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ENDEAVOUR SILVER CORP.

NI 43-101 TECHNICAL REPORT
AUDIT OF THE
RESOURCE AND RESERVE ESTIMATES
FOR THE
GUANACEVÍ PROJECT
DURANGO STATE
MEXICO

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Report By

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1.0 SUMMARY

Endeavour Silver Corp. (Endeavour Silver) has retained Micon International Limited (Micon) to conduct an audit of the updated resource and reserve estimate for its Guanaceví Mines project, located near the town of Guanaceví in the northwest part of the State of Durango in Mexico. This Technical Report constitutes an audit of the December 31, 2008 mineral resource and reserve estimate conducted on the property by Endeavour Silver. The audit was performed to ensure that the mineral resources and reserves comply with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) standards and definitions referred to in Canadian National Instrument 43-101 (NI 43-101).

An earlier resource and reserve estimate was the subject of an April, 2008 NI 43-101 Technical Report conducted in-house by Endeavour Silver. The Micon audit incorporates the exploration data gathered since the publication of the April, 2008 report. The April, 2008 Endeavour Silver Technical Report was posted on the System for Electronic Document Analysis and Retrieval (SEDAR). SEDAR is the filing system developed for the Canadian Securities Administrators (CSA).

1.1 PROPERTY DESCRIPTION

The Guanaceví Mines project is located within the Municipality of Guanaceví in the State of Durango, Mexico near its northern border with the state of Chihuahua. The property is accessed by travelling from the city of Durango located 320 kilometres southeast. Durango has a modern airport with daily flights to and from Mexico City and portions of the United States. The Guanaceví Mines project is located on the edge of the Sierra Madre, a series of rugged mountains with higher points reaching 3,300 metres above sea level. The Guanaceví Mines project is located at approximately 105°58'20"W longitude and 25°54'47"N latitude.

The Guanaceví mining district covers an area measuring approximately 5 km northeast - southwest by 10 km northwest - southeast and contains more than 50 silver/gold mines. Although only three of the mines are presently operating, there is considerable mining experience available in the area.

1.2 OWNERSHIP

Endeavour Silver holds the Guanaceví Mines project through its 100% owned Mexican subsidiary Endeavour Gold Corporation S.A. de C.V. (Endeavour Gold). Endeavour Gold holds the project through its two 100% owned subsidiaries Minera Plata Adelante S.A. de C.V. (Minera Plata Adelante) and Refinadora Plata Guanaceví S.A. de C.V. (Refinadora Plata Guanaceví). At present, the project is comprised of 36 mineral concessions. The mineral concessions are not all contiguous and vary in size, for a total property area of 998 ha. The annual 2009 concession tax for the Guanaceví properties is approximately 175,732 Mexican pesos, which is equal to about US$11,539 at an exchange rate of 15.23 pesos to US$1.00 dollar.

Since an earlier Micon Technical Report was published on SEDAR in 2007, the most significant material change to the various agreements are as follows.

Under the option interest agreement, the scheduled January 28, 2007 payment of $638,000 was made with 176,201 shares of Endeavour Silver in lieu of cash. Endeavour Silver was able to acquire the remaining shares of Minera Santa Cruz y Garibaldi S.A. de C.V. (Minera Santa Cruz), which owned 49% of the Santa Cruz silver-gold mine, for the final option interest agreement payment of $638,000 in January, 2008; however, Endeavour Silver negotiated an early buy-out of the minority shareholders. In May, 2007, Endeavour Silver issued 1,350,000 shares with a fair market value of US$5.04 per share to acquire the remaining 49% of outstanding shares in Minera Santa Cruz. The settlement price reflects the minority shareholders' earnings to date, the 2008 option payment and the projected 2007 earnings.

During 2007, Endeavour Silver also made two new acquisitions, Milache and San Pedro, both located in the San Pedro sub-district of the Guanaceví mining district. In addition to the concessions already held (San Pedro Uno and La Sultana), Endeavour now controls approximately 456 hectares in the San Pedro area. In February, 2009, Endeavour Silver acquired the Porvenir Cuatro and La Brisa concessions totalling approximately 55 hectares. The Porvenir Cuatro and La Brisa agreement is an option to earn 100% of these properties over two years for a total consideration of US$700,000. The first payment is US$100,000 cash on signing and US$200,000 in shares based on the 10 day average price before the signing date of Febraury 9, 2009. The subsequent payments are 12 months from signing with US$240,000 as shares again based on the average price 10 days prior to February 9, 2010. The final payment is due on or before February 9, 2011 and consists of a payment of US$160,000 either as cash or shares.

Endeavour Silver can acquire a 100% interest in the El Milache properties by paying US$50,000 and issuing 30,000 shares upon signing the option-to-purchase agreement and paying US$50,000 after 18 months. Endeavour Silver can earn a 100% interest in the San Pedro properties by issuing 120,000 common shares and issuing 60,000 warrants to purchase 60,000 shares at $4.69 within a 1 year period and a further 570,776 shares within a 24 month period. On signing, 120,000 common shares and 60,000 warrants were issued to the vendor. The vendor will retain a 1% net smelter royalty on mineral production.

1.3 GEOLOGY AND MINERALIZATION

The Guanaceví mineral deposits occur as an epithermal low sulphidation, quartz-carbonate, fracture-filling, vein hosted by a structure that trends approximately N45°W and dips 55° southwest. The fault and vein comprise a structural system referred to locally as the Santa Cruz vein structure or Santa Cruz vein fault. The Santa Cruz vein itself has been traced for 5 kilometres along the trend and averages approximately 3.0 m in width. High-grade mineralization in the system is not continuous, but occurs in steeply northwest-raking shoots up to 200 m in strike-length. A second vein is located sub-parallel and subjacent (located in the footwall) to the Santa Cruz vein but is less continuous. The footwall vein is economically significant in the Porvenir Dos zone and in the northern portion of deep North Porvenir.

The Santa Cruz vein is a silver-rich structure with lesser amounts of gold, lead and zinc. Based on historic production, mineralization has averaged 500 grams per tonne (g/t) silver and 1 g/t gold over 3 m true width. The minerals encountered are argentite-acanthite with limited gold, galena, sphalerite, pyrite and manganese oxides. Gangue minerals noted are barite, rhodonite, rhodochrosite, calcite, fluorite and quartz. The mineralization down to Level 6 in the Santa Cruz mine is mainly oxidized with a transition zone of oxides to sulphides occurring between Levels 6 to 8, although sulphide ore was mined above Level 6. Mineralization exhibits evidence of episodic hydrothermal events which generated finely banded textures. High-grade mineralization in the district is commonly associated with multiple phases of banding and brecciation. In the Porvenir Dos area and in the deeper portion of North Porvenir, a footwall-hosted vein is associated with the Santa Cruz vein structure. In both areas, this footwall vein is either within Guanaceví Formation footwall rocks or is at the structural contact between the Guanaceví Formation and Lower Volcanic Sequence andesite. It is banded to brecciated quartz plus carbonate and contains local scatterings (< 1%) of sulphides (pyrite>sphalerite >galena>chalcopyrite) and rare pods (< 50 cm) of sulphides.

1.4 EXPLORATION

Exploration data for the Guanaceví Mines project are kept on file at both the project geological/engineering and exploration offices. The data are also on file at Endeavour's exploration administration office, currently located in the city of Durango in the state of Durango. The data handling system includes a Microsoft Excel database, ACAD drafting software and Maptek's Vulcan deposit modeling software.

During 2008, Endeavour completed 18,483 m in 89 surface and underground drill holes at the Guanaceví Mines project. A total of 10,437 samples were also collected and submitted for assay. The exploration efforts are beginning to yeild fruit as evidenced by the significant increase in the mineral resource base.

1.5 RESERVE AND RESOURCE ESTIMATION

An earlier Resource and Reserve estimate was the subject of an April 16, 2007 NI 43-101 Technical Report conducted by Micon. An updated Reserve and Resource estimation was prepared by Endeavour staff using updated data and 3-D modeling techniques utilizing the Vulcan software and this was the subject of an April 15, 2008 Technical Report prepared by Endeavour Silver staff. This present repor incorporates data gathered since the publication of the Endeavour Silver 2008 Technical Report and discusses any changes in the estimation methodologies.

In-situ, diluted, recoverable Proven and Probable Reserves are summarized in Table 1.1. For Proven Reserves, tonnage and grades are based on the channel sample data only. Probable

Reserves are estimated using both channel samples and drill hole intercepts included in the current mine plan. Dilution was estimated using parameters for wall rock dilution as well as additional mining and mucking dilution. Dilution grades are assumed to be the same for wall rock and additional mining dilution. Ore losses were estimated using parameters similar to those outlined in the Micon Technical Report dated April 16, 2007. The Proven and Probable Reserves represent only those portions of the deposits for which Endeavour has a mine plan in place at the Porvenir mine. The tonnages in Table 1.1 include a combination of both dilution and ore losses and can be considered as estimates of the extractable or recoverable Reserves.

At a cut-off grade of 270 g/t silver, the total remaining Proven and Probable mineral Reserve is 535,000 tonnes at a grade of 353 g/t silver and 0.49 g/t gold containing an estimated 6,070,500 oz of silver and 8,400 oz of gold.

Table 1.1
Proven and Probable Reserves for the Guanaceví Mines Project as of December 31, 2008
(Cut-off Grade 270 g/t Silver)

Reserves	Diluted Recoverable Tonnes & Grade				
	Tonnes	Silver (g/t)	Gold (g/t)	Ounces Ag	Ounces Au
Proven					
Porvenir Mine	57,000	361	0.49	661,300	900
Total Proven	**57,000**	**361**	**0.49**	**661,300**	**900**
Probable					
Porvenir Mine	478,000	352	0.49	5,409,200	7,500
Total Probable	**478,000**	**352**	**0.49**	**5,409,200**	**7,500**
Total Proven + Probable	**535,000**	**353**	**0.49**	**6,070,500**	**8,400**

Endeavour Silver also updated Indicated and Inferred Resource estimates as of December 31, 2008 (Table 1.2). These Resources are in addition to the Reserves reported in Table 1.1.

Table 1.2
Indicated Resources for the Guanaceví Mines Project as of December 31, 2008

Resource of Povenir (200 g/t Cut-off)							
	Category	**Tonnes**	**Au (g/t)**	**Ag (g/t)**	**Cu(%)**	**Pb(%)**	**Zn (%)**
	Indicated	530,000	0.55	302			
	Inferred	415,000	0.61	378			
Resource of Exploration Areas (100 g/t Cut-off)							
Category	**Area**	**Tonnes**	**Au (g/t)**	**Ag (g/t)**	**Cu(%)**	**Pb(%)**	**Zn (%)**
Indicated	Porvenir Dos	272,707	0.66	325			
	Santa Cruz	461,105	0.55	305			
	MCH-VER-Blanca	19,781	0.45	259			
Total		**753,593**	**0.59**	**312**			
Inferred	Porvenir Dos	88,396	0.39	251			
	Santa Cruz	99,847	0.55	278			
	MCH-VER-Blanca	74,910	0.41	251			
Total		**263,153**	**0.46**	**261**			
Resource of Exploration Areas (100 g/t Cut-off)							
Category	**Area**	**Tonnes**	**Au (g/t)**	**Ag (g/t)**	**Cu(%)**	**Pb(%)**	**Zn (%)**
Indicated	Santa Cruz	96,656	0.54	252	0.06	1.79	2.70
	Alex Breccia	329,923	0.34	235	0.04	0.91	1.70
Total		**426,579**	**0.39**	**239**	**0.05**	**1.11**	**1.93**
Inferred	Santa Cruz	44,695	0.43	164	0.09	0.87	1.32
	Alex Breccia	352,104	0.34	176	0.05	0.86	1.56
	Noche Buena	488,476	0.15	165	0.02	0.60	1.08
Total		**885,275**	**0.24**	**169**	**0.03**	**0.71**	**1.29**

Additional Resource of Alex Breccia and Santa Cruz (50 g/t Cut-off and >3.5% Pb +Zn)							
Category	Area	Tonnes	Au (g/t)	Ag (g/t)	Cu(%)	Pb(%)	Zn (%)
Indicated	Alex Breccia	17,370	0.26	71	0.09	2.66	3.90
	Santa Cruz	31,889	0.26	78	0.06	1.39	2.59
	Buena Fe	35,807	0.08	52	0	2.58	4.38
Total		**85,000**	**0.18**	**66**	**0.07**	**2.20**	**3.60**
Inferred	Alex Breccia	47,644	0.23	75	0.07	2.28	3.32
	Santa Cruz	52,601	0.28	74	0.05	1.40	2.27
	Buena Fe	159,574	0.09	71	0	2.21	3.79
Total		**260,000**	**0.16**	**72**	**0.06**	**3.40**	**2.10**

1.6 DEVELOPMENT AND OPERATIONS

For the year ending December 31, 2008, silver production was 1,852,969 oz compared to 1,907,795 oz in 2007, a decrease of 3%, with gold production of 3,845 oz compared to 3,957 oz in 2007, also a decrease of 3%. Plant throughput for 2008 was 255,656 tonnes at an average grade of 318 g/t silver and 0.58 g/t gold as compared to 226,295 tonnes at an average grade of 375 g/t silver and 0.70 g/t gold during 2007. In 2008, recoveries averaged 70.9% and 80.7% for silver and gold, respectively. Production in 2008 is summarized in Table 1.3.

Table 1.3
Production for the Guanaceví Mines Project (2008)

Year	Tonnes	Silver (g/t)	Gold (g/t)	Silver Recovered (oz)	Gold Recovered (oz)	Silver Recovery	Gold Recovery
2008	255,656	318	0.58	1,852,969	3,845	70.9	80.7

Endeavour Silver is planning a program of surface and underground exploration drilling and development to discover and upgrade Reserves and Resources; the nature of narrow vein mining requires continuous development of new Reserves and Resources.

The Guanaceví Mines project produces doré silver bars. However, potentially economic base metals in new deposits currently under development (Alex Breccia and Santa Cruz) may be recovered from Endeavour Silver's re-commissioned flotation circuit. In 2009, Endeavour will be finalizing its reactivation of the flotation circuits.

1.7 CONCLUSIONS AND RECOMMENDATIONS

The Guanaceví Mines project is an operating silver (gold) mine with good potential for the discovery of additional resources and reserves as development and exploration at the mine continue. Endeavour Silver's sustained exploration efforts in the last 3 to 5 years are being rewarded as evidenced by the growth of its mineral resource inventory.

Endeavour Silver's properties in the Guanaceví district, including recently acquired properties and potential new acquisitions, are highly prospective for further resources which may be converted into reserves with additional exploration and development. Given the amount of historic mining in the district, the extent of the mineralization within known mining areas, and the lack of modern exploration programs covering the properties in the past, the properties have the potential to host additional zones of silver and gold mineralization, similar in character and grade to those exploited in the past, outside the present Resource and Reserve base.

As part of its ongoing exploration at the Guanaceví Mines project, Endeavour is budgeted to spend US$1,296,000 on exploration in an effort to continue to expand the resource base through both exploration drilling and development on the property and within the mine during 2009. Micon believes that Endeavour Silver's 2009 exploration budget is both appropriate and warranted.

Micon has audited and accepted the current resource and reserve estimate for the project and makes the following additional recommendations:

1) Micon recommends that Endeavour Silver continues to develop and refine a reconciliation plan for the Guanaceví Mines project. The ability to be able to reconcile the ore mined and milled on a stope-by-stope basis to the original estimates for the stope will be a critical factor in future resource and reserve estimations. The reconciliations will form the basis of reviewing dilution estimates, mining loss and gain estimates, and will assist in reviewing the classification categories of the resources.

2) Micon recommends that Endeavour Silver continues to pursue the necessary paperwork for its on-site laboratory to join a proficiency program of round robin testing such as the one run by CanMet. This would assist the on-site laboratory in assessing its performance for one or more analytical methods independently of internal quality control. Coupled with this program a total of between 5% and 10% of the samples submitted to the on-site assay laboratory should be sent out to a secondary accredited laboratory.

3) In order to minimize contamination between samples, Micon recommends that Endeavour Silver increase the usage of blanks among its control samples. It is further recommended that the blanks must look like the rest of the samples and not be in powder form. If the blanks are already crushed and pulverized, they will escape the critical test at the crushing stage.

4) In pursuit of the multi-metal precious and base metal resources at Alex Breccia and Santa Cruz, Micon recommends that Endeavour Silver conducts detailed metallurgical test work to determine how optimum metal recoveries can be achieved and the economics of running such an operation. It is further recommended that this program takes precedence over further exploration programs to expand the multi-metal resource. Endeavour Silver has conducted in-house metallurgical testing at its facility in Guanaceví for optimizing the circuit for Alex Breccia.

5) Micon recommends that, as further data are generated from mining, more detailed examination of the block modeling parameters should be undertaken to develop better

estimation protocols. This would not only help in future exploration but would also help in infill drilling.

6) Micon recommends that Endeavour Silver incorporate routine mineralogical investigations into its exploration programs to assist in the interpretation of mineralization patterns and to explain variations in recoveries at the mill site.

2.0 INTRODUCTION

At the request of Mr. Godfrey Walton, President and Chief Operating Officer of Endeavour Silver Corp. (Endeavour Silver), Micon International Limited (Micon) has been retained to provide an independent audit and review of the resources and reserve estimation for the Guanaceví Mines project in the State of Durango, Mexico. This NI 43-101 Technical Report is an update of the Endeavour Silver Technical Report dated April, 2008 and posted on the System for Electronic Document Analysis and Retrieval (SEDAR). SEDAR is the filing system developed for the Canadian Securities Administrators (CSA).

The geological setting of the property, mineralization style and occurrences, and exploration history were described in Technical Reports that were prepared by Endeavour Silver (2008), Micon (2007), Range Consulting (2006), Watts, Griffis and McOuat Limited (WGM) (2005), and in various government and other publications listed in Section 21 “References”. The relevant sections of those reports are reproduced herein.

Endeavour Silver has completed 18,483 m of surface and underground diamond drilling on the Guanaceví project since the Endeavour Silver Technical Report was issued in April, 2008. The exploration drilling program to 31 December, 2008 is discussed in Section 11.

All currency amounts are stated in US dollars or Mexican pesos, as specified, with costs and commodity prices typically expressed in US dollars. Quantities are generally stated in metric (SI) units, the standard Canadian and international practice, including metric tons (tonnes, t) and kilograms (kg) for weight, kilometres (km) or metres (m) for distance, hectares (ha) for area, grams (g) and grams per metric tonne (g/t) for gold and silver grades (g/t Au, g/t Ag). Wherever applicable, any Imperial units of measure encountered have been converted to Système International d’Unités (SI) units for reporting consistency. Precious metal grades may be expressed in parts per million (ppm) or parts per billion (ppb) and their quantities may also be reported in troy ounces (ounces, oz), a common practice in the mining industry. Table 2.1 summarizes a list of the various abbreviations used throughout this report

Table 2.1
List of the Abbreviations

Name	Abbreviations
BSI Inspectorate	BSI
Canadian Institute of Mining, Metallurgy and Petroleum	CIM
Canadian National Instrument 43-101	NI 43-101
Carbon in leach	CIL
Centimetre(s)	cm
Comisión de Fomento Minero	Fomento Minero
Day	d
Degree(s)	^{o}
Degrees Celsius	^oC
Digital elevation model	DEM
Dirección General de Minas	DGM
Dollar(s), Canadian and US	$, CDN$ and US$
Endeavour Gold S.A de C.V.	Endeavour Gold
Endeavour Silver Corp	Endeavour Silver

Name	Abbreviations
Gram(s)	g
Grams per metric tonne	g/t
Greater than	>
Grupo Peñoles	Peñoles
Hectare(s)	ha
Internal rate of return	IRR
Kilogram(s)	kg
Kilometre(s)	km
Less than	<
Litre(s)	L
Metalurgica Guanaceví S.A. de C.V.	Metalurgica Guanaceví
Metre(s)	m
Mexican Peso	peso
Micon International Limited	Micon
Million tonnes	Mt
Million ounces	Moz
Million years	Ma
Million metric tonnes per year	Mt/y
Milligram(s)	Mg
Millimetre(s)	mm
Minera Capela S.A de C.V.	Minera Capela
Minera Planta Adelente S.A. de C.V.	Minera Planta Adelente
Minera Santa Cruz y Garibaldi S.A. de C.V.	Minera Santa Cruz
North American Datum	NAD
Net present value	NPV
Net smelter return	NSR
Not available/applicable	n.a.
Ounces (troy)	oz
Ounces per year	oz/y
Parts per billion	ppb
Parts per million	ppm
Percent(age)	%
Quality Assurance/Quality Control	QA/QC
Range Consulting Group, LLC	Range Consulting
Second	s
Specific gravity	SG
System for Electronic Document Analysis and Retrieval	SEDAR
Système International d'Unités	SI
Tonne (metric)	t
Tonnes (metric) per day	t/d
Tonnes (metric) per month	t/m
Universal Transverse Mercator	UTM
Year	y

Micon visited Endeavour Silver's Guanaceví Mines project between December 15 and 18, 2006, and between September 6 and 9, 2008. Micon was assisted during the visits by a number of employees and consultants working for Endeavour Silver including Barry Devlin, P. Geo., Vice President of Exploration, Ing. Luis R. Castro, Endeavour Silver's Exploration Manager based in Durango and Nick Suter, Chief Mine Geologist, Guanaceví. During the first site visit one grab sample was taken from an underground muck pile to independently verify the mineralization on the property. Further sampling was not undertaken because the independent verification of the mineralization has been conducted in previous reports.

The review of the Guanaceví Mines project was based on published material researched by Micon, as well as data, professional opinions and unpublished material submitted by the professional staff of Endeavour Silver or its consultants. Much of the data came from reports prepared and provided by Endeavour Silver or its Mexican subsidiary, Endeavour Gold. The review of the Quality Control/Quality Assurance protocols and resource and reserve estimation parameters was conducted during the site visits to the Guanaceví Mines project. Further review of the resource and reserve parameters and an audit of the resource and reserve estimates were undertaken in February/March, 2009 upon completion of the estimates by Endeavour Silver. The audit of the resource and reserve estimates was conducted in Micon's Toronto (Canada) and Norwich (UK) offices upon receipt of the block models and polygonal resource information.

Micon is pleased to acknowledge the helpful cooperation of Endeavour Silver's management and personnel, all of whom made any and all data requested available and responded openly and helpfully to all questions, queries and requests for material.

The qualified persons responsible for the preparation of this report and the audit of the resource and reserve estimate on the Guanaceví Mines project are Messrs. William J. Lewis, B.Sc., P. Geo., a senior geologist with Micon in Toronto, Dibya Kanti Mukhopadhyay, MAusIMM., a senior mineral resource geologist with Micon based in Norwich (UK), Robert J. Leader, P.Eng., a senior mining engineer with Micon, based in Vancouver and Charley Murahwi, P. Geo., a senior geologist with Micon based in Toronto.

3.0 RELIANCE ON OTHER EXPERTS

Micon has reviewed and analyzed data provided by Endeavour Silver, its consultants and previous operators of the property, and has drawn its own conclusions therefrom, augmented by its direct field examination. Micon has not carried out any independent exploration work, drilled any holes or carried out any extensive program of sampling and assaying on the property. During the first site visit between 15 and 18 December, 2006, Micon did collect one grab sample from an underground muck pile located on the Guanaceví property. The sample was not intended to duplicate the volume of data collected by Endeavour Silver or its predecessors. Prior NI 43-101 reports have focused on verification of the mineralization. The Micon sample was taken to roughly review the grade of the material being shipped to the mill from that particular muck pile.

Micon briefly reviewed the results of a previously published Technical Report of the mineral resource and reserve estimates for the Guanaceví Mines project completed in-house by Endeavour Silver in April, 2008. The April, 2008 resource and reserve estimate has been superseded by a new resource and reserve estimate which was completed by Endeavour Silver in early January, 2009. The January, 2009 estimate conforms to the presently accepted industry standards and definitions for resource estimates and is compliant with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) definitions required by Canadian National Instrument 43-101 (NI 43-101) and, therefore, is reportable as mineral resources and reserves by Endeavour Silver.

While exercising all reasonable diligence in checking, confirming and testing it, Micon has relied upon Endeavour Silver's presentation of the project data in formulating its opinion.

Micon has not reviewed any of the documents or agreements, under which Endeavour Silver holds title to the Guanaceví project or the underlying mineral concessions and Micon offers no opinion as to the validity of the mineral titles claimed. A description of the properties, and ownership thereof, is provided for general information purposes only. The existing environmental conditions, liabilities and remediation have been described where required by NI 43-101 regulations. These statements also are provided for information purposes only and Micon offers no opinion in this regard.

The descriptions of geology, mineralization and exploration are taken from reports prepared by various companies or their contracted consultants. The conclusions of this report rely on data available in published and unpublished reports and information supplied by the various companies which have conducted exploration on the property, and information supplied by Endeavour Silver. The information provided to Endeavour Silver was supplied by reputable companies and Micon has no reason to doubt its validity.

The maps and tables for this report were either produced by Endeavour Silver or reproduced/derived from reports written for Endeavour Silver and the majority of the photographs were taken by two authors of this report during the Micon site visits in December, 2006 and September, 2008.

4.0 PROPERTY DESCRIPTION AND LOCATION

Since January 2005, the Guanaceví Mines project has been owned and operated by wholly - owned subsidiary companies of Endeavour Silver Corp. of Vancouver, Canada.

4.1 PROPERTY DESCRIPTION

The Guanaceví Mines project consists of an industrial complex that includes underground silver - gold mines and a cyanidation ore processing plant in the Guanaceví mining district, Durango State, México. The ore processing facility also comprises a recently commissioned flotation circuit.

The Guanaceví Mines project is in the Guanaceví mining district which covers an area measuring approximately 5 km northeast - southwest by 10 km northwest - southeast and contains more than 50 silver/gold mines. Although only three of the mines are presently operating, there is considerable mining experience available in the area.

Currently the Guanaceví Mines project operates at between 500 t/d and 800 t/d. This Technical Report presents current operating conditions and projections as planned by Endeavour Silver. Since acquiring the property, Endeavour Silver has initiated an aggressive program of exploration, mine preparation, cyanidation plant improvement, and equipment replacement. The Endeavour Silver production schedule includes mining and development of oxide and sulphide ore for processing in parallel circuits of cyanidation and flotation, which are anticipated to reach a combined production capacity of more than 1,000 t/d.

For the year ending December 31, 2008, silver production was 1,852,969 oz and gold production was 3,845 oz. Plant throughput for 2008 was 255,656 tonnes at an average grade of 318 g/t silver and 0.58 g/t gold. In 2008, plant recoveries averaged 70.9% for silver and 80.7% for gold.

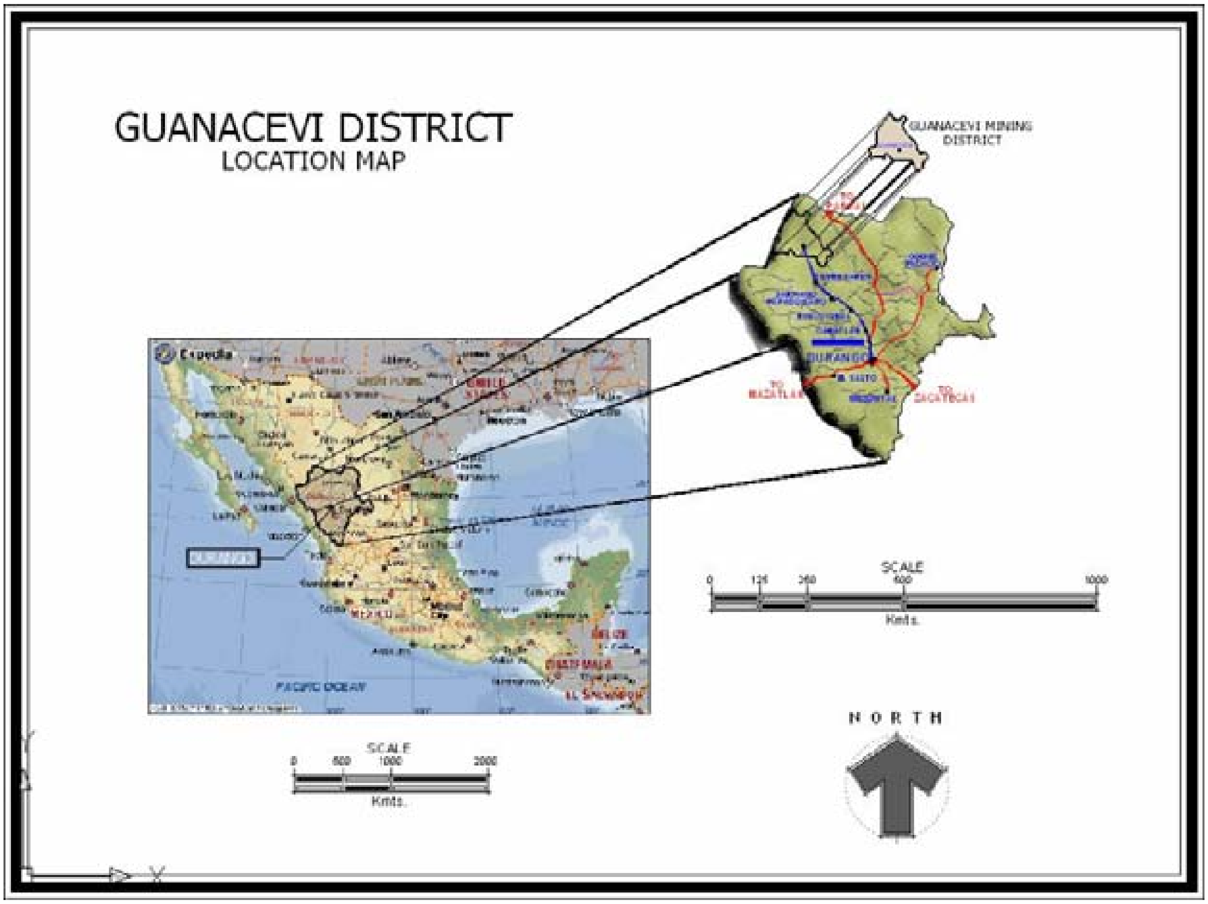
Endeavour Silver's primary short-term goal at Guanaceví is to invest in mine development and plant improvements in order to steadily increase production. Endeavour's longer term goals are to invest in exploration, find new higher grade orebodies and, if successful, evaluate the potential for further plant expansion.

Endeavour's management recently prepared a 2009 production and exploration forecast, based on a new mine plan and new exploration targets.

4.2 LOCATION

The Guanaceví Mines project is located in the northwest portion of the Mexican state of Durango near its border with the state of Chihuahua. The location of the project is shown in Figure 4.1.

Figure 4.1
Guanaceví Mines Project Location Map



The project is located 3.6 km from the town of Guanaceví, approximately 260 km northwest of the city of Durango, which is the state capital. The town of Guanaceví also gives its name to the mining district which surrounds it.

The Guanaceví Mines project is located at the approximate UTM coordinates of 401250 east and 2866500 north in zone 14 NAD 27, or 105°58'20"W longitude and 25°54'47"N latitude.

4.3 MINERAL TENURE

Endeavour Silver holds the Guanaceví Mines project through its 100% owned Mexican subsidiary Endeavour Gold Corporation S.A. de C.V. (Endeavour Gold). Endeavour Gold holds the project through its two 100% owned subsidiaries Minera Plata Adelante S.A. de C.V. (Minera Plata Adelante) and Refinadora Plata Guanaceví S.A. de C.V. (Refinadora Plata Guanaceví). At present, the project is comprised of 36 mineral concessions. See Figure 4.2 for a concession map of the Guanaceví Mines project and Table 4.1 for relevant information regarding the individual concessions. The mineral concessions are not all contiguous and vary in size, for a total property area of 998.25 ha. The annual 2009 concession tax for the Guanaceví properties is estimated to be approximately 175,732 Mexican pesos (pesos), which is equal to about US$11,539 at an exchange rate of 15.23 pesos to US$1.00 dollar.

In Mexico, exploitation concessions are valid for 50 years and are extendable provided that the application is made within the five-year period prior to the expiry of the concession and the bi-annual fee and work requirements are in good standing. All new concessions must have their boundaries orientated astronomically north-south and east-west and the lengths of the sides must be one hundred metres or multiples thereof, except where these conditions cannot be satisfied because they border on other mineral concessions. The locations of the concessions are determined on the basis of a fixed point on the land, called the starting point, which is either linked to the perimeter of the concession or located thereupon. Prior to granting a concession the company must present a topographic survey to the Dirección General de Minas (DGM) within 60 days of staking. Once this is completed the DGM will usually grant the concession. Most of the exploitation concessions which comprise the Guanaceví Mines project are surveyed but do not have their boundaries orientated astronomically north-south and east-west because the concessions predate the introduction of this legislation.

Endeavour Silver has resurveyed most of its property boundaries. At the writing of this report, the Aguaje group, the La Sultana and San Pedro Uno mineral concessions, and the newly acquired concessions in the Milache and San Pedro areas have not been check surveyed.

Prior to December 21, 2005, exploration concessions were granted for a period of 6 years in Mexico and at the end of the 6 years they could be converted to exploitation concessions. However, as of December 21, 2005 (by means of an amendment made on April 28, 2005 to the Mexican mining law) there is only one type of mining concession. Therefore, as of the date of the amendment (April, 2005), there is no distinction between exploration and exploitation concessions on all new titles granted. All concessions are now granted for a 50 year period provided the concessions are kept in good standing. For the concessions to remain in good standing, a bi-annual fee must be paid to the Mexican government and a report must be filed in May of each year which covers the work accomplished on the property between January and December of the preceding year.

4.3.1 Property Agreements

Endeavour Silver has executed a number of agreements regarding the acquisition of the mineral properties, mining rights and processing facility which comprise Guanaceví Mines project. The details of the agreements were extensively reported in the April 16, 2007 Micon Technical Report and the March 31, 2006 Technical Report by Range Consulting.

"Sale and Purchase of Shares with Reservation of Ownership Agreement"

All obligations of this agreement have been completed.

At the writing of this report, Endeavour Silver owns 100% of the Guanaceví Mines project mine and plant through Minera Plata Adelantes' acquisition of Minera Santa Cruz y Garibaldi S.A. de C.V. (Minera Santa Cruz) and Refinadora Plata Guanaceví S.A. de C.V.'s acquisition of Metalurgica Guanaceví S.A. de C.V. In 2006, Refinadora Plata Guanaceví had acquired the remaining 49% interest in the Guanaceví plant through the purchase of 100% of the shares of Metalurgica Guanaceví (MG). The purchase price for 100% of the shares of Metalurgica Guanaceví was US$2.2 million.

Endeavour Silver was able to acquire an early buy-out of the remaining shares of Minera Santa Cruz, which owned 49% of the Santa Cruz silver-gold mine. In May, 2007, the Company issued 1,350,000 shares of the Company with a fair market value of US$5.04 per share to acquire the remaining 49% of outstanding shares in Minera Santa Cruz, which included the final option payment originally due in January, 2008 and 49% of the profits for 2006 and 2007.

Endeavour Silver management elected to accelerate the property buy-out in order to streamline the mining operations and facilitate additional capital investments for the mine development program. Specifically, Endeavour Silver is evaluating the development of two new mines, Alex Breccia and Santa Cruz, on the Guanaceví Mines project and the early buy-out gave the Company the required flexibility to make the capital investments in the last half of 2007.

Under the terms of the original agreement, Endeavour Silver had the option to pay to the shareholders of Minera Santa Cruz the amount of US$2,551,430 and spend US$1 million in exploration to acquire up to a 100% interest in Minera Santa Cruz in accordance with the following schedule:

(a) US$852,143 on January 28, 2005, (paid).
(b) US$423,571 on January 28, 2006, (paid).
(c) US$637,858 on January 28, 2007, (paid).
(d) US$637,858 on January 28, 2008, (paid).

"Minera Santa Cruz Shareholders' Agreement"

This agreement between the shareholders of Minera Santa Cruz and Endeavour Silver outlines the participation of the parties in the development, administration and operation of the Santa Cruz property and the mining concessions of Minera Santa Cruz and its assets. The agreement came into effect upon Endeavour Silver earning a 51% option interest in Minera Santa Cruz by the payment of US$852,143 on January 28, 2005.

This agreement was completed in May, 2007, granting Minera Plata Adelante 100% interest in the exploitation and exploration rights.

"Minera Santa Cruz Assignment of Mining Concession Rights Agreement"

This agreement between Minera Santa Cruz and Endeavour Silver involves the transfer of Minera Santa Cruz's rights, interests and title in its mining concessions to Endeavour Silver in consideration for US$448,571. Of this amount, US$428,571 was paid, as required by the agreement, prior to May 17, 2004, and US$5,000 was to be paid annually on January 28, 2005, 2006, 2007 and 2008. Upon payment of US$5,000 on January 28, 2005, Endeavour Silver earned an undivided option interest of 51% in Minera Santa Cruz's mining concessions with Minera Santa Cruz retaining the remaining 49% interest, until January 28, 2006. On January 28, 2006, Endeavour Silver paid US$5,000 in order not to relinquish its 51% interest in the mining concessions. Upon payment of US$5,000 on January 28, 2006, no further payments were required by Endeavour Silver to maintain its 51% interest. Endeavour Silver had the option to increase its interest from 51% to 100% by payments of US$5,000 on January 28, 2007 and another US$5,000 on January 28, 2008."

This agreement was completed in May, 2007, granting Minera Plata Adelante 100% interest in these mining concessions.

"Contract for Transfer of Rights and Obligations and Sale and Purchase of Assets"

In June, 2005, Endeavour Silver signed this agreement with Minera Capela S.A. de C.V., (Minera Capela) for the transfer of rights and obligations on mining concessions which cover 9 properties from Minera Capela to Endeavour Silver. Minera Capela retains a 3% net proceeds royalty. In consideration Endeavour Silver issued 1,000,000 units at a deemed price of CDN $1.60 per unit. Each unit is comprised of one common share and one share purchase warrant with an exercise price of CDN $2.10 until July 22, 2006 and CDN $2.30 thereafter until July 27, 2007.

"Contract for Transfer of Rights"

In July, 2005, Endeavour Silver through its subsidiary Minera Plata Adelante signed an option agreement for the transfer of rights from mining concessions relating to two properties, namely Porvenir Dos and La Sultana. In consideration, Endeavour Silver paid US$137,500 according to the following schedule:

(a) US$25,000 upon signing of agreement, (paid).
(b) US$12,500 on December 30, 2005, (paid).
(c) US$100,000 on December 30, 2006,.(paid)

In August, 2005, Endeavour Silver through its subsidiary Minera Plata Adelante signed an option agreement for the exclusive right to investigate and to explore 4 properties known as the La Prieta Group. In consideration, Endeavour Silver paid US$100,000 as follows:

(a) US$15,000 on ratification date, (paid).
(b) US$15,000 by six months of ratification date, (paid).

(c) US$70,000 by twenty-four months of ratification date, (paid).

Both of these agreements were completed in 2007, granting Minera Plata Adelante 100% interest in these mining concession rights.

"Option-to-Purchase Agreements – San Pedro District"

In 2007, Endeavour Silver announced acquisition of two new exploration property positions in the Guanaceví district. The new acquisitions, Milache and San Pedro, are both located in the San Pedro sub-district of the Guanaceví mining district. In addition to the concessions already held (San Pedro Uno and La Sultana), Endeavour now controls approximately 456 hectares in the San Pedro area (Table 4.1). These property acquisitions have excellent exploration potential but do not have an immediate impact on Endeavour Silver's mine operation at Guanaceví.

The Milache properties (74.2 hectares) are located along the trend of the Santa Cruz silver vein approximately 2 kilometres northwest of the operating Porvenir mine (Figure 4.2). The properties consist of the El Milache, El Desengaño and Veronica concessions (Table 4.1). They were acquired from Francisco Barraza on November 27, 2007. Endeavour Silver can acquire a 100% interest by paying $50,000 and issuing 30,000 shares upon signing the agreement and paying $50,000 after 18 months.

The 15 San Pedro properties, totaling 330 hectares, are located about 6 kilometres northwest of the Porvenir mine (Table 4.1; Figure 4.2). On December 12, 2007, Endeavour Silver acquired an option to purchase a 100% interest in the San Pedro properties from Ignacio Barraza Duarte by paying 120,000 common shares and issuing 60,000 warrants to purchase 60,000 shares at US$4.69 within a 1 year period upon receipt of regulatory approval and a further 570,776 shares within a 24 month period. The vendor will retain a 1% net smelter royalty on mineral production. In addition, the Company will provide the vendor with up to US$400 per metre to advance the Buena Fe adit (Nacho Barraza's tunnel) during the 24 month option period. Any ores produced from this tunnel will be used to repay Endeavour's investment, after which the net profits will be shared equally (50/50) with the vendor. In this way, Endeavour anticipates generating positive cash flow to help pay for the exploration programs on the properties.

"Contract of Assignment of Mining Exploitation Rights"

In October, 2005, an agreement was executed between Minera Tayahua, S.A. de C.V. (Minera Tayahua) and Endeavour Silver through its subsidiary Minera Planta Adelante. The agreement provided for the exclusive right to explore and to mine the El Porvenir property. Endeavour Silver was committed to incur a minimum of US$100,000 for each quarter in expenditures for exploration, development and mining. Additionally during the first two years of the five year term of the agreement, Endeavour Silver was to incur US$500,000.

Figure 4.2
Guanaceví Mines Project Mineral Concessions Map

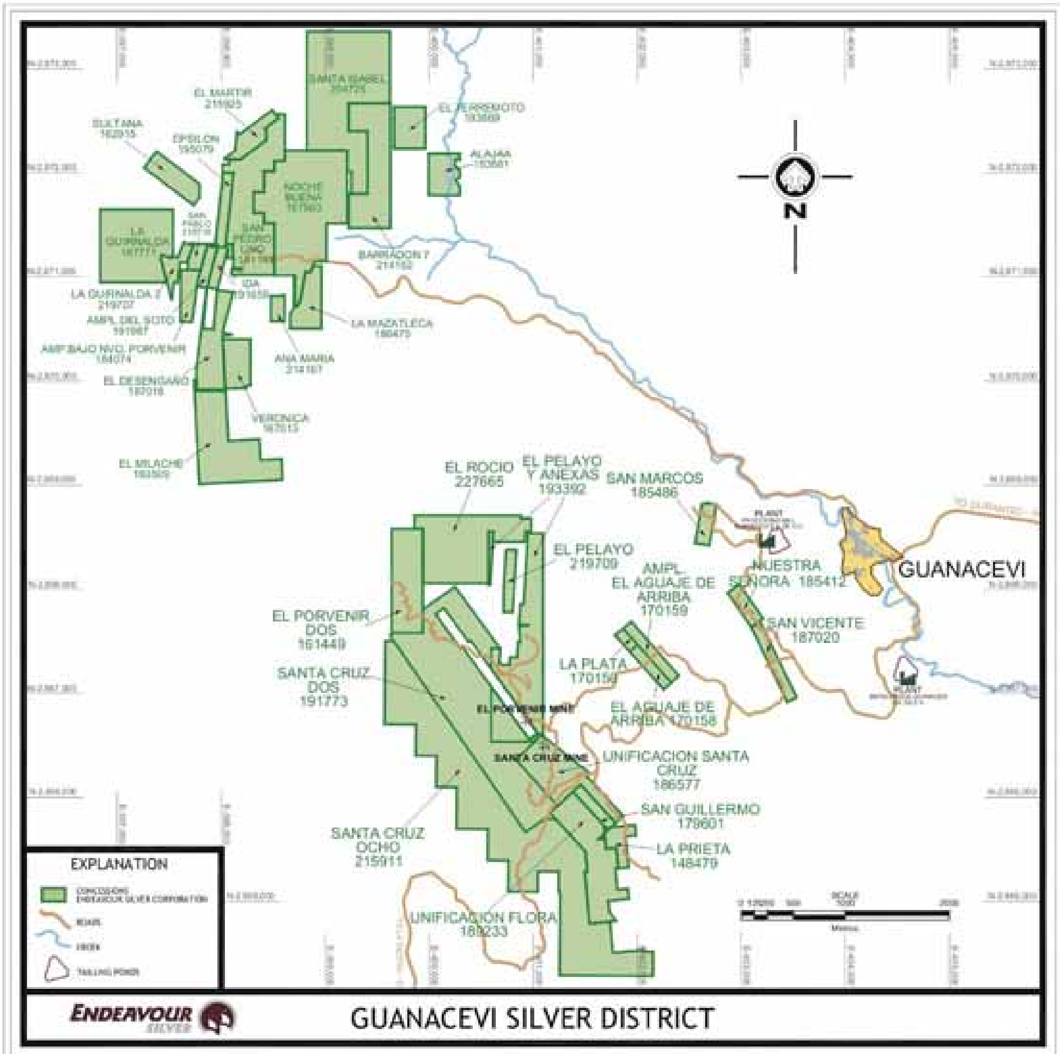


Table 4.1
Guanaceví Mines Concessions Controlled by EndeavourSilver

Lot Name	Title No.	Term of Mineral Concession		Hectares	Annual Taxes (pesos) 2009	
		From	To		1st Half	2nd Half
SANTA CRUZ DOS	191773	12/19/1991	12/18/2041	113.54	$12,633	$12,759
EL PELAYO Y ANEXAS	193392	12/19/1991	12/18/2041	56.25	$6,259	$6,322
UNIF. SANTA CRUZ	186577	4/24/1990	4/23/2040	28.59	$3,181	$3,213
SAN GUILLERMO	179601	12/11/1986	12/10/2036	5.00	$556	$562
UNIFICACION FLORA	189233	12/5/1990	12/4/2040	36.55	$4,067	$4,108
SAN MARCOS	185486	12/14/1989	12/13/2039	5.47	$608	$614
SAN VICENTE	187020	5/29/1990	5/28/2040	8.00	$890	$899
NUESTRA SENORA	185412	12/14/1989	12/13/2039	5.60	$623	$629
SAN PEDRO UNO	191143	4/29/1991	4/28/2041	49.84	$5,546	$5,601
SANTA CRUZ OCHO	215911	3/19/2002	3/18/2052	165.63	$5,237	$5,289
EL PELAYO	219709	4/3/2003	4/2/2053	5.89	$186	$188
EL PORVENIR DOS	161449	4/10/1975	4/9/2025	30.00	$3,338	$3,371
LA SULTANA	162915	8/8/1978	8/7/2028	11.59	$1,289	$1,302
EL AGUAJE DE ARRIBA	170158	3/17/1982	3/16/2032	5.00	$556	$562
A. EL AGUAJE DE ARRIBA	170159	3/17/1982	3/16/2032	7.00	$779	$787
LA PLATA	170156	3/17/1982	3/16/2032	2.00	$223	$225
LA PRIETA	148479	10/29/1967	10/28/2017	7.00	$779	$787

Lot Name	Title No.	Term of Mineral Concession		Hectares	Annual Taxes (pesos) 2009	
		From	To		1st Half	2nd Half
EL MILACHE	163509	10/10/1978	10/9/2028	42.89	$4,772	$4,820
VERONICA	167013	8/11/1980	8/10/2080	11.76	$1,309	$1,322
EL DESENGAÑO	187018	5/29/1990	5/28/2004	19.47	$2,167	$2,189
EL ROCIO	227665	7/28/2006	7/27/2056	51.23	$389	$393
AMPL. AL BAJO DEL NVO. P.	184074	2/15/1989	2/14/2039	7.31	$813	$821
LA MAZATLECA`	186475	4/2/1990	4/1/2040	14.18	$1,578	$1,594
LA GUIRNALDA	187771	9/17/1990	9/16/2040	46.76	$5,203	$5,255
LA GUIRNALDA 2	219707	4/3/2003	4/2/2053	5.99	$189	$191
SAN PABLO	216716	5/28/2002	5/27/2052	3.40	$107	$108
ANA MARIA	214167	8/18/2001	1/17/2051	3.23	$102	$103
EL MARTIR	215925	4/2/2002	4/1/2052	8.87	$280	$283
AMPL. DEL SOTO	191987	12/19/1991	12/18/2041	4.00	$445	$449
IDA	191659	12/19/1991	12/18/2041	4.91	$546	$551
EPSILON	195079	8/25/1992	8/24/2042	7.06	$786	$794
EL TERREMOTO	193869	12/19/1991	12/18/2041	12.00	$1,335	$1,348
ALAJAA	183881	11/23/1988	11/22/2038	11.21	$1,247	$1,259
BARRADON 7	214162	8/18/2001	1/17/2051	37.14	$1,174	$1,186
SANTA ISABEL	204725	4/25/1997	4/24/2047	84.00	$9,347	$9,440
NOCHE BUENA	167563	11/26/1980	11/25/2030	79.90	$8,890	$8,979
	TOTAL			998.25	$87,429	$88,303

Endeavour Silver was to mine from a minimum of 9,000 tonnes to a maximum of 27,000 tonnes per quarter. The term of the agreement was for five years but could be extended by another five years by mutual agreement by both parties. Minera Tayahua would receive a 3% net smelter return from production. Minera Tayahua terminated the contract at the end of August, 2008.

"Compensation and/or Indemnification Contract for the Temporary Occupation of Cooperative Land"

In November, 2005, Endeavour Silver entered into an agreement, with the local Ejido for the temporary surface access rights to certain land for the purpose of exploration in mining blocks covered by the mining concessions. In consideration, Endeavour Silver will pay an annual fee of Mexican pesos 10,000 which will increase by the rate of inflation plus 2% for a term of 15 years.

Since the Guanaceví Mines project is composed of a number of exploitation concessions upon which mining has previously been conducted, all of the exploration work continues to be covered by the environmental permitting already in place and no further notice of work is required by any division of the Mexican government.

In order to begin an exploration program on an exploitation concession upon which no substantial mining has been conducted, Endeavour Silver would be required to file a "Notice of Initiation of Exploration Activities" with the local authorities to inform them of the scope and environmental impact of the exploration work. Also, other permits, such as a permit to use the local municipal garbage dump, may be required.

Endeavour Silver reports that it is current in meeting the legal obligations and requirements of Mexican mining and environmental laws and regulations including assessment work, property taxes and operating permits.

4.4 PROPERTY OWNERSHIP

In addition to the mineral rights, Endeavour has agreements with various private ranch owners and a local Ejido (El Hacho) that provide access for exploration and exploitation purposes.

4.5 ENVIRONMENTAL, PERMITS AND APPROVALS

Endeavour Silver reports that it is in compliance with monitoring environmental aspects and with applicable safety, hygiene and environmental standards to maintain the balance of the ecosystem.

4.5.1 Safety

During 2008, advances were made in safety at Guanacevi with 2,055 hours of training undertaken at the mines and 4,000 hours programmed for 2009. A new safety building was constructed and a safety manager was hired as well as promoting a mine rescue trainer. A fully functional mine rescue team is on site with 16 people trained. Mine Rescue training is ongoing but included first aid, fire fighting, ventilation, use of Draeger re-breathing equipment, knots, mine exploration, practical mine recovery and smoke scenarios. In 2008 there were 13 lost time accidents although almost all were low risk accidents. This is expected to reduce significantly in 2009.

The safety department undertakes all inductions of new personnel to train them in the basics of mine and plant safety and also monitors housekeeping and sign installation. Safety talks are given at the beginning of each shift to reinforce safety in the workplace. Safety training at the mines includes the Five Point Safety method, first aid, use of PPE (personal protective equipment – helmet, safety glasses, steel toe boots, gloves, hearing protection), explosives handling, barring down and identification of areas requiring support, identification of risks, lock-out/tag-out of equipment, prevention and fighting of fires, fetid gas and practical mine evacuation training (undertaken without notice during a working shift), dust in the workplace. Similarly, the plant safety training includes Five Point Safety, cyanide handling, correct use of tools, working in confined spaces, crushing and milling risk identification, fire fighting and laboratory safety as well as work at elevated heights and welding hazards.

Also during 2008 detailed safety audits began that include management and workers undertaking audits, taking photographs of the issues, assigning someone to fix each issue within a time limit. These activities are ongoing throughout the year. In 2009, some new aspects to safety are being introduced, including the Safety Monitor system (begun) under which 10% of the workforce is trained in additional safety elements with the intent that they become their “brother’s keeper” aiding the safety department by being more active in the workplace. Safety is also an element in the production bonus system and in 2009 management introduced the Chairman’s and President’s Safety Awards (annual and quarterly safety awards) to help incentivise all personnel to work safely.

4.5.2 Environmental

At Guanacevi housekeeping improvements were made in 2008, more green areas were added and trees were planted; a plant nursery is presently being built. Erosion control and grass planting were undertaken on the tailings dam toe by environmental staff. Several areas of scrap metal were cleaned up and only one central area now exists with non-useable scrap sold off regularly. A new temporary storage area for toxic waste was built and the waste oils, dirty filters, contaminated earth and batteries generated are disposed of correctly at an official disposal centre in Zacatecas. Potable water is treated on site and quality is monitored and certified inside the acceptable limits of purity for human consumption. Similarly the drainages around the site are also sampled by a third party environmental company monthly and results sent to the Company. In-house and external environmental audits by SERMARNAT and PROFEPA are undertaken, with 100% compliance achieved in 2008.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

The Guanaceví properties are readily accessible from the city of Durango, capital of the Mexican state of Durango, via paved roads. Access is primarily gained by taking Mexican State Highway 45 north to the town of Canatlan then continuing along the paved highway that connects to Santiago Papasquiaro, then to Tepehuanes, and ending at the town of Guanaceví. The total distance between Durango and the town of Guanaceví is approximately 320 km and requires about four and one half hours drive. The city of Durango is an old colonial city (founded in 1563) which served as the political and ecclesiastical capital of the Nueva Vizcaya province of New Spain until 1823. Minerals are the chief product but the city is also an agricultural, commercial and tourist centre. The city has approximately 427,000 inhabitants (2000) and is the closest major population centre to Guanaceví. Durango has an international airport with numerous regional flights to other major Mexican cities as well as international flights to Los Angeles and to the southeast USA.

The Guanaceví properties lie 3.6 km from the town of Guanaceví which was founded in 1535. From the town of Guanaceví, a well conditioned dirt road leads southwards a few kilometres to the flotation and cyanidation plant and Endeavour offices and then an additional 5 km further to the Santa Cruz and Porvenir mines. Figure 5.1 is a view of part of the town of Guanaceví from the road leading to the Santa Cruz and Porvenir mines. Figure 5.2 is a view of the terrain in the area of mine and mill facilities.

The population of Guanaceví is approximately 2,000, and the town has all modern amenities, including primary schools and a secondary school (high school), various stores, restaurants and a three star hotel. Although the town does not have a bank, it does have a "casa de cambio" (foreign exchange house) and an ATM machine. The town, mine and plant are connected to the national land-base telephone system that provides reliable national and international direct dial telephone communications as well as stable internet connections and satellite television. Guanaceví has a small airport with a 1,000 m long dirt airstrip capable of handling light aircraft.

Although various people are engaged in town services, the town is economically dependent on the mining and milling operations within the district.

5.2 INFRASTRUCTURE

The industrial water for the plant is recycled, with the make-up water (60,000 m^3/year of fresh water) from a nearby underground mine. Electrical power from the Federal Power Authority (34 kV) supplies both the plant and mine.

Figure 5.1
Partial View of the Town of Guanaceví

Figure 5.2
View of the Terrain between the Area of Mine and Mill Facilities at Guanaceví

Endeavour Silver is currently assessing its existing tailings area but believes that there is sufficient area for many years of production. Endeavour Silver has also negotiated access and the right to use surface lands sufficient for many years of operation.

5.3 CLIMATE, VEGETATION

The dry season is from October through June with the wet season from July to September. The total average annual rainfall varies from about 65 to 105 mm. Winter temperatures vary from a maximum of 15°C to a minimum of -1.4°C, while summer temperatures range from a minimum of 20°C to a maximum of 30°C. The climate poses no limitations to the length of the operating season. Freezing temperatures can occur overnight but quickly warm to above freezing during daylight hours. Occasional snow does occur in the area but quickly melts on all but the most protected slopes.

The mountains are predominately covered with evergreen forests around Guanaceví. Wildlife in the area consists of deer, badger, foxes, coyotes, squirrels, rabbits and mice.

5.4 PHYSIOGRAPHY, HYDROLOGY

The town of Guanaceví is located on the altiplano at about 2,170 m elevation, east of the Sierra Madre Occidential mountain range within low, rounded mountains showing a relief of about 650 m from the valley bottoms near 2,100 m to the crests at 2,750 m.

5.5 LOCAL RESOURCES

At each of the mine sites, the water required is supplied from the dewatering of the mines. The tailings facility at the plant is set up to recycle all water back into the ore processing plant.

Apart from offices, warehouses and other facilities, Endeavour Silver also provides dormitories and limited housing facilities for employees working on a rotational work schedule. Much of the labour work force lives in Guanaceví and nearby communities. The area has a rich tradition of mining and there is an ample supply of skilled personnel sufficient for both the underground mining operations and the surface facilities.

6.0 HISTORY

6.1 GUANACEVÍ MINING DISTRICT AND THE GUANACEVÍ PROPERTY

Mining has played an important role in Mexico since pre-historic times, but it entered a period of rapid expansion after the Spanish conquest when rich mineral deposits were found. The wealth found in these early mines served as incentives for the early colonizers to locate to remote and barely accessible portions of the county.

It is not known if the indigenous peoples or the Spanish colonists first began mining in the Guanaceví district but mining extends back to at least 1535 when the mines were first worked by the Spanish. By the start of the 18th century, Guanaceví had become an important mining centre in the Nueva Vizcaya province of Nueva España (New Spain) as reported by Alexander von Humboldt in his travels through Nueva España. However, the Guanaceví mining district is not as well known today.

6.2 HISTORICAL EXPLORATION

The extent of historical exploration on the property is relatively unknown. Prior to management by Endeavour Silver, production was coming from three mines without the benefit of any systematic exploration drilling, geological mapping or mine planning.

At the start of the 1960's Engineer P. Sanchez Mejorado of Peñoles recommended more exploration to prove up the resource estimate of 360,000 t grading 500 g/t silver at the time. Engineer P. Sanchez Mejorado mapped and sampled the mine underground and recommended diamond drilling below Level 13. This drilling was completed in 1983, with a reported additional 229,000 t outlined grading 1.20 g/t gold and 525 g/t silver over an average thickness of 4.66 m.

Watts, Griffis and McOuat Limited (WGM) noted in its 2005 Technical Report that "The exploration works conducted by Peñoles consisted of channel sampling across the mineralized zone coupled with short lateral winke diamond drill holes (diameter approximately 1 inch) from the vein structure workings and detailed surveying and geological mapping of the underground workings. The limited exploration by Peñoles was well conducted, and blocked out several areas of potential resources." However, WGM stated further that it believed that more than half of the areas of potential resources except for those below the water table (below Level 13) had been mined out.

Pan American Silver Company (Pan American) conducted an eight-month evaluation program in 2003 that consisted of an extensive, systematic, underground channel sampling and surveying program and the drilling of three diamond drill holes in the North Porvenir area, holes SSC-01, SSC-02 and SSC-03.

Since taking over in 2004 through December 31, 2008, Endeavour has completed 322 diamond drill holes totalling 77,907 metres and 22 reverse circulation drill holes totalling

2,977 metres on the entire Guanaceví Mines project. A total of more than 20,987 samples have also been collected and submitted for assay.

Of this total, approximately 60,840 metres of diamond drilling in 231 holes have been completed on the Santa Cruz vein structure in the Porvenir mine area (Table 6.1). Holes were drilled from both surface and underground drill stations.

Figures 6.1 and 6.2 are a surface drill hole plan map and a long section of the Santa Cruz vein on the Guanaceví property showing the drill hole coverage for the four areas of interest in the mine for further exploration, as well as further extraction of any economic mineralization.

Table 6.1
Drilling Summary for Santa Cruz Vein Structure at Guanaceví Mines Project (through December, 2008)

Project	Diamond Drill Holes	Metres
North Porvenir	133	38,289
Porvenir Dos	24	5,062
La Prieta	10	1,974
Santa Cruz	48	12,412
Alex Breccia	16	3,103
Total	**231**	**60,840**

Figure 6.1
Surface Drill Hole Plan Showing the Drill Hole Coverage of the Santa Cruz Vein for the Guanaceví Mines Project

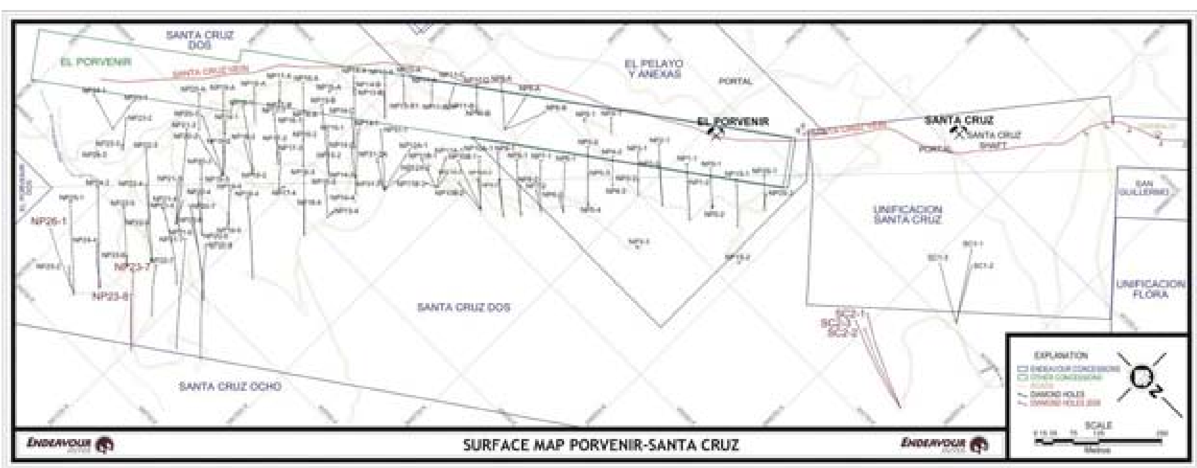
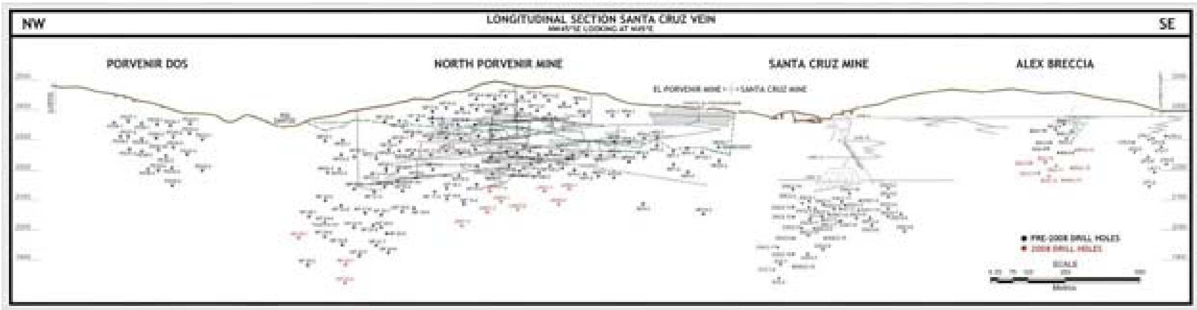


Figure 6.2
Long Section Showing Drill Hole Coverage for the Santa Cruz Vein of the Guanaceví Mines Project



6.3 HISTORIC MINING

Historic mining was reported in the April 16, 2007 Micon Technical Report and is reproduced here for the sake of continuity.

The Guanaceví mining district and the Guanaceví project area are riddled with mine openings and old workings, in a somewhat haphazard fashion near surface, representing the earliest efforts at extraction, and more systematic at depth, which is indicative of later, better organized and engineered mining. Associated with these openings and workings is a number of ruins, which represent the mine buildings, chapels and residences of the inhabitants and indicate the wealth of the mining district during its past. See Figure 6.3 for a photograph of an old mine waste dump located in the trees, alongside the road to the Santa Cruz and Porvenir mines.

The vast bulk of the material which has been extracted from underground operations through the tunnels, shafts and winzes is scattered over the hillsides in waste dumps and beneath the foundations of the ruins and modern buildings. Historically, individual veins or deposits had separate owners and, in the case of some of the larger veins or deposits, had several owners along the strike length which resulted in a surfeit of adits and shafts and very inefficient operations.

The mines within the Guanaceví mining district have been developed primarily by using open stope/shrinkage and cut and fill underground mining methods. Both the ground conditions, which vary from good to poor, and the deposit geometries tend to favour the higher cost, cut and fill mining method with development waste used for backfill.

Figure 6.3
Old Mine Waste Dump Located alongside the Road to the Santa Cruz and Porvenir Mines

6.4 HISTORIC PRODUCTION

Historic production was reported in the April 16, 2007 Micon Technical Report and is reproduced here for the sake of continuity.

Mining in the Guanaceví district extends back to at least 1535 when the mines were first worked by the Spanish.

During the late sixteenth century silver production accounted for 80% of all exports from Nueva España (New Spain), although, by the mid-seventeenth century silver production collapsed when mercury, necessary to the refining process, was diverted to the silver mines of Potosí in present day Bolivia. Collapse of the seventeenth century mining led to widespread bankruptcy among the miners and hacienda owners; however, in the latter half of the seventeenth century silver mining began to recover in Nueva España. By the start of the 18th century, Guanaceví had become an important mining centre in the Nueva Vizcaya province.

The peasant uprisings of 1810 to 1821 were disastrous to the Mexican mining industry with both the insurgents' soldiers and royalist troops all but destroying the mining production in Mexico, and the Guanaceví mining district was not spared during this period.

The district has experienced several periods of bonanza-grade production including the operation of a mint in 1844. The Guanaceví mining district, however, reached its greatest period of activity at the start of the 20th century when five processing plants were in operation and more than 15 mines were in production.

J.R. Southworth in his 1905 volume entitled "The Mines of Mexico" mentions that Guanaceví is a very rich district and "that many of the largest capitalists of New York have enormous interests in its mines". Southworth mentions that the Barradán, Hacienda Wilson, El Carmen, Nueva Australia and Hacienda Avila were all good mines and properties within the Guanaceví mining district. However, Southworth also mentioned that "considering the large number of once famous properties in Guanaceví, there are comparatively few now in operation. The cessation of development has been due to various causes, though usually not from lack of ore."

The vast majority of production came prior to the 1910 Mexican Revolution with the Guanaceví mining district being known for its high silver grades. Previous reports noted that the official production records indicate a total value of 500 million pesos equivalent to approximately 500 million ounces of silver and silver equivalents, with a present day value of about US$3.25 billion, has been extracted from this mining district. This makes the Guanaceví district one of the top five silver mining districts in Mexico on the basis of past production.

Since the 1910 Revolution, production has been sporadic. The Guanaceví Mining Company operated from the 1930s until production ceased in 1942. Daily output was approximately 110 tonnes per day (t/d).

In the 1970, the Comisión de Fomento Minero (Federal Mining Commission) (Fomento Minero), a Federal government agency charged with the responsibility of assisting the small-scale Mexican mining industry, constructed a 400 t/d flotation plant, now the Metalurgica Guanaceví plant. The plant has been expanded over time to its present capacity of 800 t/d for the cyanide circuit. In the early 1990s, Fomento Minero started construction of a 600 t/d cyanide leach plant but construction ceased when it was only 30% complete due to the lack of funding.

In 1992, Metalurgica Guanaceví, a private company, purchased the Fomento Minero facilities and completed the construction of the leach plant. During 2002, the flotation plant production ranged from 170 t/d to 250 t/d coming from the three mines: Santa Cruz, Barradon and La Prieta mines, with approximately 700 to 800 t/d of additional feed purchased from other small scale operations.

Prior to Endeavour Silver management, production was coming from three mines without the benefit of any systematic exploration drilling, geological mapping or mine planning. During the 1920s, Peñoles Mining Company (Peñoles) purchased several mines including the Santa Cruz mine, where from 1921 to 1924 the 330 m inclined shaft and several kilometres of underground workings on Levels 6, 7, 8, 10, 11 and 13 were developed that partially explored the vein ore shoots. However, the exploration results gave little promise to Peñoles at that time. The mine entered into a passive state and Peñoles rented the mines to various contractors who have, up to 2005, slowly mined the more accessible mineralization.

In 2004, Endeavour Silver completed a final agreement with the Mexican partner that owned the Metalurgica Guanaceví plant and shareholders of Minera Santa Cruz y Garibaldi S.A. de C.V. (Minera Santa Cruz) to take over the Santa Cruz mine. Ramping was initiated in 2004 to intersect the area where Pan American Silver had drilled three holes in North Porvenir – El Porvenir area. In six months the ramp was driven and approximately 10,000 t were mined from this new zone. Through 2005, approximately 1,524 m of ramping, 1,122 m of drifting and 466 m of raising were completed and 102,617 t were milled.

While it is evident that historical production has occurred in the Guanaceví mining district since pre-colonial times and early production records from the Spanish colonial period probably exist in the Archive of the Indies (Archivo des Indies), in Seville, Spain, in the records of the Viceroyalty of Mexico or in the records for Vizcaya province of Nueva España, Micon did not have access to any historical records of the actual silver and gold production.

Historical production for the years 1991 to 2003, at the Guanaceví Mines project, prior to Endeavour Silver's involvement, is roughly estimated in Table 6.2.

Table 6.2
Summary of the Production for the Guanaceví Property (1991 to 2003)

Year	Tonnes	Silver (g/t)	Gold (g/t)
1991 (from July)	2,306 (est.)	470 (est.)	1.0 (est.)
1992	10,128	340 (est.)	1.3 (est.)
1993	12,706	320 (est.)	0.8 (est.)
1994	18,256	190 (est.)	0.5 (est.)
1995 (until May)	5,774	280 (est.)	0.5 (est.)
1996	11,952	315	0.74
1997	13,379	409	0.87
1998	11,916	550	0.92
1999	6,466	528	0.84
2000	18,497	538	1.01
2001	13,150	510	1.09
2002	NA	NA	NA
2003	1,531	550	1.00
Total 1991 to 2003	**126,061**	**417**	**0.90**

A summary of the production for the years 2005 through to 2008, after Endeavour Silver became involved is presented in Table 6.3.

Table 6.3
Summary of Production for the Guanaceví Property (2005 through 2008)

Year	Tonnes	Silver (g/t)	Gold (g/t)	Oz Silver recovered	Oz Gold recovered	Recovery Ag (%)	Recovery Au (%)
2005	102,617	385	0.88	948,323	2,332	74.7	80.5
2006	117,255	449	0.90	1,352,661	2,493	80.0	73.0
2007	226,295	375	0.70	1,907,795	3,957	69.4	75.7
2008	255,656	318	0.58	1,852,969	3,845	70.9	80.7

For the year ending 31 December, 2008, the total ore processed through the Guanaceví Mines project plant was 255,656 tonnes grading 318 g/t silver and 0.58 g/t gold.

6.5 HISTORIC MINERAL RESOURCES AND MINERAL RESERVES

Prior to this report, the last Resource and Reserve estimate for the Guanaceví Mines project was reported in a Technical Report by Endeavour Silver dated April 15, 2008 and posted on SEDAR.

The Resource and Reserve estimates as of December 31, 2007 in the Endeavour Silver Technical Report are summarized in Tables 6.4 to 6.6. These Resource and Reserve estimates conducted by Endeavour Silver comply with the current CIM standards and definitions for estimating resources and reserves as required by NI 43-101 regulations.

Since the last Resource and Reserve estimate was completed, Endeavour Silver has conducted further diamond drilling and underground development and has completed a new resource and reserve estimate for the Guanaceví Mines project. Endeavour Silver's new Resource and Reserve estimate and the discussions related to the new estimate are located in Section 17.0 of this report.

The December 31, 2007 Resources and Reserves estimates were carried out using Vulcan computer software. The Reserves were derived from the figures contained in the Resource estimate. As recommended by Micon, a 3-D modeling technique, as opposed to the polygon method used for the December 31, 2006 Reserves, was used.

For the Porvenir Zone, 3-D wireframes (including any hanging wall splays) were filled with blocks. Parent blocks were sub-blocked to fill the wireframe completely and to remove any volume discrepancy arising out of the difference between the wireframe volume and the block model volume. Sub-blocks created measured 5 m by 5 m by 0.25 m. The method used by Endeavour Silver for silver and gold grade interpolation was Inverse Distance with a power of 3. The minimum number of samples used in the grade estimation of each block was 3 and maximum 25. The cut-off grade for blocks to be included as Resources was 200 g/t silver, with the vein modeled to a minimum width of 2.2 metres.

Table 6.4
Measured and Indicated Resources for the Different Zones as of December 31, 2007 (Cut-off Grade 200 g/t Silver)

Resources	Tonnes	Silver (g/t)	Gold (g/t)	Ounces Ag	Ounces Au
Measured					
Porvenir	15,046	224	0.35	108,524	167
Total Measured	**15,046**	**224**	**0.35**	**108,524**	**167**
Indicated					
Porvenir	537,452	319	0.81	5,518,207	13,928
Porvenir Dos	220,000	349	0.66	2,470,000	5,000
Santa Cruz	330,000	391	0.69	4,210,000	7,000
Alex Breccia	100,000	314	0.62	1,050,000	2,000
Total Indicated	**1,187,452**	**347**	**0.73**	**13,248,207**	**27,928**
Total Measured + Indicated	**1,202,498**	**345**	**0.73**	**13,356,731**	**28,095**

Table 6.5
Inferred Resources for Different Zones as of December 31, 2007 (Cut-off Grade 200 g/t Silver)

Resources	Tonnes	Silver (g/t)	Gold (g/t)	Ounces Ag	Ounces Au
Inferred					
Porvenir	494,754	296	0.62	4,712,517	9,862
Santa Cruz	220,000	379	0.62	2,670,000	4,000
Alex Breccia	130,000	277	0.50	1,130,000	2,000
Total Inferred	**844,754**	**313**	**0.58**	**8,512,517**	**15,862**

In order to convert Resources into Reserves an average 15% dilution factor at a grade of 90 g/t Ag and 0.18 g/t Au was selected as a reasonable figure to apply to the "in-situ" measured and indicated resources estimated by Endeavour Silver staff as of December 31, 2007. In addition, after reviewing the stope geometry and mining practices at the Porvenir mine, it was determined that for an average stope the extraction ratio should be approximately 95% (ore loss of 5 % applied to diluted Resources). Using limits defined by the mine engineering and geology departments diluted, recoverable Reserves were estimated. The Proven and Probable Reserves represented only that portion of the Porvenir deposit for which Endeavour Silver had a mine plan in place. The Proven and Probable Reserves are in addition to the Resources reported above and are presented in Table 6.6.

Table 6.6
Diluted In-Situ Recoverable Proven and Probable Reserves for the Porvenir Zone (Cut-off Grade 250 g/t Silver)

Reserves	Diluted "In-Situ" & Recoverable Tonnes & Grade[1]				
	Tonnes	Silver (g/t)	Gold (g/t)	Ounces Ag	Ounces Au
Proven					
Porvenir Mine	82,941	447	0.65	1,192,567	1,724
Total Proven	**82,941**	**447**	**0.65**	**1,192,567**	**1,724**
Probable					
Porvenir Mine	1,140,933	354	0.61	13,002,592	22,309
Total Probable	**1,140,933**	**354**	**0.61**	**13,002,592**	**22,309**
Total Proven + Probable	**1,223,874**	**360**	**0.61**	**14,195,159**	**24,033**

[1] 15% dilution factor applied at a grade of 90 g/t Ag and 0.18 g/t Au; extraction of 95% used for recoverable reserves; data used for the reserve estimate were as of October 31, 2007. Thus for an effective date of December 31, 2007, November through December, 2007 production has been subtracted from the reserve estimate.

7.0 GEOLOGICAL SETTING

The geological setting of the Guanaceví property is described in detail in the Range March, 2006 and Micon April, 2007 NI 43-10 1 Technical Reports. The following description of the geological setting has been excerpted from the April, 2007 Micon report.

7.1 REGIONAL GEOLOGY

The rock types of the district can be divided into three principal stratigraphic groups based on stratigraphic studies by the Consejo de Recursos Minerales and Endeavour Silver drill core-based observations during its exploration programs.

7.1.1 Guanaceví Formation

The oldest unit in the district is the Guanaceví Formation, a polymictic basal conglomerate composed of angular to sub-angular fragments of quartz and metamorphic rocks set in a sandy to clayey matrix within sericitic and siliceous cement. It is assigned to the Upper Jurassic or Lower Cretaceous on the basis of biostratigraphic indicator fossils mentioned but not detailed in the Durango State Geological Reference Report (1993). At least 450 m of thickness has been reported in the Guanaceví area for this basal unit, the lower contact of which has not been observed. In most areas, the upper contact is structural on high-angle normal faults but, in the San Pedro area, the upper contact is abrupt from Guanaceví conglomerate rocks to fairly fresh, dark coloured andesitic flows of the Lower Volcanic Sequence that appear conformable to the underlying Guanaceví Formation. The Jurassic assignment of the Guanaceví Formation has been in question, and at least two reports in the 1990's consider it to be Tertiary (Durning and others, unpublished reports). A Tertiary age for the unit mitigates the idea of a transitional unit persisting through the Cretaceous; alternatively, it is possible that paraconformities in the package may be present but unreported to date.

Regional studies in Mexico demonstrate that Mesozoic rocks basal to the Tertiary section are strongly deformed with the development of sericitic alteration, shearing and microfolding in local shear zones and stronger deformation associated with overthrust nappe folds of Laramide age (late Cretaceous to end of the Paleocene). This type of strong deformation is not visible in the Guanaceví Formation, further raising questions about the validity of a Mesozoic assignment for this unit.

The Guanaceví Formation has been structurally defined as a horst, occupying the central portion of the northwest trending Guanaceví erosional window and flanked by sets of northwest striking normal faults that offset the Upper and Lower Volcanic Sequences down to the southwest and northeast on corresponding sides of the window. Mineralization within the horst is hosted by the conglomerate, both as dilatational high-angle fracture-filled structures and, in the San Pedro area, as manto-like replacement bodies below the upper contact of the conglomerate with overlying andesitic units of the Lower Volcanic Sequence.

7.1.2 Lower Volcanic Sequence

Using an inherited stratigraphic framework for the area, andesitic rocks and associated sedimentary units are placed in a loosely-defined package of flows and volcaniclastic sediments correlated with Eocene volcanism throughout the Sierra Madre of Mexico. No radioisotope age determinations have been made on volcanic units of the Guanaceví district, and lithological correlations to the Lower Volcanic Sequence appear to be reasonable for the andesitic flows and associated volcaniclastic units.

It has been observed in the rocks that host the Porvenir and Santa Cruz mine workings that the andesite occurs as a pale green to nearly black volcanic flow ranging from aphyric to plagioclase-hornblende phyric. Plagioclase is the common phenocryst type with crystals ranging from 1 to 2 mm up to 10 mm. Hornblende phenocrysts are 1 mm to 4 mm in length. In porphyritic andesites, feldspar phenocryst abundance approaches 5%, and hornblende abundance is generally less than 3%.

The sequence of rock types in the Lower Volcanic Sequence, as presently understood, is a coarsening-upward series of volcaniclastic sediments capped by an andesite flow as described above. The sedimentary lithologies are siltstones overlain by sandstone with minor intercalations of conformable conglomerate beds. The siltstone-sandstone sequence becomes transitionally dominated by conglomeratic beds at the top of the volcaniclastic package. Overall thickness of the siltstone-sandstone beds is up to 120 m. Conglomerate beds of the Lower Volcanic Sequence are from a few centimetres to 150 m thick at the top of the package, and differ from the conglomerates of the Guanaceví Formation in that Lower Volcanic Sequence clasts are mainly andesite of varying textural types.

7.1.3 Upper Volcanic Sequence

The Upper Volcanic Sequence consists of rhyolite crystal-lapilli tuff units uncomformably overlying the andesites which are generally structurally disrupted and altered by oxidation and silicification. The rhyolite is strongly argillically-altered with silicification overprinting argillic alteration in the immediate hanging wall of quartz veins and other silicified structures. The rhyolite commonly contains rounded quartz ‘eyes’ up to 4 mm in diameter, and the matrix consists of adularia, kaolinite and quartz. Local concentrations of biotite crystals up to 2 mm are not uncommon. The rhyolite has variable textures from thin-bedded ash flows to coarse lapilli tuffs with lithic clasts of andesite or rhyolite up to 50 cm in diameter. These latter commonly exhibit alteration rims indicating high temperatures and fluids in the volcanic environment. The thickness of the rhyolite tuff assemblage has not been measured at this time, but appears to exceed 300 m.

Geochemically, the lower portion of the rhyolites has been demonstrated by rare earth element (REE) data, from a series of samples taken from East Santa Cruz drilling, to be magmatically linked to the underlying andesites. The similarity between REE patterns of the rhyolite crystal-lapilli tuff and the andesitic rock units in this data set suggests a common source for the two volcanic packages that is difficult to reconcile with the idea of many millions of years of volcanic quiescence (from Lower Volcanic to Upper Volcanic Sequences). This raises the possibility that regional correlations for Guanaceví rhyolite based on radioisotope age determinations may result in assignment of the rhyolite (of the Santa Cruz/Porvenir mine area) to the Lower Volcanic Sequence rather than the Upper. In the San Martin de Bolanos district of Jalisco and also in the Topia district of Durango State, uppermost volcanic lithologies of the Lower Volcanic Sequence are rhyolitic and directly associated with mineralization. This may be true for the Guanaceví mining district as well.

See Figure 7.1 for a map of the regional geology in the area surrounding the Guanaceví mining district. See Table 7.1 for a generalized stratigraphic column in the Guanaceví mining district.

Table 7.1
Generalized Stratigraphic Column in the Guanaceví Mining District

Geological Age		Stratigraphic Units and Lithologies	Thickness (m)
Tertiary	Oligocene	**Upper Volcanic Sequence** Rhyolitic tuffs and ignimbrites	+ 300
	Eocene	**Lower Volcanic Sequence** Andesite porphrytic flow Andesite conglomerate Volcanic sandstone/siltstone	 ≤ 70 ≤ 150 ≤ 120
Jurassic (?)	(Late) ?	Guanaceví Formation	+ 450

Note: Adapted from the March, 2006 Technical Report by Range Consulting

7.1.4 Structural Setting

Figure 7.1, shows major faults of the Guanaceví mining district on a simplified geologic map of the region. The map pattern constitutes an erosional window caused by crustal uplift apparently centred about 3 km west of Guanaceví. With some exceptions, fracture-filling vein mineralization is localized on the flanks of the uplift centre, suggesting a genetic relationship between uplift and mineralization. The three principal trends of high-angle normal faults that characterize the region are as follows:

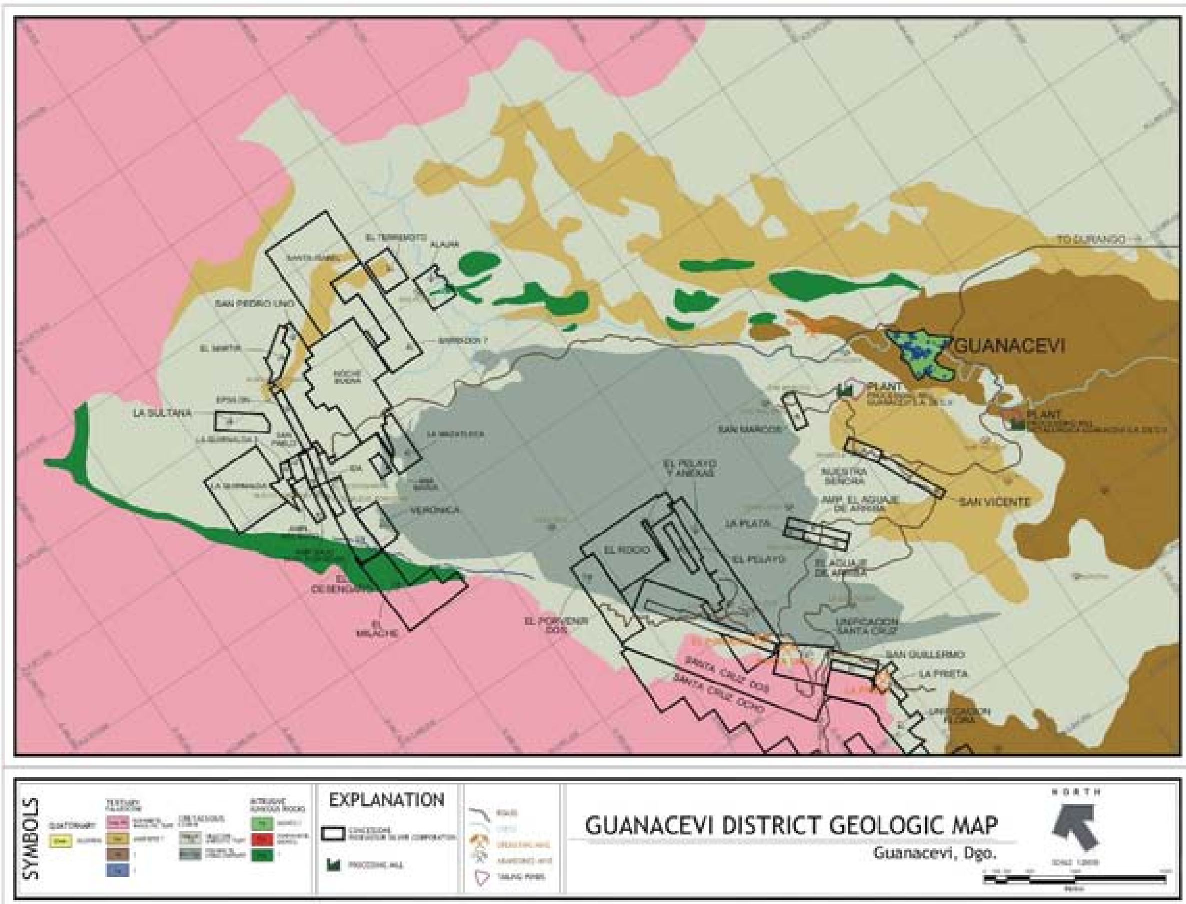
- The dominant structural trend in the region is northwest, with significant north-northeast faults in a likely conjugate relationship. This generation of structures hosts most of the mineralization in the district.

- Northeast faults postdate the mineralized structures.

- East-west faults appear last.

This pattern sequence would appear to indicate an early extension in a northeast-southwest direction, followed by a later extension in an east-northeast – west-southwest direction, followed by a northwest-southeast extension and finally ending with the latest extension in a north-south direction. This clockwise evolution of principal stress directions is similar to that of other regions in the American Cordillera, including the Sierra Madre of Mexico.

Figure 7.1
Regional Geology Map for the Guanaceví Mining District



Timing of uplift of the Guanaceví window is constrained by the following considerations:

- Dilatational fractures flanking the uplift are dominantly northwest trending, with subordinate north and north-northeast components. Northeast and east-west fractures are not significant in controlling the uplift pattern. Thus uplift is early in the structural evolution described above.
- The northeast-southwest extension in Mexico is generally associated with opening of the Gulf of California, and dated as Oligocene to Miocene.
- Uplift therefore may be coeval with the onset of silicic volcanism of the Upper Volcanics, which are considered Oligocene in age.

It is reasonable to conclude that uplift occurred at the onset of Upper Volcanic Sequence eruptions (Oligocene), northeast-southwest extension, and was coeval with mineralization. The cause of uplift, however, is left unexplained by these considerations. Alternative explanations include magmatic upwelling at depth, resurgent doming within a cryptic caldera, or tectonic transpression resulting from large-scale lateral displacement

7.2 PROJECT GEOLOGY

The Santa Cruz mine property, which forms part of the main portion of the Guanaceví Mines project, covers about a 3.0 km strike length of the Santa Cruz fault/vein system. The Santa Cruz vein is similar in many respects to other veins in the Guanaceví district except that it is the only one to lie on the west side of the horst of Guanaceví Formation and associated facies, and it dips west instead of east. See Figure 7.2 for the Guanaceví Mines project geology map.

In the Porvenir Dos area and the Deep Santa Cruz mine workings, a low angle rhyolite crystal-lapilli tuff and andesitic contact occurs high in the hanging wall of the Santa Cruz vein indicating a fault contact with Guanaceví Formation, which obviously cuts the contact.

7.2.1 Local Structure

The Santa Cruz vein, the principal host of silver and gold mineralization, is located on the west side of the horst of the Guanaceví Formation. The mineralized vein is part of a major fault system that trends northwest and principally places the Guanaceví Formation in the footwall against andesite and/or rhyolite in the hanging wall. The vein/fault presents a preferred strike of N45°W with dips from 45° to 70° to the southwest. From La Prieta to Porvenir Dos it extends a distance of 5 km and averages approximately 3.0 m in width.

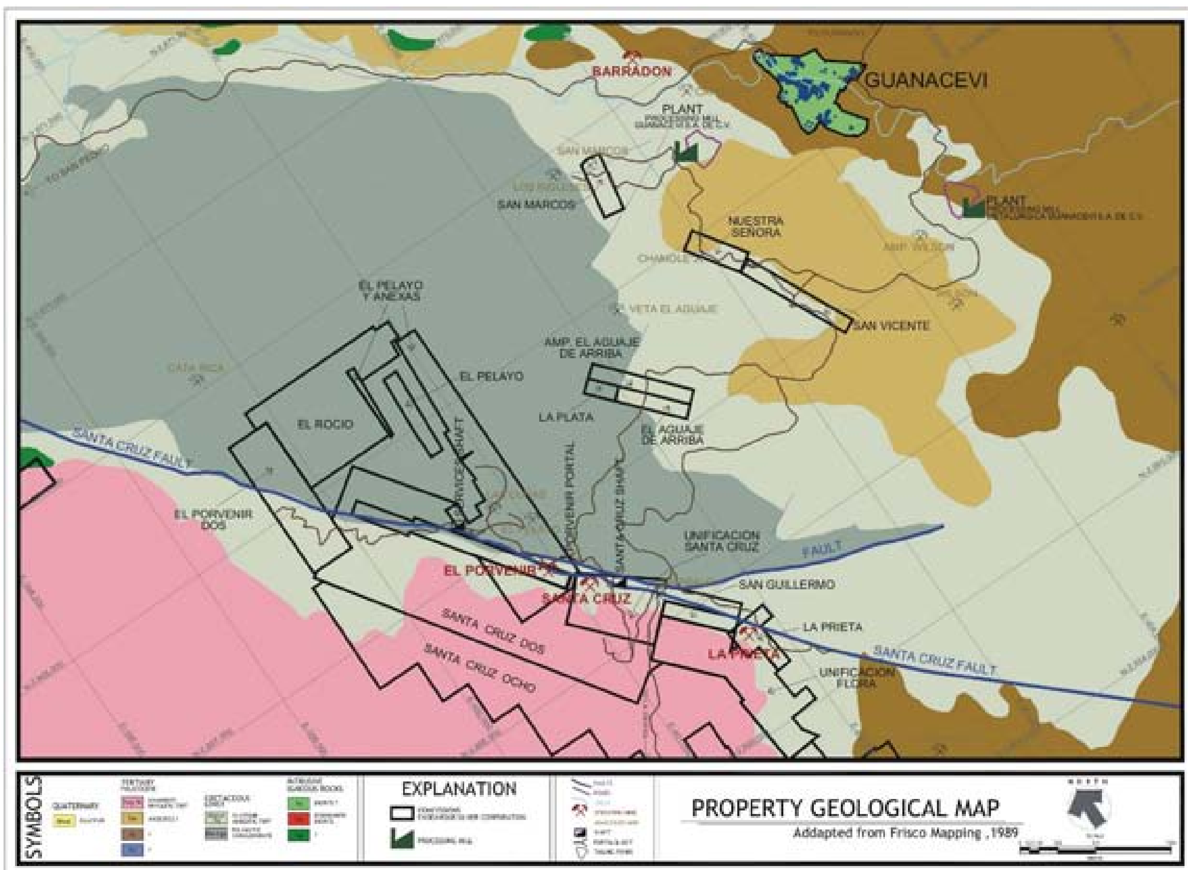
The broader and higher-grade mineralized ore shoots tend to occur along flexures in the Santa Cruz vein structure, where sigmoidal loops are developed both along strike and down dip. The vein in Deep Santa Cruz for instance splays into two, three or four separate mineralized structures with the intervening wallrocks also often well mineralized, giving mining widths up to 20 m in some places. These sigmoidal loops tend to develop with some regularity along strike and all of the ore shoots at the Santa Cruz mine have about a 60° plunge to the northwest. A shallow northwest plunging striation, raking at 15°- 30°, is noted on a number of fault planes within the Santa Cruz structure; these striations appear to be consistent with an observed sinistral movement seen on minor faults which produce small offsets of the Santa Cruz vein.

Particularly around the peripheral ore zones the vein is observed to develop imbricate structures, either as imbricate lenses shallowly oblique to the principal Santa Cruz trend or as vein segments offset by similarly trending minor faults. The trend of these structural features is generally slightly more westerly than the Santa Cruz vein/fault trend and steeper dipping. Veining is also often affected by north-south structures, which rarely seem to offset the main fault but do cause minor jogs in the vein; often the north-south structures are associated with manganese oxide concentrations and elevated silver grades.

7.2.2 Alteration

The sedimentary and volcanic rocks are hydrothermally altered with propylitization (chlorite) the most widespread, up to 150 m from the veins, with narrower bands of potassic and argillic alteration (kaolinite and adularia) typically up to 25 m thick in the hanging wall and with silicification near the veins. Phyllic alteration, however, is absent in the Guanaceví district.

Figure 7.2
Guanaceví Mines Project Geology Map



8.0 DEPOSIT TYPES

The deposit types of the Guanaceví property are described in detail in the Range March, 2006 and Micon April, 2007 NI 43-10 1 Technical Reports. The following description was excerpted from the Micon report.

The Guanaceví silver-gold district comprises classic, high-grade silver-gold, epithermal vein deposits, characterized by low sulphidation mineralization and adularia-sericite alteration. The Guanaceví veins are typical of most other epithermal silver-gold vein deposits in Mexico in that they are primarily hosted in the Tertiary Lower Volcanic series of andesite flows, pyroclastics and epiclastics overlain by the Upper Volcanic series of rhyolite pyroclastics and ignimbrites. Evidence is accumulating in the Guanaceví mining district that the mineralization is closely associated with a pulse of silicic eruptions that either signaled the end of Lower Volcanic Sequence magmatism or the onset of Upper Volcanic Sequence activity.

Low-sulphidation epithermal veins in Mexico typically have a well defined, subhorizontal ore horizon about 300 m to 500 m in vertical extent where the bonanza grade ore shoots have been deposited due to boiling of the hydrothermal fluids. Neither the top nor the bottom of the Santa Cruz ore horizon has yet been found but, given that high-grade mineralization occurs over a 400 m vertical extent from the top of the Garibaldi shaft (south of the Santa Cruz mine) to below Level 13 in Santa Cruz, it is likely that erosion has not removed a significant extent of the ore horizon.

Low sulphidation deposits are formed by the circulation of hydrothermal solutions that are near neutral in pH, resulting in very little acidic alteration with the host rock units. The characteristic alteration assemblages include illite, sericite and adularia that are typically hosted by either the veins themselves or in the vein wall rocks. The hydrothermal fluid can travel either along discrete fractures where it may create vein deposits or it can travel through permeable lithology such as a poorly welded ignimbrite flow, where it may deposit its load of precious metals in a disseminated deposit. In general terms this style of mineralization is found at some distance from the heat source. Figure 8.1 illustrates the spatial distribution of the alteration and veining found in a hypothetical low-sulphidation hydrothermal system

Figure 8.1
Alteration Mineral Distributions within a Low Suphidation System

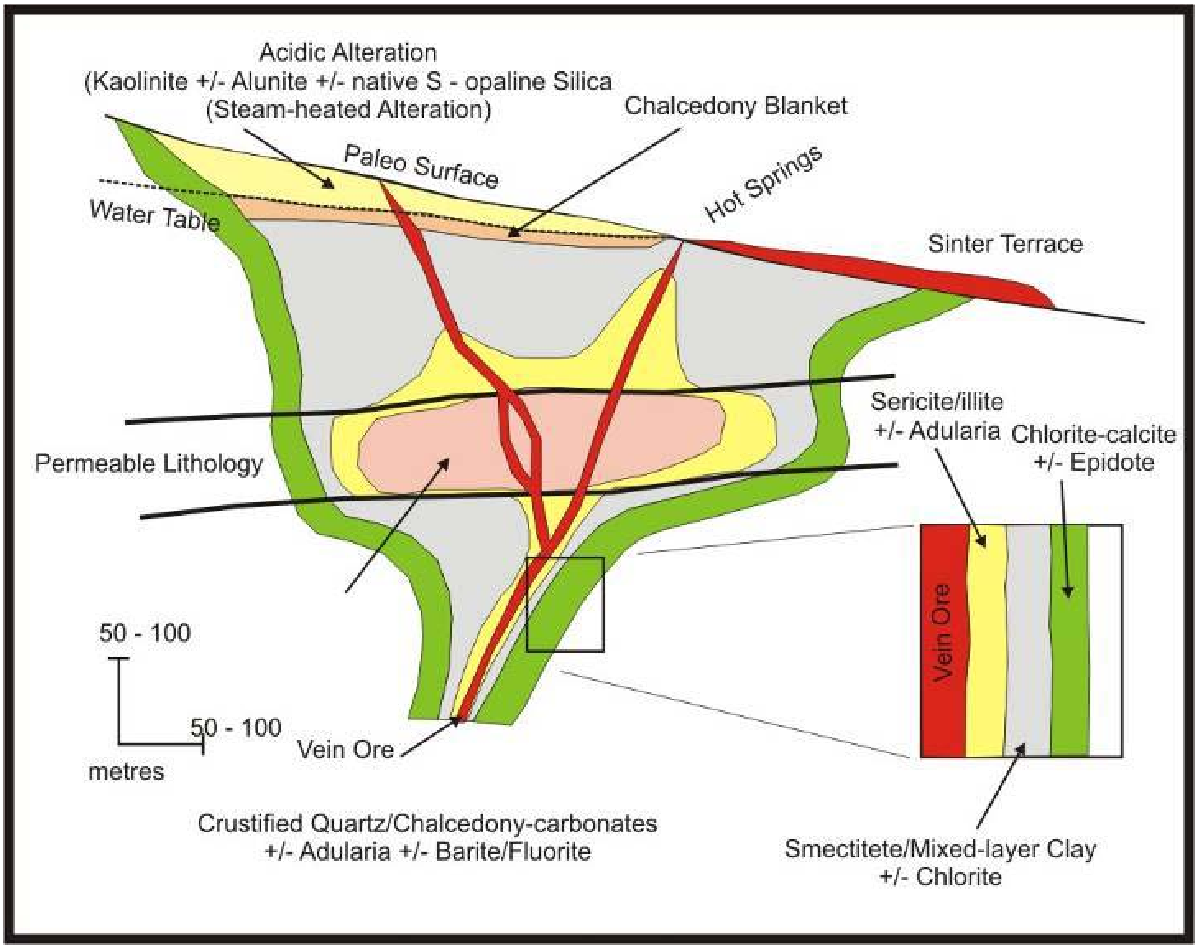


Figure taken from Pressacco, 2005.

9.0 MINERALIZATION

The mineralization of the Guanaceví property is described in detail in the March, 2006 NI 43-101 Technical Report by Range Consulting. The following description of the geological setting has been excerpted and edited from the March, 2006 report.

The principal mineralization within the Santa Cruz-Porvenir mines is an epithermal low-sulphidation, quartz-carbonate, fracture-filling vein hosted by a fault-structure that trends approximately N45°W and dips 55° southwest. The fault and vein comprise a structural system referred to locally as the Santa Cruz vein structure or Santa Cruz vein fault. The Santa Cruz vein structure has been traced for 5 km along the trend and averages about 3.0 m in width. Mineralization in the system is not continuous, but occurs in steeply northwest-raking shoots up to 200 m in strike length. A second vein, sub-parallel to the Santa Cruz vein but less continuous, is economically significant in the Porvenir Dos zone and in the northern portion of deep North Porvenir. It is referred to in both areas as the "Footwall vein", although in Porvenir Dos, the term "Conglomerate vein" has also been employed.

9.1 SANTA CRUZ VEIN

The Santa Cruz vein is a silver-rich structure with lesser amounts of gold, lead and zinc. Mineralization has averaged 500 g/t silver and 1 g/t gold over 3 m true width. The minerals encountered are argentite-acanthite, limited gold, galena, sphalerite, pyrite and manganese oxides. Gangue minerals noted are barite, rhodonite, rhodochrosite, calcite, fluorite and quartz. The mineralization down to Level 6 in the Santa Cruz mine is mainly oxidized with a transition zone of oxides to sulphides occurring between Levels 6 to 8, although sulphide ore was mined above Level 6.

Mineralization exhibits evidence of episodic hydrothermal events which generated finely banded textures. The higher grade mineralization in the district is commonly associated with multiple phases of banding and brecciation. The first phase, deposition of white quartz, white calcite and pyrite in stockwork structures often exhibits horse-tail structures bifurcating both in the horizontal and vertical sense to form imbricate pods. The second phase deposited semitranslucent quartz with argentite, scarce gold, and oxides of manganese (2%) and rare lead and zinc sulphide (4%), the latter particularly in the lower part of the hydrothermal system. The second phase was accompanied by the deposition of barite, rhodonite, rhodochrosite, fluorite and calcite.

This second phase comprises multiple pulses of mineralization expressed in the vein structures as bands of massive, banded or brecciated quartz. Massive and massive-to-banded quartz are commonly associated with carbonate which is predominantly manganoan calcite and calcitic rhodochrosite. Rhodonite is much less abundant than carbonates but is not uncommon.

According to results obtained through diamond drilling, the lead and zinc mineralization occurs more commonly in the vein below the water table which in the Santa Cruz mine occurs just below the 13 Level.

9.2 FOOTWALL VEINS

In the Porvenir Dos area and in the deeper portion of North Porvenir, a footwall-hosted vein lies in the footwall of the Santa Cruz vein structure. In both areas, this footwall vein is either within Guanaceví Formation footwall rocks or is at the structural contact between Guanaceví Formation and Lower Volcanic Sequence andesite. It is banded to brecciated quartz plus carbonate and contains local scatterings (< 1%) of sulphides (pyrite>sphalerite> galena>chalcopyrite) and rare pods (< 50 cm) of sulphides. It appears likely from drill sections that these footwall vein occurrences are splays of the main Santa Cruz vein structure and are largely sympathetic to it. At the north end of North Porvenir, on Section 19, the footwall vein attains a true width of over 7 m with silver grades of approximately 400 g/t in some areas. In Porvenir Dos, the footwall vein is narrower than the Santa Cruz vein and is overall a lower-grade vein, although one high grade intercept (uncapped) has been recorded in drill hole PD 36-3, at 2,548 g/t silver over 1.25 m.

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10.0 EXPLORATION

10.1 INTRODUCTION

In 2008, exploration drilling at Guanaceví focused in two areas: expanding the known ore-bodies along the Santa Cruz vein structure close to the Porvenir mine so that they could be added to the mine plan for development and production; and discovering new high-grade silver mineralized zones in the San Pedro area north of the Porvenir mine that have the potential to develop future resources and production.

During 2008, Endeavour completed 18,483 m of drilling in 89 surface and underground drill holes at the Guanaceví Mines project. A total of 10,437 samples were also collected and submitted for assay. Exploration activities undertaken since January, 2008 are summarized in Table 10.1.

Endeavour spent US$3,499,158 on exploration activities in 2008 on the Guanaceví Mines project, as summarized in Table 10.2.

Table 10.1
Guanaceví Mines Project Exploration Activities in 2008

AREA	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
SANTA CRUZ													
No. of Holes	1												**1**
Metres	666												**666**
No. of Samples	117												**117**
NORTH PORVENIR													
No. of Holes	1	2	1	3	3	1							**11**
Metres	564	1,077	200	737	530	181							**3,287**
No. of Samples	42	86	186	231	459	118							**1,122**
SAN PEDRO (Core)													
No. of Holes			7	6		2	10	9	4	6			**44**
Metres			1,976	1,549		826	1,642	1,417	1,104	659			**9,173**
No. of Samples			384	591	129	373	540	1,224	878	995			**5,114**
SAN PEDRO (Reverse Circulation)													
No. of Holes						15	7						**22**
Metres						1,958	1,019						**2,977**
No. of Samples						1,603	835						**2,438**
ALEX BRECCIA													
No. of Holes								2	1	3	2		**8**
Metres								474	135	847	461		**1,917**
No. of Samples								147	157	797	211		**1,312**
EL AGUAJE													
No. of Holes									3				**3**
Metres									462				**462**
No. of Samples									334				**334**
ALL													
No. of Holes	2	2	8	9	3	18	17	11	8	9	2		**89**
Metres	1,230	1,077	2,176	2,286	530	2,965	2,661	1,921	1,701	1,506	461		**18,483**
No. of Samples	159	86	570	822	588	2,094	1,375	1,371	1,369	1,792	211		**10,437**

Table 10.2
Summary of Guanaceví Mines Project Exploration Program in 2008

Description	Pesos	US$
Alex Breccia (inc. Santa Cruz mine)		
Assays	792,643	62,338
Consultants	28,554	2,772
Diamond drilling	3,645,892	322,100
Supplies and sundries	112,937	9,646
Geology and engineering personnel	602,438	48,940
Management	804	76
Roads and drill pads	107,983	8,741
Salaries (Subtotal)	617,620	55,573
Travel & Lodging	19,865	1,812
Vehicles	93,308	8,471
Not deductible	71,448	6,371
Subtotal	**6,093,492**	**526,840**
North Porvenir mine		
Assays	404,325	37,772
Diamond drilling	4,793,186	450,682
Supplies and sundries	213,212	19,832
Geology and engineering personnel	238,225	22,897
Management	844	80
Roads and drill pads	68,840	6,368
Salaries (Subtotal)	520,634	49,163
Travel & Lodging	12,311	1,158
Vehicles	42,939	4,067
Not deductible	57,059	5,366
Subtotal	**6,351,575**	**597,386**
El Aguaje de Arriba		
Assays	168,173	13,374
Consultants	70,663	6,363
Diamond drilling	608,351	59,063
Roads and drill pads	45,750	4,442
Travel & Lodging	793	77
Subtotal	**893,730**	**83,319**
Milache-Desengano-Veronica		
Assays	62,693	5,967
Diamond drilling	3,136,448	297,071
Supplies and sundries	6,376	611
Roads and drill pads	30,000	2,775
Travel & Lodging	7,909	758
Not deductible	665	64
Subtotal	**3,244,091**	**307,245**
San Pedro General		
Assays	2,866,036	252,930
Consultants	756,530	72,374
Diamond drilling	11,157,182	1,057,622
Exploration development	2,422,351	226,954
Supplies and sundries	555,082	52,040
Geology and engineering personnel	1,188,103	104,641
Professional Development	7,206	555
Management	28,906	2,766
Mining concessions	432,100	39,972
Roads and drill pads	623,714	58,564
Salaries (Subtotal)	532,463	46,728
Travel & Lodging	91,698	8,606
Vehicles	251,699	22,971
Not deductible	420,813	37,646
Subtotal	**21,333,882**	**1,984,369**
Total	**37,916,770**	**3,499,158**

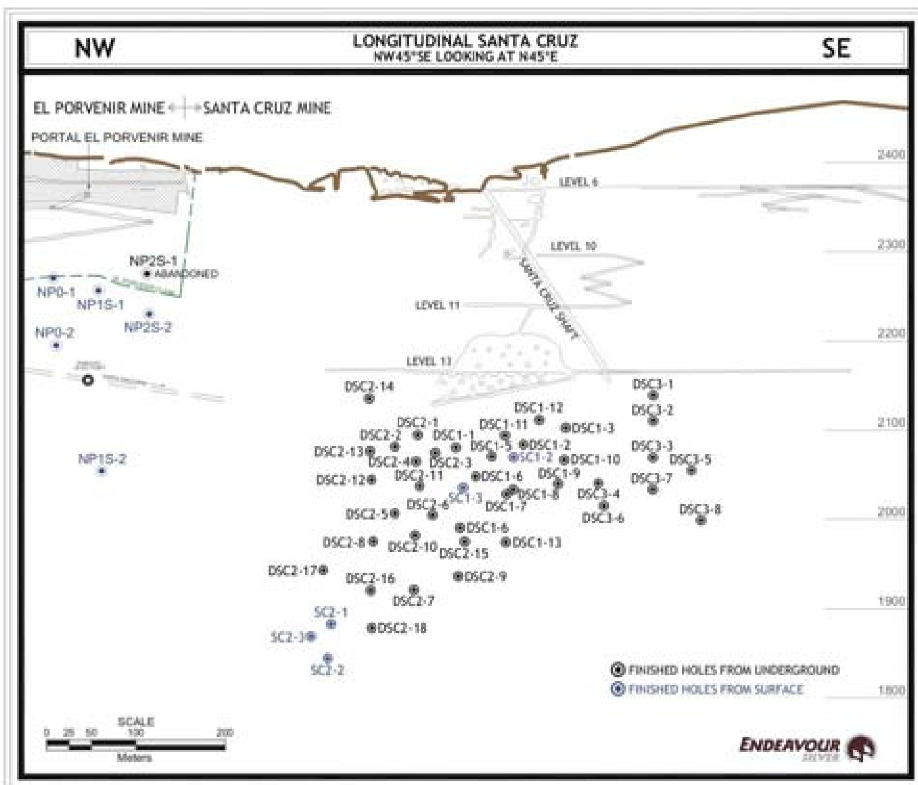
10.2 2008 SANTA CRUZ MINE SURFACE DIAMOND DRILLING

In January, 2008, surface diamond drilling continued in the Santa Cruz mine area with one drill rig provided by Layne de Mexico S.A. de C.V. By mid-January 2008, Endeavour had completed a total of 666.40 m in one surface diamond drill hole at the Santa Cruz mine, see Table 10.3. All completed surface drill holes are shown on Figure 10.1.

Table 10.3
2008 Summary for Santa Cruz Mine Surface Diamond Drilling

Hole	Azimuth	Dip	Diameter	Total Depth (m)	Start date	Finish date	Drilling Company
SC2-3	06°	-73°	HQ	666.40	02/12/2007	17/01/2008	Layne
			Total	**666.40**			

Figure 10.1
Santa Cruz Mine Long Section, showing Intersection Points on the Santa Cruz Vein



10.2.1 2008 Santa Cruz Mine Surface Diamond Drilling Results

The 2008 drilling program successfully extended the Santa Cruz orebody to the northwest and to depth. Hole SC2-3 intercepted the Santa Cruz vein at a depth of 630.4 m and averaged 78 g/t silver, 0.3 g/t gold, 1.4% lead and 3.1% zinc over a 3.4 m true width.

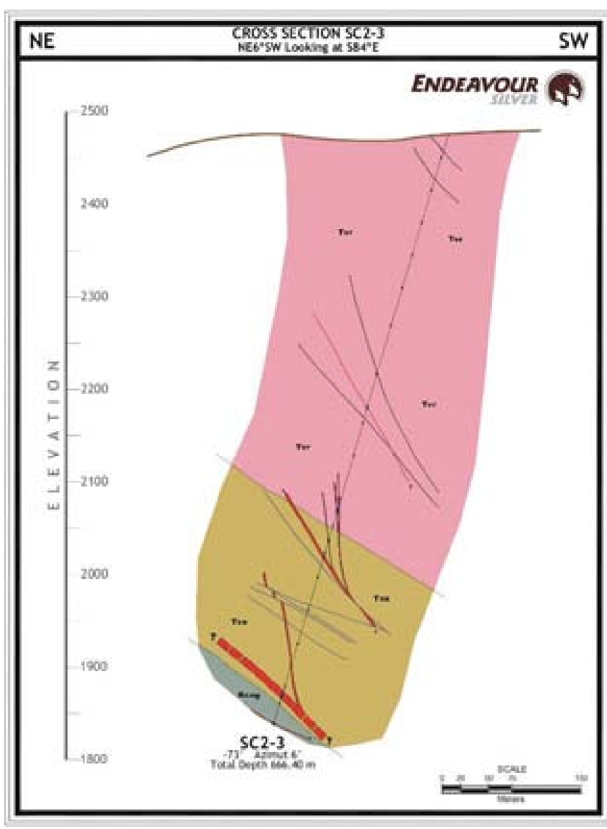
All assays results for surface diamond drilling completed in the Santa Cruz mine area from late 2007 (assays received in 2008) to January, 2008 are summarized in Table 10.4. Drilling results indicate the continued presence of a wide vein structure but a transition to more base-metal dominated mineralization with depth in the Santa Cruz mine.

Table 10.4
Santa Cruz Mine 2008 Surface Diamond Drilling Results

Hole	Vein	From (m)	To (m)	True Width (m)	Assays				
					Au g/t	Ag g/t	Cu %	Pb %	Zn %
SC2-1	Santa Cruz Vein Zone	608.63	624.77	10.2	0.2	68	0.022	1.233	2.521
SC2-2	Santa Cruz Vein Zone	651.08	660.57	6.7	0.3	61	0.028	1.420	1.718
SC2-3	Santa Cruz Vein Zone	630.41	634.65	3.4	0.3	78	0.095	1.389	3.130

Figure 10.2 is a cross-section showing Hole SC2-3 drilled to test the Santa Cruz vein structure in the Santa Cruz mine.

Figure 10.2
Cross-section through Hole SC2-3 Drilled to Test the Santa Cruz Vein



10.3 2008 NORTH PORVENIR SURFACE AND UNDERGROUND DIAMOND DRILLING

In late January, 2008, surface diamond drilling finished in the Santa Cruz mine area and the one drill rig provided by Layne de Mexico S.A. de C.V. moved to the North Porvenir mine. By mid-February, 2008, Endeavour had completed a total of 1,641 m in three surface diamond drill holes at the North Porvenir mine, see Table 10.5.

In late February, 2008, Endeavour commenced underground diamond drilling with one drill rig provided by BDW International of Mexico S.A. de C.V. By June, Endeavour had completed a total of 1,646.5 m in 8 underground diamond drill holes at the North Porvenir Mine, see Table 10.5.

Underground and surface diamond drill holes are shown on Figures 10.3 and 10.4.

Table 10.5
2008 Summary for North Porvenir Surface and Underground Diamond Drilling

Hole	Azimuth	Dip	Diameter	Total Depth (m)	Start date	Finish date	Drilling Company
Surface Diamond Drilling							
NP23-7	41°	-73°	HQ	563.85	18/01/2008	27/01/2008	Layne
NP23-8	40°	-78°	HQ	595.60	27/01/2008	07/02/2008	Layne
NP26-1	21°	-73°	HQ	481.50	08/02/2008	17/02/2008	Layne
			Subtotal	**1,640.95**			
Underground Diamond Drilling							
UNP1-1	74°	-90°	HQ	200.00	24/02/2008	09/03/2008	BDW
UNP1-2	197°	-77°	HQ/NQ	254.00	10/03/2008	03/04/2008	BDW
UNP1-3	280°	-69°	HQ/NQ	304.00	04/04/2008	14/04/2008	BDW
UNP2-1	335°	-71°	NQ	178.50	15/04/2008	23/04/2008	BDW
UNP2-2	207°	-83°	HQ-NQ	222.00	23/04/2008	09/05/2008	BDW
UNP3-1	85°	-69°	HQ	163.00	12/05/2008	17/05/2008	BDW
UNP4-1	85°	-79°	HQ	144.50	21/05/2008	28/05/2008	BDW
UNP4-2	85°	-78°	HQ	180.50	29/05/2008	07/06/2008	BDW
			Subtotal	**1,646.50**			
			Total	**3,287.45**			

Figure 10.3
Long Section of the Northern Part of North Porvenir Mine showing Intersection Points of Surface Drill Holes Completed on the Santa Cruz Vein

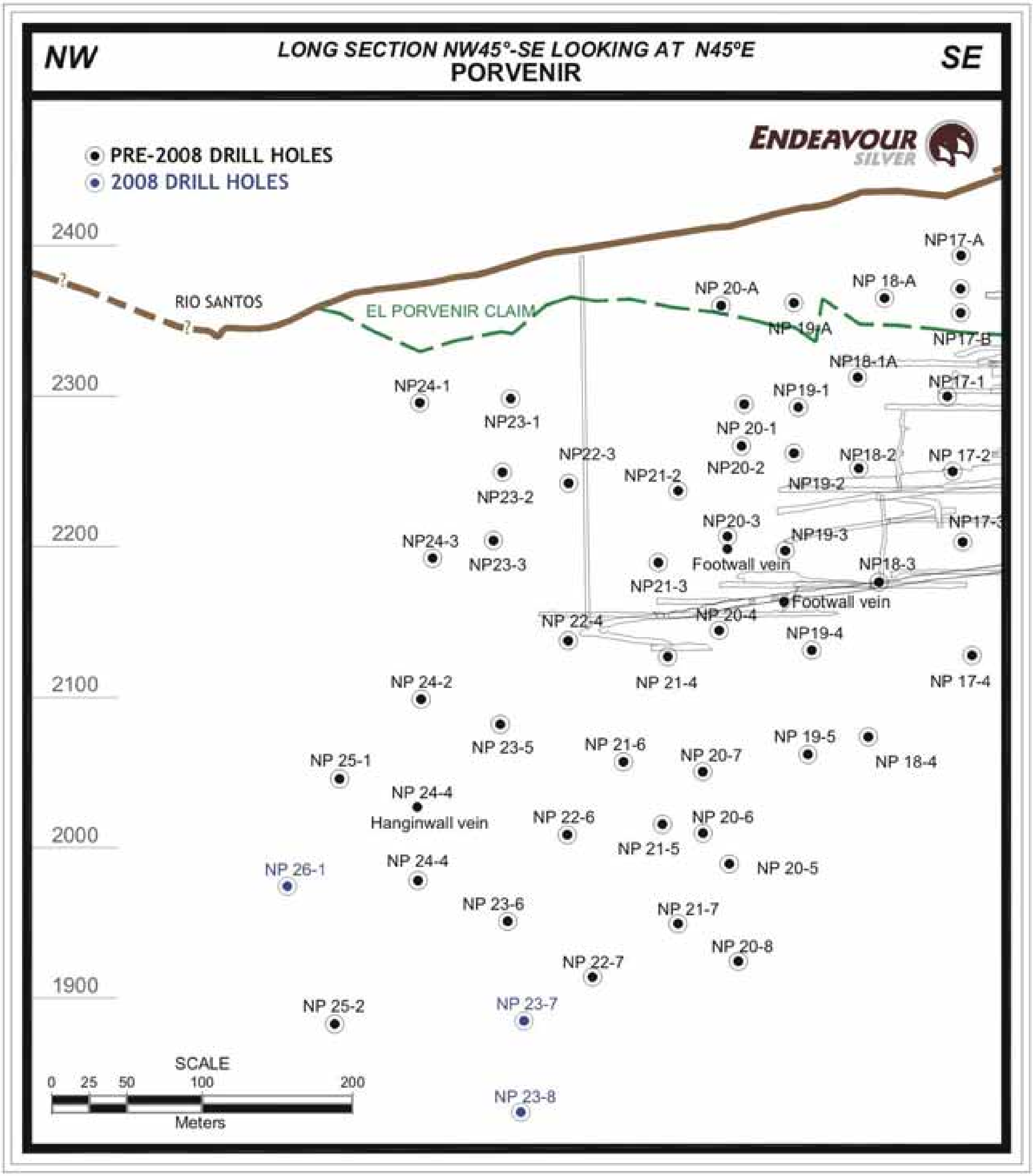
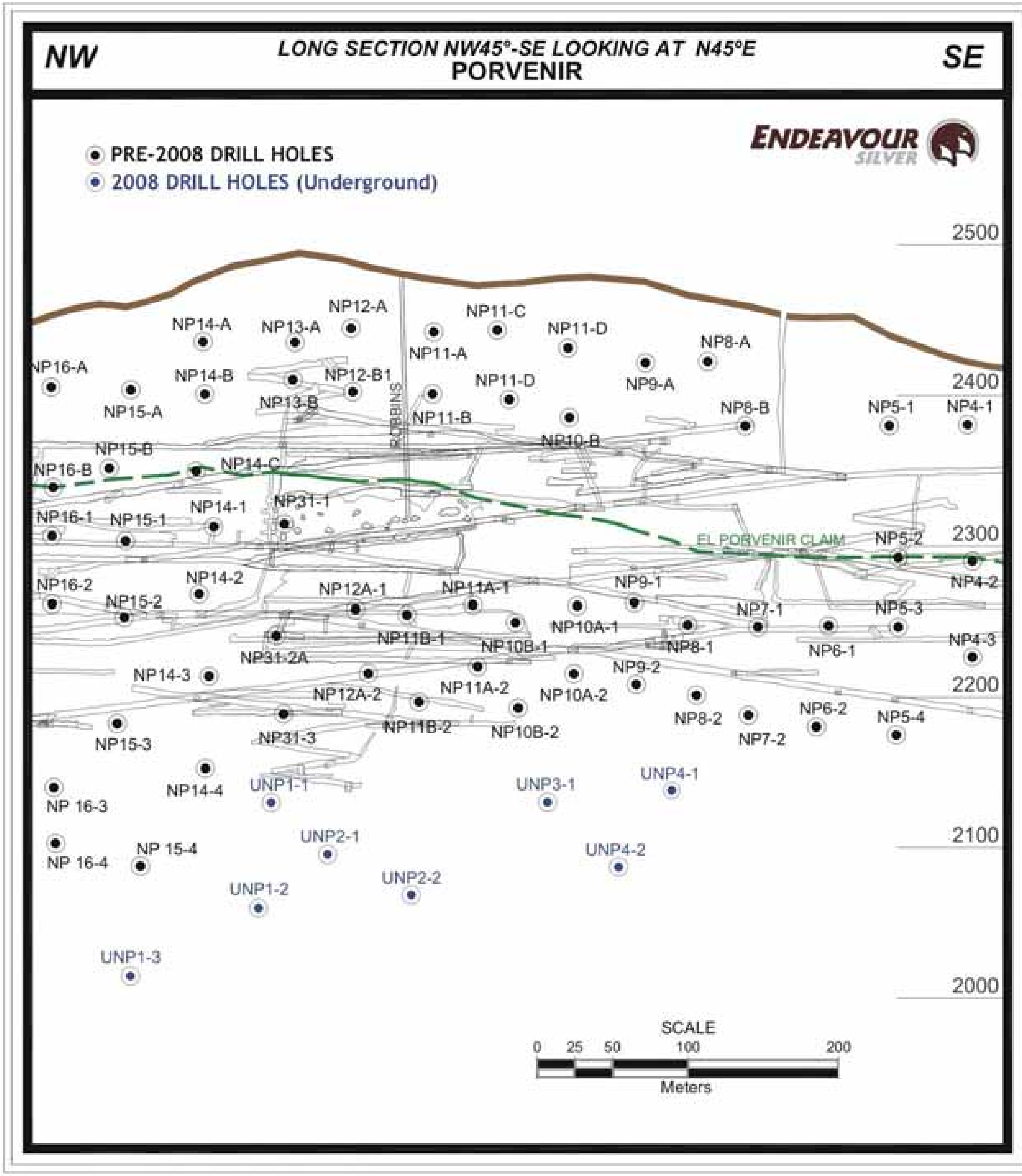


Figure 10.4
Long Section of the Central Part of North Porvenir Mine showing Intersection Points on the Santa Cruz Vein for both Underground and Surface Diamond Drill Holes



10.3.1 2008 North Porvenir Surface and Underground Diamond Drilling Results

In 2008, drilling programs at the North Porvenir mine extended the northern and central zones deeper than had been previously drilled. Strong silver mineralization in the Santa Cruz vein was intersected in several drill holes, which has expanded the previously defined resources in this area.

Drilling highlights include 314 g/t silver and 0.5 g/t gold over a 3.8 m true width in Hole UNP1-1 and 446 g/t silver and 0.9 g/t Au over a 1.6 m true width in Hole UNP4-2.

All North Porvenir mine underground and surface diamond drilling results are summarized in Table 10.6. Cross-sections of the Santa Cruz vein are shown on Figures 10.5 through 10.7.

Table 10.6
North Porvenir Mine 2008 Underground and Surface Diamond Drilling Results

Hole	Vein	From (m)	Core Length (m)	Real Width (m)	Assays	
					Ag g/t	Au g/t
Northern Zone (Surface Diamond Drilling)						
NP23-7	Santa Cruz Vein	505.80	2.90	2.1	68	0.10
NP23-8	No vein intercept					
NP26-1	Santa Cruz Vein	410.83	3.08	2.1	107	0.20
Central Zone (Surface Diamond Drilling)						
UNP1-1	Santa Cruz Vein	107.00	5.20	3.79	314	0.5
UNP1-2	Santa Cruz Vein	180.00	0.25	0.18	161	0.5
UNP1-3	Santa Cruz Vein	240.65	1.05	0.67	295	0.6
UNP2-1	Santa Cruz Vein	148.40	3.40	1.99	231	0.4
UNP2-2	Santa Cruz Vein	166.15	4.30	1.47	233	0.4
UNP3-1	Santa Cruz Vein	114.40	0.30	0.25	159	0.2
UNP4-1	Santa Cruz Vein	94.10	3.20	1.60	100	0.5
UNP4-2	Santa Cruz Vein	147.65	3.25	1.63	446	0.9

Figure 10.5
Cross-section through Holes NP23-1, -2, -3, -4, -5, -6, -7 and -8 Drilled to Test the Santa Cruz Vein in the North Porvenir Mine

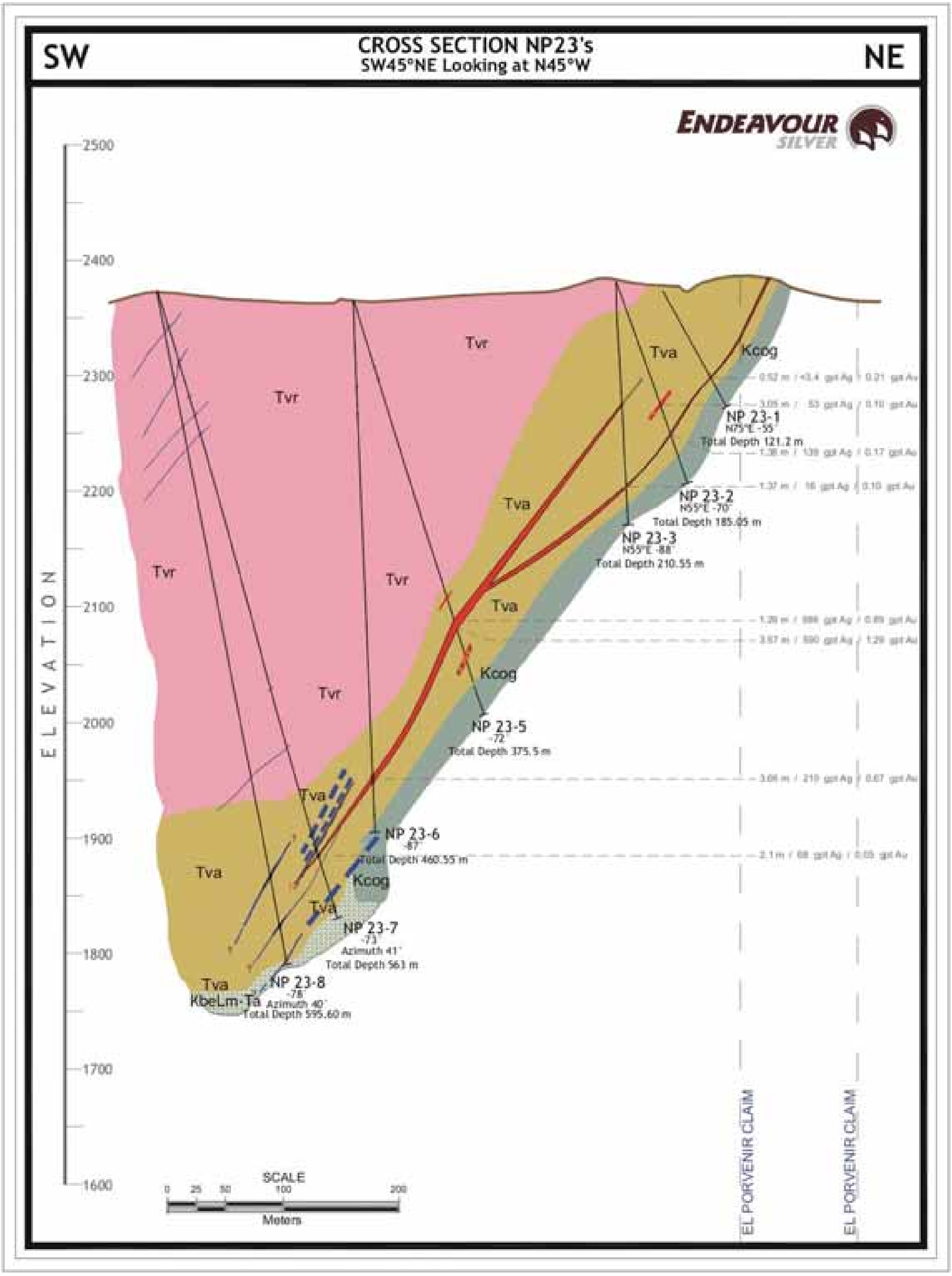


Figure 10.6
Cross-section through Hole UNP1-1 Drilled to Test the Santa Cruz Vein

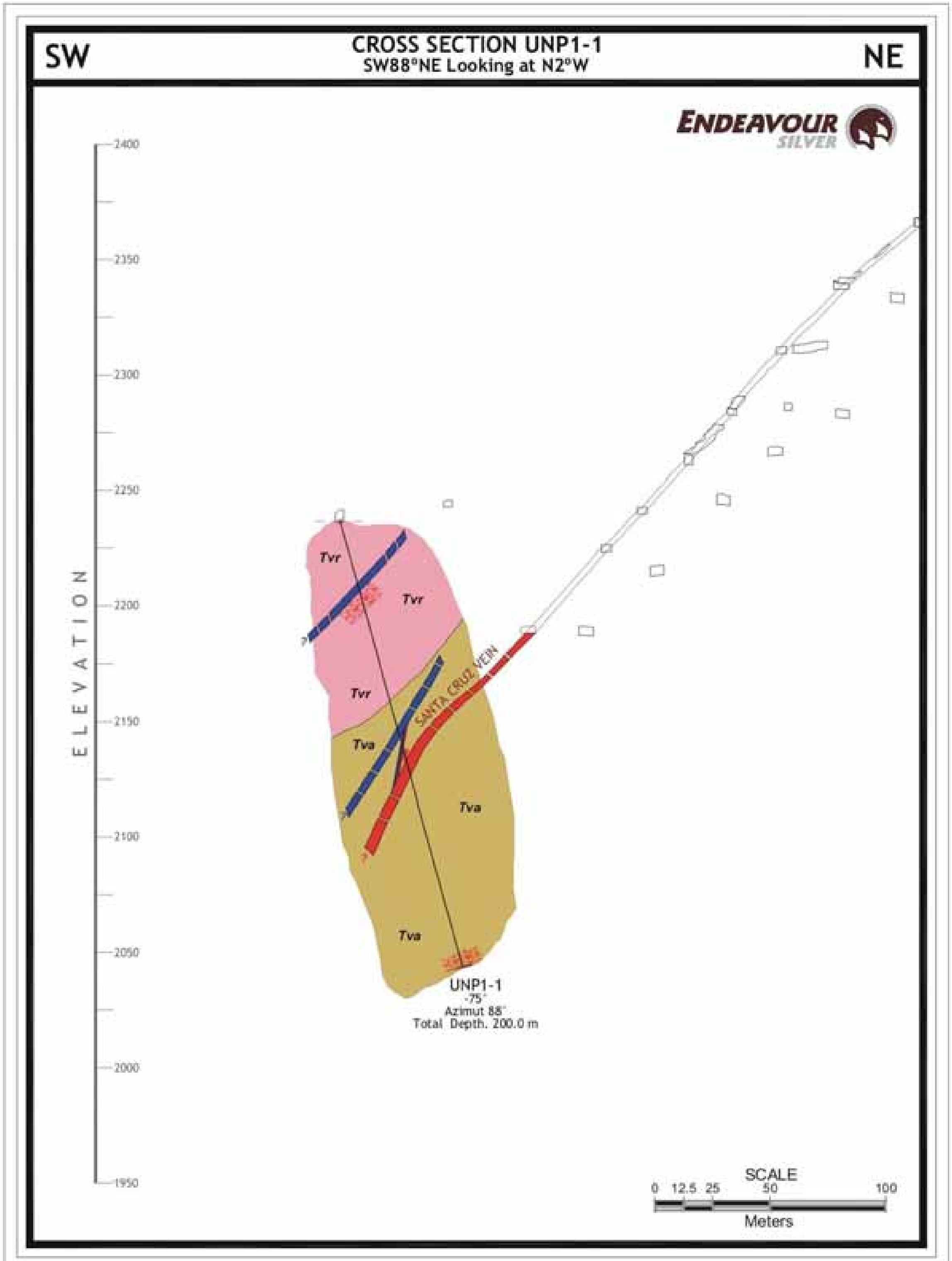
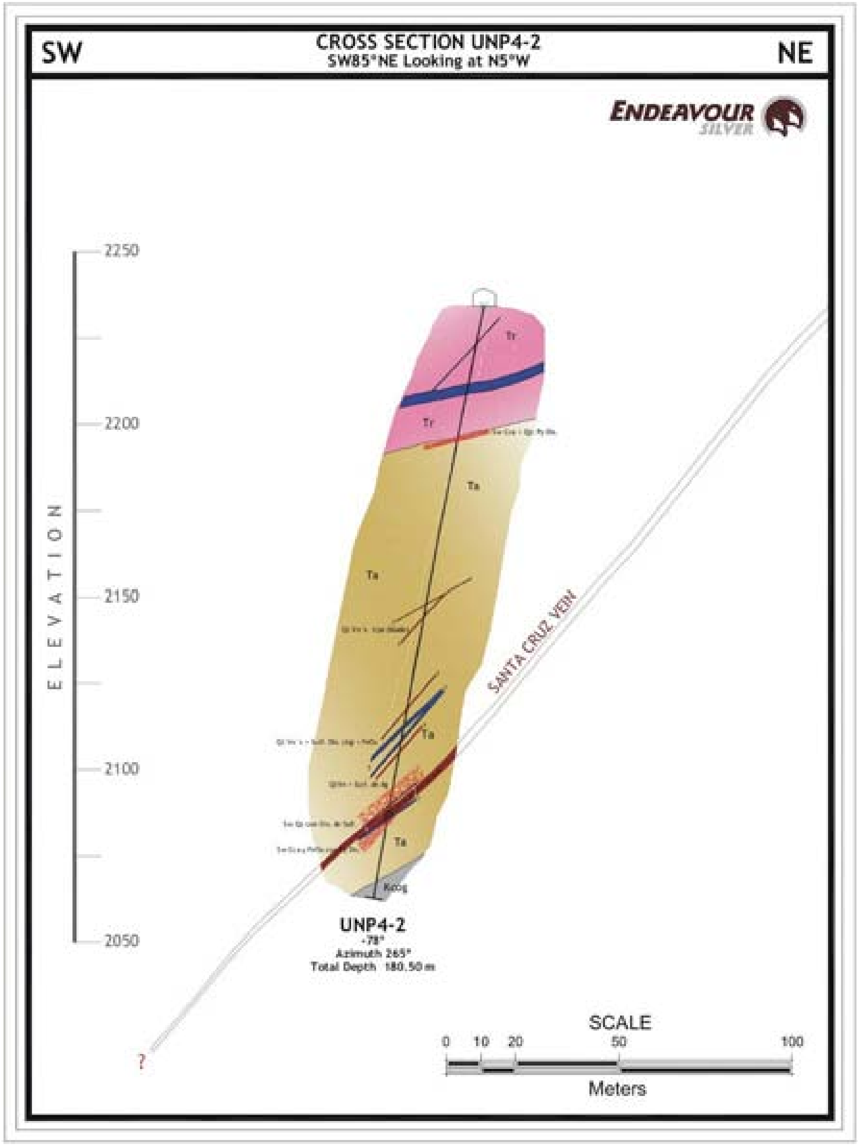


Figure 10.7
Cross-section through Hole UNP4-2 Drilled to Test the Santa Cruz Vein



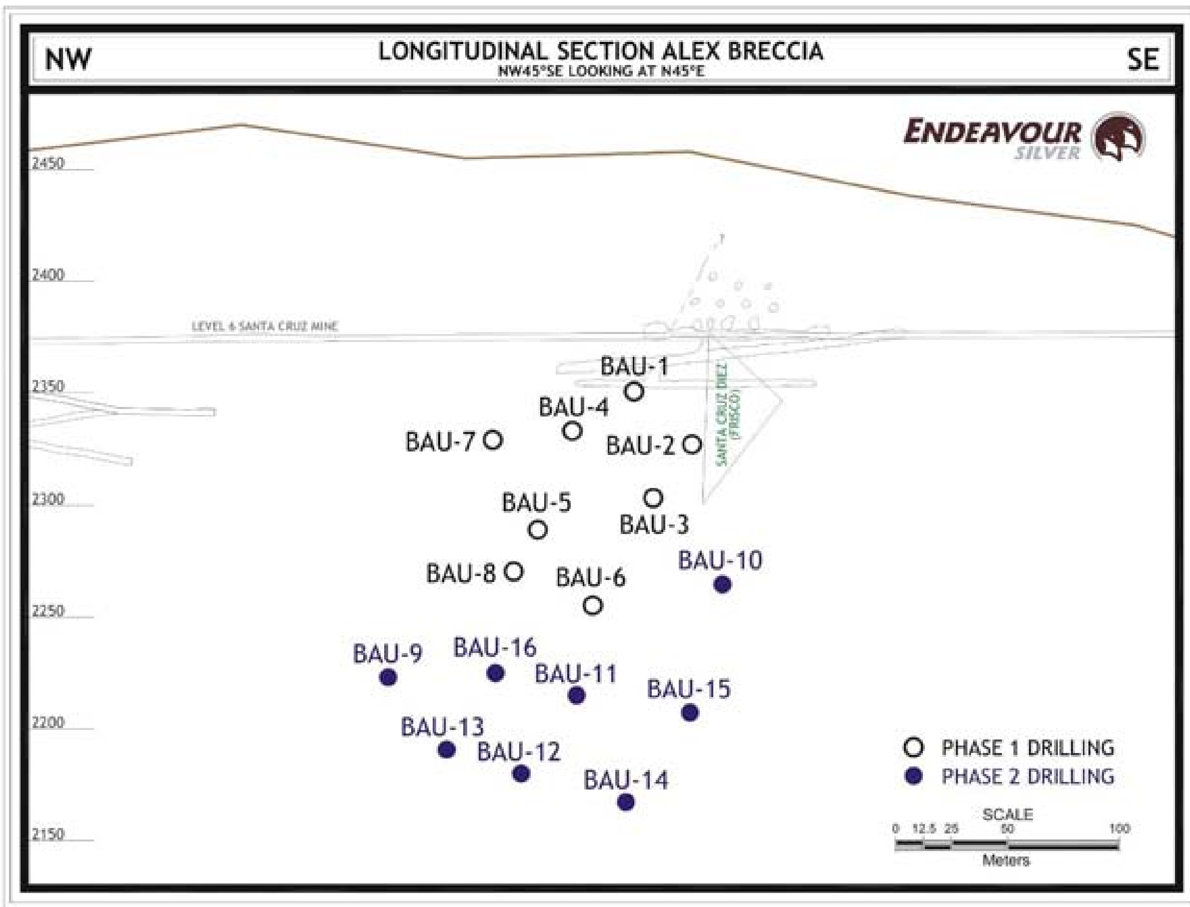
10.4 2008 ALEX BRECCIA UNDERGROUND DIAMOND DRILLING

In July, 2008, underground diamond drilling finished in the central zone of the North Porvenir mine and the one drill rig provided by BDW International of Mexico S.A. de C.V. was moved to the Alex Breccia zone. By mid-November, 2008, Endeavour had completed a total of 1,916.5 m in eight underground diamond drill holes at Alex Breccia, see Table 10.7. Underground diamond drill holes are shown on Figure 10.8.

Table 10.7
2008 Summary for Alex Breccia Underground Diamond Drilling

Hole	Azimuth	Dip	Diameter	Total Depth (m)	Start date	Finish date	Drilling Company
BAU-9	306°	-55°	NQ	269.50	31/07/2008	10/08/2008	BDW
BAU-10	92°	-67°	NQ	204.50	11/08/2008	20/08/2008	BDW
BAU-11	307°	-81°	NQ	135.00	21/08/2008	29/09/2008	BDW
BAU-12	265º	-70º	NQ	272.00	29/09/2008	06/10/2008	BDW
BAU-13	285º	-62º	NQ	314.00	06/10/2008	20/10/2008	BDW
BAU-14	223º	-75º	NQ	261.00	20/10/2008	31/10/2008	BDW
BAU-15	167º	-80º	NQ	211.50	31/10/2008	05/11/2008	BDW
BAU-16	304º	-68º	NQ	249.00	06/11/2008	13/11/2008	BDW
			Total	**1,916.5**			

Figure 10.8
Long Section of the Alex Breccia Zone showing Intersection Points on the Santa Cruz Vein for Underground Diamond Drill Holes



10.4.1 2008 Alex Breccia Underground Diamond Drilling Results

The 2008 drilling program has extended the high grade silver-gold-base metal mineralization in the Alex Breccia mineralized zone for a total of 150 metres along strike and more than 200 metres vertically below historic workings to a depth of 300 m below surface. Drilling has expanded resources in this area and underground ramp development is now underway to access the Alex Breccia zone at deeper levels. The Alex Breccia zone will feed silver-lead-zinc sulphide ore to the newly refurbished flotation circuit at Guanaceví, which has been re-commissioned and scheduled to operate at 200 tonnes per day in 2009.

Drilling highlights include Hole BAU-12, which intersected 670 g/t silver, 0.71 g/t gold and 4.9% combined lead-zinc over 5.18 m, including 1,711 g/t silver, 1.51 g/t gold and 8.19% combined lead-zinc over 1.72 m, and Hole BAU-16, which intersected 585 g/t silver, 0.52 g/t gold and 1.41% combined lead-zinc over 2.68 m, including 2,920 g/t silver, 2.45 g/t gold and 3.43% combined lead-zinc over 0.43 m.

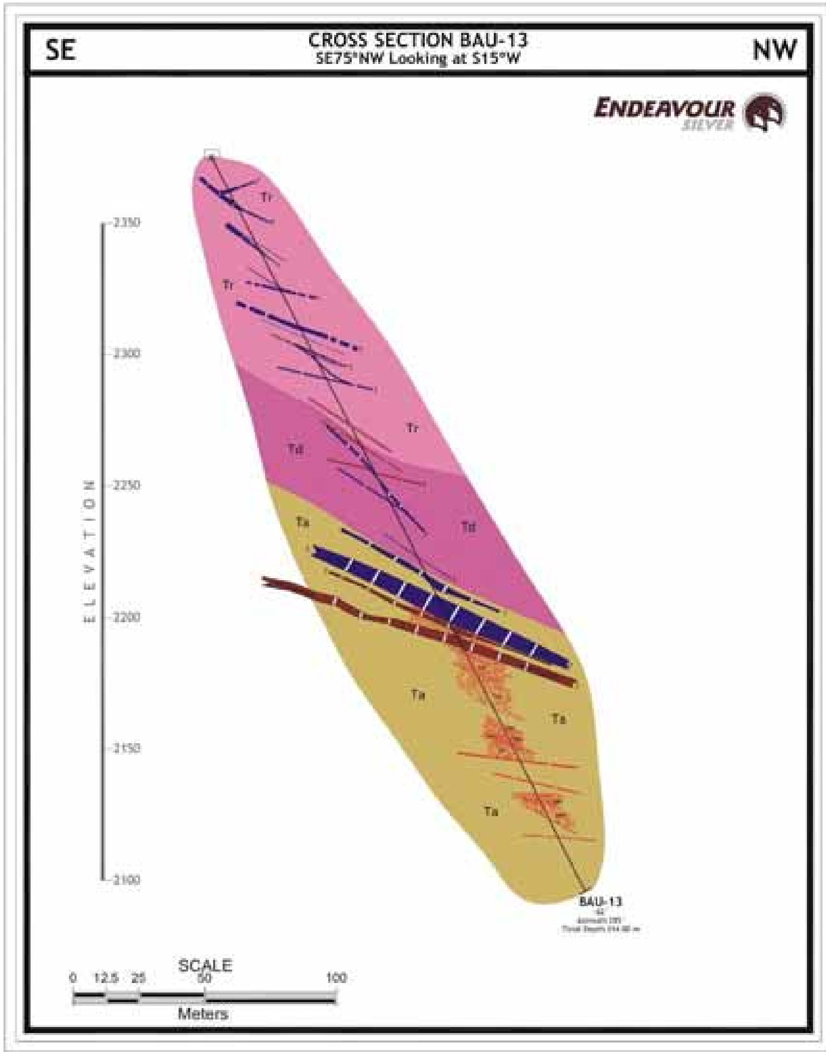
All Alex Breccia underground diamond drilling results are summarized in Table 10.8.

Figure 10.9 is a typical Alex Breccia cross-section showing Hole BAU-13 testing the Santa Cruz vein structure.

Table 10.8
Alex Breccia 2008 Underground Diamond Drilling Results

Hole	Vein	From (m)	To (m)	Core Length (m)	True Width (m)	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)
BAU-9	Santa Cruz	182.80	188.30	5.50	1.42	49	0.15	2.37	2.66
	FW Santa Cruz	190.50	191.70	1.20	0.46	161	0.43	9.85	7.06
BAU-10	Santa Cruz	117.85	121.30	3.45	2.64	114	0.25	1.26	3.60
	Including	118.45	119.00	0.55	0.42	319	0.91	0.83	2.64
	FW Santa Cruz	125.05	130.65	5.60	4.44	215	0.29	0.71	2.71
	Including	128.80	130.65	1.85	1.51	312	0.36	1.15	6.15
BAU-11	HW Santa Cruz	124.55	129.75	5.20	3.62	174	0.16	0.25	0.59
	Including	124.55	126.75	2.20	1.49	323	0.28	0.56	1.03
	Hole lost due to bad ground before intercepting Santa Cruz & FW Santa Cruz veins								
BAU-12	HW Santa Cruz	187.50	193.60	6.10	4.13	200	0.20	0.57	1.78
	Including	193.05	193.60	0.55	0.45	658	0.23	1.29	8.53
	Santa Cruz Vein	196.60	208.40	11.80	5.18	670	0.71	2.27	2.61
	Including	200.95	205.35	4.40	1.72	1,711	1.51	3.25	4.94
BAU-13	HW Santa Cruz	205.85	208.55	2.70	2.07	89	6.04	0.34	0.36
	Including	206.90	207.20	0.30	0.23	369	42.40	0.18	0.27
	Santa Cruz	232.10	235.15	3.05	1.29	312	0.55	0.28	0.45
	FW Santa Cruz	241.80	246.20	4.40	3.79	198	0.94	1.00	0.94
	Including	241.80	242.75	0.95	0.86	558	2.42	1.04	0.60
BAU-14	Santa Cruz	211.65	217.30	5.65	3.24	125	0.22	1.27	2.86
	Including	213.70	214.50	0.80	0.46	303	0.14	3.69	7.27
BAU-15	Santa Cruz Vein	163.85	164.35	0.50	0.32	288	0.23	0.64	1.49
BAU-16	HW Santa Cruz	140.15	143.25	3.10	2.68	585	0.52	0.71	0.70
	Including	140.15	140.65	0.50	0.43	2,920	2.45	3.21	0.22
	Santa Cruz	148.30	152.20	3.90	1.95	249	0.29	1.56	4.27
	FW Santa Cruz	170.10	170.45	0.35	0.22	82	0.19	4.07	7.30

Figure 10.9
Cross-section through Hole BAU-13 Testing Santa Cruz Vein in Alex Breccia



10.5 2008 SAN PEDRO SURFACE DIAMOND AND REVERSE CIRCULATION DRILLING

In mid-February, 2008, surface diamond drilling finished in the North Porvenir mine area and the one drill rig provided by Layne de Mexico S.A. de C.V. moved to the San Pedro area. By mid-October, 2008, Endeavour had completed a total of 9,173 m in 44 surface diamond drill holes and 2,977 m in 22 reverse circulation drill holes at San Pedro, see Tables 10.9 and 10.10.

Surface diamond and reverse circulation drill holes are shown on Figure 10.10.

Table 10.9
2008 Summary for San Pedro Surface Diamond Drilling

Hole	Azimuth	Dip	Diameter	Total Depth (m)	Start date	Finish date	Drilling Company
MCH2-1	45°	-45°	HQ	566.30	17/02/2008	02/03/2008	Layne
VE2-01	290°	-50°	HQ	140.80	03/03/2008	05/03/2008	Layne
DES1-1	290°	-50°	HQ	81.85	06/03/2008	07/03/2008	Layne
MCH1-1	45°	-50°	HQ	359.35	07/03/2008	13/03/2008	Layne
MCH1-2	45°	-65°	HQ	358.60	13/03/2008	19/03/2008	Layne
MCH5-1	45°	-60°	HQ	255.65	20/03/2008	25/03/2008	Layne
NB1-1	180°	-48°	HQ	344.10	25/03/2008	23/06/2008	Layne
NB1-2	180°	-72°	HQ	292.35	29/03/2008	04/04/2008	Layne
BF1-1	300°	-60°	HQ	185.60	05/04/2008	09/04/2008	Layne
BF2-1	300°	-51°	HQ	252.60	09/04/2008	14/04/2008	Layne
EPS3-1	300°	-59°	HQ	362.45	14/04/2008	20/04/2008	Layne
VE1-01	290°	-58°	HQ	222.10	21/04/2008	24/04/2008	Layne
VE3-01	290°	-45°	HQ	234.25	24/04/2008	29/04/2008	Layne
NB1-3	180°	-88°	HQ	350.50	15/06/2008	20/06/2008	Layne
NB2-1	180°	-82°	HQ	344.25	23/06/2008	28/06/2008	Layne
MCH1-3	45°	-75°	HQ	432.70	29/06/2008	07/07/2008	Layne
MCH0-1	45°	-72°	HQ	332.10	08/07/2008	14/07/2008	Layne
VE1.5-1	290°	-60°	HQ	106.20	15/07/2008	17/07/2008	Layne
VE2-2	290°	-60°	HQ	124.50	17/07/2008	19/07/2008	Layne
VE2-3	290°	-60°	HQ	103.15	19/07/2008	21/07/2008	Layne
VE2.5-1	290°	-60°	HQ	90.90	21/07/2008	22/07/2008	Layne
VE3-3	290°	-60°	HQ	115.40	23/07/2008	25/07/2008	Layne
VE2.5-2	290°	-60°	HQ	121.50	25/07/2008	27/07/2008	Layne
VE2.5-3	290°	-60°	HQ	106.25	27/07/2008	29/07/2008	Layne
VE2.5-4	290°	-60°	HQ	109.25	29/07/2008	31/07/2008	Layne
VE2.5-5	290°	-60°	HQ	105.50	31/07/2008	01/08/2008	Layne
VE2-4	290°	-60°	HQ	103.25	02/08/2008	03/08/2008	Layne
VE2.5-6	290°	-60°	HQ	115.45	04/08/2008	05/08/2008	Layne
VE2-5	290°	-60°	HQ	139.85	06/08/2008	08/08/2008	Layne
VE2-6	290°	-50°	HQ	118.45	08/08/2008	10/08/2008	Layne
VE0-1	290°	-60°	HQ	167.30	10/08/2008	12/08/2008	Layne
VE1-2	290°	-50°	HQ	216.00	13/08/2008	16/08/2008	Layne
VE1-3	290°	-55°	HQ	225.45	17/08/2008	20/08/2008	Layne
BF3-1	120°	-65°	HQ	225.80	22/08/2008	26/08/2008	Layne
NB3-1	180°	-65°	HQ	265.10	26/08/2008	01/09/2008	Layne
BF4-1	120°	-57°	HQ	240.70	01/09/2008	08/09/2008	Layne
NB2-2	180°	-55°	HQ	271.00	19/09/2008	23/09/2008	Layne
NB2-3	180°	-53°	HQ	327.30	23/09/2008	29/09/2008	Layne
DE6.5-1	290°	-53°	HQ	121.40	29/09/2008	01/10/2008	Layne
DE7.5-1	290°	-45°	HQ	79.00	01/10/2008	02/10/2008	Layne
DE6-1	290°	-48°	HQ	133.65	03/10/2008	05/10/2008	Layne
DE5-1	290°	-45°	HQ	100.00	05/10/2008	07/10/2008	Layne
DE5-2	290°	-63°	HQ	106.60	07/10/2008	09/10/2008	Layne
DE6-2	290°	-65°	HQ	118.55	09/10/2008	11/10/2008	Layne
			Total	**9,173.05**			

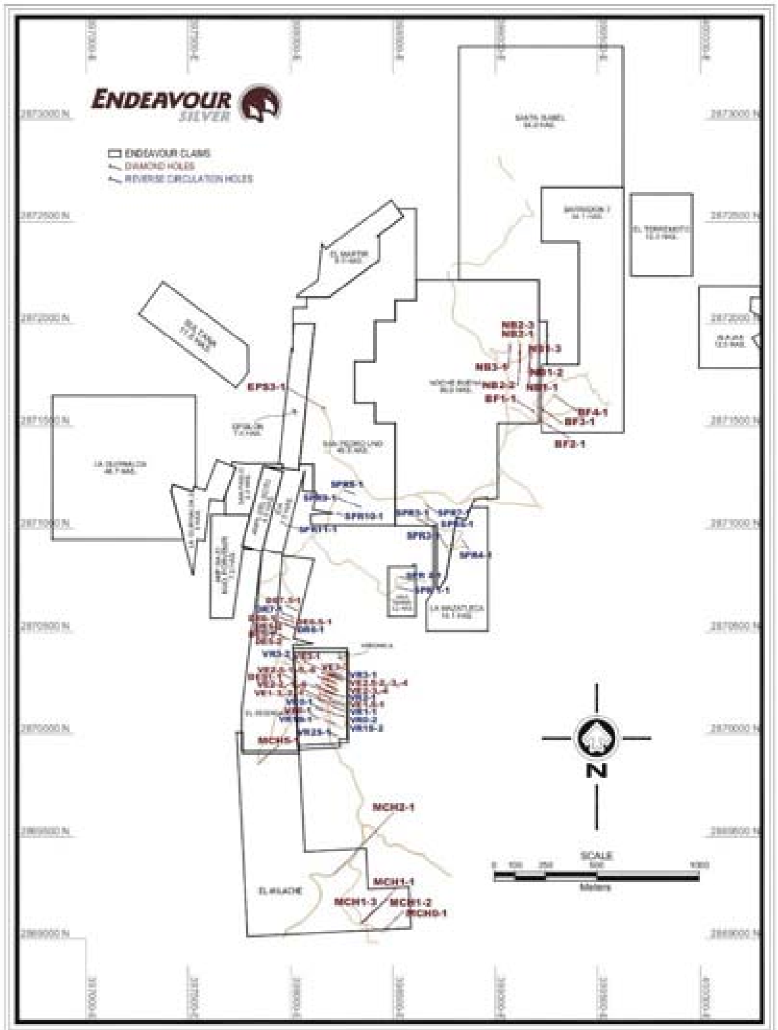
Table 10.10
Reverse Circulation Drill Hole Summary for the San Pedro Area

Hole	Total Depth (m)	Start date	Finish date	Drilling Company
VR1S-2	122.00	13-Jun-08	14-Jun-08	Layne
VR1S-1	122.00	15-Jun-08	15-Jun-08	Layne
VR2S-1	122.00	16-Jun-08	16-Jun-08	Layne
VR0-1	122.00	18-Jun-08	19-Jun-08	Layne
VR2-1	183.00	19-Jun-08	20-Jun-08	Layne
VR3-1	152.50	21-Jun-08	21-Jun-08	Layne
VR1-1	122.00	22-Jun-08	22-Jun-08	Layne
VR0-2	122.00	23-Jun-08	23-Jun-08	Layne
VR3-2	122.00	23-Jun-08	24-Jun-08	Layne
DR6-1	122.00	24-Jun-08	25-Jun-08	Layne
DR7-1	122.00	25-Jun-08	26-Jun-08	Layne
SPR5-1	112.85	26-Jun-08	27-Jun-08	Layne
SPR6-1	125.05	27-Jun-08	28-Jun-08	Layne
SPR7-1	134.25	28-Jun-08	29-Jun-08	Layne
SPR8-1	152.50	29-Jun-08	30-Jun-08	Layne
SPR9-1	244.00	01-Jul-08	03-Jul-08	Layne
SPR10-1	103.70	04-Jul-08	04-Jul-08	Layne
SPR4-1	122.00	05-Jul-08	05-Jul-08	Layne
SPR3-1	128.10	06-Jul-08	06-Jul-08	Layne
SPR1-1	131.15	07-Jul-08	08-Jul-08	Layne
SPR2-1	152.50	08-Jul-08	10-Jul-08	Layne
SPR11-1	137.25	10-Jul-08	11-Jul-08	Layne
Total	**2,976.85**			

10.5.1 2008 San Pedro Surface Diamond and Reverse Circulation Drilling Results

In 2008, exploration drilling in the San Pedro area, located in the northern part of the Guanaceví district, intersected economically interesting silver-gold-lead-zinc mineralization in five separate high grade vein systems, three moderate grade manto systems, and one bulk tonnage, lower grade stockwork zone. In contrast to the classic, high grade vein orebodies in the Santa Cruz vein near the Porvenir mine, the San Pedro area geology and mineralization are slightly different. The veins here tend to be more lead-zinc rich, and narrower but more numerous. Where they intersect a particular sub-horizontal geological contact, the mineralization spreads out along the contact as "mantos" or pancake-shaped mineralized zones. The new silver-lead-zinc stockwork and manto zones are still in the early stages of exploration drilling.

Figure 10.10
Surface Drill Hole Map of San Pedro Area, Guanaceví



Drilling in the Milache area (MCH drill holes) was important because it represents a new discovery of significant silver mineralization within the same Santa Cruz vein system that hosts the operating Porvenir silver mine some 2.5 km to the southeast.

In the Veronica area (VE and VR drill holes) silver mineralization has been outlined in both the Veronica and La Blanca veins and the underlying manto, whereas the DE and DR drill holes appear to be defining an extension to the old Desengano mine which produced high grade silver manto ores historically and again in the 1980's and 1990's. Hole VE2-1 intersected a shallow-dipping, high grade, silver vein/manto system in the San Pedro area (427 g/t silver and 0.3 g/t gold over 1.1 m true width). Many of the historic high grade silver mines at San Pedro produced ores where steep-dipping veins intersected the shallow-dipping manto system. Significant intercepts on the La Blanca vein in Holes VE2.5-2 and VE3-3 are good examples of this feature.

In the Noche Buena area (NB drill holes) strong, high grade silver-gold (lead-zinc) mineralized veins have been defined over a 100 m length by 200 m depth, and are still open in all directions. These vein intercepts are typically narrow but carry high grade silver values such as 3,068 g/t silver over 0.45 m (0.39 m true width) in Hole NB1-2, as well as significant lead-zinc mineralization (8.51% lead and 15.66% zinc). One hole drilled in the San Pedro Uno area (EPS3-1) intercepted a steep-dipping vein over a 1.15 m core length (0.58 m true width) assaying 6,680 g/t silver, 11.2 g/t gold, 1.49% lead and 2.52% zinc.

BF drill holes also intersected the vein/manto system and returned significant silver-gold-lead-zinc mineralization over mineable widths.

All surface diamond drilling results in the Milache, Veronica and Desengaño areas are summarized in Table 10.11. All surface diamond drilling results in the Noche Buena and Buena Fe are summarized in Table 10.12. All surface reverse circulation drilling results for the San Pedro District are summarized in Table 10.13. Figure 10.11 is a representative cross-section showing VE and DE series holes testing the vein and manto targets in the Veronica and Desengaño areas. Figure 10.12 is a representative cross-section showing NB series holes testing the vein and manto targets in the Noche Buena area. Figure 10.13 is a representative cross-section showing BF series holes testing the vein and manto targets in the Buena Fe area. The Real de San Pedro target is discussed in Section 10.7.1.

Table 10.11
Milache-Veronica-Desengano Drill Results

Hole	Vein	From (m)	To (m)	Core Length (m)	True Width (m)	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)
MCH0-1	Santa Cruz Vein	No significant intercept							
MCH1-1	Santa Cruz Vein	294.50	295.15	0.65	0.59	31	0.1	0.01	0.01
MCH1-2	HW Santa Cruz Vein	322.55	323.55	1.00	0.90	355	0.9	0.01	0.02
	Santa Cruz Vein	327.10	327.60	0.50	0.45	616	0.7	0.01	0.01
MCH1-3	Santa Cruz Vein	405.95	406.65	0.70	0.45	168	0.52	0.01	0.01
MCH2-1	Santa Cruz Vein	No significant intercept							
MCH5-1	Santa Cruz Vein	No significant intercept							
VE1-1	No significant intercepts								
VE0-1	No significant intercepts								
VE1-2	No significant intercepts								
VE1-3	No significant intercepts								
VE1.5-1	No significant intercepts								
VE2-1	Veronica Manto	37.10	38.40	1.30	1.10	427	0.3	0.08	0.19
VE2-2	La Blanca Vein	8.60	10.15	1.55	1.53	381	0.22	0.05	0.03
	Manto	30.05	30.75	0.70	0.45	145	0.05	6.59	0.03
VE2-3	No significant intercepts								
VE2-4	Vein/Fault	53.10	54.90	1.80	1.27	42	0.11	0.53	0.10
VE2-5	No significant intercepts								
VE2-6	No significant intercepts								
VE2.5-1	Manto	27.65	28.45	0.80	0.69	75	<0.05	4.29	0.03
VE2.5-2	La Blanca Vein	20.10	23.90	3.80	2.91	207	1.01	0.04	0.01
	Incl.	20.10	20.55	0.45	0.34	1,027	7.30	0.30	0.01
	Manto	23.25	25.45	2.20	1.69	231	0.21	0.01	0.01
VE2.5-3	La Blanca Vein	11.70	14.00	2.30	1.99	186	0.20	0.02	0.01
VE2.5-4	No significant intercepts								
VE2.5-5	No significant intercepts								
VE2.5-6	Manto	57.50	58.45	0.95	0.82	72	0.50	0.73	3.25
VE3-1	Veronica Vein	66.35	69.75	3.40	2.60	11	<0.05	0.002	0.009

Hole	Vein	From (m)	To (m)	Core Length (m)	True Width (m)	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)
VE3-3	La Blanca Vein	13.25	16.35	3.10	2.54	209	0.79	0.02	0.01
DES1-1	Desengano Vein	44.05	44.50	0.45	0.32	77	0.1	0.04	0.34
DE5-1	No significant intercepts								
DE5-2	Vein	78.70	80.60	1.90	1.00	51	0.07	0.70	0.59
DE6-1	Manto	72.65	74.25	1.60	1.49	195	0.38	0.01	0.01
	Incl.	73.60	73.75	0.15	0.14	1,135	2.28	0.02	0.02
DE6-2	Manto	73.15	74.40	1.25	0.96	79	0.10	0.01	0.01
	Vein	108.55	108.85	0.30	0.19	160	0.65	0.01	0.01
DE6.5-1	Vein	70.15	70.40	0.25	0.20	118	0.25	0.02	0.01
	Vein	76.25	76.70	0.45	0.37	143	0.33	0.11	0.02
DE7.5-1	No significant intercepts								
EPS3-1	Vein	249.50	250.65	1.15	0.58	6,680	11.2	1.49	2.52
	Vein	280.60	281.65	1.05	0.86	351	0.7	0.13	0.20

Table 10.12
Noche Buena-Buena Fe Drill Results

Hole	Vein	From (m)	Core Length (m)	True Width (m)	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)
NB1-1	Vein	73.85	0.25	0.19	523	0.1	1.47	2.93
	Vein	100.70	0.90	0.78	124	0.1	0.26	0.80
	C Vein	122.45	1.05	0.53	333	0.1	0.53	0.91
	Vein	188.60	0.20	0.14	564	0.3	1.68	3.84
	Vein	197.35	0.20	0.13	402	0.2	0.95	1.44
	Manto	298.30	1.30	1.00	392	0.32	2.22	3.92
NB1-2	Vein	30.90	1.60	0.92	551	0.1	1.29	0.69
	Vein	84.65	2.05	1.03	103	0.1	0.84	1.48
	C Vein	120.05	2.30	1.99	810	0.2	2.32	4.01
	Incl.	120.65	0.45	0.39	3,068	0.7	8.51	15.66
	Vein	249.75	0.40	0.26	321	<0.05	4.20	10.70
	Vein	269.70	0.40	0.26	214	0.2	0.55	0.99
NB1-3	Vein	18.60	0.20	0.17	336	0.07	0.29	0.28
	Vein	85.75	0.35	0.22	416	0.16	0.22	0.37
	Vein	125.90	0.50	0.17	272	<0.05	0.57	1.21
	Stockwork	145.60	1.05	0.53	120	<0.05	0.36	0.44
	C Vein	171.20	2.40	1.54	388	0.29	1.35	2.70
	Incl.	171.55	0.35	0.22	1,155	0.73	3.77	7.48
	Vein	203.60	0.40	0.31	222	0.30	0.63	1.64
	Manto	292.00	0.95	0.61	101	0.27	1.18	2.10
	Vein	302.55	0.35	0.17	216	0.40	1.58	2.43
	Vein	317.75	1.00	0.17	116	0.31	1.34	2.49
NB2-1	Vein	115.95	0.50	0.38	443	0.26	0.68	0.52
	Vein	129.80	0.30	0.23	342	0.23	0.76	1.99
	Vein	140.70	0.45	0.26	186	0.27	0.27	0.26
	Stockwork	145.65	3.25	1.96	203	0.12	0.47	0.97
	C Vein	153.45	3.95	3.42	325	0.16	0.73	1.60
	Incl.	156.30	0.35	0.30	1,295	0.45	1.46	2.95
	Stockwork	158.95	0.70	0.54	202	0.13	0.35	0.70
	Vein	162.55	0.50	0.25	223	0.13	0.28	0.78
	Stockwork	165.45	1.35	1.03	185	0.36	0.33	0.29
	Vein	174.85	0.35	0.19	253	0.19	0.39	0.29
	Vein	196.30	2.95	1.95	385	0.37	0.40	1.48
	Manto	230.40	4.20	3.64	14	0.1	0.391	0.980
	Manto	282.60	0.85	0.27	149	0.12	2.58	4.26
NB2-2	Vein	83.90	0.25	0.22	249	<0.05	3.51	9.06
	C Vein	126.65	4.55	0.79	120	0.05	0.20	0.40
	Vein	182.60	0.80	0.34	118	0.10	2.12	11.93
NB2-3	Armagedon Vein	183.15	2.25	1.50	180	0.11	1.45	2.54
	FW Armagedon Vein	216.10	2.20	1.50	205	0.07	0.59	0.99
	C Vein	247.05	1.95	1.49	127	0.45	2.13	2.38

Hole	Vein	From (m)	Core Length (m)	True Width (m)	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)
NB3-1	Vein	111.90	0.55	0.39	200	0.18	0.05	0.18
	Vein	119.55	0.60	0.49	390	0.16	1.08	2.72
	HW Armagedon Vein	123.15	2.60	1.49	289	0.19	1.75	3.09
	Armagedon Vein	163.20	1.90	1.50	195	0.14	0.41	0.69
	Incl.	163.50	0.25	0.22	1,130	0.55	1.13	2.48
BF1-1	Buena Fe Manto	121.85	2.35	1.49	118	0.1	1.04	1.91
BF2-1	Buena Fe Manto	180.30	2.05	1.78	61	0.1	4.47	7.65
BF3-1	Vein	166.10	2.40	1.45	40	0.05	1.15	1.76
	Vein	174.60	0.75	0.48	155	0.21	0.38	0.58
	Manto	187.05	2.35	1.50	50	0.07	1.99	5.28
	Manto	213.65	3.40	2.32	50	0.06	2.56	3.96
	Vein	232.00	0.75	0.26	151	0.16	3.10	4.43
BF4-1	Manto	211.80	0.40	0.17	26	<0.05	2.92	6.31

Table 10.13
San Pedro Area Reverse Circulation Drill Results

Hole	Zone	Vein	From (m)	Interval (m)	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)
DR6-1	Desengano	Stockwork	106.75	1.53	367	1.22	0.06	0.18
DR7-1	Desengano	Manto	61.00	3.05	264	0.43	0.01	0.03
VR0-1	Veronica	Veronica Vein	76.25	3.05	154	0.23	0.02	0.08
VR0-2	Veronica	Manto	77.78	1.52	138	0.44	0.01	0.04
			82.35	1.53	193	0.76	0.03	0.02
		Stockwork	96.08	3.05	129	0.51	0.03	0.06
VR1-1	Veronica	Stockwork	18.30	13.73	173	0.44	0.07	0.00
		Incl.	28.98	1.53	412	0.07	0.05	0.00
		Manto	38.13	6.10	181	0.52	0.04	0.06
VR1S-1	Veronica	No Significant Intercepts						
VR1S-2	Veronica	No Significant Intercepts						
VR2-1	Veronica	No Significant Intercepts						
VR2S-1	Veronica	Manto	82.35	1.53	262	0.32	0.01	0.01
VR3-1	Veronica	No Significant Intercepts						
VR3-2	Veronica	No Significant Intercepts						
SPR1-1	San Pedro	Stockwork	25.93	1.52	110	0.32	0.02	0.02
SPR2-1	San Pedro	No Significant Intercepts						
SPR3-1	San Pedro	No Significant Intercepts						
SPR4-1	San Pedro	No Significant Intercepts						
SPR5-1	San Pedro	No Significant Intercepts						
SPR6-1	San Pedro	No Significant Intercepts						
SPR7-1	San Pedro	No Significant Intercepts						
SPR8-1	San Pedro	No Significant Intercepts						
SPR9-1	San Pedro	Stockworvk	73.20	1.53	162.00	0.52	0.01	0.02
SPR10-1	San Pedro	No Significant Intercepts						
SPR11-1	San Pedro	No Significant Intercepts						

Figure 10.11
Cross-section through Veronica-Desengaño Vein and Manto Target Area

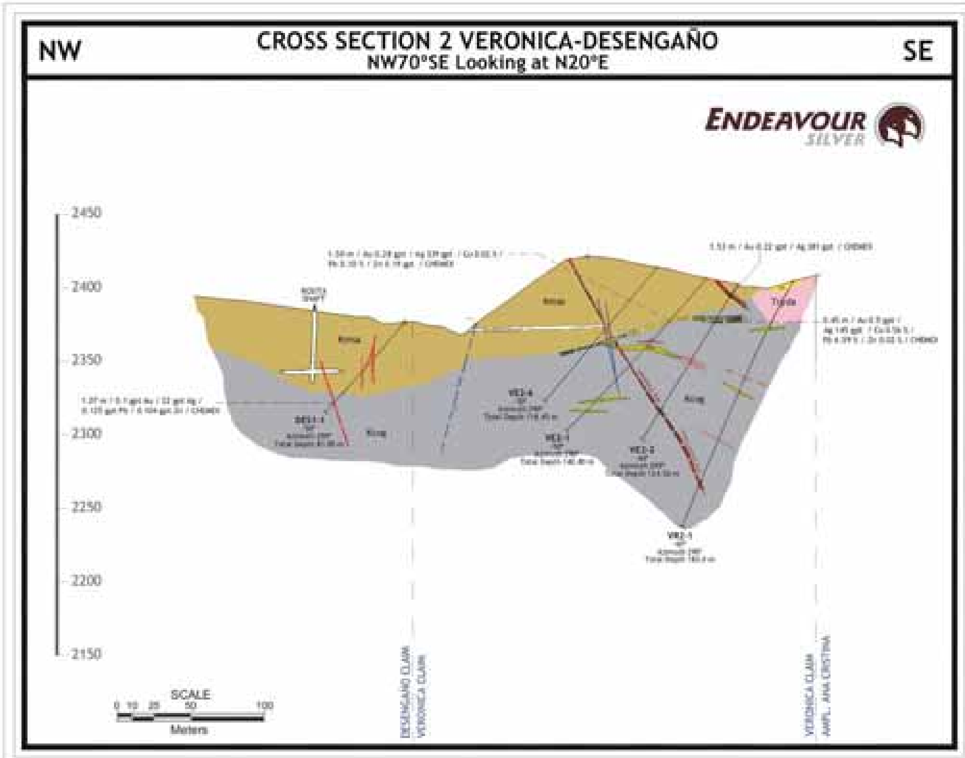


Figure 10.12
Cross-section through Noche Buena Vein and Manto Target Area

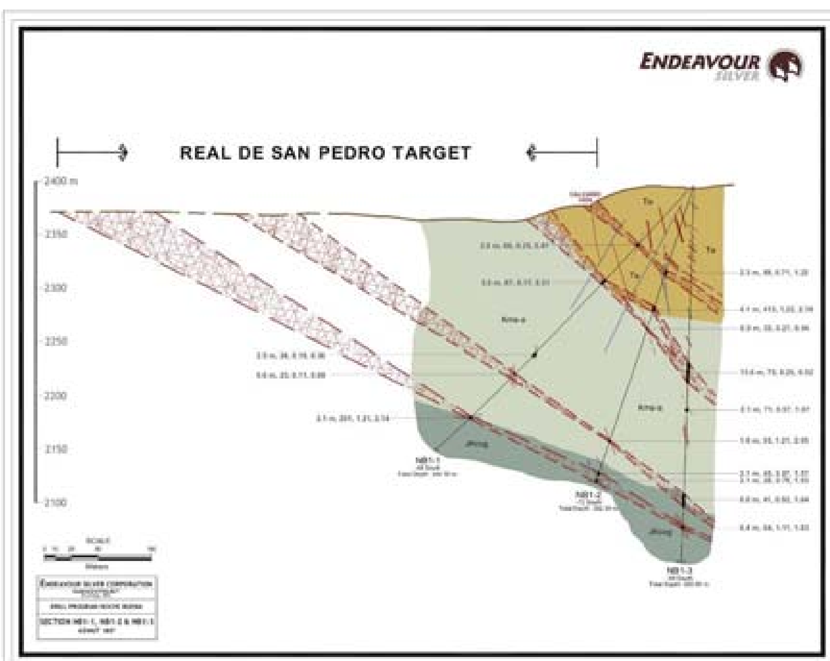
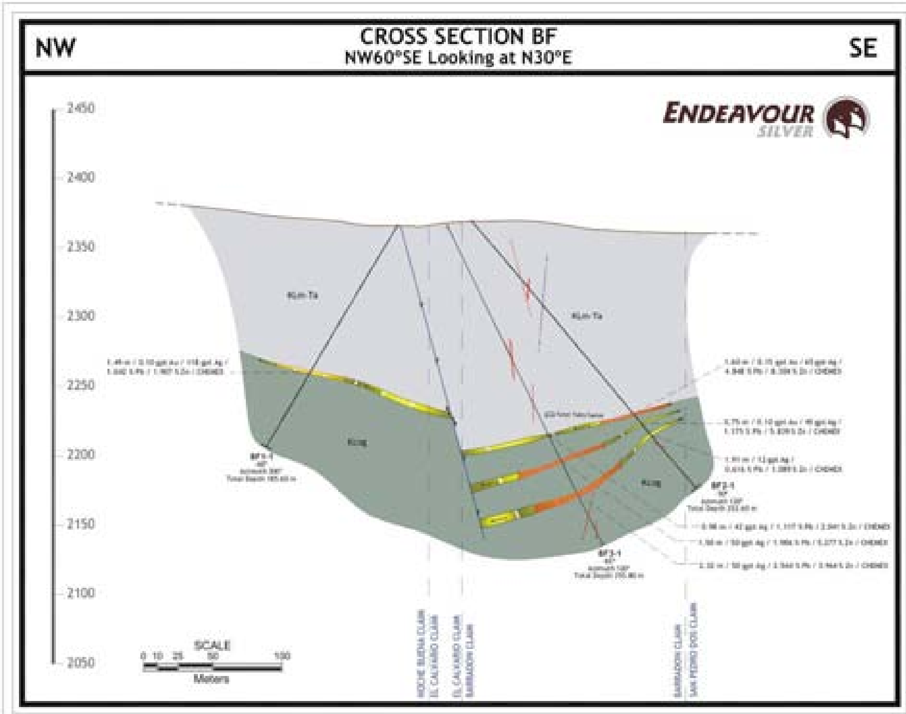


Figure 10.13
Cross-section through Buena Fe Vein and Manto Target



10.5.2 San Pedro Other Exploration Activities in 2008

Geophysical Survey

During 2008, Endeavour undertook a 25 line km (250 hectare) geophysical survey (including induced polarization, resistivity, and ground magnetics) over the central part of its San Pedro properties to see if the mineralized vein/manto system could be detected geophysically. A total of 13.6 line km (136 hectares) have been completed to date and multiple IP anomalies have been detected.

Geophysical surveys were conducted by Terra Tecnologia del Subsuelo S.A. De C.V. (TTS).

Results include residual magnetic anomalies (Fig. 10.14) and chargeability with red colours indicating chargeability highs (Fig.10.15). Selected IP sections are shown in Figures 10.16 and 10.17).

Most sections indicate a chargeability anomaly in the west part of the profiles in the middle part of the survey grid. The east part of the lines also shows high chargeability anomalies in the middle and northern part of the survey grid. A strong anomaly is also indicated on the IP pseudo-section depicted in Fig. 10.17.

Figure 10.14
Residual Magnetic Anomaly of the San Pedro area

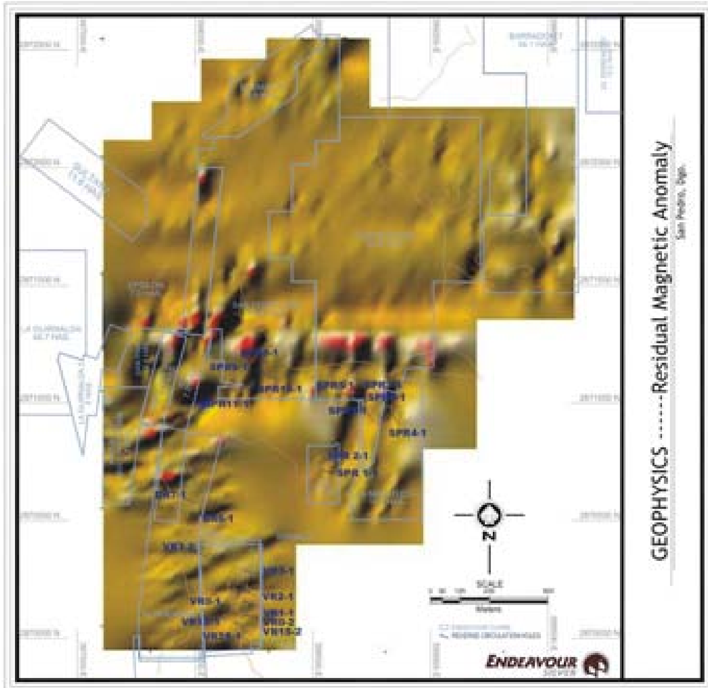


Figure 10.15
Chargeability Map at 65 m of San Pedro Area.

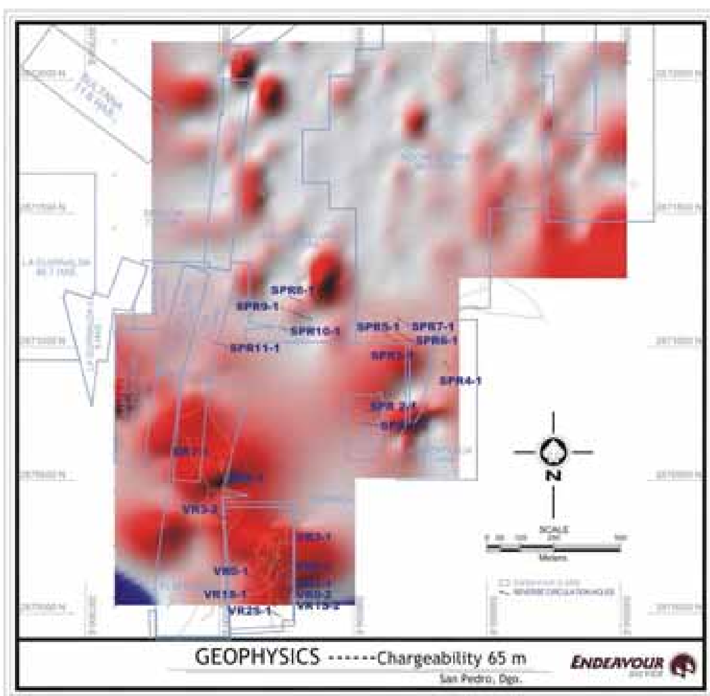


Figure 10.16
IP Section Line N300 (The section line is looking due north with west on the left side and east on the right side. The horizontal distance across the section is 1.35 km)

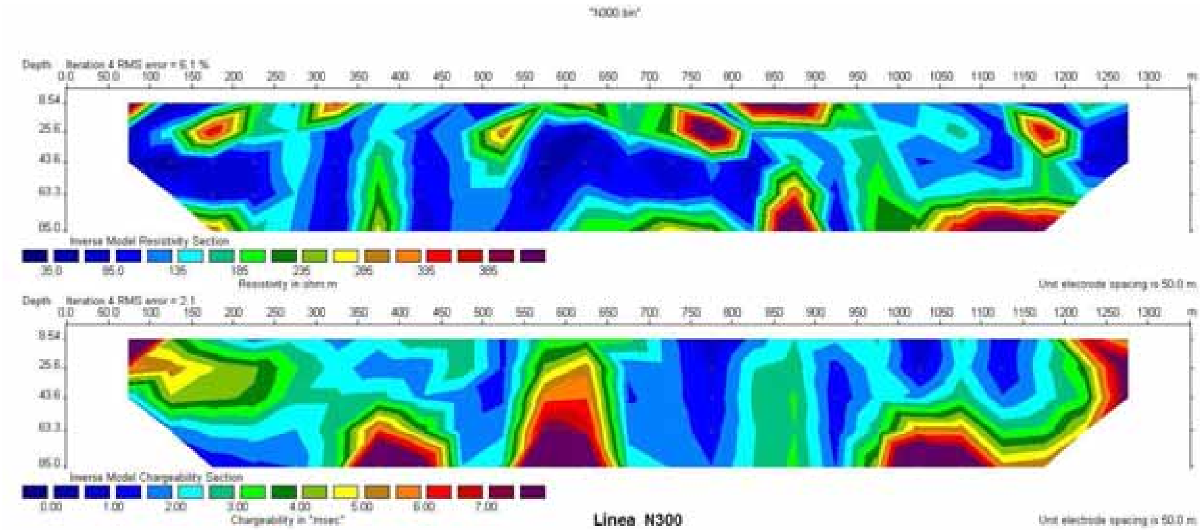
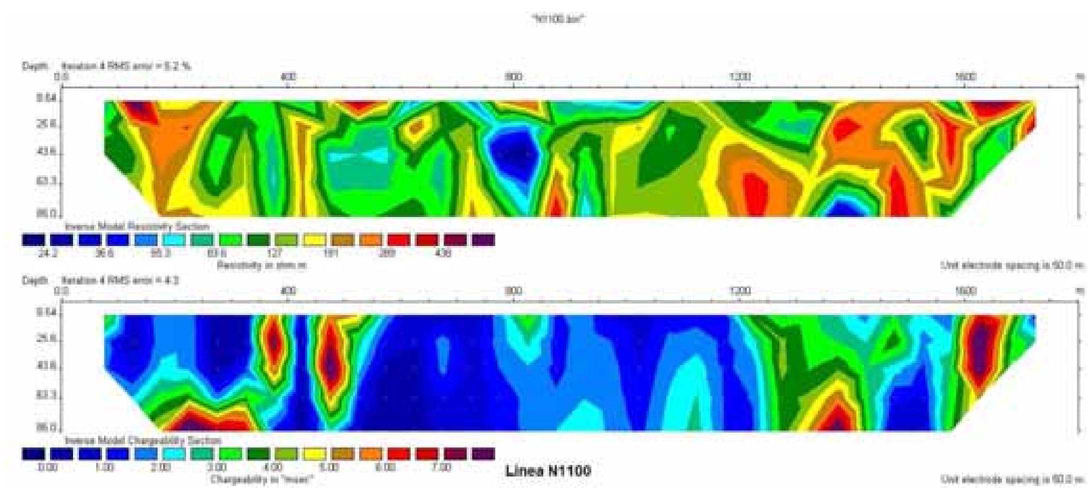


Figure 10.17
IP Section Line N1100 (The section line is looking due north with west on the left side and east on the right side. The horizontal distance across the section is 1.8 km)

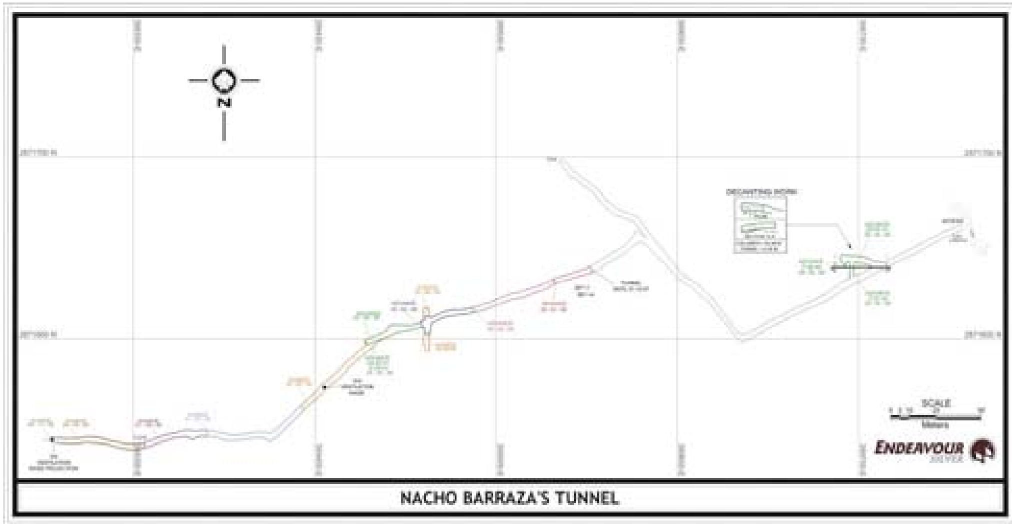


Nacho Barraza Tunnel

An exploration tunnel on the east side of the San Pedro area was collared at year-end 2007 and has progressed slowly westwards (346.4 m of advance) towards the prospective Noche Buena – Buena Fe area (Fig. 10.18).

Results of this tunneling program have not been encouraging. Mainly narrow vein structures with low to moderate silver-lead-zinc values have been encountered. In September, 2008, Endeavour Silver discontinued this tunneling program until a more specific target could be identified for development.

Figure 10.18
Plan Map showing Advance in the Nacho BarrazaTunnel in the Noche Buena-Buena Fe Area, San Pedro Sub-District



10.6 2008 EL AGUAJE SURFACE DIAMOND DRILLING

In 2008, initial mapping and sampling was conducted on Endeavour Silver's El Aguaje concessions, situated about halfway between Endeavour Silver's processing facility and the Porvenir mine. The purpose of this program was to evaluate this 100% Endeavour-owned property for possible drill targets.

The El Aquaje vein zone consists of many segments and splays with about 400 m of strike on a NW-SE trending zone (Fig. 10.19). The veins are conglomerate-hosted and they usually do not exceed 1 m in width. There are several workings along the zone. The larger set of workings lie in the north in what is known in part as Mina Ana Cristina where there are up to three sub-parallel vein components hosted by the conglomerates. Surface samples indicated that silver grades were variable (50-250 ppm Ag with one vein averaging 877 g/t Ag over 1.10 m.

In September, 2008, surface diamond drilling was conducted in the El Aguaje area with one drill rig provided by Layne de Mexico S.A. de C.V. Endeavour completed a total of 462 m in three surface diamond drill holes, see Table 10.14.

Surface diamond drill holes are shown on Figure 10.19.

Table 10.14
2008 Diamond Drill Hole Summary for the El Aguaje Area.

Hole	Azimuth	Dip	Diameter	Total Depth (m)	Start date	Finish date	Drilling Company
EA3-1	210º	-55º	HQ	100.20	10/09/2008	11/09/2008	Layne
EA1-1	260º	-48º	HQ	173.30	12/09/2008	15/09/2008	Layne
EA2-1	260º	-45º	HQ	188.45	15/09/2008	18/09/2008	Layne
				461.95 m			

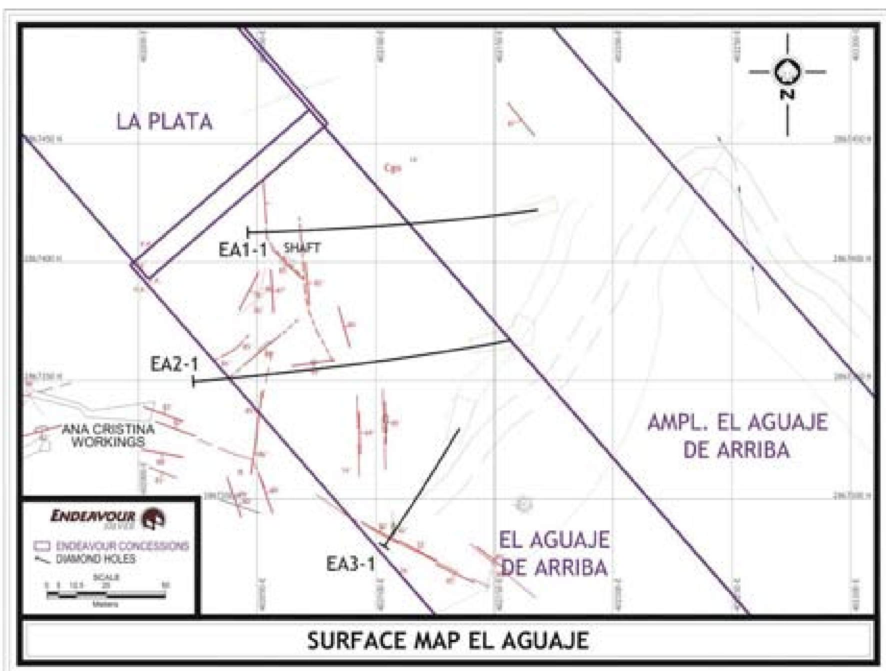
10.6.1 2008 El Aguaje Surface Diamond Drilling Results

All surface diamond drilling results in El Aguaje are summarized in Table 10.14. No significant assay results were returned for this drilling progam.

Table 10.15
Surface Drill Hole Assay Summary for vein intercepts in the El Aguaje area.

Hole	Vein	From (m)	To (m)	True Width (m)	Assays				
					Au g/t	Ag g/t	Cu %	Pb %	Zn %
EA3-1	El Aguaje Vein	70.50	70.75	0.19	0.3	<5	0.001	0.006	0.009
EA1-1	El Aguaje Vein	122.15	122.60	0.41	0.1	<5	0.001	0.006	0.014
EA2-1	El Aguaje Vein	111.30	111.95	0.63	0.9	20	0.001	0.021	0.023

Figure 10.19
Surface Map showing Traces of Diamond Holes Drilled to Test Vein Targets on the El Aguaje De Arriba and Ampl. El Aguaje de Arriba Concessions.



11.0 DRILLING

11.1 INTRODUCTION

Drilling programs on the Guanaceví Mines project through December 31, 2006 were described in detail in Micon's April, 2007 Technical Report. No changes have occurred to the methods of outlining and surveying the locations of the drill holes since the publication of the Micon report. For completeness of this report, however, the description of Endeavour Silver's drilling procedures from the April, 2007 report has been excerpted and is presented below.

11.2 DRILLING PROCEDURES

After review and approval by Endeavour Silver management of the planning and budgeting of the drilling programs proposed by Endeavour Silver geologists, the individual drill sites are prepared and surveyed. Drill holes are typically drilled from the hanging wall, perpendicular to and passing through the target structure, into the footwall. No drilling is designed for intercept angles less than about 35° to the target, and most are 45-90°. Drill holes are typically HQ to NQ size in diameter.

On the drill site, the drill set-up is surveyed for azimuth, inclination and collar coordinates with the drilling subject to daily scrutiny and coordination, with the drill crew, by Endeavour geologists. At or near the targeted drill hole depth, the hole is surveyed using a Reflex down-hole survey instrument in multi-shot mode. The instrument is lowered down the drill rod string by wireline (the core barrel has been removed) and extended through the bit, where it hangs unsecured by resting on the bit crown. Survey measurements are thus obtained at a depth of approximately 4 m below the end of the drill string and at 30 m to 50 m intervals from the bottom of the hole to the collar. The survey data obtained from the drill hole are transferred to a handheld PDA, by which it is transferred to the office and thence to the Vulcan mine planning software and AutoCAD databases. True thicknesses are estimated from the measured inclination of the drill hole intercept and the interpreted dip of the vein.

Drill core is collected daily, carried to a secure core storage building where it is laid out, measured, logged for geotechnical and geological data, and marked for sampling.

Depending on the competency of the core, core is either cut in half with a diamond bladed core saw or split with a pneumatic core splitter.

The core storage facilities at Guanaceví are well protected by high level security fences and are under 24 hours surveillance by security personnel. This arrangement rules out any possibility of tampering with the drill cores.

11.3 CORE LOGGING PROCEDURES

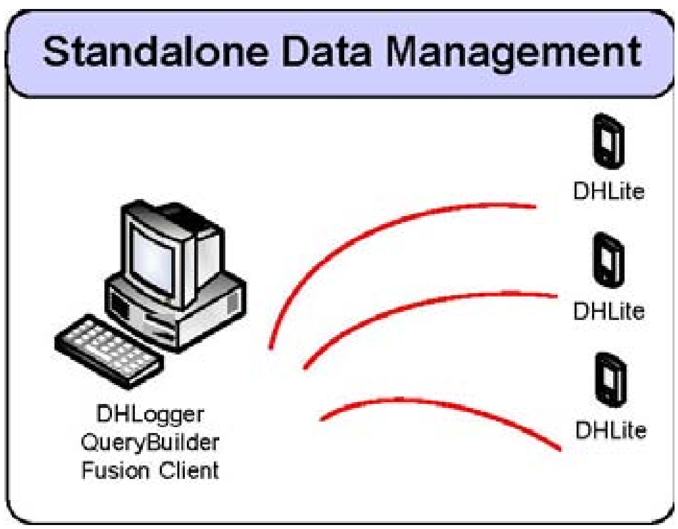
In 2008, Endeavour Silver implemented a drill hole data collection and data management system for its exploration projects.

A configuration setup by Century Systems Technologies Inc. was selected for this purpose (Figure 11.1). Century was chosen because it directly interfaces with other software, like Vulcan, MapInfo and ArcGIS. The configuration selected was as follows:

- DHLogger for drill hole data collection, management and reporting which runs on a Windows XP or Vista computer.
- DHLite for drill hole data collection which runs on a handheld Windows mobile computer Fusion Client to move data back and forth between the local computer and the server(s).

In 2008, Endeavour established logging codes and other database organization and implemented the Century data collection and data management system at Guanaceví.

Figure 11.1
Century's Configuration for Drill Hole Data Collection for the Guanaceví Mines Project



Each project will be captured into a DHLogger stand-alone database. The database comes in two files that can be easily copied to the office for backup and sharing of the data.

Only one person can be adding data to a project's database at a given time in DHLogger but many people can be logging drill holes on DHLite at the same time.

The data will be captured at the project or in the office and the database files can be posted to a secure area in the office for others to copy to their computer and view.

Directories can be setup in the office similar to the one shown below to store the database files for backup purposes and to view the project data.

Mineral resource (Vulcan), GIS, reports, Lab Import, geochemical QA/QC analysis, and other access to the data are from this PC only. To be able to access the data on the DHLogger database from another computer requires copying the Fusion Local database or implementing Fusion Server.

12.0 SAMPLING METHOD AND APPROACH

A description of Endeavour Silver's sampling method and approach for the Guanaceví Mines project was provided in previous NI 43-101 Technical Reports (Range Consulting, March 2006; Micon, April 2007). Endeavour Silver personnel have made no material changes to the sampling method and approach since the publication of the April, 2007 Micon report and the Endeavour Silver April, 2008 report. However, for completeness of this report, the description from the April, 2008 report has been excerpted and is either presented below in its entirety or has been edited where deemed appropriate.

12.1 SAMPLING INTERVALS

Sampling intervals range from about 0.3 m to 2.5 m, with most in the 0.5 m to 1.5 m range. The Endeavour Silver geologist uses geological criteria to select sample intervals. Quartz vein material is separated from hanging wall and footwall horizons, and internal vein samples are broken out by texture-type. Three principal types of vein textures are recognized: (a) massive; (b) banded; and (c) brecciated. As much as possible, vein samples are selected to represent mineralization episodes.

12.2 UNDERGROUND SAMPLING METHODOLOGY

Mine samples are collected principally for grade control purposes but are also used to build up a channel sample database for resource estimation purposes. Samples are collected from sills and in stopes. Sill samples are taken from the development face on a blast-by-blast basis. Sill face samples are either taken perpendicular to the structure or are taken horizontally and vertically; preferentially perpendicular samples are collected but with inexperienced samplers the horizontal-vertical method is used. All sampling starts from the footwall, with sample limits based on geological contacts. In stopes, and in sills if time permits, samples are taken from the back and footwall side-wall. In general footwall waste samples are not taken systematically, although at least one footwall sample is normally taken in a sampling session and if the footwall is veined or sulphide rich. If the vein is present in the footwall side-wall it is sampled, although in early 2008 the length of side-wall samples was not measured. Side-wall channel samples are measured vertically, whilst back samples are measured horizontally. In 2008 channel sample spacing was typically 2.5 metres, although in the first quarter and for most of 2007 channel sample separation was 5.0 metres. Samples are taken using a hammer and chisel, or if the back is too high a scaling bar is also used to chip the sample off.

Sample locations underground are measured from a known reference point. The reference point until mid 2008 was a physical feature such as a ventilation raise or stope access wall. In the second half of 2008 a policy of only using surveyed reference points (generally survey points with a unique identifier and identified by a painted nail) was implemented. All grade control samples are bagged in heavy duty polyurethane bags with a commercially prepared sample ticket inserted in the bag, and the sample number marked on the bag exterior with marker pen. All sample information is noted in a field notebook and later transferred to daily information sheets in the office. Basic sample information is also noted on sample ticket slips which are stored in the mine geology department office.

12.3 DENSITY DETERMINATIONS

12.3.1 Exploration Samples

Endeavour Silver has modified its protocol for density determinations in drilling programs at the Guanaceví Mines project. Endeavour Silver is now periodically sending core samples to an outside laboratory for bulk density determinations.

Samples of core from drilling programs at the Guanaceví Mines project were submitted to the SGS-Lakefield laboratory in Durango, Mexico.

Bulk density determinations at the SGS Lakefield laboratory employed the following methodology:

1) Weigh the sample.
2) Coat the sample with lacquer and let it completely dry.
3) Immerse the sample in water.
4) Weigh the volume of water that is displaced.
5) For quality control (QC), each density determination is done at least twice.

During 2008, bulk density determinations were completed by SGS on selected samples of core from Alex Breccia and the Santa Cruz mine (Table 12.1) and Noche Buena (Table 12.2).

Table 12.1
Bulk Density Determinations for Core from Alex Breccia and Santa Cruz Mine

Hole	Sample Number	Width (metres)	Au g/t	Ag g/t	Cu %	Pb %	Zn %	Pb/Zn% Combined	SG
ALEX BRECCIA									
BAU4	DH9647	1.00	0.14	234	0.02	1.27	2.80	4.07	2.72
BAU8	DH9872	0.95	0.10	184	0.02	0.74	2.40	3.14	2.55
BAU10	DH11233	0.30	1.10	486	0.04	0.83	2.56	3.39	2.56
BAU12	DH11460	0.20	0.14	23	0.02	1.07	2.28	3.35	2.61
								Average	**2.61**
SANTA CRUZ MINE									
DSC2-15	DH8477	0.30	4.20	436	0.05	1.59	3.20	4.79	2.80
DSC2-8	DH3834	1.50	3.20	612					2.66
DSC2-6	DH3688	0.60	1.00	564					2.81
DSC2-3	DH3481	0.35	0.20	248					2.63
								Average	**2.73**

Table 12.2
Bulk Density Determinations for Core from Noche Buena

Hole	Sample	Interval		Litho	Width (m)	Assays					
		From (m)	To (m)			Au g/t	Ag g/t	Cu %	Pb %	Zn %	SG
NB1-1	DH14339	122.90	123.50	CVn	0.60	0.10	505	0.03	0.87	1.52	2.93
NB1-1	DH15426	298.60	298.95	Bx	0.35	0.20	300	0.12	1.90	3.68	3.17
NB1-2	DH14415	120.35	120.65	CVn	0.30	0.21	258	0.03	1.88	2.70	3.22
NB1-2	DH14449	276.45	276.75	Kcog	0.30	0.20	127	0.05	1.43	2.23	2.86
NB1-3	DH15231	173.30	173.60	CVn	0.30	0.13	113	0.01	1.35	2.41	2.80
NB2-1	DH15535	154.70	155.10	Sw2	0.40	0.12	220	0.02	1.54	2.26	2.61
NB2-2	DH21328	179.70	180.30	Ban	0.60	<0.05	47	0.01	1.61	2.27	3.04
										Average	**2.95**

12.3.2 Mine Samples

In November, 2008 a total of 36 density samples were collected from different stopes and submitted to the SGS laboratory in Durango, Mexico for bulk density determination using the same methodology described above. The results gave average bulk density values of 2.23 for vein rock, 2.36 for footwall rocks and 2.20 for hanging wall rocks. These values are extremely low compared to expectations and compared to previous in-house determinations on core samples. As SGS determinations on core samples from other deposits in the Guanaceví Mines project gave similar results to the in-house determinations it was felt that the results obtained from the mine samples were not realistic. One cause for the unreliability of the mine samples could be the selection of fractured samples with excessive open space resulting in under-estimation of bulk density. During 2009 the mine department will implement a program of systematic bulk density sample collection under close geological supervision. In addition the in-house laboratory will begin bulk density determinations, with external laboratory checks as well. In view of the uncertainty with the bulk density results it was decided to continue using the previously model parameter of 2.55 for bulk density until a more reliable estimate could be determined.

13.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

In April, 2007, Micon reported changes that had been made to Endeavour Silver's sample preparation, analyses and security since the publication of the March, 2006 Range Consulting Technical Report. Further changes have since been made and are summarized below.

13.1 SAMPLE PREPARATION

13.1.1 Mine Channel Samples

Mine chip channel samples and mill feed belt samples are prepared and analyzed at the Metalurgica Guanaceví (MG) laboratory, Endeavour's in-house laboratory at the Guanaceví Mines project.

Grade control channel samples, which were used for stope based reserve estimates, are prepared and analyzed at the in-house laboratory. The sample preparation procedure for most of 2008 was the following: Samples are received and checked in by laboratory staff; moist samples are dried for 2-4 hours; otherwise samples are crushed to -½ inch in a primary jaw crusher; samples are split using a 1 inch or ½ inch Jones splitter; 100-150 g of sample is retained for pulverizing and is put in a metal tray, along with a pulp envelope; remaining coarse rejects are returned to their original bag along with the sample ticket and stored; the 150 g crushed sample is then dried at a temperature of 100° C. The dried sample is then pulverized in a ring pulverizer to -80 mesh; the pulverized sample is stored in a numbered envelope.

13.1.2 Exploration Core Samples

All exploration drill core is transported to the secure core storage facility at the Santa Cruz mine site. Sampling procedures typically begin with splitting by either a wheel-driven manual splitting device or an electric diamond-bladed core saw. The wheel-driven manual splitting device is generally used only when the core is badly broken-up and cannot be effectively cut by the diamond-bladed core saw. In most cases, the diamond saw is used for splitting the core. One half of the core is replaced in the original core box with depth markers, the other half is bagged with sample tickets and recorded in the sample record. Once samples are bagged, they are transported to an outside laboratory.

In 2008, all drill core samples were sent to ALS-Chemex (Chemex). Chemex maintains a preparation facility in Chihuahua, where 50 gm pulps are prepared and shipped to Vancouver, Canada for analysis. Chemex emails assay data results to Endeavour Silver geologists and then returns the pulps to Guanaceví for storage at the core building at the Santa Cruz mine site.

All of Endeavour Silver's drill core samples are bagged and tagged at the Guanaceví Mines project. Upon arrival at ALS-Chemex, all samples are logged into the laboratory's tracking system. Then the entire sample is weighed, dried and fine crushed to better than 70% passing 2 mm. A sample split of up to 250 g is then taken and pulverized to 85% passing 75 microns.

Sampling results were also reported to be reasonably representative of the mineralization of the deposits and may be used with acceptable confidence in the estimation of the mineable reserves.

13.2 ANALYSES

13.2.1 Mine/Grade Control Samples

At the MG laboratory, a 10 gm sample is removed from the 100 gm pulp and subjected to fire assay determination of gold and silver contents. Subsequent splits of the pulp are used for Pb, Zn, Cu, Mn and Fe analyses by atomic adsorption (AA). The remaining pulp is returned to Endeavour Silver for either storage or discarding. For mine production samples selected pulps are stored in the laboratory for 3 months then disposed of. Coarse reject samples are retained for a month and then sent to the plant as feed.

Endeavour Silver uses outside laboratory assay facilities for check assaying.

13.2.2 Exploration Samples

At Chemex, the analytical procedure for Au and Ag is also fire assay followed by a gravimetric finish. A 50 gram nominal pulp sample weight is used. Lead, zinc and copper are determined either by AA or atomic emission spectroscopy (AES).

As an economical tool for first pass exploration geochemistry, the pulps are sometimes subjected to aqua regia digestion and inductively coupled plasma (ICP) multi-element analysis. The data reported from an aqua regia leach are considered to represent the leachable portion of the particular analyte. These analytical methods are optimized for low detection limits. The assays for evaluation of ores and high-grade materials are optimized for accuracy and precision at high concentrations (>10,000 ppm). Over-limits for lead, zinc and copper are determined either by atomic adsorption or atomic emission spectroscopy. In 2008, the turn-around time required for analyses has typically been 2 to 4 weeks.

13.3 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC).

Endeavour Silver imposes and maintains various QA/QC protocols on sampling and assay procedures including duplicates, standards, blanks and check analyses to monitor the integrity assay results.

13.3.1 Mine Channel Sampling

The QA/QC for production samples is mainly by instituting repeat analyses using different sample numbers, with a smaller percentage of samples submitted to an external laboratory.

Underground exploration/evaluation samples are treated like any other exploration samples as described below. Since August, 2008 commercial reference standards are also being used to monitor MG laboratory performance; standards are submitted approximately every 40 samples.

13.3.2 Drilling Programs

- Drilling in the Santa Cruz, North Porvenir, San Pedro and El Aguaje areas included a QA/QC program to monitor the integrity of all assay results. Each batch of 20 samples includes one blank, one duplicate and one standard. Check assaying is also conducted at a frequency of between 5% and 10%.

A total 7,931 samples were collected during Endeavour's drilling program at Guanaceví in 2008 as shown in Table 13.1.

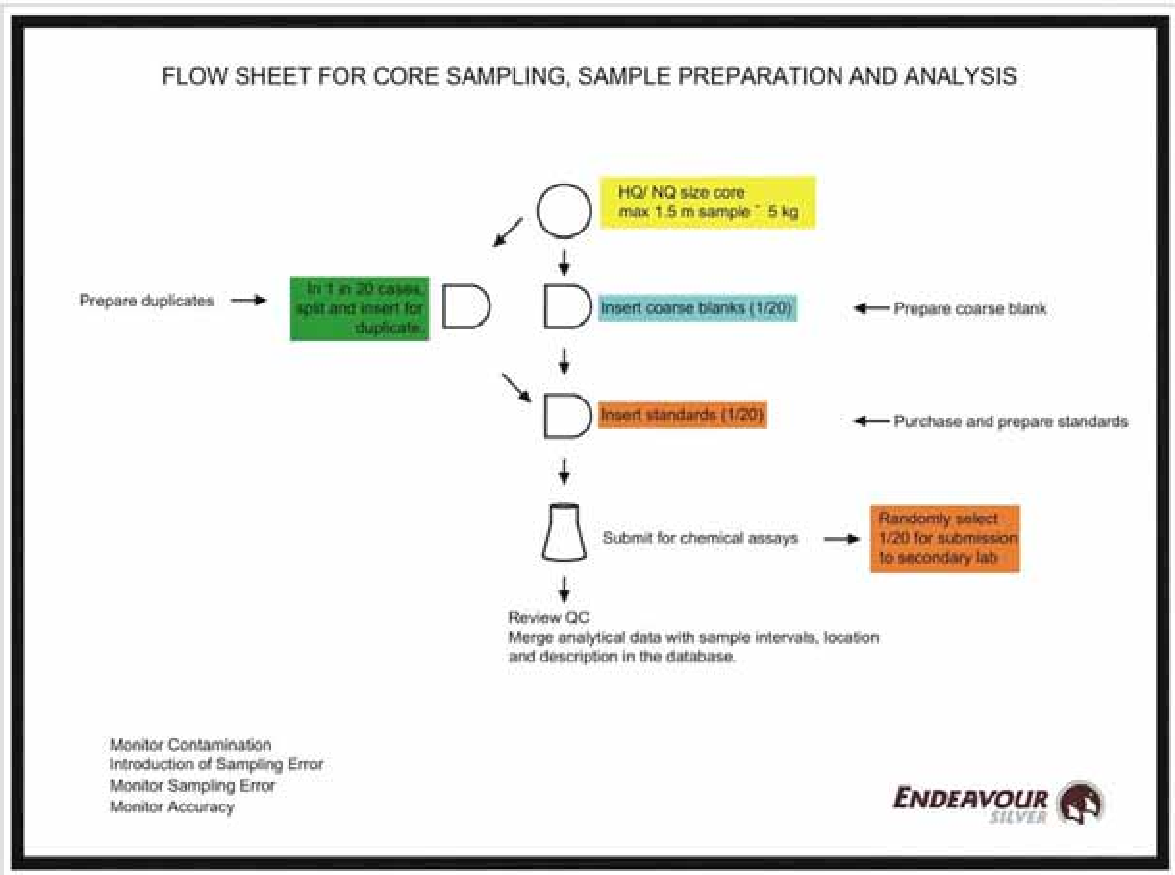
Table 13.1
Table Showing Quantities of Control Samples Used

Sample Type	No. of Samples	%
Normal	7098	89%
Blanks	273	3%
Duplicates	314	4%
Standards	246	3%
Total	**7931**	**100%**
Cross-checks	435	5%

Discrepancies and inconsistencies in the blank and duplicate data are resolved by re-assaying either the pulp or reject or both.

Endeavour Silver's sampling process, including handling of samples, preparation and analysis, is shown in the quality control flow sheet below (Figure 13.1).

Figure 13.1
Flow Sheet for Core Sampling, Sample Preparation and Analysis



13.3.3 Blank Samples

Blank samples were inserted to monitor possible contamination during the preparation process and analysis of the samples in the laboratory. The blank material used was usually derived from core samples with no apparent mineralization from the drilling programs in Guanaceví. Occasionally, outcrops of fresh rock are used for blanks. Blank samples are inserted randomly into the sample batch and given unique sample numbers in sequence with the other samples before being shipped to the laboratory.

Every effort is made to overcome the problem of potential low-level background contamination which is possibly inherent in the procedure currently being employed.

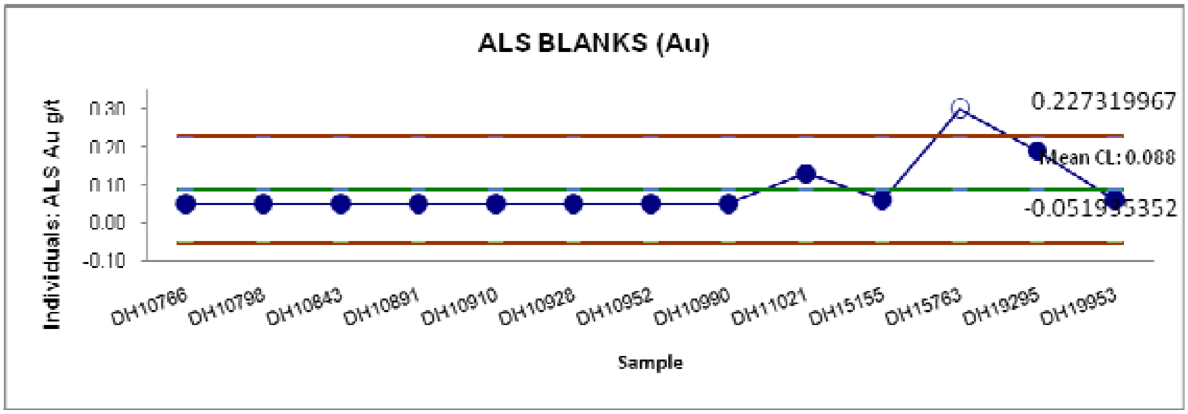
Endeavour Silver has purchased some commercially available blanks and has randomly submitted them to ALS-Chemex. However, this blank material is a pulp and is not considered an adequate check for any contamination during sample preparation.

Discrepancies and inconsistencies in the blank sample data are generally resolved by re-assaying either the pulp or reject or both.

Results

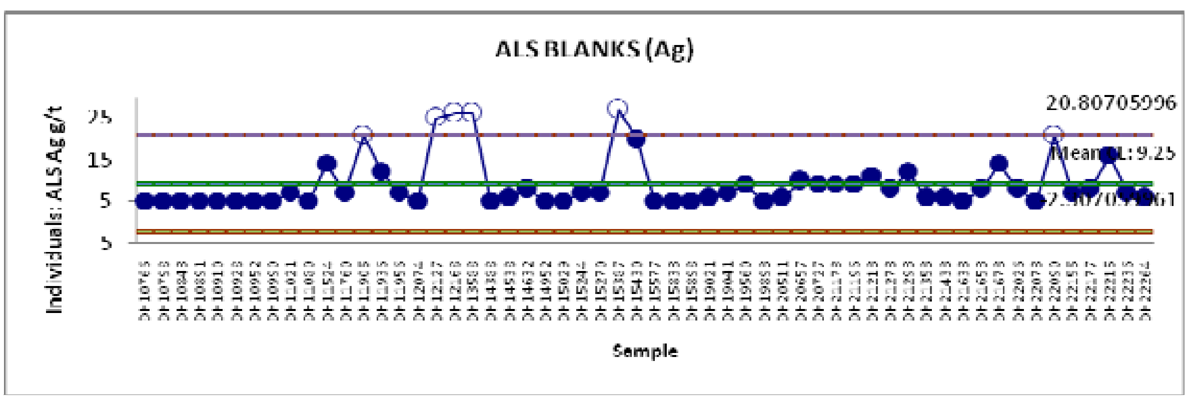
For gold, only 15 blank samples (5.6%) out of the 272 total were over the detection limit of 0.05 g/t Au (Figure 13.2). Of these, only one was out of the confidence range of 2 times the standard deviation of the same population.

Figure 13.2
Control Chart for Gold Assays from Blank Samples



For silver, 56 blank samples (20.5%) out of the 272 total were above the detection limit of 5 g/t Ag for the analytical method (Figure 13.3). Only five assays were considered outside the limits of the confidence range of 2 times the standard deviation of the same population.

Figure 13.3
Control Chart for Silver Assays from Blank Samples



For lead and zinc, all samples were over the detection limit of the method used (ICP). Only eight for lead and eleven for zinc were outside the confidence limits (Figures 13.4 and 13.5).

Figure 13.4
Control Chart for Lead Analyses from Blank Samples

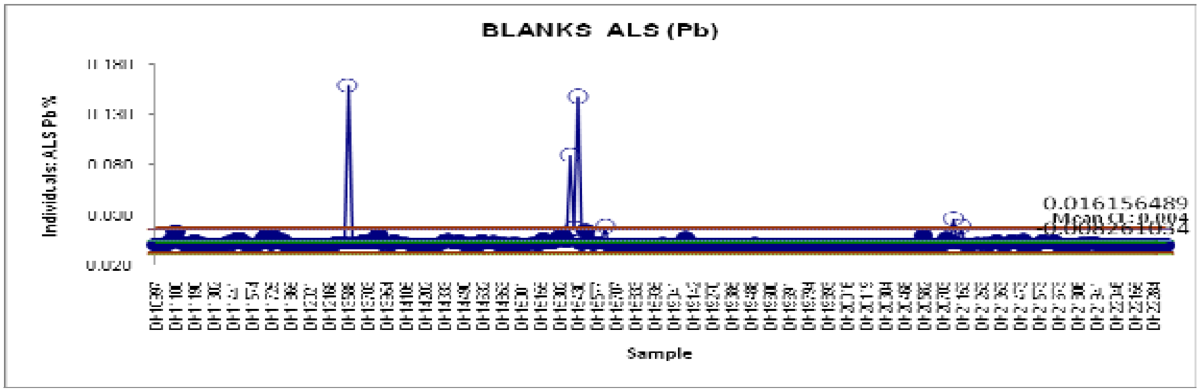
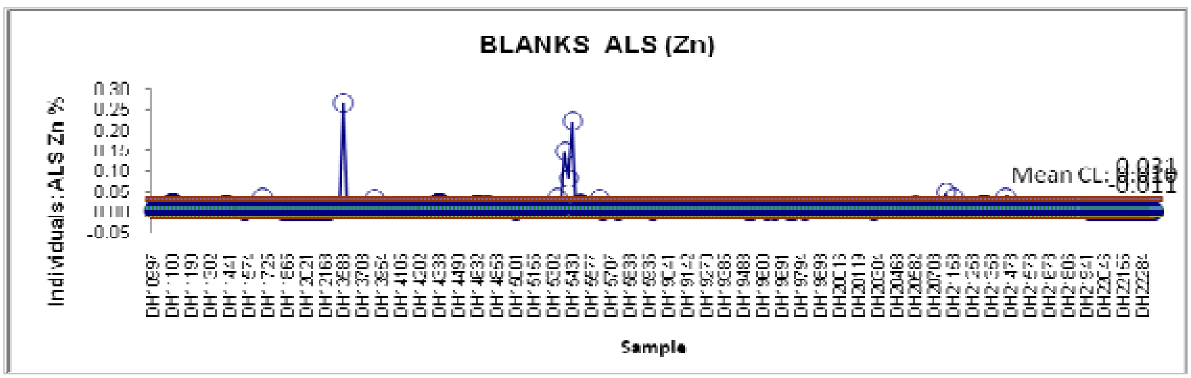


Figure 13.5
Control Chart for Zinc Analyses from Blank Samples



Upon review of the data, it is reasonable to conclude that with the exception of a few high assay values for lead and zinc, results for Endeavour Silver's drilling programs are for the most part free of any significant contamination. Any contamination is probably more related to the quality of the original blank material rather than to either contamination in the preparation process or analysis in the laboratory. Some material used for blanks may in fact have had some minor amount of mineralization.

13.3.4 Duplicate Samples

Duplicate samples were used to monitor (a) potential mixing up of samples and (b) variability of the data as products of laboratory error or the lack of homogeneity of the samples.

Duplicate core samples were prepared by Endeavour Silver personnel at the core storage facility at the Guanaceví Mines project. Preparation first involved randomly selecting a sample interval for duplicate sampling purposes. The duplicates were then collected at the time of initial sampling. This required first splitting the core in half and then crushing and dividing the half-split into two portions which were sent to the laboratory separately. The duplicate samples were ticketed with the consecutive number following the original sample. One duplicate sample was collected for each batch of 20 samples.

Discrepancies and inconsistencies in the duplicate sample data are resolved by re-assaying either the pulp or reject or both.

A total of 313 duplicate samples were taken representing 3.9% of all samples.

Scatter diagrams for duplicate samples are shown in Figures 13.6 through 13.9.

For the duplicate samples, graphical analysis shows low correlation indices for the majority of the samples. This can, however, be mainly attributed to most of the samples being near the detection limit of the analytical method.

Out of a total 313 duplicate samples, only 9 samples for gold and 4 samples for silver were outside the zone of +/- 5% of confidence in the precision (orange lines). The low correlation coefficient for gold (0.10) suggests that the homogeneity of the samples was poor. However, this could be due to most of the samples being close to the lower detection limit resulting in increased variability in the assays.

For lead and zinc, the correlation indices are very similar (close to 0.70). For the 272 samples, only 3 in each case were outside the +/- 5% zone of confidence in the precision (orange lines).

Figure 13.6
Original Versus Duplicate Graph for Gold Assays from Duplicate Samples

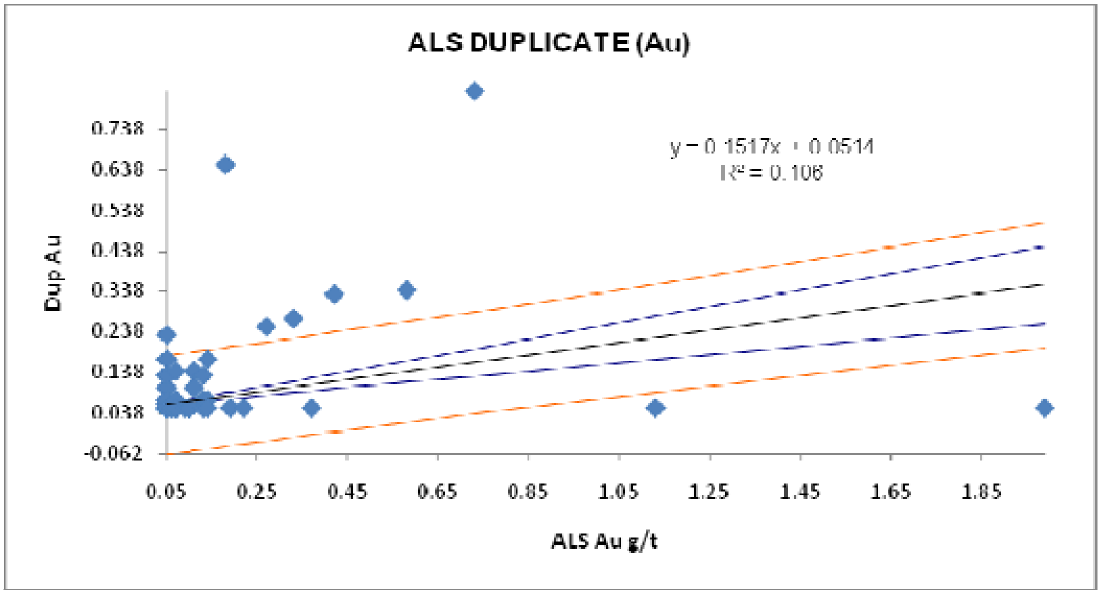


Figure 13.7
Original Versus Duplicate Graph for Silver Assays from Duplicate Samples

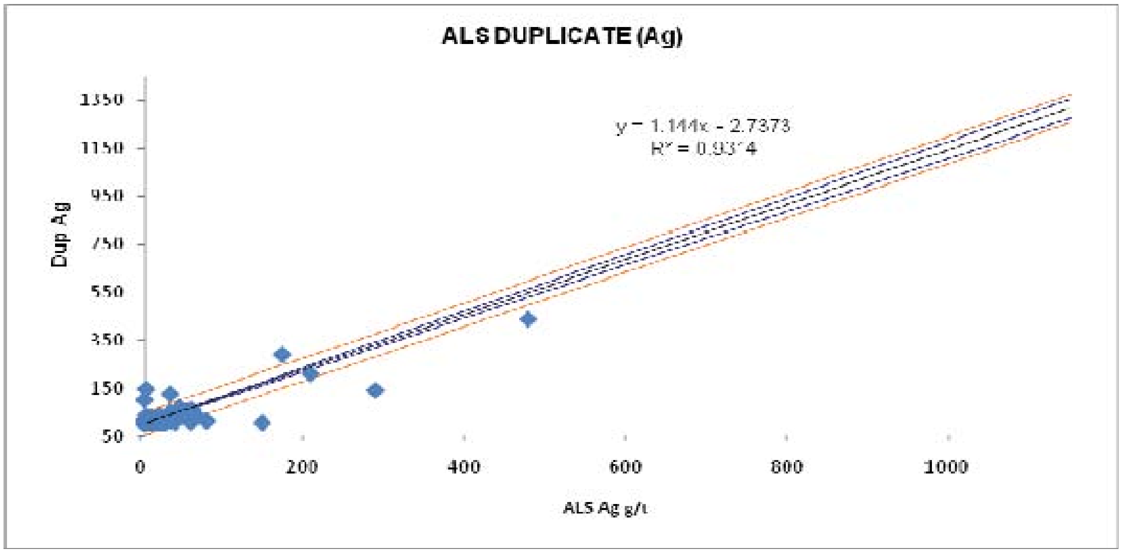


Figure 13.8
Original Versus Duplicate Graph for Lead Analyses from Duplicate Samples

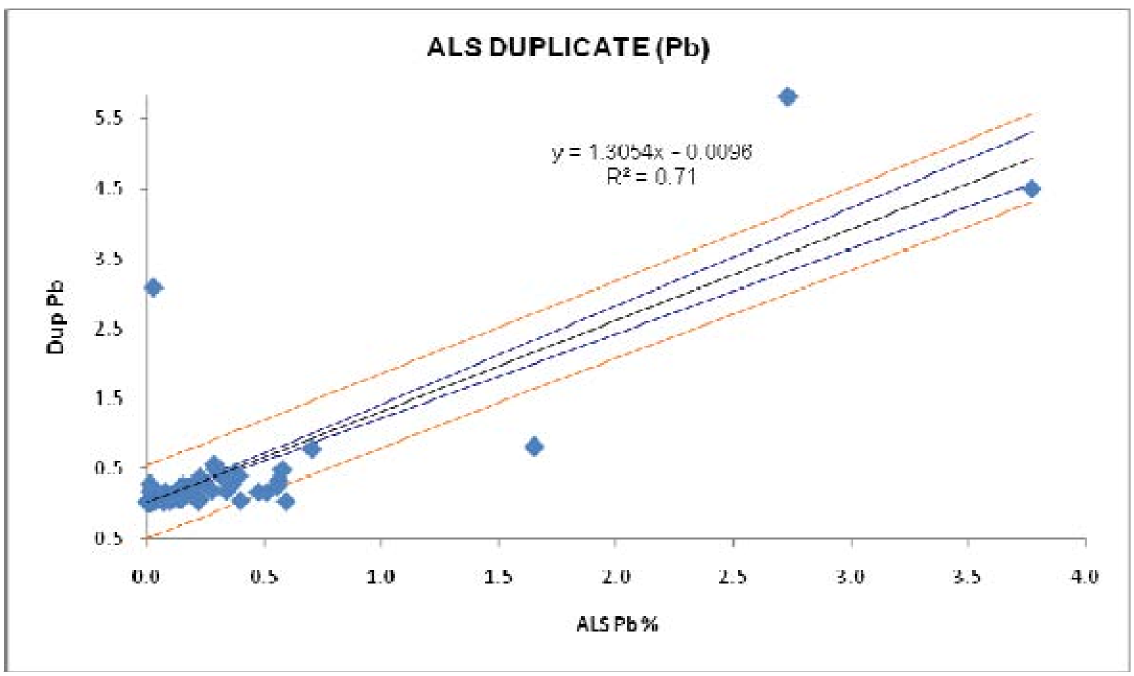
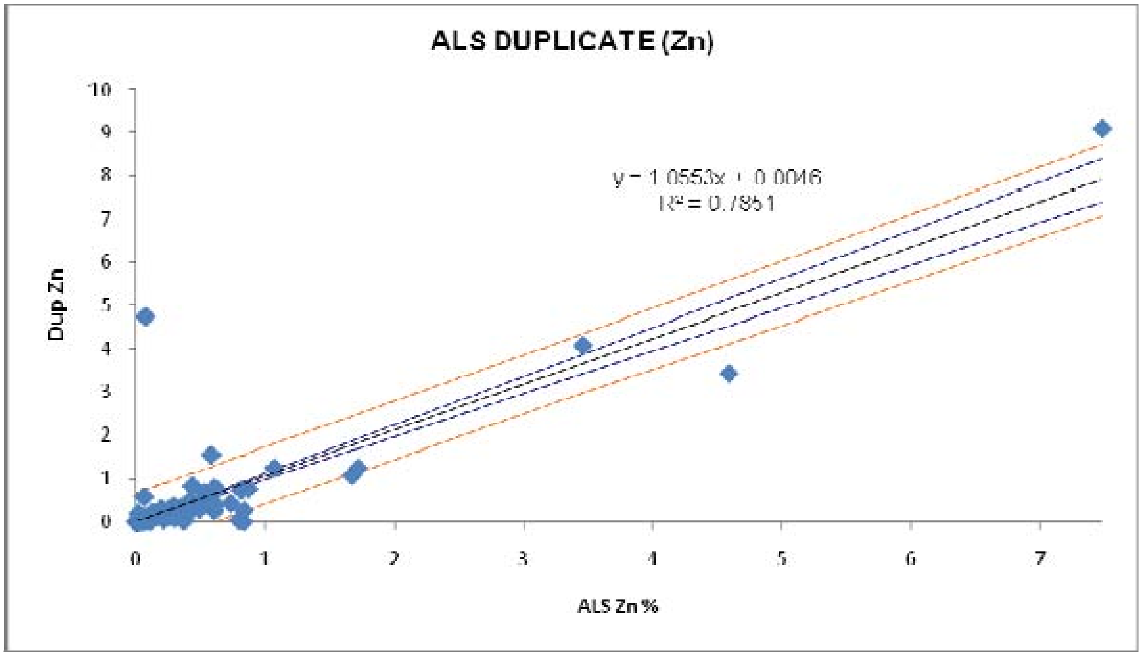


Figure 13.9
Original Versus Duplicate Graph for Zinc Analyses from Duplicate Samples



13.3.5 Reference Standards

Endeavour uses commercial reference standards to monitor the accuracy of the laboratories. Standard reference material has been purchased from various internationally-recognized companies (eg. WCM Minerals, Geostats Pty. Ltd. etc.). Each reference standard was prepared by the vendor at its own laboratories and shipped directly to Endeavour along with a certificate of analysis for each standard purchased.

In 2008, a total of 246 reference control samples were submitted at an average frequency of 1 for each batch of 25 samples. Reference standards were ticketed with pre-assigned numbers in order to avoid inadvertently using numbers that were being used during logging.

Fourteen different standards were submitted and analyzed for gold, silver, copper, lead and zinc. Reference standards used during Endeavour's drilling programs are in Table 13.2.

Table 13.2
Reference Standards used for Endeavour's Drilling Programs

STANDARD	REFERENCE NUMBER	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Edr-1	GBM904-11			0.88	9.47	23.63
Edr-2	GBM306-12			1.48	2.68	2.05
Edr-3	G302-5	1.66	40.9			
Edr-4	PM1112	1.34	229	0.23		
Edr-5	PM1120	12.2	372	5.36		
Edr-6	PB-123		70	0.68	6.06	6.88

STANDARD	REFERENCE NUMBER	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Edr-7	PB-127		101	0.86	3.89	1.83
Edr-8	PM1117		386			
Edr-9	PM1110	1.78	164	0.39		
Edr-10	PM1119	3.6	111	1.34		
Edr-11	PM1118	1.82	38	0.96		
Edr-12	PB130		82	0.25	0.73	1.44
Edr-13	PM1125		1,776			
Edr-14	PM1124		228			

For graphical analysis, results for the standards were scrutinized relative to the mean or control limit (CL), and a lower control limit (LC) and an upper control limit (UL), as shown in Table 13.3.

Table 13.3
Table showing Basis for Interpreting Standard Samples

Limit	Value
UL	Plus 2 standard deviations of standard reference material
CL	Recommended value (mean) of standard reference material)
LL	Minus 2 standard deviations of standard reference material

Endeavour Silver's general rules for a batch failure are as follows:

- A reported value for a standard greater than 3 standard deviations from the mean is a failure.
- Two consecutive values of a standard greater than 2 standard deviations is a failure.
- A blank value over the acceptable limit is a failure.
- Results are reported to Endeavour Silver's Qualified Person every month.

Analysis of the data showed that out of the 1,191 analyses, 161 (14%) were outside the control limits with most analyses ranging between 2% and 20% of the mean. There were only 5 cases where the difference was greater than 30%.

Results of each standard are presented separately below.

Edr-1 (a base metal standard)

Only one analysis for lead (Sample No. DH15569) was outside the accepted range. This was clearly an error related to the laboratory.

The average values for the standards submitted were marginally below the accepted value as shown in Table 13.4 and the control charts (Figures 13.10, 13.11 and 13.12)

Table 13.4
Laboratory Performance on Standard Sample Edr-1

Element	Average of grade sample submitted	Accepted value of standard
Cu (%)	0.82	0.88
Pb (%)	9.10	9.47
Zn (%)	23.00	23.63

Figure 13.10
Control Chart for Copper Assays from the Standard Reference Sample Edr-1

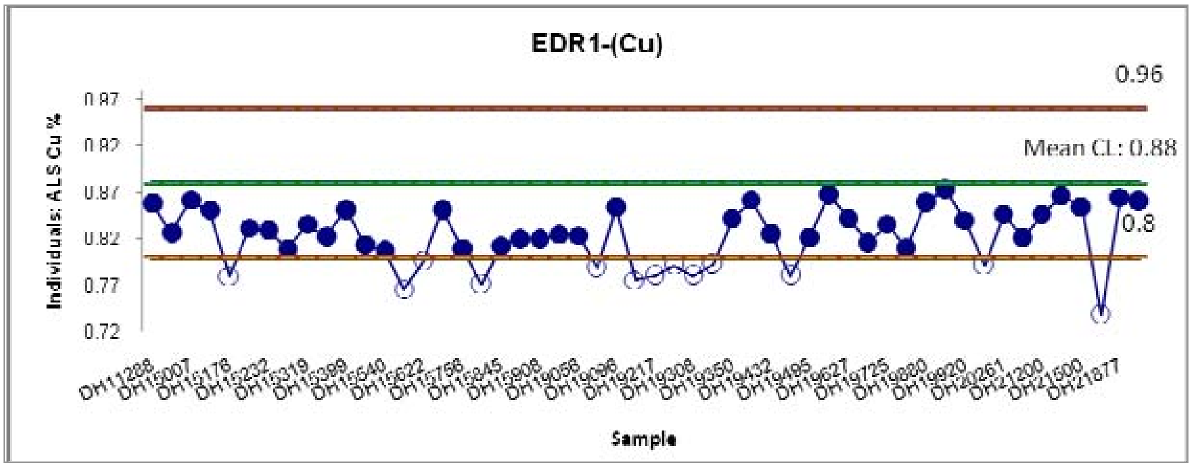


Figure 13.11
Control Chart for Lead Assays from the Standard Reference Sample Edr-1

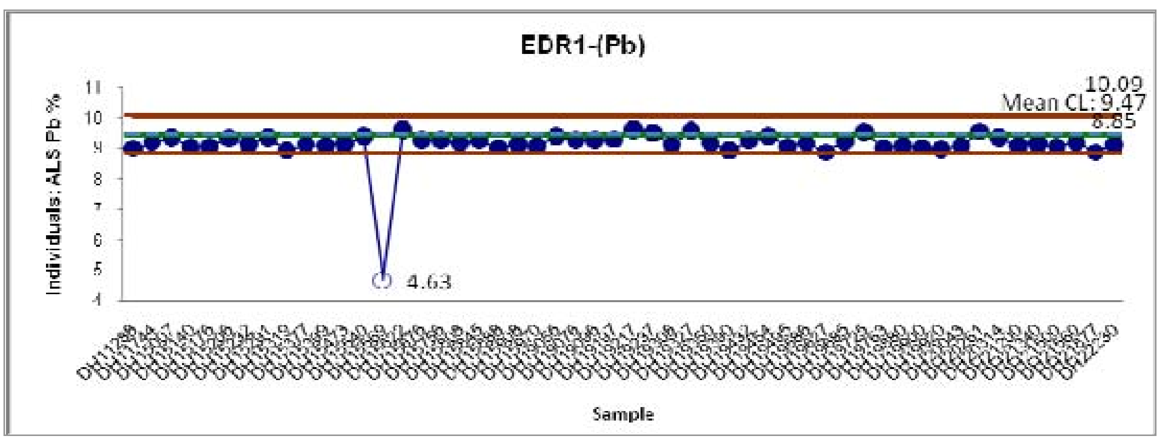
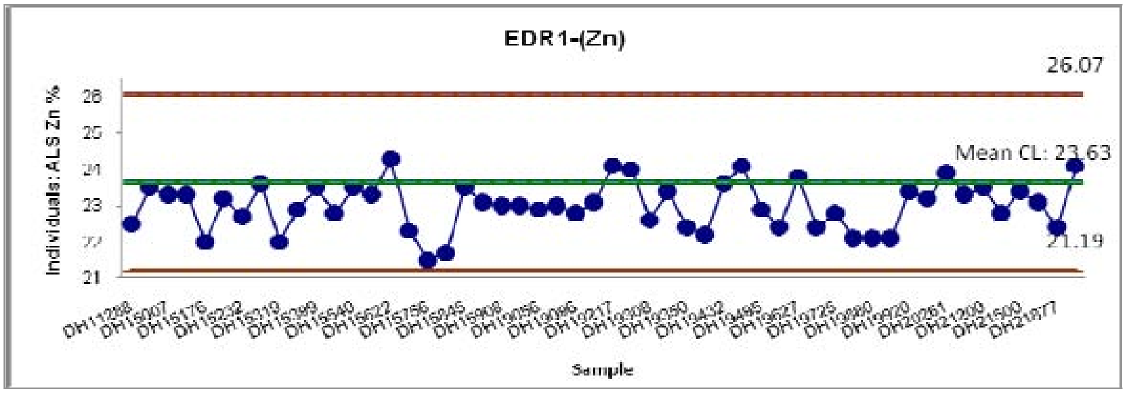


Figure 13.12
Endeavour Silver's Control Chart for Zinc Assays from the Standard Reference Sample Edr-1



Edr-2 (a base metal standard)

Only one analysis (sample No. DH20664) was outside the control limits for copper and zinc. However, the percentage by which this sample was outside the limits was very low.

Again the average values of the standards submitted were generally below the accepted value as shown in Table 13.5 and Figures 13.13, 13.14 and 13.15.

Table 13.5
Laboratory Performance on Standard Sample Edr-2

Element	Average of grade sample submitted	Accepted value of standard
Cu (%)	1.47	1.48
Pb (%)	2.61	2.68
Zn (%)	2.01	2.05

Figure 13.13
Control Chart for Copper Assays from the Standard Reference Sample Edr-2

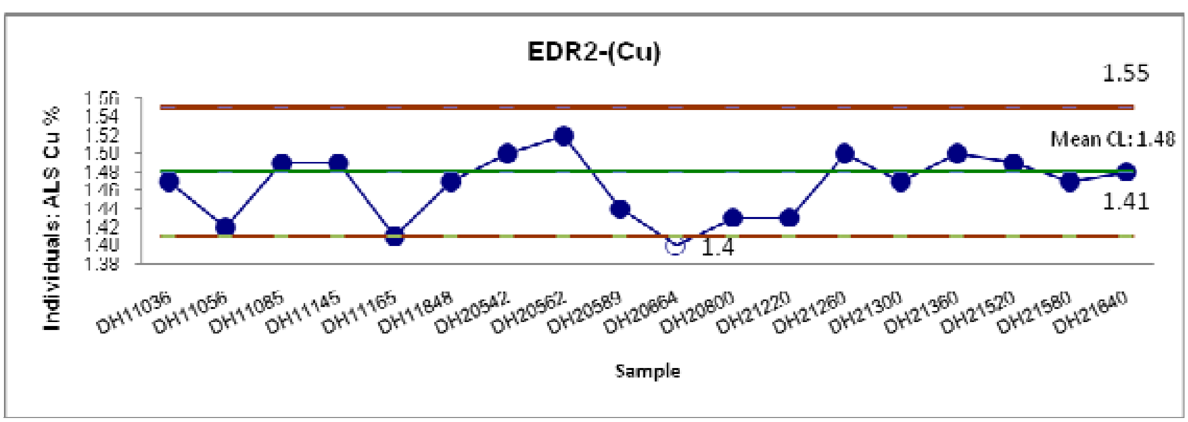


Figure 13.14
Control Chart for Lead Assays from the Standard Reference Sample Edr-2

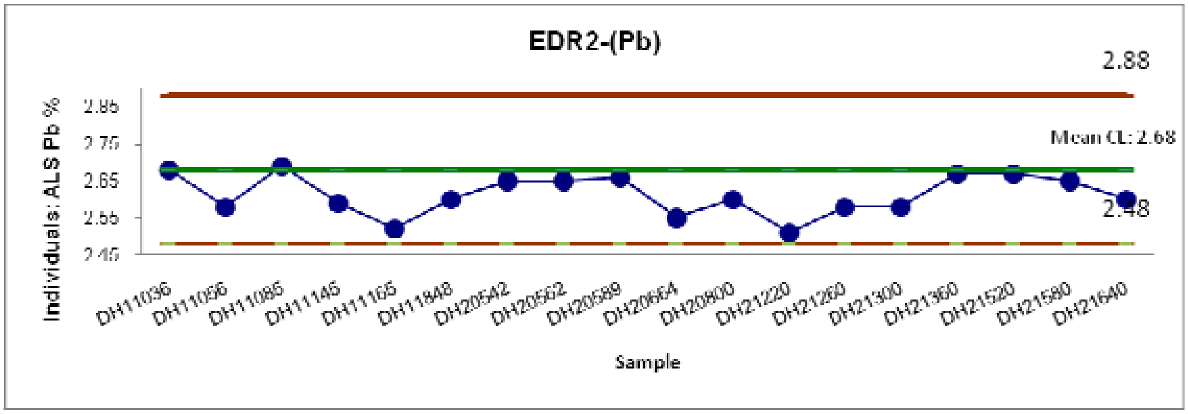
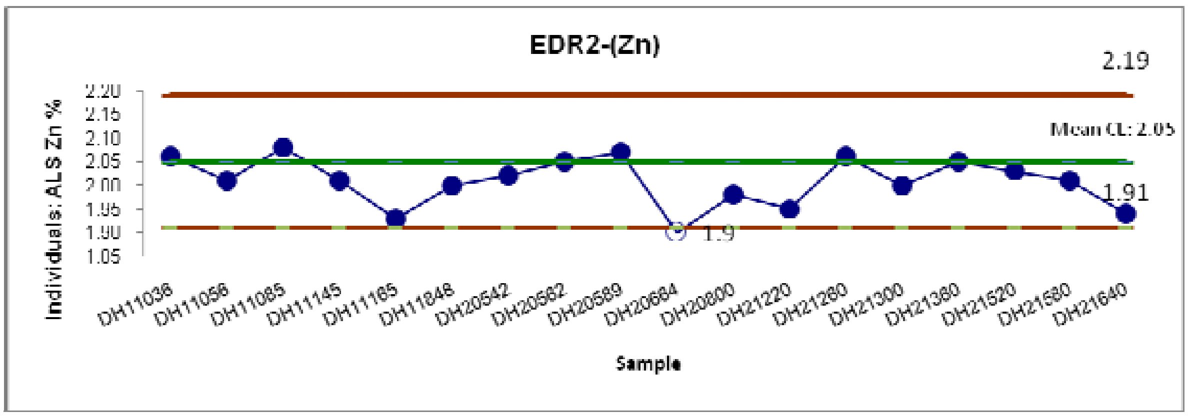


Figure 13.15
Control Chart for Zinc Assays from the Standard Reference Sample Edr-2



Edr-3 (a gold-silver standard)

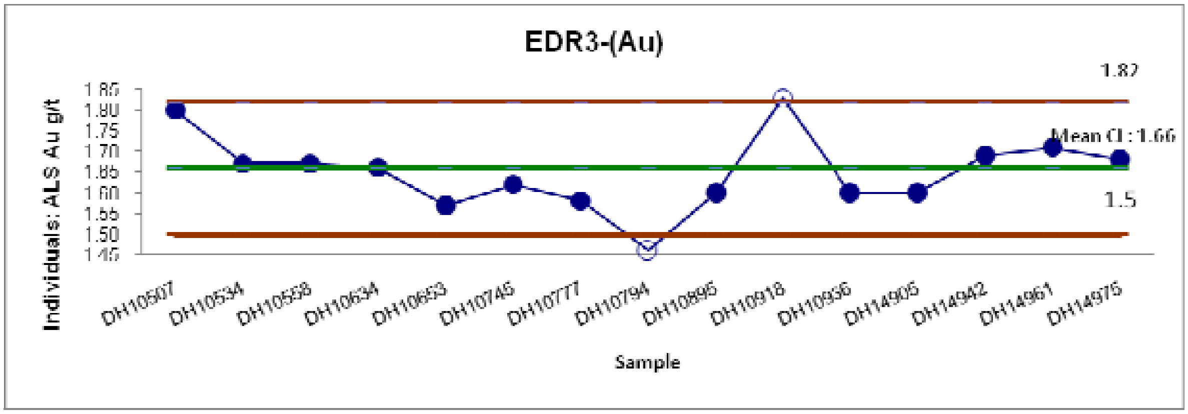
Sixteen samples of reference standard Edr-3 were inserted in the sample stream. Only two samples (DH10794 & DH10918) were outside the control limits for gold.

The average value of the standards submitted was close to the accepted value as shown in Table 13.6 and Figure 13.16.

Table 13.6
Laboratory Performance on Standard Sample Edr-3

Element	Average of grade sample submitted	Accepted value of standard
Au (gr/t)	1.649	1.65

Figure 13.16
Control Chart for Gold Assays from the Standard Reference Sample Edr-3



Edr-4 (a gold-silver-copper standard)

Eleven samples of reference standard Edr-4 were submitted. Several analyses for each metal were outside the accepted limit. Only analyses for silver showed values consistently less than the expected values.

The average values of the standards and the control charts are shown in Table 13.7 and Figure 13.17, 13.18 and 13.19.

Table 13.7
Laboratory Performance on Standard Edr-4

Element	Average of grade sample submitted	Accepted value of standard
Au (g/t)	1.371	1.350
Ag(g/t)	211	225
Cu (%)	0.238	0.23

Figure 13.17
Control Chart for Gold Assays from the Standard Reference Sample Edr-4

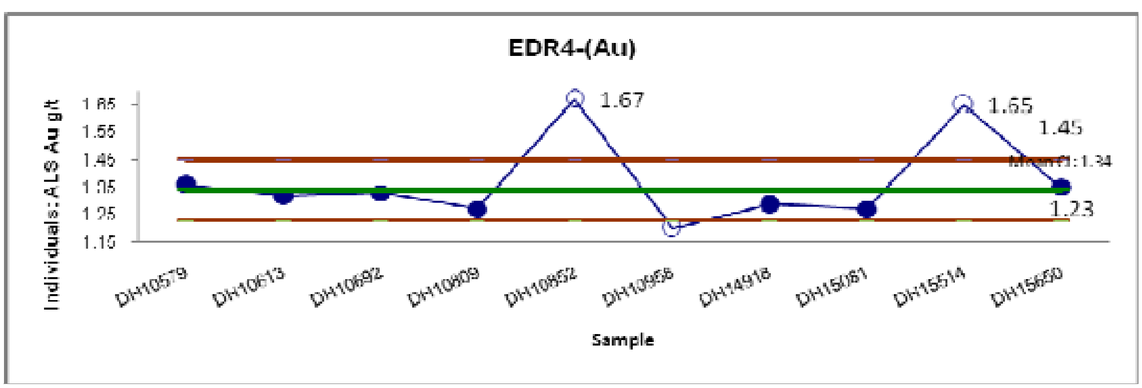


Figure 13.18
Control Chart for Silver Assays from the Standard Reference Sample Edr-4

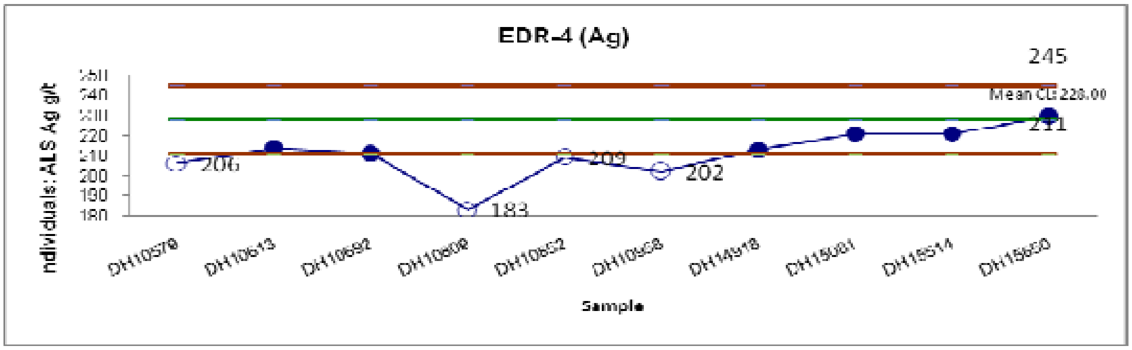
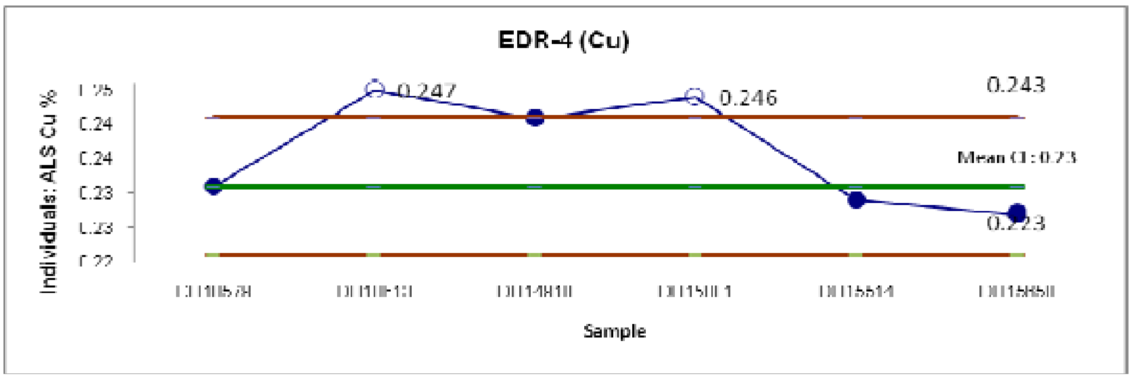


Figure 13.19
Control Chart for Copper Assays from the Standard Reference Sample Edr-4



Edr-5 (a gold-silver-copper standard)

Fourteen samples of reference standard Edr-5 were submitted. Most of the analyses were within the control limits but slightly below accepted values for the standard.

The average values of the standards and the control charts are shown in Table 13.8 and Figures 13.20, 13.21 and 13.22.

Table 13.8
Laboratory Performance on Standard Edr-5

Element	Average of grade sample submitted	Accepted value of standard
Au (g/t)	12.06	12.20
Ag(g/t)	357	371
Cu (%)	5.28	5.36

Figure 13.20
Control Chart for Gold Assays from the Standard Reference Sample Edr-5

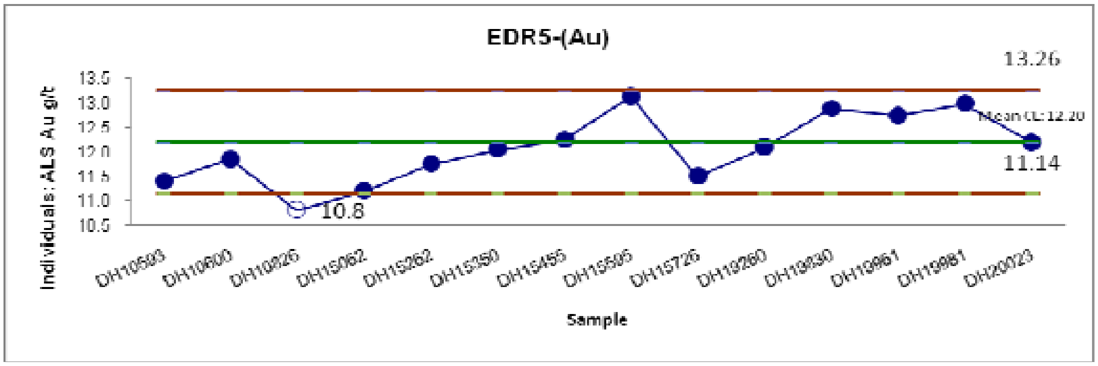


Figure 13.21
Control Chart for Silver Assays from the Standard Reference Sample Edr-5

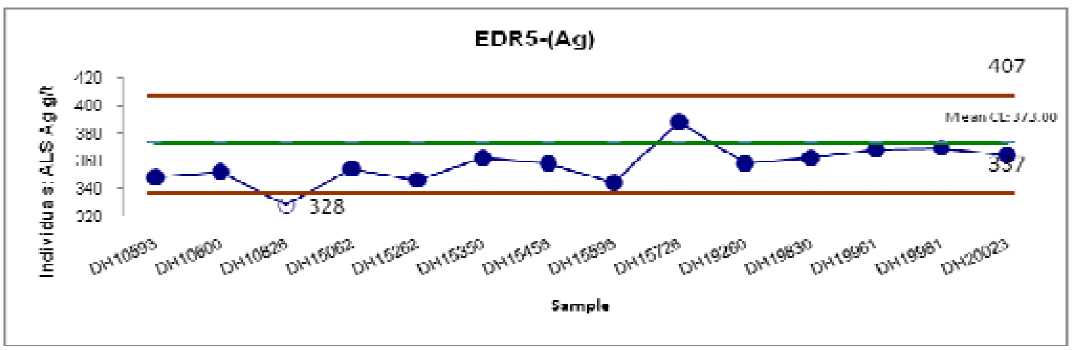
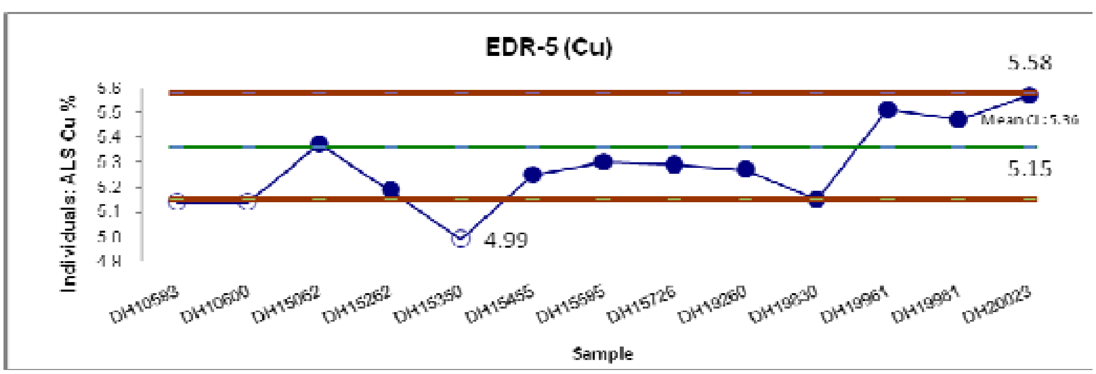


Figure 13.22
Control Chart for Copper Assays from the Standard Reference Sample Edr-5



Edr-6 (as silver-base metal standard)

Seven samples of reference standard Edr-6 were submitted. Most of the analyses were slightly below accepted values for the standard, except for silver, which matched the accepted value of the standard. Several analyses for silver, copper and lead were outside the control limits.

The average values of the standards and the control charts are shown in Table 13.9 and Figures 13.23 through 13.26.

Table 13.9
Laboratory Performacne on Standard Edr-6

Element	Average of grade sample submitted	Accepted value of standard
Ag (g/t)	70	70
Cu (%)	0.64	0.68
Pb (%)	5.75	6.07
Zn (%)	6.72	6.88

Figure 13.23
Control Chart for Silver Assays from the Standard Reference Sample Edr-6

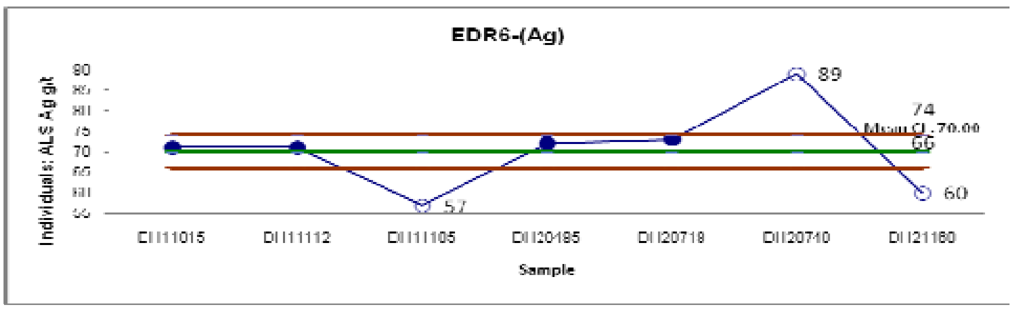


Figure 13.24
Control Chart for Copper Assays from the Standard Reference Sample Edr-6

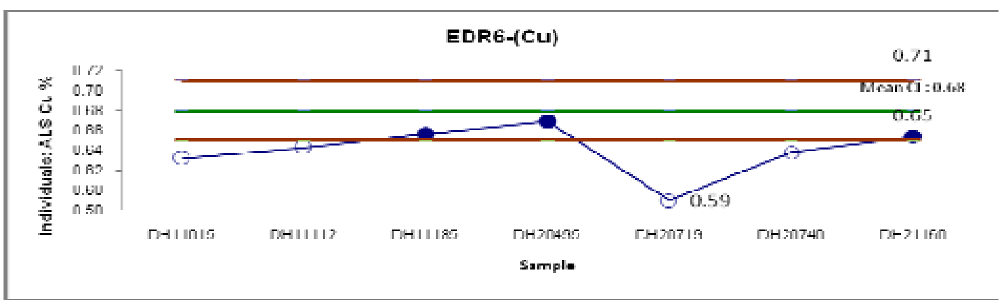


Figure 13.25
Control Chart for Lead Assays from the Standard Reference Sample Edr-6

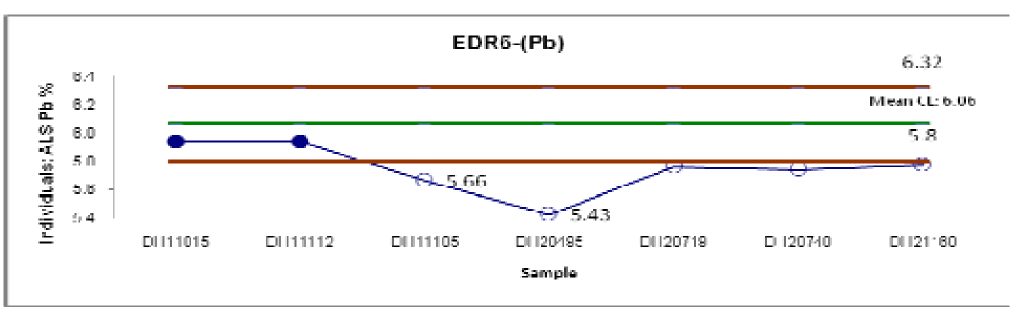
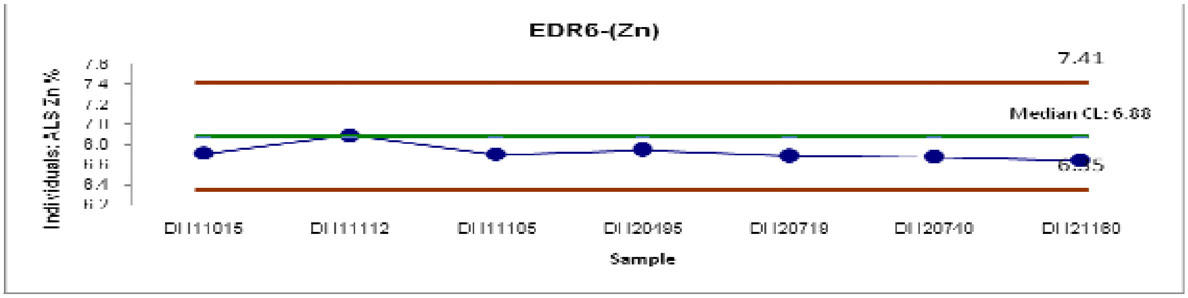


Figure 13.26
Control Chart for Zinc Assays from the Standard Reference Sample Edr-6



Edr-7 (a silver-base metal standard)

Eight samples of reference standard Edr-7 were submitted. Most of the values for silver were significantly higher than the accepted value of the standard. Most of the analyses for the other metals were within the control limits. Only one analysis for copper was slightly above the upper control limit.

The average values of the standards and the control charts are shown in Table 13.10 and Figures 13.27 through 13.30.

Table 13.10
Laboratory Performance on Standard Edr-7

Element	Average of grade sample submitted	Accepted value of standard
Ag (g/t)	147	101
Cu (%)	0.88	0.86
Pb (%)	3.84	3.89
Zn (%)	1.83	1.83

Figure 13.27
Control Chart for Silver Assays from the Standard Reference Sample Edr-7

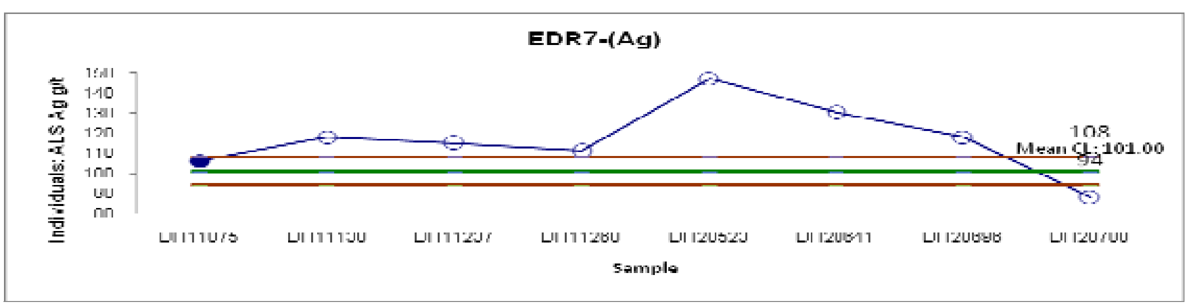


Figure 13.28
Control Chart for Copper Assays from the Standard Reference Sample Edr-7

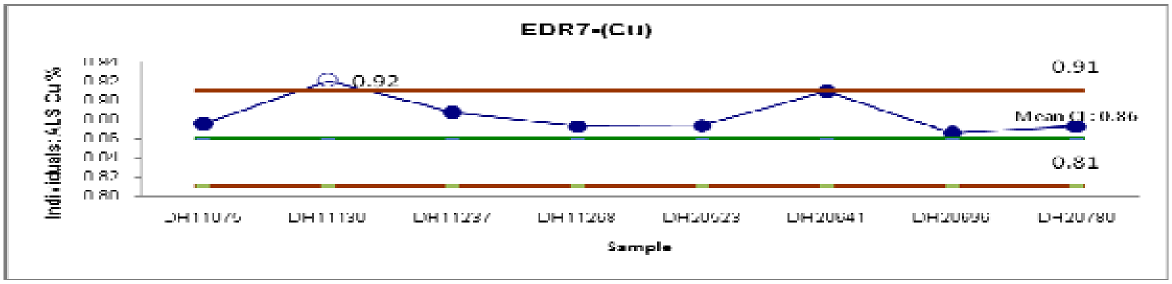


Figure 13.29
Control Chart for Lead Assays from the Standard Reference Sample Edr-7

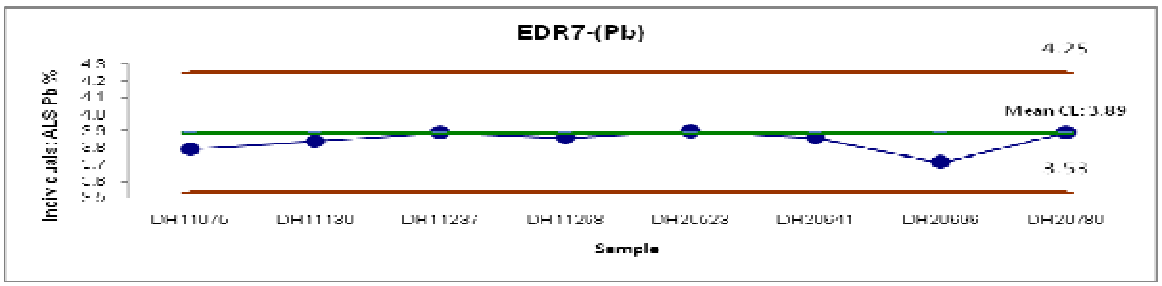
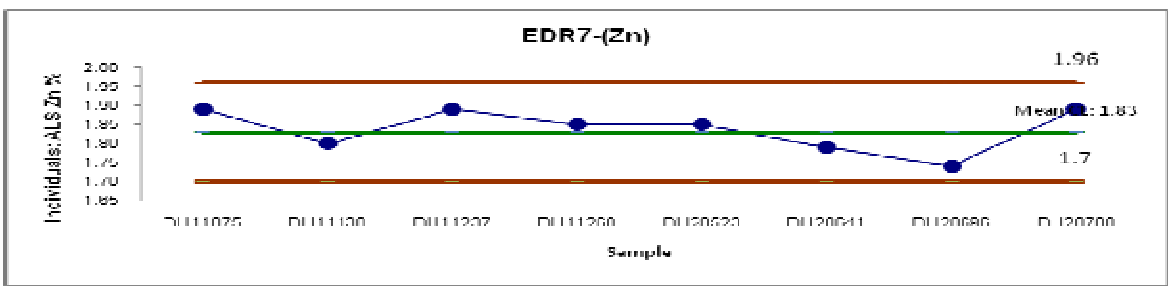


Figure 13.30
Control Chart for Zinc Assays from the Standard Reference Sample Edr-7



Edr-8 (a silver standard)

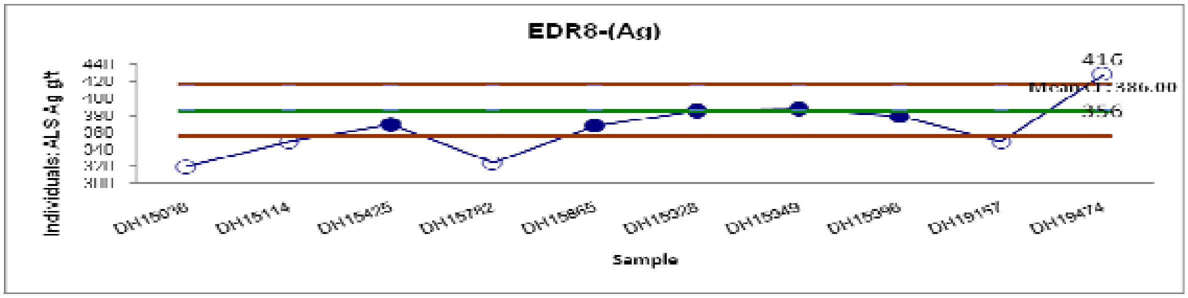
Ten samples of reference standard Edr-8 were submitted. Most of the values for silver were slightly below the accepted value of the standard. Five analyses were outside the control limits.

The average value of the standards and the control charts are shown in Table 13.11 and Figure 13.31

Table 13.11
Laboratory Performance on Standard Edr-8

Element	Average of grade sample submitted	Accepted value of standard
Ag (g/t)	366	386

Figure 13.31
Control Chart for Silver Assays from the Standard Reference Sample Edr-8



Edr-9 (a dilver-gold-copper standard)

Nineteen samples of reference standard Edr-9 were submitted. Most of the values were observed close to the accepted values for the standard. Many of the analyses, however, were outside the control limits.

The average values of the standards and the control charts are shown in Table 13.12 and Figures 13.32, 13.33 and 13.34.

Table 13.12
Laboratory Performance on Standard Edr-9

Element	Average of grade sample submitted	Accepted value of standard
Au (g/t)	1.82	1.78
Ag(g/t)	160	164
Cu (%)	0.41	0.39

Figure 13.32
Control Chart for Gold Assays from the Standard Reference Sample Edr-9

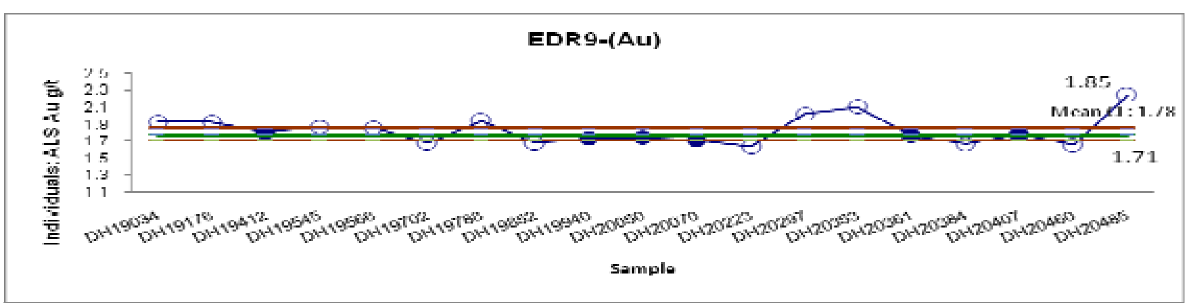


Figure 13.33
Control Chart for Silver Assays from the Standard Reference Sample Edr-9

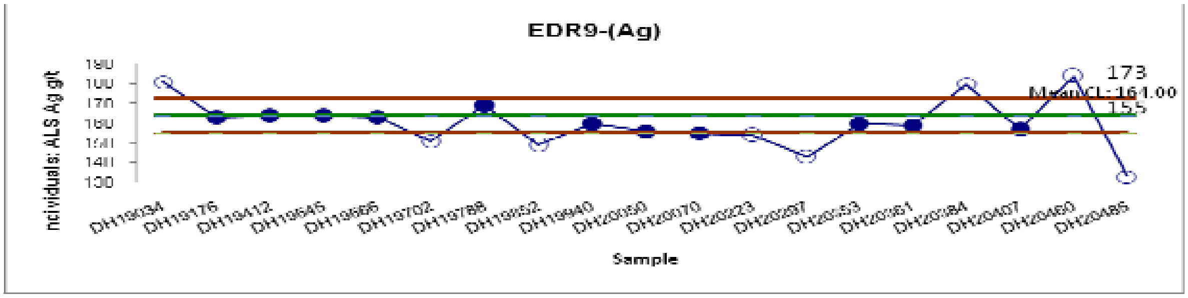
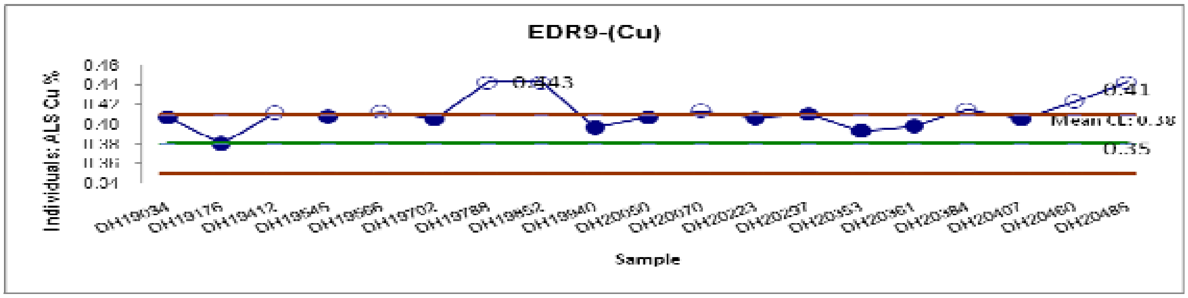


Figure 13.34
Control Chart for Copper Assays from the Standard Reference Sample Edr-9



Edr-10 (a gold-silver-copper standard)

Thirteen samples of reference standard Edr-10 were submitted. Most of the values were slightly below accepted values for the standard. Many values were also outside the control limits.

The average values of the standard and the control charts are shown in Table 13.13 and Figures 13.35, 13.36 and 13.37.

Table 13.13
Laboratory Performance on Standard Er-10

Element	Average of grade sample submitted	Accepted value of standard
Au (g/t)	3.43	3.60
Ag(g/t)	111	111
Cu (%)	1.32	1.34

Figure 13.35
Control Chart for Gold Assays from the Standard Reference Sample Edr-10

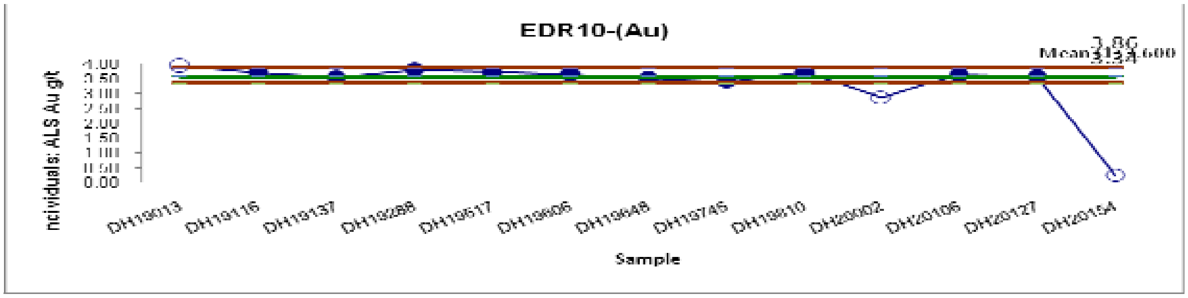


Figure 13.36
Control Chart for Silver Assays from the Standard Reference Sample Edr-10

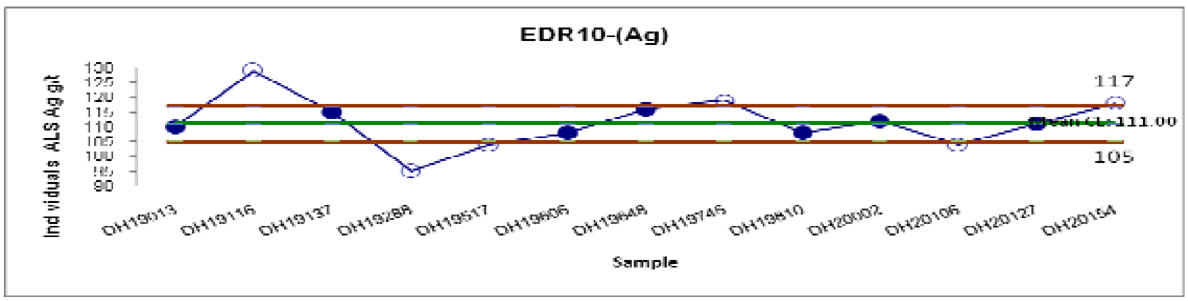
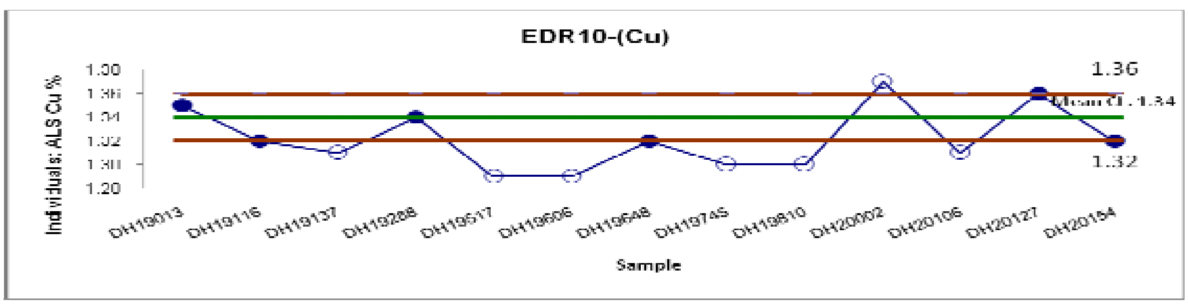


Figure 13.37
Control Chart for Copper Assays from the Standard Reference Sample Edr-10



Edr-11 (a gold-silver-copper standard)

Twenty-two samples of reference standard Edr-11 were submitted. The average was slightly below accepted values for the standard but many values, especially for silver, were outside the control limits.

The average values of the standard and the control charts are shown in Table 13.14 and Figures 13.38, 13.39 and 13.40.

Table 13.14
Laboratory Performance on Standard Edr-11

Element	Average of grade sample submitted	Accepted value of standard
Au (g/t)	1.74	1.82
Ag(g/t)	40	38
Cu (%)	.95	.96

Figure 13.38
Control Chart for Gold Assays from the Standard Reference Sample Edr-11

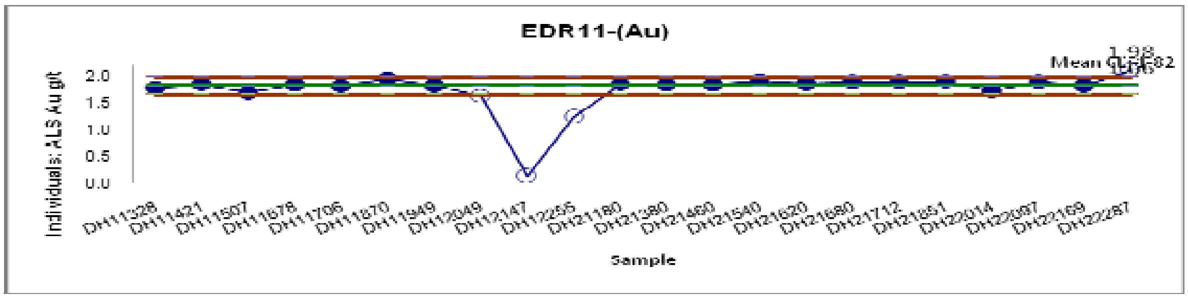


Figure 13.39
Control Chart for Silver Assays from the Standard Reference Sample Edr-11

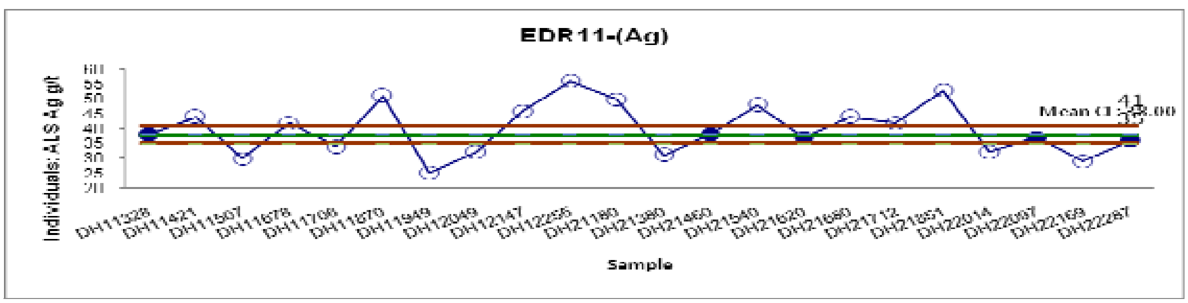
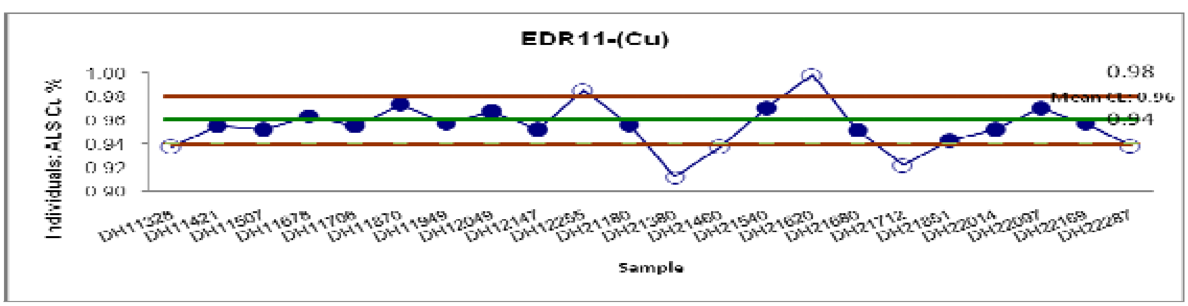


Figure 13.40
Control Chart for Copper Assays from the Standard Reference Sample Edr-11



Edr-12 (a silver-base metal standard)

Twenty-nine samples of reference standard Edr-12 were submitted. Most of the values were slightly below accepted values for the standard. Many values for copper were above the upper control limit, whereas many for lead were below the lower control limit.

The average values of the standard and the control charts are shown in Table 13.15 and Figures 13.41 through 13.44.

Table 13.15
Laboratory Performance on Standard Edr-12

Element	Average of grade sample submitted	Accepted value of standard
Ag (g/t)	82	82
Cu (%)	0.26	0.25
Pb (%)	0.68	0.73
Zn (%)	1.43	1.44

Figure 13.41
Control Chart for Silver Assays from the Standard Reference Sample Edr-12

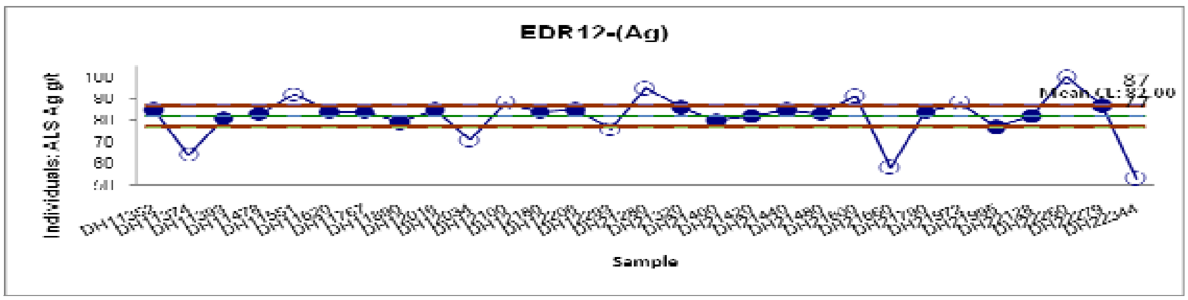


Figure 13.42
Control Chart for Copper Assays from the Standard Reference Sample Edr-12

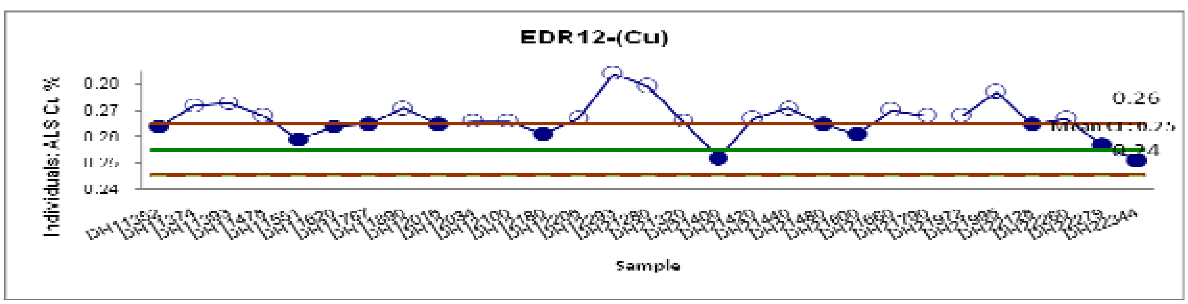


Figure 13.43
Control Chart for Lead Assays from the Standard Reference Sample Edr-12

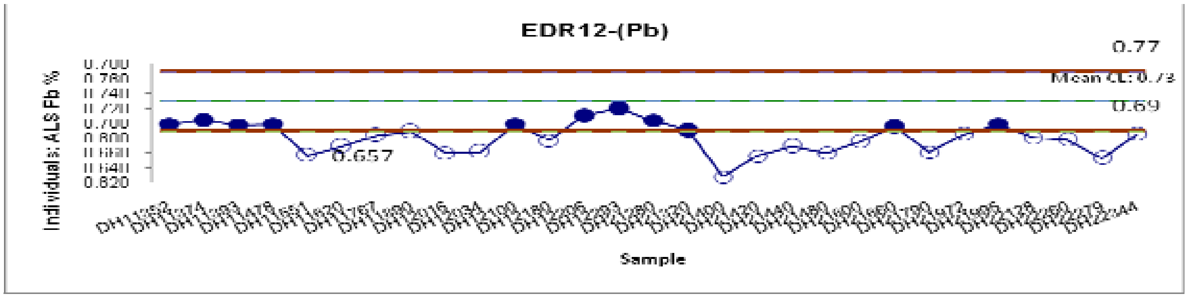
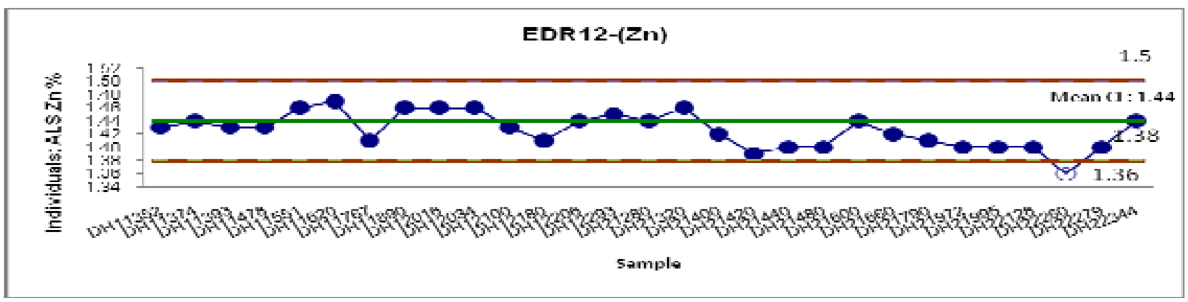


Figure 13.44
Control Chart for Zinc Assays from the Standard Reference Sample Edr-12



Edr-13 (a silver standard)

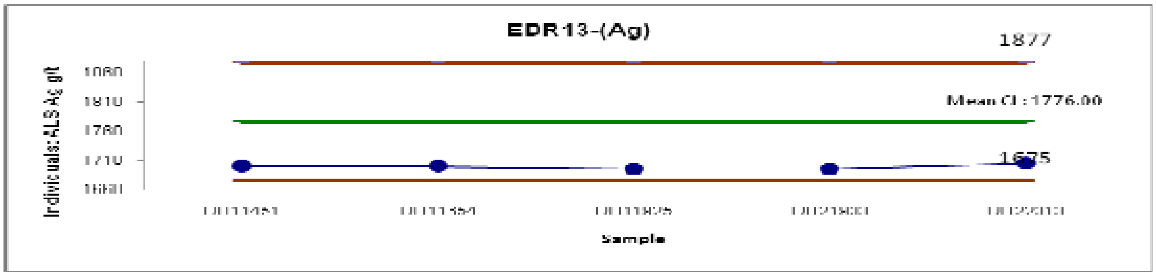
Five samples of reference standard Edr-13 were submitted. Most of the values were slightly below the accepted value for the standard but all were with the control limits.

The average value of the standard and the control chart are shown in Table 13.16 and Figure 13.45.

Table 13.16
Laboratory Performance on Standard Edr-13

Element	Average of grade sample submitted	Accepted value of standard
Ag (g/t)	1,699	1,776

Figure 13.45
Control Chart for Silver Assays from the Standard Reference Sample Edr-13



Edr-14 (a silver standard)

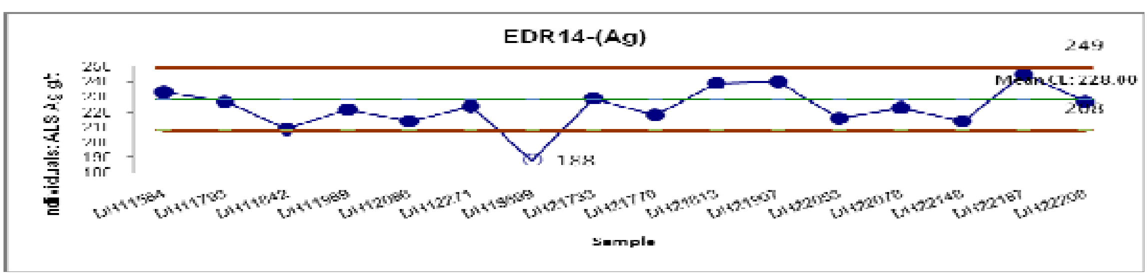
Sixteen samples of reference standard Edr-14 were submitted. All values except one were within the control limits.

The average value of the standard and the control chart are shown in Table 14.17 and Figure 14.46.

Table 13.17
Laboratory Performance on Standard Edr-14

Element	Average of grade sample submitted	Accepted value of standard
Ag (g/t)	223	228

Figure 13.46
Control Chart for Silver Assays from the Standard Reference Sample Edr-14



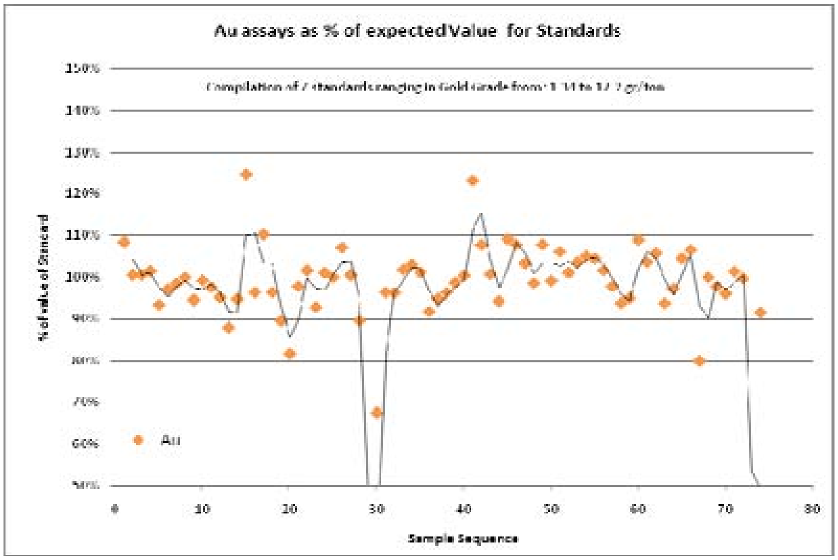
Summary of Control Sample Results

Several different standards have been used during the Guanaceví drilling program. To view the overall results of this QA/QC program, it was necessary to prepare a single control chart to show the variability of results over time. The summary control charts are shown in Figures 13.47 through 13.51.

The control chart for gold shows most of the results clustering close to the expected values for the standards, dropping slightly below the expected value near the end of the drilling program.

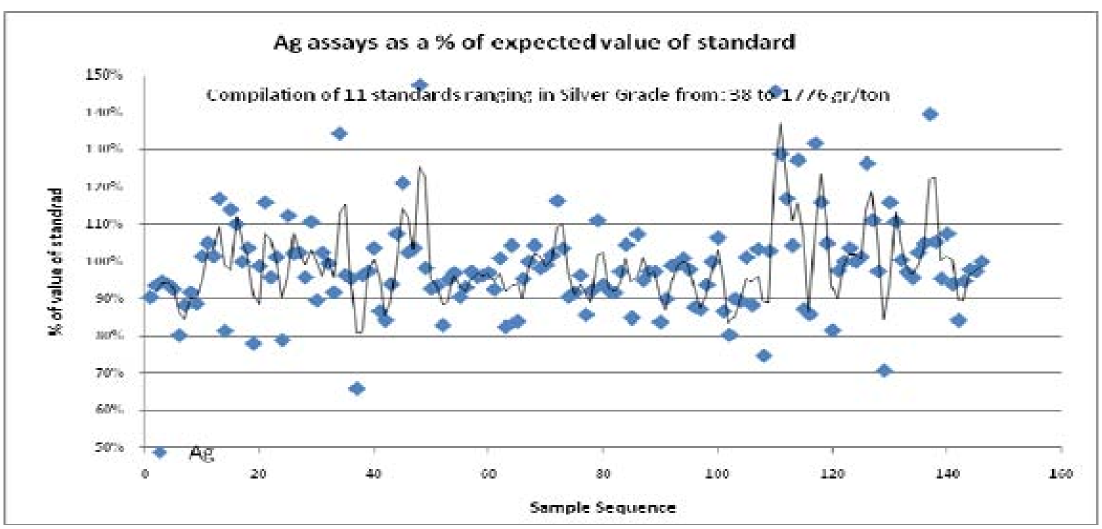
For gold, it can be observed that most results are within 10% deviation of the average expected result with only two major low peaks for the duration of the project.

Figure 13.47
Control Chart of Gold Assays over Time for Standards Submitted as Part of Guanaceví Drilling Program



In the case of silver, a higher degree of variability can be observed over time with most of the assays within 5% deviation of the expected values.

Figure 13.48
Control Chart of Silver Assays over Time for Standards Submitted as Part of Guanaceví Drilling Program



For copper, lead and zinc, results cluster around the expected values with much less variability than gold and silver. Average values are 99, 96, 98% of the expected values for copper, lead and zinc, respectively.

Figure 13.49
Control Chart of Copper Assays over Time for Standards Submitted as Part of Guanaceví Drilling Program

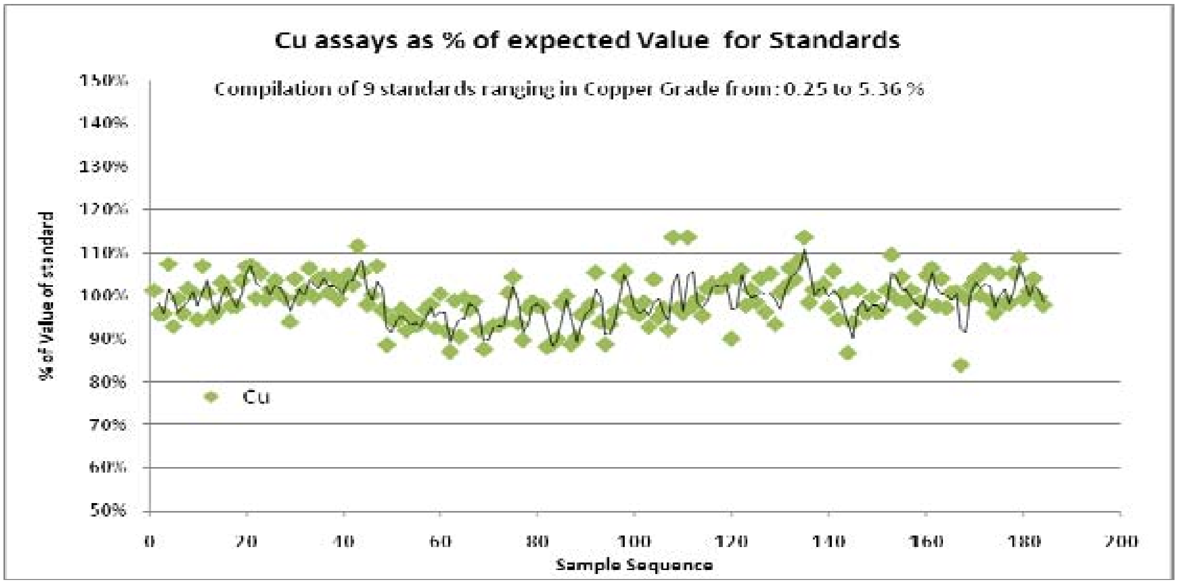


Figure 13.50
Control Chart of Lead Assays over Time for Standards Submitted as Part of Guanaceví Drilling Program

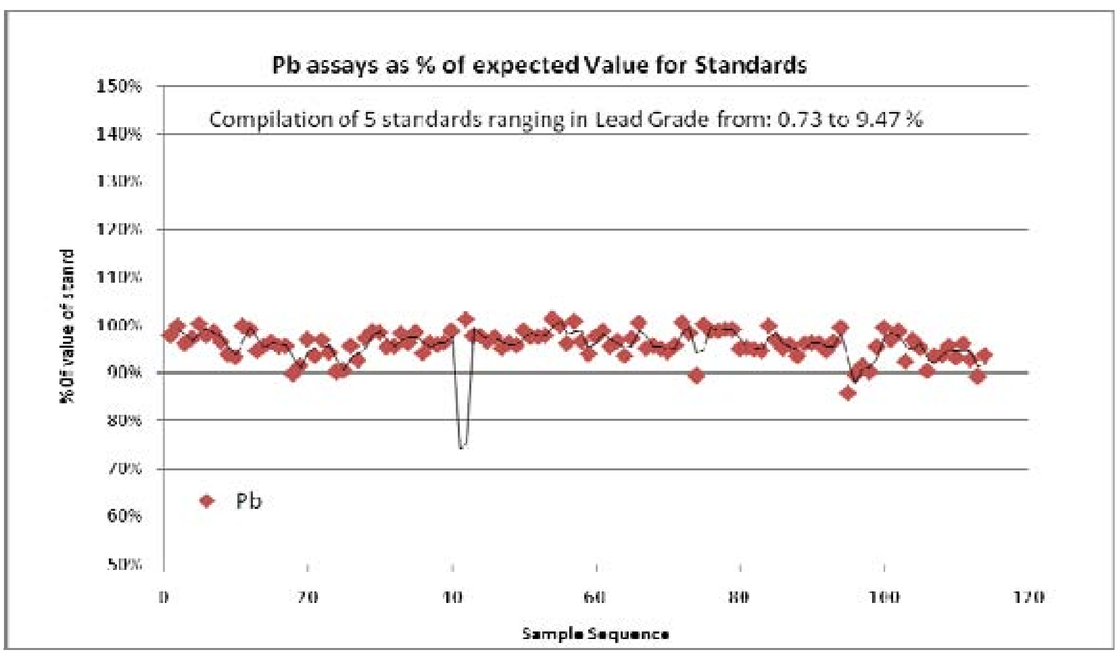
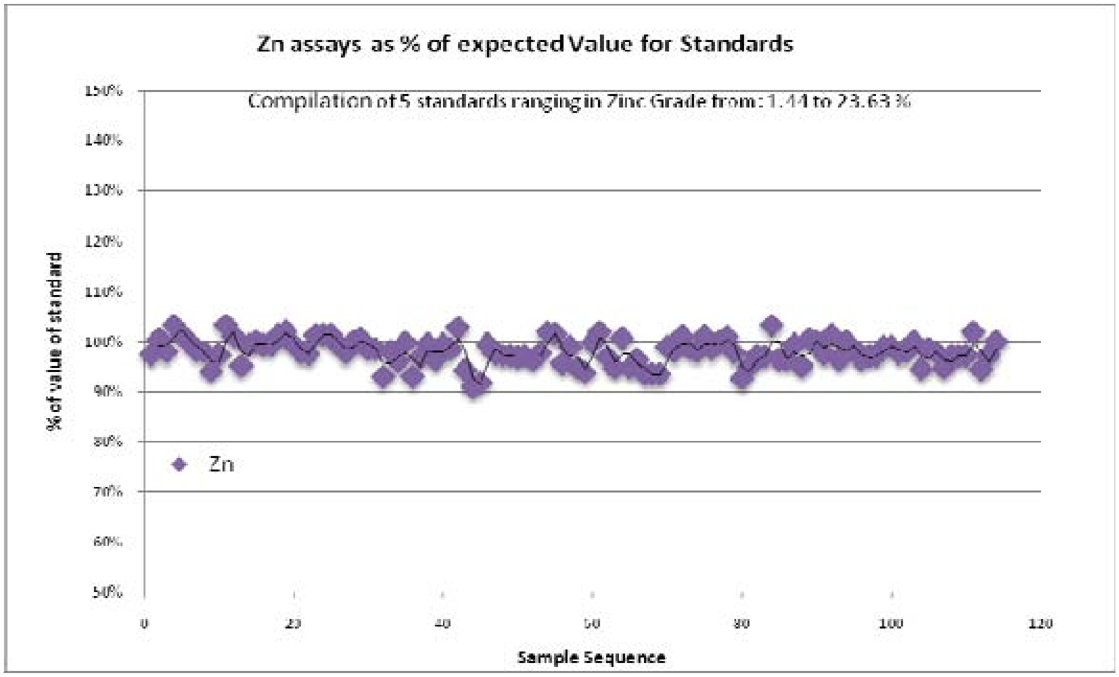


Figure 13.51
Control Chart of Zinc Assays over Time for Standards Submitted as Part of Guanaceví Drilling Program



13.3.6 Check Assaying

To evaluate sample quality control, Endeavour Silver periodically conducts check analyses.

Random pulps were selected from original core samples and sent to second laboratory to verify the original assay and monitor any possible deviation due to sample handling and laboratory procedures.

A total of 435 pulps were sent to a third party laboratory (BSI-Inspectorate) for check analysis. For the majority of these samples, there was close correlation between the original assay and the check assay.

For gold and silver, a total of 435 assays were performed. Correlation indices were 0.80 for gold and 0.99 for silver. Only for gold, a more dispersed cloud of assays is observed.

Gold and silver check assays are shown in Figures 13.52 and 13.53.

Figure 13.52
Scatter Diagram of the 435 Gold Check Samples Above Detection Limits

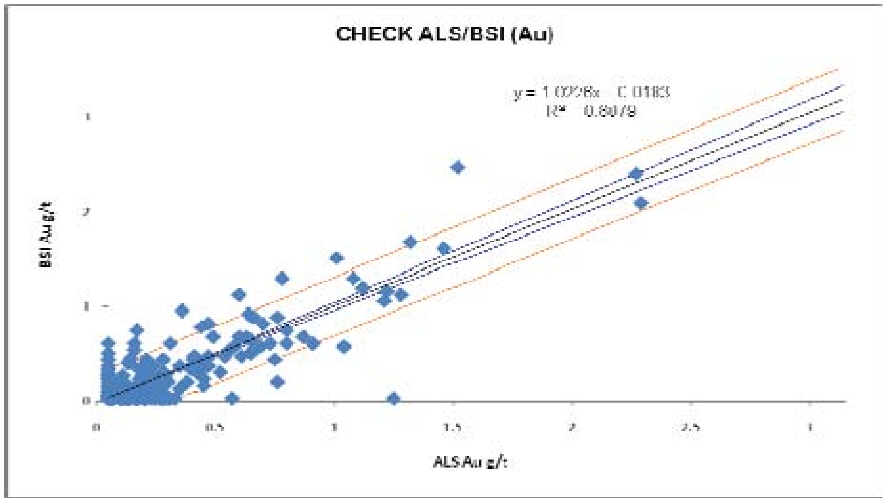
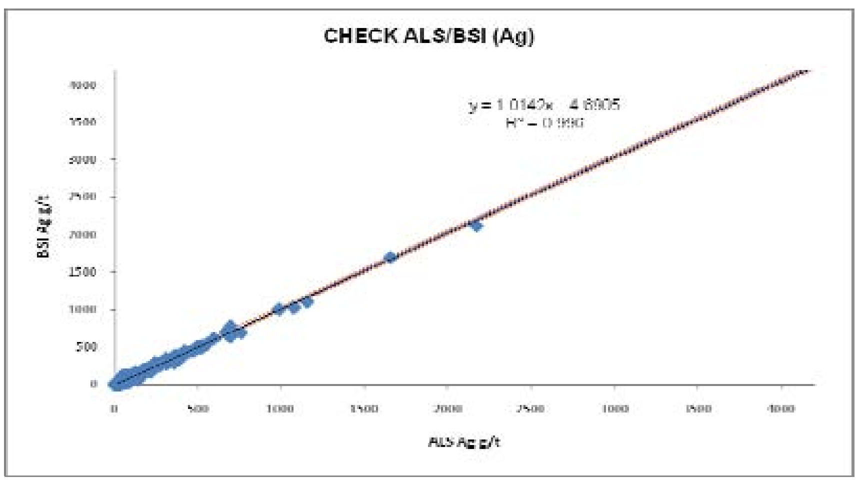


Figure 13.53
Scatter Diagram of the 435 Silver Check Samples Above Detection Limits



A total of 136 samples were analyzed for copper, lead and zinc. Correlation indices are high (> 0.96) for all three metals, showing a very good correlation between the original Chemdex assay and the BSI-Inspectorate check assay, as shown in Figures 13.54, 13.55 and 13.56.

Figure 13.54
Scatter Diagram of the 136 Copper Check Samples above Detection Limits

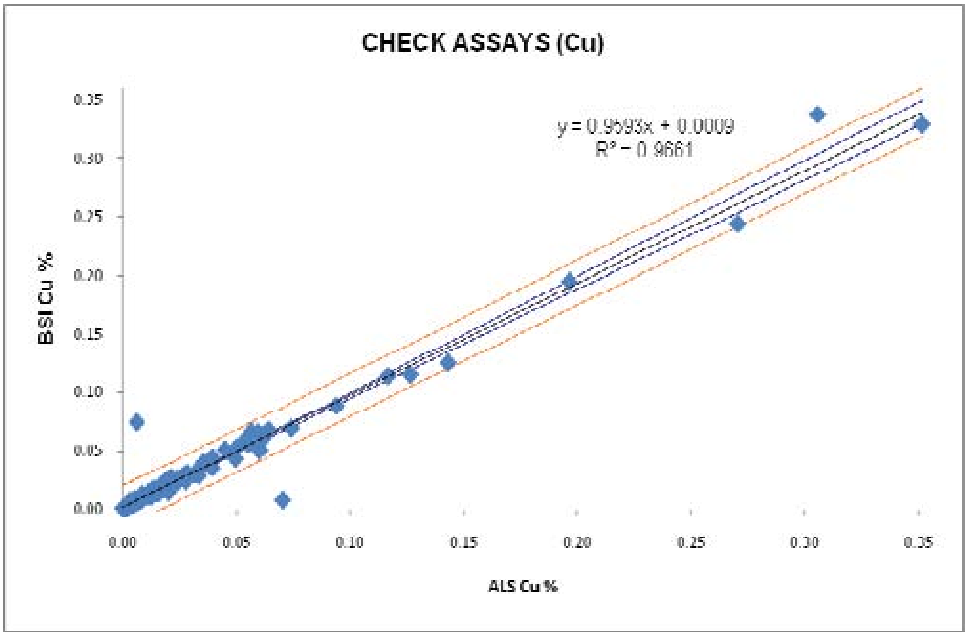


Figure 13.55
Scatter Diagram of the 136 Lead Check Samples above Detection Limits

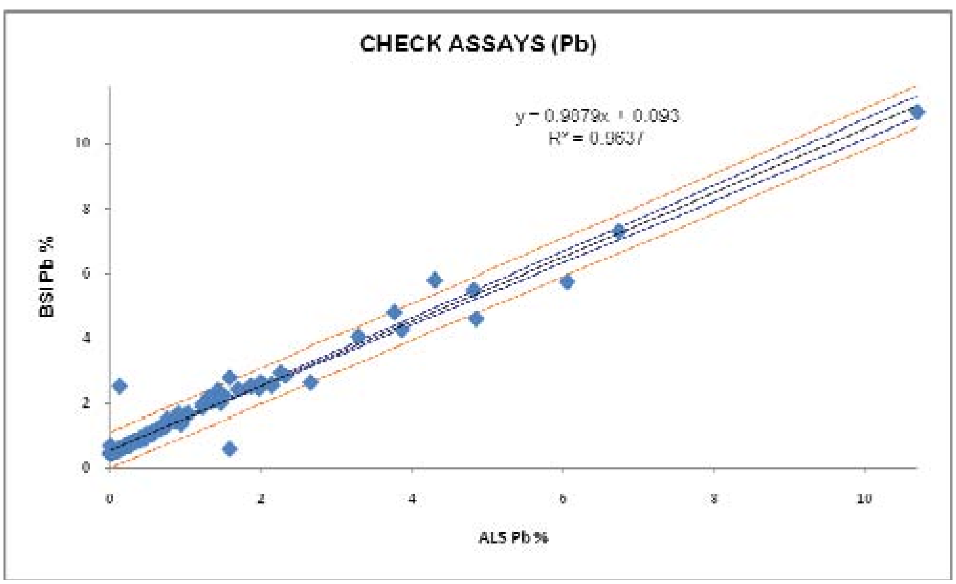
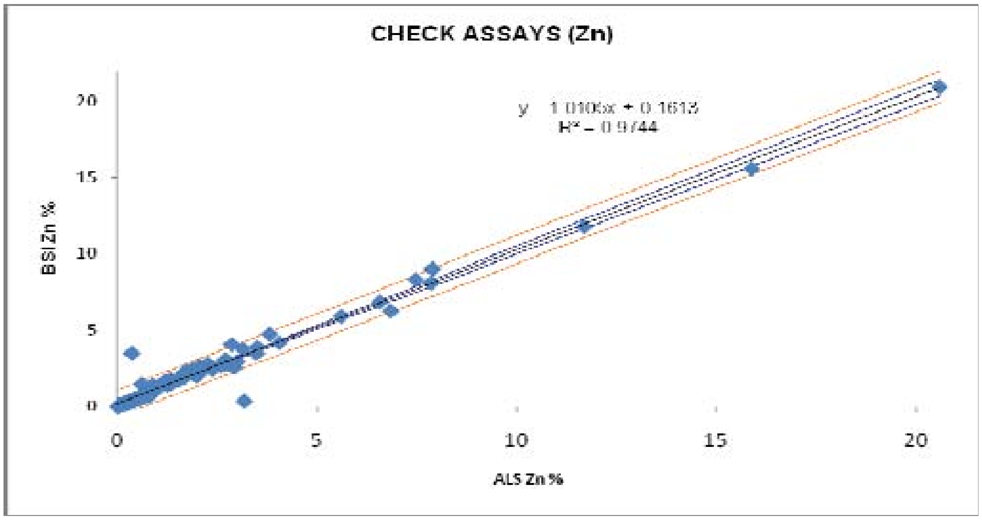


Figure 13.56
Scatter Diagram of the 136 Zinc Check Samples Above Detection Limits



13.4 SECURITY

Diamond drill core and pulps are being stored in a core storage facility constructed on the Santa Cruz mine site. The core storage building was completed in 2007. It is a covered, open-sided structure with 1.5-metre knee walls on the foundations, and chain-link fencing material above the knee walls. Access to the stored core is through a locked steel-mesh, iron-framed double gate in front, and a locked steel door in the back. Pulps are stored in boxes within the core building. Access to the core building is restricted.

13.5 CONCLUSIONS

Following its review, Micon believes that the QA/QC procedures and protocols employed at the Guanaceví Mines project were/are rigorous enough to ensure that the sample data are appropriate for use in mineral resource and reserve estimations. The core storage building provides adequate security for the samples.

During 2008 a new analytical facility was built at the MG laboratory and put into operation in October. The MG laboratory performs analyses for the geology, exploration, ecology, metallurgy and plant departments with a comprehensive range of services. The new facilities have improved sample turnaround time and are a key to improving quality control and laboratory performance. The improvements include separated and environmentally controlled:

- Balance area with: 3 analytical balances and 2 microbalances.
- Wet area.
- Fire assay area with 3 electric furnaces.
- Atomic absorption area.
- Storage area.

- Scrubber area.

In 2009 the laboratory will also implement a round robin program for check assays with other Mexican mine and commercial laboratories. This among other measures, will ensure the accuracy and reliabilityof Endeavour Silver's in-house analytical data.

14.0 DATA VERIFICATION

Further independent sampling was not conducted by Micon for this Technical Report. Other Qualified Persons have previously sampled the mineralization, as discussed in earlier published Technical Reports. The production records are also considered the most reliable data of mineralization contained in the deposits under development at the mine.

Endeavour Silver took effective control of the mining operation of the Guanaceví Mines project during 2004. The project is comprised of an operating mine which is producing silver doré bars on a regular basis. The sales of doré are a clear representation of Endeavour Silver's production sales.

Endeavour Silver maintains an active program of assay checks for the production of doré at the project's plant, in addition to a sampling and assaying program by a sales representative in the city of Torreón, Coahuila to check the assays reported by the Met-Mex Peñoles smelter. An adequate amount of checking has been conducted and the results are representative of the doré produced at the Guanaceví Mines project and shipped to the smelter.

A description of Endeavour Silver's in-house data verification and QA/QC procedures as observed by Micon is presented below.

14.1 IN-HOUSE DATA VERIFICATION PROCEDURES

Endeavour Silver conducts a validation process on the exploration data generated from its Guanaceví Mines project. The data verification procedures generally involve:

- Visually checking the data for the following:
    - Any non-conforming assay information such as duplicate samples and missing sample numbers.
    - Verifying collar elevations against survey information for each drill hole.
    - Verifying collar coordinates against survey information for each drill hole.
    - Verifying the dip and azimuth against survey information for each hole.
    - Comparing the database interval against the original assay certificate for drill hole samples.
    - Verifying survey information for location of underground channel samples used in reserve estimation.
- Using Vulcan software to check for data errors and vein continuity.

The assay information comes directly from the laboratory in an electronic format and is merged into the database using sample numbers. Once the laboratory has finalized assays they are put into a dedicated database directory.

The data are in a format that is directly importable to the company's Vulcan modeling software. The export format is an Excel spreadsheet so all data are also readily importable for use in spreadsheets or a different database.

Senior project personnel have portable versions of the drill hole database on their laptop computers. This allows them access to the data at all times. The portable databases are only up-to-date to the point that the master database is copied onto the laptop. Through day-to-day use of the database staff personnel are constantly verifying and rechecking data.

Channel sample assay data are entered into an Excel spreadsheet used for day-to-day grade control purposes; in addition assay data on sample orientation and location are also entered; all location data are relative to a local surveyed reference point. Channel samples are plotted onto plans prepared on the basis of most up-to-date survey information. If survey data for a particular stope cut are not available the sample location is estimated on the basis of the most recent survey pick up (and if available subsequent survey pick-ups). Coordinates are recorded manually and then entered into an Excel spreadsheet. The process of plotting data onto plans ensures that most field recording errors are identified and corrected.

The channel survey and assay data are then merged on the basis of sample numbers to produce the final database for resource estimation. For data collected in late 2007 and early 2008 the merging of data was done using assay plans prepared in AutoCAD, as field data were not routinely plotted up and coordinates recorded at the time. The merging of data encountered numerous problems of data duplication. Problems of channel data duplication were filtered using Excel spreadsheets and also Vulcan software. Problems of errors with sample location were identified using Vulcan 3-D software. Duplicated channel data are generally removed with the oldest data being accepted as the original information. In some cases (evaluated on a case-by-case basis) duplicated data were accepted or rejected on the basis of sample number sequences. Given the large number of channels that were originally available for use in the channel sample database the general approach was to exclude any channels/samples with data issues. Much of this process of data elimination is manual and extremely time consuming; due to the quantity of data some errors will exist in the channel sample database but the relatively small number means they will have an insignificant effect on the overall resource estimates. A final channel database for resource estimation in an Excel spreadsheet is in a format compatible for import into a Vulcan database.

Assay data and information generated by both operations and exploration are currently transmitted manually and the entire paper trail is accessible and available for inspection.

14.2 MICON DATA VERIFICATION

14.2.1 Introduction

Micon's first site visit to Guanaceví was conducted by William Lewis between December 15 and 16, 2006. The latest site visit to Guanaceví was conducted by Charley Murahwi from September 6 to 9, 2008. During the site visits, the following validation tasks were completed:

- Review of the state of geological/mineralization knowledge.
- Review of the exploration practices, specifically drilling, underground channel sampling, drill core handling and sampling procedures and sample security arrangements.
- Review of on-site laboratory facilities.
- Review of QA/QC procedures.
- Review of database integrity/back-up and storage procedures.

14.2.2 State of Geological /Mineralization Knowledge

Endeavour Silver conducts underground development and continuous level back mapping to guide sampling crews and to facilitate the interpretation of the sampling results. Following its review, Micon is satisfied that the geology team at Guanaceví has acquired a good understanding of the geology and mineralization controls which have an important bearing on resource estimates and future exploration efforts. Thus, the resource estimation process is well supported by a good geological/mineralization model.

14.2.3 Review of Exploration Practices

The drilling procedures as observed by Micon are standard for the industry. On the drill site, surveys are conducted to obtain collar coordinates, elevation of the site and its surroundings, inclination and azimuth of the drill hole. This is important for accuracy in the production of maps, sections and plans. As drilling progresses, the inclination and azimuth of the drill hole are monitored by conducting down-hole surveys. As the targeted drill hole depth is approached, the hole is surveyed using a Reflex down-hole survey instrument in multi-shot mode.

Endeavour Silver aims for HQ and NQ core sizes for surface and underground drilling, respectively. The bigger the sample, the more representative it is. The slightly smaller underground core is due to the lower capacity of the rigs as compared to surface rigs. Core logging is by bar-coding systems with a minimum of descriptive content. This is good practice and is to be commended as it provides a check list, minimizes data transcription errors and assists in maintaining consistency in logging.

In summary, Endeavour Silver's diamond drilling QA/QC are assured by good survey control, NQ and HQ core sizes which yield representative samples, good core recoveries which yield whole intercepts in targeted potential ore zones, and target intersection angles as near to perpendicular as possible. The core storage facilities at Guanaceví are well protected by a high level security fence and are located in an area under 24-hour surveillance by security personnel. The core shed facilities at Guanaceví are depicted in Figure 14.1.

Figure 14.1
Guanaceví Core Shed Facilities

14.2.4 On-site Laboratory Inspection

Micon carried out inspections of the laboratory facilities at Guanaceví and established that the weakest link in the analytical chain is the sample preparation stage. This is mainly due to deficiencies in the outdated equipment and also partly due to some bad practices. At the time of the visit Micon noted that a new laboratory complex had been built and was in the process of being equipped (Figure 14.2). More importantly, Micon established that Endeavour Silver utilizes external laboratories for all its analytical work involving exploration projects. Thus the deficiencies noted at the on-site laboratory have no effect on the resource database.

14.2.5 QA/QC on Assay Data

In addition to using accredited laboratories off the mine sites, Endeavour Silver's exploration division has imposed and maintains various quality controls on sampling and assaying procedures including:

- Duplicate samples.
- Blanks.
- Reference standards.
- Check assaying of selected pulps at different laboratories.

Figure 14.2
New Laboratory Complex at Guanaceví

Micon's review/evaluation of the QA/QC data generated from the above practices does not reveal any major deficiencies that are likely to have a material impact on the assay results used in the reserve/resource database.

14.2.6 Review of the Database

Endeavour Silver's data are stored in digital format but, for both internal and external audit purposes, hard copy output of raw and interpreted data in the form of tables, plans and sections is readily available.

Micon conducted an audit of the database at Endeavour Silver's exploration office in Durango City on September 5, 2008. The audit comprised a review of its construction, and the categories of information contained in it, to ensure that all the data necessary for the proper estimation of the resources have been assembled, and that data relating to all key geological and physical features can be accessed individually or in groupings.

As a means of verification, Micon inspected various prints and plots from the database to ensure that the output is sensible. Micon noted that Endeavour Silver ensures and maintains a clean database by imposing restricted access to the database files and established that in all respects the database is in good order. However, Endeavour Silver is encouraged to review its security measures for the ultimate protection of the database against destruction by fire, theft or electronic failure. Good house-keeping practice generally requires regular backups of electronic data with at least one up-to-date copy being maintained off site.

14.2.7 Resource/Reserve Audits

Micon's review and audit of the Endeavour Silver resource and reserve estimate is summarized as follows:

1) A site visit was conducted to the Guanaceví Mines project in Mexico where the data input procedures, geological model, block model parameters and resource classification details were reviewed in detail over a period of two days. The site visit included an underground tour to examine the various vein systems for continuity and mineralization; geological mark-up procedures and mining methods were observed and discussed. A tour of the mill was also arranged.

2) The review of the resource block model included review of the cut-off grade, wire-framing, capping of high grade assays and block model protocols.

A review of the spreadsheets of tabulated reserves and resources for each zone and by polygon block was undertaken to verify that:

- Appropriate methodology and parameters had been used to estimate quantities of dilution and recovery of mineral within the stoping areas.
- Calculations had been made correctly.
- Blocks had been correctly categorized as proven or probable reserves.

Summary tables had correctly listed total tonnages, grades and contained metal within reserve categories.

A review of the block model showed that

- The capping was adequately conservative.
- Endeavour Silver's variogram ranges and search ellipses are similar to Micon's parallel calculations.
- Overall the block model correlates well with the sample data.

15.0 ADJACENT PROPERTIES

15.1 INTRODUCTION

Endeavour Silver's property exists within the Guanaceví mining district which has hosted several past producers. A number of these past producers are located on the property and the majority of the past producers in the district are located on quartz veins that are similar or related to those found on the Guanaceví property. However, there are no immediately adjacent properties which directly affect the interpretation, evaluation of the mineralization, or anomalies found on the Guanaceví property. The geology, nature of the mineralization, historical production over the last two centuries and the limited use of modern exploration concepts and technology on the property to identify either new areas of mineralization along both the strike and dip directions of the veins, as well as parallel to the Santa Cruz vein to identify "hidden or blind" parallel veins which do not necessarily outcrop on surface, positively affect the prospectivity of the ground contained within the property.

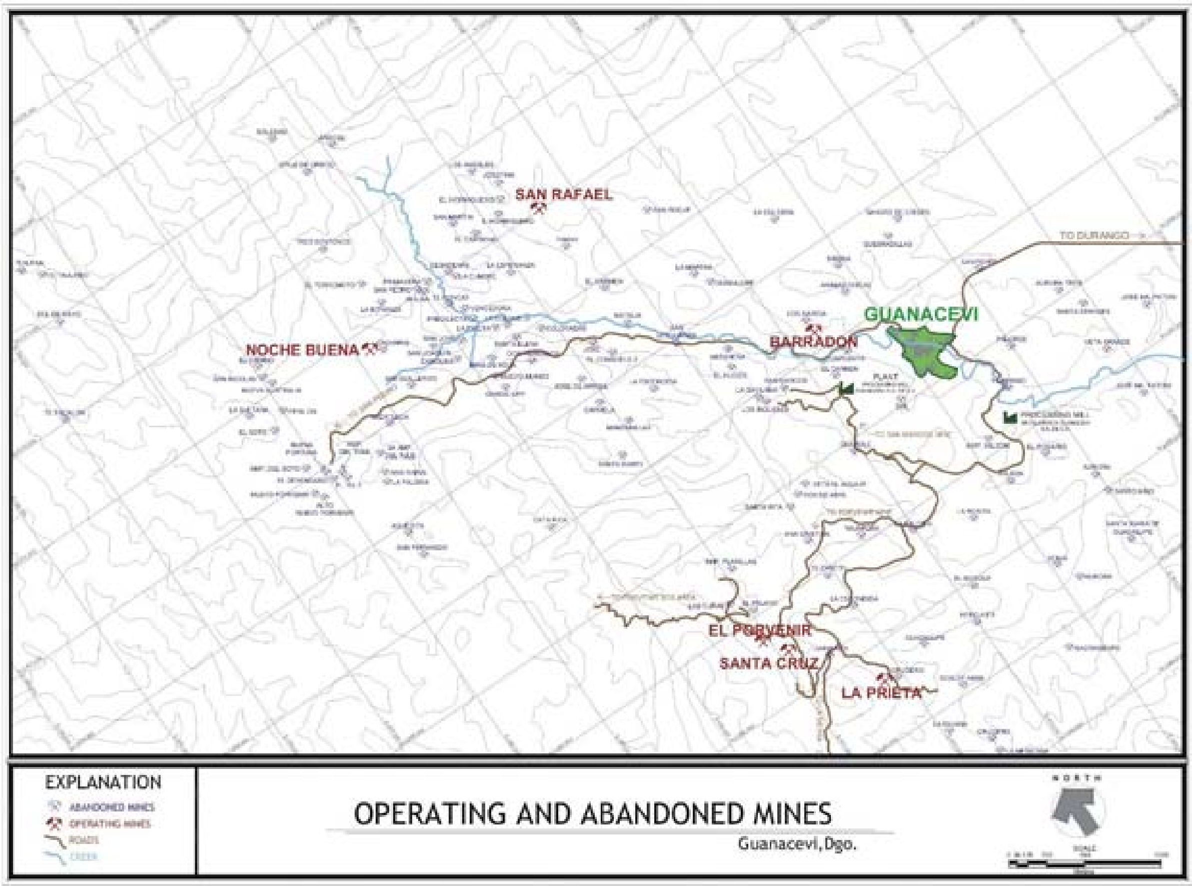
15.2 OTHER SILVER-GOLD PRODUCTION ACTIVITY IN THE GUANACEVÍ MINING DISTRICT

Micon previously reported that during 2006, the MG plant did custom milling and processing for several small mines in the Guanaceví district. These mines include the Barradon mine owned by Cesar Loera, the San Rafael mine owned by a group of local individuals, the San Marcos mine, leased by Ignacio Barraza, and a small operation in the San Pedro area also owned by Ignacio Barraza. The cumulative tonnage from these operations runs between 100 and 500 tonnes per month, and the material from each mine is run through the plant separately in batch mode. Each mine exploits quartz-carbonate veins similar in character to the Santa Cruz mineralization, but with varying amounts of base metals.

In 2008 there are now two other plants in the district. One is owned by Cesar Loera who owns the Barradon concession and is treating about 100 tonnes per day. The other is located at the San Rafael property and processes about 50 tonnes per day. Endeavour Silver does still process other ore that it purchases and processes. This allows the Company to credit its account with the silver production.

See Figure 15.1 for the locations of some of the other mineral properties and mines in the region and within the Guanaceví mining district.

Figure 15.1
Adjacent Mineral Properties/Mines in the Guanaceví Mining District



Map provided by Endeavour Silver Corp.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The mill was originally built in 1970 by the Mexican government and designed to custom mill ores from various mines in the district.

The crusher plant consists of a coarse ore circuit with 4 ore bins; three bins are dedicated to run-of-mine ore and one dedicated to purchased ore. Coarse ore is crushed in two stages and screened to minus 5/8" with a 24"x36" jaw crusher and two cone crushers (4-foot and 3-foot cone crushers) then conveyed to five fine ore bins, where it is fed to the grinding circuit, which has three operating ball mills: A 10.5'x12' Hardinge mill, a 7'x 7.5' Denver mill and a 5'x 6' Fimsa ball mill. The Denver ball mill operates as a regrind mill in parallel with Hardinge ball mill, and the ground ore is sent to a cyanidation circuit. The ore ground by the Fimsa mill can be sent to either the flotation circuit or to the cyanidation circuit. Figure 16.1 is a partial view of the mill.

Figure 16.1
View of Leach Tanks and CCD circuits

Leaching is carried out in twelve 20'x 20' and four 30'x30' agitation tanks. .Leach residues are washed in five 50' thickeners and discharged to a lined tailings pond. Reclaim water is pumped back to the mill process. The pregnant solution is treated in a Merrill-Crowe circuit and gold and silver precipitate is smelted into doré bars and shipped for refining.

The flotation circuit consists of lead and zinc flotation. The flotation cells are designed for a throughput of 400 t/d but are currently limited to the 80 t/d capacity of the Fimsa ball mill. In 2009 Endeavour Silver will focus on increasing the grinding throughput by rehabilitation of a second 7'x 7.5' Denver ball mill, which will increase the throughput of the flotation circuit to 300 t/d.

By the end of 2008 silver recovery had improved from 68-70% to 78% due to higher cyanide concentration in the leach process. Oxygen injection was scaled down from August, 2008 and completely stopped in November, 2008 with no detrimental effect on metals recovery. Figure 16.2 is a view of the Merrill-Crowe precious metal recovery circuit.

Figure 16.2
Merrill-Crowe Circuit

In 2009 hydrate lime will be switched to quicklime to reduce the consumption and reduce flocculent and diatomaceous earth consumptions in the pregnant solution clarification stages. Also new pre-coat testing will be continued in 2009.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 INTRODUCTION

The last resource and reserve estimate for the Guanaceví Mines project was reported in a Technical Report by Endeavour Silver Corp. dated April 15, 2008 and posted on SEDAR.

Since the last resource and reserve estimate was completed in April, 2008, Endeavour has conducted further diamond drilling and underground development and has completed a new resource and reserve estimate for the Guanaceví Mines project as of December 31, 2008.

Reserves and resources have been updated for all of Endeavour's mines and deposits in the Guanaceví Mines project. All mines and deposits are considered as separate entities and as such have been were modeled separately. These include the Porvenir mine, Porvenir Dos, Santa Cruz, Alex Breccia, Noche Buena and several small deposits located in the San Pedro district.

17.2 RESERVE ESTIMATION METHODOLOGIES

For the December 31, 2008 reserve and resource report, three different methodologies have been employed for resource and reserve and estimation for the Guanaceví Mines project.

For the Porvenir mine, resource and reserve estimates were completed in a 2-D horizontal plane. The model was then rotated back to 3-D. Drill holes and composites were composited into point data with a single 3-D UTM coordinate. These data were rotated twic: first a 41° clockwise rotation was applied to align to the local grid and second the data were rotated to horizontal. These point data, particularly, accumulation and thickness, were used for estimation. Compositing of the drill holes was done in an Excel spreadsheet using a 1.8 m minimum width. The composite grades and thickness were used in the modeling process. The footwall surface was then modeled to coincide with the footwall composite boundary. The modeled thickness was added to the footwall grid on a cell-by-cell basis to create the hanging wall surface. These two modeled surfaces were joined together to create a wireframe of the mineralized zone. Un-estimated blocks were given a thickness of 1.8 to maintain uniformity

All resources for Porvenir Dos, Santa Cruz, Alex Breccia and Noche Buena were estimated by block model methods using Vulcan computer software.

For smaller deposits in the San Pedro district, Endeavour employed traditional manual polygonal methods to estimate resources.

It should be noted that for the previous December 31, 2007 reserve and resource report, estimates for the Porvenir mine were made by block model methods using Vulcan computer software. Resources for other deposits (Porvenir Dos, Santa Cruz and Alex Breccia) in the Guanaceví Mines project were left unchanged from those reported by Micon in April, 2007.

The reported reserves are only for the Porvenir mine, and represent that portion of the Guanaceví Mines project for which Endeavour has a mine plan in place.

17.3 GEOLOGICAL INTERPRETATION

As reported by Micon in April, 2007, "The Guanaceví silver-gold district comprises classic, high grade silver-gold, epithermal vein deposits, characterized by low sulphidation mineralization and adularia-sericite alteration. The principal mineralization in the Santa Cruz-Porvenir mines is an epithermal, fracture filling quartz-carbonate vein of low sulphidation geochemistry closely associated with a major fault that extends over 10 km in a northwest strike direction with a generally moderate southwest dip. The Santa Cruz vein is a silver-rich structure with lesser amounts of gold, lead and zinc. Mineralization has averaged 500 g/t silver and 1 g/t gold over a 3 m true width. The minerals encountered are argentite-acanthite, limited gold, galena, sphalerite, pyrite and manganese oxides. Gangue minerals noted are barite, rhodonite, rhodochrosite, calcite, flourite and quartz. The Santa Cruz mine property covers about a 3.0 km strike length of the Santa Cruz fault/vein system. The broader and higher grade mineralized ore shoots tend to occur along flexures in the Santa Cruz vein structure, where sigmoidal loops are developed both along strike and down dip. The vein in the Santa Cruz workings, for instance, splays into two, three or four separate mineralized structures and the intervening wallrocks are also often well mineralized, giving mining widths ranging up to 10, and even 20 m in some places. These sigmoidal loops tend to develop with some regularity along the strike and ore shoots at the Santa Cruz mine have approximately a 60° to 80° plunge to the northwest. Mineralization associated with the Santa Cruz vein is restricted to quartz veins, even though locally strong silicification extends tens of metres into the hanging wall. This helps in identification of the mineralized envelopes. There are four identified zones on the property: the Porvenir, Porvenir Dos, Santa Cruz and Alex Breccia".

17.4 2-D - 3-D MODELING (PORVENIR MINE)

17.4.1 Top-Cutting High Assays (Capping)

Capping of data are necessary in the presence of extreme outlier data or when sampling issues or biases exist. There are several methods used in the industry for the capping of high grade data. A common approach is to cap the data at a specified percentile determined from examination of the cumulative probability plots. It should be noted that due to the arbitrary nature of selecting cut-off thresholds, the use of capping can have serious consequences on resource estimation. Capping is common and widely used in the industry.

Capping was done on the channel Ag and Au assays based on the 95th percentile of the cumulative probability plot before compositing was performed. No capping of width was done on the channel data. Capping of drill hole assays was done using Ag accumulation and Au grade and also based on the 95th percentile of the cumulative probability plot before compositing. In the deep Porvenir selected drill holes in excess of 6 m in width were capped at 6 m to reduce the effect of the wider zones. This affected 3 drill holes, (NP22-6, NP23-5 and NP5-2). The use of accumulation rather than grade as the capping medium was chosen due to the widely spaced drill hole data and to reduce the effect of smoothing by kriging of both thickness and grade.

For the December 31, 2008 resource estimate, the capping threshold selected for the Porvenir drill hole assays was 439 m-g/t Ag and 1.86 g/t Au, respectively and 1,482 g/t Ag and 2.20 g/t Au, respectively for the channel assay data (Table 17.1).

Table 17.1
Capping Thresholds used for Gold and Silver at the Porvenir Mine

Capping Threshold 95th Percentile		
	Silver	**Gold**
Drill Holes	439 g/t	1.86 g/t
Channels	1,482 g/t	2.20 g/t

17.4.2 Sample Composites

For the 2008 resource calculation, assays were composited into true width intervals. There are in excess of 4,000 channel samples in the database for the Porvenir mine, too many to be composited by hand. The Vulcan mining software in use at the Porvenir mine lacks a robust compositing routine that will composite to the desired specifications. As such, compositing was done ‘ad hoc’ in a multi-step process to produce composites that meet the criteria specified by the engineering and geology departments. The specifications call for a minimum true mining width of 1.8 m and a minimum cut-off grade of 270 g/t Ag. All channel composites are calculated to a 1.8 m minimum width regardless of grade. The true width is calculated for individual assays where the orientation of each assay considered was one of three possibilities, 1) vertical, 2) horizontal or 3) perpendicular. The azimuth considered for each assay within a channel sample was the same. The main objective of the compositing process was to determine the composite width followed by the composite grade. The compositing process was designed to take into consideration any internal low-grade or waste zones. Final composite widths are calculated using uncapped assays based on a 270 g/t Ag cut-off and a minimum mining width of 1.8 m.

The compositing was completed in 3 passes:

1. Calculate the full width composite (zero cut-off), two possible outcomes:
    a. Composite <1.8 m; dilute to 1.8 m using background value of 90 g/t Ag.
    b. Composite >1.8 m; proceed to step 2.
2. Calculate the vein only composite based on a single 270 g/t cut-off:;
    a. Composite <1.8 m; dilute to 1.8 m using channel assays.
    b. Composite >1.8 m; use the composite value.
3. Modification for multiple composites in a single channel if needed.

Some channels may contain two or more composites that are greater than the 270 g/t cut-off and include 1) a primary zone composite, and 2) one or more secondary zone composites. The composites are separated by internal zones of low grade and/or waste and are included in the single composite if the internal dilution is less than 2 m true width and is carried by the secondary composites.

The drill hole data were composited on a hole-by-hole basis, in an Excel spreadsheet using similar basic criteria: minimum true width of 1.8 m and minimum cut-off grade of 270 g/t silver; however, a maximum mining width of 6.0 m was applied. Based on previous and current mining experience 6.0 m is the maximum stope width mineable; it is also believed that short strike length but wide zones greater than 10 m will be encountered, but the nature of the data means that using such intervals would tend to over-estimate the resource/reserves by over-extrapolating the extent of wide zones. Given the smoothing effect of the modeling process, the use of a 6.0 m width cap will limit the possibility of over-extrapolation of tonnes. In wide mineralized zones or zones with multiple mineralized intersections a maximum limit of 2.0 m of internal dilution was applied. Internal dilution was included in composite intervals if the outlying ore grades carried the waste zone.

Composite intervals used a combination of grade and geological criteria to define the interval limits following a stepwise process:

1. The footwall vein contact was the most geologically definable feature and was used as the primary basis for defining the Santa Cruz vein structure; as mining will not be able to jump from structure to structure based on assays. Mining will be based a geologically definable feature.

2. Having defined the footwall structure the best interval greater than 1.8 m (true width) up to 6.0 m true width above the 270 g/t silver cut-off grade was defined and this was used.

Composites are 'desurveyed' into x, y and z coordinates of the midpoint of the composite. The composites are compiled in Excel and exported to GSLIB for statistical analysis, variography and modeling. A robust compositing routine is available to calculate the optimum channel composite and will be implemented for future estimates.

17.4.3 Statistics

The data used for the reserves and resources for the Porvenir mine are comprised of both underground channel data and diamond drill hole data. The data consist of 4,338 composited channel samples and 149 composited drill hole intervals spanning the main Porvenir structure and two adjoining splay structures. The univariate statistics for the channel data are shown in Table 17.2 and in Table 17.3 for the drill hole composites. The tables are for composite data only. Additional tables for assay data can be found in Appendix A. Histograms and probability plots for the thickness and accumulation are also contained in Appendix A with volume variance and variograms in Appendix B. All spatial analyses were completed on 2-D data. Transforming the data to 2-D generally improves the variography by removing the third dimension. This is particularly true when dealing with narrow vein type deposits.

Table 17.2
Univariate Statistics for Capped Channel Composite Data

Channel Composite Data – 270 g/t Cut-off					
Statistic	**TW**	**Au g/t**	**Ag g/t**	**Au.t**	**Ag.t**
Number Data	4,338	4,338	4,338	4,338	4,338
Mean	1.92	0.53	377.5	1.07	755.8
Median	1.80	0.41	306.8	0.76	561.9
Standard Deviation	0.35	0.42	282.0	0.93	635.3
Sample Variance	0.12	0.17	79,517.1	0.87	403,591.8
C.V.	0.18	0.78	0.7	0.88	0.8
IQR	1.80 - 1.80	0.21 - 0.74	152.2 - 536.4	0.38 - 1.48	273.0 - 1062.0
Minimum	1.80	0.00	3.6	0.00	6.5
Maximum	5.98	2.20	1,482.0	6.44	5,416.1
Range	4.18	2.20	1,478.4	6.44	5,409.6

TW = true width, Au.t = Au g/t.true thickness, Ag.t = Ag g/t.true thickness

Since compositing was done using a minimum mining width, the distribution of true width values is truncated on the lower end at 1.8 m, the minimum mining width. The maximum true width is 5.98 m and the average 1.98 m. The majority of composites have a true width of 1.8 m which makes it difficult to derive any spatial relationship between composites. Silver values range from 3.6 g/t to a maximum of 1,482 g/t, the capped value. The mean silver grade is 377g/t and the interquartile range (IQR) indicates that the vast majority of composite values are <500 g/t. Gold data has a range of 0 to 2.2 g/t (capped value) with the majority of composites having gold values <0.75 g/t.

Table 17.3
Univariate Statistics for Capped Drill Hole Composite Data

Drill Hole Composite Data - 200 g/t Cut-off					
Statistic	**TW**	**Au g/t**	**Ag g/t**	**Au.t**	**Ag.t**
Number Data	149	149	149	149	149
Mean	2.25	0.43	236.7	1.03	609.0
Median	1.80	0.36	208.0	0.68	375.7
Standard Deviation	1.03	0.33	175.2	1.05	640.1
Sample Variance	1.06	0.11	30,710.8	1.09	409,777.1
C.V.	0.46	0.77	0.7	1.01	1.1
IQR	1.80 - 1.82	0.15 - 0.56	97.0 - 354.3	0.32 - 1.53	174.5 - 877.8
Minimum	1.80	0.02	1.7	0.04	3.1
Maximum	6.00	1.43	883.1	5.26	2,892.6
Range	4.20	1.41	881.4	5.22	2,889.6

TW = true width, Au.t = Au g/t.true thickness, Ag.t = Ag g/t.true thickness

Drill hole data were also composited to a minimum width of 1.8 m. Thickness was also capped at a maximum of 6 m so the distribution is truncated on both ends. The maximum width cap affects 3 of the 149 drill hole intercepts. Silver values range from 1.7 g/t to a maximum of 883 g/t. The mean silver grade is 237 g/t and the interquartile range indicates that the majority of drill hole composite values are <354 g/t. Gold data have a range of 0.02 to 1.43 g/t. Most composites have a gold grade <0.56 g/t.

The variogram volume plots in Appendix B show the spatial correlation of data in the plane of the Porvenir structure. The general trend of correlation in the plane of the vein occurs at an azimuth of approximately 165° for Ag and 0° for gold. These directions correspond to the NW-SE direction in UTM coordinates or the strike direction of the structure.

Multi-directional variograms for grade and thickness are also shown in Appendix B. Fitted variogram models for silver and gold accumulation as well as thickness are shown in Figures B-8 through B-31 of Appendix B. The variograms can be adequately modeled in most cases by three structures, two nested spherical schemes, one exponential scheme and a nugget variance. The channel samples naturally reveal a shorter range component of the variogram than the drill hole composites and have also been used in determining the variography used for the kriging calculations. For the closely spaced channel data the general short range anisotropy identified from the variography is on the order of 3-4:1 with the long axis in the strike direction and perpendicular. This identified anisotropy is likely a function of the channel configuration since most channels trend in the strike direction and the true anisotropy is most likely less than a 2:1 ratio. The drill hole variography also exhibits anisotropy on the order of 4-5:1 and is also likely related to the long strike direction versus the shorter vertical component. The final search ellipses used in kriging to select data used an anisotropy ratio of about 1.2:1 for the channel data and 2:1 for the drilling data and should not be confused with the anisotropic weighting applied through the variogram model specified at the time of kriging.

17.4.4 Mineral Resource and Reserve Modeling

For the December 31, 2008 resource and reserve estimate, Endeavour Silver generated its own block model in a methodology that used GSLIB software to model the structures in 2-D followed by post-processing using Vulcan computer software to generate a 3D block model. The final Vulcan 3-D models were used to generate the resource and reserve figures.

Coordinate Transformation

To facilitate modeling in 2-D it was necessary to transform the 3-D coordinates. The transformation involved a double rotation: once in the horizontal plane and a second in the vertical plane. The rotation point of the horizontal rotation is the origin of the local grid located at local coordinates 5000N, 5000E. The rotation point of the vertical rotation was arbitrarily picked from a vertical cross-section in the plane of the vein so that the rotation would result in the points falling close the rotation point elevation of 1,950 m. The horizontal rotation is a 41° clockwise rotation about the ***z*** axis followed by a 55° rotation about the ***y*** axis. The rotation points and rotation angles are shown in Table 17.4 and graphically illustrated in Figures 17.1, 17.2 and 17.3. All data were transformed to horizontal 2D coordinates before any statistics and modeling was completed.

Table 17.4
Coordinate Transformation

Coordinate Transformations		
Grid Rotation (Plan view)		
	North	**East**
Local Grid Origin	5,000	5,000
Local Grid Origin on UTM Grid	400,802.958	2,866,500.000
Local Grid Rotation	41°	Clockwise
Grid Rotation (Inclined to Horizontal, Cross-sectional view)		
	East	**Elev**
Local Grid Rotation Point	4,984.70	1,950.00
Local Grid Rotation	55°	Clockwise

Figure 17.1
Rotation in Horizontal Plane, 41° Clockwise

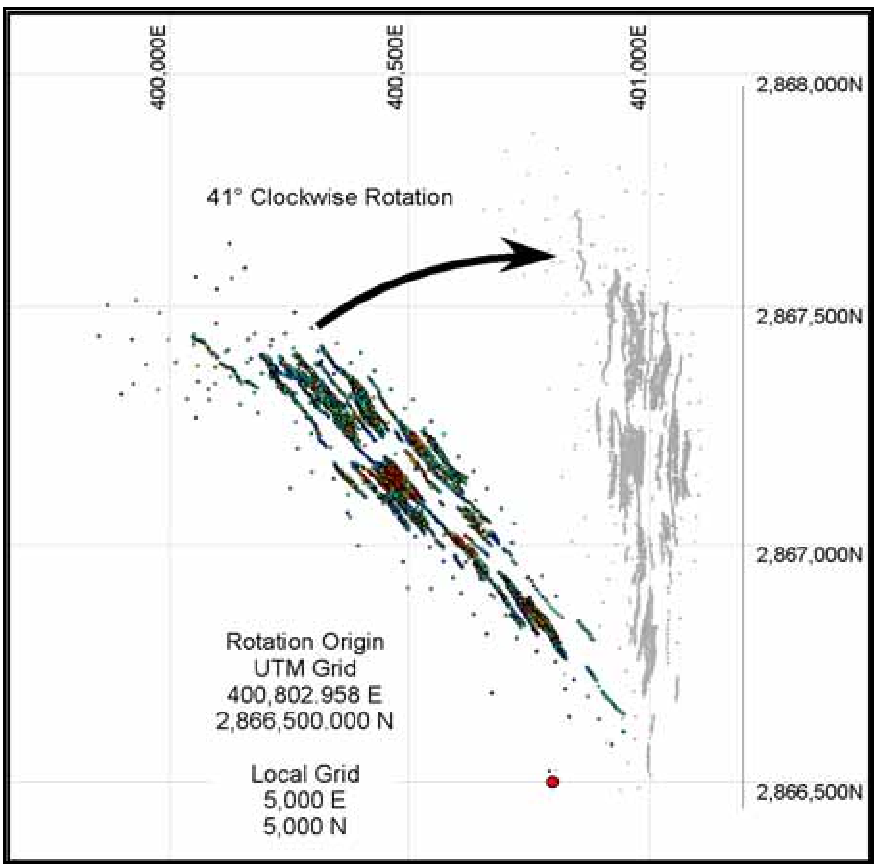


Figure 17.2
Rotation in Vertical Plane, 55° Clockwise

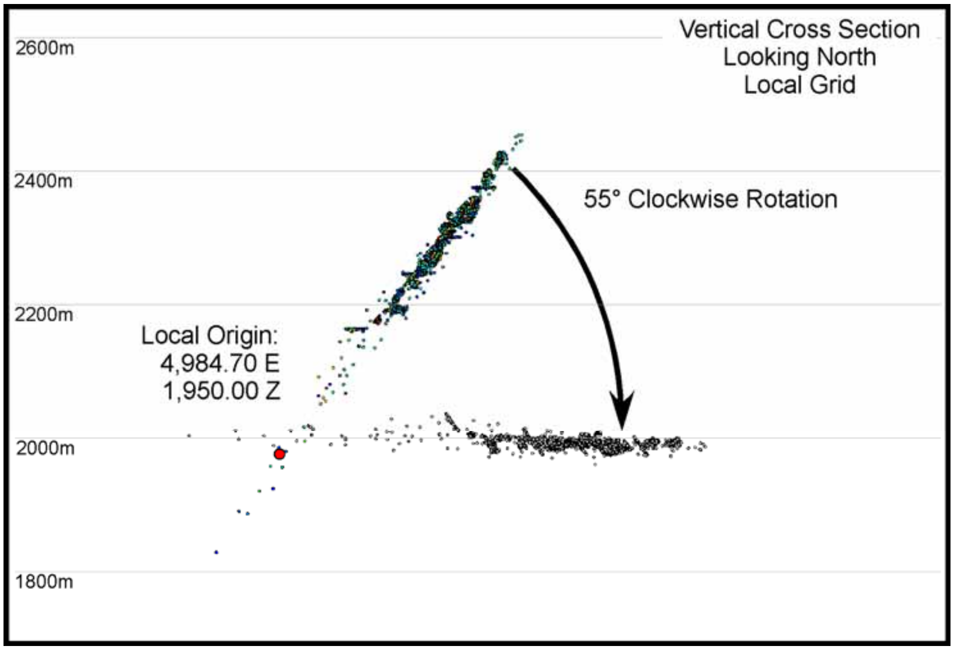
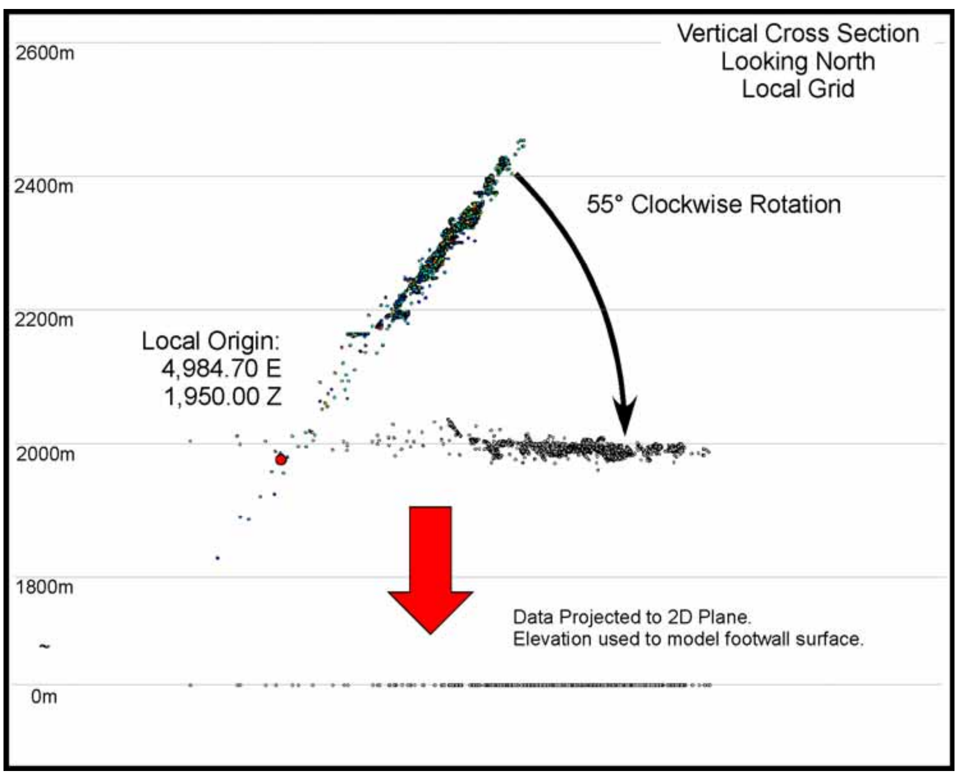


Figure 17.3
Rotation in Vertical Plane, with Translation to Zero Elevation



17.4.5 Block Model Description

There were two block models used in the 2-D modeling process. A 5 m by 5 m model was used for estimating resources in the vicinity of the mine workings and a 25 m by 25 m model for areas surrounding the 5 m model. The 5 m model was interpolated using both channel and drill hole data. The 25 m model was interpolated using drill hole data only which have an average spacing of about 50 m. A block size of 25 m is the minimum reasonable block size and is equal to half the drill hole intercept spacing.

As a final step the 25 m model was rescaled to 5 m and combined with the 5 m model to create a final 5 m model encompassing the whole area of interest. The block sizes chosen were considered appropriate given the relative spacing of the channel and drill hole data.

Table 17.5 provides the specifications of the 2D block model.

Table 17.5
2-D Block Model Specification

5m x 5m Model Centred on Mine Workings				
	N	**Size**	**Min**	**Max**
X	100	5	5,125	5,625
Y	230	5	5,100	6,250
25m x 25m Model				
	N	**Size**	**Min**	**Max**
X	36	25	4,775	5,675
Y	68	25	4,900	6,600
Combined 5m x5m and 25m x 25m Model				
	N	**Size**	**Min**	**Max**
X	180	25	4,775	5,675
Y	340	25	4,900	6,600

The updated resource block model for the Porvenir mineralized zone was generated using a parent block size of 20 m (northing) by 20 m (easting) by the width of the vein or mineralized boundary (vertical or “z”). This block size was deemed appropriate relative to the geometry of the zones, the distance between channel samples and mine planning. Table 17.6 provides the specifications of this 3D block model.

Table 17.6
3-D Block Model Specification

	X	**Y**	**Z**
Origin	399,545.24	2,867,592.37	1,577.50
Number	360	225	Variable
Size (m)	5	5	0.25-150
Minimum	5	5	0.25
Bearing	139	-	-
Rotation	0	-55	-
Rotation Axis	Y	X	-

The Vulcan 3D blocks were rotated to fit the general dip (-55°) and strike (139°) of the Santa Cruz structure in the Porvenir mineralized zone. In the rotated model, X and Y directions are in the plane of the vein whilst Z is perpendicular to vein direction. In the final Porvenir 3D block model all blocks have a uniform 5 m x 5 m size in the X and Y dimension whilst the Z dimension is variable with a minimum dimension of 0.25 m and a maximum dimension of 150 m; the Z dimension can vary in increments of 0.25 m. The Vulcan variable block dimension option means that for an individual vein model the Z direction of the model contains 3 blocks – footwall, vein and hanging wall block, each of variable thickness. The thickness of the 3D blocks is determined from vein wireframes used during the model construction process.

A total of three vein structures were modeled at the Porvenir mine: The main Santa Cruz vein (principal block model) and the Splay 2 (hanging wall) and Splay 3 (footwall) veins. Each vein was modeled individually in 2D before being imported into its own individual 3D block model. The Santa Cruz vein had two discrete block models built: one based on a 200 g/t cut-off grade for resources and one based on a 270 g/t cut-off grade for reserves.

17.4.6 Interpolation Methods

The interpolation method used was ordinary kriging on a 2-D grid. The program used was `kt3d.exe` which is part of the GSLIB suite of programs. Drill hole and channel assay data were composited by thickness weighted averaging to true width intercepts with a minimum true width of l.80 m. Assay values were capped using the method described previously. Ordinary kriging, using all accepted data without any further modification, was done on silver and gold accumulation in three separate passes:

1. Channel and drill hole data using a search ellipse of 21 m in the principal direction and 17 m in the perpendicular direction.

2. Channel and drill hole data using a search ellipse of 42 m in the principal direction and 34 m in the perpendicular direction.

3. Channel and drill hole data using a search ellipse of 180 m in the principal direction and 90 m in the perpendicular direction.

The search ellipse directions used in the ordinary kriging runs are summarized in Table 17.7.

Table 17.7
Search Ellipse Directions

Search Ellipse Directions	Azimuth
Principal Direction (Ag)	165°
Perpendicular Direction (Ag)	225°
Principal Direction (Au)	0°
Perpendicular Direction (Au)	90°

Kriging was done on 5 m by 5 m blocks in the plane of the structure estimating thickness and accumulation for passes 1 and 2 in the upper, developed part of the mine, followed by kriging on 25 m by 25 m blocks in the plane of the structure estimating thickness and accumulation for pass 3 in the lower mine below developed areas where data are sparse. The 5 m by 5 m block size is not justified for the lower parts of the deposit on the basis of the data spacing. The block model in the lower region of the mine was rescaled to 5 m by 5 m and combined with the upper model to make a single deposit-wide model. The results were imported from the GSLIB *kt3d* output files into a custom Excel spreadsheet (*Merge_Models_***.xlsx*) that merges the models and creates a final output model. Two additional spreadsheets (*TW_Model_***.xlsx* and *Model_Dilution_***.xlsx*) are used for model manipulation. The excel spreadsheet *TW_Model_***.xlsx* calculates the hanging wall, mid-point and footwall coordinates for each cell in the model. Coordinates are calculated in both UTM and local grid space. The last spreadsheet *Model_Dilution_***.xlsx*, calculates the appropriate footwall and hanging wall surfaces of the diluted models. The surfaces can be used to construct dilution solids in any general mining software package. Un-estimated blocks due to insufficient data are identified by "-999".

Two splay structures have been identified and treated separately from the main Porvenir structure. The structures have limited information. Splay 2 sits on the footwall side of the main structure and consists of 11 drill hole intercepts. Splay 3 contains both channel data and drill hole data. The data set used for estimation contains 206 channels and 7 drill hole intercepts. The channel data are highly clustered in relation to the area of interest which would make meaningful variography difficult. Despite the fact there are over 200 channel samples in the area of Splay 3 there are insufficient spatial data to give a good measure of spatial variability. Although one could justify using the variography from the main structure, it was decided to use the IDW interpolator for these areas given their relatively small size.

Like the main structure, the splay data were transformed to local 2D space where the interpolation was done. The IDW interpolator used an exponent of 3 with a minimum of 3 samples and maximum of 10 data need to estimate a cell. The models used a cell size of 5 m by 5 m. The splays were estimated in one pass using the same search ellipse as performed on the Santa Cruz vein drill hole data (180 m @ 165° / 90 m @ 255°).

For import into the Vulcan 3-D model the local 3-D block centroid coordinates (XYZ local) are transformed mathematically into 3-D UTM coordinates. Prior to import into Vulcan, data manipulation is performed in Excel to generate such model variables as dilution factors, diluted tonnes and diluted grades, and tonnage factors to be used in place of density to calculate reserve tonnes in the undiluted vein model.

Table 17.8 summarizes the kriging parameters used for modeling.

Table 17.8
Summary of Kriging Parameters Used for Modeling

Channel Data			
Item	**True Width**	**Ag Accumulation**	**Au Accumulation**
Minimum # of comps	2	2	2
Maximum # of Comps	12	12	12
Major axis search (Pass 1 /2)	21 / 42	21 / 42	21 / 42
Minor axis search (Pass 1 /2)	17 / 34	17 / 34	17 / 34
Axis ratio	1.2	1.2	1.2
Azimuth Principal Ellipse Direction	165°	165°	0°
Number of Structures	2	3	3
Nugget Variance	0.025	0.452	0.500
Structure 1 Type	Spherical	Exponential	Exponential
Structure 1 Variance Component	0.643	0.283	0.192
Structure 1 a_max, a_min (metres)	2.0 , 3.0	8.9 , 1.8	18.0 , 2.0
Structure 2 Type	Exponential	Spherical	Spherical
Structure 2 Variance Component	0.107	0.101	0.690
Structure 2 a_max, a_min (metres)	30.0 , 16.0	30.8 , 68.2	25.4 , 75.2
Structure 3 Type		Spherical	Spherical
Structure 3 Variance Component		0.165	0.239
Structure 3 a_max, a_min (metres)		86.4, 68.2	98.5, 75.2
Drill Hole Data			
Item	**True Width**	**Ag Accumulation**	**Au Accumulation**
Minimum # of comps	2	2	2
Maximum # of Comps	12	12	12
Major axis search	180	180	180
Minor axis search	90	90	90
Axis ratio	2.0	2.0	2.0
Azimuth Principal Ellipse Direction	165°	165°	0°
Number of Structures	2	3	2
Nugget Variance	0.250	0.300	0.150
Structure 1 Variance Component	Spherical	Spherical	Spherical
Structure 1 a_max, a_min	0.483	0.317	0.287
Structure 2 Variance Component	78.5, 58.7	99.1, 14.8	89.5 , 81.3
Structure 2 a_max, a_min	Exponential	Spherical	Spherical
Structure 3 Variance Component	0.267	0.101	0.400
Structure 3 a_max, a_min	296.0 , 105.2	197.5 , 164.1	93.6 , 82.8
Structure 3 Type			Spherical
Structure 3 Variance Component			0.163
Structure 3 a_max, a_min (metres)			360.4, 97.3

The block model variables are imported into Vulcan as a point database, which can be used for rapid data review. All the point data are located at the centre of the modeled vein for any given location.

As both the 2D and 3D block models are based on 5 m by 5 m blocks in the X and Y dimensions, each data point falls within only one 5 x 5 m block. Block values are assigned from the point data using a nearest neighbour technique based on a 5 x 5 m rectangular search (not elliptical). The search dimension in the block model Z axis was set at 10 m to ensure that any sub-blocks within the vein limits were also filled (they would have the same values as the parent 5 m x 5 m blocks and the only difference would thus be the block volume). Only blocks with the 3-D centroids lying within the vein solid triangulation were modeled. Hence a number of different block models were built to model different veins and different models of the same vein structure (e.g. reserve and resource veins which were defined using different composite cut-off criteria – 270 g/t Ag and 200 g/t Ag).

Bulk density was assigned to each individual block using specific gravity (SG) factor of 2.55 t/m^3. Late in 2008, 36 samples were collected from stopes to be used for density analysis. The results were received in December, 2008 and a majority of the results, particularly from vein samples, gave very low values compared to previous in-house bulk density tests. External bulk density results from the same laboratory (SGS Durango) for other Guanaceví deposits (Alex Breccia, Santa Cruz and Porvenir Dos) gave similar results to previous in-house estimations. The laboratory indicated that the samples had significant open space which raised concerns that the samples may have been too fractured for meaningful analysis. Therefore it was decided to use the previous density estimate until a new set of samples could be collected, analyzed and a review of the results performed.

17.4.7 Mineral Resource Classification

The drill spacing, in general, remains 30 m both in strike and dip of the Guanaceví deposits. Mineral resources were classified on the basis of the location of blocks relative to the data used to interpolate the block grade. The protocols for assignment of mineral resources for the Guancevi deposits adhere to the Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code) and to the CIM “Standards on Mineral Resources and Reserves”. The Porvenir mine Mineral Resources were categorized as follows:

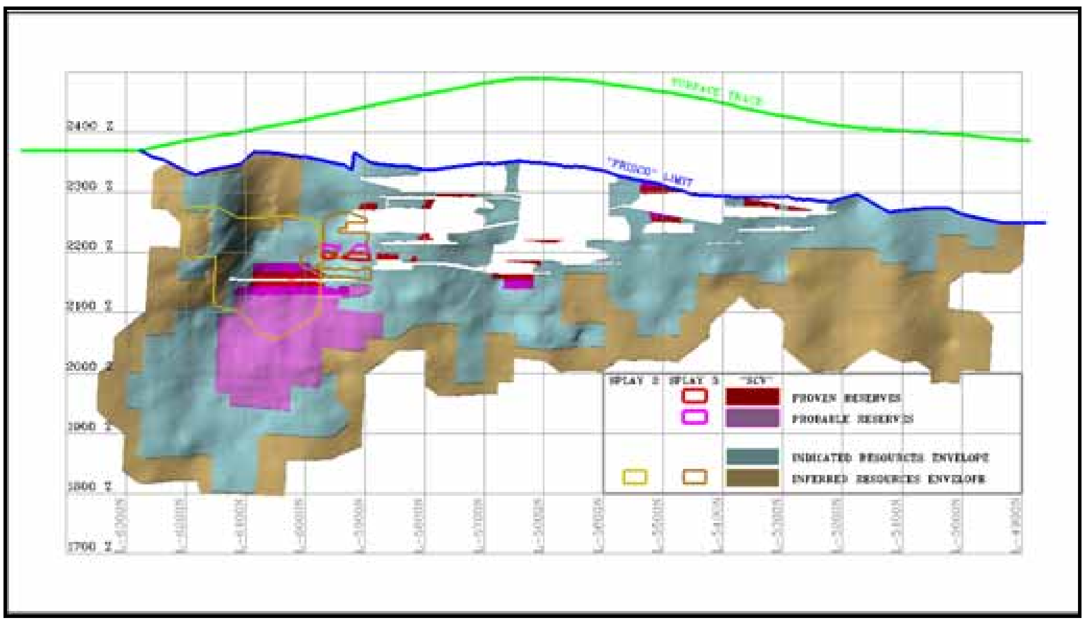
- No Measured Mineral Resources were defined, as the tonnages involved were minor.
- Indicated Mineral Resource: Blocks which lie within an envelope with a 35 m radius from the last drill hole or channel sample in the periphery of the mineralized zone; the envelope maintains geological continuity based on geological interpretation.
- Inferred Mineral Resource: Blocks which lie within an envelope outside the 35 m periphery but within 75 m from the last drill hole or channel sample in any direction within the defined mineralization.

The resource (and drill hole based reserve) limits were all defined using the 25 m x 25 m 2D block model with the basic criteria for inclusion being that the block centre (especially at the periphery of the zones), was within 35 m or 75 m of the nearest sample point in the plane (55° plane) of the vein.

The influence of this classification for the Porvenir Mineral Resources is shown in Figure 17.4.

The final Mineral Resource model was cut by the surface topography and depleted to account for previously mined volumes, and pillar zones around these mined areas. For much of the Porvenir mine the upper limit to resources and reserves was defined by the contact between the El Porvenir concession (Minera Tayahua S.A.) and Endeavour Silver's Santa Cruz Dos concession (Porvenir North): Endeavour Silver had a contract to mine the El Porvenir material which terminated in August, 2008. Resources were also depleted by the material which is considered by Endeavour Silver to be reserves as of December 31, 2008. The resulting Mineral Resource statement is effective December 31, 2008. The Mineral Resources are exclusive of the Mineral Reserves, discussed subsequently.

Figure 17.4
Classification of Mineral Resources and Reserves for the Guanaceví Mines Project - Porvenir Mine



17.4.8 Porvenir Deposit Resource Cut-off Grade

For the Porvenir mine resource estimates as of December 31, 2008 the geological cut-off grade used was 200 g/t silver. Future plans to lower mine operating costs, raise mill throughput and improve mill recoveries at Guanaceví justify using the 200 g/t silver geological cut-off for resources, which may reasonably be converted to reserves in the short to medium term.

17.5 3-D WIREFRAME MODELING (PORVENIR DOS, SANTA CRUZ, ALEX BRECCIA, NOCHE BUENA)

For the December 31, 2008 resource estimates of the Porvenir Dos, Santa Cruz, Alex Breccia and Noche Buena deposits, wireframe modeling was carried out by geologists and technicians working for Endeavour Silver's exploration department. Wireframe modeling was conducted in a similar manner as was described in the April, 2007 Micon Technical Report.

Vein structures modeled in 3D for each deposit include:

Alex Breccia	HWSCV – Hanging wall Santa Cruz vein SCV – Santa Cruz vein FWSCV – Footwall Santa Cruz vein
Porvenir Dos	SCV – Santa Cruz vein COG- Conglomerate vein
Santa Cruz	SCV – Santa Cruz vein in crosscut 1 and 3 (XC1-3) SCV2 – Santa Cruz vein in crosscut 2 (XC-2)
Noche Buena	AV – Armagedon vein AVFW – Footwall Armagedon vein FWAV – Footwall Armagedon vein (no economic resources) HWAV – Hanging wall Armagedon vein (no economic resources) HWAV2 – Hanging wall Armagedon vein CV – C vein

3-D wireframe modeling was completed in a manner to best represent the selective mining method currently being employed at the Guanaceví Mines project. In order to minimize dilution and ensure that only material above the incremental cut-off is actually mined and sent to the mill for processing, grade control geologists are only marking for exploitation, the economical portion of the vein at a minimum mining width. To honour this practice, wireframes were also constructed at a minimum mining width.

For wireframe construction, the portion of the vein with a composite grade greater than 100 g/t Ag and having a minimum true vein width of 1.5 metres was selected. This was done only for drill core. When only a low-grade (<100 g/t Ag) composite is present, a mineralized boundary is still selected to insure that the wireframe model maintains a 1.5 metre minimum true vein width throughout its entirety.

With this methodology, the wireframe does not always snap to an exact sample intersection. As reported by Micon in the April, 2007 Technical Report, this should not have any adverse effect on the resource estimation, especially since best practices were used during the wireframe modeling.

17.5.1 3-D Statistical Analysis

For the December 31, 2008 resource estimates, no 3-D statistical analysis were conducted for the Alex Breccia, Santa Cruz, Porvenir and Noche Buena zones in the Guanaceví Mines project.

17.5.2 Top-Cutting High Assays (Capping)

Endeavour has developed basic statistical parameters for raw silver and gold assays. This showed that the data are positively skewed and that it was necessary to limit the influence of high outlier assays by top-cutting high assays and making equal length composites within each zone. To determine appropriate capping for each zone, lognormal probability plots were examined and the capping used for each zone is shown in Table 17.9.

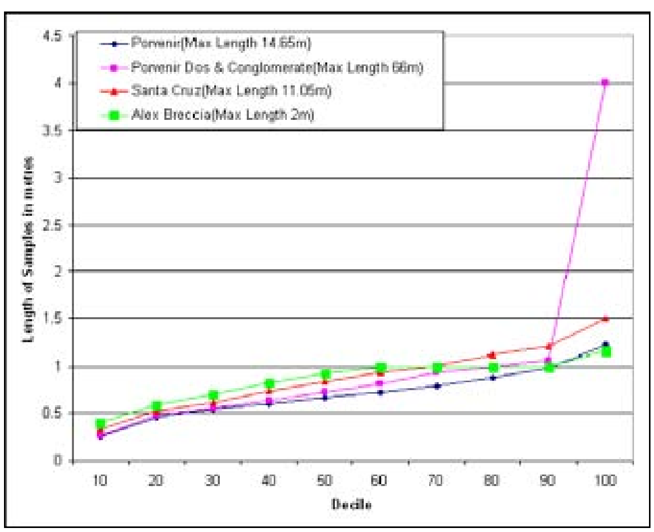
Table 17.9
Grade Capping for Alex Breccia, Santa Cruz, Porvenir Dos and Noche Buena

Zone	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)
Alex Breccia	1,159	2.10	5.79	7.10
Santa Cruz	1,025	2.00	5.79	7.10
Porvenir Dos	819	1.30	na	Na
Noche Buena	564	0.62	na	Na

17.5.3 Sample Composites

Basic statistics were previously done by Micon to understand the variation in the sample length. It was found that the sample length for most of the assays in all of the zones was less than 1 m. Micon constructed a linear plot for each decile for sample length for each zone and this is shown Figure 17.5.

Figure 17.5
Sample Length at each Decile for the Four Zones in the Guanaceví Mines Project



Micon also calculated the percentile to demonstrate that the maximum sample length for each zone was approximately 1 m and the results are tabulated in Table 17.10.

Table 17.10
Percentage of Sample in Each of the Four Zones with a Sample Length Less than or Equal to 1 Metre

Area	Percentage of sample (Length <=1 m)
Porvenir	98
Porvenir Dos	93
Alex Breccia	95
Santa Cruz	75

Based on the statistical work done by Micon, Endeavour decided to continue using 1 m as the composite length for resources for the Alex Breccia, Santa Cruz, Porvenir Dos and Noche Buena zones as of December 31, 2008.

17.5.4 Spatial Analysis

As reported in Micon's April, 2007 Technical Report, only the Porvenir mine has sufficient samples upon which to construct a variogram for the area of mineralization. All other zones lacked sufficient data upon which to conduct meaningful variography.

Endeavour carried out several studies of the variography for both silver and gold in the general direction of the strike and dip of Santa Cruz vein in the Porvenir mine. The variography clearly defined both small scale and large scale variability in the deposit.

For resource estimates, Endeavour has decided to use the search directions for each deposit as shown in the Table 17.11. These directions essentially represent the strike and dip of each mineralized zone, and have been deemed adequate for resource estimates.

Table 17.11
Search Ellipses Directions

Area	Bearing	Plunge	Dip
Alex Breccia	135	0	-50
Noche Buena	270	0	-57
Porvenir Dos	135	0	-55
Santa Cruz Xc1-3	145	0	-42
Santa Cruz Xc-2	135	0	-58

17.5.5 Mineral Resource Modeling

For the December 31, 2008 resource estimate, Endeavour generated its own 3D block model using Vulcan computer software.

17.5.6 Block Model Description

The resource block models for Alex Breccia, Santa Cruz, Porvenir Dos and Noche Buena were generated using a block size of 5 m (northing) by 5 m (easting) by the width of the vein (z). The block size chosen was deemed appropriate relative to the geometry of the zones, the distance between channel samples and mine planning.

The blocks were rotated to fit the general dip and strike of the structures modeled in each area, as shown in Table 17.12.

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Table 17.12
Summary of Blocks and Search Ellipses

Area	Model	Bearing	Dip
Alex Breccia	BAU-1	135	-50
Porvenir Dos	PD-1	135	-55
Santa Cruz			
	XC1-3	145	-42
	XC-2	135	-58
Noche Buena			
	NB-1	270	-57
	NB-2	270	-59
	NB-3	270	-68

17.5.7 Grade Interpolation

The 3D wireframes for the Alex Breccia, Santa Cruz, Porvenir Dos and Noche Buena mineralized zones (including any ancillary structures) were filled with blocks. Parent blocks were sub-blocked to fill the wireframe completely and to remove any volume discrepancy arising out of the difference between the wireframe volume and the block model volume.

Bulk density was assigned to these individual blocks before grade interpolation. Endeavour uses specific gravity (SG) factors for calculating the tonnes for the resource blocks. Specific gravity (bulk density) determinations are reported in Section 12.2 above.

The method used by Endeavour for silver and gold grade interpolation was inverse distance with a power of 3. The minimum number of samples used in the grade estimation of each block was 3 and maximum 10.

To assign grades to the blocks, two different search ellipsoids were used when grade estimation was made. The first pass was used basically to assign grades to the Indicated resource blocks and the second pass for the Inferred resources in areas that were not interpolated during the first pass, as shown in the Table 17.13.

Table 17.13
Summary of Search Ellipses used in the Estimation

Pass	Major Axis	Semi-Major Axis	Minor Axis	Min. No. of Samples	Max. No. of Samples
1	30	30	20	3	10
2	150	150	50	1	10

17.5.8 Specific Gravity (SG)

The specific gravity used for each mineralized zone was as follows:

Alex Breccia	2.60
Porvenir Dos	2.55
Santa Cruz	2.70
Noche Buena	2.95

17.5.9 Mineral Resource Classification

Mineral resources were classified on the basis of the location of blocks relative to the data used to interpolate the block grade. The protocol for assignment of mineral resources to the appropriate category is the same as in previous Technical Reports. The protocol continues to adhere to the CIM "Standards on Mineral Resources and Reserves". The mineral resources were categorized as follows:

- Indicated Mineral Resource: Blocks which lie within a 30 m radius from the last drill hole in the periphery of the mineralized zone.

- Inferred Mineral Resource: Blocks outside the 30 m periphery but within 100 m from the last drill hole in any direction within the defined mineralization.

The final mineral resource model was depleted to account for previously mined volumes, and was cut by the surface topography.

17.5.10 Cut-off Grades

The following cut-off grades were used for reporting indicated and inferred resources for the Alex Breccia, Santa Cruz, Porvenir Dos and Noche Buena mineralized zones:

All Zones: ≥ 100 g/t Ag cut-off.

Plus:

Alex Breccia and Noche Buena: ≥ 120 but < 200 g/t Ag and combined Pb and Zn ≥ 2.25%.

Santa Cruz XC-2 deep zone: $\geq$ 50 but < 200 g/t Ag and combined Pb and Zn $\geq$ 3.50%.

17.6 PROVEN AND PROBABLE MINERAL RESERVES

Proven and Probable Mineral Reserves for the Guanaceví Mines project were estimated by block model methods using Vulcan computer software, in conjunction with GSLIB open source software for 2-D block estimation steps and statistical and geostatistical analysis. The procedures used are those described in sections 17.2 through 17.8

Endeavour first estimated undiluted resources based on a 270 g/t Ag cut-off grade for silver and a minimum undiluted true vein width of 1.8 metres. The methodology for estimation of undiluted resources is discussed in the previous sections. Undiluted resource blocks were manipulated mathematically to produce diluted tonnes and grades for each estimated block; these diluted block estimates form the basis of the reserve classification and estimation. Ore loss was applied to diluted blocks prior to reporting of reserves.

Data used for the reserve estimation was as of October 31, 2008. For an effective date of December 31, 2008, polygon and triangulation limits for the Proven Reserves excluded areas mined in November and December, 2008 as defined by Porvenir mine survey pick up for December 31, 2008. Reserves reported here are in addition to the resources reported earlier in this section.

17.6.1 Reserve Cut-off Grade

A breakeven cut-off grade was used which considers metal prices, total mining, milling and administration costs, freight costs, mill recoveries and smelter charges. Cut-off grades do not include either exploration or capital costs.

For recoverable reserves, a cut-off grade of 270 g/t Ag was used for the December 31, 2008 estimate. The cut-off grade used in the calculation is based on actual accumulated costs from January through September, 2008 and has been adjusted for an inflation rate of 4.5%. Cost data were derived from company consolidated cost reports issued by Dan Dickson (CFO) in October, 2008; the inflation rate was that used for 2009 budgetary planning in October, 2008. Total calculated costs were $80.59 per tonne of ore mined and processed at the Guancevi operations.

Plant recovery for 2009 was fixed at 78% based on actual plant recoveries in October, 2008 after adjustments to plant operating practices in September/October, 2008; this recovery factor was maintained during the final quarter of 2008. A medium-to-long term silver price provided by Endeavour's corporate office was set at $12.00 per ounce.

The formula used to determine the cut-off grade is the following:

$$\begin{aligned}
\text{Ag Cut-off} &= \frac{\text{Total operating costs}}{\left(\text{Silver Price} \times \text{Metallurgical Recovery Ag} \times \text{Payable Ag}\right)} \\
&= \frac{\$80.59}{(\$12.00 \times 0.78 \times 0.99)} \\
&= 8.70\ {}^{oz}\!/_{t}\ Ag \\
&= 8.70\ {}^{oz}\!/_{t}\ Ag \times 31.1034\,{}^{g}\!/_{oz} \\
&= 270\ {}^{g}\!/_{t}\ Ag
\end{aligned}$$

During 2008 the operating costs for the Guanaceví Mines project were higher than expected. The higher operating costs were attributed to a number of factors. The falling productivity and low metal recoveries at the Guancevi plant were caused by lower production grades and tonnages largely as a result of delays in accessing new stopes in 2007 and 2008 and delays associated with plant upgrade projects. Mine dilution and processing of lower grade stockpiles resulted in lower grade ore being processed whilst recoveries were affected by the mining and processing of ores with high manganese content. However, by the end of 2008 significant cost reductions and improvements in mining efficiency and plant recovery had been achieved and these improved results from the last quarter of 2008 form the basis of the cut-off grade cost estimates.

The plant expansion and upgrades were seen to have a significant effect in the fourth quarter of 2008, but improvements at the Guanaceví mining operations were hampered by lack of development to access new stopes; as a consequence mining of marginal ore has resulted in lower grades than expected. After unsuccessfully experimenting with an external contractor to advance development projects the Guanaceví Mines project began to show significant progress with development mining in December, 2008. Major development programs are planned for early 2009 to access higher grade, higher tonnage stopes.

17.6.2 Dilution

For each undiluted ore block dilution and recovery factors were applied to take into account ore losses due to incomplete mucking on the stope floor and dilution due to wall rock over-break in both walls, additional footwall dilution during mining (especially in sills) and re-mucking of fill. Dilution factors were based on field observations, particularly of narrow ore zones, by Endeavour Silver staff during the second half of 2008 and also reflect expectations of improved mining performance as a result of increased supervision; the higher cut-off grade for reserves also dictates that miners must achieve best practice mining standards to achieve mine targets.

A uniform wall rock dilution factor of 0.2 m for both footwall and hanging wall was applied to all blocks regardless of vein thickness; this gave a minimum mining width of 2.2 m for all blocks, which conforms to actual minimum mining widths for mine equipment, and a maximum diluted vein thickness of 6.4 metres. Once wall rock dilution had been applied a further 7.5% dilution factor was applied to take into account re-mucking (1-2%) and additional footwall dilution. Depending on the thickness of the economic zone, total tonnage dilution varied between 15% and 32%, generally in the range 20-30%. After review of wallrock grades a general dilution grade of 90 g/t Ag and 0.18 g/t Au was applied to all dilution tonnes.

17.6.3 Extraction

Extraction in cut and fill operations can be high because of the minimum amount of pillars required between stopes and the mining of crown pillars typical by open stoping methods. Vein thickness is probably the most overriding factor affecting extraction at Guanaceví. With a minimum true mining width of 2.2 metres used for modeling the reserves, any material left in place could have a significant impact on extraction ratio. Review of the stope geometry and mining practices at the Porvenir mine shows that for an average stope, the extraction ratio should be approximately 95%. Ore losses, which are largely a result of incomplete mucking and localized sterilization of ore due to hanging wall failure were estimated at 5%. For the reserve estimation the block model was queried for diluted block tonnes and grade and the extraction factor applied to total stope tonnes.

17.6.4 Mineral Reserve Classification

Mineral Resources are converted to Mineral Reserves first by the application of dilution to the undiluted model. As with the resource classification the principal criterion for determining reserve categories was distance from the nearest sample. Two basic data sets were used for resource-reserve estimation: The first is the closely spaced channel sample database (from grade control data in sills and stopes); and the second are the more widely spaced drill hole samples. Only resources that meet the indicated category criteria were considered for inclusion as reserves.

In areas of the deposit where channel data were available, blocks were estimated using both channel and drill hole data. In these areas similar selection criteria to those used historically at the mine were used: Proven stope blocks are defined by use of longitudinal sections to define a 10 m vertical limit above and below workings with channel sample data. Within this 10 m limit Proven stope blocks are defined on the basis of the majority of the diluted blocks being above the economic cut-off grade; for continuity some blocks below the cut-off grade can be included within the Proven Reserve stope blocks. For Probable Reserves a similar method is used for areas that are greater than 10 m vertically but less than 25 m vertically from the workings. Some areas that satisfied these conditions were not included within the Probable Reserves on the basis of operational criteria or indications from mining that there was insufficient support for their inclusion. In active mining areas pillars and areas mined subsequent to the October 31, 2008 data cut-off were also excluded from the final reserve (and resource) estimate, with model limits based on topographic data as of December 31, 2008.

In a number of areas, principally the deeper parts of the deposit, channel data are not available and Probable Reserves were defined on the basis of drill hole data. In these areas the drilling data and geological data give enough confidence to define additional reserves, but the wider spaced nature of the data means that there is an additional element of uncertainty associated with the model estimates and more chance of the model not being as reliable spatially. For this reason more conservative criteria were adopted. As with the resource classification a strict distance criterion was not used, rather an envelope based on a maximum distance of 25 m, in the plane of the vein was defined. All diluted material within the envelope was categorized as Probable Mineral Reserves, this included a number of internal blocks that were below the 270 g/t cut-off grade; most of these blocks were close to the cut-off grade and their inclusion also tries to take into account an internal dilution zone likely to be found within this larger ore block. Sub-cut-off grade blocks at the peripheries of the zone were not included in the reserve limits. Once reserve limits in the Porvenir zone were defined the mine engineering department developed a mine plan to ensure that the defined limits were economically viable.

Proven and Probable Mineral Reserves were defined on both the main Santa Cruz vein structure and also on the Splay 3 structure. The influence of the Proven and Probable Reserve areas used for this classification is also displayed in Figure 17.4, included previously.

17.7 MINERAL RESOURCE AND RESERVE TABULATIONS

Following the methodologies outlined above, the resulting Mineral Resource and Mineral Reserve figures are summarized in Tables 17.14 and 17.15, respectively. All reported Resources exclude material reported as Reserves.

The reported Recoverable Mineral Reserves are less than half those reported for December 31, 2007. The vast majority of this difference is attributable to changes in the modeling methodology, which are summarized below:

- Undiluted minimum mining width decreased from 2.10 m to 1.80 m.
- Maximum mineable undiluted vein width of 6 m applied to December 31, 2008 reserves, no capping of vein width in December 31, 2007 reserves.
- Reduced reserve limits in the Porvenir Deep zone to better reflect confidence associated with drill data, based on initial mining experience in upper part of zone.
- Grade and thickness estimated using ordinary kriging in place of the inverse distance weighting method and with different search parameters.
- Additional information from drilling and development sampling.

Table 17.14
Guanaceví Mines Project Mineral Resource Summary as at 31 December, 2008

Resource of Povenir (200 g/t Cut-off)							
	Category	Tonnes	Au (g/t)	Ag (g/t)	Cu(%)	Pb(%)	Zn (%)
	Indicated	530,000	0.55	302			
	Inferred	415,000	0.61	378			
Resource of Exploration Areas (100 g/t Cut-off)							
Category	**Area**	**Tonnes**	**Au (g/t)**	**Ag (g/t)**	**Cu(%)**	**Pb(%)**	**Zn (%)**
Indicated	Porvenir Dos	272,707	0.66	325			
	Santa Cruz	461,105	0.55	305			
	MCH-VER-Blanca	19,781	0.45	259			
Total		**753,593**	**0.59**	**312**			
Inferred	Porvenir Dos	88,396	0.39	251			
	Santa Cruz	99,847	0.55	278			
	MCH-VER-Blanca	74,910	0.41	251			
Total		**263,153**	**0.46**	**261**			
Resource of Exploration Areas (100 g/t Cut-off)							
Category	**Area**	**Tonnes**	**Au (g/t)**	**Ag (g/t)**	**Cu(%)**	**Pb(%)**	**Zn (%)**
Indicated	Santa Cruz	96,656	0.54	252	0.06	1.79	2.70
	Alex Breccia	329,923	0.34	235	0.04	0.91	1.70
Total		**426,579**	**0.39**	**239**	**0.05**	**1.11**	**1.93**
Inferred	Santa Cruz	44,695	0.43	164	0.09	0.87	1.32
	Alex Breccia	352,104	0.34	176	0.05	0.86	1.56
	Noche Buena	488,476	0.15	165	0.02	0.60	1.08
Total		**885,275**	**0.24**	**169**	**0.03**	**0.71**	**1.29**
Additional Resource of Alex Breccia and Santa Cruz (50 g/t Cut-off and >3.5% Pb +Zn)							
Category	**Area**	**Tonnes**	**Au (g/t)**	**Ag (g/t)**	**Cu(%)**	**Pb(%)**	**Zn (%)**
Indicated	Alex Breccia	17,370	0.26	71	0.09	2.66	3.90
	Santa Cruz	31,889	0.26	78	0.06	1.39	2.59
	Buena Fe	35,807	0.08	52	0	2.58	4.38
Total		**85,000**	**0.18**	**66**	**0.07**	**2.20**	**3.60**
Inferred	Alex Breccia	47,644	0.23	75	0.07	2.28	3.32
	Santa Cruz	52,601	0.28	74	0.05	1.40	2.27
	Buena Fe	159,574	0.09	71	0	2.21	3.79
Total		**260,000**	**0.16**	**72**	**0.06**	**3.40**	**2.10**

Table 17.15
Guanaceví Mines Project Mineral Reserve Summary as at 31 December, 2008

Reserves	Diluted, Recoverable Tonnes & Grade					"In Situ" Tonnes & Grade		
	Tonnes	Silver (g/t)	Gold (g/t)	Ounces Ag	Ounces Au	Tonnes	Silver (g/t)	Gold (g/t)
Proven								
Porvenir Mine	57,000	361	0.49	661,300	900	46,840	462	0.61
Total Proven	**57,000**	**361**	**0.49**	**661,300**	**900**	**46,840**	**462**	**0.61**
Probable								
Porvenir Mine	478,000	352	0.49	5,409,200	7,500	418,070	408	0.56
Total Probable	**478,000**	**352**	**0.49**	**5,409,200**	**7,500**	**418,070**	**408**	**0.56**
Total Proven + Probable	**535,000**	**353**	**0.49**	**6,070,500**	**8,400**	**464,910**	**413**	**0.56**

17.8 MICON VALIDATION

17.8.1 Block Model Validation

Porvenir Mine

The Micon validation consisted of the following steps:

a) Outlier study of gold and silver.
b) Correlation between gold and silver.
c) De-cluster analysis.
d) Analysis of grade-tonnage curves.

Outlier Study of Silver and Gold

Micon performed cumulative normal distribution plots to analyze outliers. The samples were extracted using the code for each vein as provided by Endeavour Silver. Cumulative normal distribution plots were made using the rank method. The outlier was identified on the basis of the inflection points. The plots for both Ag and Au with the capping value used are provided in Figures 17.6 and 17.7, respectively. In every case the capping used is conservative and is taken at the 95th percentile. The reasons for capping at the 95th percentile are as follow:

- Sampling bias - As mineralized zones are often more fractured, the zone may get sampled preferentially.

- Possible laboratory error as indicated by QA/QC data.

Micon concurs with Endeavour Silver's conservative approach and suggests that work be put in hand to minimize the effects of the first mentioned above.

Correlation between Gold and Silver

Micon carried out scatter plots to establish the relation between gold and silver (Figure 17.8). The correlation coefficient derived is 0.62 and is considered to be relatively good. This result is similar to that obtained by Endeavour Silver. Micon carried out variography to further corroborate the results (Figure 17.9). he variograms for both Ag and Au were normalized for interpretation. The interpretation of the variograms confirms the relation between gold and silver as established by the scatter plot. Thus a co-kriging approach is justifiable and may be used in future estimates.

Figure 17.6
Cumulative Normal Distribution Plot for Ag (g/t) for Porvenir Mine

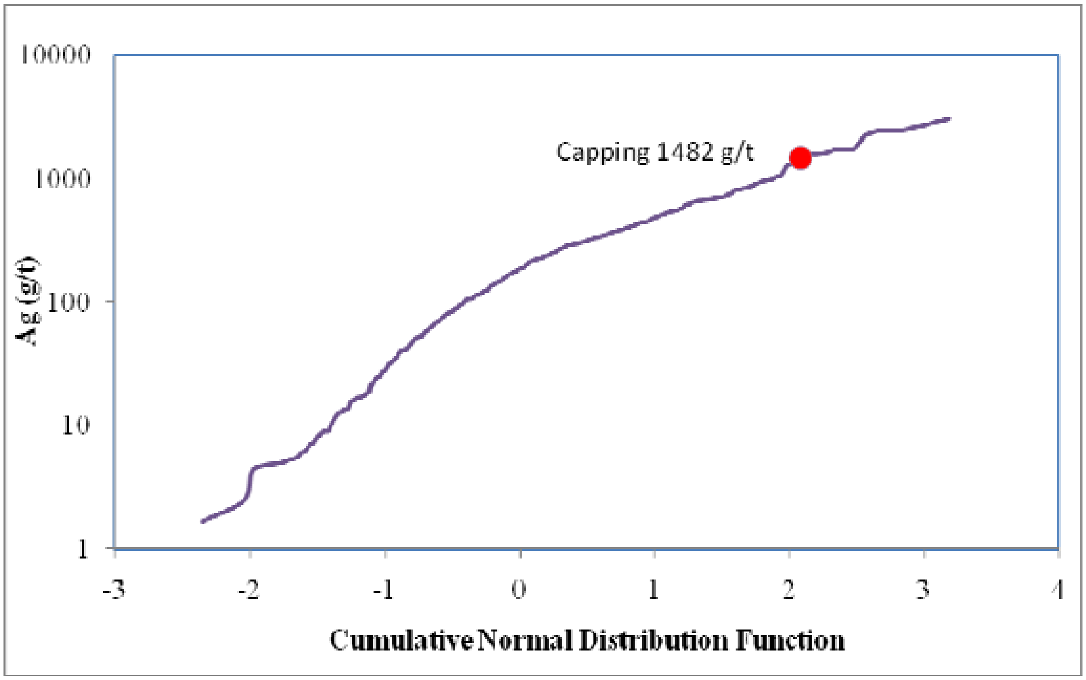


Figure 17.7
Cumulative Normal Distribution Plot for Au (g/t) for Porvenir Mine

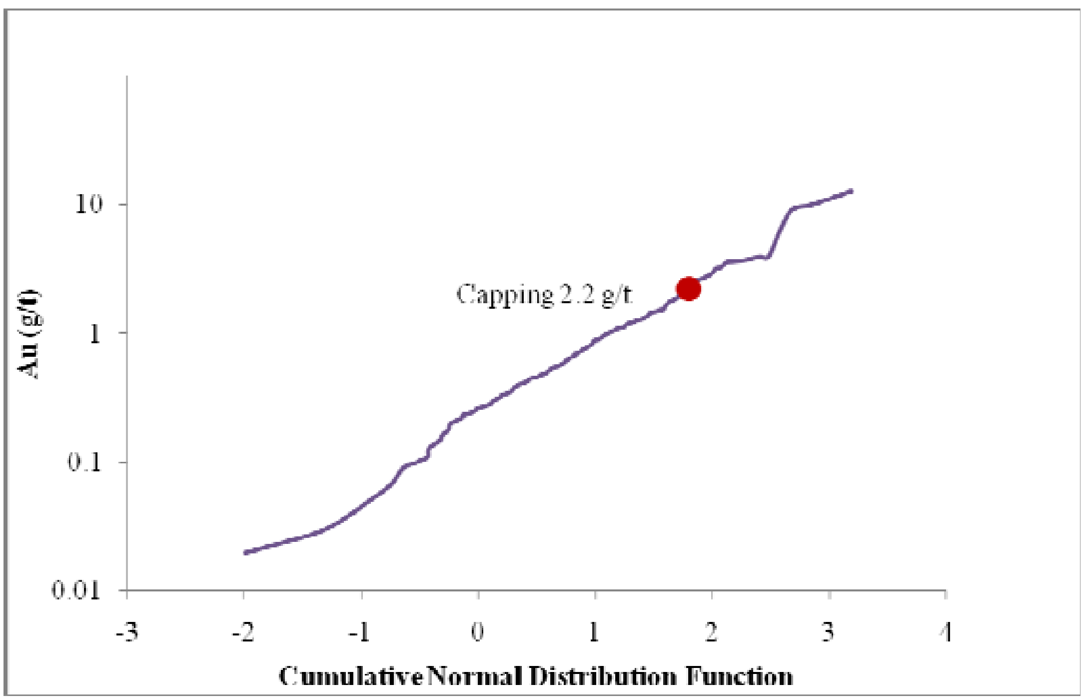


Figure 17.8
Correlation between Gold and Silver for Porvenir Mine

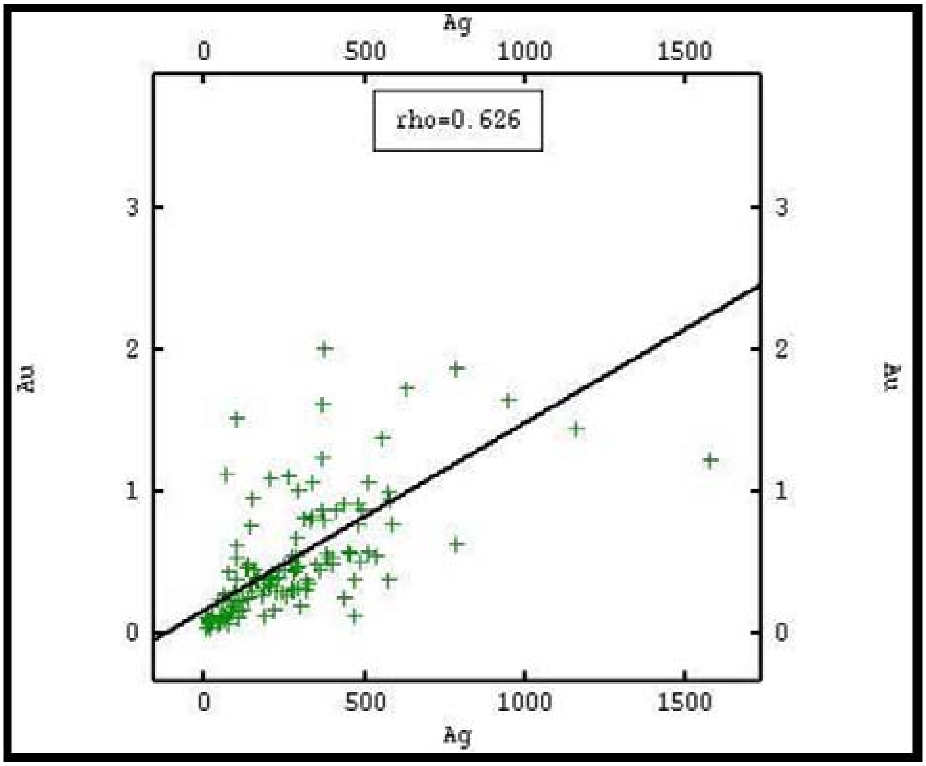
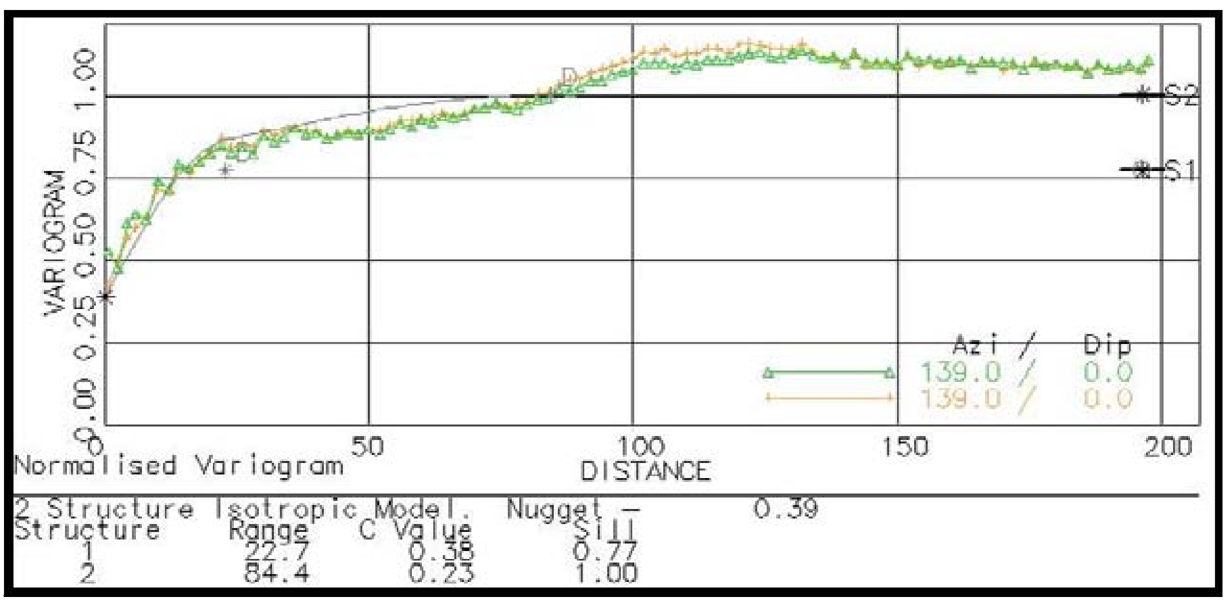


Figure 17.9
Variogram for Ag and Au for Porvenir Mine



De-cluster Analysis

The samples were de-clustered to a block size of 50 m x 50 m along the strike and dip direction of the vein. The size of the window selected is in line with the general drill spacing of the deposit. The estimation for Porvenir mine was carried out using two different block sizes: for the current mining area, the block size used was 5 m x 5 m while, for the near mine exploration area, the block size considered was 25 m x 25 m. This is in line with the sample spacing in the respective areas. Micon re-blocked the complete block model to 50 m x 50 m and compared the results for both Ag and Au with the de-clustered drill hole samples using a scatter plot. The exercise was carried out separately for the mining area and the near mine exploration area. The results are shown in Figures 17.10, 17.11, 17.12 and 17.13.

The scatter plots indicate a good relation both for Ag and Au in both the areas.

Figure 17.10
Scatter Plot between De-clustered Drill Hole Data and Estimated Block Model Data for Ag (g/t) for Mining Area

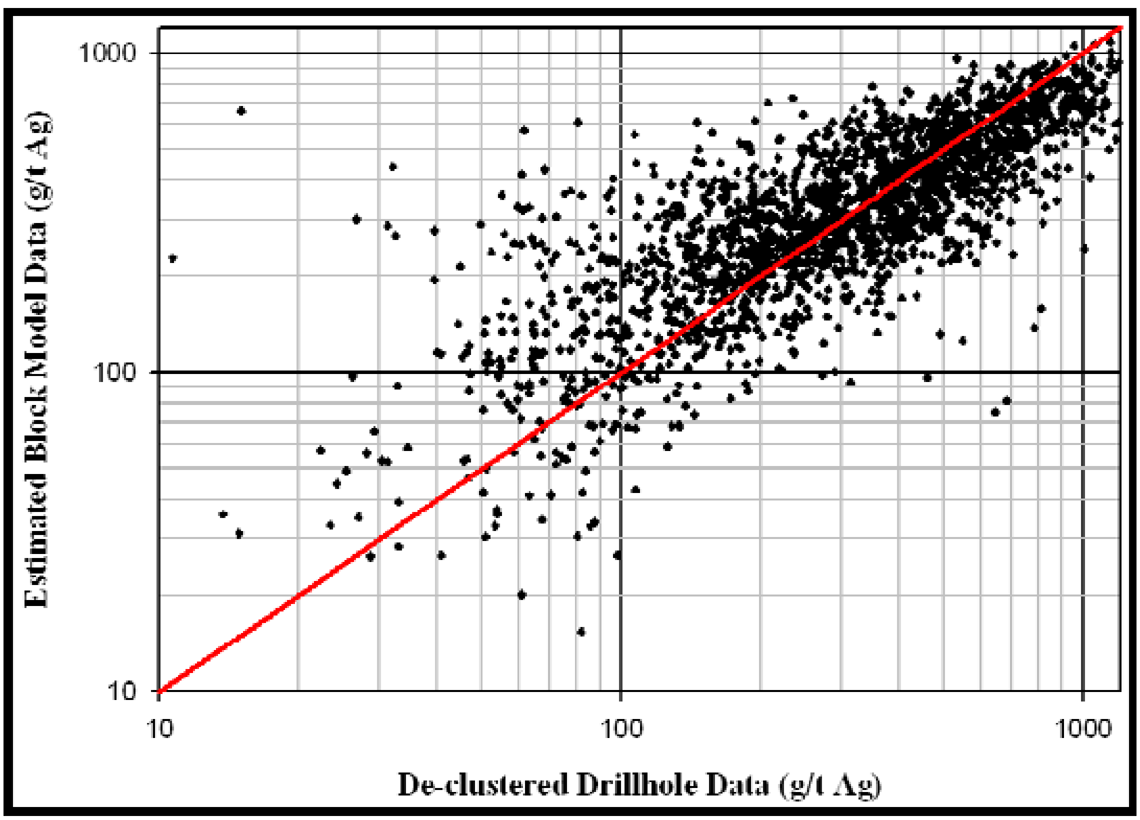


Figure 17.11
Scatter Plot between De-clustered Drill Hole Data and Estimated Block Model Data for Au (g/t) for Mining Area

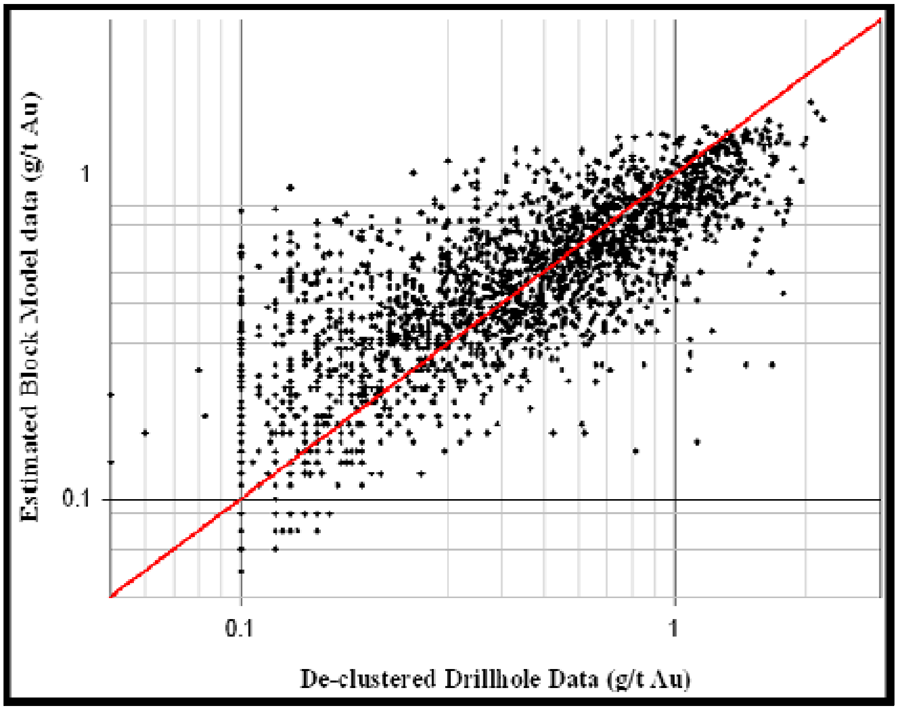


Figure 17.12
Scatter Plot between De-clustered Drill Hole Data and Estimated Block Model Data for Ag (g/t) for Near Mine Exploration Area

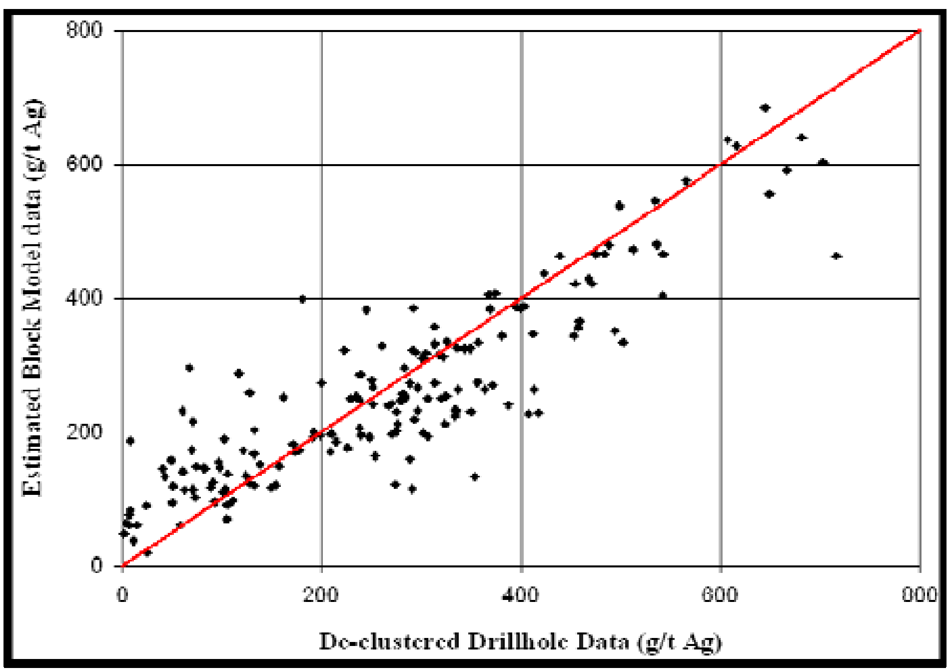
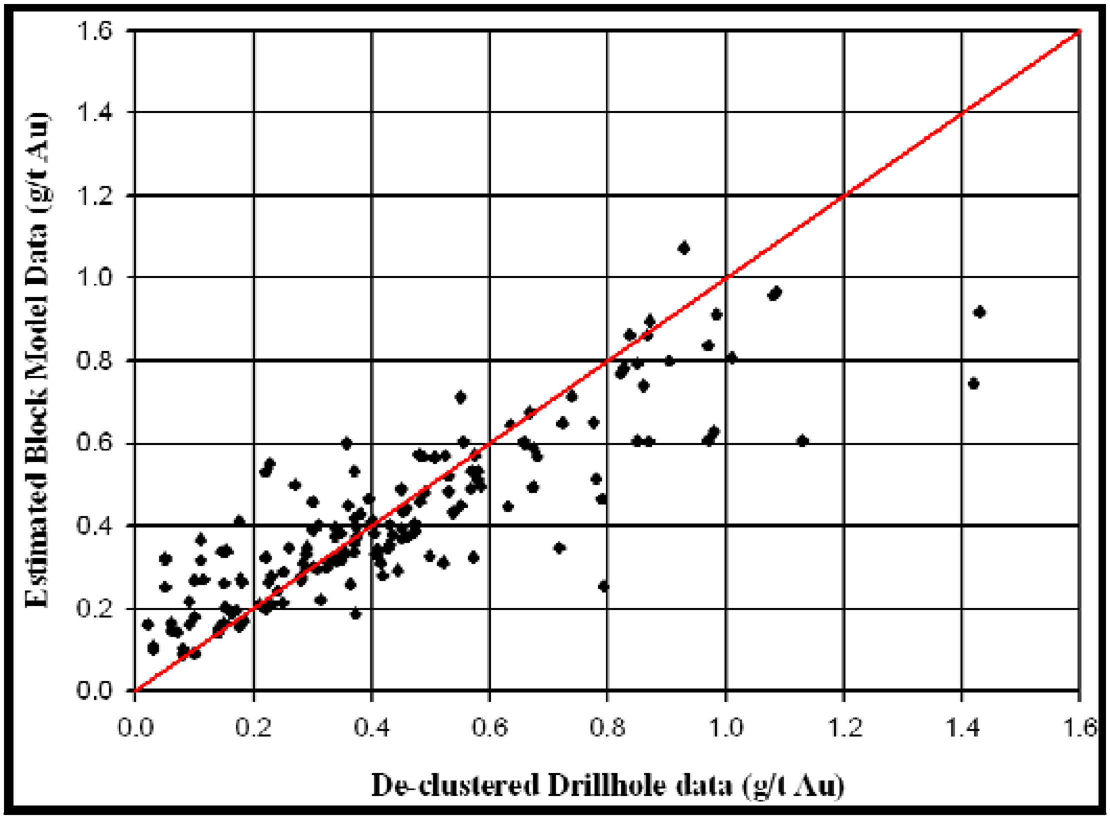


Figure 17.13
Scatter Plot between De-clustered Drill Hole Data and Estimated Block Model Data for Au (g/t) for Near Mine Exploration Area



Grade-Tonnage Curve

The above data were used to calculate a grade-tonnage curve between drill hole samples and the block model to understand the proportion of volume above each cut-off between drill hole samples and estimated blocks. The grade-tonnage curve for the current mining area is shown in Figure 17.14 and that for the near mine exploration area is shown in Figure 17.15. Both grade-tonnage curves indicate good correlation between samples and blocks.

On the basis of the above validations, Micon considers the resource model to be reliable and that it may be used for further study.

Figure 17.14
Grade-Tonnage Curve using Ag Cut-off for Mining Area

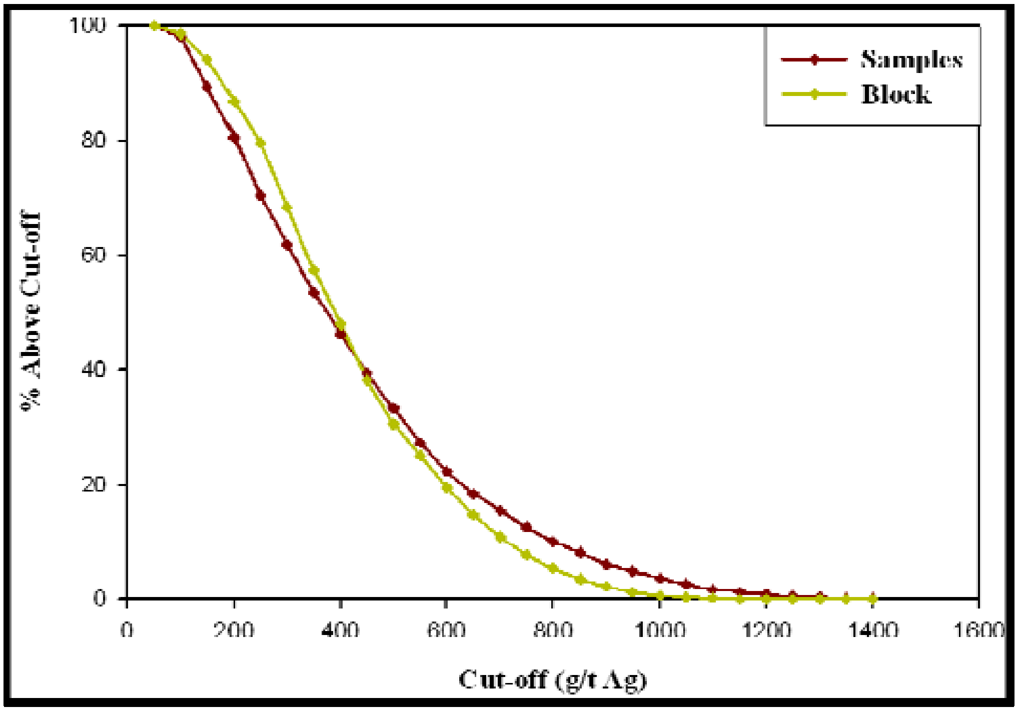
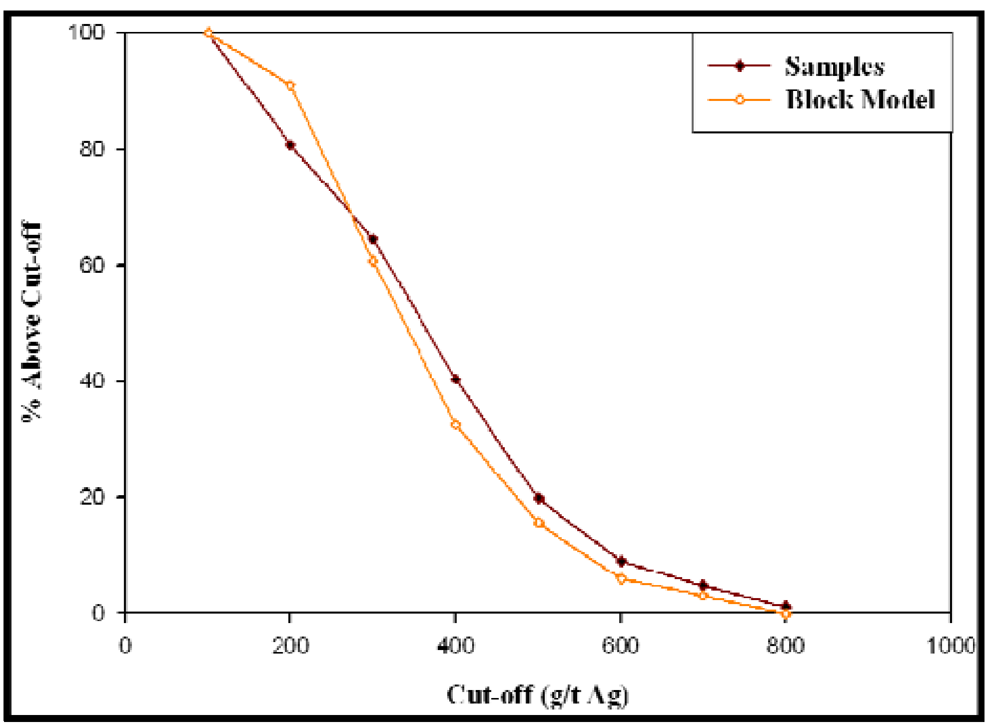


Figure 17.15
Grade-Tonnage Curve using Ag Cut-off nor Near Mine Exploration Area



Exploration Areas

The exploration areas reviewed are listed below:

1. Alex Breccia.
2. Porvenir Dos.
3. Santa Cruz.
4. Noche Buena.

These exploration areas have been drilled to various drill densities. All the targets have more than one mineralized vein. The drill spacing varies from 50 m x 50 m to more than 100 m along section by 50 m. The interpolation methods used by Endeavour Silver are summarized in Table 17.16.

Table 17.16
Summary of Resource Evaluation Parameters

Parameter		Alex Breccia	Porvenir Dos	Santa Cruz	Noche Buena
No. of drillholes		16	24	44	7
Minimum vein width		1.5 m	1.5 m	1.5 m	1.5 m
Capping		95th percentile	95th percentile	95th percentile	95th percentile
Compositing		1 m	1 m	1 m	1 m
Block Size		5 x 5 m and variable along the width of the vein	5 x 5 m and variable along the width of the vein	5 x 5 m and variable along the width of the vein	5 x 5 m and variable along the width of the vein
Interpolation Method		Inverse Distance with a power of 3	Inverse Distance with a power of 3	Inverse Distance with a power of 3	Inverse Distance with a power of 3
Ranges Used (major, Semi-major, minor)		1st- 30 x 30 x 20 m, 2nd-150 x 150 x 50 m	1st- 30 x 30 x 20 m, 2nd-150 x 150 x 50 m	1st- 30 x 30 x 20 m, 2nd-150 x 150 x 50 m	1st- 30 x 30 x 20 m, 2nd-150 x 150 x 50 m
Number of samples	Min.	2	2	2	2
	Max.	10	10	10 (20 for XC-2)	10
Categorization		Indicated & Inferred	Indicated & Inferred	Indicated & Inferred	Inferred

Micon reviewed the procedures and makes the following comments:

1. Review of the geology and mineralization knowledge:

   The understanding of the geology and continuity of mineralization is good. A detailed understanding of economic parameters needs to be considered in future. The amount of material included below cut-off in some of the veins ranges from 30% to 50%.

2. Review of Outliers:

   The capping considered for all the areas is generally conservative. Based on the limited amount of drilling and consideration of minimum vein width (1.5 m) the approach adopted is considered realistic.

3. Review of compositing:

Endeavour Silver's compositing of samples is reasonable considering the length of samples analyzed. However, the approach adopted at Porvenir mine might give better results. A study needs to be carried out to confirm the approach.

4. Review of block size:

   Considering the drill hole spacing, the block size appears to be too small and may result in the calculation of unrealistic local grades. However, the method of sample selection minimizes this error.

Micon carried out the following additional checks for each of the areas.

1. Check of outliers: Micon developed cumulative normal distribution plots using the rank method to establish the outlier assays. An inflection from the straight line would indicate the value of the outlier.

2. Checking of the average grade of samples de-clustered to 50 m x 50 m and comparing the average grade with the block model re-blocked to 50 m x 50 m. This would provide a comparison of the global grade estimate between the block model and the samples.

3. Scatter Plot between de-clustered drill hole sample grades and estimated block model grades. The drill hole samples were de-clustered using a 50 m x 50 m window. The block model was also re-blocked to the same size as the drill holes. The data from both were then used to calculate the average grade and to calculate the correlation co-efficient. Micon reviewed all the scatter plots and found them to have good correlationAlex Breccia

Alex Breccia

Alex Breccia has two zones, one having only silver and gold while the other has lead and zinc in addition to silver and gold. The plots (Figures 17.16, 17.17, 17.18 and 17.19) represent the cumulative normal distribution plots with the outlier values as derived by Endeavour Silver. The identified outlier and capping used appear reasonable for all the four elements.

The mean grades for all the elements for the de-clustered drill hole samples and the estimated block model grades are very close (Table 17.17). The difference is well within the error of estimation. The correlation co-efficient is high indicating very little misallocation of grade.

Figure 17.16
Cumulative Normal Distribution Plot for Ag (g/t) for Alex Breccia

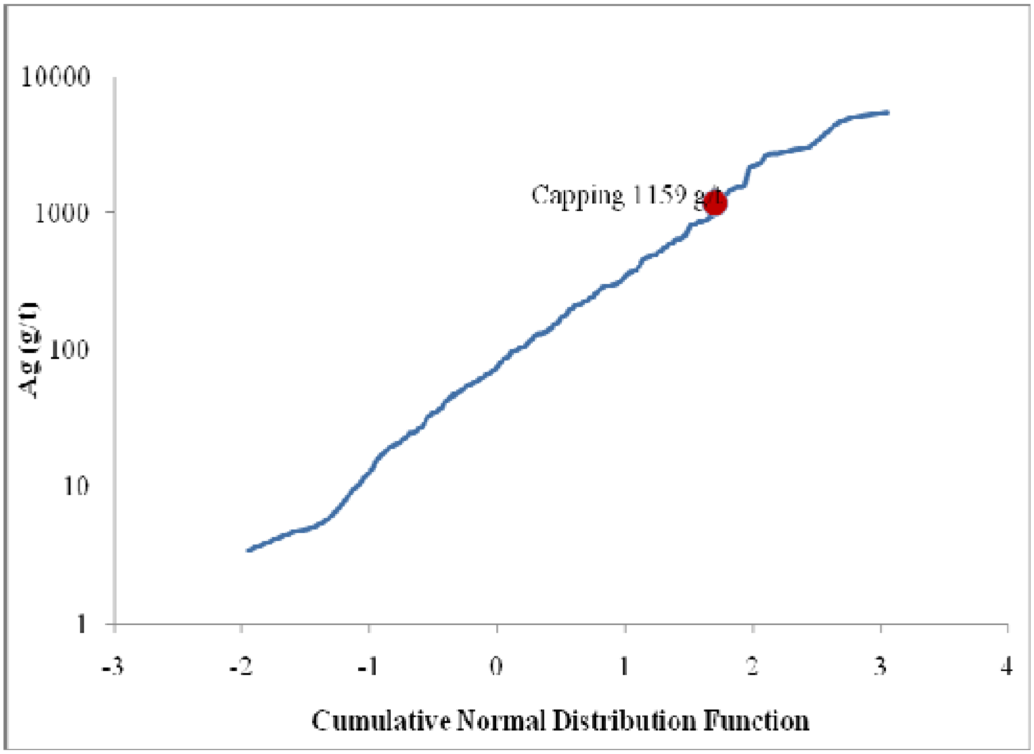


Figure 17.17
Cumulative Normal Distribution Plot for Au (g/t) for Alex Breccia

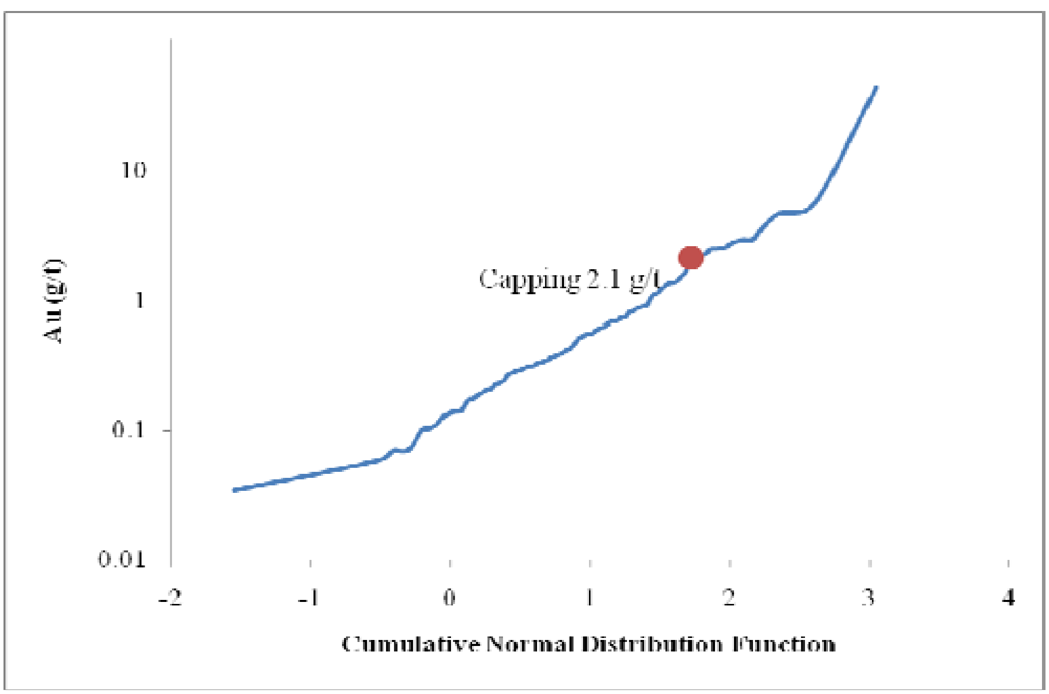


Figure 17.18
Cumulative Normal Distribution Plot for Pb (%) for Alex Breccia

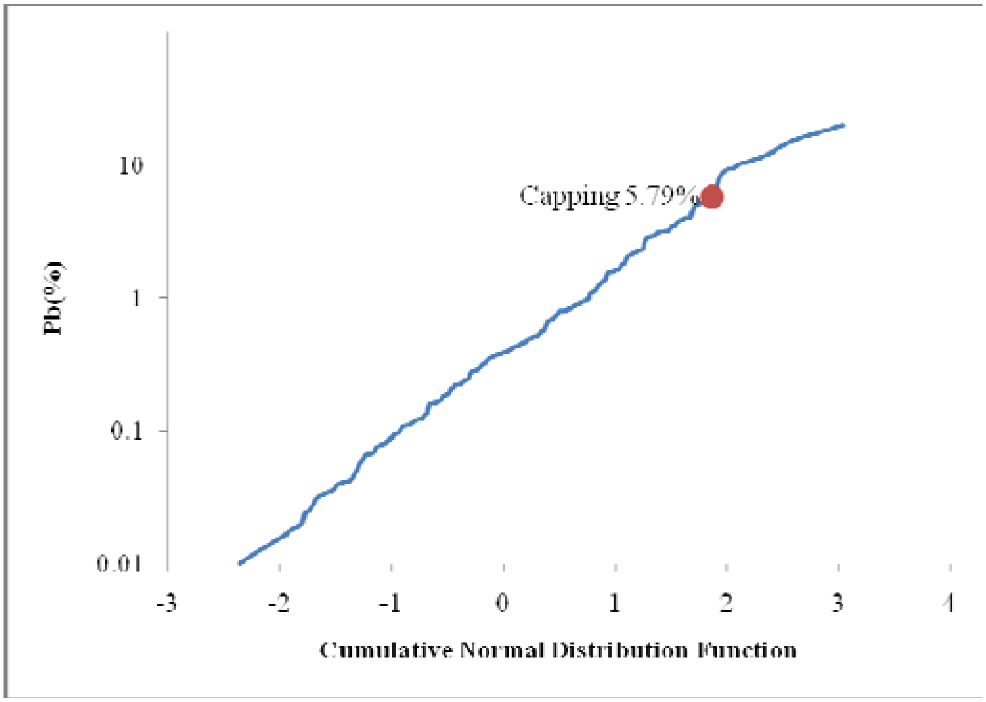


Figure 17.19
Cumulative Normal Distribution Plot for Zn (%) for Alex Breccia

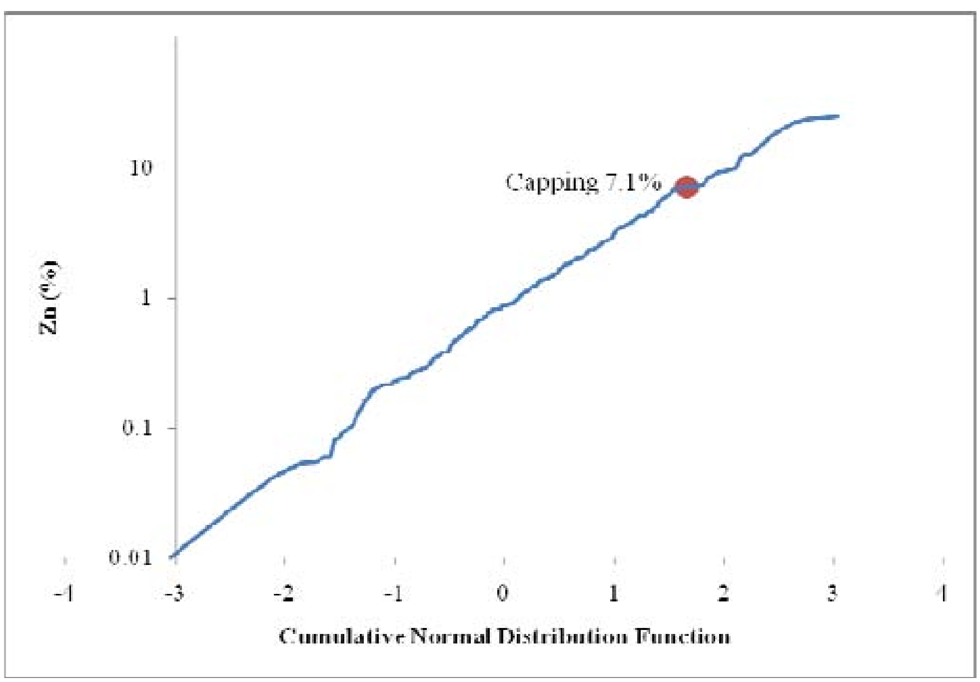


Table 17.17
Average Grade of the Elements for Alex Breccia along with Correlation Co-efficient

Elements	De-clustered Sample Mean	Estimated Block Model mean	Correlation Coefficient
Ag (g/t)	176	167	0.86
Au (g/t)	0.32	0.29	0.93
Pb (%)	0.76	0.82	0.91
Zn (%)	1.46	1.44	0.92

Porvenir Dos

Porvenir Dos has only silver and gold mineralization. The area has similar mineralization to Porvenir mine. Figures 17.20 and 17.21 show cumulative normal distribution function plots for Ag and Au, respectively. The capping used for silver appears higher than expected based on the plot. Endeavour has used a similar capping as used for the Porvenir mine based on the relation between the two deposits and their close proximity. The analogy was used because there are no adequate samples to clearly define the outlier for this area. Micon concurs with the approach. The capping used for gold looks reasonable. The correlation co-efficients for both elements along with the mean grade between samples and blocks indicate a reasonable estimate of grade (Table 17.18).

Figure 17.20
Cumulative Normal Distribution Plot for Ag (g/t) for Porvenir Dos

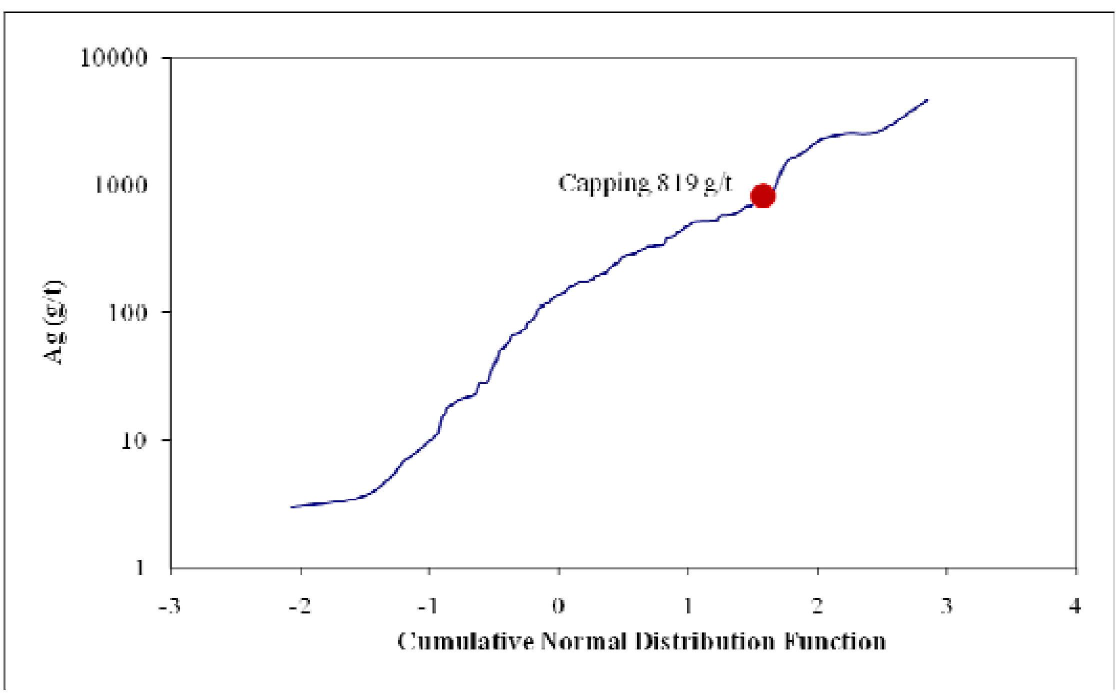


Figure 17.21
Cumulative Normal Distribution Plot for Au (g/t) for Porvenir Dos

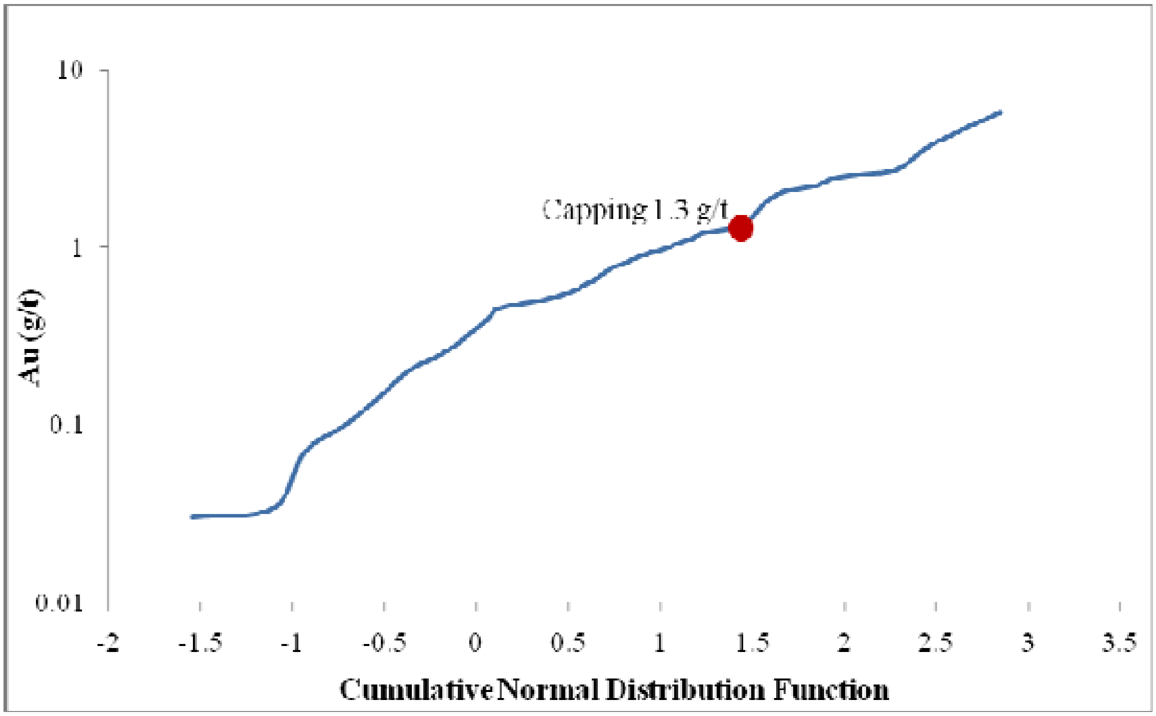


Table 17.18
Average Grade of the Elements for Porvenir Dos along with Correlation Co-efficient

Elements	De-clustered Sample Mean	Estimated Block Model Mean	Correlation coefficient
Ag (g/t)	173	181	0.96
Au (g/t)	0.50	0.43	0.80

Santa Cruz

Santa Cruz has zones of Pb and Zn mineralization in addition to silver and gold, similar to Alex Breccia. The capping for all the four elements is shown in Figures 17.22, 17.23, 17.24 and 17.25. While the silver and gold capping looks reasonable, the values used are marginally higher in the case of lead and zinc. The mean grade for all the four elements between drill hole samples are comparable with high correlation co-efficients (Table 17.19).

Figure 17.22
Cumulative Normal Distribution Plot for Ag (g/t) for Santa Cruz

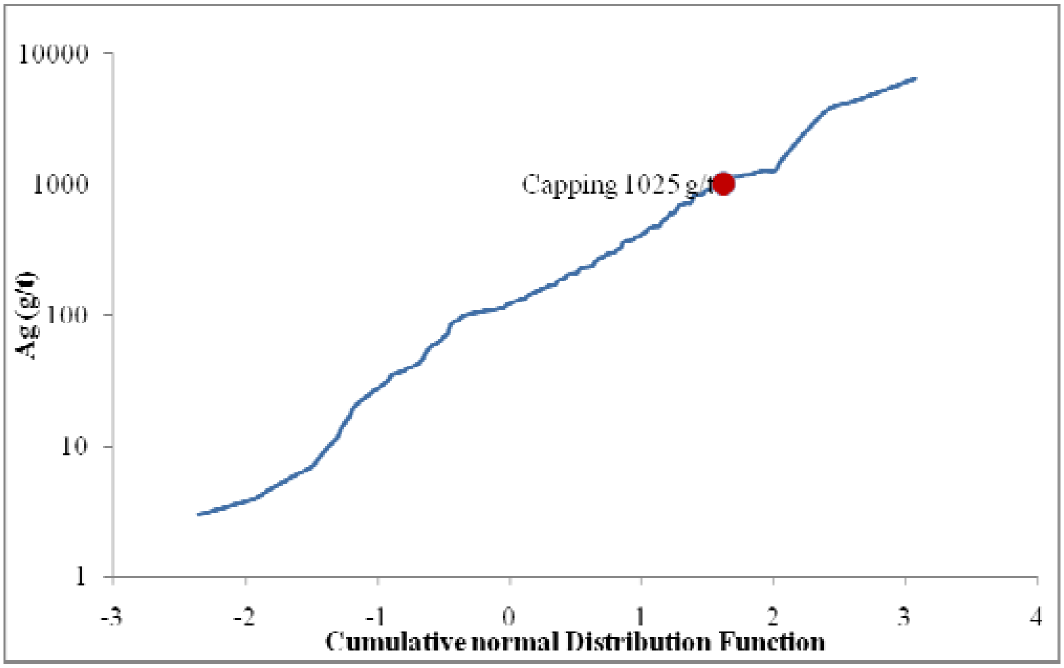


Figure 17.23
Cumulative Normal Distribution Plot for Au (g/t) for Santa Cruz

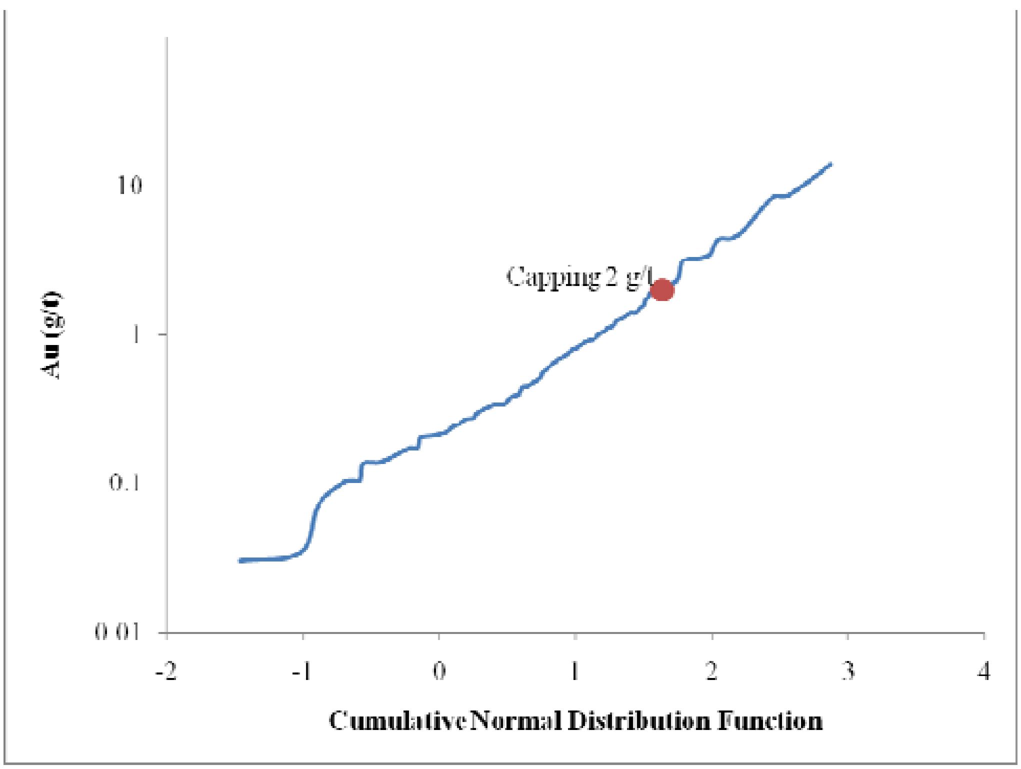


Figure 17.24
Cumulative Normal Distribution Plot for Pb (%) for Santa Cruz

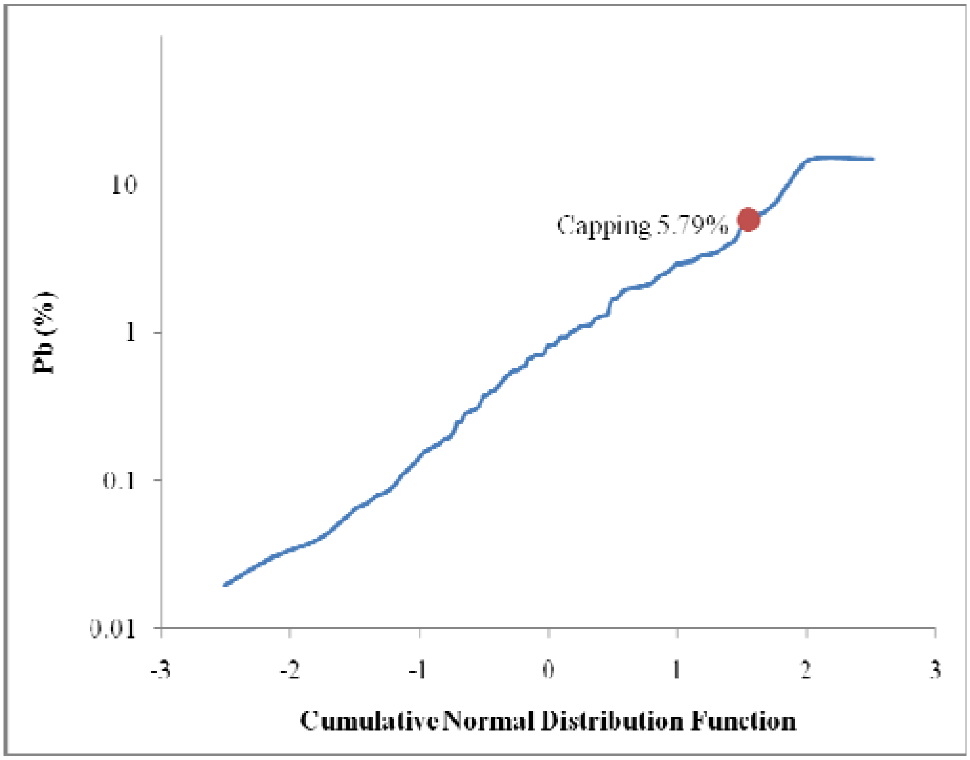


Figure 17.25
Cumulative Normal Distribution Plot for Zn (%) for Santa Cruz

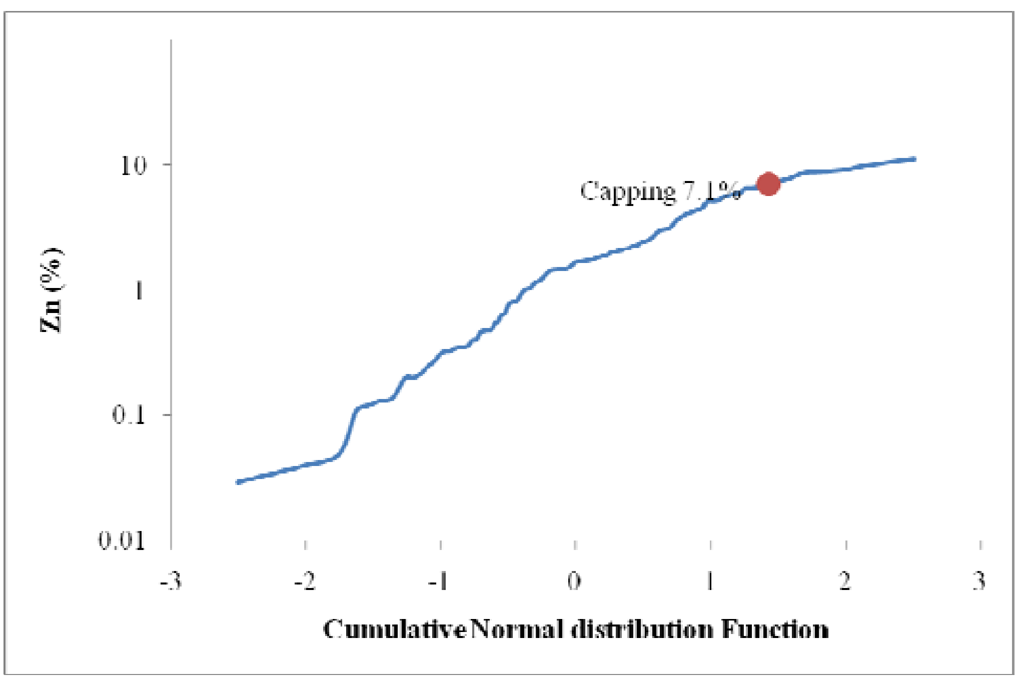


Table 17.19
Average Grade of the Elements for Santa Cruz along with Correlation Co-efficient

Elements	De-clustered Sample Mean	Estimated Block Model Mean	Correlation Coefficient
Ag (g/t)	211	228	0.88
Au (g/t)	0.39	0.44	0.90
Pb (%)	2.36	2.22	0.97
Zn (%)	1.55	1.42	0.94

Noche Buena

The area has been intersected by only 7 drill holes. There are several vein systems identified. The drill spacing in some of the veins is more than 100 metres. The continuity of economic mineralization is sketchy at the moment and would require addition drilling to confirm appropriate capping. The values used as a result both for Ag and Au (Figure XX and XX) are conservative. Micon concurs with the approach. The estimated average grade matches well with the samples with a high correlation co-efficient, as shown in Table 17.20.

Figure 17.26
Cumulative Normal Distribution Plot for Ag (g/t) for Noche Buena

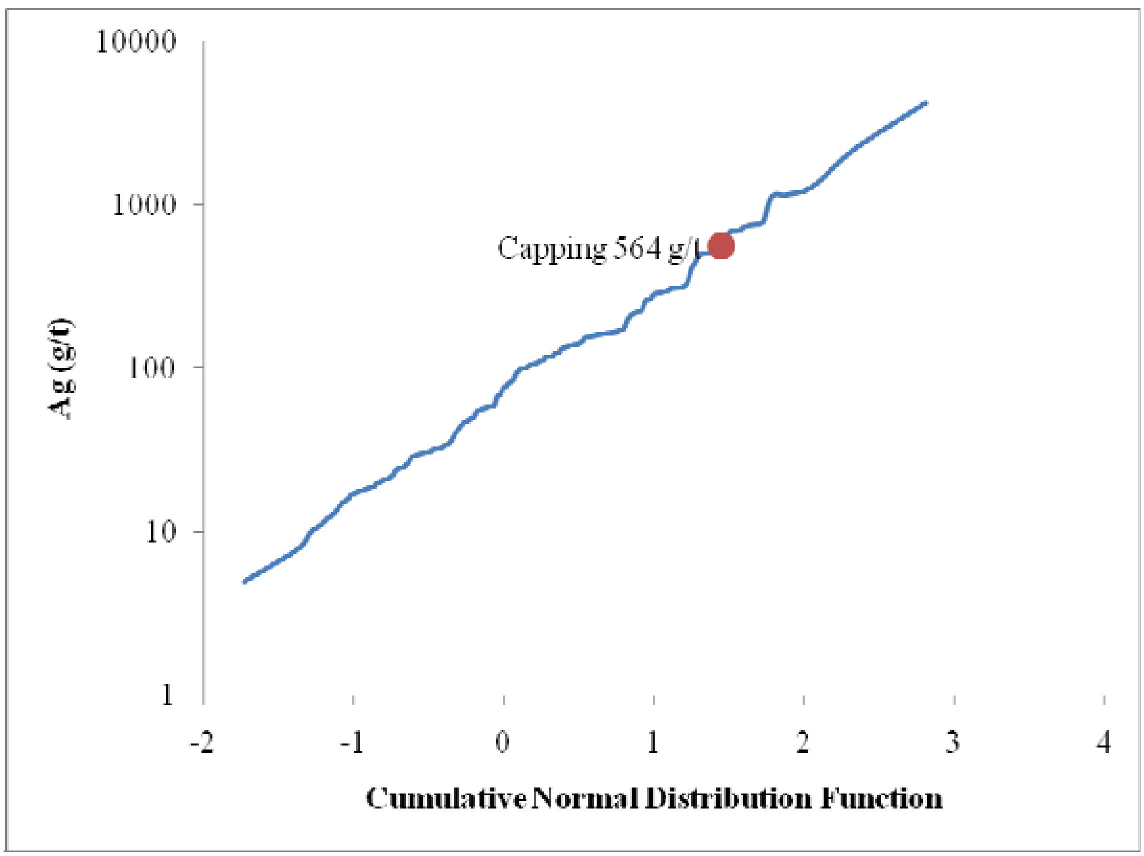


Figure 17.27
Cumulative Normal Distribution Plot for Au (g/t) for Noche Buena

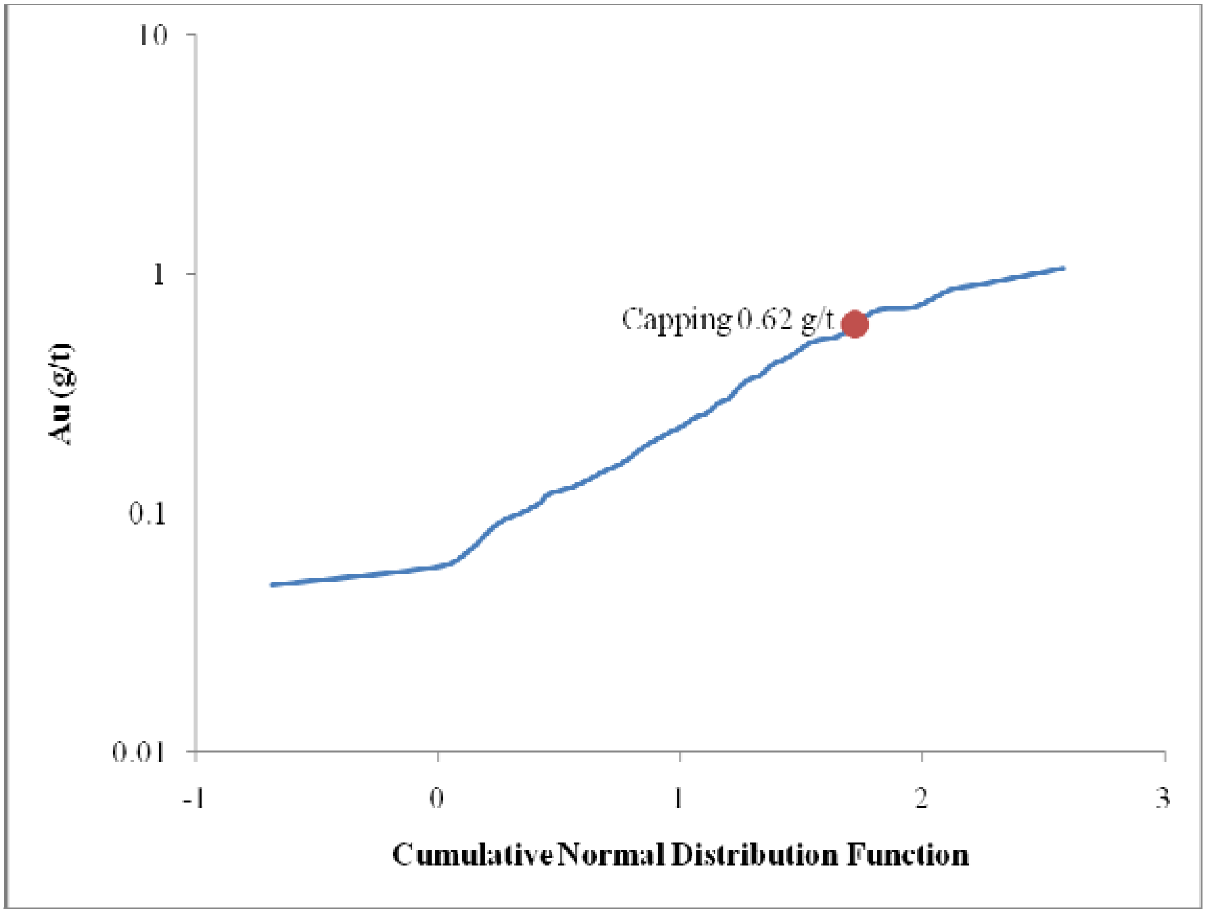


Table 17.20
Average Grade of the Elements for Noche Buena along with Correlation Co-efficient

Element	De-clustered Sample Mean	Estimated Block Model Mean	Correlation Coefficient
Ag (g/t)	116	103	0.90
Au (g/t)	0.12	0.11	0.88

Veronica, La Blanca and Buena Fe

These three areas have limited drill hole information. Micon reviewed the polygonal estimates and concurs with the methodology used.

Conclusion

Micon's independent review supports the mineral resource/reserve estimates as presented in Tables 17.14 and 17.15.

18.0 OTHER RELEVANT DATA AND INFORMATION

At the writing of this report, all relevant data and information regarding Endeavour Silver's Guanaceví Mines project is included in other sections of this report. This section will focus on covering the items contained in Item 25 of the Form 43-101F1 Technical Report "Additional Requirements for Technical Reports on Development Properties and Production Properties"

18.1 MINING OPERATIONS

Since January 1, 2007, Endeavour Silver has been in control of the day-to-day mining operations at the Guanaceví Mines project. Endeavour Silver assumed control of the mining operations from a local mining contractor in order to allow for more flexibility in operations and to continue optimizing the costs.

On December 31, 2008, the Guanaceví Mines project had a roster of 391 employees. The mine operates on two 10-hour shifts, 7 days a week, whereas the mill operates on a 24/7 schedule. The miners are skilled and experienced in vein mining and are currently not unionized. There is an incentive system in place rewarding personnel for good attendance, safety and production. Technical services and overall supervision is provided by Endeavour Silver staff. The mine employs geology, planning and surveying personnel and has detailed production plans and schedules. All the mining activities are being conducted under direct supervision and guidance of the mine manager.

An organization chart for the Guanaceví Mines project is shown in Figure 18.1.

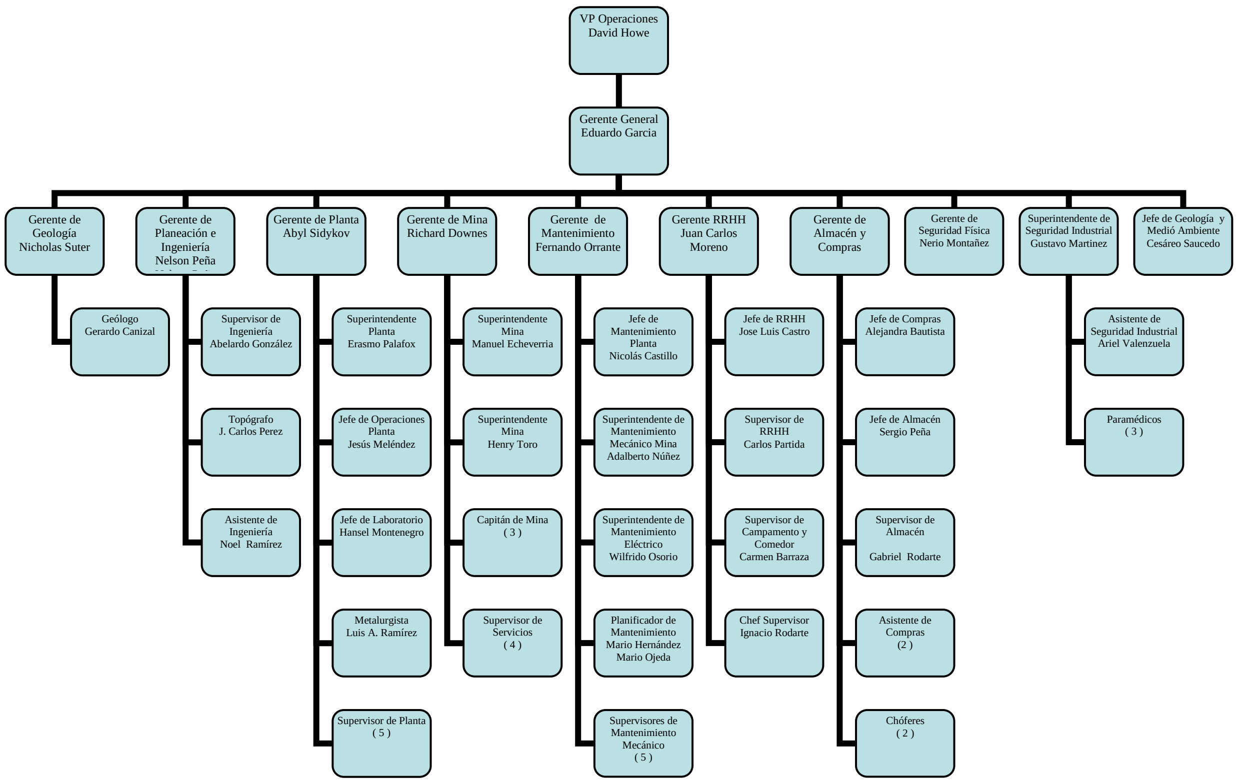
18.2 GROUND CONDITIONS

The Porvenir mine is a classic, high grade silver-gold, epithermal vein deposit, characterized by low sulphidation geochemistry and adularia-sericite alteration. The Santa Cruz vein is the host of the silver and gold mineralization. It is oriented northwest and occurs principally within the Guanaceví Formation, with a preferred strike of N45°W and dips of between 50° and 55° to the southwest.

The footwall is an unaltered andesite that has rock quality determination (RQD) ranging from 80 to 100. This is competent ground that only occasionally requires additional support such as 6-foot spilt-set bolts or shotcrete.

The vein is a classic quartz vein that varies from 1 to 5 m wide with an average width of approximately 3.0 m. The footwall contact is defined by a clear change of rock type from vein material to unaltered andesite. The hanging wall contact is typically defined by a clear structural boundary between the vein and the hanging wall rocks, with the contact usually defined as the Santa Cruz fault, a normal fault characterized by striations and fault gouge. The gouge material is typically white clay that can range from 5 mm up to 1 m or 2 m in thickness. The vein is generally self-supporting over the entire width and requires no mechanical supports. When vein widths increase beyond 5 m some local support in the form of split-set bolts and welded wire mesh may be required. In some areas post-mineral movement of the fault has caused some fracturing along the vein.

Figure 18.1
Organization chart for the Guanaceví Mines Project as of February, 2009



In the Porvenir Deep zone mineralization is hosted both in the vein and in altered and weakly to moderately oxidized wall rocks. The vein and argillic altered andesitic hosts to mineralization are moderately fractured with RQDs ranging from <20% locally to typically 50-80%. Mine workings in the upper level have openings up to 5 m in width without experiencing serious ground problems but requiring some ground support. Typically the wider mineralized zones are not close to the hanging wall fault and are less prone to hanging wall instability issues seen in some other parts of the mine.

The footwall zone to the Porvenir Deep zone in its central part consists of oxidized and argillic altered andesite with a number of faults, the latter generally requiring support in the form of split sets. The immediate footwall zone is moderately competent but from about 10 m to 40 m from the vein systematic ground support is required, consisting of both split sets and wire mesh. One major fault zone requires more extensive support in the form of timber or steel sets due to water lubrication of the clay-filled fault plane.

The hanging wall is an andesite with adularia-sericite alteration which varies locally from very weak to very strong, depending on the amount of argillic phases. In the zones of intense argillic hanging wall alteration, ground support such as 3.6 m Swellex bolts and welded mesh support straps are required on a 1.5 m by 1.5 m spacing to maintain stability. In these areas there is always a risk of greater dilution and the mine accounts for these areas when estimating the reserves. Occasionally, a thin cap of vein material is left on the hanging wall to prevent weathering of the clay and assist with stability.

18.3 MINING METHOD

A conventional cut and fill mining method is employed with the stopes generally 100 metres long and 20 metres high. Access to the stoping areas is provided by a series of primary and secondary ramps located in the footwall. The ramps have grades from minus 15% to plus 12%, with plus or minus 12% as standard. The cross-sections are 4 metres by 4 metres for the primary ramps and 3.5 metres by 3.5 metres for the secondary ramps.

In the upper parts of the mine stope access is by short (10 metres to 40 metres) cross-cuts from the ramp to the vein/stope. These cross-cuts are generally 3.5 metres by 3.5 metres in cross-section and are usually driven down at minus 18% to intersect the stope. As the stope advances up-dip on the vein, the back is taken down in these cross-cuts to maintain access until the cross-cut reaches a maximum inclination of 22%.

In the lower parts of the mine (below the water table) stope access is by 60-metre long cross-cuts to the vein/stope. Footwall lateral development provides access to the cross-cuts. The cross-cuts are generally 3.0 metres by 3.5 metres in cross-section and are driven at plus 1% to intersect the stope (for water drainage). As the stope advances up-dip on the vein, the back is taken down in these cross-cuts to maintain access until the cross-cut reaches a maximum inclination of plus 22.5%.

Mining in the stopes is done with jackleg drills. Back cuts are taken 2 metres to 2.5 metres high via vertical up-hole drilling or by breasting. The broken material is mucked out using scooptrams (2 yard or 3.5 yard depending on vein width). Waste fill from mine development is placed in the stope by the same scooptrams to within 2 metres to 2.5 metres of the back. When the vein is less than minimum mining width the footwall is slashed to provide adequate width. This slashing is done during the fill cycle and the slashed material remains in the stope as fill.

Mining dilution has been estimated by Endeavour Silver as variable with a minimum of 0.4 metres of overbreak wallrock dilution and a minimum operational vein width of 2.2 metres; additional dilution is derived from the footwall especially in sill development, from occasional hanging wall failure and from re-mucking of floor fill. In general dilution is estimated at being between 15% and and 32%, whilst lost ore is estimated at approximately 5%. The dilution material in almost all cases is mineralized and therefore it is difficult to estimate its impact on the final grades of the mined ore, particularly as reliable reconciliation is very difficult to achieve; mining dilution is assumed to have an average grade of 90 g/t Ag and 0.18 g/t Au.

Stopes that have high-grade ore in the sill when started are filled with one metre of cemented rock fill to allow recovery of the sill pillar. The cemented rock fill consists of development waste mixed with 5% by weight ordinary Portland cement and is placed over a five millimetre steel welded mesh on the stope sill. The cemented rock fill is mixed in a muck bay adjacent to the stope by the same scooptrams that will place it in the stope. Three to six sacks of cement (depending on bucket capacity) are simply dumped on top of a bucket of waste, a little water is added and this is mixed a few times by the scooptram and then carried into the stope and dumped on the sill. The cemented rock fill is placed starting at the entrance going into the sill so that the scooptram is driving on top of the fresh fill to provide compaction. This is a common method in Mexico which works well where it is used. Ore and waste transportation is by scooptram and truck haulage.

Ore and waste haulage is performed using two TORO EJC 522 15 tonne underground LHD trucks which are complemented with four nine tonne capacity diesel highway trucks rented from local contractors. For stope and development mucking, Endeavour currently has four 2-yard scooptrams and four 3.5-yard scooptrams. Two single boom Jumbo drills and jacklegs are used for development headings and stope drilling is by jackleg drilling only. During 2009 two additional 3.5-yard scooptrams, and one additional 2-yard scooptram, as well as a scissor lift truck for services will be purchased to improve operational efficiency. Complete maintenance and service facilities for the underground mobile equipment are located near the mine portal.

At shallower depths in the Porvenir mine, drainage and pumping was minimal as very little ground water was encountered. Water was also brought in from the surface for drilling and dust control. As mining has proceeded deeper, a pump station has been built in the lower part of the main ramp to handle water produced from below the water table; the mine is currently pumping to surface 700 gallons per minute

Principal mine ventilation is provided by a 100 horsepower, 54 inch conventional exhaust fan. This fan is located on surface at the head of a 220 metre long by 2.1 metres diameter borehole. Fresh air is drawn down the ramp, through the workings and exhausted out to the surface through the borehole. This circuit is moving approximately 80,000 cubic feet per minute of air. A second ventilation borehole, 292 metres long and 2.4 metres diameter located close to the northeastern limit of the deposit, was completed in early 2009. The second borehole, which connects the main Porvenir Deep ramp spiral to surface, will use a 400 HP exhaust fan to move a minimum of 220,000 cubic feet per minute through the circuit. Secondary ventilation is by conventional axial-vane mine fans that are from 24 to 36 inches in diameter and 25 Hp to 50 Hp. These fans blow ventilating air into the working headings through ventilation ducting that is 24 or 36 inches in diameter.

The electrical power for the mine is distributed by a series of substations connected to the public power grid. Electric power arrives at the mine site via 34.5 Kv overhead transmission lines which is reduced by a 2,000 Kva transformer to 13.5 Kv and distributed to the Santa Cruz mine and the Porvenir mine transformers. The power is taken underground at the Porvenir mine at 13.5 Kv via the ventilation borehole to the principal underground transformer where it is reduced by a 750 Kva transformer to 4,160 volts (V) and distributed out to five portable underground mine transformers where it is reduced further, to 480 V. From the portable transformers the electricity is distributed out to the secondary ventilation fans, the jumbo drill and other points of consumption by armored cables sized for the load. The underground electrical system is equipped with an automatic ground-fault-interrupter system. Additional underground transformers will be added as required. The Porvenir mine also has a 350 HP diesel generator capable of supplying power for pumping, secondary ventilation and a compressor in case of any power outage.

Compressed air is provided by four 650 CFM electric compressors installed on the surface. Compressed air is brought into the mine by a six-inch diameter pipe that passes down the principal ventilation borehole and then branches up and down the ramps in four inch diameter principal airlines and then to two-inch airlines that enter the individual working places.

18.4 GRADE CONTROL

The sill faces are mapped on a daily basis by a geologist and tied into the last survey station. The geologist or a sampler spray paints the sample locations and lengths perpendicular to the structures (with less experienced samplers horizontal and vertical samples are also used – until they have the confidence to mark perpendicular samples). The geologist will also spray paint the maximum width that he wants the next round to be within. Typically there are 3-4 samples taken per face: (a) a sample directly above the main mineralized vein; (b) the vein; and (c) a sample directly in the footwall of vein. A sampler then takes chip samples over the marked sample lengths. The samples are placed in individual sample bags with a numbered tag. The second half of the tag remains in the sample book and all pertinent information about the sample is recorded. This is repeated until all the samples are taken for each face. The samples are collected and then delivered to the MG laboratory for sample preparation and assaying. Field duplicates and blanks are submitted on a daily basis. A similar procedure is followed when taking stope samples: In stopes, back and some footwall channel samples are taken every 2.5 m; typically 3-4 channels are taken in each round, but more or less samples are possible depending on the width of the structure; typical sample length is approximately 1 metre but varies from 0.5 metres to 2.0 metres; stope sample lengths are measured horizontally and vertically.

Sampling is done by the mine geology staff to identify potential stopes and make forecasts regarding production from working and planned stopes. The best grade control is the direct interaction between the geologist and the miner in the stope on a daily basis. This includes discussions on selective mining, leaving the hanging wall intact and not gouging into the footwall. The geologists and engineering staff meet with mining supervision on a weekly basis to discuss the previous week's production, grade control, and grade control issues, including planned individual stope widths for the coming week. Grade control takes the ongoing involvement of everyone in the mine.

18.5 PRODUCTION

For the year ending December 31, 2008, silver production was 1,852,969 oz and gold production was 3,845 oz. Plant throughput for 2008 was 255,656 tonnes at an average grade of 318 g/t silver and 0.58 g/t gold. In 2008, recoveries averaged 70.9% for silver and 80.7% for gold.

Endeavour Silver mine management is currently working on projects to access the deeper portions of already developed ore zones, as well as opening up new mineralized zones.

Two ramps are currently being driven from the Porvenir mine, one into the deep part of the North Porvenir ore zone, where production has already begun, and the other into the deeper portion of the Santa Cruz mine ore zone.

Endeavour Silver has also driven a ramp in to the Alex Breccia zone and is also currently working on a project to access the Porvenir Dos zone via a new portal. Both the Alex Breccia and Porvenir Dos zones will become stand-alone facilities with a minimal amount of development. The Alex Breccia zone is the southwest extension of the Santa Cruz vein. The Porvenir Dos zone is located on the northwest extension of the Santa Cruz vein.

18.6 MINERAL PROCESSING

In 2008 the Guanaceví mill processed ore from the Porvenir mine (North Porvenir and El Porvenir), purchased ore and Bolañitos (Guanajuato) flotation concentrate. In 2008, grinding had a capacity of 698 t/d average.

The flotation circuit has a capacity of approximately 420 t/d, while the cyanide leach circuit can process up to 800 t/d. The re-commissioned flotation section started processing ore in October, 2008 but is currently shutdown due to insufficient of feed.

The plant consists of the following circuits:

- Crushing: ore bins, conventional crushing with a primary 24”x36” jaw crusher, a 4-foot secondary cone and 3-foot tertiary cone crushers, a 5’x10’ vibrating screen (-½” to -5/8”).

- Grinding: with 3 ball mills: a 10.5’x12’ Hardinge, a 7’x7.5’ Denver and a 5’x 6’ Fimsa ball mills.

- Cyanidation and CCD circuit: 16 leach tanks in two series (12 tanks of 20’x20’ and 4 tanks of 30’x30’).

- Merrill-Crowe circuit with 2 leaf clarifiers and one de-aeration tower.

- Refinery: two gas fired furnaces.

- Flotation.

Oxidized ore is ground and pumped to a 50-foot diameter thickener and is thickened to 50% solids. The thickened slurry is transferred to 2 series of agitated leach tanks (12 units of 20’x20’ and 4 units of 30’x30’) that are arranged for gravity flow from tank to tank. NaCN is added to the slurry at a ratio of 2.7 kg per tonne of solids. The solution from the leaching tanks is processed in a counter-current decantation circuit through five thickeners. The pregnant solution goes to the Merrill-Crowe plant for clarification and precipitation of the silver and gold. The retention time in the leaching plant is about 72 hours.

A gas furnace smelts the precipitate to produce doré which typically averages 98% silver and is shipped and sold to the Peñoles Met-Mex facility in Torreon for final refining.

The assay laboratory utilizes wet assaying, fire assaying and atomic absorption methods. The laboratory does all the assaying required for mill processing as well as assaying mine and exploration samples. Duplicates and blanks are run on a regular basis, as well as check assays at outside laboratories.

18.7 TAILINGS DAM

The mill lies adjacent to historic tailings dams which are not utilized in current operations, and a new tailings pond (Figure 18.2). Endeavour Silver has sampled the old tailings and it is believed that re-treatment of the tailings could possibly add to the economics of the Guanaceví Mines project in the future. Any potential resources in the historic tailings are beyond the scope of this report.

The new tailings pond expansion phase 2 was completed in June, 2008 which will allow the plant to operate until mid-2009. The new tailings dam was constructed using the centreline method and is completely lined (Figure 18.3). The process water is recycled back to the mill.

Further expansion of the tailings facility requires construction of a new access road. A new road permit application is in process and is expected in March, 2009. A temporary tailings dam will be constructed on the top of the old tailings pond to use in the period of the new tailings facility expansion. Endeavour Silver has contracted Mines Group and AMEC to design and build a temporary dam, which will allow operating for approximately 5 months.

Figure 18.2
Aerial View of the Plant and Tailings Facilities of the Guanaceví Mines Project

Figure 18.3
Photograph of Tailings Dam Being Constructed With Historical Tailings and Plant in the Background

18.8 CONTRACTS

Endeavour Silver has no contracts for mining, smelting, refining, transportation, handling, sales, contracts or agreements that are outside of normal or generally accepted practices within the mining industry. Endeavour Silver has a policy on not hedging or forward selling any of its products.

18.9 ENVIRONMENTAL CONSIDERATIONS AND SAFETY

The Guanaceví Mines project monitors all the effluents and air quality at the site. Regular monitoring and laboratory testing are conducted either by Endeavour Silver staff or out-sourced to qualified contractors. Regular meetings are held with the local Ejido and President of the Municipality of Guanaceví to discuss areas of mutual concern.

The mill and mine recycle batteries, oils, greases, steel and aluminum.

The mine and mill have induction meetings and tours with all new employees and hold daily safety meetings with all employees.

Endeavour Silver has completed approximately 65% to 70% of an environmental action plan established by the Mexican government environmental authority (SEMARNAT) for the Guanaceví Mines project. These improvements are necessary due to negligence in the areas of ecology and the environment by previous operators of the project. Endeavour Silver is confident that it can meet the standards set by the environmental authorities within the established time period.

Endeavour Silver has an environmental contingency plan in place to take immediate control of any incident, correcting the main cause of the incident, and implementing the actions needed to prevent it from happening again.

Environmental projects currently being worked on at the Guanaceví Mines project include:

- Environment impact studies for the extension of the tailings dam and moving of the main access road and a new haul from the Porvenir Dos mine to the MG plant.

- General cleaning and painting activities at the MG plant, office and staff living quarters at the "Colonia" and at the mine.

Endeavour Silver acknowledges the importance of the safety and health of its employees, while at the same time, improving the quality of their lives. To ensure this, Endeavour Silver has implemented safety programs to prevent accidents and work-related illnesses, and raise awareness of the value of these programs and to promote improvement of the conditions and work environment in every area of the Guanaceví Mines project. Specific objectives include:

- To protect all personnel from possible work risks that could cause health damage.

- To provide the employees with the necessary training and emphasize the precautions to prevent accidents.

- To establish safety regulations for all work areas and activities.

- To provide the employees with rules, guidelines and basic procedures about safety and health in order to prevent risks in every area of the workplace.

Endeavour Silver has designed a personnel training program to prevent workplace accidents, which is registered at the Ministry of Labor and Social Prevention.

Endeavour Silver has established mine rescue training at the Guanaceví Mines project. The objective is to have on site a team of mine rescue personnel that can take control of any accident in the mine, including the most serious risk, a mine-related fire. A total of 15 employees are currently enrolled in the mine rescue program. Ongoing training is being conducted by qualified mine rescue trainer who previously worked seven years for Peñoles at the Cienega mine in Durango.

18.10 TAXES

Taxation in Canada and Mexico is often complex and varies from one jurisdiction to the other. There are numerous calculations and allowances, all of which are outside the scope of this report. However, taxes are all levied in the normal course of business. Endeavour Silver is subject to the taxing jurisdictions of Durango, Mexico and Canada. Endeavour Silver represents that all taxes assessed have been paid or will be paid when due, aside from any protests or other tax relief available under law.

18.11 CAPITAL COST ESTIMATES

In 2008, the plant expansion and upgrade program continued at the Guanaceví Mines project. During the year emphasis was on expanding plant capacity.

Capital projects completed in 2008 included:

- Mine development 5,048 metres.
- Ventilation shaft 287 metres.
- Pump station modification.
- Leach circuit expansion.
- Electrical substation expansion.
- Flotation circuit rehabilitation.
- Tailings dam phase 2 expansion.
- New silver refinery.
- New warehouse.
- New security building.
- New assay laboratory.

- New toxic waste storage.
- Drill road/pad reclamation 12,000 m^3.

In 2009, Endeavour Silver has US$14,929,310 million budgeted for capital projects at the Guanaceví Mines project (Table 18.1). This budget for capital expenditure on the mine and plant and is in addition to the exploration budget presented in Section 19.0 below.

Table 18.1
2009 Capital Cost Estimates for the Guanaceví Mines Project

Mine		US$
	Equipment	1,108,200
	Pumping	1,050,000
	Compressors	276,180
	Ventilation	57,000
	Electrical	1,686,220
	Safety	50,000
	Services	299,000
	Buildings	255,000
	Projects	248,450
	Sub-Total	**5,030,050**
Mine Development		**US$**
	Development Porvenir	3,292,910
	Development Santa Cruz	2,368,850
	Development Alex Breccia	1,849,970
	Development Porvenir 2	983,820
	Sub-Total	**8,495,550**
Plant		**US$**
	Miscellaneous	303,710
	Tailings dam	1,100,000
	Sub-Total	**1,403,710**
Total	**US$**	**14,929,310**

18.12 2008 OPERATING COSTS

The cash operating cost of silver produced at the Guanaceví Mines project in fiscal 2008 was $8.60 per oz compared to $8.16 in 2007 (Table 18.2). Cash operating cost per oz of silver is calculated net of gold credits and royalties. On a per tonne of ore processed basis, the cash operating costs averaged US$61.88/t compared to 2007 $68.08/t.

The higher cash costs in the second and third quarters of 2008 are attributed to a combination of lower production grades due to mine dilution and the processing of lower grade stockpiles.

For the Guanaceví Mines project, Endeavour Silver continued to temporarily incur additional operating costs while expansion and upgrade programs were implemented and completed in 2008. The completion of the capital program, coupled with the fourth quarter depreciation of

Mexican peso to the US dollar, significantly reduced cash costs. Subsequent to December 31, 2008 the peso has continued to devalue.

Table 18.2
2007 And 2008 Operating Costs for Guanaceví Mines Project

(in US$000s except oz produced / payable and cash cost/oz)	Year Ended Dec 31, 2008	Three Months Ended Dec 31, 2008	Three Months Ended Sep 30, 2008	Three Months Ended June 30, 2008	Three Months Ended Mar 31, 2008
Cost of Sales	$19,950	$4,983	$5,376	$4,467	$5,124
Add/(Subtract):					
Royalties	($807)	($264)	($77)	($198)	($268)
Change in Inventories	$13	($191)	($22)	$196	$30
By-Product gold sales	($3,336)	($796)	($824)	($764)	($979)
Cash Operating Costs	**$15,820**	**$3,759**	**$4,453**	**$3,701**	**$3,907**
Oz Produced	1,858,937	515,407	465,661	419,245	458,624
Oz Payable	1,840,348	510,253	461,004	415,053	454,038
Cash Cost Per Oz US$	**$8.60**	**$7.37**	**$9.66**	**$8.92**	**$8.61**
(in US$000s except oz produced / payable and cash cost/oz)	**Year Ended Dec 31, 2007**	**Three Months Ended Dec 31, 2007**	**Three Months Ended Sep 30, 2007**	**Three Months Ended June 30, 2007**	**Three Months Ended Mar 31, 2007**
Cost of Sales	$18,717	$5,383	$5,397	$4,370	$3,567
Add/(Subtract):					
Royalties	($742)	($211)	($191)	($149)	($191)
Change in Inventories	$131	($289)	$518		($98)
By-Product gold sales	($2,700)	($880)	($704)	($489)	($627)
Cash Operating Costs	$15,406	$4,003	$5,020	$3,732	$2,651
Oz Produced	1,907,795	542,789	491,643	382,377	490,986
Oz Payable	1,888,717	537,361	486,726	$378,554	486,076
Cash Cost Per oz US$	**$8.16**	**$7.45**	**$10.31**	**$9.86**	**$5.45**

18.13 2009 PRODUCTION FORECAST

For 2009 Endeavour Silver is forecasting to produce 1.9 million ounces of silver and 2,980 ounces of gold from the Guanaceví Mines project. Plant throughput for 2009 is forecast at 208,250 tonnes at an estimated average grade of 364 g/t silver and 0.56 g/t gold. Recoveries are forecast to average 78% and 81% for silver and gold, respectively. Plant throughput is based on production from the Porvenir mine and other deposits in the Guanaceví Mines project. The production plan for the Porvenir mine reserves is presented in the following section.

The property has a substantial undeveloped resource potential. Beyond 2009, Endeavour Silver believes that continued exploration and development will lead to the discovery of new resources, and Endeavour Silver actively continues acquiring rights to new properties in the Guanaceví district.

18.14 PORVENIR MINE RESERVES PRODUCTION PLAN 2009 - 2011

The life-of-mine plan for the Porvenir mine forecasts production of 535,389 tonnes at an average recoverable grade of 353 g/t silver and 0.49 g/t gold to produce 4,737,799 ounces of silver and 6,863 ounces of gold during the next 3 years. Plant recoveries are forecast to average 78% for silver and 82% for gold. The mine plan does not take into consideration other operations which are forecast to provide additional feed material for the Guanaceví plant. The mine plan was prepared by the Guanaceví Mines project engineering department.

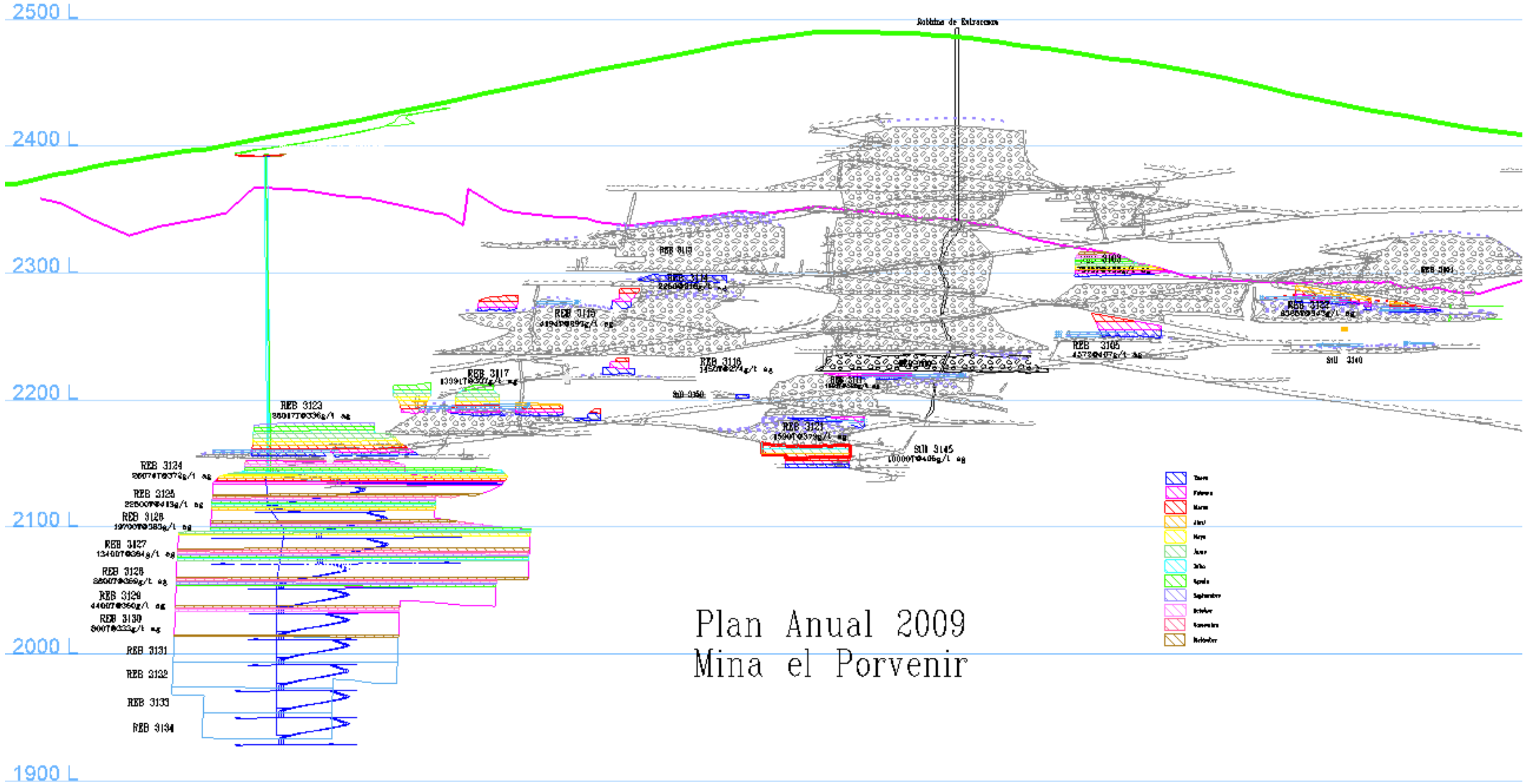
For 2009 the mine plan forecasts production of 1.6 million ounces of silver and 2,450 ounces of gold from the Porvenir mine; plant throughput is forecast at 172,980 tonnes at an average grade of 368 g/t silver and 0.54 g/t gold.

The production plan forecasts that mining of the reserves will be completed in December, 2011. The average monthly production rate is 14,872 tonnes. To achieve the planned production the mine plan forecasts a total of 7,486 metres of development, with an average monthly advance of 312 metres. The maximum month production in the mine plan is 15,870 tonnes and the minimum is 12,780 tonnes.

The mine plan is based on the mining methodology and equipment described in Section 18.3. The mine plan assumes 5 jackleg production crews for ore production. Development will be performed by 3 jackleg crews and 1 jumbo crew. Each crew works a 10 hour shift with two shifts being operated 365 days in the year. Production crews produce 60 tonnes per shift; drilling 35 blast holes. Development jacklegs crews blast an average of one round per shift with an average advance of 1.5 metres; average jackleg advance per shift from 3 crews is 4.5 metres. The jumbo crews blast on average 1.5 rounds per shift with an average round advance of 2.8 metres giving an effective shift advance of 4.2 metres.

Endeavour Silver's mine and development plan through December, 2009 is shown in Figure 18.4.

Figure 18.4
Longitudinal Section of the Porvenir Mine (looking northeast) showing Mine and Development Plan through December, 2009



19.0 INTERPRETATION AND CONCLUSIONS

19.1 DISCUSSION AND INTERPRETATION

Upon acquiring the Guanaceví Mines project, Endeavour Silver obtained an operating project with an extensive mining history and well known silver and gold bearing vein systems. The ongoing exploration programs have demonstrated good potential for the discovery of additional resources and reserves as development and exploration at the mine continues. Also, since taking over the day-to-day operation of the mine, Endeavour Silver has implemented measures in a number of areas which culminated in increased productivity and efficiency leading to cost savings. Further improvements in low cost mining techniques should allow mining to be expanded beyond the boundaries of previously mined areas and extend into new areas.

Endeavour Silver has updated the resource and reserve estimate for the period ending December 31, 2008 and the results are presented in Tables 17.7 and 17.8. Micon has conducted an audit of the Endeavour Silver resource and reserve estimate for the period ending December 31, 2008 and considers these estimates, as presented by Endeavour Silver, to have been reasonably prepared and to conform to the current CIM standards and definitions for estimating resources and reserves as required under NI 43-101 "Standards of Disclosure for Mineral Projects." Accordingly, Micon accepts Endeavour Silver's resource and reserve estimate as its basis for the ongoing mining operations at the Guanaceví Mines project. In Micon's opinion there are no significant technical, legal, environmental or political considerations which would affect the extraction and processing of the resources and reserves at the Guanaceví Mines project.

Micon believes that the land controlled by Endeavour Silver is highly prospective both along strike and down dip of the existing mineralization and that further resources could be converted into reserves with additional exploration and development.

Endeavour Silver is also in the position of having acquired a portion of a major historical mining district in Mexico that has not been subjected fully to modern exploration concepts and technology. The property holds the potential for the discovery of mineralized deposits of similar character and grade as those discovered in the past either along the trend of the vein or at depth below the presently exploited areas.

19.2 CONCLUSIONS

In the case of the Guanaceví Mines project, although a number of mineralized areas have been exploited during the past, improvements in mining techniques have allowed mining to be expanded within the boundaries of previously mined areas and extended the mining into new areas.

The resources and reserves reported herein by Endeavour Silver for the Guanaceví Mines project have been audited and accepted by Micon as constituting the basis for Endeavour Silver's operations in Mexico.

Given that (1) the known mineralization on the Santa Cruz vein extends some 4,500 m along strike, that (2) the mineralized zones in the Deep Santa Cruz, Porvenir, Porvenir Dos and Alex Breccia areas are open at depth, and that (3) the down-dip potential of the Deep Santa Cruz, Porvenir, Porvenir Dos and Alex Breccia areas does not appear to be constrained by the increase in base-metal to silver and gold ratios, Endeavour Silver could reasonably expect that further exploration may yield additional mineralized areas which could have a considerable positive impact on the resources and possibly on the reserves as exploration and development continue at the Guanaceví Mines project. Therefore, in summary, Micon believes that the program for further exploration on the Guanaceví Mines project proposed by Endeavour Silver is both warranted and justified as the potential for the discovery of additional resources is good.

20.0 RECOMMENDATIONS

20.1 2009 EXPLORATION PROGRAMS

Endeavour Silver's exploration efforts are ongoing and exploration efficiencies appear to be improving progressively as new resources are being discovered.

In 2009, Endeavour Silver plans a two-phase exploration program focused on following up several of the new discoveries made near Endeavour's mining operation at Guanaceví and testing several new prospective targets within the district. If initial drilling in 2009 is successful, a second phase budget for follow-up exploration will be prepared and submitted for approval by the company's Board of Directors. The primary long-term goal of this program is to expand reserves and resources and to identify properties for potential acquisition in the Guanaceví district for future growth.

The Phase 1 exploration program will include7,700 m of core in 25 diamond drill holes to target the depth extension of the Santa Cruz vein in the North Porvenir mine and extensions of several veins, the Santa Cruz and ancillary veins on Porvenir Cuatro, and mantos and stockworks in the San Pedro area, both in the Guanaceví district. The estimated cost of diamond drilling is US$140 per metre.

Drilling proposed for the San Pedro area will test high grade veins as well as moderate grade mantos and one larger stockwork zone of silver-lead-zinc mineralization, all within an area measuring more than 1.5 kilometres in length and 500 metres across. Mineralized zones are mainly comprised of narrow veinlets of quartz, carbonate and adularia with sphalerite, galena and pyrite hosted in Tertiary-age volcaniclastic andesite.

The Phase 2 exploration program will then focus on expanding the highest priority discovery areas in order to prepare them for an updated reserve/resource report at year-end.

Table 20.1 summarizes the planned Phase 1 2009 budget for the Guanaceví Mines Project.

Table 20.1
Guanaceví Exploration Priority Targets – 2009

Project Area	2009 Program			Budget US$
	Holes	Metres	Samples	
Priority Target Areas				
Noche Buena Surface	6	1,500	2,050	325,000
Porvenir Cuatro Surface	4	1,200	400	180,000
Porvenir Mine Surface & Underground	15	5,000	1,500	791,000
Totals	**25**	**7,700**	**3,950**	**1,296,000**

Priority Target Areas

Priority targets include Noche Buena surface, Porvenir Cuatro surface and Porvenir mine surface and underground. For each of these targets, the programs are:

1. Noche Buena – surface mapping/sampling/trenching; surface diamond drilling (1,500 m).

2. Porvenir Cuatro – surface mapping/sampling; surface diamond drilling (1,200 m).

3. Porvenir mine surface and underground – exploration development; underground diamond drilling (5,000 m).

Detailed descriptions of the targets and the planned programs are in Appendix C.

20.2 RECOMMENDATIONS

Micon has reviewed Endeavour Silver's proposal for further exploration in and around its Guanaceví Mines property and endorses the proposed exploration program subject to funding and any other matters which may cause the proposed exploration program to be amended in the normal course of its business activities or alterations which may affect the program as a result of exploration activities themselves.

Through its acquisition of the Guanaceví Mines project, Endeavour Silver acquired an operating project in one of the major silver producing districts in Mexico. Micon has audited and accepted the current resource and reserve estimate for the project and makes the following additional recommendations:

1) Micon recommends that Endeavour Silver continues to develop and refine a reconciliation plan for the Guanaceví Mines project. The ability to be able to reconcile the ore mined and milled on a stope-by-stope basis to the original estimates for the stope will be a critical factor in future resource and reserve estimations. The reconciliations will form the basis of reviewing dilution estimates, mining loss and gain estimates, and will assist in reviewing the classification categories of the resources.

2) Micon recommends that Endeavour Silver continues to pursue the necessary paperwork for its on-site laboratory to join a proficiency program of round robin testing such as the one run by CanMet. This would assist the on-site laboratory in assessing its performance for one or more analytical methods independently of internal quality control. Coupled with this program a total of between 5% and 10% of the samples submitted to the on-site assay laboratory should be sent out to a secondary accredited laboratory.

3) In order to minimize contamination between samples, Micon recommends that Endeavour Silver increase the usage of blanks among its control samples. It is further recommended that the blanks must look like the rest of the samples and not be in powder form. If the blanks are already crushed and pulverized, they will escape the critical test at the crushing stage.

4) In pursuit of the multi-metal precious and base metal resource at Alex Breccia and Santa Cruz, Micon recommends that Endeavour Silver conducts detailed metallurgical test work to determine how optimum metal recoveries can be achieved and the economics of running such an operation. It is further recommended that this program takes precedence over further exploration programs to expand the multi-metal resource.

5) Micon recommends that, as further data are generated from mining, more detailed examination of the block modeling parameters should be undertaken to develop better estimation protocols. This would not only help in future exploration but would also help in infill drilling.

6) Micon recommends that Endeavour Silver incorporate routine mineralogical investigations into its exploration programs to assist in the interpretation of mineralization patterns and to explain variations in recoveries at the mill site.

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CERTIFICATE OF AUTHOR
WILLIAM J. LEWIS

As the co-author of this report on the Guanaceví Mines project of Endeavour Silver Corp., in Durango State, Mexico, I, William J. Lewis do hereby certify that:

1) I am employed by, and carried out this assignment for, Micon International Limited, Suite 900, 390 Bay Street, Toronto, Ontario M5H 2Y2, tel. (416) 362-5135, fax (416) 362-5763, e-mail wlewis@micon-international.com;

2) I hold the following academic qualifications:

   B.Sc. (Geology) University of British Columbia 1985

3) I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Manitoba (membership # 20480); as well, I am a member in good standing of several other technical associations and societies, including:

   - Association of Professional Engineers and Geoscientists of British Columbia (Membership # 20333)
   - Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories (Membership # 1450)
   - The Geological Association of Canada (Associate Member # A5975)
   - The Canadian Institute of Mining, Metallurgy and Petroleum (Member # 94758)

4) I have worked as a geologist in the minerals industry for 23 years;

5) I am familiar with NI 43-101 and, by reason of education, experience and professional registration; I fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 4 years as an exploration geologist looking for gold and base metal deposits, more than 11 years as a mine geologist in underground mines and 5 years as a surficial geologist and consulting geologist on precious and base metals and industrial minerals;

6) I have had no prior involvement with the mineral properties in question;

7) As of the date of this certificate 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 this report not misleading;

9) I am independent of the parties involved in the transaction for which this report is required, other than providing consulting services;

10) I am responsible for the preparation of sections 1, through 11, 15 16, 18, 19, 21 and jointly wrote sections 12, 13, and 20 of the Technical Report dated March 18, 2009 entitled “NI 43-101 Technical Report Audit of the Resource and Reserve Estimate for the Guanaceví Mines Project, Durango State Mexico.”

Dated this 18 day of March, 2009

“William J. Lewis”

William J. Lewis, B.Sc., P.Geo.
Senior Geologist,
Micon International Limited

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CHARLEY Z. MURAHWI

As a co-author of this report on the Guanaceví Mines project of Endeavour Silver Corp., I, Charley Z. Murahwi do hereby certify that:

1) I am employed as an Senior Geologist by, and carried out this assignment for, Micon International Limited, Suite 900, 390 Bay Street, Toronto, Ontario M5H 2Y2, telephone 416 362 5135, fax 416 362 5763, e-mail cmurahwi@micon-international.com.

2) I hold the following academic qualifications:

   B.Sc. (Geology and Botany) University of Rhodesia, Zimbabwe, 1979;

   Diplome d´Ingénieur Expert en Techniques Minières, Nancy, France, 1987;

   M.Sc. (Economic Geology), Rhodes University, South Africa, 1996.

3) I am a registered Professional Geoscientist of Ontario (membership number 1618) and am also a member of the Australasian Institute of Mining & Metallurgy (AusIMM) (membership number 300395).

4) I have worked as a mining and exploration geologist in the minerals industry for over 28 years;

5) I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 14 years on gold, silver, copper, tin and tantalite projects (on and off- mine), and 12 years on Cr-Ni-Cu-PGE deposits in layered intrusions/komatiitic environments.

6) I visited the Guanaceví Mines project in Mexico between 6 and 9 September, 2008 and the Endeavour Silver exploration office in Durango (Mexico) on 5 September, 2008.

7) I have had no prior involvement with the mineral property in question;

8) As of the date of this certificate 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 this report not misleading;

9) I am independent of the parties involved in the Guanaceví property, other than providing consulting services;

10) I have read the NI 43-101 and the portions of this Technical Report for which I am responsible have been prepared in compliance with this Instrument.

11) With the exception of sub-sections pertaining to Mineral Reserves, I am jointly responsible for the preparation of all sections of this Technical Report dated March 18, 2009 and entitled “NI 43-101 Technical Report Audit of the Resource and Reserve Estimate for the Guanaceví Mines Project, Durango State, Mexico.”

Dated this 18th day of March, 2009

“Charley Z. Murahwi”

Charley Z. Murahwi, M.Sc., P. Geo. MAusIMM

micon INTERNATIONAL LIMITED | mineral industry consultants

CERTIFICATE OF AUTHOR
ROBERT JAMES LEADER

As the co-author of this report on the Guanaceví project of Endeavour Silver Corporation., in Durango State, Mexico, I, Robert James Leader do hereby certify that:

1) I am employed by, and carried out this assignment for, Micon International Limited, Suite 205, 700 West Pender Street, Vancouver, BC, V6C 1G8, tel. (604) 647-6463, fax (604) 647-6455, e-mail jleader@micon-international.com;

2) I hold the following academic qualifications:

ACSM (First Class)	Camborne School of Mines - 1974
M.Sc. (Engineering)	Queens University, Kingston, Ontario - 1981

3) I am a registered Professional Engineer with the Association of Professional Engineers and Geoscientists of British Columbia (Membership #13896), I am a member in good standing of other technical associations and societies, including:

- The Canadian Institute of Mining, Metallurgy and Petroleum
- The Institute of Materials, Minerals and Mining (IOM3), UK

4) I have worked as a mining engineer in the minerals industry for 32 years;

5) I am familiar with NI 43-101 and, by reason of education, experience and professional registration; I fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 3 years working as a mining engineer on a base metal underground mine, and over 15 years as a senior mining engineer and consultant carrying out reserves estimates and mine planning and design for diverse mining projects both underground and open pit;

6) I have not visited the Guanaceví Mines Project in Mexico;

7) I have had no prior involvement with the mineral properties in question;

8) As of the date of this certificate 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 this report not misleading;

9) I am independent of the parties involved in the transaction for which this report is required, other than providing consulting services;

10) In this report, I am responsible for the preparation of parts of Sections 1, 2, 17.6, and 17.7, Sections 18.1, 18.2, 18.3, 18.5, 18.14 and parts of Sections 19 and 20 of the technical report dated March 18, 2009 entitled "NI 43-101 Technical Report Audit of the Resource and Reserve Estimate on the Guanaceví Project, Durango State, Mexico."

Dated this 18th day of March 2009

"Robert J. Leader"

Robert J. Leader, M.Sc., P.Eng.
Senior Mining Engineer
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CERTIFICATE OF AUTHOR
DIBYA KANTI MUKHOPADHYAY

As the co-author of this report on the Guanaceví project of Endeavour Silver Corp., in Durango State, Mexico, I, DIBYA KANTI MUKHOPADHYAY do hereby certify that:

1) I am employed by, and carried out this assignment for, Micon International Co. Limited, Suite 10, Keswick Hall, Norwick, United Kingdom of Great Britain and Northern Ireland, tel. 0044(1603) 501 501, fax 0044(1603) 507 007, e-mail dk@micon-international.co.uk;

2) I hold the following academic qualifications:

   M.Sc. (Applied Geology) Jadavpur University, Kolkata, India 1993

3) I am a member of the Australasian Institute of Mining and Metallurgy (Member # 225557); as well, I am a member in good standing with The Canadian Institute of Mining, Metallurgy and Petroleum (Member # 140645)

4) I have worked as a geologist in the minerals industry for almost 14 years;

5) I am familiar with NI 43-101 and, by reason of education, experience and professional registration; I fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 3 years as an exploration geologist looking for gold and base metal deposits, more than 3 years as a mine geologist in open pit and underground mines and 8 years as a surficial geologist and consulting geologist on precious and base metals and industrial minerals;

6) I have had no prior involvement with the mineral properties in question;

7) As of the date of this certificate 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 this report not misleading;

8) I am independent of the parties involved in the transaction for which this report is required, other than providing consulting services;

11) I am responsible for the Micon audited resource estimate and related portions of Sections 1, 14, 17, 19 and 20, except for those portions of the report discussing the reserves of the technical report dated March 18, 2009 entitled “NI 43-101 Technical Report Audit of the Resource and Reserve Estimate on the Guanaceví Project, Durango State Mexico.”

Dated this 18th day of March 2009

“Dibya Kanti Mukhopadhyay”

Dibya Kanti Mukhopadhyay, M.Sc, MAusIMM
Senior Mineral Resource Geologist,
Micon International Limited

APPENDIX A

EXPLORATORY STATISTICS

DRILL HOLE AND CHANNEL DATA

Exploratory Statistics - Guanacevi Channel Data

Channel Histograms of Uncapped and Capped Au and Ag Accumulation

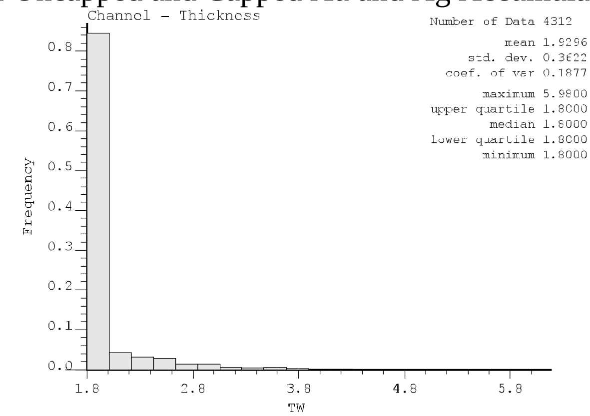


Figure A-21.1 – Channel Thickness

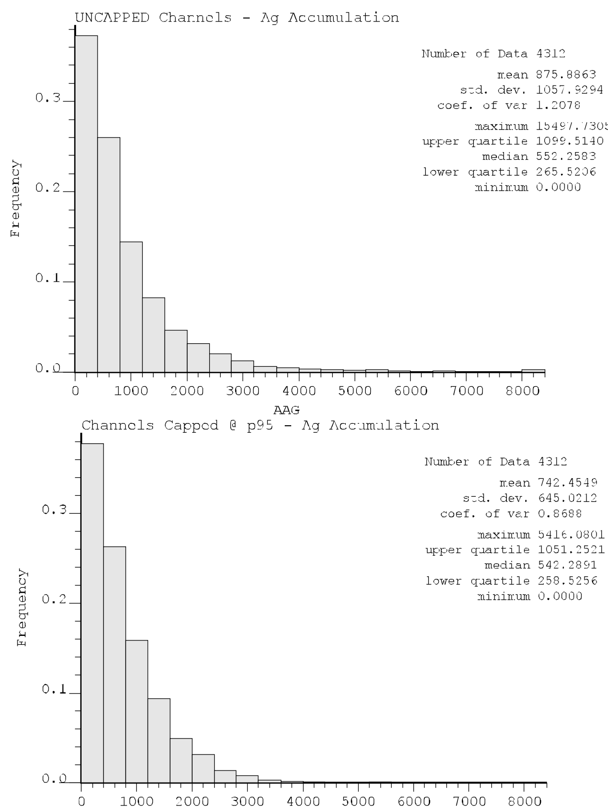


Figure A-21.2 - Channel Ag Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

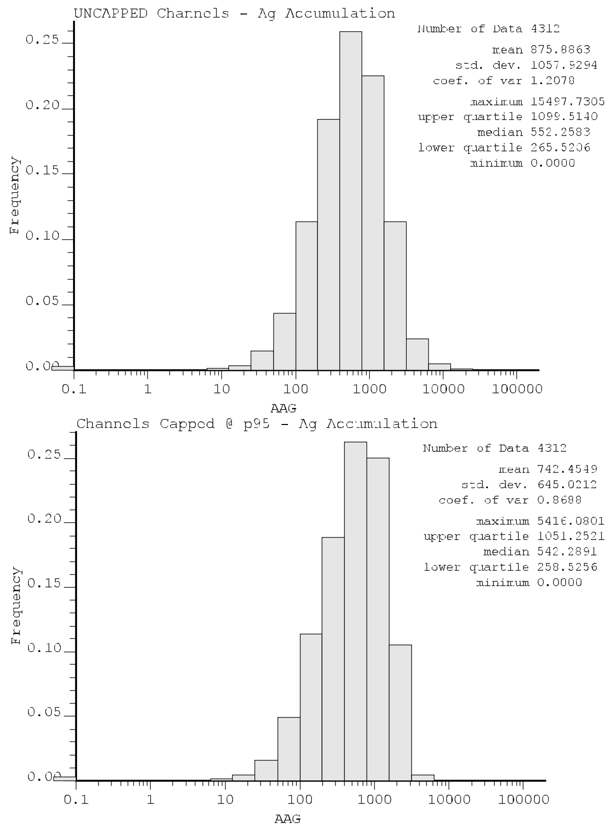


Figure A-21.3 - Channel Log Ag Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

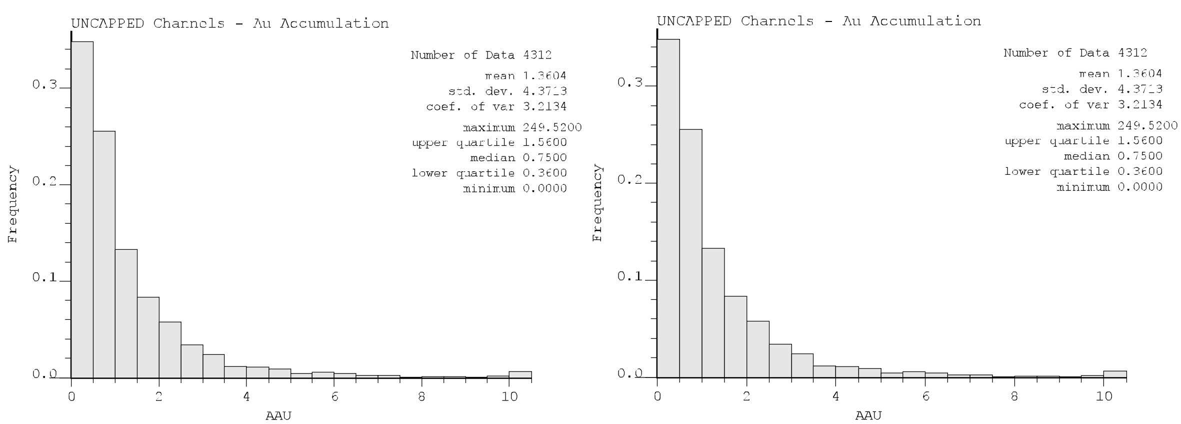


Figure A-21.4 - Channel Au Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

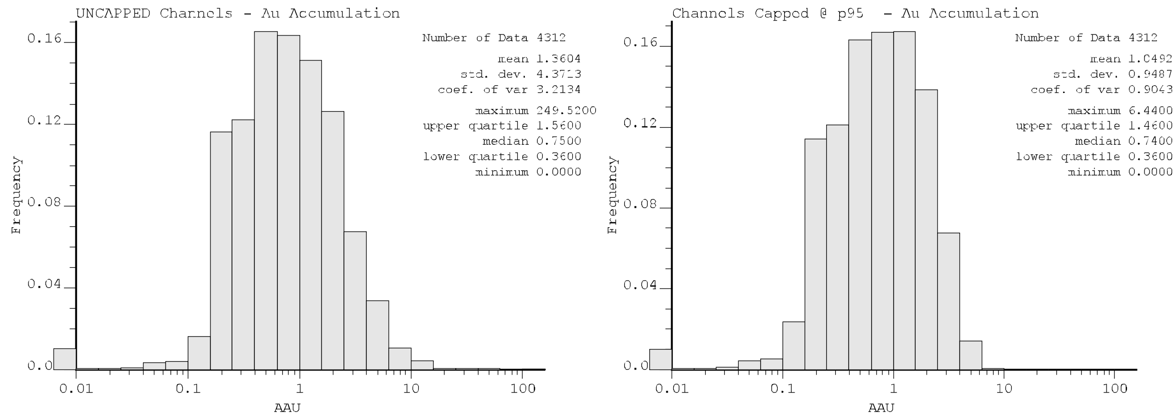


Figure A-21.5 - Channel Log Au Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

Drill hole Histograms of Uncapped and Capped Au and Ag Accumulation

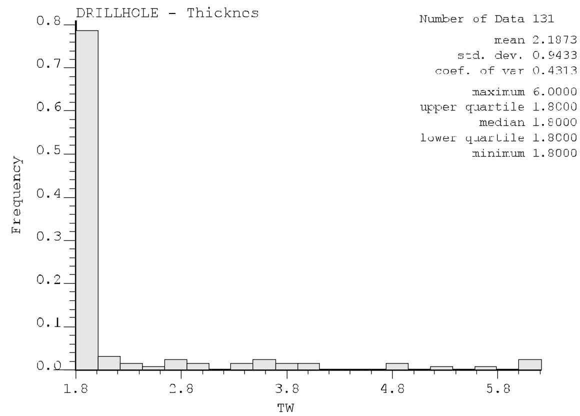


Figure A-21.6 – Drill hole Thickness

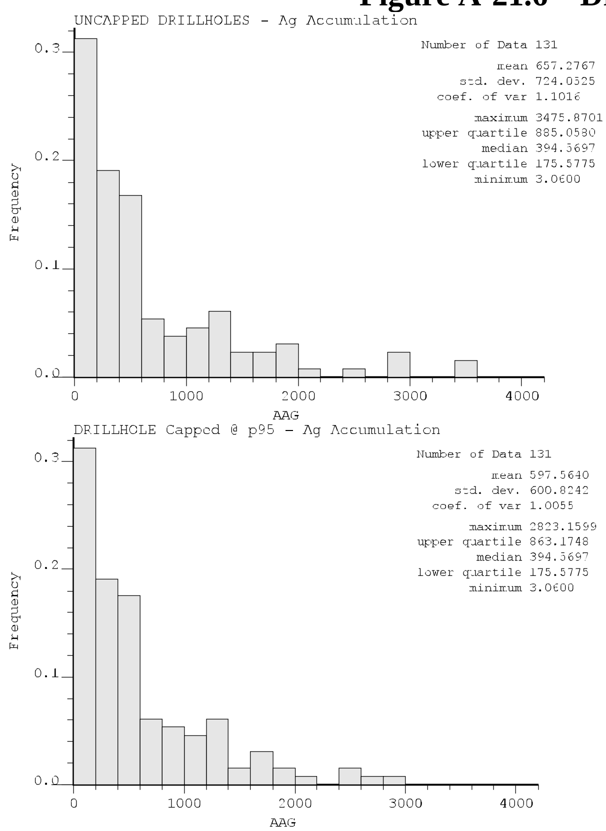


Figure A-21.7 - Drillhole Ag Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

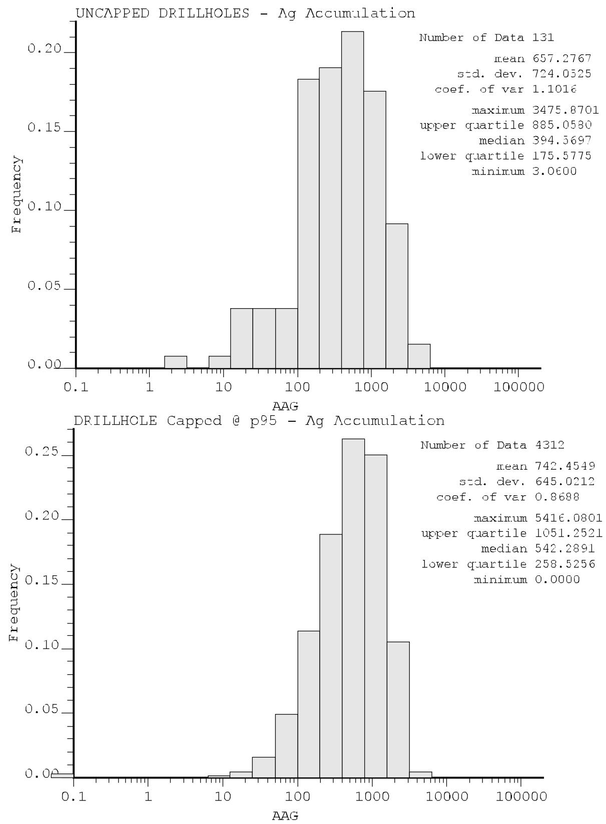


Figure A-21.8 - Drillhole Log Ag Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

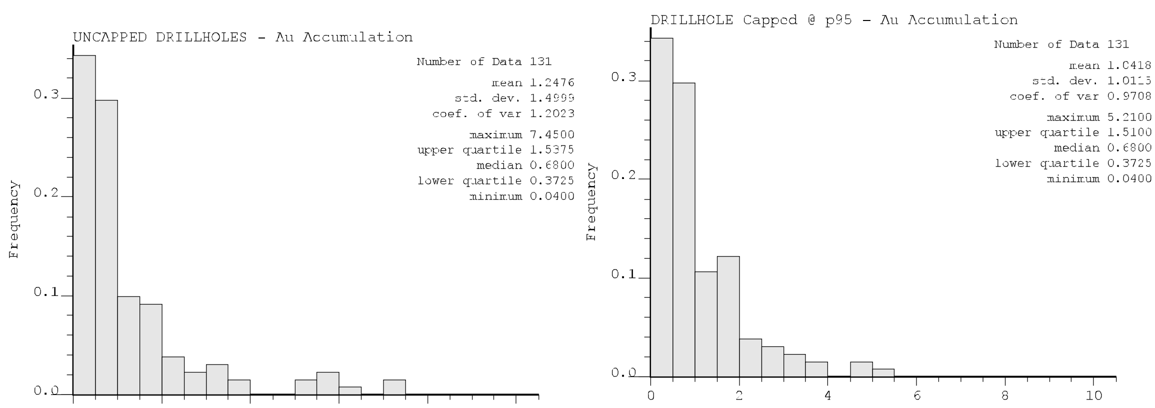


Figure A-21.9 - Drillhole Au Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

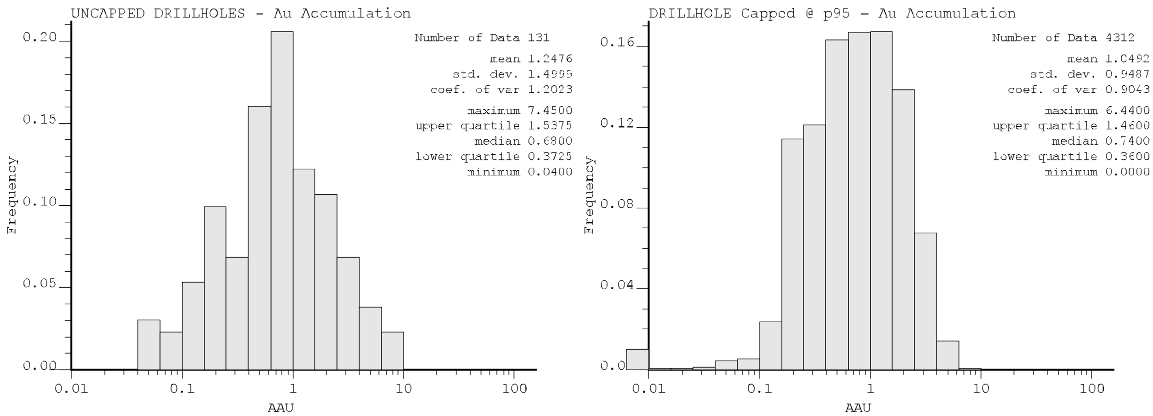


Figure A-21.10 - Drillhole Au Accumulation; Left: Uncapped, Right: Capped at 95th percentile.

Channel Assay Probability Plots

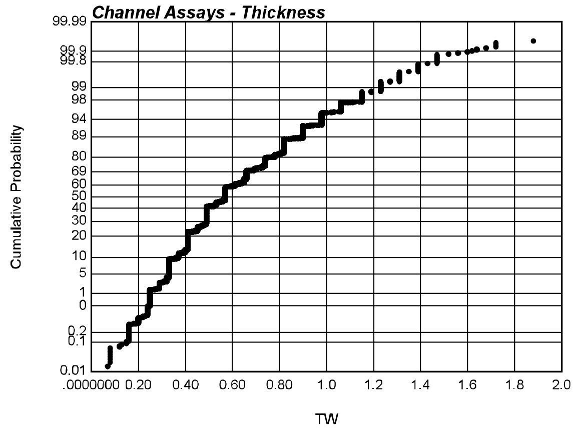


Figure A-21.11 - Channel Assay Thickness

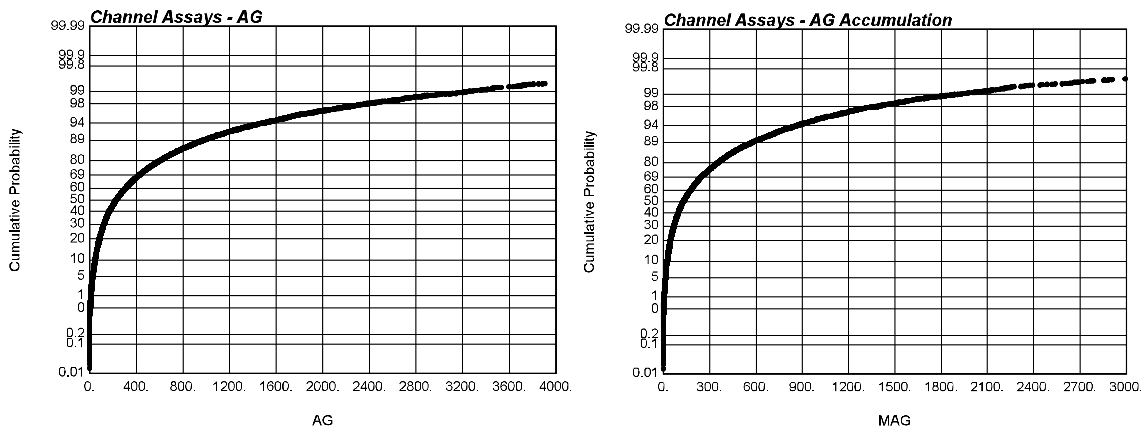


Figure A-21.12 - Channel Assay (Left)Ag, (Right) Ag Accumulation

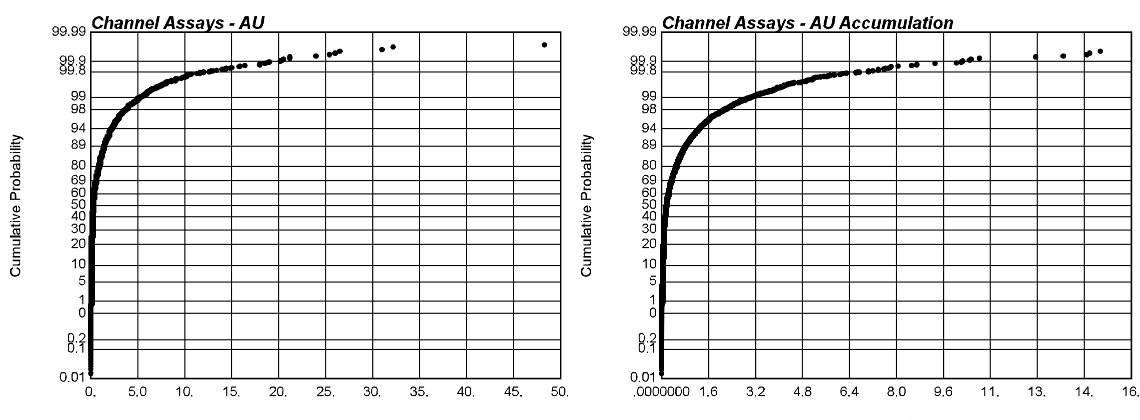


Figure A-21.13 – Channel Assays (Left)Au. (Right) Au Accumulation

Drillhole Probability Plots of

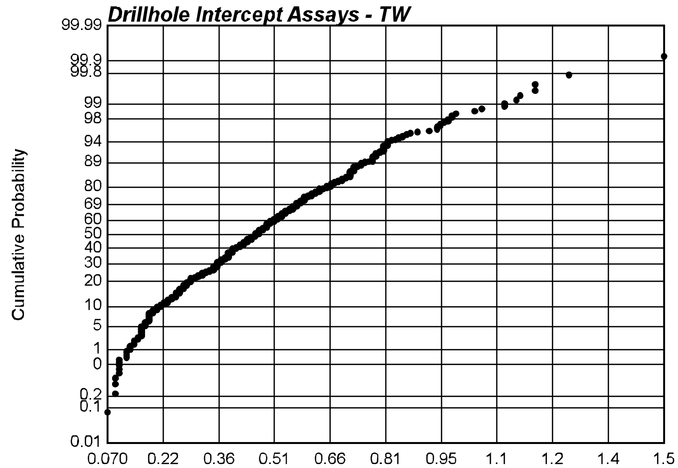


Figure A-21.14 - Drillhole TW Probability Plot

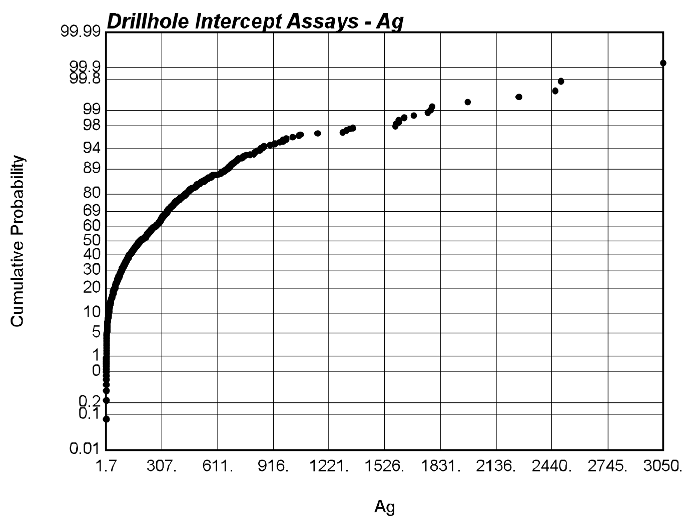


Figure A-21.15 - Drillhole Ag Probability Plot, 95th percentile = 850g/t

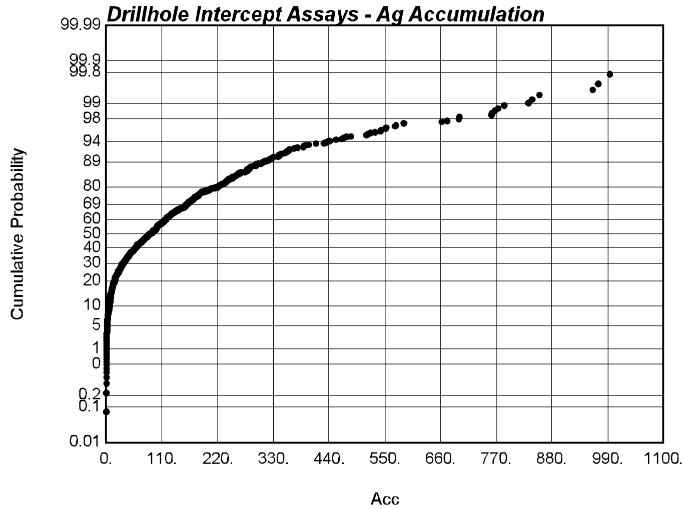


Figure A-21.16 - Drillhole Ag Accumulation Probability Plot, 95th percentile = 439g/t

APPENDIX B

VARIOGRAPHY

Volume Variance: Variogram Maps - Guanacevi Channel Data

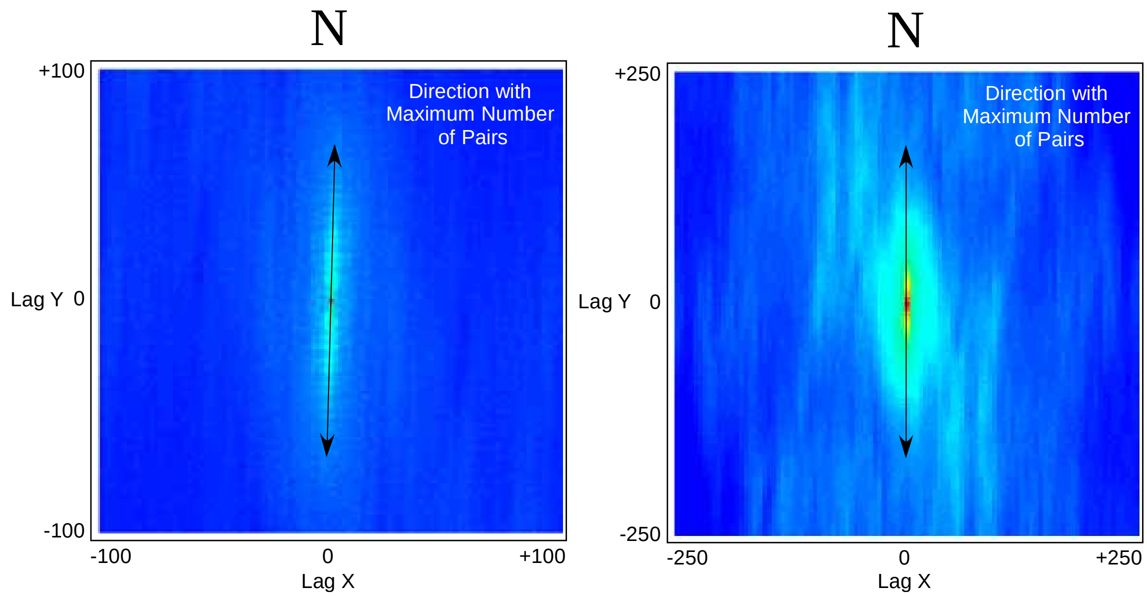


Figure B- 1 – Variogram Volume Map Channel Data – Number of Pairs, Left: 2m lag separation, Right: 5m lag separation.

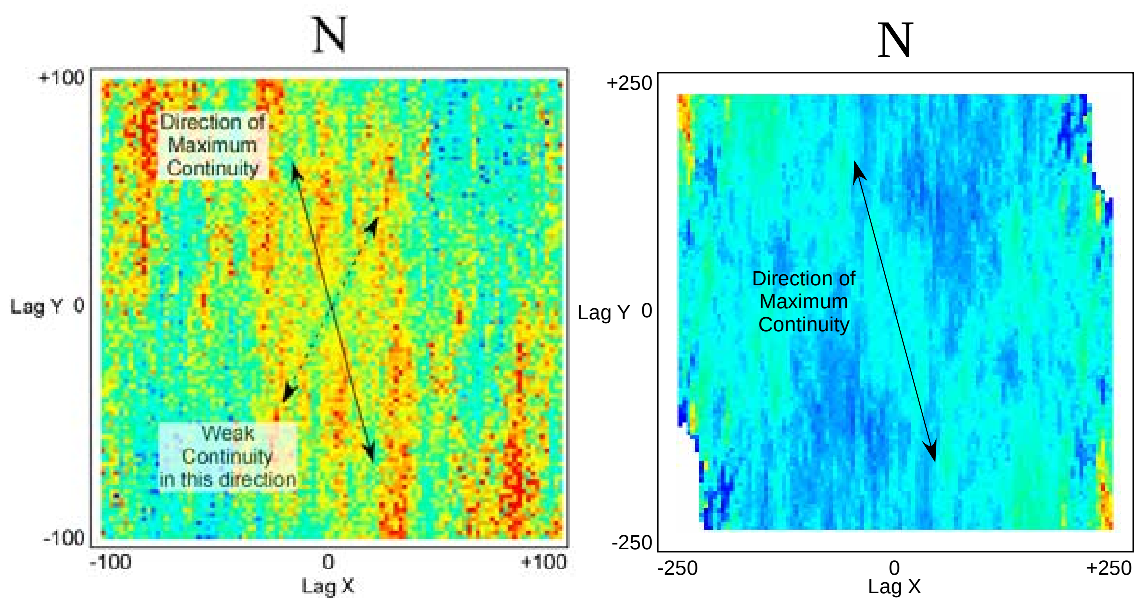


Figure B- 2 – Variogram Volume Map Channel Data – TW Variance, Left: 2m lag separation, Right: 5m lag separation.

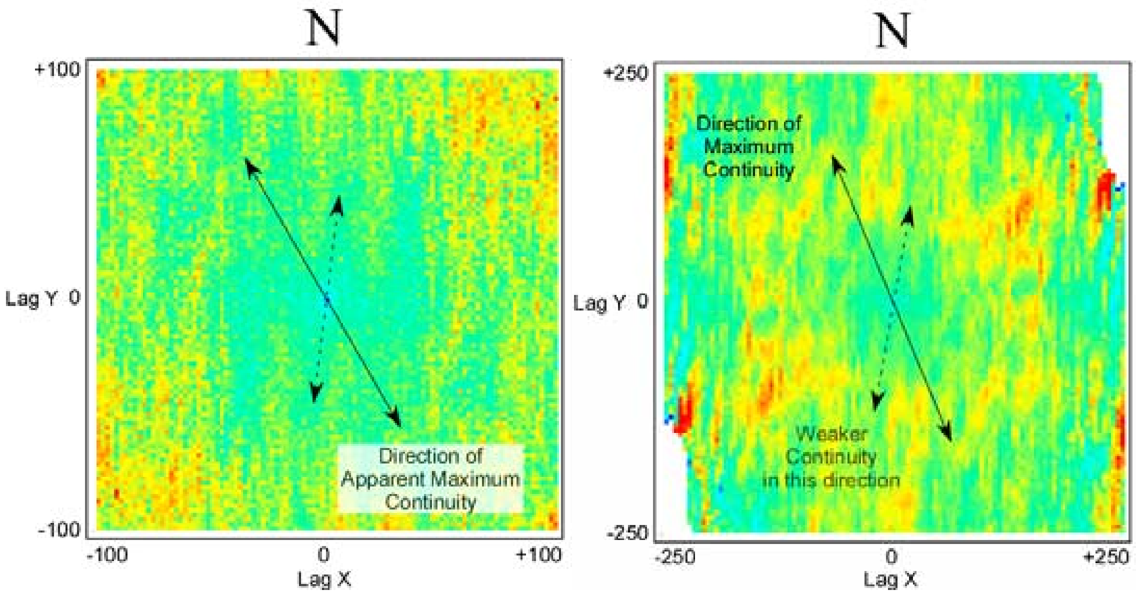


Figure B- 3 - Variogram Volume Map Channel Data – Ag Accumulation Variance, Left: 2m lag separation, Right: 5m lag separation.

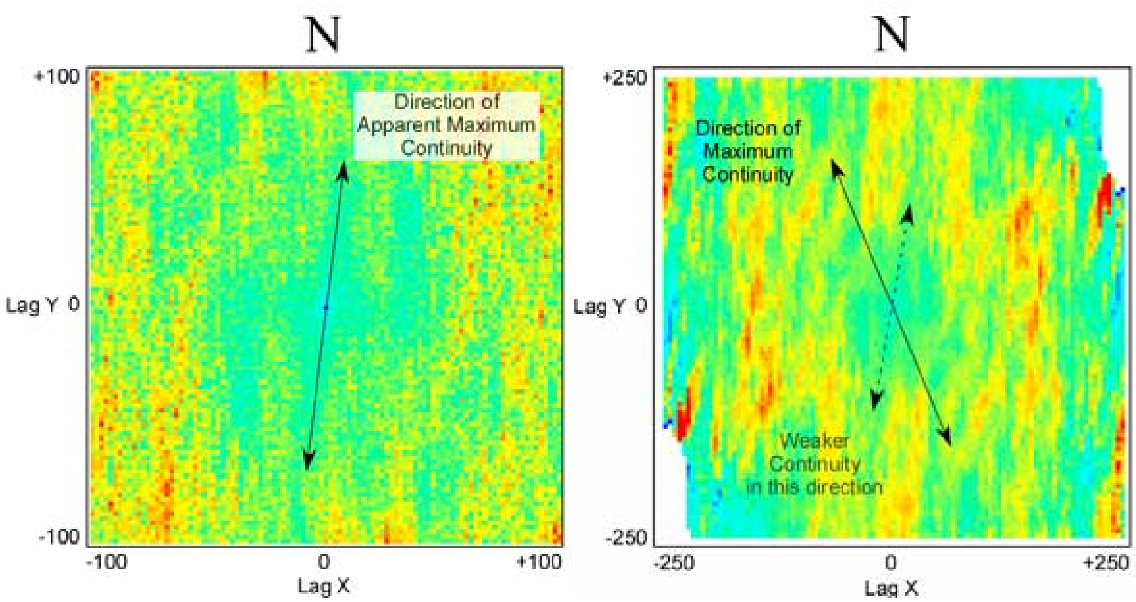


Figure B- 4 - Variogram Volume Map Channel Data – Au Accumulation Variance, Left: 2m lag separation, Right: 5m lag separation.

Volume Variance: Variogram Maps - Guanacevi Drillhole Data

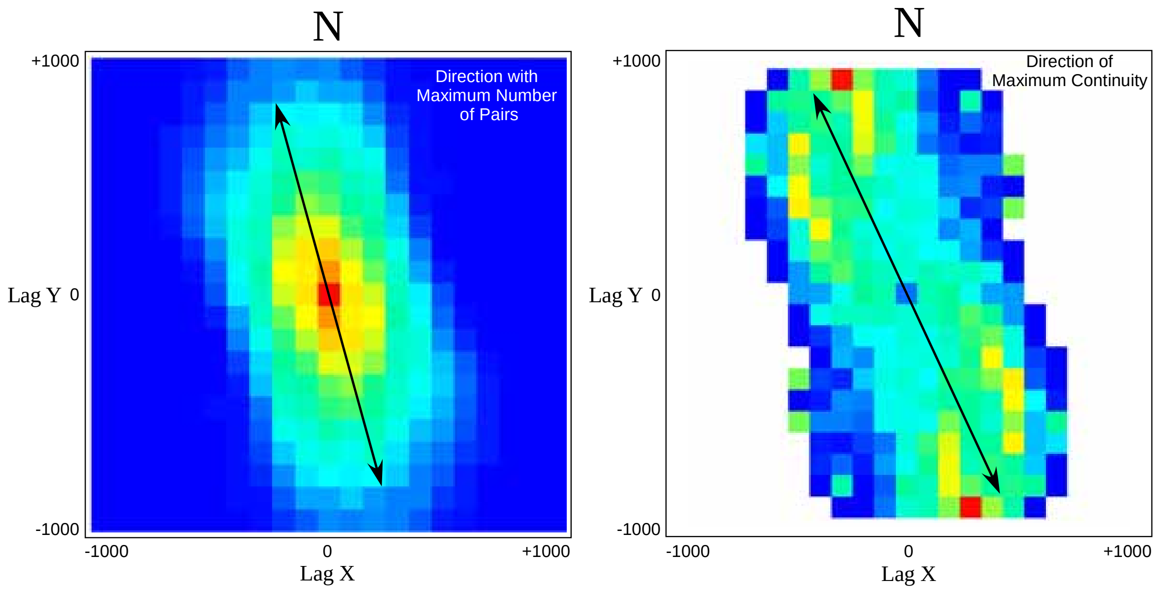


Figure B- 5 - Variogram Volume Map Drillhole Data – Left: Number of Pairs, Right: Thickness.

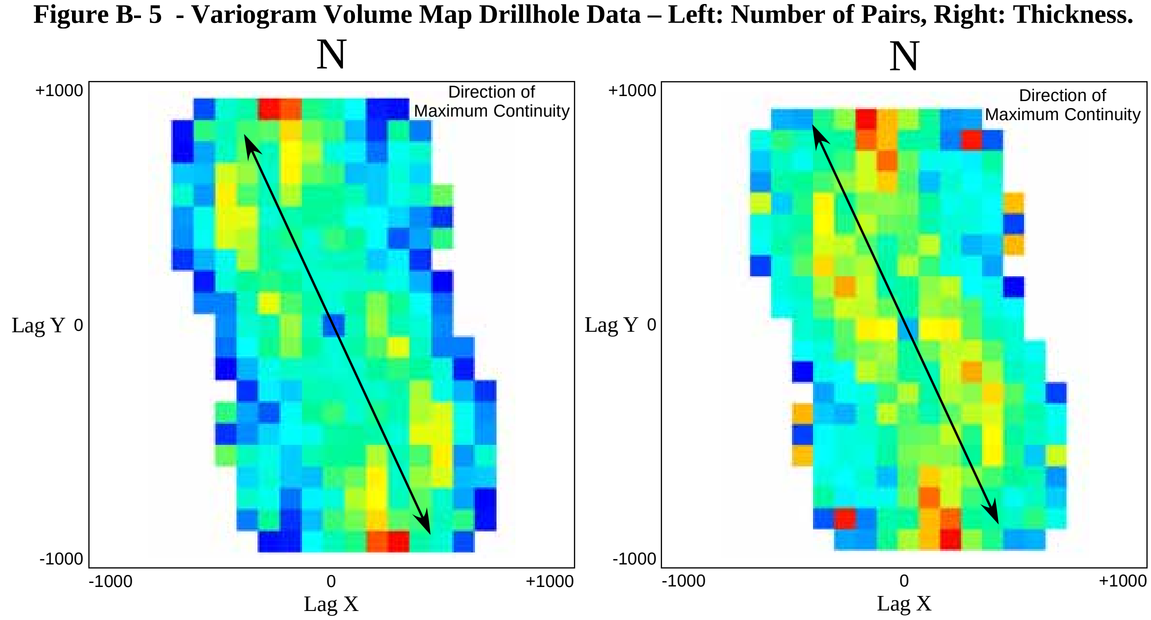


Figure B- 6 - Variogram Volume Map Drillhole Data – Left: Ag Accumulation, Right: Au Accumulation.

Variogram Models – Guanacevi Channel Data

TW Channel Data

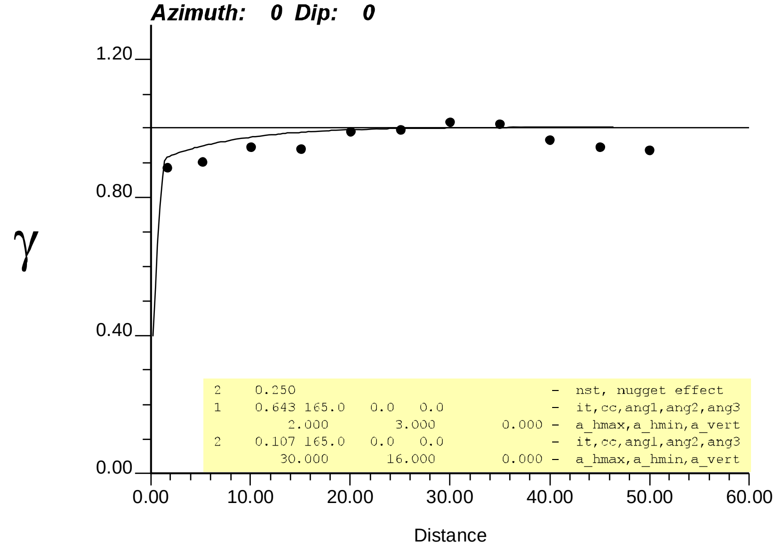


Figure B- 7 - Channel Data TW Omnidirectional Variogram

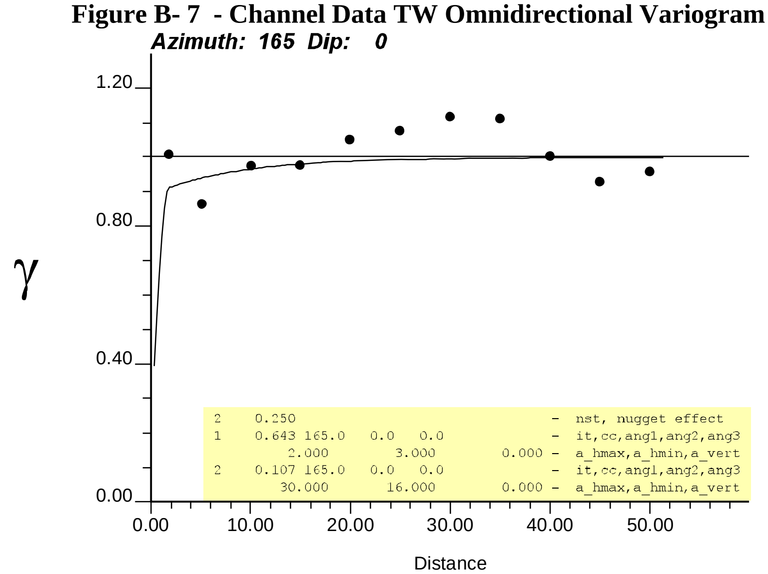


Figure B- 8 - Channel Data TW Variogram Principal Direction

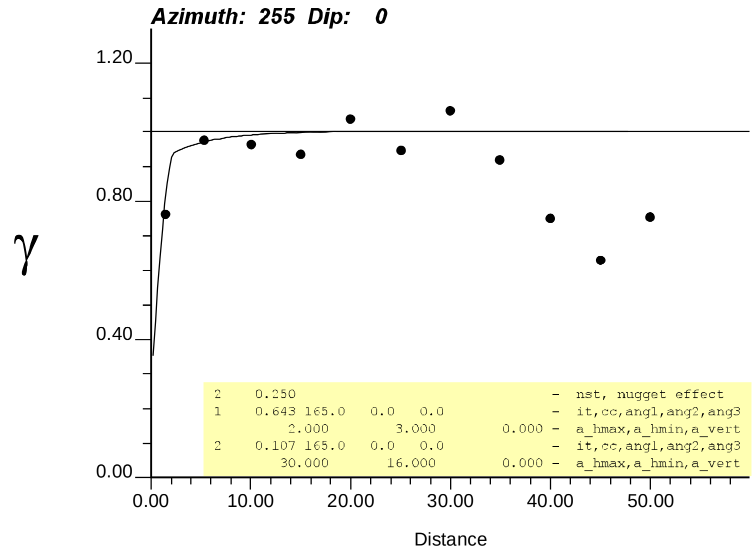


Figure B- 9 - - Channel Data TW Variogram Perpendicular Direction

$$\gamma(\mathbf{h}) = 0.025 + 0.643 \cdot Sph_{\left(\frac{2.00}{30.00}\right)} + 0.107 \cdot Exp_{\left(\frac{3.00}{16.00}\right)}$$

Figure B- 10 - Channel Data Au Variogram Model

Au Accumulation Channel Data

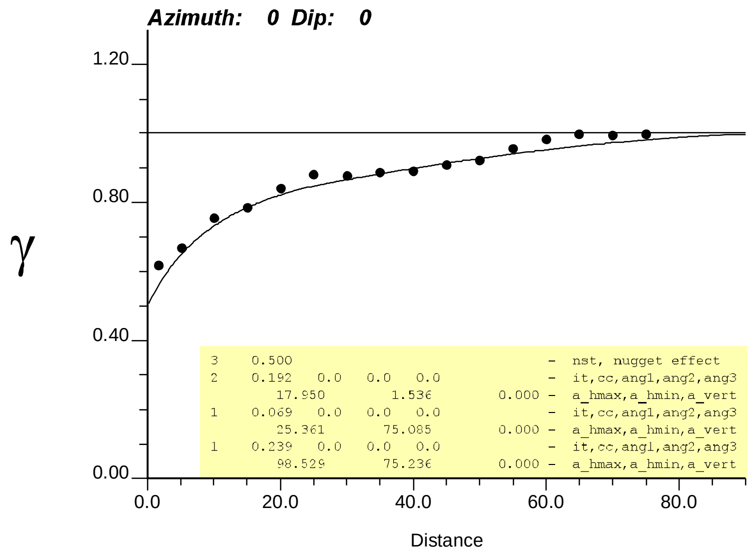


Figure B- 11 - Channel Data Au Omnidirectional Variogram

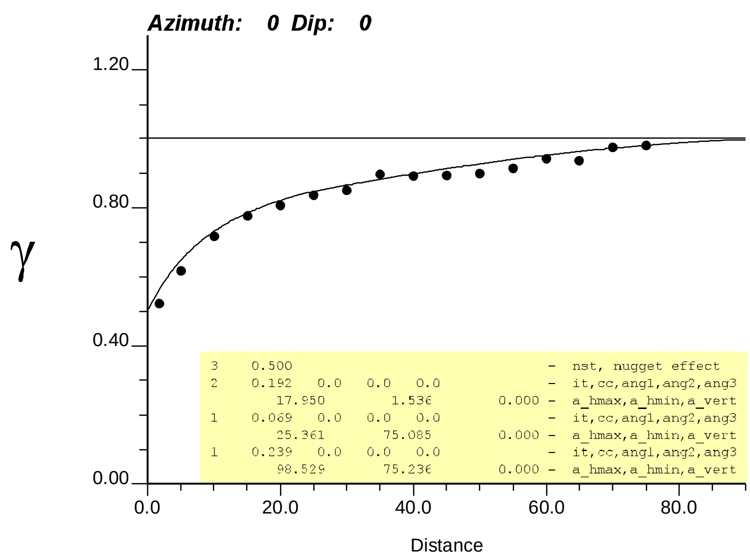


Figure B- 12 - Channel Data Au Variogram Principal Direction

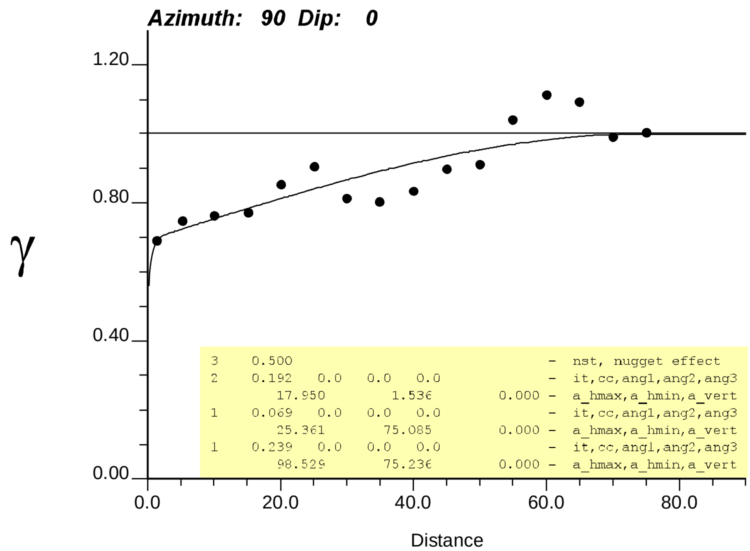


Figure B- 13 - Channel Data Au Variogram Perpendicular Direction

$$\gamma(\mathbf{h}) = 0.5 + 0.192 \cdot Exp_{\left(\frac{17.95}{1.56}\right)} + 0.69 \cdot Sph_{\left(\frac{25.36}{75.24}\right)} + 0.239 \cdot Sph_{\left(\frac{98.53}{75.24}\right)}$$

Figure B- 14 - Channel Data Au Variogram Model

Ag Accumulation Channel Data

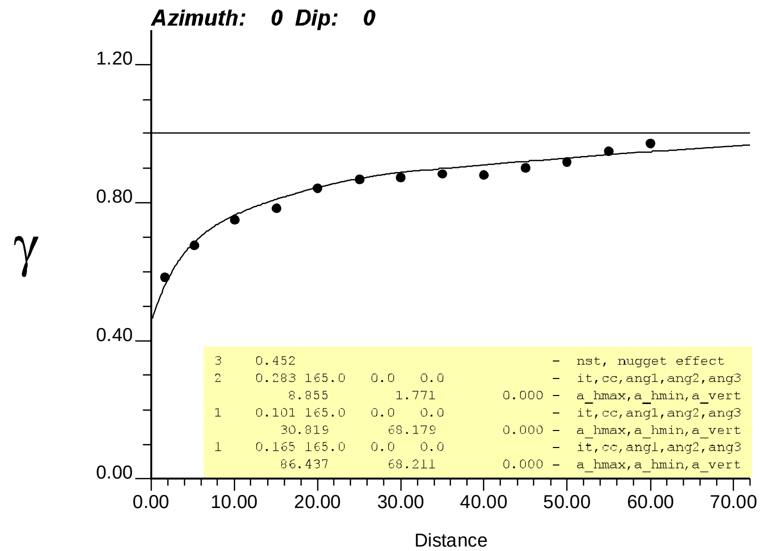


Figure B- 15 - Channel Data Ag Omnidirectional Variogram

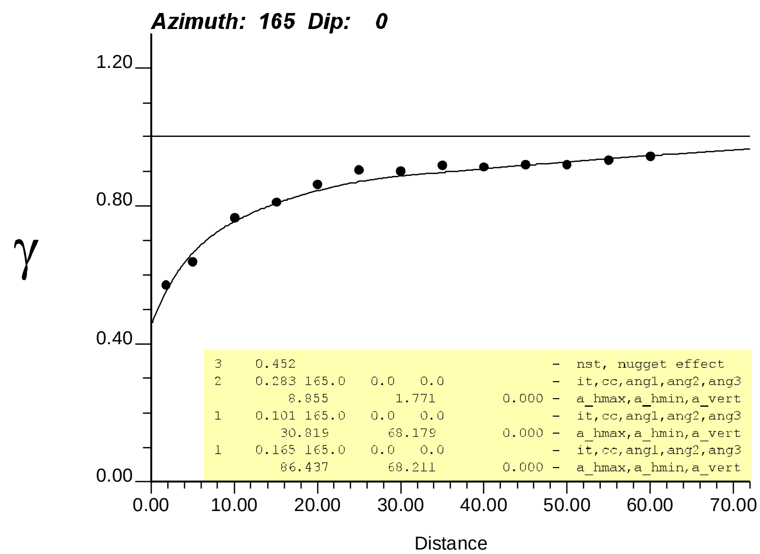


Figure B- 16 - Channel Data Ag Variogram Principal Direction

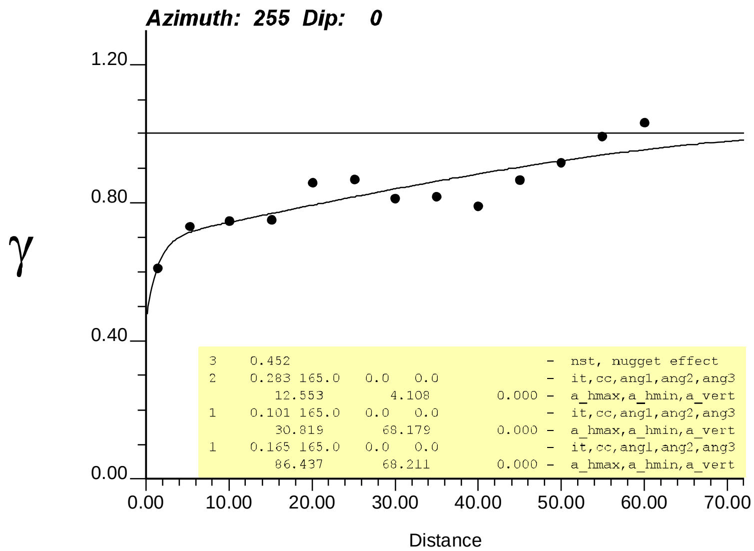


Figure B- 17 - Channel Data Ag Variogram Perpendicular Direction

$$\gamma(\mathbf{h}) = 0.452 + 0.283 \cdot Exp_{\left(\frac{8.86}{1.77}\right)} + 0.101 \cdot Sph_{\left(\frac{30.82}{68.18}\right)} + 0.165 \cdot Sph_{\left(\frac{86.44}{68.21}\right)}$$

Figure B- 18 - Channel Data Ag Variogram Model

Variogram Models – Guanacevi Drillhole Data

TW Drillhole Data

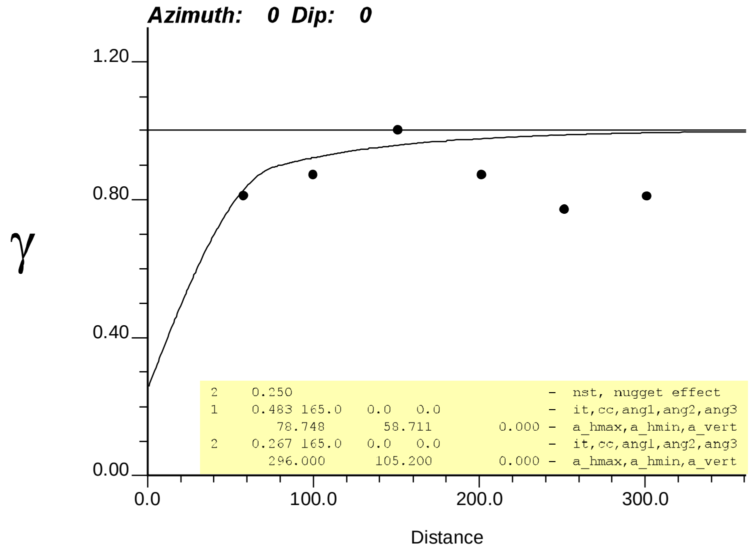


Figure B- 19 - Drillhole TW Omnidirectional Variogram

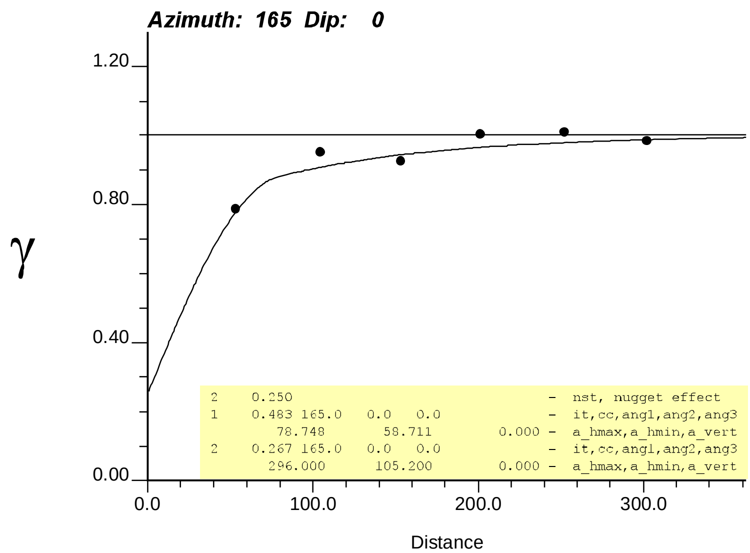


Figure B- 20 - Drillhole TW Principal Direction

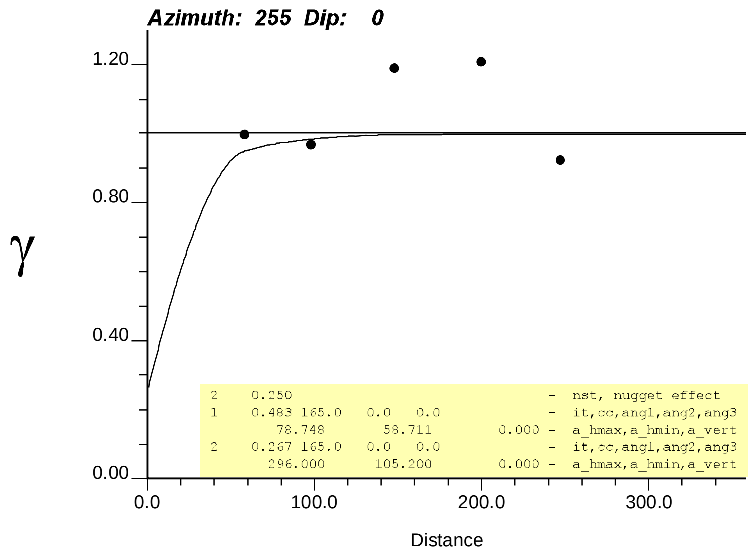


Figure B- 21 - Drillhole TW Perpendicular Direction

$$\gamma(\mathbf{h}) = 0.25 + 0.483 \cdot Sph_{\left(\frac{78.75}{58.71}\right)} + 0.267 \cdot Exp_{\left(\frac{296.00}{105.20}\right)}$$

Figure B- 22 – Drillhole Data TW Variogram Model

Au Accumulation Drillhole Data

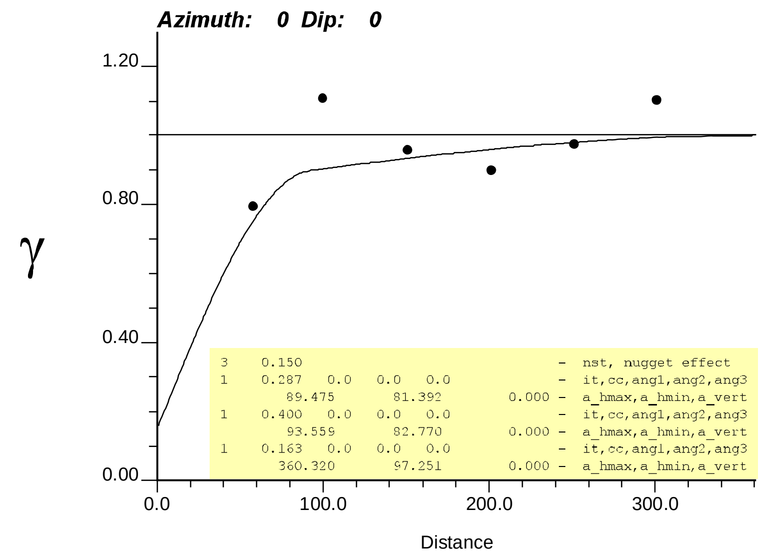


Figure B- 23 – Drillhole Au Omnidirectional Variogram

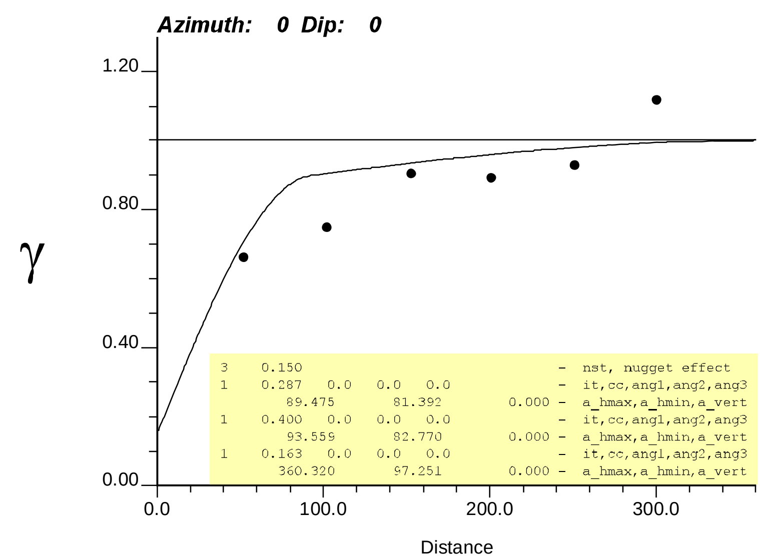


Figure B- 24 - Drillhole Au Variogram Principal Direction

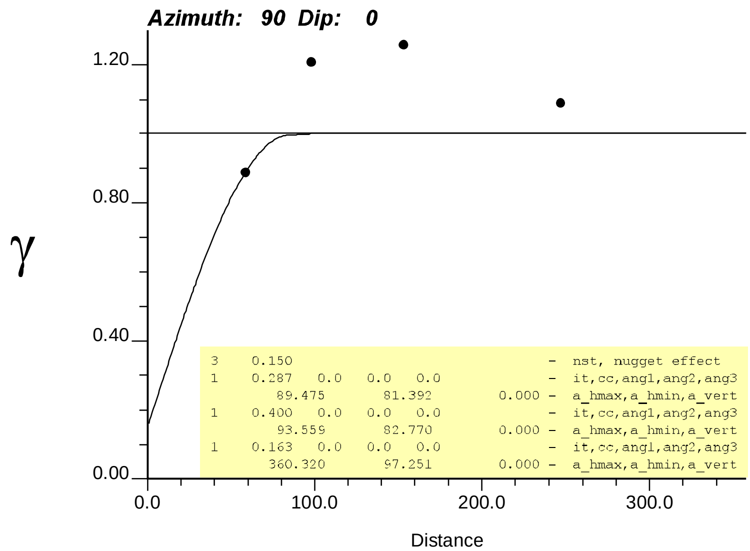


Figure B- 25 - Drillhole Au Variogram Perpendicular Direction

$$\gamma(\mathbf{h}) = 0.15 + 0.287 \cdot Sph_{\left(\frac{89.48}{81.34}\right)} + 0.400 \cdot Sph_{\left(\frac{93.56}{82.77}\right)} + 0.163 \cdot Sph_{\left(\frac{360.44}{97.25}\right)}$$

Figure B- 26 - Drillhole Data Au Variogram Model

Ag Accumulation Drillhole Data

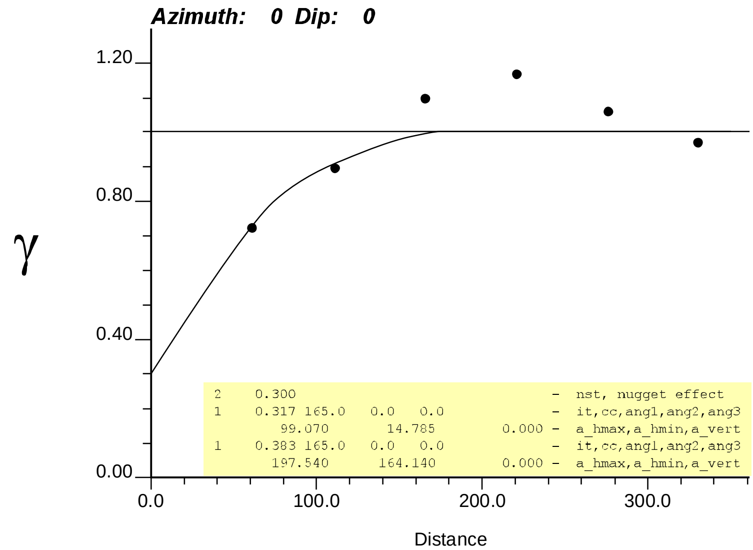


Figure B- 27 - Drillhole Data Ag Omnidirectional Variogram

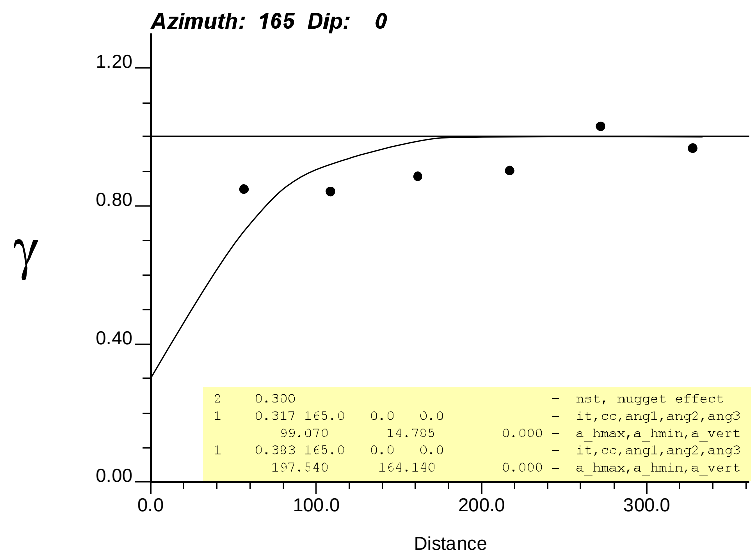


Figure B- 28 - Drillhole Ag Variogram Principal Direction

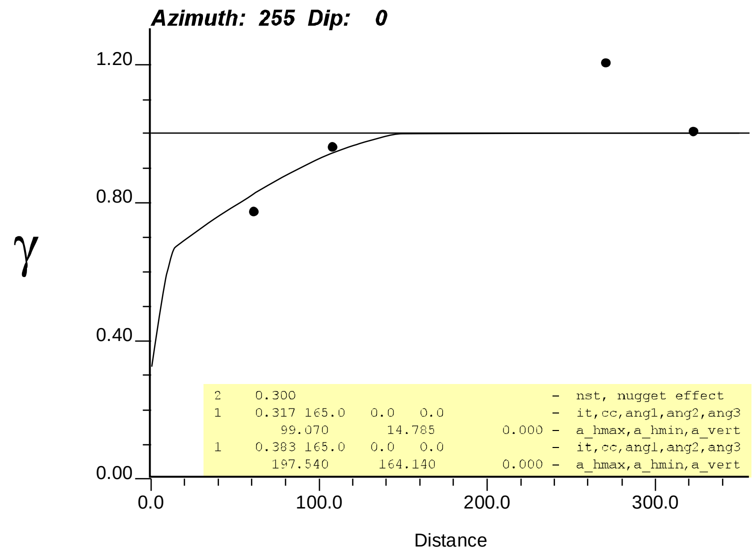


Figure B- 29 - Drillhole Ag Variogram Perpendicular Direction

$$\gamma(\mathbf{h}) = 0.300 + 0.317 \cdot Sph_{\left(\frac{99.07}{14.79}\right)} + 0.383 \cdot Sph_{\left(\frac{197.54}{164.14}\right)}$$

Figure B- 30 - Drillhole Data Ag Variogram Model

APPENDIX C

DETAILS ON THE GUNACEVI MINES PROJECT

PRIORITY EXPLORATION TARGETS

1.1 Noche Buena

During 2008, diamond drilling programs in the Noche Buena area of the San Pedro sub-district identified a potentially widespread zone of silver (gold)-lead-zinc mineralization. The target consists of a large mineralized vein/stockwork/ manto system comprised of narrow (1-3 cm), discontinuous veinlets. Primary sulphide minerals include sphalerite, galena, minor pyrite and rare chalcopyrite. The gangue consists of quartz, carbonate, adularia and minor fluorite. The Noche Buena target is hosted mainly in Tertiary volcaniclastic andesite, which overlies the older Guanaceví conglomerates in the area.

The best example so far of Noche Buena-type mineralization was intercepted in Hole NB2-1. This hole encountered a zone of vein/stockwork mineralization averaging 89 g/t Ag, 0.10 g/t Au, 0.22% Pb and 0.43% Zn over 30.2 m (true width).

Late in 2008, soil samples were taken from a surveyed grid previously completed for geophysics in the Noche Buena target area (Figure 20.1). The objective of this soil sample program is to delineate the extent of the geochemical expression of this target for possible future trenching and drilling.

A total of 423 soil samples have been collected to-date (Figure 20.1). Assay results for these samples are pending.

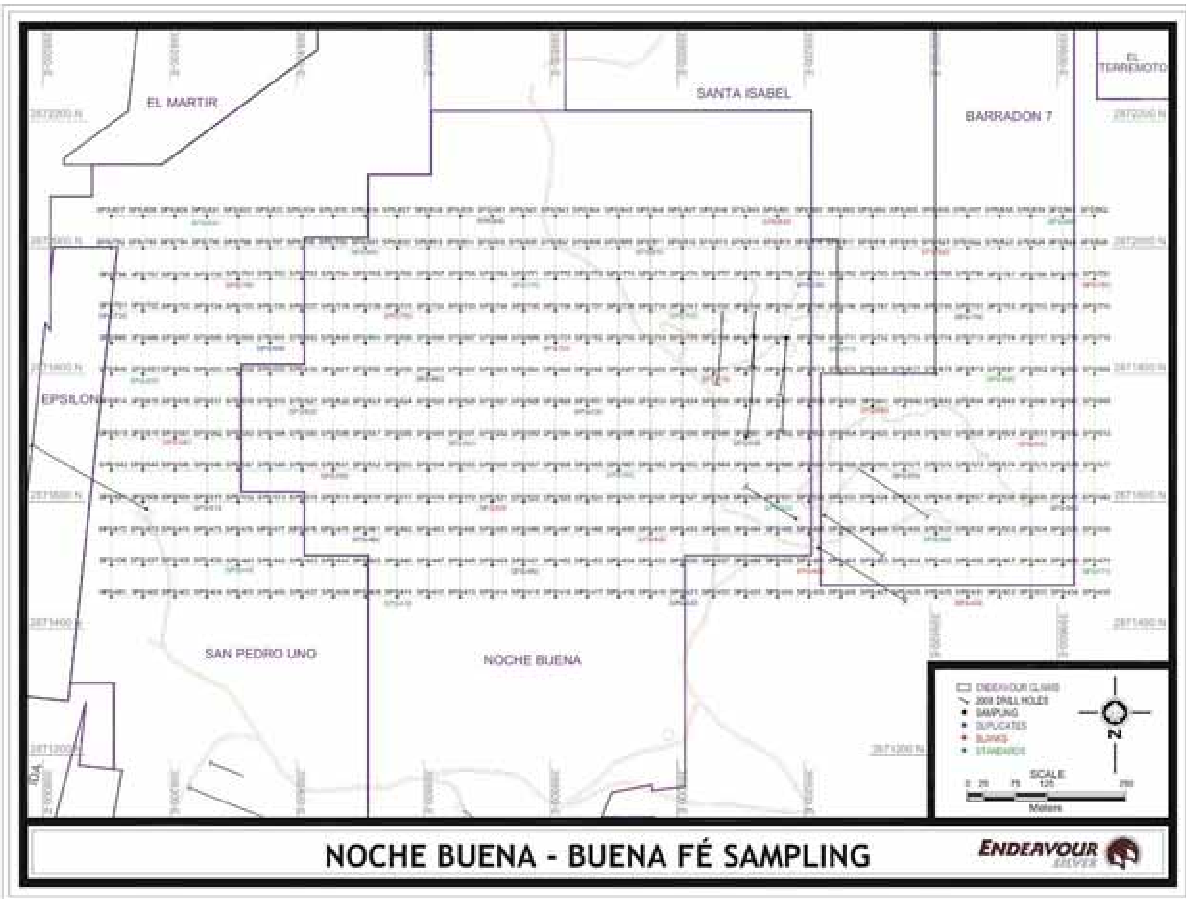
2009 Exploration Program

Proposed 2009 exploration on the Noche Buena target includes:

- Follow-up mapping and sampling of the Noche Buena mineralized zone.
- Geochemical assaying of soil samples collected in 2008.
- Trenching mainly for bedrock sampling of soil-covered Noche Buena structures.
- Surface diamond drilling to test the highest-grade and best mineralized structures identified in the soil sampling and trenching programs in Noche Buena target area.

A total of 900 m of trenching and 1,500 m in five surface diamond drill holes are proposed.

Figure1.1
Surface Map showing Endeavour's Concessions and the Location of the Soil Sample Grid in the Noche Buena Area



Budget

The estimated cost of the program is US$325,000 (Table 20.2). The approximate time-frame for execution of this program, including trenching and drilling, is approximately six months.

Table 1.1
Proposed Budget for Noche Buena Exploration Program

Activity (units)	Units	Unit Cost (US$)	Total Cost (US$)
Soil and trench assays (sample)	1,600	30	48,000
Core assays (sample)	450	40	18,000
Surface diamond drilling (m)	1,500	125	187,500
Field & office supplies (weeks)	25	240	6,000
Housing and food (weeks)	25	360	9,000
Geology and engineering personnel (weeks)	25	840	21,000
Salaries - labour (weeks)	25	180	4,500
Trenches, roads, drill pads and reclamation (weeks)	25	520	13,000

Activity (units)	Units	Unit Cost (US$)	Total Cost (US$)
Travel and lodging (weeks)	25	40	1,000
Vehicle inc. Gasoline, repair and maintenance (weeks)	25	240	6,000
Surface use agreements - ejidos (months)	2	5,000	10,000
Expenses non deductible (weeks)	25	40	1,000
		Total	**325,000**

1.2 Porvenir Cuatro

In February, 2009, Endeavour acquired the Porvenir Cuatro (~30 ha) and La Brisa (~25 ha) concessions located in the Guanaceví Mining district. The properties are accesible by gravel road, about a 12 km drive through the village of San Pedro, northwest of the town of Guanaceví. The Porvenir Cuatro concession is also northwest of Endeavour's Porvenir mine and Porvenir Dos development project, both located on the same Santa Cruz vein structure as Porvenir Cuatro. There has been limited historic production from the Serrano mine on Porvenir Cuatro. There has also been very little exploration work conducted on either concession.

The Porvenir Cuatro concession is along the trend of the Santa Cruz vein, approximately 2 to 3 km northwest of Endeavour's Porvenir mine. On Porvenir Cuatro, the Santa Cruz structure outcrops for approximately 500 m of strike length. A possible extension of another 170 m, northwest of the Serrano Mine, increases the possible total strike length to about 670 m.

The Santa Cruz vein is a normal fault defining the western edge of a large horst block that forms the core of the Guanaceví district and the San Pedro sub-district to the north. The Santa Cruz vein observed on Porvenir Cuatro mainly consists of a quartz-calcite+/- barite vein with manganese oxides and fine disseminations of argentite, as observed in the Serrano mine workings and dumps. Abundant manganese oxides are also observed locally. In outcrop, the vein occurs as fine grained quartz to chalcedony (low temperature?) in argillized and locally silicified andesite host rock. The structure has two flexural changes. To the southeast, near Porvenir Dos, it strikes N25°W with a dip of 55° SW. About 250 m to the northwest, in the central part of Porvenir Cuatro, it changes to N55°W with a dip of 48° SW. Where this strike change is observed, the Santa Cruz vein is wider, ranging from one metre up to 2.5 m across. Furthermore, in this flexural zone there are possibly two subparallel, subsidiary structures oblique to the main Santa Cruz structure. One of these oblique structures marks a sharp contact with the polymictic conglomerate (Conglomerate Guanaceví Kcog) and the other occurs within the conglomerate. The latter is an irregular 1-2 m wide structure. Beyond the Serrano mine to the northwest, the Santa Cruz vein varies in strike from N15°-35°W with dip of 40°-50°.

In March, 2009, Endeavour's exploration crew began surveying cross-section lines in the field every 50 m. Cross-sections are continuing at regular 50-metre spacings starting from the last drill cross-section made in Porvenir Dos. A geological mapping and sampling program along the Santa Cruz vein and north-northeast veins in the conglomerate is also being investigated in the field. Once surveying and geological mapping have been completed, drill holes will be planned for Phase 1 surface diamond drilling on Porvenir Cuatro.

2009 Exploration Program

Proposed exploration on Porvenir Cuatro will include:

Surface diamond drilling to test the Santa Cruz vein structure and ancillary vein mineralization in the hanging wall will be undertaken. Surface, and possibly underground mapping and sampling of old workings, is also planned.

A total of 1,200 m in four surface diamond drill holes is proposed for Phase 1 (Table 20.3). The location of the proposed holes shown is preliminary. The actual location of pierce points for proposed holes will be finalized once surface surveying and mapping, both surface and underground, have been completed.

Target Potential: 3 million oz Ag

The Porvenir Cuatro target potential is based on a minimum target with the hypothetical dimensions of 500 m long with an average thickness of 2.0 m and a 450 m down-dip projection. A specific gravity of 2.5 was used for estimating the volume. Only half of the estimated volume was used for the tonnage estimate because of the triangular wedge formed by projecting the Santa Cruz vein to where it intersects the concession limits at depth. The tonnage potential is estimated at 280,000 tonnes. Using the average grade for the nearby Porvenir Dos concession (360 g/t Ag), an approximate 3 million oz Ag potential is estimated. This is similar to the contained silver ounces defined by drilling on Porvenir Dos.

Budget

The estimated total cost of the program is US$180,000 (Table 20.3). The approximate time-frame for execution of this drilling program is approximately two months.

An initial property payment of US$100,000 was paid to the vendors to acquire this property in February, 2009.

Table 1.2
Proposed Budget for Porvenir Cuatro Exploration Program

ACTIVITY (units)	Units	Unit Cost (US$)	Total Cost (US$)
Core assays (sample)	400	40	16,000
Surface diamond drilling (m)	1,200	125	150,000
Field & office supplies (weeks)	5	240	1,200
Housing and food (weeks)	5	200	1,000
Geology & engineering personnel (weeks)	5	600	3,000
Salaries - labour (weeks)	5	100	500

ACTIVITY (units)	Units	Unit Cost (US$)	Total Cost (US$)
Trenches, roads, drill pads & reclamation (weeks)	5	400	2,000
Travel & lodging (weeks)	5	30	150
Vehicle inc. Gasoline, repair & maintenance (weeks)	5	200	1,000
Surface use agreements - ejidos (months)	1	5,000	5,000
Expenses non deductible (weeks)	5	30	150
Total			**180,000**

1.3 Porvenir Mine

As part of its ongoing underground exploration at the Guanaceví Mines project, Endeavour Silver is budgeting to spend an estimated US$791,000 on diamond drilling at the Porvenir mine in a combined exploration and definition drilling program to include both surface and underground drill holes, in an effort to continue to expand the resource base (Table 20.4). Approximately 5,000 metres of drilling in 15 holes is planned. The focus will be on upgrading resources to reserves and delineating new resources within or adjacent to existing resources at the Porvenir mine.

Table 1.3
Porvenir Mine Drilling Budget for 2009

Area	Cost (US$)
Porvenir Deep (Underground drilling)	$ 190,000
Porvenir Deep / North (Surface drilling)	$ 533,000
Porvenir Central (Underground drilling)	$ 68,000
TOTAL	**$ 791,000**

APPENDIX D

GLOSSARY OF MINING TERMS

GLOSSARY AND DEFINED TERMS

The following is a glossary of certain mining terms that may be used in this Technical Report.

A

Adit	A horizontal passage from the surface into the mine providing access to a mineral deposit.
Ag	Silver.
Assay	A chemical test performed on a sample of ores or minerals to determine the amount of valuable metals contained.
Au	Gold.

B

Backfill	Waste material used to fill the void created by mining an orebody.
Ball mill	A steel cylinder filled with steel balls into which crushed ore is fed. The ball mill is rotated, causing the balls to cascade and grind the ore.
Base metal	Any non-precious metal (eg. copper, lead, zinc, nickel, etc.).
Blasthole	A drill hole in a mine that is filled with explosives in order to blast loose a quantity of rock.
Block caving	An inexpensive method of mining in which large blocks of ore are undercut, causing the ore to break or cave under its own weight.
Bulk mining	Any large-scale, mechanized method of mining involving many thousands of tonnes of ore being brought to surface per day.
Bulk sample	A large sample of mineralized rock, frequently hundreds of tonnes, selected in such a manner as to be representative of the potential orebody being sampled. Used to determine metallurgical characteristics.
Bullion	Metal formed into bars or ingots.
Byproduct	A secondary metal or mineral product recovered in the milling process.

C

Calcine	Name given to concentrate that is ready for smelting (i.e. the sulphur has been driven off by oxidation).
Chalcopyrite	A sulphide mineral of copper and iron; the most important ore mineral of copper.

Channel sample	A sample composed of pieces of vein or mineral deposit that have been cut out of a small trench or channel, usually about 10 cm wide and 2 cm deep.
Chip sample	A method of sampling a rock exposure whereby a regular series of small chips of rock is broken off along a line across the face.
Chute	An opening, usually constructed of timber and equipped with a gate, through which ore is drawn from a stope into mine cars.
CIM Standards	The CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council from time to time.
CIM	The Canadian Institute of Mining, Metallurgy and Petroleum.
Concentrate	A fine, powdery product of the milling process containing a high percentage of valuable metal.
Contact	A geological term used to describe the line or plane along which two different rock formations meet.
Core	The long cylindrical piece of rock, about an inch in diameter, brought to surface by diamond drilling.
Core sample	One or several pieces of whole or split parts of core selected as a sample for analysis or assay.
Cross-cut	A horizontal opening driven from a shaft and (or near) right angles to the strike of a vein or other orebody. Also used to signify that a drill hole is crossing the mineralization at or near right angles to it.
Cu	Copper.
Custom smelter	A smelter which processes concentrates from independent mines. Concentrates may be purchased or the smelter may be contracted to do the processing for the independent company.
Cut-off grade	The lowest grade of mineralized rock that qualifies as ore grade in a given deposit, and is also used as the lowest grade below which the mineralized rock currently cannot be profitably exploited. Cut-off grades vary between deposits depending upon the amenability of ore to gold extraction and upon costs of production.
Cyanidation	A method of extracting exposed gold or silver grains from crushed or ground ore by dissolving it in a weak cyanide solution. May be carried out in tanks inside a mill or in heaps of ore out of doors.
Cyanide	A chemical species containing carbon and nitrogen used to dissolve gold and silver from ore.

D

Dacite	The extrusive (volcanic) equivalent of quartz diorite.

Decline	A sloping underground opening for machine access from level to level or from surface; also called a ramp.
Deposit	An informal term for an accumulation of mineralization or other valuable earth material of any origin.
Development	Underground work carried out for the purpose of opening up a mineral deposit. Includes shaft sinking, cross-cutting, drifting and raising.
Development drilling	Drilling to establish accurate estimates of mineral resources or reserves.
Dilution	Rock that is, by necessity, removed along with the ore in the mining process, subsequently lowering the grade of the ore.
Diorite	An intrusive igneous rock composed chiefly of sodic plagioclase, hornblende, biotite or pyroxene.
Dip	The angle at which a vein, structure or rock bed is inclined from the horizontal as measured at right angles to the strike.
Drift	A horizontal or nearly horizontal underground opening driven along a vein to gain access to the deposit.

E

Ejido	A local community of people who own the surface rights to an area of land
Endeavour Silver	Endeavour Silver Corp., including, unless the context otherwise requires, the Company's subsidiaries.
Epithermal	Hydrothermal mineral deposit formed within one kilometer of the earth's surface, in the temperature range of 50–200°C.
Epithermal deposit	A mineral deposit consisting of veins and replacement bodies, usually in volcanic or sedimentary rocks, containing precious metals or, more rarely, base metals.
Exploration	Prospecting, sampling, mapping, diamond drilling and other work involved in searching for ore.

F

Face	The end of a drift, cross-cut or stope in which work is taking place.
Fault	A break in the Earth's crust caused by tectonic forces which have moved the rock on one side with respect to the other.

Flotation	A milling process in which valuable mineral particles are induced to become attached to bubbles and float as others sink.
Fold	Any bending or wrinkling of rock strata.
Footwall	The rock on the underside of a vein or ore structure.
Fracture	A break in the rock, the opening of which allows mineral-bearing solutions to enter. A "cross-fracture" is a minor break extending at more-or-less right angles to the direction of the principal fractures.

G

g/t	Grams per metric tonne.
Galena	Lead sulphide, the most common ore mineral of lead.
g/t	Grams per tonne.
Grade	Term used to indicate the concentration of an economically desirable mineral or element in its host rock as a function of its relative mass. With gold, this term may be expressed as grams per tonne (g/t) or ounces per tonne (opt).
Gram	0.0321507 troy ounces.

H

Hanging wall	The rock on the upper side of a vein or ore deposit.
High grade	Rich ore. As a verb, it refers to selective mining of the best ore in a deposit.
Host rock	The rock surrounding an ore deposit.
Hydrothermal	Processes associated with heated or superheated water, especially mineralization or alteration.

I

Indicated Mineral Resource

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.

Inferred Mineral Resource

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.

Intrusive — A body of igneous rock formed by the consolidation of magma intruded into other

K

km — Kilometre(s). Equal to 0.62 miles.

L

Leaching — The separation, selective removal or dissolving-out of soluble constituents from a rock or ore body by the natural actions of percolating solutions.

Level — The horizontal openings on a working horizon in a mine; it is customary to work mines from a shaft, establishing levels at regular intervals, generally about 50 m or more apart.

Limestone — A bedded, sedimentary deposit consisting chiefly of calcium carbonate.

M

m — Metre(s). Equal to 3.28 feet.

Marble — A metamorphic rock derived from the recrystallization of limestone under intense heat and pressure.

Measured Mineral Resource

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

Metallurgy — The science and art of separating metals and metallic minerals from their ores by mechanical and chemical processes.

Metamorphic	Affected by physical, chemical, and structural processes imposed by depth in the earth's crust.
Mill	A plant in which ore is treated and metals are recovered or prepared for smelting; also a revolving drum used for the grinding of ores in preparation for treatment.
Mine	An excavation beneath the surface of the ground from which mineral matter of value is extracted.
Mineral	A naturally occurring homogeneous substance having definite physical properties and chemical composition and, if formed under favorable conditions, a definite crystal form.
Mineral Claim	That portion of public mineral lands which a party has staked or marked out in accordance with federal or state mining laws to acquire the right to explore for and exploit the minerals under the surface.
Mineralization	The process or processes by which mineral or minerals are introduced into a rock, resulting in a valuable or potentially valuable deposit.
Mineral Resource	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 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 term mineral resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which mineral reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socio-economic and governmental factors. The phrase reasonable prospects for economic extraction implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. A mineral resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions, might become economically extractable. The term mineral resource used in this AIF is a Canadian mining term as defined in accordance with NI 43-101 – Standards of Disclosure for Mineral Projects under the guidelines set out in the Canadian Institute of Mining, Metallurgy and Petroleum (the CIM), Standards on Mineral Resource and Mineral Reserves Definitions and guidelines adopted by the CIM Council on August 20, 2000 (the CIM Standards).

N

Net Smelter Return

A payment made by a producer of metals based on the value of the gross metal production from the property, less deduction of certain limited costs including smelting, refining, transportation and insurance costs.

O

Outcrop	An exposure of rock or mineral deposit that can be seen on surface, that is, not covered by soil or water.
Oxidation	A chemical reaction caused by exposure to oxygen that results in a change in the chemical composition of a mineral.
Ounce	A measure of weight in gold and other precious metals, correctly troy ounces, which weigh 31.2 grams as distinct from an imperial ounce which weigh 28.4 grams.
oz	Ounce

P

Plant	A building or group of buildings in which a process or function is carried out; at a mine site it will include warehouses, hoisting equipment, compressors, maintenance shops, offices and the mill or concentrator.
Pyrite	A common, pale-bronze or brass-yellow, mineral. Pyrite has a brilliant metallic luster and has been mistaken for gold. Pyrite is the most wide-spread and abundant of the sulphide minerals and occurs in all kinds of rocks.

Q

Qualified Person	Conforms to that definition under NI 43-101 for an individual: (a) to be an engineer or geoscientist with at least five years' experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these; (b) to have experience relevant to the subject matter of the mineral project and the technical report; and (c) to be a member in good standing of a professional association that, among other things, is self-regulatory, has been given authority by statute, admits members based on their qualifications and experience, requires compliance with professional standards of competence and ethics and has disciplinary powers to suspend or expel a member.

R

Raise	A vertical hole between mine levels used to move ore or waste rock or to provide ventilation.

Ramp	An inclined underground tunnel which provides access for exploration or a connection between levels of a mine.
Reclamation	The restoration of a site after mining or exploration activity is completed.
Recovery Rate	A term used in process metallurgy to indicate the proportion of valuable material obtained in the processing of an ore. It is generally stated as a percentage of the material recovered compared to the total material present.
Refining	The final stage of metal production in which impurities are removed from the molten metal.
Refractory ore	Ore that resists the action of chemical reagents in the normal treatment processes and which may require pressure leaching or other means to effect the full recovery of the valuable minerals.

S

Shaft	A vertical passageway to an underground mine for moving personnel, equipment, supplies and material including ore and waste rock.
Shoot	A concentration of mineral values; that part of a vein or zone carrying values of ore grade.
Skarn	Name for the metamorphic rocks surrounding an igneous intrusive where it comes in contact with a limestone or dolostone formation.
Sphalerite	A zinc sulphide mineral; the most common ore mineral of zinc.
Stockpile	Broken ore heaped on surface, pending treatment or shipment.
Stope	An area in an underground mine where ore is mined.
Strike	The direction, or bearing from true north, of a vein or rock formation measureon a horizontal surface.
Stringer	A narrow vein or irregular filament of a mineral or minerals traversing a rock mass.
Sulphides	A group of minerals which contains sulfur and other metallic element such as copper and zinc. Gold is usually associated with sulphide enrichment in mineral deposits.

T

Tailings	Material rejected from a mill after most of the recoverable valuable minerals have been extracted.
Tailings pond	A low-lying depression used to confine tailings, the prime function of which is to allow enough time for heavy metals to settle out or for cyanide to be destroyed before water is discharged into the local watershed.
Tonne	A metric ton of 1,000 kilograms (2,205 pounds).

Tunnel	A horizontal underground opening, open to the atmosphere at both ends.

V

Vein	A fissure, fault or crack in a rock filled by minerals that have travelled upwards from some deep source.

W

Wall rocks	Rock units on either side of an orebody. The hanging wall and footwall rocks of an orebody.
Waste	Unmineralized, or sometimes mineralized, rock that is not minable at a profit.

Z

Zone - An area of distinct mineralization.