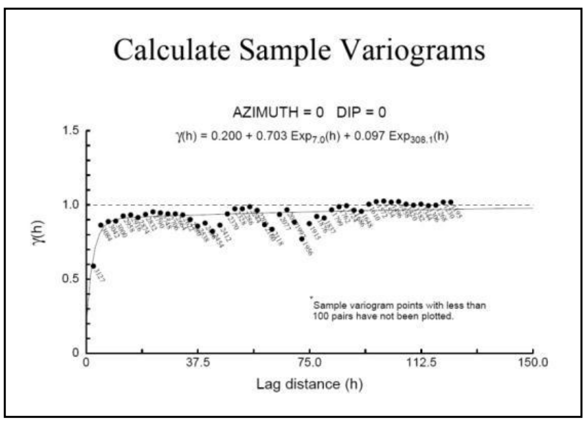


FIGURE 14-39: DOWNHOLE CORRELOGRAM MODEL FOR SILVER

TABLE 14.7: CORRELOGRAM MODELS FOR 3C BRECCIA ZONE

3C	MO			CU			AU			AG		
Nugget (C0)	0.25			0.15			0.4			0.2		
C1	0.643			0.649			0.497			0.724		
C2	0.107			0.201			0.103			0.076		
1st Structure												
	Range	**Azimuth**	**Dip**	**Range**	**Azimuth**	**Dip**	**Range**	**Azimuth**	**Dip**	**Range**	**Azimuth**	**Dip**
Maximum	28.3	350	49	46.8	22	46	21.1	351	-61	50.8	268	12
Intermediate	19.6	237	18	12.4	11	-43	12.2	337	28	9.4	97	78
Minimum	8	172	-15	7.4	286	6	6	70	6	6.4	358	2
2nd Structure												
Maximum	626.3	25	42	504.5	285	2	586.8	30	56	556.1	118	54
Intermediate	159	165	41	91.4	168	85	91.3	176	29	186.4	103	-35
Minimum	30.6	95	-21	20.9	195	-4	41.4	95	-16	34.3	18	7

TABLE 14.8: CORRELOGRAM MODELS FOR EPITHERMAL ZONE

EPITHERMAL	MO			CU			AU			AG		
Nugget (C0)	0.05			0.117			0.4			0.2		
C1	0.793			0.727			0.491			0.674		
C2	0.157			0.157			0.109			0.126		
1st Structure												
	Range	**Azimuth**	**Dip**	**Range**	**Azimuth**	**Dip**	**Range**	**Azimuth**	**Dip**	**Range**	**Azimuth**	**Dip**
Maximum	38.2	161	-65	42.5	106	-31	54.4	314	55	43.4	82	3
Intermediate	18.7	89	8	6.4	59	48	9.7	342	-32	16.4	230	87
Minimum	6.3	3	-23	5.5	180	24	6.5	63	13	10.3	172	-2
2nd Structure												
Maximum	551.3	282	52	1790.6	90	0	822.6	31	78	494.7	207	-10
Intermediate	168.3	190	2	165.9	180	68	178.4	33	-12	324.7	166	77
Minimum	52.8	98	37	83.6	1	22	36.1	123	1	30.4	115	-8

14.9 BLOCK MODEL DEFINITION

The block model used to calculate the resource estimate was defined according to the limits shown in Figure 14-42.

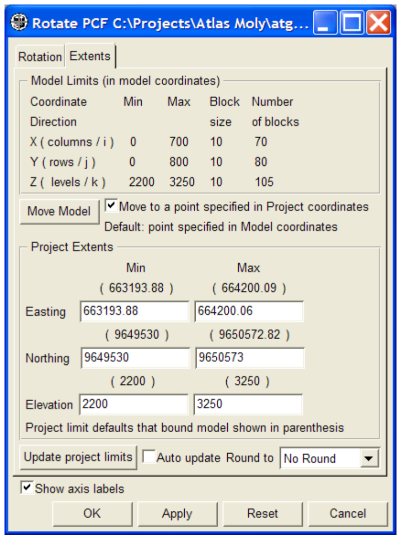


FIGURE 14-40: BLOCK MODEL BOUNDS

The block model is rotated 30° which reflects the orientation of the deposit and roughly the orientation of the observed mineralization. Figure 14-43 shows the position and orientation of the block model used for the study. The block size chosen was 10 x 10 x 10 m to roughly reflect the available drill hole spacing and to adequately discretize the deposit.

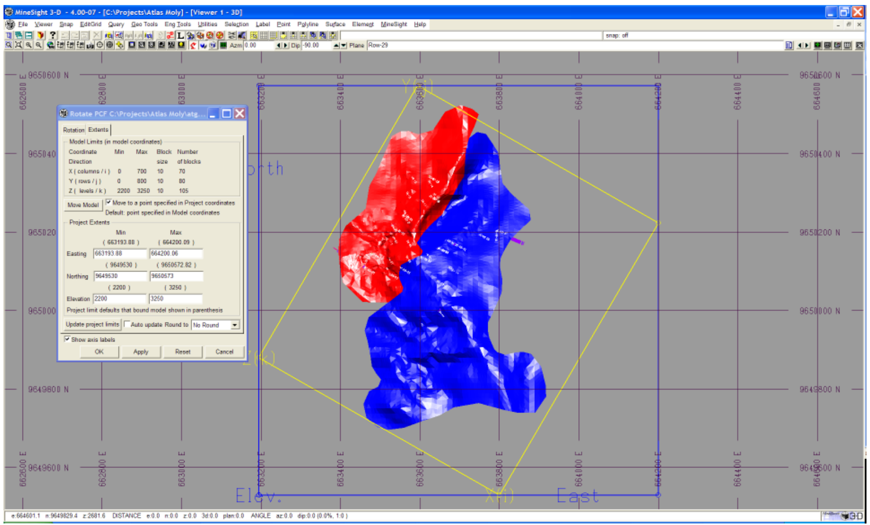


FIGURE 14-41: LOCATION OF PROJECT (BLUE RECTANGLE) AND MODEL LIMITS (YELLOW RECTANGLE)

Of the possible 588,000 blocks to be estimated (200 rows, 400 columns, and 140 levels), less than 57,718 blocks or 9.8% contain estimated values (weighted against topography and mined out stopes). This is primarily due the geologic constraints applied to the estimation process, in addition to the limited search distances applied, search ellipsoid direction, and the use of ordinary kriging as the modelling method.

14.10 RESOURCE INTERPOLATION

The estimation plan includes the following items:

- Store the mineralized zone code and percentage of mineralization.
- Estimate the grades for each metal using ordinary kriging and a single pass.
- Use a minimum of three composites and a maximum of 20, with a maximum of two composites from any one drill hole.

Table 14.10 summarizes the search ellipse dimensions for the estimation process which is an omni-directional ellipse with 100 m radius.

TABLE 14.9: SEARCH ELLIPSE PARAMETERS

Major Axis	Semi-Major Axis	Minor Axis	1st Rotation Angle Azimuth	2nd Rotation Angle Dip	3rd Rotation Angle
100	100	100	0	-90	0

The resulting block model is shown in plan, section, and long section view in Figures 14-44 through 14-46.

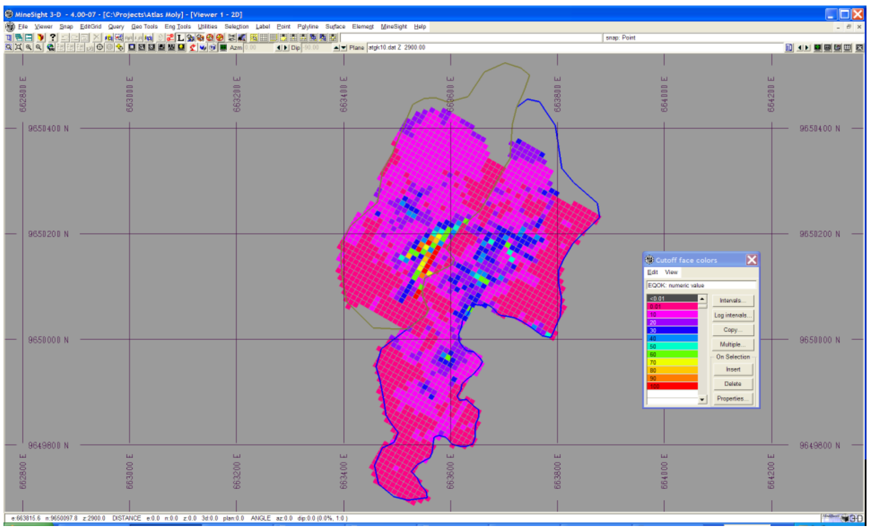


FIGURE 14-42: PLAN VIEW OF GRADE MODEL DISPLAYING BLOCK MODEL COLOURED BY NET VALUE WITH GEOLOGY
(BRECCIA – OLIVE, EPITHERMAL – BLUE)

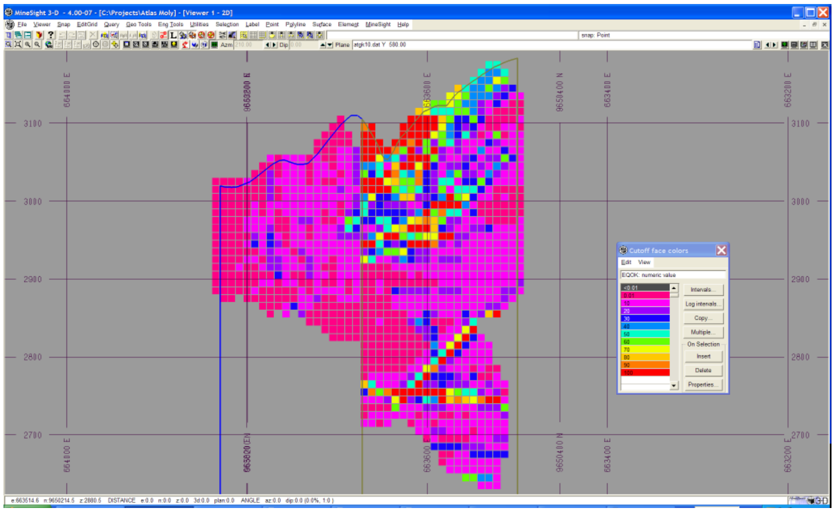


Figure 14-43: Section of Grade Model Displaying Block Model coloured by Net Value with Geology, Topography and Drill holes (Breccia – Olive, Epithermal – Blue)

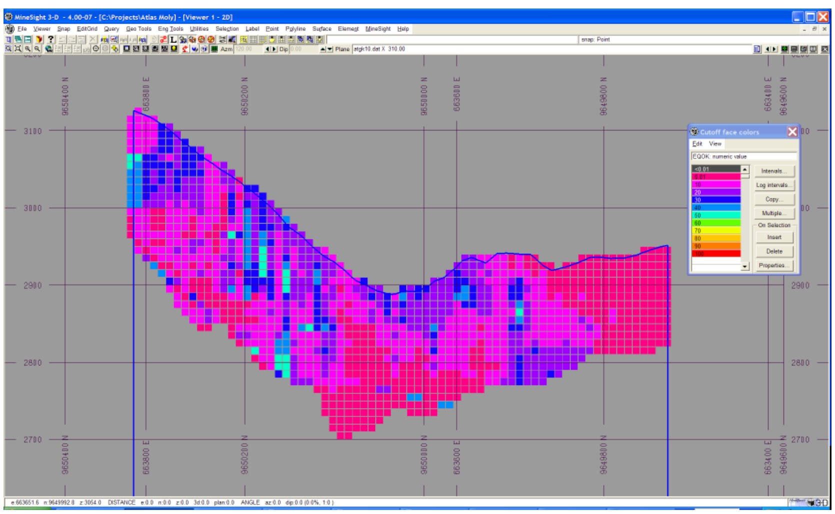


Figure 14-44: Long Section of Grade Model Displaying Block Model coloured by Net Value with Geology, and Topography (Breccia in Olive, Epithermal in Blue)

Net Value and Cut-off Grade Calculation

The calculated net in-situ value (US$) and the cut-off grade calculation for net per tonne value ($US) are based on the following commodity prices:

- molybdenum: $12.00/lb
- copper: $3.50/lb
- gold: $1,400/ounce
- silver: $26.00/ounce

These prices are based on an analysis of the current year, past year, three-year, and five-year rolling average calculations. Therefore, the calculation for NET$ value is as follows:

$$NET\$ = (12 * MO + 3.5 * CU) * 2.20459/1000 + (1400 * AU + 26 * AG)/31.1034$$

14.11 MINERAL RESOURCE CLASSIFICATION

The resources are classified in accordance with:

- CIM *Definition Standards for Mineral Resources and Mineral Reserves* (November, 2010); and
- CIM *Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines* (November 23, 2003).

Based on the study herein reported, delineated mineralization within the Tres Chorreras deposit is classified as a mineral resource according to the following definition from National Instrument 43-101:

> "In this Instrument, the terms "mineral resource", "inferred mineral resource", "indicated mineral resource" and "measured mineral resource" have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM Council on August 20, 2000, as those definitions may be amended from time to time by the Canadian Institute of Mining, Metallurgy, and Petroleum."

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

The terms Indicated and Inferred are defined in 43-101 as follows:

> "An **'Indicated Mineral Resource'** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical

> characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed."
>
> "An **'Inferred Mineral Resource'** is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes."

The classification of resources was based on the distance to the nearest composite within the zone being interpolated. The distance to the nearest composite for Indicated resources was determined to be 30 m which is a conservative estimate of continuity based on variography. The average distance to the composite and the number of composites were also evaluated visually to ensure that the Indicated blocks were well supported. In addition, an inspection and analysis of the Relative Variability Index (RVI) shown in Figure 14.68 shows that a large percentage of the resources have a reasonable degree of confidence assigned to them.

The RVI allows for a quantitative analysis of relative error on a block by block basis. It can effectively quantifying risk and uncertainty; therefore, it is an effective tool for resource classification.

Geologic continuity is established through surface mapping, underground data and drill hole data. There is good geologic continuity and confidence in the geologic solids.

To update of the Tres Chorreras resource, the concept of "reasonable expectation of economic extraction" was employed by creating an optimized pit using the following parameters:

- AuEq (gold equivalent) = NET$ x 31.1035 / $1400
- Mining Cost: US$2.00
- Processing Costs: US$18.00
- Metal Prices: US$12.00/lb Mo, US$3.50/lb Cu, US$26/oz Ag, and US$1,400/oz Au.

The potentially open-pittable resources are reported at a base case cut-off of US$20 net value (Figure 14-47). The remainder of the resources below the pit, termed potentially mineable by underground methods, are reported at a base case cut-off rate of US$50 net value (Figure 14-48).

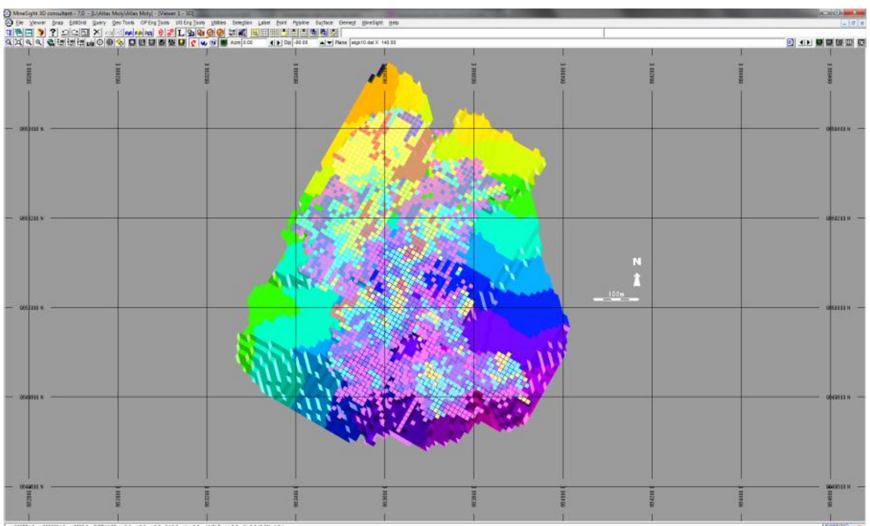


FIGURE 14-45: PLAN VIEW WITH GRIDDED SURFACE OF OPTIMIZED PIT AND GRADE MODEL AT NET$20 CUT-OFF

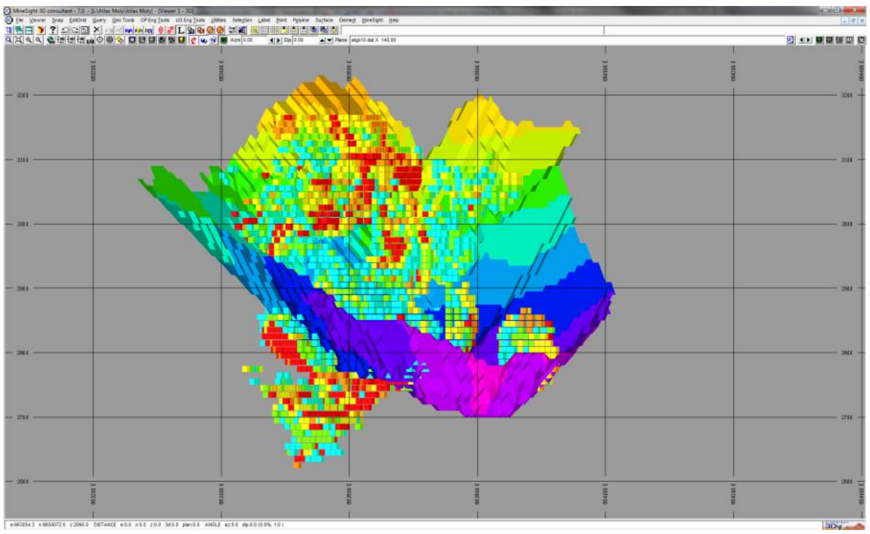


FIGURE 14-46: CROSS SECTION VIEW LOOKING NORTH WITH GRIDDED SURFACE OF OPTIMIZED PIT AND GRADE MODEL AT NET$50 CUT-OFF
(GRIDLINES AT 200 M INTERVALS)

14.12 MINERAL RESOURCES

The combined Indicated and Inferred mineral resources within the 3C Breccia and Epithermal zones, as defined by the parameters defined in Section 14.11, are listed in the Table 14.11 for the Open Pit Resources and Table 14.12 for the Underground Resources for Mo%, Cu%, Au g/t and Ag g/t, respectively along with AuEq g/t (gold equivalent). These resources are listed at varying cut-off grades to reflect different possible mining scenarios, as discussed here.

The Total Indicated and Inferred Resources are summarized in Table 14.13 for the Open Pit Resources and Table 14.14 for the Underground Resources for the Breccia and Epithermal Zones (Combined) for Mo, Cu, Au, Ag and AuEq, respectively. The 3C Breccia is obviously more base metal rich and the Epithermal zone is more precious metal rich.

To determine the economic viability of the Tres Chorreras Project and possible extraction scenarios, a Preliminary Economic Assessment (PEA), a Pre-feasibility Study (PFS), or a Feasibility Study (FS) must to be completed. However, appropriate cut-off grades may be derived based on experience and data extracted from a similar project of similar scale in a similar location. The potential mining scenarios are varied due to the nature of the Tres Chorreras Project as it is a relatively high-grade deposit with large tonnage. Therefore, the author is reporting three cut-off grades to reflect these potential mining scenarios which all have a reasonable expectation of economic extraction.

The Open Pit Resources are reported at a cut-off value of US$20/tonne not only to demonstrate overall in-situ mineral content, which defines the known key resource, but this value also reflects the low cost extraction scenario that would employ higher tonnage extraction rates.

The Underground Resources are reported at a cut-off value of $50/tonne which provides a mid-level cost cut-off for operations, which would reflect medium level underground mining and milling costs and is provided for comparison purposes. The third cut-off value of $80/tonne is presented as base case for a high cost, selective high-grade underground mining method, similar to the one used at nearby Rio Blanco Project.

In addition, in an effort to give the reader an appreciation of in-situ (i.e., in the ground) metal content, the pounds of molybdenum and copper, and the ounces of gold and silver are calculated for each cut-off value. In addition, the gold equivalent ounces are calculated based on the following metal prices: US$1,400/oz gold, US$26.00/oz silver, US$12.00/lb molybdenum, and US$3.50/lb copper, respectively. Note that recoveries are assumed to be, at this early stage and lacking any definitive metallurgical recovery data, 100%.

The reader is cautioned that this amount of metal is a calculated estimate, and is subject to many factors. Readers are cautioned that only future studies can determine the actual metal content and the most economical method of extraction.

TABLE 14.10: INDICATED AND INFERRED RESOURCES AT VARYING $NET CUT-OFF GRADES FOR 3C BRECCIA AND EPITHERMAL ZONES – OPEN PIT

OPEN PIT CLASS	CUTOFF NET$	TONNES	NET$	MO %	CU %	AU g/t	AG g/t	AUEQ g/t	MO Mlbs	CU Mlbs	AU K Ounces	AG K Ounces	AUEQ K Ounces
Epithermal Indicated	**20**	**9,777,000**	**47**	**0.004%**	**0.029%**	**0.829**	**7.7**	**1.06**	**0.8**	**6.3**	**260.6**	**2,426.6**	**333.1**
	30	7,359,000	55	0.004%	0.032%	0.963	9.1	**1.23**	0.7	5.2	227.8	2,145.8	290.4
	40	4,957,000	64	0.004%	0.034%	1.151	10.5	**1.45**	0.5	3.7	183.5	1,675.1	230.7
	50	3,216,000	75	0.004%	0.036%	1.366	11.7	**1.69**	0.3	2.5	141.2	1,212.9	174.7
	60	2,065,000	87	0.005%	0.038%	1.61	12.5	**1.96**	0.2	1.7	106.9	832.4	129.8
	70	1,353,000	99	0.004%	0.038%	1.862	13.5	**2.22**	0.1	1.1	81.0	587.9	96.7
	80	887,000	112	0.004%	0.041%	2.132	14.6	**2.52**	0.1	0.8	60.8	415.3	71.8
	90	623,000	124	0.004%	0.040%	2.379	15.8	**2.78**	0.1	0.6	47.7	315.8	55.8
	100	458,000	135	0.002%	0.038%	2.62	16.3	**3.02**	0.0	0.4	38.6	240.0	44.5
Epithermal Inferred	**20**	**15,697,000**	**39**	**0.007%**	**0.051%**	**0.588**	**8.2**	**0.88**	**2.3**	**17.8**	**296.7**	**4,123.0**	**446.5**
	30	10,926,000	45	0.008%	0.062%	0.681	9.5	**1.03**	1.9	14.9	239.2	3,323.2	361.8
	40	6,211,000	54	0.009%	0.071%	0.817	10.9	**1.22**	1.2	9.7	163.1	2,182.6	243.0
	50	2,757,000	66	0.010%	0.080%	1.033	12.6	**1.49**	0.6	4.9	91.6	1,115.1	132.4
	60	1,486,000	76	0.012%	0.096%	1.206	13.3	**1.72**	0.4	3.1	57.6	636.9	82.3
	70	691,000	90	0.015%	0.120%	1.434	14.4	**2.03**	0.2	1.8	31.8	320.4	45.2
	80	309,000	110	0.017%	0.140%	1.814	15.7	**2.49**	0.1	1.0	18.0	156.2	24.7
	90	156,000	136	0.020%	0.165%	2.283	18.0	**3.07**	0.1	0.6	11.4	90.3	15.4
	100	113,000	152	0.018%	0.152%	2.628	20.1	**3.42**	0.0	0.4	9.5	73.1	12.4
3C **Indicated**	**20**	**2,903,000**	**70**	**0.089%**	**0.220%**	**0.571**	**4.6**	**1.68**	**5.7**	**14.1**	**53.3**	**428.4**	**157.1**
	30	2,479,000	78	0.100%	0.241%	0.635	5.0	**1.87**	5.4	13.2	50.6	397.0	149.1
	40	2,057,000	87	0.113%	0.262%	0.709	5.3	**2.09**	5.1	11.9	46.9	351.2	138.0
	50	1,667,000	97	0.130%	0.284%	0.788	5.6	**2.33**	4.8	10.4	42.2	302.2	124.9
	60	1,406,000	104	0.144%	0.298%	0.847	5.9	**2.52**	4.5	9.3	38.3	264.5	114.0
	70	1,141,000	114	0.162%	0.316%	0.912	6.2	**2.75**	4.1	7.9	33.5	226.7	101.0
	80	905,000	124	0.182%	0.337%	0.982	6.5	**3.01**	3.6	6.7	28.6	190.2	87.4
	90	679,000	137	0.207%	0.372%	1.052	7.0	**3.33**	3.1	5.6	23.0	152.0	72.7
	100	547,000	147	0.233%	0.393%	1.087	7.5	**3.59**	2.8	4.7	19.1	131.5	63.2
3C **Inferred**	**20**	**3,767,000**	**80**	**0.104%**	**0.208%**	**0.733**	**4.5**	**1.93**	**8.6**	**17.3**	**88.8**	**546.2**	**233.8**
	30	3,216,000	90	0.117%	0.226%	0.829	4.8	**2.16**	8.3	16.0	85.7	495.2	223.5
	40	2,703,000	100	0.132%	0.250%	0.93	5.1	**2.42**	7.9	14.9	80.8	445.9	210.0
	50	2,348,000	109	0.143%	0.266%	1.02	5.4	**2.62**	7.4	13.8	77.0	406.2	197.7
	60	2,027,000	117	0.153%	0.281%	1.126	5.7	**2.82**	6.8	12.6	73.4	368.3	184.1
	70	1,744,000	126	0.165%	0.298%	1.21	6.0	**3.03**	6.3	11.5	67.9	333.6	169.9
	80	1,473,000	135	0.177%	0.322%	1.299	6.3	**3.26**	5.8	10.5	61.5	296.0	154.4
	90	1,205,000	147	0.193%	0.349%	1.405	6.6	**3.53**	5.1	9.3	54.5	255.8	136.9
	100	919,000	163	0.222%	0.409%	1.483	7.1	**1.70**	4.5	8.3	43.8	210.4	50.1

TABLE 14.12: INDICATED AND INFERRED RESOURCES AT VARYING $NET CUT-OFF GRADES FOR 3C BRECCIA AND EPITHERMAL ZONES – UNDERGROUND

OPEN PIT CLASS	CUTOFF NET$	TONNES	NET$	MO %	CU %	AU g/t	AG g/t	AUEQ g/t	MO Mlbs	CU Mlbs	AU K Ounces	AG K Ounces	AUEQ K Ounces
Indicated	**20**	**12,680,000**	**52**	**0.023%**	**0.073%**	**0.770**	**7.0**	**1.20**	**6.5**	**20.4**	**313.9**	**2,855.0**	**490.1**
	30	9,838,000	60	0.028%	0.085%	0.880	8.0	**1.39**	6.1	18.4	278.4	2,542.8	439.4
	40	7,015,000	71	0.036%	0.101%	1.021	9.0	**1.64**	5.6	15.6	230.3	2,026.3	368.8
	50	4,883,000	82	0.047%	0.121%	1.169	9.7	**1.91**	5.1	13.0	183.5	1,515.1	299.6
	60	3,471,000	94	0.061%	0.144%	1.301	9.8	**2.18**	4.7	11.0	145.2	1,096.9	243.8
	70	2,494,000	106	0.076%	0.165%	1.427	10.2	**2.47**	4.2	9.1	114.5	814.5	197.7
	80	1,791,000	118	0.094%	0.190%	1.551	10.5	**2.76**	3.7	7.5	89.3	605.5	159.1
	90	1,302,000	131	0.110%	0.213%	1.687	11.2	**3.07**	3.2	6.1	70.6	467.8	128.5
	100	1,005,000	142	0.128%	0.231%	1.786	11.5	**3.33**	2.8	5.1	57.7	371.5	107.7
Inferred	**20**	**19,464,000**	**47**	**0.025%**	**0.082%**	**0.616**	**7.5**	**1.09**	**10.9**	**35.1**	**385.5**	**4,669.2**	**680.3**
	30	14,142,000	55	0.033%	0.099%	0.715	8.4	**1.29**	10.2	31.0	324.9	3,818.4	585.3
	40	8,914,000	68	0.046%	0.125%	0.851	9.2	**1.58**	9.1	24.6	244.0	2,628.5	453.0
	50	5,105,000	86	0.071%	0.166%	1.027	9.3	**2.01**	8.0	18.7	168.6	1,521.2	330.2
	60	3,514,000	100	0.093%	0.203%	1.160	8.9	**2.36**	7.2	15.7	131.0	1,005.2	266.4
	70	2,435,000	116	0.122%	0.247%	1.274	8.4	**2.75**	6.6	13.3	99.7	654.1	215.1
	80	1,782,000	131	0.150%	0.290%	1.388	7.9	**3.13**	5.9	11.4	79.6	452.1	179.1
	90	1,361,000	146	0.173%	0.328%	1.505	7.9	**3.48**	5.2	9.8	65.9	346.1	152.3
	100	1,032,000	162	0.200%	0.381%	1.608	8.5	**3.88**	4.5	8.7	53.4	283.5	128.7

TABLE 14.11: OPEN PIT RESOURCES FOR 3C BRECCIA AND EPITHERMAL ZONES

UNDERGROUND CLASS	CUTOFF NET$	TONNES	NET$	MO %	CU %	AU g/t	AG g/t	AUEQ g/t	MO Mlbs	CU Mlbs	AU K Ounces	AG K Ounces	AUEQ K Ounces
Epithermal	50	1,021,000	68	0.004%	0.039%	1.247	9.3	1.53	0.1	0.9	40.9	305.6	50
Indicated	60	616,000	77	0.003%	0.041%	1.447	9.6	1.73	0.0	0.6	28.7	189.9	34
	70	338,000	88	0.003%	0.042%	1.68	10.0	1.97	0.0	0.3	18.2	108.7	21
	80	193,000	99	0.002%	0.042%	1.904	10.9	2.20	0.0	0.2	11.8	67.3	14
	90	113,000	109	0.002%	0.037%	2.127	12.1	2.44	0.0	0.1	7.7	43.8	9
	100	72,000	118	0.002%	0.040%	2.315	12.3	2.64	0.0	0.1	5.4	28.5	6
Epithermal	50	3,053,000	78	0.004%	0.037%	1.313	17.8	1.76	0.3	2.5	128.9	1,743.5	172
Inferred	60	2,248,000	86	0.003%	0.038%	1.466	19.8	1.94	0.2	1.9	106.0	1,431.9	141
	70	1,563,000	96	0.003%	0.041%	1.645	21.6	2.16	0.1	1.4	82.6	1,083.1	109
	80	1,115,000	105	0.002%	0.035%	1.816	23.8	2.36	0.1	0.9	65.1	854.5	85
	90	855,000	111	0.003%	0.037%	1.915	25.7	2.50	0.0	0.7	52.7	707.1	69
	100	580,000	119	0.002%	0.038%	2.002	30.2	2.67	0.0	0.5	37.4	563.3	50
3C	50	3,544,000	84	0.144%	0.240%	0.48	7.5	2.08	11.2	18.7	54.7	855.8	237
Indicated	60	2,478,000	97	0.171%	0.269%	0.542	8.4	2.41	9.4	14.7	43.2	665.2	192
	70	1,757,000	111	0.203%	0.295%	0.603	8.9	2.75	7.9	11.4	34.1	500.0	155
	80	1,302,000	124	0.235%	0.319%	0.648	9.5	3.08	6.7	9.2	27.1	399.3	129
	90	962,000	138	0.271%	0.341%	0.704	9.9	3.45	5.7	7.2	21.8	307.3	107
	100	726,000	152	0.305%	0.374%	0.762	10.2	3.81	4.9	6.0	17.8	237.1	89
3C	50	3,967,000	87	0.136%	0.271%	0.532	6.9	2.12	11.9	23.7	67.9	884.0	271
Inferred	60	3,061,000	96	0.152%	0.296%	0.603	7.3	2.36	10.3	19.9	59.3	718.4	232
	70	2,259,000	108	0.174%	0.317%	0.681	7.9	2.64	8.7	15.8	49.5	572.9	192
	80	1,674,000	119	0.194%	0.340%	0.767	8.8	2.93	7.1	12.6	41.3	471.4	158
	90	1,237,000	132	0.216%	0.367%	0.854	9.5	3.24	5.9	10.0	34.0	376.7	129
	100	982,000	142	0.235%	0.381%	0.924	10.1	3.48	5.1	8.2	29.2	318.9	110

TABLE 14.12: UNDERGROUND RESOURCES FOR 3C BRECCIA AND EPITHERMAL ZONES (COMBINED)

UNDERGROUND CLASS	CUTOFF NET$	TONNES	NET$	MO %	CU %	AU g/t	AG g/t	AUEQ g/t	MO Mlbs	CU Mlbs	AU K Ounces	AG K Ounces	AUEQ K Ounces
Indicated	50	4,566,000	81	0.112%	0.195%	0.652	7.9	1.96	11.3	19.6	95.6	1,161.4	287
	60	3,094,000	93	0.138%	0.223%	0.722	8.6	2.27	9.4	15.2	71.9	855.1	226
	70	2,095,000	107	0.171%	0.254%	0.777	9.0	2.63	7.9	11.7	52.3	608.7	177
	80	1,495,000	121	0.205%	0.283%	0.810	9.7	2.97	6.7	9.3	38.9	466.6	143
	90	1,074,000	135	0.243%	0.309%	0.853	10.2	3.34	5.7	7.3	29.5	351.1	115
	100	798,000	149	0.277%	0.343%	0.903	10.4	3.70	4.9	6.0	23.2	265.6	95
Inferred	50	7,021,000	83	0.079%	0.169%	0.872	11.6	1.96	12.2	26.2	196.8	2,627.5	443
	60	5,309,000	92	0.089%	0.186%	0.968	12.6	2.18	10.4	21.8	165.3	2,150.3	373
	70	3,821,000	103	0.104%	0.204%	1.075	13.5	2.44	8.8	17.2	132.1	1,656.0	300
	80	2,789,000	114	0.117%	0.218%	1.187	14.8	2.70	7.2	13.4	106.4	1,325.9	242
	90	2,093,000	123	0.129%	0.232%	1.288	16.1	2.94	5.9	10.7	86.6	1,083.8	198
	100	1,563,000	133	0.148%	0.254%	1.324	17.6	3.18	5.1	8.7	66.5	882.1	160

14.13 MODEL VALIDATION

A graphical validation was done on the block model; this serves the following purposes:

- Checks the reasonableness of the estimated grades based on the estimation plan and the nearby composites.
- Checks that the general drift and the local grade trends of the block model compare to the drift and local grade trends of the composites.
- Ensures that all blocks that should be filled in, are filled in.
- Checks that topography has been properly accounted for.
- Checks against manual "ballpark" estimates of tonnage to determine reasonableness.
- Inspects and explains the high-grade blocks created as a result of outliers.

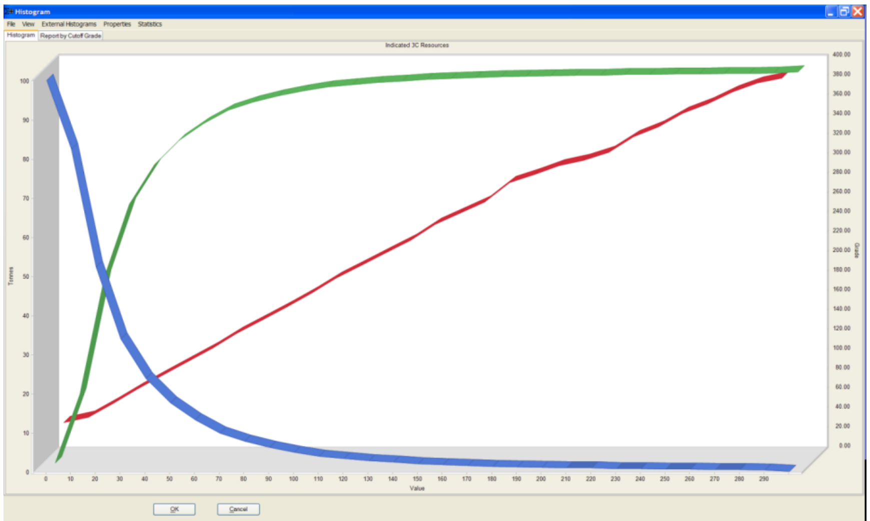


FIGURE 14-47: GRADE–TONNAGE CURVE AND CUMULATIVE FREQUENCY PLOT FOR 3C ZONE INDICATED RESOURCES

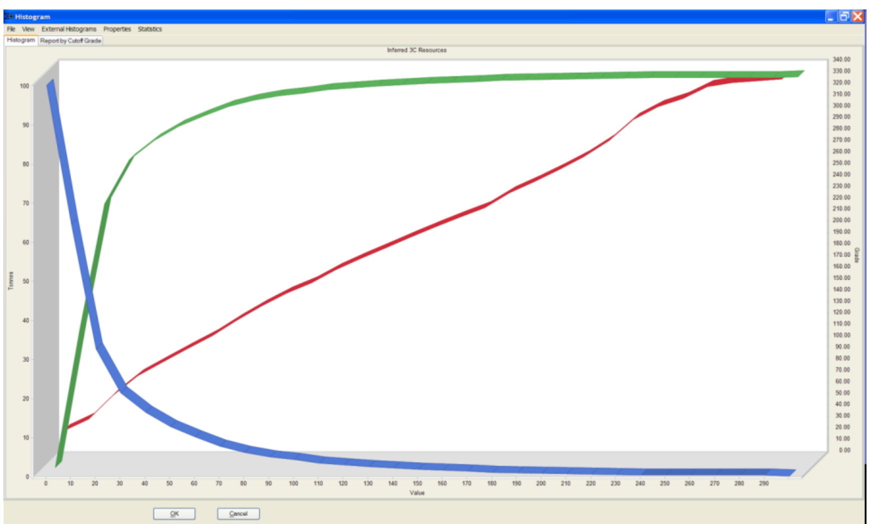


FIGURE 14-48: GRADE–TONNAGE CURVE AND CUMULATIVE FREQUENCY PLOT FOR 3C ZONE INFERRED RESOURCES

FIGURE 14-49: GRADE–TONNAGE CURVE AND CUMULATIVE FREQUENCY PLOT FOR EPITHERMAL ZONE INDICATED RESOURCES

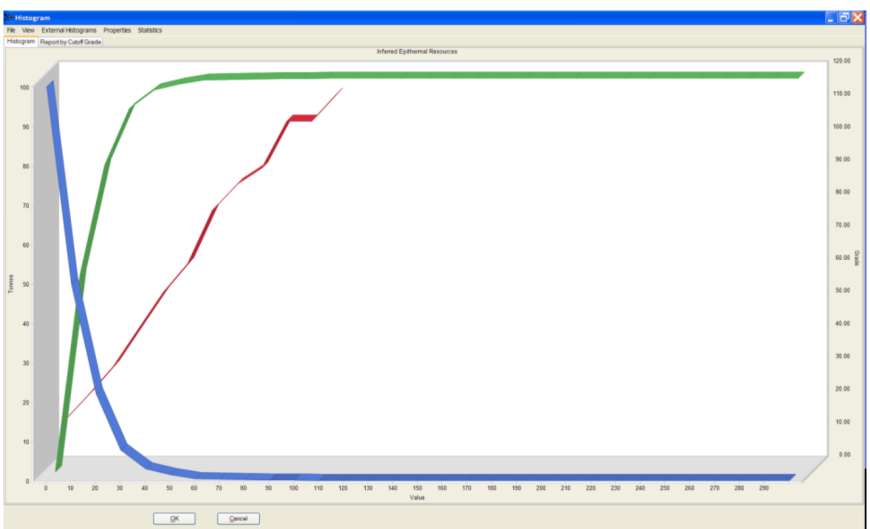


FIGURE 14-50: GRADE–TONNAGE CURVE AND CUMULATIVE FREQUENCY PLOT FOR EPITHERMAL INFERRED RESOURCES

A full set of cross sections, long sections and plans were used to check the block model on the computer screen, showing the block grades and the composite. No evidence of any block being wrongly estimated was found: it appears that every block grade can be explained as a function of the surrounding composites, the correlogram models used, and the estimation plan applied.

These validation techniques include, but are not limited to, the following:

- Visual inspections on a section-by-section and plan-by-plan basis.
- Grade Tonnage Curves shown above in Figures 14-49 through 14-52.
- Histograms at varying cut-off grades that demonstrate a relatively uniform, normal distribution.
- Swath Plots that show the comparison of the Ordinary Kriged blocks versus Inverse Distance and Nearest Neighbour estimates shown in Figures 14-53 through 14-64. It should be noted that there are a number of cases where the Nearest Neighbour curve is very skewed and/or exaggerated compared to the ordinary kriged and the inverse distance curve: it was not possible to truly decluster the data necessary for an adequate nearest neighbour estimate (i.e. 10 m).
- An inspection of histograms, distance of the first composite to nearest block, average distance to blocks for all composites used, and the number of composites used are shown in Figures 14-65, 14-66, and 14-67, respectively.
- Analysis of Relative Variability Index which quantifies variability within the deposit is shown in Figure 14-68. The RVI is useful for further studies to quantify risk and qualify resources for the purpose of classification.

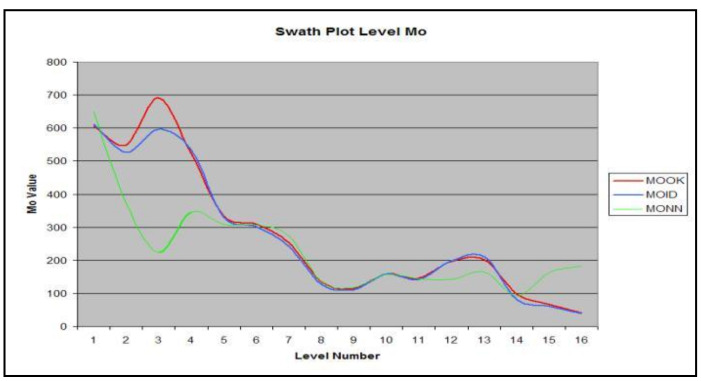


FIGURE 14-51: SWATH PLOT FOR MOLYBDENUM BY ELEVATION

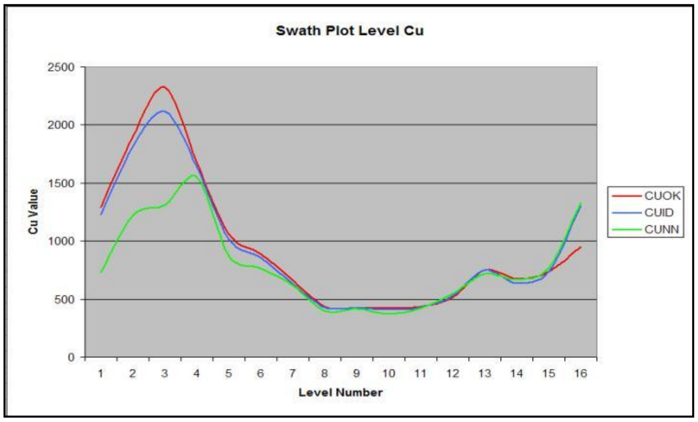


FIGURE 14-52: SWATH PLOT FOR COPPER BY ELEVATION

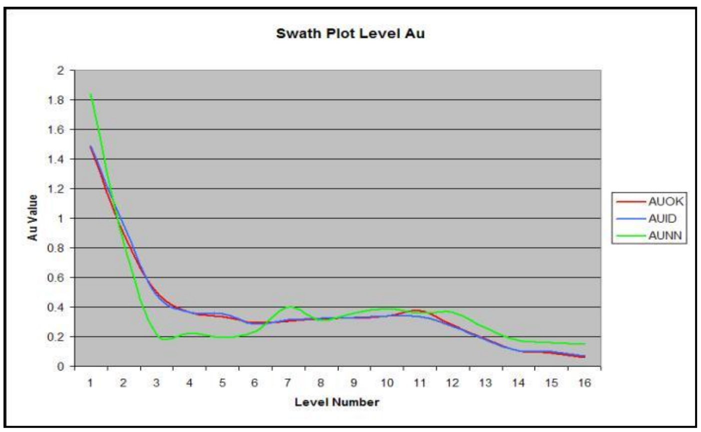


FIGURE 14-53: SWATH PLOT FOR GOLD BY ELEVATION

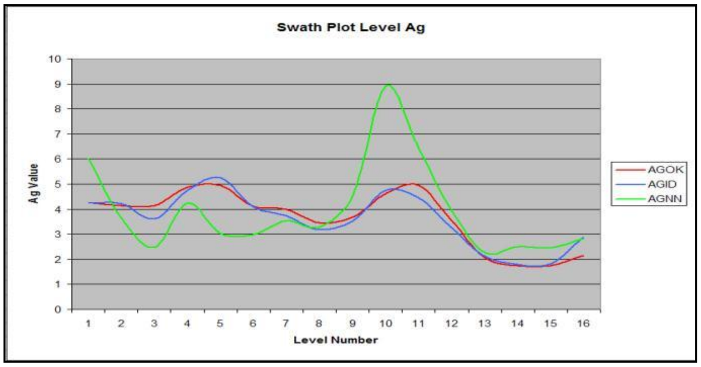


FIGURE 14-54: SWATH PLOT FOR SILVER BY ELEVATION

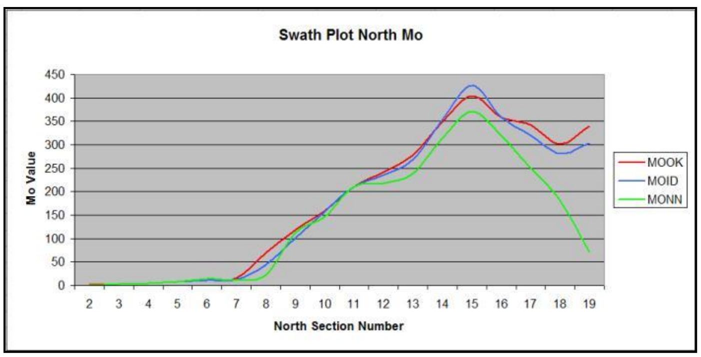


FIGURE 14-55: SWATH PLOT FOR MOLYBDENUM BY NORTHING

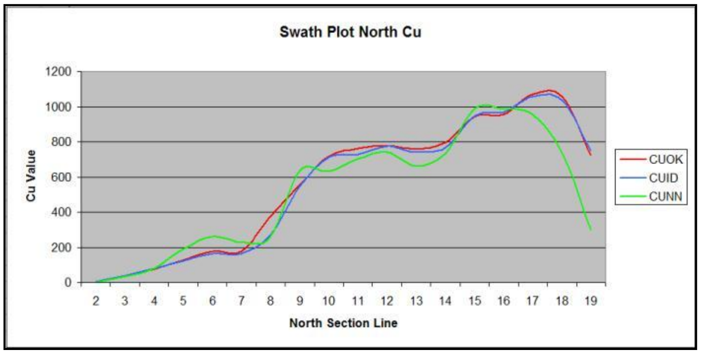


FIGURE 14-56: SWATH PLOT FOR COPPER BY NORTHING

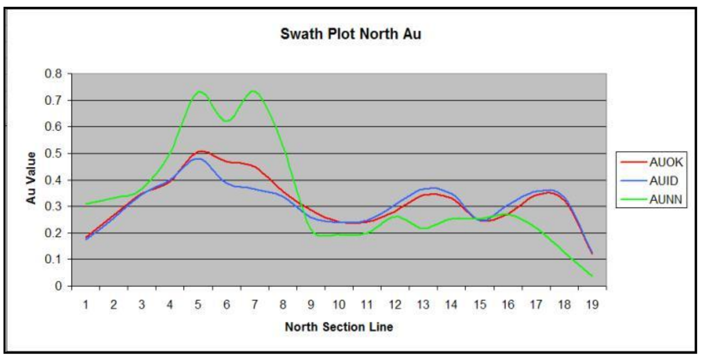


FIGURE 14-57: SWATH PLOT FOR GOLD BY NORTHING

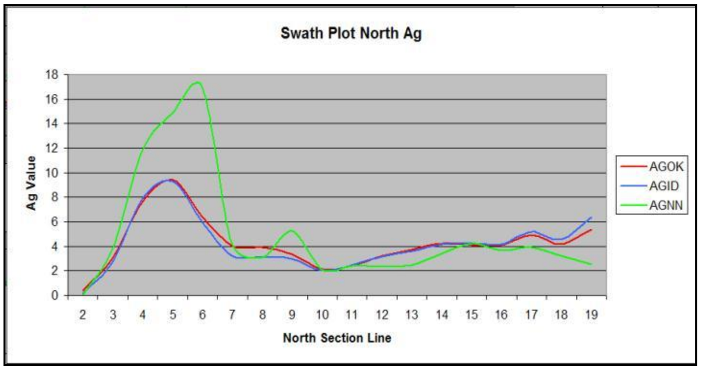


FIGURE 14-58: SWATH PLOT FOR SILVER BY NORTHING

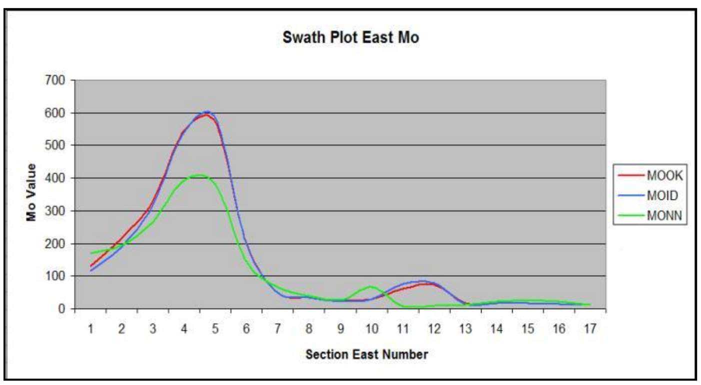


FIGURE 14-59: SWATH PLOT FOR MOLYBDENUM BY EASTING

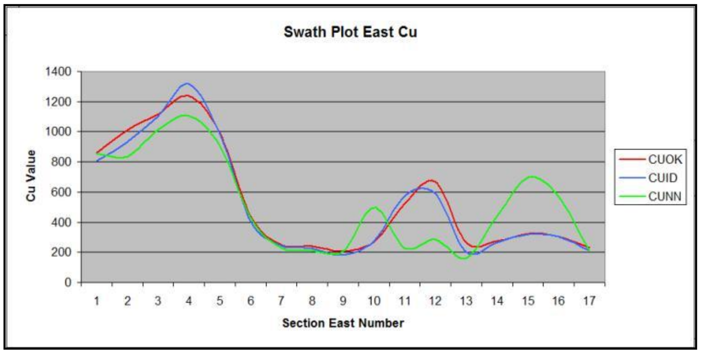


FIGURE 14-60: SWATH PLOT FOR COPPER BY EASTING

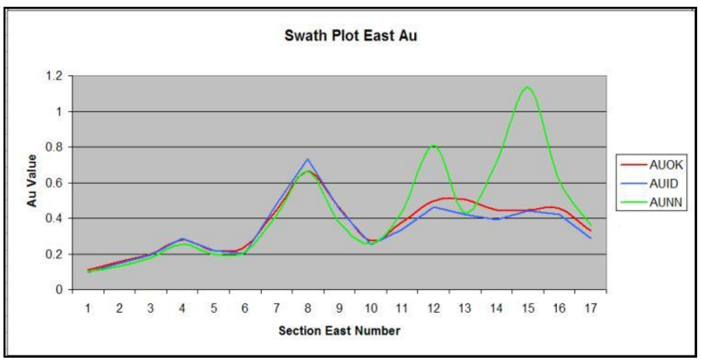


FIGURE 14-61: SWATH PLOT FOR GOLD BY EASTING

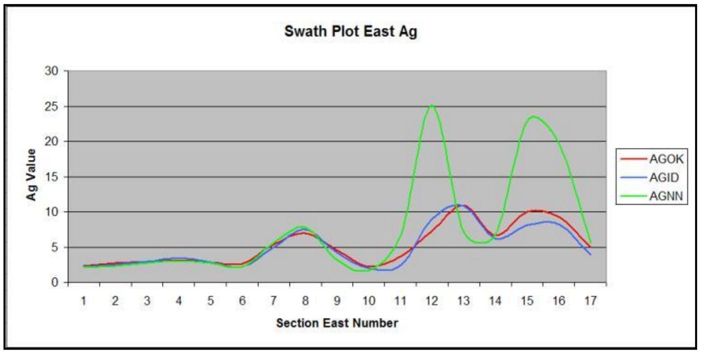


FIGURE 14-62: SWATH PLOT FOR SILVER BY EASTING

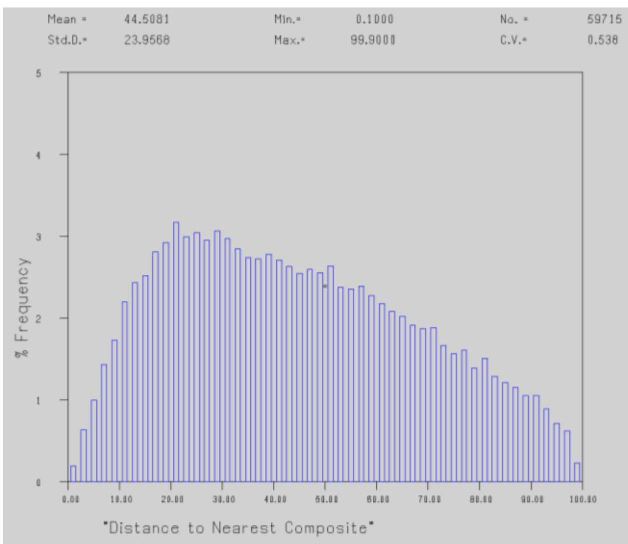


FIGURE 14-63: DISTANCE TO NEAREST COMPOSITE

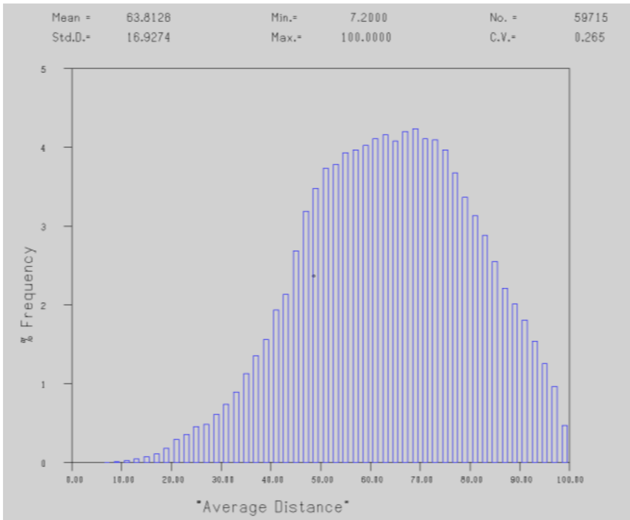


FIGURE 14-64: AVERAGE DISTANCE TO COMPOSITE

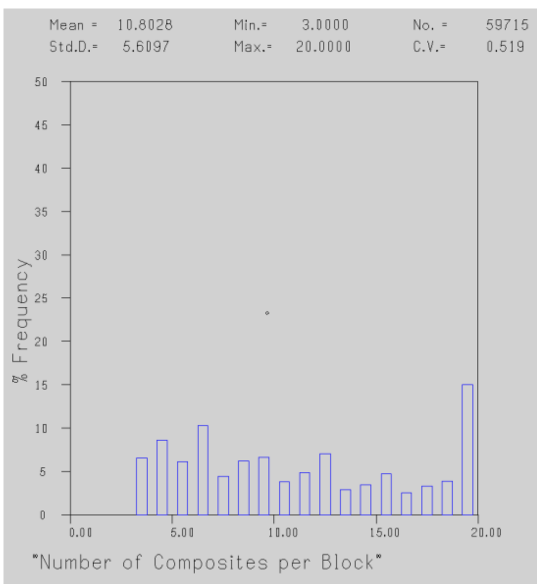


FIGURE 14-65: NUMBER OF COMPOSITES USED

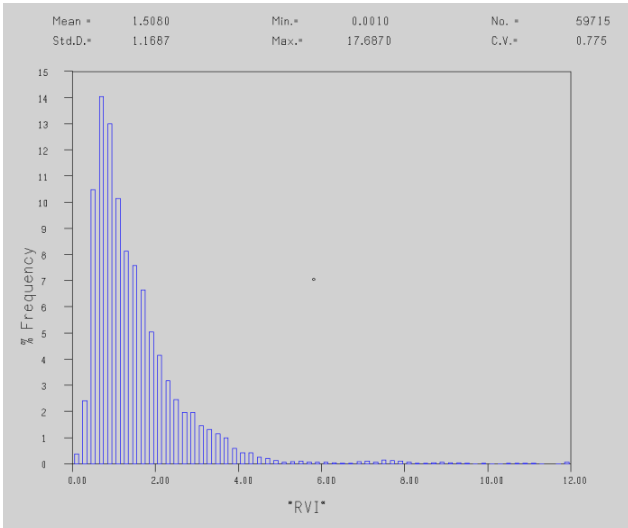


FIGURE 14-66: RELATIVE VARIABILITY INDEX

15 ADJACENT PROPERTIES

Epithermal gold deposits occur largely in volcano-plutonic arcs (island and continental arcs) associated with subduction zones and they form contemporaneously with volcanism. The deposits form at shallow depths, generally < 1 km, and are hosted mainly by volcanic rocks.

There are several examples of this style of mineralization in Ecuador. Kinross Gold Corp.'s Fruta Del Norte (FDN) Project is located about 130 km to the southeast of the 3C project. The FDN project is interpreted as a low to intermediate sulphidation epithermal gold-silver deposit. The mineralization occurs along the edge of a pull-apart basin and is partially buried by lower Cretaceous conglomerate that is dominantly post-mineralization. The system is characterized by stockworks, veins, and disseminated zones within andesitic volcanic rocks of the Jurassic Misahualli Formation (Sillitoe, 2006). Resources and reserves for the FDN property (Fruta del Norte Ecuador, 2011) are shown in Table 15.1.

TABLE 15.1: MINERAL RESERVE AND RESOURCE SUMMARY FOR FRUTA DEL NORTE (FDN) PROJECT (AS AT DECEMBER 31, 2011)

GOLD	Tonnes (x 1,000)	Grade (g/t)	Ounces (x 1,000)
Proven and Probable Reserves	25,440	8.21	6,715
Measured and Indicated Resources	4,266	4.89	671
Inferred Resources	22,093	5.13	3,645

SILVER	Tonnes (x 1,000)	Grade (g/t)	Ounces (x 1,000)
Proven and Probable Reserves	25,440	8.21	6,715
Measured and Indicated Resources	4,266	4.89	671
Inferred Resources	22,093	5.13	3,645

IAMGOLD Corporation and INV Metals Inc.'s Quimsacocha Project is located approximately 35 km northeast of the Tres Chorreras Project. The mineralization is characterized as a high sulphidation epithermal gold-copper-silver deposit associated with a north-northeast striking structural feature hosted by Upper Miocene tuffs and flows.

Mineral resources have been estimated based on a US$22.00/tonne NSR cut-off (Roscoe Postle Associates, 2012) as shown in Table 15.2.

TABLE 15.2: MINERAL RESOURCE ESTIMATE SUMMARY (MARCH 31, 2012)
INV METALS INC. - QUIMSACOCHA PROJECT

Resource Classification	Tonnage (Mt)	Au (g/t)	Contained Au (Moz)	Ag (g/t)	Contained Ag (Moz)	Cu (%)	Cu (Mlb)
Indicated	32.6	3.2	3.3	22	22.7	0.20	143.1
Inferred	2.3	2.2	0.2	27	2.0	0.22	11.2

1. CIM Definition Standards were followed for Mineral Resources
2. Resources are constrained by a Whittle shell and reported at an NSR cut-off value of US$22/tonne.
3. Mineral Resources are estimated using a long-term gold price of US$1,500 per ounce, silver price of U$S26 per ounce, and copper price of US$3.50/lb.
4. Numbers may not add due to rounding: Total discrepancy is due to rounding.

International Minerals Corporation's Rio Blanco Project is located approximately 50 km north of the Tres Chorreras Project. The mineralization is characterized as a low sulphidation epithermal comprising veins and vein breccias with gold and silver hosted by Saraguro Group tuffs and flows in northeast trending structures related to the Bulubulu Fault. The current mineral resource and reserve estimation for the Alejandra North and San Luis Deposits at the Rio Blanco Project (October 2006) are shown in Table 15.3.

TABLE 15.3: MINERAL RESERVES FOR ALEJANDRO NORTH AND SAN LUIS DEPOSITS AT THE RIO BLANCO PROJECT

Zone	Reserve Category	Tonnes	Gold Grade (g/t)	Gold Contained (oz)	Silver Grade (g/t)	Silver Contained (oz)
Alejandro North	Proven	142,560	10.8	49,000	90	410,000
	Probable	1,879,020	7.9	476,000	59	3,562,000
Alejandro North Total	Proven & Probable	2,021,580	8.1	526,000	61	3,973,000
San Luis	Proven	---	---	---	---	---
	Probable	125,868	19.5	79,000	83	334,000
Alejandro North & San Luis	Proven & Probable	2,147,448	8.8	605,000	62	4,307,000

1. The mineral reserves are derived from total Measured and Indicated resources of 2,150,000 tonnes at an average grade of 9.5 g/t gold and 69 g/t silver containing 661,000 ounces of gold and 4,785,000 ounces of silver at a cut-off grade of 3 g/t gold for Alejandra North and 4 g/t gold for San Luis.

2. The previously announced mineral reserves for Alejandra North of 1,990,000 tonnes were at an average grade of 8.1 g/t gold and 63 g/t silver containing 521,000 ounces of gold and 4,039,000 ounces of silver at a cut-off grade of 4 g/t gold.

3. The mineral reserves are estimated using a 4 g/t gold cut-off and a $475/oz gold price.

4. The mineral reserves remain subject to overall metallurgical recoveries of 87% for gold and 70% for silver.

5. Mining dilution of approximately 10%, with a diluting grade of 1.7 g/t gold, has been accounted for in the reserves.

6. Mining losses have been estimated at 10% for general mining, plus approximately 10% of the sill pillar that will not be recovered. These losses are accounted for in the reserves.

7. The mineral reserve estimate for Alejandra North varies slightly from the January 2006 feasibility study estimate due to better than expected recovery from the sill pillar based on the updated mine plan prepared by Wardrop Engineering (October 2006).

The mineral deposit types and metal quantities quoted for each of the above deposits are not necessarily what may be, or is being, recovered. The information, with regards to the nature of the mineralization types for the above named properties, is not indicative of mineralization on the Tres Chorreras Project; the information is sourced from public reports on SEDAR and from company websites as noted above.

16 OTHER RELEVANT DATA AND INFORMATION

16.1 ENVIRONMENTAL

As required by the regulations of the new Ecuadorian Mining Law (January 29, 2009 and November 16, 2009), AMIC was required to complete an environmental audit as part of the process to obtain an Environmental License for the Project. This audit was approved by the Ministry of Environment in April, 2012. To receive the Environmental License, AMIC must complete minor administrative paperwork, including posting a bond which is linked to compliance with the Environmental Management Plan.

Note: an Environmental Impact Assessment (EIA) was developed for the Project and approved by the Ministry of Energy and Mines (now Ministry of Non-Renewable Resources) in December, 2006. Given that the Project had a previously approved EIA, the aforementioned audit was required by the Ministry of Environment to obtain the Environmental License.

16.1.1 Environmental Audit

This section has been adapted from the Executive Summary of AMSA's current Environmental Audit, completed by Terrambiente Consultores in March, 2012.

Activities

In 2007 and 2008, Atlas Moly S.A. undertook an extensive work program focusing on, among others items, the construction of a camp for workers, collection, removal and disposal of more than 22 tonnes of solid waste that had accumulated during the previous artisanal miners' tenure of the concession, geological mapping, topographic surveys, tunnel sampling, outcrop sampling, geochemical soil sampling, magnetometer readings, and exploratory diamond drilling.

Since 2008 the company has not conducted exploration activities, and a focus has thus been placed on minor camp maintenance activities.

Audit Scope

The audit covered the following aspects of the Tres Chorreras Project:

- The activities, operations and facilities of the Project, including the status and implementation of all activities.
- The environmental impacts generated by the project, mainly due to emissions, liquid discharges and waste management.
- The application of the current Mining-Environmental legislation and the state of compliance by the company.

- Compliance with the activities outlined in the Project Environmental Management Plan (EMP) contained in the approved EIA.

Environmental-Legal Framework Applicable to the Project

Ecuador's Constitution guarantees the protection of natural resources and the prevention of pollution. The legal framework is complemented by a set of laws, regulations, decrees, ministerial agreements and other complementary legislation. The State guarantees the fulfillment of the legal framework through different specialized public institutions. In the case of environmental issues related to the mining sector, the authority is the Ministry of Environment.

Below is a summary of legislation relevant to the phase of "Mineral Exploration" in accordance with the current legal framework.

1. Constitution of the Republic of Ecuador, issued on October 20, 2008, RO 449.
2. Mining Law, Law 045. RO / Sup. No. 517 of January 29, 2009.
3. Environmental Management Law, Code 19 RO / Sup. No. 418 of September 10, 2004.
4. Water Law, Code 16, R.O. 339, May 20, 2004.
5. General Regulations of the Mining Law, Executive Decree No. 119. RO / 67 of November 16, 2009.
6. Environmental Regulation for Mining Activities, Executive Decree No. 121. RO / 67 of November 16, 2009.
7. Unified Text of Secondary Environmental Legislation, Ministry of Environment
    - Book III: Forestry
    - Book VI: Environmental Quality
    - Chapter IV: The Process of Environmental Impact Assessment
    - Part IV: Regulation of the Law of Environmental Management for the Prevention and Control of Environmental Pollution
    - Chapter III: Prevention and Control of Environmental Pollution
    - Chapter IV: Environmental Control, Environmental Quality Standards and the Discharge of Effluents: Water Resource
    - Book VI – Annex 1 Soil Quality Standards and Remediation Criteria for Contaminated Soils Book VI

Audit Findings

The following non-compliances were noted in the audit:

1. Atlas Moly S.A. must keep a record of generated effluent, indicating the flow, discharge frequency, applied treatment, laboratory analysis and the identification of the receiving water body. It is mandatory that the reported flow of effluent generated is supported by production data. Once the treatment plant comes into operation, records must be developed for generated effluent, discharge frequency, applied treatment, lab work and the identification of the receiving water body.

2. Drainage systems for domestic sewage, industrial wastewater and storm water generated in an industry, should be separated into their respective systems or collectors. A filtration process is required for decanting minerals in suspension, which may be done after the filtration of suspended solids.

3. At the Tres Chorreras site, no significant issues were identified with respect to waste management, however, the standards were not observed regarding the handling of polythene bags in garbage containers to avoid the spread of disease.

4. The contractors who provide services for the project must submit monthly reports to the Industrial Safety Coordinator or paramedic. These reports must contain information on the training given, as well as incidents, accidents and occupational-related diseases that were registered during their activities.

5. MSDS Information must be available for all chemicals and products located on site and should be in Spanish so that all staff can learn the characteristics of these products. Take corrective action regarding the proper use and location of the MSDS on all containers.

6. Through the use of posters or illustrative brochures, demonstrate methods of fuel spill control, emergency response, machinery and equipment handling, waste disposal and control, resource protection and other issues identified in the EMP. The law requires the realization of posters and brochures illustrating fuel management, spill control and emergency response.

7. Industrial noise monitoring should be undertaken at the drilling sites.

8. The frequency of industrial noise monitoring shall be quarterly. Commence this activity in accordance with the EMP.

Observations

A. Mining concession holders are required to perform their duties with methods and techniques that minimize damage to land, the environment, natural and cultural heritage, to the adjoining concessions, to third parties and, in any case, to compensate any damage they cause while undertaking work activities.

B. Water can only be used by obtaining a water use concession, except for that which is required for domestic service.

C. All water users must be registered in the National Water Resource Council, including the source and the corresponding flow.

This process has been initiated and inspections have been conducted. It is in progress.

D. To minimize Project impacts, a signage system should be implemented within areas where Project activities are undertaken.

E. Chemicals and hydrocarbons must be stored, handled and transported in a technically appropriate manner, as established in the environmental regulations for the hydrocarbon sector and the Ecuadorian Technical Standard INEN 2266, concerning the Transport, Storage and Handling of Hazardous Chemicals.

F. Containers that are located on the outside of the buildings shall not be in direct contact with the ground to prevent the entry of rain water into them and to avoid pollution.

G. An infiltration field for black waters should be constructed where the fixed camp is to be built, and shall have a sand filter.

Atlas Moly SA has taken a big leap with the acquisition of a treatment plant for the treatment of gray and black waters. Once permission has been granted to resume exploration activities, this plant should become operational as soon as possible.

H. A coordinator should be designated to manage a nursery and revegetation activities, and will be responsible for developing, implementing, executing and updating the procedure for the recovery of affected areas.

J. Monitoring of the activities pertaining to the community relations program as well as signed agreements between Atlas Moly S.A. and the local populations within the Project Area of Influence should be conducted. This monitoring should be undertaken annually.

16.2 SOCIAL RESPONSIBILITY

In 2007 and 2008, AMIC had a number of social programs in place with the surrounding communities, including: a focus on hiring locals from within the direct and indirect areas of influence of the Project; local procurement practices; frequent public consultation activities; a community investment program; training on environmental and health and safety-related issues; and, the formation and training of a community monitoring team.

In May 2011, due to an extended period of exploration inactivity because of the Mining Mandate, the concession was occupied by a group of artisanal miners. AMIC has had numerous discussions with the government regarding this situation and it expects that these illegal miners will be removed in the near-term, as the government is currently removing illegal miners from valid concessions in the vicinity. AMIC expects that after exploration activities have resumed, the social programs that began in 2007 and 2008 will be reinstated and provide employment opportunities for local workers.

17 INTERPRETATION AND CONCLUSIONS

To date, AMIC has spent more than $1 million in exploration on the Tres Chorrera Concession. Since 2008, there has been no additional technical work done on the property, up to and including the date of this report.

A total of 42 drill holes totalling 7,940.7 m were drilled in two campaigns. In addition, 1,027 underground chip samples were incorporated into the database. The drill holes were composited to 2.5 m within geology domains and block modelling was used to estimate grades into 10 x 10 x 10 m blocks.

The purpose of this Technical Report is to upgrade and present the mineral resource estimate for the Tres Chorreras Project taking into account the current metal prices as shown in Tables 17.1 and 17.2. Calculated on a base case of US$20 net value cut-off for potentially open-pittable resources and US$50 net value cut-off for potentially underground mineable resources, the total Indicated resources are estimated to be 17.2 million tonnes with a net value of $60 per tonne and grades of 0.047% Mo, 0.0105% Cu, 0.739 g/t Au and 7.2 g/t Ag along with 1.40 g/t AuEq (gold equivalent). Total Inferred resources are estimated to be 26.5 million tonnes with a net value of $56 per tonne and grades of 0.047% Mo, 0.105% Cu, 0.684 g/t Au, and 8.6 g/t Ag, along with 1.32 g/t AuEq.

The calculation of the gold equivalent is based on the following metal prices: US$1,450 per ounce of gold, US$28.00 per ounce of silver, US$15.00 per pound of molybdenum and US$3.60 per pound of copper which represents three-year trailing averages. The US$80 Underground case is provided to give the reader an appreciation of the sensitivity of the underground component in the case of higher cost mining methods.

In-situ (i.e., in the ground) metal content is calculated and listed as the number of pounds of molybdenum, pounds of copper, ounces of gold, and ounces of silver and calculated to provide the reader an appreciation of each metal at the cut-off. Note that recoveries are assumed to be, at this early stage and lacking definitive metallurgical recovery data, 100%. The total Indicated metal is estimated to be 17.8 million pounds of molybdenum, 40.1 million pounds of copper, 0.41 million ounces of gold, and 4.0 million ounces of silver, or 0.77 million gold equivalent ounces. The total Inferred metal is estimated to be 23.1 million pounds of molybdenum, 61.3 million pounds of copper, 0.58 million ounces of gold, and 7.3 million ounces of silver, or 1.12 million gold equivalent ounces.

TABLE 17.1: INDICATED AND INFERRED TRES CHORRERAS RESOURCES

OPEN PIT	CUTOFF	TONNES	NET$	MO	CU	AU	AG	AUEQ	MO	CU	AU	AG	AUEQ
CLASS	NET$			%	%	g/t	g/t	g/t	Mlbs	Mlbs	K Ounces	K Ounces	K Ounces
Indicated	20	12,680,000	52	0.023%	0.073%	0.770	7.0	1.20	6.5	20.4	313.9	2,855.0	490
Inferred	20	19,464,000	47	0.025%	0.082%	0.616	7.5	1.09	10.9	35.1	385.5	4,669.2	680
UNDERGROUND													
Indicated	50	4,566,000	81	0.112%	0.195%	0.652	7.9	1.96	11.3	19.6	95.6	1,161.4	287
Inferred	50	7,021,000	83	0.079%	0.169%	0.872	11.6	1.96	12.2	26.2	196.8	2,627.5	443
UNDERGROUND													
Indicated	80	1,495,000	121	0.205%	0.283%	0.810	9.7	2.97	6.7	9.3	38.9	466.6	143
Inferred	80	2,789,000	114	0.117%	0.218%	1.187	14.8	2.70	7.2	13.4	106.4	1,325.9	242

TABLE 17.2: COMBINED INDICATED AND INFERRED TRES CHORRERAS RESOURCES

	TONNES	NET$	MO	CU	AU	AG	AUEQ
	US$20 and US$50 Cut-off		%	%	g/t	g/t	g/t
Indicated	17,246,000	60	0.047%	0.105%	0.739	7.2	1.40
Inferred	26,485,000	56	0.040%	0.105%	0.684	8.6	1.32
	US$20 and US$80 Cut-off						
Indicated	14,175,000	59	0.042%	0.095%	0.774	7.3	1.39
Inferred	22,253,000	55	0.037%	0.099%	0.688	8.4	1.29

The current work assumes that Tres Chorreras would be mined using a bulk mining method followed by a smaller underground component of extraction.

Tres Chorreras Concession hosts a significant resource which warrants further exploration. Additional drilling and metallurgical testing are required to increase the confidence in the Indicated and Inferred Mineral Resources. More drilling is required particularly at the northeast of the 3C Breccia Deposit and the southern extension of the Epithermal Deposit.

Pending positive results of the proposed metallurgical testing and additional drilling, a preliminary economic assessment (PEA) would be the next step in determining the economic potential of the deposit.

18 RECOMMENDATIONS

The following actions are recommended to further evaluate the resource potential and evaluate the economic viability of the Tres Chorrera Project:

- Additional drilling on the concession: a minimum 15 hole program, totalling 3,000 m, to expand the resource base with in-fill drilling to up-grade the classification of the Inferred mineral resources to the Indicated category.
- Metallurgical testing of typical material from both the 3C Breccia Deposit and the Epithermal Deposit to determine preliminary applicable milling methods, recoveries, and configurations for the initial underground and surface facilities. This testing will provide initial parameters for mining and milling the deposits which are required to complete a PEA (preliminary economic assessment).
- Conduct a PEA after the results of the recommended drilling and metallurgical work are complete.
- Perform an audit of preparation facilities and the assay laboratory.
- Continue with the QA/QC of the master database.
- Continue density measurements and analysis.
- Perform geostatistical evaluation to support of future resource estimates.
- Generate an updated mineral reserve estimate and Technical Report.

It is recommended that AMIC dedicate a total budget of US$2.04 million to accomplish the activities outlined in the 2013-2014 proposed budget shown in Table 18.1.

TABLE 18.1: BUDGET FOR PROPOSED 2013-2014 WORK PROGRAM (US$)

Item	Comment	Total (US$)
Drilling	3,000 m DDH	600,000
Geology, GIS, and General Labour		60,000
Geochemistry/Analytical	soil, rock, and core samples	80,000
Metallurgical Testing and Report		200,000
Resource Estimate and Report		60,000
Preliminary Economic Assessment	technical report	210,000
TOTAL CONTRACT COSTS		1,210,000
Field Costs		60,000
Government Fees, Licenses, Permits, and Tenure		150,000
Community and Environment		100,000
Legal		100,000
Communications		4,000
Hotel, Travel, and Transportation		80,000
TOTAL DIRECT COSTS		494,000
TOTAL PROJECT COSTS		1,704,000
Salary		150,000
NET COSTS		1,854,000
Contingency	10%	185,400
TOTAL		**2,039,400**

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20 DATE AND SIGNATURES

CERTIFICATE OF AUTHOR - ROBERT J. MORRIS

I, Robert J. Morris, M.Sc., P.Geo. do hereby certify that:

1. I am a Principal of Moose Mountain Technical Services, 6243 Kubinec Road, Fernie BC V0B 1M1.
2. I graduated with a B.Sc. from the University of British Columbia in 1973.
3. I graduated with a M.Sc. from Queen's University in 1978.
4. I am a member of the Association of Professional Engineers and Geoscientists of B.C. (#18301).
5. I have worked as a geologist for a total of forty years since my graduation from university.
6. My past experience with porphyry molybdenum exploration and mining includes work at the Huckleberry and Sphinx deposits and numerous porphyry copper-gold deposits in British Columbia.
7. I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" as defined in National Policy 43-101.
8. I am responsible for the geology and resource review and verification and preparation of the technical report titled "Resource Estimate for the Tres Chorreras Copper, Molybdenum, Gold, Silver Occurrence", dated 10 September 2008.
9. I completed a site visit of the Tres Chorreras Property from the 2nd to the 4th of April 2008. I have had no prior involvement with the Tres Chorreras property.
10. As of effective date of this report, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
11. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
12. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 30th day of January 2013,

"original signed and sealed"

Robert J. Morris, M.Sc., P.Geo.

CERTIFICATE OF AUTHOR - GARTH D. KIRKHAM

I, Garth David Kirkham, do hereby certify that:

1. I am a consulting geoscientist with an office at 6331 Palace Place, Burnaby, British Columbia, V5E-1Z6.

2. This certificate applies to the "Resource Estimate for the Tres Chorreras Copper, Molybdenum, Gold, Silver Occurrence", dated 31 January 2013 prepared for Atlas Minerals Ltd. of Calgary, Alberta.

3. I am a graduate of the University of Alberta in 1983 with a B. Sc. in Geophysics. I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of Alberta, the Association of Professional Engineers and Geoscientists of BC, and the Northwest Territories and Nunavut Association of Engineers and Geoscientists. I have continuously practiced my profession performing computer modelling since 1988, both as an employee of a geostatistical modelling and mine planning software and consulting company and as an independent consultant.

4. My past experience with molybdenum properties includes the Ajax Deposit (BC, Canada) and El Creston (Mexico) in addition to numerous poly-metallic deposits throughout the world.

5. I have not visited the property.

6. In the independent report titled "Resource Estimate for the Tres Chorreras Copper, Molybdenum, Gold, Silver Occurrence", dated 31 January 2013, I am responsible for the Sections 14.

7. I have not had prior involvement with the Tres Chorreras Project.

8. I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in draft National Policy 43-101.

9. 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 and that this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

10. I have read National Instrument 43-101, Standards for Disclosure of Mineral Properties and Form 43-101F1. This technical report has been prepared in compliance with that instrument and form.

11. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

Dated this 31st day of January, 2013,

"original signed and sealed"

____

Garth David Kirkham, P.Geo.