MINE DEVELOPMENT ASSOCIATES

MINE ENGINEERING SERVICES

Technical Report Update

on the

El Dorado Project Gold and Silver Resources,

Department of Cabañas, Republic of El Salvador

March 3, 2008

Prepared for

PACIFIC RIM MINING CORPORATION

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1.0 SUMMARY

Pacific Rim Mining Corporation ("Pacific Rim") is exploring and developing the El Dorado Project in El Salvador. Pacific Rim engaged Mine Development Associates ("MDA") to prepare new resource estimates for the vein deposits in the Bálsamo/Cerro Alto area. The El Dorado Project's resources are gold and silver mineralization in steeply dipping epithermal veins. MDA has not changed already stated resource estimates most recently updated in 2006. The purpose of this report is to disclose the new resource estimates.

The resource estimates were prepared by the principal author, Steven Ristorcelli of MDA. MDA requested that the second author, Peter A. Ronning ("Ronning"), assist in the preparation of the data underlying the resource estimate, and in the writing and compiling of the present report. Ken Reipas, P. Eng. and Tom Rannelli, P. Eng., Al Kuestermeyer, P. Eng., Terry Braun, P. Eng., all of SRK Consulting ("SRK") and all Qualified Persons in their respective fields, have restated information related to past work done on the pre-feasibility, engineering, metallurgy and economics of the Minita and South Minita areas. Information concerning land status was obtained directly from Mr. William Gehlen of Pacific Rim who updated the information received in 2006 from two letters by the legal firm Rusconi, Valdez, Medina & Asociados, dated February 20, 2006, and from Pacific Rim Mining S.A. de C.V. Permitting and environmental work was also updated by Mr. William Gehlen of Pacific Rim. Engineering work and metallurgical work completed since the last report in 2006 have been updated.

1.1 Property Description

The El Dorado Project is located in the Department of Cabañas approximately 74 km northeast of San Salvador, the capital city of El Salvador, and 10 km southwest of the town of Sensuntepeque. Three Exploration Licenses and one pending Exploitation Concession, together covering approximately 15,640 hectares, comprise the El Dorado property. Pacific Rim has obtained title opinions dated February 20, 2006, prepared by Luis A. Medina of Rusconi, Valdez, Medina & Asociados, which state that the three Exploration Licenses were at that time in good standing (Medina, 2006a, 2006b). According to Medina (2006a), the El Dorado Exploitation Concession was not yet granted but the company "…holds the sole priority, unimpeachable right to obtain the concession …". Pacific Rim informs MDA that, as of the date of this report, the three exploration licenses are still in good standing and the status of the application for an exploitation concession remains as it was at the time of Medina's reports in 2006. MDA has done no independent verification of the status of the licenses and concession and offers no opinion concerning their status.

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1.2 Geology

The El Dorado district can be subdivided into five sub-districts based on mineralization: North, Central, Central East, South and Southwest. The principal bedrock is fine-grained porphyritic andesite flows, andesite agglomerate and andesite porphyry of the Miocene Morazan Formation. Pliocene felsic volcanic rocks are present in the South and Southwest El Dorado sub-districts, where dacitic to rhyolitic tuffs are intruded by andesite porphyry in a sub-volcanic vent complex. The deposition of the Pliocene volcanic rocks partly overlaps with epithermal vein formation

The El Dorado district mineralization is dominated by north-trending epithermal chalcedonic-quartz and carbonate veins, with lesser but still-significant chalcedonic-quartz and carbonate veins having northwesterly or northeasterly trends. The veins are controlled by two pronounced structural elements: N30°W- to N30°E-trending tensional faults and systems of northwest-trending strike-slip faults. The largest veins can be traced for up to three kilometers and can be up to tens of meters wide. The veins generally dip steeply, and usually form topographic ridges. The gold- and silver-bearing veins of the El Dorado district, of which at least 36 exceed one meter in width, occur over an area exceeding 50 km^2. They belong to the low-sulfidation class of epithermal precious metal deposits.

The dominant components of the El Dorado veins are chalcedonic quartz and calcite. The veins generally contain less than 1% to 2% sulfides. The multistage paragenetic nature of the veins implies that quartz, calcite and gold- and silver-bearing minerals have been introduced in several stages. Massive chalcedony is cut by crustiform-colloform banded chalcedony and/or breccias containing massive to crustiform-colloform banded fragments. The vein minerals include adularia, sericite, pyrite, acanthite, electrum, native gold, native silver, chalcopyrite, sphalerite, and galena. The opaque minerals generally comprise less than 1% of the vein but may form a significant portion of individual gray to black bands. Individual gold grains, up to 0.1 mm in diameter, have been observed in polished sections, associated with chalcopyrite and lesser pyrite. There are no known instances of gold that is visible to the naked eye or with a low-power lens.

Exploration by Pacific Rim and its predecessors has resulted in the delineation of six mineralized areas with multi-vein deposits for which resources can be estimated at the present time. Four of them, the Minita, South Minita, Bálsamo/Cerro Alto and Nueva Esperanza deposits, appear to be aligned along a northerly trend or structural zone. The other two deposits with resources, La Coyotera and Nance Dulce, are each distinct from other known resources and each other.

The main historic production at the El Dorado district was derived from four main veins in the Minita deposit, within an area about 700-m long and 300-m wide. These steeply dipping veins were the Minita, Zancudo, Minita 3 and El Dorado veins. The Minita and to a lesser extent Zancudo veins account for the bulk of historic production.

The Minita vein, the largest of the defined veins in the Minita deposit, trends roughly north-south over a strike length of at least 900 m. Widths average three meters but reach over nine meters. The Minita 3 vein, located just east of the Minita vein, trends roughly north-south over a strike length of close to 600 m. The mean thickness at Minita 3 is one and one half meters but the more productive parts average closer to two and one half meters. The Zancudo vein is located between the El Dorado vein, on the west, and the Minita vein on the east. It trends roughly north-south over a strike length of at least 700 m. Vein widths average about one meter. Ten other veins in the Minita area have been defined but due to their size, their relatively low grade or to insufficient drilling, they have not been estimated.

The Nueva Esperanza vein is less than one kilometer north of, and along strike with the central part of the Minita area. A small resource has been defined at Nueva Esperanza, which comprises sub-parallel, massive, primarily chalcedonic quartz veins, thinner veins, and various concentrations of quartz stockwork-mineralized andesite. The structure dips moderately to the west. Potential to increase the resource exists along strike to the north where the vein remains untested.

The South Minita deposit was discovered in 2005 by Pacific Rim. The deposit begins about 200 m south of the southern extension of the Minita area. Ten veins contribute to the estimated South Minita resource but 75% of the resource lies in three veins, and one of these hosts 50% of the total South Minita resource. The South Minita veins dip steeply to moderately to the east. The total strike length of the South Minita resource area is approximately 1,000 m in a north direction, which is about one third of the known total mineralized trend that extends northward as far as Nueva Esperanza. The South Minita veins are similar in character to those at Minita, though they are thinner and less continuous than the best veins in the Minita area.

The Bálsamo/Cerro Alto veins, located about 500 m east of South Minita, were discovered in 2006. Drilling in 2006 and 2007 showed these veins to strike due north just like Minita and South Minita and dip moderately to the east at about 50^{o}, just like South Minta. Bálsamo is a fault zone containing three distinct veins; the structurally lowest of these three veins has most of the Bálsamo resource. Cerro Alto is a very strong single vein but has only low to moderate grades. Otherwise, the style of mineralization in both areas is similar to Minita and South Minita.

The La Coyotera vein system is just over one kilometer to the northwest of Nueva Esperanza. It has a strike length of over 1,200 m. The system trends approximately due north at its southern end and then bends to about N20°E for most of its length. Its dip is essentially vertical and it consists of one, two or locally more sub-parallel veins or mineralized structures. The La Coyotera “vein” is a complex multi-stage lode made up of massive gray to white, mostly recrystallized chalcedony, banded colloform quartz, and possibly hydrothermal breccias containing fragments of vein material, barren silica cement, and wallrock.

About 2.4 kilometers south-southwest of the South Minita deposit, a series of northwest-trending veins forms the Nance Dulce deposit. This deposit contains multiple veins, dominated by two steeply northeast-dipping veins that are interpreted to have reasonable continuity from drill hole to drill hole. Those two veins make up the Nance Dulce resource. The mineralization is similar, in its style and constituents, to that in the Minita and South Minita systems. The veins that contribute to the Nance Dulce resource, as presently understood, are thinner and less continuous than the best veins in the Minita system. The Nance Dulce vein system requires more drilling to better define the mineralization and upgrade the classification of the resource, with the possibility of expanding it.

1.3 Exploration

Exploration work completed includes geological mapping, geochemical rock sampling, hand trenching, and drilling. Several campaigns of drilling have been completed on the El Dorado Project throughout the last decade and one is ongoing as of this writing. The vast majority of the holes drilled on the El Dorado Project are core holes. There are 5,060 down hole surveys; 24,600 drill hole samples with at least one gold assay; 25,101 drill hole silver assays; 644 drill holes; and multiple fields of geologic data for most intervals. Reverse circulation drilling was employed to pre-collar some core holes, but was used for the entirety of seven holes at Nueva Esperanza in earlier drill campaigns. In the past there have been instances of low core recovery at El Dorado, mainly at La Coyotera. Since Pacific Rim began operating the project in 2002, however, core recovery has with few exceptions been very good.

1.4 Metallurgy

The gold-silver mineralization had been identified as acanthite, electrum, native gold, and native silver. The sulfide mineralization is pyrite, chalcopyrite and trace sphalerite and galena. Gravity separation is not considered as a viable recovery process.

Metallurgical testing has been completed for the previous owners by Colorado Mountain Research Institute, Mountain States Research Institute and Dawson Laboratories. Pacific Rim contracted with McClelland Laboratories Inc. to review previously completed work and to continue testwork. McClelland's initial testwork was reported in 2004. That work resulted in the determination of optimum conditions for extraction of gold and silver from composited Minita vein material. In 2007 McLelland completed large scale confirmatory cyanidation tests utilizing the optimum conditions determined in their 2004 work. The 2007 testwork used three core composites, one formed using vein material from the Minita deposit, one using material from the South Minita deposit, and a combined "overall" composite formed using material from the two deposits. According to McClelland, "Results show that the three composites were readily amenable to the processing sequence optimized for the MV (*Minita Vein - MDA*) core composite.

The El Dorado flowsheet consists of a crushing circuit, a single stage ball mill, vat leaching, a 5-stage CCD circuit and Merrill Crowe precipitation.

The leaching tests indicate that fine grinding (200 mesh), long leach times (48 hrs), and high cyanide strengths are required to achieve optimum gold and silver recoveries.

The operating recoveries for the El Dorado process plant are estimated to be 92% for gold and 83% for silver. In testing under optimum conditions, McClelland averaged 92.5% gold and 88.8% silver extractions for the Minita ore and 92.1% gold and 83.5% silver for the combined Minita-South Minita ores. Pocock's counter-current decantation ("CCD") balances indicate soluble recoveries of 99.2% to 99.6% in a four-stage CCD circuit. The soluble recovery in the planned five-stage CCD circuit will be 99.5%. Other losses for the plant slag and unaccounted losses will total about 0.45% recovery loss.

The current El Dorado process plant has a design throughput rating of 750 tpd at 90% availability. The ball mill and thickeners are sized for a 1,000 tpd maximum throughput circuit. The design crushing system is rated at 130 tph, which will provide crushing on an eight-hour shift for 835 tpd. The Merrill-Crowe and refinery systems are sized to handle the 1,000 tpd system. The leaching system is designed to provide 50 hours retention time at 835 tpd. In order to increase total plant throughput to 1,000 tpd, additional tanks will be required. Excess leaching time should be avoided. McClelland's test work indicates that even with pretreatment, slight preg robbing[1] will occur at 48 to 72 hrs leach time. A conventional five-stage CCD plant with doré recovery by zinc precipitation (Merrill-Crowe) will be used. Other options are filtration with a zinc precipitation or Carbon in Leach ("CIL") with doré recovery by electrowinning. The favorable settling characteristics of the ore favor the CCD over filtration. Numerous studies of the economics of CIL vs. CCD indicate that when the recovered silver to gold ratio is over 3.5, the economics favor the CCD. The El Dorado ratio is 8.0:1. The CCD system reduces the amount of cyanide reporting to the Inco cyanide destruction unit by one-third to one-half, reducing the Inco reagent costs.

1.5 Resources

Estimates of the El Dorado resources were completed relying heavily on geology and cross sectional interpretations. Classic three dimensional block models were made for La Coyotera and Nueva Esperanza resource estimates. Estimation was by kriging with checking by inverse distance and nearest neighbor methods. Variable-width long sectional or grade-accumulation three dimensional models were made for the Minita, South Minita, Bálsamo/Cerro Alto and Nance Dulce deposits. For these four deposits estimation was by inverse distance methods but was checked against kriged and nearest neighbor models. Capping levels varied depending upon the vein, the deposit and the area. Bulk density values used ranged from 2.42 g/cm^3 for some veins to 2.62 g/cm^3 for wallrock.

MDA classified the resources in order of increasing geological, analytical, sample and estimation confidence, into Inferred, Indicated and Measured categories to be in compliance with Canadian National Instrument 43-101 and the "CIM Definition Standards - For Mineral Resources and Mineral Reserves." MDA classified the El Dorado resources by a combination of distance to the nearest sample, the number of samples used to estimate a block, the confidence in certain drill intercept interpretations, sample quality, and the core recovery. The project-wide undiluted resources are given in Table 1.1. While the resources were estimated separately for gold and silver, the tabulation of resources was based on gold equivalent in grams per tonne (g AuEq/t). A ratio of 70 silver to 1 gold was used to establish the gold equivalent.

[1] "Preg robbing" refers to the removal of gold from solution by certain constituents of the mineralization, amongst which might be, clays, sulphides or carbonaceous materials. "Preg" refers to the "pregnant" solutions containing gold extracted from the mineralization.

Table 1.1 El Dorado Total Project Resources

El Dorado Project Total Resource - Measured							
Cutoff (g AuEq/t)	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Oz Ag**	**Ounces** (AuEq)
1.0	1,121,500	9.22	8.40	302,800	57.56	2,075,500	332,600
4.0	**780,100**	**12.39**	**11.31**	**283,600**	**75.76**	**1,900,200**	**310,800**
5.0	721,900	13.03	11.90	276,100	79.70	1,849,700	302,500
6.0	663,000	13.70	12.51	266,600	83.96	1,789,600	292,100
7.0	614,400	14.28	13.03	257,300	87.40	1,726,400	282,100
8.0	539,900	15.21	13.89	241,100	92.54	1,606,300	264,000
9.0	481,600	16.01	14.63	226,500	97.06	1,502,800	247,900

El Dorado Project Total Resource - Indicated							
Cutoff (g AuEq/t)	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Oz Ag**	**Ounces** (AuEq)
1.0	6,673,400	6.16	5.55	1,191,500	42.70	9,162,300	1,322,300
4.0	**3,496,700**	**9.96**	**9.00**	**1,011,500**	**67.45**	**7,582,300**	**1,119,700**
5.0	3,029,900	10.81	9.76	950,600	73.23	7,133,700	1,052,700
6.0	2,639,700	11.59	10.46	887,300	79.13	6,715,500	983,300
7.0	2,226,000	12.53	11.30	808,400	86.59	6,197,300	896,900
8.0	1,823,200	13.64	12.30	721,000	94.10	5,515,600	799,800
9.0	1,463,200	14.92	13.45	632,600	102.97	4,844,200	701,700

El Dorado Project Total Resource - Measured and Indicated							
Cutoff (g AuEq/t)	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Oz Ag**	**Ounces** (AuEq)
1.0	7,794,900	6.60	5.96	1,494,300	44.84	11,237,800	1,655,000
4.0	**4,276,800**	**10.40**	**9.42**	**1,295,100**	**68.96**	**9,482,500**	**1,430,500**
5.0	3,751,800	11.23	10.17	1,226,700	74.47	8,983,400	1,355,200
6.0	3,302,700	12.01	10.87	1,153,900	80.10	8,505,100	1,275,400
7.0	2,840,400	12.91	11.67	1,065,700	86.77	7,923,700	1,179,100
8.0	2,363,100	14.00	12.66	962,100	93.74	7,121,900	1,063,900
9.0	1,944,800	15.19	13.74	859,100	101.51	6,347,000	949,600

El Dorado Project Total Resource - Inferred							
Cutoff (g AuEq/t)	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Oz Ag**	**Ounces** (AuEq)
1.0	1,954,200	5.65	5.10	320,200	38.52	2,419,900	354,900
4.0	**839,300**	**10.47**	**9.45**	**255,000**	**70.89**	**1,913,000**	**282,400**
5.0	702,500	11.62	10.51	237,300	78.43	1,771,500	262,400
6.0	568,400	13.07	11.81	215,800	88.14	1,610,700	238,800
7.0	478,700	14.32	12.94	199,200	96.42	1,483,940	220,430
8.0	397,100	15.69	14.22	181,500	104.66	1,336,250	200,370
9.0	346,600	16.76	15.18	169,200	111.37	1,241,100	186,800

It is likely that additional mineralization will be encountered within and around the principal resource veins as well as in veins throughout the district, which at present are defined by drill holes, surface mapping and sampling. The drill holes and surface samples outside the main resource areas often have gold and silver mineralization, sometimes with very significant grades. This is a rather mixed blessing for Pacific Rim, because on the one hand any one of those veins may or may not host resources similar to the Minita area, but on the other hand, each one deserves more exploration.

1.6 Recommendations

The recommendations in this report focus on drilling for resource enhancement and exploration. The Feasibility Study, which had been halted in 2006, should be re-initiated. Matters that will be addressed in the feasibility study are beyond the scope of the present report.

The work recommended herein consists of, in round numbers, 30,000 meters of drilling, plus estimated costs to cover a year of continuing surface exploration, an allowance for related quality control and quality assurance work, and for Feasibility Study resumption. The estimated total cost is **US$ 5,350,000.**

2.0 INTRODUCTION

2.1 Terms of Reference

Pacific Rim Mining Corporation ("Pacific Rim") is exploring and developing the El Dorado Project in El Salvador. Pacific Rim engaged Mine Development Associates ("MDA") to prepare new resource estimates for the vein deposits at Bálsamo/Cerro Alto. MDA has completed work for Pacific Rim in the past. The El Dorado Project's resources are gold and silver mineralization in steeply dipping epithermal veins. In 2003 resource estimates were done for the Minita area (Minita, Minita 3, and Zancudo veins), Nueva Esperanza and La Coyotera deposits. In 2006 the Minita area resource estimate was updated and an estimate was done on the South Minita vein deposits and the Nance Dulce deposit. As part of the 2006 work, MDA reviewed and restated all of these previous estimates (Ristorcelli and Ronning, 2006). The purpose of the present report is to disclose the new resource estimates.

The resource estimates were prepared by the principal author, Steven Ristorcelli of MDA. MDA requested that the second author, Peter A. Ronning ("Ronning"), assist in the preparation of the data underlying the resource estimate, and in the writing and compiling of the present report. Ken Reipas, P. Eng. and Al Kuestermeyer, P. Eng. , both of SRK Consulting ("SRK") and both Qualified Persons in their respective fields, have updated, reviewed and edited the new engineering and metallurgical work. Tom Rannelli, P. Eng. and Terry Braun, P. Eng., both of SRK and both Qualified Persons in their respective fields, have restated information related to past work done on the feasibility, engineering, metallurgy and economics of the Minita and South Minita areas.

2.2 Sources of Information

The information that the authors used in the preparation of the resource estimates, and additional information reviewed in preparing this report, is listed in Section 21.0. The sources of information include exploration data accumulated by Pacific Rim and additional documents provided by that company, including a pre-feasibility study prepared in 2005 (Tanaka and others, 2005). In addition to the company data and documents, public domain information has been gathered from a number of sources. The authors had numerous conversations with employees and management of Pacific Rim, both in the field and at the company's project headquarters in Sensuntepeque, El Salvador.

2.3 Personal Inspection by the Authors

Ristorcelli has visited the project multiple times since 2003. Most recently, and specifically for the purpose of this resource estimate Ristorcelli visited the project twice during 2007. The first visit was from August 2 to August 4, 2007, for the purpose of evaluating the progress of the Bálsamo/Cerro Alto exploration. The second was from October 23 to October 25, 2007. Most of this time was spent modeling the Bálsamo/Cerro Alto deposit on section and reviewing the technical database.

Ronning has also visited the project several times, beginning in 2003. In 2007 he spent the period from October 23 to October 25 at the project, reviewing the El Dorado database.

SRK made a site visit to the El Dorado Project in May 2004. The site visit was conducted by Mr. William Tanaka, Principal Geological Engineer and Qualified Person as defined under NI43-101. SRK also made a visit to the El Dorado Project site in January 2004 to review the scope of the environmental and social baseline studies and environmental impact study. Bruce Murphy, P. Eng., and Ken Reipas, P. Eng. visited the property from June 24 to 26, 2006 and June 25 to 26, 2006, respectively, as part of their work leading towards the upcoming feasibility study.

2.4 Effective Date

The data used in preparing the Bálsamo/Cerro Alto resource estimates contained in this report were current as of October 30 2007. The estimates were issued and made public in January of 2008. Exploration was continuing as the report was written. The effective date of this report, which appears on the cover page and in the Author's Certificate, is the date at which the writing of the report was completed. The effective date is March 3, 2008.

2.5 Note on Language, Terminology and Definitions

Most of the technical information concerning the El Dorado Project is in English. A few of the printed and electronic sources of information used in the preparation of this report are in Spanish. The authors are competent to read documents in Spanish, and the information that was originally in Spanish is presented in this report in English without further acknowledgement of the translation. Where appropriate, Spanish is retained, as in the case of proper nouns.

The name "El Dorado" is used in several contexts relating to the project. The following explanation may clarify its various uses to readers unfamiliar with the project:

El Dorado Project	Refers to the project as a whole including all the sub-projects, concessions, resources, and deposits
El Dorado Exploitation Concession	The legally defined area for which Pacific Rim expects to be granted mining rights. This was formerly part of the El Dorado exploration licenses.
El Dorado Mine Area	Refers to the near vicinity of the former producing El Dorado Mine, including the El Dorado, Minita, Minita 3, Zancudo and other veins that were exploited or explored via interconnecting underground workings. This area is sometimes also referred to as the Minita Mine Area. The El Dorado Mine Area covers 30 to 40 hectares.
El Dorado Deposit	The mineral deposit situated in the El Dorado Mine Area, consisting of the veins noted above. In this report the authors have used the term "Minita Deposit" to mean the same thing.
El Dorado Vein	One of the veins in the Minita Mine Area

2.5.1 Definitions

Some frequently used acronyms and abbreviations that appear in this report are listed below. Some technical terms not listed below may be found in the glossary of technical terms that appears in Error! eference source not found..

AA	atomic absorption spectrometry
Ag	silver
Ai	Abrasion Index
Au	gold
BWI	Bond Work Index
Cu	copper
ft	feet
g/t	grams per tonne
g AuEq/t	grams gold equivalent per ton
hp	horsepower
ID^3	inverse distance cubed
km	kilometer
kWh/st	kilowatt-hour per short ton
m	meters
masl	meters above sea level
MPa	megaPascal
m^2/t-day	square meters per tonne-day
oz	Troy ounce (12 oz to 1 pound, 1 troy oz = 31.10348 grams)
ton	short (imperial) ton
tonne	metric ton
tpd	(short) tons per day
tph	(short) tons per hour

2.5.2 Map Coordinates

The cartographic reference system of the Republic of El Salvador uses the NAD27 datum, a Lambert Conic Conformal Projection and the Clark 1866 Ellipsoid[2]. In the text and figures in this report the term "El Salvador national grid" refers to this cartographic reference system.

[2] These technical terms refer to a model of the earth's shape and a mathematical procedure used to project the earth's curved surface onto a flat map.

3.0 RELIANCE ON OTHER EXPERTS

MDA has relied extensively on data, information and work compiled and completed by Pacific Rim and its predecessors as operators of the El Dorado Project. MDA reviewed the data, reports and geology and used those data believed to accurately represent the project. In estimating the mineral resources MDA used the geologic model jointly developed with Pacific Rim.

The assessment of adequacy, reasonableness and accuracy for the underlying database is presented in Section 14.0, Data Verification, of this report. By necessity, MDA has made judgments about the general reliability of the underlying data. Where deemed either inadequate or unreliable, the data were either eliminated from use or procedures were modified to account for lack of confidence in that specific information. This does not guarantee that all unreliable data has been eliminated from the database.

The contributors to this report are "Qualified Persons" according to the requirements needed for completing an NI43-101 compliant report for data evaluations, resource modeling, metallurgical studies, reserve estimation and mine planning, environmental issues, and economic evaluations. Though the two principal authors have had experience in most matters included in this report, they are not qualified to the extent of being "experts" in such issues as metallurgy, mine design, mineral economics, land title, legal issues and environmental matters. Information provided by Pacific Rim and other consultants has been included in discussions of these topics.

Information concerning the status of mineral and surface rights was obtained directly from Mr. William Gehlen of Pacific Rim who updated the information received in 2006 from two letters by the legal firm Rusconi, Valdez, Medina & Asociados, dated February 20, 2006, and from Pacific Rim Mining S.A. de C.V. MDA has not independently investigated the status of the mineral and surface rights, is not qualified to investigate them, and offers no opinion on the status of these rights.

Permitting and environmental work was also updated by Mr. William Gehlen of Pacific Rim. Engineering work and metallurgical work completed since the last report in 2006 have been updated SRK. In addition to those just-mentioned data and information, Pacific Rim has helped update this report with respect to geology, history, and exploration.

3.1 2005 Pre-Feasibility Study by SRK

SRK prepared a Pre-Feasibility Study (summarized in Section 18 of this document) which was posted on SEDAR in January 2005 (Tanaka and others, 2005). The SRK Pre-Feasibility Study is based on information provided to SRK by Pacific Rim throughout the course of SRK's investigations at that time. SRK is not an insider, associate or an affiliate of Pacific Rim, and neither SRK nor any affiliate has acted as advisor to Pacific Rim or its affiliates in connection with the El Dorado Project. The results of the study by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

Subsequent to SRK's work, MDA has updated the estimate of Mineral Resources, as presented in this document and previous documents (Ristorcelli and Ronning, 2006). Therefore this report represents materially different technical and economic conditions and assumptions than those prepared and published by SRK in January 2005.

Pacific Rim is currently re-initiating the Feasibility Study which will include an updated Statement of Mineral Reserves.

4.0 PROPERTY DESCRIPTION AND LOCATION

(see Figure 4.1 and Figure 4.2)

The El Dorado Project, located in the Department of Cabañas, is approximately 74 km northeast of San Salvador, the capital city of El Salvador, and 10 km southwest of the town of Sensuntepeque. The El Dorado deposit is located principally in the municipalities of San Isidro and Sensuntepeque. By road the travel time from the project site to downtown San Salvador is approximately 1.5 hours but can vary upwards depending upon the traffic (Dayton Mining, 2001).

The Republic of El Salvador is divided into 14 departments or states. Each state has its own Governor who is selected by the political party of the President. The Departments are divided into Municipalities which are overseen by the Mayor and the Municipal Board. Geographically the El Dorado Project covers parts of five municipalities, San Isidro, Sensuntepeque, Guacotecti, Santa Clara and San Esteban Catarina. The preponderance of the estimated resources is within San Isidro. A small part of the La Coyotera resource is within Sensuntepeque. There is no defined role for the Municipal government in the development and operation of the El Dorado Project. The Municipality will receive a 1% net smelter return ("NSR") royalty, should a mine go in to production.

4.1 Property Definition

Mineral rights in El Salvador belong to the Republic and are administered by the central government. Exploration and exploitation rights are granted to qualified companies as, respectively, licenses and concessions. The boundaries of Exploration Licenses and Exploitation Concessions are determined by stating the coordinates of their corners in an application, using the El Salvadoran national grid system.

4.1.1 Mineral Titles

(see Figure 4.2)

Three Exploration Licenses and one pending Exploitation Concession, listed in Table 4.1, together covering approximately 15,640 hectares, comprise the El Dorado property. Pacific Rim has obtained title opinions dated February 20, 2006, prepared by Luis A. Medina of Rusconi, Valdez, Medina & Asociados, which state that the three Exploration Licenses were at that time in good standing (Medina, 2006a, 2006b). According to Medina (2006a), the El Dorado Exploitation Concession was not yet granted but "… the Company, by virtue of its compliance with the Mining Law of El Salvador and the requirements imposed thereby, holds the sole priority, unimpeachable right to obtain the concession (the "El Dorado Exploitation Concession") …" Pacific Rim informs MDA that, as of the date of this report, the three exploration licenses are still in good standing and the status of the application for an exploitation concession remains as it was at the time of Medina's reports in 2006. MDA has done no independent investigation of the status of the licenses and concession application, is not qualified to do such an investigation, and offers no opinion concerning their status.

Figure 4.1 Location Map

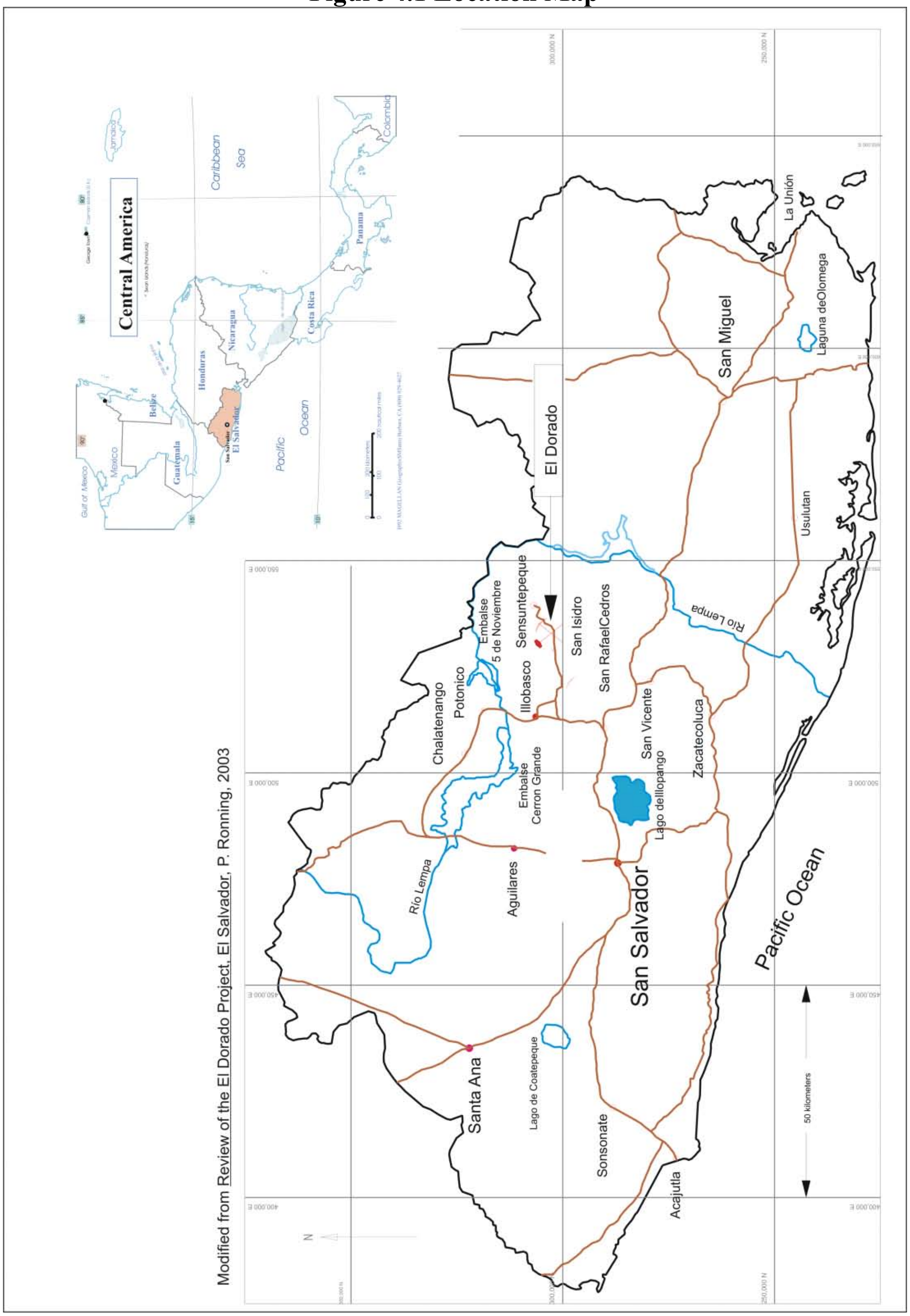
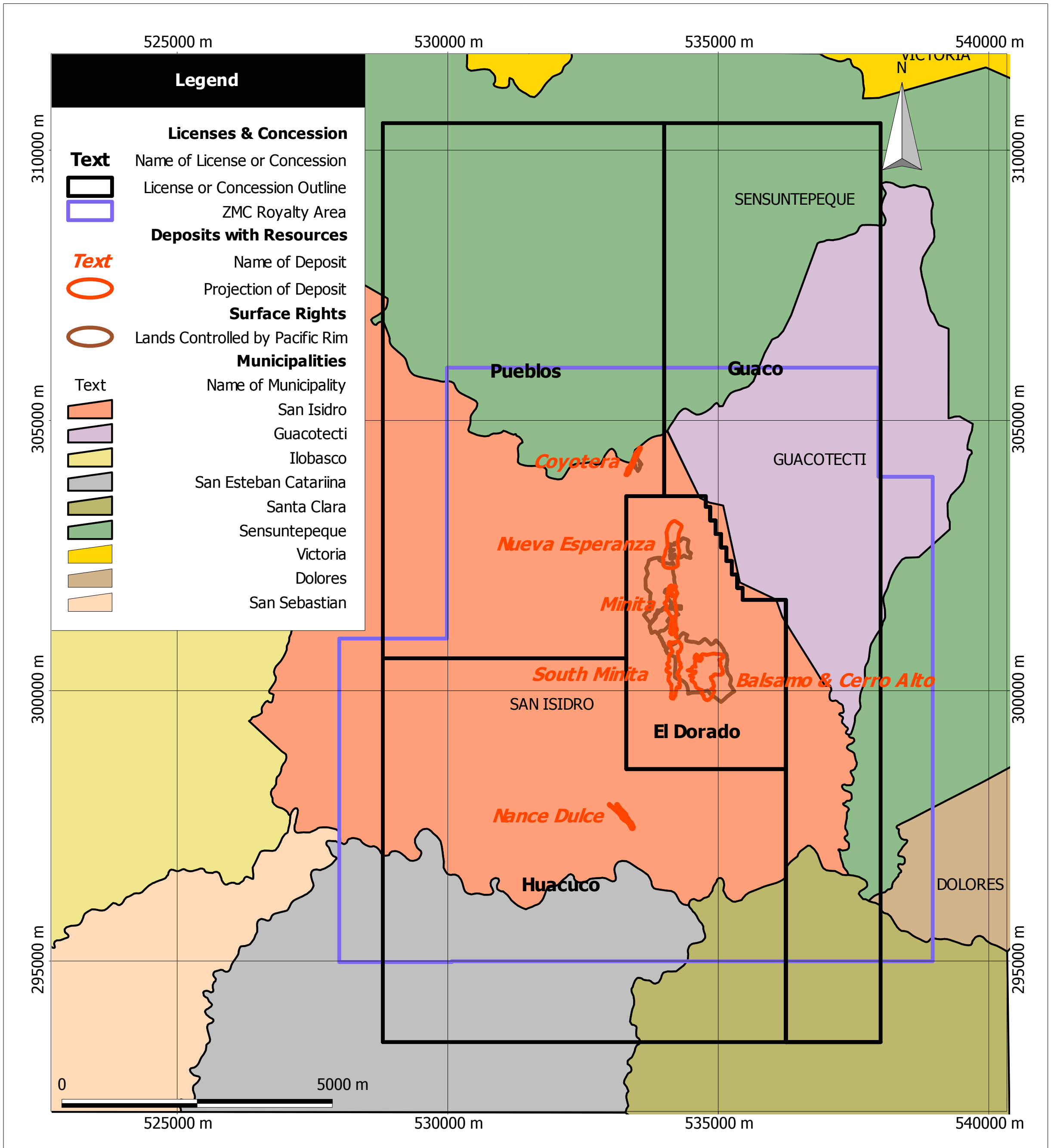


Figure 4.2 Exploration Licenses and Exploitation Concession



El Dorado Project	Compiled By: PAR	Exploration Licenses and Exploitation Concession	El Salvador National Grid Based on NAD 27	Figure Number: 4.2
Pacific Rim El Salvador S.A. de C.V.	Data from public sources, Pacific Rim and MDA			19-Feb-08

Table 4.1 Mineral Titles Comprising the El Dorado Property

Name of Concession or License	Area in Hectares	Type	Date Granted	Latest Expiry Date
Huacuco	4,684.75	Exploration	Sept. 28, 2005	Sept. 28, 2013
coordinates ⇒		*Point*	*Easting meters*	*Northing meters*
		Northwest No. 1	528800	300600
		Northeast No. 2	533300	300600
		No. 3	533300	298550
		No. 4	536250	298550
		Southeast No. 5	536250	293500
		Southwest No. 6	528800	293500
Pueblos	4,938.00	Exploration	Sept. 29, 2005	Sept. 29, 2013
coordinates ⇒		*Point*	*Easting meters*	*Northing meters*
		Northwest No. 1	528800	310500
		Northeast No. 2	534000	310500
		No. 3	534000	303600
		No. 4	533300	303600
		Southeast No. 5	533300	300600
		Southwest No. 6	528800	300600

Guaco	4,747.16	Exploration	Sept. 28, 2005	Sept. 28, 2013
coordinates ⇒		*Point*	*Easting meters*	*Northing meters*
		No. 1	534000	303600
		Northwest No. 2	534000	310500
		Northeast No. 3	538000	310500
		Southeast No. 4	538000	293500
		Southwest No. 5	536250	293500
		No. 6	536250	301680
		No. 7	535450	301680
		No. 8	535450	301900
		No. 9	535350	301900
		No. 10	535350	302150
		No. 11	535250	302150
		No. 12	535250	302400
		No. 13	535150	302400
		No. 14	535150	302650
		No. 15	535050	302650
		No. 16	535050	302900
		No. 17	534950	302900
		No. 18	534950	303150
		No. 19	534850	303150
		No. 20	534850	303400
		No. 21	534770	303400
		No. 22	534770	303600

El Dorado	1,270.05	Exploitation	Pending	n/a
coordinates ⇒		*Point*	*Easting meters*	*Northing meters*
		Northwest No. 1	533300	303600
		Northeast No. 2	534770	303600
		No. 3	534770	303400
		No. 4	534850	303400
		No. 5	534850	303150
		No. 6	534950	303150
		No. 7	534950	302900
		No. 8	535050	302900
		No. 9	535050	302650
		No. 10	535150	302650
		No. 11	535150	302400
		No. 12	535250	302400
		No. 13	535250	302150
		No. 14	535350	302150
		No. 15	535350	301900
		No. 16	535450	301900
		No. 17	535450	301680
		No. 18	536250	301680
		No. 19	536250	298550
		No. 20	533300	298550

Notes: The legal location of the license or concession is dependent on the coordinates stated in the registry document, not on any monuments placed in the field. The legal location is established without a need for a legal field survey. The coordinates are given using the national geographic grid system used in El Salvador. The Salvadoran system uses North American Datum of 1927 (NAD 27) for Central America and a Lambert Conformal Conic map projection (These technical terms refer to a model of the earth's shape and the mathematical means used to illustrate the earth's curved surface on a flat map).

The Huacuco, Pueblos and Guaco Exploration Concessions are owned by Dorado Exploraciones S.A. de C.V., a 100% owned subsidiary of Pacific Rim Cayman. Pacific Rim Cayman is owned by Pacific Rim Mining Corp. The El Dorado Exploitation Concession, when granted, will be held by Pacific Rim El Salvador S.A. de C.V.

The geographic coordinates shown in this table were copied from exhibits attached to Medina, 2006a, 2006b.

4.1.2 Acquisition and Maintenance of Mineral Titles in El Salvador

This section is taken for the most part from Ronning, 2003. The original sources of the information are as indicated in the text. The authors compared this description of the applicable regulations to a copy of "Reglamento de la Ley de Mineria y Sus Reformas" ("The Mining Law"), provided to them by

Pacific Rim in February of 2006. Where the Mining Law was different from the 2003 description, the present text was amended to conform to the Mining Law.

The competent authority for regulating mining activities in El Salvador is the Executive Branch in the Ministry of Economy, acting through the Division of Hydrocarbons and Mines.

The 2001 Feasibility Study provided a useful summary of the current mining law in El Salvador. That summary appears below, modified by the present authors to reflect the current Mining Law:

(i) All mineral deposits remain the property of the State which has the sole right to award exploration licenses and exploitation concessions;

(ii) Mining rights will be issued to people (Salvadorans or foreigners) who can prove that they have technical and financial capabilities to develop mining projects;

(iii) Exploration Licenses:

(a) To be granted for an initial term of four years, extendible by application and approval, for periods of two years, to a maximum of eight years. After that period, that part of the License still of interest to the holder must be converted to an Exploitation Concession;

(b) Limitation to 50 square kilometers;

(c) Surface access and damages to be negotiated with landowners or, failing agreement, by direction of the government;

(d) Holder to execute a technical program as submitted to and approved by the authorities;

(e) Holder to submit annual reports on progress relative to original program. The minimum contents of the annual reports are specified in the Mining Law; and

(f) A fee ("canon" in Spanish), calculated according to the surface area of the License, is to be paid during the first month of each year that the license exists. Table 4.2 sets out the fee schedule:

Table 4.2 Schedule of Fees for Exploration Licenses

Year:	1	2	3	4-6	7-8
US$ per square kilometer or fraction:	$25	$50	$75	$100	$300

(iv) Exploitation Concession:

(a) Granted by an Accord of the Ministry for a term of 30 years, which can be extended without specified limit(s);

(b) If exploitation has not commenced within one year of the granting of the Concession, cancellation proceedings will commence (other than for reasons akin to Force Majeure);

(c) Area of the Concession to be determined according to the known extents of the deposit, but in any case to be within the pre-existing Exploration License;

(d) The holder of the Concession is to pay an annual fee of US$ 300 per square kilometer;

(e) Holder to submit annual reports. The minimum contents of the annual reports are specified in the Mining Law;

(f) Environmental impact study covering the entire area of the concession is required as part of the technical program submitted for approval for exploitation; and

(g) Post bond or guarantees not less than US$ 5,714 per square kilometer.

(v) Taxes to be paid at state and municipal levels. State taxes are specified but municipal taxes will have to be negotiated.

(vi) Royalties:

(a) NSR Royalty of 1% must be paid to the State; and
(b) An NSR of up to 1% must be paid to the Municipality.

According to Medina (2003), the main obligations that Pacific Rim as the license holder has to comply with in order to maintain the licenses are listed below. Requirements completed or removed since 2003 are omitted from this list; the changes in the regulations that have been effected since 2003, and that the authors are aware of, are reflected in the list.

1) To present the documentation required in Article 37 of the mining law, especially that of the financial and technical capability of the Company, fulfilling the formal and technical requirements;

3) To fulfill with the technical and engineering standards required by the domestic legislation and by the norms internationally established for the protection of the environment, according to what is stated in Article 17 of the Mining Law;

4) To file annually or whenever it is required, reports on advances or problems detected, especially those related with environmental matters according to Article 18 of the Mining Law;

5) To file annual reports with detailed information of the exploration activities conducted and the investment made within the reporting period according to Article 22 of the Mining Law;

6) To request extensions of the exploration licenses within the terms and fulfilling to the requirements established in Article 19 of the Mining Law; and

7) To pay the annual fees for the Licenses, according to Articles 19, 22, and 66 of the Mining Law.

4.1.2.1 Conversion to Exploitation Concessions

Exploration licenses can be maintained for no more than eight years, at the end of which time a decision must be made as to whether to convert all or part of the license to an Exploitation Concession. Upon making a decision to convert to an Exploitation Concession, the license holder has a period of one year to complete the steps of the conversion process.

The pending El Dorado Exploitation Concession consists of parts of two former Exploration Licenses, El Dorado Norte and El Dorado Sur. The conversion of the parts of the two licenses to the new El Dorado Exploitation Concession is proceeding. Pacific Rim has the exclusive right to acquire the concession (Medina, 2006a).

4.1.3 Applicable Agreements and Other Royalties

Pacific Rim holds the El Dorado concessions directly from the state. There are no third-party agreements that relate to the mineral rights. Pacific Rim originally acquired the El Dorado Project through an amalgamation with a predecessor company (Pacific Rim Annual Information Form, February 27, 2004). The original acquisition by the predecessor company was based on a 1993 option agreement, since exercised, with Zinc Metal Corporation ("ZMC") of Toronto. Under the terms of that 1993 agreement, the El Dorado Property is subject to annual advance minimum royalty payments, those being the greater of US$ 50,000 per year or a 3% net smelter return royalty, in favor of ZMC. Pacific Rim has the right to purchase the royalty from ZMC for US$ 4,000,000, formulated as US$ 1,000,000 for the first one-half of the royalty and US$ 3,000,000 for the second one-half. To maintain this right, Pacific Rim must acquire at least one-half of the royalty within six months of the commencement of commercial production.

The outline of the area to which the royalty applies is shown on Figure 4.2. The royalty applies to all of the resources known at present on the El Dorado Project.

4.2 Environmental Liabilities

Pacific Rim has completed extensive environmental and permitting work for this project as described in Section 18.5.

The project is designed to meet El Salvador laws and regulations, and international and North American good practices for engineering design and environmental management. Comprehensive environmental and social baseline studies have been completed to provide supporting information for project design and the project environmental impact study ("EIS") (Gochnour et al., 2005). The EIS has been prepared in accordance with the Terms of Reference issued by the Ministry of the Environment and Natural Resources ("MARN"), and World Bank Group/International Finance Corporation ("IFC") guidelines. The EIS was submitted to MARN in early September 2004.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Physiography and Climate

(Most of this section is derived from the Dayton Mining 2001 Feasibility Study.)

5.1.1 Physiography

El Salvador can be divided into four morphological/geological regions: Coastal Plains, Coastal Ranges, the Great Interior Valley, and the Northern Mountain Ranges. The El Dorado Project is located on the border of the Great Interior Valley and the Northern Mountain Ranges.

The terrain in the El Dorado License area is one of moderate relief surrounded by higher hills to the north, east, and west. Elevations range between 200 m and 800 masl (meters above sea level). The project area contains shallow top soils and volcanic subsoils that are generally cultivated for seasonal crops. Five perennial streams or rivers traverse the license and concession area: Río Titihuapa, Río de Los Pueblos, Río Gualuca, Río San Francisco and Río San Isidro. Water levels vary with the seasons with good flows being maintained during the wet season.

5.1.2 Climate

El Salvador has a tropical climate with pronounced wet (May to October) and dry seasons. Average annual rainfall at Sensuntepeque is about 2,000 mm. During the wet season, rainfall generally comes from low-pressure systems over the Pacific and usually falls in heavy afternoon thunderstorms. Hurricanes occasionally form in the Pacific; however, they seldom affect El Salvador. During the dry season (November to April), the weather patterns are controlled by the northeast trade winds. As the air from the Caribbean passes over Honduras, most of the precipitation is lost in the mountains, thus limiting rainfall for El Salvador. Extreme temperature ranges are from 7° to 38° C. Temperatures vary with elevation, with the hottest temperatures occurring in the Pacific lowlands.

5.1.3 Seismicity

Seismic activity is common in El Salvador. The activity is most pronounced to the south, in the Benioff Zone[3], and to the northwest of El Salvador along the North American-Caribbean plate boundary. Significant earthquakes have occurred recently within 100 km of the El Dorado Project. These include a magnitude 7.9 at a distance of 36 km from the site, a magnitude 7.8 (January 13, 2001) at 86 km, a magnitude 7.7 at 54 km, a magnitude 7.1 at a distance of 99 km, and two magnitude 7.0 earthquakes at 90 and 99 km from the site (USGS National Earthquake Information Center, through January, 2008). These data indicate that there is potential for a major earthquake to occur near the site, and that there is a need for sophisticated seismic analyses of proposed mine facilities at appropriate levels of seismic risk.

[3] A plane beneath the trenches of the circum-Pacific seismic belt, along which earthquakes originate.

5.2 Access and Infrastructure

(*Most of this section is derived or adapted from the Dayton Mining 2001 Feasibility Study.*)

An asphalt highway crosses the project area, providing excellent access to the national road network. The original mine site, now the center of exploration operations, is located about 200 m from the highway. Within the exploration license area, a network of compacted dirt and rock roads has been constructed that provides access throughout most of the central project area.

A primary 13,500 volt electrical transmission line passes along the highway and in front of the mine site and is connected to the current infrastructure via two-30 kva transformers, from which both 110v and 220v lines are distributed throughout the mine site area. Experience in the El Dorado district since July 1993 has shown that the local electricity supply is not reliable enough to be considered for a mining operation. Although there has been improvement in the continuity of supply over the past few years, disruptions, nevertheless, are still frequent and may last for up to 30 hours.

As a consequence it is probable that a company-owned diesel generating power plant will be required to provide power if a mine is developed. An alternative to the company owning and operating its own power plant is that of contracting supply and maintenance to an independent company.

Basic supplies, including lumber, steel, cement, sand, and gravel are available locally. Although limited in depth, a broad variety of services is available in Sensuntepeque.

5.2.1 Availability of Personnel

There exists a large labor pool of potential workers in the area surrounding the project site. A skilled mining workforce does not exist in El Salvador, so other sources, such as Nicaragua, Mexico and South America will need to be considered. Persons with skills such as secretarial, accounting, and administrative skills, as well as environmental and laboratory technicians, can be readily found in San Salvador, if not locally.

5.3 Surface Rights

Most property in the area is private. Holdings are generally small to medium in size, ranging from 10 to 60 hectares although there are several local families where combined, the immediate family together own properties that contain hundreds of hectares. There are no undisturbed lands nor are there natural areas in the region . The principal land uses are cattle ranching and subsistence farming (corn, beans, sorgum and cane). Since most of the property is privately owned, it can be freely bought and sold (DaytonMining, 2001).

The following discussion of surface rights that Pacific Rim owns or controls is based on information provided by Pacific Rim. MDA has done no independent investigation of these surface rights, is not qualified to do such an investigation, and offers no opinion as to the status of such surface rights.

At the time that Pacific Rim acquired the El Dorado Project through a merger of predecessor companies the project assets included a total of 68.86 hectares of surface real estate. This real estate is still part of the project assets. It includes the original Rosario mine site (see the discussion of "History" in Section 6.0) and contains all of the infrastructure that existed at the time of the merger. Additionally, it includes land in the areas of El Dorado, Nueva Esperanza and La Coyotera. Some of the land was acquired in the 1990's to accommodate future mine infrastructure envisioned in conceptual mine plans of the time (Dayton Mining, 2001).

Since acquiring the project, and guided by the requirements made apparent in the 2005 Pre-Feasibility Study, Pacific Rim has acquired additional surface lands of approximately 93.42 hectares, intended for use as the site for the plant and tailings disposal facilities. The property is situated on the south side of the paved highway that connects Sensuntepeque with San Salvador. Pacific Rim has also purchased land to accommodate a ten meter border to the public road that will join the mine infrastructure to the highway.

The surface rights owned or otherwise controlled by Pacific Rim are illustrated on Figure 4.2, the same figure that illustrates the license and concession boundaries. Pacific Rim believes that those surface rights are sufficient for all needed mine infrastructure.

6.0 HISTORY

The history of the El Dorado Mine Area and some other occurrences within the El Dorado Project area is summarized below;

Colonial Period to 1953

The colonial Spanish discovered gold in the district in the early 1500's. They conducted shallow surface trenching and pitting in the El Dorado and surrounding areas. At El Dorado, limited operations ceased in 1894, and the deposit remained dormant until 1942 when the New York and El Salvador Mining Company (NYESMC), a subsidiary of the New York and Honduras Rosario Mining Company, acquired the property. NYESMC commenced mining and milling operations in 1948. Exploitation occurred between 1948 and 1953 on levels developed at 50 ft (15 m), 175 ft (53 m), 300 ft (91 m), and 425 ft (130 m). The levels were serviced by two vertical shafts to the deepest level. The mine is currently *(2001)* flooded to the 50 ft Level.

Some 270,200 tonnes of material were milled by NYESMC, with about 72,500 troy ounces of gold extracted. (Production figures vary slightly amongst sources, but are generally similar to those given here.) The average vein width was 1.52 m and both shrinkage stoping and cut-and-fill mining techniques were utilized.

The El Dorado mine was shut down in 1953 for reasons that are somewhat unclear. The Rosario reports suggest that the limited resources combined with high mining costs and low gold prices caused the mine's shutdown. According to a former Mine Manager at El Dorado between 1948 and 1951, the depressed gold price was the primary cause for mine closure (Homer Anderson, quoted in Dayton Mining 2001 Feasibility Study). McNames (1969) indicated that rising costs due to a new labour law were also a factor.

At the El Porvenir Breccia, about 3.5 kilometers southeast of the El Dorado Mine, the colonial Spanish constructed a shaft and cross-cut. In modern times, the property was worked sporadically from before the end of the 19th century until the 1940's. Five adits, with about 200 meters of drifting, were constructed, and a small mill was brought to the site in the early 1900's. The mill proved to be unsuitable for the oxidized mineralization.

1975-76

The New York and El Salvador Mining Company was Purchased By Bruneau Mining Corporation, a company controlled by Rosario. Bruneau conducted an exploration program that consisted of:

i. 52.3 km of line cutting;

ii. Geological mapping, rock and soil geochemistry, including 2,542 geochemical analyses of soil samples;

iii. Clean up and resampling of 380 m of adit;

iv. Trenching involving the movement of 820.5 cubic meters of material; and

v. 1239.5 m of core drilling in four holes (Levy, 1977).

1991	New York and El Salvador Mining Company, then a subsidiary of Zinc Metal Corporation, sought funding for an exploration program based on the premise that an open pit resource could be developed on the El Dorado veins (Malouf, 1991).
1993	Mirage Resource Corporation entered into an agreement with NYESMC to acquire 100% of the El Dorado mining district. Kinross El Salvador, S.A. de C.V obtained its charter.
1993 – 1995	Surface mapping, trenching and drilling programs identified a number of deposits and prospects in addition to the El Dorado vein system, including the Nueva Esperanza and La Coyotera North veins
August – November 1995	Kinross drilled 2,239.41 meters of core on the La Coyotera North vein.
September 1995	A Pre-Feasibility Study was prepared for the El Dorado project by the international mineral consulting firm of James Askew and Associates, Inc. (JAA) on behalf of Mirage.
1996	Kinross El Salvador obtained the Exploration Licenses for El Dorado Norte and El Dorado Sur
April 2000	Dayton Mining Corporation acquired the El Dorado Project through the acquisition of all the outstanding shares of Mirage Resource Corporation. This resulted in the property being held by Kinross El Salvador S.A. de C.V., a 100% owned subsidiary of Dayton.
2001	Dayton produced a Feasibility Study based on an operation processing about 500 tonnes of ore per day
April 2002	Pacific Rim Mining Corp. and Dayton Mining Corp. amalgamated through a reverse take-over.
mid-2002	Pacific Rim began its exploration program
March 2003	The name of Kinross El Salvador S.A. de C.V. was formally changed to Pacific Rim El Salvador S.A. de C.V.

6.1 Historical Resource and Reserve Estimates

Since the early 1990's there have been a number of resource estimates done for several different veins. All available estimates are presented here for completeness and historical perspective; however, all are now considered outdated as extensive additional data has been obtained through drilling by Pacific Rim. Ronning (2003) listed and described in some detail most of the historic resource estimates, and that information is given in
Appendix A.

Malouf (1991) did not perform a rigorous resource or reserve estimation, but rather presented an "ore reserve potential," a term that would not be accepted today but does describe the level of work done. His "ore reserve potential," with assumed dilution and internal low grade, was given at 5 million tonnes grading 3.99 g Au/t. Malouf assumed an open pit mining scenario.

Historic estimates for the El Dorado mine area are given in Table 6.1. Historic estimates for the La Coyotera area are given in Table 6.2. Historic estimates for the Nueva Esperanza area are given in Table 6.3. At Nueva Esperanza, because silver was not consistently reported and because it is relatively low grade, the silver is not reported in Table 6.3.

All of these estimates predate the implementation of Canadian National Instrument 43-101. These historic estimates are presented here only for the reader's information and comparison.

6.2 Technical Reports and Resource updates by Pacific Rim

Pacific Rim has completed three resource updates since taking over management of the El Dorado Project in 2002. The summaries of the two earlier resource updates are included here for completeness and historical perspective and are superseded by the current resource calculations presented and explained later in this technical report.

- MDA prepared their first technical report on the gold and silver resources on the El Dorado Project on November 26, 2003. The report included resource estimations for the Minita area, (including Minita, Minita 3, and Zancudo veins), Nueva Esperanza and La Coyotera vein systems. The purpose of this first report was to describe the data, procedures, results, risks upside and resources of the El Dorado Project in compliance with Canadian National Instrument 43-101.
- MDA completed a second technical report of the gold and silver resources on the El Dorado Project on July 31, 2006 (Ristorcelli and Ronning, 2006). This report was an update of the initial global estimate of 2003 and included the resources in the newly discovered South Minita and Nance Dulce deposits.

Table 6.1 Historic Resource Estimates of the El Dorado Mine Area

Historic Minita Area Resource Estimates

	Staff of Kinross Gold Corp., May 1996		Mirage - Kinross Gold Corp, July 1997		Kinross Gold restated, September 1997*		La Croix & Associates 2000	
	Indicated	Inferred	Indicated	Inferred	Indicated	Inferred	Indicated	Inferred
Minita Vein								
Gold Cut Off Grade (g/t)	4	4	3	3	4	4	6	6
Tonnes	258,500	139,400	608,200	225,100	563,100	177,300	626,100	103,100
Gold Grade (g/t)	12.37	12.57	11.90	9.60	12.50	11.20	14.17	10.92
Silver Grade (g/t)	**	**	75.00	64.00	80.00	75.00	99.60	77.60
Contained Gold (ounces)	102,800	56,540	232,000	69,000	227,000	64,000	285,000	36,000
Contained Silver (ounces)	**	**	1,472,000	465,000	1,443,000	427,000	2,005,000	257,000
Minita 3 Vein								
Gold Cut Off Grade (g/t)	4	4	3	3	4	4	6	6
Tonnes	396,500	169,000	332,000	70,000	299,400	53,300	141,100	3,300
Gold Grade (g/t)	10.86	9.88	11.30	6.30	12.20	7.10	11.95	8.62
Silver Grade (g/t)	**	**	89.00	31.00	97.00	35.00	89.00	69.50
Contained Gold (ounces)	138,440	53,680	121,000	14,000	117,000	12,000	54,000	1,000
Contained Silver (ounces)	**	**	954,000	70,000	929,000	60,000	404,000	7,000
Zancudo Vein								
Gold Cut Off Grade (g/t)	4	4	4	4	5	5	9	9
Tonnes	22,600	36,100	44,200	19,000	31,400	15,100	32,000	4,200
Gold Grade (g/t)	5.78	6.12	11.20	7.90	14.00	8.70	12.20	9.62
Silver Grade (g/t)	**	**	84.00	58.00	109.00	65.00	104.20	66.50
Contained Gold (ounces)	4,200	7,100	16,000	5,000	14,000	4,000	13,000	1,000
Contained Silver (ounces)	**	**	119,000	35,000	110,000	32,000	107,000	9,000

* Changes recommended by Strathocona Mineral Services

**In the 1996 estimate, silver grades were stated only in a summary table that combined indicated and inferred resources.

Table 6.2 Historic Resource Estimates of the La Coyotera Area

	Mirage - Kinross Gold Corp, July 1997		Kinross Gold restated, September 1997*		Kinross El Salvador, March 2000		La Croix & Associates 2000*	
Category	Indicated	Inferred	Indicated	Inferred	Indicated	Inferred		Not classified
Gold Cut Off Grade (g/t)	2	2	4	4	4	4	NA	5
Tonnes	1,724,100	273,100	1,055,900	149,400	932,725	326,368	NA	840,500
Gold Grade (g/t)	5.72	4.67	7.48	6.04	8.57	4.67	NA	8.06
Silver Grade (g/t)	45.93	44.42	56.79	59.96	76.00	55.12	NA	67.20
Contained Gold (ounces)	317,000	41,000	254,000	29,000	257,035	49,034	NA	218,000
Contained Silver (ounces)	2546000	390000	1,928,000	288,000	2,279,065	578,393	NA	1,816,000

** Hanging wall vein using unadjusted SG of 2.47 g/cm^3

Table 6.3 Historic Resource Estimates of the Nueva Esperanza Area

	Indicated			Inferred		
Estimator	**Tonnes**	**Gold grade (g/t)**	**Ounces Gold**	**Tonnes**	**Gold grade (g/t)**	**Ounces Gold**
Kinross Gold, 1996	462,500	3.36	49,960	481,700	2.90	44,910
Kinross Gold, 1997, restated	845,000	2.70	73,400	37,600	2.20	2,700
La Croix & Associates, 2000	538,700	4.26	73,800	766,600	2.25	55,500

7.0 GEOLOGICAL SETTING

This section was derived from Ronning (2003) and the Dayton Mining Feasibility Study of 2001, but has been modified and supplemented to address those issues related to the gold and silver resources or resource estimates. The geology of the El Dorado district was updated using information in the study undertaken by Richer (2006).

7.1 Regional Geology

The tectonics and seismicity of El Salvador are influenced by the Caribbean, Cocos and North American lithospheric plates. The Cocos plate is subducted to the northeast beneath the Caribbean plate off the west coast of Central America in a convergent plate boundary, which forms the Middle American trench (Figure 7.1). The boundary between the Caribbean and North American plates forms a left lateral shear zone including the Motagua fault and Cayman trench extending from southern Mexico to the Caribbean Sea. Volcanic rocks have accumulated along the Caribbean plate margin in response to the subduction of the Cocos plate during the Tertiary and Quaternary. In El Salvador, the volcanic rocks have been divided into five formations based on their relative age and geochemistry: the Quaternary San Salvador Formation, the late Tertiary to Quaternary Cuscatlan and Bálsamo Formations, the Miocene Chalatenango Formation, and the Miocene and older Morazan Formation (Table 7.1). Quaternary volcanic rocks, including the chain of active volcanoes, are mainly present along the Pacific coast from Guatemala to Costa Rica, while Tertiary volcanic and plutonic rocks are generally found to the north, covering extensive areas of Honduras, Nicaragua and northern El Salvador (Figure 7.1). The Tertiary rocks represent the host to many epithermal vein systems including the gold-bearing veins of the El Dorado district found in northern El Salvador (Figure 7.1).

El Salvador can be divided into four morphological-geological regions: Coastal Plains, Coastal Ranges, Great Interior Valley, and the Northern Mountain Ranges. The Coastal Plains are in the western and southern part of the country and consist of alluvial deposits, spits, and mangrove swamps. The Coastal Ranges consist of the Tacuba, Balsam, and Jucuaran ranges which are composed of the late Miocene to Pleistocene Bálsamo Formation. The Great Interior Valley is a heterogeneous basin with low mountain topography composed of eroded volcanoes and the intermountain basins (Metapan, Rio Lempa, Rio Titihuapa, and Olomega). There are active Pleistocene volcanoes in the southern part of the valley. The Northern Mountain Ranges are dominantly composed of the Tertiary Chalatenango and Morazan Formations. Intrusive rocks, emplaced into Cretaceous-Lower Tertiary sedimentary rocks in the Metapan region, occur in the northwestern part of the country.

Two predominant regional fault systems characterize the structural geology of El Salvador. One system strikes northwest and is associated with subsidiary northeast-striking faults. The other set is east-striking with subsidiary north-striking faults. Northwest-striking faults are the prominent faults and may be traced for distances up to 180 km across the country, cutting the east-striking set of faults (Figure 7.2). The east-striking faults commonly form *en echelon* grabens offset by 20-30 kms along northwest striking faults. Such grabens form the interior valley of El Salvador characterized by large basins (Olomega, Rio Titihuappa, Rio Lempa, and Metapan) and calderas (e.g. Texistepeque) that host extinct volcanic edifices of Pliocene to Pleistocene age (Figure 7.2). Those basins/calderas align in a northwest orientation following the prominent northwest-striking fault system oblique to the modern volcanic arc. All regional structural trends are observed at the El Dorado district. This structural intersection may have been important in localizing volcanic and hydrothermal activity on a regional scale.

7.2 Property Geology

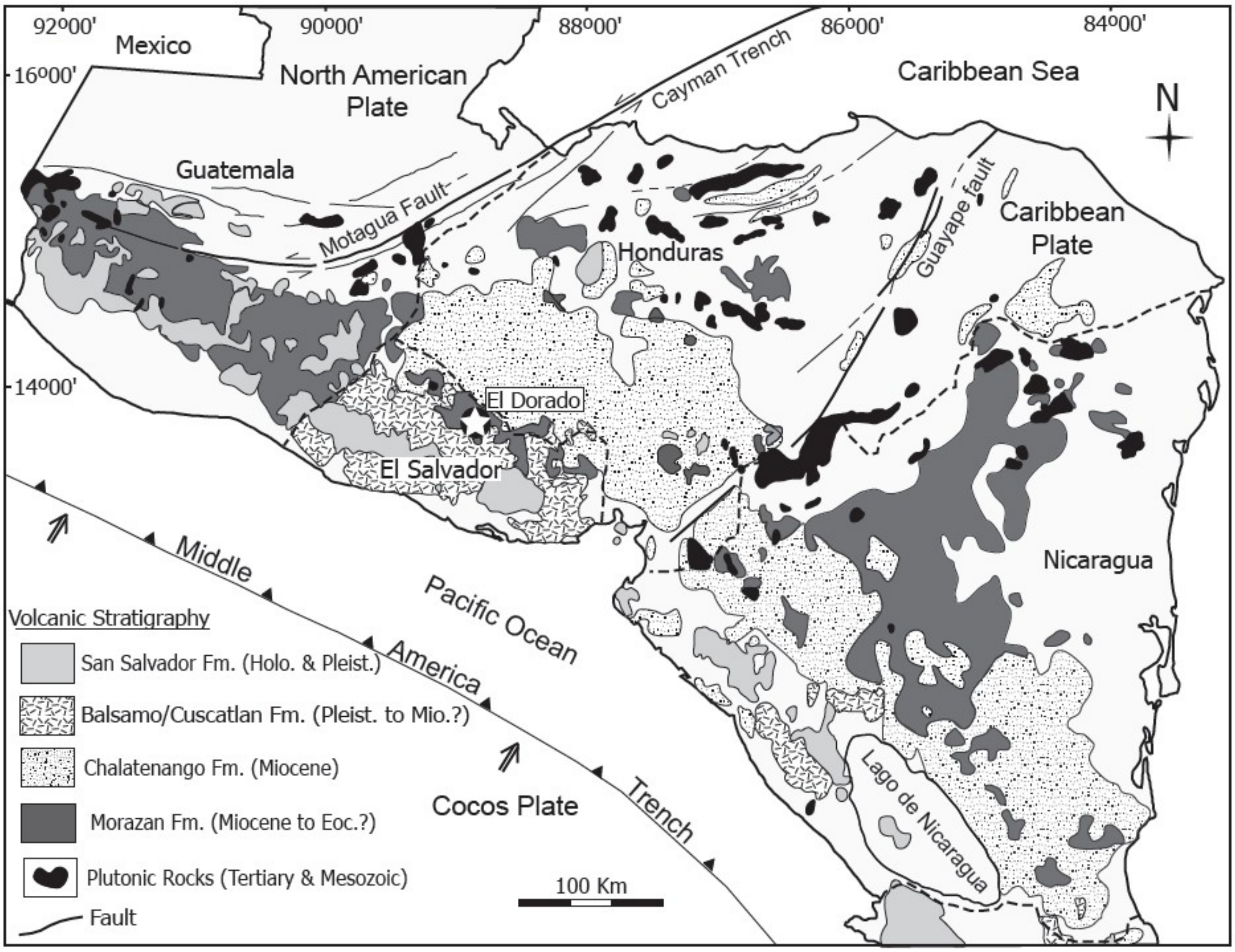
The El Dorado district can be subdivided into three distinct regions based on their basement geology and dominant structural controls: North, Central, and South. Two main packages of rocks are identified: a lower >400 m-thick sequence of basaltic to andesitic lava flows interbedded with volcanogenic sedimentary rocks that was intruded by basaltic to andesitic porphyritic domes and dikes during the late Miocene (10.7 ± 1.9 Ma) based on one ^{40}Ar-^{39}Ar plateau age on plagioclase (Richer, 2006). This sequence represents the main host to gold-bearing veins including the La Coyotera in North El Dorado and the Minita vein system in Central El Dorado (Figure 7.3).

The second of the two main rock packages is dominantly felsic volcanic and sub-volcanic rocks of Pliocene age (dated between 4.0-3.3 Ma; Richer 2006). They unconformably overlie or intrude the basaltic to andesitic basement rocks. Those rocks include domes, dikes, lava flows, pyroclastic and sedimentary rocks, and are mainly preserved in South El Dorado (Figure 7.3). The deposition of the Pliocene volcanic rocks partly overlaps with epithermal vein formation, which is best constrained at around 4.0 Ma based on Ar-Ar dating of vein adularia (Richer, 2006). Sinters are present in the southwestern portion of the district where they are intercalated with pyroclastic deposits at the base of the Pliocene volcanic sequence (Figure 7.3). Post-mineralization basalt lava flows cap the volcanic sequence.

A complex pattern of veins is observed in the El Dorado district (Figure 7.3). In North El Dorado, veins mainly strike NNW to N30°E. In Central El Dorado, the veins strike NNW to NNE with the Minita vein striking due north. In the same area, the surface veins appear to be limited to the south by the northwest-striking Avila fault. In South El Dorado, the geometry of veins is similar to those of Central and North El Dorado with the exception of the Nance Dulce vein which strikes northwest.

One structural model proposed by a prior operator for the Central and Northern regions is that the north-trending tensional veins opened between shear couples formed along northwest-trending strike slip faults. Rotation of some veins is invoked to explain the variation in trends of veins. However, exposures of strike slip structures are poor (or non-existent) and essential geologic measurements needed to define the true kinematics of the structural formation of veins in all regions are rare. Alternatively, the overall geometry resembles a normal fault system where extension would be largely oriented in an east-west direction at high angles to the strike of the veins. Pacific Rim's approach has focused on understanding the local vein structures, looking to define maximum extension areas for exploration drilling.

Figure 7.1 Regional Geology

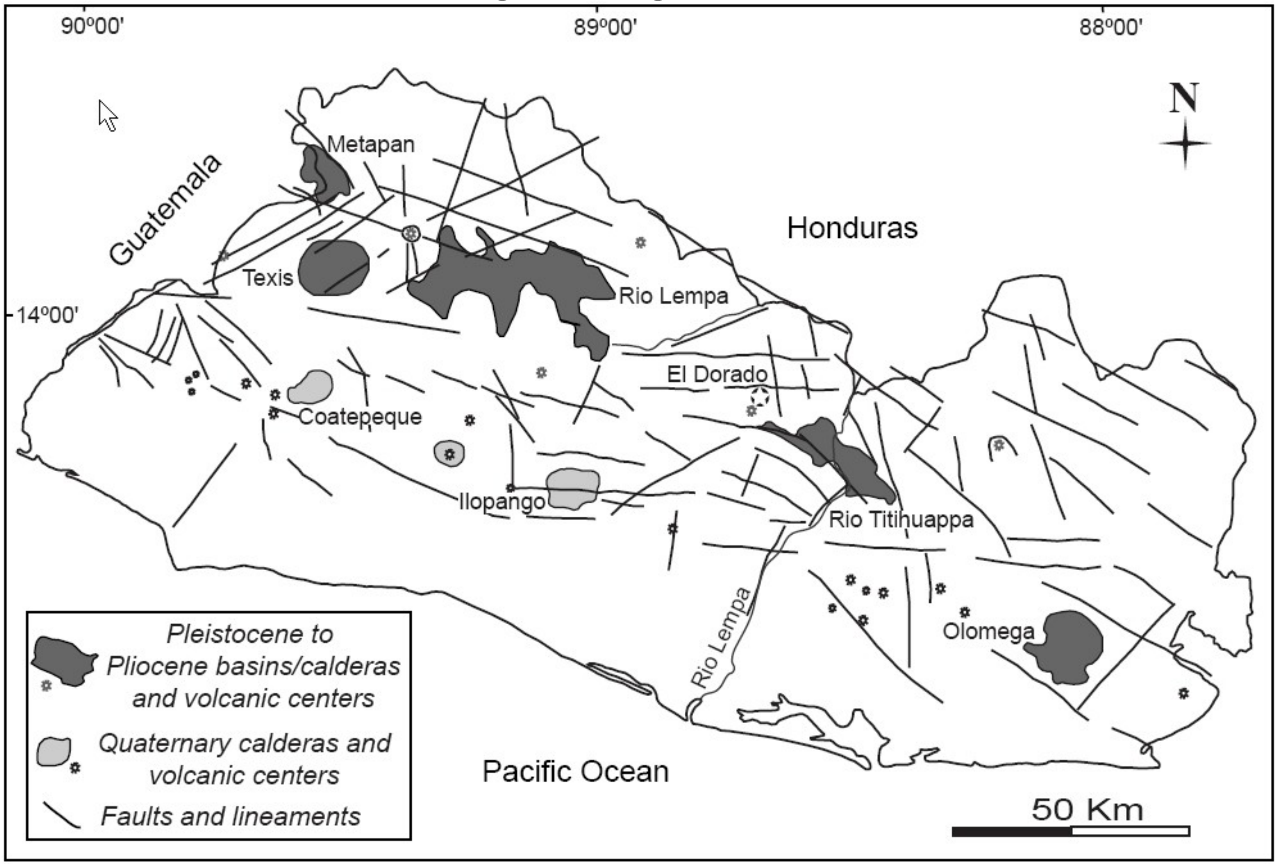


Map from Richer, 2006

Table 7.1 Regional Formations

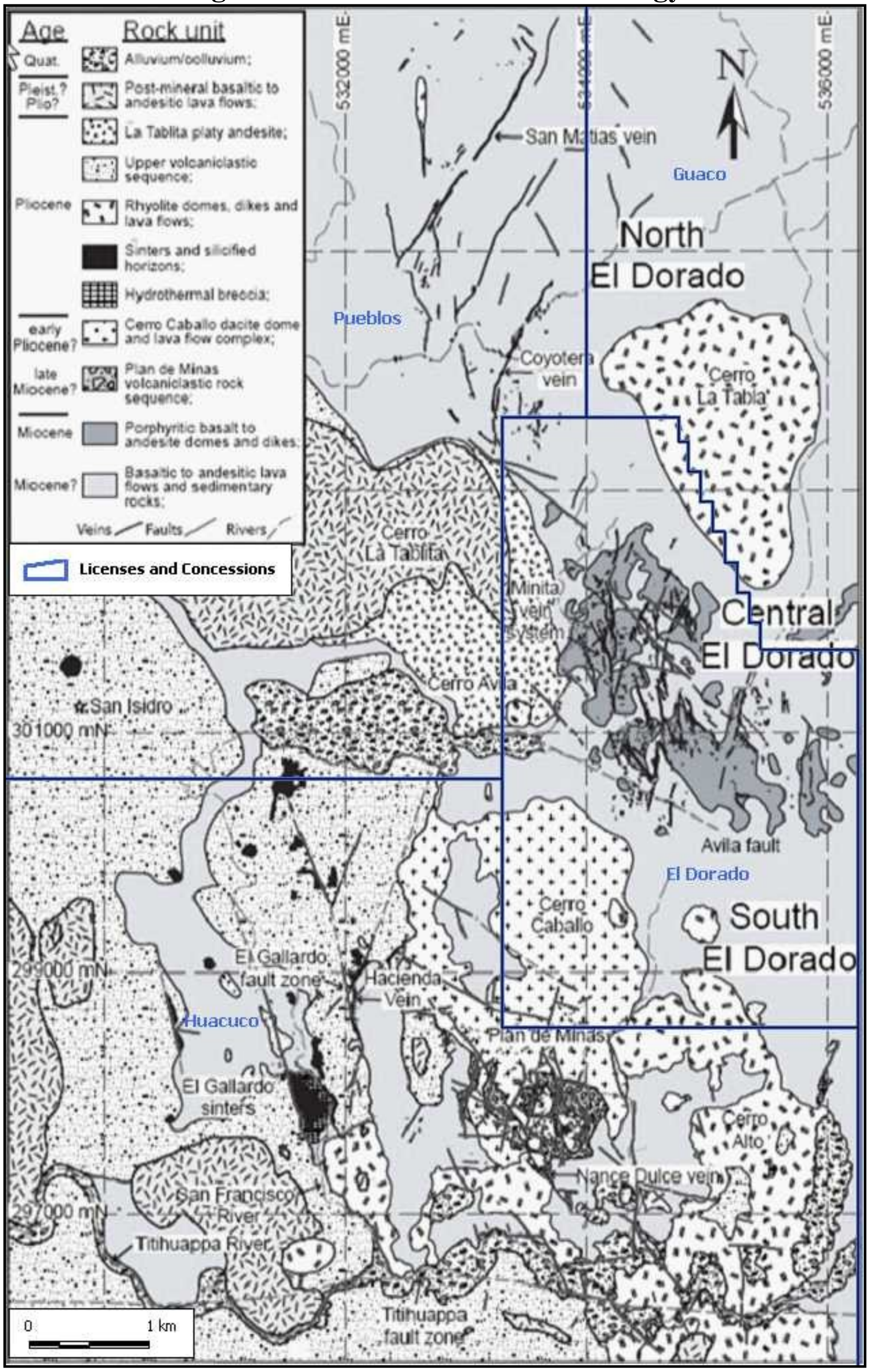
Age	Formations	Facies descriptions	Av. silica (wt%)
Holocene	San Salvador Fm	Lavas and tephras of Quaternary volcanoes along the volcanic front;	52.4-65.7
Pleistocene to Pliocene 4.0±0.2 Ma	Cuscatlan Fm	Felsic pyroclastic and epiclastic rocks at the base grading into felsic to intermediate lava flows and domes;	–
4.1±0.4 Ma Pliocene to Miocene?	Balsamo Fm	Mafic to intermediate lava flows and associated autobreccias intercalated with epiclastic to pyroclastic rocks ;	–
9.4±0.4 Ma Miocene	Chalatenango Fm	Extensive felsic pyroclastic and epiclastic rocks locally interbedded with felsic lava flows;	70.8
15.7±0.6 Ma Miocene to Eocene?	Morazan Fm	Felsic to intermediate intrusive rocks;	–
		Mafic to intermediate lava flows and autobreccias, volcanogenic sedimentary rocks and intermediate to felsic epiclastic and pyroclastic rocks;	57.7

Figure 7.2 Regional Structure



Map from Richer, 2006

Figure 7.3 El Dorado District Geology



Geological base from Richer, 2006. License and concession outlines from a GIS file provided by Pacific Rim.

8.0 DEPOSIT TYPES

The characteristics of the various deposits on the El Dorado property are consistent with low sulfidation type epithermal precious metal vein systems. The term "low sulfidation" refers to the chemically reduced (*i.e.*, not oxidized) state of the sulfur in these deposits. In more descriptive terms, mineralization is generally associated with quartz and/or chalcedony, plus lesser but variable amounts of adularia, calcite, rhodochrosite, potassium-bearing mica, chlorite and pyrite gangue. Gold typically occurs as electrum or more rarely as selenides and tellurides in association with acanthite, silver sulphosalts, base-metal sulfides and pyrite (Cooke and Simmons, 2000). The depths of formation can range from the very shallow hot spring-related gold deposits to veins formed hundreds or even thousands of feet below the surface.

The gold- and silver-bearing veins of the El Dorado district, of which at least 36 exceed one meter in width, occur over an area exceeding 50 km^2. Vein mineralization is dominated by chalcedonic quartz and calcite. Veins range in width between 0.25 and 15 m in surface exposures. Individual veins are generally less than 500-m long, but range up to 1000 m in length. Some systems of related, *en echelon* veins have been traced for up to three kilometers. The veins dip steeply, and generally form ridges.

Although the quartz/chalcedony/calcite veins dominate the mineralization known to date, other forms of silica-rich alteration and mineralization are found in the district. They include opaline to chalcedonic quartz veins, some replacement bodies, hydrothermal silica-rich breccias, and true sinter deposits. The different styles of mineralization may occur in close proximity to each other. Multiple and telescoped hydrothermal events are invoked to explain the juxtaposition of variant alteration types. Many veins, including most of the best-mineralized ones, exhibit evidence of multiple veining events. Some veins are zoned, with lower-temperature textures and opaline silica near the present surface, and higher-temperature features such as banded, recrystallized chalcedonic-quartz and calcite, deeper in the vein.

Petrographic examination of the colloform-banded quartz reveals several minor, but important, components. Important minerals include adularia, sericite, pyrite, acanthite, electrum, native gold, native silver, chalcopyrite, sphalerite, and galena. Adularia and sericite have been observed in quantities up to 5%. The opaque minerals generally comprise less than 1% of the vein but may form a significant portion of individual gray to black bands. Individual gold grains up to 0.1 mm in diameter, associated with pyrite, have been observed in polished sections.

Variations amongst the deposits in the El Dorado district can be ascribed to different levels of present-day erosion, local variations in their conditions of formation and/or possibly multiple episodic, juxtaposed hydrothermal events.

9.0 MINERALIZATION

The information in this section is based on the authors' own observations, various formal and informal documents prepared by the staff of the Pacific Rim and its predecessors, and many conversations with Pacific Rim's geological staff.

The El Dorado district contains many deposits, prospects and occurrences in veins, hot spring deposits and hydrothermal breccias. Pacific Rim's geological staff has divided the district into five sub-districts, the Northern, Central, Central-East, Southern and Southwest. The sub-districts are distinguished from each other by their geographic location, dominant vein orientations, the depths to which the hydrothermal system has been eroded and other characteristics of the veins. Complex, multi-stage paragenetic histories are best displayed in what appear to be higher-level veins such as La Coyotera and San Matias in the Northern sub-district, Nueva Esperanza near the boundary of the Northern and Central sub-districts and Goose in the Central-East sub-district. Veins of the immediate Minita deposit area in the Central sub-district, such as Minita, Minita 3, Zancudo, El Dorado, and Rosario as well as South Minita, Bálsamo, and Cerro Alto, appear to have been more deeply eroded. Veins in the South and Southwest for the most part, have not yet been adequately tested through drilling and have surface characteristics ranging from sinter (El Gallardo and San Isidro areas) to deeply eroded (old Nance Dulce and El Porvenir). The Nance Dulce resource, described in 2006, is still open and was discovered by drilling a high-level, unmineralized alteration zone at surface to the proposed productive interval located approximately 200 masl. Potential exists in all sub-districts for additional discoveries of this type.

In their 1999 "Summary of Exploration Activities," Turner and Johansing organized their descriptions of the deposits and zones into 33 targets, many of which comprise multiple veins. Ronning (2003) provided a very detailed description of many of the target areas and his report may be used to provide additional background information for this report. Discoveries after 2003 but before this report are reported in Ristorcelli and Ronning (2006). Since acquisition of the project, exploration by Pacific Rim has resulted in the recognition and discovery of an additional 12 vein systems and prospects as well as numerous extensions of previously known vein systems. The most important, to date, are the South Minita, Bálsamo, and Cerro Alto "blind" vein discoveries in the Central sub-district and the Nance Dulce discovery in the Southern sub-district. The Bálsamo and Cerro Alto resources are the main subject of this report although metallurgical results are also discussed for the South Minita resource as well. Much of the following discussion is derived from information provided by Pacific Rim and prior operators.

9.1 General

The following section describes the mineralization in the main resource area, the northern part of the Central El Dorado sub-district. The characteristics of the South Minita, Bálsamo and Cerro Alto mineralization are very similar, if not identical to the mineralization in the main resource area and principally the Minita vein. Here, the best gold grades are in veins that display some form of crustiform-colloform banding. This banding is composed of a combination of chalcedony, quartz, adularia, black sulfides, clay and calcite. Often, these veins are composites of multiple vein events, and display multiple stages of banding and/or brecciation features. Banding can appear laminar or highly contorted, or can have brecciated forms. Higher gold values appear to be in veins where the vein and breccia events are less complex. In areas where massive, non-fractured wallrocks are cut by a single, discrete structure, as opposed to stockwork or sheeted vein zones, the vein grades tend to be better.

Grades are highest and banding is often best developed near the outer vein wall contacts. Where vein walls have symmetrical banding, grades are often significantly better in one wall than the other. However, veins normally contain asymmetrical banding, with the banding at one vein wall overprinted by a breccia, another veining event or some type of late structural deformation.

In brecciated zones, fragments are nearly always supported by some type of cementing matrix. The breccias often cross-cut the principal vein. Fragments from the immediate wallrocks are often present, but the fragments more commonly represent lithologies transported from other parts of the vein. They are angular to rounded and sometimes show "plastic" deformation features (locally named "corn-flake" and "mega-flake" breccias).

Chalcedony (cryptocrystalline quartz) is present where calcite is less abundant; it may occur with adularia. Fine-grained to coarse-grained quartz can have a primary origin, or can be recrystallized from chalcedony. It is generally interlayered with or interstitial to adularia, in bands and crystal aggregates. Breccia cement is commonly quartz, with small amounts of clay, calcite and/or adularia. Comb quartz, spar calcite, and zeolites are common in minor late-stage veins and vugs. References in the text to "quartz veins" or "banded quartz" refer to chalcedony and/or coarser-grained quartz recrystallized from chalcedony.

Calcite has many textures and variations but crystals are mostly equant to anhedral. Calcite occurs in coarse-grained, massive to crudely banded and recrystallized masses. Distinct growth zones with sub-microscopic inclusions are common. Some highly elongate calcite grains, with length to width ratios of up to 40:1, can occur concentrated in distinct bands that often have a quartz and/or calcite matrix cement. This texture has at times been mistakenly identified as "lattice" texture[4]. True lattice textures are locally present. Fine-grained spherulitic calcite growths consisting of pseudo-acicular calcite clusters are locally abundant and commonly give the calcite a mottled appearance.

Clay minerals are very fine-grained and occur as irregular masses, in distinct bands, and disseminated in massive chalcedony and/or calcite zones. X-ray diffraction analysis was used to identify the following colored clay mineral species: nontronite[5] (distinctly green), corrensite[6] (pale to dark brown to slightly greenish brown), and montmorillonite with interstratified illite (nearly colorless to tan). Corrensite appears to be the dominant mineral in the higher-grade, middle levels of the vein systems. Montmorillonite occurs at the higher levels, while nontronite is more common deeper in the veins.

[4] Quartz replacing bladed calcite crystals due to retrograde solubility in cooling hydrothermal systems
[5] A member of the smectite group of phyllosilicate minerals.
[6] A mineral of the chlorite group.

Opaque minerals, which constitute a very small volume of the vein material, are very fine-grained and may not be visible to the unaided eye, even in productive veins. In decreasing order of abundance, opaque minerals identified from polished section analysis are: chalcopyrite, acanthite, gold, pyrite, galena, sphalerite and covellite. Native silver and electrum were also observed in earlier petrographic studies. Sulfide minerals can occur as independent grains and/or intergrowths. Gold encapsulated by chalcopyrite or acanthite is locally common, and gold has been reported in pyrite crystals. Base and precious metals are found together in the same bands; but pyrite rarely occurs with other opaque minerals except chalcopyrite. Adularia-rich bands tend to contain the greatest concentrations of opaque minerals. Calcite can have scattered inclusions of opaque minerals and spherulitic calcite often contains free gold and acanthite grains. Because of the very fine-grained nature of the sulfides, the term, "black sulfide", commonly used in the core logs, generally identifies concentrations of any fine-grained dark gray to black sulfide mineral. Identification of the individual sulfide minerals requires petrographic examination.

In summary, key visual characteristics of higher-grade veins include (not necessarily in order of most importance):

1) Colloform banding with inter-layered dark bands,
2) Abundant corrensite,
3) Both real lattice and pseudo-lattice texture, mottled and/or corn-flake textures, and
4) Fine-grain disseminated to irregular coarse-grained clots of "black" sulfide.

These criteria, along with assay values, were used to help differentiate between high-grade vein domains and low-grade domains. However, when outside the main Minita resource veins gold can occur in veins lacking these observed criteria. For example, high grade gold is seldom found outside principal veins or vein zones. However, a few instances of high grade gold in small veinlets in the footwall or hanging wall have been found in the South Minita and Bálsamo systems. These rare veinlets tend to occur near the top of the productive vein horizons in all instances. Also, non-gold bearing, well-banded, crustiform-textured veins have been found in San Matias, Nance Dulce, Rosario and upper Cerro Alto systems. Closer inspection of these veins reveals the "dark" banding is due to fine-grained pyrite and finely disseminated manganese or iron oxides. Careful logging can identify these instances prior to receiving assay results.

The mineralization trend that includes the Minita deposit has become a major resource area. The total extent of the trend could fairly be considered to be from Nueva Esperanza at the north to South Minita at the south, a total distance of 3,200 m. It is interesting to note that at Nueva Esperanza at the north end of the trend, the deposits dip to the west; at Minita, in what is now considered the core of the mineralization trend, the veins become progressively steeper and eventually vertical and then, farther southward, roll over and dip steeply east. At South Minita on the southern end of the defined mineralization trend the veins dip easterly at a slightly shallower angle. Both the Bálsamo and Cerro Alto veins, described in this report, have similar trends and dips to those seen in the South Minita system. These veins can also be traced in the older drill hole data to the north where only the upper elevations of the veins have been tested, presumably above the productive horizon. Additional exploration is required to fully test this extension and projection concept.

9.2 Minita Area

The Minita mine area is in the core of the Central El Dorado sub-district. Ninety-two percent of the past production at the El Dorado district was derived from four main veins in an area about 700 m long and 300 m wide. These are the Minita, Zancudo, Minita 3 and El Dorado veins, the first two of which account for the bulk of historic production. The El Dorado vein has not been investigated sufficiently, so is not discussed below. Other prospective veins in the Minita area are Portillo, Rosario, Moreno, Montecristo, Candelaria, Guadalupe, Goose and Potrero. Much of the following discussion is derived from Turner and Johansing (1999).

9.2.1 Minita Vein

The Minita vein is located between the Zancudo vein, on the west, and the Minita 3 vein (Figure 9.1). The Minita vein trends roughly north-south over a strike length of at least 900 m. Surface vein exposures are limited, with widths generally less than 0.5 m; however, subsurface widths differ dramatically, with true vein widths reaching over nine meters. The Minita vein was the most productive vein of the El Dorado mine operated by Rosario Resources between 1948 and 1953. The Minita vein is reported to have produced 95,922 tonnes of material or 35.5% of the total 270,197 tonnes milled. The Minita vein was mined on the 50-, 175-, 300-, and 425-ft levels, generally between 301,250 N and 301,600 N. However, development on the 175-ft level extends between about 301,200 N and about 301,820 N. Crosscuts were also driven connecting the veins in the El Dorado mine area on the 175-, 300-, and 425-ft levels.

9.2.2 Minita 3 Vein

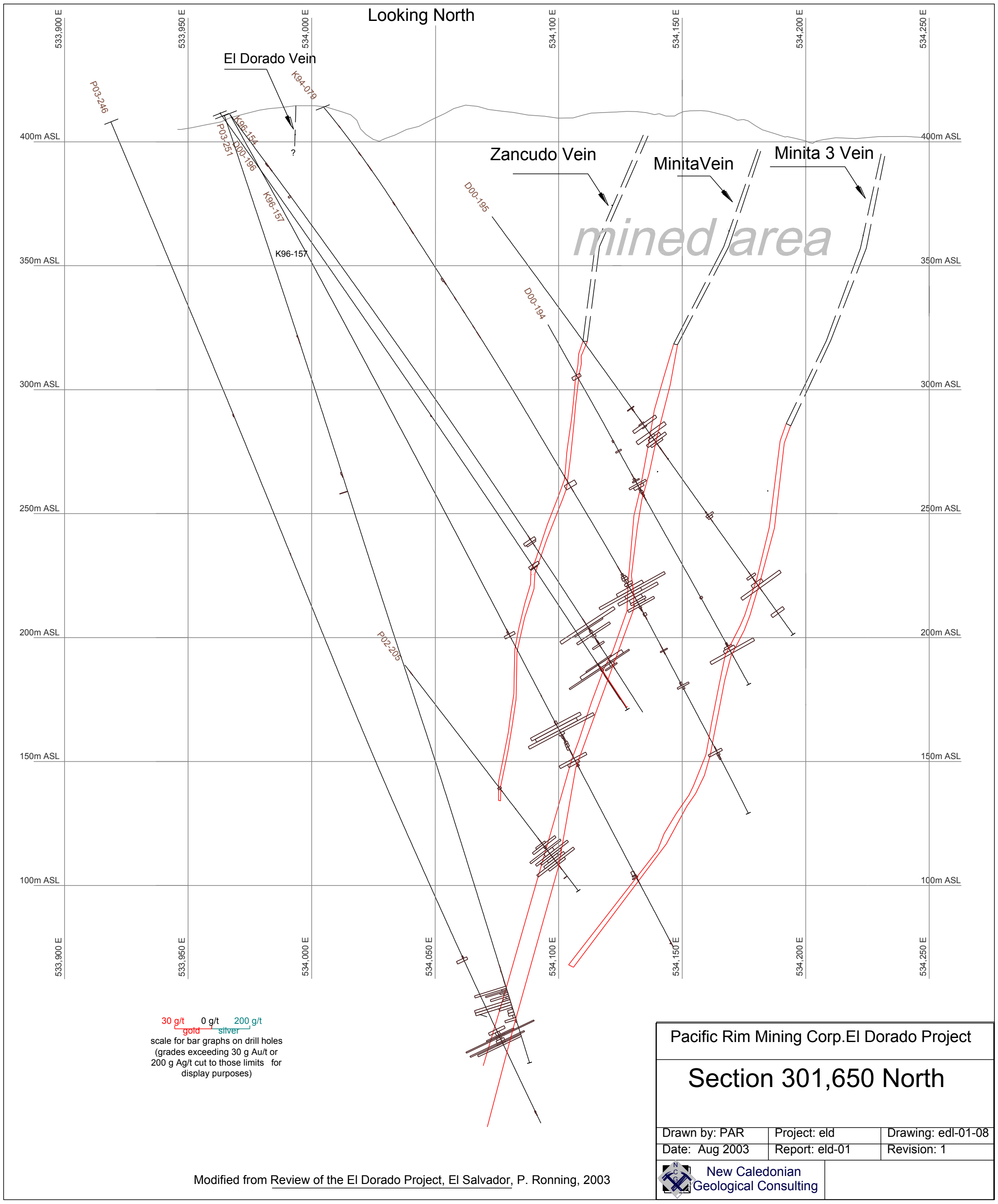
The Minita 3 vein is located just east of the Minita vein, (Figure 9.1) within the Minita area. The Minita 3 vein trends roughly north-south over a strike length of close to 600 m between 301,400 N and 302,000 N. Surface vein exposures are limited, with widths generally less than a meter. In the subsurface, widths can be greater than on surface, with true vein widths up to 6 m encountered in the drilling. The Minita 3 vein was the third most productive vein of the El Dorado mine. The vein is reported to have produced 41,676 tonnes of material or 15.4% of the total tonnes milled. The Minita 3 vein was mined on the 70-, 175-, 300-, and 425-ft levels generally between 301,500 N and 301,750 N. Development on the 175-ft level extends to approximately 301,780 N. Crosscuts were also driven connecting to other veins in the Minita mine area.

9.2.3 Zancudo Vein

The Zancudo vein is located between the El Dorado vein on the west, and the Minita vein on the east (Figure 9.1). It trends roughly north-south over a strike length of at least 700 m. Vein width, both surface and sub-surface, is generally less than 2 m and averages 1 m in the drilling. The Zancudo vein was the second most productive vein of the El Dorado mine area. The vein is reported to have produced 76,937 tonnes of material or 28.5% of the total tonnes milled. The Zancudo vein was mined on the 30-, 50-, 175-, 300-, and 425-ft levels. The 175-ft level was developed and locally mined between 301,090

N and 301,730 N. Cross-cuts were also created connecting the veins in the Minita mine area on the 175-, 300-, and 425-ft levels. Samples from the Zancudo vein revealed an average vein (sample) width of 0.85 m.

Figure 9.1 Cross Section of the Main Minita Veins

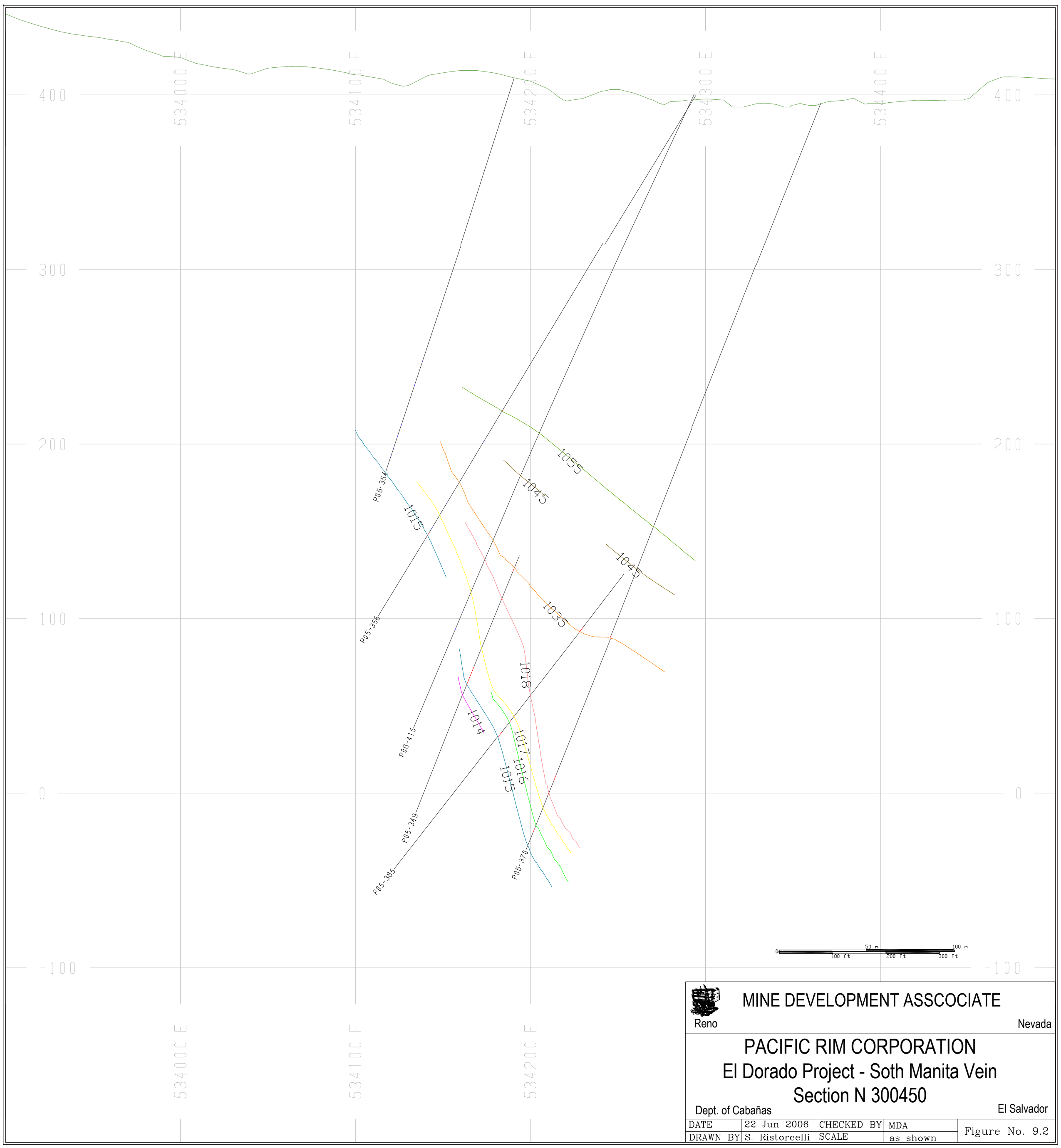


9.3 South Minita Area

The South Minita deposit is a new discovery made in 2005 by Pacific Rim. The deposit's north end is about 200 m south of the southern extension of Minita. The veins, of which ten contribute to the estimated South Minita resource, dip steeply to moderately to the east. The total length of the South Minita area proper is approximately 1,000 m in a north-south direction, constituting about one third of the known total mineralized trend that extends northward as far as Nueva Esperanza.

The South Minita veins occur within a 25-m to 75-m thick zone of fractured andesite, that Pacific Rim geologists refer to as the "lode." All veins lie within this thick zone of strongly fractured rock with minor and local weak mineralization. The lowest vein, the Footwall vein (designated 1015), identified on some illustrations as the "Pink" vein, contains about one half of the South Minita resource. Additionally, there is a very thin and highly discontinuous vein/veinlet (designated 1014) that occurs in the footwall to the lode and Footwall vein. This discontinuous vein was modeled only because it has some of the better grades encountered at South Minita. Three main veins at South Minita contain three quarters of the estimated resources: 1015 (50%) at the footwall, 1017 (10%) still within the lode, and 1035 (15%), which occurs mostly above the main fractured area of the lode. The entire set of 10 veins strikes for approximately 1000 m in a northerly direction and has a 400 m vertical extent, for a total dip distance of over 425 m. A typical cross section is given in Figure 9.2.

Figure 9.2 Cross Section of the South Minita Veins



9.4 Bálsamo – Cerro Alto Area

The Bálsamo and Cerro Alto resources are new discoveries that occur on blind, southern extensions of two vein systems, which have prominent surface expressions to the north but have not seen historic development or production. While these resources lie in three distinct veins/structures, they are grouped into one area because of their spatial association. The northern, near-surface portions of these veins had been drilled by Pacific Rim during earlier exploration campaigns and, although significant veins were encountered, they contained little or no grade. It wasn't until condemnation drilling began in the proposed tailing impoundment facility that the blind, high-grade extensions of these veins were discovered.

The veins at Bálsamo/Cerro Alto occur within a 300-m wide zone but unlike South Minita, the intervening rock is not fractured or mineralized. Eleven veins have been defined to date but only five have sufficient grade or intersections or are sufficiently strong to justify estimating a resource; all of these are located in three separate multi-veined structural zones, Bálsamo, Cerro Alto, and La Luz. Continuity between drill-hole intercepts is predicted based on numerous structural, geological and spatial relationships, but the complexity makes it impossible to have full confidence in the continuity between drill holes in many places, using the data available.

9.4.1 Bálsamo

The Bálsamo vein system is located approximately 1500 m south-southeast of the Minita vein, the principal vein in the Minita resource and about 500 m east-southeast of the South Minita system. Mineralization occurs over 150 m of elevation between 50 to 200 masl. The character of the mineralization is similar to that of the Minita system. Bálsamo could be considered a thin S. Minita-style structural zone with distinct veins in it. There are three Bálsamo veins lying within a single 10 m-thick structural zone. The lowermost vein contains the largest resource.

9.4.2 Cerro Alto

The Cerro Alto vein is located about 200 m east of the Bálsamo vein. Mineralization is more calcite-rich, similar in character to the South Minita system. The length of this vein is 900 m and the total down-dip extent of the down-dip longest vein (Cerro Alto) is 600 m. Cerro Alto is a distinct vein more similar to Minita, albeit with lower grades.

9.4.3 La Luz

The La Luz structure is presently poorly defined and little can be stated regarding this structure. It has a small, inferred resource. It is the third of the three mineralized structural zone in the Bálsamo/Cerro Alto area.

9.5 La Coyotera Area

The La Coyotera vein system, located 1.5 km northwest of the Minita area, has been traced over a strike length of about 1,200 m. The system trends approximately due north at its southern end and then bends eastward to about N20^{o}E for most of its length. Its dip is essentially vertical.

The following information was compiled by Pacific Rim staff:

> Much of the La Coyotera vein is really a lode rather than an individual or discrete vein. The lode is made of many veins and breccias, overlapping to form a sheeted zone with many of what may be either splays or step-overs in a shear zone. Commonly, thin horses of andesite occur between vein stages that cannot be correlated between holes. There are many styles of mineralization and their locations and extent are highly variable.
>
> Leaching of calcite, recrystallization of chalcedony, and oxidation are common and extensive throughout the length and depth of the lode. The lode has two branches at the north end of the system, a narrow, generally lower-grade west branch and a larger, higher-grade east branch. The two branches converge but do not intersect at the surface. However, the near-surface, east-dipping east branch rolls over at depth to become west-dipping, and eventually merges with the west branch into one lode at depth and to the north. The best grades and most complex veining occur where the east branch rolls to the west and extends to just below where the two branches merge with depth. Although the hanging wall and footwall to the lode can be moderately to strongly fractured, the lode is usually poorly fractured. In addition, the adjacent wallrocks contain very strong potassic feldspar and clay alteration up to several meters out from the lode. This pervasive, strong replacement is not obvious and was only recognized after thin section and x-ray diffraction studies were completed.
>
> The following vein styles and/or textures are noted:

- CB – banded chalcedony, adularia, less common corrensite and/or nontronite, black sulfides, and occasionally pyrite.
- CF – corn-flake breccias composed of finely banded, commonly plastically deformed fragments.
- FB – micro-breccia composed of mineralized, banded vein and non-mineralized rock fragments.
- BR – various types of breccia fragments rimmed by black sulfide and sometimes pyrite.
- XB – breccias composed of blocks and large clasts of CB, CF and/or FB styles.
- NC – contorted to brecciated calcite with up to 20% disrupted bands of nontronite.
- RQ – recrystallized vein chalcedony to fine-grain quartz with complete leaching of calcite, commonly with relict bands of corrensite/nontronite and minor manganese oxide staining.
- CP – sugary calcite veins or breccias with up to 3% pyrite.
- FF – fractures with trace pyrite and black sulfide, usually found in breccias and cross-cutting both matrix and clasts.

- BP – colloform pyrite along vein wall margins and rimming un-banded, gray chalcedony fragments.
- DS – disseminated pyrite and black sulfides (up to 3%) in varicolored, un-banded chalcedony.
- MB – bands of chalcedony with manganese oxide, traces of pyrite and/or iron oxides, interbanded with fibrous chalcedony bands up to 4 mm, with corrensite and/or hematite stains.

Typically, high-grade clasts appear to be paragenetically early and diluted by barren vein material and andesite clasts. The common breccia types have varied distribution and intensity. Most may be formed by collapse processes rather than by hydrothermal fluidization.

Opaque minerals consisting for the most part of fine-grained black sulfides are clear indicators of higher grades, although they make up only a very small percentage of the lode volume. Opaque minerals recognized in polished section are: acanthite, chalcopyrite (locally altered to covellite or chalcocite), pyrite, gold and traces of sphalerite and galena. Chalcopyrite appears to be the dominant sulfide in black sulfide bands. Precious metal deposition does not appear to have an obvious relationship to gangue mineralogy or texture but rather is related to a specific horizon and/or elevation.

In summary, key characteristics of higher-grade gold deposition are not clear, but if the criteria used to recognize high grade mineralization in the Minita vein were indiscriminately applied to La Coyotera, the result would often be misleading. Gold is confined to a distinct horizon and can occur in many vein types and textures. The presence of relatively large amounts of black sulfides may be the only fairly consistent indicator for high-grade gold.

9.6 Nueva Esperanza Vein

No comprehensive study of the mineralization of the Nueva Esperanza vein has been completed by Pacific Rim. The following description is from Mirage Resources reports (Mirage Resources, 1997; Wallis, 1996).

Three distinct vein types have been defined:

1. An upper massive chalcedony vein zone with little or no calcite, and a vuggy, weakly banded texture, extending to about 50 m below the surface.
2. A middle zone composed of banded chalcedony and what may be breccia of hydrothermal origin, extending 120 m down-dip along the plane of the vein.
3. A lower broad calcite-rich zone with a narrow chalcedony vein commonly occurring in the footwall.

There is a core part of the vein that exhibits lattice textures and moderate to strong colloform banding. These are features that are indicative of the higher-grade areas in the Minita vein system. Below this near-horizontal core zone, the vein appears to expand into a lode zone consisting of sheeted and/or stockwork veins and veinlets in weakly silicified wallrock and breccias of possibly hydrothermal origin.

9.7 Nance Dulce Veins

Mineralization in the Nance Dulce area was known as early as 1914, when a prospector was reported to have mined material with a value of $10/ton in gold from a small adit on Nance Dulce hill. No other records as to this early stage of work exist. During the first quarter of 1994, geological mapping by Mirage in the southernmost part of the El Dorado Exploration License Area identified the Nance Dulce vein. Initial samples revealed "Bonanza" grades up to 270 g Au/t hosted by a colloform-banded chalcedony vein, 1- to 2-m wide. Further south along the same structure, widespread pyritic, siliceous hydrothermal breccia and strong argillic alteration after quartz/sericite/pyrite alteration are present in the hanging wall of the Nance Dulce structure.

Additional work done by Mirage and its successors, prior to Pacific Rim's acquisition of the project, included geological mapping at several scales, trenching, surface rock sampling, construction of a 2.5 km access road, and in 1994, drilling of ten holes totaling 1,321 m.

In 2004 Pacific Rim did a drilling program that traced the Nance Dulce vein system northwestward for approximately 1,000 m beyond the Mirage drilling. Pacific Rim has drilled approximately 7,565 m in 26 holes[7]. The drilling outlined what is now an Inferred resource on the northern part of the Nance Dulce vein system. The resource starts about 530 m northwest of the 1994 drilling.

In the resource area there are multiple veins, including two steeply northeast-dipping veins that are interpreted to have reasonable continuity from drill hole to drill hole. It is those two veins that comprise the Inferred resource described in Section 17.0. The mineralization is similar, in its style and constituents, to that in the Minita and South Minita systems. As known at present, from the relatively sparse drilling, the veins that contribute to the Nance Dulce resource are thinner and less continuous than the best veins in the Minita. The Nance Dulce vein system requires more drilling in order to better define the mineralization, with the objective of upgrading the classification of the resource and possibly expanding it.

[7] These numbers are more than are ascribed to Nance Dulce in Section 17.0 because here they include holes that do not figure in the resource estimate.

10.0 EXPLORATION

The fifteen year period of recent exploration on the El Dorado Project includes extensive mapping of mineralized structures, lithogeochemical sample collection, trenching and drilling. There have been numerous ancillary studies including environmental baseline work. The results of the exploration work are described in the discussions of the individual exploration targets in Ronning (2003) and in the technical report on the gold and silver resources by Ristorcelli and Ronning (2006). Exploration drilling is the only relevant new work completed since the 2006 report and is described in relevant parts of Section 11.0 of this report. The present section includes only a summary of the surface work completed during the previous periods.

10.1 Geological and Geochemical Survey

Geologic mapping to varying levels of detail, done by Pacific Rim and its predecessors, covers approximately 4,400 hectares of the nearly 16,000 hectare property, including most of the known vein systems. Digital maps have been generated at scales ranging from 1:1,000 to 1:10,000. In addition, the project archives contain numerous individual maps of trenches, veins and target areas at various scales. Volumes of this older historic mapping and sampling data have been digitized, geo-referenced to an accurate "true earth" coordinate system and compiled into Pacific Rim's GIS database. Pacific Rim's geologists continue to do supplemental mapping and sampling, filling gaps, resolving geologic problems as they arise, and mapping new discoveries. And most importantly, the geologists continue to discover previously unrecorded veins.

As of April 2006, the El Dorado Project database contained results for about 3,980 rock samples collected from within the El Dorado Project area. Pacific Rim's predecessor operators collected approximately 2,360 of the samples and Pacific Rim's exploration crews collected the remainder. The samples are described as channel samples, chip channel samples, selected chips, random chip samples and grab samples. It is believed that in almost all cases, and certainly in the case of Pacific Rim's samples, the sampling was done by company geologists or by local laborers working under the direct supervision of company geologists.

10.2 Trenching

Hand trenching is a common method of exposing bedrock in areas of extensive soil cover. For the most part it is done on a small scale using local labor, although Pacific Rim's predecessor operators did some bulldozer trenching. In the project database, 541 of the surface rock samples are identified as being from trenches. An additional 483 samples are contained in a database labeled as "Old Trench Samples." They are not included in the discussions in this report. These samples appear to have been analyzed using less sensitive methods than the samples included in the main surface sample database, so the authors did not to include them.

11.0 DRILLING

Several campaigns of drilling have been completed on the El Dorado Project throughout the last 14 years, by Pacific Rim and by preceding operators. Pacific Rim began drilling at El Dorado in May 2002 and this campaign is still in progress as of this writing. The drilling database (Table 11.1) used in the preparation of this report was current as of the end of October 2007. A map of the drill holes in the resource areas is given in Figure 11.1. The majority of the holes drilled on the El Dorado Project are core holes.

Table 11.1 Descriptive Statistics of the El Dorado Project Drill Database

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Length	35,443	1.3	6.1	0.0	0.0	0.01	500	m
Au-Average	25,028	0.13	1.11	4.34	3.90	0.00	306.30	g Au/t
Ag-Average	24,753	1.00	8.177	34.643	4.237	0.000	2809.80	g Ag/t
Au Equivalent	24,737	0.16	1.28	4.97	3.87	0.00	362.50	g AuEq/t
AgAu Ratio	24,724	8.39	31	145	5	0	12335	
Core Recovery	18,475	100.00	96	14	0	0	108	%
RQD	15,126	73.00	65	29	0	0	100	%
Vein Width	2,590	2.00	2.83	2.03	0.72	0.03	9.40	m

"-Average" is the average of all check and duplicate samples for an interval

According to Snider *et. al.* (1996), reverse circulation (RC) drilling was employed to pre-collar some core holes, but was also used to drill seven complete holes at Nueva Esperanza during an earlier drill campaign. It is apparent that down-hole contamination occurred in the course of the reverse circulation drilling. This was considered in the selection of drill samples used in resource estimation. Core drilling is the only method now in use on the project.

Discussions of the drilling procedures and the core recovery follow in Sections 11.1 and 11.2. The results of the drilling campaigns are integrated into the discussions of mineralization in Section 9.0 and of resource estimates in Section 17.0.

The proportional relationship between the length of a drill-hole intercept and the true thickness of the intersected body varies with each mineralized intercept. The best estimates of the true dimensions of mineralized veins are an integral part of the resource estimation process discussed in Section 17.0. The issue of "true thicknesses" is not addressed here, except to note that drill holes almost always intersect the veins at some angle less than 90°, so that drill-hole intercepts are longer than true thicknesses. Standard trigonometric or graphical methods are used to estimate true thicknesses.

CAD CONTROL BLOCK REF:\\Stever\projects\El Dorado\Reports\20072008\43-101\Figures\Figure11-01_dhmap11-07.dwg
DATE:13-Jul-06

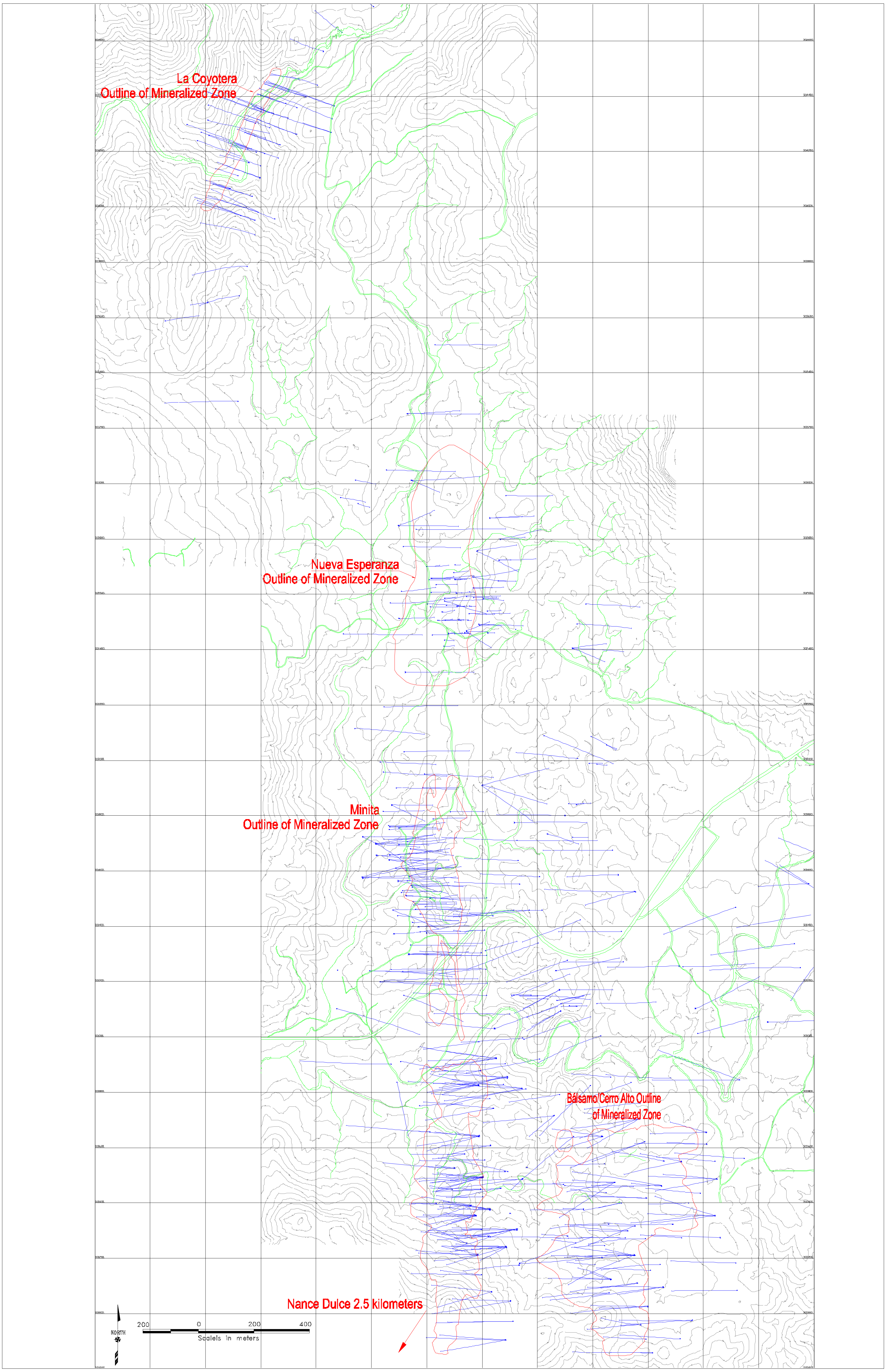


FIGURE NO. 11-1

PACIFIC RIM CORPORATION
El Dorado Project
Drill Hole Map

Dept. of Cabañas — El Salvador

AS A MUTUAL PROTECTION TO OUR CLIENTS, THE PUBLIC, AND MDA ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS, OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

MINE DEVELOPMENT ASSOCIATES
Reno — Nevada

DATE	18-Feb-2008
DRAWN BY	S Ristorcelli
CHECKED BY	MDA
SCALE	As shown

11.1 Drilling Procedures

At present core drilling is done using HQ equipment that produces 63.5 mm diameter core. If it is necessary to reduce to a smaller diameter to overcome drilling difficulties, NQ equipment is used, producing 47.625 mm diameter core. In order to better monitor and control core recovery in bad ground conditions, a split core tube is used. This device allows the core to be removed from the drill tube with less disruption than might be the case with more conventional equipment. The core is placed in specially designed, 1.2 m-long wooden core boxes at the drill site. Special “closed” boxes are used when the core is extremely broken to reduce shifting and contamination within the box. However, instances of such bad ground conditions have been rare in Pacific Rim’s experience and have never been encountered in the productive vein areas.

Drillers measure the core recovery and collect RQD data before the core is broken up and put into the core boxes. Loaded core boxes are trucked to Pacific Rim’s core logging, sampling and storage facility in the El Dorado mine area.

The down-hole orientations of the drill holes have been measured using various instruments during the history of the project. The instruments used measured both hole direction and inclination. From 2003 until recently the instrument in use was a digital down-hole survey device called a Reflex™. The drillers did the down-hole surveys. Measurements were taken approximately every 50 m down the hole. After the measurement at the bottom of the hole, measurements were repeated approximately every 50 m as the instrument was raised back up the hole. The drillers recorded raw azimuth data, uncorrected for declination. All survey data were recorded on drillers’ daily logs as well as special survey forms. Both the driller and a helper were supposed to confirm the digital reading and recordation of each survey. If excessive deviation occurred, the driller was expected to repeat the survey. Down and up surveys were compared by Pacific Rim staff and, where duplicate intervals overlapped, an average was recorded in a master compilation. Both raw survey and declination corrected values were recorded.

Serious discrepancies were rare but did occur. After consultation with the driller representative, Pacific Rim personnel recorded a corrected survey reading. The correction methodology was recorded in the survey section of the original drill-hole archives. Discrepancies in pre-Pacific Rim data, when identified, have also been recorded in the above manner. Generally, the bad survey data are discarded and the average of a previous and later survey are recorded.

A Flexit™ downhole survey instrument has been in use for most of the holes drilled since 2006. This instrument is capable of collecting a nearly continuous series of orientation measurements as it is pulled up the drill hole. Recording is done automatically, into a memory module, and Pacific Rim staff subsequently load the data into the company’s digital database. However, not all holes were surveyed with it and, for various reasons, a Tropari survey may have been used for the entirety of the survey or for only part of the information making up the down hole survey file (for example a Tropary might be used every 50 m down the hole to monitor deviation but the FlexIt would be used at the completion of the hole with a FlexIt survey only for coming back out of the hole.) Of 239 holes tabulated for type of surveying, a Flexit™ was used exclusively for 227 holes and a Tropari was used, at least in part, for 12 holes (William Gehlen, written communication, February 19, 2008).

Since 2003, Pacific Rim has used a differential GPS for surveying drill collars and other survey work. Before this, collars were surveyed by contract surveyors. After drill holes are completed, the collar locations are marked with poured concrete blocks.

Pacific Rim photographs drill core from the principal and significant vein sections, and from other intervals where samples or geotechnical data are collected, when drilling in or stepping out from known resource areas. Core from new exploration areas is not generally photographed unless a significant vein or alteration interval is intercepted. Due to recent pressure to complete assaying and logging of the important vein intersections in shorter time frames, large backlogs of drill logging of country rock exist.

11.2 Core Recovery

Historically, core recovery issues have played a large role in the evaluation of the El Dorado Project. In some cases, core recovery had been used in factoring grades and tonnages in resource estimates. Hence, a detailed discussion and analysis of this issue is given here, which presents analyses and conclusions which in some cases differ from historic "remedies" for poor core recovery.

While reading this section, the reader should be aware that overall core recovery in Pacific Rim's drilling is very good. Table 11.2 gives a breakdown of core recovery in total and by campaign as of June 2003. To a large extent the success of Pacific Rim's drilling program is due to the fact that it is using the same drilling company and group of drillers that drilled all previous holes in the El Dorado area since Mirage acquired the project.

This section remains the same as in previous reports as the issue with core recovery has been pretty well mastered. For example, core recovery at South Minita where the bulk of the drilling since 2003 has taken place is 99.5% for all samples coded to a modeled vein.

Table 11.2 Core Recovery by Campaign
(as of June 2003)

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
DDH*	127	98	90.8	21.9	0.24	5	100	%
Kinross	4,633	100	90.4	19.5	0.22	0	100	%
Dayton	285	100	94.9	16.4	0.17	5	100	%
Pacific Rim	2,005	100	99.1	5.8	0.06	26	100	%
San Matias Area	144	100	82.5	26.0	0.31	4	100	%
All Groups	7,194	100	92.1	18.1	0.20	0	100	%

* Four drill holes predating Kinross

The six deposits whose resources are described in this report, Nueva Esperanza, La Coyotera, Minita, South Minita, Bálsamo/Cerro Alto and Nance Dulce, differ from one another in some of their geological characteristics. These geologic differences impact core recovery differently and could affect core recovery's influence on *potential* sample bias differently. Hence, core recovery is discussed individually for each of three of the deposits: Minita, La Coyotera, and Nueva Esperanza. South Minita and Nance Dulce have core recovery characteristics similar to Minita. Core recovery at Bálsamo/Cerro Alto was very good.

11.2.1 Core Recovery at the Minita Deposit

Higher-grade mineralization at the Minita deposit is related to banded chalcedony veins. Within this material type alone, there should be no preferential bias caused by core loss. However, if this high-grade quartz is associated with calcite, the softer calcite *may* be preferentially lost, thereby potentially introducing a positive bias to grade estimates. Table 11.3 shows that grades initially decrease with lower core recovery down to 90% and then the grades *on average* increase. However, there is no statistically significant relationship, as the average increase is caused by a few outlier samples. Figure 11.2 through Figure 11.5 demonstrate this relationship graphically. There are four sets of data on each graph. "AuAvg" and "AgAvg" are the mean grades of gold and silver for each 5% increment in core recovery. "All Groups" is the mean grade of all core recovery increments. "% Relative Difference" is the relative difference in grade of that particular core recovery increment compared to the "100%" core recovery increment grade.

This non-systematic relationship between grade and core recovery suggests that core recovery cannot be used to factor grade. Furthermore, one cannot arbitrarily eliminate all samples with less than, say, 40% core recovery because doing so would introduce a positive bias to the sample set. Nevertheless, the confidence in samples with extremely low core recovery is minimal. For this reason, MDA has opted to eliminate the use of all samples with core recovery of less than 25%, while those blocks estimated from samples with core recoveries that average less than 80% will be classified no higher than Indicated.

Table 11.3 Core Recovery and Grade – Minita Deposit

All El Dorado Mine Resource Area Samples (greater than 1 g Au/t and 5 g Ag/t)

Core Rec. (%)	AuAvg Mean	% Relative Difference	Grouped (mean/diff%/N)	AgAvg Mean	% Relative Difference	Grouped (mean/diff%/N)
0	23.20	231%	11.74	185.00	265%	63.56
5	17.56	151%	68%	76.00	50%	25%
10	2.57	-173%	24	16.40	-209%	24
15	10.89	55%		60.04	18%	
20	4.70	-49%		14.09	-260%	
25	4.17	-68%		16.38	-210%	
30	2.00	-250%	15.33	13.50	-276%	101.80
35	2.55	-175%	119%	19.13	-165%	101%
40	42.15	501%	30	339.40	570%	30
45	20.10	187%		145.07	186%	
50	11.29	61%		39.54	-28%	
55	6.77	-4%		25.78	-97%	
60	7.13	2%	14.98	70.28	39%	103.93
65	12.65	81%	114%	89.75	77%	105%
70	12.04	72%	71	67.64	33%	71
75	36.92	427%		229.42	353%	
80	14.59	108%		94.27	86%	
85	8.20	17%		74.09	46%	
90	6.56	-7%	-10%	41.17	-23%	-7%
95	6.16	-14%	73	49.92	-2%	73
100	**7.01**	**0%**	**593**	**50.69**	**0%**	**593**
All Groups	8.11			57.49		

% Relative Difference of the increment over the 100% group

Figure 11.2 Core Recovery and Gold Grade – Minita Deposit

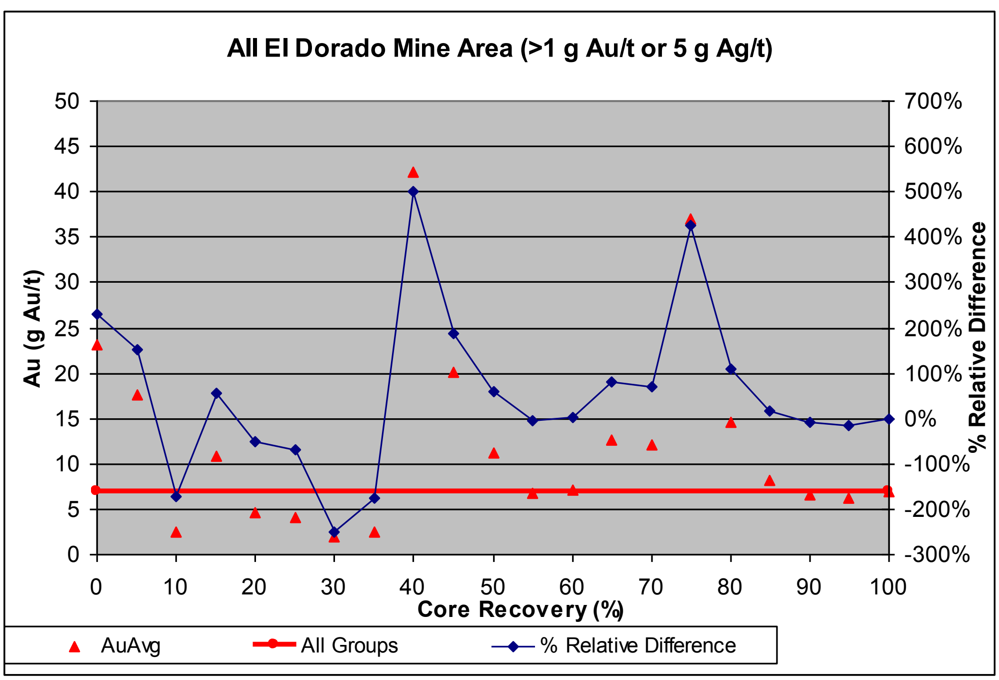


Figure 11.3 Core Recovery and Silver Grade – Minita Deposit

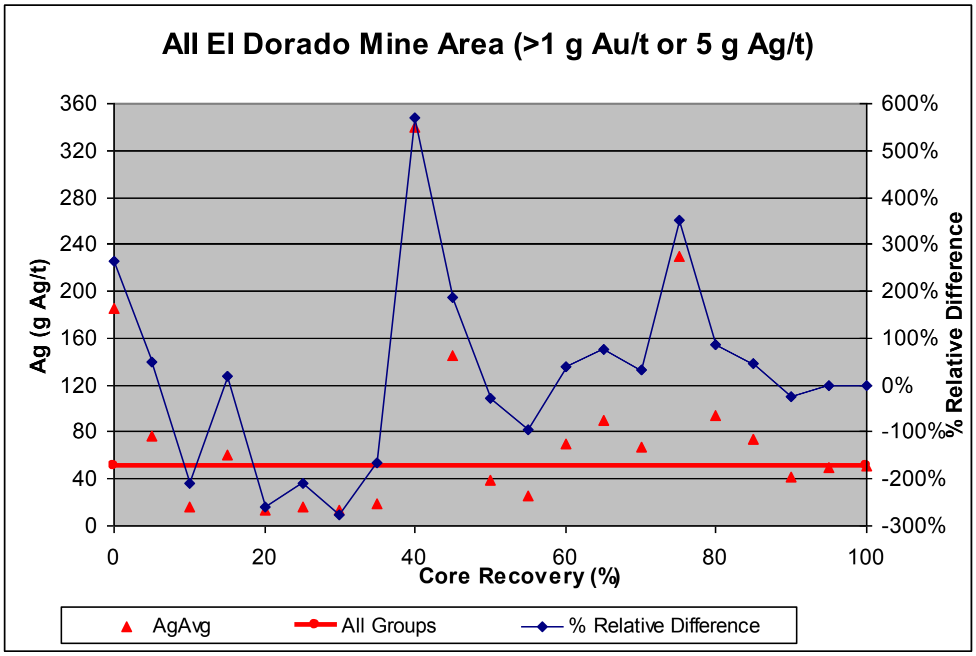


Figure 11.4 Core Recovery and Gold Grade Scatterplot – El Dorado Mine Area

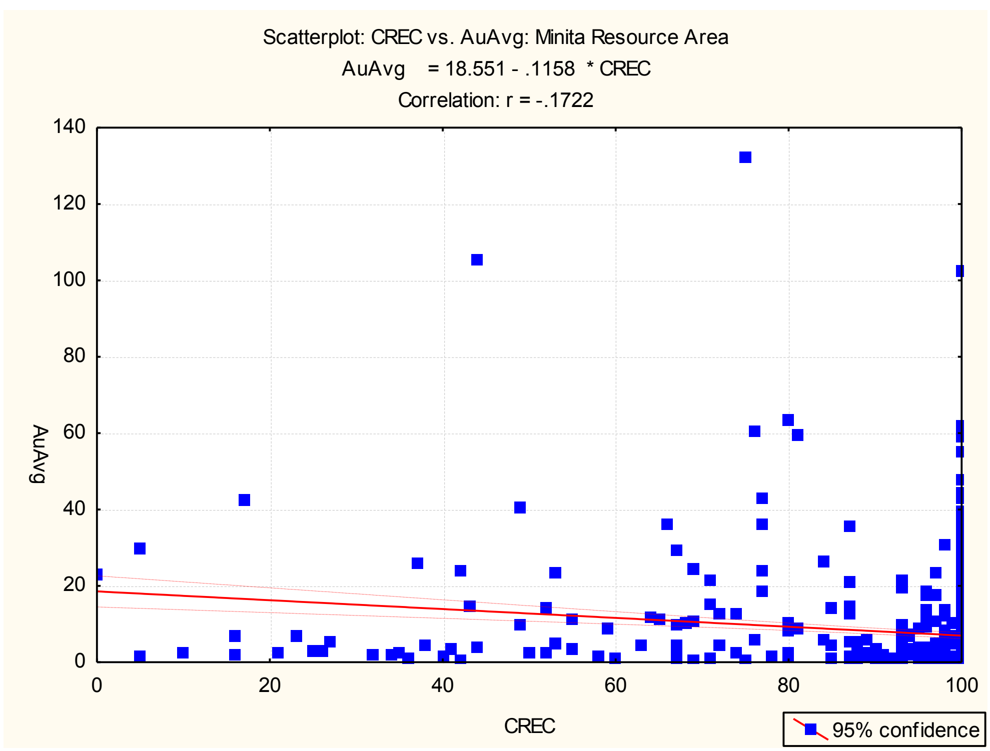
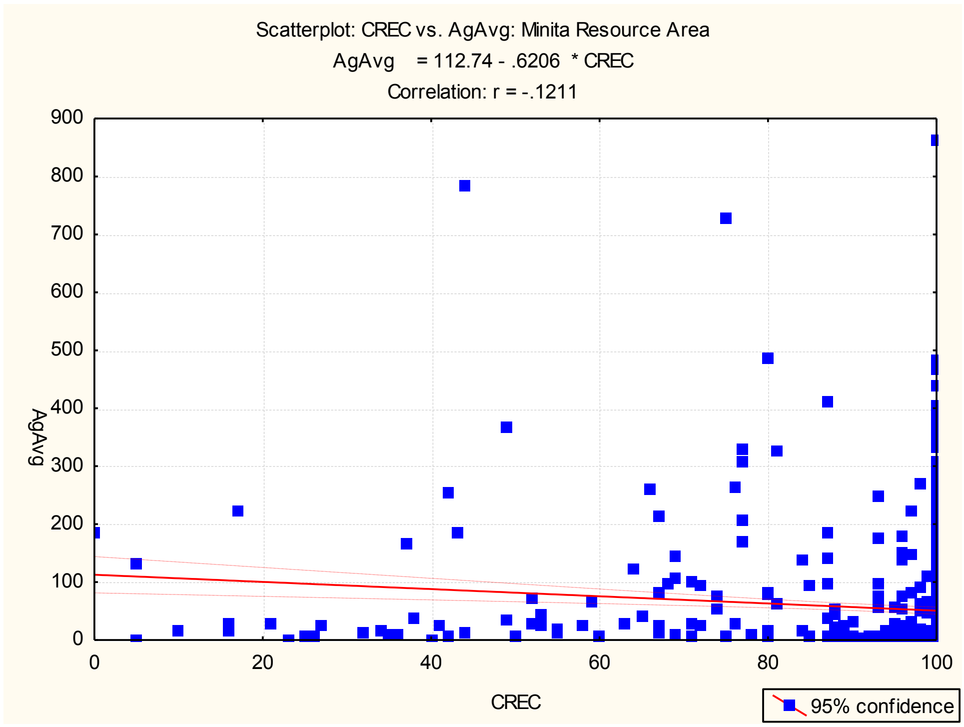


Figure 11.5 Core Recovery and Silver Grade Scatterplot – Minita Deposit



11.2.2 Core recovery at the Nueva Esperanza Area

Contrary to the findings at the Minita area, the geology at Nueva Esperanza could *potentially* introduce a bias through its effect on core recovery. Higher-grade mineralization at Nueva Esperanza is related to quartz vein material occurring within andesite, which is often clay-altered. This contrast in mineralogy *could* introduce a bias if, during drilling, the clays are washed out and the higher grade quartz vein material is retained. Table 11.4 demonstrates that, on average, lower core recoveries have higher grades but again, a statistically significant set of data does not exist (Figure 11.6 through Figure 11.9). The analysis in Table 11.4 also shows that silver and gold do not behave similarly with respect to core recovery. The gold grades from samples with low core recoveries are normally above the mean of all assays, and silver grades from samples with very low core recoveries are above the mean for all silver samples, but silver grades from samples with moderately low core recoveries do not have materially higher grades. There are four sets of data on each graph. "AuAvg" and "AgAvg" are the mean grades of gold and silver for each 5% core recovery increment. "All Groups" is the mean grade of all core recovery increments. "% Relative Difference" is the relative difference in grade of that particular core recovery increment compared to the "100%" core recovery increment grade.

Because of the tendency for erratic relationships between low core recovery and grades and because of the geologic features described above, samples with core recovery of less than 25% will be excluded from resource estimation and no material will be classified as Measured if a block is estimated from samples whose average core recovery is less than 80%. Figures 11.6 through 11.9 demonstrate this relationship graphically.

Table 11.4 Core Recovery and Grade – Nueva Esperanza Area

All Nueva Esperanza Samples greater than 1 g Au/t and 5 g Ag/t

Core Rec. (%)	AuAvg Mean	% Relative Difference	Grouped (mean/diff%/N)	AgAvg Mean	% Relative Difference	Grouped (mean/diff%/N)
0			2.32			11.65
5	7.84	158%	-23%	35.66	73%	-43%
10			9			9
15						
20	0.61	-398%		3.15	-552%	
25	1.10	-176%				
30			4.86			36.81
35	3.94	30%	60%	20.47	0%	79%
40	5.73	89%	48	50.43	145%	48
45	2.02	-50%		11.75	-75%	
50	2.19	-38%		22.97	12%	
55	5.71	88%		37.06	80%	
60	2.95	-3%	4.37	22.17	8%	26.57
65	5.71	88%	44%	50.86	147%	29%
70	3.41	12%	74	17.10	-20%	74
75	4.51	49%		23.46	14%	
80	1.83	-66%		10.58	-94%	
85	5.85	93%		25.76	25%	
90	5.91	94%	23%	11.42	-80%	-41%
95	2.52	-21%	31	12.45	-65%	31
100	**3.04**	**0%**	**129**	**20.56**	**0%**	**129**
All Groups	3.73			23.59		

% Relative Difference of the increment over the 100% group

Figure 11.6 Core Recovery and Gold Grade – Nueva Esperanza Area

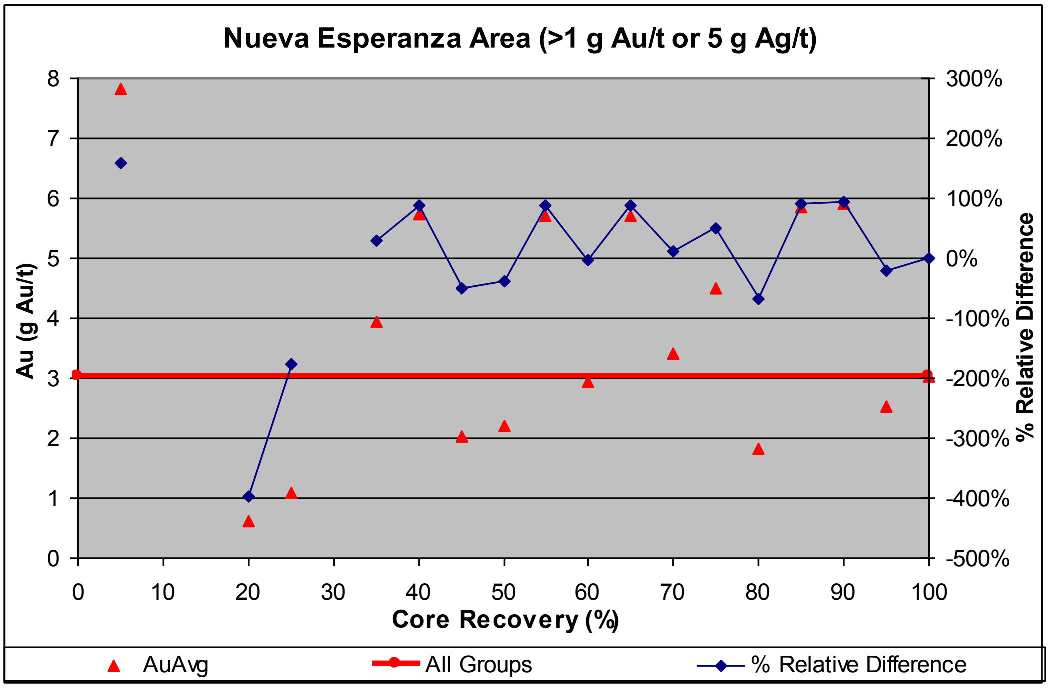


Figure 11.7 Core Recovery and Silver Grade – Nueva Esperanza Area

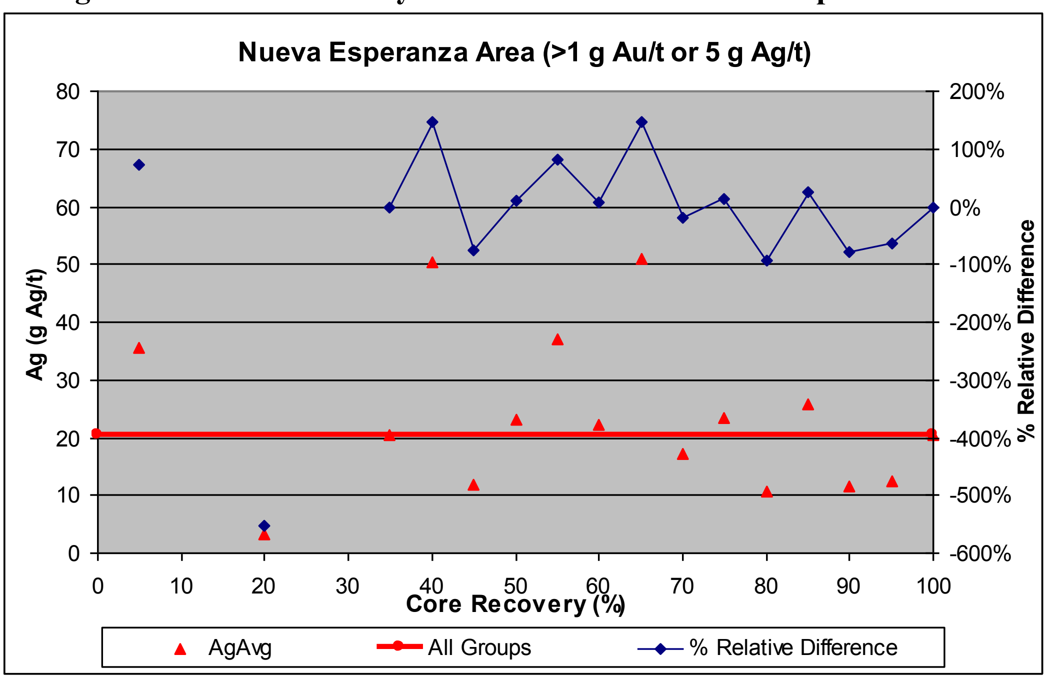


Figure 11.8 Core Recovery and Gold Grade Scatterplot – Nueva Esperanza Area

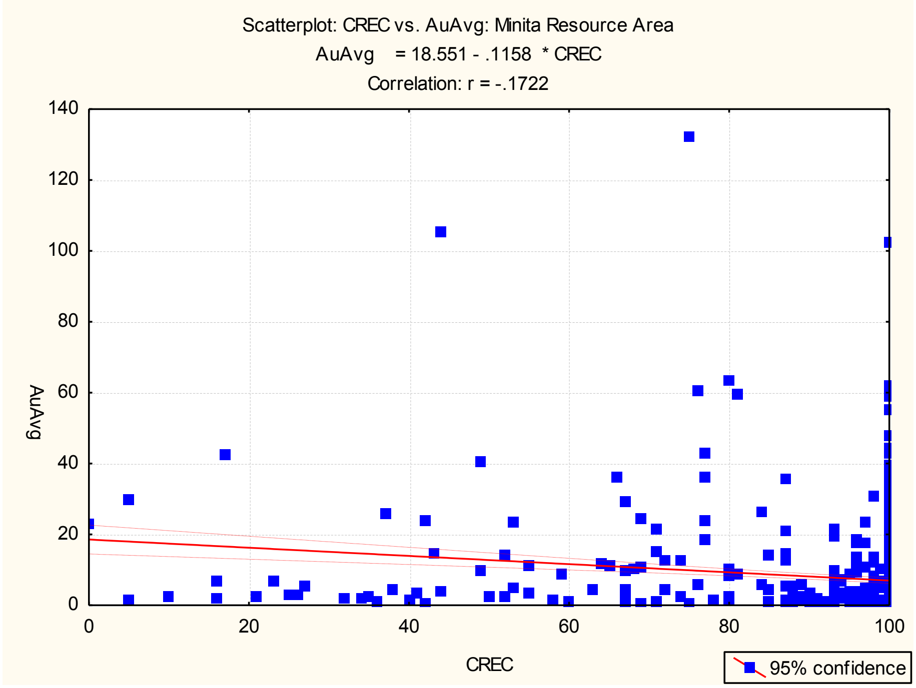
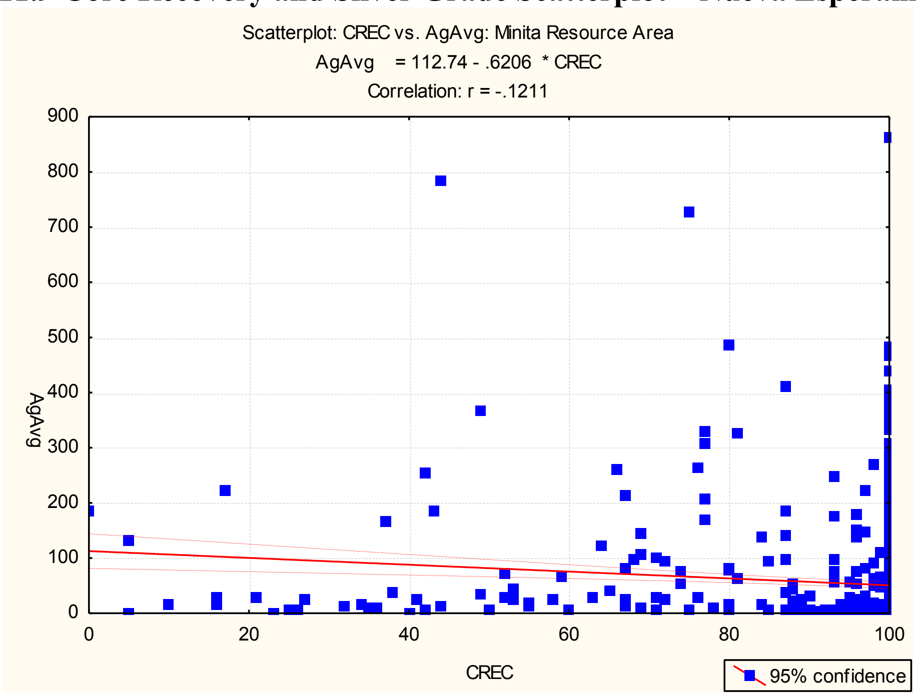


Figure 11.9 Core Recovery and Silver Grade Scatterplot – Nueva Esperanza Area



11.2.3 Core Recovery at the La Coyotera Area

Higher-grade gold mineralization at La Coyotera is preferentially associated with quartz veining. This veining is located within a wide zone of brecciated vein material, sometimes with calcite (presumed to be, in general, lower grade). This by itself does not suggest that grade biases might exist with core recovery. In fact, there is no relationship with grade and core recovery in the La Coyotera database as shown in Table 11.5 and Figure 11.10 through Figure 11.13. Rather, grades remain relatively consistent down to core recoveries of below 25%. There are four sets of data on each graph. "AuAvg" and "AgAvg" are the mean grades of gold and silver for each 5% core recovery increment. "All Groups" is the mean grade of all core recovery increments. "% Relative Difference" is the relative difference in grade of that particular core recovery increment compared to the "100%" core recovery increment grade.

MDA has opted, based on these analyses and geologic environment, to eliminate all samples with core recoveries of less than 25% from resource estimation while those blocks estimated from samples with core recoveries of less than 80% will be classified no higher than Indicated.

Table 11.5 Core Recovery and Grade – La Coyotera Area

All Coyotera Samples greater than 1 g Au/t and 5 g Ag/t

Core Rec. (%)	AuAvg Mean	% Relative Difference	Grouped (mean/diff%/N)	AgAvg Mean	% Relative Difference	Grouped (mean/diff%/N)
0			6.28			54.30
5			59%			84%
10	1.24	-220%	43	28.63	-3%	43
15	10.01	153%		46.17	56%	
20	15.37	289%		154.02	422%	
25	4.58	16%		41.91	42%	
30	6.61	67%	4.27	68.90	133%	43.48
35	5.06	28%	8%	51.88	76%	47%
40	4.27	8%	175	38.46	30%	175
45	2.93	-35%		37.03	25%	
50	3.55	-11%		30.05	2%	
55	4.68	18%		53.82	82%	
60	4.81	22%	3.40	58.99	100%	38.68
65	2.18	-82%	-14%	28.66	-3%	31%
70	3.05	-30%	222	28.96	-2%	222
75	3.56	-11%		44.58	51%	
80	2.88	-37%		42.75	45%	
85	4.02	2%		29.79	1%	
90	3.83	-3%	17%	30.99	5%	-3%
95	5.41	37%	73	26.54	-11%	73
100	**3.95**	**0%**	**481**	**29.52**	**0%**	**481**
All Groups	4.04			35.04		

% Relative Difference of the increment over the 100% group

Figure 11.10 Core Recovery and Gold Grade – La Coyotera Area

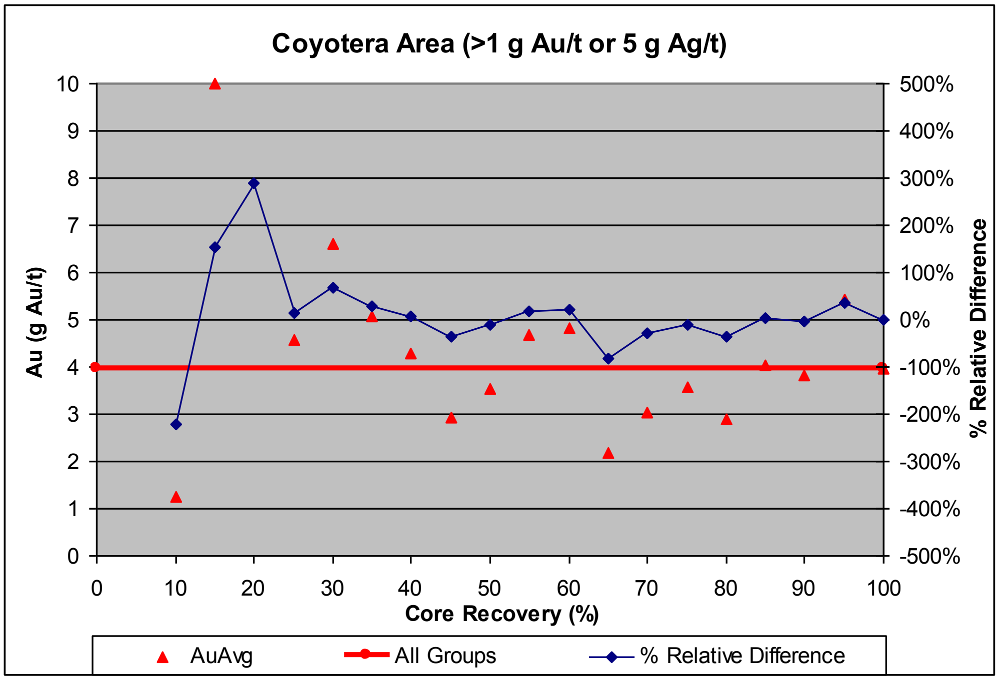


Figure 11.11 Core Recovery and Silver Grade – La Coyotera Area

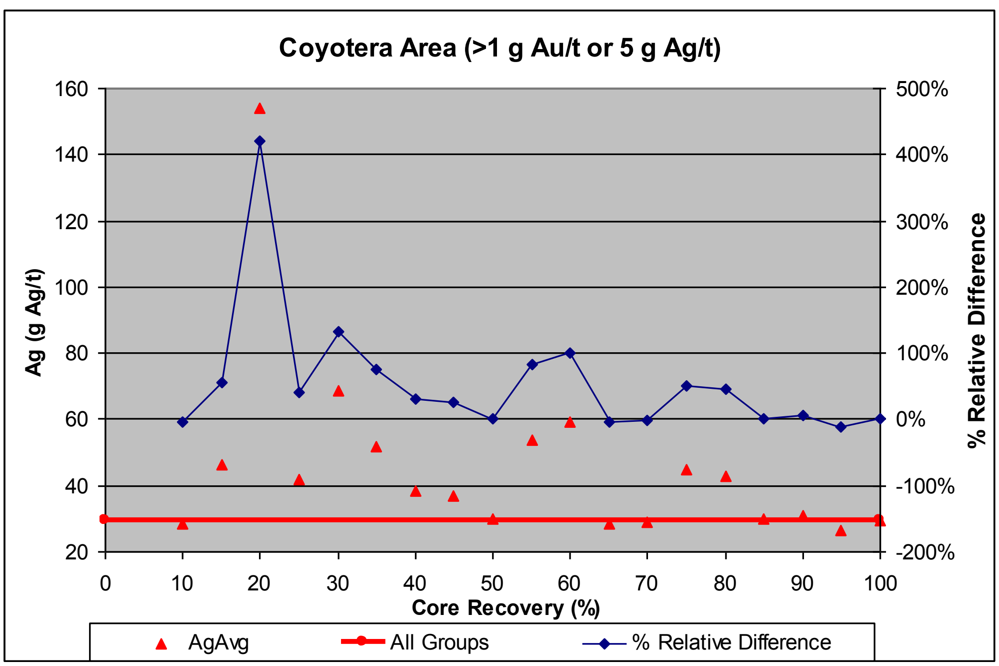


Figure 11.12 Core Recovery and Gold Grade Scatterplot – La Coyotera Area

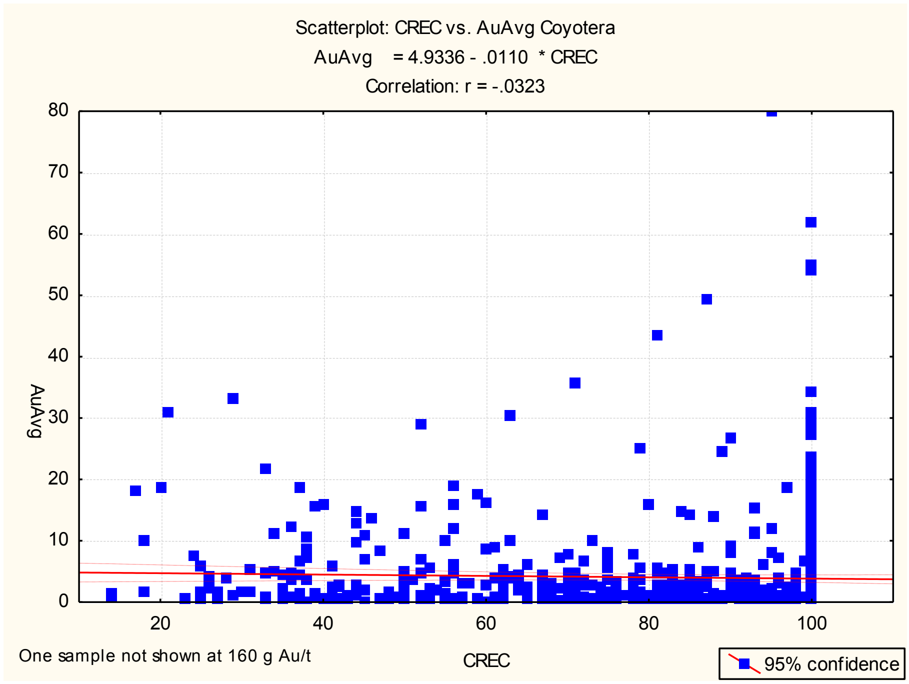
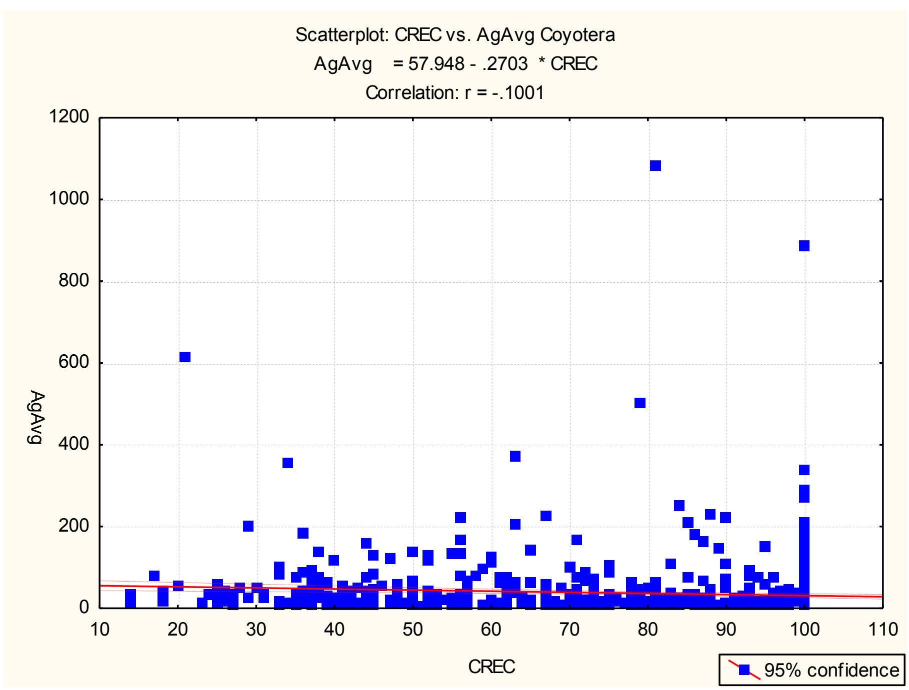


Figure 11.13 Core Recovery and Silver Grade Scatterplot – La Coyotera Area



12.0 SAMPLING METHOD AND APPROACH

Overall, the sampling procedures (Appendix B) used by and geologic logging done by Pacific Rim are considered at or above industry standards and are producing a dataset of sufficient quality to produce resource estimates.

12.1 Pacific Rim Samples

12.1.1 Surface Samples

Ronning (2003) wrote "*The sampling method used by Pacific Rim field personnel varies with the purpose of the sample. Geologists doing initial reconnaissance or prospecting may collect selected grab samples from new discoveries. Such samples would be intended only to determine if minerals of interest are present, not to estimate grades for any volume of material.*

For more systematic sampling, outcrops are cleaned off and in some cases shallow hand trenches are dug. Continuous chip samples are collected over intervals selected by a geologist. In most cases local laborers do the sampling, under a geologist's supervision. The manner of sampling is recorded in field notes and is entered into the digital database of surface samples."

From the beginning, Pacific Rim has taken GPS readings at all sample sites. In addition, most trenches are photographed.

12.1.2 Samples from Drill Core

The geologists who log the drill core select the intervals to be sampled as they log. Sampling is done by local employees of Pacific Rim, under the direction of the geologists. The logging geologists and samplers are well trained and have extensive experience. The principal logging geologist as well as the core samplers have been on the project since at least 1997, and all have extensive knowledge of the rock types, sampling techniques and overall procedures. This results in excellent backward compatibility and comparisons with older data recorded by previous operators. The core is sawn in half along its axis, using a water cooled rock saw. Care is taken to choose the saw cut that will be most representative. In instances where core is too broken to be sawn, the fragments to be included in the sample are selected by hand, with care to keep the sample as representative as possible. Procedures being used today have been in place with little modification since Pacific Rim began working on El Dorado. Ronning (2003) reported that Pacific Rim's immediate predecessor operator, Dayton Mining, also used a rock saw for sampling core from the 13 holes it drilled in 2000. Operators prior to Dayton used a percussion core splitter.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

MDA did a review of Pacific Rim's quality control and quality assurance ("QAQC") data, during the course of the October 2007 trip and its follow-up. More comprehensive QAQC data are available for gold than for silver, and most of the discussion in section 13.0 focuses on gold. Where this discussion does deal with silver, in sections 13.3 and 13.6, it is explicitly so stated.

The primary gold analyses for the El Dorado program are done at Inspectorate, using a fire assay preparation with an AA finish ("FAAA"). The QAQC data that MDA reviewed consist of:

- Re-analyses by Inspectorate using a fire assay preparation and a gravimetric finish ("FAGR");
- Check samples done by Inspectorate, using new pulps prepared from the coarse reject material, analyzed by FAAA;
- Check analyses at American Assay Laboratories Inc. ("American Assay") using new pulps prepared by Inspectorate from the coarse reject material, analyzed by FAAA; and
- Analyses by Inspectorate of low grade material that Pacific Rim describes as a "low-grade standard." This serves a similar purpose to a "blank."

13.1 Comparison of FAAA with FAGR

The three graphs that follow illustrate the relationship between the gravimetric and atomic absorption gold analyses. Figure 13.1 and Figure 13.2 show the percent difference between the two analyses, plotted against the average grade of the two samples. The data are presented in the figures based on the sorted average grade in order to demonstrate potential bias by grade. Ideally the percent difference would be zero. In the real world it should be small and have little bias, and for the most part, this proves to be the case. The lack of bias is shown by the red trend line in the figures, which follows the zero percent difference line very closely.

There are some outliers evident in Figure 13.1 and Figure 13.2, having differences between the atomic absorption and gravimetric results that are substantial, in a few cases exceeding 50%. All of the extreme outliers pre-date 2006, and they are too few to cause concern in terms of resource estimates. Any future instances of such outliers that may occur should be investigated at the time they occur.

Figure 13.1 Percent Difference Au Gravimetric vs Au Atomic Absorption

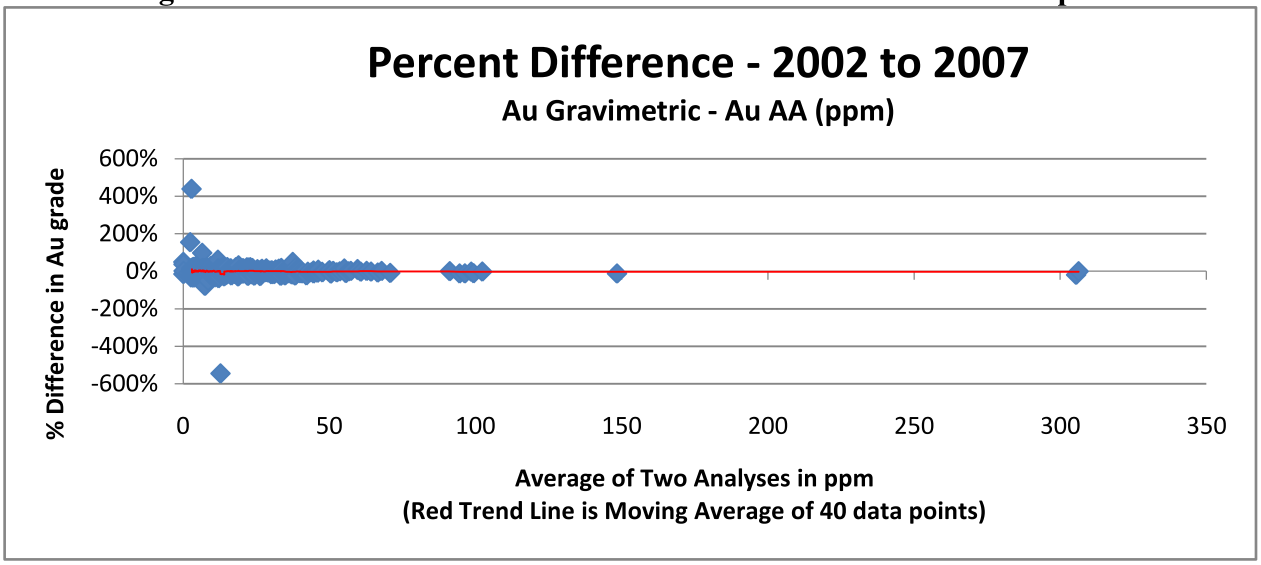
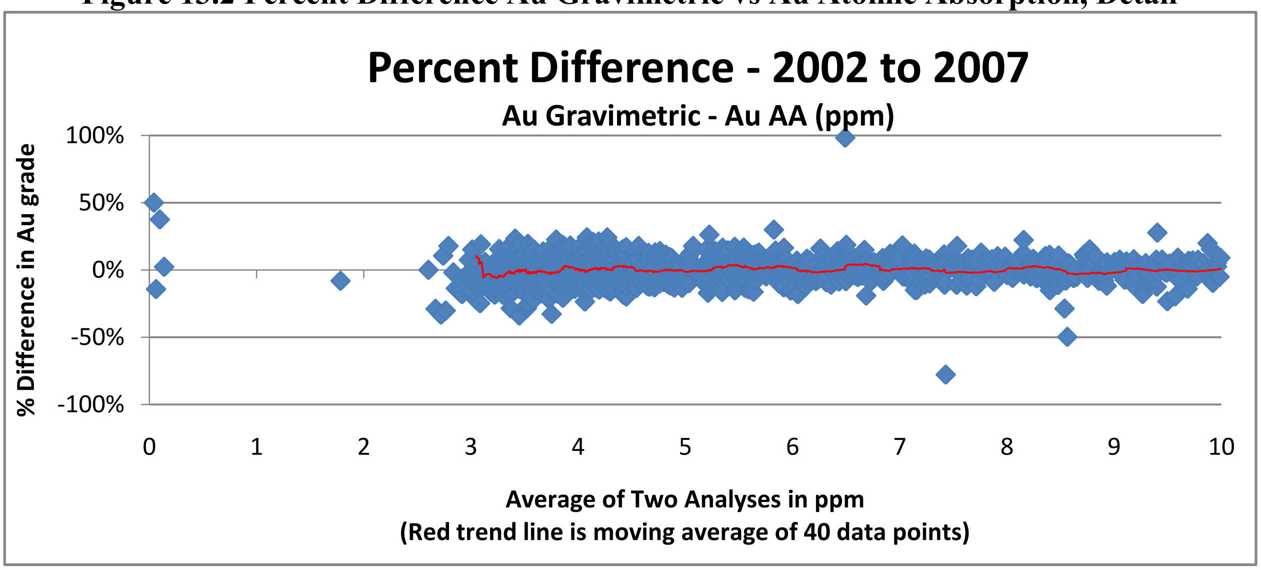


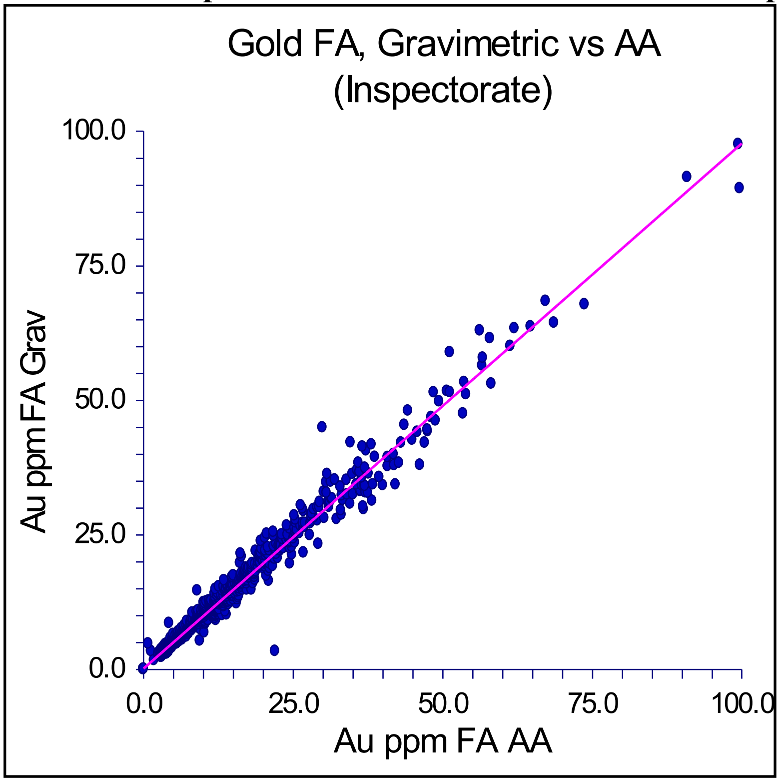
Figure 13.2 Percent Difference Au Gravimetric vs Au Atomic Absorption, Detail



(Figure 13.2 includes the same data as Figure 13.1 but shows a smaller part of the graph at a larger scale)

Figure 13.3 is a scatterplot of fire assay gold with a gravimetric finish versus fire assay gold with an AA finish. The regression line has a slope very near one. Like the two graphs that precede it, the scatterplot suggests that there is not a discernible bias between the two methods. For the resource estimates, MDA has elected to average the gravimetric and atomic absorption results together, in those instances where both are available. The very close correspondence of the two methods supports the decision to use such averaging.

Figure 13.3 Scatterplot Au Gravimetric vs Au Atomic Absorption



(Au averages exceeding 100 ppm excluded; line is an orthogonal regression having Y intercept of 0.19 ppm and slope of 0.98.)

13.2 Coarse Reject Checks, Gold

The coarse reject check sample data for gold comprise 325 sample pairs, both analyzed by Inspectorate, the most recent of which are from drill hole P05-409, drilled late in 2005. It is unfortunate that coarse reject checks have not been continued during the more recent drilling. As a consequence, the coarse reject checks have little direct relevance to the Bálsamo – Cerro Alto resource estimate. MDA did review them, and noted one curious characteristic that is briefly mentioned here.

There appears to be a very slight negative bias in the coarse reject checks; that is, the second analysis has a tendency to be slightly lower than the first in the grade range between 0.1 ppm Au and 10 ppm Au. This bias is evident in Figure 13.4 and Figure 13.5.

Data falling outside the ranges shown on the two figures have been excluded to eliminate the effect of erratic outliers. It is evident on both graphs that the red trend line falls persistently below the 0 percent difference line, indicating a small but persistent negative bias. The mean difference for all sample pairs averaging greater than 0.5 ppm Au is -3.2%. Figure 13.5 was prepared as a check on the apparent bias in Figure 13.4. It uses a median smoothed trend line, in effect a moving median, instead of a moving average. The median smoothed line is less affected by erratic outliers than is the moving average trend line, reducing any apparent bias that might be due primarily to such outliers. Figure 13.5 exhibits a similar bias to Figure 13.4. The median difference is -2.1%.

Pacific Rim should investigate the procedures used for preparing these samples to see if the source of the bias can be identified and removed.

Figure 13.4 Percent Difference, Au in Reject vs. Au in Original, Moving Average

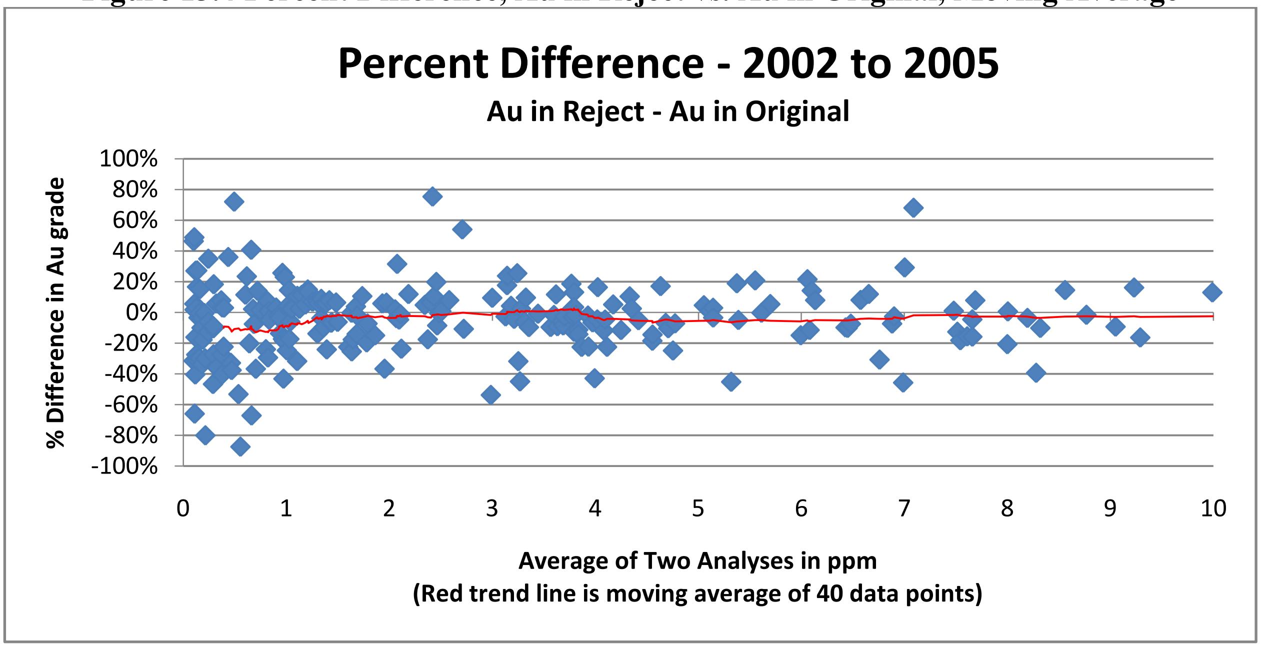
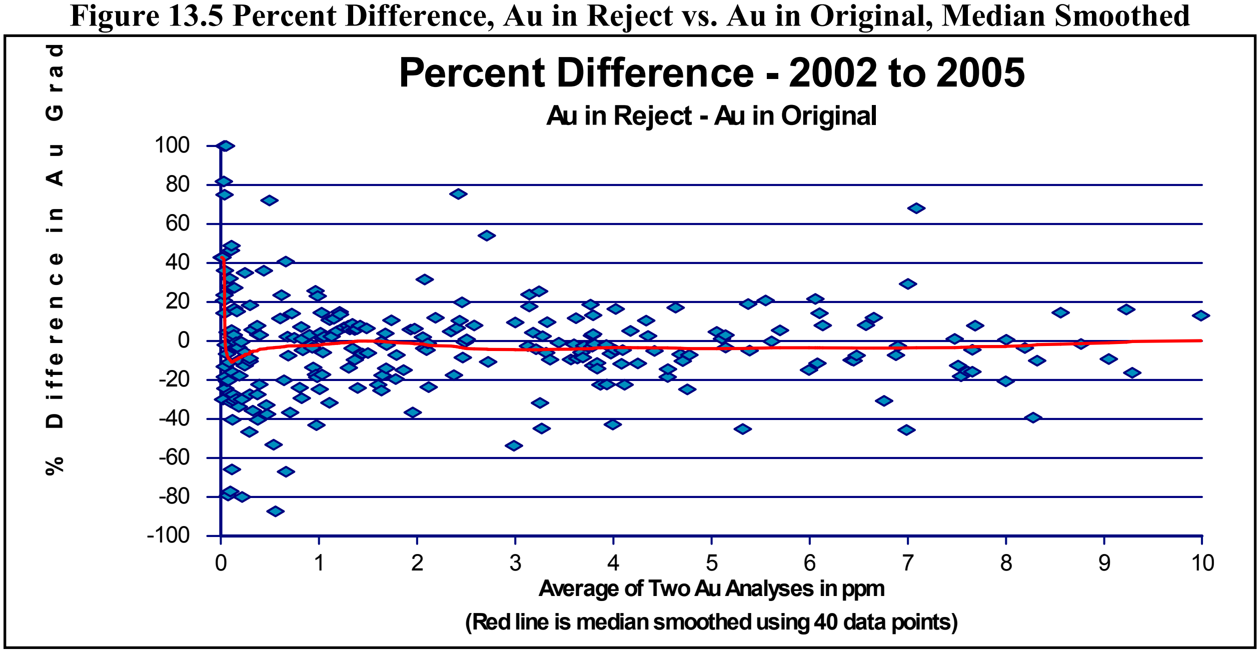


Figure 13.5 Percent Difference, Au in Reject vs. Au in Original, Median Smoothed



13.3 Coarse Reject Checks, Silver

The coarse reject check sample data for silver comprise 269 sample pairs, both analyzed by Inspectorate, the most recent of which are from drill hole P05-409, drilled late in 2005. As in the case of gold, these coarse reject silver checks have little direct relevance to the Bálsamo - Cerro Alto resource estimate.

The analyses of silver in the rejects compare very well with the original analyses, with the exception of eight outliers; sample pairs having extreme differences. These outliers are evident in Figure 13.6 and Figure 13.7. In Figure 13.6 the moving average trend line shows a slight positive bias above (to the right on the X axis) about 50 ppm Ag. In Figure 13.7 the moving average trend line is replaced by a median smoothed (moving median) trend line, which shows no discernible bias. This suggests that the slight apparent bias is due to some of the extreme outliers affecting the calculation of the moving average, and there is probably no significant systematic bias in the silver analyses of the rejects.

The source of the extreme differences evident in eight of the sample pairs is not known. Such differences should be investigated at the time that the analyses are received.

Figure 13.6 Percent Difference, Ag in Reject vs. Ag in Original, Moving Average

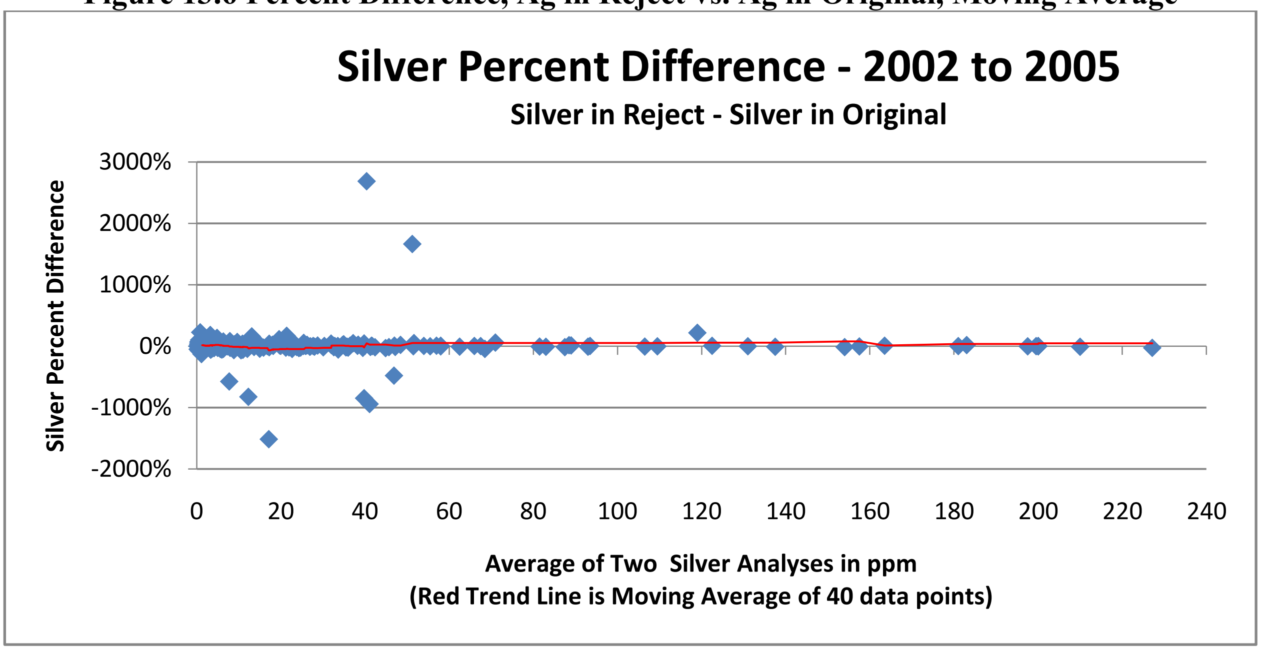
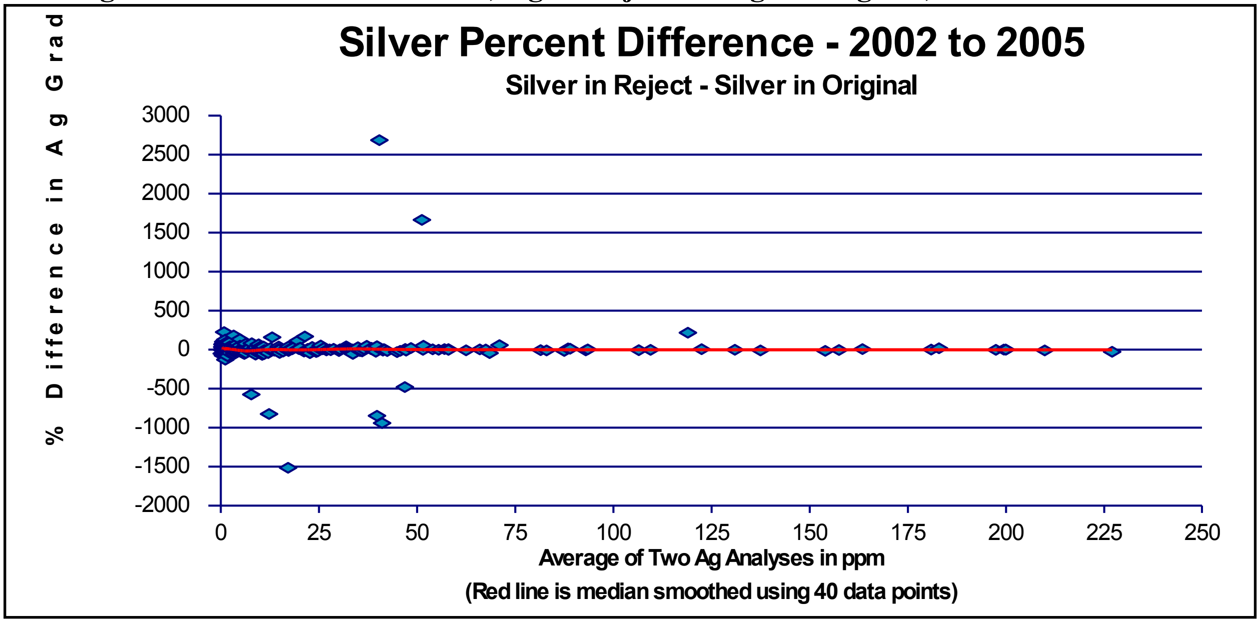


Figure 13.7 Percent Difference, Ag in Reject vs. Ag in Original, Median Smoothed



13.4 American Assay Checks

The El Dorado data set contains results for 766 check assays done at American Assay, using the second of two pulps prepared by Inspectorate. The checks are from Pacific Rim drill holes starting with P02-204 and ending with P07-536. The most recent hole for which there was analytical data while MDA was on site was hole P07-606.

On first inspecting the American Assay checks, MDA noticed a larger-than-expected number of sample pairs that appeared to have extreme differences. After investigation, Pacific Rim found that some of the apparent extreme differences were due to data entry errors, and these were dealt with.

After the data entry errors that had been identified were cleaned up, a few extreme differences were still evident in the sample pairs, as shown in Figure 13.8 and Figure 13.9. The two figures show the same data, but are scaled differently on the Y axis in order to show patterns at different scales. Pacific Rim's staff has stated that they will have new analyses done for those sample pairs exhibiting extreme differences, in grade ranges that matter in terms of resources. MDA believes that these are most likely caused by mis-handling errors and/or data entry errors because for the most part reproducibility is very good, having been demonstrated to be so in Minita, South Minita and now, the Bálsamo area.

Figure 13.8 Percent Difference Between Labs, Au

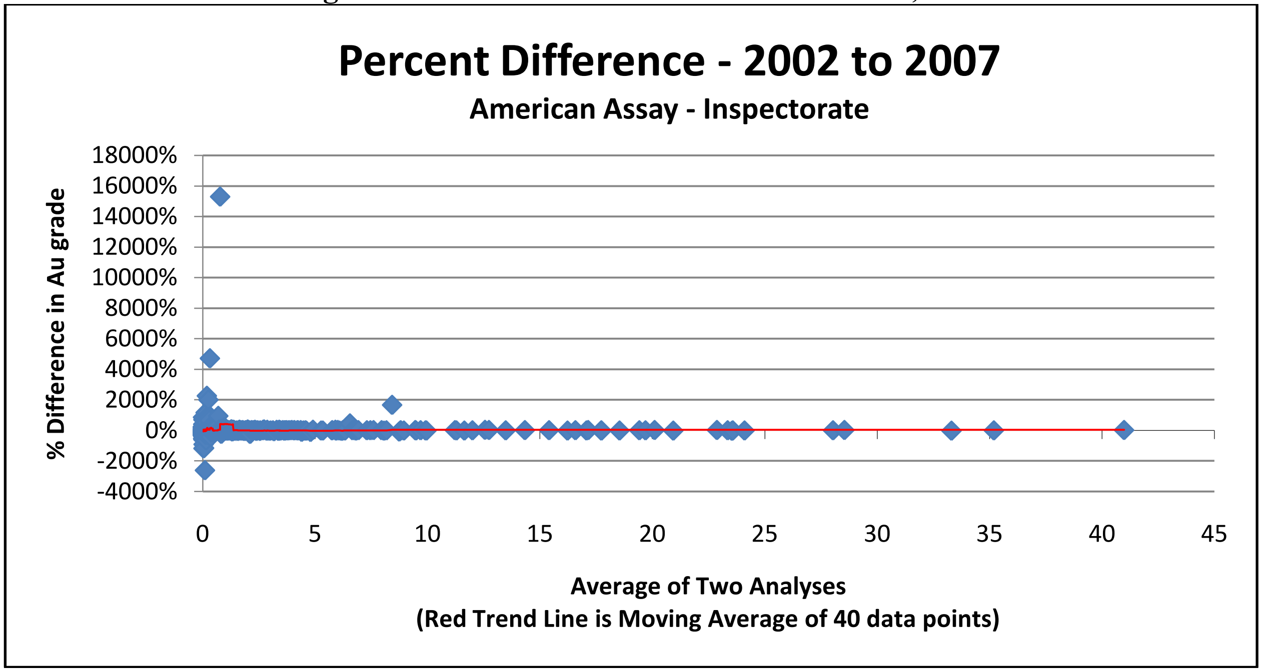
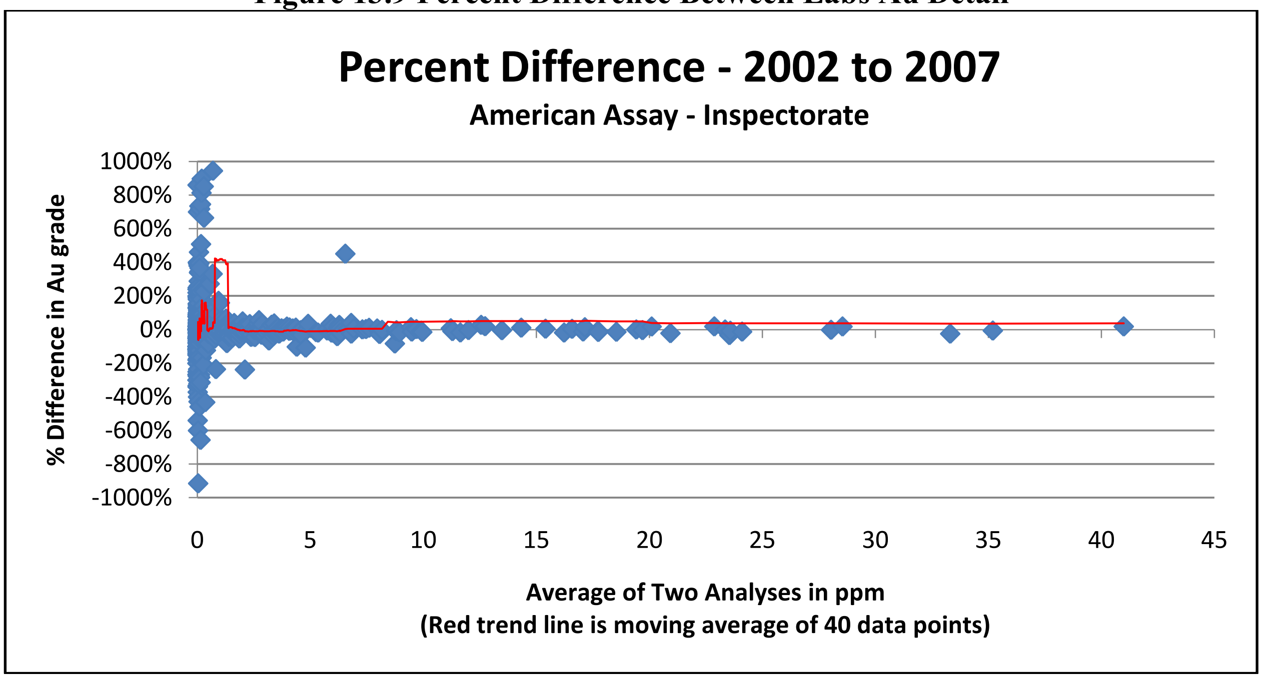


Figure 13.9 Percent Difference Between Labs Au Detail



In order to look for bias in the American Assay checks, MDA examined a filtered data set. Differences exceeding 100% were eliminated, as were sample pairs with a mean-of-pair less than 0.1 ppm Au. This left 460 sample pairs in the data set. The differences in the filtered data set are illustrated in Figure 13.10 and Figure 13.11. The figures are based on the same data, but Figure 13.10 uses a moving average trend line while Figure 13.11 uses a median smoothed (moving median) trend line. Both figures show a small negative bias, that is, a tendency for the American Assay checks to report slightly lower gold grades than the Inspectorate analyses, in the grade range between about 1 and 10 ppm Au. The mean difference is -0.44% for all 230 pairs having a mean-of-pair above 0.5 ppm Au and a percent difference of no more than 100%. While this difference between American Assay appears to be real, it is not consequential in terms of a resource estimate. It is in fact a smaller difference that that between Inspectorate's original analyses and Inspectorate's own coarse reject checks.

Figure 13.10 Percent Difference Between Labs, Au, Filtered Data

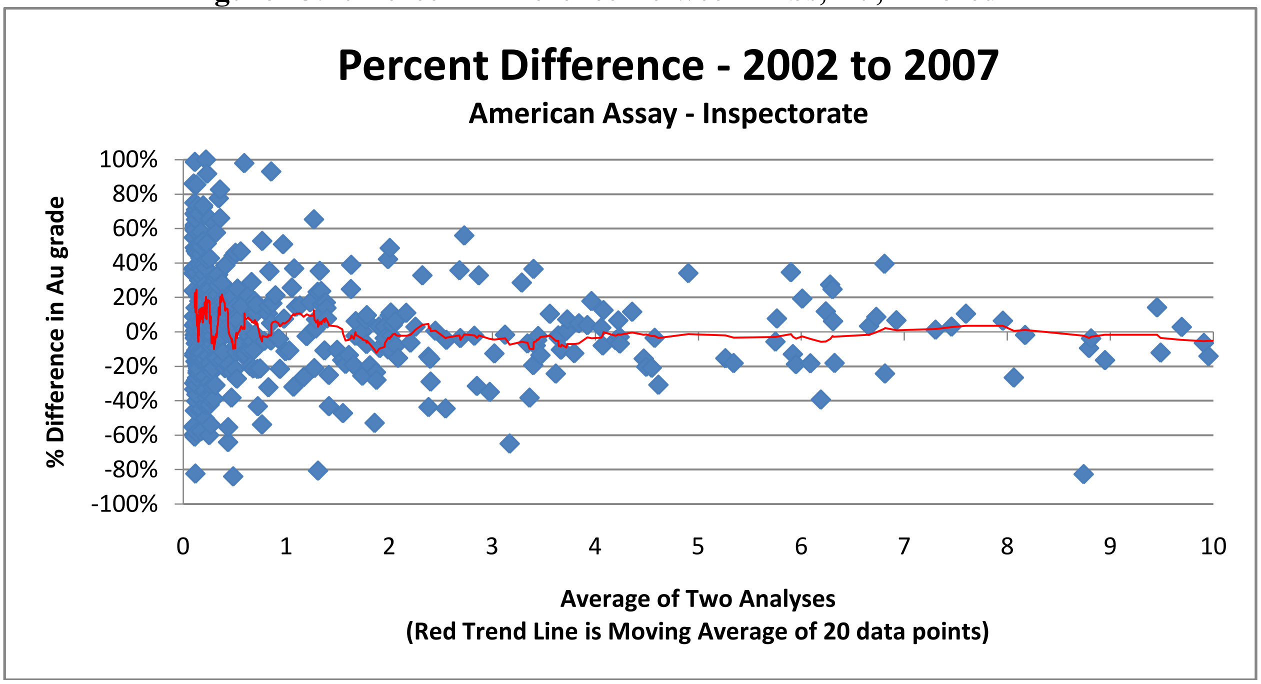
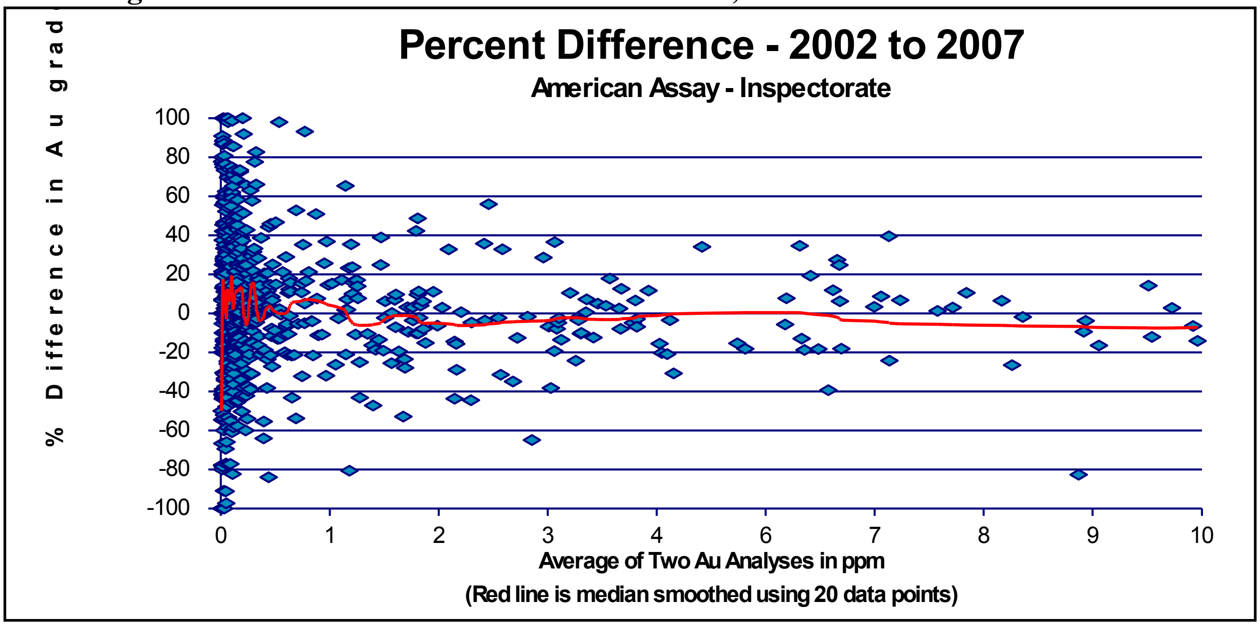
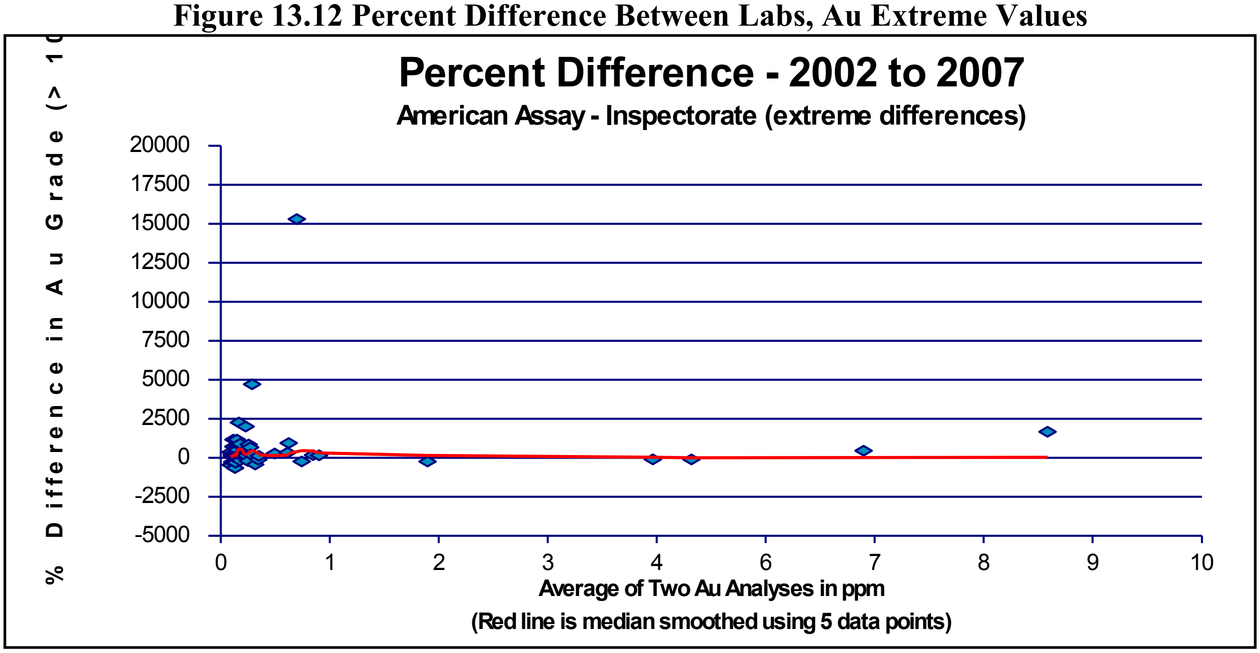


Figure 13.11 Percent Difference Between Labs, Au Filtered Median Smoothed



MDA also looked for bias in 45 sample pairs having means-of-pairs of at least 0.1 ppm Au and extreme differences, exceeding 100%. Those percent differences are illustrated in Figure 13.12. Where the differences are extreme, there is a slight tendency for American Assay to be biased high with respect to Inspectorate, in contrast to the inconsequential low bias in the majority of sample pairs. This observation may not be very meaningful, as some of the extreme differences could be due to sample mix-ups or recording errors.

Figure 13.12 Percent Difference Between Labs, Au Extreme Values



13.5 Gold in the Low Grade Standard

There are 568 analyses of the low standard available, 281 of which are from sample batches relating to holes drilled in 2006 or 2007.

Two approaches to reviewing the results of the low-grade standard were taken. The first approach was to compare the analyses of the low-grade standard (some might call it "blank" or barren) to those of the immediately preceding samples in the respective sample batch. The purpose of this test is to see, by visual inspection, whether there is a tendency for the low-grade standard to have a higher analysis if the preceding sample is high grade. If such a relationship existed, it would suggest the possibility of contamination during the analytical process. Two instances were noted in which a high gold grade in a sample was followed by a higher-than-usual analysis of the low-grade standard. These two instances are marked by black down-arrows in Figure 13.13. Two such instances are not statistically meaningful, so there is no evidence for contamination of the low standards from preceding high-grade samples in the laboratory.

The second approach to evaluating the low-grade standard analyses is simply to inspect the results to see if some of the results are "too high". Figure 13.13 and Figure 13.14 illustrate the analyses of the low-grade standard over time, with the drill-hole sequence used to approximate a time sequence. The plots for the low standards, in blue on both figures, differ only in the scale of the Y axis.

Pacific Rim established the low gold standard values by doing a small round-robin test, submitting 5 samples to each of 3 different labs (W.T. Gehlen, email communication, 2007). The results all came back below a 5 ppb detection limit. Fifteen results below the detection limit do not allow for any statistical means of establishing an "accepted value" for the low standard. Treating any gold analysis above 5 ppb as a failure would probably be too tight a criterion. In order to make a somewhat quantitative analysis of what might constitute a failure, MDA did a crude statistical analysis using the population of gold analyses of the standard in the complete analytical database. First, obvious failures were removed, choosing arbitrarily to remove any analysis exceeding 0.05 ppm Au. MDA found that the mean of this reduced population was about 0.006 ppm Au and the standard deviation was about 0.01 ppm Au. This yielded a mean-plus-three standard deviations of about 0.04 ppm Au, as a possible failure threshold. Not surprisingly, this rather circular path of reasoning produces a failure threshold that is close to the arbitrary 0.05 ppm Au that MDA started with. MDA believes that using the 0.05 ppm Au as a failure threshold is reasonable. Using that threshold yields 12 failures in the 281 analyses from sample batches relating to the 2006 and 2007 drill holes. Those 12 failures are tabulated in Table 13.1.

MDA has no information on which to base any conclusions as to the reasons for the failures. Possible reasons include analytical errors, sample handling errors, data handling errors and even the possibility that the sinter material from which the low grade standard is made contains occasional erratic gold values. Nevertheless, MDA recommends that those batches that contained the 12 "failures" be re-analyzed.

Figure 13.13 Gold Analyses of Low Standard and Preceding Sample

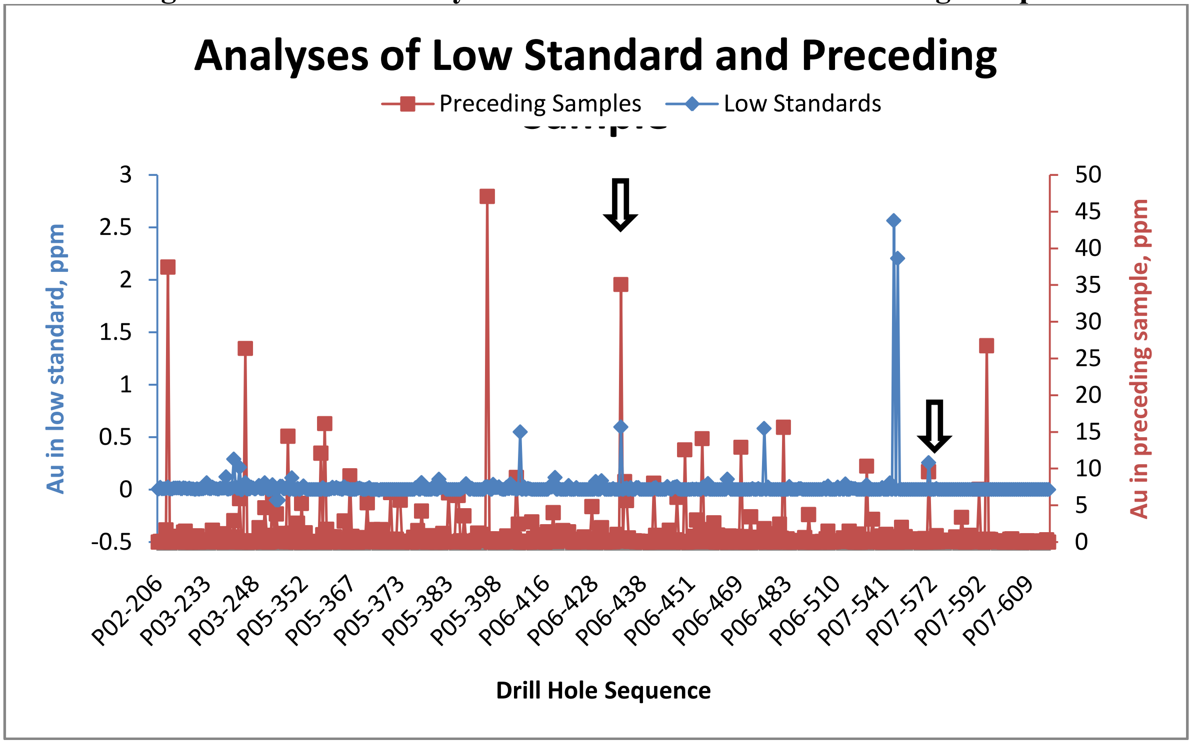


Figure 13.14 Gold Analyses of Low Standard

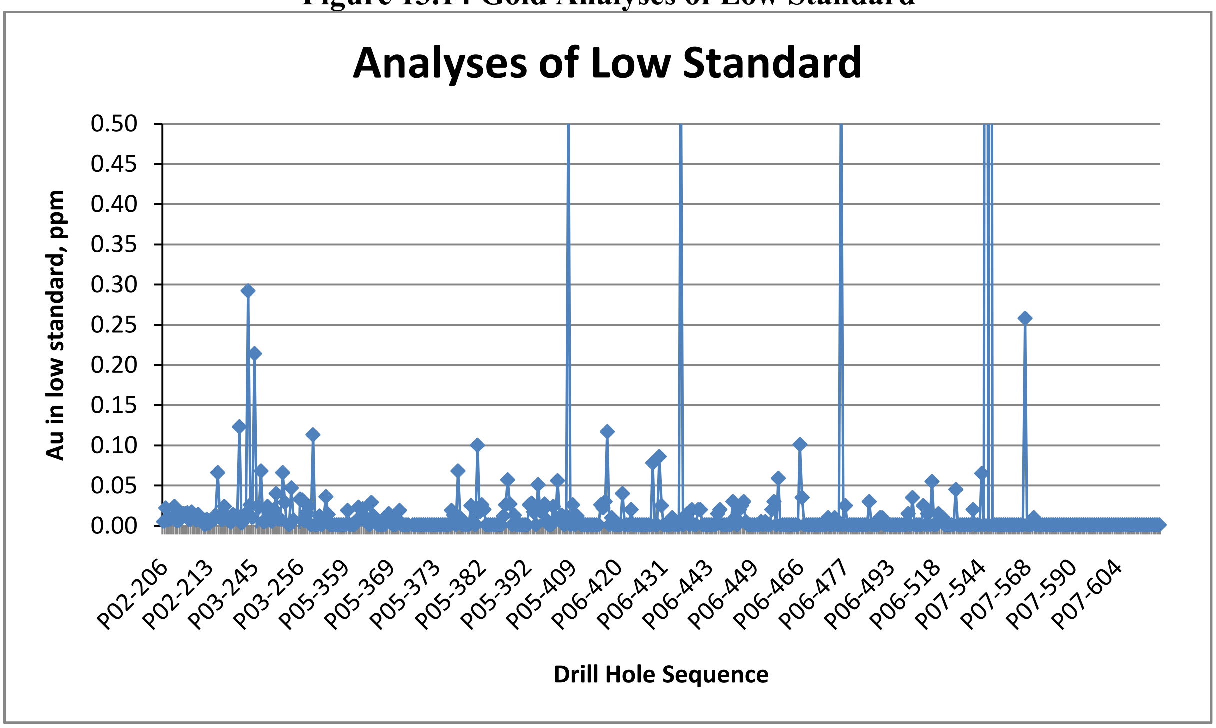


Table 13.1 Low Grade Standard Failures

Drill Hole	Batch Number	Sample ID	Gold in ppm	Target Area
P06-417	06-330-00229-01	32800	0.117	South of Minita
P06-429	06-330-00344-02	34825	0.078	South of Minita
P06-430	06-330-00344-01	34050	0.086	South of Minita
P06-433	06-330-00383-02	34474	0.598	South of Minita
P06-458	06-338-00986-01	36200	0.059	Guadalupe
P06-466	06-338-00986-01	35999	0.101	Nueva Esperanza-Jobos
P06-477	06-338-02241-01	37400	0.584	South Minita
P06-516	06-338-02658-01	36729	0.055	Moreno
P07-544	07-338-00726-01	39326	0.065	Condemnation
P07-546	07-338-00726-01	39375	2.565	Cerro Alto
P07-547	07-338-00726-01	39350	2.205	Moreno
P07-568	07-338-01622-01	39850	0.258	Bálsamo

13.6 Silver in the Low Grade Standard

Figure 13.15 and Figure 13.16 are similar to Figure 13.13 and Figure 13.14, but the former two, displayed below, show the results of the silver analyses of the low standard. There are two instances in which somewhat elevated silver analyses of the standard follow high silver values in the preceding sample. These are indicated by the black down-arrows in Figure 13.15. The first (leftmost) such sample pair on the graph coincides with a similarly elevated pair for gold (Figure 13.13).

Figure 13.15 and Figure 13.16 use the same data for the graph of silver values in the low standard (blue on both graphs), but the scale of the Y axis is larger in Figure 13.16. The degree of scatter evident in the silver analyses appears similar to that of the gold analyses, or slightly greater, based only on visual inspection.

Figure 13.15 Silver Analyses of Low Standard and Preceding Sample

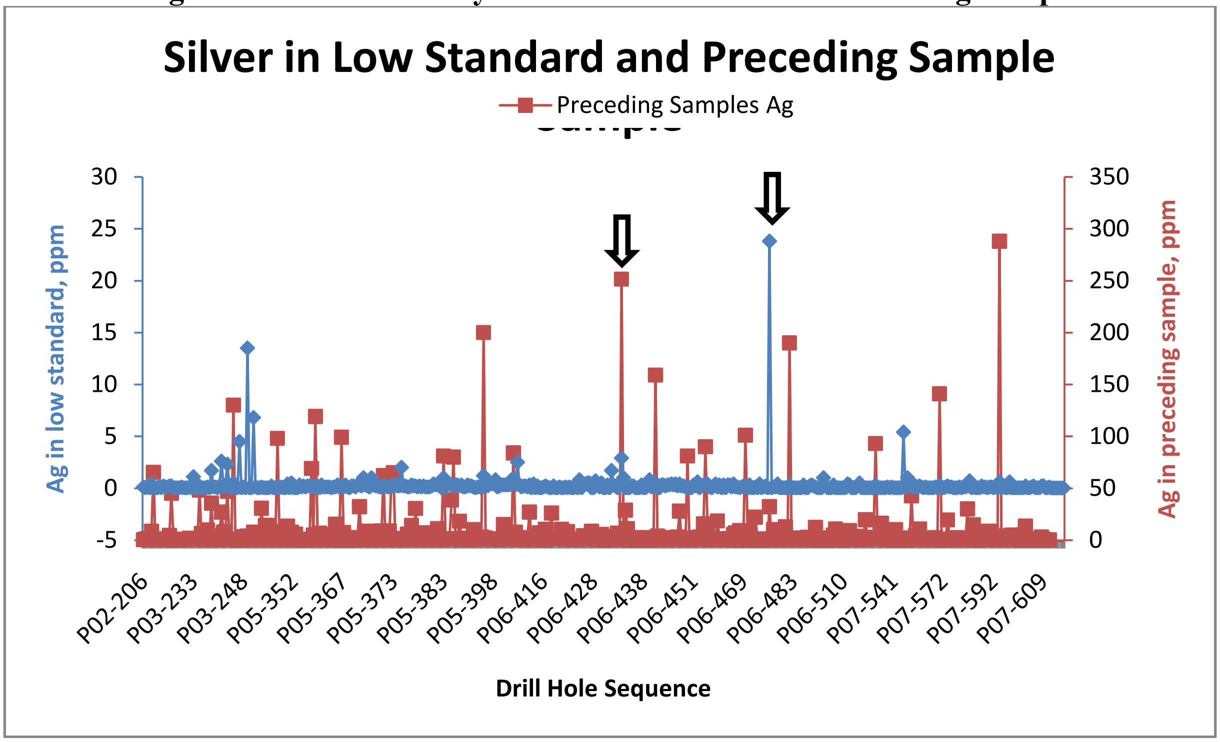
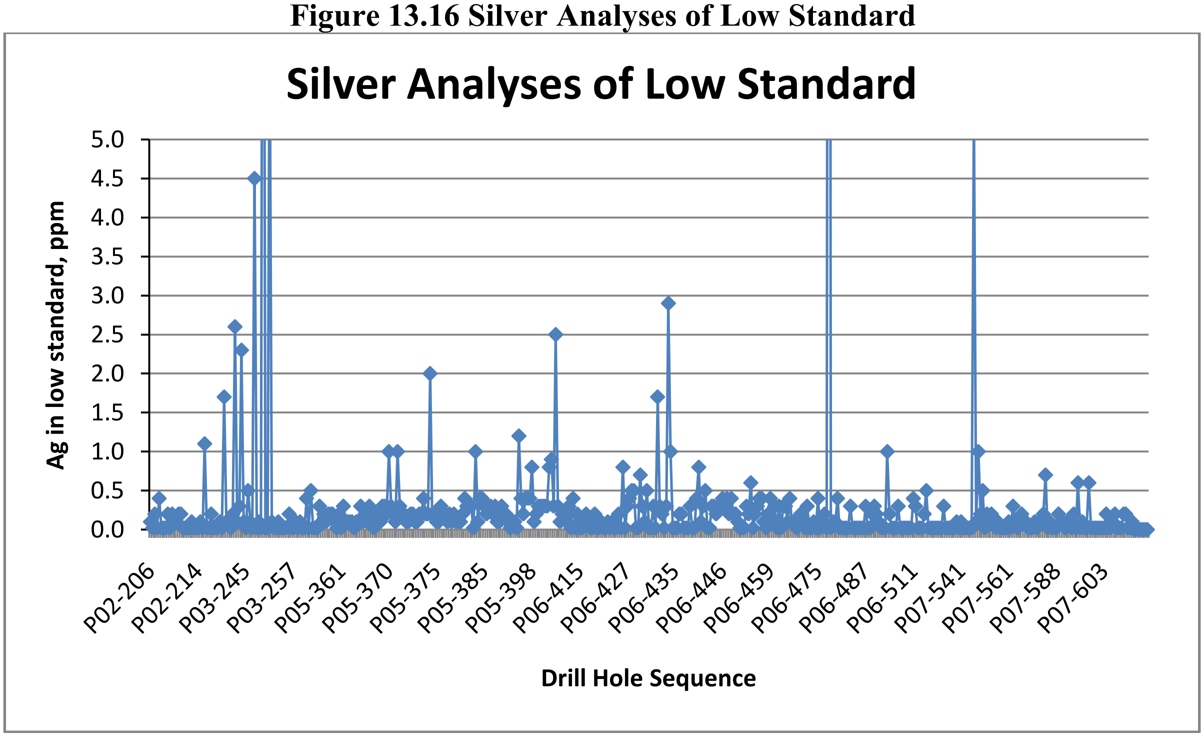


Figure 13.16 Silver Analyses of Low Standard



13.7 Independent Sampling

MDA took independent samples during the August 2007 site visit. Analytical results from those samples are given below in Table 13.2. Overall MDA corroborated the general tenor of mineralization, but with a bias towards overall lower grade. The results are not unexpected, with original low grades generally returning higher grades and original high grades generally returning lower grades.

Table 13.2 MDA Independent Samples

MDA No.	Hole No.	Smpl. No.	Insp. (Orig) Au Grav* (ppm)	Chemex (Check) Au Grav (ppm)	Diff. Ch/Insp	Insp. (Orig) Ag Grav (ppm)	Chemex (Check) AA** (ppm)	Diff. Ch/Insp
EDMDA-4	P06-489	36970	1.222	1.770	45%	8.00	1.25	-84%
EDMDA-5	P06-489	36969	4.937	7.280	47%	85.00	102.00	20%
EDMDA-6	P06-489	36968	34.357	27.700	-19%	238.80	160.00	-33%
EDMDA-7	P06-522	38436	11.383	8.370	-26%	108.00	77.00	-29%
EDMDA-8	P06-522	38435	0.577	0.720	25%	3.00	1.25	-58%
EDMDA-9	P06-522	38438	13.028	8.840	-32%	100.00	56.00	-44%
EDMDA-10	P06-522	38437	1.435	3.140	119%	8.90	17.00	91%
EDMDA-11	P06-522	38439	0.050	0.120	140%	1.30	1.25	-4%
EDMDA-12	P06-522	38440	8.846	5.870	-34%	82.00	1.25	-98%
EDMDA-13	P07-548	39607	12.823	15.900	24%	205.10	194.00	-5%
Means of difference					**29%**			**-25%**
Means			**8.866**	**7.971**	**-10%**	**84.01**	**61.10**	**-27%**

* Au Grav if >2 g Au/t; otherwise AAS

** Ag Grav except 39607 and 36968 which are ICP

13.8 Recommendations

MDA recommends strongly that the QAQC data generated by Pacific Rim's programs be kept up to date, and monitored as they are received. When failures occur, such as those described for the low-grade standard, they should be followed up immediately. Usually such follow-ups will involve re-analysis of the affected laboratory sample batches. The sample batches that contained the failures listed in Table 13.1 must be re-analyzed.

14.0 DATA VERIFICATION

Most of the data upon which this study is based originated with Pacific Rim and other sources as noted. Both Ronning and Ristorcelli have audited different parts of the database for internal consistency and accuracy. The results demonstrate that the database is reliable and accurate.

14.1 Database Audit

While in Sensuntepeque in October of 2007, MDA audited critical components of the El Dorado database. The results of the audit are summarized in Table 14.1. The database is very clean.

Table 14.1 Summary of Audit Results

Item	Number of Records	Check Source	Number of Records Checked	Percent of Records Checked	Number of Errors	Percent Errors	Number of Significant Errors	Percent Significant Errors
Gold & Silver Analyses	7,633	Certificates	1,248	16%	11	0.1%	nil	nil
Sample Interval	7,633	Paper Logs	798	10%	2	0.3%	nil	nil
Sample Number	7,633	Paper Logs	798	10%	nil	nil	nil	nil
Collar Location	210	Field Notes	51	24%	nil	nil	nil	nil
Collar Location	210	GPS Dump	54	26%	nil	nil	nil	nil
Down-hole Surveys	2.314	Field Notes	229	9.9%	11	5%	nil	nil

MDA elected to check only records from 2006 and 2007 drilling. MDA had checked earlier records at other opportunities. Checking from the start of 2006 did create some overlap with the checks that MDA did in 2006.

Independently of the checks recorded here, MDA and Pacific Rim together found some errors in collar locations while doing the modeling of the Bálsamo and Cerro Alto veins. Some additional data entry errors were also identified in the QAQC database, when Pacific Rim followed up what initially appeared to be large discrepancies between original analyses and check analyses. This iterative process of discovering errors is normal, and MDA believes that the El Dorado database is sufficiently clean and accurate for use in modeling.

14.1.1 February 2006 Database Audit

This description of the February 2006 database audit is adapted from one prepared by Ristorcelli and Ronning for inclusion in an informal, unpublished trip report issued to Pacific Rim after MDA's February 2006 visit to the El Dorado Project.

Pacific Rim gave MDA a database containing collar data up to hole P06-419, survey data up to hole P06-416, and assay data that were complete up to hole P05-411, with partial assay data for holes P05-412 and P05-413.

The database that MDA had used in 2003 was compared to the new database and found to be largely identical. Few changes had been made to the data that existed in 2003. MDA discussed such changes as were found with Pacific Rim's staff, and determined that the changes were minor corrections. MDA concluded that the auditing done in 2003 was still valid and only data added since 2003 required auditing for the purpose of the present resource estimates.

MDA proceeded to do an audit of the drill data from South Minita as of February 2006. The results of that audit are summarized in Table 14.2. All of the issues noted during the February 2006 audit were subsequently addressed in a satisfactory way by Pacific Rim's staff.

Table 14.2 Check Results from South Minita

Table	Total Records	Records Checked	Percent[1] Checked	Total Errors	Error Rate Percent[2]	Significant Errors	Percent[2]
Assays	4,788	1,965	41	32	1.6	18	0.9
Collars	93	30	32	5	5.4	0	0
Downhole Surveys	820	184	22	9	4.8	9	4.8

Notes: [1] Percent of total assay records for South Minita; [2] error rate as a percent of records checked.
In the assay table an error was deemed significant if the difference between the value entered and the correct value exceeded 0.1 g Au/t.
All of the nine errors in the downhole survey table were in one hole and were of the same type; no correction had been made for declination. This error was corrected and no similar errors were found.

MDA also audited the new data from drill holes in the Nance Dulce area. The results of that audit are summarized in Table 14.3. The error rate in the Nance Dulce assay table was higher than it was in the South Minita assay table and Pacific Rim had cleaned the database prior to resource estimation. MDA recommended that Pacific Rim do additional cleaning of the Nance Dulce data.

Table 14.3 Check Results from Nance Dulce

Table	Total Records	Records Checked	Percent[1] Checked	Total Errors	Error Rate Percent[2]	Significant Errors	Percent[2]
Assays	564	202	36	10	5.0	8	4.0
Collars	39	10	26	0	0	0	0
Downhole Surveys	199	59	30	6	10	1	1.6

Notes: [1] Percent of total assay records for Nance Dulce; [2] error rate as a percent of records checked.

In the assay table an error was deemed significant if the difference between the value entered and the correct value exceeded 0.1 g Au/t.

The one significant error in the down-hole surveys was an erroneous declination correction. The other five "errors" in the down-hole surveys were cases of missing data; no original data could be found to check those five surveys in the database.

14.1.2 April – May 2006 Database Audit

During a visit to Pacific Rim's Sensuntepeque office in late April and early May of 2006, MDA augmented the February database audit with some additional work. The first step was to compare the then-current database to the one that had been audited in February of 2006. This comparison proved satisfactory, and MDA found that issues noted in February had been dealt with. The next step was to do an incremental audit of new data that had been added since February. Drill hole P05-412 was used as the starting point for this incremental audit. That hole was chosen because the data for it had been incomplete at the time of the February audit. The most recent hole included in the April – May audit was P06-442.

The results of the April – May audit are summarized in Table 14.4. These results are not separated by area.

Table 14.4 Check Results from April – May 2006 Audit

Table	Total Records	Records Checked	Percent[1] Checked	Total Errors	Error Rate Percent[2]	Significant Errors	Percent[2]
Assays	2,016	507	25	11	2	0	0
Collars	31	5	16	0	0	0	0
Down-hole Surveys	537	51	9	2	4	2	4

Notes: [1] Percent of total assay records for Nance Dulce; [2] error rate as a percent of records checked.

The errors in the assay table are more properly described as omissions; gravimetric gold assays were available but had not been added to the database. The omissions are not deemed significant because the gravimetric assays were very similar to the atomic absorption gold analyses that were in the database. Thus the omissions would have had no discernible effect on the resource estimates.

The errors in the down-hole survey table were in the azimuths; one was incorrect by 4.5° and the other was incorrect by 27°. The errors were in two different holes, each of which had 9 down-hole survey records, one of which was in error. The error rate, at 4%, is higher than is desirable, but the errors would not have had a significant effect on the resource estimate. The errors were corrected.

14.2 Modeling Procedures and Data Verification

The modeling procedures that MDA used are not formally part of the auditing process, but are in fact one of the most effective forms of data verification. MDA used paper plots of the drill-hole cross sections, with the assays plotted, and on these drew vein traces corresponding to each significant intercept. The original hand-written drill logs were consulted when drawing each vein trace. Consequently, every significant drill-hole intercept that contributed to the resource model was reviewed both on the section plot and in the original drill log. This procedure brings to light any discrepancies between the original drill logs and the digital database used to generate the section plots. While MDA does not maintain a formal error count while doing this work, MDA found that the digital database fairly and accurately represents the data in the drill logs.

14.3 Examination of Drill Core

In February and in April – May of 2006, MDA spent two afternoons examining drill core at Pacific Rim's core logging and storage facility on the El Dorado property. These examinations were in part intended to help resolve questions that arose during modeling of the South Minita and Nance Dulce deposits, and in part to compare the drill logs to the core. MDA found that the drill logs are of unusually high quality and accurately represent the features evident in the drill core.

15.0 ADJACENT PROPERTIES

The El Dorado license area essentially covers a mineralized district. The writers are unaware of any immediately adjacent mineral properties, with the exception of Pacific Rim's own Santa Rita Project, northwest of El Dorado.

Some detail is provided here about the Santa Rita Project, because the existence of the Santa Rita mineralization enhances one's appreciation of the scale of the mineralized district that includes El Dorado and Santa Rita. The source of the information is Pacific Rim's geologic staff. Santa Rita is a very early stage exploration project, and the mineralization found there is not necessarily similar in character, dimensions and grade to the mineralization found on the El Dorado Project. MDA and the authors have not independently verified any of the information contained herein about Santa Rita, nor have any of the authors visited the Santa Rita Project.

The mineralization at Santa Rita is approximately 15 kilometers to the north-northwest of the main Minita mineralized area. The southeast corner of the Santa Rita Exploration License is coincident with the northwest corner of the Pueblos Exploration License. Pacific Rim has recently discovered gold-bearing quartz veins on the Santa Rita License. Only preliminary surface mapping and trench sampling has been done at Santa Rita, but early indications are that it contains a low-sulfidation epithermal precious metal system, similar in its general characteristics to the El Dorado system. Surface trenching and sampling has revealed bonanza gold grades in the southern portion of the Trinidad vein across wide surface vein widths. Assay composite results for each trench are presented in Table 15.1.

Pacific Rim dug these trenches perpendicular to the Trinidad vein exposing its full surface width, over a strike length of approximately 750 m at intervals of approximately 25 m, then mapped, chip sampled, and reclaimed the trenches. An additional 800 m of the Trinidad vein north of the current work area has yet to be tested by a detailed mapping and sampling program.

As with previous surface sampling along this particular segment of the Trinidad vein where the vein is traced up and over a hill, gold grades appear to be highest on the flanks of the hill and decrease toward the top of the hill. Pacific Rim believes that the top of the 'productive interval' at the Trinidad vein is at approximately 390 masl elevation. Typical of many similar epithermal systems, vein exposures above the productive interval (in this case above 390 m elevation, at the top of the hill) have returned low gold grades and vein exposures below that elevation (in this case within the productive interval, on the flanks of the hill) have returned bonanza gold grades.

Previous surface chip and grab sampling of the Trinidad vein yielded anomalous gold grades of between 6.43 and 118.0 g Au/t over vein widths of one to two meters. The recent trenching program has revealed that the vein is significantly wider than previously understood, ranging from 1.0 to 5.7 m across and averaging approximately 3.4 m in surface width.

Table 15.1 Trench Samples from Trinidad Vein, Santa Rita Project

Trench #	Gold Grade (g/t)	Vein Width (m)	Trench Elevation (m) ASL
SR-01	36.44	5.1	385.2
SR-02	38.19	4.9	387.1
SR-03	12.83	4.55	379.5
SR-04	16.82	5.4	373.4
SR-05	17.52	3.5	364.4
SR-06	12.18	3.65	362.8
SR-09	11.86	5.7	352.3
SR-10	10.99	3.35	350.6
SR-11	8.47	1.8	399.6
SR-12	6.26	2.35	399.3
SR-13	1.74	2.5	397.2
SR-14	8.93	2.65	396.9
SR-15	17.97	3.55	393.9
SR-17	1.7	3.45	386.7
SR-19	0.226	3.15	411.7
SR-20	0.12	1	413.6
SR-21	0.017	2.3	421.2
SR-22	0.17	2	425.5
SR-23	0.12	2.28	425.7
SR-24	0.43	2.6	425.2
SR-25	0.05	2.35	422
SR-27	0.37	4.15	421.5
SR-28	1.85	5	421
SR-29	0.54	3	410
SR-30	1	1.95	399.1
SR-32	0.51	3.75	393.6

Pacific Rim recently resumed exploration work at the Santa Rita project following its voluntary suspension of work there in late 2006, when Santa Rita became the target of intermittent anti-mining protests led by a small El Salvadoran Non-Governmental Organization ("NGO") utilizing protestors imported from outside the principal area of interest. During the intervening months, Pacific Rim purchased the surface rights over the high-grade section of the Trinidad vein, giving it unlimited access to the property, built new roads to access the vein, and commenced a public service and charitable works campaign in the Santa Rita area. This has resulted in a suspension of protest activity and resulted in a high level of community support from the project site and many surrounding communities. Pacific Rim intends to continue surface exploration at Santa Rita through the coming months with drilling planned for 2008.

A prospect known as La Calera is about 15 km west-southwest of the El Dorado mine area. In 2003 Pacific Rim explored the La Calera deposit, but the company has since dropped the property. Minerales Morazán, S.A. de C.V., a subsidiary of Condor Minera PLC, is the current operator on this exploration license. The company says La Calera has total inferred resources of 1.69 million tonnes of gold at a grade of 2.07 grammes a tonne, or 112,604 ounces, and 1.69 million tonnes of silver at 1.79 grammes a tonne, or 97,373 ounces (December 20, 2006, news story, Metals Place). The vein deposit at La Calera is similar in type to the high-grade vein deposits on the El Dorado license area but is structurally more complex. In addition, there is a low-grade envelope and stockwork adjacent to the principal vein area that may develop into an open-pittable deposit with further work.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Pacific Rim has completed extensive metallurgical testing and process design work for this project as described in Section 18.2. The El Dorado flowsheet consists of a crushing circuit, a single stage ball mill, vat leaching, a 5-stage CCD circuit and Merrill Crowe precipitation.

The leaching tests indicate that fine grinding (200 mesh), long leach times (48hrs hours), and high cyanide strengths are required to achieve optimum gold and silver recoveries.

The operating recoveries for the El Dorado process plant are estimated to be 92% for gold and 83% for silver. In testing under optimum conditions, McClelland averaged 92.5% gold and 88.8% silver extractions for the Minita ore and 92.1% gold and 83.5% silver for the combined Minita-South Minita ores. Pocock's (2006) counter current decantation ("CCD") balances indicate soluble recoveries of 99.2% to 99.6% in a 4-stage CCD circuit. The soluble recovery in the planned 5-stage CCD circuit will be 99.5%. Other losses for the plant slag and unaccounted losses will total about 0.45% recovery loss.

The current El Dorado process plant has a design throughput rating of 750tpd at 90% availability. The ball mill and thickeners are sized for a 1,000tpd maximum throughput circuit. The design crushing system is rated at 130tph, which will provide crushing on a 8-hour shift for 835tpd. The Merrill-Crowe and refinery systems are sized to handle the 1,000tpd system. The leaching system is designed to provide 50 hours retention time at 835tpd. In order to increase total plant throughput to 1,000tpd, additional tanks will be required. Excess leaching time should be avoided. McClelland's test work indicates that even with pretreatment slight preg robbing will occur at 48-72 hours leach time. A conventional 5-stage CCD plant with doré recovery by zinc precipitation (Merrill-Crowe) will be used. Other options are filtration with a zinc precipitation or Carbon in Leach ("CIL") with doré recovery by electrowinning.

The favorable settling characteristics of the ore favor the CCD over filtration. Numerous studies of the economics of CIL vs. CCD indicate that when the recovered silver to gold ratio is over 3.5, the economics favor the CCD. The El Dorado ratio is 8.0:1. The CCD system reduces the amount of cyanide reporting to the Inco cyanide destruction unit by one-third to one-half, reducing the Inco reagent costs.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

There are now six deposits within the El Dorado Project area for which resources have been estimated, each with unique geologic characteristics or distinct geographic locations requiring distinct modeling techniques. As such, each aspect of each area is discussed separately. The six areas for which resources were estimated are:

- the Minita mine area, which has 13 defined veins, of which only three are modeled;
- the South Minita area, which is composed of a set of at least ten anastomosing and bifurcating veins, all of which have been modeled;
- the La Coyotera area, composed of a vertical vein breccia;
- the Nueva Esperanza area, a complex, 45^{o}W-dipping mineralized zone;
- the Nance Dulce area, containing two principal northwest-striking, steep to east-dipping veins and numerous smaller veins. Only the two principal veins were modeled and included in the Inferred resource; and
- the Bálsamo/Cerro Alto area, which has 11 identified veins of which five were sufficiently well defined or high enough grade to justify modeling.

This resource update has kept all estimates that appeared in the 2006 report (Ristorcelli and Ronning, 2006) the same, as there was little to no additional drilling in those deposits for which current resource estimates already existed prior to 2007. This report describes newly estimated resources for the Bálsamo/Cerro Alto veins, where significant additional drilling has taken place. In all cases, the deposits are tabulated on gold equivalent[8] cutoff grades.

17.1 Deposit Geology Pertinent to Resource Estimation

The total extent of mineralization along the Minita trend extends from Nueva Esperanza at the north to South Minita at the south, a total distance of 3,200 m. It is interesting to note that at the north end, the deposits dip to the west; at Minita the veins become progressively steeper and eventually vertical and then dip steeply east. At South Minita the veins dip east at a slightly shallower angle. East of the south end of the Minita trend is Bálsamo/Cerro Alto, whose veins parallel those at South Minita.

17.1.1 Minita Area

The Minita mine area, located in the Central El Dorado sub-district, has multiple, classic epithermal quartz/carbonate veins. These veins range from less than one meter to nine meters thick. Although

[8] Gold equivalent is calculated using a ratio of 70 silvers to one gold.

these veins do include multiple phases of mineralization, they have two dominant domains than can co-exist in the same vein: a well-mineralized domain, and a weakly mineralized domain. The well-mineralized vein is made up of banded quartz and/or carbonate with distinctive colloform and related vein textures, with the clay mineral corrensite and/or distinct disseminated or banded black sulfides. Grades are generally greater than ~3 g Au/t in the well-mineralized material; in material having greater than ~10 g Au/t, colloform-textured quartz with corrensite becomes the dominant phase. The weakly mineralized structures are quartz veinlets, sheeted zones, or often quartz/carbonate veins, all with grades generally lower than ~3 g Au/t. These domains are adjacent to each other along strike. Wallrock contacts are generally sharp.

In the Minita vein, all but six intercepts are made up of the well-mineralized veins and the six exceptions are evenly distributed throughout the deposit. Unlike the Minita vein, Minita 3 and Zancudo have clusters of both well- and poorly mineralized zones and were consequently modeled separately. The other ten defined veins are less well-developed and/or less-well drilled out, and were not modeled.

The resources in the veins are best modeled along two-dimensional planes, with the third dimension (east-west) assigned as a thickness parameter.

17.1.2 South Minita Area

South Minita begins 200 m south of the southern extent of Minita and is a series of bifurcating and anastomosing veins and vein breccias. The veins at South Minita occur within what has been locally called a "lode zone" made up of fractured andesite, which ranges from approximately 25-m to 75-m thick. Ten veins have been defined to date. Continuity between drill-hole intercepts is predicted based on numerous structural, geological and spatial relationships, but the complexity makes it impossible to demonstrate continuity between drill holes in many places, using the data available.

The style of mineralization is similar to what is described for the veins at Minita but clearly with more structural complications, shown by bifurcations and coalescing veins within a broad structural zone.

17.1.3 La Coyotera Area

La Coyotera is a unique deposit made up of well-banded quartz/carbonate veins, breccias, brecciated veins, and all gradations in between lying within a vertical structure with two limbs. There are multiple periods of mineralization and brecciation, lots of fragment rotation, some hydrothermal breccia and some tectonic breccia. These different zones are adjacent and parallel to each other. Even though the variation in mineralization style and lithology is great, the continuity is actually surprisingly good, despite its appearance. The deposit has a near-vertical dip, with the modeled area extending for 300 to 400 m vertically and 500 m horizontally. Widths of the mineralized zone average between 10 and 15 m for individual mineralized structures while averaging over 30 m for the entire merged limbs or both limbs and the intervening horse. Widths of the potentially mineable material are narrower averaging 3.5 m. There are abundant open spaces and voids, possibly averaging up to 10%.

Three domains were modeled:

- Low-grade, which is dominantly brecciated andesite (zone 11);
- Mid-grade which is made up of both brecciated andesite with brecciated vein material and brecciated vein material without andesite (zone 12); and
- High-grade vein and brecciated vein material (zone 13).

17.1.4 Nueva Esperanza Area

Nueva Esperanza is made up of quartz veins within altered andesite. The altered andesite is generally between 0.1 g Au/t and 3 g Au/t, but almost always has 0.5 g Au/t and is modeled as zone 1. The vein material is quartz and is generally greater than 3 g Au/t and is modeled as zone 2. The quartz vein material occurs as single veins or in multiple parallel veins in a zone ranging up to more than seven meters thick. The quartz is more crystalline and banded at depth, and in outcrop defines a ridge. In general, Nueva Esperanza is consistent in width. The modeled length is over 700 m while the modeled down-dip extent is 380 m. The total width of the mineralized zone averages about 15 m while the high-grade zones average about 3 m.

17.1.5 Nance Dulce Area

Nance Dulce is located about three kilometers south-southeast of the center of South Minita. Nance Dulce is composed of a set of 16 veins, most of which are sub-parallel and have an overall northwest trend. Of the 16 defined veins and mineralized fractures, only two are considered consistent and strong enough to model for the purpose of resource estimation. Termed the East Vein and the West Vein, the two modeled veins would contain about 90% of the total metal in the known Nance Dulce deposit area. Confidence in correlating drill-hole intercepts from hole to hole is considered reasonable but tentative, as choosing which of several intercepts in one hole to correlate with others in another hole is somewhat arbitrary. The drill-hole spacing is variable in the range 40 to 100 m, too wide to permit any of the resource to be classified any higher than Inferred at this time.

The veins in the Nance Dulce deposit have a similar appearance and composition to those in the Minita and South Minita deposits. The best mineralization is in strongly banded veins containing black opaque minerals. The Nance Dulce veins tend to be thinner, and are more difficult to trace and correlate from drill hole to drill hole, than are the veins of the Minita and South Minita systems. The northwest trend of the Nance Dulce veins is distinctly different from the north trend of the apparently stronger and more consistent veins along the Minita trend. If one makes the assumption that the Nance Dulce veins and the Minita veins formed in fractures that opened in response to the same stress field, it may be that the Nance Dulce fractures were mostly brittle shears whereas the Minita fractures were much more like tensional breaks, creating larger openings.

17.1.6 Bálsamo – Cerro Alto Area

Bálsamo/Cerro Alto is located 300 m to 600 m due east of South Minita. It is made up of three main mineralized structures: Bálsamo, Cerro Alto, and La Luz. The Bálsamo structure is about five- to ten-meters thick and has at least three mineralized veins within it. Cerro Alto is a single well-defined and predictable structure with a strong, albeit low-grade vein in it. La Luz is only just beginning to be defined and it cannot as yet be definitively characterized.

The veins at Bálsamo/Cerro Alto occur within a 300-m wide zone but unlike South Minita, the intervening rock is not brecciated or mineralized. Bálsamo could be considered a thin South Minita-style structural zone with distinct veins in it, while Cerro Alto is a distinct vein more similar to Minita. Eleven veins have been defined to date but only five have sufficient grade or intersection or are sufficiently strong to justify estimating a resource; all of these are located in three separate multi-veined structural zones. Continuity between drill-hole intercepts is predicted based on numerous structural, geological and spatial relationships, but the complexity makes it impossible to have full confidence in the continuity between drill holes in many places, using the data available.

The style of mineralization and the method of modeling is similar to that described for the veins at Minita and South Minita.

17.2 El Dorado Project Data

Pacific Rim's detailed El Dorado database contains the following information:

- Analytical – Gold and silver assays and check samples plus multi-element inductively coupled plasma (ICP) data for all the Pacific Rim data and most of the older principal vein data from the La Coyotera, Nueva Esperanza, Minita, Minita 3 and Zancudo systems.
- Geologic – Lithology, alteration, wallrock/vein mineralogy and detailed vein descriptions.
- Geotechnical – Collars, down-hole surveys, specific gravity or bulk density data, recovery, RQD, vein/fracture densities/orientations and structure.
- Topographic – Detailed one-meter topography, geo-coded air photos and sub-meter survey control.
- Other – 3D control for underground mine workings, underground mine tunnel samples, detailed trench maps, surface geologic outcrop maps, small structure database and surface gold/silver assays plus multi-element geochemistry.

The surface rock sample data set contains approximately 3,980 samples. There are 3,356 down-hole surveys, 18,725 drill-hole samples with at least one gold assay, 18,608 drill-hole silver assays, 466 drill holes, and multiple fields of geologic data for most intervals.

All samples were used to define the locations of zones but only the drill-hole data were used for grade estimation. Table 17.1 describes the entire El Dorado Project database as of October 2007.

Table 17.1 Descriptive Statistics of the El Dorado Project Drill Database

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Length	35,443	1.3	6.1	0.0	0.0	0.01	500	m
Au-Average	25,028	0.13	1.11	4.34	3.90	0.00	306.30	g Au/t
Ag-Average	24,753	1.00	8.177	34.643	4.237	0.000	2809.80	g Ag/t
Au Equivalent	24,737	0.16	1.28	4.97	3.87	0.00	362.50	g AuEq/t
AgAu Ratio	24,724	8.39	31	145	5	0	12335	
Core Recovery	18,475	100.00	96	14	0	0	108	%
RQD	15,126	73.00	65	29	0	0	100	%
Vein Width	2,590	2.00	2.83	2.03	0.72	0.03	9.40	m

"-Average" is the average of all check and duplicate samples for an interval

The electronic database also includes details of the numerous and extensive workings in the El Dorado mine area. Excellent maps exist that show stopes, drifts and underground sampling, which have been digitized and entered into the database. These data were used to better locate the veins in well-defined areas, and also to exclude from the resources those areas mined. While compiling this data, it was noted that there were some discrepancies with recorded depths to workings. As a result, Pacific Rim surveyed three known mine portals, which were used to tie into the underground workings and modify the locations. All the digitized data including the samples were then adjusted to these surveyed levels. All the historical information, including a first-person account by an individual who was working at the mine at the time of its closure, indicates that the workings go down only as deep as the 280 m elevation (425 ft below the surface). However, there are six holes that hit voids, all at about 40 m below the lowest recorded workings. Curiously this is about one level below the reported bottom of the workings. While there is no verification that this deeper level has been mined, this is still an unanswered question.

The topographic data are considered to be excellent. Pacific Rim commissioned airborne photographic surveys, from which digital maps with contours at 1-m intervals were produced.

17.2.1 Minita and South Minita Area Database

This section (17.2.1) of the report is unchanged from previous reports.

Table 17.2 describes the entire El Dorado database from which grade estimation was made at Minita and South Minita. There are 11,441 drill-hole gold assays and 11,406 drill-hole silver assays.

Table 17.2 Descriptive Statistics of the Minita and South Minita Area Drill Database

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
East	16,491					533,778	534,400	m
North	16,491					299,769	302,198	m
Elevation	16,491					-178.4	477	m
From	16,491					0.0	587	m
To	16,491					3.30	601	m
Length	16,491	1.25	28.18	10.72	0.38	0.03	538.50	m
Au-Average	11,441	0.16	1.38	6.41	4.65	0.00	306.30	g Au/t
Ag-Average	11,406	1.00	9.16	47.63	5.20	0.00	2809.80	g Ag/t
Au Equivalent	11,404	0.18	1.51	7.04	4.65	0.00	346.44	g AuEq/t
AgAu Ratio	11,404	7	18	65	4	0	2360	
Core Recovery	9,521	100.00	98	9	0	0	100	%
RQD	8,363	78.00	72	25	0	0	100	%
Vein Width	2,020	2.00	2.62	2.15	0.82	0.05	9.40	m

"-Average" is the average of all check and duplicate samples for an interval

17.2.2 La Coyotera Area Database

This section (17.2.2) of the report is unchanged from previous reports.

Table 17.3 describes the entire La Coyotera database from which grade estimation was made. There are 1,980 drill-hole gold assays and 1,954 drill-hole silver assays. There has been no exploration work done at La Coyotera since the publication of the last resource estimate in 2003.

Table 17.3 Descriptive Statistics of the La Coyotera Area Drill Database

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
East	1,981					533,285	533,638	m
North	1,981					303,999	304,477	m
Elev	1,981	225.4	229.4			(29)	429	m
From	1,981	242.7	232.4			3	514	m
To	1,981	243.8	233.5			3	516	m
Length	1,981	1.1	1.1			0	9	m
AuAvg	1,980	0.25	1.96	6.02	3.07	0.00	156	g Au/t
AgAvg	1,954	3.65	17.27	47.58	2.75	0.03	1084	g Ag/t
AuEQ	1,954	0.3	2.2	6.6	3.0	0.0	168.4	g AuEq/t
AgAu	1,954	13	25	50	2	1	967	
Type	1,981					1	1	
Zone	1,981					9	13	
Crec	1,745	100	87	21	0	13	100	%
RQD	98	39	39	27	1	0	100	%

* 1 is DDH, 2 is RC

"-Average" is the average of all check and duplicate samples for an interval

17.2.3 Nueva Esperanza Area Database

This section (17.2.3) of the report is unchanged from previous reports.

Table 17.4 describes the Nueva Esperanza database from which grade estimation was made. There were 1,076 drill-hole sample gold assays and 1,064 drill-hole sample silver assays.

Table 17.4 Descriptive Statistics of the Nueva Esperanza Area Drill Database

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
East	1,127					533,862	534,375	m
North	1,127					302,318	303,046	m
Elevation	1,127	353.1	342.4			107	451	m
From	1,127	90.4	106.8			0.00	438	m
To	1,127	91.4	108.0			1.30	438	m
Length	1,127	1.3	1.3			0.03	27	m
Au Average	1,076	0.34	1.59	3.41	2.15	0.00	36	g Au/t
Ag Average	1,064	1.45	9.23	24.13	2.61	0.00	295	g Ag/t
Au Equivalent	1,064	0.36	1.72	3.74	2.17	0.00	40	g AuEq/t
Ag/Au Ratio	1,064	5.16	11.14	48.69	4.37	0.00	1100	
Type*	1,127					1	2	
Zone	1,127					1	9	
Core Recovery	790	100.00	90.43	18.25	0.20	5.00	100	%
RQD	85	86.00	82.04	19.77	0.24	0.00	100	%

* 1 is DDH, 2 is RC

"-Average" is the average of all check and duplicate samples for an interval

17.2.4 Nance Dulce Area Database

This section (17.2.4) of the report is unchanged from previous reports.

Table 17.5 describes all the samples coded to veins at Nance Dulce. There are 80 drill-hole intercepts that are coded to veins and these have uncapped mean grades of 10.11 g Au/t and 67.57 g Ag/t.

Table 17.5 Descriptive Statistics of the Nance Dulce Area Coded Samples

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximimum	Units
From	86	134.5	136.4			37.8	287.4	m
To	86	134.7	136.9			38.8	287.7	m
Length	86	0.3	0.5			0.0	1.8	m
Au Average	80	6.01	10.11	13.77	1.36	0.01	98.52	g Au/t
Ag Average	80	33.90	67.57	99.58	1.47	0.20	1043.60	g Ag/t
Au Equivalent	80	6.95	11.07	15.08	1.36	0.02	113.43	g AuEq/t
AgAu Ratio	80	7.07	13.15	18.85	1.43	1.20	101.44	
True Width	86	0.32	0.58	0.69	1.19	0.03	2.51	m

"-Average" is the average of all check and duplicate samples for an interval

17.2.5 Bálsamo/Cerro Alto Area Database

Table 17.6 describes the Bálsamo/Cerro Alto coded database from which grade estimation was made. There were 497 drill-hole sample gold and silver assays.

Table 17.6 Descriptive Statistics of the Bálsamo/Cerro Alto Area Drill Database

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Length	497	0.82	1.07	0.40	0.38	0.05	1.95	m
Au-Average	497	1.10	4.54	9.77	2.15	0.00	305.44	g Au/t
Ag-Average	494	9.10	52.96	117.96	2.23	0.00	2546.60	g Ag/t
Au Equivalent	494	1.35	5.62	11.96	2.13	0.01	356.38	g AuEq/t
AgAu Ratio	494	10	28	151	5	0	2100	
Core Recovery	349	100.00	99	5	0	54	100	%
RQD	349	61.00	56	28	0	0	100	%
Vein Width	497	1.80	2.50	1.63	0.65	0.05	7.20	m

"-Average" is the average of all check and duplicate samples for an interval

17.3 Rock Density

Pacific Rim has made an admirable effort to evaluate rock density and has taken, in addition to all those previously reported, 34 measurements at Bálsamo/Cerro Alto in veins alone. Many more rock density measurements were also taken in wall rock. All measurements involved physical measurements of core size and weight (Section 17.3.1). The values used in this report are expressed as densities, in grams per cubic centimeter (g/cm^3). The measurement methods did not use large bulk samples, so MDA made some assumptions, described in the following text, to arrive at estimated bulk densities.

For comparative purposes, values used for bulk density in the past were 2.54, 2.5, 2.47, and 2.33 g/cm^3 for the Minita veins, South Minita veins, La Coyotera, and Nueva Esperanza, respectively.

17.3.1 Minita Area Rock Density

Pacific Rim took 114 El Dorado mine area samples of whole core and measured the diameter and length of each sample, in order to calculate the volume. The samples were then weighed, dried and weighed again. The samples were described for the percent voids and coded by rock type into four groups: wallrock andesite, vein, sheeted zone and breccia. As recovery was very good in Pacific Rim's drill campaign, and vugs are common, this was the most appropriate method of measuring sample density. MDA analyzed the results and grouped them into zones that would be used for modeling wallrock and mineralization. The results are given in Table 17.7 and Figure 17.1 and Figure 17.2. Nothing has changed since the 2003 resource estimate that suggests a need to re-evaluate the bulk density estimate for material from Minita.

Table 17.7 Descriptive Statistics of Minita Area Density Measurements

Description	Measured Density (g/cm3)	Estimated Void (%)
All Data	2.56	7%
Minita	2.56	7%
Zancudo	2.60	6%
Wallrock	2.65	2%
All Mineralization	2.54	8%
Vein	2.53	10%

Figure 17.1 Minita Area Density Test Work

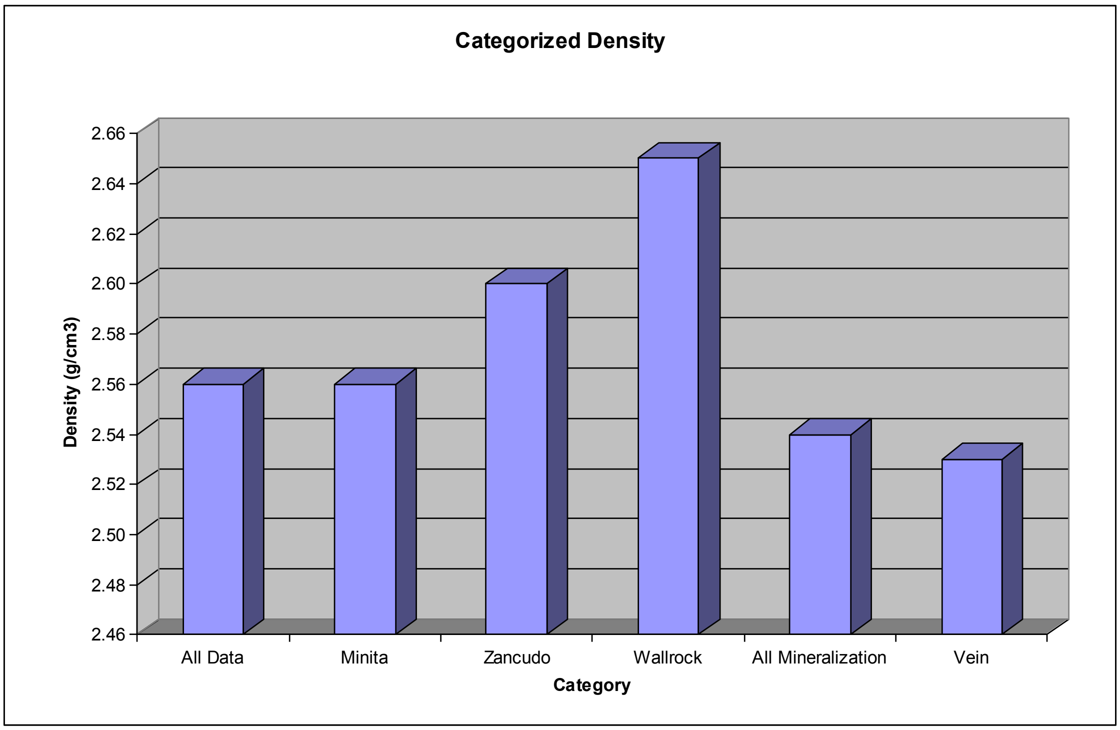
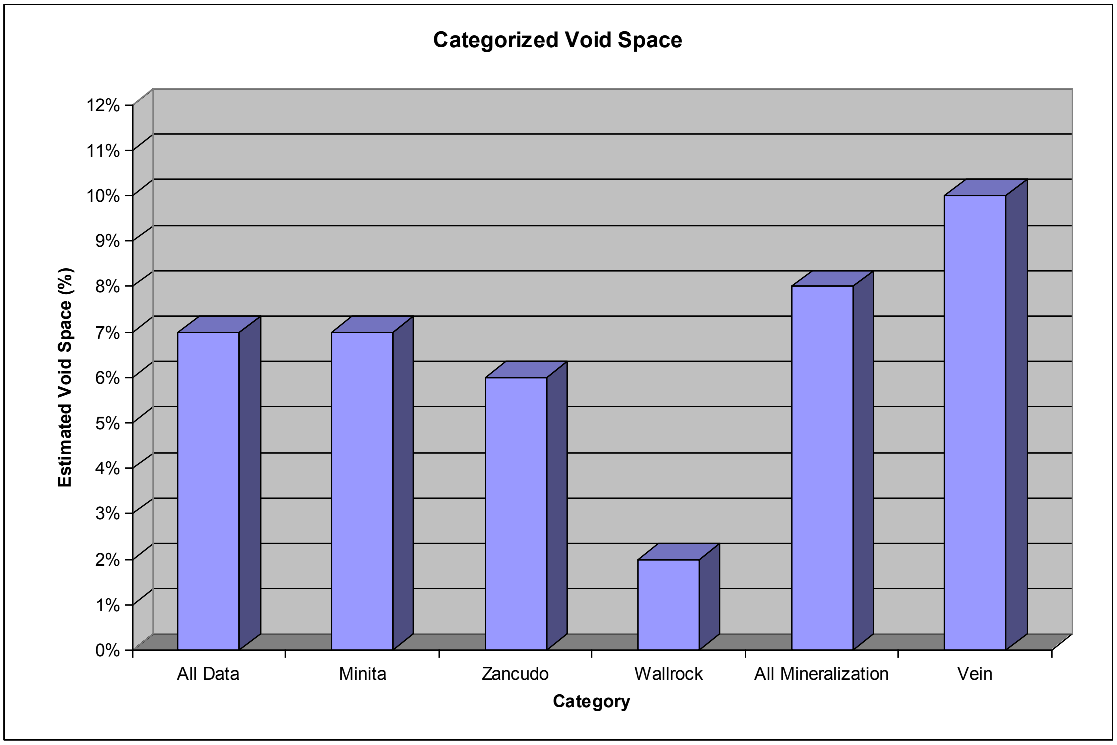


Figure 17.2 Minita Area Void Space Estimate



Even though void space was taken into account while measuring the density of the chosen samples, the values to be used still needed to be modified to account for the unavoidable bias of measuring only samples that were not broken. Modifications must also account for those voids that are reported to occur in the vein but are too large to be incorporated in the core measurements. MDA therefore decreased the vein/mineralization density by 3%, to arrive at an estimated bulk density of 2.46 g/cm^3. Although it is not used in this resource estimate, future work should use the wallrock density reduced by 1% to an estimated bulk density of 2.62 g/cm^3.

17.3.2 South Minita Area Rock Density

Fifty-eight measurements of density were made in vein material coded to any one of the ten defined veins. Similar measurement procedures were used in these more recent samples as were used earlier for the Minita samples. The sample results were evaluated statistically together and by vein. Due to the very similar density data amongst the veins, as well as the similar geological and mineralogical characters of the different veins, a single bulk density value was used for all veins. The value is 2.50 g/cm^3, which is the mean of all samples reduced by 3% to compensate for unavoidable sample bias. By comparison, the bulk density value used at Minita is 2.46 g/cm^3. The percentage vugs were not analyzed for South Minita because the density measurements accounted for the void space.

17.3.3 Nance Dulce Area Rock Density

Due to the similarity of vein mineralogy and texture and the early stage of resource definition at Nance Dulce, a bulk density value was assigned to the Nance Dulce veins that is similar to those used at Minita (2.46 g/cm^3) and South Minita (2.50 g/cm^3). For Nance Dulce 2.50 g/cm^3 was selected. The percentage vugs were not analyzed for Nance Dulce because the density measurements accounted for the void space.

17.3.4 Bálsamo/Cerro Alto Area Rock Density

Thirty-four measurements of density were made in vein material coded to any one of the eleven defined veins. Similar measurement procedures were used in these more recent samples as were used earlier for the Minita samples. The sample results were evaluated statistically together and by vein. Due to the very similar density data amongst the veins, as well as the similar geological and mineralogical characters of the different veins, a single bulk density value was used for all veins. The value is 2.50 g/cm^3, which is the mean of all samples reduced by 2% to compensate for unavoidable sample bias. By comparison, the bulk density value used at Minita is 2.46 g/cm^3. The percentage vugs were not analyzed for Bálsamo/Cerro Alto because the density measurements accounted for the void space.

17.3.5 La Coyotera Area Rock Density

Because the core from La Coyotera was already split prior to the initiation of the rock density measurement campaign, Pacific Rim was forced to use pieces of split core for density determinations. This required coating the samples with paraffin and using the total immersion method to measure their specific gravity. The results of the specific gravity measurements are expressed herein as densities. Pacific Rim took 68 samples of core, selected by mineral zone, described them, and sent them to Inspectorate in Reno, Nevada. Pacific Rim geologically grouped the material and percentages by each chosen intercept and within each zone used for modeling. The results were weighted by percent of that material in each zone and by weight of each sample. The weighted averages were then decreased by 5% to compensate for the unavoidable bias introduced by not being able to measure broken core, *i.e.*, low density material, and to account for larger voids not included in the core samples (density measurements were not done by measuring volume – including voids – and dividing by weight). The resulting bulk density estimates used in modeling are:

- Low-grade, brecciated andesite: 2.47 g/cm^3;
- Mid-grade, brecciated andesite and/or vein/brecciated vein: 2.45 g/cm^3; and
- High-grade, vein/brecciated vein: 2.42 g/cm^3.

The bulk density used for the country rock is 2.6 g/cm^3.

17.3.6 Nueva Esperanza Area Rock Density

For the same logic and reasons, specific gravity measurements were done the same way for Nueva Esperanza as for La Coyotera. There were 46 measurements taken. The weighted averages were then decreased by 5% to compensate for the unavoidable bias introduced by not being able to measure broken core and to account for larger voids not included in core (density measurements were not done by measuring volume – including voids – and dividing by weight), giving the following results for estimated bulk densities:

- Low-grade, altered andesite: 2.53 g/cm^3; and
- High-grade, veins and sheared veins: 2.47 g/cm^3.

17.4 Mineral Zone Descriptions

All data and text in this section remain unchanged from the previous 43-101 report except for the additions of Bálsamo/Cerro Alto.

17.4.1 Minita Area

The veins at the Minita area were defined on cross sections. Determinations of vein coding used angles to core axes, locations, geologic descriptions, and historic workings and samples. Once defined, the sample intervals were coded by vein, the intervals were given a measured (from the geologic log) true thickness as well as an azimuth and dip of the vein at that intersection. A drill-hole map is given in Figure 17.3.

17.4.1.1 Minita Vein

The Minita vein is a particularly well-defined and predictable or "well-behaved" vein. It is consistent in both grade and width, with the best thickness and grade being in the central area. Descriptive statistics of the Minita vein are given in Table 17.8. QQ plots were made to help determine capping values. Gold was capped at 65 g Au/t and silver was capped at 550 g Ag/t. This represents 3% of the sample metal value for both gold and silver (Table 17.8).

Table 17.8 Descriptive Statistics of Minita Vein Samples

Minita **55 and 155 Capping** **65 g Au/t** **550 g Ag/t**

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Au-Average	402	8.03	13.08	15.61	1.19	0.00	132.0	g Au/t
Difference (%)			-3%					
Au-Capped	402	8.03	12.70	13.63	1.07	0.00	65.00	g Au/t
Ag-Average	402	43.25	87.27	117.42	1.35	0.00	864	g Ag/t
Difference (%)			-3%					
Ag-Capped	402	43.25	85.05	105.66		0	550	g Ag/t
Au Equivalent	402	8.83	14.32	17.09	1.19	0.01	142.4	g Aueq/t
Ag/Au Ratio	402	6.50	10.86	74.59	6.87	0.00	1400.00	
Core Recovery	412	100	91	23	0	0	100	%
RQD	210	80	72	27	0	0	100	%
Vein Measured True Th.	413	5.15	4.73	1.94	0.41	0.30	9.40	m
Vein Azimuth	413	173	169	22	0	0	339	deg.
Vein Dip	413	-75	-75	5	0	-90	-65	deg.
Vein Code	413					55	155	
Confidence Code**	413					1	3	
Void*	11					1	1	

* 1 is void ** 1 is lowest, 3 is highest

"-Average" is the average of all check and duplicate samples for an interval

The sample data were then composited twice, once to full length for vein thickness determinations, and once excluding all samples with core recovery less than 25% for grade determinations. Table 17.9 gives the statistics of the Minita vein composites. These composites were chosen based on geology, mineralogy, textures, location and grade. Except for near the south end of the modeled area, the vein is predictable and there is high confidence in composite definition. In the central area, the vein splits and the hanging wall split is modeled separately. Vein determinations could include internal weakly mineralized material or even "horses" of unmineralized material if they were considered part of the vein system. If the vein splayed into sheeted zones these were coded as weakly mineralized. If there was a well-defined and well-mineralized vein distinctly separate from surrounding sheeted material or stockwork, this too was segregated, although this was a rare occurrence. Because the Minita vein is well defined and is such a strong structure, it was modeled first and was used as the "anchor" for defining the surrounding veins.

Table 17.9 Descriptive Statistics of Minita Vein Composites

All **55 and 155**

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Length	73	3.8	5.4	5.3	1.0	0.3	28.5	m
To	73	271.6	270.8			22.7	543.7	m
AuAvg	73	9.06	12.85	8.76	0.68	0.01	55.50	g/t
AuCap	73	9.06	12.44	7.69	0.62	0.01	38.91	g/t
AuAvgXCW	73	25.1	41.4	47.7	1.2	0.0	253.2	g/t * m
AuCapXCW	73	25.1	39.9	43.0	1.1	0.0	202.5	g/t * m
AuAvgXMW	73	24.8	41.2	45.0	1.1	0.0	244.2	g/t * m
AuCapXMW	73	24.8	39.8	40.8	1.0	0.0	195.3	g/t * m
AgAvg	73	59.79	87.73	66.17	0.75	0.65	306.71	g/t
AgCap	73	59.79	85.38	61.86	0.72	0.65	306.71	g/t
AgAvgXCW	73	134.2	277.2	362.1	1.3	0.0	1711.2	g/t * m
AgCapXCW	73	134.2	270.3	339.7	1.3	0.0	1575.7	g/t * m
AgAvgXMW	73	133.2	273.3	336.4	1.2	0.2	1650.4	g/t * m
AgCapXMW	73	133.2	267.2	318.3	1.2	0.2	1519.7	g/t * m
AuEq	73	9.55	14.10	9.60	0.68	0.03	57.77	g/t
Ag/Au	73	6.35	6.95	4.58	0.66	1.31	75.00	
Crec	71	100	96	9	0.1	55	100	%
RQD	49	79	75	20	0	6	100	%
VnMTW	73	2.80	3.25	2.03	0.62	0.25	9.40	m
VnDipAZ	73	170	168	42	0	0	339	degrees
Vn_Dip	73	-75	-75	6	0	-90	-60	degrees
Vn_Code	73	55	66	31	0	55	155	
ConfCode	73	3	3	0	0	2	3	
VnCTW	73	2.6	3.2	2.2	0.7	0.0	9.2	m
VnCDW	73	4.2	5.6	5.3	0.9	0.4	28.6	m
VnCHW	73	2.7	3.4	2.3	0.7	0.0	9.8	m
Void	0							

"Avg" is the average of all check and duplicate samples for an interval; Note: VnCTW are calculated true widths; VnMTW are measured true widths

17.4.1.2 Minita 3 Vein

The Minita 3 vein is considerably smaller than Minita in width and strike length, and the grades are less persistent. Minita 3 mineralization displays clusters of well-mineralized areas and poorly mineralized areas, which pointed to modeling them separately. Descriptive statistics of the well-mineralized domain (65), the only one of economic interest, are given in Table 17.10. Minita 3 QQ plots and low CVs (coefficient of variation = standard deviation / mean) suggest that capping is not necessary (Table 17.10). The sample data were composited to full vein width for width determinations but excluded all samples with core recovery less than 25% for grade determinations (see Section 11.2). Table 17.11 gives the composite statistics by vein of Minita 3.

Minita 3 parallels Minita and merges with Minita at its southern end. There is either another weakly mineralized vein, or a splay of Minita 3, that continues south beyond the merger.

Table 17.10 Descriptive Statistics of Minita 3 Vein Samples

Minita 3	**(65)**			**Capping**	**None g Au/t**		**None g Ag/t**	
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	45	4.86	8.55	9.48	1.11	0.11	39.6	g Au/t
Difference (%)			0%					
Au-Capped	45	4.86	8.55	9.48	1.11	0.11	39.6	g Au/t
Ag-Average	45	24.80	59.84	72.67	1.21	0.70	309.0	g Ag/t
Difference (%)			0%					
Ag-Capped	45	24.80	59.84	72.67		0.70	309.0	g Ag/t
Au Equivalent	45	5.22	9.40	10.47	1.11	0.12	44.0	g Aueq/t
AgAu Ratio	45	6.32	6.50	3.17	0.49	0.82	18.67	
Vein Measured True Th.	46	2.31	2.44	1.05	0.43	0.40	4.10	m
Vein Azimuth	46	180	169	16	0	140	195	deg.
Vein Dip	46	-67	-69	6	0	-84	-62	deg.
Vein Code	46					65	65	
Confidence Code**	46					2	3	
Void*	2					1	1	

"-Average" is the average of all check and duplicate samples for an interval

Table 17.11 Descriptive Statistics of Minita 3 Vein Composites

	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Min.**	**Max.**	**Units**
Length	16	2.8	2.7	1.6	0.6	0.4	6.3	m
To	16	263.0	250.7			58.2	354.2	m
AuAvg	16	6.85	7.59	5.10	0.67	0.70	20.90	g/t
AuCap	16	6.85	7.59	5.10	0.67	0.70	20.90	g/t
AuAvgXCW	16	6.7	17.1	17.6	1.0	1.4	59.4	g/t * m
AuCapXCW	16	6.7	17.1	17.6	1.0	1.4	59.4	g/t * m
AuAvgXMW	16	6.5	16.0	15.8	1.0	1.3	47.4	g/t * m
AuCapXMW	16	6.5	16.0	15.8	1.0	1.3	47.4	g/t * m
AgAvg	16	36.74	51.72	39.44	0.76	3.07	159.79	g/t
AgCap	16	36.74	51.72	39.44	0.76	3.07	159.79	g/t
AgAvgXCW	16	51.5	118.3	132.4	1.1	3.4	453.8	g/t * m
AgCapXCW	16	51.5	118.3	132.4	1.1	3.4	453.8	g/t * m
AgAvgXMW	16	49.9	110.9	119.5	1.1	3.6	362.7	g/t * m
AgCapXMW	16	49.9	110.9	119.5	1.1	3.6	362.7	g/t * m
AuEq	16	7.30	8.33	5.62	0.67	0.74	23.18	g/t
Ag/Au	16	6.14	6.48	2.52	0.39	1.33	10.88	
Crec	15	98	93	15	0.2	34	100	%
RQD	7	53	67	25	0	3	97	%
VnMTW	16	1.83	2.05	1.18	0.58	0.40	4.10	m
VnDipAZ	16	180.0	170.9	15.4	0.1	140.0	195.0	degrees
Vn_Dip	16	-67.5	-69.2	4.5	-0.1	-80.0	-62.0	degrees
Vn_Code	16	65	65	0	0	65	65	
ConfCode	16	3	3	0	0	2	3	
VnCTW	16	2.1	2.2	1.4	0.6	0.3	5.0	m
VnCDW	16	2.8	2.7	1.6	0.6	0.4	6.3	m
VnCHW	16	2.3	2.4	1.5	0.7	0.3	5.3	m
Void	0							

"-Average" is the average of all check and duplicate samples for an interval. Note: VnCTW are calculated true widths; VnMTW are measured true widths

17.4.1.3 Zancudo Vein

Zancudo, the smallest of the modeled veins, is a fairly well-understood vein, at least with respect to its location. It is a thin vein that, similar to Minita 3, does have clusters of well-mineralized areas and poorly mineralized areas. As in the case of Minita 3, the well-mineralized and poorly mineralized areas were modeled separately and the single well-mineralized domain (45) statistics are given in Table 17.12. Zancudo QQ plots and relatively low CVs suggest that capping of silver be done to 100 g Ag/t, and that no capping of the gold is necessary (Table 17.12). Capping the silver removed a considerable amount of the sample metal content (27%). The sample data were composited in a similar fashion to Minita and Minita 3. Table 17.13 gives the composite statistics of Zancudo vein composites.

Table 17.12 Descriptive Statistics of Zancudo Vein Samples

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Au-Average	65	4.36	5.95	6.87	1.15	0.00	34.7	g Au/t
Difference (%)			0%					
Au-Capped	65	4.36	5.95	6.87	1.15	0.00	34.7	g Au/t
Ag-Average	65	25.20	42.50	63.91	1.50	0.10	294.0	g Ag/t
Difference (%)			-27%					
Ag-Capped	65	25.20	30.97	31.45	1.02	0.10	100.0	g Ag/t
Au Equivalen	65	4.79	6.56	7.74	1.18	0.01	38.9	g Aueq/t
AgAu Ratio	65	6.33	7.01	4.24	0.61	0.02	25.0	
Vein Measur	71	1.20	1.54	0.97	0.63	0.10	3.23	
Vein Azimuth	71	160	133	67	0.5	0	195	
Vein Dip	71	-80	-79	6	-0.1	-90	-60	
Confidence C	71					1	3	
Void	7					1	1	

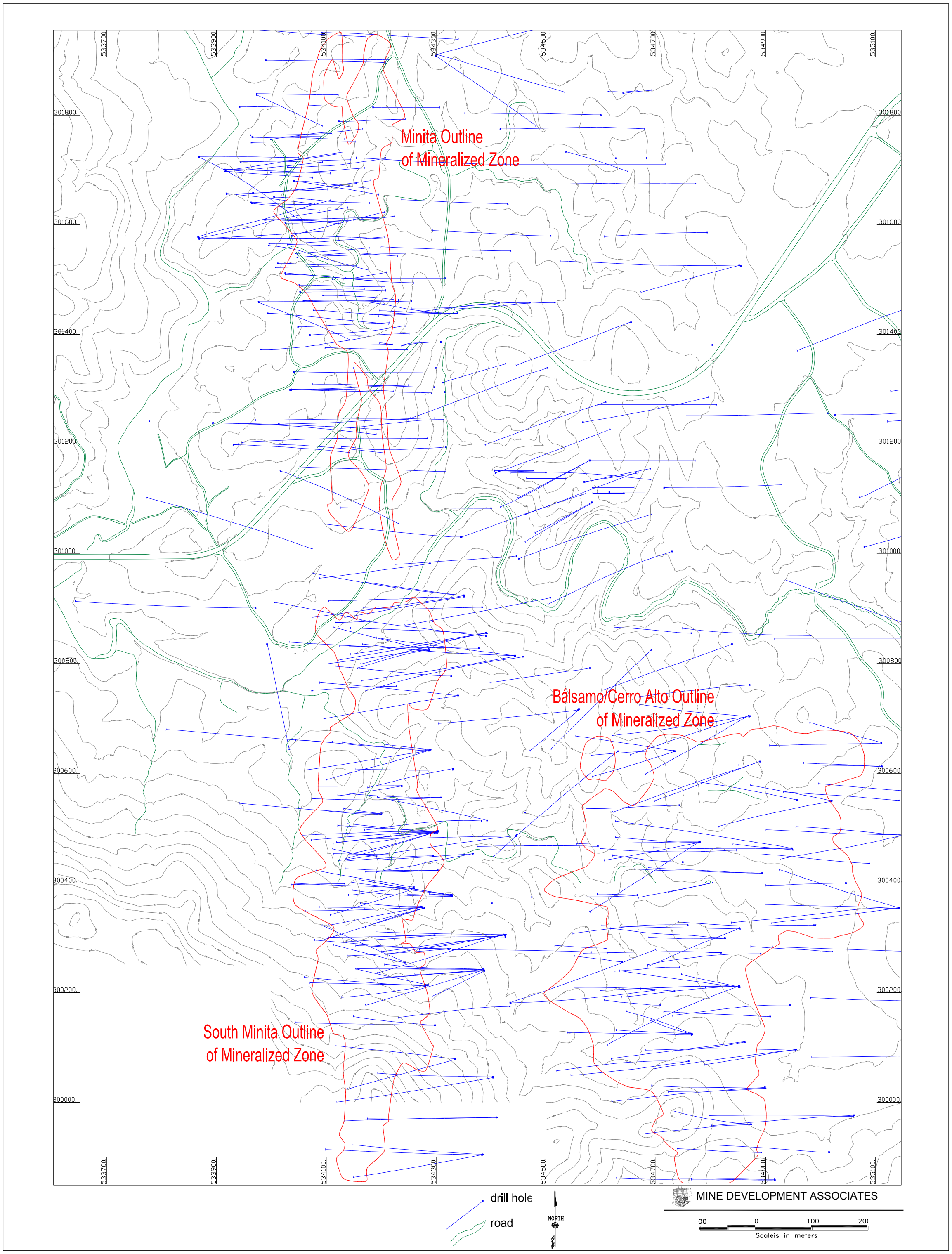
"-Average" is the average of all check and duplicate samples for an interval

Table 17.13 Descriptive Statistics of Zancudo Vein Composites

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Length	41	1.4	1.6	1.2	0.7	0.2	5.8	m
To	41	219.6	219.5			56.6	453.8	m
AuAvg	38	4.13	5.22	5.39	1.03	0.03	34.70	g/t
AuCap	38	4.13	5.22	5.39	1.03	0.03	34.70	g/t
AuAvgXCW	38	3.7	5.4	5.9	1.1	0.0	30.5	g/t * m
AuCapXCW	38	3.7	5.4	5.9	1.1	0.0	30.5	g/t * m
AuAvgXMW	38	3.9	6.3	8.0	1.3	0.0	36.9	g/t * m
AuCapXMW	38	3.9	6.3	8.0	1.3	0.0	36.9	g/t * m
AgAvg	38	19.76	36.44	47.39	1.30	0.17	294.00	g/t
AgCap	38	18.93	23.00	13.66	0.59	0.17	60.00	g/t
AgAvgXCW	38	24.3	38.7	48.9	1.3	0.2	258.7	g/t * m
AgCapXCW	38	22.3	23.8	16.8	0.7	0.2	73.1	g/t * m
AgAvgXMW	38	21.5	47.5	70.8	1.5	0.2	332.2	g/t * m
AgCapXMW	38	21.5	27.5	26.7	1.0	0.2	155.0	g/t * m
AuEq	38	4.50	5.74	6.04	1.05	0.04	38.90	g/t
Ag/Au	41	5.82	5.76	3.21	0.56	1.00	13.79	
Crec	29	100	93	16	0.2	28	100	%
RQD	18	82	80	13	0	0	94	%
VnMTW	41	1.20	1.50	0.76	0.51	0.10	3.23	m
VnDipAZ	41	162	144	57	0	0	195	degrees
Vn_Dip	41	-80	-79	7	0	-90	-60	degrees
Vn_Code	41	45	45	0	0	45	45	
ConfCode	41	3	3	1	0	1	3	
VnCTW	41	0.9	1.0	0.7	0.7	0.1	3.9	m
VnCDW	41	1.4	1.7	1.3	0.7	0.2	7.0	m
VnCHW	41	0.9	1.0	0.7	0.7	0.1	4.0	m
Void	0							

"-Average" is the average of all check and duplicate samples for an interval; Note: VnCTW are calculated true widths; VnMTW are measured true widths

Figure 17.3 Minita, South Minita, Bálsamo/Cerro Alto Drill Hole Plan Map



17.4.2 South Minita Area

All ten veins in the South Minita area were estimated as "2D" models[9] in 3D space, the same way as at Minita. For brevity, the discussion in this report will present statistical data on the three main veins, which represent 51%, 10%, and 15% of the total South Minita resource based on ounces of metal; that is 75% of the entire South Minita Indicated resource. All of the veins, however, had similar analyses, as are presented below. In all cases, the South Minita veins were modeled in their entirety, meaning that the distinction between well-mineralized and not-well-mineralized veins was made using inverse distance to a higher power in the estimation process rather than by using hard boundaries. A drill hole map is given in Figure 17.3.

17.4.2.1 Footwall Vein (1015)

Throughout the exploration of South Minita, the Footwall vein was always considered the most persistent and dominant vein of the set. It is called the "Pink Vein" in some compilations, and has been assigned the number 1015 in the resource database. It lies along the footwall of the lode zone and is present in most of the drill holes that intersect the lode. Footwall QQ plots suggest that capping of silver be done at 250 g Ag/t and of the gold be done at 60 g Au/t; capping levels are given in Table 17.14. The sample data were composited in a similar fashion to the Minita veins. Table 17.15 gives the composite statistics of South Minita Footwall vein composites.

Table 17.14 Descriptive Statistics of the Footwall Vein Samples – South Minita

		(1015 and 1115)		Capping	60 g Au/t		250 g Ag/t	
	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Au-Average	315	3.30	6.95	11.21	1.61	0.00	148.40	g Au/t
Difference			-2%					
Au-Capped	315	3.30	6.84	10.19	1.49	0.00	60.00	g Au/t
Ag-Average	315	11.80	43.94	68.26	1.55	0.40	680.9	g Ag/t
Difference			-3%					
Ag-Capped	315	11.80	42.78	61.08	1.43	0.40	250.0	g Ag/t
Au Equivalent	315	3.54	7.58	12.06	1.59	0.02	158.1	g AuEq/t
AgAu Ratio	315	5.89	25.05	170.15	6.79	0.20	2000.0	
Core Recovery	259	100	100	2	0	80	100	%
RQD	259	69	67	19	0	0	100	%
Vein Width	316	3.2	3.4	2.2	0.7	0.1	8.6	m
Confidence Code	316	2	2	1	0	1	3	
Void	0							

[9] These truly are estimated in 3D space but have variable block dimensions in the horizontal east-west direction representing variable vein widths. These models are sometimes referred to as grade accumulation models. These types of models are made by estimating, on a block by block basis, metal (also referred to as accumulation or grade times thickness) and vein thickness and dividing the "accumulation" of grade and thickness by the estimated vein thickness to determine grade.

Table 17.15 Descriptive Statistics of the Footwall Vein Composites – South Minita

(1015 and 1115)

	Sum of w	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
AuAvg	91	4.19	6.95	8.70	1.25	0.03	148.40	g/t
AuCap	91	4.19	6.84	7.35	1.07	0.03	60.00	g/t
AuAvgXCW	91	6.8	14.6	23.7	1.6	0.0	179.0	g/t*m
AuCapXCW	91	6.8	14.4	23.6	1.65	0.0	179.0	g/t*m
AuAvgXMW	91	6.0	13.9	20.8	1.5	0.0	140.8	g/t*m
AuCapXMW	91	6.0	13.7	20.8	1.5	0.0	140.8	g/t*m
AgAvg	91	22.72	44.02	54.93	1.25	0.50	680.90	g/t
AgCap	91	22.72	44.02	54.93	1.25	0.50	680.90	g/t
AgAvgXCW	91	25.5	92.7	148.9	1.6	0.1	991.7	g/t*m
AgCapXCW	91	25.5	92.7	148.9	1.61	0.1	991.7	g/t*m
AgAvgXMW	91	26.7	87.8	135.2	1.5	0.2	779.8	g/t*m
AgCapXMW	91	26.7	87.8	135.2	1.5	0.2	779.8	g/t*m
Au Equivalent	91	4.71	7.58	9.41	1.24	0.04	158.12	g/t
Ag/Au	92	6.52	7.38	5.60	0.76	0.69	40.74	
Core Recovery	72	100	100	1	0	92	100	%
RQD	72	68	67	16	0	30	100	%
Vein MTW	92	1.4	2.0	1.8	0.9	0.1	8.6	m
Vein Azimuth	92	360.0	356.2	36.5	0.1	10.0	360.0	m
Vein Dip	92	-60	-62	10	0	-85	-35	degrees
Vein Code	92	1015	1052	49	0	1015	1115	degrees
Confidence Code	92	2	2	1	0	1	3	
Vein CTW	92	1.4	2.0	1.9	0.9	0.1	9.0	m
Vein CDW	92	1.7	2.6	2.5	0.9	0.1	12.4	m
Vein CHW	92	1.5	2.4	2.3	1.0	0.1	10.6	m
Void	0							

Note: VnCTW are calculated true widths; VnMTW are measured true widths

17.4.2.2 Hanging Wall to Footwall Vein (1017)

There are three veins defined in the hanging wall of the Footwall vein and still within the lode: 1017, which dominates, and two others 1016 and 1018. Vein 1017 lies above 1016, which in turn lies above 1015, the main Footwall vein (Figure 9.2). QQ plots suggest that capping of the silver be done to 250 g Ag/t and capping of the gold be done at 60 g Au/t, as is summarized in Table 17.16. The sample data were composited in a similar fashion to the Minita veins. Table 17.17 gives the composite statistics of South Minita second hanging wall vein to the Footwall vein, the 1017 vein.

Table 17.16 Descriptive Statistics of 1017 Vein Samples – South Minita

(1017 and 1117)				Capping	40 g Au/t		500 g Ag/t	
	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Au-Average	113	2.72	6.56	12.11	1.85	0.01	99.34	g Au/t
Difference			-10%					
Au-Capped	113	2.72	5.92	8.22	1.39	0.01	40.00	g Au/t
Ag-Average	113	19.10	45.98	91.22	1.98	0.50	795.6	g Ag/t
Difference			-5%					
Ag-Capped	113	19.10	43.60	74.24	1.70	0.50	500.0	g Ag/t
Au Equivalent	113	3.00	7.22	13.35	1.85	0.02	110.7	g Aueq/t
AgAu Ratio	113	8.22	9.93	9.99	1.01	0.29	70.0	
Core Recovery	73	100	99	6	0	50	100	%
RQD	73	68	66	19	0	0	100	%
Vein Width	114	1.3	2.1	1.9	0.9	0.1	6.2	m
Confidence Coc	114	2	2	1	0	1	3	
Void	0							

Table 17.17 Descriptive Statistics of 1017 Vein Composites – South Minita

(1017 and 1117)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
AuAvg	53	4.26	6.78	6.76	1.00	0.01	22.10	g/t
AuCap	53	4.26	6.14	5.72	0.93	0.01	21.79	g/t
AuAvgXCW	53	2.0	7.4	19.8	2.7	0.0	138.6	g/t*m
AuCapXCW	53	2.0	6.7	15.8	2.35	0.0	106.7	g/t*m
AuAvgXMW	53	2.1	6.9	16.6	2.4	0.0	113.2	g/t*m
AuCapXMW	53	2.1	6.3	13.5	2.1	0.0	87.2	g/t*m
AgAvg	53	28.29	47.10	52.68	1.12	0.60	201.00	g/t
AgCap	53	28.29	44.73	48.15	1.08	0.60	201.00	g/t
AgAvgXCW	53	9.8	51.5	161.5	3.1	0.0	1136.4	g/t*m
AgCapXCW	53	9.8	49.0	145.0	2.96	0.0	1007.3	g/t*m
AgAvgXMW	53	10.5	47.4	135.3	2.9	0.1	928.3	g/t*m
AgCapXMW	53	10.5	45.4	122.2	2.7	0.1	822.9	g/t*m
Au Equivalent	53	4.66	7.45	7.44	1.00	0.02	23.64	g/t
Ag/Au	53	7.50	7.39	3.00	0.41	0.29	70.00	
Core Recovery	36	100	99	7	0	50	100	%
RQD	36	66	68	15	0	12	100	%
Vein MTW	53	0.6	1.1	1.2	1.1	0.1	6.2	%
Vein Azimuth	53	360.0	360.0	0.0	0.0	360.0	360.0	m
Vein Dip	53	-60	-64	10	0	-90	-40	degrees
Vein Code	53	1117	1074	50	0	1017	1117	degrees
Confidence Code	53	2	2	1	0	1	3	
Vein CTW	53	0.7	1.1	1.4	1.2	0.1	7.6	m
Vein CDW	53	0.9	1.5	1.9	1.3	0.1	11.1	m
Vein CHW	53	0.7	1.3	1.6	1.2	0.1	8.4	m
Void	0							

Note: VnCTW are calculated true widths; VnMTW are measured true widths

17.4.2.3 Hanging Wall Vein (1035)

In the hanging wall of the lode, above the 1015 to 1018 group, is another set of veins. The lowest and most prominent of this set is Vein 1035 (Figure 9.2). Capping in this zone was done to 40 g Au/t and 250 g Ag/t (Table 17.18), representing 2% and 4% of the metal, respectively. The sample data were composited in a similar fashion to the Minita veins. Table 17.19 gives the composite statistics of South Minita hangingwall1035 vein.

Table 17.18 Descriptive Statistics of 1035 Vein Samples – South Minita

	(1035 and 1135)		Capping		40 g Au/t		250 g Ag/t	
	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Au-Averag	149	2.13	6.01	9.48	1.58	0.01	64.25	g Au/t
Difference			-2%					
Au-Cappe(	149	2.13	5.88	8.88	1.51	0.01	40.00	g Au/t
Ag-Averag	149	14.50	48.75	74.03	1.52	0.40	414.1	g Ag/t
Difference			-4%					
Ag-Cappe(	149	14.50	46.73	66.72	1.43	0.40	250.0	g Ag/t
Au Equival	149	2.26	6.70	10.50	1.57	0.02	70.2	g Aueq/t
AgAu Ratio	149	8.11	12.21	22.74	1.86	0.76	381.0	
Core Reco	115	100	100	1	0	97	100	%
RQD	115	74	70	20	0	0	100	%
Vein Width	149	1.6	1.8	1.3	0.8	0.1	4.3	m
Confidence	149	2	2	1	0	1	3	
Void	0							

Table 17.19 Descriptive Statistics of 1035 Vein Composites – South Minita

(1035 and 1135)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
AuAvg	74	3.69	6.02	7.52	1.25	0.01	38.98	g/t
AuCap	74	3.69	5.89	7.21	1.22	0.01	38.98	g/t
AuAvgXCW	74	1.8	6.4	10.0	1.6	0.0	47.6	g/t*m
AuCapXCW	74	1.8	6.3	9.7	1.55	0.0	47.6	g/t*m
AuAvgXMW	74	2.0	6.7	10.4	1.6	0.0	46.0	g/t*m
AuCapXMW	74	2.0	6.6	10.2	1.6	0.0	46.0	g/t*m
AgAvg	74	23.42	48.75	60.50	1.24	0.40	324.80	g/t
AgCap	74	23.42	46.69	54.76	1.17	0.40	250.00	g/t
AgAvgXCW	74	14.5	52.2	82.1	1.6	0.1	361.3	g/t*m
AgCapXCW	74	14.5	49.9	77.8	1.56	0.1	361.3	g/t*m
AgAvgXMW	74	15.4	53.7	83.8	1.6	0.0	349.7	g/t*m
AgCapXMW	74	15.4	51.4	79.6	1.5	0.0	349.7	g/t*m
Au Equivalent	74	3.88	6.72	8.36	1.24	0.02	43.62	g/t
Ag/Au	74	7.94	9.10	6.17	0.68	1.02	41.67	
Core Recovery	56	100	100	1	0	97	100	%
RQD	56	78	70	17	0	29	100	%
Vein MTW	74	0.7	1.0	1.0	1.0	0.1	4.3	%
Vein Azimuth	74	360.0	360.0	0.0	0.0	360.0	360.0	m
Vein Dip	74	-55	-54	12	0	-80	-25	degrees
Vein Code	74	1035	1081	50	0	1035	1135	degrees
Confidence Code	74	2	2	1	0	1	3	
Vein CTW	74	0.6	1.1	1.1	1.0	0.1	4.8	m
Vein CDW	74	0.7	1.2	1.2	1.0	0.1	5.6	m
Vein CHW	74	0.8	1.5	1.7	1.1	0.1	7.6	m
Void	0							

Note: VnCTW are calculated true widths; VnMTW are measured true widths

17.4.3 Nance Dulce Area

Only two of the 16 veins were modeled. These veins were modeled in a similar way to Minita and South Minita, namely as 2D models in 3D space. The discussion in this report will present statistical data on only those two veins, the West Vein (2035) and the East Vein (2075). The East and West Veins were modeled in their entirety without distinction between well-mineralized (designated 20XX) and not-well-mineralized veins (designated 21XX), although some grade restrictions were placed on the high-grade intercepts.

17.4.3.1 West Vein (2035)

The West Vein is smaller in total tonnes but is substantially higher in grade than the East Vein. The West Vein is not the most westerly of the veins but it is the western-most of the two prominent veins. Three discontinuous veins occur to the west of the West Vein. West Vein QQ plots suggest that capping is not necessary; the final composite statistics of the West Vein are given in Table 17.20. The sample data were composited to the entire vein intervals.

Table 17.20 Descriptive Statistics of the West Vein Composite Samples – Nance Dulce

West Vein (2035 and 2135)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Au-Average	12	17.41	14.02	15.04	1.07	0.10	50.02	g Au/t
Difference			0%					
Au-Capped	12	17.41	14.02	15.04	1.07	0.10	50.02	g Au/t
Ag-Average	12	85.91	89.16	86.38	0.97	2.23	255.30	g Ag/t
Difference			0%					
Ag-Average	12	85.91	89.16	86.38	0.97	2.23	255.30	g Ag/t
Au Equivalent	12	18.87	15.29	16.15	1.06	0.21	52.84	g AuEq/t
AgAu Ratio	12	6.68	23.45	33.46	1.43	2.53	87.58	
Confidence Code	11	3.0	2.5	0.7	0.3	1.0	3.0	
Vein Width	12	0.5	0.6	0.4	0.8	0.1	1.6	m

17.4.3.2 East Vein (2075)

The East Vein is larger in total tonnes but lower grade than the West Vein. The East Vein is not the most easterly of the veins but it is the eastern-most of the two prominent veins. Three discontinuous veins occur to the east of the East Vein. QQ plots suggest that capping is necessary for the East Vein and the gold was capped to 45 g Au/t and the silver was capped to 300 g Ag/t. Composite statistics of the East Vein are given in Table 17.21. The sample data were composited to the entire vein intervals.

Table 17.21 Descriptive Statistics of the East Vein Composite Samples – Nance Dulce

West Vein (2075 and 2175)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Au-Average	11	6.85	9.77	12.31	1.26	0.03	39.32	g Au/t
Difference			-4%					
Au-Capped	11	5.98	9.38	12.22	1.30	0.03	39.32	g Au/t
Ag-Average	11	51.51	67.05	75.44	1.13	1.76	225.02	g Ag/t
Difference			-4%					
Ag-Average	11	44.46	64.09	75.09	1.17	1.76	220.05	g Ag/t
Au Equivalent	11	7.59	10.73	13.36	1.25	0.06	42.39	g AuEq/t
AgAu Ratio	11	7.50	11.36	13.72	1.21	2.22	53.33	
Confidence Code	11	2.0	2.2	0.6	0.3	1.0	3.0	
Vein Width	11	0.6	0.9	0.8	0.8	0.1	2.7	m

17.4.4 La Coyotera Area

La Coyotera was modeled using a conventional three dimensional block model. Block sizes were 2 (north) m by 5 m by 5 m. The domains described in section 17.1.2 were modeled on section, digitized and used to code the sample data. The sample statistics are given in Table 17.22. The samples were composited to 2.5-m intervals, excluding all samples with core recovery of less than 25%. Capping levels were determined for each zone separately and represented between 1% and 9% of the metal value. Capping was done prior to compositing, and compositing honored the domains. Descriptive statistics of the composite database by zone are given in Table 17.23. Figure 17.4 is a drill hole map of the La Coyotera area. The cross sectional model was taken to plan and also reconciled with the composite data. These zones were used to code the model and for final volumes and grade estimation controls.

Table 17.22 Descriptive Statistics of La Coyotera Area Samples

Coyotera		Zone 11	Capping Level (Au/Ag)				4.5	60
	Valid N	**Median**	**Mean**	**Std. Dev**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	909	0.33	0.67	0.96	1.43	0.01	13.9	g Au/t
Difference			-3%					
Au-Capped	909	0.33	0.65	0.80	1.23	0.01	4.5	g Au/t
Ag-Average	890	4.50	7.89	9.56	1.21	0.03	96	g Ag/t
Difference			-1%					
Ag-Capped	890	4.50	7.82	9.12	1.16	0.03	60	g Ag/t
Au Equivalent	857	0.39	0.72	1.04	1.43	0.01	15	g Aueq/t
Ag/Au Ratio	857	12.1	18.8	23.9	1.3	1.0	472.0	
Zone	924					11	11	
Core Recovery	786	100	88	21	0	17	100	%
RQD	34	21	26	18	1	0	52	%

Coyotera		Zone 12	Capping Level (Au/Ag)				6.0	100
	Valid N	**Median**	**Mean**	**Std. Dev**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	194	1.65	2.12	2.16	1.02	0.02	18.1	g Au/t
Difference			-9%					
Au-Capped	194	1.65	1.95	1.38	0.70	0.02	6.0	g Au/t
Ag-Average	189	20.05	24.50	20.76	0.85	1.70	206	g Ag/t
Difference			-2%					
Ag-Capped	189	20.05	23.98	17.22	0.72	1.70	100	g Ag/t
Au Equivalent	187	2.04	2.50	2.33	0.93	0.07	19	g Aueq/t
Ag/Au Ratio	187	13.2	20.8	27.2	1.3	0.7	272.9	
Zone	202					12	12	
Core Recovery	189	89	77	25	0	0	100	%
RQD	14	0	15	19	1	0	57	%

Coyotera		Zone 13	Capping Level (Au/Ag)				40.0	400
	Valid N	**Median**	**Mean**	**Std. Dev**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	343	6.05	9.64	12.60	1.31	0.02	155.8	g Au/t
Difference			-7%					
Au-Capped	343	6.05	8.99	8.48	0.94	0.02	40.0	g Au/t
Ag-Average	342	48.95	74.37	100.02	1.34	0.10	1084	g Ag/t
Difference			-6%					
Ag-Capped	342	48.95	70.14	71.90	1.03	0.10	400	g Ag/t
Au Equivalent	335	6.88	11.00	13.90	1.26	0.02	168	g Aueq/t
Ag/Au Ratio	335	7.5	10.4	9.4	0.9	0.8	103.7	
Zone	350					13	13	
Core Recovery	303	100	77	28	0	14	100	%
RQD	9	0	6	11	2	0	22	%

Table 17.23 Descriptive Statistics of La Coyotera Composites

Coyotera **Zone 11**

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
Length	461	2.50	2.04			0.00	2.5	m
Au-Average	461	0.40	0.61	0.68	1.11	0.01	10.2	g Au/t
Difference			-4%					
Au-Capped	461	0.40	0.59	0.57	0.96	0.01	5	g Au/t
Ag-Average	454	5.05	7.51	7.58	1.01	0.16	81	g Ag/t
Difference			-1%					
Ag-Capped	454	5.05	7.44	7.29	0.98	0.16	60	g Ag/t
Zone	461					11	11	
Core Recovery	424	98	88	17	0	27	100	%
RQD	14	22	25	15	1	0	52	%

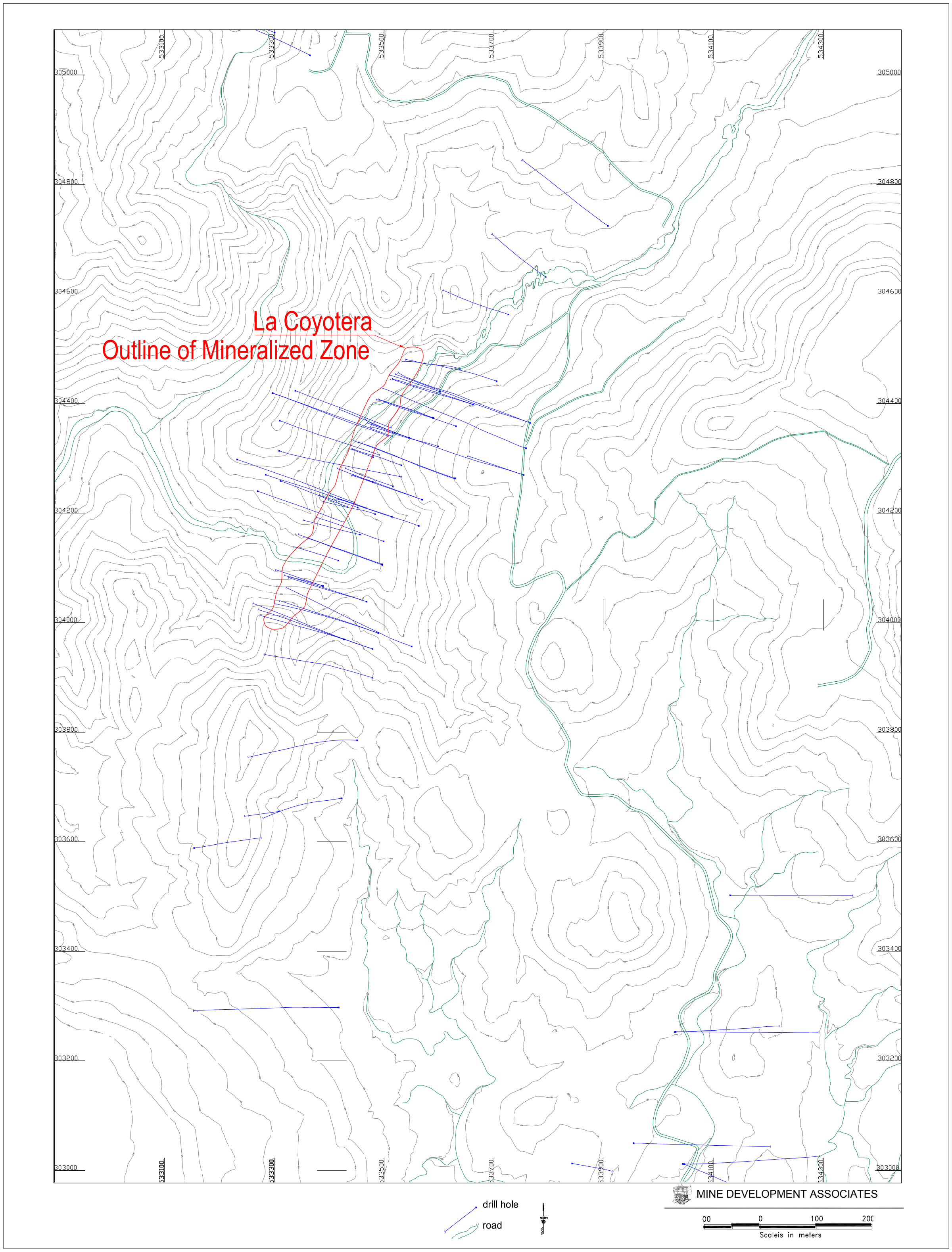
Coyotera **Zone 12**

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
Length	101	2.50	1.91			0.00	2.5	g/t
AuAvg	99	1.87	2.13	1.47	0.69	0.22	10.9	g/t
Difference			-9%					
AuCap	99	1.87	1.96	0.99	0.51	0.22	6	g/t
AgAvg	97	22.01	24.54	15.08	0.61	3.91	93	g/t
Difference			-2%					
AgCap	97	22.01	23.97	13.14	0.55	3.91	72	g/t
Zone	101					12	12	
CRec	96	81	78	22	0	25	100	
RQD	3	15	15	0	0	15	15	%

Coyotera **Zone 13**

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
Length	157	2.50	1.93			0.10	2.5	g/t
AuAvg	157	7.00	9.91	9.95	1.00	0.19	83.0	g/t
Difference			-8%					
AuCap	157	7.00	9.17	6.61	0.72	0.19	36	g/t
AgAvg	156	64.36	75.32	75.66	1.00	1.50	569	g/t
Difference			-5%					
AgCap	156	64.36	71.51	55.94	0.78	1.50	321	g/t
Zone	157					13	13	g/t
CRec	146	88	80	22	0	26	100	
RQD	2	9	6	5	1	0	9	%

Figure 17.4 La Coyotera Area Drill Hole Map



17.4.5 Nueva Esperanza Area

Nueva Esperanza, like La Coyotera, was modeled using a conventional three dimensional block model. Block sizes are 10 (north) m by 5 m by 5 m. Two domains were modeled (section 17.1.2) on section, digitized and used to code the sample data. These sectional zones were taken to plan and used to code the block model and control grade estimation and give volumes.

The sample statistics are given in Table 17.24. The samples were composited to 2.5 m intervals excluding all samples with core recovery of less than 25%. Capping levels were determined for each of the two zones separately, which represented between 2% and 7% of the metal value. Capping was done prior to compositing. Descriptive statistics of the composite database by zone are given in Table 17.25. Figure 17.5 is a drill hole map of the Nueva Esperanza area.

Table 17.24 Descriptive Statistics of Nueva Esperanza Samples

Nueva Esperanza **Zone 1**

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
Length	562	1.3	1.4			0	6	m
Au-Average	542	0.38	0.84	1.45	1.73	0.00	17	g Au/t
Difference			-7%					
Au-Capped	542	0.38	0.78	1.05	1.34	0.00	6	g Au/t
Ag-Average	531	1.50	4.59	9.44	2.06	0.03	91	g Ag/t
Difference			-3%					
Ag-Capped	531	1.50	4.47	8.52	1.90	0.03	60	g Ag/t
Au Equivalent	474	0.39	0.75	1.13	1.52	0.00	13	g Aueq/t
Ag/Au Ratio	474	4.71	7.73	10.73	1.39	0.03	99	
Zone	562					1	1	
Core Recovery	404	100	90	18	0	22	100	%
RQD	36	88	86	18	0	0	100	%

Nueva Esperanza **Zone 2**

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
Length	139	1.1	1.3			0	10	m
Au-Average	132	4.18	6.95	7.12	1.03	0.09	36	g Au/t
Difference			-2%					
Au-Capped	132	4.18	6.81	6.61	0.97	0.09	30	g Au/t
Ag-Average	131	24.00	41.68	56.32	1.35	0.17	295	g Ag/t
Difference			-6%					
Ag-Capped	131	24.00	39.35	46.97	1.19	0.17	200	g Ag/t
Au Equivalent	124	4.59	7.86	8.21	1.04	0.09	40	g Aueq/t
Ag/Au Ratio	124	5.68	6.95	8.35	1.20	0.76	99	
Zone	139					2	2	
Core Recovery	102	89	77	23	0	5	100	%
RQD	7	84	85	1	0	84	86	%

Table 17.25 Descriptive Statistics of Nueva Esperanza Composites

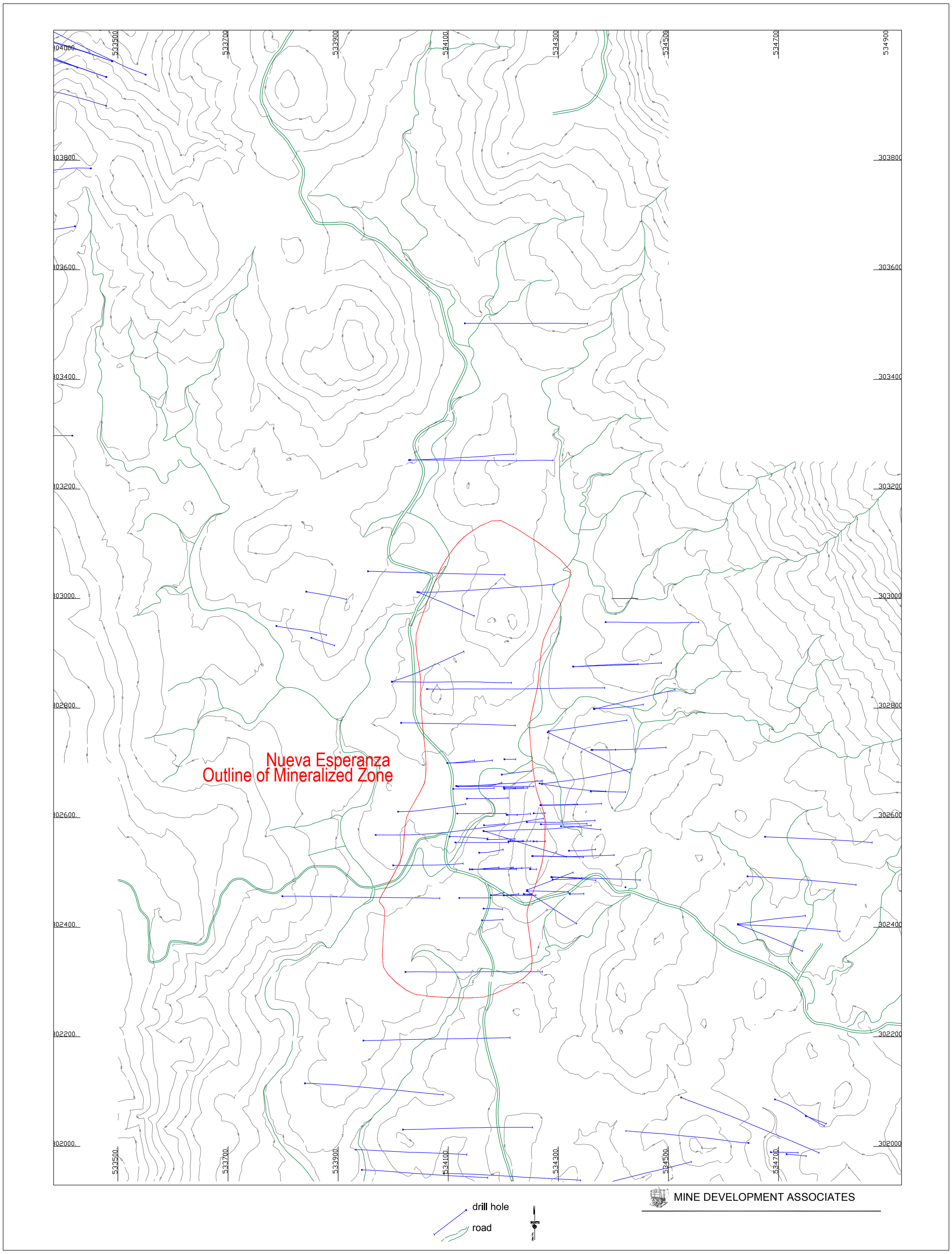
Nueva Esperanza **Zone 1**

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
Length	301	2.5	2.0			-	3	m
Au-Average	296	0.45	0.69	0.78	1.13	0.03	6.0	g Au/t
Difference			-3%					
Au-Capped	296	0.45	0.67	0.67	1.00	0.03	4.0	g Au/t
Ag-Average	290	1.64	4.23	7.05	1.67	0.17	52	g Ag/t
Difference			-3%					
Ag-Capped	290	1.64	4.10	6.33	1.54	0.17	41	g Ag/t
Zone	301					1	1	
Core Recovery	244	100	91	16	0	29	100	%
RQD	19	87	85	18	0	14	100	%

Nueva Esperanza **Zone 2**

	Valid N	Median	Mean	Std. Dev	CV	Min.	Max.	Units
Length	83	1.9	1.7			-	3	m
Au-Average	75	4.94	7.16	6.17	0.86	0.45	31.8	g Au/t
Difference			-2%					
Au-Capped	75	4.94	7.01	5.74	0.82	0.45	30.0	g Au/t
Ag-Average	74	27.95	46.07	52.53	1.14	0.50	295	
Difference			-6%					
Ag-Capped	74	27.95	43.37	43.25	1.00	0.50	200	g Ag/t
Zone	83					2	2	
Core Recovery	59	82	79	19	0	38	100	%
RQD	2	85	85	1	0	84	85	%

Figure 17.5 Nueva Esperanza Area Drill Hole Map



17.4.6 Bálsamo/Cerro Alto Area

Five of the eleven veins in the Bálsamo/Cerro Alto area were estimated as "2D" models[10] in 3D space, the same way as at Minita and South Minita. For brevity, this discussion combines all veins as much as possible. All of the veins, however, had similar evaluations and estimations completed. In all cases, the Bálsamo/Cerro Alto veins were modeled in their entirety, meaning that the distinction between well-mineralized and not-well-mineralized veins was made using inverse distance to a higher power in the estimation process rather than by using hard boundaries. A drill hole map is given in Figure 17.3.

Throughout the exploration of Bálsamo/Cerro Alto, the Cerro Alto vein itself was always clearly defined and apparent. Bálsamo veins, lying within a "lode" zone similar to South Minita but thinner, were more difficult to model because of structural complexities. However, there always appeared to be a hanging wall vein (3046) and a footwall vein (3044).

Gold and silver outlier grade capping was defined iteratively by evaluating outlier grades on QQ plots, assessing the coefficient of variation ("CV"), and reviewing the location of the high-grades. The descriptive statistics and capping levels of the Bálsamo/Cerro Alto assay data by vein are given in (Table 17.26). The sample data were composited in a similar fashion to the Minita and South Minita veins. Table 17.27 gives the composite descriptive statistics of Bálsamo/Cerro Alto vein composites.

[10] These truly are estimated in 3D space but have variable block dimensions in the horizontal east-west direction representing variable vein widths. These models are sometimes referred to as grade accumulation models. These types of models are made by estimating, on a block by block basis, metal (also referred to as accumulation or grade times thickness) and vein thickness and dividing the "accumulation" of grade and thickness by the estimated vein thickness to determine grade.

Table 17.26 Descriptive Statistics of Vein Samples – Bálsamo/Cerro Alto

Balsamo FW Vein		**3044**	**3144**	**Capping**	**40**	**g Au/t**	**600**	**g Ag/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	124	1.74	8.49	16.17	1.90	0.00	305.44	g Au/t
Difference			-10%					
Au-Capped	124	1.74	7.64	11.04	1.45	0.00	40.00	g Au/t
Ag-Average	124	26.90	106.83	178.83	1.67	0.50	2546.6	g Ag/t
Difference			-6%					
Ag-Capped	124	26.90	99.99	139.76	0.00	0.50	600.0	g Ag/t
Au Equivalent	124	2.23	10.63	19.59	1.84	0.01	356.4	g Aueq/t
AgAu Ratio	124	13.74	19.30	29.73	1.54	3.56	500.0	
Core Recovery	93	100	99	3	0	85	100	%
RQD	93	70	70	20	0.29	0	100	%
Vein Width	124	2.0	2.6	1.6	0.6	0.1	5.7	m
Confidence Code	122	2	2	1	0	1	3	

Balsamo Central Vein		**3045**	**3145**	**Capping**	**25**	**g Au/t**	**300**	**g Ag/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	37	0.35	3.01	6.86	2.28	0.00	33.55	g Au/t
Difference			-10%					
Au-Capped	37	0.35	2.70	5.45	2.02	0.00	25.00	g Au/t
Ag-Average	37	3.60	64.76	163.10	2.52	0.50	699.3	g Ag/t
Difference			-35%					
Ag-Capped	37	3.60	42.23	77.98	0.00	0.50	300.0	g Ag/t
Au Equivalent	37	0.45	4.31	9.91	2.30	0.02	47.5	g Aueq/t
AgAu Ratio	37	26.42	83.65	245.27	2.93	2.79	1000.0	
Core Recovery	21	100	100	1	0	95	100	%
RQD	21	77	69	15	0.22	17	95	%
Vein Width	37	0.8	2.3	1.4	0.6	0.1	4.7	m
Confidence Code	37	2	2	0	0	1	2	

Balsamo HW Vein		**3046**	**3146**	**Capping**	**30**	**g Au/t**	**330**	**g Ag/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	107	1.44	5.23	8.22	1.57	0.03	37.61	g Au/t
Difference			-4%					
Au-Capped	107	1.44	5.04	7.53	1.49	0.03	30.00	g Au/t
Ag-Average	107	14.70	65.33	101.39	1.55	0.40	514.1	g Ag/t
Difference			-4%					
Ag-Capped	107	14.70	62.57	90.19	0.00	0.40	330.0	g Ag/t
Au Equivalent	107	1.98	6.53	10.11	1.55	0.04	47.9	g Aueq/t
AgAu Ratio	107	11.64	15.14	15.31	1.01	0.80	98.5	
Core Recovery	85	100	100	1	0	88	100	%
RQD	85	64	64	22	0.34	0	100	%
Vein Width	107	2.0	2.4	1.3	0.5	0.1	4.4	m
Confidence Code	107	2	2	1	0	1	3	

Cerro Alto		**3055**	**3155**	**Capping**	**20**	**g Au/t**	**80**	**g Ag/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	166	0.83	2.35	4.03	1.72	0.00	30.96	g Au/t
Difference			-5%					
Au-Capped	166	0.83	2.23	3.31	1.48	0.00	20.00	g Au/t
Ag-Average	164	4.30	12.97	20.82	1.61	0.00	156.0	g Ag/t
Difference			-6%					
Ag-Capped	164	4.30	12.23	17.25	1.41	0.00	80.0	g Ag/t
Au Equivalent	164	0.94	2.62	4.34	1.66	0.01	32.2	g Aueq/t
AgAu Ratio	164	6.02	36.32	227.08	6.25	0.00	2100.0	
Core Recovery	113	100	98	7	0	54	100	%
RQD	113	33	38	27	0.71	0	92	%
Vein Width	166	2.1	2.9	1.9	0.7	0.1	7.2	m
Confidence Code	166	3	3	1	0	1	3	

La Luz		**3065**	**3165**	**Capping**	**None**	**g Au/t**	**None**	**g Ag/t**
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Min.**	**Max.**	**Units**
Au-Average	12	1.46	3.93	5.72	1.46	0.09	18.56	g Au/t
Difference			0%					
Au-Capped	12	1.46	3.93	5.72	1.46	0.09	18.56	g Au/t
Ag-Average	11	13.60	30.51	47.48	1.56	0.60	158.0	g Ag/t
Difference			0%					
Ag-Capped	11	13.60	30.51	47.48	0.00	0.60	158.0	g Ag/t
Au Equivalent	11	1.69	4.44	6.72	1.52	0.10	21.7	g Aueq/t
AgAu Ratio	11	6.74	27.67	82.88	3.00	2.13	321.6	
Core Recovery	2	100	100	0	0	100	100	%
RQD	2	41	42	25	0.59	27	54	%
Vein Width	12	0.8	1.1	0.6	0.5	0.3	2.5	m
Confidence Code	12	2	2	0	0	1	2	

Table 17.27 Descriptive Composite Statistics of Vein Composites – Bálsamo/Cerro Alto

Balsamo FW Vein 3044 and 3144 Capped 32.302 g Au/t 391.5 g Ag/t

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	49	1.4	2.0	1.8	0.9	0.1	8.3	m
To	49	350.1	344.4	0.0	0.0	125.5	482.6	m
AuAvg	49	2.28	8.48	9.96	1.17	0.03	42.18	g/t
AuCap	49	2.28	7.63	8.12	1.06	0.03	32.30	g/t
AuAvgXCW	49	2.1	13.4	31.8	2.4	0.0	160.1	g/t*m
AuCapXCW	**49**	**2.1**	**11.8**	**26.5**	**2.24**	**0.0**	**124.5**	**g/t*m**
AuAvgXMW	49	2.1	13.1	27.8	2.1	0.0	136.0	g/t*m
AuCapXMW	49	2.1	11.8	23.5	2.0	0.0	105.8	g/t*m
AgAvg	49	34.70	106.69	117.79	1.10	0.80	556.70	g/t
AgCap	49	34.70	99.88	98.76	0.99	0.80	391.50	g/t
AgAvgXCW	49	36.8	168.0	361.2	2.1	0.3	1546.7	g/t*m
AgCapXCW	**49**	**36.8**	**155.8**	**320.6**	**2.06**	**0.3**	**1365.4**	**g/t*m**
AgAvgXMW	49	31.5	164.6	314.8	1.9	0.3	1313.7	g/t*m
AgCapXMW	49	31.5	154.0	280.7	1.8	0.3	1205.4	g/t*m
AuEq	49	2.70	10.00	11.59	1.16	0.06	50.13	g/t
Ag/Au	49	12.73	16.80	14.60	0.87	3.56	108.00	
Crec	36	100	99	2	0	93	100	%
RQD	36	75	70	19	0	0	98	%
VnMTW	49	1.0	1.5	1.4	0.9	0.1	5.7	%
VnDipAZ	49	350.0	323.4	89.5	0.3	20.0	360.0	m
Vn_Dip	49	-55	-53	8	0	-70	-30	degrees
ConfCode	49	2	2	1	0	1	3	
VnCTW	**49**	**1.2**	**1.6**	**1.4**	**0.9**	**0.0**	**6.2**	**m**
VnCHW	49	1.5	2.0	1.7	0.9	0.0	7.2	m

Balsamo Central Vein 3045 and 3145 Capped None g Au/t 300 g Ag/t

	Valid N	Median	Mean	Std.Dev.	CV	Min.	Max.	Units
Length	19	0.6	1.2	1.4	1.2	0.2	5.3	m
To	19	353.9	359.4	0.0	0.0	242.9	448.7	m
AuAvg	19	0.45	2.87	4.13	1.44	0.06	14.30	g/t
AuCap	19	0.45	2.58	3.49	1.35	0.06	14.30	g/t
AuAvgXCW	19	0.2	3.0	6.9	2.3	0.0	28.5	g/t * m
AuCapXCW	**19**	**0.2**	**2.7**	**5.6**	**2.12**	**0.0**	**22.3**	**g/t * m**
AuAvgXMW	19	0.2	2.6	6.1	2.3	0.0	25.5	g/t * m
AuCapXMW	19	0.2	2.3	5.0	2.1	0.0	20.0	g/t * m
AgAvg	19	6.84	64.42	126.48	1.96	0.72	625.00	g/t
AgCap	19	6.84	43.52	67.09	1.54	0.72	300.00	g/t
AgAvgXCW	19	3.7	64.9	163.1	2.5	0.1	701.3	g/t * m
AgCapXCW	**19**	**3.7**	**43.8**	**95.8**	**2.19**	**0.1**	**414.0**	**g/t * m**
AgAvgXMW	19	3.4	55.2	142.8	2.6	0.2	626.7	g/t * m
AgCapXMW	19	3.4	38.2	84.7	2.2	0.2	370.0	g/t * m
AuEq	19	0.61	3.79	5.83	1.54	0.10	23.23	g/t
Ag/Au	19	26.52	20.78	17.68	0.85	2.79	81.43	
Crec	13	100	100	1	0	95	100	%
RQD	13	74	70	13	0	17	95	%
VnMTW	19	0.6	2.3	1.6	0.7	0.1	4.7	m
VnDipAZ	19	340.0	342.8	16.5	0.0	315.0	360.0	degrees
Vn_Dip	19	-50	-51	10	0	-70	-35	degrees
ConfCode	19	2	2	1	0	1	2	
VnCTW	**19**	**0.5**	**1.0**	**1.3**	**1.3**	**0.1**	**5.1**	**m**
VnCHW	19	0.7	1.5	2.1	1.4	0.2	8.9	m

Note: VnCTW are calculated true widths; VnMTW are measured true widths

Table 17.27 Descriptive Composite Statistics of Vein Composites – Bálsamo/Cerro Alto (continued)

Balsamo HW Vein	3046	and	3146 Capped	None	g Au/t	330	g Ag/t	
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
Length	46	1.6	2.0	1.6	0.8	0.1	6.1	m
To	46	342.7	348.2	0.0	0.0	214.8	475.5	m
AuAvg	46	1.95	5.21	6.06	1.16	0.03	26.39	g/t
AuCap	46	1.95	5.02	5.74	1.14	0.03	26.39	g/t
AuAvgXCW	46	3.2	7.3	10.8	1.5	0.0	54.6	g/t*m
AuCapXCW	**46**	**3.2**	**7.1**	**10.1**	**1.43**	**0.0**	**47.2**	**g/t*m**
AuAvgXMW	46	3.2	7.7	10.8	1.4	0.0	42.9	g/t*m
AuCapXMW	46	3.2	7.5	10.3	1.4	0.0	37.2	g/t*m
AgAvg	46	24.01	65.10	78.18	1.20	0.40	407.00	g/t
AgCap	46	24.01	61.13	67.60	1.11	0.40	330.00	g/t
AgAvgXCW	46	37.1	91.5	120.6	1.3	0.0	466.8	g/t*m
AgCapXCW	**46**	**37.1**	**89.3**	**118.4**	**1.33**	**0.0**	**466.8**	**g/t*m**
AgAvgXMW	46	38.5	96.5	125.4	1.3	0.0	416.9	g/t*m
AgCapXMW	46	34.6	93.0	118.2	1.3	0.0	393.6	g/t*m
AuEq	46	2.41	6.14	7.12	1.16	0.07	31.29	g/t
Ag/Au	46	12.08	15.90	12.96	0.81	1.08	90.00	
Crec	33	100	100	0	0	98	100	%
RQD	33	64	64	19	0	0	100	%
VnMTW	46	1.2	1.6	1.2	0.8	0.1	4.4	%
VnDipAZ	46	350.0	340.2	48.0	0.1	40.0	360.0	m
Vn_Dip	46	-55	-54	8	0	-70	-35	degrees
ConfCode	46	2	2	1	0	1	3	
VnCTW	**46**	**1.1**	**1.6**	**1.3**	**0.8**	**0.1**	**5.6**	**m**
VnCHW	46	1.5	2.0	1.8	0.9	0.1	7.3	m

Cerro Alto	3055	and	3155 Capped	None	g Au/t	80	g Ag/t	
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
Length	72	1.9	2.2	1.8	0.8	0.1	8.1	m
To	72	197.3	205.5	0.0	0.0	18.1	425.2	m
AuAvg	72	1.06	2.25	2.77	1.23	0.01	14.93	g/t
AuCap	72	1.06	2.14	2.58	1.21	0.01	14.93	g/t
AuAvgXCW	72	1.4	4.5	8.3	1.9	0.0	59.1	g/t*m
AuCapXCW	**72**	**1.4**	**4.2**	**6.9**	**1.64**	**0.0**	**42.9**	**g/t*m**
AuAvgXMW	72	1.3	4.2	8.0	1.9	0.0	56.3	g/t*m
AuCapXMW	72	1.3	4.0	6.7	1.7	0.0	41.0	g/t*m
AgAvg	70	6.56	12.08	17.72	1.47	0.00	156.00	g/t
AgCap	70	6.56	11.47	14.78	1.29	0.00	80.00	g/t
AgAvgXCW	70	6.5	24.5	40.0	1.6	0.0	228.5	g/t*m
AgCapXCW	**70**	**6.5**	**23.0**	**35.0**	**1.52**	**0.0**	**153.6**	**g/t*m**
AgAvgXMW	70	6.7	23.1	39.0	1.7	0.0	238.0	g/t*m
AgCapXMW	70	6.7	21.7	33.4	1.5	0.0	160.0	g/t*m
AuEq	72	1.24	2.42	2.97	1.23	0.01	15.22	g/t
Ag/Au	70	5.84	7.48	13.03	1.74	0.00	116.67	
Crec	41	100	98	4	0	87	100	%
RQD	41	40	38	24	1	0	90	%
VnMTW	72	1.4	1.7	1.5	0.8	0.1	7.2	%
VnDipAZ	72	360.0	286.0	136.7	0.5	10.0	360.0	m
Vn_Dip	72	-55	-56	7	0	-75	-35	degrees
ConfCode	72	3	2	1	0	1	3	
VnCTW	**72**	**1.5**	**1.9**	**1.6**	**0.8**	**0.1**	**7.6**	**m**
VnCHW	72	1.8	2.3	2.0	0.9	0.1	9.2	m

Note: VnCTW are calculated true widths; VnMTW are measured true widths

Table 17.27 Descriptive Composite Statistics of Vein Composites – Bálsamo/Cerro Alto
(continued)

La Luz	3065	and	3165 Capped	None	g Au/t	None	g Ag/t	
	Valid N	**Median**	**Mean**	**Std.Dev.**	**CV**	**Minimum**	**Maximum**	**Units**
Length	10	0.9	1.0	0.5	0.5	0.4	1.6	m
To	10	191.9	141.6	0.0	0.0	17.7	228.2	m
AuAvg	10	1.46	3.93	5.70	1.45	0.09	18.56	g/t
AuCap	10	1.46	3.93	5.70	1.45	0.09	18.56	g/t
AuAvgXCW	10	1.3	3.6	5.5	1.5	0.1	14.5	g/t*m
AuCapXCW	**10**	**1.3**	**3.6**	**5.5**	**1.52**	**0.1**	**14.5**	**g/t*m**
AuAvgXMW	10	1.1	3.0	4.0	1.3	0.0	10.9	g/t*m
AuCapXMW	10	1.1	3.0	4.0	1.3	0.0	10.9	g/t*m
AgAvg	9	11.52	30.51	47.40	1.55	0.60	158.00	g/t
AgCap	9	11.52	30.51	47.40	1.55	0.60	158.00	g/t
AgAvgXCW	9	10.8	29.7	41.6	1.4	0.9	123.2	g/t*m
AgCapXCW	**9**	**10.8**	**29.7**	**41.6**	**1.40**	**0.9**	**123.2**	**g/t*m**
AgAvgXMW	9	9.2	27.4	31.6	1.2	0.6	79.0	g/t*m
AgCapXMW	9	9.2	27.4	31.6	1.2	0.6	79.0	g/t*m
AuEq	10	1.63	4.34	6.28	1.44	0.10	20.82	g/t
Ag/Au	9	7.81	27.67	82.88	3.00	2.13	321.59	
Crec	2	100	100	0	0	100	100	%
RQD	2	41	42	25	1	27	54	%
VnMTW	10	0.9	0.9	0.7	0.8	0.3	2.5	%
VnDipAZ	10	360.0	359.0	3.2	0.0	350.0	360.0	m
Vn_Dip	10	-47	-45	6	0	-50	-35	degrees
ConfCode	10	2	2	1	0	1	2	
VnCTW	**10**	**0.9**	**0.9**	**0.4**	**0.5**	**0.3**	**1.4**	**m**
VnCHW	10	1.1	1.3	0.6	0.5	0.4	2.0	m

Note: VnCTW are calculated true widths; VnMTW are measured true widths

17.5 Modeling

Modeling the resource areas began with discussions with Pacific Rim geologists, who gave insight and guidance as to the styles and controls of mineralization. Modeling then went on to construction of cross sections and definition of domains; the Pacific Rim staff was heavily involved in the geologic modeling so as to incorporate their knowledge. Procedures then went on to coding, capping and compositing, classical statistics, and geostatistics, prior to grade estimation. Several grade models were made for each metal for validation, along with volume and point validation checking.

MDA only modeled three of the thirteen defined veins at Minita but all ten at South Minita and five of the eleven Bálsamo/Cerro Alto veins. Someday, all the veins should be modeled because in spite of the relatively low-quality resource the smaller veins might provide, they could add some mine life to the project.

17.5.1 Minita Area Modeling

Once defined on cross section, the composites and interpreted extents of the vein were taken to long section. This was used for the ultimate control on vein area. Estimations of vein widths were used for volume determination along with the long section area.

Geostatistical analyses were performed on thickness, gold grade and gold grade times thickness, silver grade and silver grade times thickness. Ristorcelli and Ronning (2003) presented the variograms for this work; as nothing new has been done for this update, the reader is referred to the 2003 reports. After each vein was defined on section, the outlines were digitized. The footwall of each vein was then used to make a three dimensional surface. This surface, within the bounds or limits of the vein defined on long section, was used to code the location of the vein in the model and for all further modeling. MDA plotted all underground workings and underground samples and removed these volumes from the model and resource estimate.

Because of the unique method of estimating vein deposits, extra features were collected and estimated. A list of those items is given below:

Core recovery (CRec): Core recovery was always estimated as it was used in resource classification. The values were estimated with the same parameters and weighting as gold times thickness values.

Confidence Code (ConfC): This is a classification of confidence in a particular intercept. It is a subjective code that considers location, sample quality, and certainty that the composite properly represents the vein intercept. This value is used for evaluating the need for future development drilling, as well as in resource classification at the Minita mine area. This was always estimated by the nearest neighbor method.

Measured true width (MTW): MTW is the measured true width measured from drill log geologic data and, in particular, graphic data, taking into account sample lengths and angles to core axes. This was used as a check on the calculated true width.

Calculated true width (CTW): CTW is the calculated true width, which is based on the angle of the drill hole at the intercept and the strike and dip of the vein at the intercept.

Horizontal true width (HTW): HTW is the calculated horizontal width, which is based on the angle of the drill hole at the intercept and the strike and dip of the vein at the intercept. This value is used for tonnage calculations in the “vertical” GSM (gridded seam model) block model.

17.5.1.1 Minita Vein Modeling

At the Minita vein, continuity of metal and thickness was demonstrated to be good to very good, both from a visual standpoint and from a geostatistical standpoint, with ranges up to 100 m. As the composites are of varying length, grade thickness modeling was required. Models were estimated by Kriging, inverse distance cubed (ID^3), and nearest neighbor. Comparing the estimate to the composite data, it was determined that the ID^3 model was the best fit. So the calculated vein true width (CTW), the capped gold grade times calculated true width (AuC * CTW), and capped silver grade times calculated true width (AgC * CTW) were estimated with the parameters given in Table 17.28. At Minita, the high-grade or well-mineralized domain (55) was modeled together with the weakly mineralized domains (155) because the few weakly mineralized samples occurred interspersed with the well-mineralized samples. Minita long sections are given in Figure 17.6 and Figure 17.7. MDA also estimated core recovery (CRec), confidence code (ConfC), and measured true width (MTW). Estimation parameters are given in Table 17.28 Estimation Parameters for Minita Area Veins.

Tonnes per block were calculated by multiplying the block volume (height [3 m] times length [5 m] by width [HTW]) by the specific gravity (2.46 g/cm^3). The number of samples and the distance to the nearest sample were stored for each estimated block.

Due to the distribution and limited nature of the drilling at the north end of the Minita vein, one hole with a high-grade assay (37.466 g Au/t; at ~301,950N) estimates ~2.0% of the ounces in the Minita vein. A hard boundary constrains it at the north, eliminating extrapolation. Following all other parameters and conditions, this falls into the Measured and Indicated classification, which is justified throughout the rest of the deposit. However, this area requires further drilling for better definition, while it could also generate a larger resource extending to the north and down dip. This potential exaggeration of tonnes and grade and metal is compensated for by the south end (~301,300N) where drilling intersected the Minita vein but, due to complex configurations and conflicting drill data evidence, the vein in that part of the deposit was eliminated entirely from the resource.

17.5.1.2 Minita 3 Vein Modeling

Continuity of metal and thickness is more variable for the Minita 3 vein than for the Minita vein. The study showed that the weakly mineralized structures (coded as 165) clustered separately from the well-mineralized veins (65). As such, MDA defined these zones using nearest neighbor and then estimated the grades separately for each. Essentially all the low-grade zone (ZONE 2 or VNCD 165) is well below economic grade. Like the highest grades at Minita, the highest grades at Minita 3 are associated with colloform banding and corrensite. No variograms could be generated because the points were too few. As in the case of Minita, grade thickness modeling was required. Models were estimated only by inverse distance cubed (ID^3) and checked with nearest neighbor. The calculated vein true width (CTW), the capped gold grade times calculated true width (AuC * CTW), and capped silver grade times calculated true width (AgC * CTW) were estimated with the parameters given in Table 17.28. The Minita 3 long sections are given in Figure 17.8 and Figure 17.9. MDA also estimated core recovery (CRec), confidence code (ConfC), measured true width (MTW). Tonnes per block were calculated by multiplying the block volume (height (3 m) times length (10 m) by width (HTW)) by the specific gravity (2.46 g/cm^3). The number of samples and the distance to the nearest sample were stored for each estimated block.

17.5.1.3 Zancudo Vein Modeling

For the same reasons as at Minita 3, the same logic and parameters (except for a shorter distance) were used in the Zancudo modeling. Estimation parameters are given in Table 17.28.

Table 17.28 Estimation Parameters for Minita Area Veins

Parameter	Item	Minita Vein	Minita 3 Vein	Zancudo Vein
Estimation method	CTW	ID^3	ID^3	ID^3
Min/Max composites	CTW	1 / 8	1 / 8	1 / 8
Zones used	CTW	55 and 155	65 and 165 separately	45 and 145 separately
Distance (m)	CTW	200	200	150
Estimation method	AUC*CTW	ID^3	ID^3	ID^3
Min/Max composites	AUC*CTW	1 / 10	1 / 8	1 / 8
Zones used	AUC*CTW	55 and 155	65 and 165 separately	45 and 145 separately
Distance (m)	AUC*CTW	200	200	150
Estimation method	AGC*CTW	ID^3	ID^3	ID^3
Min/Max composites	AGC*CTW	1 / 10	1 / 8	1 / 8
Zones used	AGC*CTW	55 and 155	65 and 165 separately	45 and 145 separately
Distance (m)	AGC*CTW	200	200	150

17.5.2 South Minita Area Modeling

Geostatistical analyses were performed on thickness, gold grade times thickness, and silver grade times thickness. After each vein was defined on section, the outlines or extents were digitized. The footwall of each vein was then used to make a three dimensional surface. This surface, within the bounds or extents of the vein, was used to code the footwall (west wall) location of the vein. There are no underground workings at South Minita. As at Minita, other features were estimated as well (see list in section 17.5.1).

At South Minita, vein continuity, metal content, and thickness are based on geologic interpretation and geostatistics. These parameters have been shown to be less predictable than at Minita. Correlogram ranges rarely reached 100 m and then only for thickness. As the composites are of varying length, grade thickness ("accumulation") modeling was required. Models were estimated only by inverse distance estimation and nearest neighbor. MDA segregated the well-mineralized vein from the less well-mineralized vein during estimation. Rather peculiar results were obtained. While there may in fact be hard boundaries between the well-mineralized (banded, black sulfides, leached texture) vein material and the weakly mineralized vein material (<~3 g Au/t), the drill spacing and apparently complex nature of this relationship did not produce appropriate estimation results when these two types were modeled separately. To compensate for the lack of segregation of these two domains and to insert sharper grade changes between them, inverse distance estimation to the fourth power (ID^4) was chosen as the final estimation method. MDA also estimated core recovery (CRec), confidence code (ConfC), and measured true width (MTW), for those reasons described in Section 17.5.1. Estimation parameters are given in Table 17.29.

Tonnes per block were calculated by multiplying the block volume (height [3 m] times length [5 m] times width [HTW]) by the specific gravity (2.50 g/cm^3). The number of samples and the distance to the nearest sample were stored for each estimated block, as were the nearest neighbor grades, grade thicknesses, widths, and vein azimuths and dips.

MDA made eight different models for each vein in order to assess which model best portrayed the style of mineralization. The model results were evaluated relative to the composite data, visual inspections and by quantifying changes between the models. In the end, total ounces and grade in the models varied no more than ~10%, giving confidence to the controls on estimation. Long sections for South Minita veins 1015, 1017 and 1035 are presented in Figure 17.10 through Figure 17.15.

Figure 17.6 Long Section of the Minita Vein Resource - Gold Equivalent Grades

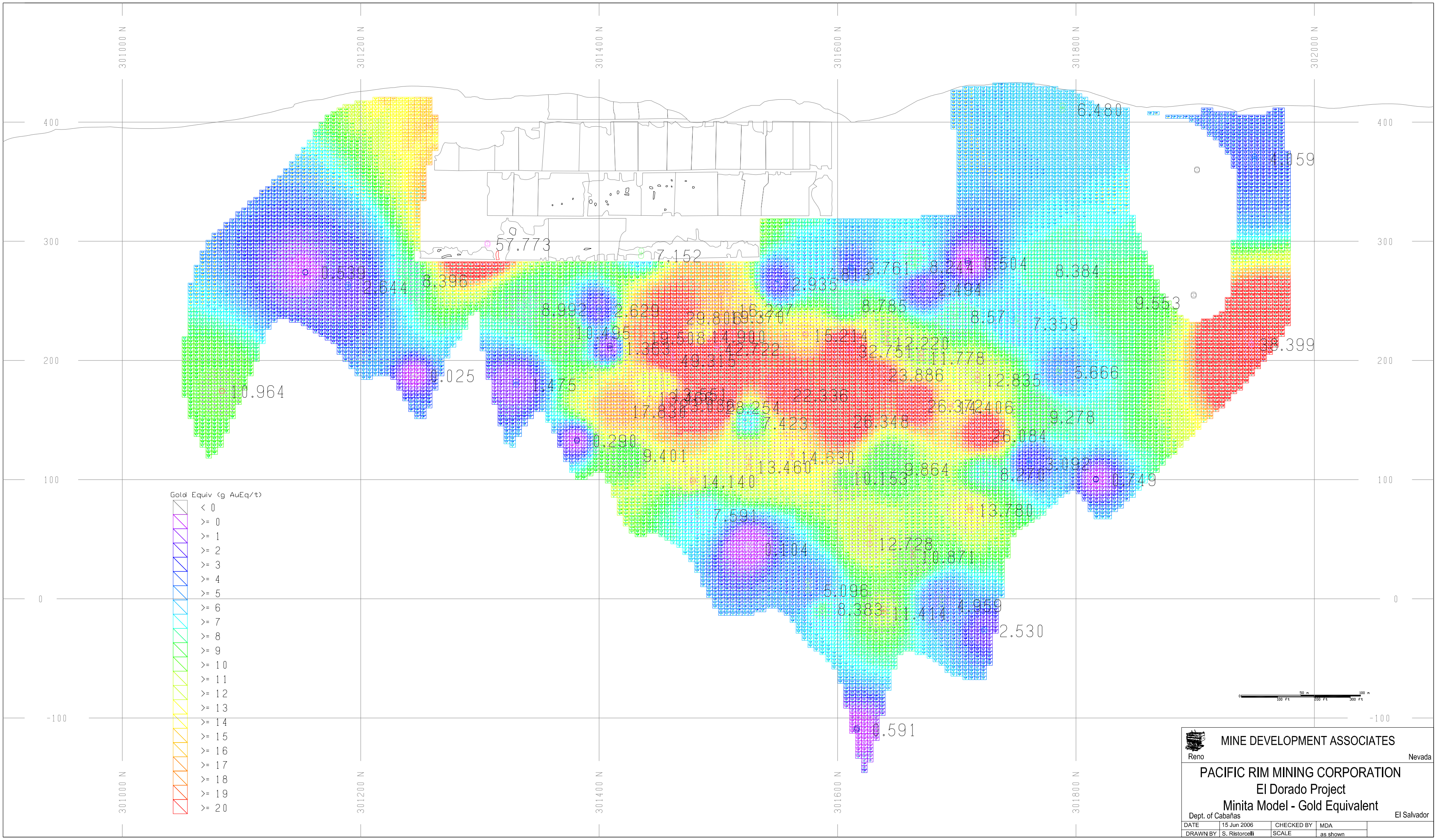


Figure 17.7 Long Section of the Minita Vein Resource - True Thickness

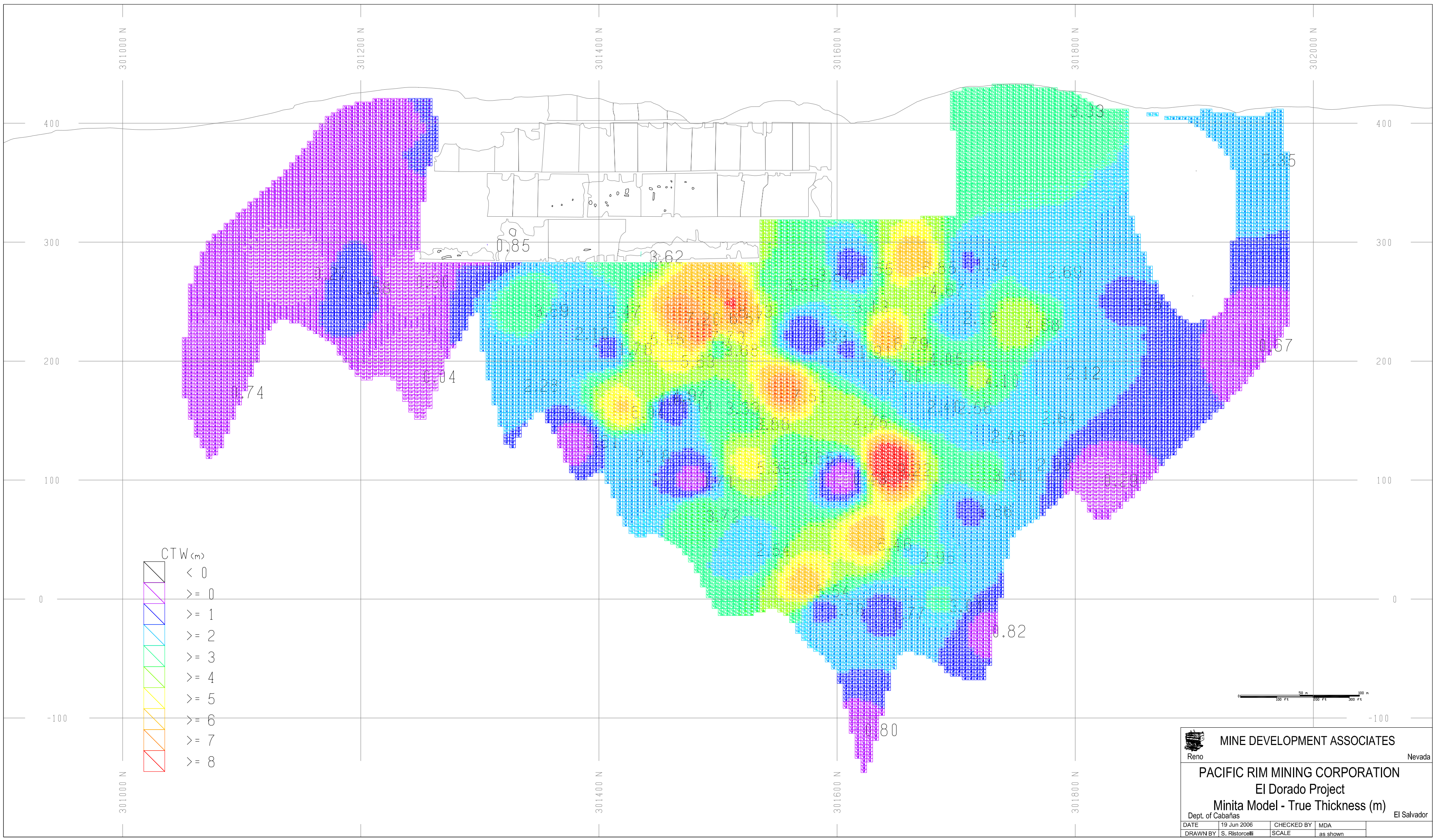


Table 17.29 Estimation Parameters for South Minita Area Veins

All Veins	
Parameter	**Calculated True Width (CTW)**
Estimation method	ID^3
Min/Max composites	1 / 8
Samples used	low- and high-grade domains together
Distance (m)	100 horizontal by 50 vertical
Gold grade time thickness (g Au/t-capped times calculated true width)	
Estimation method	ID^4
Min/Max composites	1 / 8
Samples used (only with CREC>25%)	low- and high-grade domains together
Distance (m)	100 horizontal by 50 vertical
Silver grade time thickness (g Ag/t-capped times calculated true width)	
Estimation method	ID^4
Min/Max composites	1 / 8
Samples used (only with CREC>25%)	low- and high-grade domains together
Distance (m)	100 horizontal by 50 vertical
* (only with CREC>25%)	

Figure 17.8 Long Section of the Minita3 Vein Resource – Gold Equivalent Grades

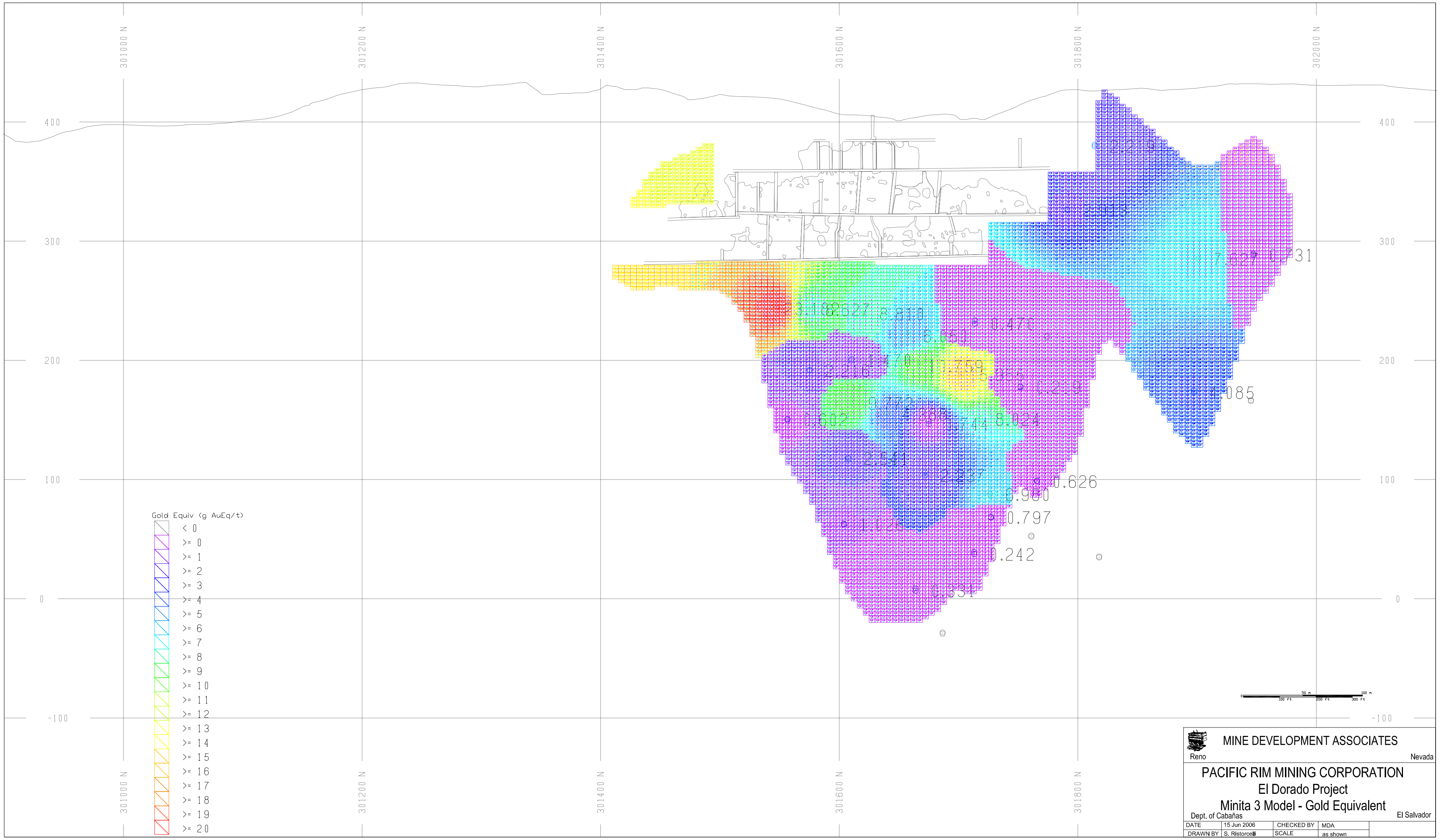


Figure 17.9 Long Section of the Minita3 Vein Resource – True Thickness

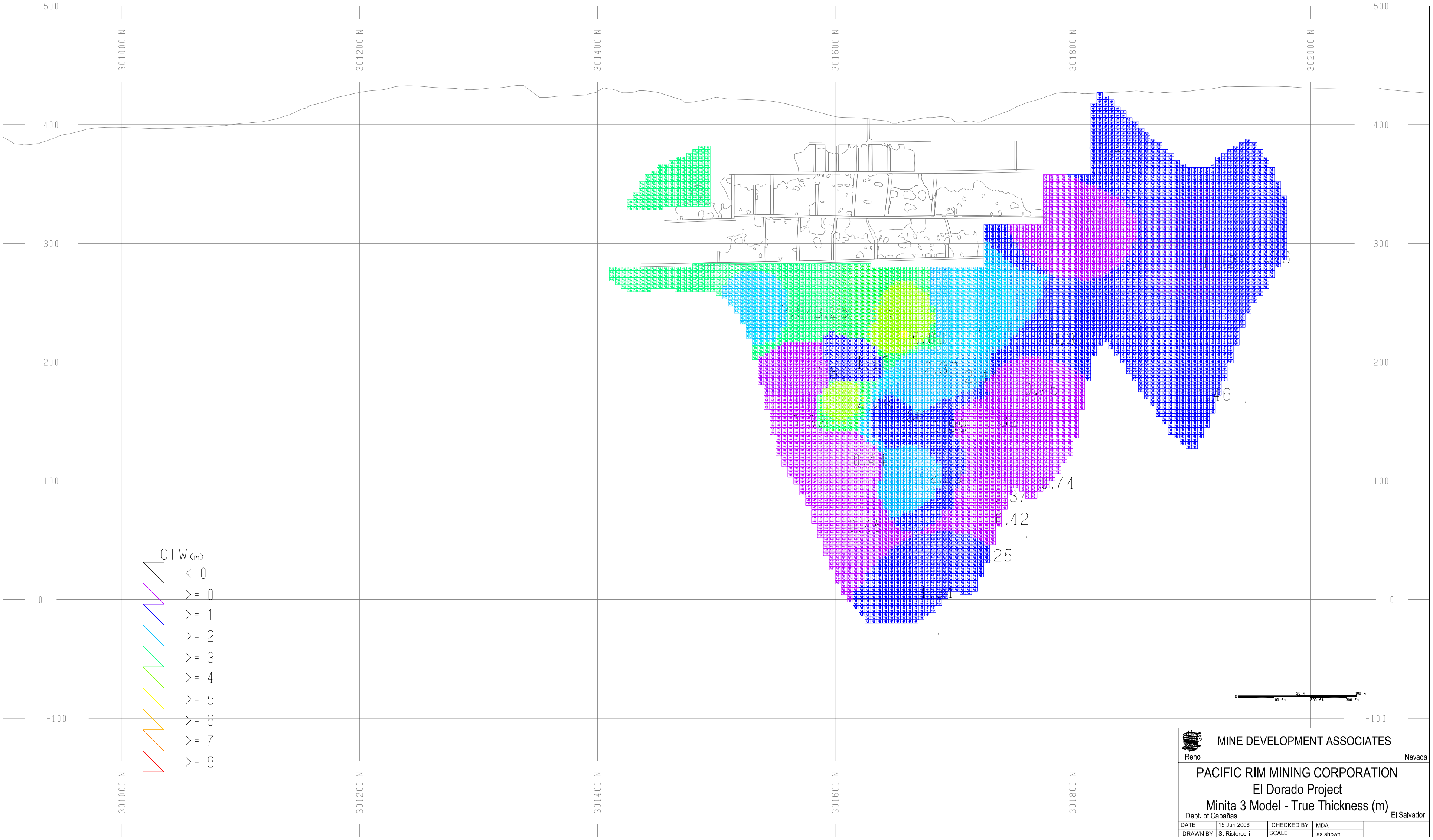


Figure 17.10 Long Section of the South Minita Vein 1015 Resource – Gold Equivalent Grades

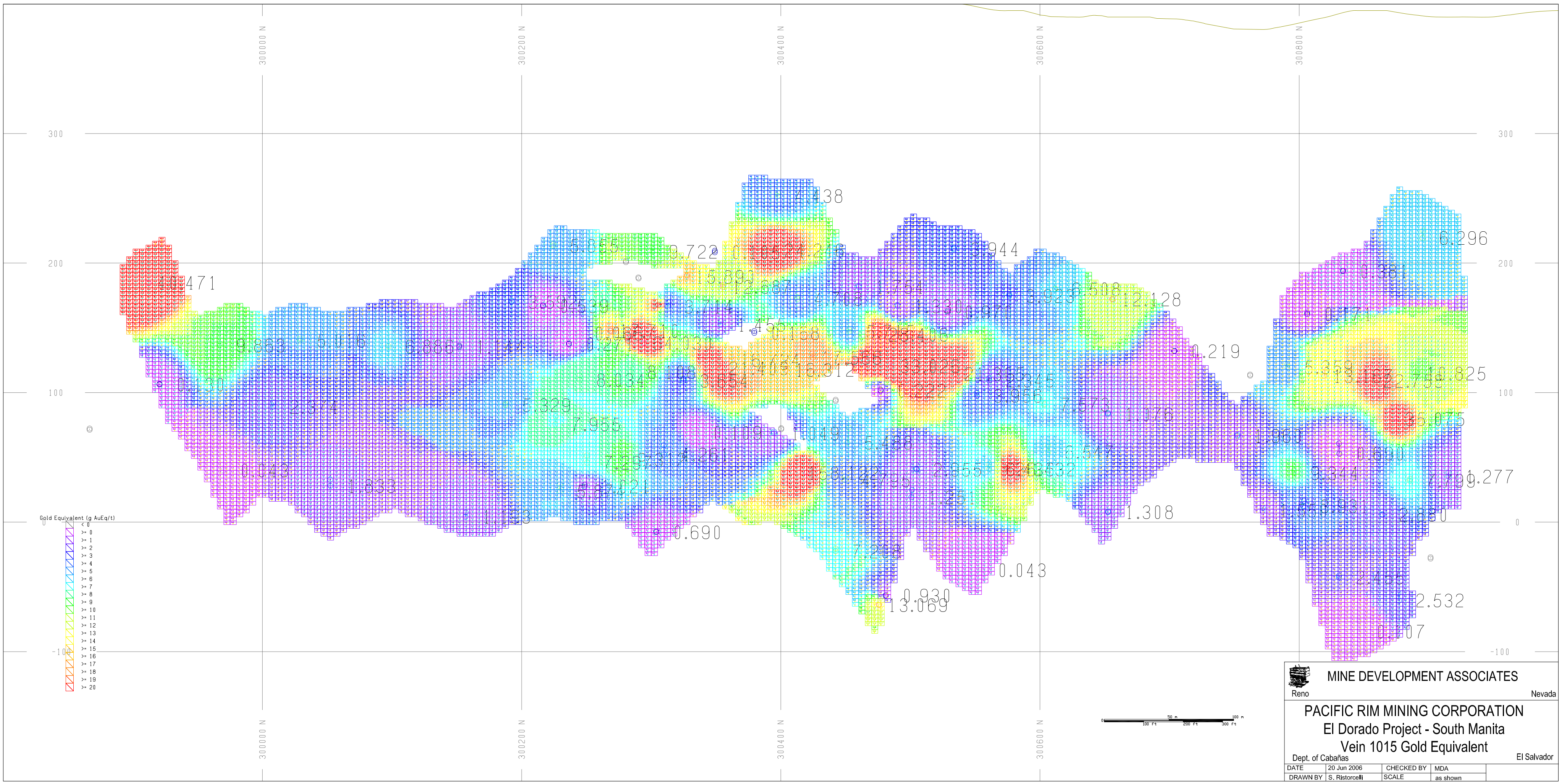


Figure 17.11 Long Section of the South Minita Vein 1015 Resource – True Thickness

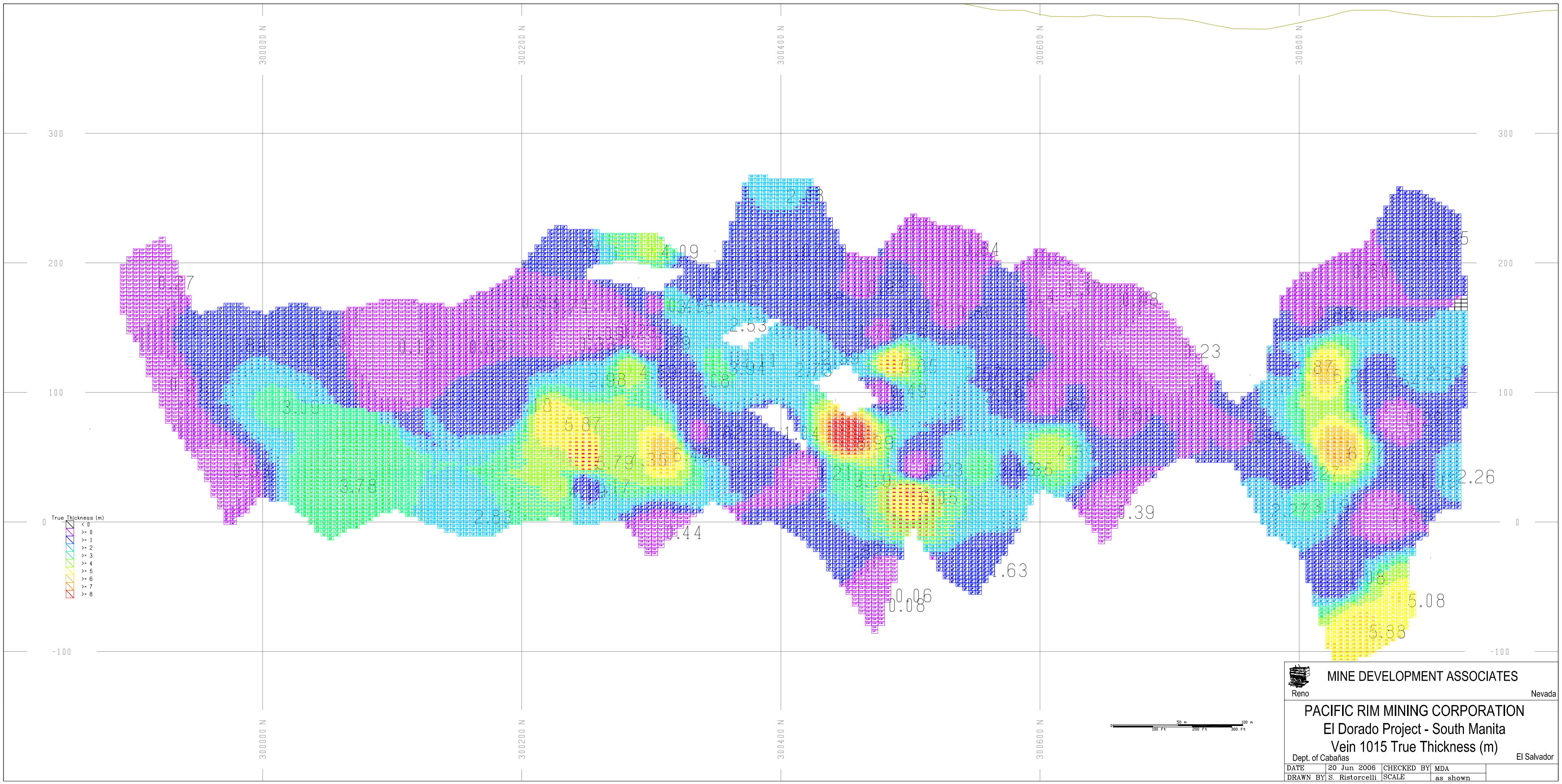


Figure 17.12 Long Section of the South Minita Vein 1017 Resource – Gold Equivalent Grades

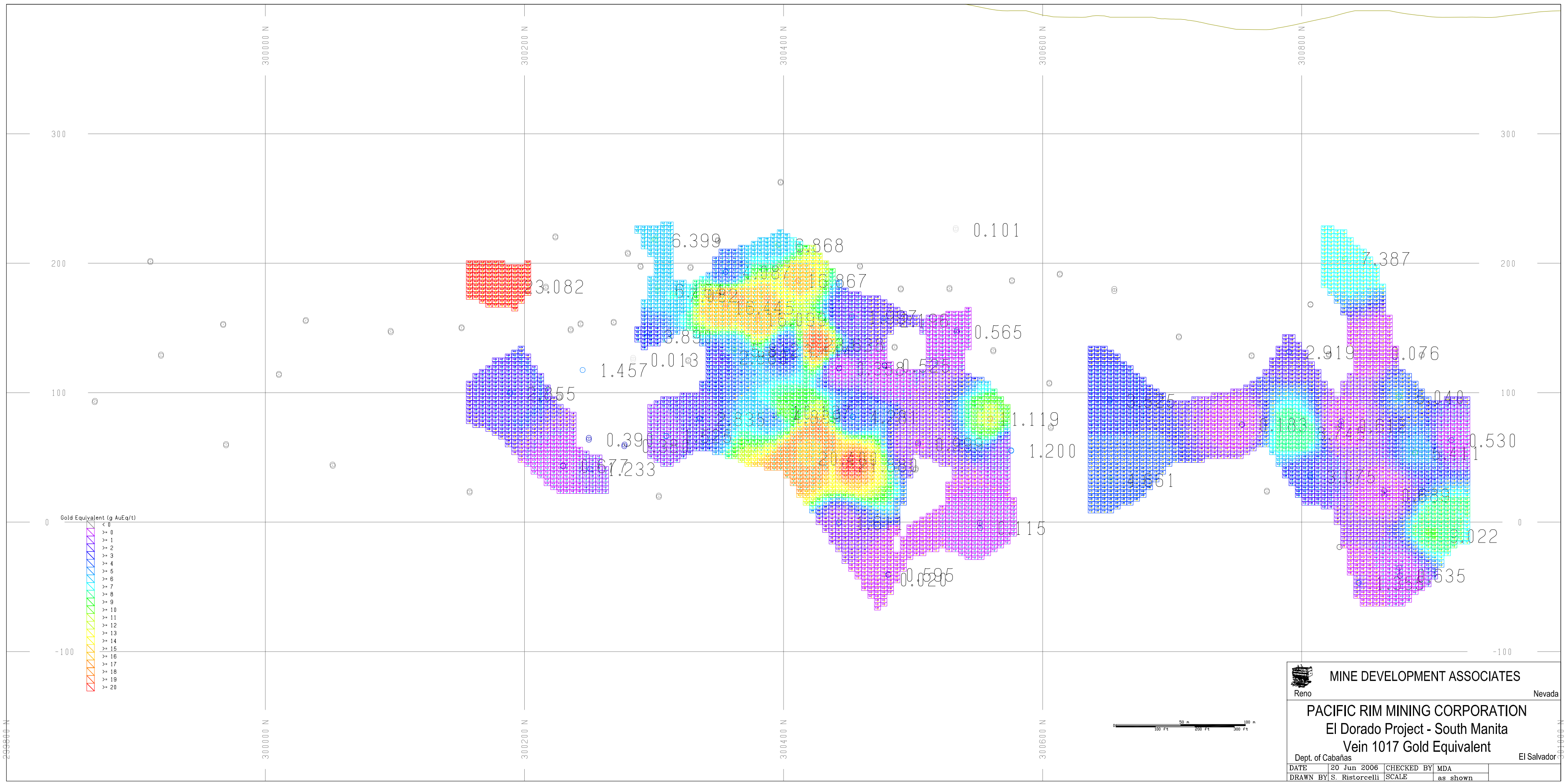


Figure 17.13 Long Section of the South Minita Vein 1017 Resource – True Thickness

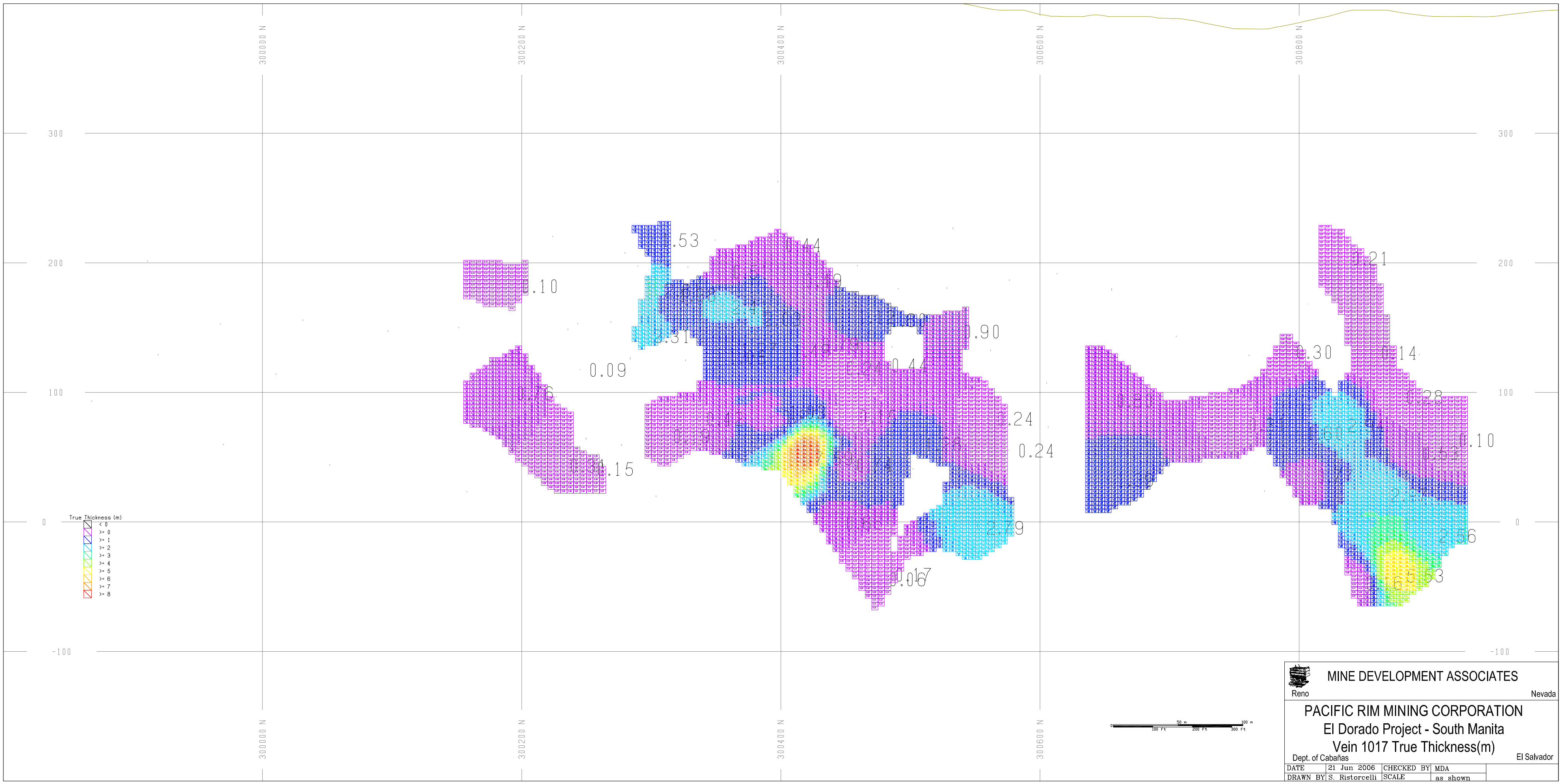


Figure 17.14 Long Section of the South Minita Vein 1035 Resource – Gold Equivalent Grades

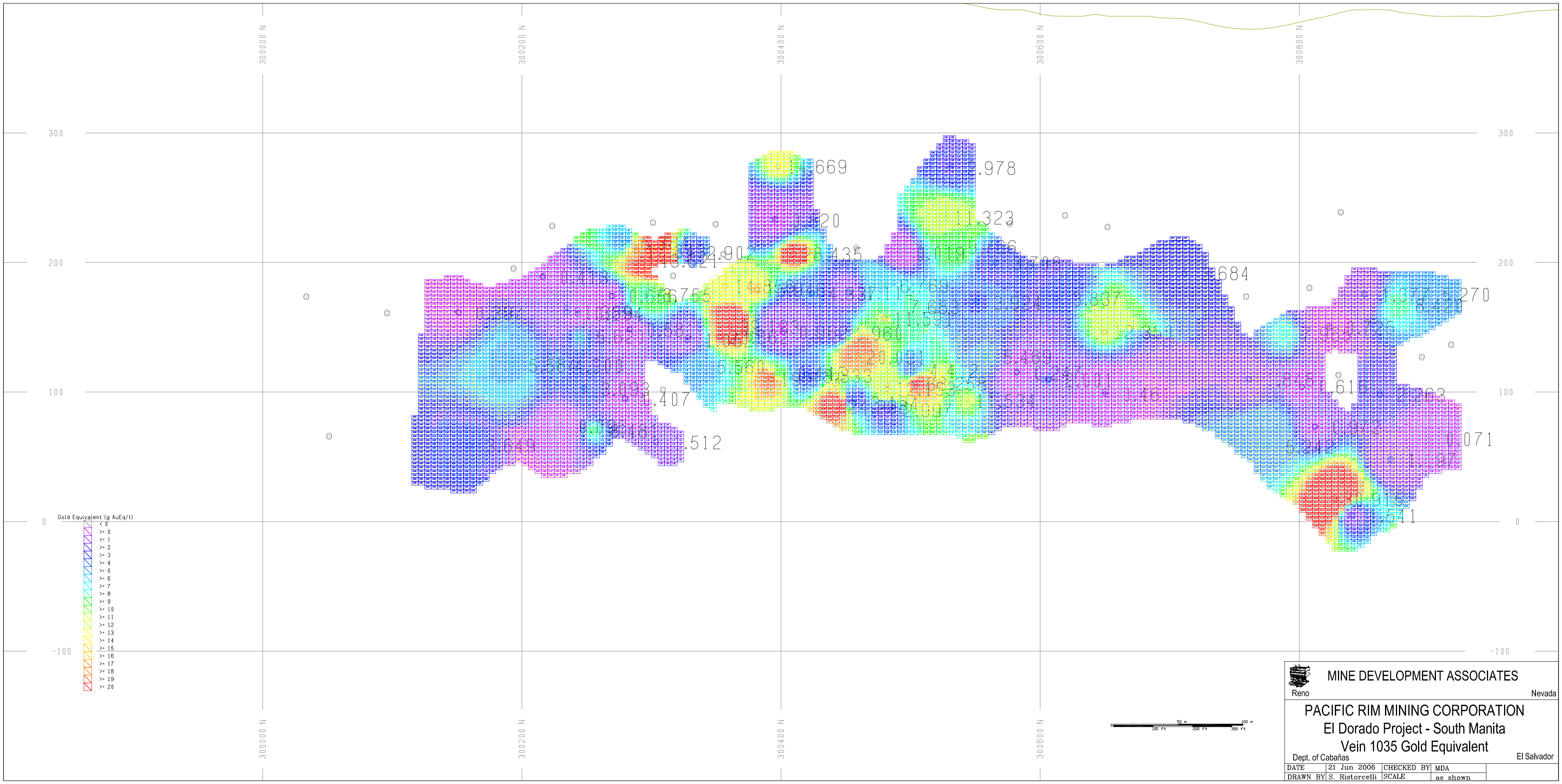
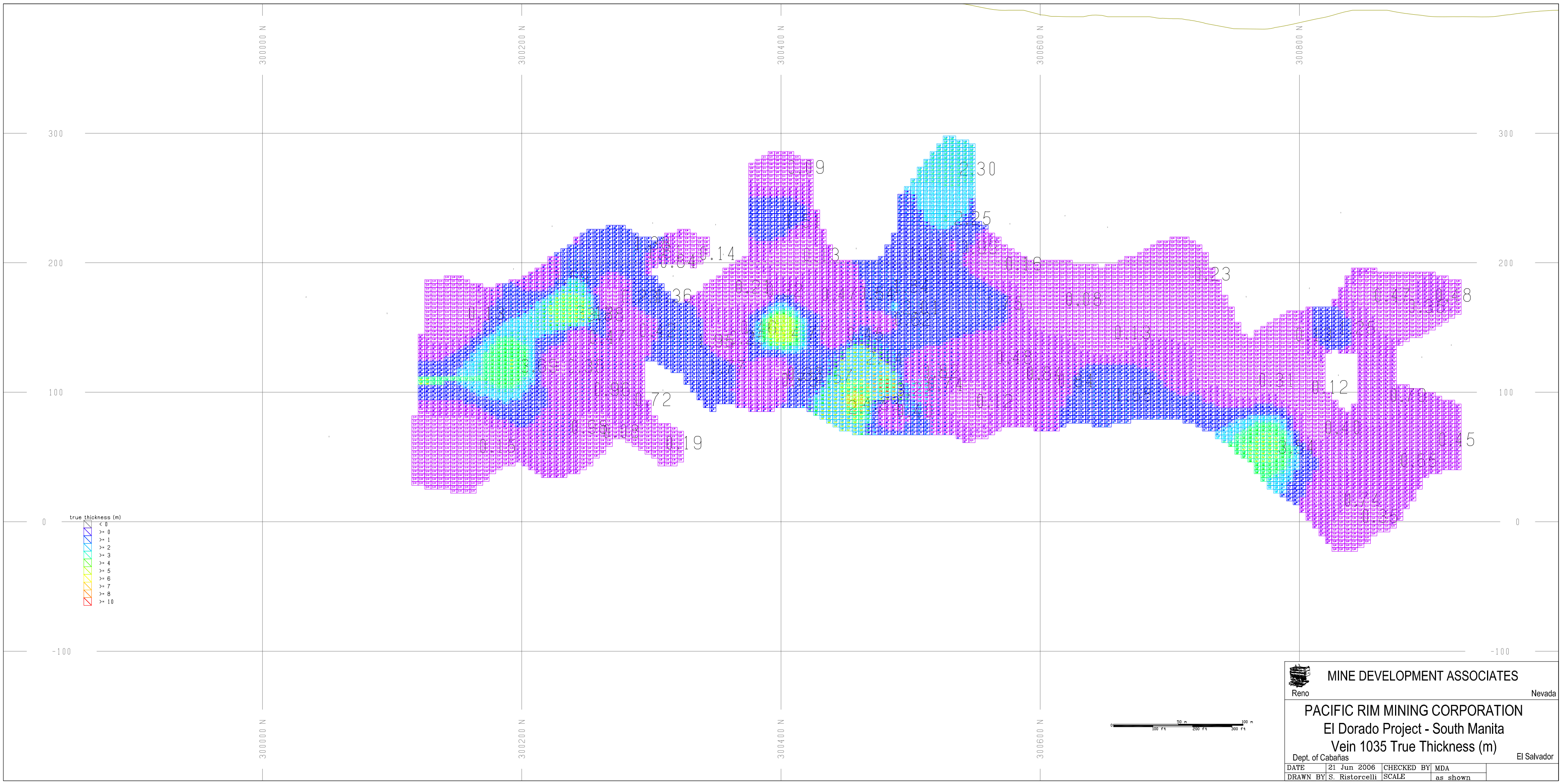


Figure 17.15 Long Section of the South Minita Vein 1035 Resource – True Thickness



17.5.3 Nance Dulce Area Modeling

After each vein was defined on section, the outlines or extents were digitized. The footwall of each vein was then used to make a three dimensional surface. This surface, within the bounds or extents of the vein, was used to code the footwall (west wall) location of the vein. There are no underground workings at Nance Dulce.

Vein interpretation, metal content, and thickness are based on geologic interpretation. As the composites are of varying length, grade thickness (accumulation) modeling was required. Models were estimated by inverse distance estimation and nearest neighbor only. The well-mineralized vein material was estimated with the less-well mineralized vein material, but the well-mineralized material was restricted in the distance it was projected. While there may in fact be hard boundaries between the well-mineralized (banded, black sulfides, leached texture) vein material and the weakly mineralized vein material (<~3 g Au/t), the drill spacing (~80 m) does not allow for appropriate estimation results when these two types are modeled separately. To compensate for the lack of segregation of these two domains and to insert sharper grade changes between them, inverse distance estimation to the fourth power (ID^4) was chosen as the final estimation method and the well-mineralized composite samples were restricted in their range of influence during estimation. Estimation parameters are given in Table 17.30.

Tonnes per block were calculated by multiplying the block volume (height [3 m] times length [5 m] times width [HTW]) by the specific gravity (2.50 g/cm^3). The number of samples and the distance to the nearest sample were stored for each estimated block, as were the nearest neighbor grades, grade thicknesses, widths, and vein azimuths and dips.

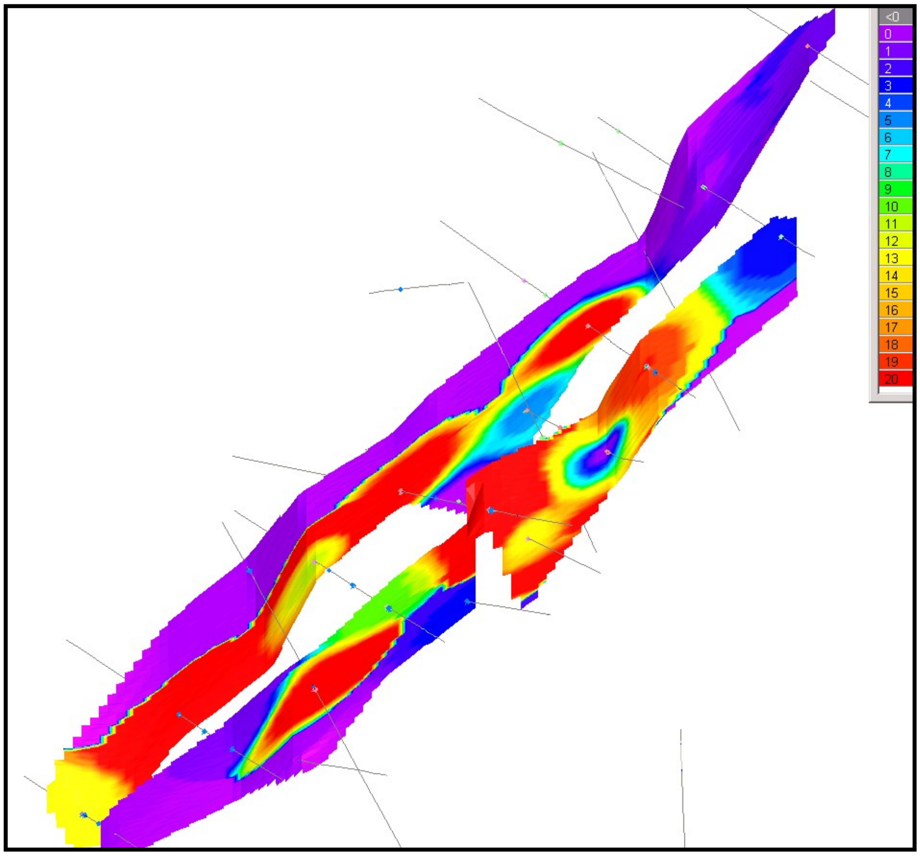
The model results were evaluated relative to the composite data, visual inspections and by quantifying differences between the nearest neighbor and inverse distance models. A pictorial of the two main veins at Nance Dulce is given in Figure 17.16.

Table 17.30 Estimation Parameters for Nance Dulce Area Veins

All Veins	
Parameter	**Calculated True Width (CTW)**
Estimation method	ID^3
Min/Max composites	1 / 8
Samples used	low- and high-grade domains together
Distance (m)	100 horizontal by 75 vertical
Gold grade (g Au/t-capped)	
Estimation method	ID^4
Min/Max composites	1 / 8
Samples used	low- and high-grade domains together
Weighting	true vein thickness
Distance (m)	100 horizontal by 50 vertical
Restrictions (g Au/t and m)	>4 and 50
Silver grade (g Ag/t-capped)	
Estimation method	ID^4
Min/Max composites	1 / 8
Samples used	low- and high-grade domains together
Weighting	true vein thickness
Distance (m)	100 horizontal by 50 vertical
Restrictions* (g Au/t and m)	>4 and 50

* The gold grades controlled the estimate

Figure 17.16 Pictorial of Nance Dulce – Gold Equivalent Grades Times True Thickness
(looking west and down at 70°)



17.5.4 Bálsamo/Cerro Alto Area Modeling

Geostatistical analyses were performed on thickness, gold grade times thickness, and silver grade times thickness. After each vein was defined on section, the outlines or extents were digitized. The footwall of each vein was then used to make a three dimensional surface. This surface, within the bounds or extents of the vein, was used to code the footwall (west wall) location of the vein. There are no underground workings at Bálsamo/Cerro Alto.

At Bálsamo/Cerro Alto, vein continuity, metal content, and thickness are based on geologic interpretation and geostatistics. These parameters have been shown to be less predictable than at Minita but more so than at South Minita. Correlogram ranges were between 75 and 110 m. As the composites are of varying length, grade thickness ("accumulation") modeling was required. Models were estimated only by inverse distance estimation and nearest neighbor. MDA segregated the well-mineralized vein from the less well-mineralized vein during estimation. Rather peculiar results were obtained. While there may in fact be hard boundaries between the well-mineralized (banded, black sulfides, leached texture) vein material and the weakly mineralized vein material (<~2-3 g Au/t), the drill spacing and apparently complex nature of this relationship did not produce appropriate estimation results when these two types were modeled separately. To compensate for the lack of segregation of these two domains and to insert sharper grade changes between them, inverse distance estimation to the fourth power (ID^4) was chosen as the final estimation method. MDA also estimated core recovery (CRec), confidence code (ConfC), and measured true width (MTW), for those reasons described in Section 17.5.1.

Tonnes per block were calculated by multiplying the block volume [height (3 m) times length (5 m) times width (HTW) by the specific gravity (2.50 g/cm^3)]. The number of samples and the distance to the nearest sample were stored for each estimated block, as were the nearest neighbor grades, grade thicknesses, widths, and vein azimuths and dips.

MDA considered the result of the South Minita resource estimate sensitivity studies to determine estimation parameters for Bálsamo/Cerro Alto. Estimation parameters are given in Table 17.31. Long sections for Bálsamo Footwall vein (3044) are presented in Figure 17.17 through Figure 17.19, for thickness, gold equivalent grade, and gold grade times thickness.

Table 17.31 Estimation Parameters for Bálsamo/Cerro Alto Area Veins

All Veins	
Parameter	**Calculated True Width (CTW)**
Estimation method	ID^4
Min/Max composites	1 / 8
Samples used	low- and high-grade domains together
Distance (m)	100 horizontal by 50 vertical
Gold grade time thickness (g Au/t-capped times calculated true width)	
Estimation method	ID^4
Min/Max composites	1 / 8
Samples used (only with CREC>25%)	low- and high-grade domains together
Distance (m)	100 horizontal by 50 vertical
Silver grade time thickness (g Ag/t-capped times calculated true width)	
Estimation method	ID^4
Min/Max composites	1 / 8
Samples used (only with CREC>25%)	low- and high-grade domains together
Distance (m)	100 horizontal by 50 vertical
* (only with CREC>25%)	

Figure 17.17 Long Section of Thickness of Bálsamo Footwall Vein
(looking west; m)

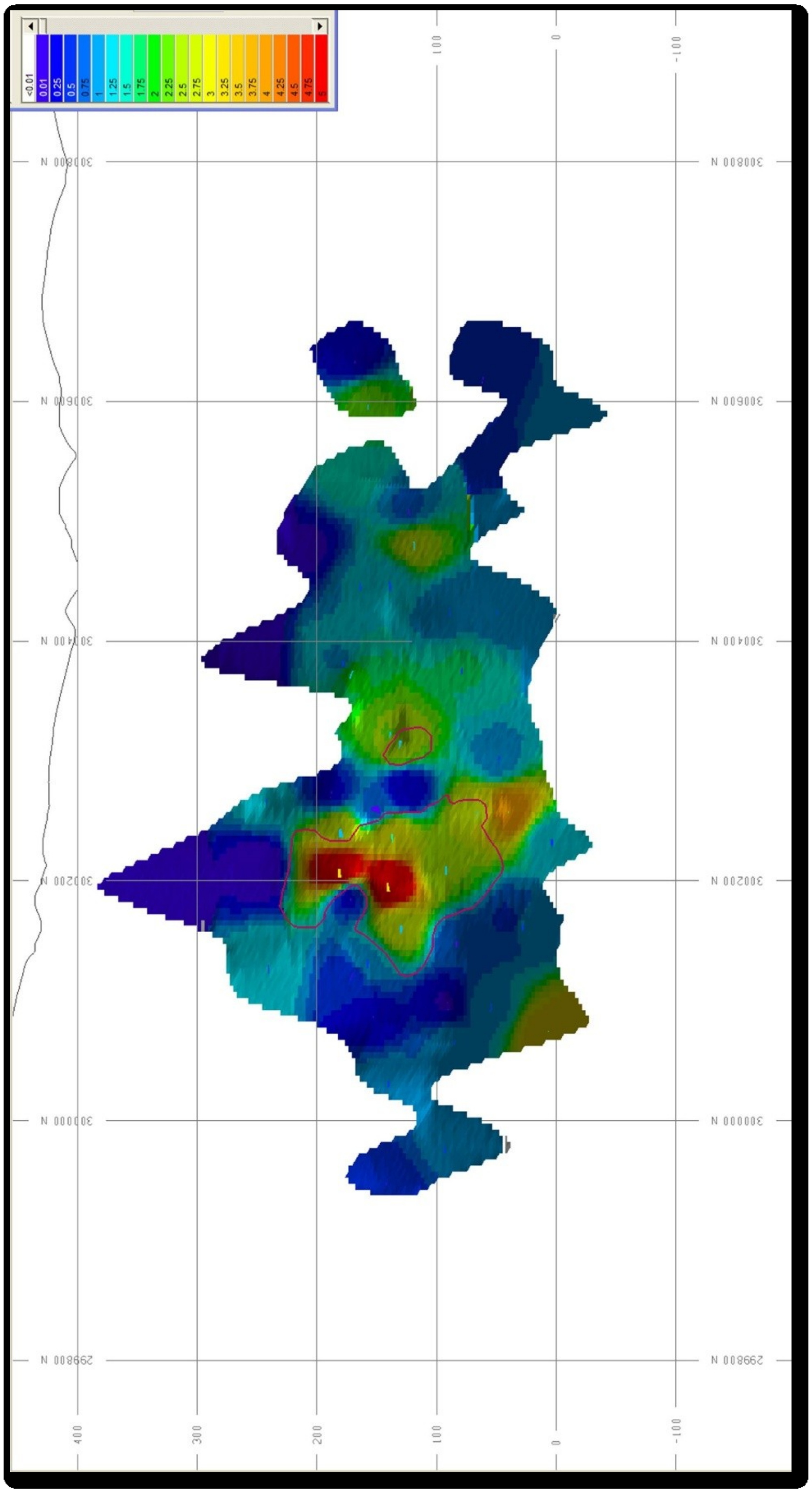


Figure 17.18 Long Section of Gold Equivalent Grade of Bálsamo Footwall Vein
(looking west; g AuEq/t)

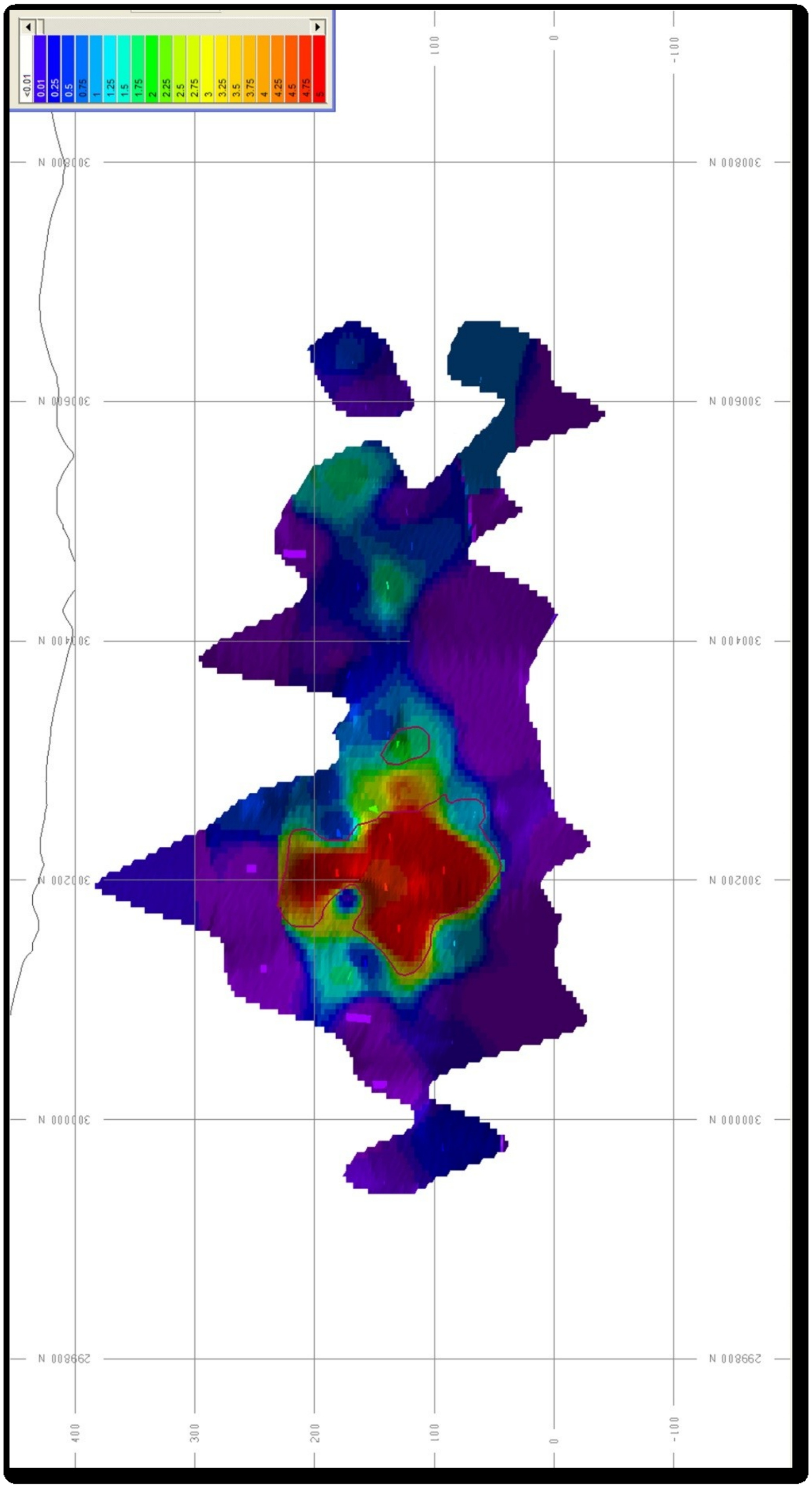
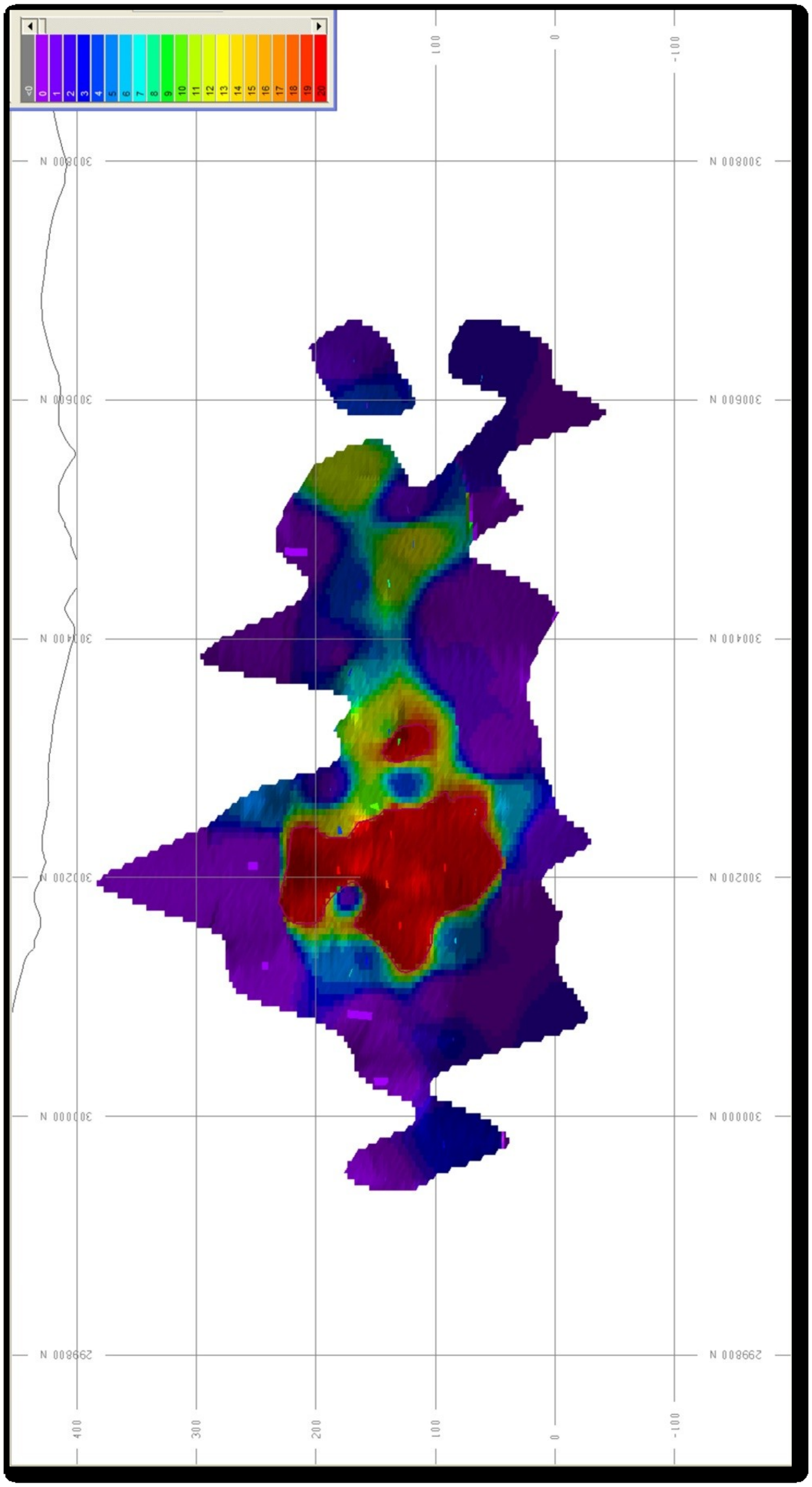


Figure 17.19 Long Section of Gold Equivalent Grade Times Thickness of Bálsamo Footwall Vein
(looking west; g AuEq/t*m)



17.5.5 La Coyotera Area Modeling

La Coyotera was modeled as a classic three dimensional block model. Zones were defined on section, taken to plan and used to code percentages into each block. Grades were modeled using Kriging. Specific gravity per block was calculated based on the percentage of each zone and each zone's measured specific gravity (see section 17.3). Correlograms were calculated for La Coyotera by zone and each zone (11, 12, and 13) was modeled separately. These were used to define estimation parameters while point validation was used to fine-tune the estimate (Table 17.32). A typical cross section is given in Figure 17.20. Kriging was the final estimate used while ID^3 and nearest neighbor models were used as checks. In 2006, the model was rebuilt with 1-m by 2-m by 3-m (high) block sizes to have more appropriate block sizes for the more than likely underground mining that would take place. There are no underground workings at La Coyotera.

17.5.6 Nueva Esperanza Area Modeling

Nueva Esperanza was modeled in a similar way to La Coyotera, as a classic three dimensional block model. Nueva Esperanza has two defined mineral zones: low-grade altered andesite (1) and higher-grade vein and sheeted vein (2). The zones were defined on section, taken to plan and used to code percentages into each block. Grades were modeled using Kriging. Specific gravity per block was calculated based on the percentage of each zone and each zone's measured specific gravity. Correlograms were calculated for Nueva Esperanza on both zones combined and each zone (1 and 2) was modeled separately. The correlograms were used to define estimation parameters (Table 17.33) while point validation was used to fine-tune the estimate. A typical cross section of the modeled vein is given in Figure 17.21. While Kriging was the estimation method used, ID3 and nearest neighbor models were used as checks. There are no underground workings at Nueva Esperanza.

Table 17.32 Estimation Parameters for La Coyotera

	First Pass – Gold (and CRec)		
Parameter	**Zone 1**	**Zone 2**	**Zone 3**
Samples: min/max/max per hole	1 / 12 / 3	1 / 12 / 3	1 / 12 / 3
Rotation/Dip/Tilt	30^o / 0^o / 0^o	30^o / 0^o / 0^o	30^o / 0^o / 0^o
Search (m)	80 / 40 / 80	80 / 26 / 80	60 / 25 / 60
C_0 / C_1 / C_2	.527 / .350 / .125	.412 / .286 / .303	0.358 / 0.642
R_1 (in rotation/dip/tilt directions)	27 / 27 / 23	17 / 9 / 17	49 / 13 / 19
R_2 (in rotation/dip/tilt directions)	42 / 42 / 82	51 / 25 / 106	49 / 13 / 19
Length-weighting	Yes	Yes	Yes
	Second Pass – Gold *		
Search (m)	40 / 20 / 40	40 / 13 / 40	NA
	First Pass – Silver		
Parameter	**Zone 1**	**Zone 2**	**Zone 3**
Samples: min/max/max per hole	1 / 12 / 3	1 / 12 / 3	1 / 12 / 3
Rotation/Dip/Tilt	30^o / 0^o / 0^o	30^o / 0^o / 0^o	30^o / 0^o / 0^o
Search (m)	80 / 40 / 80	80 / 26 / 80	60 / 25 / 60
C_0 / C_1 / C_2	.301 / .529 / .172	.285 / .715 / NA	0.358 / 0.642
R_1 (in rotation/dip/tilt directions)	15 / 5 / 30	19 / 10 / 19	49 / 13 / 19
R_2 (in rotation/dip/tilt directions)	49 / 16 / 68	NA	49 / 13 / 19
Length-weighting	Yes	Yes	Yes
	Second Pass – Silver *		
Search (m)	50 / 10 / 50	40 / 13 / 40	NA

* Those parameters not listed in the second pass remained the same

Figure 17.20 Cross Section of the La Coyotera Resource

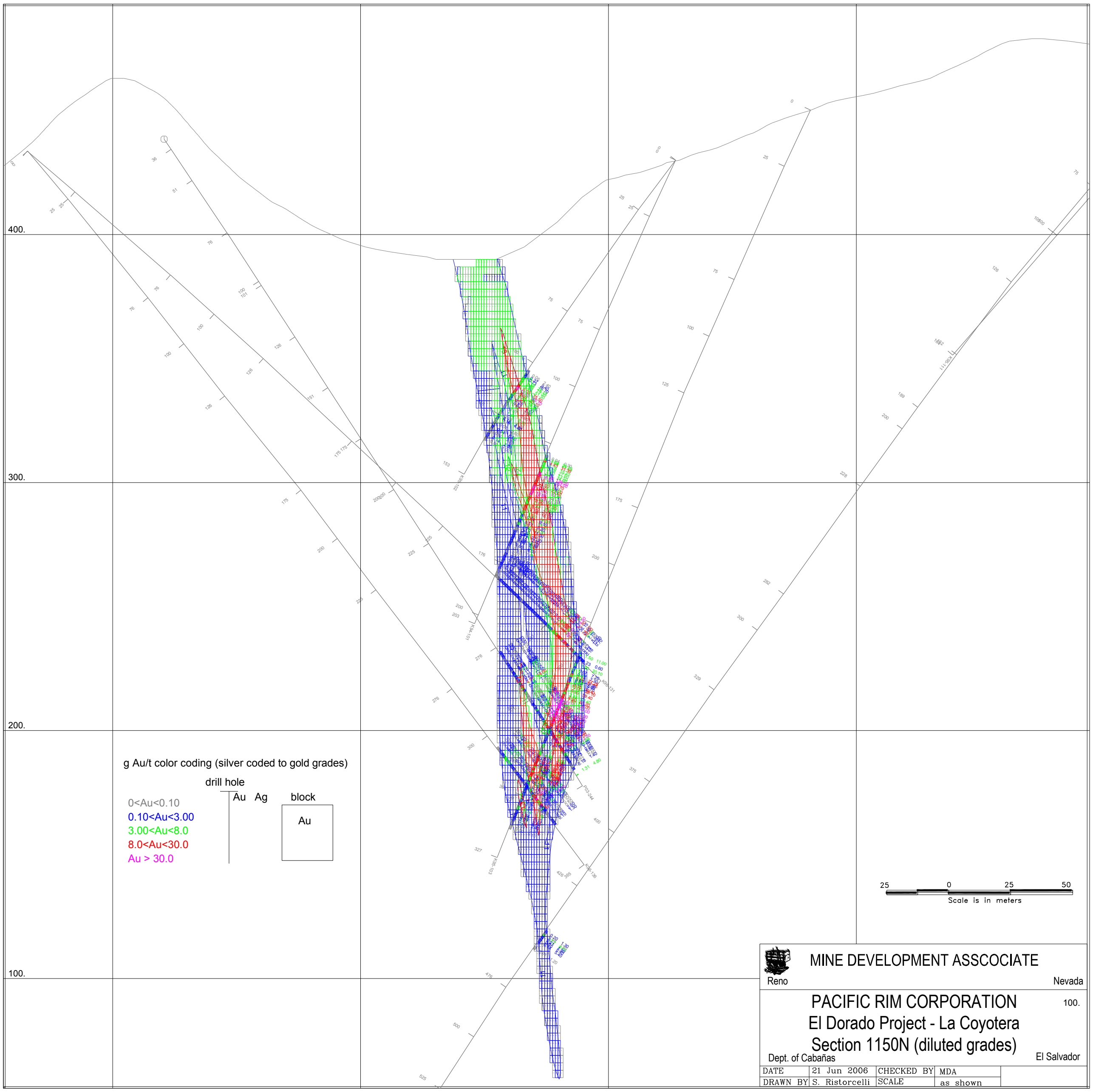


Figure 17.21 Cross Section of the Nueva Esperanza Resource

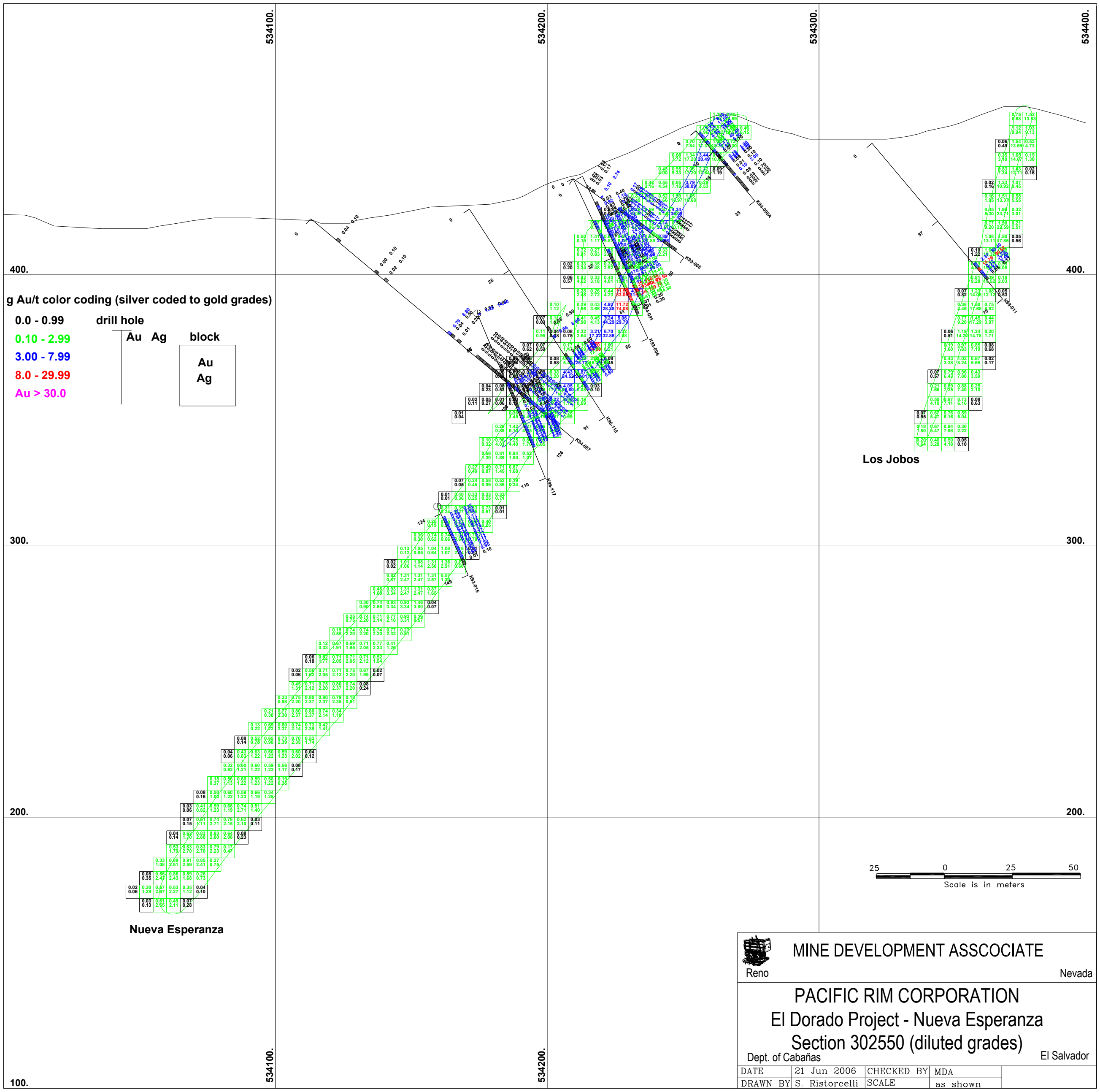


Table 17.33 Estimation Parameters for Nueva Esperanza

	First Pass – Gold (and CRec)		
Parameter	**Zone 1**	**Zone 2**	**Zone 3**
Samples: min/max/max per hole	1 / 12 / 3	1 / 12 / 3	1 / 12 / 3
Rotation/Dip/Tilt	30^o / 0^o / 0^o	30^o / 0^o / 0^o	30^o / 0^o / 0^o
Search (m)	80 / 40 / 80	80 / 26 / 80	60 / 25 / 60
C_0 / C_1 / C_2	.527 / .350 / .125	.412 / .286 / .303	0.358 / 0.642
R_1 (in rotation/dip/tilt directions)	27 / 27 / 23	17 / 9 / 17	49 / 13 / 19
R_2 (in rotation/dip/tilt directions)	42 / 42 / 82	51 / 25 / 106	49 / 13 / 19
Length-weighting	Yes	Yes	Yes
	Second Pass – Gold *		
Search (m)	40 / 20 / 40	40 / 13 / 40	NA
	First Pass – Silver		
Parameter	**Zone 1**	**Zone 2**	**Zone 3**
Samples: min/max/max per hole	1 / 12 / 3	1 / 12 / 3	1 / 12 / 3
Rotation/Dip/Tilt	30^o / 0^o / 0^o	30^o / 0^o / 0^o	30^o / 0^o / 0^o
Search (m)	80 / 40 / 80	80 / 26 / 80	60 / 25 / 60
C_0 / C_1 / C_2	.301 / .529 / .172	.285 / .715 / NA	0.358 / 0.642
R_1 (in rotation/dip/tilt directions)	15 / 5 / 30	19 / 10 / 19	49 / 13 / 19
R_2 (in rotation/dip/tilt directions)	49 / 16 / 68	NA	49 / 13 / 19
Length-weighting	Yes	Yes	Yes
	Second Pass – Silver *		
Search (m)	50 / 10 / 50	40 / 13 / 40	NA

* Those parameters not listed in the second pass remained the same

17.6 Gold and Silver Resources

MDA classified the resource in order of increasing geological and quantitative confidence, into Inferred, Indicated and Measured categories to be in compliance with Canadian National Instrument 43-101 and the "CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines", issued in 2000 and modified with adoption of the "CIM Definition Standards - For Mineral Resources and Mineral Reserves" in 2005. CIM mineral resource definitions are given below:

Mineral Resource

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

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

The 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. These assumptions must be presented explicitly in both public and technical reports.

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.

Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or

Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.

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.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions.

Measured Mineral Resource

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and 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.

Mineralization or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade of the mineralization can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

Because of the requirement that the resource exists "in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction," MDA is reporting the resources at cutoffs that are reasonable for deposits of this nature and mining conditions of this type. Presently, MDA believes that all but Nueva Esperanza would be exploited by underground means and hence, expected underground cutoff grades are used: 4 g AuEq/t. For simplicity, and because Nueva Esperanza is such a small part of the total resource, it too, for the purposes of reporting, is presented at underground mining cutoffs. That cutoff of 4 g AuEq/t uses a ratio of 70 silver to 1 gold. The ratio was based on recent historic silver to gold price ratios. It was chosen in 2003 and has remained the same for consistency of reporting. Because of the many narrow veins at South Minita and Nance Dulce, a second criteria needed to be met in order for a block to be considered in the resource. A block needed to have greater than a 4 g AuEq/t times true thickness (a "GT of 4"), *i.e.*, any grade of 8 g AuEq/t needed to occur in a vein at least 0.5 m wide.

There are no Measured resources at South Minita at this time due to the complex structural setting and the difficulty in verifying the hole to hole interpretation. Additional drilling would be required to upgrade the Indicated to Measured. There are no Measured or Indicated resources at Nance Dulce, principally due to the relatively wide drill hole spacing of around 80 m. There are Indicated but no Measured resources at Bálsamo/Cerro Alto due to this being the first estimate and to the relatively wide drill spacing, particularly for Bálsamo.

MDA classified the El Dorado resources by a combination of distance to the nearest sample, the number of samples used to estimate a block, the confidence in certain drill intercepts and the core recovery. The criteria for resource classification are given in Table 17.34.

Descriptive statistics of classification criteria are given in Table 17.35.

Measured, Indicated, Measured plus Indicated, and Inferred resources are given in Table 17.36. Several grade cutoffs are given to demonstrate changes with varying cutoffs but *the reported official resource is bolded and is at 4.0 g AuEq/t*. All reported numbers are undiluted in-situ resources except La Coyotera, which is diluted in the horizontal to 1-m by 2-m blocks. The resources are tabulated separately by vein and by area in Appendix C.

17.7 Gold and Silver Mineralization Potential

Jointly, Pacific Rim and MDA coded all the intercepts in the Minita area. The work, while defining an additional seven veins in the El Dorado mine area, did not define additional Measured and Indicated resources. Small amounts of work could define and bring up the classification of the resources. The other seven veins were in general low-grade; *i.e.*, ~4-5 g Au/t, and small. However, these are structures that in some cases represent additional targets for exploration. In addition, to the east of the Minita area is the Rosario area. MDA and Pacific Rim began the exercise of interpreting geology and coding mineralized intercepts when it became apparent that additional drilling was needed and more attention should be paid to that area. It is likely that additional mineralization will be encountered in those veins in the eastern El Dorado district in the Rosario area.

Throughout the district there are numerous veins, often with gold and silver mineralization and sometimes very significant grades. This is a rather mixed blessing for Pacific Rim in that on the one hand any one of those veins could host deposits similar to the Minita area, but on the other hand, each one needs further exploration to some extent.

Table 17.34 Criteria for Resource Classification

	Minita Vein		
	Measured	**Indicated**	**Inferred**
Distance (m)	1 to 20	21 to 75	>75 (within zone)
Confidence code*	2 or 3	NA	NA
Core recovery (%)**	>80	NA	NA
	Minita 3 Vein		
	Measured	**Indicated**	**Inferred**
Distance (m)	1 to 15	16 to 75	>75 (within zone)
Confidence code*	2 or 3	NA	NA
Core recovery (%)**	>80	NA	NA
	Zancudo Vein		
	Measured	**Indicated**	**Inferred**
Distance (m)	1 to 15	16 to 50	>50 (within zone)
Confidence code*	2 or 3	NA	NA
Core recovery (%)**	>80	NA	NA
	All South Minita Veins* **		
	Measured	**Indicated**	**Inferred**
Distance (m)	None	0 to 30	>30 (within zone)
Confidence code*	None	2 or 3	1, 2 or 3****
Core recovery (%)**	None	NA	NA
	Nance Dulce Veins* **		
	Measured	**Indicated**	**Inferred**
Distance (m)	None	None	<85 (within zone)
Confidence code*	None	None	1, 2 or 3****
Core recovery (%)**	None	None	NA
	Bálsomo/Cerro Alto Veins* **		
	Measured	**Indicated**	**Inferred**
Distance (m)	None	0 to 30	>30 (within zone)
Confidence code*	None	2 or 3	1, 2 or 3****
Core recovery (%)**	None	NA	NA
	La Coyotera		
	Measured	**Indicated**	**Inferred**
Distance (m)	1 to 12	13 to 50	>50 (within zone)
Number of samples	>=2	NA	NA
Core recovery (%)**	>70	>50	NA
	Nueva Esperanza		
	Measured	**Indicated**	**Inferred**
Distance (m)	NA	1 to 25	>25 (within zones)
Core recovery (%)**	NA	NA	NA

* 1 to 3, with 3 the highest; ** No samples with core recovery <25% were used;
must have a gt (g AuEq/t times true thickness) >= 4; * or <30 with a low confidence code of 1

Table 17.35 Descriptive Statistics of Resources by Classification

	Measured	Indicated	Inferred
		Minita Vein	
Mean number of samples	9.8	9.5	7.4
Mean closest point	12.7	35.4	97.4
Mean core recovery	97.7	93.3	95.0
Mean confidence code	2.8	2.6	2.4
		Minita 3 Vein	
Mean number of samples	7.6	7.2	4.8
Mean closest point	10.3	36.2	116.9
Mean core recovery	97.5	88.7	95.9
Mean confidence code	2.8	2.6	2.8
		Zancudo Vein	
Mean number of samples	7.2	6.7	4.0
Mean closest point	10.3	26.8	72.3
Mean core recovery	98.5	94.5	90.7
Mean confidence code	2.7	2.5	2.3
		All South Minita Veins	
Mean number of samples	NA	5.7	4.1
Mean closest point	NA	16.4	25.6
Mean core recovery	NA	99.6	99.7
Mean confidence code	NA	2.3	1.3
		All Bálsamo/Cerro Alto Veins	
Mean number of samples	NA	4.4	3.5
Mean closest point	NA	18.7	34.3
Mean core recovery	NA	99.6	99.8
Mean confidence code	NA	2.3	1.8
		La Coyotera	
Mean number of samples	7.9	6.5	5.8
Mean closest point	8.2	25.5	55.9
Mean core recovery	90.1	83.9	82.5
		Nueva Esperanza	
Mean number of samples	NA	4.4	5.3
Mean closest point	NA	15.7	36.8
Mean core recovery	NA	NA	NA

The total Measured, Indicated and Inferred resources for the El Dorado Project are set out in Table 17.36. Similar tables for each of the six deposits described in this report appear in Appendix C. The Indicated and Inferred resources in the Bálsamo/Cerro Alto area are presented in Table 17.37

Table 17.36 El Dorado Total Project Resources

El Dorado Project Total Resource - Measured							
Cutoff	**Tonnes**	**Grade**	**Grade**	**Oz Au**	**Grade**	**Oz Ag**	**Ounces**
(g AuEq/t)		(g AuEq/t)	(g Au/t)		(g Ag/t)		(AuEq)
1.0	1,121,500	9.22	8.40	302,800	57.56	2,075,500	332,600
4.0	**780,100**	**12.39**	**11.31**	**283,600**	**75.76**	**1,900,200**	**310,800**
5.0	721,900	13.03	11.90	276,100	79.70	1,849,700	302,500
6.0	663,000	13.70	12.51	266,600	83.96	1,789,600	292,100
7.0	614,400	14.28	13.03	257,300	87.40	1,726,400	282,100
8.0	539,900	15.21	13.89	241,100	92.54	1,606,300	264,000
9.0	481,600	16.01	14.63	226,500	97.06	1,502,800	247,900

El Dorado Project Total Resource - Indicated							
Cutoff	**Tonnes**	**Grade**	**Grade**	**Oz Au**	**Grade**	**Oz Ag**	**Ounces**
(g AuEq/t)		(g AuEq/t)	(g Au/t)		(g Ag/t)		(AuEq)
1.0	6,673,400	6.16	5.55	1,191,500	42.70	9,162,300	1,322,300
4.0	**3,496,700**	**9.96**	**9.00**	**1,011,500**	**67.45**	**7,582,300**	**1,119,700**
5.0	3,029,900	10.81	9.76	950,600	73.23	7,133,700	1,052,700
6.0	2,639,700	11.59	10.46	887,300	79.13	6,715,500	983,300
7.0	2,226,000	12.53	11.30	808,400	86.59	6,197,300	896,900
8.0	1,823,200	13.64	12.30	721,000	94.10	5,515,600	799,800
9.0	1,463,200	14.92	13.45	632,600	102.97	4,844,200	701,700

El Dorado Project Total Resource - Measured and Indicated							
Cutoff	**Tonnes**	**Grade**	**Grade**	**Oz Au**	**Grade**	**Oz Ag**	**Ounces**
(g AuEq/t)		(g AuEq/t)	(g Au/t)		(g Ag/t)		(AuEq)
1.0	7,794,900	6.60	5.96	1,494,300	44.84	11,237,800	1,655,000
4.0	**4,276,800**	**10.40**	**9.42**	**1,295,100**	**68.96**	**9,482,500**	**1,430,500**
5.0	3,751,800	11.23	10.17	1,226,700	74.47	8,983,400	1,355,200
6.0	3,302,700	12.01	10.87	1,153,900	80.10	8,505,100	1,275,400
7.0	2,840,400	12.91	11.67	1,065,700	86.77	7,923,700	1,179,100
8.0	2,363,100	14.00	12.66	962,100	93.74	7,121,900	1,063,900
9.0	1,944,800	15.19	13.74	859,100	101.51	6,347,000	949,600

El Dorado Project Total Resource - Inferred							
Cutoff	**Tonnes**	**Grade**	**Grade**	**Oz Au**	**Grade**	**Oz Ag**	**Ounces**
(g AuEq/t)		(g AuEq/t)	(g Au/t)		(g Ag/t)		(AuEq)
1.0	1,954,200	5.65	5.10	320,200	38.52	2,419,900	354,900
4.0	**839,300**	**10.47**	**9.45**	**255,000**	**70.89**	**1,913,000**	**282,400**
5.0	702,500	11.62	10.51	237,300	78.43	1,771,500	262,400
6.0	568,400	13.07	11.81	215,800	88.14	1,610,700	238,800
7.0	478,700	14.32	12.94	199,200	96.42	1,483,940	220,430
8.0	397,100	15.69	14.22	181,500	104.66	1,336,250	200,370
9.0	346,600	16.76	15.18	169,200	111.37	1,241,100	186,800

Table 17.37 Bálsamo/Cerro Alto Resources

Total Balsamo/Cerro Alto Area - Measured and Indicated									
Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Oz Au	Grade (g Ag/t)	Oz Ag	Ounces (AuEq)	True Width (m)	Hor. Width (m)
1.0	972,200	7.78	6.71	209,600	75.27	2,353,000	243,200	2.18	2.70
4.0	**566,700**	**11.47**	**9.86**	**179,600**	**112.95**	**2,058,000**	**209,000**	**1.90**	**2.33**
5.0	479,300	12.74	10.94	168,600	125.93	1,941,000	196,400	1.90	2.32
6.0	419,500	13.77	11.80	159,100	138.23	1,864,000	185,700	1.83	2.23
7.0	387,800	14.36	12.31	153,500	143.46	1,789,000	179,100	1.84	2.24
8.0	345,700	15.19	13.02	144,800	151.76	1,687,000	168,900	1.86	2.26
9.0	292,200	16.42	14.03	131,800	166.86	1,568,000	154,200	1.84	2.24

Total Balsamo/Cerro Alto Area - Inferred									
Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Oz Au	Grade (g Ag/t)	Oz Ag	Ounces (AuEq)	True Width (m)	Hor. Width (m)
1.0	502,100	6.10	5.36	86,500	52.10	841,000	98,500	1.87	2.34
4.0	**281,200**	**8.80**	**7.71**	**69,700**	**76.29**	**690,000**	**79,600**	**1.60**	**2.02**
5.0	229,600	9.78	8.57	63,300	85.05	628,000	72,200	1.54	1.95
6.0	185,200	10.82	9.44	56,200	96.09	572,000	64,400	1.47	1.85
7.0	157,700	11.57	10.09	51,200	103.40	524,000	58,700	1.45	1.83
8.0	133,600	12.30	10.72	46,000	110.92	476,000	52,800	1.44	1.83
9.0	113,800	12.97	11.29	41,300	117.48	430,000	47,500	1.43	1.81

17.8 Validation

Numerous checks were made throughout the process of estimating each deposit's resources. Checks began with comparing volumes from section to plan for the La Coyotera and Nueva Esperanza models. All La Coyotera volumes were within 3%. Nueva Esperanza volumes showed a conservative element in that the level plan volumes were 12% less than the sectional volumes for the high-grade zone. This was caused by pinching out the zones on level plan. The Nueva Esperanza low-grade zones were 6% different with the level plans being less, again resulting in a more conservative estimate.

Checks were made between the level plan volumes and the block model volumes. For the vein deposits (two dimensional models), checks were made between the block models and volumes defined by the vein outlines and applying a mean thickness. These tests all compared well. Total volume and mean grade tests were then done to get a sense of the magnitude of the resources.

The grade estimation was validated for each deposit by comparing assays, composites, nearest neighbor, inverse distance, and when applicable, Kriging estimates. Modifications were made to improve the estimates. In the case of Nueva Esperanza in particular and less so for the other deposits, the data are clustered, making the comparisons more difficult.

Checks done for the South Minita resource included: volumetric checks (essentially manual *vs.* the estimated volume); comparisons between composite grades, "tonnes", and metal and with nearest neighbor models; and the eight separate estimates.

Checks done for the Nance Dulce resource included: volumetric checks (essentially manual *vs.* the estimated volume) and comparisons between composite grades, "tonnes", and metal and with nearest neighbor models.

Validation completed for Bálsamo/Cerro Alto included performing a few different estimates, comparing nearest neighbor to inverse distance, and getting a global tonnage estimate based on mean and median thicknesses and surface areas of the footwall zones. The differences in tonnage between nearest neighbor (unbiased) mean thickness (CTW) times the surface area and tonnage factor were all about 6% to 8% higher than the model. Grades of the nearest neighbor model were similar to the grades of the inverse distance model.

17.9 Mineral Reserve Statement

This mineral reserve statement is extracted from SRK's Pre-Feasibility Study, as stated in the following text. The reserves are based on resource estimates done in 2003 (Ristorcelli and Ronning, 2003). One product of the feasibility study that is now in progress will be new reserve estimates based on the current resource estimates, updated operating costs, and revised metal prices.

The most recent estimate of Mineral Reserves is supported by a Pre-Feasibility Study dated January 21, 2005 (Tanaka and others, 2005), which has not been updated. The Pre-Feasibility Study results are summarized in report Section 18.

Table 17.38 summarizes the mineral reserves (as of 21 January 2005) for Minita and Minita 3. Reserves were estimated using an equivalent gold cutoff grade of 5g Au/t and a gold and silver price of US$350/oz and US$5.00/oz, respectively. These reserves were based upon 21 January 2005 Mineral Resources which have since been superseded by resources reported by Ristorcelli and Ronning (2006) and restated in this report.

Pacific Rim is currently preparing a Feasibility Study which will include an updated Statement of Mineral Reserves.

Table 17.38 Mineral Reserve Statement (21 January 2005)

	Tonnes	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Grade (g AuEq/t)	Ounces (AuEq)
Proven							
Minita	648,480	10.33	215,475	69.70	1,453,187	11.33	236,235
Minita 3	63,469	7.56	15,433	54.02	110,238	8.33	17,007
Total	**711,949**	**10.088**	**230,908**	**68.303**	**1,563,425**	**11.064**	**253,242**
Probable							
Minita	756,979	9.28	225,819	54.08	1,316,192	10.05	244,622
Minita 3	135,955	7.79	34,031	59.12	258,399	8.63	37,722
Total	**892,934**	**9.051**	**259,850**	**54.848**	**1,574,591**	**9.835**	**282,344**
Proven & Probable							
Proven	711,949	10.09	230,908	68.30	1,563,425	11.06	253,242
Probable	892,934	9.05	259,850	54.85	1,574,591	9.83	282,344
Total	**1,604,883**	**9.51**	**490,758**	**60.82**	**3,138,016**	**10.38**	**535,586**

Notes: Based upon a 5.0gpt cut-off grade, US$350/oz Au and US$5.00/oz Ag market price.

18.0 OTHER RELEVANT DATA AND INFORMATION

The following sections summarize the results of the El Dorado Pre-Feasibility Study dated January 21, 2005. MDA has updated parts of Section 18 as appropriate to reflect items that have changed since SRK did the Pre-Feasibility Study.

18.1 Mining Operations

Mining engineering performed to date is described in this section. Pacific Rim is in the process of updating this work using new and updated information. These updated results will be presented in a Feasibility Study which is currently under way.

The project is a steeply dipping, narrow vein gold deposit with reserves of over 1.6 million tonnes averaging 9.5g Au/t and 60.8g Ag/t (5.0g Au/t equivalent cutoff grade) for the principal veins considered, the Minita and Minita 3. The average widths of these veins are approximately 3.3m.

MDA notes that subsequent exploration has delineated further resources potentially amenable to mining in concert with the two veins above. The resources described in Section 17.0 of this report at the South Minita and Balsamo/Cerro Alto deposits may well provide additional reserves, if pending engineering studies show that they are economically viable.

18.1.1 Historical Mining Information

The deposits were discovered by the Spanish in the early 1500's and were worked by limited surface operations until 1894. From 1948 to 1953, a branch of Rosario Mining Company worked the deposits by underground methods. No mining has been done since, although exploration continued by various companies and at various times.

18.1.1.1 Past Production

Cut and fill mining and shrinkage stoping were the techniques previously used. Total production was 270,200 tonnes at an average grade of 9.59g Au/t. The old mine workings are not accessible because the shaft timbers collapsed and the shaft was not reopened below 15m from the collar. The old workings are currently flooded.

In 1975, Bruneau Mining Company purchased the property and an exploration program was initiated. The program ended in July 1976.

From 1979 to 1992, El Salvador experienced violent and persistent armed conflict. Since 1992, the country has been a peacefully governed democracy, although crime is a persistent problem. In 1993, during a period of high gold prices, exploration of the area commenced.

18.1.1.2 Previous Technical Studies

James Askew and Associates, majority owner at the time for Mirage Resource Corporation, completed a Pre-Feasibility Study in 1995. Kinross Gold Corporation became involved in the exploration effort in 1996. In April 2000, Dayton Mining Corporation acquired Mirage and continued exploration. An internal Feasibility Study was completed by Kinross El Salvador in July 2001 (Dayton Mining, 2001). Current project ownership rests with Pacific Rim El Salvador. Ronning (2003) completed a review of the project. The task of modeling the resources and estimating the geologic tonnes and grades was assigned to Mine Development Associates (Ristorcelli and Ronning, 2003, 2006) A report on the geotechnical design parameters was prepared by Call and Nicholas Inc., ("CNI") and issued in March 2004 (Sirkant and Nicholas, 2004). Also in March 2004, McIntosh was asked to develop a conceptual mine design and pre-feasibility level cost estimate. A Pre-Feasibility Study was completed by SRK (Tanaka and others, 2005) in January 2005. At least two iterations of an environmental impact statement have been issued since 2004 (Gochnour et al., 2004, 2005).

18.1.2 Mining Method

SRK has determined with the O'Hara method that the El Dorado deposit is amenable to the following mining methods: Sub-level stoping, shrinkage stoping, and cut and fill stoping. Normally, sub-level stoping is expected to be more cost effective as it is a bulk mining method. However, due to the narrow widths found in this deposit, cut and fill may prove to be comparatively similar.

SRK reviewed the structural data available for the Minita and South Minita zones and conclude that these areas are amenable to a combination of mining methods using sub-level stoping and cut and fill mining. Given the mineralized widths associated with the Bálsamo and Cerro Alto veins, it is also assumed to be minable using similar methods. No appraisals regarding mining methods have been done for other deposits in the region. In the January 2005 report, McIntosh recommends utilizing a bench and fill mining method. SRK supports the selection of a bench and fill method (i.e. sub-level blasthole stoping).

18.1.2.1 Bench & Fill Mining Method

The bench and fill mining method utilizes uncemented rock backfill. Sub-level spacing is planned at 20 m vertically from sill to sill. Sill development will be advanced by single-boom electric-hydraulic jumbos. The planned drift height is 3.2 m, enough to accommodate the planned pneumatic drill. Drifting along the ore horizon is planned to follow the vein structure and the drift width is expected to vary from a minimum of 3.2 m to the maximum of 9.4 m. In areas where the vein thickness is less than the minimum drift widths, a technique called 'resuing' will be used to control dilution.

Drifting along the ore will be kept tight to the hangingwall side and wherever possible, a shanty-style drift profile will be maintained to avoid undercutting the hangingwall. Once the sub-levels have been advanced to the extremities of the vein, the sublevels will be drilled off utilizing downholes (57mm diameter) averaging 16.8 m in length, breaking through to the sublevel below. Slot raises will be developed at the extremities of the sublevels to begin the blasting cycle on each sublevel.

Advancing along strike, slices of ore will be blasted in manageable sizes and mucked from the sub-level below. Ground conditions will be monitored as the open stope becomes larger, and the backfill cycle will begin once a strike length of approximately 17 m has been opened up (Sirkant and Nicholas, 2004). The LHDs will be equipped with remote controls to permit the operator to stand in a safe location when the LHD must operate beyond the safety of the supported brow. The mining direction is a retreat from both extremities towards the middle. This arrangement could require additional attention to drillholes and ground support in later stages of mining the block. The decreasing size of the central pillar will increase the stress on the mine openings.

Due to the tabular nature of the orebody, backfill will be placed after each blasting cycle to minimize the remote control mucking distance and to minimize the exposed hangingwall and footwall. This backfill material will be brought into the stope from the far end of the sub-level via a footwall access drift and placed from the sub-level above. Waste produced by mining the drifts and other excavations will be used for backfill "locally." Backfill will only be hauled underground from the surface stockpile when it is unavailable from underground sources. It is anticipated that additional backfill material will be required over the life of mine. Waste rock from development will only be hauled to the surface when underground storage areas are full and no stopes are in the backfill cycle.

When ore extraction of an entire sub-level is complete, the McIntosh mine plan includes the construction of a thin cemented floor to be placed over top of the backfill intended to minimize ore losses and maximize mucking efficiency by creating a working surface for the next mucking horizon. For costing purposes, the assumed nominal floor thickness is 10cm. The cemented floor is intended to serve as a visible and/or somewhat physical marker horizon for the LHD operator to ensure the mucking process recovers only the blasted ore material.

The mining sequence will start over again with the extraction of the sub-level above. This mining method primarily employs uncemented backfill for the bulk of the stopes. Based on the overall planned production sequence, an engineered sill pillar is required to enable mining the ore beneath the first production level. Stopes on the first and second sub levels will be backfilled with cemented backfill. The cemented backfill will serve as an artificial pillar to permit the stoping below to advance upward level by level until the stopes directly below the cemented fill are recovered. If the early stopes were backfilled with uncemented backfill, a pillar of potentially valuable ore would have been left unrecovered. The plan is to use cemented fill on the 145 and 165 elevations to maximize ore recovery.

To ensure these engineered sill pillars are constructed with quality in mind, only appropriately sized rock (crushed and screened) will be used for construction. The size distribution of the waste rock material used, and proper mixing of the cement mixture with the rock are important design constraints to monitor and control.

Preliminary mining designs completed by SRK on the Minita and South Minita zones indicate the need for a combination of both Bench and Fill as well as Cut and Fill methods. Further design work will determine the applicable mining parameters required to optimize the geotechnical and operating cost considerations.

18.1.3 Proposed Mine Layout Development

Within the McIntosh design, the planned main access to the mine is by a decline (4.5 m x 4.5 m) from a portal near the plant area to a location on the footwall side of the Minita vein at the 245 m elevation close to the center of the deposit on strike. A spiral ramp descends from there to the lowest level at -53 m elevation.

The main decline and spiral ramp will be 2,414 m in length to the point on the 145 m elevation where the initial stopes are planned. The decline will start at the portal and descends at 14.4% gradient for 372 m. The ramp will then make a 30 m radius turn and descend 771 m at a 14.5% gradient to the 245 elevation. This is close to the midpoint of the Minita vein where the stopes have above average width and grade. From the 245 elevation, the main ramp will continue down for 1,271 m to the 145 elevation where production will begin. The ramp spirals are designed to return to the same approximate location along strike with each descent of 20 m vertical m to the next sub-level. This keeps the ramp access in the midpoint of the ore zone to balance haulage distances and ventilation air flows.
Each ramp spiral includes a 15 m straight and flat interval at the entry for the sublevel access crosscut. The spirals also have straight intervals opposite the footwall and at the south side to keep the ramp close to the vein. The curves are 30 m radius. The length of each spiral is approximately 213 m at a gradient of 9.4%. Accessing stopes from the 145 m elevation down to the -53 m elevation will require an additional 2,345 m of main ramp. The shorter ramps planned to access small satellite stoping areas are designed with 20m radii and average grades of 13%.

From the sublevel access cross cuts, footwall access drifts will be driven in waste parallel to the ore body. In addition, ore development will be advanced to the extent of the vein at the prescribed sub-level interval spacing.

To access the South Minita zone, the preliminary design indicates a secondary decline 2160 m in length is required to be driven off the main access ramp noted above. Two additional ranch ramps totaling 911 m will be required to provide full coverage of this zone.

18.1.4 Mine Recovery

18.1.4.1 Crown Pillar

In the absence of a detailed analysis, a crown pillar thickness of 20 m is planned to separate the proposed underground mine from previous mine workings established since 1953. The CNI report (2004) also supports a crown pillar in the range of 15 m-19 m in thickness between the 100 m to 200 m elevation.

Approximately 48,700 undiluted tonnes at 12.7g Au/t and 92.4g Ag/t is contained in the planned crown pillar (applying cut off grade of 5.0g AuEq/t). The Minita and Minita 3 veins converge in this area to form a maximum width of just under 10 m for a small section, but average 4.6 m wide for the majority of the strike length.

If stress, rockmass and structures are favorable, the mining method of choice for pillar recovery is a simple longitudinal retreat towards the central access point with dumped upholes. Utilizing a 1:1 pillar width to height ratio, a 'skin' of thickness 5.0 m will be left behind upon final retreat. This represents an extraction ratio of 75% and assumes that rib pillars will not be required in case of breaching the 'skin'. Furthermore, a mining loss factor of 10% was applied to account for potential stability problems.

18.1.4.2 Production Stopes

A mining stope recovery of 98% was used to account for ore losses. The challenge will be to balance ore grade with dilution in order to maximize mine recovery.

18.1.5 Geotechnical

CNI in Tucson, Arizona submitted a report titled "Geotechnical Design Parameters for the El Dorado Mine, March 2004" authored by Sirkant and Nicholas. This report includes the following:

- Evaluation of the stope and pillar dimensions for mining the Minita vein;
- Evaluation of the layout of the ramp access to the mine;
- Evaluation of size of access excavations and support required, if any.

Based on the observations in the drill core and outcrops complemented by the RQD database compiled, CNI derived the geotechnical design parameters. Refer to Table 18.1.

Joint orientation data were not available. Core samples were collected for strength determination (i.e. triaxial tests, shear strength, tensile strength).

Table 18.1 Geotechnical Design Parameters (Sirkant and Nicholas, 2004)

Rock Type	Cohesion (MPa)	Friction Angle (degrees)	Density (t/m^3)	Intact UCS (MPa)	Tensile Strength (MPa)
Andesite – Chlorite Alteration	22.7	49.7	2.61	123.9	15.2
Andesite – Hematite Alteration	26.3	43.5	2.57	121.8	N/A

SRK has applied additional correction factors to the above geotechnical design parameters. Based on this limited amount of information, the net result categorically considers the rockmass to be 'good' under the Laubscher method.

SRK recommends that joint orientation data be collected to properly assess the structural design constraints. Furthermore, unfavorable structures (such as faults, dykes, shear zones) on a regional scale located immediate to the hangingwall and/or footwall need to be identified as their presence will affect stope stability. A review of the drill logs may be sufficient to determine the proximity and continuity of such planes of weakness.

Subsequent structural assessment was conducted by SRK during 2006 to characterize the structural setting of the El Dorado veining. In addition a structural review of the South Minita deposit was conducted. Further work is required to determine optimal design parameters for mine design and this will form part of the ongoing structural analyses.

18.1.5.1 Ground Support

CNI recommends that the access drifts be supported with 1.5 m length split sets on a 2.0 m x 2.0 m bolting pattern. Depending on the in situ rockmass condition, the amount, type and level of ground support may need to be upgraded. This variability in ground conditions and hence ground support requirements represent a degree of risk to the project.

SRK is in agreement that a bolting pattern is required for main access routes. Further to this, SRK recommends an active bolt (i.e. mechanical bolt, resin rebar) because of the seismicity in the area and a longer bolt length (i.e. 2.4 m length).

Cost estimates assume that only the back will be supported for stope headings and waste development. The installation of screen on the back will be considered for the main ramps as required.

18.1.5.2 Cemented & Uncemented Backfill

Backfill is generally used as a filler to provide passive support to the stope walls. By placing backfill, the unsupported stope length will be minimized. Based on a 20 m stope height, CNI recommends a maximum unsupported stope length of 17 m along strike.

The intended use of cemented backfill is to allow recovery of the sill pillars. In order to meet the production schedule, mining must begin at the 145 m elevation which will create a sill pillar below that elevation. Cemented backfill will be placed in the stopes mucked from the 145 m elevation to allow for recovery of the sill pillar below. CNI has recommended a cement content of 4%-5% to yield a 2.8MPa strength material.

18.1.6 Dilution

The dilution estimation methodology employed accounts for variations of the vein thickness. The purpose for proceeding with this method rather than assigning an overall dilution factor was to avoid over estimating dilution in the thicker portions of the vein and underestimating dilution in the thinner portions.

The estimation method employed results in an overall average dilution (both planned and unplanned) of 33%. Refer to Table 18.2 for the detailed breakdown.

Table 18.2 Overall Dilution Estimate (McIntosh, 2005)

	Material (t)	Gold (gpt)	Silver (gpt)	Proportion (%)
Planned	296,380	0.35	3.0	23.6
Unplanned	37,799	0.35	3.0	3.0
Backfill	80,893	0.00	0.0	6.4
Dilution	**415,135**			**33.2%**

18.1.7 Production Rate

Ore will be sourced from sill development and stope production.

A maximum achievable production rate of 995tpd can be realized assuming that headings are available and that cycle times are achieved for bench and fill stoping, resuing and non-resuing drifting as shown in Table 18.3. Given a maximum possible production rate of 995tpd, sustained production of 750tpd is achievable.

Table 18.3 Production Rate

	Production (t/blast)	Production (cycles/day)	Number of Headings	Production Rate (tpd)
Bench and Fill (downholes)	613	0.71	2.00	870
Ore Sill (resuing)	57	1.53	0.25	22
Ore Sill (non-resuing)	91	1.50	0.75	102
Total			**3.0**	**995**

Ground control issues will be evaluated in future studies to assure the achievability of the required production rate.

The estimated mineable ore reserve is 1.6 million tonnes, based on a 1.5 m minimum stope width, and recovering a portion of the crown pillar and the Minita 3 veins where possible. Due to the narrow nature of this deposit, the mining rate is considered to be high as the deposit is reduced at a rate of 56 m (vertical) per year.

With planned drift heights of 3.2 m, the ore production will be distributed as follows: 16% development sills, 84% stopes.

In recognition of the additional resources available in South Minita and the Bálsamo/Cerro Alto areas, further scrutiny of the mining developments are required to fully optimize the mining schedules and production rates. This work will form part of the next proposed feasibility update.

18.2 Recoverability (Metallurgy & Process Design)

Metallurgical testwork performed to date is described below. Based upon this work, the mineral processing plan, also described in this section has been developed. The El Dorado flowsheet consists of a crushing circuit, a single stage ball mill, vat leaching, a 5-stage CCD circuit and Merrill Crowe precipitation. Pacific Rim is in the process of updating this work using new and updated information. These updated results will be presented in a Feasibility Study which is currently under way.

18.2.1 Ore Description

The El Dorado deposit is described by MDA and others as chalcedonic quartz/carbonate veins containing less than 2% sulfides. The veins range from 1 m to 15 m wide. The chalcedonic portion ranges from the massive form to banded to colloform. In general, the massive chalcedony is low grade, while the banded and colloform chalcedony is ore grade. The calcite component is closely intermixed with the banded and colloform chalcedony, with crosscutting and cementing on the massive chalcedony.

The gold-silver mineralization had been identified as acanthite, electrum, and native gold and native silver. The sulfide mineralization is pyrite, chalcopyrite and trace sphalerite and galena. The gold and silver mineralization is fine grained. While complete microscopic analysis has not been undertaken, extensive check assaying of geologic samples indicate a variance of less than 2% between sample splits. This confirms the absence of "nugget" gold. Gravity separation was not considered as a viable recovery process.

18.2.1.1 Metallurgical Test History

Metallurgical test work was completed for the previous owners by Colorado Minerals Research Institute (CMRI) (Cuttriss, 1995, Phillips, 1995), Mountain States Research Institute (MSRD) (Bhappu, 1996) and Dawson Laboratories (Nadasdy, 1996, Nadasdy and Bennett, 2000). The test samples were primarily from the Minita vein. Bond Work Indicies and abrasion indices were done on the El Dorado dump ore as well as the Minita vein ore. The test programs included grind optimization studies, cyanide strength optimization studies, settling (thickener sizing) and cyanide destruction tests.

The leaching tests at all the laboratories indicated that fine grinding (270-325mesh), long leach times (96 hours), and high cyanide strengths were required to achieve optimum gold and silver recoveries.

The Dawson test work was the latest of the series, as summarized below in Table 18.4 and Table 18.5.

Table 18.4 Gold Recovery Kinetic Leach Tests

Sample	Laboratory	NaCN kg/t	Mesh Size	Recovery (%) at Specified Leach Times in Hours 24hr	48hr	58hr	72hr	82hr	96hr
Middle/Minita	Dawson	0.5	270	53.8%	89.1%	93.5%	94.2%	94.9%	95.2%
Middle/Minita	Dawson	1.0	200	62.7%	86.5%	87.9%	89.3%	90.7%	92.3%
Middle/Minita	Dawson	1.0	270	60.2%	89.3%	92.9%	94.8%	95.5%	95.7%
Middle/Minita	Dawson	1.0	325	72.0%	90.4%	93.2%	94.1%	95.2%	96.3%
Deep/Minita	Dawson	1.0	270	74.5%	85.2%	90.2%	93.4%	95.0%	96.5%
Middle/Minita	Dawson	2.0	270	88.1%	90.0%	90.9%	93.8%	95.7%	96.5%
Shallow/Minita	Dawson	2.0	270	52.9%	76.9%	84.1%	85.5%	87.9%	90.3%

Table 18.5 Silver Recovery Kinetic Leach Tests

Sample	Laboratory	NaCN kg/t	Mesh Size	Recovery (%) at Specified Leach Times in Hours 24hr	48hr	58hr	72hr	82hr	96hr
Middle/Minita	Dawson	0.5	270	22.1%	39.4%	48.4%	53.3%	56.5%	58.0%
Middle/Minita	Dawson	1.0	200	25.8%	34.9%	53.3%	54.3%	56.1%	70.6%
Middle/Minita	Dawson	1.0	270	32.9%	48.6%	67.5%	70.5%	73.0%	77.5%
Middle/Minita	Dawson	1.0	325	37.0%	57.0%	70.7%	71.0%	71.3%	71.6%
Deep/Minita	Dawson	1.0	270	25.5%	45.8%	56.8%	62.3%	65.6%	74.1%
Middle/Minita	Dawson	2.0	270	45.6%	70.2%	82.4%	81.6%	84.5%	90.0%
Shallow/Minita	Dawson	2.0	270	30.5%	44.1%	51.8%	52.5%	53.2%	71.7%

Bond Work Indices for samples identified as Minita vein ranged from 12.9kWh/st to 17.3kWh/st with an average of 14.9kWh/st (16.4kWh/t). High silica dump samples ran as high as 19.7kWh/t, while mixed silica-calcite and the site dump sample ran 12.9kWh/t, an average of 16.3kWh/st (17.96kWh/t).

Abrasion indices ranged from 0.608 to 0.451 on dump samples. In the sample whose description matched Minita vein most closely the abrasion index was 0.451.

Settling Tests were run on samples ground at p80 270mesh and p80 325mesh. Pocock Industrial tested several flocculants and arrived at a recommended 0.175m^2/t-day for thickener sizing.

CMRI conducted cyanide detoxification tests utilizing the Inco process. The tests were successful in reducing cyanide levels to 0.5mg/l in the test sample albeit at high consumptions of sodium meta-bisulfite. The high consumption was attributed to the high levels of WAD CN in the sample and the presence of thiocyanite ions.

18.2.1.2 McClelland Laboratories

McClelland Laboratories was contracted by Pacific Rim to review all the previous metallurgical testing, comment and make recommendations for further test work. McClelland recommended a new test series of grind optimization, Inco detoxification tests and zinc precipitation tests (2004a and 2004b). Samples for the tests were selected from cores by Pacific Rim. The samples were all from the Minita vein and represented the first 2-3 years of commercial production.

Staged grinding was used for all the McClelland tests. Previous test work utilized batch grinding. Stage grinding more closely replicates the actual grind curve obtained in a milling/classification circuit.

The results of the McClelland grind optimization series for gold were:

Time	100 mesh	150 mesh	200 mesh	270 mesh	325 mesh
24 hrs.	84.2% ext.	90.3% ext	97.5% ext.	97.8% ext.	96.5% ext.
48 hrs.	82.5% ext.	89.1% ext.	94.9% ext.	96.8% ext.	95.4% ext.
96 hrs.	79.9% ext.	87.5% ext.	87.9% ext.	90.1% ext.	95.4% ext.

The results of the McClelland grid optimization series for silver were:

Time	100 mesh	150 mesh	200 mesh	270 mesh	325 Mesh
24 hrs.	47.5% ext.	47.7% ext.	50.9% ext.	48.7% ext.	53.0% ext.
48 hrs.	59.9% ext.	59.9% ext.	64.1% ext.	60.3% ext.	61.8% ext.
96 hrs.	68.2% ext.	71.8% ext.	78.3% ext.	64.1% ext.	72.7% ext.

The results clearly indicate that preg robbing was occurring in the samples tested. As no organic carbon was found by assay in the sample, the preg robbing was attributed to the clays identified in the ore. McClelland proposed and tested a high lime pretreatment of the ore to pacify the clay activity. The high lime pretreatment eliminated the preg robbing characteristics at leach times of 24 to 48 hours and substantially minimized the effect at longer leach times.

In an attempt to raise silver recoveries McClelland ran optimization tests utilizing lead nitrate. The silver recovery and rate of recovery were improved by the addition of lead nitrate. Optimum results were obtained at additions of 0.05kg/tonne of lead nitrate.

McClelland ran an optimization series of cyanide strengths at 200 mesh grind. The cyanide optimization tests indicated that recoveries and rate of recovery were maintained at a 1.0g/l cyanide strength.

McClelland then conducted a confirmatory test utilizing the optimized conditions. The conditions were:

- Grind p80 200 mesh
- High Lime Pretreatment
- Sodium Cyanide 1.0g/l
- Lead Nitrate 0.05g/l

The results were:

Time Hrs.	Recovery, %	
	Gold	Silver
24	91.8	87.6
36	92.3	88.0
48	92.5	88.8

The tailings from the optimization tests were sent to Pocock Industrial in Salt Lake City for settling and viscosity tests (Pocock Industrial, 2006). Pocock determined a thickener sizing of $0.08m^2$/t-day with flocculent. The samples settled quickly to densities of up to 70% solids. Pocock's viscosity tests indicated that the slurry should be limited to 60% solids for handling.

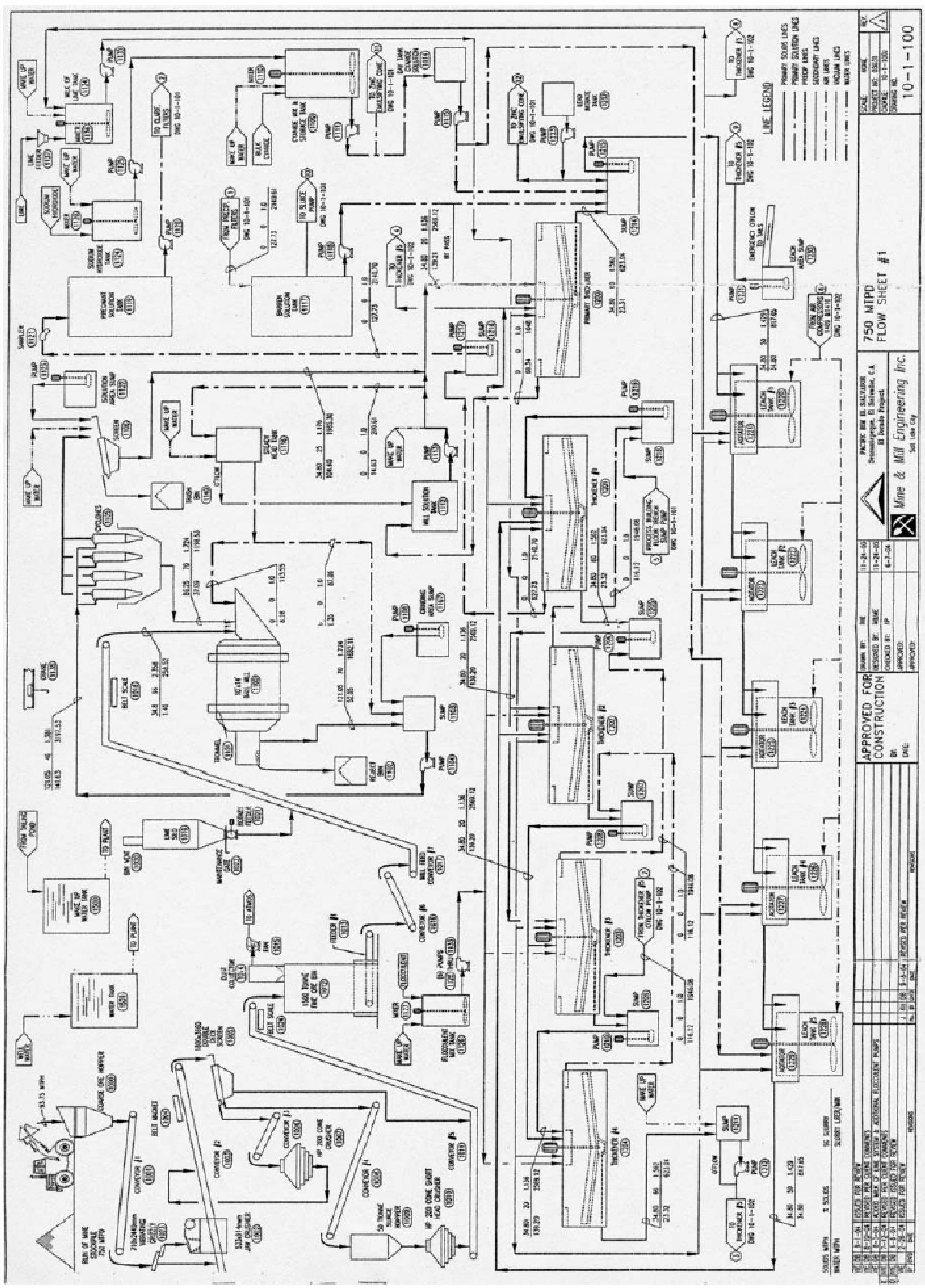
The tailings after thickening and viscosity testing were returned to McClelland (2004a, 2004b) for Inco cyanide testing. The samples were "spiked" with sodium cyanide to restore cyanide levels to the values expected in the operating circuit. Target conditions were 5:1 SO_2/CN ratio, Cu++ as catalyst at 15-20ppm, 120 minute retention time. The cyanide content was reduced from 477mg/l to 0.065mg/l WAD CN. The drinking water standard for WAD CN is 0.2mg/l.

McClelland did not conduct any Bond work index or abrasion index tests due to lack of sample.
In 2007, McLelland Laboratories Inc. reported on testwork on the South Minita and Minta cores to characterize the metallurgical, settling , and amenability to INCO cyanide destruction characteristics of the ores (see section 18.2.5).

18.2.2 Mineral Processing

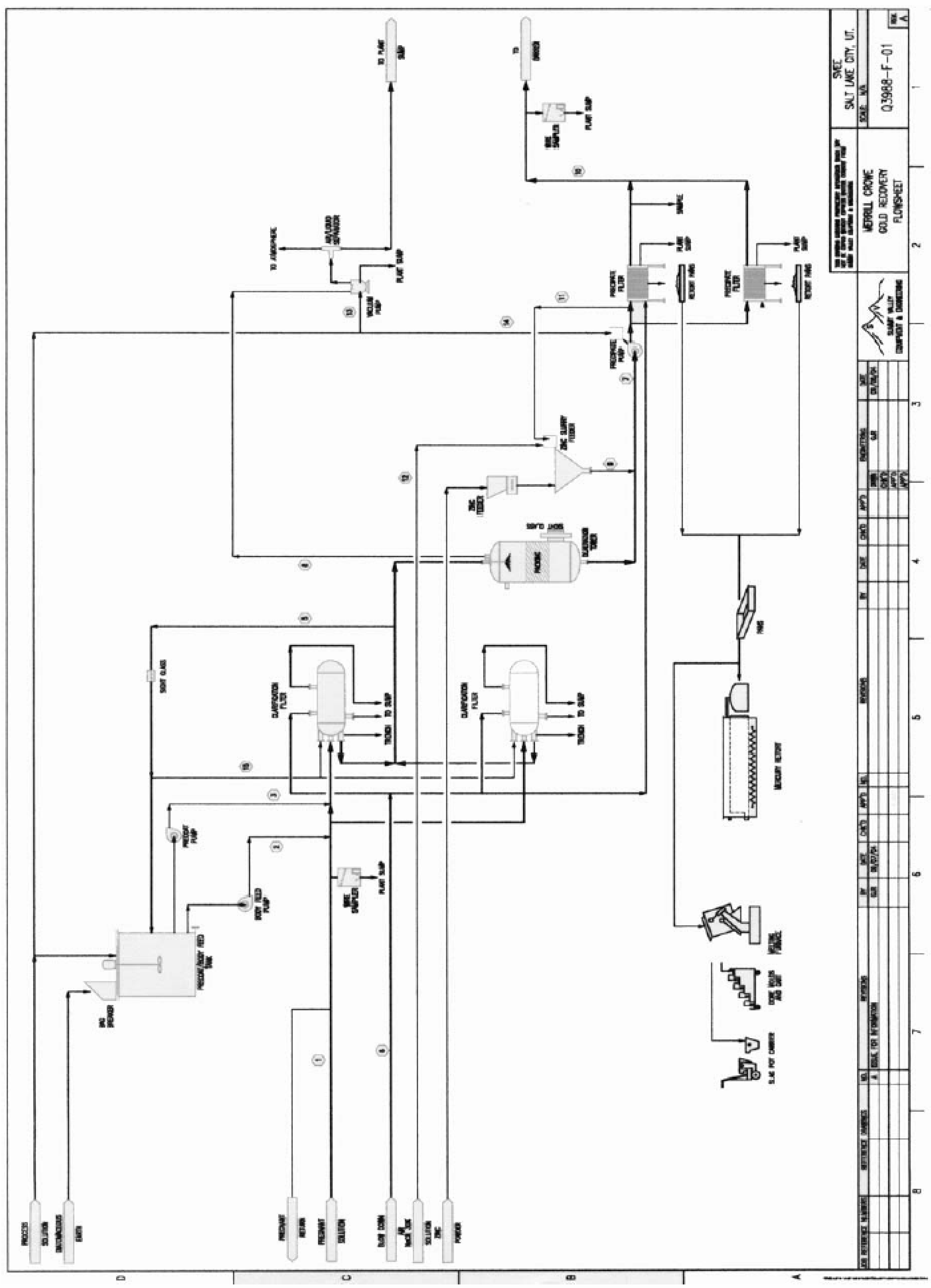
The El Dorado process plant has a design throughput rating of 750tpd at 90% availability i.e., 835tpd. The ball mill and thickeners are sized for a 1,000tpd maximum throughput. The design crushing system is rated at 130tph, which will provide crushing on a 8-hour shift for 835tpd. The Merrill-Crowe and refinery systems are sized to handle the 1,000tpd throughput if desired. The leaching system is designed to provide 50 hours retention time at 835tpd. In order to increase total throughput to 1,000tpd, additional leach tanks will be required. Excess leaching time should be avoided. McClelland's test work indicates that even with pretreatment slight preg robbing will occur at 48-72 hours leach time. Figures 18.1 and 18.2 show the flow sheet for the El Dorado processing plant. Table 18.6 summarizes the design criteria. A conventional 5-stage counter current decantation ("CCD") plant with doré recovery by zinc precipitation (Merrill-Crowe) will be used. Other options are filtration with zinc precipitation or Carbon in Leach ("CIL") with doré recovery by electrowinning. The excellent settling characteristics of the ore favor the CCD over filtration. Numerous studies of the economics of CIL vs. CCD indicate that when the recovered silver to gold ratio is over 3.5, the economics favor the CCD. The El Dorado ratio is 8:1. The CCD system reduces the amount of cyanide reporting to the Inco cyanide destruction unit by one-third to one-half, thereby reducing the Inco reagent costs.

Figure 18.1: Process Flow Sheet for Crushing and Leaching



SRK Consulting Engineers and Scientists			Process Flow Sheet for Crushing and Leaching
Project No. 151401	Date January 2005	Revision B	

Figure 18.2: Process Flow Sheet for MC Precipitation – Dore



SRK Consulting
Engineers and Scientists

Project No.	Date	Revision	Process Flow Sheet for MC Precipitation - Dore
151401	January 2005	B	

Table 18.6 El Dorado Process Plant Design Criteria

Plant Area	Description	Value(s)
Operating Schedule	Crushing	1 shift/day; 365 days/year
	Processing	3 shifts/day; 365 days/year
Design Throughput	Crushing	130tph
	Processing	835tpd; 750tpd @ 90% availability
Design Recovery	Gold	95% maximum
	Silver	91% maximum
Crushing	Impact index	9.80
	Abrasion index	0.50
	Product	95% -10 mm
Grinding	Bond index	18.0kWh/t
	Product	p80 -200mesh
	Calculated work index	19.04kWh/t
	Ball mill circulating load	250%
	Abrasion index	0.50
Leaching	Retention time	48 hours
	Air sparge	0.175l/m^3 pulp @ 68.65kPa
	Pulp density	50% solids
	Flow	Gravity
Thickeners	Feed	20% solids
(1 grind; 5 CCD)	Underflow	60% solids
	Design area	0.10m^2/tonne-day (flocculated)
Merrill-Crowe	Maximum flow rate	110m^3/hr
	Clarifier flow rate	0.61 l/s-m^2
	Filter press flow rate	0.61 l/s-m
	Press capacity	100kg precipitate
	Precoat and body feed	Diatomaceous earth
	Zinc addition rate	1.5g zinc/g doré
Retort and smelting	Mercury retort	200 kg capacity; wet precipitate
	Crucible furnace	Diesel-fired
	Flux/ precipitate ratio	1:1
	Furnace capacity	2 charges/8 hour shift
	Doré bars	175kg
Reagents	Lime (total)	2.6kg/t
	Lime (mill feed)	2.0kg/t
	Lime (leach/thickeners)	0.6kg/t
	Sodium cyanide (total)	0.30kg/t
	Sodium cyanide (leach)	0.29kg/t
	Sodium cyanide (MC)	0.01kg/t
	Flocculent (total)	0.045kg/t
Cyanide Destruction	Sodium meta-bisulfite	1.360kg/t
	SO_2 as meta-bisulfite	5:1 CN
	Cu as $CuSO_4$ concentration	17 g/l
	Air sparge	0.175l/m^3 pulp @ 68.65kPa
	Retention time	3 hours

18.2.2.1 Crushing

Run of Mine ore will be fed into a feed bin by a front end loader. The ore will be fed at a controlled rate by a pan feeder to a vibrating grizzly deck with 4" bar spacing. The oversize at +4" will report to a 22" x 36" jaw crusher with a close side setting ("CSS") of 4". The crushed product will join with the grizzly undersize and be conveyed to a 6' x 12' double deck screen with 1" and ⅜" screens. The +1" will be crushed in a Standard HP 200 (4.25 ft equivalent) crusher with a ⅞" CSS, operating in closed cycle with the screen. The –1"+⅜" will report to a short head HP200 (4.25ft equivalent) crusher with a CSS of 5/16" operating in open circuit. The 100% -⅜" material on the screen will join with the 90% -⅜" material from the short head crusher and be conveyed to a 1500t (live capacity) silo. The crushing system will be equipped with belt scales and electro-magnets. The 1500t silo will have a dust collection system.

18.2.2.2 Grinding

Ore will be withdrawn from the 1,500t bin at a controlled rate by a variable frequency drive ("VFD") belt feeder. The ore will be fed to the 10' x 14' 1,000hp ball mill by a series of belt conveyors. Pebble lime will be added to the belt conveyors from a 40 tonne silo by a VFD rotary valve. The ore feed rate and lime addition rate will be controlled by a programmable logic controller ("PLC"). The ball mill operates in closed cycle with a bank of 4 hydrocyclones (3 operating and 1 spare). Cyclone underflow returns to the mill feed for further grinding. The mill is designed for 250% circulating load. The cyclone overflow at 80% -200 mesh size and 30% solids is sampled, gravity flows to a trash screen and then to an 11.5m diameter conventional grind thickener.

18.2.2.3 Leaching

Leaching will be done in a series of five 9m x 9m agitated tanks. The tanks will be air sparged at the rate of 0.175 liter air/m^3 pulp. The slurry will flow tank to tank by gravity. The leached pulp will gravity flow to the first CCD thickener.

18.2.2.4 Counter-Current Decantation

Counter-current decantation ("CCD") will be done in five 11.5 m diameter thickeners. In the CCD circuit the thickener underflows at 60% solids will be pumped from thickener #1 to #5. Thickener overflows will flow counter current from thickener #5 to #1. Cyanide free water will be added to the feed of thickener 5. Overflow from thickener 1 will be pumped to the pregnant solution tank for feed to the Merrill-Crowe plant. Underflow from thickener 5 will be pumped to the Inco cyanide destruction unit.

18.2.2.5 Cyanide Destruction

The underflow from thickener 5 at an estimated 300ppm cyanide will be treated in an Inco destruction unit to levels of less than 0.2mg/l WAD CN. The feed will be diluted to 40% solids by make up water and agitated with sodium meta-bisulfate, copper sulfate and excess air for a minimum of 3.0hrs in a 9 m x 9 m reactor vessel. The treated tails will be pumped to the tailings disposal area. A portion of the tailings will be hydrocycloned to provide suitable sand for mine backfill[11].

18.2.2.6 Precipitation (Merrill-Crowe)

Pregnant solution will be clarified in a pressure leaf filter, then deaerated in a vacuum tower. Pulverized zinc metal will be added to the clarified deaerated solution through a cone. Gold and silver sludge will be precipitated and recovered in a recessed plate filter press. The filter press will be manually cleaned as required. The clarifiers and filter presses are duplicated so that plant operations can continue without interruption during cleaning cycles.

Diatomaceous earth required as filter aid will be added to the clarifiers and presses as both pre- coat and body feed. The Merrill-Crowe unit will be equipped with flow meters, dissolved oxygen meters and samplers. The barren solution from the filter presses will be pumped to the mill barren solution tank.

18.2.2.7 Retorting & Smelting

The precipitate from the filter presses will be manually loaded into a retort for mercury removal. The retorted precipitate will be mixed with fluxes and smelted in a diesel fired crucible furnace. The resultant bar or button will be shipped off site. Clean slags from the smelting process will be processed through the mill. Slags containing visible doré beads will be crushed and resmelted.

18.2.2.8 Reagents

Lime

Pebble lime will be added to the mill feed belt. Lime for pH control in the leach and CCD system will be provided by a pulverized lime mixing system and a milk of lime loop.

Sodium Cyanide

Sodium cyanide in solid form will be dissolved in a mix tank and transferred to a day tank. A cyanide loop system will provide metered addition to the leach system. A separate metering pump will supply sodium cyanide solution to the MC zinc cone as necessary.

Flocculent

Dry flocculent will be mixed by an eductor to a 1% solution and aged. The aged flocculent will be pumped by individual Moyno-type pumps to each thickener in the circuit.

[11] The concept of using this material as backfill was first introduced in the 2005 pre-feasibility study. This prompted some questions from MARN as the concept had not appeared in the earlier EIS. Pacific Rim has resolved the matter with MARN.

Lead Nitrate

Dry lead nitrate will be mixed to a 20% solution and meter pumped to the leach circuit. A separate metering pump will be utilized to add the solution to the MC zinc cone as necessary.

Antiscalent

Antiscalent will be received in liquid form in returnable carboys. The antiscalent will be meter pumped to location as necessary.

18.2.3 Ancillaries

18.2.3.1 Assay and Sample Preparation Laboratory

The assay and sample preparation laboratory will be in a 10 m x 18 m pre-engineered steel building adjacent to the process building. The sample preparation laboratory will have the capability to process both mine and process plant samples for assaying. The assay lab will contain complete sample preparation facilities and metallurgical test facilities. The assay laboratory will be equipped with fire assay ("FA") and atomic adsorption ("AA") capabilities. The laboratory will be capable of performing 50 FA analyses per shift. The AA will be utilized for plant solution assays and cyanide soluble solids analysis.

18.2.3.2 Cyanide Storage

Sodium cyanide will be stored in a 14 m x 31 m pre-engineered steel structure. The storage structure will be constructed with appropriate containment and access control measures.

18.2.3.3 Plant Maintenance

Mechanical and electrical maintenance operations will be housed in a 12 m x 15 m pre-engineered steel building adjacent to the assay laboratories. The building will contain maintenance offices.

18.2.4 Metallurgical Recovery

The operating recoveries for the El Dorado process plant will be 92% for gold and 88.3% for silver. In testing, McClelland averaged 92.5% gold and 88.8% silver extractions. Pocock's CCD balances indicate soluble recoveries of 99.2% to 99.6% in a 4-stage CCD circuit. The soluble recovery in the planned 5-stage CCD circuit will be 99.5%. Other losses for the plant slag and unaccounted losses will total about 0.45% recovery loss.

18.2.5 2007 Metallurgical Testing

McLelland Laboratories Inc. reported on large-scale confirmatory cyanidation tests in 2007 (McClelland Laboratories, Inc., 2007), using the same optimum conditions as in their 2004 Minita vein testwork (McClelland Laboratories Inc., 2004a, 2004b). The following information (Table 18.7 and excerpt following) from their March 2, 2007 report summarize their findings. Core composites were formed from the Minita vein, ("MV"), the South Minita vein ("MSV") and the combined overall composite ("OE").

Table 18.7 Summary Metallurgical Results, Confirmatory Cyanidation Tests, Three Core Composites, P_{80}75µm Feeds

	Extracted g/mt ore		Trail Grade, g/mt		Calc'd Head, g/mt ore		Recovery, percent		Reagent Cons., Kg/mt ore		
Core Composite	Au	Ag	Au	Ag	Au	Ag	Au	Ag	NaCN	Lime[1)]	$Pb(NO_3)_2$[2)]
MV	15.48	92.5	1.26	11.7	16.74	104.2	92.5	88.8	0.30	2.6	0.05
MSV	9.044	73.79	0.599	10.33	9.643	84.12	93.8	87.7	0.24	3.0	0.05
OE	9.428	48.89	0.810	9.67	10.238	58.56	92.1	83.5	0.35	2.9	0.05

1) Includes high calcium hydrated lime (HCHL) added during high lime pretreatment.
2) Lead nitrate added

According to McClelland Laboratories Inc., (2007):

"Results show that the three composites were readily amenable to the processing sequence optimized for the MV core composite. Testwork in 2004 showed the grind size could be coarsened to P_{80}75µm from that originally (pre-2004) optimized at P_{80}45µm. The "preg-robbing" nature of the ore can be significantly minimized by high lime pretreatment and silver recovery can be improved with $Pb(NO_3)_2$ addition (0.05 kg/mt).

Retention time was decreased from 96+ hours to 24-36 hours. Cyanide consumption (~0.3 kg/mt average) is lower than the pre-2004 indications because of the efficiency of high lime pretreatment and cyanidation at pH 10.8 rather than pH 10.2. Lime requirements remain moderate at about 2.8 (average) kg/mt of ore.

Zinc precipitation test results show that over 99% of the dissolved Au and Ag values can be recovered from pregnant solutions from the three core composites. The Zn:PM ratio of 3.0, which provided best precipitation results, should be much lower (1.0-1.5) in commercial practice."

Bond Work Indices ("BWI") and abrasion indices ("Ai") tests run on the combined overall core composite were 15.1 and 0.3667, respectively. The BWI tests run on South Minita only ore and wall rock samples exhibited indices of 11.06 and 14.61 respectively. Ai testwork on these samples resulted in indices of 0.2560 and 0.1871 respectively.

"BWI and Ai results for the OE core composite were considered most reliable because of the OE composite contained all mineable materials (inc. hanging and foot wall [*sic*] materials) and the BWI was conducted using a closed circuit ball mill and a target grind of 75µm (200M [mesh]) rather than a minus 150µm used for the MSV [Minita South vein] core composite.

Gravity sedimentation and pulp rheology data provided by Pocock Industrial showed reasonable settling and viscosity characteristics and no specialized equipment will be required for the commercial CCD circuit."

Environmental characterization and INCO detoxification testwork and analyses were conducted by Pocock Industrial on the leached pulp and final tail solids from the above confirmatory metallurgical test of the combined overall composite. The filtered solution, after INCO detoxification contained 0.14 mgWAD CN/L, well below the US drinking water maximum contaminant levels. The static acid rock drainage ("ARD") Potential Test of the final tail resulted in a paste pH of 8.34 and oxidizable $S^{=}$ content of 0.010 weight percent. The net neutralizing potential was extremely high at +313 tons/CaCO3/1000 tons and the ratio of acid neutralizing potential ("ANP") to acid generating potential (AGP) was 1043. This compares to the US regulatory guidelines of NNP of +20 and a ratio of 2. Results for the South Minita vein in isolation were pH=8.10, NNP= 429 and ratio =196. The INCO detoxification test resulted in a final filtered cyanide concentration of 0.11 mgWAD CN/L.

18.3 Markets

Gold markets are mature and global markets are strong, with reputable smelters and refiners located throughout the world. Demand for gold is presently high with prices for gold showing a remarkable increase during the past year. London PM Fix price averaged US$877/ounce in January 2008.

18.4 Contracts

Gold produced at El Dorado will be sold shipped to a refinery and will be subject to conventional refining terms and conditions. Currently there are no signed refining agreements.

Pacific Rim may also choose to develop its decline into the mine using contractors. This decision has not been finalized and there are no agreements in place for contractor development.

18.5 Environmental Considerations

The project has been designed to meet El Salvador laws and regulations, and international and North American good practices for engineering design and environmental management. Comprehensive environmental and social baseline studies have been completed to provide supporting information for project design and the project environmental impact study ("EIS") (Gochnour et al., 2005). The EIS has been prepared in accordance with the Terms of Reference issued by the Ministry of the Environmental and Natural Resources ("MARN"), and World Bank Group/International Finance Corporation ("IFC") guidelines. The EIS was submitted to MARN in early September 2004.

After achieving technical approval of the EIS in August 2005, Pacific Rim was instructed to publish the EIS in its final version. The final version of the EIS was available the latter part of September 2005 (Gochnour et al., 2005). In October 2005 the company was instructed to proceed to public consultation. In accordance with the requirements of the law, the EIS was available for public comment and review in the offices of the government October 5-18, 2005. Pacific Rim received the resulting public comments on March 29, 2006, and submitted answers to MARN's questions October of 2006. The EIS has been neither approved or rejected as of this writing.

18.5.1 Legal Requirements

18.5.1.1 El Salvador Laws & Regulations

The EIS contains a detailed description of El Salvador environmental laws and regulations. A brief summary is provided below.

The Political Constitution of the Republic of El Salvador of 1983 declares that the protection, conservation, rational development and restoration of natural resources are of social interest. Mining and exploration projects are regulated under the Mining Law and Its Reforms, Decrees 544 and 475, 2001, and the Regulation of the Mining Law, Decree No. 68, July 19, 1996. Highlights of the Mining Law and its Regulation follow:

- Exploration, mining and processing must be conducted in accordance with technical and mining engineering requirements, as well as internationally established guidelines (Art. 117);
- An approved environmental impact statement is required to convert an exploration concession into an exploitation concession;
- The rights to land occupation, water supply and rights of way, etc. for the duration of the project are established;
- Accepted international norms on emission levels and effluent limits must be complied with (Art. 25 of the Regulation);
- A financial security (bond) must be posted; and
- Explosive and waste management requirements are specified.

The Environmental Law, Decree No. 233, 1998 and the General Regulation of the Environmental Law specify the following:

- An environmental permit from MARN, based on the approval of an Environmental Impact Assessment ("EIA"), is required for exploration, exploitation and industrial processing of minerals and fossil fuels;
- The environmental permit requires the company to implement prevention, minimization or compensation measures established in the environmental management program, which is a component of the Environmental Impact Assessment;
- Public consultation is required for the Environmental Impact Assessment; and

- A financial security (bond) is required that covers the total cost of the facilities or investment required to comply with the environmental management plans included in the Environmental Impact Assessment.

Numeric standards for ambient air quality; emissions from fixed sources; maximum environmental noise levels; water quality and effluent limits are specified in various norms and regulations, including the Special Regulation of Technical Norms for Environmental Quality, Decree No. 40, and the Special Regulations for Wastewater, Decree No. 39. Other environmental management regulations include:

- Special Regulation on Solid Waste Management, Decree No. 42;
- Special Regulation on Hazardous Substances and Wastes, Decree No. 41; and
- The Law Regulating the Deposit, Transport and Distribution of Petroleum Products.

The Law of Wildlife Conservation, Decree No. 844 covers the protection, restoration, management, development and conservation of wildlife. Activities such as hunting, collection, commercialization, use and development of wildlife are regulated under the law.

The Forest Law, Decree No. 268, regulates the forest industry. The Law covers the conservation, improvement, restoration and growth of forest resources according to the principles of multiple use, and the rational development and management of forest and forest areas and renewable natural resources.

Health and safety are regulated under the Health Code, Decree No. 955. The purchase of explosives is regulated under the Law of Control of Fire Arms, Munitions, Explosives and Similar Articles, and its Regulation. The National Civil Police are responsible for the transport of explosives.

18.5.1.2 Licenses & Approvals

Pacific Rim holds three Exploration Licenses and has applied for an exploitation concession. These are described in Section 4.1.1.

In November 2003, Pacific Rim submitted an EIS for exploration programs within the El Dorado exploration licenses, which was approved by MARN on June 15, 2004 (Resolution No. 151-2004).

For the proposed project, the most important permit required by the El Salvadoran government is the Environmental License. As noted above, the license is issued based on the review and approval of a comprehensive EIA by MARN. An EIS is also required for the following:

- Water use; and
- The use, disposal and transport of hazardous materials.

The review period for an EIS specified in the Environmental Law is 60 days, although the review period may be extended an additional 60 days for reasons of complexity. Once MARN has approved the EIS, the period specified for the issuance of the environmental license is 10 days.

According to Pacific Rim's annual report for 2007:

> " In September 2004, the Company submitted an EIS to MARN for a 750 tonne per day operation. In September 2005, the finalized EIS (incorporating comments from MARN) was resubmitted to MARN, which then granted technical approval of the EIS, and instructed the Company to submit the EIS for public comment, which was carried out in October 2005. In March 2006, the Company received from MARN a list of issues raised during the public comment period and was asked to amend the EIS to address these and a number of other issues. During fiscal 2007 the amended EIS was resubmitted to MARN, which requested clarification on a number of items. The Company's responses to these requests have been provided and no further developments occurred during the remainder of fiscal 2007. The Company is currently awaiting further instructions from MARN or final acceptance of the EIS and granting of an environmental permit.

The 2007 annual report also states that:

> " In accordance with El Salvadoran Law, Pacific Rim presented a request for the conversion of this 12.75 square kilometer portion of the El Dorado exploration licenses to an exploitation concession on December 22, 2004. The conversion process is currently pending ministerial acceptance of Pacific Rim's Environmental Impact Study (see below and Section 11) and issuance of the environmental permits. El Salvadoran administrative rules and procedures give Pacific Rim exclusive rights to the exploitation concession area while the permitting process is underway.

18.5.1.3 Institutional Capacity

There are no modern mining operations in El Salvador; therefore, the government regulators have not had the opportunity to develop a complete understanding of mining processes and mining environmental management. Nor has El Salvador established comprehensive mining environmental management regulations. The primary concerns associated with limited institutional capacity include:

- Limited technical resources for reviewing permit applications (i.e. the EIS), potentially resulting in approval delays;
- Unclear permitting requirements, potentially resulting in approval delays and/or perceived non-compliance; and
- Potential for development of regulations or compliance criteria that are not relevant and/or applicable to mining operations.

These concerns can generally be avoided by frequent and consistent communications with government officials and by providing educational assistance. Pacific Rim has been in regular communication with the economic and environmental ministries on the progress of the project and the EIS.

Pacific Rim has approached the government with suggestions for educational support. MARN has been very sensitive to potential perceptions of conflict of interest and to date has not accepted invitations from Pacific Rim for educational tours of modern mining operations in other countries. However, an educational seminar on Mining and the Environment sponsored by Pacific Rim in August 2004 was well attended by personnel from both MARN and the Division of Hydrocarbons and Mines.

18.5.2 Pacific Rim's Requirements

18.5.2.1 Environmental Policy

Pacific Rim's Environmental Policy, dated January 2004, is provided in the EIS. The Policy states that Pacific Rim is committed to the concept of Sustainable Development, which includes balancing the management of resources with the protection of human health and the environment, and the with the needs of economic growth. Commitments include:

- Implementing administrative and operational practices to ensure that the installations comply with applicable legislation for protection of the workers, the public and the environment.
- Maintaining ongoing auditing and review to ensure compliance with government and company policies.
- Ongoing evaluation of available technologies for reducing environmental effects and improving levels of compliance.
- Applying norms and procedures, in the absence of legislation, to promote environmental protection and minimize environmental risks.
- Maintaining communication and coordination with authorities, workers and the public to protect the environment.
- Supporting cost effective improvements and solutions to environmental problems.
- Reporting the progress of the company regarding environmental compliance.

18.5.2.2 International Good Practices

The project has been designed to meet international good practices for engineering design and environmental management. These practices have been developed by international nongovernmental organizations ("NGOs") such as the World Bank Group, the World Health Organization ("WHO") and the United Nations, or adopted from laws and regulations developed by government organizations of the industrialized nations.

Financial institutions typically require that mining projects being considered for project financing meet World Bank Group environmental guidelines. On June 4, 2003, ten leading banks from seven countries announced the adoption of the "Equator Principles," a voluntary set of guidelines that are used to standardize the review of social and environmental issues associated with projects being considered for financing, and to promote environmentally and socially responsible development. The Principles outline the specific World Bank Group policies and guidelines that would be considered during the financial and due diligence review for a project, and emphasize the development of a project specific Environmental Impact Assessment, Environmental Management Plan and public consultation program.

An overview of the environmental policies and guidelines from the World Bank Group and other international guidelines applicable to El Dorado are summarized in Section 3.4 of the EIS (Gochnour et al., 2004, 2005). The EIS also provides a summary of numeric guidelines from World Bank Group industry sector guidelines for wastewater effluent, ambient air quality and noise, and comparisons to the El Salvadorian standards.

18.5.2.3 Environmental Impact Assessment

Pacific Rim contracted Vector Colorado, an international environmental engineering firm, to conduct environmental baseline studies and prepare the EIS in November 2003. Vector assembled a multidisciplinary team of engineers, scientists and sociologists with experience in environmental impact assessment for mining projects located in Central America to prepare the EIS. The team included Consultoria y Tecnología Ambiental, S.A. ("CTA"), a Guatemalan environmental firm, which was responsible for local management and preparation of many of the environmental baseline studies and for preparing the Spanish EIS report. CTA has extensive experience preparing environmental impact assessments and in 2003 prepared the EIS for Montana Exploradora's Marlin project located in western Guatemala. Montana Exploradora is a subsidiary of Glamis Gold.

MARN issued initial Terms of Reference for the EIS in the fall of 2003. Final Terms of Reference were issued July 30, 2004. The EIS was completed in early September 2004 (Gochnour et al., 2004) and submitted to MARN for review.

Pacific Rim and Vector responded to comments from MARN and the public during the year following the submission of the EIS, and re-issued the EIS in final form in September of 2005 (Gochnour et al., 2005). Subsequent to that discussions and clarifications took place, and the EIS was again re-issued in October of 2006.

18.5.2.4 Environmental & Social Baseline Studies

Comprehensive environmental and social baseline studies were conducted for the EIS in accordance with World Bank/IFC guidelines. The baselines studies incorporated information from previous studies conducted at the site, including:

- SRK, Inc & Enertech, S.A. 1997. Baseline Study El Dorado Project El Salvador. Prepared for Kinross Gold USA, Inc. SRK Project No. 73403.
- Hydro-Triad, Ltd., Mina El Dorado PreFeasibility Report, March, 1995.

Information in these studies was supplemented by additional studies conducted between January and July 2004. The results of the environmental and social baseline studies are reported in Section 5 of the EIS (Gochnour et al., 2005). The following provides a brief summary of the results of the physical and biological baseline studies:

Ambient Air Quality and Noise

Low air pollutant concentrations are expected in the vicinity of the project due to its remote location from industrial sources of particulate matter and gases. In late 2003, Pacific Rim initiated monitoring of baseline concentrations of respirable particulate matter. Monitoring was conducted every six days in accordance with US Environmental Protection Agency ("USEPA") standards. The results indicate that background concentrations of respirable PM10 (particulate matter less than 10 microns in aerodynamic diameter) are well below World Bank guidelines. Ambient noise levels are also within World Bank guidelines.

Water Resources

The Exploration License areas are located within the river basins formed by the Copinolapa River and the Titihuapa River, and are drained by tributaries of these rivers. The rivers flow into the Lempa River which empties into the Pacific Ocean.

The principal drainage within the project area is the San Francisco River, which flows west to San Isidro where it flows into the San Isidro River. The San Isidro River flows south to empty into the Titihuapa River south of the project area. Water from the rivers is used for irrigation and livestock watering.

There are many springs in the study area. The springs located in the upper San Francisco and Cacahuatal Rivers, upgradient of the project area, are used as a water supply by communities in the vicinity of San Francisco and San Isidro. Groundwater resources in the area have not been developed; during the dry season, water supplies for both human consumption and agriculture are limited.

In 1995 a surface water quality monitoring program was initiated, which included six stations within the study area. Quarterly monitoring continued through 1999. Pacific Rim resumed the water quality monitoring program in the fall of 2003. Two sites were added to the monitoring program at this time; one on the San Francisco River and another on the Quebrada Las Lauras.

The results of the surface water quality studies indicate that the water is hard to very hard and has a slightly alkaline to neutral pH. With the exceptions of fecal coliform bacteria and seasonal sediment loading, the data indicate that the water quality is generally good with low to fairly low alkalinity, conductivity, nitrates, sulfates, total suspended solids and metals.

Groundwater quality appears to be relatively good and comparable to surface water quality. The groundwater is generally classified as hard to very hard, with a slightly alkaline to neutral pH, and low to fairly low alkalinity, conductivity, nitrates, sulfates, and metals.

Soils

Land in the study area is used primarily for grazing and farmland. Soils are generally clayey and topsoil is shallow, which is likely due to erosion. In general, the soils are poor and contain little organic matter. The soil capability (suitability of soils for various uses) indicates crop limitations or unsuitability for cultivation, which limits the use of the majority of the project area to pasture or forest.

Flora and Fauna

Extensive agricultural operations and livestock grazing have altered the natural environment of El Salvador. The countryside in the project area consists of gently rolling hills in the valleys surrounding higher flat topped mesas and steep cinder cone hills. The land within the valleys has been heavily impacted by human activities for agricultural use and cattle ranching, which has resulted in a countryside characterized as patches of cultivated areas mixed with herbaceous areas. No native tropical rainforest remains in the study area. Where trees exist, they are very dispersed. Small patches of secondary forest exist along rivers and sometimes along fences and roadways. No protected, threatened or rare species were found with the study area, and no protected areas exist near the study area. Five different species of fish were found in the rivers of the study area.

18.5.2.5 Impact Assessment Results

The impact analysis (Section 6 of the EIS) was applied to all physical, biological and socioeconomic resources that have the potential to be affected by the proposed project during the construction, operations and closure phases of the project. No significant negative impacts were identified. Most potential impacts will be mitigated by proper engineering design and construction and the use of standard international good practices for environmental management.

The following provides a brief summary of the physical and biological impact assessment results:

Air Quality

An emissions inventory of gaseous and particulate emissions was completed for the project. The results of the emission inventory indicated that project would be considered a minor source for gaseous pollutants and a major source for particulate pollutants. Ambient air quality impacts due to emissions of PM10 and Total Suspended Particulates ("TSP") were assessed using an Industrial Source Complex – Short Term model Version 3 ("ISCST3"), an air quality dispersion model developed by the USEPA. The results of the model indicate that daily and annual ambient air quality concentrations of PM10 and TSP would be in compliance with World Bank and El Salvador criteria. Monitoring of PM10 will be conducted to verify performance of dust control mitigation measures and the results of the impact assessment.

Noise

Ambient noise in the vicinity of the project will increase. Noise emissions from the project were estimated, and a noise model conducted to determine potential impacts. The results of the model indicated that the level of noise at the closest receivers outside of the project area will not surpass World Bank guidelines. Noise monitoring will be conducted to confirm the prediction and additional measures will be taken if necessary.

Flora and Fauna

The ecosystems in the disturbance areas are dominated by pasturelands and thickets with dispersed trees. Potential impacts to flora and fauna will not be significant. All disturbance areas will be reclaimed using native species of trees and other vegetation. In addition, Pacific Rim plans to implement a reforestation program along the San Francisco River and in other areas of the project site.

Negative impacts to water quality would also impact aquatic life. Water quality impacts are discussed in more detail below. In general, short term increases in turbidity and suspended solids would be expected during earthwork activities until the disturbance areas are stabilized and revegetated.

Water Resources

Concerns regarding impacts to water resources were carefully reviewed in the impact analyses. The results of the water resources impact analyses are summarized in the following subsections.

Mine & Ramp Dewatering

During construction and operation, groundwater will be pumped from the ramp and old mine workings and discharged into the San Francisco River. Currently much of the water in the river is diverted for agricultural and ranching uses upstream of the project area. Therefore, the additional flows would be considered a positive impact by downstream water users.

At closure, dewatering will cease. Groundwater will no longer be discharged from the mine into the San Francisco River and the stream flow will return to pre-mining levels.

Mine Development Rock Management

In general, potential negative impacts to water quality associated with the development rock stockpile are low. The mining operation will produce a relatively small quantity of development rock that would be stored in a stockpile near the portal. All development rock will be returned to the mine for use as backfill prior to the end of operations. The results of waste characterization testing, discussed in Section 4.7.4.4 of the EIS, indicate that the potential for water quality impacts due to runoff or seepage from the development rock stockpile is low. Acid generation is currently not occurring, and the potential for acid generation to occur in the future is low due to high excess neutralization potential in the rocks. In the absence of acid generation, the potential for high concentrations of leachable constituents from mine wall rock and development waste rock is also low.

Tailings Impoundment Development & Effluent Discharges

Tailings characterizations studies indicate good quality in the detoxified process water and the extract from leach testing of detoxified tailings solids. Arsenic and mercury concentrations in the detoxified process water are slightly elevated and are in excess of benchmark effluent levels proposed for the project. The detoxified process water and the tailings extract also contain elevated sulfate and total dissolved solids content.

The tailings impoundment will be sized to contain surface water run off and provide water storage capacity for dry season ore processing. The region experiences a wet season when high rates of precipitation and low evaporation will result in a positive water balance. Discharge of excess water that accumulates in the impoundment may be required on a periodic basis during the wet season.

Impacts to surface water will be minimized by detoxifying process water placed in the tailings impoundment, and scheduling discharge to coincide with the maximum rate of dilution both within the impoundment, and at the point of discharge.

The method of effluent discharge proposed in Pacific Rim's EIS was as follows, in italicized text. That proposal has been superseded by subsequent developments, but the description is retained for the information it contains concerning the conditions that were anticipated:

> *A preliminary discharge analysis was performed by Vector Colorado (July 2004) to evaluate potential cyanide concentrations in water discharged from the tailings impoundment. Bench scale cyanide detoxifications tests indicate that the Inco SO_2/Air process was successful in reducing WAD cyanide concentration to 0.064mg/l. In the analysis, it was assumed that the process water discharged to the tailings impoundment has a cyanide concentration of 1mg/l. A range of wet and dry season conditions as well as various options regarding upstream surface water runoff capture and diversion were evaluated. Natural degradation of cyanide was not considered in the assessment. Cyanide reduction was limited to dilution from direct precipitation and/or surface water run on.*
>
> *In all cases examined, cyanide within the impoundment was predicted to be diluted to levels of 1.0mg/l or less. Maximum discharge rates of 30 l/s to 80 l/s were also predicted.*
>
> *Local flow rates at candidate discharge points ranged from a minimum of 130 l/s to 765 l/s during the wet period when a discharge could be required. Depending upon the discharge point, additional minimum dilution rates of 4 to 9 times are possible. Under the assumptions presented above, the discharge could be managed to produce in-stream cyanide concentrations as low as 0.1mg/l for the assumed cyanide concentrations. For reference, the El Salvador effluent limit for total cyanide is 0.5mg/l.*
>
> *Note that the forgoing discussion of cyanide in the impoundment discharge is based on a conservative assumption regarding cyanide concentration in the process water and the effectiveness of cyanide detoxification. The bench scale tests indicate a high degree of cyanide detoxification is possible. Under a range of operational conditions with respect to impoundment water quality it is anticipated that the cyanide content in process water can be managed to meet effluent limitations.*
>
> *Other constituents present in the detoxified process water will be diluted to low levels within the impoundment and at the point of discharge. Based on the bench scale tailings studies, a three-fold dilution may be required to reduce sulfate to an acceptable level. Arsenic and mercury could require a two-fold dilution to reach effluent benchmark levels. Because dilution rates between 4 and 9 times are possible at the candidate discharge locations, it is anticipated that process water can be managed to meet all proposed benchmark effluent limits under a range of actual operating conditions. Discharges from the tailings dam will occur only when the water quality meets discharge water quality requirements.*

In June of 2006 Pacific Rim agreed that it would treat effluent before discharge into a river. According to Pacific Rim, initially a reverse osmosis plant will be operated to treat all of the water to be discharged. Bio-remediation technology will subsequently be used to treat part of the discharge.

18.5.3 Social Aspects

18.5.3.1 Social Baseline Studies

El Salvador is the smallest and the most densely populated of the Central American countries. It is also one of the poorest of the Central American countries. The project area is located in the Department of Cabañas, which contains the highest level of poverty in the country (65% of the population is poor and 37% live in absolute poverty). Literacy is 30% and 42% of the population does not have access to potable water.

In 1992 the Department of Cabañas had a population of 138,000 people, a population density of 135 persons/km^2 and growth rate of 1.5%. In 2003 the population had increased to 155,000 persons.

The primary economic activity is agriculture. Approximately 30% of the land is used to grow corn, beans and sorghum in small parcels and 28% is used to grow sugar cane in large plantations. Cattle ranching uses 22 % of the land in Cabañas.

Within Cabañas, the project area is located within the municipality of San Isidro. In 2002, the population was approximately 10,000 people; 59% of the population is rural. Agriculture is the principal economic activity, although as discussed above, the soil quality for agriculture is poor. Approximately 80% of the population receives remittances from family members that live principally in the US. This has contributed to the creation of a dependent class of people that does not work.

No significant archeological finds were encountered in the study area.

18.5.3.2 Public Consultation

The Environmental Law includes a requirement for public consultation following the submittal of the EIS. World Bank Group/IFC and the Equator Principle guidelines require two rounds of public consultation during the EIS for Category A mining projects. One round should occur early enough in the EIS process so that public issues, concerns and opportunities can be addressed in the EIS. The second round of meetings should present the EIS findings to the public.

In February 2004, the first round of public meetings was held in the communities that would be affected by the project. Eleven meetings were held in 11 communities between February 23 and February 27. More than 600 people participated in the meetings, including members of the communities, government officials and NGOs that are active in the area.

The primary issues and concerns identified during the meetings included:

- Deterioration in the quantity and quality of water;
- Impacts to the social and economic situation;
- Industrial and natural hazards;
- Current water shortages; and
- Waste management.

Other issues and concerns identified included:

- Impacts to flora and fauna;
- Impacts to land;
- Contamination of air; and
- Noise contamination.

The public consultation activities and the results of the meetings are described in Section 7.6.3 of the EIS. The second round of public consultation was held during the first week of October 2004. A total of 11 meetings were held and total attendance was 759, including government officials and NGOs that are active in the area.

After achieving technical approval of the EIS in August 2005, Pacific Rim was instructed to publish the EIS in its final version. The final version of the EIS was available the latter part of September 2005 (Gochnour et al., 2005). In October 2005 the company was instructed to proceed to public consultation. In accordance with the requirements of the law, the EIS was available for public comment and review in the offices of the government October 5-18, 2005. Pacific Rim received the resulting public comments on March 29, and submitted answers to MARN's questions October of 2006. The EIS has been neither approved or rejected as of this writing.

Ongoing public consultation and information programs will continue throughout the project. Pacific Rim employed a Public Relations Director in early-2004 who is responsible for public relations, public information and community development.

18.5.3.3 Social Impact Assessment

Royalties and taxes paid to the federal government will contribute to the fiscal income of the country, but not in a significant way. The income of the municipality of San Isidro will increase significantly; it is expected that the municipality will use the funds to improve public services.

Socioeconomic impacts related to employment opportunities are significant. Construction of the decline will be awarded to an experienced underground mining contractor. Total decline development labor requirements (including supervision, engineering, maintenance and operating labor) are estimated to be 40 workers during the first year and 60 workers during the second year. The construction workforce for the surface facilities is estimated to be 400 people over a 10 month period.

The total number of employees during operations is estimated to average 252 for the first two years of operations. Indirect jobs are estimated to be on the order of 1.7 jobs for each direct job. It is estimated that 150 to 160 of the new jobs at the project will be filled by the local population. Families of the workers will have an opportunity for improved health care, education and quality of life.

Skilled and specialty labor will be required for the remaining 92 to 102 new jobs. It is likely that these jobs will be filled by skilled workers from other locations in El Salvador or Central America.

Pacific Rim plans to maximize employment opportunities for local community members. Local labor will be contracted for training as underground miners by the mining contractor in order to replace contractor labor with qualified local labor in the shortest time practical.

Basic reading and math skills are a prerequisite for employment. Pre-employment basic education (reading and math) opportunities will be made available to those interested in applying for jobs. On-the-job training programs for operating personnel will also be provided. Job training will increase the opportunities for the workers to find jobs when the project closes.

Compared to current traffic levels, the increase in traffic caused by the project would not be significant. Visual impacts would not be significant; as most of the facilities are located within a large valley surrounded by hills and would not be seen from the majority of roads and residential areas in the area.

18.5.3.4 Community Development

The baseline socioeconomic studies and the public meeting results provided information on the needs of the local communities, and the capacity of the communities and NGOs to effectively assist in community development activities. Components of the community development program will include:

- The formation of a Community Development Committee: this committee will be trained to identify and evaluate development activities, and will be responsible for recommending projects to be supported.
- Community participation and capacity creation: assistance to community groups and community members will be given priority.
- Coordination with existing development plans: Pacific Rim will coordinate with the local communities in order to avoid duplicating efforts and to increase the effectiveness of development activities.
- Associations: Pacific Rim will partner with NGOs and government agencies to help provide improvements in health care and education.

The actual financial contribution to Community Development from Pacific Rim over the life of the project will be based on the recommendations developed by the Community Development Committee, and the effectiveness of the Community Development Program in meeting its goals.

18.5.3.5 Opposition

The Company believes that its plans for the El Dorado Project have the support of the majority of the local residents and community leaders. Unemployment in the vicinity of the project area is high and the local communities look forward to the development of the project. International NGOs with environmental and/or social development objectives that, in their view, are inconsistent with mine development, have staged opposition to the project. This opposition has found limited support amongst some members of the local population. Pacific Rim is working with all willing stakeholders to address issues of concern.

As described in Section 18.5.1 on page 177 of the EIS, the company has submitted all the documents required by law in a timely manner. The environmental impact statement has been posted for public comment and MARN has given Pacific Rim a list of the issues that were raised during the public comment period. An amended EIS was submitted in October of 2006, and Pacific Rim is now awaiting final acceptance of the document.

18.5.3.6 Environmental & Social Management

It is generally the role of the government to provide the oversight required to confirm that the project is planned, operated and closed within legal and industry parameters. With the limited capacity of the government, as discussed above, it will be necessary for Pacific Rim to assume this role.

Comprehensive environmental and social management plans ("Plan") will be developed and implemented to ensure that the project is constructed, operated and closed in accordance with El Salvadoran environmental requirements and international good practices. An overall Environmental Management Plan ("EMP") will be developed that will provide: general requirements and objectives for environmental/social management, organization and responsibilities, implementation schedules, capacity development and training, budgeting and cost-benefit analysis requirements; communication, ongoing review and improvement, record keeping and reporting.

All compliance requirements will be outlined in each Plan, as applicable, including: those specified in the El Salvadoran environmental laws and regulations, in international good practice guidelines and in Pacific Rim's environmental policy. Mitigation measures outlined in the EIS and all permit conditions will also be outlined in the applicable Plan(s).

The Environmental Law requires compliance with the environmental management program outlined in the EIS. Conceptual versions of the EMP and the individual plans are provided in the EIS.

The specific plans are listed below:

- Environmental Management Plans
  - Biodiversity Management Plan
  - Forest Management Plan
  - Wastewater Treatment Plan

Natural and Manmade Hazard Management Plan
Mine Waste Management Plan
Tailings Facility Management and Monitoring
Cyanide Management Plan
Surface Water and Groundwater Management Plan
Particulate Matter Control Plan
Solid & Hazardous Materials Management Plan
Cultural Resources Management Plan
Monitoring Plan

- Closure and Reclamation Plan
- Accident Prevention and Contingency Plan

Social Management Plans include:

- Public Consultation and Information Plan
- Community Development Plan

Other management plans that support and complement the Plans include:

- Occupation Health and Safety Plan
- Fire Prevention Plan

18.5.4 Environmental Management Costs

Environmental management costs are estimated to be US$5.0million over the life of the project, as shown on Table 18.8. The costs are based on the development and implementation of the environmental management plans outlined above and described in the EIS. Some of these costs overlap with other costs components of the project.

It should be noted that all of the costs provided in Table 18.8 that are not included in the environmental cost component of the economic model, are included in the general and accounting or safety cost components of the economic model.

Table 18.8 Environmental Management Plan Cost Estimate

Plan	Cost Estimate (US$)
Environmental Management Plan	172,500
Individual Environmental Management Plans	
Biodiversity Management Plan	3,500
Forest Management Plan	25,300
Wastewater Treatment Plan	15,000
Natural and Manmade Hazard Management Plan	29,500
Mine Waste Management Plan	45,050
Tailings Facility Management and Monitoring	157,720
Cyanide Management Plan	44,380
Surface Water and Groundwater Management Plan	73,750
Particulate Matter Control Plan	196,188
Solid & Hazardous Materials Management Plan	172,500
Cultural Resources Management Plan	3,000
Monitoring Plan	92,000
Closure and Reclamation Plan (including consulting fees)	2,369,600
Accident Prevention and Contingency Plan	77,500
Social Management Plans	
Public Consultation and Information Plan	325,000
Community Development Plan	664,000
Related Management Plans	
Occupation Health and Safety Plan	460,000
Fire Prevention Plan	149,500
Total	**5,075,988**

18.5.4.1 Closure & Reclamation Costs

Approximately US$2.3million of the US$5.1million environmental management cost is for final closure and reclamation. Table 18.9 provides a summary of closure costs by facility. As shown on Table 18.9, the costs include a contingency of 15%. Major activities during closure will include:

- Removal of physical structures;
- Closure of the tailings storage facility; and
- Regrading, replacement of growth media and revegetation.

Table 18.9 Closure Cost Estimate

Facility or Item	Cost Estimate (US$)
Mine Surface Facilities	119,000
Underground Facilities	43,000
Plant Facilities	498,000
Office and Changehouse Facilities	93,000
Landfill	4,000
Tailings Storage Facility (includes mob/demobilization & contingency)	1,289,000
Post-Closure Monitoring	135,000
Subtotal	2,181,000
Contingency (15%)	134,000
Total	2,315,000

Following decommissioning of all project facilities, buildings, structures and equipment will be removed from the site. All scrap iron, equipment, tools, piping, and general debris will be removed, properly scrapped, recycled, or disposed of in an appropriate manner. Underground pipes and duct banks will be disconnected from services and left in place to avoid unnecessary surface disturbance.

An analysis of surface soils quality in the vicinity of the mine, the ore and concentrates storage areas, and the roadways will be conducted in order to assess the potential for metals exposure via dust generation and metals migration to surface water. All contaminated soils identified will be removed.

Disturbed areas will be covered with topsoil or fill material and re-contoured to provide positive drainage and minimize erosion. The facilities areas will be contour ripped, some areas will be covered with topsoil, and the entire disturbed area will be re-vegetated. Mine access roads will likely remain in place to provide access for future land uses.

Although reclamation and closure activities will occur as feasible during mine life, for this study, it is assumed that the major closure and reclamation activities will begin following the operations phase. Once mining ends the process plant will be decommissioned and post-closure activities will commence.

Underground Mine Closure

The proposed closure and reclamation approach for the underground mine includes:

- Removing salvageable equipment, power transformers, petroleum products and any motors;
- Sealing the portal and ventilation boreholes at the surface; and
- Allowing the mine workings to flood with ground water.

Underground workings will be the first of the mine site facilities to be closed. Initially all of the salvageable equipment and petrochemical components will be removed. The shaft and opening portal will be sealed using a reinforced concrete cap. The cap will be positioned at or below grade on bedrock or a secure base and will be covered with soil and re-vegetated. The soil will be graded to prevent accumulation of surface water over the caps. A monument will be placed over the backfilled shaft to allow relocation and survey inspections.

Process Plant & Surface Facilities

The proposed closure and reclamation for the surface facilities, mill and ancillary facilities includes the following activities:

- Material and equipment removal and salvage;
- Plant site and building decommissioning/dismantling;
- Concrete slab fracturing/removal of foundations/tracks and steel beams;
- Debris disposal; and
- Soil removal (spills and contaminated soil only).

Following decommissioning of the mill and associated process facilities, building structures and equipment will be removed from the site. All scrap iron, equipment, tools, piping, and general debris will be removed, properly scrapped, recycled, or disposed of in an appropriate manner.

Tank area closure and reclamation will include:

- Proper removal and disposal of tank content;
- Thorough rinsing;
- Removal of tank and foundation;
- Removal of contaminated soils from beneath foundation and from around foundation area, if necessary;
- Place clean topsoil over excavated area; and
- Vegetate, as required.

Tailings Storage Facility

The focus of the closure and reclamation plan will be to provide stability to the tailings in critical areas of the impoundment and to achieve isolation of the tailings from the surrounding environment. Upon termination of tailings disposal, process water in the impoundment will be treated to meet effluent water quality requirements and then discharged. The pipelines associated with tailings transport will be disconnected, cleaned of tailings, removed section by section, and disposed of in a proper manner. A soil cover will be placed over the tailings surface to permanently encapsulate the tailings and to provide a medium for vegetating the surface of the impoundment.

The tailings cover will be designed based on results of a tailings consolidation analysis and on the geochemical characteristics of the materials used to construct the cover. The cover may include geotextile and natural soils. For costing purposes, it is assumed that this activity will require placing approximately one meter of soil over the tailings impoundment surface and contouring of the surface to provide positive drainage towards the spillway.

A vegetative cover will be established on the tailings embankment and the impoundment surface for controlling erosion, minimizing impacts to water quality and for aesthetic purposes. Precipitation and surface runoff onto the tailings cover surface will be conveyed by water diversion channels to the spillway.

A spillway will be constructed one or two years prior to closure. The spillway will be designed to pass the flows from the probable maximum precipitation storm, while maintaining sufficient freeboard to prevent overtopping of the dam. Ultimately the reclaim and water discharge system will be dismantled and removed.

18.5.4.2 Financial Security

The Mining Law Regulation, Decree No. 68, requires that a financial security be posted for the project. The amount of the security is specified as "not less than" US$5,714/km^2. Pacific Rim has elected to convert 12.7 km^2 from within the limits of the Exploration License areas to an Exploitation Concession. The resulting minimum financial security is estimated to be US$ 73,000.

The Environmental Law requires that a financial security be registered with MARN in an amount equivalent to the total cost required to comply with the environmental management plans. All inclusive environmental management plan costs are estimated to be US$5.0million over the life of the project including environmental, operating costs, monitoring, and closure costs.

18.6 Taxes and Royalties

Taxes to be paid at state and municipal levels:

- State taxes are specified and municipal taxes will be negotiated within the framework of existing regulations.

Royalties:

- NSR of 1% must be paid to the State; and
- An NSR of up to1% must be paid to the Municipality.

Rental Fees:

- Licensees are required to pay an annual rental fee to the national government. For the El Dorado licenses the fee now stands at US$300/km^2/yr, for an annual total of US$22,500 per year. The annual fee for an exploitation concession is also US$300/km^2. The annual total cost is dependent on the size of the concession.

18.7 Capital and Operating Cost Estimates

Life of Mine ("LoM") capital and operating cost summaries are shown in Table 18.10 and Table 18.11, respectively.

Table 18.10 LoM Operating Cost Summary

Cost Category		Unit Cost (US$/t-milled)	Total Cost (US$ million)
Mining Cost		$27.15/t	$44.280
Mill Processing		$14.00t	$22.835
G&A		$8.53/t	$13.913
TOTAL OPERATING (1)		**$49.68/t**	**$81.029**
	US$/oz-Au	*$162.61/oz-Au*	

(1) Excludes royalties and refining charges.

Table 18.11 LoM Capital Cost Summary

Cost Center	-2	-1	1	2	3	4	5	6	7	8	9	10	Total
Mine	6.03	14.38	7.73	2.61	2.55	2.56	.05	0	0	0	0	0	**35.92**
Processing	0.95	12.64	0	0	0	0	0	0	0	0	0	0	**13.59**
Tailings	1.90	2.78	0	0	0	0	0	0	0	0	0	0	**4.68**
Infrastructure	2.63	1.12	0	0	0	0	0	0	0	0	0	0	**3.76**
Env. Mgmt.	0.21	0.35	0	0	0	0	0	0	0	0	0	0	**0.56**
Closure/Recl.	0	0	0	0	0	0	0	0	0.21	1.53	0.59	.16	**2.49**
Owner	2.55	2.31	1.00	0	0	0	0	0	0	0	0	0	**5.86**
Total	**14.27**	**33.59**	**8.73**	**2.61**	**2.55**	**2.56**	**.05**	**0.00**	**0.21**	**1.53**	**0.59**	**.16**	**66.86**

18.8 Economic Analysis

The technical-economics are based upon work performed by Pacific Rim's engineers and consultants and has been prepared on an annual basis. The economic model was developed by SRK (Tanaka and others, 2005). Assumptions used are discussed in detail throughout this report and are summarized in Table 18.12.

Table 18.12 Technical-Economic Model Parameters

Model Parameter	Technical Input
General Assumptions	
Pre-Production Period	2years
Mine Life	6.2years
Operating Days	365days
Production Rate (avg.)	750tpd
Stockpile (avg.)	10days
Market	
Gold Price	US$400.00/oz
Silver Price	US$6.00/oz
Refinery Charges	
Treatment	US$0.17/oz doré
Gold Refining	US$0.50/oz
Transportation (500kg or less)	US$1,875/shipment
Transportation (over 500kg)	US$3,000/shipment
Air Freight (45kg or less)	US$6.00/kg
Air Freight (over 45kg)	US$4.50/kg
Royalty	
Government	2.00%
Owner	1.50%

Economic Results are summarized in Table 18.13. The project cash cost is US$162.61/Au Eq oz, (or US$49.68/t-milled). The pre-tax base case valuation result of $NPV_{8\%}$ (US$17.0million).

Table 18.13 Technical-Economic Results (21 January 2005)

Description		**Technical Input or Result**
Ore		
Ore Milled		1,631kt
Recovered Gold		457koz
Recovered Silver		2,791koz
Revenue (US$000s)		
Gross Revenue		**$199,320**
Market Price Gold	*US$400/oz*	
Market Price Silver	*US$6.00/oz*	
Refinery & Transport Charges		$1,488
Net Smelter Return		**$197,832**
Government Royalty		$3,986
Credit for Advance Royalty		($600)
NSR Royalty		$2,967
Gross Income From Mining		**$191,478**
Realized Price (Gold)	*US$419.31/Au-Eq oz*	
Operating & Capital Cost (US$000s)		
Mining		$44,280
Process		$22,835
G&A		$13,913
Total		**$81,029**
Cash Cost (US$/oz)	*$162.61/oz*	
Cash Cost (US$/t-milled)	*$49.68/t*	
Cash Operating Margin		**$110,450**
(US$/oz)	*$221.65/oz*	
(US$/t-milled)	*$67.72/t*	
Capital Cost (US$000s)		
Mining		$35,917
Mill & Infrastructure		$22,021
Other Capital		$8,917
Total		**$66,855**
Cash Flow (**$NPV_{0\%}$**)		**$43,594**
(**$NPV_{8\%}$**)		**$16,992**

Project sensitivities are summarized in Table 18.14. As seen, the project is most sensitive to gold production and gold price. Sensitivity on operating and capital cost is closely matched, with the project being only slightly more sensitive to operating costs.

Table 18.14 Project Sensitivity ($NPV_{0\%}$, US$million)

Parameter	-10%	-5%	Base	+5%	+10%
Gold Grade (Market Price)	$24.4	$34.0	$43.6	$53.2	$62.8
Operating Costs	$53.4	$48.5	$43.6	$38.7	$33.8
Capital Costs	$48.3	$46.0	$43.6	$41.2	$38.9

18.9 Project Payback

Based upon the analysis parameters used in the SRK 2005 Pre-Feasibility Study (Tanaka and others, 2005), project payback will occur approximately 3.5 years from the start of production.

18.10 Mine Life

A 2 year pre-production period is used, primarily to allow for access ramp development to the ore body. The mine will have an estimated 6.2 year life given the reserves reported in 2005 and a designed 750tpd average mine production rate. The mining model assumes that ore will be transported to the mill from the mine-site stockpile, which is designed to contain an average 10 day (±7.5kt) supply of ore.

Ristorcelli and Ronning (2006) and Ristorcelli and Ronning (this report) have calculated new resource estimates for three areas since the Pre-Feasibility Study was completed: South Minita, Nance Dulce, and Bálsamo/Cerro Alto. In addition, an updated estimate for Minita has been completed. The estimates for Nueva Esperanza and La Coyotera have been restated. Some of these newly estimated resources may have an impact on mine scheduling, design and production. Work to be completed as part of the Feasibility Study will determine the effect of the newly defined resources on the projected mine life.

19.0 INTERPRETATION AND CONCLUSIONS

MDA finds the resources on the El Dorado Project to be generally of good quality, made better by the quality of work conducted by Pacific Rim personnel. The gold distribution and the quality of work and sampling on the project give the resource estimates a high degree of confidence. The database, because of the diligence demonstrated by Pacific Rim, is reliable. Importantly, Pacific Rim's technical work, especially the core logging, is of very high quality, and above the industry norm.

Notwithstanding the above, as in any estimate some risks exist. For the El Dorado resources, the greatest risks lie along the strike and down dip extremities of the vein models where locations and distributions of the resources are less certain and where drilling is less dense. A case in point is the one drill-hole sample at the north end of the Minita vein that carries with it about 2% of the Minita resource even after restricting its influence. In other instances, where conflicting data exist, the affected mineralization could not be included in the present resource estimate. Additional drilling in problem areas, or where the drill pattern is now sparse, will inevitably result in changes and improvements in future estimates. The resource area at South Minita is particularly complex structurally and this is reflected through the lack of Measured resources. In the Nance Dulce deposit, the combination of geological complexity and a sparse pattern of drill holes makes it possible to estimate only an Inferred resource at this time. While Cerro Alto is a well-defined vein and quite predictable, the Bálsamo vein lies somewhere in between Cerro Alto and South Minita with respect to continuity and predictability. With further drilling it may be possible to upgrade this classification and augment the resource.

At present there are six deposits with estimated resources in the El Dorado district; Minita, South Minita, La Coyotera, Nueva Esperanza, Nance Dulce and Bálsamo/Cerro Alto. In the area of the defined resources and on the defined structures, there is the possibility of increasing the resources incrementally. There are numerous other veins near Minita area that are not included in this resource estimate because they are not well defined. These target veins deserve some exploration drilling and could add to the resource base.

In addition, the El Dorado district contains many other mineralized quartz veins, some unexplored and some incompletely explored. The deposit model, and the work in the El Dorado district to date, indicate that each vein requires some level of exploration. While the deposit is now at a development stage, it still possesses excellent exploration potential.

The 2003 reports (Ronning, 2003 and Ristorcelli and Ronning, 2003) mentioned a number of prospects that merited exploration, but are not mentioned in the present report because they have not received substantial new work since 2003. Those and most probably other targets not yet recognized will be the basis of future exploration work.

Since the 2006 resource model update, five holes have been drilled into and through the Minita area resources: P06-464, P06-469, P06-474, P06-471 and P06-505. All five holes have added support to the resource model and criteria used in estimation. Two of these holes, P06-464 and P06-505, were drilled at the south end of Minita, an area where structural complexities have not allowed for resource estimation. These holes did encounter mineralization that would certainly be economic in places where one would expect, but could not predict, to encounter mineralized veins. Interestingly, some additional mineralization was encountered, probably from the unmodeled El Dorado vein; again, with economic grades. Clearly, this drilling indicates that additional mineralized material will be found that will likely be developed and mined once the project is in production. The other three holes, P06-469, P06-474 and P06-471, were drilled right through the resource area. These three holes intersected grades not dissimilar to those defined in the resource model. These holes also encountered grades in locations where the model was not extended and yet this new drilling encountered mineralization, in some cases obviously with economic grades. Although these intersections supported the model and modeling procedures, updating the model was neither mandated nor necessary as the change would not be material.

At South Minita and since the 2006 resource model update, nine holes have been drilled into and through the zones in which veins were modeled: P06-483, P06-446, P06-447, P06-479, P06-445, P06-442, P06-444, P06-443, and P06-477. In general, the post-model drilling results demonstrate a similar degree of complexity to that which appeared in the model. The number of mineralized intercepts encountered by the drilling is similar to the number that were indicated in the model. The complexity is such that it is difficult to confidently correlate individual intercepts from the drilling to veins in the model. The post-model drilling results do support the general character of the model, but they also demonstrate that extensive drilling may have to take place prior to final stope design. The additional drilling must be incorporated into the engineering and costing for the development of South Minita.

In addition, quite a few holes were drilled in between Minita and South Minita and clearly demonstrated that more mineralization will be defined at some point, most likely after the project is in a least development.

20.0 RECOMMENDATIONS

The new resource estimates that triggered the present report are a prelude to a new Feasibility Study of the El Dorado Project that is in progress at the time of writing. It would be redundant and beyond the scope and purpose of the present report to make recommendations relating to that work in progress. The recommendations herein are limited to work that will enhance the quality of future resource estimates and possibly lead to the discovery of additional resources.

In the case of recommendations for future drilling, the authors recommend justifiable quantities of drilling based on the information in hand. The authors decline to specify drill hole locations or orientations, believing that Pacific Rim's exploration staff is better able to design specific drilling projects to meet the company's needs. The estimated costs are all-inclusive, covering direct drill costs, geological supervision, analyses, room and board as applicable, data management and interpretation.

20.1 Minita and Central Sub-District Drilling

The defined resources in the Minita, Minita 3, and Zancudo veins will probably increase incrementally with additional drilling. For example, as noted in Section 19.0, some known mineralized intercepts could not be included in the present resource estimate because they could not be correlated with other known intercepts. Additional infill drilling might make it possible to include some of those intercepts in a future resource estimate.

There are numerous known veins in the Central sub-district, east and southeast of the Minita Deposit, that were tested with widely-spaced drill holes by prior operators, and to a lesser extent by Pacific Rim. Named veins in the eastern part of the Central sub-district include Rosario, Chica and many others. This area has not been discussed in the present report as there has not been substantial new work there since the 2003 reports (Ronning, 2003, Ristorcelli and Ronning, 2003). However, based on the earlier work, the authors believe that potential exists to discover resources in the eastern Central sub-district to augment those of the Minita deposit.

Infill drilling in the Minita area and exploration drilling in the eastern part of the Central sub-district that would together amount to about 8,000 meters is readily justified. At an all-inclusive cost of US$ 150 per meter, this drilling would cost in the order of: **US$ 1,200,000**

20.2 Infill Drilling at the South Minita Deposit

Better definition of the South Minita veins is warranted. This drilling can take place from the surface, which could reach 25 holes for roughly 9,000 meters of drilling. This drilling program should be designed after mine planning so as to optimize the drill program. If the drilling were done from the development workings, costs would decrease, and possibly significantly. The cost of the surface drilling program would be in the order of: **US$ 1,350,000**

20.3 Infill Drilling at the Bálsamo/Cerro Alto Deposits

After a simple economic assessment including preliminary engineering and costing, better definition of the Bálsamo/ Cerro Alto veins is warranted. This drilling can take place from the surface, which could reach 10 holes for roughly 4,000 meters of drilling. This drilling program would better define the grade distribution in the principal veins. The cost of the surface drilling program, which would be core only, would be in the order of: **US$ 600,000**

20.4 Infill Drilling at the Nance Dulce Deposit

An economic assessment should be done on the Nance Dulce deposits and if positive, some additional drilling, if successful, could lead to the upgrading of the classification of the Nance Dulce resource. The resource would need to be upgraded to at least the Indicated category before it could be considered for inclusion in any future mine plans. Approximately 4,000 meters of drilling in 10 to 15 holes would bring the deposit database to a point at which another review of the resource would be warranted. The cost for the drilling would be in the order of: **US$ 600,000**

20.5 Drilling Other Target Areas

Many target areas for additional exploration drilling exist on the project. These include but are not limited to the areas north and along strike of the Bálsamo/Cerro Alto vein areas. A reasonable allowance for such exploration drilling would be in the order of 5,000 meters. At US$ 150 per meter, the cost for that would be about: **US$ 750,000**

20.6 Other Exploration

The most effective early stage exploration tools for identifying and refining drill targets in the El Dorado district have proven to be geological mapping combined with rock chip sampling. This type of work continues to be useful and has been shown to be successful since the last Technical Report. These efforts could likely continue seemingly indefinitely with all the veins that exist. For the immediately foreseeable future of about a year, the cost for that continuing work is likely to be in the order of:
US$ 300,000

20.7 Continuing Quality Control Monitoring

All of the drilling and sampling should be accompanied by continuing quality control and quality assurance monitoring, done in a timely way so that results are received and issues responded to promptly. The cost of that monitoring for one year would be in the order of **US$ 50,000**

20.8 Feasibility Study

Pacific Rim, given favorable political and permitting conditions, should re-initiate the halted Feasibility Study. The cost of that work should be about **US$ 500,000**

Total Estimated Cost of Recommendations **US$ 5,350,000**

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22.0 DATE AND SIGNATURE PAGE

Effective Date of report: March 3rd 2008

The data on which the contained resource estimates are based was current as of the Effective Date.

Completion Date of report: March 3rd, 2008

"Steve Ristorcelli" ***March*** 3rd***, 2008***

______________________________ Date Signed:

Steven Ristorcelli, P. Geo.

"Peter Ronning" ***March*** 3rd***, 2008***

____________________________ Date Signed:

Peter A. Ronning, P.Eng.

"Ken Reipas" ***March*** 3rd***, 2008***

______________________________ Date Signed:

Ken Reipas, P. Eng.

"Al Kuestermeyer" ***March*** 3rd***, 2008***

______________________________ Date Signed:

Al Kuestermeyer P. Eng.

"Terry H. Braun" ***March*** 3rd***, 2008***

______________________________ Date Signed:

Terry Braun, P. Eng.

"Tom Ranelli" ***March*** 3rd***, 2008***

______________________________ Date Signed:

Tom Rannelli, P. Eng.

23.0 CERTIFICATES OF AUTHORS

STEVEN RISTORCELLI, P. GEO.

I, Steven Ristorcelli, P. Geo., do hereby certify that I am currently employed as Principal Geologist by Mine Development Associates, Inc., 210 South Rock Blvd., Reno, Nevada 89502 and:

1. I graduated with a Bachelor of Science degree in Geology from Colorado State University in 1977 and a Master of Science degree in Geology from the University of New Mexico in 1980. I have worked as a geologist for a total of 30 years since my graduation from undergraduate university.
2. I am a Registered Professional Geologist in the states of California (#3964) and Wyoming (#153) and a Certified Professional Geologist (#10257) with the American Institute of Professional Geologists.
3. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
4. I am responsible for the preparation of sections 17 and parts of section 13 but contributed to, reviewed and am familiar with all other sections of this technical report titled Technical Report Update on the El Dorado Project Gold and Silver Resources, Republic of El Salvador dated March 3, 2008 (the "Technical Report"). I visited numerous times over the years and most recently the project October 23 to October 25, 2007
5. I have had prior involvement with the property having visited it six times in the last 5 years and having estimated resources of the project.
6. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
7. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 3rd day of March, 2007.

"Steven Ristorcelli"

Steven Ristorcelli
Print Name of Qualified Person

NCG

New Caledonian Geological Consulting
RR 6, 1450 Davidson Road
Gibsons, B.C., Canada V0N 1V6
Vancouver phone (604) 684-6864 fax (604) 608-2957
e-mail peter@ronning.ca

consulting to the mineral exploration industry since 1989

Re: the report entitled "Technical Report Update on the El Dorado Project Gold and Silver Resources, Department of Cabañas, Republic of El Salvador" dated March 3rd, 2008.

(hereinafter referred to as "The Technical Report")

I, Peter Arthur Ronning, P.Eng. of 1450 Davidson Road, Gibsons, B.C., V0N 1V6, hereby certify that:

1. I am a consulting geological engineer, doing business under the registered name New Caledonian Geological Consulting, at the address set out above.
2. I am a graduate of the University of British Columbia in geological engineering, with the degree of B.A.Sc. granted in 1973. I also hold the degree of M.Sc. (applied) in geology, granted by Queen's University in Kingston, Ontario, in 1983.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia, Registration Number 16,883.
4. I have worked as a geologist and latterly as a Professional Engineer in the field of mineral exploration since 1973, in many parts North and South America. For five years I was an exploration geologist with a major North American gold mining company, during which time I worked with many types of gold-bearing deposits, including low sulfidation epithermal precious metal deposits with similarities to the deposits at El Dorado.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of my education, affiliation with a professional association as defined in NI 43-101 and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101 with respect to the contents those parts of The Technical Report that I prepared.
6. I am a co-author of the Technical Report. I am the responsible author of sections 2.0, 4.0 through 10.0, 11.1, and 12.0 through 15.0. I contributed to sections 1.0, 3.0, 12.0, 19.0 and 20. I have reviewed and participated in the editing of all sections of the report. I spent the following periods at the El Dorado Project: June 6th 2003 to June 16th 2003, February 5th through February 9th 2006,, April 25th through May 4th, 2006 and October 23rd through October 25th, 2008. During those periods I spent some time reviewing geology in the field, some time examining drill core, and some time working with data at the project office.
7. Prior to undertaking to prepare a technical report in 2003, I had not had any involvement with the El Dorado Project.
8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in said report, the failure to disclose which makes The Technical Report misleading.

(certificate continues on next page)

9. I am independent of the issuer, applying the tests set out in section 1.5 of NI 43-101. Except as herein noted, I neither own, control, nor expect to receive a beneficial interest in the El Dorado property, nor in any corporation or entity whose value one could reasonably expect to be affected by the conclusions expressed in the report. I may inadvertently be the beneficial owner of an interest in any publicly traded company through participation in mutual funds over whose portfolios I have no control.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with those documents.
11. A copy of this report is submitted as a computer readable file in Adobe Acrobat© PDF© format. The requirements of electronic filing necessitate submitting the report as an unlocked, editable file. I accept no responsibility for any changes made to the computer file after it leaves my control.

"Peter Ronning"

Peter A. Ronning, P.Eng.
March 3, 2008

CERTIFICATE AND CONSENT

To accompany, "Technical Report Update on the El Dorado Project Gold and Silver Resources, Department of Cabanas, Republic of El Salvador" dated March 3, 2008 ("the March 2008 Technical Report"), prepared by Mine Development Associates ("MDA") for Pacific Rim Mining Corporation.

I, Ken S. Reipas, residing at 43 Deverell Street, Whitby, Ontario, Canada, do hereby certify that:

1) I am a Principal Mining Engineer with the firm of SRK Consulting (Canada) Inc. ("SRK") with an office at Suite 1000, 25 Adelaide Street E, Toronto, Ontario.

2) I am a graduate of Queen's University with a B.Sc. in Mining Engineering in 1981, and have practiced my profession continuously since 1981.

3) I am a Professional Engineer registered with the Professional Engineers of Ontario (PEO).

4) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the El Dorado Project or securities of Pacific Rim Mining Corporation.

5) I am not aware of any material fact or material change with respect to the subject matter of the March 2008 Technical Report, which is not reflected in the report, the omission to disclose which makes the report misleading.

6) I, as a qualified person, am independent of the issuer as defined in NI 43-101.

7) I have not had any prior involvement with the property that is subject to the technical report.

8) I have read NI 43-101 and Form 43-101F1. To the best of my knowledge, the March 2008 Technical Report has been prepared in compliance with this Instrument and Form 43-101F1.

9) SRK Consulting (US) Inc. was retained by Pacific Rim Mining Corporation in 2005 to prepare a Prefeasibility Study on their El Dorado Project in El Salvador. The Prefeasibility Study included a 2005 estimate of Mineral Reserves which is referenced in the current Technical Report by MDA. I visited the project site on April 25 and 26, 2006.

10) I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, relevant work experience, registration as Professional Engineer, review of the 2005 Prefeasibility Study, and my previous involvement in the project, I fulfill the requirements to be a "qualified person".

11) I am the qualified person responsible for the 2005 estimate of Mineral Reserves referenced in this current March 2008 Technical Report.

12) I hereby consent to use of the March 2008 Technical Report for submission to any Provincial regulatory authority.

LICENSED PROFESSIONAL ENGINEER
K. S. REIPAS
PROVINCE OF ONTARIO

Ken Reipas

Toronto, Canada
February 27, 2008

Ken S. Reipas, P.Eng.
Principal Mining Engineer

CERTIFICATE AND CONSENT

To accompany, "Technical Report Update on the El Dorado Project Gold and Silver Resources, Department of Cabanas, Republic of El Salvador" dated March 3, 2008 ("the March 2008 Technical Report"), prepared by Mine Development Associates ("MDA") for Pacific Rim Mining Corporation.

I, **Alva L. Kuestermeyer**, with a business address at SRK Consulting (U.S.), Inc., 7175 W. Jefferson Avenue, Suite 3000, Lakewood, Colorado, U.S. 80235 hereby state that:

1. I am a Principal Metallurgical Engineer/Mineral Economist with the firm, SRK Consulting (U.S.), Inc.
2. I am a graduate of South Dakota School of Mines and Technology with a B.S. in Metallurgical Engineering in 1973.
3. I am a graduate of Colorado School of Mines with an M.S. in Mineral Economics in 1982.
4. I have practiced my profession continuously for some 32 years since graduating, have variously managed, authored and co-authored over twenty mining feasibility studies, feasibility audits and due diligences for a variety of mineral deposit types in numerous countries and as a Competent Person.
5. I am a member of the Society of Mining, Metallurgical and Exploration Engineers.
6. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the El Dorado Project or securities of Pacific Rim Mining Corporation.
7. I am not aware of any material fact or material change with respect to the subject matter of the March 2008 Technical Report, which is not reflected in this report, the omission or disclosure of which makes the technical report misleading.
8. I am independent of the issuer as defined in NI 43-101.
9. I have read NI 43-101 and Form 43-101F1. To the best of my knowledge, the March 2008 Technical Report has been prepared in compliance with this Instrument and Form 43-101F1.
11. I am the qualified person responsible for the Metallurgical/Process Summary referenced in this current March 2008 Technical Report.
12. I hereby consent the use of this report for submission to any Provincial regulatory authority.

March 3, 2008

Alva L. Kuestermeyer
Principal Metallurgical Engineer/Mineral Economist

CERTIFICATE AND CONSENT

To Accompany the March 2008 Technical Report, "Technical Report Update on the El Dorado Project Gold and Silver Resources, Republic of El Salvador" dated March 3, 2008, and prepared by Mine Development Associates ("MDA") for Pacific Rim Mining Corporation.

I, Terry H Braun, residing at 11045 West Grand Place, Littleton, Colorado USA, do hereby certify that:

1) I am a Principal Engineer with the firm of SRK Consulting (U.S.), Inc. (SRK) with an office at Suite 3000, 7175 West Jefferson Avenue, Lakewood, Colorado USA.

2) I am a graduate of the University of Colorado Boulder with a B.Sc in Civil Engineering in 1988, the Colorado School of Mines in Golden, Colorado with a M.S. in Environmental Engineering in 1993, and have practiced my profession continuously since 1988.

3) I am a Professional Engineer registered with the Colorado State Board of Technical Registration.

4) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the El Dorado Project or securities of Pacific Rim Mining Corporation.

5) I am not aware of any material fact or material change with respect to the subject matter of the March 2008 Technical Report, which is not reflected in the report, the omission to disclose which makes the report misleading.

6) I, as a qualified person, am independent of the issuer as defined in NI 43-101.

7) I have not had any prior involvement with the property that is subject to the technical report.

8) I have read NI 43-101 and Form 43-101F1. To the best of my knowledge, the March 2008 Technical Report has been prepared in compliance with this Instrument and Form 43-101F1.

9) SRK Consulting (US) Inc. was retained by Pacific Rim Mining Corporation in 2005 to prepare a Prefeasibility Study on their El Dorado Project in El Salvador. The Prefeasibility Study included a 2005 estimate of Mineral Reserves which is referenced in the current Technical Report by MDA.

10) I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, registration as Professional Engineer, review of the 2005 Prefeasibility Study, and my current involvement in the project, I fulfill the requirements to be a "qualified person".

11) I am the qualified person responsible for the Environmental Summary referenced in this current March 2008 Technical Report

12) I hereby consent to use of the March 2008 Technical Report for submission to any Provincial regulatory authority.

Lakewood, Colorado
March 3, 2008

Terry H. Braun, P.E.
Principal Engineer

CERTIFICATE AND CONSENT

To accompany, "Technical Report Update on the El Dorado Project Gold and Silver Resources, Department of Cabanas, Republic of El Salvador" dated March 3, 2008 ("the March 2008 Technical Report"), prepared by Mine Development Associates ("MDA") for Pacific Rim Mining Corporation.

I, Thomas D. Rannelli, residing at 2147 Winding Woods Drive, Oakville, Ontario, Canada, do hereby certify that:

1) I am a Principal Mining Engineer with the firm of SRK Consulting (Canada) Inc. ("SRK") with an office at Suite 1000, 25 Adelaide Street E, Toronto, Ontario.
2) I am a graduate of University of Western Ontario, Richard Ivey School of Business in 2007 with an MBA and a graduate of Queen's University with a B.Sc. in Mining Engineering in 1985, and have practiced my profession continuously since 1985.
3) I am a Professional Engineer registered with the Professional Engineers of Ontario (PEO).
4) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the El Dorado Project or securities of Pacific Rim Mining Corporation.
5) I am not aware of any material fact or material change with respect to the subject matter of the March 2008 Technical Report, which is not reflected in the report, the omission to disclose which makes the report misleading.
6) I, as a qualified person, am independent of the issuer as defined in NI 43-101.
7) I have not had any prior involvement with the property that is subject to the technical report.
8) I have read NI 43-101 and Form 43-101F1. To the best of my knowledge, the March 2008 Technical Report has been prepared in compliance with this Instrument and Form 43-101F1.
9) SRK Consulting (US) Inc. was retained by Pacific Rim Mining Corporation in 2005 to prepare a Prefeasibility Study on their El Dorado Project in El Salvador. The Prefeasibility Study included Technical –Economics which is referenced in the current Technical Report by MDA.
10) I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, relevant work experience, registration as Professional Engineer, review of the 2005 Prefeasibility Study, I fulfill the requirements to be a "qualified person".
11) I am the qualified person responsible for the 2005 Technical-Economics referenced in this current March 2008 Technical Report.
12) I hereby consent to use of the March 2008 Technical Report for submission to any Provincial regulatory authority.

Toronto, Canada
February 27, 2008

T. D. Rannelli, P.Eng.
Principal Mining Engineer

Appendix A Summary and Brief Description of Historic Resource Estimates

(from Ronning, August 22, 2003 with additions by Ristorcelli)

From: Review of the El Dorado Project, El Salvador

By Peter Ronning, August 22, 2003

Historical Resource and Reserve Estimates

There have been a number of resource estimates produced, for several different veins, since the early 1990's. These are:

- El Dorado Mine Area
- La Coyotera
- Nueva Esperanza

It is important to note that all of the resource estimates discussed in this report are, to varying degrees, out of date. The most recent estimates were done by Lacroix in 2000 and 2001. For that reason, the Lacroix estimates are described in more detail than earlier ones.

Pacific Rim has done considerable in-fill and step-out drilling since the time of the Lacroix estimates. The company has commissioned the preparation of new resource estimates. These are not completed at the time of writing. While this report documents recent work by Pacific Rim, it does not present any new or current resource estimates.

RESOURCE ESTIMATES – EL DORADO MINE AREA

There have been at least 5 estimates of the resources in the El Dorado Mine Area since 1995, including:

1. James Askew and Associates in 1995. The results of this estimate are not presented in this report, as JAA was working with fewer drill holes than were available to later estimators.

2. Kinross Gold USA estimate in 1996. The 1996 Kinross estimate incorporated approximately 4,900 meters of diamond drilling done in early 1996, which would not have been available at the time of the JAA estimate in 1995.

3. Kinross Gold USA estimate in 1997.

4. Strathcona Mineral Services in 1997. Strathcona did not do a complete new estimate, but re-stated the 1997 Kinross estimate using a higher cut off grade.

5. The Lacroix estimate of 2000, considered to be the most current. The Lacroix estimate is presented in this report in more detail than earlier ones.

Table A1 Comparison of El Dorado Area Resource Estimates prior to 2000

Estimators and Date >	Staff of Kinross Gold Corp., May 1996		Mirage - Kinross Gold Corp, July 1997		Strathcona Mineral Services, September 1997	
Category >	Indicated*	Inferred	Indicated	Inferred	Indicated	Inferred
Minita Vein						
Gold Cut Off Grade (gpt)	4	4	3	3	4	4
Tonnes	258,500	139,400	608,200	225,100	563,100	177,300
Gold Grade (gpt)	12.37	12.57	11.90	9.60	12.5	11.2
Silver Grade (gpt)	**	**	75.0	64.0	80	75
Contained Gold (ounces)	102,800	56,540	232,000	69,000	227,000	64,000
Contained Silver (ounces)	**	**	1,472,000	465,000	1,443,000	427,000
Minita 3 Vein						
Gold Cut Off Grade (gpt)	4	4	3	3	4	4
Tonnes	396,500	169,000	332,000	70,000	299,400	53,300
Gold Grade (gpt)	10.86	9.88	11.3	6.3	12.2	7.1
Silver Grade (gpt)	**	**	89	31	97	35
Contained Gold (ounces)	138,440	53,680	121,000	14,000	117,000	12,000
Contained Silver (ounces)	**	**	954,000	70,000	929,000	60,000
Zancudo Vein						
Gold Cut Off Grade (gpt)	4	4	4	4	5	5
Tonnes	22,600	36,100	44,200	19,000	31,400	15,100
Gold Grade (gpt)	5.78	6.12	11.2	7.9	14	8.7
Silver Grade (gpt)	**	**	84	58	109	65
Contained Gold (ounces)	4,200	7,100	16,000	5,000	14,000	4,000
Contained Silver (ounces)	**	**	119,000	35,000	110,000	32,000

Notes: *Table 5.5 of Snider et al, 1996, contained the perplexing statement that “Use of measured/indicated category for comparative purposes only; considered inferred for resource classification.”

The writer believes that the use of the terms indicated and inferred in the 1997 estimates is generally consistent with the CIM Standards on Mineral Resources and Reserves of August 2000.

**In the 1996 estimate, silver grades were stated only in a summary table that combined indicated and inferred resources.

Lacroix Resource Estimate

The most current resource estimate for the El Dorado Mine Area, including the Minita, Minita 3 and Zancudo veins, is Lacroix' estimate of October 2000. The following description is from Lacroix' summary in his 2000 report:

> *"An update of the El Dorado Mine Area resources has been completed by Lacroix & Associates in collaboration with Dayton Mining Corporation and their consultants. This update includes estimates for the Zancudo, Minita and Minita 3 veins, all of which are located within close proximity of the El Dorado Mine Area. The up-dip portions of these veins as well as other en-echelon vein structures in the area were the subject of mining activity from 1949 to 1955. The estimates follow a recently completed drilling program designed primarily to improve the confidence levels associated with the known extent of the above-mentioned veins.*
>
> *"Indicated resources are estimated to contain 0.80 million tonnes grading 13.7 grams per tonne gold and 98 grams per tonne silver or 15.3 grams per tonne gold equivalent. An additional resource of 0.11 million tonnes grading 12.2 grams per tonne gold equivalent has been estimated. This resource, which lies mostly below and contiguous to the indicated resource within the same structures, is classified as inferred.*
>
> *"The above-stated inventories, which total[12] 0.91 million tonnes grading 13.4 grams per tonne gold and 95 grams per tonne silver or 14.9 grams per tonne gold equivalent, are reported at an in-situ gold equivalent cut-off value of 6.0 grams per tonne for Minita and Minita 3 and 9.0 grams per tonne for Zancudo. With exception to the Zancudo vein, which is narrow (0.75m) and spotty in grade, the resources hold together well at increasing cut-off grades. In particular, the Minita vein, which represents over 80% of the in-situ resource, maintains continuity at cut-off grades up to 10 or 11 grams per tonne.*
>
> *"The resource estimate is based on a number of intercepts in which substantially lower core recovery is co-incident with some of the higher-grade samples. It is believed that the poor recovery is due in part to an abundance of lattice texture, which is both difficult to drill and recover. Should the lost core material be composed primarily of unmineralized material, an upward grade bias may exist. Alternatively, the lost core may also represent void space, suggesting that the overall bulk density of the vein is lower in these areas. This could lead to an upward bias in tonnage for areas where low recovery was observed. In recognition of these concerns, grades for individual assays have been weighted according to recovered length as opposed to measured drill length. As well, the specific gravity for each composite interval has been adjusted downward by the percentage of lost core. The net result of these adjustments was to lower the overall specific gravity from 2.54 to*

[12] current practice does not accept the reporting of a total in which an inferred resource is added to indicated or measured resources. Such a total appears in this quote, but it is from a report completed in 2000, not a current statement.

2.35 with a slight bias toward lower densities in zones of higher grade, thereby impacting the grade as well as the tonnage. These adjustments are consistent with observations made during earlier historic mining operations, where observed bulk density was consistently lower than theoretical values obtained from intact core.

"The above-stated resource classifications provide reasonable conformity with both Australasian (JORC) and the SME-AIME guidelines. The deposit is drilled from the lowest historic mining level (285 meters elevation) down to an elevation of about 100 meters on a nominal 50 to 100 meter spacing. Below this, as well as on the extremities, the drill density is much less. This change in drill intercept density coincides with the change in classification from indicated to inferred. Based on variogram data coupled with observed structural continuity, grades cannot be predicted with an accepted level of confidence where the drill spacing is greater than 95 meters or the distance to the closest composite exceeds half the maximum prescribed spacing.

"None of the resource has been classified as measured. It is believed that, in addition to reducing the overall drill spacing to a 48 meter staggered pattern, the issues surrounding core recovery and sample voids will have to be addressed through bulk sampling in order to classify any portion of the resource as measured. There has been no recent mining experience with the deposit and it would be premature to assume that the level of confidence associated with measured resources can be applied to this resource without further work. Although historic mining has demonstrated the continuity of the vein structures, substantial underground development (raising & drifting) was necessary to define resources with sufficient confidence to commence mining operations. While necessary to formulate any detailed mine plans, it is not advised that any additional drilling be completed from surface in the area of the indicated resource. A limited surface program designed to upgrade resources along the peripheries of deposit as well as determine the full down-plunge extent of the Minita resource could be considered as an addendum to the recently completed program."

Some of the parameters and assumptions that Lacroix used were:

At the time of the estimate, 52 core holes had been completed in the El Dorado Mine Area. Lacroix used 49 holes in the resource estimate.

The drill holes used intercepted the veins between the lowest historic mining level at about 285 meters asl and an elevation of about 100 meters.

The drill hole data base contained 2,216 assayed sample intervals, 303 of which were located within the interpreted boundaries of the mineralized zones.

Gold assays from the Minita and Minita 3 veins were capped, or cut, at 55.0 g Au/t before compositing. Those from the Zancudo Vein were cut to 25.0 g Au/t.

In order to compensate for low core recovery in a number of drill holes, when compositing intervals each assay was weighted by the recovered core length rather than the drilled length. In order to compensate for the "missing mass", for calculation purposes the specific gravity for each drilled length was reduced by the percent of missing core.

Underground data were used to assist in modeling the deposit, but assays from underground were not used in the estimate.

Cut-off values were based on equivalent gold grades, estimated using US$290 per ounce & 92% recovery for gold and US$5.00 per ounce and 85% recovery for silver.

Recommended minimum in-situ cut-off grades of 6.0 g/t gold equivalent for the Minita veins and 9.0 g/t gold equivalent for the Zancudo Vein were used.

After testing various methods, ordinary kriging was selected as the best estimation procedure.

Table A2 Lacroix 2000 Resource Estimate, El Dorado Area

In Situ Resource – Indicated								
Sample Distance less than 48 m; Drill Spacing less than 95 m								
	Cutoff	**Tonnes**	**Au Equiv**	**Au Equiv**	**Au**	**Ag**	**H.Thick**	**SG**
Vein	**(Au Eq g/t)**	**(x 1,000)**	**(KOz)**	**(g/t)**	**(g/t)**	**(g/t)**	**(m)**	
Zancudo	9	32.0	14.3	13.86	12.20	104.2	0.70	2.52
Minita	6	626.1	317.2	15.76	14.17	99.6	3.90	2.34
Minita 3	6	141.1	60.6	13.37	11.95	89.0	2.64	2.37
Subtotal	**Indicated**	**799.2**	**392.1**	**15.26**	**13.70**	**97.9**	**3.55**	**2.35**
In Situ Resource – Inferred								
Sample Distance between 48 and 95 meters; Drill Spacing between 95 meters and 2 x 95 meters								
	Cutoff	**Tonnes**	**Au Equiv**	**Au Equiv**	**Au**	**Ag**	**H.Thick**	**SG**
Vein	**(Au Eq g/t)**	**(x 1,000)**	**(KOz)**	**(g/t)**	**(g/t)**	**(g/t)**	**(m)**	
Zancudo	9	4.2	1.4	10.68	9.62	66.5	0.50	2.53
Minita	6	103.1	40.3	12.15	10.92	77.6	2.68	2.45
Minita 3	6	3.3	1.0	9.73	8.62	69.5	2.66	2.10
Subtotal	**Inferred**	**110.6**	**42.7**	**12.02**	**10.80**	**76.94**	**2.60**	**2.44**
This table is taken from Table 3.5 of Lacroix, 2000, with minor re-formatting but no alteration of content. Au equivalent calculated using 62.8 grams silver per gram gold ($5/oz Ag, R=85%; $290/oz Au, R=92%)								

HISTORICAL RESOURCE ESTIMATES – LA COYOTERA

There have been at least five estimates of the resource at La Coyotera since 1995, including:

1. James Askew and Associates in 1995. This early estimate incorporated data from only 25 drill holes, and so it is not directly comparable to subsequent estimates using a larger data base. The results are not presented in this report.
2. Kinross Gold USA estimate in 1996. Kinross identified what they considered to be inconsistencies in the JAA estimate, and did what was referred to as an in-house "in situ geologic resource estimate". [Kinross] is stated that the 1996 estimate used the same 25 hole data base as the 1995 one. However, later in the same 2000 report and in Snider et al (1996) it is stated that composites from 35 holes were used. The larger number of holes is correct, since more holes were drilled during the 1995 – 96 period. The results of the 1996 estimate are not presented in this report.
6. Kinross Gold USA estimate in 1997. This estimate incorporated the results of 52 drill holes. It was done using the Datamine software package and the following parameters:
   - specific gravity of vein material 2.47
   - search distances of 40 meters for indicated and 60 meters for inferred material
   - spherical search
   - maximum and minimum sample values of 10 and 3
   - 2 meter down hole composites
   - no cutting factor
7. Strathcona Mineral Services, 1997. Strathcona started its review of the La Coyotera resource as part of a due diligence effort for another party, and completed it on behalf of Kinross. Strathcona made a number of recommendations for improving the estimating procedures. However, in its revision of the Kinross estimate of 1997, the only change Strathcona made was to use the higher cut off grade that appears in Table 3.
8. Kinross Gold El Salvador S.A. de C.V. estimate in 2000. Kinross re-estimated the La Coyotera resource using the following parameters:
   - specific gravity of vein material 2.45
   - minimum grade of 4 g Au/t. That is, on a section contoured by grade, only material that falls within the 4 g Au/t contour was used.
   - a polygonal method was used. For the indicated category, areas of influence for each drill hole were constructed using perpendicular bisectors between adjacent drill hole intersections, or a maximum distance of 25 meters away from the drill hole in any direction.
   - inferred material was that supported only by single drill hole intercepts or lying outside the 25 meter radius from a drill hole.

- vein dilution by wallrock was not considered except that vein limits were modified to consider incompetent low grade or waste that would inevitably mix with vein material during mining. Also considered was low grade vein material that could not be readily distinguished from ore during mining.

The tabulation that follows is adapted from one that appeared in the report by Kinross Staff (2000).

Lacroix Resource Estimate

The most current work relating to a resource estimate for the La Coyotera veins is contained in a memo from P. Lacroix dated March 2001. The memo is based on "a very preliminary review" of the La Coyotera resource. The memo included a "Preliminary Estimate". Lacroix chose not to assign the preliminary estimate to any of the categories, measured, indicated or inferred. He stated that such assignment would be subject to the completion of a more rigorous model. The memo of March 2001 is essentially a working document prepared for discussion, and the preliminary estimates included in it are not used in the present report.

Table A3 Comparison of 1997 - 2000 La Coyotera Resource Estimates

Estimator and Date	Mirage - Kinross Gold Corp, July 1997		Strathcona Mineral Services, September 1997 (Thalenhorst)		Staff of Kinross El Salvador S.A. de C.V., March 2000	
Category	Indicated	Inferred	Indicated	Inferred	Indicated	Inferred
Gold Cut Off Grade (gpt)	2.00	2.00	4.00	4.00	4.00	4.00
Tonnes	1,724,100	273,100	1,055,900	149,400	932,725	326,368
Gold Grade (gpt)	5.72	4.67	7.48	6.04	8.572	4.673
Silver Grade (gpt)	45.93	44.42	56.79	59.959	76.00	55.12
Contained Gold (ounces)	317,000	41,000	254,000	29,000	257,035	49,034
Contained Silver (ounces)	2,546,000	390,000	1,928,000	288,000	2,279,065	578,393

Notes: These resource estimates pre-date the implementation of National Instrument 43-101. Nevertheless the writer believes that the terms "Indicated" and "Inferred" were used in a way that is generally consistent with the CIM Standards on Mineral Resources and Reserves of August 2000. The present writer is not aware of the status of any of the resource authors with respect to the current definition of a "Qualified Person".

HISTORICAL RESOURCE ESTIMATES – NUEVA ESPERANZA

There have been at least 5 estimates of the resource at Nueva Esperanza since 1995, including:.

1. James Askew and Associates in 1995. This early estimate incorporated data from only 31 drill holes, and so is not directly comparable to subsequent estimates using a larger data base. The results are not presented in this report.
2. Kinross Gold Corporation did an in-house resource estimate in 1996, using 33 core holes. Kinross' results are summarized in Table A4, which is a copy of part of Table 5.4 in Snider et al, 1996.

Table A4 1996 Nueva Esperanza Resource Estimate

In Situ Geologic Resource* above 300 meters Elevation						
	Indicated 20 meter oriented search			**Inferred** 60 meter oriented search		
Cutoff Grade (g Au/tonne)	**Tonnes**	**Gold Grade (g Au/tonne)**	**Contained gold, troy ounces**	**Tonnes**	**Gold Grade (g Au/tonne)**	**Contained gold, troy ounces**
0.0	591,100	2.78	52,830	527,000	2.72	46,090
0.7	521,500	3.08	51,640	513,700	2.78	45,910
1.0	462,500	3.36	49,960	481,700	2.9	44,910
2.0	304,100	4.35	42,530	306,000	3.67	36,110
3.0	197,000	5.37	34,010	168,200	4.68	25,310
4.0	118,600	6.60	25,170	91,500	5.71	16,800
5.0	67,000	8.23	17,730	57,300	6.44	11,860

Notes: *"Geologic Resource" is not a current term but corresponds in general to "Resource". The writer (Ronning) believes that the terms indicated and inferred are used in a manner consistent with the current CIM Standards.

A density of 2.33 tonnes/cubic meter was used

This resource was estimated using substantially the same data base as the later estimate by Lacroix (section 0) but differs in some details

The later (Lacroix) estimate included some material below 300 meters elevation in the inferred category. This 1996 estimate is restricted to material above 300 meters.

This estimate used data from trenches, whereas the later estimate did not

In both estimates interpolation was done using the mathematical procedure known as "kriging". However, different parameters, such as search radii, were used. See the two source reports for details.

3. Kinross Gold Corp. did another in-house estimate in 1997.
4. Kinross' Estimate was reviewed by Thalenhorst (1997). Thalenhorst made a number of recommendations for improving the resource estimate, but did not re-estimate the resource implementing those recommendations. He did re-state the 1997 Kinross estimate using a higher cut-off grade, with the comment that the original cut-off used by Kinross was unrealistically low.

Table A5 below, is extracted from Thalenhorst's Table 1.

Table A5 1997 Nueva Esperanza Resource Estimates

	Indicated			Inferred		
Cutoff Grade g Au/tonne	Tonnes	Gold g Au/tonne	Silver g Ag/tonne	Tonnes	Gold g Au/tonne	Silver g Ag/tonne
Kinross 1997 estimate:						
1.0	845,000	2.7	16	37,600	2.2	13
Thalenhorst re-statement of Kinross estimate:						
3.0	266,400	4.6	26	4,800	3.8	19

Lacroix Resource Estimate

The most current resource estimate for the Nueva Esperanza Vein is Lacroix' estimate of October 2000. It is described here in somewhat more detail than the earlier estimates. The following description is from Lacroix' summary in his 2000 report:

> *"An update of the Nueva Esperanza resources and their potential economic contribution to the El Dorado Project has been completed. Indicated resources are estimated to be 0.54 million tonnes grading 4.3 grams per tonne gold and 27.6 grams per tonne silver or 4.7 grams per tonne gold equivalent. This resource is reported at a 0.0 gram per tonne gold cut-off. At a 2.0 gram per tonne cut-off, the resource is estimated at 0.50 million tonnes grading 4.5 grams gold and 29.1 grams silver per tonne with a 5.0 gram per tonne gold equivalent grade.*
>
> *"An additional resource of 0.9 million tonnes grading 2.2 grams per tonne gold equivalent at a 0.0 cut-off grade has been estimated. This resource, which lies below and contiguous to the indicated resource within the same structure, is classified as inferred. Reported at a 2.0-gram cut-off, the (inferred) resource totals 0.4 million tonnes grading 3.3 grams per tonne gold equivalent. Caution is advised in use of the higher cut-off values for both indicated and inferred, as blocks are not necessarily contiguous.*
>
> *"A large portion of the higher-grade resource is based on samples from only three drill hole intercepts. As well, a zone of substantially lower core recovery is co-incident with some of the higher-grade intercepts. It is estimated that if the lost core represents void space or unmineralized material, the reduction in contained metal could be as high as 23% in the indicated category. Although it is unlikely to be this high, the full magnitude of the correction does serve to demonstrate the level of risk associated with the deposit. The foremost component of any drilling undertaken to upgrade the Nueva Esperanza deposit should be directed at improving the confidence level for the grade estimates associated with the three high-grade holes as well as resolving the issues surrounding the low core recovery. Potential extension of the known resource along strike and down dip, if any, should also be investigated*

"The above-stated resource classifications provide reasonable conformity with both Australasian (JORC) and the SME-AIME guidelines. The deposit is drilled from surface (425 to 450 m. elev.) down to about 375 meters to 325 meters elevation on an approximate spacing of 50 meters along strike by 25 meters down dip. Below this, as well as on the extremities, the drill density is much less. This change in drill intercept density coincides with the change in classification from indicated to inferred. None of the resource has been classified as measured. It is believed that, in addition to reducing the overall drill spacing to a 25 meter staggered pattern, the issues of core recovery and sample voids will have to be addressed in order to classify any portion of the Nueva Esperanza resource as measured. There has been no recent mining experience with the deposit and it would be premature to assume that the level of confidence associated with measured resources can be applied to this resource without further work. While necessary to formulate any detailed mines, it is not advised that any additional drilling be completed in the area of the indicated resource unless more favorable economics can be demonstrated. Also, given the increase in incremental stripping beyond the depth of the indicated resource, it is doubtful that upgrading the inferred resource would be of substantial benefit at this time."

Some of the parameters used in the Lacroix estimate for Nueva Esperanza were:

At the time of the estimate, a total of 37 core holes, 7 reverse circulation holes and 12 trenches had been completed at Nueva Esperanza. The resource model was restricted to the use of sample data from 35 of the core holes.

The deposit had been drilled from surface (425 to 450 m. elev.) down to about 375 meters to 325 meters elevation on an approximate spacing of 50 meters along strike by 25 meters down dip. All holes had been collared from the hanging wall of the vein, drilled toward the east at a dip of 35 to 80 degrees from horizontal. Overall, drilling had covered an area about 300 meters in strike length down to an elevation of 200 meters.

The Nueva Esperanza drill hole data base (core holes only) contained 705 assayed samples from core holes, 255 of which were located within the interpreted boundaries of the mineralized zone or "vein".

all assay grades for gold were capped or cut at 27.0 g/tonne before compositing. This capping was adopted from earlier work by Kinross staff.

Assays intervals were composited down the hole from collar to final depth in length-weighted averages each representing 2.0 meters of continuous sample.

The resource estimate for Nueva Esperanza was based on a 3-D computer block model
The indicated resource is that part of the resource where the drill hole spacing is less than 55 meters, the spacing having been selected using variography.

Table A6 contains a summary the results of Lacroix' estimate.

Table A6 Lacroix Resource Estimate for Nueva Esperanza

Indicated Resource				
Au Eq (G/T) Cut-off	Tonnes X1,000	Au (G/T) Equivalent	Au (G/T)	Ag (G/T)
0.0	539.1	4.70	4.26	27.63
0.5	539.0	4.70	4.26	27.63
1.0	538.7	4.70	4.26	27.65
1.5	525.3	4.79	4.34	28.17
2.0	495.4	4.97	4.51	29.13
2.5	452.9	5.23	4.74	30.54
3.0	411.0	5.48	4.97	32.04
3.5	358.3	5.81	5.27	33.99
4.0	290.9	6.28	5.69	36.99
Notes: SG = 2.33, Avg. Drill Spacing less than 55 Meters				
Inferred Resource				
Au Eq (G/T) Cut-off	**Tonnes X1,000**	**Au (G/T) Equivalent**	**Au (G/T)**	**Ag (G/T)**
0.0	905.4	2.18	2.03	9.43
0.5	899.2	2.19	2.04	9.48
1.0	766.6	2.42	2.25	10.87
1.5	578.4	2.80	2.59	12.86
2.0	395.3	3.30	3.04	15.81
2.5	293.1	3.67	3.39	17.87
3.0	186.3	4.18	3.86	20.39
3.5	126.6	4.63	4.29	21.49
4.0	91.5	4.97	4.62	22.26
Notes: SG = 2.33, Avg. Drill Spacing > 55 Meters				
Au equivalent calculated using 62.8 grams silver per gram gold ($5/oz Ag, R=85%; $290/oz Au, R=92%)				
This table is taken from Table 3.6 of Lacroix, 2000, with minor re-formatting and the addition of explanatory notes, but no alteration of content.				

Lacroix (2000) noted that in parts of the Nueva Esperanza deposit core recoveries were poor. The estimates in Table A6 are not adjusted for core recovery. Lacroix included the following discussion of the issue:

"With respect to the issue of core recovery, a number of explanations have been theorized as to the reason for the poor recovery. Depending on which is more likely, the impact on the resource inventory will be different. Should the lost core be composed primarily of unmineralized material, an upward grade bias could exist and grades may have to be adjusted downward. If the lost core represents void space, the bulk specific gravity of the vein may be lower than the assumed 2.33. This would lead to an overall upward bias in tonnage, but may have very little impact on grade. To assess the impact of the latter, core recovery was modeled as an additional grade item based on the average recovery for each composite. This allowed a separate calculation of specific gravity for each block based on the modeled recovery. The individual SG values were then applied to each block tonnage to arrive at an adjusted estimate of the resource inventory. The results of the adjustments are summarized in Table A7.

Table A7 Nueva Esperanza Resource, SG Adjusted by Core Recovery[13]

	SG=2.33			SG=2.33 * Core Recovery			
	KTonnes	**Au Equiv (G/T)**	**KOz Au**	**KTonnes**	**Au Equiv (G/T)**	**KOz Au**	**Difference**
Indicated	539.1	4.70	81.5	424.4	4.58	62.5	23.3%
Inferred	905.4	2.18	63.5	770.5	2.17	53.8	15.3%
Total	**1,444.5**	**3.12**	**145.0**	**1,195.0**	**3.03**	**116.3**	**19.8%**

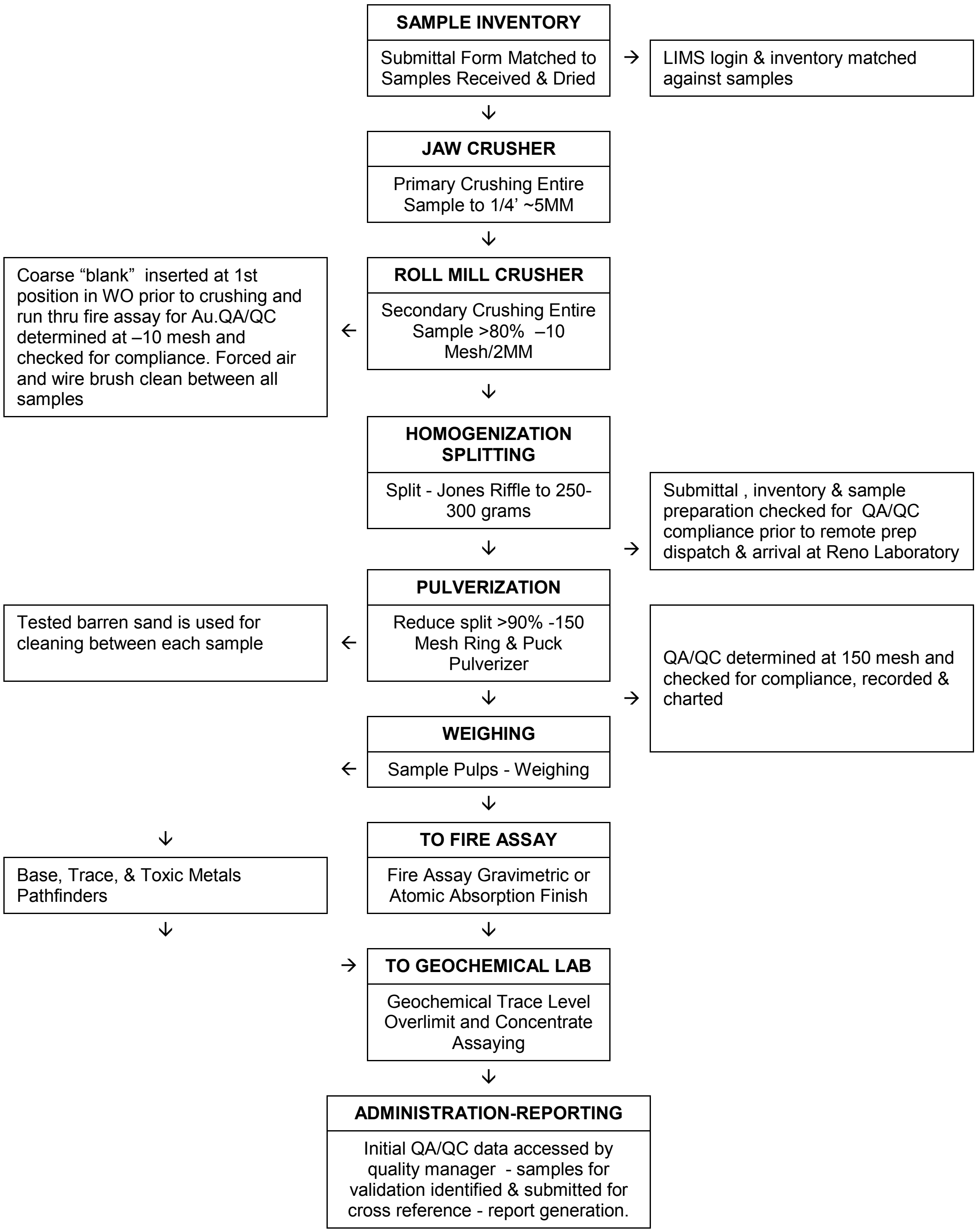
"As can be observed, the differences are significant and the impact is higher in the indicated resource. There has also been a slight reduction of grade (3%) in this portion of the resource, indicating that the lower core recovery is slightly more prevalent in the higher-grade areas. Should the lost core be related to lost calcite material, a reduction in grade of up to 23% in the indicated category could be evident."

[13] This table is copied directly from Lacroix. The table number has been changed to correspond to the numbering sequence in the present report.

Appendix B Independent Sample Preparation and Analytical Procedures

This description is copied from Ronning and Ristorcelli, 2003

Pacific Rim/Inspectorate Sample Preparation Procedures



Pacific Rim/Inspectorate Analytical Procedures

Pacific Rim's samples are analyzed at the laboratory of Inspectorate America Corporation in Sparks, Nevada using the following methodology:

Element	Inspectorate America Procedure Description	Lower Detection Limit	Description of Method
gold	FA-AA 30 g subsample	2 ppb	fire assay fusion of 30 gram sub-sample; analysis by atomic absorption spectrometer
gold	FA	0.005 g/t	fire assay fusion, gravimetric determination
silver	FA-AAS	0.1 ppm	cold vapour atomic absorption spectrometry
30 other elements	Aqua/ICP	varies by element	aqua regia acid digestion and ICP-AES analysis

Independent Sample Preparation and Analytical Procedures (Ronning and Ristorcelli, 2003)

The sample preparation sequence followed was:

- Samples were logged in to the laboratory's tracking system.
- Samples were dried in a drying oven.
- Samples were crushed using jaw and/or roller crushers to better than 70% minus 2 millimeters.
- 50 to 250 gram sub-samples were split from the crushed material using a riffle splitter.

The sub-samples were pulverized to better than 85% passing through a 75 micron screen.

- The analytical methods employed by ALS Chemex are:
- Analytical Procedures Used on Independent Samples

Element	ALS Chemex Procedure Code	Detection Range, ppm	Description of Method
gold	Au-AA25	0.01 to 100	fire assay fusion of 30 gram sub-sample; analysis by atomic absorption spectrometer
silver	Ag-AA45	0.2 to 100	aqua regia acid digestion; analysis by atomic absorption spectrometry
silver	Ag-AA46	1 to 1,500	aqua regia acid digestion; analysis by atomic absorption spectrometry

Appendix C Detailed Tabulation of El Dorado Resources

Minita Area – Total Minita Resource

Table C1 Total Minita Area Measured and Indicated Resources Individually

Total Minita Area - Measured

Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Ounces (AuEq)	Tr. Width (m)	H. Width (m)
0.0	729,000	11.55	10.56	247,500	69.43	1,627,300	270,800	2.78	2.91
0.5	709,900	11.86	10.84	247,300	71.24	1,625,900	270,600	2.83	2.96
1.0	692,500	12.14	11.09	246,900	72.96	1,624,500	270,300	2.93	3.06
2.0	664,500	12.59	11.51	245,800	75.66	1,616,400	268,900	3.05	3.19
3.0	633,100	13.09	11.96	243,500	78.80	1,604,000	266,500	3.20	3.35
3.5	624,000	13.23	12.09	242,600	79.69	1,598,700	265,400	3.24	3.39
4.0	**614,100**	**13.39**	**12.23**	**241,500**	**80.59**	**1,591,200**	**264,300**	**3.28**	**3.43**
4.5	591,500	13.73	12.55	238,700	82.76	1,573,800	261,100	3.35	3.51
5.0	579,900	13.92	12.72	237,100	83.92	1,564,700	259,500	3.39	3.55
5.5	555,700	14.30	13.05	233,200	86.48	1,545,100	255,400	3.38	3.54
6.0	541,000	14.52	13.27	230,800	88.00	1,530,600	252,600	3.40	3.56
6.5	524,000	14.80	13.52	227,700	89.64	1,510,200	249,300	3.42	3.59
7.0	513,400	14.97	13.67	225,600	90.66	1,496,400	247,100	3.45	3.61
7.5	491,700	15.30	13.98	221,000	92.13	1,456,400	241,800	3.45	3.62
8.0	456,900	15.88	14.51	213,200	95.60	1,404,300	233,300	3.48	3.64
8.5	440,600	16.16	14.78	209,300	97.36	1,379,200	228,900	3.53	3.70
9.0	416,600	16.58	15.16	203,100	99.58	1,333,800	222,100	3.57	3.73

Total Minita Area - Indicated

Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Ounces (AuEq)	Tr. Width (m)	H. Width (m)
0.0	1,515,600	8.40	7.73	376,800	46.39	2,260,700	409,100	2.08	2.17
0.5	1,385,400	9.14	8.42	375,200	50.55	2,251,500	407,300	2.14	2.23
1.0	1,289,800	9.77	9.00	373,300	54.10	2,243,300	405,300	2.22	2.31
2.0	1,261,500	9.96	9.17	372,100	55.11	2,235,200	404,100	2.27	2.36
3.0	1,217,300	10.23	9.42	368,700	56.68	2,218,100	400,400	2.33	2.42
3.5	1,195,600	10.36	9.54	366,700	57.45	2,208,500	398,200	2.36	2.46
4.0	**1,175,100**	**10.47**	**9.65**	**364,400**	**58.16**	**2,197,300**	**395,700**	**2.39**	**2.49**
4.5	1,123,900	10.76	9.90	357,900	59.75	2,159,000	388,800	2.45	2.55
5.0	1,086,700	10.96	10.09	352,600	60.98	2,130,700	383,000	2.50	2.61
5.5	1,043,200	11.20	10.31	345,700	62.45	2,094,600	375,600	2.55	2.65
6.0	1,001,300	11.43	10.51	338,500	63.79	2,053,500	368,000	2.59	2.70
6.5	896,000	12.02	11.06	318,600	67.89	1,955,600	346,400	2.59	2.71
7.0	823,900	12.49	11.48	304,100	70.61	1,870,300	330,800	2.64	2.76
7.5	750,600	13.00	11.95	288,400	73.21	1,766,700	313,700	2.68	2.80
8.0	680,200	13.55	12.47	272,600	75.89	1,659,600	296,300	2.72	2.84
8.5	610,100	14.15	13.03	255,500	79.10	1,551,600	277,600	2.75	2.88
9.0	558,800	14.65	13.48	242,200	81.94	1,472,200	263,200	2.78	2.91

Minita Area – Total Minita Resource (continued)

Table C2 Total Minita Area Measured plus Indicated Resources and Inferred

Total Minita Area - Measured and Indicated

Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Ounces (AuEq)	Tr. Width (m)	H. Width (m)
0.0	2,244,600	9.42	8.65	624,300	53.88	3,888,000	679,900	2.31	2.41
0.5	2,095,300	10.06	9.24	622,500	57.56	3,877,400	677,900	2.37	2.48
1.0	1,982,300	10.60	9.73	620,200	60.69	3,867,800	675,600	2.46	2.57
2.0	1,926,000	10.87	9.98	617,900	62.20	3,851,600	673,000	2.54	2.65
3.0	1,850,400	11.21	10.29	612,200	64.25	3,822,100	666,900	2.63	2.74
3.5	1,819,600	11.34	10.42	609,300	65.08	3,807,200	663,600	2.66	2.78
4.0	**1,789,200**	**11.47**	**10.53**	**605,900**	**65.86**	**3,788,500**	**660,000**	**2.70**	**2.81**
4.5	1,715,400	11.78	10.82	596,600	67.68	3,732,800	649,900	2.76	2.88
5.0	1,666,600	11.99	11.01	589,700	68.97	3,695,400	642,500	2.81	2.94
5.5	1,598,900	12.27	11.26	578,900	70.80	3,639,700	631,000	2.83	2.96
6.0	1,542,300	12.52	11.48	569,300	72.28	3,584,100	620,600	2.87	3.00
6.5	1,420,000	13.05	11.97	546,300	75.91	3,465,800	595,700	2.90	3.03
7.0	1,337,300	13.44	12.32	529,700	78.30	3,366,700	577,900	2.95	3.09
7.5	1,242,300	13.91	12.75	509,400	80.70	3,223,100	555,500	2.99	3.13
8.0	1,137,100	14.49	13.29	485,800	83.81	3,063,900	529,600	3.02	3.17
8.5	1,050,700	14.99	13.76	464,800	86.76	2,930,800	506,500	3.08	3.22
9.0	975,400	15.48	14.20	445,300	89.48	2,806,000	485,300	3.12	3.26

Total Minita Area - Inferred

Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Ounces (AuEq)	Tr. Width (m)	H. Width (m)
0.0	141,300	6.58	6.03	27,400	38.87	176,600	29,900	1.68	1.77
0.5	136,300	6.80	6.23	27,300	40.19	176,100	29,800	1.71	1.81
1.0	78,400	11.39	10.39	26,200	67.40	169,900	28,700	2.08	2.21
2.0	78,400	11.39	10.39	26,200	67.44	170,000	28,700	2.08	2.21
3.0	78,400	11.39	10.39	26,200	67.44	170,000	28,700	2.08	2.21
3.5	78,400	11.39	10.39	26,200	67.44	170,000	28,700	2.08	2.21
4.0	**78,400**	**11.39**	**10.39**	**26,200**	**67.44**	**170,000**	**28,700**	**2.08**	**2.21**
4.5	78,400	11.39	10.39	26,200	67.44	170,000	28,700	2.08	2.21
5.0	77,900	11.38	10.42	26,100	67.68	169,500	28,500	2.10	2.23
5.5	77,100	11.46	10.53	26,100	68.14	168,900	28,400	2.13	2.26
6.0	75,800	11.57	10.63	25,900	68.81	167,700	28,200	2.15	2.29
6.5	62,100	12.72	11.67	23,300	76.18	152,100	25,400	2.21	2.36
7.0	60,100	12.94	11.85	22,900	77.58	149,900	25,000	2.24	2.40
7.5	56,900	13.28	12.14	22,200	79.97	146,300	24,300	2.29	2.46
8.0	53,800	13.59	12.43	21,500	82.50	142,700	23,500	2.34	2.52
8.5	53,200	13.62	12.51	21,400	83.02	142,000	23,300	2.36	2.54
9.0	52,300	13.68	12.55	21,100	83.91	141,100	23,000	2.39	2.57

South Minita Area (there are no Measured resources)

Table C3 South Minita Indicated Resource

South Minita Indicated

Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Ounces (AuEq)	True Width (m)	Hor. Width (m)
0.0	1,462,800	8.09	7.37	346,800	49.85	2,345,000	380,300	1.48	1.92
0.5	1,462,800	8.09	7.37	346,800	49.85	2,345,000	380,300	1.48	1.92
1.0	1,451,400	8.14	7.43	346,500	50.22	2,343,000	380,000	1.46	1.91
2.0	1,342,600	8.68	7.91	341,500	53.83	2,324,000	374,700	1.42	1.86
3.0	1,172,500	9.59	8.73	329,100	60.12	2,266,000	361,500	1.32	1.74
3.5	1,128,300	9.84	8.95	324,800	61.85	2,244,000	356,900	1.31	1.72
4.0	**1,070,900**	**10.16**	**9.25**	**318,400**	**63.99**	**2,203,000**	**349,900**	**1.28**	**1.68**
4.5	1,004,300	10.55	9.60	310,000	66.62	2,151,000	340,800	1.25	1.64
5.0	938,900	10.96	9.97	300,900	69.24	2,090,000	330,800	1.23	1.62
5.5	884,800	11.31	10.29	292,600	71.50	2,034,000	321,700	1.22	1.62
6.0	806,900	11.84	10.76	279,200	75.60	1,961,000	307,200	1.21	1.60
6.5	736,700	12.37	11.23	266,100	79.82	1,890,000	293,100	1.20	1.60
7.0	682,300	12.82	11.64	255,300	82.94	1,819,000	281,300	1.20	1.59
7.5	614,200	13.44	12.20	240,900	86.64	1,711,000	265,300	1.18	1.57
8.0	539,300	14.23	12.92	224,000	91.41	1,585,000	246,700	1.14	1.49
8.5	471,100	15.10	13.73	208,000	95.63	1,448,000	228,700	1.10	1.44
9.0	433,200	15.66	14.25	198,400	98.73	1,375,000	218,000	1.09	1.43

Table C4 South Minita Inferred Resource

South Minita Inferred

Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Ounces (AuEq)	True Width (m)	Hor. Width (m)
0.0	552,500	5.28	4.84	85,900	31.06	552,000	93,800	1.75	2.17
0.5	552,500	5.28	4.84	85,900	31.06	552,000	93,800	1.75	2.17
1.0	505,800	5.69	5.21	84,800	33.33	542,000	92,500	1.64	2.00
2.0	432,600	6.38	5.83	81,100	37.96	528,000	88,700	1.55	1.90
3.0	349,400	7.30	6.67	74,900	44.26	497,000	82,000	1.41	1.73
3.5	321,400	7.65	6.99	72,200	46.72	483,000	79,100	1.37	1.67
4.0	**302,800**	**7.89**	**7.20**	**70,100**	**48.23**	**470,000**	**76,800**	**1.35**	**1.65**
4.5	280,100	8.19	7.47	67,300	50.15	452,000	73,700	1.33	1.62
5.0	236,100	8.83	8.06	61,200	54.26	412,000	67,000	1.31	1.60
5.5	198,100	9.51	8.68	55,300	58.40	372,000	60,600	1.27	1.56
6.0	166,600	10.22	9.33	50,000	62.53	335,000	54,800	1.20	1.49
6.5	143,400	10.87	9.91	45,700	66.88	308,000	50,100	1.16	1.45
7.0	129,000	11.33	10.34	42,900	69.17	287,000	47,000	1.14	1.43
7.5	111,600	11.97	10.95	39,300	70.98	255,000	42,900	1.09	1.37
8.0	96,400	12.63	11.58	35,900	73.78	229,000	39,100	1.06	1.33
8.5	85,600	13.19	12.09	33,300	76.71	211,000	36,300	1.04	1.31
9.0	73,700	13.90	12.74	30,200	81.48	193,000	32,900	1.00	1.27

La Coyotera

Table C5 La Coyotera Measured Resource

				Measured			
Cutoff	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Ounces** Silver	**Ounces** Gold Eq.
0.0	1,286,000	1.81	1.61	66,500	14.22	588,000	74,900
0.2	1,126,000	2.06	1.83	66,100	16.12	583,000	74,500
0.4	918,000	2.45	2.18	64,500	18.97	560,000	72,500
0.5	802,000	2.75	2.45	63,000	20.97	541,000	70,800
0.6	694,000	3.09	2.76	61,500	23.22	518,000	68,900
0.8	530,000	3.83	3.43	58,300	28.20	480,000	65,200
1.0	429,000	4.52	4.06	55,900	32.75	451,000	62,300
1.2	367,000	5.10	4.58	54,000	36.54	431,000	60,100
1.4	321,000	5.65	5.08	52,300	40.23	415,000	58,200
1.6	295,000	6.00	5.40	51,300	42.47	403,000	57,000
1.8	282,000	6.21	5.58	50,600	43.71	396,000	56,300
2.0	268,000	6.44	5.80	49,900	44.99	387,000	55,400
2.5	226,000	7.22	6.51	47,200	49.31	358,000	52,400
3.0	195,000	7.93	7.17	44,900	53.26	333,000	49,600
4.0	**166,000**	**8.69**	**7.86**	**42,100**	**57.79**	**309,000**	**46,500**
5.0	142,000	9.40	8.51	39,000	62.15	285,000	43,000
6.0	122,000	10.05	9.11	35,800	65.94	259,000	39,500
7.0	101,000	10.81	9.79	31,700	71.25	230,000	35,000
8.0	83,000	11.50	10.42	27,900	75.44	202,000	30,700
9.0	65,000	12.34	11.18	23,400	81.03	169,000	25,800

Table C6 La Coyotera Indicated Resource

				Indicated			
Cutoff	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Ounces** Silver	**Ounces** Gold Eq.
0.0	6,309,000	1.37	1.18	239,500	12.90	2,617,000	276,900
0.2	5,475,000	1.56	1.35	237,800	14.71	2,589,000	274,700
0.4	4,633,000	1.79	1.55	231,200	16.63	2,477,000	266,500
0.5	4,097,000	1.97	1.71	224,800	18.08	2,381,000	258,800
0.6	3,561,000	2.18	1.90	217,200	19.70	2,255,000	249,400
0.8	2,703,000	2.65	2.32	201,800	22.92	1,992,000	230,300
1.0	1,989,000	3.28	2.89	184,900	27.28	1,745,000	209,800
1.2	1,627,000	3.77	3.33	174,300	30.57	1,599,000	197,200
1.4	1,251,000	4.51	4.00	160,800	35.91	1,444,000	181,400
1.6	1,067,000	5.03	4.47	153,300	39.52	1,355,000	172,600
1.8	966,000	5.38	4.79	148,700	41.66	1,294,000	167,200
2.0	879,000	5.72	5.10	144,100	43.99	1,244,000	161,800
2.5	714,000	6.53	5.83	133,800	49.26	1,131,000	150,000
3.0	609,000	7.19	6.43	125,800	53.31	1,043,000	140,700
4.0	**501,000**	**7.99**	**7.15**	**115,200**	**58.68**	**945,000**	**128,700**
5.0	415,000	8.71	7.81	104,200	63.60	849,000	116,400
6.0	349,000	9.33	8.37	93,800	67.49	757,000	104,600
7.0	288,000	9.92	8.91	82,700	70.79	657,000	92,000
8.0	228,000	10.58	9.53	69,700	73.40	537,000	77,400
9.0	161,000	11.42	10.32	53,500	76.84	398,000	59,200

La Coyotera (continued)

Table C7 La Coyotera Measured Plus Indicated Resource

Total Meas and Indicated							
Cutoff	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Oz Au	Grade (g Ag/t)	Ounces Silver	Ounces Gold Eq.
0.0	7,595,000	1.44	1.25	306,000	13.13	3,205,000	351,800
0.2	6,601,000	1.65	1.43	303,900	14.95	3,172,000	349,200
0.4	5,551,000	1.90	1.66	295,700	17.02	3,037,000	339,100
0.5	4,899,000	2.09	1.83	287,800	18.55	2,922,000	329,500
0.6	4,255,000	2.33	2.04	278,700	20.27	2,773,000	318,300
0.8	3,233,000	2.84	2.50	260,100	23.78	2,472,000	295,400
1.0	2,418,000	3.50	3.10	240,800	28.25	2,196,000	272,200
1.2	1,994,000	4.01	3.56	228,300	31.67	2,030,000	257,300
1.4	1,572,000	4.74	4.22	213,100	36.78	1,859,000	239,700
1.6	1,362,000	5.25	4.67	204,600	40.15	1,758,000	229,700
1.8	1,248,000	5.57	4.97	199,300	42.12	1,690,000	223,400
2.0	1,147,000	5.89	5.26	194,000	44.23	1,631,000	217,300
2.5	940,000	6.69	5.99	181,000	49.27	1,489,000	202,300
3.0	804,000	7.37	6.60	170,700	53.23	1,376,000	190,400
4.0	**667,000**	**8.17**	**7.34**	**157,300**	**58.48**	**1,254,000**	**175,200**
5.0	557,000	8.90	8.00	143,200	63.32	1,134,000	159,400
6.0	471,000	9.52	8.56	129,600	67.09	1,016,000	144,100
7.0	389,000	10.16	9.15	114,400	70.92	887,000	127,100
8.0	311,000	10.82	9.76	97,600	73.91	739,000	108,200
9.0	226,000	11.70	10.58	76,900	78.03	567,000	85,000

Table C8 La Coyotera Inferred Resource

Inferred							
Cutoff	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Oz Au	Grade (g Ag/t)	Ounces Silver	Ounces Gold Eq.
0.0	626,000	0.92	0.77	15,400	10.40	209,000	18,400
0.2	516,000	1.09	0.92	15,200	12.45	206,000	18,100
0.4	410,000	1.30	1.09	14,300	14.86	196,000	17,100
0.5	338,000	1.48	1.24	13,500	17.04	185,000	16,100
0.6	301,000	1.60	1.33	12,900	18.41	178,000	15,500
0.8	233,000	1.86	1.56	11,600	21.40	160,000	13,900
1.0	170,000	2.22	1.85	10,100	26.05	143,000	12,200
1.2	101,000	3.00	2.51	8,200	34.05	111,000	9,800
1.4	86,000	3.29	2.76	7,700	37.04	103,000	9,200
1.6	75,000	3.57	2.99	7,200	40.31	97,000	8,600
1.8	63,000	3.91	3.27	6,700	44.66	91,000	8,000
2.0	58,000	4.07	3.41	6,400	46.27	87,000	7,700
2.5	45,000	4.63	3.91	5,600	50.32	72,000	6,600
3.0	30,000	5.57	4.72	4,500	59.58	57,000	5,300
4.0	**19,000**	**6.86**	**5.83**	**3,600**	**72.12**	**44,000**	**4,200**
5.0	14,000	7.66	6.52	3,000	80.38	37,000	3,500
6.0	11,000	8.39	7.11	2,400	89.43	31,000	2,900
7.0	8,000	9.11	7.75	1,900	94.99	24,000	2,300
8.0	5,000	10.22	8.78	1,300	100.55	15,000	1,500
9.0	3,000	11.33	9.78	900	108.11	10,000	1,000

Nueva Esperanza

Table C9 Nueva Esperanza Indicated Resource

			Indicated				
Cutoff	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Ounces** Silver	**Ounces** Gold Eq.
0.2	2,481,000	1.37	1.26	100,500	7.68	613,000	109,200
0.3	2,204,000	1.51	1.39	98,400	8.49	601,000	107,000
0.4	1,925,000	1.68	1.54	95,500	9.48	586,000	103,900
0.5	1,726,000	1.82	1.67	92,900	10.28	570,000	101,000
0.6	1,525,000	1.99	1.83	89,600	11.24	551,000	97,500
0.8	1,159,000	2.40	2.20	82,100	13.72	511,000	89,400
1.0	**971,000**	**2.69**	**2.47**	**77,200**	**15.32**	**478,000**	**84,000**
1.2	799,000	3.03	2.79	71,600	17.11	440,000	77,900
1.4	667,000	3.38	3.11	66,600	18.91	406,000	72,400
1.6	593,000	3.61	3.33	63,400	19.94	380,000	68,800
1.8	533,000	3.83	3.53	60,400	20.86	357,000	65,500
2.0	471,000	4.08	3.77	57,100	21.78	330,000	61,800
2.5	348,000	4.74	4.39	49,200	24.49	274,000	53,100
3.0	277,000	5.26	4.88	43,400	26.45	236,000	46,800
4.0	**183,000**	**6.20**	**5.77**	**33,900**	**30.47**	**179,000**	**36,400**
5.0	110,000	7.36	6.86	24,300	34.76	123,000	26,100
6.0	63,000	8.72	8.16	16,700	39.27	80,000	17,800
7.0	44,000	9.77	9.13	12,800	44.49	62,000	13,700
8.0	30,000	10.76	10.07	9,900	47.96	47,000	10,500
9.0	18,000	12.29	11.53	6,700	53.83	31,000	7,100

Table C10 Nueva Esperanza Inferred Resource

			Inferred				
Cutoff	**Tonnes**	**Grade** (g AuEq/t)	**Grade** (g Au/t)	**Oz Au**	**Grade** (g Ag/t)	**Ounces** Silver	**Ounces** Gold Eq.
0.2	5,679,000	0.66	0.62	112,300	3.24	591,000	120,700
0.3	4,851,000	0.73	0.68	106,100	3.60	561,000	114,100
0.4	4,050,000	0.81	0.75	97,700	3.99	520,000	105,200
0.5	3,210,000	0.90	0.84	86,300	4.54	468,000	93,000
0.6	2,340,000	1.04	0.96	72,200	5.38	405,000	78,000
0.8	1,162,000	1.39	1.27	47,500	7.96	298,000	51,800
1.0	**569,000**	**1.89**	**1.72**	**31,500**	**11.91**	**218,000**	**34,700**
1.2	381,000	2.30	2.09	25,600	14.85	182,000	28,200
1.4	307,000	2.54	2.30	22,700	16.54	163,000	25,100
1.6	258,000	2.74	2.48	20,600	17.87	149,000	22,700
1.8	221,000	2.92	2.64	18,800	19.14	136,000	20,700
2.0	184,000	3.13	2.83	16,700	20.64	122,000	18,500
2.5	120,000	3.61	3.27	12,600	24.10	93,000	13,900
3.0	78,000	4.07	3.67	9,200	27.63	69,000	10,200
4.0	**29,000**	**5.17**	**4.67**	**4,300**	**35.49**	**33,000**	**4,800**
5.0	16,000	5.75	5.21	2,600	37.64	19,000	2,900
6.0	4,000	7.01	6.54	800	33.10	4,000	800
7.0	1,000	8.16	7.79	300	25.98	1,040	330
8.0	1,000	8.39	8.01	200	26.99	550	170
9.0	-	0.00	0.00	-	0.00	-	-

The 1 g AuEq/t cutoff is an open pit mining cutoff while the 4 g AuEq/t cutoff is an underground cutoff. Likely this project would be mined by open pit methods but all the other deposits and tabulation would be mined by underground methods.

Table C11 Nance Dulce Inferred Resource

Nance Dulce Inferred

Cutoff (g AuEq/t)	Tonnes	Grade (g AuEq/t)	Grade (g Au/t)	Ounces (Au)	Grade (g Ag/t)	Ounces (Ag)	Ounces (AuEq)	True Width (m)	Hor. Width (m)
0.0	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
0.5	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
1.0	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
2.0	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
3.0	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
3.5	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
4.0	**128,900**	**21.30**	**19.56**	**81,100**	**121.98**	**506,000**	**88,300**	**0.85**	**0.95**
4.5	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
5.0	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
5.5	128,900	21.30	19.56	81,100	121.98	506,000	88,300	0.85	0.95
6.0	125,800	21.68	19.90	80,500	123.99	501,000	87,700	0.85	0.95
6.5	124,900	21.79	20.01	80,400	124.60	500,000	87,500	0.85	0.95
7.0	122,900	22.04	20.24	80,000	125.93	498,000	87,100	0.85	0.94
7.5	111,900	23.48	21.57	77,600	133.37	480,000	84,500	0.81	0.89
8.0	107,300	24.16	22.20	76,600	137.00	473,000	83,300	0.79	0.86
8.5	105,500	24.42	22.45	76,100	138.47	470,000	82,800	0.78	0.85
9.0	103,800	24.69	22.69	75,700	139.87	467,000	82,400	0.77	0.85