TETRA TECH

# Resource Estimate Update for the Proposed Acquisition of the La Preciosa Property, Durango, Mexico

PRESENTED TO

**Avino Silver & Gold Mines Ltd.**

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# ABBREVIATIONS

| Abbreviation | Definition |
|---|---|
| AAS | Atomic Absorption Spectrometry |
| Acme | Acme Laboratories |
| Ag | Silver |
| AgEQ | Silver Equivalent |
| Ai | Bond Abrasion Index |
| ALS | ALS Laboratories |
| Au | Gold |
| Avino | Avino Silver & Gold Mines Ltd. |
| BWi | Bond Ball Mill Work Index |
| C | Prep Duplicates |
| CIM | Canadian Institute of Mining, Metallurgy and Exploration |
| Coeur | Coeur Mining, Inc. |
| CPI | Consumer Price Index |
| CSV | Comma-Separated Values |
| Cu | Copper |
| HS | High Sulphidation |
| ICP | Inductively Coupled Plasma |
| ICP-AES | Inductively Coupled Plasma-Atomic Emission Spectroscopy |
| ID | Inverse Distance Weighting |
| ID2 | Inverse Distance to the Second Power |
| IMC | Independent Mining Consultants |
| Inspectorate | Inspectorate Laboratories |
| IP | Induced Polarization |
| IS | Intermediate Sulphidation |
| JV | Joint Venture |
| LCI | La Cuesta International Inc. |
| LCT | Locked Cycle Test |
| LDL | Lower Detection Limit |
| LS | Low Sulphidation |
| Luismin | Compania Mineras Minas San Luis |
| LVC | Lower Volcanic Complex |
| M3 | M3 Engineering & Technology Corp. |

| | |
|---|---|
| MDA | Mine Development Associates |
| MineSight | MineSight Comprehensive Modeling and Mine Planning Platform |
| MP | Mining Plus |
| MRE | Mineral Resource Estimate |
| NI 43-101 | National Instrument 43-101 |
| NSR | Net Smelter Return |
| OK | Ordinary Kriging |
| Orko | Orko Gold Corp. or Orko Silver Corp. |
| PAS | Pan American Silver |
| PAX | Potassium Amyl Xanthate |
| PMLP | Proyectos Mineros La Preciosa, S.A. de C.V. |
| QA/QC | Quality Assurance and Quality Control |
| QP | Qualified Person |
| Q-Q | Quantile-Quantile |
| RC | Reverse Circulation |
| RQD | Rock Quality Designation |
| SD | Standard Deviation |
| SGS | SGS Laboratories |
| Snowden | Snowden Engineering Inc. |
| UDL | Upper Detection Limit |
| UVS | Upper Volcanic Supergroup |

## Units of Measure

| | |
|---|---|
| above mean sea level | amsl |
| acre | ac |
| ampere | A |
| annum (year) | a |
| bank cubic metres | $bm^3$ |
| billion | B |
| billion tonnes | Bt |
| billion years ago | Ga |
| British thermal unit | BTU |
| centimetre | cm |
| cubic centimetre | $cm^3$ |
| cubic feet per minute | cfm |
| cubic feet per second | $ft^3/s$ |
| cubic foot | $ft^3$ |
| cubic inch | $in^3$ |
| cubic metre | $m^3$ |
| cubic yard | $yd^3$ |
| Coefficients of Variation | CVs |
| day | d |
| days per week | d/wk |
| days per year (annum) | d/a |
| dead weight tonnes | DWT |
| decibel adjusted | dBa |
| decibel | dB |
| degree | ° |
| degrees Celsius | °C |
| diameter | ø |
| dollar (American) | USD$ |
| dollar (Canadian) | Cdn$ |
| dry metric ton | dmt |
| foot | ft |
| gallon | gal |
| gallons per minute (US) | gpm |
| gauge | ga |
| gigajoule | GJ |
| gigapascal | GPa |
| gigawatt | GW |
| gram | g |
| grams per litre | g/L |
| grams per tonne | g/t |
| greater than | > |
| hectare (10,000 $m^2$) | ha |
| hertz | Hz |
| horsepower | hp |
| hour | h |

| | |
|---|---|
| hours per day | h/d |
| hours per week | h/wk |
| hours per year | h/a |
| inch | " |
| kilo (thousand) | k |
| kilogram | kg |
| kilograms per cubic metre | $kg/m^3$ |
| kilograms per hour | kg/h |
| kilograms per square metre | $kg/m^2$ |
| kilometre | km |
| kilometres per hour | km/h |
| kilopascal | kPa |
| kilotonne | kt |
| kilovolt | kV |
| kilovolt-ampere | kVA |
| kilovolts | kV |
| kilowatt | kW |
| kilowatt hour | kWh |
| kilowatt hours per tonne (metric ton) | kWh/t |
| kilowatt hours per year | kWh/a |
| less than | < |
| litre | L |
| litres per minute | L/m |
| megabytes per second | Mb/s |
| megapascal | MPa |
| megavolt-ampere | MVA |
| megawatt | MW |
| metre | m |
| metres above sea level | masl |
| metres Baltic sea level | mbsl |
| metres per minute | m/min |
| metres per second | m/s |
| metric ton (tonne) | t |
| microns | µm |
| milligram | mg |
| milligrams per litre | mg/L |
| millilitre | mL |
| millimetre | mm |
| million | M |
| million bank cubic metres | $Mbm^3$ |
| million bank cubic metres per annum | $Mbm^3/a$ |
| million ounce(s) | M oz. |
| million pound(s) | Mlb |
| million tonnes | Mt |
| minute (plane angle) | ' |
| minute (time) | min |
| month | mo |

| | |
|---|---|
| Neutron | N |
| ounce | oz |
| pascal | Pa |
| centipoise | mPa·s |
| parts per million | ppm |
| parts per billion | ppb |
| percent | % |
| pound(s) | lb |
| pounds per square inch | psi |
| revolutions per minute | rpm |
| second (plane angle) | " |
| second (time) | s |
| specific gravity | SG |
| square centimetre | $cm^2$ |
| square foot | $ft^2$ |
| square inch | $in^2$ |
| square kilometre | $km^2$ |
| square metre | $m^2$ |
| thousand tonnes | kt |
| thousands of ounces | t oz. or k oz. |
| tonne (1,000 kg) | t |
| tonnes per day | t/d |
| tonnes per hour | t/h |
| tonnes per year | t/a |
| tonnes seconds per hour metre cubed | $ts/hm^3$ |
| volt | V |
| week | wk |
| weight/weight | w/w |
| wet metric ton | wmt |
| year (annum) | a |

# 1.0 SUMMARY

Tetra Tech was retained by Avino Silver & Gold Mines Ltd. (Avino) to compile an independent Technical Report on the Project. The purpose of this Technical Report is to support the News Release dated October 27, 2021 entitled: "Avino acquires neighboring La Preciosa project; adds significant production potential to growth profile, and substantially enhances its Mineral Resources". This Technical Report conforms to National Instrument 43-101 (NI 43-101) Standards of Disclosure for Mineral Projects. All currencies are expressed in United States dollars (USD$) in this Technical Report, unless otherwise noted.

## 1.1 Mineral Resource Estimate

The Mineral Resource Estimate (MRE) has been prepared by Michael O. Brien, P.Geo., of Tetra Tech Inc. The MRE was done using the 2019 Canadian Institute of Mining, Metallurgy and Exploration (CIM) Best Practice Guidelines and are reported using the 2014 CIM Definition Standards (CIM, 2014). Table 1-1 below summarizes the total model resource for the La Preciosa Project which has an effective date of October 27, 2021.

The La Preciosa veins are narrow tabular units and have been estimated using Ordinary Kriging (OK), using metal accumulations and vein thicknesses using a two-dimensional approach. A similar two-dimensional approach was originally used for estimation on the La Preciosa Deposit by Marcelo Zangrandi (AMBA 2020), as an internal resource estimation exercise for Coeur Mining, Inc. (Coeur). The QP believes that the two-dimensional approach is appropriate to this deposit.

In 2020, geological modelling of the veins was conducted by Hugo Zúñiga, a Coeur staff geologist, using Leapfrog Geo software. The interpretation defined numerous vein bodies. A two-dimensional approach to mineral resource estimation was pioneered on the La Preciosa deposit during 2020, by Zangrandi (2020) as an unpublished internal mineral resource estimation exercise for Coeur. The estimation was carried out using Vulcan software.

In 2021, the QP remodelled the veins from the previous vein interpretations, added channel sampling sections, and estimated the mineral resource using a two-dimensional OK approach utilizing Leapfrog Geo 6.0.3 software and leapfrog EDGE.

Block Models were generated for each of the 23 veins that were estimated. Estimates were made into blocks with dimensions 15 m x 15 m x vein thickness oriented in the best fit plane of each vein. Sub-blocking was applied to a minimum block size of 5 m x 5 m x vein thickness.

MREs were constrained within the four highest-grade veins and no more 500 m from surface. The cut-off grade applied to the mineral resource is conceptual and based on selective narrow-vein cut-and-fill mining for the steeper veins (e.g., Gloria and Abundancia) and room and pillar for the flat-lying veins (e.g., Martha)

The tonnage and grade sensitivities for all mineralized vein material over a range of cut-off (AgEQ) values and the tonnages and grades at a series of cut-off (AgEQ) values are presented in Section 14.0.

The Mineral Resource was estimated in October 2021 and confined to continuous regions amenable to underground exploitation and using costs derived from the nearby Avino Mine to provide reasonable prospects for eventual extraction. The Mineral Resources are summarized in Table 1-1

**Table 1-1: Summary of Project Mineral Resources (Effective Date October 27, 2021)**

| La Preciosa Property - Mineral Resources Summary - Effective Date October 27, 2021 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Grade | | | | Metal Contents | | | |
| All Veins | Classification | Tonnage kt | Ag g/t | Au g/t | Cu % | AgEq g/t | Ag M oz | Au k oz | Cu % | AgEq M oz |
| | Total Measured | - | - | - | - | - | - | - | - | - |
| | Total Indicated | 17,441 | 176 | 0.34 | - | 202 | 99 | 189 | - | 113 |
| | **Total M&I** | **17,441** | **176** | **0.34** | - | **202** | **99** | **189** | - | **113** |
| | **Total Inferred** | **4,397** | **151** | **0.25** | - | **170** | **21** | **35** | - | **24** |

The QP believes that the Mineral Resources have been estimated using good industry practice and conform to the 2014 CIM Definition Standards.

There are no other known environmental, legal, title, taxation, socioeconomic, marketing, political, or other relevant factors that would materially affect the estimation of Mineral Resources that are not discussed in this Report.

## 1.2 Terms of Reference

Mineral Resources are estimated using the 2019 edition of the CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines (CIM, 2019) and are reported using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014).

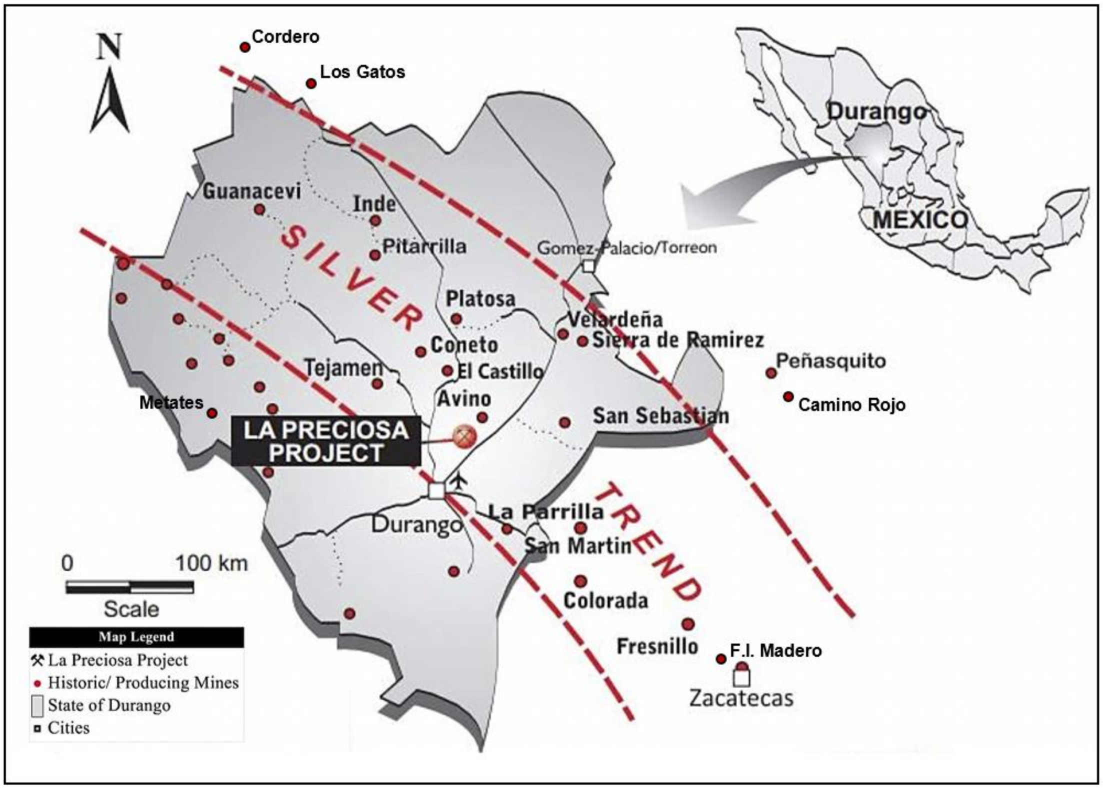
## 1.3 Project Description and Location

### 1.3.1 Location and Access

The Project is located in the state of Durango, Mexico, within the municipalities of Pánuco de Coronado and Canatlán, and is approximately 85 km by existing road, northeast of the city of Victoria de Durango, the state capital. A new access road is anticipated to be constructed which would reduce this to a distance of 50 km and a time of 45 minutes.

The Project is situated on the eastern flank of the Sierra Madre Occidental mountain range. It can be found on the Instituto Nacional de Estadística, Geografía e Informática General Carlos Real Topographic Map G13D72, centered on coordinates 24°25'42.4200"N Latitude and 104°27'27.2380"W Longitude (554,987.8815mE, 2,701,771.0046mN) in the Universal Transverse Mercator (WGS 84), Zone 13R (Northern Hemisphere). A General Location Map of the Project is provided in Figure 1-1.

**Figure 1-1: Project Location Map**




Source: Coeur, 2013

## 1.3.2 Land Tenure

The Project consists of eight Mining Concessions that encompass approximately 1,120 ha. Proyectos Mineros La Preciosa, S.A. de C.V. (PMLP) holds 100% of the registered, legal, and beneficial interest in and to these Mining Concessions. PMLP also holds 100% of the registered, legal, and beneficial interest in and to three (3) additional Mining Concessions that are adjacent to, and contiguous with, the Project. These three additional Mining Concessions encompass approximately 31,300 ha. Combined, the eleven (11) Mining Concessions of PMLP comprise approximately 32,400 ha and, together with approximately 1,800 ha of surface estates controlled, represent the Project consolidated property package (Property Package). Further details on the land tenure are presented in Section 4.0.

By a share purchase agreement dated October 27, 2021 with Coeur. and its affiliates, Avino has agreed to indirectly acquire PMLP and the La Preciosa property. The closing of the proposed acquisition is subject to significant conditions, including that there shall not have occurred any event, change, or circumstance which has had or would reasonably be expected to have a material adverse effect, the authorization of the Mexican Federal Economic Competition Commission, approval of the transaction by the NYSE American, any other necessary third party approvals, and the completion of all other covenants and conditions required to be performed by the parties prior to closing. There can be no assurance that the proposed transaction will be completed as proposed or at all. This report has been prepared for Avino on the basis that the proposed acquisition will be completed.

## 1.4 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Property is located approximately 85 km northeast of the city of Durango and can be accessed by vehicle from Durango in approximately 90 minutes.

The Property area has a semi-arid climate, with an annual average temperature of about 25°C and an average annual precipitation of about 600 millimeters (mm), usually occurring between May and October.

Durango is approximately 45 minutes away from the Project site and has a population of over 600,000. There is local mining work force available in Durango and the surrounding. The region is a good source of skilled personnel, support services, and mining equipment.

The quality of infrastructure and the population density increases towards the city of Durango. The Property is not currently connected to the commercial electrical grid, but the nearby village of Francisco Javier Mina (population around 920) and the town of Francisco I. Madero (population around 4,550) are serviced by the commercial electrical grid.

The international airport in Durango is served by daily flights connecting to destinations in Mexico and the US. A railway line is present near the south boundary of the Property and the railway has a direct line to Torreón, which connects to other cities in México and the US.

The nearest metal smelter is located in Torreón. The smelter is owned by Met-Mex Peñoles S.A. de C.V. and is a primary producer of lead and zinc. The facility also has a silver refinery, which has the capacity to refine 120,000 kg of silver per month.

Presently the Property has six core storage sheds, an office, lunch room, washrooms, small warehouse, flammable substances storage area, drilling company workshop, night watchman's accommodation, and a generator/core cutting shed.

The water for drilling and services was obtained from a water reservoir in Francisco Javier Mina. The water was hauled to the Project by tanker trucks to water tanks located adjacent to the drilling areas.

The Property lies on the western edge of the high plains of northern México, an extensive volcanic plateau characterized by narrow, northwest-trending ranges separated by wide, flat-floored filled basins. In the Durango area, the basins have elevations of between 1,900 to 2,100 metres above sea level (masl) and the higher peaks rise to 3,000 m. The Property elevation in the area of the mineralized zones at the Property is between 1,990 and 2,265 m. The highest elevations on the Property are at the northwest trending La Preciosa Ridge, which overlies the La Gloria and Abundancia veins. A broad valley forms to the east of the ridge and extends approximately 1 km toward another lower-lying ridge to the northeast.

## 1.5 History

In the late 19th century, the Property was known as Mina La Preciosa. Early work was focused on the north end of La Preciosa Ridge where the Gloria and Abundancia veins crop out. Mining ceased at the onset of the Mexican Revolution, in 1910, and further mining did not occur until the 1970s.

Luismin (Compania Mineras Minas San Luis) operated under the name Minera Thesalia as a joint venture with Tormex S.A. and conducted exploration on the property in 1981, 1982, 1988, and 1994.

Orko Gold Corp. (subsequently Orko Silver Corp.) entered into a Joint Venture (JV) agreement with Luismin in 2003 and subsequently acquired the control of the property with Luismin maintaining a royalty. Orko performed a series of exploration programs beginning in 2005 and lasting until 2008. In 2009, Orko signed a JV agreement with Pan-American Silver (PAS). PAS drilled 363 drillholes for a total of 91,096 m during 2009-2010. The drilling results were sufficient to support the Measured Resource model and the feasibility study issued in 2012.

In April 2013, the acquisition of Orko was completed by Coeur. After completion of the acquisition, Coeur's activities included land and water resources acquisition plus additional efforts on geological and technical studies

On October 27, 2021, Avino announced that it had acquired the Project from Coeur.

## 1.6 Geology and Mineralization

The Property is situated on the eastern flank of the Cretaceous to mid-Tertiary Sierra Madre Occidental (Figure 7-1). The SMO is the largest silicic igneous province in North America and it stretches from the USA-Mexico border to the latitude of Guadalajara, where the SMO is covered by the late Miocene to Quaternary Trans-Mexican Volcanic Belt.

Mineralization at the Project is hosted within multiple discrete poly-phase quartz veins, often displaying banded, smoky, drusy, and chalcedony textures. Also, in each stage there is variably crustiform banded fracture fill/breccia cement mineralogy. Fluorite, amethyst, a substantial number of barite laths, calcite, and rhodochrosite may also be present, and sulfide mineralization in the form of sphalerite, galena, pyrite, chalcopyrite, acanthite, sparse native silver, and free gold, as well as iron and manganese oxides have been noted in drill core. The principal silver bearing mineral at the Project is acanthite-pseudomorphic after argentite or as microcrystalline to amorphous grains.

The main vein system on the Abundancia ridge consists of dominantly southward-striking and westward-dipping veins plus east-southeast–striking, south-dipping crosscutting veins. The Abundancia ridge vein system has been traced on surface for over 1.5 km. In the eastern part of the Project, a north- to northwest-striking, shallow west-dipping vein system with associated hanging wall veining and alteration is exposed in a series of hills. This vein system is referred to as the Martha vein or fault zone and has been traced by drilling for over 2.5 km along strike.

The mineralization in the area occurs in veins, veinlets, and stockwork. These veins average in true width less than 15 m (Martha Vein) and consist of several stages of banded crustiform to colloform, quartz (and cryptocrystalline quartz at shallow depths), adularia, barite, and typically later carbonates (both calcite and rhodochrosite); illite commonly replaces the adularia. There are variable amounts of pyrite, sphalerite, and galena plus argentite, and variable amounts of tetrahedrite - tennantite, freibergite, and Ag sulfosalt.

The mineralization displays characteristics typical of epithermal veins in Mexico, particularly of the Ag-rich variety. Quartz veins are accompanied by adularia, barite, calcite, rhodochrosite of variable timing, as well as acanthite, freibergite, Ag sulfosalts and minor electrum, plus variable amounts of pyrite, honey-colored sphalerite, tennantite/tetrahedrite, chalcopyrite and galena, and supergene Fe and Mn oxides; the hypogene minerals are characteristic of intermediate-sulphidation deposits in Mexico. Mineralization is believed to be Tertiary in age both the Lower Volcanic Supergroup (LVS) and Upper Volcanic Supergroup (UVS) are mineralized, but the basalts are recent and not mineralized.

The Martha vein is the largest vein in the deposit, with at least three times the volume of the next largest vein, La Abundancia. The Martha vein dips ~20-30°, following the southwest-dipping contact of volcaniclastic rocks overlying an immature conglomeratic unit (consisting mainly of polylithic clast-supported fragmental rock with angular to sub-rounded clasts) or the underlying schist.

There are steep-dipping veins in the west on the ridge, such as La Gloria vein . These steep veins can be considered as a mineralized zone or lode of stock work, silicification, breccias, veins, vein breccias, veinlets, and a general mix of multiple styles of mineralization. Within this broader zone, for example the Martha lode ranges from 1 to 35 m thicknesses and averages approximately 5 m.

## 1.7 Exploration and Drilling

Most of the work at the Project that is material to the mineral resources is from contemporary exploration, mainly drilling, conducted by Luismin, Orko, PAS and Coeur:

- Luismin completed 8 drillholes for a total of 1,603 m in 1981, 1982, and 1994.
- Orko completed 373 drillholes for a total of 146,487 m from 2005 to 2008 and five more drillholes for a total of 500 m from 2011 to 2012.
- PAS completed 363 drillholes for a total of 91,095 m from 2009 to 2010 and 5 more drillholes for a total of 500 m from 2011 to 2012.
- Coeur completed 103 drillholes for a total of 22,324 m from 2013 to 2014.

The most recent drilling results from Coeur were used for targeting the first three years of the mine plan to convert inferred to indicated resources and reduce risk in achieving the early mine plan, obtaining geotechnical data in the area of the design pits, tailings impoundment, and process plant footprint, which were also sampled for geochemical data, and testing and condemning waste dumps and tailings impoundment areas.

The QP is satisfied that the amount and quality of drilling is sufficient to support an MRE.

## 1.8 Sample Preparation, Analyses, and Security

In 2003–2008 and 2011–2012 (Orko) SGS Laboratories (SGS) was used as the primary sample preparation lab used and Inspectorate Laboratories (Inspectorate) as the secondary sample preparation lab located in the city of Durango. The sample pulps were sent to the SGS analytical laboratory in Toronto, Canada, which was accredited by ISO/IEC 17025, and to the Inspectorate's analytical laboratory in Reno, Nevada, USA, which was ISO 9001:2008 certified. Sample pulps representing check assays also were sent to these analytical facilities, as well as to ALS Chemex in North Vancouver, Canada and ALS Chemex in Reno, Nevada, USA

Gold content was determined by fire assay at a detection limit of 5 ppb Au. Silver was analyzed by atomic absorption spectrometry (AAS). Samples with silver values greater than 300 g/t Ag based on this analytical method were re-run by fire assay with a gravimetric finish. All samples also were subjected to strong acid digestion followed by a 40 element Inductively Coupled Plasma (ICP) analyses, including silver. Nevertheless, no record of QA/QC procedures and results exists for these drill campaigns.

In 2008–2010 (PAS), except for the pulp duplicate samples, all PAS samples were prepared and assayed by SGS in Durango, Mexico. Pulp duplicate samples were analyzed at Inspectorate's lab in Sparks, Nevada.

For gold analyses at SGS, all samples were initially assayed using fire assay procedures with atomic absorption spectroscopy (AAS) finish. For silver analyses at SGS, all samples were initially analyzed using 3-acid digestion with an AAS finish (0.3 g/t detection limit). For samples with analyses greater than the 300 g Ag threshold limit, the samples were rerun using a fire assay with gravimetric finish procedure having a detection limit of 5 g/t Ag.

For gold analyses at Inspectorate, all samples were run by fire assay with a gravimetric finish that had a detection limit of 3 g/t Au, and Silver analyses for all samples run at Inspectorate were initially run using a 4-acid digestion with ICP finish (0.1 g/t Ag detection limit) that had a 200 g/t Ag upper threshold limit. For samples with analyses greater than 200 g/t, the samples were rerun using fire assay with a gravimetric finish that had a detection limit of 5 g/t and an upper threshold limit of 5,000 grams per tonne Au.

In 2013–2014, ALS Laboratory (ALS) in Zacatecas, ZAC, MX was contracted to complete all sample preparation. Sample pulps were created in Zacatecas and sent to ALS's analytical laboratory in Vancouver, BC, CA which is ISO 9001:2008 certified. Orko era pulps representing re-assays were sent to ALS Vancouver, as well as to SGS in Lakefield, ON, CA which is ISO 17025 certified.

At ALS, silver content was determined by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES). A 0.25 g sample is digested with perchloric, nitric, hydrofluoric, and hydrochloric acids. Gold content was determined by ICP-AES, following an initial Fire Assay Fusion of a precious metal bead. The sample bead is digested in 0.5 ml dilute nitric acid in the microwave oven. 0.5 ml of concentrated hydrochloric acid is then added for further digestion.

At SGS, silver content was determined by Inductively Coupled Plasma-Atomic Absorption Finish. This is a 4-Acid digestion. A 2 g sample is digested with perchloric, nitric, hydrofluoric, and hydrochloric acids. Gold content was determined by exploration grade fire assay. This is a 30 g fire assay with an ICP finish.

Based on a review of the database and procedures, the QP is satisfied that the QA/QC, Check Samples, and Check Assays are adequate and within industry accepted norms and suitable to support an MRE.

## 1.9 Data Verification

The QP visited the project on July 20, 2021 and reviewed drill cores, the logging facilities, vein outcrops and drill collar positions.

The Project drillhole database was validated by the Coeur technical services group and was verified and deemed appropriate for resource modeling. A review and validation of the 2013 - 2014 assay, collar coordinate, downhole survey, and assay data has been performed by Coeur. The historic drillhole database has been verified by Orko (pre-2009), Mine Development Associates (MDA) (2009), PAS (2008-2010), Snowden Engineering Inc. (Snowden) (2011), Mining Plus (MP) (2012), and Independent Mining Consultants (IMC) (2013).

Orko (pre-2009): The QP reviewed scatterplots of 317 of these 331 gold and silver check analyses provided in earlier Technical Reports (which did not provide reasons for the 14 check assays missing from scatterplot comparisons). Orko's consultant, MP, and its QP, created quantile-quantile (Q-Q) plots of assays for 120 of the 134 samples from the three labs that were available in the MP database. These plots indicated reasonable correlation with no biases between Inspectorate and SGS for gold or silver. The Q-Q plots for Inspectorate versus ALS showed similar correlations, but with an apparent slight high bias for silver in the Inspectorate assays.

MDA (2009): MDA conducted a comprehensive check assay program that included pulp and coarse reject samples reportedly representing each of the mineralized vein intercepts. Submitted by MDA to ALS Chemex in Reno, Nevada, these checks samples consisted of 240 pulp rejects, of which 61 original pulps were assayed by SGS and 179 original pulps, which were assayed by Inspectorate. Q-Q plots of the results revealed acceptable correlation between the two primary laboratories (SGS and Inspectorate) and the secondary laboratory (ALS), with no indication of biases.

PAS (2008-2010): Snowden (September 2011) and MP (November 2012) Technical Reports both make reference to a suite of pulp duplicate samples representing the Martha vein from both earlier Orko and PAS drillholes.

However, neither report provides any details of the results of comparisons between the duplicate sample pairs (M3, 2013).

Snowden (2011): The Snowden Technical Report (Snowden 2011a; 2011b) does not mention the collection by Snowden of any independent drill core samples or existing coarse reject or pulp duplicates for check assay. Snowden did not perform or recommend additional material density (specific gravity) testing (M3, 2013).

MP (2012): Mining Plus independently collected 74 samples consisting of 23 samples of half (sawn) core and 46 existing coarse rejects. Although the MP Technical Report states that, “All results from this program returned values well within acceptable limits”, no actual data for the duplicate sample analyses were provided. MP did not perform or recommend additional material density (specific gravity) testing (M3, 2013).

IMC (2013): The statistical analysis of the QA/QC database indicates that the project database can be accepted for estimation of mineral resources, based almost entirely on the reliable results from inserted standards. However, the QA/QC database in general does not meet industry “best practices” in the opinion of IMC.

In 2014 Coeur initiated and completed a comprehensive review and data entry campaign for all drillhole geologic logs from Orko, PAS, and Coeur. The review included 843 drillholes for a total of 259,919 m and the following procedures:

- Drillhole collars are checked visually in MineSight Comprehensive Modeling and Mine Planning Platform (MineSight) and on topographic based maps to confirm that holes are on the correct drill pads and map coordinates.
- Downhole survey data are imported into an acQuire database using an import object and the data are checked for overlapping intervals and intervals below the recorded length of the drillhole.
- Verification of samples against hard copy assay certificates was conducted manually at both the Chihuahua Exploration office and the Chicago Corporate office.

As a result, Coeur was able to verify 60% of the primary SGS sample count and was able to verify a 43% increase in the QA/QC sample count. Coeur considered the performance of the Orko data that was verified by the SGS data files to be indicative of the performance of the entire Orko master database, and subsequently acceptable for use in resource evaluation.

In 2014, Coeur developed a standardized procedure to improve the accuracy of density measurements. In March 2014 Coeur employees completed 1,667 density measurements using the new procedure. The average density of these measurements was 2.52 g/cm$^3$

The QP is satisfied that the sampling and assay data, topographic information, and drill core management for this project have been comprehensively verified and are suitable to be used for mineral resource estimation.

## 1.10 Mineral Processing and Metallurgical Testing

Extensive metallurgical investigations were conducted to support the previous studies, including a feasibility study completed in 2014, NI 43-101 Technical Report Feasibility Study for La Preciosa Silver-Gold Project. The previous test work was mainly focused on the gold and silver recovery by cyanidation. The 2014 test work shows that the Bond ball mill work index of the mineralization ranged from 14.7 kWh/t to 18.2 kWh/t and averaged 16.1 ± 1.0 kW/t, indicating moderately hard to ball mill grinding. In 2021, SGS Minerals at Durango, Mexico, conducted further test work, mainly focusing on investigating the flotation performance of the samples generated from the Abundancia, Gloria, and Martha mineralization zones (SGS, 2021). Two composite samples labeled as Martha composite and

Abundancia-Gloria composite were constructed for the metallurgical testing. The flotation locked cycle tests at a primary grind size of 80% passing 106 µm, show that the samples responded reasonably well to the flotation concentration process. The results are summarized below:

- Martha composite: 54.2% of the gold and 81.4% of the silver reported to a final concentrate containing 7.36 g/t Au and 6,455 g/t Ag respectively.
- Abundancia-Gloria composite: 53.3% gold recovery and 76.9% silver recovery with a concentrate containing 9.1 g/t Au and 10,650 g/t Ag.

A separate flotation LCT test was conducted on the Abundancia-Gloria sample using a more complex flowsheet with regrinding coarser than 75 µm fraction of the rougher flotation tailings. Silver recovery was slightly improved to 79.1%.

The 2021 test work also tested the metallurgical response of the two composite samples to centrifugal gravity concentration. The results show that most of the gold and silver in the two samples should not occur in coarse free gold and silver forms.

Further test work should be conducted to optimize the process conditions. The optimization should improve the metallurgical performance. The samples, representative of the planned mill feeds, should be tested.

## 1.11 Conclusions and Recommendations

### 1.11.1 Geology

The Project is located in an area with moderate climate, workable topography and regional work force that has experience in construction and operations of mining projects. The Project is located near a major population center and has proximity to infrastructure. The permitting process in Mexico is relatively straightforward and a reasonable permitting schedule is achievable. The preparation of permitting documents is essentially complete, with only the source of power and final water permit to be resolved, prior to submission.

The mineral resources for the Project were developed using a computer block model, the drillhole data, and the geologic and structural interpretations. The mineral resources are summarized in Table 1-2.

**Table 1-2: Summary of Project Mineral Resources (Effective Date October 27, 2021)**

| La Preciosa Property - Mineral Resources Summary - Effective Date October 27, 2021 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Grade | | | | Metal Contents | | | |
| All Veins | Classification | Tonnage kt | Ag g/t | Au g/t | Cu % | AgEq g/t | Ag M oz | Au k oz | Cu % | AgEq M oz |
| | Total Measured | - | - | - | - | - | - | - | - | - |
| | Total Indicated | 17,441 | 176 | 0.34 | - | 202 | 99 | 189 | - | 113 |
| | **Total M&I** | **17,441** | **176** | **0.34** | - | **202** | **99** | **189** | - | **113** |
| | **Total Inferred** | **4,397** | **151** | **0.25** | - | **170** | **21** | **35** | - | **24** |

#### 1.11.1.1 QA/QC and Data Validation

The procedures used by the previous owner (Coeur) should be maintained in future exploration drilling to maintain consistency of data and approach.

### 1.11.2 Metallurgy

The historical and 2021 test programs show that in general the samples tested responded reasonably well to the cyanidation and flotation processes. Further test work should be conducted to optimize the process conditions, especially flotation conditions, to improve silver and gold recovery.

It is recommended metallurgical developments continue to support optimization of process parameters to improve silver and gold recovery. The test work and studies should be able to provide sufficient support data for next phase study and design work, including:

- Optimize process routine, including a flotation alone and a flotation-cyanidation hybrid process;
- Verify and optimize metallurgical performances on the samples representing future mill feeds, especially the life of mine average mill feed and the initial year mill feeds based on the updated mine plan;
- Test metallurgical responses of variability samples representing various lithological characters, alterations, grades, and spatial locations;
- Develop preliminary metallurgical performance projection based on the updated mine plan and proposed process.

# 2.0 INTRODUCTION

Tetra Tech was retained by Avino to compile an independent Technical Report on the Project. The purpose of this Technical Report is to support the News Release dated October 27, 2021 entitled: "Avino acquires neighboring La Preciosa project; adds significant production potential to growth profile, and substantially enhances its Mineral Resources".

By a share purchase agreement dated October 27, 2021 with Coeur and its affiliates, Avino has agreed to indirectly acquire PMLP and the La Preciosa property. The closing of the proposed acquisition is subject to significant conditions, including that there shall not have occurred any event, change, or circumstance which has had or would reasonably be expected to have a material adverse effect, the authorization of the Mexican Federal Economic Competition Commission, approval of the transaction by the NYSE American, any other necessary third party approvals, and the completion of all other covenants and conditions required to be performed by the parties prior to closing. There can be no assurance that the proposed transaction will be completed as proposed or at all. This report has been prepared for Avino on the basis that the proposed acquisition will be completed.

This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

## 2.1 Terms of Reference

All currencies are expressed in USD$. Mineral Resources are estimated using the 2019 edition of the CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines (2019 CIM Best Practice Guidelines) (CIM, 2019) and are reported using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves (2014 CIM Definition Standards) (CIM, 2014).

## 2.2 Qualified Persons

The following serve as the Qualified Persons (QPs) for this Technical Report as defined in NI 43-101 Standards of Disclosure for Mineral Projects, and in compliance with Form 43-101 F1:

Michael O. Brien, P.Geo., Tetra Tech Inc, for sections 1.1, 1.3, through 1.9, 1.11.1, 4.0 through 12.0, 14.0, 23.0, 25.1, 26.1, and 27.0.

Hassan Ghaffari, P.Eng., M.A.Sc., Tetra Tech Inc., for sections 1.2, 2.0, 3.0, 15.0 through 22.0, and 24.0.

Jianhui (John) Huang, P.Eng., PhD., Tetra Tech Inc., for section 1.10, 1.11.2, 13.0, 25.2, 26.2, and 27.0.

## 2.3 Site Visits and Scope of Personal Inspection

Michael O. Brien, P.Geo., a QP according to NI 43-101 guidelines, visited the Project on July 20, 2021. The core shack and core processing facilities were visited, and several representative cores were reviewed and compared with logging sheets. Underground drift development on the Gloria and Abundancia Vein and outcrops were visited and the veins were examined.

Hassan Ghaffari, P.Eng., a QP according to NI 43-101 guidelines, visited the Project on July 20, 2021 and conducted a general overview of the Project site.

## 2.4 Effective Dates

This Technical Report has an effective date of October 27, 2021.

## 2.5 Information Sources

Information sources used in compiling this report are included in Section 27.0.

## 2.6 Previous Technical Reports

In January 2020, Coeur contracted AMBA Consultoria of Belo Horizonte to prepare an internal MRE report. This internal report entitled 'La Preciosa – Resource Estimation, January 2020', author Marcelo Zangrandi, pioneered the two-dimensional approach to mineral resource estimation for the property.

In 2014, Coeur contracted M3 Engineering & Technology Corporation of Tucson, Arizona (M3) to prepare a Feasibility Study Technical Report on the Project. On July 30, 2014, Coeur announced the results of the La Preciosa NI 43-101 Feasibility Study. The Feasibility Study Technical Report was filed on September 4, 2014, with an effective date of July 29, 2014 and an issue date of August 29, 2014.

In 2013, Coeur contracted M3 to prepare a Preliminary Economic Assessment Technical Report on the Project. The Preliminary Economic Assessment Technical Report was filed on July 29, 2013, with an effective date and an issue date of July 26, 2013.

In 2012, Orko Silver Corp. filed an Updated MRE Technical Report on November 7, 2012, with an effective date of November 5, 2012.

In 2011, Pan American Silver Corp. and Orko Silver Corp. filed a Preliminary Economic Assessment Technical Report on September 21, 2011, with an effective date of June 30, 2011.

Prior to 2011, Orko Silver Corp. filed MRE Technical Reports on April 3, 2009, May 28, 2008, January 10, 2008, and July 10, 2007, with effective dates of March 31, 2009, March 31, 2008, October 1, 2007, and March 31, 2007, respectively.

# 3.0 RELIANCE ON OTHER EXPERTS

This Technical Report has been prepared by Tetra Tech for Avino. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Tetra Tech at the time of preparation of this Technical Report.
- Assumptions, conditions, and qualifications as set forth in this Technical Report.

For the purpose of this Technical Report, Tetra Tech has relied on ownership information provided by Avino and its legal representative on December 7, 2021. Tetra Tech has not researched property title or mineral rights for the Project and expresses no opinion as to the ownership status of the Property.

Except for the purposes legislated under Canadian securities laws, any use of this Technical Report by any third party is at that party's sole risk.

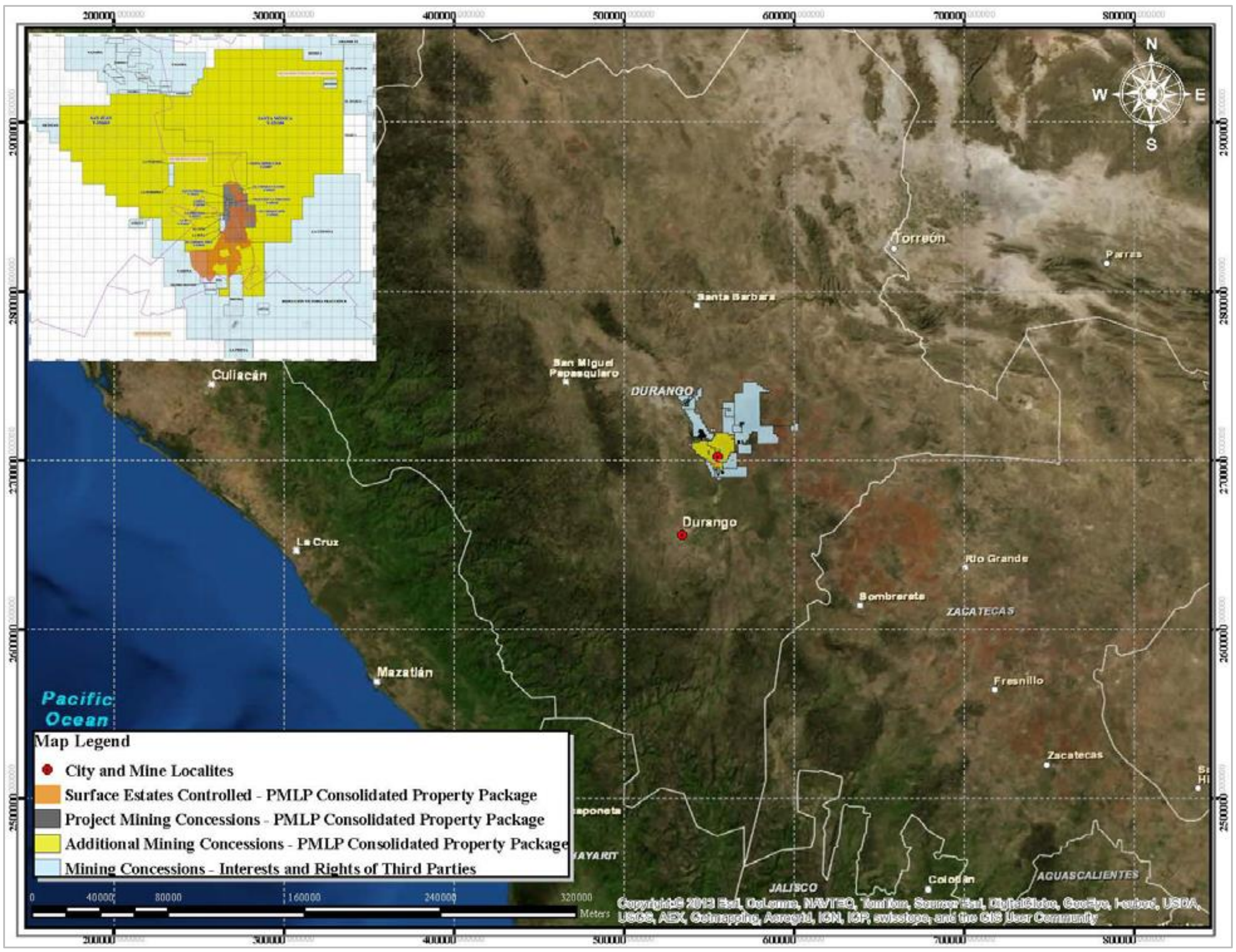
# 4.0 PROPERTY DESCRIPTION AND LOCATION

## 4.1 Location and Mineral Tenure

The Project is located in the state of Durango, Mexico, within the municipalities of Pánuco de Coronado and Canatlán, and is approximately 85 km by existing road, northeast of the city of Victoria de Durango, the state capital. A new access road is anticipated to be constructed which would reduce this to a distance of 50 km and a time of 45 minutes.

The Project is situated on the eastern flank of the Sierra Madre Occidental mountain range. It can be found on the Instituto Nacional de Estadística, Geografía e Informática General Carlos Real Topographic Map G13D72, centered on coordinates 24°25'42.4200"N Latitude and 104°27'27.2380"W Longitude (554,987.8815mE, 2,701,771.0046mN) in the Universal Transverse Mercator (WGS 84), Zone 13R (Northern Hemisphere). A General Location Map of the Project is provided in Figure 4-1.

**Figure 4-1: General Location Map**






TETRA TECH

The Project consists of eight Mining Concessions that encompass approximately 1,120 ha. PMLP holds 100% of the registered, legal, and beneficial interest in and to these Mining Concessions. PMLP also holds 100% of the registered, legal, and beneficial interest in and to three (3) additional Mining Concessions that are adjacent to, and contiguous with, the Project. These three additional Mining Concessions encompass approximately 31,300 ha. Combined, the eleven (11) Mining Concessions of PMLP comprise approximately 32,400 ha and, together with approximately 1,800 ha of surface estates controlled, represent the Project consolidated property package (Property Package).

By a share purchase agreement dated October 27, 2021 with Coeur and its affiliates, Avino has agreed to indirectly acquire PMLP and the La Preciosa property. The closing of the proposed acquisition is subject to significant conditions, including that there shall not have occurred any event, change or circumstance which has had or would reasonably be expected to have a material adverse effect, the authorization of the Mexican Federal Economic Competition Commission, approval of the transaction by the NYSE American, any other necessary third party approvals, and the completion of all other covenants and conditions required to be performed by the parties prior to closing. There can be no assurance that the proposed transaction will be completed as proposed or at all. This report has been prepared for Avino on the basis that the proposed acquisition will be completed.

Table 4-1 provides notable information about the Mining Concessions. Figure 4-2 depicts the location of the Mining Concessions and surface estates controlled, which comprise the Property Package.

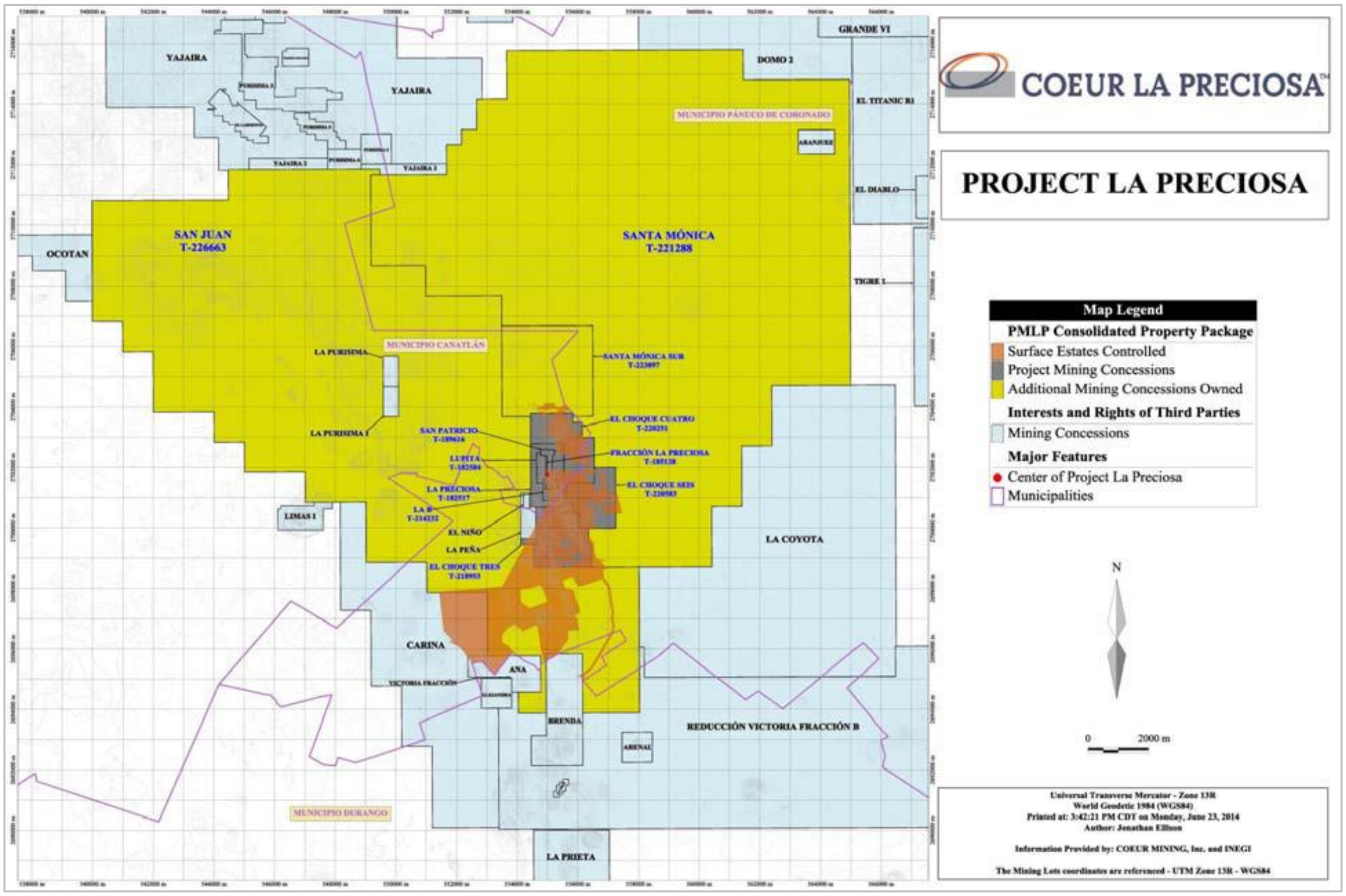
**Table 4-1: Project Property Package**

| No. | Name | Expedient # | Title # | Issue Date | Area (Has.) | Semiannual Mining Duties[1] | Expiry Date |
|---|---|---|---|---|---|---|---|
| 1. | La Preciosa | 002/00398 | 182517 | 1988-07-15 | 143.6119 | $18,560.40 | 2038-07-14 |
| 2. | Lupita | 009/00303 | 182584 | 1988-08-12 | 27.1878 | $3,513.75 | 2038-08-11 |
| 3. | Fracción La Preciosa | 321.1/2-399 | 185128 | 1989-12-14 | 2.5249 | $327.00 | 2039-12-13 |
| 4. | San Patricio | 321.42/919 | 189616 | 1990-12-05 | 29.4740 | $3,810.00 | 2053-07-01 |
| 5. | La B | 2/1.3/01962 | 214232 | 2001-09-06 | 28.2006 | $3,646.00 | 2051-09-05 |
| 6. | El Choque Tres | 2/1.3/02251 | 218953 | 2003-01-28 | 10.0000 | $1,293.00 | 2053-01-27 |
| 7. | El Choque Cuatro | 25/30812 | 220251 | 2003-07-02 | 629.7778[2] | $81,393.00 | 2053-07-01 |
| 8. | El Choque Seis | 25/31144 | 220583 | 2003-09-02 | 249.0000 | $32,182.00 | 2053-09-01 |
| 9. | Santa Monica | 025/31208 | 221288 | 2004-01-20 | 6,385.4570 | $2,117,657.00 | 2054-01-19 |
| 10. | Santa Monica Sur | 025/31411 | 223097 | 2004-10-14 | 900.0000 | $66,097.00 | 2054-10-24 |
| 11. | San Juan | 025/31434 | 226663 | 2006-02-17 | 14,003.4737 | $1,028,416.00 | 2056-02-16 |

[1] 2014 Mining Duties assessed semiannually. All amounts are in Mexican Pesos (MXN).

[2] Pursuant to a subsequent “Corrección Administrativa de Título” the size of El Choque Cuatro is 629.7778 hectares. The Mining Concession’s Tarjeta erroneously reflects 644.1296 ha. The Dirección General de Minas is being petitioned to administratively correct the Tarjeta error.

**Figure 4-2: Map of the Project Consolidated Property Package**




The Dirección General de Minas (General Bureau of Mines) administers Mining Concessions in Mexico. A legal survey (Trabajos Periciales) of each Mining Concession was completed as a requirement of, and condition precedent to, the General Bureau of Mines granting such Concession.

Pursuant to an amendment of the Mexican Mining Law (Law), by Congressional Decree of February 22, 2005, published in the Diaro Oficial de la Federación April 28, 2005, there is no longer any distinction between an Exploration Concession and an Exploitation Concession. Consequently, all Concessions are “Mining Concessions” (Exploration and Exploitation), and as a result, all Exploration and Exploitation Concessions have been converted into Mining Concessions, expiring 50 years from the date they were originally granted.

Payment of Mining Duties are required for each Mining Concession and, each year, are payable semiannually in January and July to the Secretaría de Economía (Secretariat of Economy). The Mining Duties are calculated by determining the correct Cuota[1] (Fee), which varies based upon the age of the Mining Concession. The Fee is then multiplied by the number of hectares encompassed by the Mining Concession, the product of which equals the semiannual Mining Duty payable for the respective Mining Concession. A copy of the payment receipt of the Mining Duty must be filed with the Dirección General de Regulación Minera, a sub-directorate of the General Bureau of Mines, semiannually each February and August.

[1] The Base Rate or “Fee” is adjusted annually and published the Diario Oficial De La Federación each December for use in calculating Mining Duties payable due the following year.

Annually, in May, owners of Mining Concessions must file with the Dirección de Revisión de Obligaciones, a subdirectorate of the General Bureau of Mines, Informes Para Comprobar La Ejecucion de Las Obras y Trabajos (Work Assessment Reports), disclosing the works to, and investments made in, each Mining Concession or sanctioned Agrupamiento (Group) of Mining Concessions, for the immediately preceding calendar year. The Regulations of the Mining Law establish tables containing the minimum investment amounts for each Mining Concession or Group(s) of Mining Concessions. These amounts are updated annually in accordance with the changes to the Mexican Consumer Price Index (CPI) and published in the Diario Oficial De La Federación in December, providing the Cuotas Fija (flat fee) and Cuotas Adicional (additional flat fee), which determine the total investment the owner is obligated to make in each Mining Concession or Group thereof, for the succeeding year. In 2014, PMLP must invest a minimum of MXN$70,590,535.53 in Agrupamiento La Preciosa, which consist of all eleven (11) Mining Concessions.

Informes Estadístico Sobre La Producción, Beneficio y Destino de Minerales o Sustancias Concesibles (Production Reports), detailing the production, beneficiation, and destination of concessionable minerals, must be submitted by annually by January 30. These reports must be submitted for each Mining Concession bearing production and all Mining Concessions with over six (6) years of age, whether bearing production or not.

The surface estates overlying the Project are owned by a mixture of ejidos[2] and private parties.

## 4.2 Issuer's Interest

On February 20, 2013, Coeur announced it was entering into a definitive agreement pursuant to which Coeur would agree to acquire all of the issued and outstanding common shares of Orko, the parent company of PMLP, in a transaction with a total value of approximately CAD$350 million.

On April 16, 2013, Coeur announced the completion of its acquisition of Orko pursuant to its previously announced plan of arrangement, detailed in the news release on February 20, 2013. As a result of the completion of the arrangement, Coeur now owns all of the issued and outstanding shares of Orko.

The Property is now owned by Coeur Mining, Inc. (97.56%) and Coeur La Preciosa Silver Corp. (2.44%).

## 4.3 Royalties, Back-in Rights, Payments, Agreements, and Encumbrances

- A Consulting and Finder's Fee Agreement dated May 01, 2002, as amended ((Agreement) by and between Silver Standard Resources, Inc., the predecessor in interest of and to PMLP and La Cuesta International, Inc.(LCI). In accordance with the terms thereof, PMLP pays a Finder's Fee to LCI, comprised of: (I.) an advance royalty, every six (6) months, equal to the greater of (i.) USD$5,000 or (ii.) 2% of direct exploration costs in and to the Mining Concession San Juan (Título #226663) and (II.) a one-quarter of one percent (0.25%) Net Smelter Return (NSR) royalty on production derived from the Mining Concession San Juan (Título #226663), which is located adjacent to the Project, if any. The maximum amount payable under the terms of the Agreement is USD$2,000,000. PMLP has the right, at any time, to acquire from LCI all of the NSR payable in respect to LCI, including any amount remaining payable under the NSR. LCI shall not sell, transfer, or otherwise assign all or any portion of its interest in the NSR ((NSR Interest) to any other party without first offering the NSR Interest to PMLP. Reciprocally, PMLP shall not sell, transfer, or otherwise assign all or any portion of its interest in and to the Mining Concession to any other party without first offering the Mining Concession to LCI;

[2] An ejido is one of two types of social property in Mexico, granted by the government that combines communal ownership with individual use. The ejido consists of common use land, community development land, and individual parcels, which may be assigned to ejido members.

- A Net Smelter Return Royalty Agreement dated June 19, 2002 ((Sanluis Agreement #1) by and among Minas Luismin S.A. de C.V., Minas Sanluis, S.A. de C.V., collectively, the owner and the predecessor in interest of and to PMLP and Corporación Turística Sanluis, S.A. de C.V., the holder and predecessor in interest of and to SANLUIS Corporación, S.A.B. de C.V. In accordance with the terms thereof, the Owner conveyed a three percent (3%) NSR royalty ((Sanluis Royalty #1) on production to the holder, derived from Mining Concessions El Choque Tres (Título #218953) and La B (Título #214232), if any. Sanluis Royalty #1 is a covenant that runs with, and binds, these two (2) Mining Concessions and the legal title thereto, the owners thereof, and their successors and/or assigns. The Sanluis Agreement #1 provides that owner has a right of first refusal to acquire the Sanluis Royalty #1 if the holder receives a bona fide proposal to acquire the Sanluis Royalty #1 from a third party;

- On June 12, 2014 SANLUIS Corporación, S.A.B. de C.V. extended to Coeur its right of first refusal pursuant to the terms, covenants, and obligations of the Sanluis Agreement #1. Coeur exercised its right of first refusal and on July 2, 2014 repurchased the Sanluis Royalty #1 encumbering the two (2) Mining Concessions El Choque Tres (Título #21895) and La B (Título #214232) for USD$12,000,000.00. The repurchase price also reflects the concurrent extension and exercise of the right of first refusal of the Sanluis Royalty #2 described immediately hereinbelow.

- A Net Smelter Return Royalty Agreement dated June 19, 2002, ((Sanluis Agreement #2) by and among Minas Luismin S.A. de C.V., Minera Thesalia, S.A. de C.V., collectively, the owner and the predecessor in interest of and to PMLP and Corporación Turística Sanluis, S.A. de C.V., the holder and predecessor in interest of and to SANLUIS Corporación, S.A.B. de C.V. In accordance with the terms thereof, the Owner conveyed a three percent (3%) NSR royalty ((Sanluis Royalty #2) on production to the holder, derived from Mining Concessions La Preciosa (Título #182517), Lupita (Título #182584), Fracción La Preciosa (Título #185128), and San Patricio (Título #189616), if any. Sanluis Royalty #1 is a covenant that runs with, and binds, these four (4) Mining Concessions and the title thereto, the owners thereof, and their successors and/or assigns. The Sanluis Agreement #2 provides that owner has a right of first refusal to acquire the Sanluis Royalty #2 if the holder receives a bona fide proposal to acquire the Sanluis Royalty #2 from a third party;

- On June 12, 2014 SANLUIS Corporación, S.A.B. de C.V. extended to Coeur its right of first refusal pursuant to the terms, covenants, and obligations of the Sanluis Agreement #2. Coeur exercised its right of first refusal and on July 2, 2014 repurchased the Sanluis Royalty #2 encumbering the four (4) Mining Concessions La Preciosa (Título #182517), Lupita (Título #182584), Fracción La Preciosa (Título #185128), and San Patricio (Título #189616) for USD$12,000,000.00. The repurchase price also reflects the concurrent extension and exercise of the right of first refusal of the Sanluis Royalty #2 described immediately hereinabove.

- On June 12, 2013 PMLP executed a Contrato de Ocupación Temporal Para La Extracción, Explotación, Uso y Aprovechamiento de Las Fuentes de Agua del Subsuelo (Temporary Occupancy Agreement) with Fernando Rivas Cossío, an ejidatario of the ejido Vicente Suarez ((Posesionario). This Temporary Occupancy Agreement covers approx. five and nine-tenths (5.9) hectares, and has a term of thirty (30) years from June 12, 2013. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Posesionario is USD$75,000. PMLP has prepaid the annual rent through June 12, 2018;

- On June 12, 2013 PMLP executed a Temporary Occupancy Agreement with Fernando Rivas Cossío, an ejidatario of the ejido Vicente Suarez ((Posesionario). This Temporary Occupancy Agreement covers approx. eight and four-tenths (8.4) hectares, and has a term of thirty (30) years from June 12, 2013. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Posesionario is USD$75,000. PMLP has prepaid the annual rent through June 12, 2018;

- On July 23, 2013 PMLP executed a Temporary Occupancy Agreement with Alejandro Hernández Jarquín ((Propietario). This Temporary Occupancy Agreement covers approx. one thousand two hundred eighteen and five-tenths (1,218.5) hectares, has a term of twenty-five (25) years from July 23, 2013, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement, a lump sum payment was tendered upon the execution thereof, equaling

MXN$16,463,966.40, and represents the sum total consideration due from the Compañía thereunder. The land encumbered by this Temporary Occupancy Agreement overlies a portion of the Mining Concession El Choque Tres (Título #218953), El Choque Cuatro (Título #220251), La B (Título #214232), La Preciosa (Título #182517), and San Juan (Título #226663);

- On February 07, 2014 PMLP executed a Temporary Occupancy Agreement with Unidád Comercial Agricola y Ganadera Don Joaquin S. de R.L. de C.V. ((Propietario). This Temporary Occupancy Agreement covers approx. twenty (20) hectares, has a term of twenty-five (25) years from February 07, 2014, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Propietario is USD$18,000. PMLP has prepaid the annual rent through February 09, 2019. On February 10, 2019, PMLP must prepay the ensuing five (5) year's annual rent, through February 09, 2024. Thereafter, there is no longer an obligation to prepay the annual rent. The land encumbered by this Temporary Occupancy Agreement overlies a portion of the Mining Concession San Juan (Título #226663);
- On February 07, 2014 PMLP executed a Temporary Occupancy Agreement with Jorge Soto Enríquez ((Propietario). This Temporary Occupancy Agreement covers approx. six (06) hectares, has a term of twenty-five (25) years from February 07, 2014, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement the annual rent payable to the Propietario is USD$5,400. PMLP has prepaid the annual rent through February 09, 2019. On February 10, 2019, PMLP must prepay the ensuing five (5) year's annual rent, through February 09, 2024. Thereafter, there is no longer an obligation to prepay the annual rent. The land encumbered by this Temporary Occupancy Agreement overlies, to varying degrees, portions of the Mining Concessions El Choque Cuatro (Título #220251), San Juan (Título #226663), and Santa Monica (Título #221288);
- On February 07, 2014 PMLP executed a Temporary Occupancy Agreement with Jorge Soto Enríquez ((Propietario). This Temporary Occupancy Agreement covers approx. ninety-four (94) hectares, has a term of twenty-five (25) years from February 07, 2014, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Propietario is USD$84,600. PMLP has prepaid the annual rent through February 09, 2019. On February 10, 2019, PMLP must prepay the ensuing five (5) year's annual rent, through February 09, 2024. Thereafter, there is no longer an obligation to prepay the annual rent. The land encumbered by this Temporary Occupancy Agreement overlies, to varying degrees, portions of the Mining Concessions El Choque Cuatro (Título #220251), San Juan (Título #226663), and Santa Monica (Título #221288);
- On February 13, 2014 PMLP executed a Temporary Occupancy Agreement with Petra Higareda Briceño Viuda de García ((Propietario). This Temporary Occupancy Agreement covers approx. fifty-four and nine-tenths (54.9) hectares, has a term of twenty-five (25) years from February 13, 2014, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Propietario is USD$49,422.93. PMLP has prepaid the annual rent through February 13, 2019. The land encumbered by this Temporary Occupancy Agreement overlies, to varying degrees, portions of the Mining Concessions El Choque Cuatro (Título #220251) and La Preciosa (Título #182517);
- On February 18, 2014 PMLP executed a Temporary Occupancy Agreement with ejido Lázaro Cárdenas ((Ejido). This Temporary Occupancy Agreement covers approx. one hundred fifty-seven and two-tenths (157.2) hectares, has a term of thirty (30) years from February 18, 2014, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Ejido is MXN$785,944.95. The annual rent shall be adjusted annually in accordance with the changes to the Mexican CPI. The land encumbered by this Temporary Occupancy Agreement overlies, to varying degrees, portions of the Mining Concessions El Choque Cuatro (Título #220251), El Choque Seis (Título #220583), and Santa Monica (Título #221288);

- On February 19, 2014 PMLP executed a Temporary Occupancy Agreement with ejido Francisco Javier Mina ((Ejido). This Temporary Occupancy Agreement covers approx. eighty-nine and two-tenths (89.2) hectares, has a term of thirty (30) years from February 19, 2014, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Ejido is MXN$445,846.69. The annual rent shall be adjusted annually in accordance with the changes to the Mexican CPI. The land encumbered by this Temporary Occupancy Agreement overlies, to varying degrees, portions of the Mining Concessions El Choque Cuatro (Título #220251), El Choque Seis (Título #220583), and Santa Monica (Título #221288);
- On April 11, 2014 PMLP executed a Temporary Occupancy Agreement with Candelaria Uves Solórzano ((Propietario). This Temporary Occupancy Agreement covers approx. two hundred eighteen and eight-tenths (218.8) hectares, has a term of twenty-five (25) years from April 11, 2014, and expressly allows for the exploration, exploitation, and beneficiation of concessionable minerals. In accordance with the terms of the Temporary Occupancy Agreement, the annual rent payable to the Propietario is USD$196,911.89. PMLP has prepaid the annual rent through March 28, 2019. However, beginning March 28, 2015 and continuing until March 28, 2019, PMLP must prepay, in each of those years, for the future lease periods from March 29, 2019 through March 28, 2024. On March 28, 2024, PMLP must prepay the annual rent for the ensuing five (5) years or until March 28, 2029. On March 28, 2029, PMLP must prepay the annual rent for the ensuing five (5) years or until March 28, 2034. The last annual rent payment under the terms of the Temporary Occupancy Agreement is scheduled to be made March 28, 2034, a prepayment of the annual rent for the last year of the term of the Temporary Occupancy Agreement, 2039. The land encumbered by this Temporary Occupancy Agreement overlies, to varying degrees, portions of the Mining Concessions El Choque Cuatro (Título #220251), El Choque Seis (Título #220583), Fracción La Preciosa (Título #185128), La B (Título #214232), La Preciosa (Título #182517), San Patricio (Título #189616), and Santa Monica (Título #221288).

There are no other known royalties, back-in rights, payments, agreements, or encumbrances.

## 4.4 Environmental Liabilities and Permits

Please refer to Section 20.0 for a discussion regarding environmental and permitting factors related to the Project.

## 4.5 Significant Factors and Risks

Pursuit of the purchase or control of the necessary and convenient surface estates that overlie the Project is ongoing. There are risks that some of these surface estates, or portions thereof, may not be acquired due to unrealistic expectations of the parties, uncured or incurable defects in the legal land title, and/or survey and legal description inaccuracies.

The accuracy and completeness of ownership records maintained by the several Registros Públicos de la Propiedad y del Commercio (RPPyC) and Direcciones de Catastro within the state of Durango varies greatly. Prior to commencing negotiations for the purchase or control of a surface estate, legal land titles are thoroughly abstracted to determine legal ownership and the defects affecting validity of said ownership. Many Certificados and Constancias, issued by the several RPPyC, Direcciones de Recaudación, and Registros Agrario Nacional, are requested and obtained, in order to cross reference our own research with that of these government entities. Any disparities between the two are flagged for curing or ameliorating the title risk(s).

Well before consummating the purchase or leasehold transaction, each surface estate parcel is surveyed in the field using high-precision equipment manufactured by Trimble Navigation, LTD. Any discrepancies between the survey results, legal descriptions within the chain of title, and/or previous surveys are analyzed and curative actions are taken to formally reconcile and/or correct the legal dimensions of said surface estate. Many of the surface estates overlying the Project have been secured by long-term leasehold agreements.

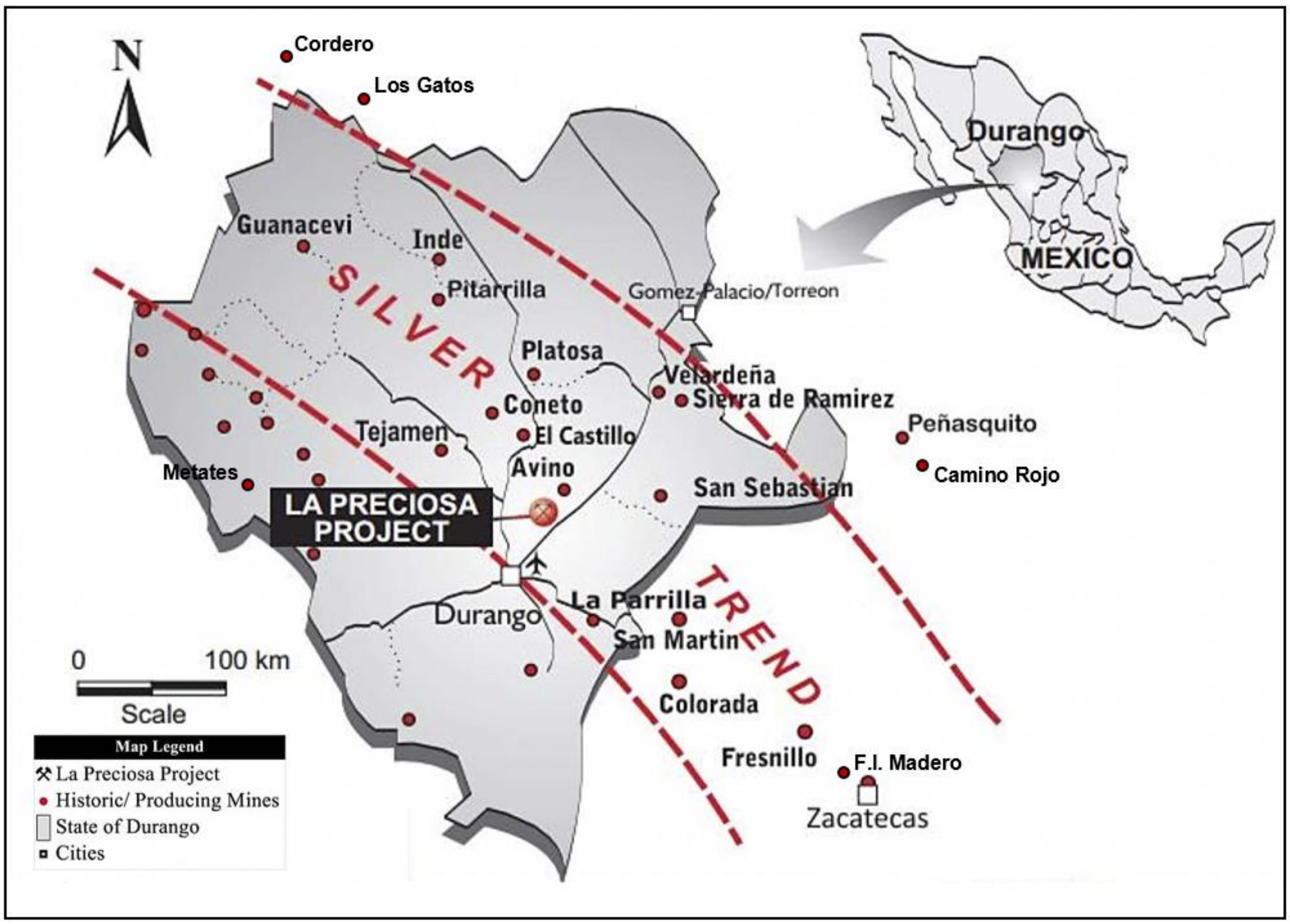
# 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

## 5.1 Location Access

The Property is located approximately 85 km by existing roads, northeast of the city of Durango and can be accessed by vehicle from Durango in approximately 90 minutes. Figure 5-1 shows the Project's regional location. A Google satellite map showing the location of the Property relative to Durango and the access roads is shown in Figure 5-2. From Durango, travel northeast toward Torreón by sealed Federal Highway 40, to the town of Francisco I. Madero. From this point, a secondary paved road is followed northwest to the village of Lázaro Cárdenas, then by newly paved road to the village of Francisco R. Serrano. After 9 km, turn and traverse a newly paved road in a southwest direction to the village of Francisco Javier Mina, then travel in a southerly direction for 5.5 km by gravel road to the access road to the Project site. The access road is a 3.5 km gravel road heading southeast and leads to the portal of the historic workings and the main camp of the Project.

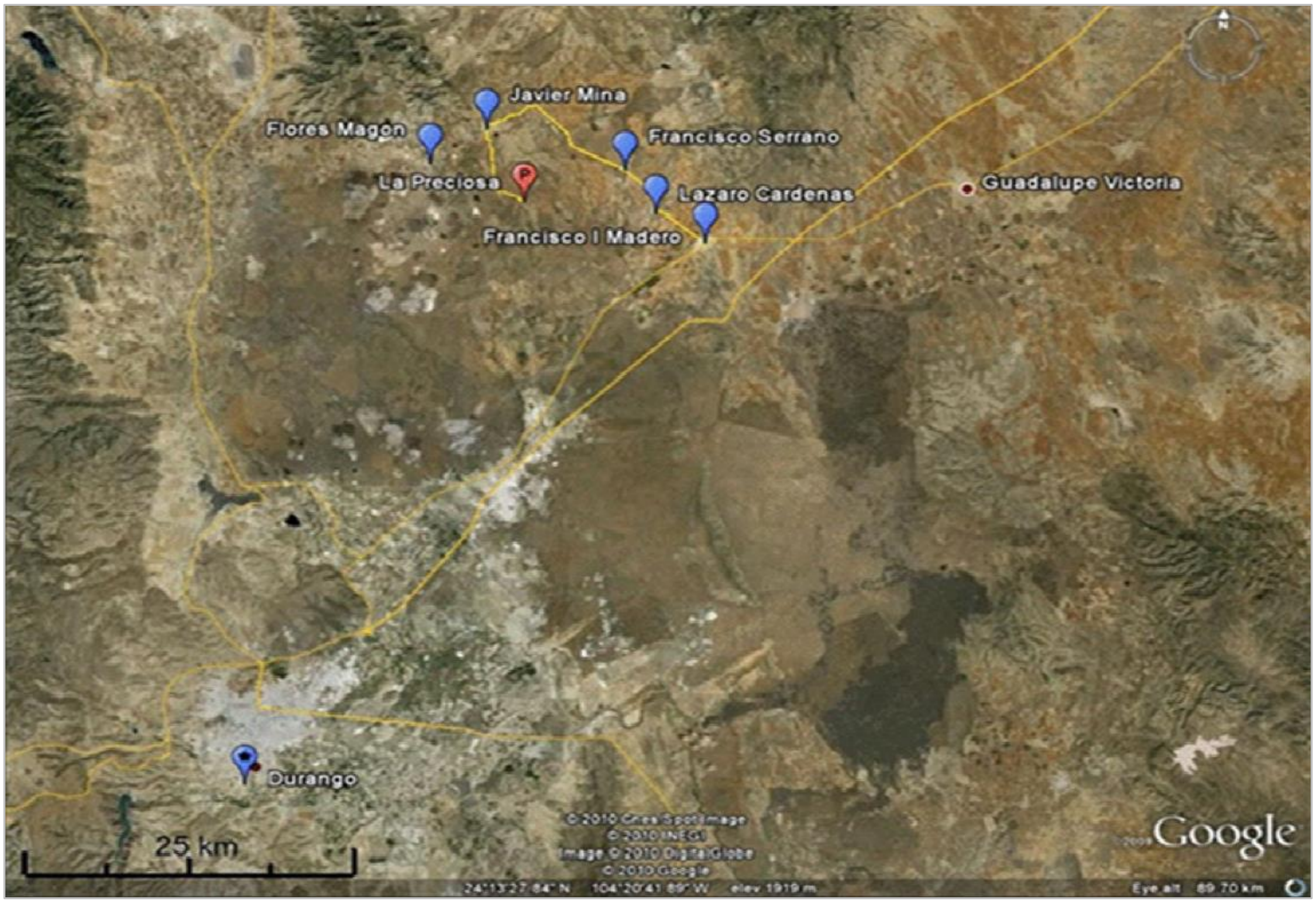
A much shorter site access road is planned to go from Highway 40 directly to the site and avoid the small communities. This road is also anticipated to be aligned with the anticipated water pipeline route. Land acquisitions and road right of way with local landowners are in progress.

**Figure 5-1: Project Location Map**




Source: Coeur, 2013

**Figure 5-2: Property Location and Access Map (Satellite)**




Source: Google Maps, 2010

## 5.2 Climate and Length of Operating Season

The Property area has a semi-arid climate, with an annual average temperature of about 25°C and an average annual precipitation of about 600 mm, usually occurring between May and October. Temperatures can fall below freezing on winter nights but snow is rare. Mining activities can take place year round. The dominant wind direction is southeast.

## 5.3 Proximity to Population Center and Transport

Durango is the capital city of Durango State and has a population of over 600,000. One of the major industries in Durango is mining, particularly for silver, and the region is expected to be a good source of skilled personnel, support services, and mining equipment. The city of Durango is served by an international airport with daily flights connecting to destinations in Mexico and connections to the United States. Durango is situated along Mexican Federal Highway 40, which connects Durango to Mazatlán, approximately 310 km to the southwest on the Pacific coast, and to Torreón, approximately 245 km to the northeast. A railway line runs between Durango and Torreón and connects to other cities in Mexico and the United States.

## 5.4 Surface Rights, Land Availability, Infrastructure, and Local Resources

### 5.4.1 Surface Rights, Land Availability, and Mining Areas

The Property includes suitable sites for construction of the plant and infrastructure.

Surface rights in the Property area are held by a combination of private landowners, ejidos, and ejidatarios, which are ejido members with rights to use specific tracts of land within the ejido. Ejidos are areas of communal land used for agriculture where community members jointly control rights to access and use the land. Ejidos are registered with Mexico's National Agrarian Registry.

### 5.4.2 Ownership

The issuer has verified who the registered land owners are who hold surface rights within the boundaries of the proposed mining activities.

### 5.4.3 Power, Infrastructure, and Water

The quality of infrastructure and the population density increases towards the city of Durango. The Property is not currently connected to the commercial electrical grid, but the nearby village of Francisco Javier Mina (population around 920) and the town of Francisco I. Madero (population around 4,550) are serviced by the commercial electrical grid. The Property presently is supplied electrical power by one 65 kW diesel generator and two smaller 5.5 kW diesel generators. The main power grid for Durango follows a paved federal highway and a power connection. There is currently an application in to CFE to connect a trunk line to the existing 230 kV power line located adjacent to the Ruta 40, about 12 km from the site.

The town of Francisco I. Madero has a Pemex gas station and the services of metal fabricators and mechanic shops. A railway line is present near the south boundary of the Property and the railway has a direct line to Torreón, the site of the nearest metal smelter. The smelter is owned by Met-Mex Peñoles S.A. de C.V. and is a primary producer of lead and zinc. The facility also has a silver refinery, which has the capacity to refine 120,000 kg of silver per month.

Presently the Property has six core storage sheds, an office, lunch room, washrooms, small warehouse, flammable substances storage area, drilling company workshop, night watchman's accommodation, and a generator/core cutting shed.

The water for drilling and services has been previously obtained from a water reservoir in Francisco Javier Mina, charged at a rate of MXN$500 per 1.75 $m^3$, including the cost to haul water to the Project by tanker trucks to water tanks located adjacent to the drilling areas.

### 5.4.4 Local Resources and Mining Personnel

There is local mining work force available in Durango and the surrounding. Durango is approximately 45 minutes away from the Project site.

## 5.5 Topography, Elevation, and Vegetation

The Property lies on the western edge of the high plains of northern Mexico, an extensive volcanic plateau characterized by narrow, northwest-trending ranges separated by wide, flat-floored filled basins. In the Durango area, the basins have elevations of between 1,900 to 2,100 metres above sea level (masl) and the higher peaks rise to 3,000 m. The Property elevation in the area of the mineralized zones at the Property is between 1,990 and 2,265 m. The highest elevations on the Property are at the northwest trending La Preciosa Ridge, which overlies the La Gloria and Abundancia veins. A broad valley forms to the east of the ridge and extends approximately 1 km toward another lower lying ridge to the northeast. Grasses, small shrubs, and cactuses comprise the typical vegetation on the steep hillsides with larger bushes and mesquite trees in the lower lying areas near springs and streams. Nearby farmers produce beans and maize with groundwater sourced from thick gravel beds in the surrounding plains or via dry farming during the rainy season. Local cattle graze on land dominated by rocky soils supporting nopal (prickly pear) and huizache (acacia) scrubland.

# 6.0 HISTORY

In the late 19th century, the Property was known as Mina La Preciosa. Early work was focused on the north end of La Preciosa Ridge where the Gloria and Abundancia veins outcropped to surface. Mining ceased at the onset of the Mexican Revolution, in 1910, and further mining did not occur until the 1970s. It has been estimated by Orko personnel that a total of ~30,000 t were extracted during that time (MP, 2012).

Luismin operated under the name Minera Thesalia as a joint venture with Tormex S.A. and conducted exploration on the property in 1981, 1982, 1988, and 1994. This work consisted of a surface and underground channel sampling program, a single east-west line of induced polarization (IP) resistivity across the property, and drilled seven diamond drill core holes totaling 1,319 m. This included five surface drillholes targeting the Gloria and Abundancia veins 50-75 m below the primary underground workings, and two holes drilled from within those older workings.

Luismin expanded the historic underground workings to a size of approximately 3 m by 3 m. This allowed for the underground drilling and also for a program of channel sampling. A reported 11,739 t of material was removed from the sides of the historic underground workings at reported grades of 0.43 g/t Au and 157 g/t Ag. That material was stockpiled outside the portal of those underground workings and is still in-place. While Luismin staff did calculate several MREs during that time, based on limited information, the channel sampling and shallow drilling were not used for the calculation of the current Mineral Resources.

Orko (subsequently Orko Silver Corp.) entered into a JV agreement with Luismin in 2003 and subsequently acquired the control of the property with Luismin maintaining a royalty.

Orko performed a series of exploration programs beginning in 2005 and lasting until 2008, and drilled 388 core holes for a total of 152,368 m on targets at Orito, San Juan, and La Preciosa. Additional surface sampling and mapping was also performed during that time.

Orko signed a JV agreement with PAS in 2009. PAS drilled 363 drillholes for a total of 91,096 m during 2009-2010. The desired result was a Measured Resource to support a feasibility study issued in 2012 by Quantitative Geoscience Pty. Ltd. and included a Technical Report by Snowden done in 2011 (Snowden, 2011a). PAS work included the use of some drillholes for geotechnical purposes, and four metallurgical test programs performed by SGS Mineral Services in Durango, Mexico. Problems with those metallurgical test programs were noted by Snowden and future work was recommended. However, a table of Mineral Resources was produced as a result of the MP Updated MRE prepared for Orko in 2012 (MP, 2012). A QP had not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves; and (ii) the issuer is not treating the historical estimate as current mineral resources or mineral reserves. The historical resources are presented as historical information only. It should be noted that these historical estimates were designed to support open pit/surface mining scenarios.

## Table 6-1: La Preciosa Historical MRE (Effective Date October 25, 2012)

| La Preciosa Mineral Resources Estimate – effective October 25, 2012* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mining Method | Classification | Cut-off Grade | t (millions) | Silver (g/t) | Silver (million ounces) | Gold (g/t) | Gold (thousands oz.) | Silver Equivalent (g/t) | Silver Equivalent |
| **Open Pit** | **Indicated** | 25 | 29.6 | 104 | 99 | 0.20 | 190 | 115 | 110 |
| **Open Pit** | **Inferred** | 25 | 47.7 | 86 | 132 | 0.16 | 245 | 95 | 146 |
| **Underground** | **Indicated** | 60 | 0.1 | 99 | 0 | 0.16 | 0 | 108 | 0.2 |
| **Underground** | **Inferred** | 60 | 1.9 | 124 | 8 | 0.21 | 13 | 136 | 8 |
| **Total** | **Indicated** | | 29.7 | 104 | 99 | 0.20 | 191 | 115 | 110 |
| | **Inferred** | | 49.6 | 87 | 140 | 0.16 | 259 | 97 | 154 |

*Notes*:

[1] Open pit resources stated are contained within a potentially economically mineable pit shell. Pit optimization is based on assumed silver and gold prices of US$25.90/oz and US$1,465/oz respectively and mill recoveries of 88% and 78% respectively, mining costs of US$1.45/t, processing costs of US$17.25/t and G&A costs of US$4.35/t. Break-even cut-off grades used were 25 g/t Ag for open pit mill material and 60 g/t Ag for underground material.

[2] Silver equivalency is based on unit values calculated from the above metal prices, and assumes 100% recovery of all metals.

[3] Mineral Resource tonnage and contained metal have been rounded to reflect the accuracy of the estimate, and sums may not total due to rounding.

[4] The Underground Indicated and Inferred Resources do not account for mining method and probability that mine plan design could significantly change these Resources.

In April 2013, the acquisition of Orko was completed by Coeur. Since completion of the acquisition, activities have included land and water resources acquisition plus additional efforts on geological and technical studies. All involved property owners were identified and their titles verified to be in good standing prior to acquisition of surface rights.

By a share purchase agreement dated October 27, 2021 with Coeur Mining and its affiliates, Avino has agreed to indirectly acquire PMLP and the La Preciosa property. The closing of the proposed acquisition is subject to significant conditions, including that there shall not have occurred any event, change, or circumstance which has had or would reasonably be expected to have a material adverse effect, the authorization of the Mexican Federal Economic Competition Commission, approval of the transaction by the NYSE American, any other necessary third party approvals, and the completion of all other covenants and conditions required to be performed by the parties prior to closing. There can be no assurance that the proposed transaction will be completed as proposed or at all. This report has been prepared for Avino on the basis that the proposed acquisition will be completed.

## 6.1 Water

Two wells were drilled by Coeur in an aquifer located about 10 km due south of the proposed plant site. The wells were drilled on advice from CONAGUA, the water resource monitoring agency, and were drilled and completed with guidance from a respected hydrologist.

In addition, four existing small diameter wells, previously drilled to provide water for grazing, were logged, cased, and had pumps installed in them.

## 6.2 Geologic Modeling Programs

Before 2014, Coeur reviewed and interpreted all prior core logs via a common core logging system and re-entered them into the model. As a result, finer details that had been previously logged but not entered into the model were able to be captured for future interpretation. This resulted in common naming conventions, notations on mineralization type and oxidation states, alteration codes, and host rock naming conventions. This greatly improved the quality of the mineral resource model.

Over 1,400 new mineral density measurements were taken across a broad spectrum of both mineralized and non-mineralized sections of the model. This included both new and older core measurements and greatly improved the density data within the model.

A re-sampling effort was undertaken by Coeur to identify additional mineralized zones, and also sample zones between and adjacent to known veins, to define if there was mineralization in those rock masses.

During Coeur's review of the prior Orko data, it was also discovered that Orko had used a less expensive laboratory procedure of a 3-acid digestion rather than the ISO standard 4-acid digestion for atomic adsorption chemical analysis. Pulps for these samples were removed from storage and submitted for re-analysis. This included approximately 6,400 pulps located at the site and some ~800 located at a remote storage location in Canada. These were re-analyzed, with new standards and blanks, and compared to the prior data set.

## 6.3 Metallurgical Testing

Metallurgical testing performed by Orko showed recoveries that had considerable variation. A review of that data showed that there was no testing performed to optimize recovery and that the testing was done with a variety of conditions. New programs of metallurgical testing were performed to define the optimum conditions for the testing and then re-perform that testing within those defined optimums.

This includes flotation and leaching testing at optimized pH, reagent addition levels, and retention times to provide circuit design and operating characteristics.

Flotation testing did not prove to be a viable alternative due to low quality concentrate grades and low recoveries. Whole leaching of mineralized material, at a grind of 75 microns, was found to provide optimized recovery in agitated leaching applications. This metallurgical process is designed to feed a Merrill-Crowe plant to produce doré at site.

Additional testing was initiated to define leach recovery potential for heap leaching of low-grade mineralized material. This testing was initiated with bottle roll tests based on previously-defined pH and reagent levels.

## 6.4 Environmental Studies

The Property was divided into two study areas for environmental applications: one for the mine area and one for the access, power, and waterlines. All plant and animal studies and clearances, surface and groundwater baseline data, drainage basin studies, and storm water drainage volumes and flows were defined. Local and site studies have been completed for groundwater characterization (water quality, water level, pit-inflow rates), surface water quality, and geochemical characterization of mining wastes (waste rock and tailings). Monitoring and management plans have been developed for groundwater monitoring, waste rock, tailings, prevention, and control of potential petroleum and chemical spills, sediment control plans, and tailing designs were completed based on those studies. A mine closure and reclamation plan and closure cost estimate has been prepared.

# 7.0 GEOLOGICAL SETTING AND MINERALIZATION

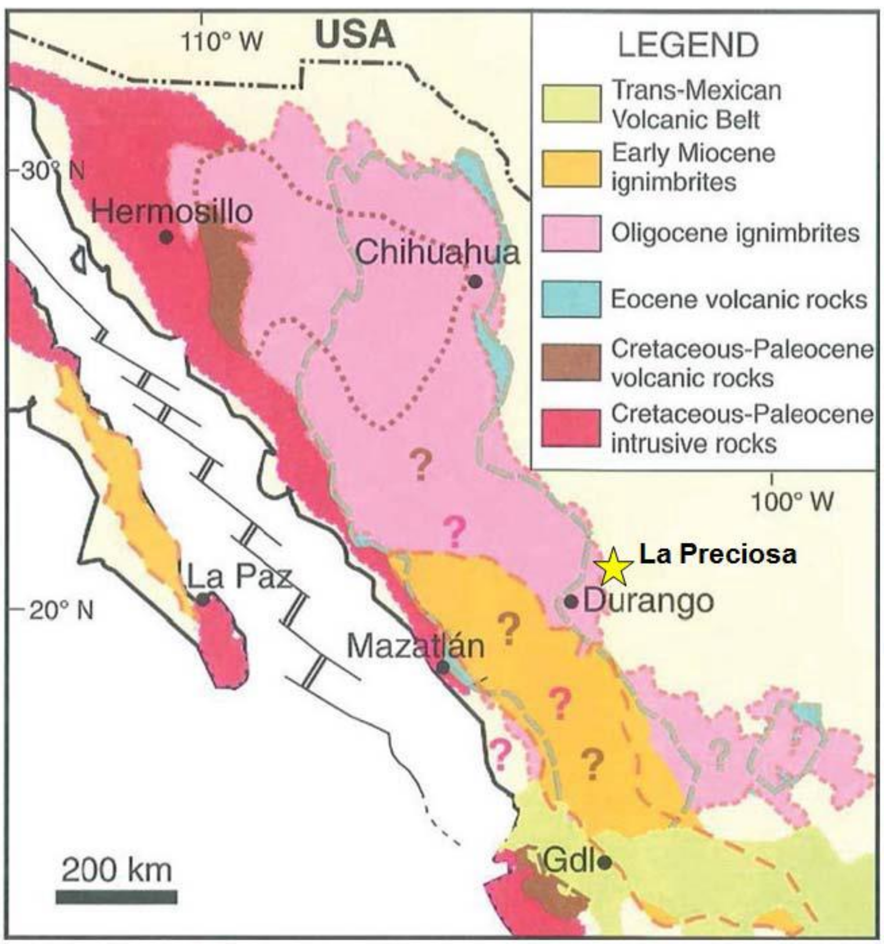
## 7.1 Regional Geology

The Property is situated on the eastern flank of the Cretaceous to mid-Tertiary Sierra Madre Occidental (Figure 7-1). The SMO is the largest silicic igneous province in North America and it stretches from the USA-Mexico border to the latitude of Guadalajara, where the SMO is covered by the late Miocene to Quaternary Trans-Mexican Volcanic Belt.

The SMO is part of the Basin and Range physiographic province where magmatism and tectonism were related to the subduction of the Farallon Plate beneath North America. Physiographically, the core of the SMO forms the boundary between the Mexican Basin and Range Province to the east and the Gulf Extensional Province to the west.

Figure 7-1 shows a simplified geological map of Northern Mexico showing the main assemblages of the Sierra Madre Occidental (from Ferrari et al., 2007). The Lower Volcanic Complex (LVC) is shown in blue and the UVS is shown in pink and orange.

**Figure 7-1: Simplified Geological Map of Northern Mexico**




Source: Ferrari et al., 2007

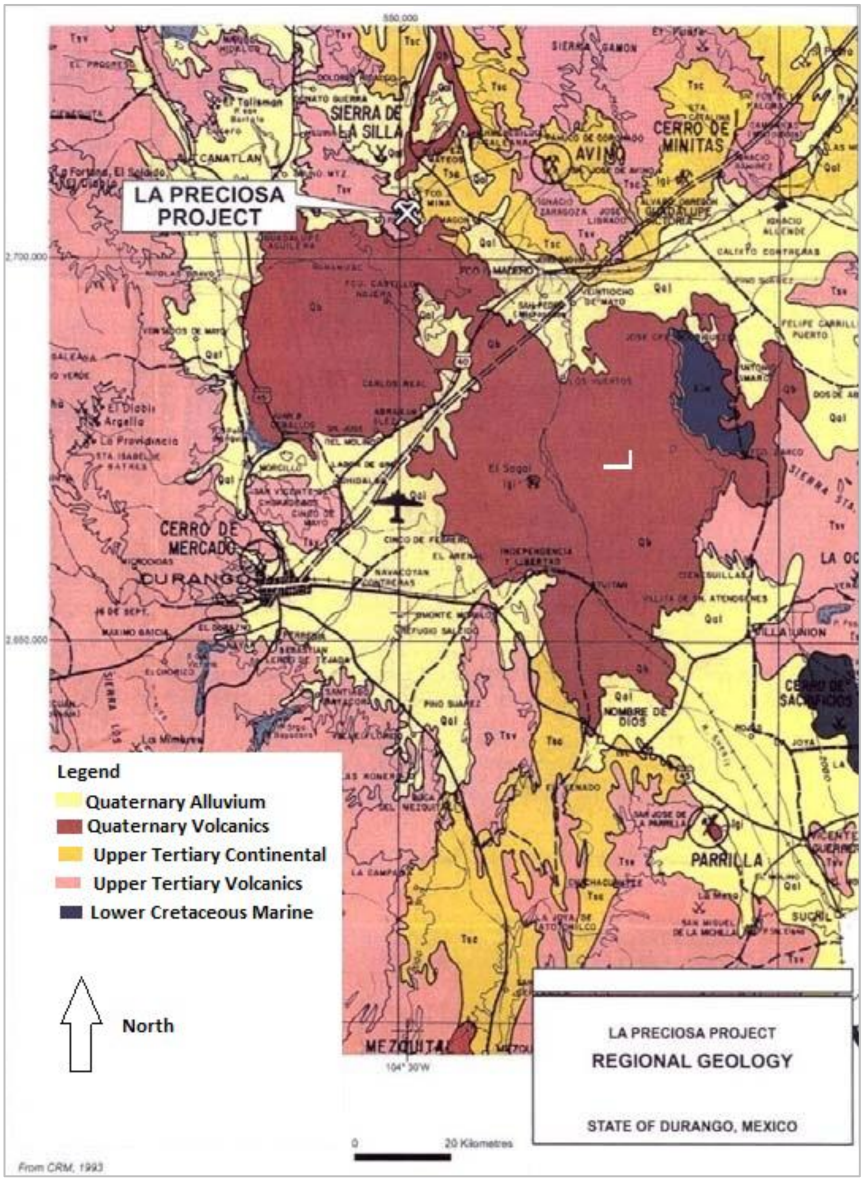
The stratigraphy of the SMO comprises the following main sequences:

- Late Cretaceous to Paleocene plutonic rocks.
- Paleocene-Eocene (ca. 67-55 Ma) andesites and lesser rhyolites, traditionally grouped into the LVC (McDowell and Keizer, 1977).
- Silicic ignimbrites mainly deposited during two pulses, e.g., Oligocene (ca. 32-28 Ma) and Early Miocene (ca. 24-20 Ma), and grouped into the UVS (McDowell and Keizer, 1977).
- Transitional basaltic-andesitic lavas that erupted toward the end of, and after, each ignimbrite pulse.
- Post-subduction volcanism consisting of alkaline basalts and ignimbrites deposited in the Late Miocene, Pliocene, and Pleistocene.

In the area, deformed metasedimentary rocks of Cretaceous age are exposed in small windows through the Tertiary volcanic rocks of the SMO. These consist of folded and foliated clastic metasedimentary rocks that are unconformably overlain by undeformed Early Tertiary conglomerate and sandstone of the Ahuichila Formation (Aguirre-Diaz and McDowell, 1993), which are in turn overlain by a sequence of intermediate tuffs, flows, and agglomerate of the Paleocene-Eocene age LVC. The LVC sequence is overlain by a thick sequence of rhyolite and intermediate to felsic ignimbrite, tuff, and volcanic breccia of Oligocene-age that are exposed along cliffs to the west of the Property.

The region is transected by the regional northwest-striking San Luis-Tepehuanes fault system (Nieto-Samaniego et al., 1999), which roughly coincides with the eastern margin of the SMO. This fault system comprises a complex network of northwest- to north-striking, west-dipping fault segments that are associated with east to northeast tilting of Tertiary stratigraphy. In the Durango region, the fault system is made up of north-northwest trending normal faults and associated (half) grabens that were active during two stages of extension between ca. 32 and 24 Ma (Nieto-Samaniego et al., 1999). The basins and parts of the lower hills in the region are covered with varying thicknesses of Pliocene to Pleistocene basalt that erupted from numerous vents now marked by small volcanic cinder cones and domes.

**Figure 7-2: Regional Geology Map**



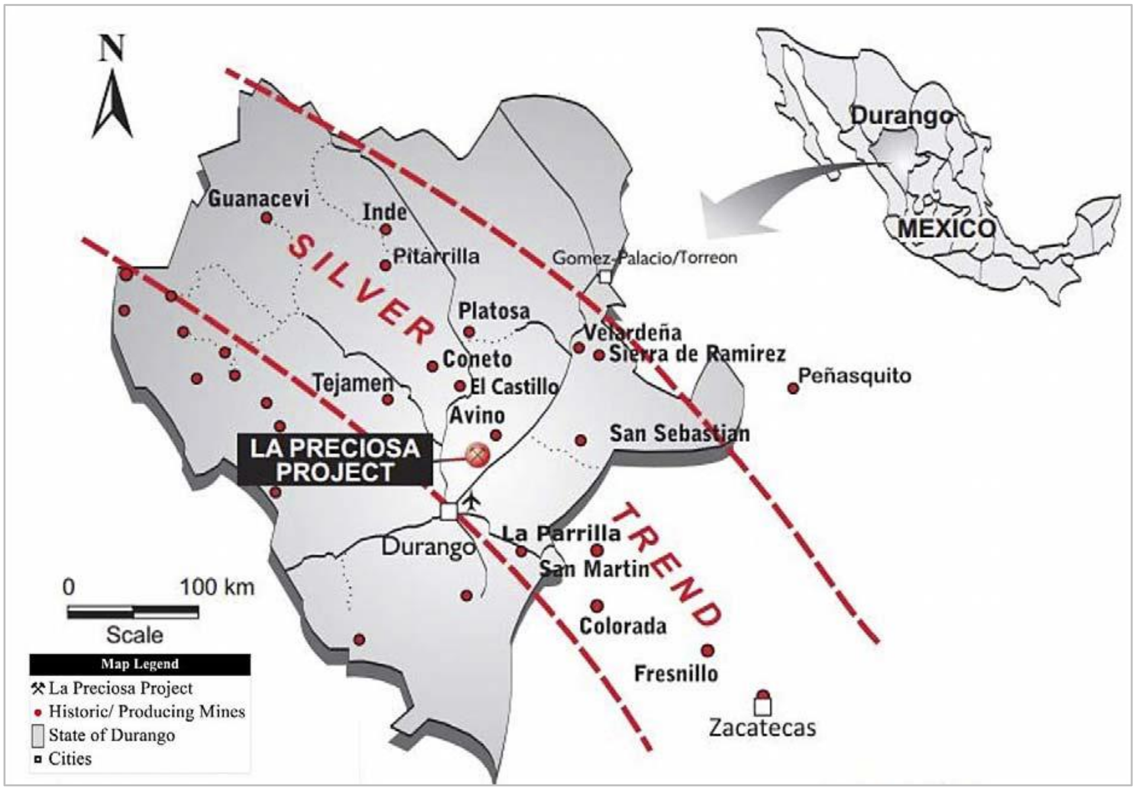

## 7.2 Regional Mineral Deposits

Mineral deposits of the Sierra Madre Occidental plateau and the La Preciosa District consist mainly of silver and gold mineralization with or without significant base metal components. The known deposits form a northwest-trending belt from the state of Zacatecas and the large Fresnillo silver deposit on the south east to the Guanaceví silver deposit near the border with the state of Chihuahua.

Approximately 18 km to the northeast of the property is the historic Avino property, and the Avino and San Gonzalo veins and stockwork system, which is considered a low- to intermediate-sulphidation Ag-Au-copper (Cu) epithermal deposit similar to other deposits in the Mexican silver belt.

Approximately 50 km north of the Project is the El Castillo Mine (Argonaut Gold is the operator), which is thought to be a porphyry-style gold system related to Oligocene granodiorite-diorite porphyries that intrude Cretaceous clastic and carbonate sediments in an extensional tectonic setting. Gold mineralization occurs throughout the magmatic-hydrothermal system.

**Figure 7-3: Mineral Deposits in the Project Area**




Source: M3, 2013

San Sebastian, located 60 km to the east of the Project, contains a number of productive vein systems including Francine, Don Sergio, and Andrea. Production by Hecla from the Francine vein was high-grade silver, with significant gold values. Mineralization occurs in poly-phase chalcedonic quartz veins with an average width of 1.6 m. Production from the Don Sergio vein was high-grade gold, with some silver values. Several epithermal veins exist within the San Sebastian valley. The Francine, Professor, Middle, and North vein systems are hosted within a series of shale units, with interbedded fine-grained sandstones. The Don Sergio, Jessica, Andrea, and Antonella veins located in the Cerro Pedernalito area, about 6 km from the Francine vein, are hosted in the same formation, with the addition of diorite intrusion. Mining ceased in 2005; however, Hecla is continuing with an active exploration program in the area, in particular on the Hugh Zone.

Directly adjacent to the Project on the west is the San Juan project of Silver Standard. Orko conducted prospecting, geological mapping, and some surface sampling. Vein targets, La Plomosa, La Plomosa Sur, El Vaquero, San Juan, Nancy Sur, and the down-dip projection of the Nancy vein are known on the San Juan property. La Plomosa vein has approximately 80 m of historical drifting and one drillhole.

Immediately south of La Plomosa and San Juan are the large Victoria and Salamandra concessions of Canasil Resources Inc. under joint venture with Blackcomb Minerals Inc. Salamandra is a skarn silver-zinc-copper prospect.

La Parrilla mine of First Majestic Silver Corporation, is located near the Durango-Zacatecas border, approximately 65 km southeast of the city of Durango and 80 km south of the Project. La Parrilla is currently in production at a rate of 800 tpd. First Majestic is focusing on the La Rosa/Los Rosarios, San Marcos, San José, San Nicolás, Vacas, Quebradilla, La Luz, and Recuerdo structures. The silver-lead-zinc mineralization is hosted in vein-fault zones, breccias, and replacement bodies. These occur within the porphyritic diorite intrusive rocks and in the adjacent limestone, skarn, and hornfels rocks. While the geology is different than that at the Project, it does illustrate another example of precious metal mineral endowment in the region.

There are numerous precious metal exploration and expansion projects underway in Durango State and adjacent areas, including Metates, La Cienega, La Parrilla, Pitarrilla, Guanacevi, San Agustin, Peñasquito, Santa Cruz, San Sebastian, and Topia, as well as an expansion at the Tayoltita (San Dimas) operations. Neighboring Zacatecas state is also very active.

## 7.3 Local Geology and Mineral Deposits

### 7.3.1 Local Geology

The oldest rocks on the property are Jurassic-Cretaceous metasedimentary graphitic schist, chlorite schist, and layers of quartzite (Figure 7-4 and Figure 7-5). These metasedimentary rocks do not outcrop at surface but are intersected in drill core. Overlying the metasedimentary sequence is a thick package of unmetamorphosed polylithic conglomerate containing lenses of arkosic sandstone of unknown age.

The sedimentary package is overlain by intermediate tuff and agglomerate of the regional Tertiary age LVC. In places, the flows are porphyritic or glomeroporphyritic, and the tuffs are partly welded. The youngest rocks within the property are basalt flows that erupted from several Pleistocene-age volcanic vents and which now fill the lower valleys. Cerro Prieto, Cerro Blanco, and Cerro La Chicharronera are prominent examples of the volcanic vents. Other nearby (9 km west) volcanic vents is the Holocene age, La Breña-El Jagüey maar complex, which is part of the Durango Volcanic Field. Sporadic mafic to felsic dikes and sills of unknown age are found in the deeper parts of the area and rarely at surface.

The area contains a series of Tertiary-age silver-bearing (±gold) epithermal quartz veins associated with barite, fluorite, and sporadic base metals, primarily zinc and lead. There are two major vein and vein-breccia systems exposed on a series of hills and ridges, which are separated by a flat-floored valley roughly 800 m wide. The conglomerate and Tertiary Lower Volcanic andesitic rocks are the main host rocks for quartz veins, although vein mineralization does extend into the basement metasedimentary rocks.

The main veins system on the Abundancia Ridge consists of dominantly south-striking and west-dipping veins plus east-southeast-striking, south dipping crosscutting veins. For example, the Abundancia Ridge vein system has been traced on surface for more than 1.5 km, and drilling has revealed that the veins continue to the north, beneath basalt cover.

Along the eastern side of the Project, a series of hills expose a north- to northwest-striking, shallow west-dipping vein system with associated hanging wall veining and alteration. This vein system is referred to as the Martha vein or fault zone and has been traced by drilling for over 2.5 km along strike.

Mineralization at the Project is hosted within multiple discrete poly-phase quartz veins, often displaying banded, smoky, drusy, and chalcedony textures. Also, in each stage there is variably crustiform banded fracture fill/breccia cement mineralogy. Fluorite, amethyst, a substantial number of barite laths, calcite, and rhodochrosite may also be present, and sulfide mineralization in the form of sphalerite, galena, pyrite, chalcopyrite, acanthite, sparse native silver, and free gold, as well as iron and manganese oxides have been noted in drill core. The principal silver bearing mineral at the Project is acanthite-pseudomorphic after argentite or as microcrystalline to amorphous grains.

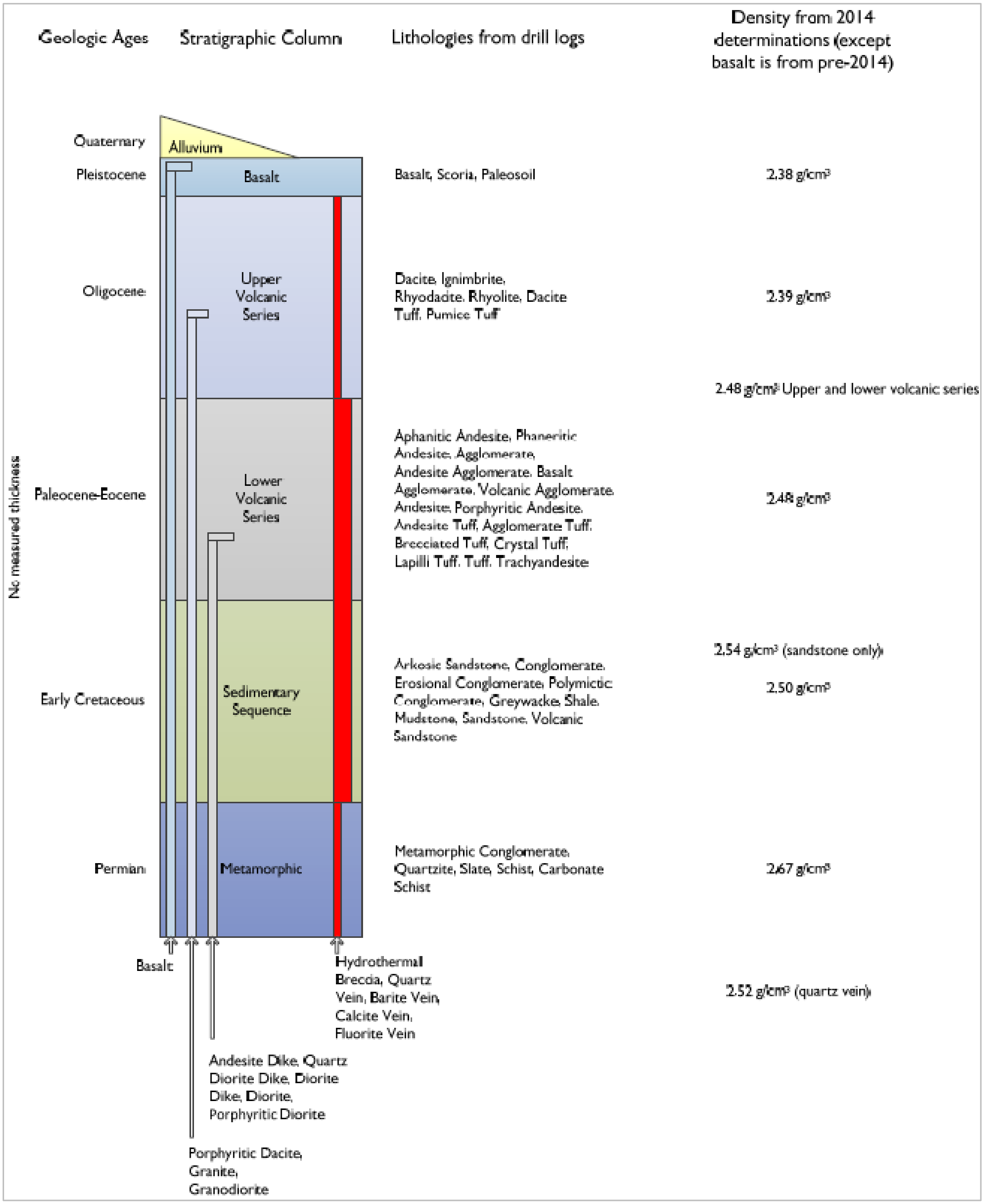
Vein mineralization does extend into the basement metasedimentary rocks, but its extent and distribution is not well understood. The main vein system on the Abundancia ridge consists of dominantly southward-striking and westward-dipping veins plus east-southeast–striking, south-dipping crosscutting veins. The Abundancia ridge vein system has been traced on surface for over 1.5 km. Along the eastern part of the Project, a series of hillocks expose a north- to northwest-striking, shallow west-dipping vein system with associated hanging wall veining and alteration. This vein system is referred to as the Martha vein or fault zone and has been traced by drilling for over 2.5 km along strike.

Examination of mineralized samples identified mainly argentite, tennantite/tetrahedrite, and Ag sulphosalts in samples. The majority of gold/electrum is inter-grown with or occupying the same paragenetic position as argentite, silver sulphosalts, sphalerite, and galena, mostly transitional between quartz and carbonate/iron carbonate in formation.

Wall rocks hosting mineralization are variably silicified, with proximal patchy illite-smectite alteration and distal chlorite alteration. The presence of manganocalcite has been noted in several drillholes, but it is not uniformly distributed. In shallower drillholes, pyrolusite and limonite often appear on fracture surfaces.

The host rocks and veins have undergone intense weathering. The base of oxidation is erratically distributed as weathering is controlled by the presence of post mineralization faults which allowed the percolation of oxidized meteoric groundwater to vertical depths of 350 m below surface. Weathering minerals include iron oxides, iron carbonates, manganese oxides, and unidentified clays.

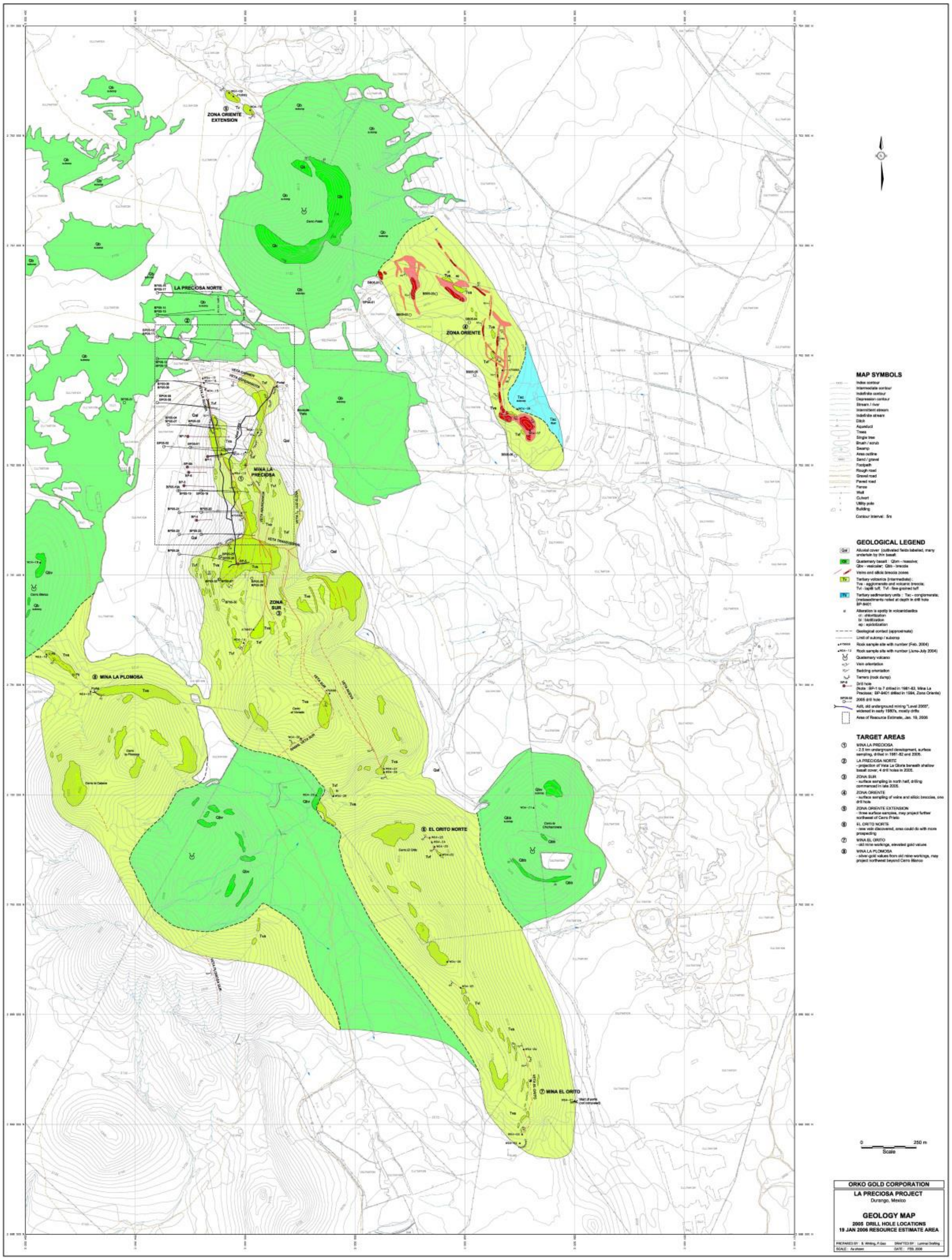
## Figure 7-4: Project Local Stratigraphic Column






TETRA TECH

## Figure 7-5: Local Geologic Map




Source: Orko, 2006

### 7.3.2 Lithological Units

The main rock types occurring in the Project area include volcanic flows, pyroclastic rocks, sedimentary rocks (clastic and epiclastic rocks), metamorphic rocks, and subvolcanic dikes. The lithological descriptions below include the alteration products that were most commonly observed.

**Volcanic Flows:** Distinctive volcanic flows include vesicular basalt, basaltic andesite, and latite to andesite. The lithology logs also include rhyolite. Rhyolite flows were not observed during the alteration study. Quartz-phaneritic felsic crystal-lithic tuff is abundant in the northeastern part of the property, and it is possible that rhyolite flows occur within that unit.

**Vesicular basalt:** Vesicular basalt is the youngest lithology in the property. It forms sub-horizontal flows that cover the tilted volcanic, pyroclastic, and volcaniclastic sequence beneath. The vesicular basalt unit is black, fine-grained, and has abundant vesicles. It commonly overlays a paleosol horizon that varies in thickness from tens of cm to m. The vesicular basalt unit is not affected by visible hydrothermal alteration.

**Basaltic andesite:** Basaltic andesite is dark purple-brown, sparsely porphyritic, with phenocrysts that average less than 1 mm in length. Phenocrysts and to a lesser degree groundmass are commonly altered to carbonate.

**Latite to andesite:** Latite to andesite is beige colored, porphyritic, with few feldspar phenocrysts and few mafic phenocrysts. Feldspar phenocrysts are variably altered to clay, mafic phenocrysts are variably altered to chlorite, clay, pyrite, or hematite after pyrite, and groundmass is variably altered to clay.

**Pyroclastic Rocks:** Distinctive volcanic pyroclastic lithologies include lapilli-tuff breccia, crystal-lapilli tuff, felsic crystal-lapilli tuff-breccia, and lesser mafic lapilli tuff and mafic crystal tuff.

**Lapilli-tuff-breccia:** Lapilli-tuff-breccia is the most widespread pyroclastic lithology observed in the deposit. It has a dark green to brown green magmatic, porphyritic matrix enclosing angular lithic clasts and juvenile clasts of various sizes. Minor agglomerate and clastic horizons occur within the lapilli-tuff-breccia. Lapilli-tuff-breccia is consistently classified as agglomerate in lithology logs. However, according to the pyroclastic rock classification, the term agglomerate should only be applied for pyroclastic rocks that contain over 75% pyroclasts greater than 64 mm, whereas the lapilli-tuff-breccia commonly contains over 40% magmatic matrix. Intervals of autobreccia were also observed locally.

Significant differences in composition between magmatic matrix and lithic clasts makes this unit favourable for patchy alteration facies. Smectite clay is a common secondary mineral in the lapilli-tuff-breccia, and may be a product of devitrification of the magmatic matrix and of juvenile clasts, or of hydrothermal activity.

**Crystal-lapilli-tuff:** The lapilli-tuff-breccia (described above) grades into intervals of crystal-lapilli-tuff and lapilli-tuff that is up to several m thick. Flow banding is observed locally in the form of aligned lapilli. Feldspar crystals are variably altered to clay, which are most commonly kaolinite or illite.

**Felsic crystal-lapilli-tuff-breccia:** Felsic crystal-lapilli-tuff-breccia has abundant quartz crystals, subangular to angular porphyritic lithic lapilli, and numerous fiamme enclosed in a light reddish-brown to white or light green-white magmatic matrix. This unit occurs in the northeast portion of the Project area, and includes intervals of felsic crystal±lapilli-tuff up to several m wide that locally contain that contains feldspar crystals. Feldspar crystals and lithic clasts are variably altered to clays.

**Sedimentary Rocks:** Sedimentary rocks include conglomerate, sandstone, and minor siltstone and shale.

**Sedimentary Breccia and Conglomerate:** Greenish-grey to brown, matrix to clast supported, moderately to poorly, and locally well sorted polylithic sedimentary breccia to conglomerate is the most widespread sedimentary lithology. Weak carbonate and hematite cement are common. Disseminated, fine-grained euhedral pyrite is commonly observed within the cement. Locally the matrix is completely replaced by epidote.

**Sandstone:** Sandstone forms lenses that are typically less than 6 m thick, and occur most commonly associated with the conglomerate. Irregular, thicker sandstone horizons up to 20 m thick also occur in the upper parts of the volcanic stratigraphy in the northwestern part of the property. Locally, sandstone grades into siltstone and shale beds that are generally less than 2 m thick.

**Metasedimentary Rocks:** Metasedimentary rocks include muscovite-schist and quartz-muscovite-schist that form the basement to the overlying sedimentary and volcanic sequence. The upper contact of the metasedimentary rocks is commonly veined, intruded by subvolcanic dikes and sills, and faulted. The schist contains two well-developed foliations, one of which is folded by the other.

**Subvolcanic Intrusions:** The entire volcanic, sedimentary, and metasedimentary sequence is intruded by dikes and sills of felsic to intermediate composition. The subvolcanic intrusions are most abundant along the contacts between basement metasedimentary rocks and the overlying conglomerate. Dike and sill contacts are typically strongly clay altered.

Light to dark colored feldspar porphyry dikes and sills are sparsely porphyritic, but locally have few to moderate feldspar phenocrysts and few mafic phenocrysts that are completely converted to pyrite and clays. Feldspar phenocrysts are variably clay altered. Groundmass is commonly moderately sericitized.

### 7.3.3 Alteration

The principal visible alteration facies observed in the Property consist of:

- Patchy albite-epidote±chlorite flanks the deposit to the west, north, and southeast, and produces strengthening of the rock. Chlorite, brucite, and epidote are the most common minerals present in this facies.
- Silica-sericite-pyrite occurs along northwest and east-northeast trending corridors, and does not appear to be intense enough to affect rock strength. Illite and muscovite are the most common minerals in this facies.
- Pseudomorphic clays and carbonate after phenocrysts occurs throughout all porphyritic lithologies and does not define specific trends or affect rock strength. Illite, phengite, and montmorillonite, iron-carbonates, and lesser chlorite are the most common in this facies.
- Pervasive texture destructive silica defining northwest-trends are often defined by zones of breccia.
- Fault-fill clays are restricted to post-mineral faults. Montmorillonite is the most common mineral in this facies.

The most frequently occurring are (in order of decreasing frequency): montmorillonite, illite, phengite, iron carbonate, silica, chlorite, brucite, muscovite, kaolinite, calcite, and epidote. Among the alteration minerals, muscovite is the mineral that appears to have best spatial correlation with faults.

The Deposit lacks a distinct halo of a high illite crystallinity surrounding mineralization. This lack of an alteration halo is interpreted as being due to a combination of the strong lithological control over illite crystallinity, and to the scale of this alteration study, which was conducted along the main mineralized zones. It is possible that a broad zone of illite crystallinity high would be defined at a more regional scale.

## 7.4 Mineralization

The area has been cut by numerous structures, both northwest and northeast oriented (to north-northwest and north-northeast), as well as ~eastwest; post-Oligocene extension resulting in graben-style faults, possibly with low-angle listric-type movement. Subsequent mineralization occurred along these low and high-angle faults, and also followed the low-angle contact of the basement or conglomerate with the tuff. The Martha vein, with a dip of ~20° to the southwest, defines the unconformity at depth. The shallowly dipping Abundancia vein dips ~50° to the west-northwest, and the high-angle La Gloria vein in the west dips ~75° to the west-southwest. Internal to this main system of veins are also areas of veinlets and stockwork, which constitute most of the mineralization.

Mineralization is controlled by three types of structures:

- Type 1: structures commonly associated with faults and exhibit crustiform, cockade, and colloform textures that are representative of multiple vein opening stages. These veins generally have widths of greater than 30 cm and can form vein systems up to several m wide. Cavities are also common in these veins. Quartz stockwork comprising mm- to cm-scale quartz veinlets is common both in the hanging wall and footwall of Type 1 vein systems.
- Type 2: structures consist of veins that range in width from 1 cm to several tens of cm, and rarely include veins up to 6 m wide (e.g., Abundancia and La Gloria veins). Type 2 veins are dominated by colloform textures with sugary quartz and euhedral crystals projecting into cavities along the vein centers. Dilation (or jigsaw) breccia veins are also common, with angular clasts of wall rock (typically fine-grained volcaniclastic rock) in quartz and (or) calcite cement. Colloform textures and crystal growth into cavities are characteristics of open-space filling which commonly occurs in extensional settings.
- Type 3: structures are commonly associated with abundant hematite alteration of the host rock, breccia, minor stockwork development, and patchy or narrow quartz vein development. Type 3 structures are typically fault zones up to several m wide with variably developed quartz-carbonate-calcite veins and fault breccia.

As previously mentioned, the mineralization in the area occurs in veins, veinlets, and stockwork. These veins average in true width under 15 m (Martha Vein) and consist of several stages of banded crustiform to colloform, quartz (and cryptocrystalline quartz at shallow depths), adularia, barite, and typically later carbonates (both calcite and rhodochrosite); illite commonly replaces the adularia. There are variable amounts of pyrite, sphalerite, and galena plus argentite, and variable amounts of tetrahedrite - tennantite, freibergite, and Ag sulfosalt.

### 7.4.1 Local Mineralization

The district has many characteristics that are typical of epithermal veins in Mexico, particularly of the Ag-rich variety. Quartz veins are accompanied by adularia, barite, calcite, rhodochrosite of variable timing, as well as acanthite, freibergite, Ag sulfosalts and minor electrum, plus variable amounts of pyrite, honey-colored sphalerite, tennantite/tetrahedrite, chalcopyrite and galena, and supergene Fe and Mn oxides; the hypogene minerals are characteristic of intermediate-sulphidation deposits in Mexico. Mineralization is believed to be Tertiary in age both the LVS and UVS are mineralized, but the basalts are recent and not mineralized.

Petrographic studies of the veins in the Deposit find that multiple stages of silver and base metal mineralization are associated with repeated fluid boiling and mixing events, defined by crustiform banded fill/cement assemblages within a framework of intermittent and more significant fracturing/rupturing of wall rock and pre-existing vein/cement assemblages. There is a repetition of common hydrothermal fill/cement mineralogy, including mineralized minerals, such that correlation of vein/cement assemblages/events between drillhole intersections would be difficult.

The occurrence of adularia and style of early quartz and chalcedonic quartz replacement amongst wall rock replacement and fracture-fill/cement assemblages confirms silver and base metal mineralization associated with low sulphidation, epithermal style systems developed on the Martha and Olin structures at the Project. Significant widths of mineralized quartz and carbonate dominated fracture-fill and breccia cement assemblages have developed as a result of extended episodes of hydrothermal fluid flow and repeated rupturing of wall rock and pre-existing vein/cement assemblages. Internal crustiform banding within the different voluminous fill/cement assemblages represents incremental opening and filling of fractures/cavities between major rupturing events.

The Martha vein is the largest vein in the deposit by far, with at least three times the volume of the next largest vein, La Abundancia. Both veins are low angle, the Martha vein dips ~20-30°, following the southwest-dipping contact of volcaniclastic rocks overlying an immature conglomeratic unit (consisting mainly of polylithic clast-supported fragmental rock with angular to sub-rounded clasts) or the underlying schist.

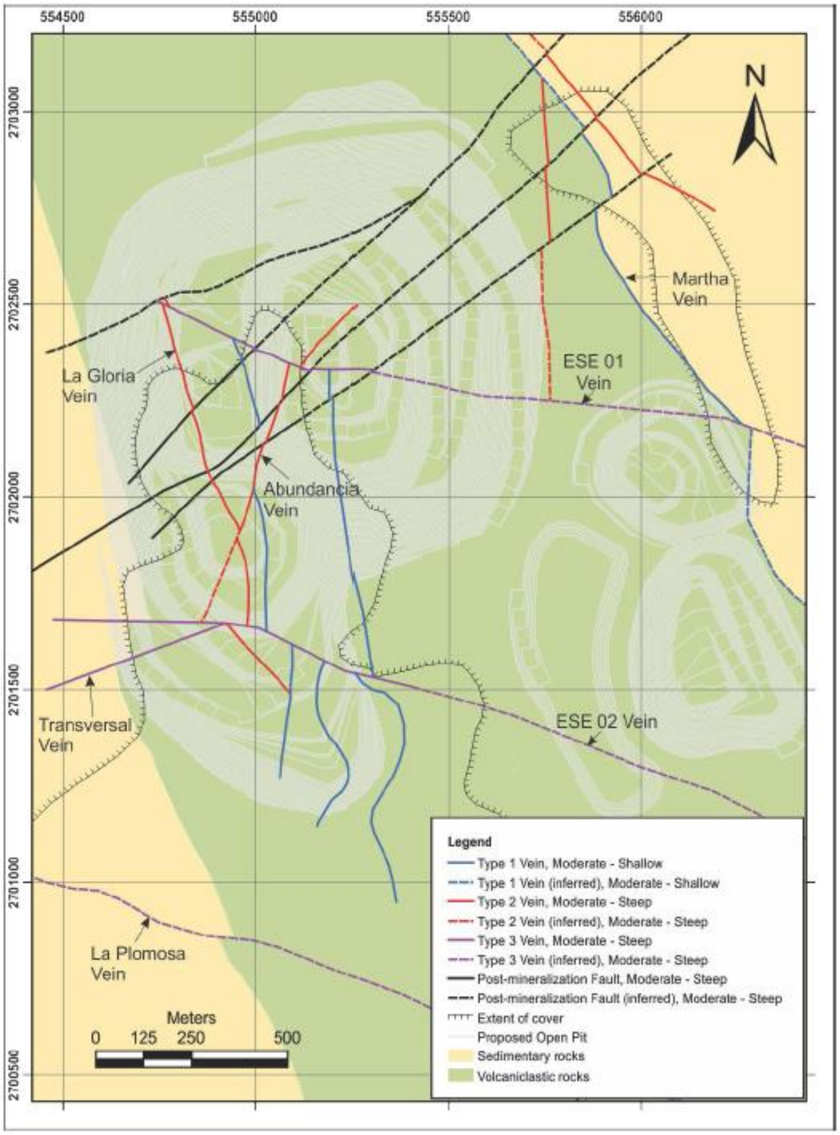
There are also high-angle veins in the west on the ridge, such as La Gloria vein, the largest of this set of veins. These high-angle veins can be considered as a mineralized zone or lode of stock work, silicification, breccias, veins, vein breccias, veinlets, and a general mix of multiple styles of mineralization. Within this broader zone, for example the Martha lode ranges from 1 to 35 m thicknesses and averages approximately 5 m.

### 7.4.2 Structural Geology

There are three main types of syn-mineralization veins and faults in the property:

- Type 1 – Silver-gold bearing, south-southeast– and south-striking, shallow west-dipping structures (e.g., the Martha fault zone).
  - These structures are commonly associated with faults and exhibit crustiform, cockade, and colloform textures that are representative of multiple vein opening stages. Veins generally have widths greater than 30 cm and can form vein zones up to several m wide.
  - Steep down-dip (i.e., shallow west-plunging) mineral lineation and associated steps indicate that these structures developed as normal faults.
- Type 2 – Silver-gold bearing, south-southeast– to south-southwest–striking, moderate to sub vertical west-dipping structures (e.g., the Abundancia and La Gloria veins).
  - These structures contain veins that range in width from 1 cm to several tens of cm, and include rare up to 6 m wide veins. Vein textures comprise colloform banding, dilation (jig-saw) breccia, and euhedral crystals projecting into cavities along the vein centers typical of extensional veins. Few faults are associated with these veins, although vein walls are sometimes characterized by smooth and striated post-mineralization faults.
  - Type 2 veins developed as extensional veins in the hanging wall and footwall of Type 1 structures. Rare syn-mineralization faults display steep-west plunging mineral lineation and associated steps indicating normal dip-slip movement.
- Type 3 – East-southeast-striking, moderate to steep south-dipping structures (e.g., two ESE structures, La Plomosa, and Transversal veins) with sporadic silver-gold bearing quartz veins. These structures are up to several m wide, consisting of fault zones with variably developed quartz-carbonate-calcite veins and fault breccia commonly associated with hematite alteration of the host rock.
- Dominantly moderate to steeply west-plunging mineral lineation and associated steps along southwest-dipping veins indicate that these structures developed as normal-dextral oblique-slip faults.

**Figure 7-6: Structural Geology Map for the Project**




Source: SRK, 2014

# 8.0 DEPOSIT TYPES

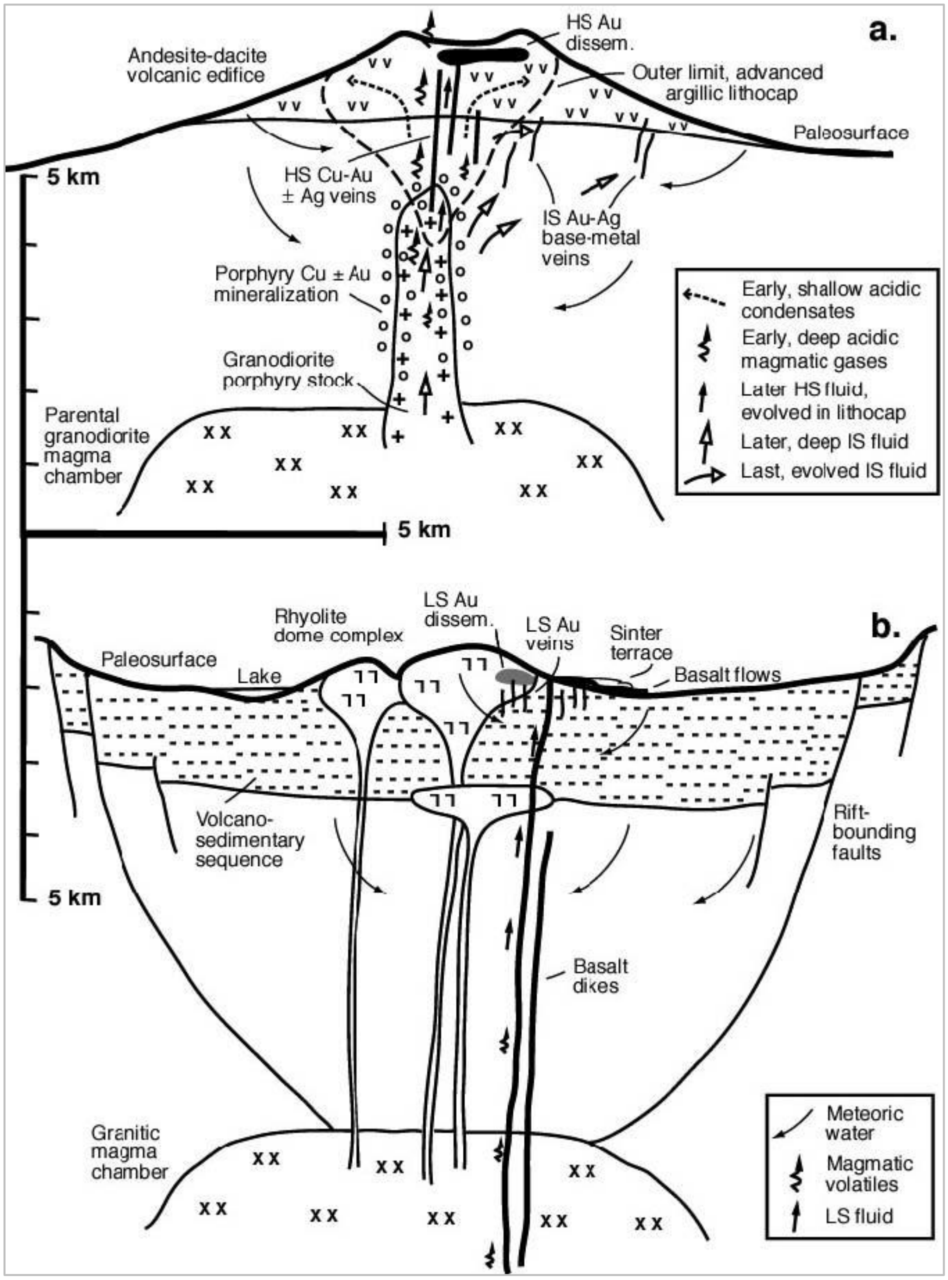
Silver and gold mineralization in the Project area can be grouped into the low sulphidation epithermal model of precious metal deposits. These types of deposits are found worldwide and have been commonly formed during the Cretaceous to Holocene.

Low sulphidation deposits occur as veins, breccias, and disseminated precious metal mineralization deposited by the circulation of neutral to weakly acidic hydrothermal fluids along regional fault structures, fracture zones, or through highly permeable lithologies such as ignimbrite and agglomerate. Because the fluids are relatively neutral, very little alteration is evident and the veins and nearby wall rock may commonly include illite, sericite, and adularia. Generally, this style of mineralization is distal from a heat source.

Sillitoe and Hedenquist (2003) subdivide epithermal deposits into High- (HS), Low- (LS) and Intermediate-sulphidation (IS) types based on mineralogy, deposit morphology, associated alteration, and geologic setting (Figure 8-1).

Type IS epithermal deposits occur in a broadly similar spectrum (to HS deposits) of andesitic-dacitic arcs, but commonly do not show such a close connection with porphyry Cu deposits as do many of the HS deposits. However, high silica igneous rocks such as rhyolite are related to only a few IS deposits. IS deposits form from fluids spanning broadly the same salinity range as those responsible for the HS type, although Au-Ag, Ag-Au, and base-metal rich Ag-(Au) subtypes reveal progressively higher mineralized material fluid salinities.

**Figure 8-1: Schematic Sections of End-member Volcanotectonic Settings and Associated Epithermal and Related Mineralization Types**




- Calc-alkaline volcanic arc with neutral to mildly extensional stress state showing relationships between HS and IS epithermal and porphyry deposits (note that the complete spectrum need not be present everywhere). Early magmatic volatiles are absorbed into ground water within the volcanic edifice (shown here as a stratovolcano, but it may also be a dome setting) to produce acidic fluid for lithocap generation, over and/or supra-adjacent to the causative intrusion. Later, less acidic IS fluid gives rise to IS mineralization, both adjacent to and distal from the advanced argillic lithocap. Where the IS fluid flows through the leached lithocap environment, it evolves to a HS fluid (Einaudi et al., 2003) to produce HS veins or disseminated mineralization, depending on the nature of the structural and lithologic permeability. The HS fluid may evolve back to IS stability during late stages, supported by paragenetic relationships and lateral transitions of high- to intermediate-sulfidation mineralogy.
- Rift with bimodal volcanism and LS deposits. Deep neutralization of magmatic volatiles, typically reduced, results in a LS fluid for shallow LS vein and/or disseminated mineralization and related sinter formation (Sillitoe and Hedenquist, 2003).

The veins in the Project area consist of several stages of banded, crustiform (to colloform), quartz and cryptocrystalline quartz at shallow depths, adularia, barite, and typically later carbonates both calcite and rhodochrosite, "illitic clay" (illite) commonly replaces the adularia (Coote, 2010). There are variable amounts of pyrite, sphalerite and galena plus argentite, and variable amounts of tetrahedrite-tennantite, freibergite and Ag sulfosalts.

The Ag:Au ratio is high, approximately 500:1 for the resource. Supergene oxidation extends to at least 300 m depth, and includes manganese oxide. There is abundant adularia, bladed calcite textures, and coexisting vapour-rich and liquid-rich inclusions, all indicating an ascending, boiling fluid consistent with the abundant evidence for brecciation which suggests that that mixing caused metal deposition and carbonate formation.

# 9.0 EXPLORATION

## 9.1 Summary of Past Exploration

Exploration and other work at the Project date back to mining in the late 1800s on the Abundancia and La Gloria veins, two prominent veins exposed on the surface of La Preciosa Ridge. This work, which ceased in the early 1900s, and small-scale underground mining in the 1970s, resulted in the production of a small amount of material from these two veins, estimated by MP (Head and Collins, 2012) to be less than 30,000 t. This tonnage estimation was not validated by Coeur but site inspections support that a small amount of mining was previously done.

The majority of work at the Project that is material to the mineral resources is from contemporary exploration, mainly drilling, conducted by Luismin, Orko, and PAS (Table 9-1). In addition to the drilling completed by these companies, other exploration activities, consisting of:

1. Prospect sampling by Orko in 2004, followed by geologic mapping by Orko geologists.
2. Completion of three IP ground geophysical surveys in 2005 that totaled 40 line-km. The resistivity data did not appear to be a useful product of this work, but the chargeability component did identify an anomaly in the valley between La Preciosa Ridge and Zona Oriente.
3. A large geochemical soil sampling program over a grid spanning 5 km north to south and 2 km east to west. This program produced anomalous analytical results from areas near shallowly covered veins such as Veta Nueva, Orito, and Nancy.

Historic exploration (along with recognition of late 1800s/early 1900s mining) was responsible for the identification of anomalous silver and gold in soils and outcropping veins.

## 9.2 Coeur Exploration and Development

Coeur's 2013-2014 drilling program was divided into three types:

- Type I drilling: completion of 21 reverse circulation (RC) drillholes to test and condemn waste dumps and tailings impoundment areas, drilling commenced January 2014 and completed February 2014.
- Type II drilling: infill core drilling between February 2014 and mid-April 2014 completed a 75-hole drilling program totaling 11,437 m. Drilling targeted the first three years of the mine plan to convert inferred to indicated resources and reduce risk in achieving the early mine plan. All drilling was concentrated around the Abundancia Ridge area.
- Type III drilling: from December 2013 to March 2014 Major Drilling, under KP supervision, completed seven HQ3 core holes specifically to obtain geotechnical data in the area of the design pits, tailings impoundment, and process plant footprint. Subsequently, these holes also were sampled for geochemical data.

Coeur has completed development and exploration work at the Project in 2013-2014, as shown in Table 9-1.

**Table 9-1: 2013 – 2014 Coeur Exploration and Development Work Summary**

| Quantity | Data Type | Totals | Target |
|---|---|---|---|
| 75 drillholes | Core Holes | 11,437 m | In-fill drilling, resource conversion |
| 21 drillholes | RC Holes | 8,543 m | Waste dumps and tailings, condemnation drilling |
| 7 drillholes | Core Holes | 2,244 m | Geotechnical information |
| 103 drillholes | Drill Samples | 12,358 samples | New assay samples from older drillholes |
| N/A | Geophysical | 300 $km^2$ | Magnetic survey for lithological and structural domains |
| N/A | Geologic Mapping (surface and underground) | | Define structural geology |
| N/A | Drillholes (scanned 109 new and old drillholes) | 35,754 m | IR measurements to define alteration |
| N/A | Drillholes (scanned 26 new and old drillholes) | 6,166 m | Televiewer scans for structural geology and geotechnical data |

In the opinion of the QP, Coeur's drilling, sampling, and logging was done to industry standards. A total of 25.908 m of RC samples, or 17 intervals, was logged as NR (no return), which is 0.3% of the total amount of RC drilled in 2014 (Table 9-1). RC drilling was specifically focused on exploring sites for waste rock and tailings facilities. Core recovery is reported as 100%, no NR intervals were reported. Because the 2014 core drilling program was designed to infill between existing drillholes, the resulting samples are representative of the mineralization as a whole and are not biased in their location, orientation, sampling method, or metal grade. Since the core drilling infilled the area designed to be mined in the first three years of the mine plan, the spatial density of sampling is good, sufficient for much of the material to be classified as indicated or measured.

In the opinion of the QP, the quantity and quality of the lithological, geotechnical, collar, and downhole survey data collected in the exploration and infill drill programs completed by Coeur, Orko, PAS, and Lusmin are sufficient to support Mineral Resource estimation as follows:

- Core logging meets industry standards for gold exploration.
- Collar surveys have been performed using industry-standard instrumentation.
- Downhole surveys were performed using industry-standard instrumentation.
- Recovery data from core drill programs are acceptable.
- Geotechnical logging of drill core meets industry standards for planned open pit operations.
- Drill orientations are generally appropriate for the mineralization style, and have been drilled at orientations that are optimal for the orientation of mineralization for the bulk of the deposit area.

Core logging did not reveal any unusual geologic features that have not been observed in previous logging in the Project area. Assay results and location of mineralized intercepts are consistent in spatial location and grade of previous drilling in the Project area and no unusually high-grade intercepts or previously unknown mineralized areas were encountered, i.e., the distribution of sample grades from the 2014 drill program are similar to distributions of grades from previous drill programs.

# 10.0 DRILLING

The issuer has not drilled on the property since taking ownership.

During 2014, Coeur drilled 75 HQ diamond drillholes for a total of 11,437 m, with an average depth of 150 m, and with core recoveries of 85%. Drilling was done by Layne de Mexico S.A de C.V.

In addition to infill core drilling, an additional 2,244 m of core was drilled for the geotechnical investigation by Major. These core holes were logged and on completion of geotechnical work, the core was split, sampled, and assayed; however, the assay and geology data were not available in time for use in the resource model.

All drillholes, except for RC drillholes intended by Coeur for condemnation drilling, are diamond core holes of varying diameters, mainly HQ and some NQ diameter drillholes. Exploration and development drilling to delineate mineral resources has been performed in sequential campaigns by Luismin, Orko, PAS, and Coeur as summarized in Table 10-1 (excludes RC drilling because RC was not used in resource estimation).

**Table 10-1: Drilling Summary**

| Company | Years | Area | Number of Drillholes | Meters of Drilling | Hole Number Prefixes |
|---|---|---|---|---|---|
| Luismin | 1981, 1982, 1994 | La Preciosa | 8 | 1,630 | BP |
| Orko | 2006 | Orito | 7 | 2,326 | BO |
| | 2007 | San Juan | 8 | 3,554 | SJ |
| | 2005 | La Preciosa | 1 | 451 | BC |
| | 2006 | | 6 | 1,910 | BB |
| | 2005–2008 | | 366 | 144,126 | BP05-BP08 |
| PAS | 2009–2010 | La Preciosa | 363 | 91,095 | BP09-BP-10 |
| Orko | 2011–2012 | La Preciosa | 5 | 500 | BP11-BP12 |
| Coeur | 2013–2014 | La Preciosa | 103 | 22,324 | CLP14, KP14, KP13, DH13 |
| **Totals** | | | **867** | **267,916** | |

## 10.1 2017 Underground Channel Sampling

Channel sampling was carried out by Coeur in drifts on the Abundancia and Gloria Veins. 426 samples (482.2 m) were captured on the Abundancia Vein and 336 samples (380.5) on the Gloria Vein. The property had previously been drilled intensively in the vicinity of the underground development, allowing the channel sampling data to be compared with drill hole samples. The channel samples were statistically compared with diamond drill samples where both types were present within 10 m of each other within the relevant veins. The samples were composited to 1 m lengths and nearest neighbours (Gloria: 45 pairs, Abundancia: 35 pairs) were compared by means of scatterplots and Q-Q plots to assess whether it was reasonable or not to consider them as a single population. The channel samples and closest drill samples within 10 m proximity are shown in Figure 14-12.

## 10.2 Drilling by Luismin

Of the seven Luismin drillholes in the Project database, two were drilled from underground workings and five from the surface. The primary targets were the Abundancia and La Gloria veins, which run semi-parallel to the north-northwest-striking Abundancia Ridge, at depths of 50 to 75 m below the primary underground workings on the 2065 m level (elevation). Lusmin drilled one additional drillhole 313 m deep in 1994 in the eastern vein breccia system, but data for this drillhole are not available. There are no available details on the Luismin drilling procedures, except that the drill core was either small-diameter BQ or AX size. The remaining half-core from these holes is stored in the original core boxes on site.

## 10.3 Drilling by Orko (2005 to 2008, 2011, 2012)

Orko began drilling in March 2005, ultimately completing 388 diamond drillholes totaling 152,368 m of core, spaced on roughly 100 m centers, with all but 16 of the holes targeting various veins. Orko used Major for all of its drilling using Longyear 44, 38A, and 38B core drills. Drill core diameters started at HQ-diameter, with reductions to NQ-diameter at around 260 m downhole. Between rod changes the drillers inserted a wooden “run” block in the core boxes marked with the downhole depth in both ft. and m. Downhole surveys were taken approximately every 50 m down the hole with a Reflex survey instrument. The results of these surveys indicated only moderate deviation in downhole azimuths and inclinations.

Drill core was collected on a daily basis from the drill rig by Orko technicians, who taped the boxes shut prior to transporting the core to the site core shed. Once at the shed, technicians cleaned the boxes and core, marked the boxes with the hole number, box number, and the depth intervals, and reconciled these data with the depths marked on the driller’s core run blocks.

After completion of each hole, a PVC pipe was placed in the hole collar and a concrete cap was poured around the collar PVC pipe, and a length of PVC pipe was left protruding above the concrete cap. The concrete cap was inscribed with the drillhole number, total hole depth, and the azimuth and inclination of the hole at the collar. An independent surveyor was contracted to survey the collar coordinates on a regular basis.

## 10.4 Drilling by PAS

PAS began drilling in June 2009, under the terms of PAS’s Option Agreement to acquire a joint venture interest in the Project from Orko, and PAS completed 331 diamond drillholes. The drilling focused on in-filling the 100 m center grid previously completed by Orko. PAS’s drilling resulted in a spacing of 50 m on every other section (100 m apart) over an area approximately 800 m by 800 m. This selective tighter spaced drilling area is located in the northern part of the deposit. Additionally, infill drillholes were drilled on selected sections as well as on two 15- to 20-m close-spaced fences to assess the short-range continuity of geology and mineralization. Major was also used by PAS to do the drilling program, which resulted in similar drilling and downhole surveying procedures as Orko, although greater capacity drill rigs were employed which resulted in fewer NQ-diameter drillholes. Beginning in early 2010, selected drillholes were surveyed using a Reflex ACT/QPQ orientation tool to obtain oriented drill core for geotechnical purposes. The drillhole collar monuments and the survey of collar coordinates followed the same procedures established earlier by Orko.

## 10.5 Drilling by Coeur

Between January and April 2014 Coeur drilled a total of 75 HQ core drill, 21 RC holes totaling 19,980 m, and 7 geotechnical core holes totaling 2,244 m. A majority of Coeur's drillholes were oriented west to east at varying dips, depending on the target vein orientation, to minimize the drillhole intersection angle with the vein. In general, the downhole length of the drill intersection approximates the true thickness of the vein, but this length can vary from hole to hole. Most of the 2013 drillholes were completed in the main deposit area, an area approximately 3,000 m north to south by 2000 m east to west.

RC drillholes were drilled on -45° to -60°, to -90° inclination with north-northeast and southwest-west azimuths. Infill drillholes were designed to increase the amount of Measured and Inferred material in the first three years of the mine plan (an area encompassing Abundancia Ridge). These drillholes were inclined from -40° to -85°, with azimuths from north-northeast to southwest-west.

Downhole surveying in core and RC drillholes was done from top to bottom approximately every 10 m downhole using a gyroscope survey instrument. Results of these surveys indicated only minor deviation in azimuth and inclination. Collars were surveyed with total station instrument using WGS 84 coordinate system.

Drill core was collected on daily from the drill rig by Coeur technicians, who taped the boxes shut prior to transporting the core to the onsite core shed. In the core shed technicians cleaned the boxes and core, marked the boxes with the drillhole number, box sequence number, depth intervals, and checked recorded depths against the depths marked on the driller's core run blocks. Color digital photographs of each core box were taken before the core was split and sampled. Core was then laid out and logged, using paper logging forms, by project geologists, who also marked sampling intervals according to Coeur QA/QC sampling protocols. Briefly sampling criteria requires samples to be greater than 50 cm and less than 200 cm in length. Logging describes all common features, such as rock type, alteration, mineralization, faults, etc.

RC drill sampling was done on 5 ft. or 1.5 m intervals. Samples were collected after passing through a cyclone under both wet and dry conditions. Samples were placed in plastic bags when drilling dry material and in Micropore bags when the drilling was wet.

After completion of each hole, a PVC pipe was placed in the drillhole collar and a cement cap or monument was poured around the collar PVC pipe and inscribed with the drillhole number, total drillhole depth, and the azimuth and inclination of the hole at the collar. An independent surveyor was contracted to survey the coordinates of each collar on a regular basis.

## 10.6 Core Recovery and Rock Quality Designation

Only Orko drilling had drillhole core recovery and rock quality designation (RQD) values recorded in the acQuire database, these types of data were not recorded by PAS or Luismin. Although Coeur recorded core recovery and RQD measurements, at the time of this report was written those data had not been entered into the acQuire database, thus no analysis was done.

Orko's recovery values are reasonable with a mean core recovery of 94.5% and a mean RQD of 54.3%. For both silver and gold there is a decrease in Ag and Au grade with increasing core recovery where recovery is >20%, which suggests that there is a small sampling bias with loss of material in higher grade zones. Grades decrease slightly with increasing core recovery, however maximum grades increase with increasing core recovery because of the greater number of intervals with better core recovery. It is important to note that the data are not normalized for the number of recovery measurements. Because the highest Ag and Au grades are typically found in quartz veins, and core recovery in quartz veins tends to be lower because the veins are fractured, the grade-recovery relationship is expected. Given the small number of recovery measurements in the range of 0-40 percent recovery, and lower maximum grades in the 0-40% range, the impact of core recovery on the resource estimate is insignificant.

## 10.7 QP Opinion

The QP is satisfied that the amount and quality of drilling is sufficient to support an MRE.

# 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

## 11.1 Sample Collection Methods

### 11.1.1 Luismin (1981, 1982, 1994)

No documents/reports are available that describe the sampling methods used by Luismin. Based on descriptions provided by visual inspection of Luismin core by previous QPs, the core was split using a conventional manual splitter and properly “marked and neatly stored”. Luismin reportedly collected a total of only 130 samples for assay, with variable sample lengths that ranged from 0.5 to 2.0 m. The breaks between samples reportedly respected geologic features.

### 11.1.2 Orko (2003–2008, 2011, 2012)

Orko technicians transported core from the drill rigs daily to the core logging facility, where it was cleaned and the core boxes marked with the hole number, box number, and from-to depth intervals. Each box of core was then photographed and moved to a rack for examination by a geologist who logged lithology, structure, alteration, mineralization type, intensity, and sulfide percentage and oxidation and assigned codes for rock types, structures, and veins. Logging was done manually on paper logging forms. Following geologic logging, geotechnical data including core recovery, was recorded. After logging was complete, the geologist marked the sample intervals on the core and on the core box dividers with a permanent marker, along with a cutting line along the longitudinal axis of the core and recorded the sample interval depths and corresponding sample numbers on the geological log. The core was then sawn in half along the cut line by an Orko technician using a water-cooled diamond saw, after which one half of the interval was placed in a plastic sample bag along with a sample tag. The remaining half was returned to the core boxes that then were placed on numbered racks in a large, secure, storage shed at the Project site.

To determine material density, a single piece of the sampled core was removed from each sample sack, allowed to air-dry, and then dry weighed for measurement of specific gravity. Once measured, the core piece was returned to the appropriate sample bag and the whole sample was placed in a rice sack for transport to the Inspectorate de Mexico sample preparation facility in the city of Durango. Prior to transport, each rice sack was weighed and the total weight recorded. All samples were in the possession of Orko personnel from the diamond drill rigs to the Inspectorate lab.

### 11.1.3 PAS (2008–2010)

PAS followed the same drillhole logging and sampling procedures and protocols developed by Orko, beginning with PAS drillhole BP10-458 onwards. The geologists determined the diamond core sample intervals and marked the positions of the intervals on both the core and the core box dividers. The core was then cut along the cut line marked on the core by the geologists using a water cooled diamond bladed saw, and both halves were placed back in the core boxes for transport to the core sampling area. Sample bags and sample tags were labeled with the consecutive sample numbers assigned to the sample intervals, with numbers reserved for insertion of QA/QC samples. The pieces of half core to be assayed were then placed in the appropriate labeled sample bags along with the corresponding sample tag, and then the bags containing the individual samples were inserted in groups of ten into labeled rice sacks along with the labeled standard and blank QA/QC samples. The rice bags filled with samples were stored on site until transported by a PAS employee to the SGS de Mexico laboratory in the city of Durango, Mexico.

### 11.1.4 Coeur (2013–2014)

The Coeur development program consisted of RC and core drilling. The RC drilling program was conducted by two drill rigs contracted from Layne de Mexico. One geologist was assigned to each active drilling shift. Geologists were provided with a package of sample tags which indicated the sample identification and the interval. Sample tags were included inside each sample bag and a permanent marker was used to note the sample identification and interval on each sample bag. A geologic description was recorded on a paper log at the drill rig, including any additional notes on the drilling or sample. This log was later transferred to an electronic format. Coeur's company protocol for quality control (Coeur, 2012) was applied throughout the sample collection process. All RC samples were collected by Coeur technicians, accompanied by a project geologist. Samples were collected at 1.5 m intervals in two 5 g buckets. The entire sample was weighed, with typical weights ranging from 100-125 kg. The sample was initially split in half using a single Jones-type splitter with one half of this split bagged for analysis at the commercial laboratory. The remaining sample is split once more, retaining 1/8 of the original sample, and bagged for storage in the project warehouse.

Core was collected at the drill rig and transported to the core logging facility on a daily basis, where it was cleaned and the boxes were marked with hole number, box number, and the sample interval. Each box of core was photographed and moved to a rack for examination by a geologist. After geologic and geotechnical logging were complete, geologists then marked sample intervals on the core and on the core box dividers with a permanent marker, along with the cutting line along the longitudinal axis of the core. All sample intervals and corresponding sample numbers were recorded on the geologic log. The core was then sawn in half along the cut line by a Coeur technician using a water cooled diamond saw. One half of the interval was placed in a plastic sample bag along with a sample tag. The remaining half was returned to the core box and placed on numbered racks in a large, secure, storage shed at the project site.

## 11.2 Sample Preparation and Analysis Procedures

### 11.2.1 Luismin (1981, 1982, 1994)

The drillhole samples collected by Luismin were transported to the company's in-house laboratory in Durango. No written records of the chain of custody, sample preparation, or sample analysis procedures are known to exist.

### 11.2.2 Orko (2003–2008, 2011, 2012)

#### 11.2.2.1 Sample Preparation

Orko used two sample preparation labs located in the city of Durango – Inspectorate and SGS. During 2005 to 2007, SGS was the primary lab used and Inspectorate served as the secondary lab. From hole BP07-93, the primary and secondary lab designations were switched and Inspectorate became the primary lab in order to improve assay turn-around times. Upon receipt at both the SGS and Inspectorate sample preparation laboratories, the samples were placed in order according to sample number, and then crushed, and a sub-sample split was taken for pulverization. The remaining coarse rejects were returned to the project site and stored. Neither preparation lab was ISO nor IEC certified at the time the Project samples were processed.

#### 11.2.2.2 Sample Analysis

The sample pulps were sent to Inspectorate's analytical laboratory in Reno, Nevada, USA, which was ISO 9001:2008 certified, and to the SGS analytical laboratory in Toronto, Canada, which was accredited by ISO/IEC

17025. Sample pulps representing check assays also were sent to these analytical facilities, as well as to ALS Chemex in North Vancouver, Canada and ALS Chemex in Reno, Nevada, USA, each of whom is independent of Coeur. At the SGS analytical laboratory in Toronto, the pulps were analyzed by several methods. Gold content was determined by fire assay at a detection limit of 5 ppb Au. Silver was analyzed by AAS, at a calibrated detection limit of 0.3 g/t Ag and an upper limit threshold of 300 g/t Ag. Samples with silver values greater than 300 g/t Ag based on this analytical method were re-run by fire assay with a gravimetric finish. All samples also were subjected to strong acid digestion followed by a 40 element ICP analyses, including silver.

Some of the elements in the ICP package have threshold limits for ICP analysis. Examples include silver, which due to its 10 g/t upper ICP threshold does not allow the method to be used for this Project because over half of all samples exceed this value. Similarly, the base metals Pb and Zn and the element Ba have an upper threshold of > 10,000 g/t, (or 1.0%), which also precludes the use of ICP analysis for these elements. For the minerals containing any of the 40 elements that are totally digestible by strong acids, such as oxide, sulfide, and carbonate species, the ICP analysis method works well. However, for minerals containing any of these elements that are resistant to the strong acid digestion, only partial values will result.

The laboratory procedures used at the Inspectorate lab in Reno were similar to those used by SGS and described above. However, silver was an exception where, due to more precise instrument calibration, the detection limits were a lower 0.1 g/t (g/t) Ag and the upper threshold limit was 200 g/t Ag. As a result, samples having silver contents greater than 200 g/t were subsequently re-analyzed by fire assay with a gravimetric finish.

Orko completed two drillholes in 2011 and three drillholes in 2012 for a total of 500 m. Only 29.2 m of this drilling was sampled and assayed, according to the Orko database. No record of QA/QC procedures and results exists for these drill campaigns.

### 11.2.3 PAS (2008–2010)

#### 11.2.3.1 Sample Preparation

Except for the pulp duplicate samples, all PAS samples were prepared and assayed by SGS in Durango, Mexico. Upon arrival at SGS, the samples were assembled in numerical order according to the sample tag numbers, individually crushed, then riffle split to provide a sub-sample for pulverizing. The pulverized, approximately 200 g sub-sample, was placed in a small labeled paper packet. After the required assay aliquots were removed, the residual material remaining in the packet was returned to PAS for storage on site at the Project, along with the coarse reject that remained after splitting of the assay sub-sample.

Pulp duplicate samples were analyzed at Inspectorate's lab in Sparks, Nevada.

#### 11.2.3.2 Sample Analysis

Sample pulps analyzed at SGS used the following procedures:

- For gold analyses at SGS, all samples were initially assayed using fire assay procedures with AAS finish. The detection limit for this procedure was 0.005 g/t and the maximum assay threshold was 10 g/t. For samples initially assaying more than 10 g/t Au, these were rerun using a fire assay with gravimetric finish procedure having a detection limit of 3 g/t Au,
- For silver analyses at SGS, all samples were initially analyzed using 3-acid digestion with an AAS finish (0.3 g/t detection limit). For samples with analyses greater than the 300 g Ag threshold limit, the samples were rerun using a fire assay with gravimetric finish procedure having a detection limit of 5 g/t Ag. In addition, 33-element

trace analyses using a 2-acid digestion and ICP finish having a 2 g/t detection limit and a threshold of 10 g/t for silver were completed for all samples,

- For gold analyses at Inspectorate, all samples were run by fire assay with a gravimetric finish that had a detection limit of 3 g/t Au, and
- Silver analyses for all samples run at Inspectorate were initially run using a 4-acid digestion with ICP finish (0.1 g/t Ag detection limit) that had a 200 g/t Ag upper threshold limit. For samples with analyses greater than 200 g/t, the samples were rerun using fire assay with a gravimetric finish that had a detection limit of 5 g/t and an upper threshold limit of 5,000 grams per tonne Au.

## 11.2.4 Coeur (2013–2014)

### 11.2.4.1 Sample Preparation

All Coeur samples in 2013 and 2014 were submitted to an accredited commercial laboratory. Coeur contracted ALS in Zacatecas, ZAC, MX to complete all sample preparation on RC cuttings and split HQ drill core. The sample is logged in the tracking system, weighed, dried, and finely crushed to better than 70% passing a 2 mm screen. A riffle split of up to 250 g is taken and pulverized to better than 85% passing a 75 micron screen. The method is appropriate for both RC cuttings and drill core.

### 11.2.4.2 Sample Analysis

Sample pulps were created in Zacatecas and sent to ALS's analytical laboratory in Vancouver, BC, CA which is ISO 9001:2008 certified. Orko era pulps representing re-assays were sent to ALS Vancouver, as well as to SGS in Lakefield, ON, CA which is ISO 17025 certified. Both labs are independent of Coeur.

#### Silver Detection

At ALS, silver content was determined by ICP-AES. A 0.25 g sample is digested with perchloric, nitric, hydrofluoric, and hydrochloric acids. The residue is topped up with dilute hydrochloric acid and the resulting solution is analyzed. The lower and upper detection limits (LDL and UDL) for this method are 0.5 ppm and 100 ppm, respectively. At 100 ppm the sample triggers an additional 4-Acid Digestion ICP-AES analysis that is optimized for accuracy and precision at high metal concentrations. This method utilizes the same acids as the prior method, but includes additional stages of heating and drying, along with the addition of de-ionized water to aid in further digestion. The LDL and UDL for this method are 1 ppm and 1500 ppm, respectively.

At SGS, silver content was determined by Inductively Coupled Plasma-Atomic Absorption Finish. This is a 4-Acid digestion. A 2 g sample is digested with perchloric, nitric, hydrofluoric, and hydrochloric acids. The LDL and UDL are 0.3 g/t and 300 g/t respectively.

#### Gold Detection

Gold content was determined by ICP-AES, following an initial Fire Assay Fusion of a precious metal bead. The sample bead is digested in 0.5 ml dilute nitric acid in the microwave oven. 0.5 ml of concentrated hydrochloric acid is then added for further digestion. The LDL and UDL of this method are 0.001 ppm and 10 ppm, respectively. At 10 ppm the sample triggers an additional Gravimetric analysis. This includes the creation of a lead button containing the 30 g sample, which is then cupelled to remove the lead. The remaining gold and silver bead is parted in dilute nitric acid and weighed as gold. The LDL and UDL for this method are 0.05 ppm and 1000 ppm, respectively.

At SGS, gold content was determined by exploration grade fire assay. This is a 30 g fire assay with an ICP finish. The LDL and UDL are 1 ppb and 10000 ppb, respectively.

### Multi-Element Detection

At ALS, an additional suite of 40 elements were also analyzed by ICP for all new samples created in 2013 and 2014. The drilling also encountered base metal values of zinc and lead which triggered the multi-element over limit method. Table 11-1 lists the elements and associated units, and detection limits.

**Table 11-1: Multi-element ICP Package Analyzed by Coeur**

| Element | Symbol | Units | Lower Limit | Upper Limit |
|---|---|---|---|---|
| Aluminum | Al | % | 0.01 | 50 |
| Arsenic | As | ppm | 5 | 10,000 |
| Barium | Ba | ppm | 10 | 10,000 |
| Beryllium | Be | ppm | 0.5 | 1,000 |
| Bismuth | Bi | ppm | 2 | 10,000 |
| Calcium | Ca | % | 0.01 | 50 |
| Cadmium | Cd | ppm | 0.5 | 500 |
| Cobalt | Co | ppm | 1 | 10,000 |
| Chromium | Cr | ppm | 1 | 10,000 |
| Copper | Cu | ppm | 1 | 10,000 |
| Iron | Fe | % | 0.01 | 50 |
| Gallium | Ga | ppm | 10 | 10,000 |
| Potassium | K | % | 0.01 | 10 |
| Lanthanum | La | ppm | 10 | 10,000 |
| Magnesium | Mg | % | 0.01 | 50 |
| Manganese | Mn | ppm | 5 | 100,000 |
| Molybdenum | Mo | ppm | 1 | 10,000 |
| Sodium | Na | % | 0.01 | 10 |
| Nickel | Ni | ppm | 1 | 10,000 |
| Phosphorus | P | ppm | 10 | 10,000 |
| Lead | Pb | ppm | 2 | 10,000 |
| Sulfur | S | % | 0.01 | 10 |
| Antimony | Sb | ppm | 5 | 10,000 |
| Scandium | Sc | ppm | 1 | 10,000 |
| Strontium | Sr | ppm | 1 | 10,000 |
| Thorium | THz | ppm | 20 | 10,000 |
| Titanium | Ti | % | 0.01 | 10 |

*table continues…*

| Element | Symbol | Units | Lower Limit | Upper Limit |
|---|---|---|---|---|
| Thallium | Tl | ppm | 10 | 10,000 |
| Uranium | U | ppm | 10 | 10,000 |
| Vanadium | V | ppm | 1 | 10,000 |
| Tungsten | W | ppm | 10 | 10,000 |
| Zinc | Zn | ppm | 2 | 10,000 |

## 11.3 Sample Security

RC samples were collected and bagged at the drill rig by Coeur technicians, supervised by a project geologist. The bags are labeled with a unique sample ID and the interval meterage. Core samples were bagged by Coeur technicians at the project logging and storage facility. Samples were delivered daily by Coeur technicians and a project geologist to ALS in Zacatecas, ZAC, MX. Sample prep was completed Zacatecas and pulps samples were shipped to ALS Vancouver, BC, CA for analytical test work.

Chain of custody for delivery is established by transmittal sheets and sample receipt documents from the lab. Final chain of custody is ensured through electronic delivery of work orders and PDF assay certificates.

Hard copies of assay certificates and the geologic logs were stored at the Coeur project office in Durango, MX. The geologic logs include the sample sequence list, including inserted QA/QC. Electronic copiers of all data were stored by Coeur on a corporate server in Chicago. Ultimately all data are stored in an acQuire database located on an independent, backed-up server.

Coarse reject and sample pulps were returned to the Project site by laboratory staff and stored onsite in multiple secure storage facilities (the current core storage and logging facility).

## 11.4 Analytical Results

### 11.4.1 Assay Methods

Table 11-2 contains a listing of the assay methods and associated metadata used by Coeur. The sample preparation, security and analytical procedures are adequate and within industry accepted norms.

Based on a review of the database and procedures, a visit to the core storage and logging facilities, the QP is satisfied that the documented sample preparation, security, and analytical procedures are adequate and within industry accepted norms and suitable to support an MRE.

**Table 11-2: Assay Methods**

| Analytical Laboratory | Element | Analytical Method | Units | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| ALS | Ag | ME-ICP41 | ppm | 0.2 | 100 |
| ALS | Ag | ME-ICP61 | ppm | 0.5 | 100 |
| ALS | Ag | ME-OG46 | ppm | 1 | 1,500 |
| ALS | Ag | ME-OG62 | ppm | 1 | 1,500 |
| ALS | Ag | GRA21 | ppm | 5 | 10,000 |
| SGS | Ag | GE-AAS42E | g/t | 0.3 | 300 |
| ALS | Au | ICP21 | ppm | 0.001 | 10 |
| ALS | Au | GRA21 | ppm | 0.005 | 1,000 |
| SGS | Au | GE-FAI313 | ppb | 1 | 10,000 |

### 11.4.2 Data Delivery and Storage

Following the completion of analyses at the commercial laboratory, electronic results are delivered via email to a distribution list of Coeur recipients, approved by the project manager. ALS also provides secure online access to review the status of work orders and offers the ability to download data files and certificates.

Data are loaded into the acQuire database by a database manager or geologist with sufficient acQuire permissions. AcQuire is designed to securely store all original data. Acquire uses calculated and derived fields to produce data in a consistent format that can be uploaded into a 3D modeling package which allows for a further visual review of the data.

## 11.5 Quality Assurance and Quality Control, Check Samples, and Check Assays

### 11.5.1 Luismin QA/QC (1981, 1982, 1994)

There are no records of any QA/QC programs or protocols prior to 2003.

### 11.5.2 Orko QA/QC (2003–2008, 2011, 2012)

#### 11.5.2.1 Orko QA/QC Procedures

Orko maintained a QA/QC program during its tenure that consisted primarily of inserting standards and blanks into the sample sequence. Although no duplicates were included in the regularly submitted sample batches, duplicates (check samples) were submitted to a secondary laboratory in separate batches to check for systematic bias by the primary assay laboratory.

According to earlier Technical Reports (MDA, 2009, Snowden 2011a, MP 2012), alternating standards and blanks were inserted every tenth sample in the sample sequence, equivalent to a 5% insertion rate for each sample type. MP noted that based on the 88,235 core samples submitted by Orko to the primary laboratories, a 5% insertion rate is roughly equivalent to 4,400 blanks and an equal number of standards. However, MP stated that in the QA/QC files in the database provided for its MRE, there were data for a slightly smaller number of standards (3,994 standards, 4.3% of the total samples), but a significantly lesser number of blanks (1,127 blanks, or 1.3% of the total samples) and 1,103 duplicates. Similar quantities of Orko QA/QC data were reported by MDA and Snowden. The data verification process performed by the QPs responsible for this Report also detected a shortfall in the amount of expected QA/QC data, which is discussed in the following Section 12 of this Technical Report.

MP and Snowden stated in their Technical Reports that Orko's blank samples consisted of a combination of basalt core drilled during its exploration program and material collected from basalt boulders found on the property. The basalt blanks reportedly used were designated as Orko-2, Orko-4, Orko-5, Orko-7, and Orko-9. MDA noted in its Technical Report that SGS provided certificates for the basalt blanks based on approximately 150 analyses by aqua regia digestion and ICP-AES finish, but that no round-robin multi-laboratory analyses were done to substantiate the SGS values for the blanks.

Early on in Orko's exploration program, two commercial standards were used in a small number of sample batches, one of which was certified for gold and silver, and the other for gold only. The accepted values for these standards are unknown. For most of Orko's tenure, custom standards were used that were prepared from a stockpile of mineralized material situated near the Luismin portal. An unspecified amount of this material was sent to SGS's metallurgical division for certification prior to preparation of the standards. MDA reported that this certification was based on approximately 150 analyses. As with the SGS-certified basalt blanks, MDA noted that values established for the standards were not supported by round-robin testing at multiple labs. Over the course of Orko's exploration activities, four such custom standards were compiled, numbered as follows with accepted values in parenthesis: Orko-1 (0.210 g/t Au, 293.40 g/t Ag), Orko-3 (0.068 g/t Au, 112.00 g/t Ag), Orko-6 (0.072 g/t Au, 146.10 g/t Ag), and Orko-8 (0.134 g/t Au, 237.90 g/t Ag). In addition to these standards, in accordance with recommendations by MDA, a fifth standard was compiled that was subjected to round-robin multi-lab analyses. This standard, Orko-10, did not have a final certified value at the time MDA issued its Technical Report (results from one of the five round-robin labs had not been received). This standard subsequently saw limited use by PAS, and is discussed in Section 11.3.3.1 of this Technical Report.

#### 11.5.2.2 Orko QA/QC Results

The results of Orko's QA/QC results are not easily interpreted. The standards were problematic because they were not certified, and record keeping was reported to have been inadequate such that the identity of the standards in the sample batches and assay certificates was not always certain (MDA, 2009). The standard deviation (SD) of some of the standards was unusually high, particularly silver for Orko-1 and gold for all standards. The relative closeness of the accepted silver values for the high grade standards (Orko-1: 293.40 g/t Ag, and (Orko-8: 237.90 g/t Ag) and the moderate grade standards (Orko-3: 112.00 g/t Ag and Orko-6: 146.10 g/t Ag) result in overlapping of the two-SD ranges for the standard pairs, making it unclear whether some observed "failures" falling outside of these ranges were due to inconsistencies in the standards themselves, mislabeling of the standards during sample submission (as noted by MDA), or actual errors in the assay analyses. Snowden's graphical plots of the standard results suggest that there may have been some switching of standard labels for standards Orko–3 and Orko-8.

MDA (whose personnel were the only independent QPs involved one-on-one with Orko personnel during exploration drilling) reported that although Orko had examined the standard sample assay results on a batch-by-batch basis, these results were not systematically charted over time, and as a consequence, analytical failures were not investigated in a timely manner. This was compounded by the uncertainty as to the identities of some standards (as described above), which made the identification of actual failures more difficult. As a result, trends in the results of standards during drilling were not identified. Also, in some cases the standards were analyzed by an analytical method that differed from the method used to analyze certain drill core samples in a batch. This occurred at the Inspectorate lab, where all initial silver assays that fell below 200 g/t Ag were analyzed using an ICP method (which occurred for two out of the four standards), whereas those samples with initial ICP assays greater than 200 g/t Ag were analyzed by fire assay with gravimetric finish. However, after reviewing the results of the Orko standards analyses, MDA concluded that the data neither revealed any systematic analytical biases, nor did it provided assurance that no such problems existed.

Four percent of the samples representing the Orko-2 blank and 10% of the basalt drill core samples exceeded the allowable value for silver, while the basalt drill core samples experienced no failures for gold. However, due to the lack of true round-robin certification of the blanks, in Snowden's opinion the blank samples could not be considered to be void of mineralization, making it impossible to determine whether blank sample failures were a result of contamination or background silver grade. Thus, Snowden judged the blanks to be unreliable for determining whether contamination was an issue in the sample preparation and analytical laboratories. However, Snowden did recognize an important point – if the blank failures were totally due to contamination, their magnitude did not indicate "significant concern with sample contamination".

A discussion of Orko's QA/QC duplicate samples can be found in Section 12.0 of this Technical Report.

Orko completed two drillholes in 2011 and three drillholes in 2012 for a total of 500 m. Only 29.2 m of this drilling was sampled and assayed, according to the Orko database. Therefore, no record of QA/QC procedures and results exists for these drill campaigns.

## 11.5.3 PAS QA/QC (2008–2010)

The descriptions and discussions of results presented in this section rely on those provided by Snowden in its 2011 Technical Report prepared for Orko and PAS (Snowden, 2011a).

### 11.5.3.1 PAS QA/QC Procedures

Relative to the Orko QA/QC program, the PAS QA/QC procedures provided for a much more systematic insertion of blanks, standards, and pulp duplicates into the batches of drill core samples. PAS batches consisted of 50 samples submitted to SGS, within which sample numbers ending with 10 or 60 were silver standards, sample numbers ending in 30 or 80 were gold standards, and sample numbers ending in 20, 40, 70, or 90 were blanks. Duplicate samples were collected by the laboratory by taking a pulp duplicate split of every sample represented by sample numbers in the sequence ending with 49 or 99, and these pulp duplicates were subsequently assigned the next sample numbers (ending in 50 and 00, respectively), which had been reserved in the sample numbering sequence by the geologists. These duplicates were subsequently submitted in separate batches of pulps to an umpire (secondary) laboratory.

The blank samples used by PAS consisted of half-core basalt. A total of 652 blank samples were inserted as described in the previous paragraph, resulting in a 4% insertion rate. A total of 662 standards were inserted as described, resulting in a similar 4% insertion rate. PAS used three different standards summarized as follows, with expected values shown in parenthesis - Orko-10 (145.47 g/t Ag, 0.057 g/t Au), GBM908-13 (151.4 g/t Ag), and G308-7 (0.27 g/t Au). Standards GBM908-13 and G308-7 were commercial standards purchased from Geostats Pty. Ltd. Standard GBM908-13 was a base metal standard that was also certified for silver and sulfur, while standard G308-7 was certified for gold only. Standard Orko-10 was the custom standard described earlier in this Report. Snowden confirmed that Standard Orko-10 was prepared by SGS in Durango from material obtained from stockpiles at the Project site and noted that although this standard was round-robin tested in five independent laboratories from which expected values for gold and silver were derived, it was never officially certified. A total of only 21 samples from this standard were inserted in sample batches, all of which were from drillholes BP09-355 to BP09-364. PAS commissioned SGS Peru to evaluate the Orko-10 standard material, and SGS Peru concluded that this standard had unacceptably high variances, probably due to the presence of native silver in the sample. As a result, PAS discontinued its use of standard Orko-10 beginning with hole BP09-365 and thereafter.

Snowden reported that PAS geologists regularly monitored the performance of standard and blank assays received from SGS by plotting values as line graphs in Excel as soon as each batch of assays was reported by the laboratory. Whenever any of the standard results exceeded three SDs from the expected value, the entire batch of assays was re-submitted for analysis.

#### 11.5.3.2 PAS QA/QC Results

Snowden reported failures for only two gold standards and five silver standards which represent failure rates of 0.3% for gold, and 0.8% for silver. These results indicate that laboratory contamination was not a material concern for the samples from the PAS drilling campaigns.

The results for both silver and gold from certified commercial standards GBM908-13 and G308-7 displayed a bias on the high side of the expected values. Although the results for GBM908-13 fell within acceptable limits, a consistent high bias relative to the expected mean was present. Results for standard G308-7 displayed a very slight bias towards the under-reporting of the gold grades. However, all results were within two SDs of the certified expected values, indicating acceptable levels of laboratory accuracy.

### 11.5.4 Coeur QA/QC Program (2013–2014)

Coeur maintained a QA/QC program that was structured on guidelines set forth in the written company QA/QC policy. QA/QC consisted of routine insertion of standards, blanks, and duplicates into the primary sample stream for both RC and core samples. Umpire check assays have been commissioned in 2014. Table 11-3 defines the suggested Test % for QA/QC sample insertion based upon the total count of primary samples.

**Table 11-3: Coeur Development Program QA/QC Recommendations**

| | Primary Lab Control | | | | | External Control Samples | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Type** | **Duplicates** | | | **Standards** | **Blanks** | **Pulps** | **Rejects** | **Standards** | **Blanks** | **Duplicates** |
| **Duplicate Type** | **Sample** | **Prep** | **Analytical** | | | | | | | |
| **Suggested Test %** | 2.5% | 2.5% | 2.5% | 5.0% | 5.0% | 10.0% | 1.0% | 1.0% | 1.0% | 0.5% |

#### 11.5.4.1 Certified Standards and Blanks

The 2013 and 2014 assay campaigns utilized five certified commercial standards and one round robin tested standard. The campaigns used one certified blank and one round robin tested blank. The certified standards were purchased from CDN Resource Laboratories Ltd., in Langley, B.C., Canada and SGS de Mexico, in Durango, Mexico. The blank was purchased from Rocklabs, in Auckland, New Zealand. Table 11-4 lists the standards and blank and their certified silver and gold values.

**Table 11-4: Coeur Certified Standards and Blanks**

| Standard ID | Certifying Lab | Element | Standard Value (ppm) | 1 SD (ppm) |
|---|---|---|---|---|
| CDN-ME-1101 | CDN | Ag | 68 | 2.3 |
| CDN-ME-1101 | CDN | Au | 0.564 | 0.28 |
| CDN-ME-1205 | CDN | Ag | 25.6 | 1.2 |
| CDN-ME-1205 | CDN | Au | 2.20 | 0.14 |
| CDN-ME-1303 | CDN | Ag | 152 | 10 |
| CDN-ME-1303 | CDN | Au | 0.924 | 0.1 |
| CDN-ME-1304 | CDN | Ag | 34.0 | 1.6 |
| CDN-ME-1304 | CDN | Au | 1.8 | 0.06 |
| HGRS-02 | SGS | Ag | 98.7 | 4.0 |
| HGRS-02 | SGS | Au | 0.01 | 0.003 |
| ORKO-10 | SGS (round robin) | Ag | 145.466 | 4.227 |
| ORKO-10 | SGS (round robin) | Au | 0.057 | 0.005 |
| AuBlank58 | Rocklabs | Ag | < 0.002 | N/A |
| AuBlank58 | Rocklabs | Au | N/A | N/A |
| BLANK-5 | Acme, ALS, SGS (round robin) | Ag | < 5 | N/A |
| BLANK-5 | Acme, ALS, SGS (round robin) | Au | < 0.004 | N/A |

QA/QC comparison analyses are completed in the acQuire database using separate tools for blanks, standards, and duplicates. Performance of the standards was tracked over time and against lower and upper cut-off limits. Run plots were generated, with multiple user controlled options. Plots generated for this report include the assay value plotted against the certificate number, which depicts the standard's performance over time. The plots also contain error lines indicating the acceptable minimum and maximum values for the given standard and assay method. Coeur policy recognizes QA/QC failures as ± 3 SDs for standards and ± 5 times the lower detection of the assay method for blanks.

When a blank or standard fails QA/QC it is moved to a “rejected” status in acQuire, along with all primary, duplicate, and lab QA/QC samples above and below the failure, and up to the next or previous passing blank or standard. This partial batch of samples must be re-run at the original laboratory, and with the same analysis method as the failed method. In the case of the Project, the QA/QC focuses on silver and gold, although the primary analysis includes multi-element ICP. Coeur does not re-run the multi-element ICP on failed sample batches. If the blank or standard fails a second re-assay the entire batch must be analyzed a third time at a second commercial laboratory, using an analysis method similar to that of the original test work.

#### 11.5.4.2 Coeur QA/QC Results

**Blanks and Standards**

In 2013-2014, Coeur submitted 21,991 primary samples for assay at two commercial laboratories. 1,018 blanks and 1,369 standards where inserted into the sample streams, representing insertion rates of 4.63% and 6.23%, respectively. The combined insertion rates exceed the total of 10% standards and blanks suggested by Coeur protocol and included in Table 11-3. All standards and blanks were analyzed at ALS in Vancouver, BC, CA and/or SGS in Lakefield, ON, CA. Table 11-5 is an actual example of a QA/QC report exported directly from the acQuire database. The report tables the statistical performance of all standards and blanks, defined the assaying laboratory and by the analytical method utilized. The column # Outside Limit is the count of failed standard or blanks.

**Table 11-5: acQuire Standards QA/QC Report, ALS**

| Assay Field | Std ID | # of Analyses | # Outside Limit | % Outside Limit | Mean | Median | Min | Max | Standard Deviation | % Rel Std Dev | Standard Error | % Rel Std Err | Total Bias |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag_Ag_GRA21_ppm | ORKO-10 | 6 | 0 | 0 | 134.33 | 136 | 120 | 141 | 6.97 | 5.19 | 2.84 | 2.12 | 0 |
| Ag_Ag_OG46_ppm | ORKO-10 | 6 | 0 | 0 | 137 | 135.5 | 120 | 161 | 12.18 | 8.89 | 4.97 | 3.63 | 0 |
| Ag_Ag_OG62_ppm | ORKO-10 | 137 | 38 | 27.74 | 145.75 | 143 | 124 | 185 | 11.47 | 7.87 | 0.98 | 0.67 | 0 |
| Ag_Ag_OG62_ppm | HGRS-02 | 238 | 1 | 0.42 | 101.95 | 102 | 96 | 141 | 3.53 | 3.46 | 0.23 | 0.22 | 0.03 |
| Ag_ME_ICP61_ppm | HGRS-02 | 282 | 13 | 4.61 | 95.13 | 97.55 | 36.1 | 100 | 10.69 | 11.24 | 0.64 | 0.67 | -0.04 |
| Ag_ME_ICP61_ppm | CDN-ME-1101 | 285 | 0 | 0 | 68.74 | 68.9 | 59.5 | 78.7 | 2.75 | 4 | 0.16 | 0.24 | 0.01 |
| Ag_ME_ICP61_ppm | CDN-ME-1205 | 172 | 0 | 0 | 26.39 | 26.3 | 23.8 | 29.8 | 1.15 | 4.36 | 0.09 | 0.33 | 0.03 |
| Ag_ME_ICP61_ppm | CDN-ME-1304 | 225 | 3 | 1.33 | 34.98 | 34.8 | 20.8 | 65.1 | 3.04 | 8.7 | 0.2 | 0.58 | 0.03 |
| Au_Au_GRA21_ppm | CDN-ME-1205 | 157 | 0 | 0 | 2.31 | 2.3 | 1.91 | 2.88 | 0.18 | 7.82 | 0.01 | 0.62 | 0.05 |
| Au_Au_GRA21_ppm | CDN-ME-1304 | 2 | 2 | 100 | 2.5 | 2.5 | 2.24 | 2.75 | 0.26 | 10.22 | 0.18 | 7.23 | 0.39 |
| Au_Au_ICP21_ppm | ORKO-10 | 143 | 0 | 0 | 0.06 | 0.06 | 0.05 | 0.07 | 0 | 5.16 | 0 | 0.43 | 0.02 |
| Au_Au_ICP21_ppm | HGRS-02 | 508 | 18 | 3.54 | 0.01 | 0 | 0 | 1.81 | 0.08 | 822.12 | 0 | 36.48 | -0.01 |
| Au_Au_ICP21_ppm | CDN-ME-1101 | 285 | 0 | 0 | 0.58 | 0.58 | 0.49 | 0.68 | 0.03 | 5.77 | 0 | 0.34 | 0.03 |
| Au_Au_ICP21_ppm | CDN-ME-1205 | 172 | 0 | 0 | 2.22 | 2.21 | 1.84 | 2.63 | 0.17 | 7.48 | 0.01 | 0.57 | 0.01 |
| Au_Au_ICP21_ppm | CDN-ME-1304 | 225 | 3 | 1.33 | 1.78 | 1.81 | 0.01 | 2.1 | 0.21 | 11.75 | 0.01 | 0.78 | -0.01 |

The manual insertion of standards and blanks includes an inherent risk for mislabeled or incorrectly inserted samples. Original standards and blanks failed QA/QC and the sample batches were re-assayed. Further review was conducted on the failed standards and blanks by Coeur and Acme. The result of the review identified 189 standards and seven blanks that were likely assigned an incorrect standard ID or blank ID. These samples were reclassified based on the original assay results which produced silver and gold values that were associated with another active project standard or blank. The result of the reclassification was the approval of the Round 1 QA/QC for these samples.

Further review of the results of standard Orko-10 indicated a resulting bias to the overall QA/QC performance. The PEA indicated that the use of Orko-10 had been discontinued by PAS after a reevaluation of the standard resulted in unacceptably high variances (M3, 2013). The Orko-10 standard was inserted 143 times into the 2013-2014 campaign. The decision to use the standard was the result of recent performance indicating low SDs, based on 161 sample results; and its immediate availability to the Project. The standard failed 38 silver analyses, a 26.6% failure rate. The run plots in Figure 11-1 illustrates that the standard performed consistently when analyzed by Ag_OG62_ppm, by failing both above and below the standard limits, with locally larger magnitude failures above the maximum acceptable limit. In order to quantify these findings, Table 11-6 and Table 11-7 contain values in parentheses that indicate QA/QC results which exclude the entire Orko-10 sample set. Coeur has moved to discontinue the used of standard Orko-10, and dispose of any remaining sample material.

**Figure 11-1: Orko-10 Silver Standard. Medium Population, with Multiple Failures Outside the Acceptable Minimum and Maximum.**

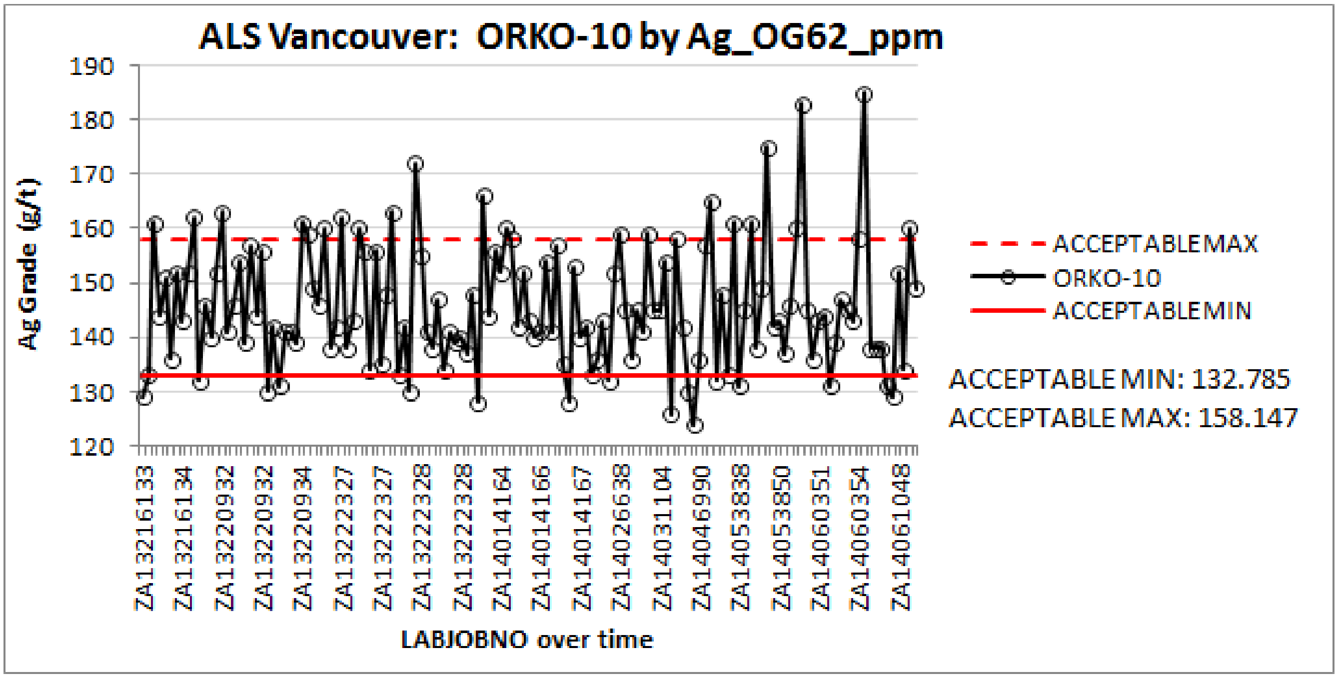



Table 11-6 contains a Round 1 summary of Coeur QA/QC results for company inserted standards and blanks. Round 1 results are those submitted with the original sample batches for the 2013-2014 campaign. The Total Failure is the combined failure rate of standards and blanks with respect to the total submitted primary samples for the assay campaign. The values in parentheses in Table 11-6 indicate the resulting standard and failure count after all ORKO-10 standards are removed from the Round 1 QA/QC statistics. The resulting recalculated failure rate is in parentheses. The Round 1 sample statistics indicate a low (<2%) failure rate for the Coeur campaign after removal of the ORKO-10 subset.

### Table 11-6: Summary of Round 1 QA/QC Results

| Group | Count/Rate |
|---|---|
| Primary Samples | 21,991 |
| Blanks | 1,018 |
| Blank Failures | 16 |
| Standards | 1,369 (1,226) |
| Standard Failures | 60 (22) |
| Failure Rate | 3.27% (1.78%) |

The run plot examples in this report (Figure 11-2 through Figure 11-5) illustrate various graphical representations of the performance of actual blanks and standards. The run plot demonstrates assay value on the y-axis, plotted against the LABJOBNO on the x-axis. The LABJOBNO on the x-axis is also a depiction of the standard performance over time.

### Figure 11-2: Silver Blanks. Small Population, Zero Failures. Baseline or ACCEPTABLEMIN is ½ the LOWERDETECTION of the Assay Method.

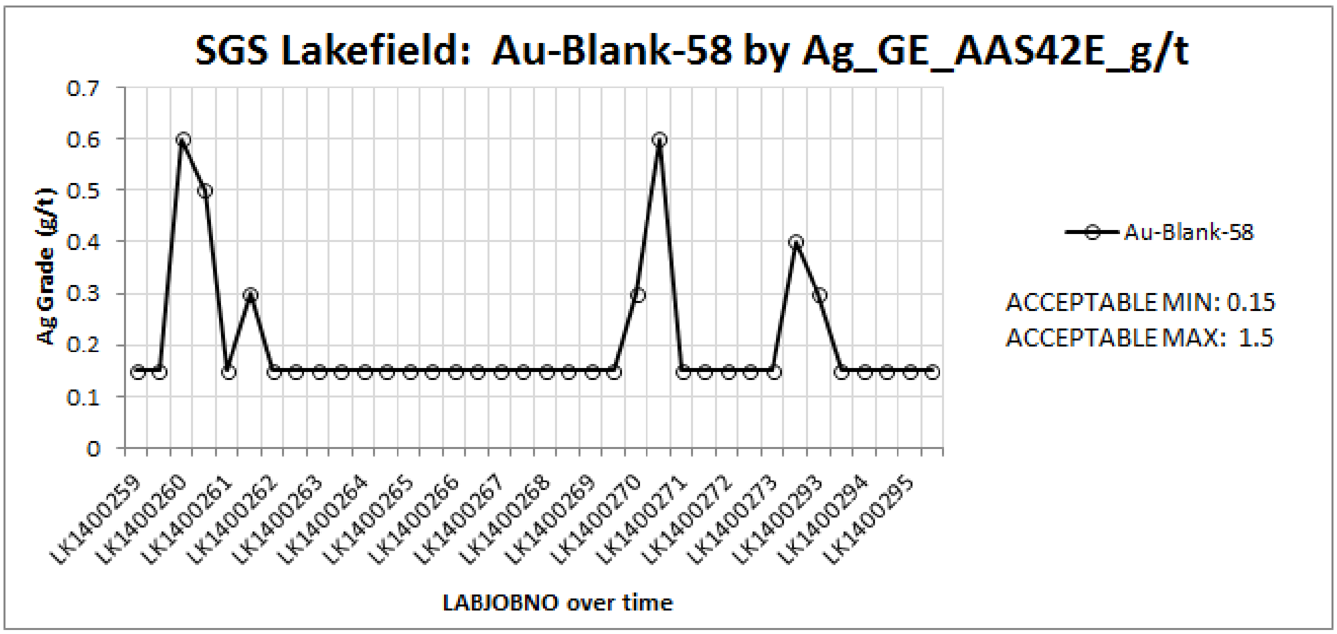


**Figure 11-3: Silver Blanks. Large Population with Multiple Failures of Large Magnitude. Baseline, or ACCEPTABLEMIN is ½ the LOWERDETECTION of the Assay Method.**

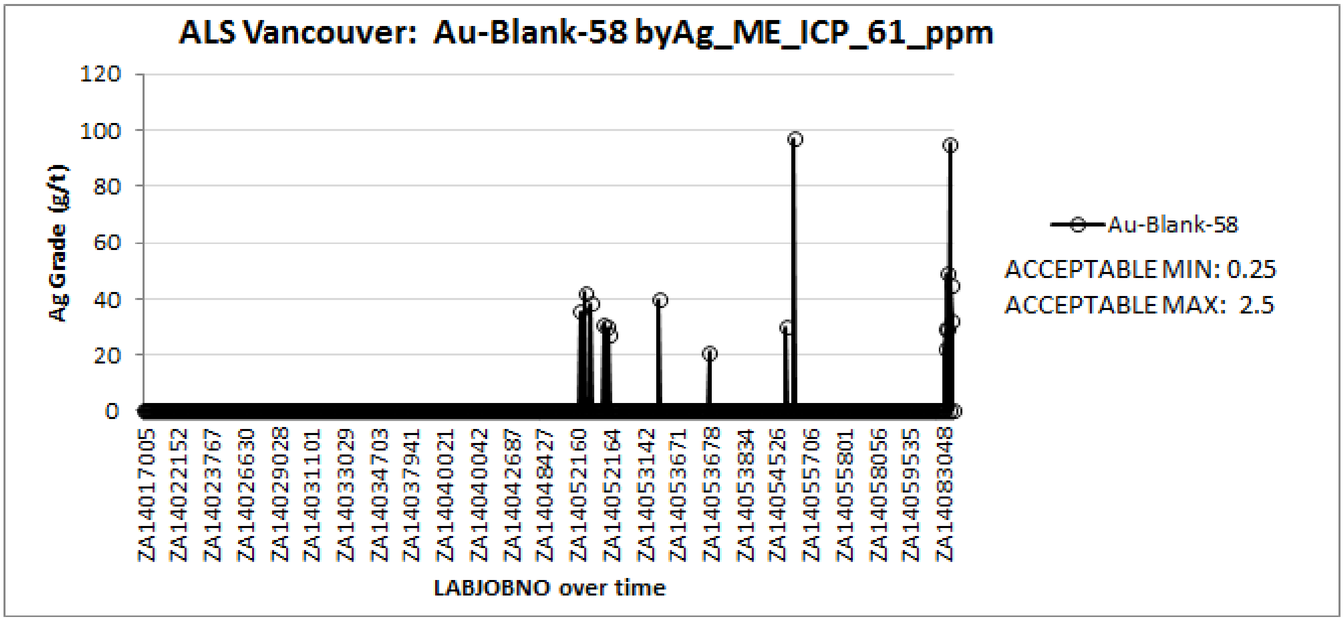



**Figure 11-4: Silver Standard. Large Population with Zero Failures. Results Trend Along the True Standard Value.**

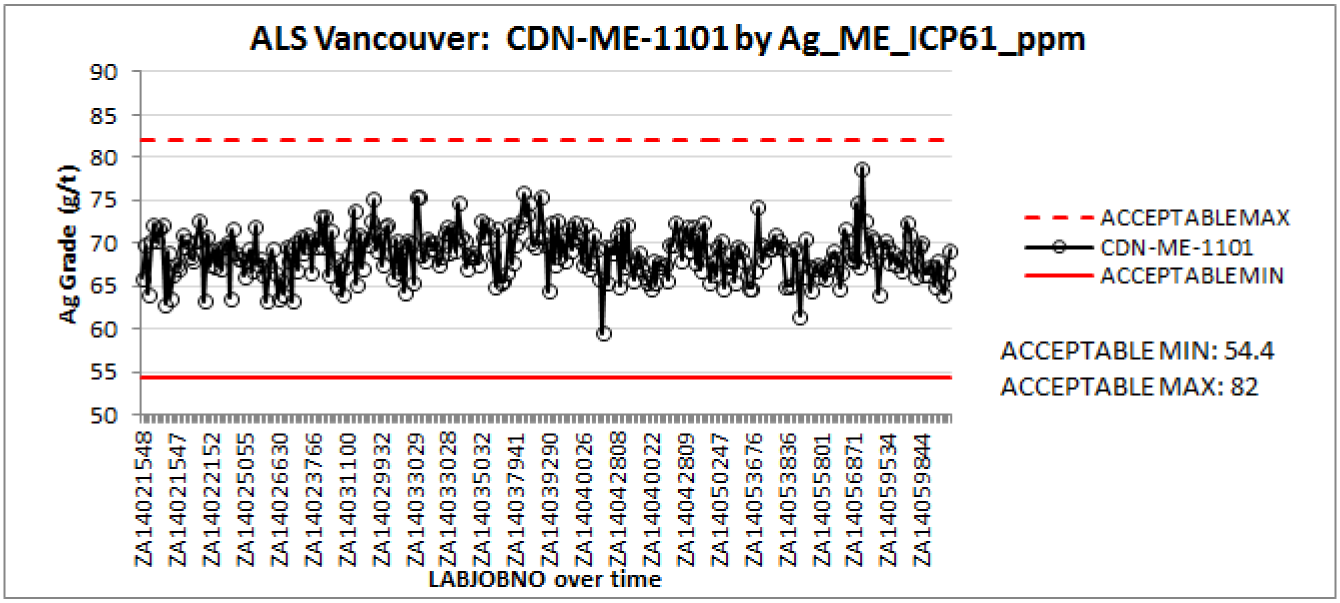
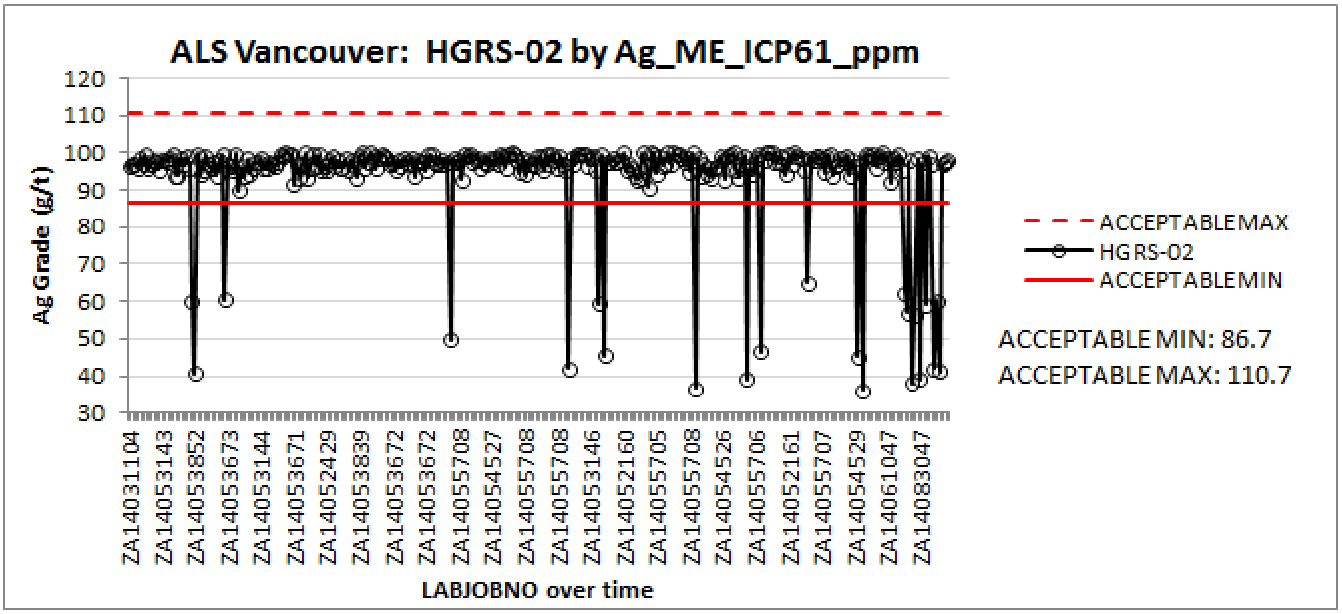


**Figure 11-5: Silver Standard. Large Population with Multiple Failures of Large Magnitude Below the ACCEPTABLEMIN.**




A percentage of failures of Round 1 QA/QC were subjected to reassay at the same laboratory using the same assay method as the original sample. Table 11-7 summarizes the result and status of standards and blanks that have received a Round 2 analysis. Samples pending results of a Round 2 analysis are also tabled. At the time of this report, 11 blanks and 30 standards are pending results of the Round 2 analyses. As in Table 11-6, values in parentheses represent sample counts that exclude Orko-10 standards. All samples that failed Round 2 QA/QC, and their associated sample batches, will be analyzed at a second commercial laboratory with an analysis method equivalent to that used by ALS.

**Table 11-7: Summary of Round 2 QA/QC Results**

| | | Development Drilling |
|---|---|---|
| Blanks | Reassayed Round 2 | 6 |
| | Passed Round 2 | 0 |
| | Failed Round 2 | 5 |
| | Pending Round 2 Results | 11 |
| Standards | Reassayed Round 2 | 30 (15) |
| | Passed Round 2 | 16 (3) |
| | Failed Round 2 | 14 (2) |
| | Pending Round 2 Results | 28 (5) |
| | **Total Percent Passing Round 2** | **44% (14%)** |

All QA/QC samples that have not successfully passed Coeur's QA/QC procedures remain in a "rejected" status in the acQuire database. Additionally, all primary samples associated with these failed control samples remain in a "rejected" status and are unavailable for use in the resource evaluation. When a control sample passes QA/QC, the new primary assay value of the associated primary samples will be moved to an "accepted" status in the acQuire database.

### Duplicates

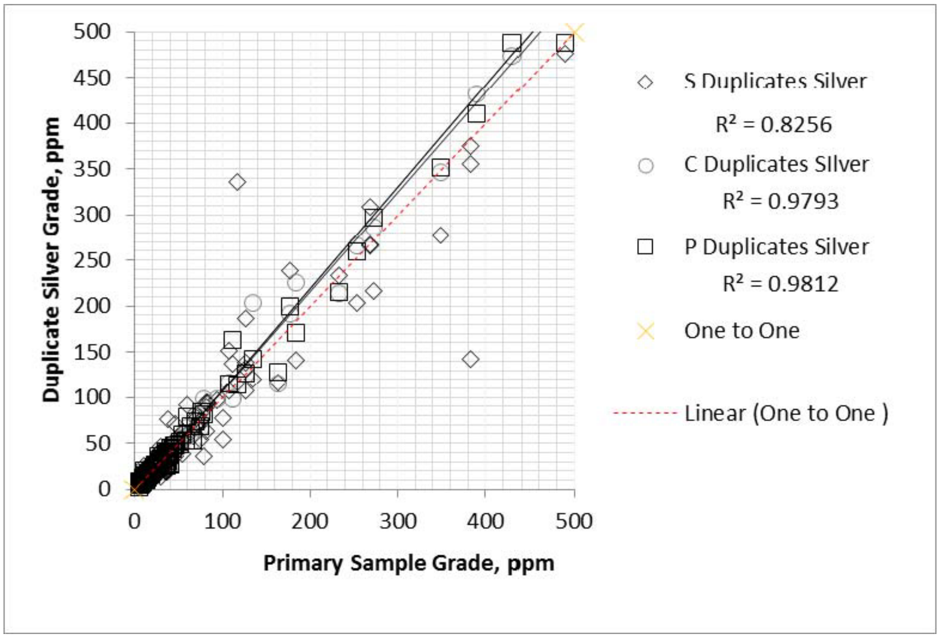
In 2013-2014 Coeur submitted 15,107 new primary samples to ALS. These samples are subjected to the company duplicate QA/QC protocol, included in Table 11-3. The protocol suggests an equal distribution of duplicate samples at various check stages. These include the sample (S), prep (C), and analytical (P) stages. Coeur submitted 1,347 duplicates resulting in an insertion rate of 8.92% which exceeded the total suggested insertion rate of 7.5%. Check stage totals and resulting failures are included in Table 11-8. The Threshold is a dynamic value that eliminates sample pairs from the population based on their assay value's proximity to the lower detection level of the method used. For this exercise the Threshold is equal to 10 times the lower detection of the method. Any primary sample with an assay value less than this is considered below the Threshold and is removed from the analysis. Failed duplicates will be reassayed in 2014 with the primary sample and all associated duplicates per Coeur QA/QC protocol.

**Table 11-8: Duplicate Sample Summary**

| Check Stage | Sample Type | Count | Count Above Threshold | % Acceptable Difference | Failed Duplicates | % Failure |
|---|---|---|---|---|---|---|
| Sample | (S) Sample | 661 | 236 | N/A | N/A | N/A |
| Prep | (C) Crush | 343 | 173 | 25% | 14 | 8.1% |
| Analytical | (P) Pulp | 343 | 172 | 20% | 18 | 10.5% |
| **Eligible Primary Samples** | | **Duplicate Samples** | | | **Insertion Rate** | |
| 15,107 | | 1,347 | | | 8.92% | |

Figure 11-6 is a scatter plot of the primary sample grade on the x-axis and the duplicate sample grade on the y-axis. The plot is segregated by check stage. The plot illustrates R2 values for each check stage that indicate moderate correlation between the sample duplicates (S) and excellent correlation between the analytical duplicates (P).

**Figure 11-6: Scatter Plot of Primary vs. Duplicate Values by Check Stage**




### Umpire Assays

Umpire assays for the 2013-2014 sample campaigns are currently in progress. Per Coeur policy, a random selection of pulps chosen throughout the range of grades should be selected from each assay certificate from the primary lab and sent to another laboratory for check analysis; using the same analytical digestion method and instrumental finish.

## 11.5.5 Opinions and Recommendations of the Qualified Person

Based on a review of the database and procedures, the QP is satisfied that the QA/QC, check samples, and check assays are adequate and within industry accepted norms and suitable to support an MRE.

# 12.0 DATA VERIFICATION

## 12.1 Current Verifications

The QP visited the project on July 20, 2021 and reviewed drill cores, the logging facilities, vein outcrops, and drill collar positions.

Five well-marked collars were located and positions were checked with a hand-held GPS unit (GPSMAP 66i). Plan positional differences were well within the expected limits of error (see Table 12-1).

**Table 12-1 Summary of Collar Locations and Positions**

| | Field measured | | Database | | Plan Difference |
|---|---|---|---|---|---|
| DHID | Easting | Northing | Easting | Northing | (m) |
| BP07-126 | 555161.0 | 2702386.0 | 555161.0 | 2702385.3 | 0.7 |
| BP09-355 | 555159.0 | 2702383.0 | 555159.7 | 2702382.3 | 1.0 |
| BP09-357 | 555159.0 | 2702383.0 | 555159.9 | 2702382.1 | 1.2 |
| BP09-361 | 555203.0 | 2702431.0 | 555203.0 | 2702431.0 | 0.1 |
| BP09-360 | 555204.0 | 2702431.0 | 555203.6 | 2702431.0 | 0.4 |

The core shack and core processing facilities were visited, and several representative cores were reviewed and compared with logging sheets. Logging matched the cores reviewed (BP07-102, CLP14-077) and assay grades were supported by signs of mineralization. The core storage and logging facilities are clean and weather-proof, and the core stacks and boxes are clearly labelled (Figure 12-1 and Figure 12-2).

Underground drift development on the Gloria and Abundancia Vein and outcrops were visited (Figure 12-3 and Figure 12-4), and the veins were examined.

## Figure 12-1: Core Logging Facilities La Preciosa

Source: Red Pennant

## Figure 12-2: Core Storage


Source: Red Pennant

**Figure 12-3: Adit level Drift on Abundancia Vein**

Source: Red Pennant

**Figure 12-4: Gloria Vein Outcrop Looking South. Width of View ~200 m in Foreground.**

Source: Red Pennant

## 12.2 Historic Verifications

The Project drillhole database was validated by the Coeur technical services group. It has been verified and deemed appropriate for resource modeling. A review and validation of the 2013 - 2014 assay, collar coordinate, downhole survey, and assay data has been performed by Coeur.

The historic drillhole database has been verified by Orko (pre-2009), MDA (2009), PAS (2008-2010), Snowden (2011), MP (2012), and IMC (2013).

### 12.2.1 Orko – Pre-2009

Prior to 2009, Orko reportedly sent 331 duplicate sample pulps from five of its drillholes to ALS Global (formerly ALSChemex) in North Vancouver, B.C., Canada, as a check against Inspectorate's primary assay results for these holes. Although the analytical methods used for silver by ALS for some of the check samples reportedly differed slightly from those methods used by Inspectorate, the results for these check samples indicated an only slight high bias on the part of Inspectorate for silver grades less than 30 g/t Ag, and a corresponding very slight high bias across the board for Inspectorate gold assays, as determined using fire assay with gravimetric finish methods. The QP responsible for this section of the Report reviewed scatterplots of 317 of these 331 gold and silver check analyses provided in earlier Technical Reports (which did not provide reasons for the 14 check assays missing from scatterplot comparisons). Based on these reviews, in the opinion of the QP, these check assay data fall within acceptable limits (M3, 2013).

In addition to the 331 duplicate samples, Orko submitted coarse rejects to SGS for 134 samples from drillhole BP07-102 that were originally prepared and assayed by Inspectorate. SGS in turn prepared pulp duplicates for these samples that were subsequently submitted to ALS. MP, consultants to Orko and the QPs for the November 5, 2012 Technical Report on the Project, created Q-Q plots of assays for 120 of the 134 samples from the three labs that were available in the MP database. These plots indicated reasonable correlation with no biases between Inspectorate and SGS for gold or silver. The Q-Q plots for Inspectorate versus ALS showed similar correlations, but with an apparent slight high bias for silver in the Inspectorate assays. In the opinion of the QP responsible for this section of the Report, these comparisons are acceptable for both gold and silver between all three laboratories (M3, 2013).

### 12.2.2 Mine Development Associates – 2009

As a follow-up to the pre-2009 check assay programs conducted by Orko, MDA in 2009 conducted a comprehensive check assay program that included pulp and coarse reject samples reportedly representing each of the mineralized vein intercepts. Submitted by MDA to ALS in Reno, Nevada, these checks samples consisted of 240 pulp rejects, of which 61 original pulps were assayed by SGS and 179 original pulps, which were assayed by Inspectorate. Q-Q plots of the results revealed acceptable correlation between the two primary laboratories (SGS and Inspectorate) and the secondary laboratory (ALS), with no indication of biases. In conjunction with this check assay effort, MDA inserted QA/QC blanks and gold and silver standard samples into the check assay batches at select but unequal intervals. The QA/QC results for the blank samples indicated no failures for silver and 2 failures (out of 10) for gold. All standard assays fell within the acceptable ranges (M3, 2013).

For determination of material density, Orko had routinely conducted one density measurement from each sample sent for assay, using a single piece of half-core removed from each sample and a water immersion method that resulted in a set of recorded densities that exceeded 88,000 in number. After each density analysis, the samples used were returned to the appropriate sample sacks for shipment to the laboratory for assay. Concerned that Orko's density determinations were possibly biased high because the method used did not account for the presence of vugs in the vein samples, MDA had Orko complete an additional 92 density determinations using a dry analysis technique on whole core representing the Martha vein and other lesser veins from the deposit. In the opinion of the QP responsible for this section of the Technical Report, this density validation testing generated specific gravity values that are not significantly different than the average specific gravities obtained by Orko's analyses (M3, 2013).

### 12.2.3 PAS – 2008-2010

The Snowden (September 2011) and MP (November 2012) Technical Reports both make reference to a suite of pulp duplicate samples representing the Martha vein from both earlier Orko and PAS drillholes. According to the Snowden Technical Report, "To eliminate any concerns about the quality of Orko data, PAS undertook a specific testing program of original data by reassaying drillhole samples and by comparing recent PAS drillhole sample grades with earlier Orko sample grades, which also showed grade biases". The Snowden Technical Report further states in Table 11.3 that the duplicate samples, which totaled 146 in number, were submitted "because of problems in correlating mineralization over short distances between Orko and Pan American holes". The MP Technical Report added that of the 146 duplicate pulps, 43 of the pulps were originally assayed by Inspectorate, while 103 were originally assayed by SGS. The duplicate assays for all 146 pulps were generated by SGS. However, neither report provides any details of the results of comparisons between the duplicate sample pairs (M3, 2013).

To follow up on MDA's validations of material density, PAS applied four different testing methods to the same individual rock samples removed from 252 different sample intervals in the remaining half core. These included 133 samples from veins and adjacent silicified material and 119 samples from un-silicified andesite, the most common host rock to the Project mineralization. The selection of each of the 252 samples considered the variable degree of oxidation in the deposit by taking approximately 40 samples of vein/silicified material and approximately 40 samples of andesite from shallow (highly oxidized), middle (moderately oxidized), and deep (weakly oxidized to unoxidized) portions of the deposit. One of the four measurement techniques employed included data for determination of a "void index" that could be used to derive bulk density. The selected samples (most of which were previously measured for specific gravity by Orko) weighed between 400 grams and 600 grams in order to reduce measurement error. Prior to testing, each sample was geologically described. The resulting specific gravity measurements were reportedly made by a technician in the metallurgical laboratory at PAS's La Colorado mine operations in Zacatecas, Mexico. The results of these measurements indicated that the Orko-specific gravity data were suitable for use in Mineral Resource estimation, provided that a bulk density conversion factor of 0.99 was applied to the average specific gravity for each of the material types (vein, vein silicification, and various host rocks). In the opinion of the QP responsible for this section of the Report, this fine tuning of the measured specific gravities for the various material types is acceptable, but not material to estimation of Mineral Resources in the Project deposit (M3, 2013).

### 12.2.4 Snowden – 2011

The Snowden Technical Report (Snowden 2011a; 2011b) does not mention the collection by Snowden of any independent drill core samples or existing coarse reject or pulp duplicates for check assay. Snowden reportedly reviewed original assay certificates from SGS in Durango, Mexico and from Inspectorate's laboratory in Sparks, Nevada, which included 441 assays from PAS's drilling and 3,188 assays from Orko drillholes. In total, 44 errors were noted in the PAS database assay files (an error rate of 1.4%), 41 of which were determined to be related to a single assay batch that apparently was subsequently reassayed. Two of the three remaining errors reportedly involved the entry of incorrect assay detection limits. Nine errors were noted in the Orko assay database, seven of which were reportedly due to cases where the average values of acceptable duplicate assay pairs were entered rather than the primary sample assays. Snowden did not perform or recommend additional material density (specific gravity) testing (M3, 2013).

### 12.2.5 Mining Plus – 2012

MP independently collected 74 samples consisting of 23 samples of half (sawn) core and 46 existing coarse rejects. Although the MP Technical Report states that, "All results from this program returned values well within acceptable limits", no actual data for the duplicate sample analyses were provided. MP also reportedly compared the results of 3,285 assays representing the major zones of mineralization reported on laboratory certificates with entries in the assay database and found six errors (an error rate of only 0.2%), and concluded that none of these errors were materially significant with respect to mineral resource estimation (M3, 2013). MP checked collar coordinates for 17 drillholes using a hand-held GPS unit and noted no significant discrepancies (considering the accuracy of the GPS unit) with the values in the project database. Downhole survey data also were reviewed by MP, which found errors believed to have been caused either by inaccurate data transcription or by errors in the actual survey measurements. Where original data could be located, these downhole survey data were verified or corrected. MP also noted variances between drillhole azimuths and inclinations at the drillhole collars and the initial downhole survey data points. In MP's view, the reason for these discrepancies probably was due to the drill set-ups not corresponding to the planned azimuths and inclinations. To address these differences, MP reported that hole collar markers were removed and new collar measurements made of drillhole azimuths and inclinations, except where prevented by deterioration of the drillhole collars due to caving and/or the presence of the magnetic basalts on the eastern portion of the project drill pattern. Also, MP reported removing the downhole survey data for several drillholes for which it determined that the trace of these holes as defined by the downhole surveys was physically impossible. In summary, outside of the errors described above, MP noted that with the collection of downhole survey data on 50 m intervals, the potential impact of individual survey errors is limited. MP did not perform or recommend additional material density (specific gravity) testing (M3, 2013).

### 12.2.6 IMC – 2013

Only five additional drillholes that were not included in the MP MRE were considered for inclusion in the IMC MRE summarized in Section 14, (holes 1, 2, 3, 4, and 5) and only one of these has assay data (BP12-718). In the opinion of the QPs responsible for this Report, no additional independent validations of these data were warranted. This opinion is based on the lack of any significant amount of additional data that post-dates the MP study and Technical Report, and in light of the documented acceptable agreement between duplicate sampling and assaying exercises and material density validations conducted by previous QPs (M3, MDA, Snowden, and MP). The QA/QC information that has been described in this section was loaded into the IMC system and analyzed to confirm previous work.

In summary, the primary basis for confirmation of the drillhole database are the inserted standards that have been completed during the assay programs. There were also a number of inserted blank samples. As described earlier, there are a total of 1,103 duplicate assays in the QA/QC database. These are a mixture of:

- Duplicate Pulps to the same lab: 43 samples
- Check Pulps to a second lab: 793 samples
- Coarse Rejects to the same lab: 192 samples
- Coarse Rejects to a second lab: 75 samples

The analysis by previous QPs and IMC do not indicate any particular issues with bias in the above data sets. However, none of the above programs are sufficiently consistent in procedure, data distribution, or purpose to be considered as a major component of the QA/QC data. The above duplicate samples represent 1.1% of the total assay database. The reliability of the entire drill program is therefore relying on the inserted standards and blank samples.

**Standards**

There are 4,580 standards inserted into 104,720 assays (4.4%) of which 547 standards were inserted into the 12,955 assays above 25 g/t (4.2%).

**Blanks**

There are 1,765 blanks out of 104,720 assays (1.7%) of which 348 blanks were inserted into the 12,955 assays above 25 g/t (2.7%).

Blanks were not inserted on a regular basis, although it appears that blanks were likely inserted after high-grade intercepts on a visual judgment basis rather than on a consistent insertion basis.

Standards were generally inserted throughout the database. The percentage inclusion is similar in both mineralized material and waste components of the deposit. IMC prepared maps and sections of the holes that contain standards and found them to cover the area of the mineral resource on a relatively consistent basis. Analysis of tested standards versus the published Standard Value in the MP Report dated November 5, 2012 do not show any immediate issues regarding assay lab bias, regardless of the lab used for the primary assay. There are some confusing data points in the QA/QC database that present different certified values for some standards compared to the MP Report. IMC has chosen to use the certified values as published in the MP Report.

The statistical analysis of the QA/QC database indicates that the project database can be accepted for estimation of mineral resources, based almost entirely on the reliable results from inserted standards. However, the QA/QC database in general does not meet industry "best practices" in the opinion of IMC.

### 12.2.7 Coeur Validation of Drill Data

Assay data were imported into an acQuire database using assay import object. The commercial laboratories provide assay data in a pre-constructed Comma-Separated Values (CSV) template that imports seamlessly into the acQuire database when no errors are present. AcQuire imports adhere to very strict rules relating to sample IDs, assay data, and lab job numbers. When these rules are violated, an error report is generated. There is no manual data entry related to the assay import process. In addition, continuous comparison of the database values against the original PDF certificates is a valuable check on the database integrity.

### 12.2.8 Coeur Geologic Data Validation

In 2014 Coeur initiated and completed a comprehensive review and data entry campaign for all drillhole geologic logs from Orko, PAS, and Coeur. The review included 843 drillholes for a total of 259,919 m. The Project was contracted to HRC and included review and data entry of hardcopy and scanned geologic drill logs. HRC inspected four database tables; lithology, alteration, mineralization, and structure. A list of accepted logging codes was provided by Coeur with edits applied as needed as the Project proceeded. HRC supplemented the data process with an internal validation process that reviewed the logs for legibility, completeness, and consistency with regards to geologic interpretation. Select drillholes were reviewed in 3D to identify potential error in interpretation. Mechanical audits were completed to identify overlapping intervals, gaps in geology, and inconsistencies in drill depths.

### 12.2.9 Coeur Collar Survey Checks

Drillhole collars are checked visually in MineSight and on topographic based maps to confirm that holes are on the correct drill pads and map coordinates.

Downhole survey data are imported into an acQuire database using an import object. The 2013-2104 downhole surveys were completed by IDS Mexico. IDS provided CSV data files that, in most cases, imported seamlessly into acQuire. On several occasions the CSV file was constructed from a different template, and additional manual formatting was required and completed by the geologic database manager. On import, the data are checked for overlapping intervals and intervals below the recorded length of the drillhole.

### 12.2.10 Coeur Validation Of Historical Drillhole Data

Coeur continued to verify Orko era data in 2013 and 2014. A 2013 report includes a review of the original Orko database and reviews subsets of the data loaded into the acQuire Database. This review included drillhole collar, downhole survey, density, RQD, and sample ID and assays. The review also outlines the general acQuire database structure. Recommendations are proposed and have been addressed by Coeur, or are included in this report as recommendations for further work. Coeur identified the need to verify assay data against original hardcopy assay certificates. Coeur initiated this project in 2014. Verification of samples against hard copy assay certificates was conducted manually at both the Chihuahua Exploration office and the Chicago Corporate office. The initial comparisons checked 298 standards and 497 primary samples that were analyzed at Inspectorate from 2006 through 2008. No discrepancies between the two datasets were identified. This amounts to verification of 2.9% of QA/QC samples and 0.7% of primary samples. The Orko and PAS assay results required verification for use in resource estimation. Further evaluation of the Orko master database was completed in 2014. Inspectorate provided official data files and certificates for 100% of the lab jobs completed from 2007 - 2009. The Inspectorate results were loaded to acQuire directly from the data files and are presumed validated, but will benefit from an additional check against the hardcopy certificate.

SGS data files provided by Orko had been modified. Coeur was able to obtain 426 of 753 (57%) original data files and 634 of the original PDF certificates from the SGS. The data files received were loaded directly into acQuire and the resulting data are considered validated. QA/QC procedures were completed on the imported SGS data files, per Coeur's company protocol. A combined silver and gold total of 3,180 identifiable QA/QC values were analyzed in acQuire, resulting in 30 failures. Seven pairs of data were excluded from the analysis due to either the standard value exceeding the UDL of the assay method, or because the standard was not certified for a gravimetric analysis. Coeur policy mandates that a standard fails when the value exceeds ± three SDs of the standard value and a blank fails if it exceeds ± five times the LDL of the analysis method. Failure rates for silver and gold for from the SGS data files were 0.7% and 1.3%, respectively. Assay pairs from the Orko master database and the SGS data files were compared in acQuire to validate the primary assay database. A combination of 46,551 sample pairs of silver and gold were analyzed using x-y scatter plots. (Figure 12-1 and Figure 12-2) The silver and gold values should be exact matches and therefore a failure is defined as any deviation greater than zero. The comparison resulted in 510 failures, or 1.1% of the pairs. Figure 12-1 and Figure 12-2 visually indicate that the failures are of relatively low magnitude. Coeur is confident 54 of the silver failures are the result of Orko gravimetric results being merged into a fire assay field. These are not true failures, but the result of manual data manipulation. The remaining silver and gold failures are assumed to be attributed to manual error or discrepancies with reporting of assays at or near the detection level of the assay method.

The data and statistics presented in this section illustrate that Coeur was able to verify 60% of the primary SGS sample count and was able to verify a 43% increase in the QA/QC sample count. The QA/QC insertion rate of 12%, from the SGS data files indicated that the validated data contained an acceptable quantity of QA/QC samples which exceeded Coeur's current internal requirement. The QA/QC completed on the SGS data performed well, with low failure rates. The primary assay comparison produced very low failure rates and overall low magnitude failures. In summary, these comparisons represent 60% of the primary assay database and 57% of the total lab jobs stored in acQuire. The remainders of the outstanding original data files are considered to be unobtainable. Therefore, Coeur considered the performance of the Orko data that was verified by the SGS data files to be indicative of the performance of the entire Orko master database, and subsequently acceptable for use in resource evaluation.

## 12.2.11 Coeur Data Collection Campaigns

### 12.2.11.1 Density

The Orko master density database contained 89,226 records of calculated density, with an average density of 2.51 g/cm$^3$. In 2014, Coeur developed a standardized procedure to improve the accuracy of density measurements. In March 2014 Coeur employees completed 1,667 density measurements using the new procedure (see Table 12-2). The average density of these measurements was 2.52 g/cm$^3$.

**Table 12-2: Density Data 2014 Summary**

| Lithology | Density (g/cm$^3$) |
|---|---|
| Basalt | 2.38 |
| Metamorphic | 2.67 |
| Sedimentary | 2.50 |
| Volcanic | 2.48 |

#### 12.2.11.2 Geomechanical

In 2013, KP initiated a geomechanical drill program. The drilling consisted of two holes completed in 2013 and four holes completed in 2014. The drilling was completed by Major Drilling using HQ3 diameter core using triple tube techniques. The geomechanical core was oriented using the Reflex ACTIII device. The drill core was split and assayed using Coeur's procedures discussed in this report. The assay results for these drillholes are not included in the resource estimation data set.

#### 12.2.11.3 Reassay of Pulps

Initial silver assaying by Orko at SGS used a 3-acid digestion with ICP-AES finish for all samples, followed by fire assays for samples exceeding 300 g/t Ag. In 2013, 313 pulp samples were reassayed and demonstrated that using a 4-acid digestion with an ICP finish resulted in a more complete sample digestion and, on average, higher Ag grades. In 2014, Coeur selected all Orko era samples within the 25 - 100 ppm silver grade range for reassay by the 4-Acid ICP method. Coeur submitted 6,059 and 825 pulp samples to ALS and SGS, respectively. Reassay results from ALS showed an average increase in Ag grade of 11% when comparing Coeur's 4-acid digestion ICP results to Orko's 3-acid digestion results. Reassay results from showed an average increase in Ag grade of 2.2% when comparing Coeur's 4-acid digestion ICP results to Orko's 3-acid digestion results.

### 12.2.12 Coeur Review of Orko Era Drill Core Sampling

Core drilled during the Orko and PAS campaigns was selectively sampled based on geologic observation during the core logging process. In 2013, Coeur initiated a campaign to re-log, sample, and assay portions of the previously unsplit core. During the review of the core and logs, Coeur geologists identified samples that ended in mineralized material as well as structures and alteration that were unsampled. The geologists collected these new samples from 35 drillholes along three parallel sections. The program resulted in 3,520 new primary samples added to the acQuire database.

### 12.2.13 Coeur Review of Orko Era Quartz Vein Sampling

In addition to the legacy drill core sampling, Coeur geologists reviewed the database to identify un-sampled intervals logged as quartz vein. A total of 95 samples, representing 120 meters of core length, were identified in the drillhole database. If the material was available and un-sampled, the vein interval and several meters of core above and below it would be sampled and assayed.

### 12.2.14 Spectroscopy Study

In 2014, Coeur contracted SRK Consulting of Toronto, Ontario to conduct an Infrared Absorption scan for alteration on the Project drill core. SRK scanned 76 drillholes for a combined 8,568 intervals totaling 24,987 m. The spectral data identifies the presence or absence of clay species and is useful for geotechnical purposes such as identifying fault zones, zones of high cohesive strength, and depth to water. The spectral dataset is stored in the project acQuire database.

## 12.3 Data Verification Conclusion

The QP is satisfied that the sampling and assay data, topographic information, and drill core management for this project have been comprehensively verified and are suitable to be used for mineral resource estimation.

# 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Extensive metallurgical investigations were conducted to support the previous studies, including a feasibility study completed in 2014, *NI 43-101 Technical Report Feasibility Study for La Preciosa Silver-Gold Project,* prepared by M3 of Tucson, Arizona. Metallurgical testing prior to 2013 was summarized and reported in the PEA report, *Snowden Mining Industry Consultants, 2011a. Pan American Silver Corp. and Orko Silver Corp, La Preciosa silver property, Durango Mexico, Preliminary economic assessment – Technical report: NI 43-101 report* prepared by A. Finch, M. Stewart, J. Snider, T.L. Drielick, T.L., and G. Hawthorn for Pan American Silver Corp. and Orko Silver Corp., June 2011. The previous test work was mainly focused on the gold and silver recovery by cyanidation. In 2021, SGS Minerals at Durango, Mexico, conducted further test work, mainly focusing on investigating the flotation performance of the samples generated from the Abundancia, Gloria, and Martha mineralization zones (SGS, 2021).

Section 13.1 below is reproduced from the 2014 Feasibility Study Report (M3 Engineering & Technology Corporation, 2013) with minor updating.

## 13.1 2014 Feasibility Study Test Work

The deposit is amenable to conventional process technology and can be processed in a conventional crushing, grinding, leaching, and Merrill-Crowe silver recovery circuit with detoxified tailings prior to reporting to a tailings storage facility.

The metallurgical and mineralogy investigations were developed by the following techniques: XRD, QEMSCAN, clay, and near infrared analyses, flotation, comminution parameters, variability and development, sodium cyanide leaching, bulk sodium cyanide leaching, sodium cyanide detoxification, Merrill-Crowe simulation, flocculant screening, conventional, high rate and paste thickening, vacuum and pressure filtration, pressure clarification, and slurry rheology.

Mineralogy Highlights:

- The gold grains are contained in iron hydroxide that is enclosed in quartz-rich particles.
- The majority of the located gold occurrences in the samples would be considered to be liberated.
- Gold particles precipitated in direct association with pyrite and non-sulfide gangue minerals were generally low in gold content and were of smaller average diameter than the liberated gold particles. Some of this gold was found as inclusions within the pyrite or gangue particle and may not be amenable to cyanide leaching. Gold was detected in association with silver sulfide minerals.
- The major portion of the silver in this sample occurs as silver sulfide (acanthite, $Ag_2S$). Traces of silver-selenium sulfide (possibly aguilarite) and complex silver-antimony-zinc sulfide were also observed. Silver-bearing grains range from 15 - 100 µm in size. The silver-bearing grains observed and described here are locked in quartz or are associated with pyrite, galena and lead carbonate, and iron oxide or iron hydroxide. Acanthite also occurred as very fine veins within quartz.
- Minerals detected by short-wave infrared and visible light include: copiapite, cerussite, epidote, goethite, gypsum, hematite, illite, illite-NH4, jarosite, kaolinite, montmorillonite, nontronite, quartz, saponite. Oxidation state did not correlate with silver dissolution.

Bond crusher work index values were measured from 65 whole core samples. The results are shown below:

- The Bond crusher work index averaged 9.7 ± 3.4 kWh/t and varied from 21.3 kWh/t to 5.2 kWh/t for all samples tested.
- Bond abrasion index (Ai) tests were completed on 47 samples. Ai results ranged from 0.37 g to 1.27 g, and averaged 0.74 g ± 0.25 g.
- Bond ball mill work index (BWi) tests were completed on 47 samples. BWi results ranged from 14.7 kWh/t to 18.2 kWh/t and averaged 16.1 ± 1.0 kW/t.
- Bond rod mill work index (RWi) tests were completed on 36 samples. RWi results ranged from 12.7 kWh/t to 18.1 kWh/t and averaged 15.3 ± 1.4 kW/t.
- SAG mill comminution tests were completed.

Silver dissolution testing in the variability study consisted of 141 bottle roll tests with samples ground to a particle size of 80% passing approximately 45 µm, and 23 bottle roll tests with the samples ground to a particle size of 80% passing approximately 74 µm. The ground material was leached for 72 hours at a pulp density of 40% solids in 1.5 g/l NaCN at a pH of 11.5. Lead nitrate was not added.

The exploratory cyanide leach series investigated various alternative leaching schemes to determine silver and gold recoveries or improve metal leaching kinetics. The exploratory leaches included feed and residue size classification, baseline cyanide leaching, two-stage leaching, hot leaching, leaching of sand and slime size fractions, $O_2$ enriched leaching, and pressure conditioning and pressure leaching.

Thirteen leach tests were completed as standard NaCN bottle roll tests conducted for 72 or 96 hours at pH 11.5, pulp density of 40% w/w, and ambient temperature. The test series evaluated three particle sizes: 80% passing 30, 45, and 75 µm, and two sodium cyanide concentrations of 1.5 and 4.0 g/l.

Feasibility study silver and gold recovery was calculated based on head grade versus tailings grade regression of the variability average grade, lithology elevation bench, and selected exploratory bottle roll tests.

The weighted silver and gold recovery was determined to be 84% and 61% respectively, based on life of mine head grades. The test results and regression projections for the gold and silver recoveries are shown in Figure 13-1 and Figure 13-2.

**Figure 13-1: Gold Cyanide Leach Extraction vs. Head Grade (after M3, 2014)**

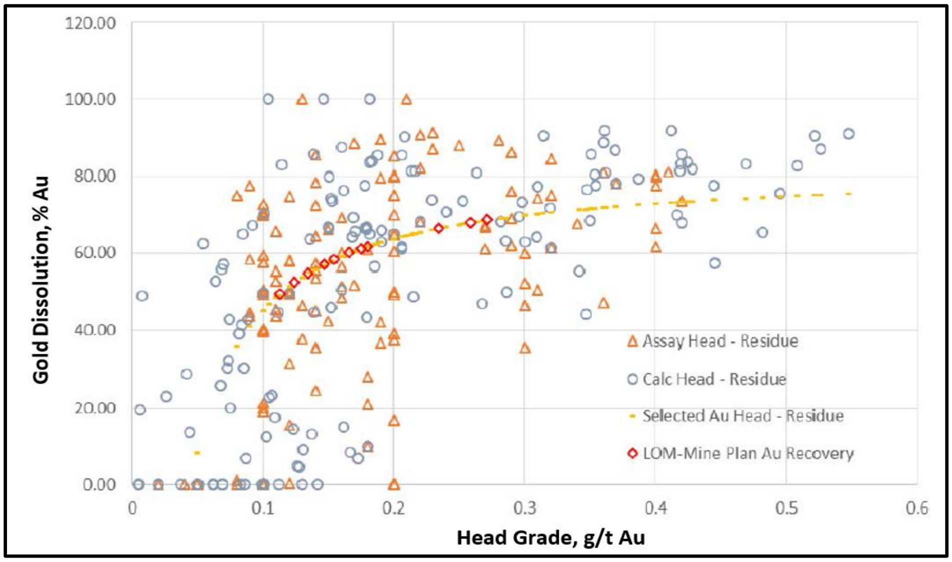
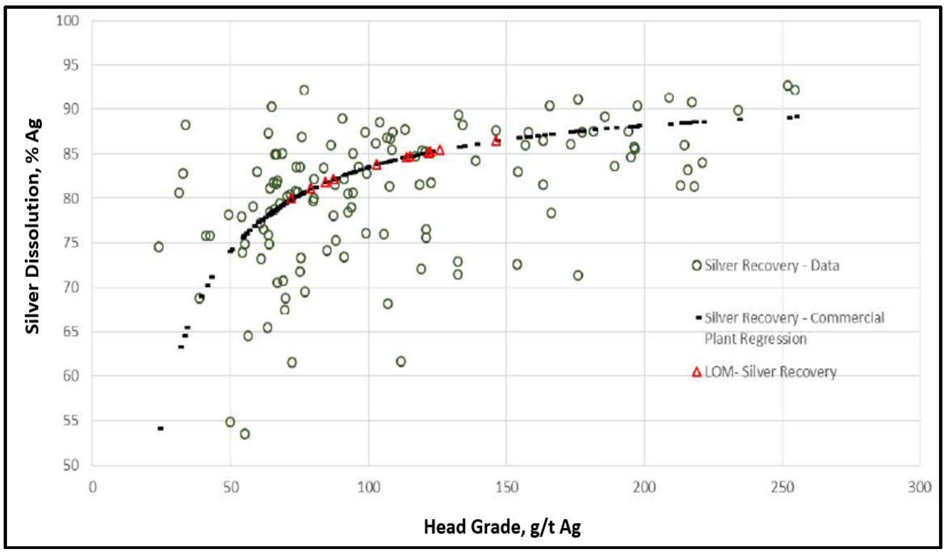



**Figure 13-2: Silver Cyanide Leach Extraction vs. Head Grade (after M3, 2014)**




## 13.2 2021 Test Work

Further test work conducted in 2021 was focused on metallurgical response of the samples to conventional flotation concentration. The samples tested were from Abundancia, Gloria, and Martha mineralization zones. The test work is summarized the following sections.

### 13.2.1 Metallurgical Test Samples

A total of 34 samples from Abundancia, Gloria, and Martha mineralization zones, were sent to SGS by Compañía Minera Mexicana de Avino S.A. de C.V.

The received samples were crushed to 100% passing 6 mesh, and the main interested chemical elements were analyzed. Two composite samples, labeled as Martha composite and Abundancia-Gloria composite, were formed for the metallurgical testing.

The chemical analysis was conducted on the as-received induvial samples and two composite samples. Table 13-1 shows the head assay results for the two composite samples.

**Table 13-1: Head Grade of Composite Samples**

| Sample | Au | Ag | Pb | Zn | Fe | S |
|---|---|---|---|---|---|---|
| | g/t | g/t | % | % | % | % |
| Martha Composite | 0.43 | 231 | 0.126 | 0.287 | 2.6 | 0.40 |
| Abundancia-Gloria Composite | 0.32 | 241 | 0.147 | 0.271 | 2.8 | 0.31 |

The total sulphur contents of the composite samples were low, at 0.31% S and 0.40% S respectively.

The specific gravity was 2.74 g/cm$^3$ for the Martha composite and was 2.77 g/cm$^3$ for the Abundancia-Gloria composite.

### 13.2.2 Flotation Study

SGS completed a comprehensive flotation test program on the two composite samples. The test work includes bulk flotation and selective flotation.

The bulk flotation was focused on the recoveries of gold and silver. Different types of flotation collectors, including various promotors, were tested. A dispersant, namely DL-160, was also explored in an effort to mitigate the effect of slime on the flotation.

#### 13.2.2.1 Martha Composite

For the Martha composite sample, as shown in Figure 13-3 and Figure 13-4, the flotation results indicate that:

- Gold recoveries to rougher concentrates ranged from 51.3% to 64.6%, with the concentrate grades of between 1.63 g/t Au and 2.49 g/t Au.
- Silver recoveries to rougher concentrates ranged from 76.9% to 87.3%, with the concentrate grades in the range of 1,224 g/t Ag to 2,068 g/t Ag.
- A finer primary grind size, which changed from 80% passing 150 µm to 80% passing 106 µm, did not substantially improve the metal recovery.

**Figure 13-3: Gold Recovery – Bulk Rougher Flotation - Martha Composite (after SGS, 2021)**

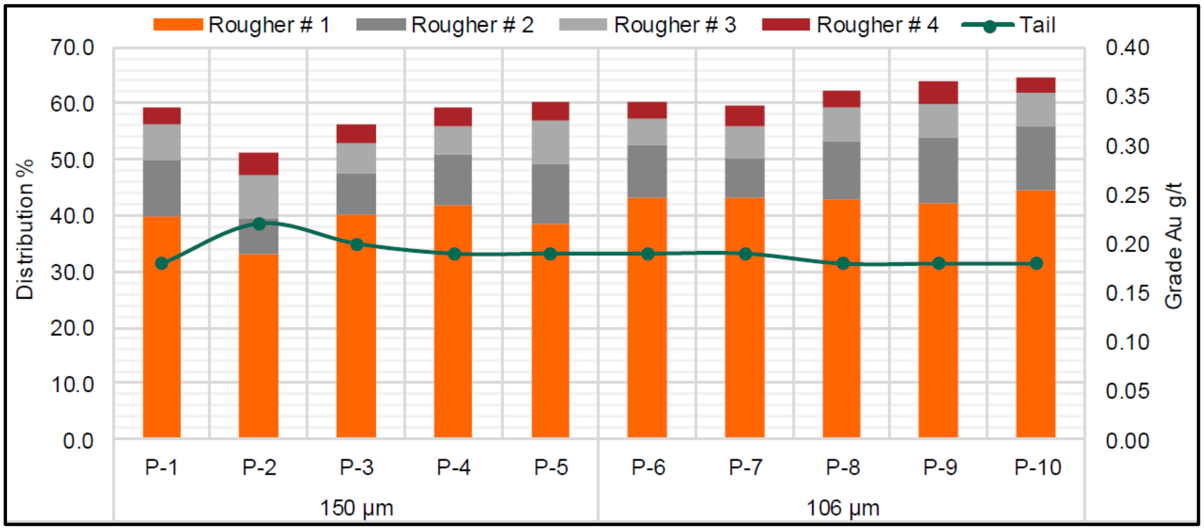
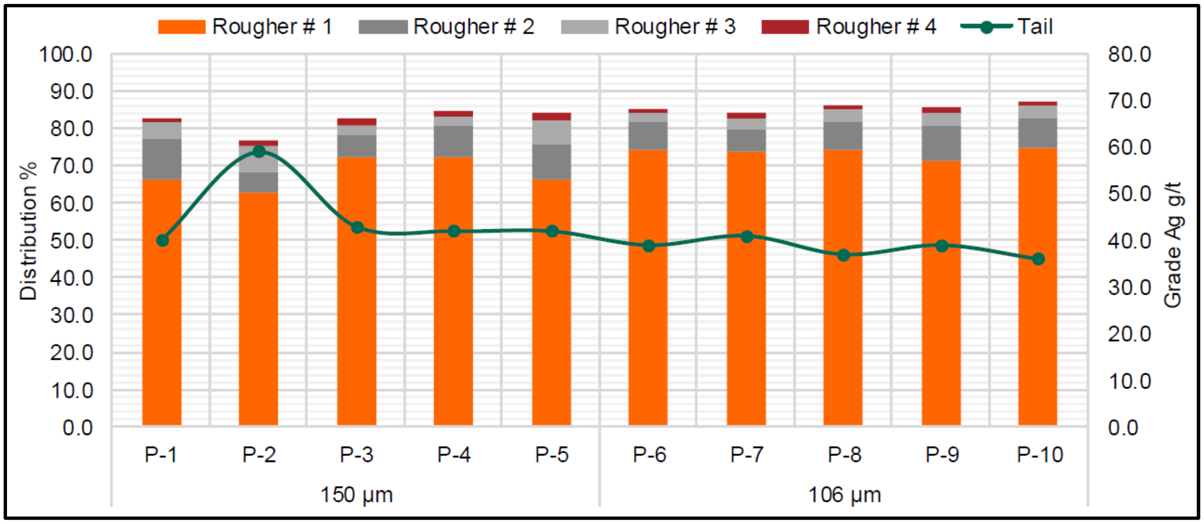



**Figure 13-4: Silver Recovery – Bulk Rougher Flotation - Martha Composite (after SGS, 2021)**




A further reduction of the primary grind size to 80% passing 75 µm can improve gold and silver metallurgical performances, however the improvements are not substantial.

The cleaner flotation test results show that the bulk rougher concentrate grade can be improved substantially to approximately 12,000 g/t Ag with a silver recovery of 73.6%.

A locked cycle test (LCT) was conducted on the Martha composite sample at a primary grind size of 80% passing 106 µm with A-31, A-7583, XF-322N, and potassium amyl xanthate (PAX) as collectors.

The locked cycle test results on the Martha composite sample show that 54.2% of the gold and 81.4% of the silver reported to a final concentrate containing 7.36 g/t Au and 6,455 g/t Ag respectively. The concentrate from the LCT test was assayed for multi-elements, the impurity levels of the concentrate are expected to lower than the current penalty thresholds set up by the smelters who process the concentrates from the Avino mine.

In comparison to the bulk flotation flowsheet, selective flotation was also conducted to evaluate whether it is feasible to produce gold and silver bearing lead and zinc concentrates, respectively.

The selective flotation test results on the Martha composite sample show that:

- Overall lead recovery to lead rougher concentrate ranged from 37.1% to 42.1%; the concentrate grade was low, varying from 0.4% Pb to 0.6% Pb.
- Overall zinc recoveries to a lower than 1% Zn concentrate were only from 33.6% to 38.9%.

The results indicate that the sample did not respond well to the selective flotation procedure tested.

#### 13.2.2.2 Abundancia-Gloria Composite

Similar to the Martha composite sample, the Abundancia-Gloria composite sample was also tested for its metallurgical response to the bulk and selective flotation procedures. The bulk flotation test results are summarized in Figure 13-5 and Figure 13-6. The flotation results indicate that the Abundancia-Gloria sample produced similar metallurgical performances as the Martha sample.

**Figure 13-5: Gold Recovery – Bulk Rougher Flotation - Abundancia-Gloria Composite (after SGS, 2021)**

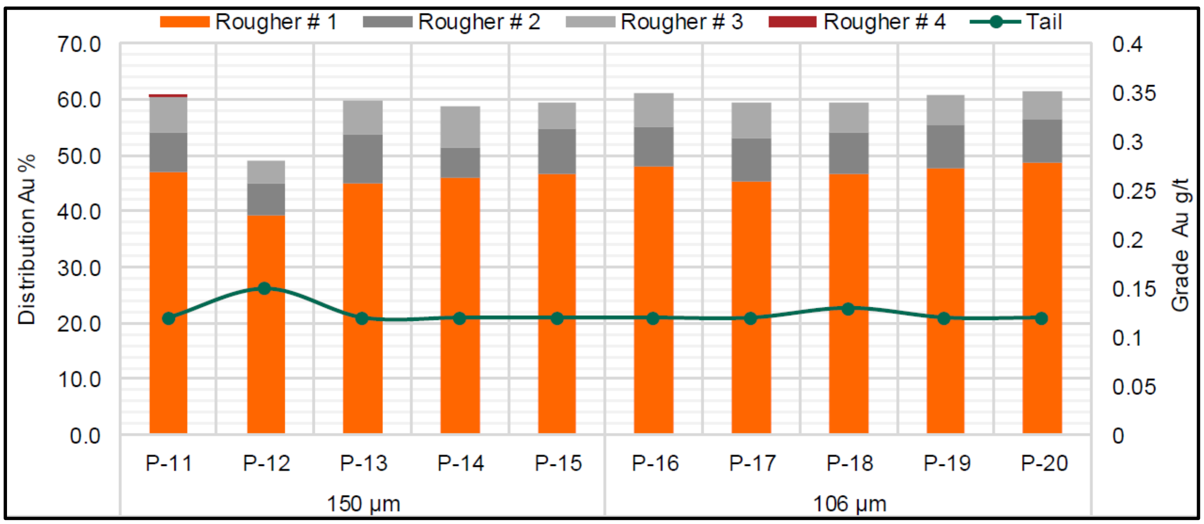
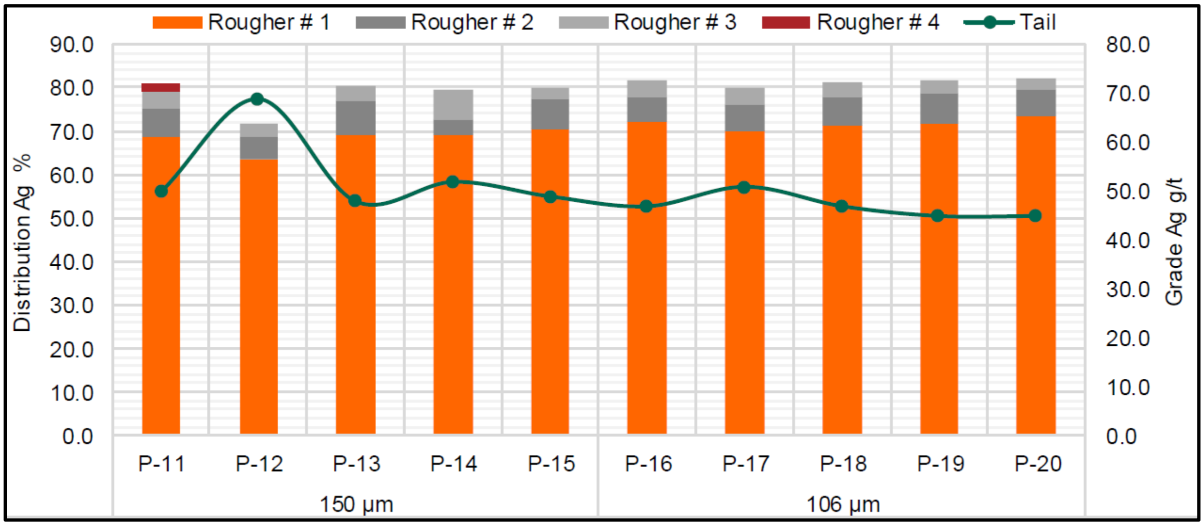


**Figure 13-6: Silver Recovery – Bulk Rougher Flotation - Abundancia-Gloria Composite (after SGS, 2021)**




The test results show that excluding the results from Test 12 and Test 17, the metal recoveries to the bulk concentrates ranged from 59.0% to 63.7% for gold and from 79.5% to 82.3% for silver respectively. The silver grade of the concentrate is in the range of 1,900 to 2,600 g/t. Similarly, no significant improvement was observed when the tests were conducted at a finer grind size of 80% passing 106 µm, compared to 80% passing 150 µm.

A further reduction of the primary grind size to 80% passing 75 µm can significantly improve gold recovery, but no obvious improvement for silver recovery.

The cleaner test results show that the bulk rougher concentrate grade can be improved substantially to approximately 11,300 g/t Ag with a recovery of 70.2%.

A LCT test was also conducted on the Abundancia-Gloria sample at a primary grind size of 80% passing 106 µm with A-31, A-7583, XF-322N, and PAX as collectors.

The locked cycle test results on the Abundancia-Gloria composite sample were as follows:

- Gold recovery was 53.3% with a concentrate grade of 9.1 g/t Au.
- Silver recovery was 76.9% with a concentrate grade of 10,650 g/t Ag.

The concentrate from the LCT test was assayed for multi-elements, the impurity levels of the concentrate are expected to lower than the current penalty thresholds set up by the smelters who process the concentrates from the Avino mine. A separate flotation LCT test was conducted on the Abundancia-Gloria sample using a more complex flowsheet with regrinding coarser than 75 µm fraction of the rougher flotation tailings. Silver recovery was slightly improved to 79.1%.

Similar to the Martha composite sample, selective flotation was also conducted on the Abundancia-Gloria composite sample to evaluate whether it is feasible to produce gold and silver bearing lead and zinc concentrates respectively. The selective flotation test results show that it may be not feasible to produce separate gold and silver bearing concentrates because the lead and zinc grades of the separate concentrates are too low to further upgrade. Further test work and economical assessments should be conducted to optimize concentrate product plan.

### 13.2.2.3 Gold and Silver Occurrences in Flotation Tailings

Size fraction analysis tests were carried out on a blend of the flotation tailings generated from various flotation tests to investigate the loss of gold and silver in each size fraction. The results indicate that:

- The finest size faction (less than 20 µm) had the highest gold grade, and more than one-third of the total gold in the flotation tailings was identified in the finest fraction.
- Silver was nearly evenly distributed in middle size fractions, but higher in the finest and coarsest fractions.

A diagnostic leaching test was conducted on the flotation tailings fractions. The test results are summarized in Figure 13-7 and Figure 13-8.

**Figure 13-7: Gold Occurrence – Abundancia-Gloria Flotation Tailings (after SGS, 2021)**

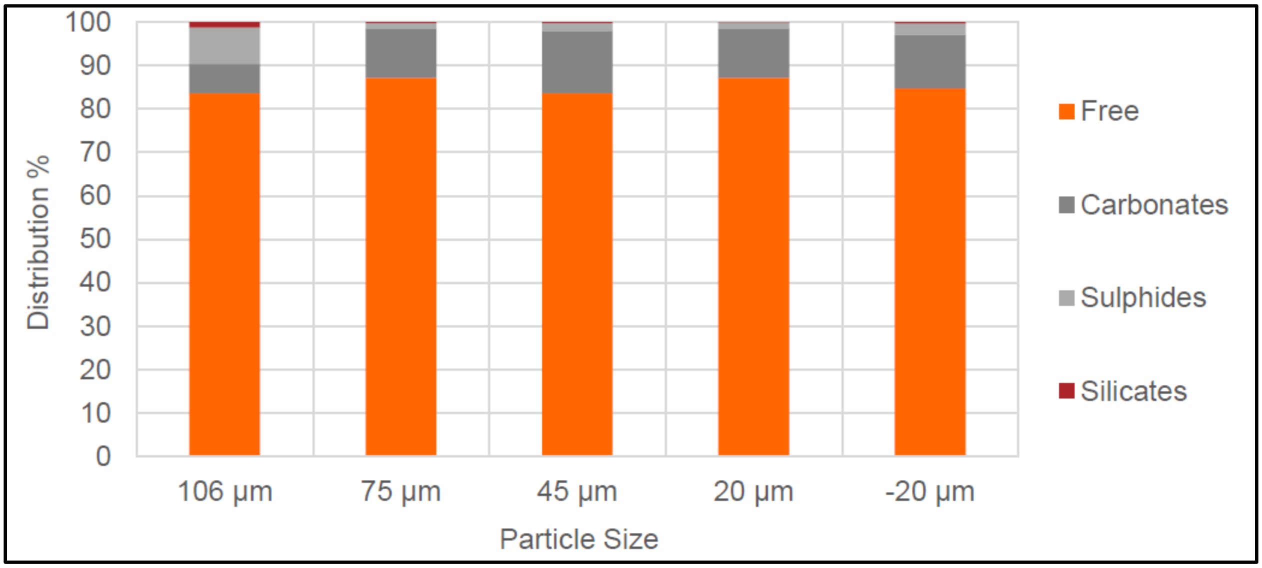
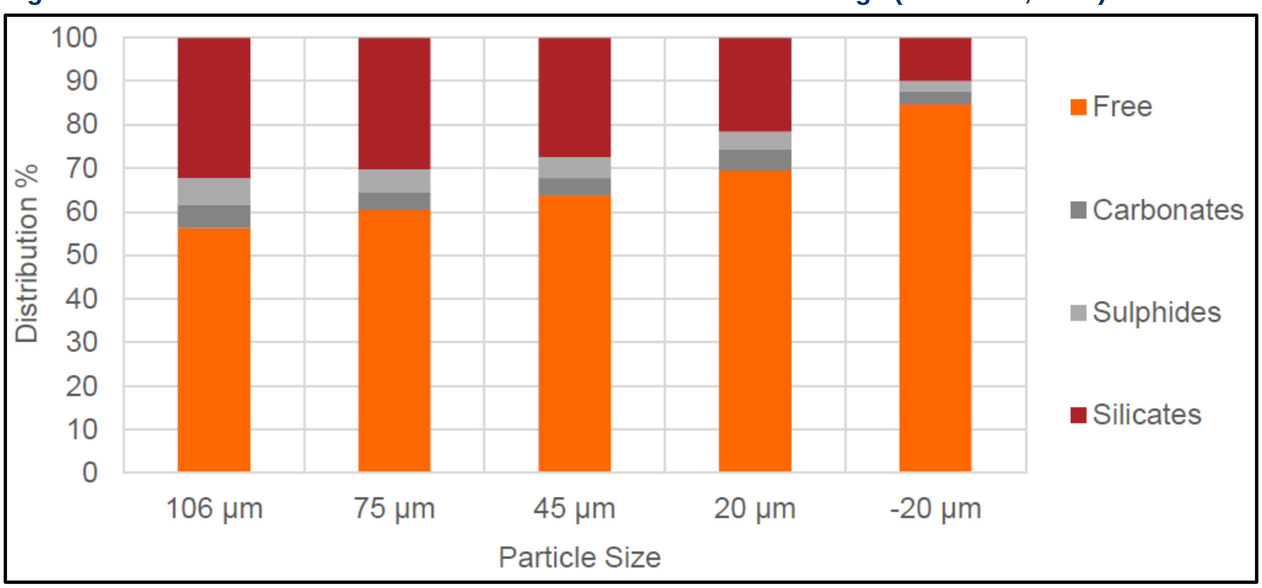



**Figure 13-8: Silver Occurrence – Abundancia-Gloria Flotation Tailings (after SGS, 2021)**



The results show that:

- The exposed gold in the different size fractions ranges from 83.7 to 87.2%, while the exposed silver is lower in the range of 56.3% to 84.7%.
- Between 9.9% and 32.2% of the silver in the different size fractions is associated with silicate minerals, compared to approximately 1% or less for the gold.
- Compared to silver, gold is more closely associated with carbonate minerals.

A separate diagnostic leaching test was conducted on a flotation tailings generated from the Abundancia-Gloria sample with a grind size of 80% passing 150 µm to investigate the associations of gold and silver with different types of minerals. The gold and silver occurrences of the tailings sample are shown in Table 13-2.

**Table 13-2: Diagnostic Leaching Test Results – Abundancia-Gloria Flotation Tailings**

| Stage | Extraction, % | |
|---|---|---|
| | Gold | Silver |
| Free | 71.8 | 57.1 |
| Locked in Carbonates | 11.5 | 7.1 |
| Locked in Sulfides | 8.5 | 5.4 |
| Locked in Silicates | 8.2 | 30.4 |
| **Total** | **100.0** | **100.0** |

### 13.2.3 Gravity Concentration

SGS also conducted gravity concentration tests separately on the Martha and Abundancia-Gloria composite samples using a Knelson concentrator (KC-MD3) at three different particle sizes, 80% passing 700 µm, 250 µm, and 74 µm respectively.

The test results indicate that

- 11.4% of the gold reports to a 1.3 g/t Au gravity concentrate for the Abundancia-Gloria sample and 13.5% to a 2.7 g/t Au concentrate for the Martha sample.
- 14.4% of the silver reports to a 1,391 g/t Ag concentrate for the Abundancia-Gloria sample and 20.8% to a 2,217 g/t Ag gravity concentrate for the Martha sample.
- The results imply that most of the gold and silver should not occur in coarse free gold and silver forms.

### 13.2.4 Filtration Test with Flotation Tailings

A series of filtration tests was carried out on the flotation tailings produced from the Abundancia-Gloria composite sample at a pressing pressure of 30 psi. The results show that the tailings should be amenable to pressure filtration.

**Table 13-3: Filtration Test Results – Flotation Tailings - Abundancia-Gloria Composite**

| Particle Size 80% passing (µm) | Thickness of the cake (mm) | Moisture (% w/w) | Filtration Rate ($t/m^2/hr.$) |
|---|---|---|---|
| 150 | 10 | 13.5 | 1.5 |
| 106 | 9.5 | 18.7 | 1.3 |
| 75 | 9.7 | 17.2 | 1.0 |

## 13.3 Recommendations

Further test work should be conducted to optimize test conditions and process flowsheet to improve overall metallurgical performance. Recommended test work is detailed in Section 26.0.

# 14.0 MINERAL RESOURCE ESTIMATES

## 14.1 Introduction

The La Preciosa veins present are narrow tabular units. A two-dimensional approach was first used for estimation on the La Preciosa Deposit by Marcelo Zangrandi (AMBA 2020), as an internal resource estimation exercise for Coeur. The QP believes that the two-dimensional approach is appropriate to this deposit.

When undertaking resource estimation on any deposit with narrow vein- or layer-like geometry, the variable of ultimate interest (e.g., grade) may not be the best variable for direct kriging (Bertoli et al., 2003). This is because the grade of mineralized intercepts is clearly defined, but on varying length or thickness supports. Grade can also be defined as the ratio of two other variables (thickness and accumulation – the product of grade by thickness potentially weighted by bulk density), which are amenable to direct kriging (Chiles and Delfiner, 1999). The variables of economic interest, i.e., those upon which economic decisions and optimizations will be made, are actually the projected horizontal or true geometric thickness (tonnage) and the accumulation (metal content) and not the grade. The grade over the thickness of the mineralized unit is easily obtained as the quotient of accumulation and the thickness. For bodies that have thickness less than or equal to the equipment size or selective mining unit cross-section, the grade of short intervals within the unit is of little importance, as high grades cannot be practically selectively mined. Two-dimensional estimation, using thickness and metal accumulations, has been successfully applied for many decades on the South African Witwatersrand Gold Mines.

Two-dimensional metal accumulations were estimated by the QP for the silver and gold grades of the veins, and the projected true thickness was estimated based on the attitude of the veins and intercept length. OK was applied as the primary method, with inverse distance estimates generated as a check. The QP has modified the earlier Zangrandi approach to use projected true thickness for each vein (rather than a generalized horizontal thickness), independently modelled variograms, search parameters and block model parameters, and using a dynamic workflow in Leapfrog Geo and Edge software.

## 14.2 Topographic Information

The topography provides an important limit to the extent of outcropping veins. In 2011, PAS commissioned PhotoSat™ to estimate the site topography using high-definition satellite photos (colour ortho photos with 50 cm resolution acquired on October 14, 2011) from which a digital elevation model (DEM) was built, and the DEM then reduced to a topographic map with 1, 5, 10, and 50 m contour intervals. PhotoSat reported an accuracy of ±30 cm on a 1 m grid. An unknown number of control points were established on the ground to register the satellite image to the project datum (datum used is WGS84).

## 14.3 Geological Models

During 2013 and 2014, Coeur reviewed the cores, interpreted the geological model, and revised the lithology classifications for an NI 43-101 Feasibility Study (Neff et al., 2014). The MRE used for this historic feasibility study was informed by an open pit mining method and the estimation method was Multiple Indicator Kriging applied independently to silver and gold.

In 2020, geological modelling of the veins was conducted by Hugo Zúñiga, Coeur staff geologist, using Leapfrog Geo software. The interpretation defined numerous vein bodies. A two-dimensional approach to mineral resource estimation was pioneered on the La Preciosa deposit during 2020, by Zangrandi (2020) as an unpublished internal mineral resource estimation exercise for Coeur. The estimation was carried out using Vulcan software.

In 2021, the QP remodelled the veins from the previous vein interpretations, added channel sampling sections, and estimated the mineral resource using a two-dimensional OK approach utilizing Leapfrog Geo 6.0.3 software and leapfrog EDGE.

During 2021, the domains and drillhole assay data were modified to include channel sampling data, depleted by historic mining voids and verified in Leapfrog Geo by the QP. Independent grade estimates were made using Leapfrog Edge by the QP.

The estimation workflow is as follows:

Vein composites were created for each drill hole or channel sample intercept of each mineralized vein. The composite length is the aggregated sample lengths comprising the samples of a single vein intercept, corrected to true width using the average inclination of the vein. The accumulations for Ag and Au are the aggregated products of grade and true thickness over the full vein thickness. The three variables, thickness (m), Ag accumulation (m.g/t), and Au accumulation (m.g/t) were estimated for 15 m x 15 m blocks over the thickness of the veins. Estimation was carried out using OK and inverse distance to the second power weighting.

**Figure 14-1: West-East Section Across La Preciosa Showing Significant Veins (Northing Y+2702185)**

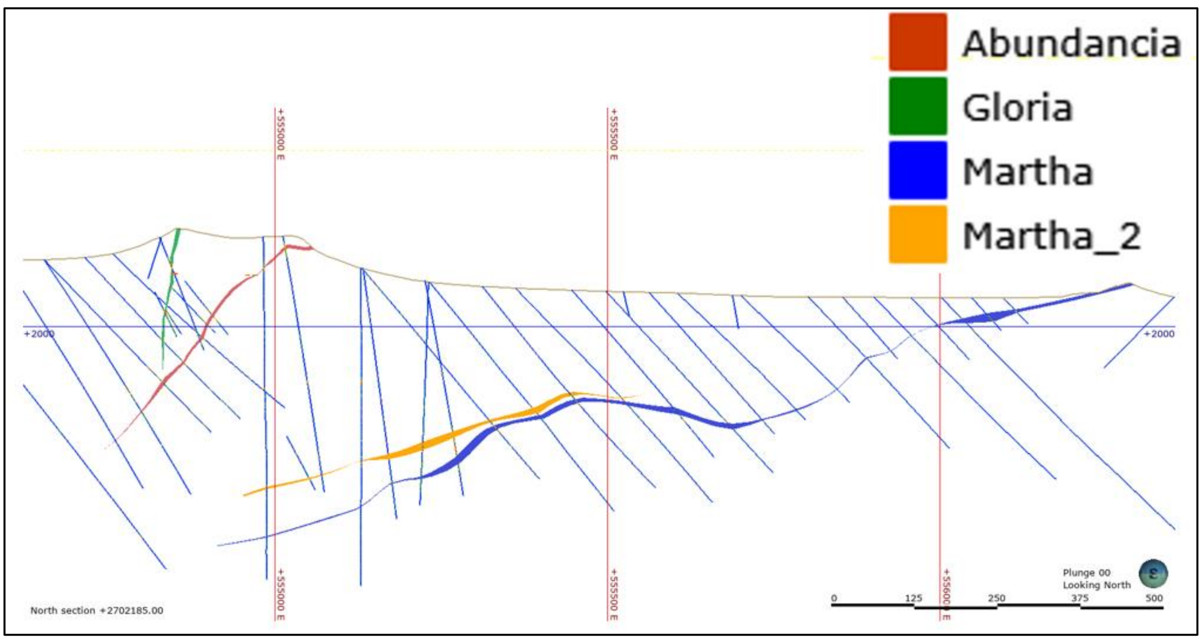
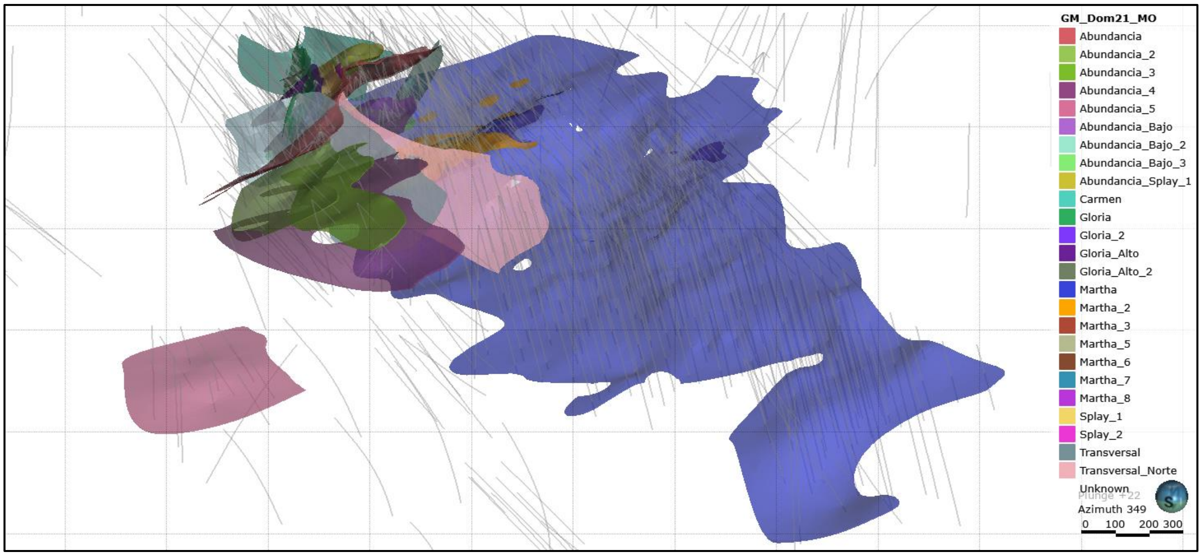


**Figure 14-2: Orthographic View of the Veins**




Source: Red Pennant, 2021

The resource estimation domains for the veins are shown in Figure 14-2.

## 14.4 Exploratory Data Analysis

The data for estimation consists of sampling and logging from 1,004 drillholes.

Silver and gold sample grade and sample length statistics for the veins constituting the Resource Estimation Domains are listed in Table 14-2.

**Table 14-1: Length-Weighted Silver and Gold Sample Grade and Sample Length Statistics for Vein Domains**

| Vein Grade Statistics weighting: Length-weighted<br>Name<br>Ag (g/t) | Total | Abundancia | Abundancia_2 | Abundancia_3 | Abundancia_4 | Abundancia_5 | Abundancia_Bajo | Abundancia_Bajo_2 | Abundancia_Bajo_3 | Abundancia_Splay_1 | Carmen | Gloria | Gloria_2 | Gloria_Alto | Gloria_Alto_2 | Martha | Martha_2 | Martha_3 | Martha_5 | Martha_6 | Martha_7 | Martha_8 | Splay_1 | Splay_2 | Transversal | Transversal_Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Count | 133406 | 1362 | 44 | 76 | 68 | 32 | 152 | 96 | 64 | 100 | 153 | 886 | 76 | 54 | 16 | 4919 | 464 | 76 | 16 | 249 | 67 | 46 | 97 | 37 | 169 | 164 |
| Length | 297462.8 | 1245.9 | 35.0 | 59.7 | 58.8 | 22.7 | 99.7 | 75.2 | 49.5 | 77.2 | 106.3 | 799.5 | 79.8 | 56.6 | 15.3 | 4107.9 | 374.9 | 50.3 | 14.5 | 170.9 | 57.6 | 54.2 | 100.9 | 26.3 | 139.1 | 113.1 |
| Mean | 7.1 | 186.5 | 64.0 | 113.2 | 72.8 | 68.2 | 131.3 | 185.5 | 201.1 | 115.9 | 130.1 | 215.3 | 117.9 | 68.8 | 35.6 | 118.7 | 233.9 | 93.9 | 123.6 | 121.7 | 158.0 | 69.3 | 137.1 | 137.7 | 121.3 | 71.8 |
| SD | 48.1 | 212.4 | 104.6 | 136.1 | 180.0 | 67.7 | 162.9 | 417.0 | 299.6 | 112.1 | 212.2 | 207.3 | 127.2 | 71.1 | 39.3 | 208.9 | 347.2 | 98.4 | 243.9 | 175.6 | 271.0 | 56.1 | 113.5 | 137.4 | 148.5 | 158.7 |
| Coefficient of variation | 6.8 | 1.1 | 1.6 | 1.2 | 2.5 | 1.0 | 1.2 | 2.2 | 1.5 | 1.0 | 1.6 | 1.0 | 1.1 | 1.0 | 1.1 | 1.8 | 1.5 | 1.0 | 2.0 | 1.4 | 1.7 | 0.8 | 0.8 | 1.0 | 1.2 | 2.2 |
| Variance | 2315.0 | 45105.0 | 10935.8 | 18531.8 | 32397.9 | 4585.5 | 26527.7 | 173895.0 | 89787.9 | 12569.6 | 45048.5 | 42966.0 | 16192.0 | 5052.2 | 1544.6 | 43651.9 | 120523.1 | 9691.2 | 59509.1 | 30823.6 | 73431.8 | 3143.7 | 12879.3 | 18875.0 | 22044.4 | 25200.5 |
| Minimum | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 | 0.8 | 7.9 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 13.2 | 9.1 | 1.2 | 4.3 | 13.5 | 15.1 | 11.4 | 0.0 | 0.0 |
| Median | 0.0 | 136.9 | 27.2 | 66.8 | 16.5 | 53.0 | 69.8 | 108.0 | 103.8 | 77.2 | 79.2 | 160.0 | 78.0 | 51.0 | 18.2 | 58.0 | 127.0 | 60.2 | 57.7 | 65.6 | 88.0 | 55.4 | 117.0 | 104.0 | 78.2 | 37.0 |
| Maximum | 5897.4 | 5897.4 | 614.0 | 670.0 | 968.0 | 319.0 | 708.0 | 3761.7 | 1361.6 | 722.0 | 1700.0 | 1805.0 | 850.0 | 373.0 | 133.0 | 4036.6 | 2818.0 | 666.0 | 1030.0 | 1828.3 | 1770.0 | 194.0 | 619.0 | 743.0 | 1314.5 | 1480.0 |
| Au (g/t) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Count | 133406 | 1362 | 44 | 76 | 68 | 32 | 152 | 96 | 64 | 100 | 153 | 886 | 76 | 54 | 16 | 4919 | 464 | 76 | 16 | 249 | 67 | 46 | 97 | 37 | 169 | 164 |
| Length | 297462.768 | 1245.852 | 35.030 | 59.721 | 58.841 | 22.700 | 99.710 | 75.230 | 49.525 | 77.225 | 106.349 | 799.473 | 79.804 | 56.581 | 15.291 | 4107.939 | 374.909 | 50.250 | 14.500 | 170.920 | 57.600 | 54.190 | 100.858 | 26.310 | 139.143 | 113.054 |
| Mean | 0.017 | 0.366 | 0.076 | 0.152 | 0.056 | 0.282 | 0.155 | 0.111 | 0.266 | 0.289 | 0.166 | 0.432 | 0.457 | 0.091 | 0.080 | 0.237 | 0.506 | 0.157 | 0.447 | 0.261 | 0.207 | 0.079 | 0.244 | 0.157 | 0.144 | 0.108 |
| SD | 0.164 | 0.754 | 0.086 | 0.216 | 0.143 | 0.539 | 0.225 | 0.145 | 0.278 | 0.449 | 0.187 | 0.951 | 2.016 | 0.104 | 0.133 | 0.535 | 0.796 | 0.186 | 0.307 | 0.171 | 0.169 | 0.050 | 0.447 | 0.141 | 0.149 | 0.140 |
| Coefficient of variation | 9.904 | 2.060 | 1.137 | 1.421 | 2.535 | 1.911 | 1.449 | 1.305 | 1.045 | 1.554 | 1.123 | 2.201 | 4.410 | 1.136 | 1.670 | 2.260 | 1.573 | 1.178 | 0.685 | 0.656 | 0.815 | 0.632 | 1.831 | 0.898 | 1.033 | 1.297 |
| Variance | 0.027 | 0.569 | 0.007 | 0.047 | 0.020 | 0.290 | 0.050 | 0.021 | 0.077 | 0.202 | 0.035 | 0.905 | 4.064 | 0.011 | 0.018 | 0.287 | 0.634 | 0.034 | 0.094 | 0.029 | 0.029 | 0.002 | 0.200 | 0.020 | 0.022 | 0.020 |
| Minimum | 0.000 | 0.000 | 0.006 | 0.001 | 0.001 | 0.007 | 0.003 | 0.005 | 0.000 | 0.001 | 0.000 | 0.000 | 0.021 | 0.000 | 0.001 | 0.000 | 0.001 | 0.005 | 0.073 | 0.007 | 0.010 | 0.010 | 0.006 | 0.018 | 0.001 | 0.000 |

*table continues…*

| Vein Grade Statistics weighting: Length-weighted | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ag (g/t) | Total | Abundancia | Abundancia_2 | Abundancia_3 | Abundancia_4 | Abundancia_5 | Abundancia_Bajo | Abundancia_Bajo_2 | Abundancia_Bajo_3 | Abundancia_Splay_1 | Carmen | Gloria | Gloria_2 | Gloria_Alto | Gloria_Alto_2 | Martha | Martha_2 | Martha_3 | Martha_5 | Martha_6 | Martha_7 | Martha_8 | Splay_1 | Splay_2 | Transversal | Transversal_Norte |
| Median | 0.001 | 0.200 | 0.047 | 0.075 | 0.010 | 0.096 | 0.084 | 0.072 | 0.170 | 0.135 | 0.115 | 0.227 | 0.137 | 0.061 | 0.011 | 0.106 | 0.279 | 0.089 | 0.359 | 0.226 | 0.151 | 0.065 | 0.142 | 0.128 | 0.097 | 0.060 |
| Maximum | 70.900 | 16.850 | 0.429 | 1.195 | 0.852 | 2.387 | 2.160 | 1.610 | 1.199 | 3.720 | 1.030 | 23.000 | 18.000 | 0.479 | 0.409 | 33.737 | 7.671 | 1.175 | 1.187 | 0.934 | 0.958 | 0.235 | 3.650 | 0.907 | 0.840 | 0.942 |
| Sample length (m) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Count | 133406 | 1362 | 44 | 76 | 68 | 32 | 152 | 96 | 64 | 100 | 153 | 886 | 76 | 54 | 16 | 4919 | 464 | 76 | 16 | 249 | 67 | 46 | 97 | 37 | 169 | 164 |
| Mean | 2.23 | 0.91 | 0.80 | 0.79 | 0.87 | 0.71 | 0.66 | 0.78 | 0.77 | 0.77 | 0.70 | 0.90 | 1.05 | 1.05 | 0.96 | 0.84 | 0.81 | 0.66 | 0.91 | 0.69 | 0.86 | 1.18 | 1.04 | 0.71 | 0.82 | 0.69 |
| SD | 12.59 | 0.48 | 0.52 | 0.44 | 0.54 | 0.31 | 0.46 | 0.35 | 0.63 | 0.53 | 0.45 | 0.49 | 0.48 | 0.50 | 0.55 | 0.52 | 0.42 | 0.34 | 0.32 | 0.35 | 0.42 | 0.49 | 0.45 | 0.41 | 0.41 | 0.50 |
| Coefficient of variation | 5.65 | 0.53 | 0.66 | 0.56 | 0.62 | 0.43 | 0.71 | 0.45 | 0.82 | 0.69 | 0.65 | 0.55 | 0.46 | 0.48 | 0.58 | 0.63 | 0.52 | 0.52 | 0.36 | 0.51 | 0.49 | 0.42 | 0.43 | 0.58 | 0.50 | 0.73 |
| Variance | 158.63 | 0.23 | 0.28 | 0.19 | 0.29 | 0.09 | 0.21 | 0.12 | 0.40 | 0.28 | 0.20 | 0.24 | 0.23 | 0.25 | 0.30 | 0.27 | 0.17 | 0.12 | 0.10 | 0.12 | 0.18 | 0.24 | 0.20 | 0.17 | 0.17 | 0.25 |
| Minimum | 0.00 | 0.00 | 0.12 | 0.08 | 0.00 | 0.30 | 0.14 | 0.20 | 0.17 | 0.05 | 0.17 | 0.03 | 0.35 | 0.17 | 0.20 | 0.03 | 0.10 | 0.20 | 0.25 | 0.17 | 0.20 | 0.50 | 0.04 | 0.20 | 0.15 | 0.02 |
| Median | 0.80 | 0.90 | 0.64 | 0.75 | 0.80 | 0.65 | 0.50 | 0.85 | 0.60 | 0.65 | 0.60 | 0.85 | 1.00 | 1.00 | 0.93 | 0.80 | 0.85 | 0.63 | 0.80 | 0.70 | 0.85 | 1.05 | 1.00 | 0.60 | 0.75 | 0.52 |
| Maximum | 577.29 | 6.13 | 2.00 | 2.00 | 2.10 | 1.50 | 2.00 | 1.65 | 4.45 | 4.37 | 2.00 | 6.87 | 2.00 | 2.05 | 2.00 | 9.00 | 3.35 | 1.40 | 1.65 | 2.00 | 3.00 | 3.10 | 2.30 | 2.00 | 2.00 | 2.95 |

Histograms (logarithmic) of the silver sample grade distributions of Martha, Martha 2, Abundancia, and Gloria Veins are shown in Figure 14-3 to Figure 14-6, inclusive.

**Figure 14-3: Log Histogram of Sample Silver Grades for Martha Vein**

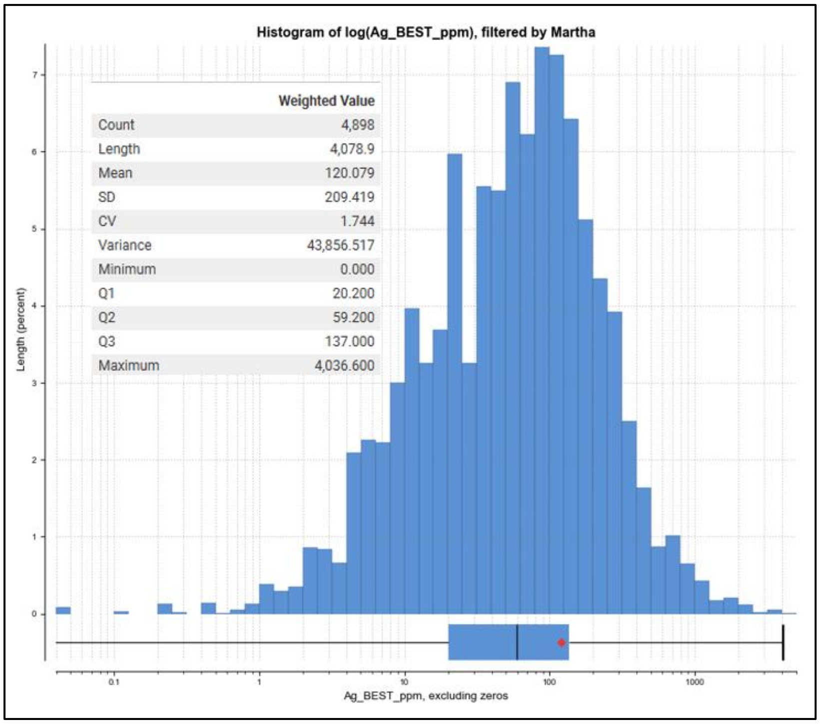
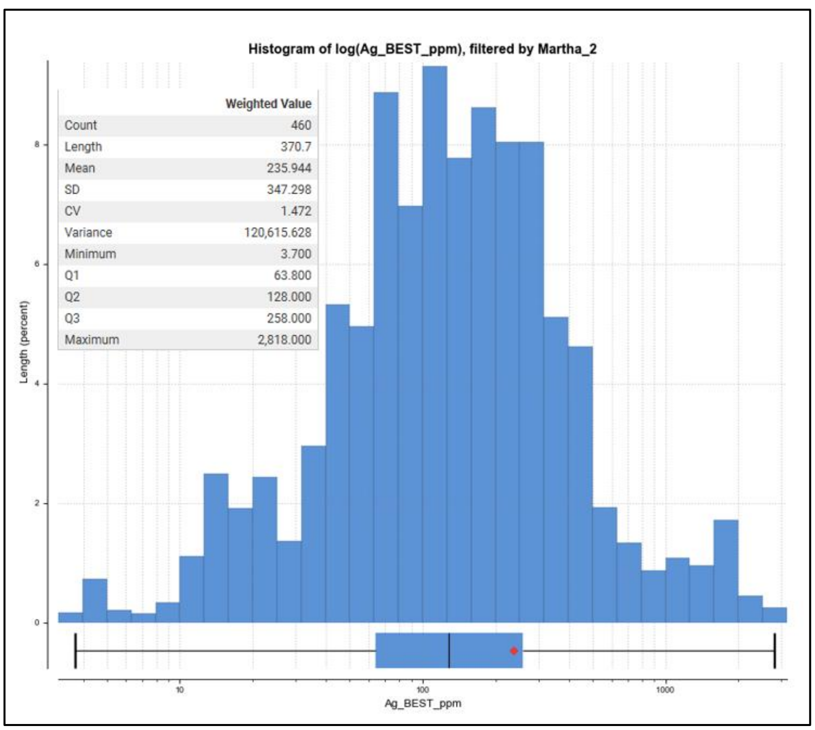
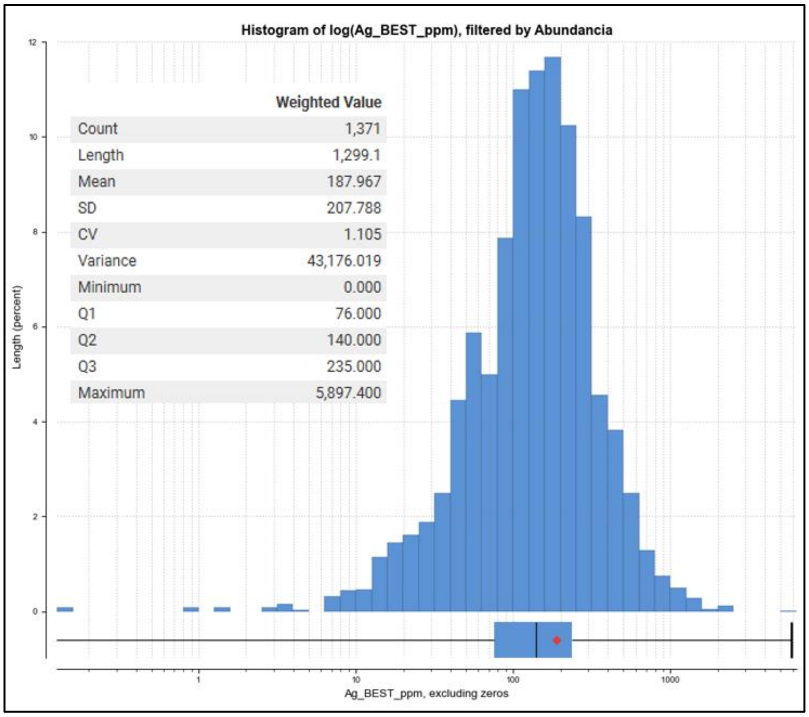


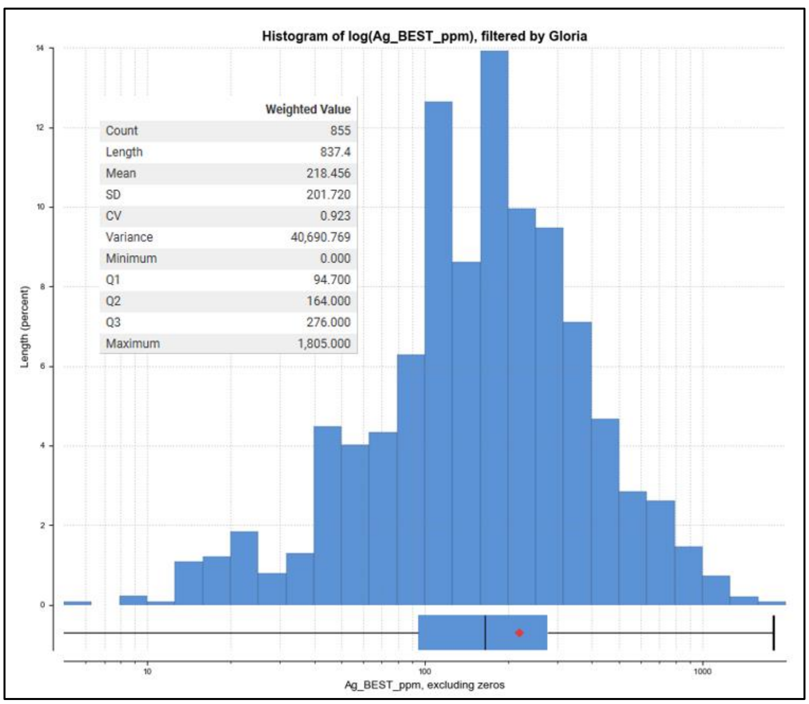

**Figure 14-4: Log Histogram of Sample Silver Grades for Martha 2 Vein**



## Figure 14-5: Log Histogram of Sample Silver Grades for Abundancia Vein

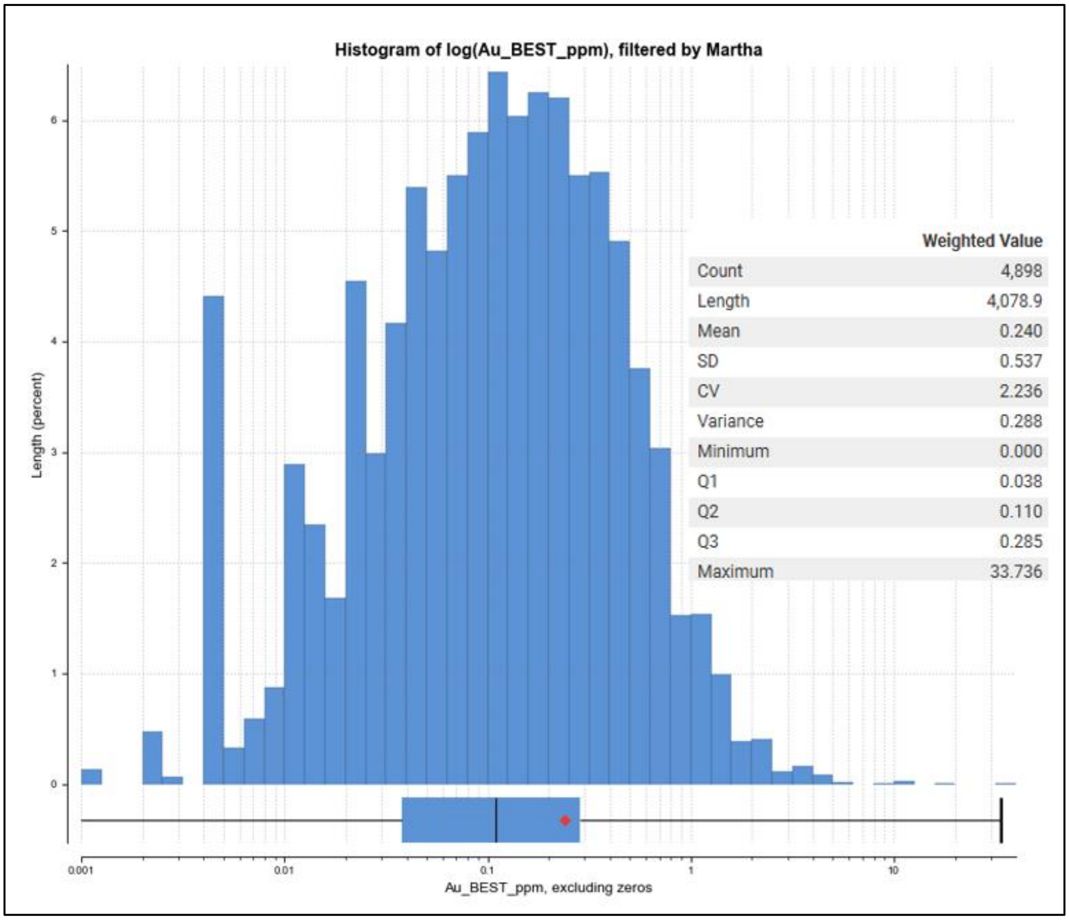



## Figure 14-6: Log Histogram of Sample Silver Grades for Gloria Vein

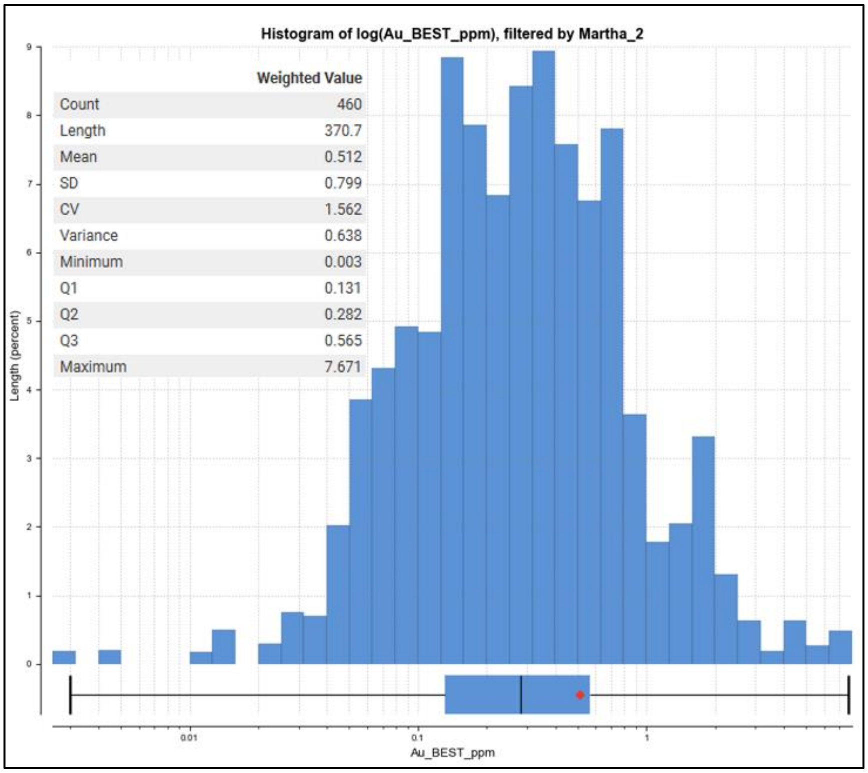


Histograms (logarithmic) of the silver sample grade distributions of Martha, Martha 2, Abundancia, and Gloria Veins are shown in Figure 14-7 to Figure 14-10, inclusive.

**Figure 14-7: Log Histogram of Sample Gold Grades for Martha Vein**



### Figure 14-8: Log Histogram of Sample Gold Grades for Martha 2 Vein




### Figure 14-9: Log Histogram of Sample Gold Grades for Abundancia Vein

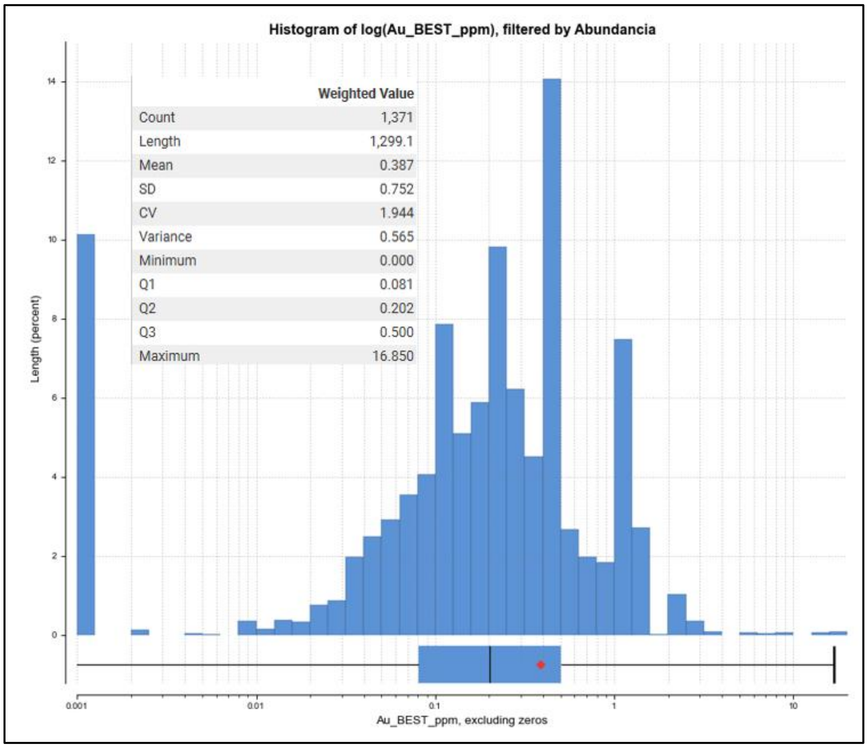
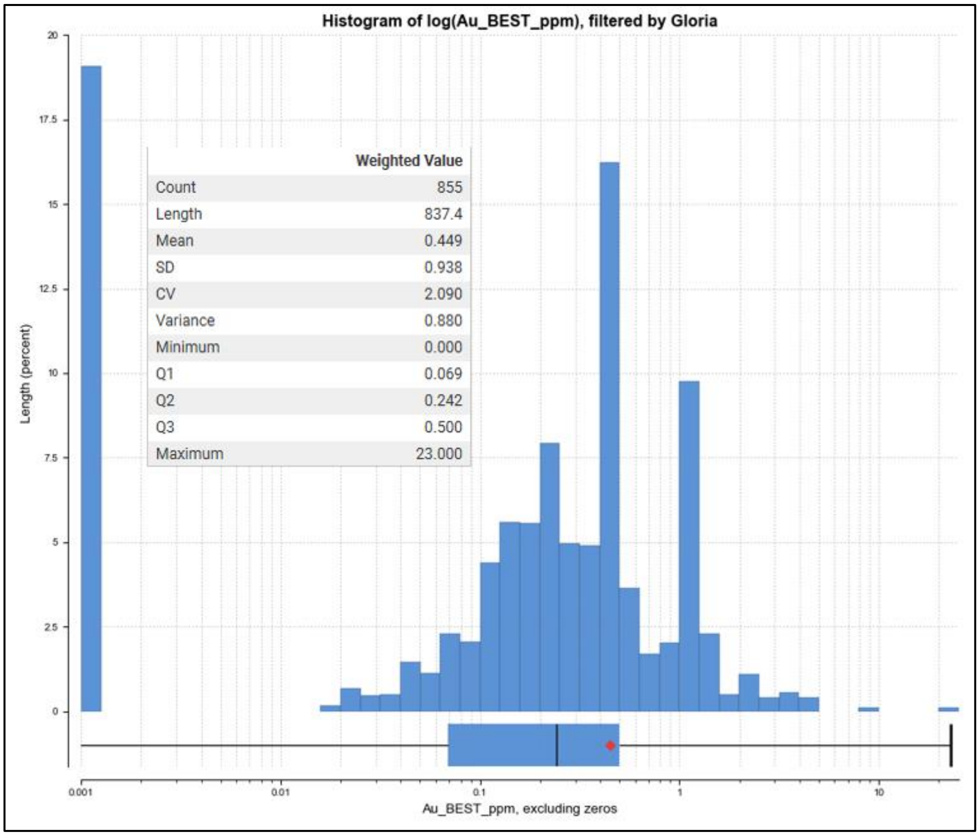


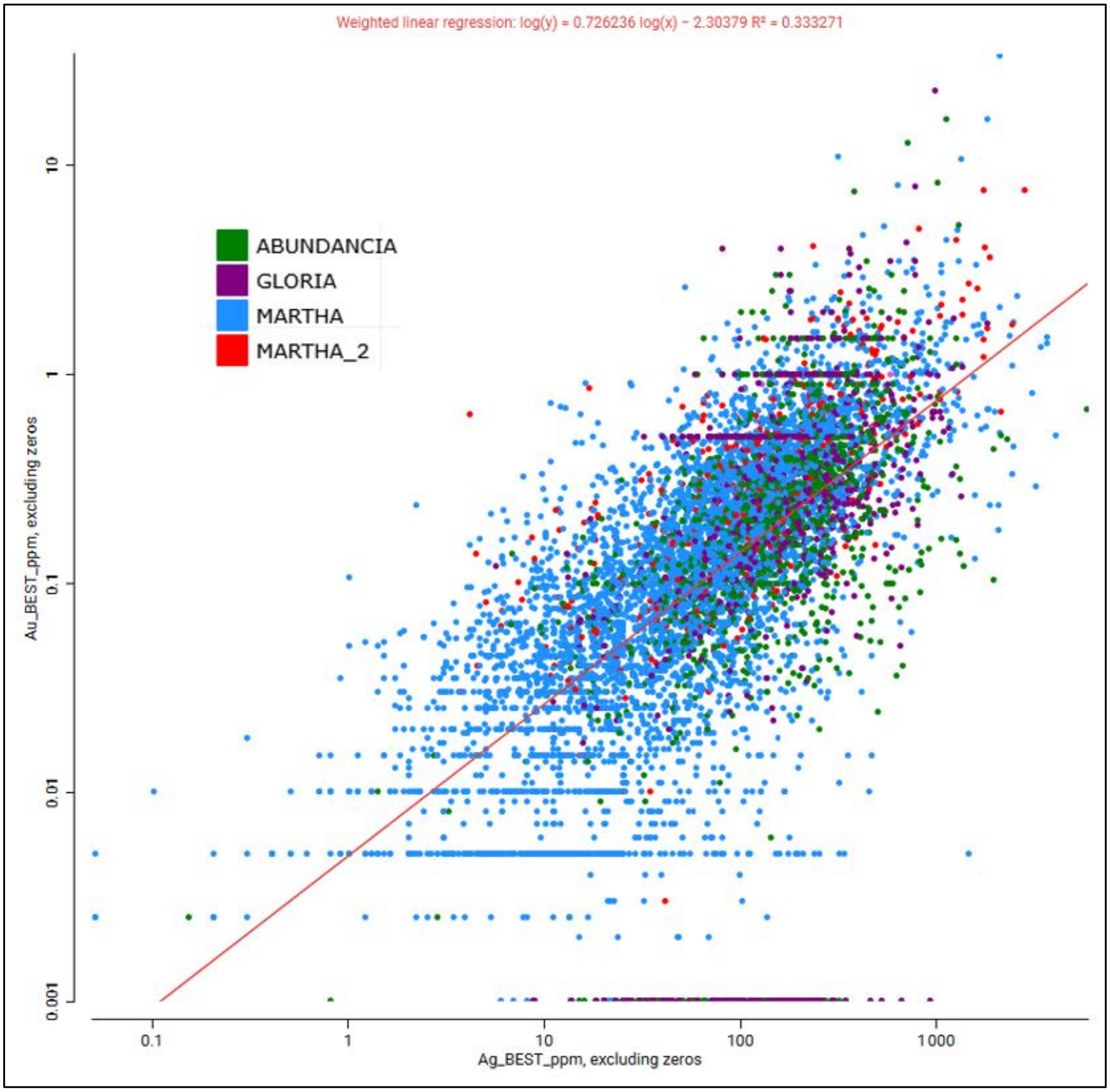
**Figure 14-10: Log Histogram of Sample Gold Grades for Gloria Vein**




The gold and silver grade distributions all show similar approximations to lognormality.

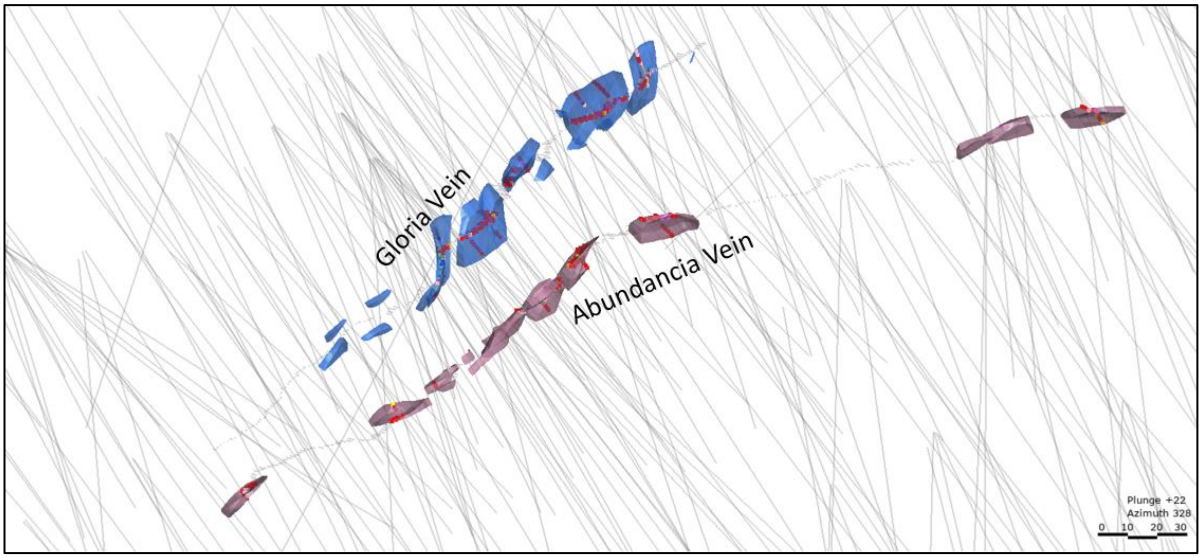
The gold grades are positively and significantly correlated with the silver grades (e.g., for Martha, Martha 2, Abundancia, and Gloria Veins, see Figure 14-11).

**Figure 14-11: Scatterplot (Logarithmic) of Gold vs. Silver for the Four Main Veins**



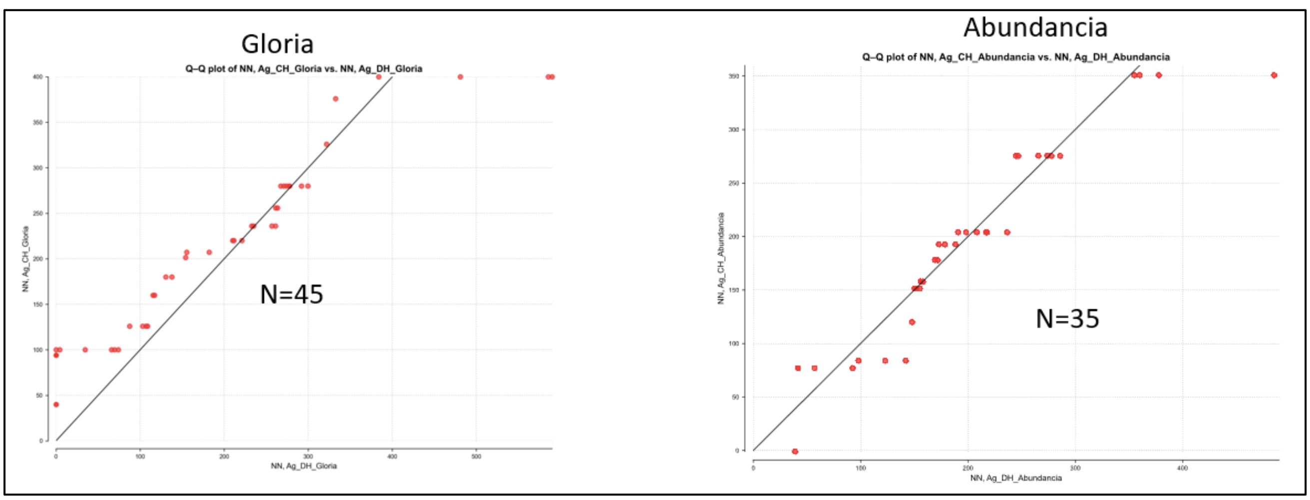

Channel sampling was carried out by Coeur in drifts on the Abundancia and Gloria Veins. 426 samples (482.2 m) were captured on the Abundancia Vein and 336 samples (380.5 m) on the Gloria Vein. The property has been drilled intensively in the vicinity of the underground development, allowing the two types of sampling data to be compared. The channel samples were statistically compared with diamond drill samples where both types were present within 10 m of each other within the veins. The samples were composited to 1 m lengths, and nearest neighbours (Gloria: 45 pairs, Abundancia: 35 pairs) were compared by means of scatterplots and Q-Q plots to assess whether it was reasonable or not to consider them as a single population. The channel samples and closest drill samples within 10 m proximity are shown in Figure 14-2.

**Figure 14-12: Oblique View of Proximity Volumes for Channel Samples and Drill Samples in Gloria and Abundancia Veins**




Despite the different methods of sampling, the Q-Q plots (see Figure 14-13) approached the ideal 45° line, thus indicating that the populations of channel and drill samples for the Abundancia and Gloria veins are similar. Consequently, the QP decided to use the channel sampling and drill sampling in the mineral resource estimation process.

**Figure 14-13: Q-Q Plots Illustrating the Similarity Between Channel and Drill Samples Within 10 m Proximity.**



## 14.5 Estimation Process

Following the reasoning described in Section 14.1, and due to the variable length sample support, silver (and gold) accumulation was selected to estimate the silver and gold grades for the 23 mineralized veins.

Sample accumulations were composited across the full width of the vein. The accumulated products of metal grade and sample thickness (true width) and accumulated true thickness were stored for each intercept. The intercept length and the length weighted accumulations average grades and thickness across the vein for silver and gold are summarized by estimation domain in Table 14-2.

**Table 14-2 Vein Composite Statistical Summary**

| Variable | Vein | Count | Total Length (m) | Mean | SD | Coefficient of Variation | Variance | Minimum | Median | Maximum |
|---|---|---|---|---|---|---|---|---|---|---|
| Ag acc (m.g/t) | Abundancia | 428 | 1245.9 | 667.53 | 696.64 | 1.04 | 485309.79 | 0.00 | 430.16 | 4536.17 |
| Ag acc (m.g/t) | Abundancia_2 | 23 | 35.0 | 117.35 | 168.82 | 1.44 | 28501.47 | 2.31 | 69.27 | 645.84 |
| Ag acc (m.g/t) | Abundancia_3 | 29 | 59.7 | 237.25 | 211.13 | 0.89 | 44575.85 | 0.01 | 167.21 | 914.45 |
| Ag acc (m.g/t) | Abundancia_4 | 34 | 58.8 | 149.24 | 249.00 | 1.67 | 61998.77 | 0.00 | 29.00 | 709.26 |
| Ag acc (m.g/t) | Abundancia_5 | 12 | 22.7 | 151.26 | 143.31 | 0.95 | 20537.77 | 6.96 | 101.60 | 386.94 |
| Ag acc (m.g/t) | Abundancia_Bajo | 36 | 99.7 | 407.05 | 328.03 | 0.81 | 107601.54 | 4.08 | 253.07 | 1254.77 |
| Ag acc (m.g/t) | Abundancia_Bajo_2 | 30 | 75.2 | 525.21 | 397.51 | 0.76 | 158010.51 | 1.93 | 500.60 | 3109.74 |
| Ag acc (m.g/t) | Abundancia_Bajo_3 | 24 | 49.5 | 489.47 | 504.36 | 1.03 | 254382.41 | 0.00 | 342.93 | 1678.65 |
| Ag acc (m.g/t) | Abundancia_Splay_1 | 42 | 77.2 | 344.21 | 421.03 | 1.22 | 177264.12 | 0.00 | 167.00 | 1454.06 |
| Ag acc (m.g/t) | Carmen | 12 | 106.3 | 157.59 | 128.75 | 0.82 | 16576.77 | 0.00 | 128.59 | 323.04 |
| Ag acc (m.g/t) | Gloria | 280 | 799.5 | 891.92 | 799.28 | 0.90 | 638843.00 | 0.00 | 639.07 | 4350.09 |
| Ag acc (m.g/t) | Gloria_2 | 36 | 79.8 | 246.78 | 160.55 | 0.65 | 25775.04 | 20.49 | 210.27 | 556.96 |
| Ag acc (m.g/t) | Gloria_Alto | 30 | 56.6 | 195.59 | 148.62 | 0.76 | 22088.51 | 0.00 | 166.75 | 554.77 |
| Ag acc (m.g/t) | Gloria_Alto_2 | 16 | 15.3 | 38.50 | 46.40 | 1.21 | 2153.27 | 0.00 | 18.35 | 127.44 |
| Ag acc (m.g/t) | Gloria_Alto_2 | 16 | 15.3 | 0.10 | 0.21 | 2.04 | 0.04 | 0.00 | 0.02 | 0.66 |

*table continues…*

| Variable | Vein | Count | Total Length (m) | Mean | SD | Coefficient of Variation | Variance | Minimum | Median | Maximum |
|---|---|---|---|---|---|---|---|---|---|---|
| Ag acc (m.g/t) | Martha | 574 | 4107.9 | 1538.18 | 1827.94 | 1.19 | 3341355.02 | 0.00 | 832.78 | 9065.98 |
| Ag acc (m.g/t) | Martha_2 | 75 | 374.9 | 1722.04 | 1708.34 | 0.99 | 2918413.17 | 0.00 | 1225.96 | 7159.84 |
| Ag acc (m.g/t) | Martha_3 | 16 | 50.3 | 421.60 | 341.24 | 0.81 | 116445.07 | 39.32 | 256.37 | 954.98 |
| Ag acc (m.g/t) | Martha_5 | 6 | 14.5 | 404.86 | 400.93 | 0.99 | 160747.83 | 10.57 | 366.52 | 1025.45 |
| Ag acc (m.g/t) | Martha_6 | 54 | 170.9 | 907.68 | 1010.10 | 1.11 | 1020299.09 | 1.03 | 360.84 | 2854.20 |
| Ag acc (m.g/t) | Martha_7 | 16 | 57.6 | 1214.17 | 1225.03 | 1.01 | 1500686.68 | 68.16 | 515.22 | 2826.92 |
| Ag acc (m.g/t) | Martha_8 | 9 | 54.2 | 547.01 | 326.68 | 0.60 | 106721.33 | 68.56 | 696.94 | 999.83 |
| Ag acc (m.g/t) | Splay_1 | 38 | 100.9 | 489.09 | 346.47 | 0.71 | 120044.01 | 4.06 | 379.09 | 1034.57 |
| Ag acc (m.g/t) | Splay_2 | 14 | 26.3 | 377.91 | 310.92 | 0.82 | 96670.46 | 34.13 | 206.49 | 816.44 |
| Ag acc (m.g/t) | Transversal | 42 | 139.1 | 470.68 | 431.07 | 0.92 | 185822.08 | 0.00 | 333.19 | 1760.29 |
| Ag acc (m.g/t) | Transversal_ Norte | 35 | 113.1 | 274.66 | 376.79 | 1.37 | 141970.76 | 0.00 | 148.93 | 2110.07 |
| Au acc (m.g/t) | Abundancia | 428 | 1245.9 | 1.14 | 1.52 | 1.34 | 2.30 | 0.00 | 0.83 | 15.04 |
| Au acc (m.g/t) | Abundancia_ 2 | 23 | 35.0 | 0.14 | 0.12 | 0.84 | 0.01 | 0.00 | 0.13 | 0.47 |
| Au acc (m.g/t) | Abundancia_ 3 | 29 | 59.7 | 0.33 | 0.31 | 0.93 | 0.09 | 0.00 | 0.22 | 1.16 |
| Au acc (m.g/t) | Abundancia_ 4 | 36 | 58.8 | 0.08 | 0.12 | 1.55 | 0.02 | 0.00 | 0.02 | 0.49 |
| Au acc (m.g/t) | Abundancia_ 5 | 12 | 22.7 | 0.65 | 0.82 | 1.26 | 0.68 | 0.04 | 0.43 | 2.61 |
| Au acc (m.g/t) | Abundancia_ Bajo | 36 | 99.7 | 0.53 | 0.40 | 0.75 | 0.16 | 0.01 | 0.36 | 1.42 |

*table continues…*

| Variable | Vein | Count | Total Length (m) | Mean | SD | Coefficient of Variation | Variance | Minimum | Median | Maximum |
|---|---|---|---|---|---|---|---|---|---|---|
| Au acc (m.g/t) | Abundancia_ Bajo_2 | 30 | 75.2 | 0.34 | 0.17 | 0.50 | 0.03 | 0.00 | 0.34 | 0.67 |
| Au acc (m.g/t) | Abundancia_ Bajo_3 | 25 | 49.5 | 0.64 | 0.50 | 0.78 | 0.25 | 0.00 | 0.59 | 1.59 |
| Au acc (m.g/t) | Abundancia_ Splay_1 | 42 | 77.2 | 0.84 | 0.94 | 1.11 | 0.87 | 0.00 | 0.40 | 2.78 |
| Au acc (m.g/t) | Carmen | 12 | 106.3 | 0.20 | 0.16 | 0.80 | 0.03 | 0.00 | 0.17 | 0.42 |
| Au acc (m.g/t) | Gloria | 280 | 799.5 | 1.46 | 1.77 | 1.21 | 3.12 | 0.00 | 1.23 | 21.13 |
| Au acc (m.g/t) | Gloria_2 | 36 | 79.8 | 0.75 | 1.41 | 1.89 | 2.00 | 0.03 | 0.43 | 8.64 |
| Au acc (m.g/t) | Gloria_Alto | 30 | 56.6 | 0.25 | 0.23 | 0.94 | 0.05 | 0.00 | 0.21 | 1.10 |
| Au acc (m.g/t) | Martha | 574 | 4107.9 | 2.93 | 3.27 | 1.12 | 10.68 | 0.00 | 1.51 | 14.54 |
| Au acc (m.g/t) | Martha_2 | 75 | 374.9 | 3.55 | 3.18 | 0.90 | 10.10 | 0.00 | 2.30 | 12.31 |
| Au acc (m.g/t) | Martha_3 | 16 | 50.3 | 0.73 | 0.73 | 1.00 | 0.54 | 0.03 | 0.32 | 2.11 |
| Au acc (m.g/t) | Martha_5 | 6 | 14.5 | 1.65 | 0.86 | 0.52 | 0.75 | 0.02 | 1.84 | 2.34 |
| Au acc (m.g/t) | Martha_6 | 54 | 170.9 | 1.67 | 1.37 | 0.82 | 1.87 | 0.01 | 1.23 | 4.06 |
| Au acc (m.g/t) | Martha_7 | 16 | 57.6 | 1.54 | 1.34 | 0.87 | 1.81 | 0.06 | 0.89 | 3.29 |
| Au acc (m.g/t) | Martha_8 | 9 | 54.2 | 0.66 | 0.41 | 0.61 | 0.16 | 0.05 | 0.66 | 1.10 |
| Au acc (m.g/t) | Splay_1 | 38 | 100.9 | 0.85 | 0.87 | 1.02 | 0.75 | 0.01 | 0.55 | 4.00 |
| Au acc (m.g/t) | Splay_2 | 14 | 26.3 | 0.50 | 0.43 | 0.86 | 0.18 | 0.03 | 0.34 | 1.07 |
| Au acc (m.g/t) | Transversal | 42 | 139.1 | 0.57 | 0.42 | 0.73 | 0.18 | 0.00 | 0.60 | 1.43 |
| Au acc (m.g/t) | Transversal_ Norte | 35 | 113.1 | 0.45 | 0.40 | 0.88 | 0.16 | 0.00 | 0.38 | 1.90 |

*table continues…*

| Variable | Vein | Count | Total Length (m) | Mean | SD | Coefficient of Variation | Variance | Minimum | Median | Maximum |
|---|---|---|---|---|---|---|---|---|---|---|
| True thickness (m) | Abundancia | 428 | 1245.9 | 3.64 | 2.41 | 0.66 | 5.82 | 0.00 | 3.10 | 11.84 |
| True thickness (m) | Abundancia_2 | 23 | 35.0 | 2.17 | 1.10 | 0.51 | 1.22 | 0.19 | 2.36 | 3.91 |
| True thickness (m) | Abundancia_3 | 29 | 59.7 | 2.22 | 1.02 | 0.46 | 1.05 | 0.21 | 1.87 | 3.86 |
| True thickness (m) | Abundancia_4 | 36 | 58.8 | 1.97 | 0.94 | 0.48 | 0.88 | 0.17 | 1.83 | 3.85 |
| True thickness (m) | Abundancia_5 | 12 | 22.7 | 2.06 | 0.72 | 0.35 | 0.52 | 0.95 | 1.68 | 3.06 |
| True thickness (m) | Abundancia_Bajo | 36 | 99.7 | 3.51 | 1.50 | 0.43 | 2.25 | 0.31 | 3.84 | 6.47 |
| True thickness (m) | Abundancia_Bajo_2 | 30 | 75.2 | 3.56 | 1.62 | 0.45 | 2.62 | 0.28 | 3.83 | 5.71 |
| True thickness (m) | Abundancia_Bajo_3 | 25 | 49.5 | 2.60 | 1.36 | 0.52 | 1.86 | 0.43 | 2.46 | 5.06 |
| True thickness (m) | Abundancia_Splay_1 | 42 | 77.2 | 2.75 | 1.88 | 0.68 | 3.54 | 0.40 | 2.28 | 7.26 |
| True thickness (m) | Carmen | 12 | 106.3 | 1.13 | 0.96 | 0.85 | 0.93 | 0.01 | 0.66 | 3.09 |
| True thickness (m) | Gloria | 280 | 799.5 | 3.96 | 2.51 | 0.63 | 6.29 | 0.03 | 3.20 | 10.34 |
| True thickness (m) | Gloria_2 | 36 | 79.8 | 2.30 | 0.92 | 0.40 | 0.85 | 0.46 | 2.31 | 4.12 |
| True thickness (m) | Gloria_Alto | 30 | 56.6 | 2.77 | 1.20 | 0.43 | 1.44 | 0.17 | 3.24 | 4.52 |

*table continues…*

| Variable | Vein | Count | Total Length (m) | Mean | SD | Coefficient of Variation | Variance | Minimum | Median | Maximum |
|---|---|---|---|---|---|---|---|---|---|---|
| True thickness (m) | Gloria_Alto_2 | 16 | 15.3 | 1.19 | 0.51 | 0.43 | 0.26 | 0.19 | 1.12 | 1.99 |
| True thickness (m) | Martha | 574 | 4107.9 | 11.88 | 7.97 | 0.67 | 63.47 | 0.14 | 10.46 | 46.72 |
| True thickness (m) | Martha_2 | 75 | 374.9 | 7.02 | 3.34 | 0.48 | 11.16 | 0.19 | 6.40 | 12.69 |
| True thickness (m) | Martha_3 | 16 | 50.3 | 4.21 | 1.89 | 0.45 | 3.57 | 0.62 | 4.06 | 6.50 |
| True thickness (m) | Martha_5 | 6 | 14.5 | 3.37 | 1.42 | 0.42 | 2.01 | 0.24 | 3.66 | 4.60 |
| True thickness (m) | Martha_6 | 54 | 170.9 | 6.13 | 4.46 | 0.73 | 19.93 | 0.21 | 4.69 | 13.64 |
| True thickness (m) | Martha_7 | 16 | 57.6 | 6.54 | 4.04 | 0.62 | 16.32 | 0.60 | 5.78 | 11.79 |
| True thickness (m) | Martha_8 | 9 | 54.2 | 8.69 | 6.01 | 0.69 | 36.09 | 1.83 | 8.22 | 15.81 |
| True thickness (m) | Splay_1 | 38 | 100.9 | 3.44 | 1.72 | 0.50 | 2.97 | 0.03 | 2.63 | 7.18 |
| True thickness (m) | Splay_2 | 14 | 26.3 | 2.96 | 1.84 | 0.62 | 3.39 | 0.40 | 3.63 | 5.60 |
| True thickness (m) | Transversal | 42 | 139.1 | 3.72 | 1.94 | 0.52 | 3.76 | 0.44 | 3.26 | 6.62 |
| True thickness (m) | Transversal_Norte | 35 | 113.1 | 4.28 | 2.54 | 0.59 | 6.47 | 0.18 | 3.65 | 8.93 |

The composited accumulation values and the thickness of the veins were independently estimated using OK and inverse distance weighting (ID). The grades were estimated as the quotient of the accumulation estimates and the thickness estimates.

The QP considers that two-dimensional (accumulation) estimation of metal accumulations (metal sample grade multiplied by thickness, accumulated over total vein thickness) and vein thickness are appropriate for estimation of relatively narrow veins (Bertoli et.al, 2003).

## 14.6 Domain Estimation Boundaries

Grade estimates in each of the vein domains were treated as discrete ("hard") boundaries and only the composites falling within each vein volume were used for the estimation of that specific vein.

## 14.7 Density Assignment

Zangrandi (2020) studied on the available density information (89,208 SG/density measures), dividing the samples by domain. Samples with values outside of ±2 SDs were considered outliers and were separated from each population. The summary of density by lithology is shown in Table 14-3.

**Table 14-3: Summary of Density by Unit**

| Unit | SG |
|---|---|
| Vein | 2.55 |
| Basalt | 2.40 |
| Abundancia Wall Rock | 2.49 |
| Gloria Wall Rock | 2.47 |
| Other wall rock | 2.52 |

A value of 2.55 T/m$^3$ was applied to the MREs for the veins.

## 14.8 Grade Capping/Outlier Restrictions

Capping values were applied to the metal accumulation variables based on analysis of histograms and log histograms. Capping values are shown in Table 14-4.

**Table 14-4: Capping Values for Metal Accumulations**

| Domained Estimation Name | Capping Value |
|---|---|
| Ag_m_gpt_Abundancia | 2500 |
| Ag_m_gpt_Gloria | 2000 |
| Ag_m_gpt_Martha | 4000 |
| Ag_m_gpt_Martha_2 | 6000 |
| Au_m_gpt_Abundancia | 5 |
| Au_m_gpt_Gloria | 10 |
| Au_m_gpt_Martha | 10 |
| Au_m_gpt_Martha_2 | 12 |

## 14.9 Variography

Metal accumulation variography was modelled based on normal scores of metal accumulations. Thickness variography was modelled using raw thickness data. In all cases, variograms were modelled with two spherical structures and within a best fit plane for each vein. The variogram model parameters used for Kriging estimates are summarized in Table 14-5.

**Table 14-5: Variogram Parameters**

| General | Direction | | | | | | | Structure 1 | | | | | | | Structure 2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variogram Name | Dip | Dip Azimuth | Pitch | Model space | Variance | Nugget | Normalized Nugget | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor |
| Ag_m_gpt_Abundancia: Transformed Variogram Model | 34.5 | 286.4 | 160.4 | Data | 297,213 | 64,644 | 0.218 | 80,158 | 0.270 | Spherical | | 59 | 32 | 500 | 152,025 | 0.512 | Spherical | | 225 | 106 | 500 |
| Ag_m_gpt_Abundancia_2: Transformed Variogram Model | 34.5 | 260.1 | 32.7 | Data | 19,263 | 5,977 | 0.310 | 5,868 | 0.305 | Spherical | | 48 | 27 | 500 | 7,422 | 0.385 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Abundancia_3: Transformed Variogram Model | 20.7 | 268.1 | 7.0 | Data | 37,977 | 9,407 | 0.248 | 10,896 | 0.287 | Spherical | | 48 | 27 | 500 | 17,682 | 0.466 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Abundancia_4: Transformed Variogram Model | 14.9 | 286.0 | 9.6 | Data | 31,390 | 9,006 | 0.287 | 9,781 | 0.312 | Spherical | | 48 | 27 | 500 | 12,594 | 0.401 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Abundancia_5: Transformed Variogram Model | 10.1 | 211.4 | 173.2 | Data | 16,599 | 4,427 | 0.267 | 4,482 | 0.270 | Spherical | | 48 | 27 | 500 | 7,683 | 0.463 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Abundancia_Bajo: Transformed Variogram Model | 30.8 | 264.1 | 150.2 | Data | 103,273 | 23,205 | 0.225 | 28,607 | 0.277 | Spherical | | 48 | 27 | 500 | 51,451 | 0.498 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Abundancia_Bajo_2: Transformed Variogram Model | 58.6 | 255.3 | 156.3 | Data | 345,151 | 101,336 | 0.294 | 101,716 | 0.295 | Spherical | | 48 | 27 | 500 | 141,995 | 0.411 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Abundancia_Bajo_3: Transformed Variogram Model | 19.9 | 252.3 | 11.9 | Data | 212,255 | 54,231 | 0.256 | 60,450 | 0.285 | Spherical | | 48 | 27 | 500 | 97,510 | 0.459 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Abundancia_Splay_1: Transformed Variogram Model | 42.5 | 266.0 | 174.2 | Data | 79,731 | 20,810 | 0.261 | 23,632 | 0.296 | Spherical | | 48 | 27 | 500 | 35,265 | 0.442 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Carmen: Transformed Variogram Model | 77.8 | 16.0 | 37.3 | Data | 14,406 | 3,254 | 0.226 | 3,810 | 0.265 | Spherical | | 48 | 27 | 500 | 7,334 | 0.509 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Gloria: Transformed Variogram Model | 82.9 | 259.0 | 170.4 | Data | 351,447 | 98,300 | 0.280 | 148,240 | 0.422 | Spherical | | 68 | 23 | 500 | 106,453 | 0.303 | Spherical | | 272 | 150 | 500 |
| Ag_m_gpt_Gloria_2: Transformed Variogram Model | 31.6 | 274.9 | 174.5 | Data | 23,048 | 5,107 | 0.222 | 6,191 | 0.269 | Spherical | | 48 | 27 | 500 | 11,747 | 0.510 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Gloria_Alto: Transformed Variogram Model | 52.6 | 278.9 | 154.5 | Data | 19,850 | 4,375 | 0.220 | 5,548 | 0.280 | Spherical | | 48 | 27 | 500 | 9,921 | 0.500 | Spherical | | 227 | 150 | 500 |

*table continues…*

| General | Direction | | | | | | | Structure 1 | | | | | | | Structure 2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variogram Name | Dip | Dip Azimuth | Pitch | Model space | Variance | Nugget | Normalized Nugget | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor |
| Ag_m_gpt_Gloria_Alto_2: Transformed Variogram Model | 31.9 | 278.1 | 131.5 | Data | 1,631 | 468 | 0.287 | 457 | 0.280 | Spherical | | 48 | 27 | 500 | 706 | 0.433 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Martha: Transformed Variogram Model | 21.7 | 233.9 | 91.0 | Data | 1,455,576 | 280,344 | 0.193 | 260,111 | 0.179 | Spherical | | 29 | 29 | 500 | 916,576 | 0.630 | Spherical | | 255 | 230 | 500 |
| Ag_m_gpt_Martha_2: Transformed Variogram Model | 19.4 | 271.6 | 44.1 | Data | 2,165,255 | 296,423 | 0.137 | 312,446 | 0.144 | Spherical | | 34 | 23 | 500 | 1,547,725 | 0.715 | Spherical | | 156 | 174 | 500 |
| Ag_m_gpt_Martha_3: Transformed Variogram Model | 24.7 | 258.7 | 167.5 | Data | 81,930 | 21,244 | 0.259 | 23,006 | 0.281 | Spherical | | 48 | 27 | 500 | 37,688 | 0.460 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Martha_5: Transformed Variogram Model | 28.5 | 254.2 | 164.2 | Data | 146,856 | 40,620 | 0.277 | 40,723 | 0.277 | Spherical | | 48 | 27 | 500 | 65,571 | 0.447 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Martha_6: Transformed Variogram Model | 29.4 | 272.3 | 164.1 | Data | 388,711 | 113,309 | 0.292 | 121,472 | 0.313 | Spherical | | 48 | 27 | 500 | 153,968 | 0.396 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Martha_7: Transformed Variogram Model | 22.9 | 267.8 | 155.5 | Data | 693,785 | 218,820 | 0.315 | 205,569 | 0.296 | Spherical | | 48 | 27 | 500 | 269,397 | 0.388 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Martha_8: Transformed Variogram Model | 18.1 | 276.3 | 122.7 | Data | 102,679 | 23,226 | 0.226 | 27,805 | 0.271 | Spherical | | 48 | 27 | 500 | 51,617 | 0.503 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Splay_1: Transformed Variogram Model | 52.4 | 261.9 | 146.9 | Data | 102,030 | 23,783 | 0.233 | 27,671 | 0.271 | Spherical | | 48 | 27 | 500 | 50,597 | 0.496 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Splay_2: Transformed Variogram Model | 39.7 | 266.0 | 165.0 | Data | 70,152 | 18,436 | 0.263 | 19,341 | 0.276 | Spherical | | 48 | 27 | 500 | 32,382 | 0.462 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Transversal: Transformed Variogram Model | 66.6 | 182.0 | 13.2 | Data | 149,376 | 36,029 | 0.241 | 42,946 | 0.288 | Spherical | | 48 | 27 | 500 | 70,386 | 0.471 | Spherical | | 227 | 150 | 500 |
| Ag_m_gpt_Transversal_Norte: Transformed Variogram Model | 45.0 | 170.8 | 26.4 | Data | 144,309 | 45,183 | 0.313 | 46,568 | 0.323 | Spherical | | 48 | 27 | 500 | 52,543 | 0.364 | Spherical | | 227 | 150 | 500 |
| Au_m_gpt_Abundancia: Transformed Variogram Model | 34.6 | 285.5 | 161.8 | Data | 1 | 1 | 0.682 | 0 | 0.210 | Spherical | | 42 | 30 | 500 | 0 | 0.109 | Spherical | | 106 | 93 | 500 |

*table continues…*

| General | Direction | | | | | | | Structure 1 | | | | | | | Structure 2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variogram Name | Dip | Dip Azimuth | Pitch | Model space | Variance | Nugget | Normalized Nugget | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor |
| Au_m_gpt_Abundancia_2: Transformed Variogram Model | 34.5 | 260.1 | 32.7 | Data | 0 | 0 | 0.431 | 0 | 0.206 | Spherical | | 43 | 27 | 500 | 0 | 0.363 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Abundancia_3: Transformed Variogram Model | 20.7 | 268.1 | 7.0 | Data | 0 | 0 | 0.428 | 0 | 0.208 | Spherical | | 43 | 27 | 500 | 0 | 0.365 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Abundancia_4: Transformed Variogram Model | 14.9 | 286.0 | 9.6 | Data | 0 | 0 | 0.503 | 0 | 0.212 | Spherical | | 43 | 27 | 500 | 0 | 0.285 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Abundancia_5: Transformed Variogram Model | 10.1 | 211.4 | 173.2 | Data | 1 | 0 | 0.498 | 0 | 0.203 | Spherical | | 43 | 27 | 500 | 0 | 0.300 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Abundancia_Bajo: Transformed Variogram Model | 30.8 | 264.1 | 150.2 | Data | 0 | 0 | 0.430 | 0 | 0.203 | Spherical | | 43 | 27 | 500 | 0 | 0.366 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Abundancia_Bajo_2: Transformed Variogram Model | 58.6 | 255.3 | 156.3 | Data | 0 | 0 | 0.409 | 0 | 0.201 | Spherical | | 43 | 27 | 500 | 0 | 0.390 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Abundancia_Bajo_3: Transformed Variogram Model | 19.9 | 252.3 | 11.9 | Data | 0 | 0 | 0.417 | 0 | 0.203 | Spherical | | 43 | 27 | 500 | 0 | 0.379 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Abundancia_Splay_1: Transformed Variogram Model | 42.5 | 266.0 | 174.2 | Data | 0 | 0 | 0.455 | 0 | 0.208 | Spherical | | 43 | 27 | 500 | 0 | 0.337 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Carmen: Transformed Variogram Model | 77.8 | 16.0 | 37.3 | Data | 0 | 0 | 0.436 | 0 | 0.190 | Spherical | | 43 | 27 | 500 | 0 | 0.373 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Gloria: Transformed Variogram Model | 80.4 | 259.9 | 168.1 | Data | 3 | 2 | 0.604 | 0 | 0.134 | Spherical | | 44 | 31 | 9 | 1 | 0.259 | Spherical | | 180 | 140 | 64 |
| Au_m_gpt_Gloria_2: Transformed Variogram Model | 31.6 | 274.9 | 174.5 | Data | 23,048 | 9,689 | 0.420 | 4,644 | 0.202 | Spherical | | 43 | 27 | 500 | 8,712 | 0.378 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Gloria_Alto: Transformed Variogram Model | 52.6 | 278.9 | 154.5 | Data | 0 | 0 | 0.463 | 0 | 0.207 | Spherical | | 43 | 27 | 500 | 0 | 0.330 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Gloria_Alto_2: Transformed Variogram Model | 31.9 | 278.1 | 131.5 | Data | 0 | 0 | 0.574 | 0 | 0.197 | Spherical | | 43 | 27 | 500 | 0 | 0.229 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Martha: Transformed Variogram Model | 21.7 | 233.9 | 91.0 | Data | 6 | 0 | 0.043 | 1 | 0.226 | Spherical | | 59 | 31 | 500 | 4 | 0.730 | Spherical | | 209 | 144 | 500 |

*table continues…*

| General | Direction | | | | | | | Structure 1 | | | | | | | Structure 2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variogram Name | Dip | Dip Azimuth | Pitch | Model space | Variance | Nugget | Normalized Nugget | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor |
| Au_m_gpt_Martha_2: Transformed Variogram Model | 19.4 | 271.6 | 31.1 | Data | 8 | 1 | 0.174 | 2 | 0.231 | Spherical | | 27 | 17 | 500 | 5 | 0.592 | Spherical | | 203 | 149 | 500 |
| Au_m_gpt_Martha_3: Transformed Variogram Model | 24.7 | 258.7 | 167.5 | Data | 0 | 0 | 0.482 | 0 | 0.202 | Spherical | | 43 | 27 | 500 | 0 | 0.317 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Martha_5: Transformed Variogram Model | 28.5 | 254.2 | 164.2 | Data | 1 | 0 | 0.453 | 0 | 0.191 | Spherical | | 43 | 27 | 500 | 0 | 0.356 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Martha_6: Transformed Variogram Model | 29.4 | 272.3 | 164.1 | Data | 1 | 0 | 0.458 | 0 | 0.207 | Spherical | | 43 | 27 | 500 | 0 | 0.335 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Martha_7: Transformed Variogram Model | 22.9 | 267.8 | 155.5 | Data | 1 | 0 | 0.499 | 0 | 0.198 | Spherical | | 43 | 27 | 500 | 0 | 0.303 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Martha_8: Transformed Variogram Model | 18.1 | 276.3 | 122.7 | Data | 0 | 0 | 0.416 | 0 | 0.201 | Spherical | | 43 | 27 | 500 | 0 | 0.383 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Splay_1: Transformed Variogram Model | 52.4 | 261.9 | 146.9 | Data | 1 | 0 | 0.459 | 0 | 0.215 | Spherical | | 43 | 27 | 500 | 0 | 0.327 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Splay_2: Transformed Variogram Model | 39.7 | 266.0 | 165.0 | Data | 0 | 0 | 0.470 | 0 | 0.197 | Spherical | | 43 | 27 | 500 | 0 | 0.333 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Transversal: Transformed Variogram Model | 66.6 | 182.0 | 13.2 | Data | 0 | 0 | 0.415 | 0 | 0.205 | Spherical | | 43 | 27 | 500 | 0 | 0.381 | Spherical | | 175 | 131 | 500 |
| Au_m_gpt_Transversal_Norte: Transformed Variogram Model | 45.0 | 170.8 | 26.4 | Data | 0 | 0 | 0.447 | 0 | 0.209 | Spherical | | 43 | 27 | 500 | 0 | 0.343 | Spherical | | 175 | 131 | 500 |
| True_thick_Abundancia: Variogram Model | 19.1 | 275.5 | 142.9 | Data | 4 | 0 | 0.013 | 1 | 0.219 | Spherical | | 32 | 21 | 500 | 6 | 1.537 | Spherical | | 162 | 83 | 500 |
| True_thick_Abundancia_2: Variogram Model | 20.0 | 262.1 | 153.2 | Data | 1 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 1 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Abundancia_3: Variogram Model | 20.7 | 268.1 | 7.0 | Data | 1 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 1 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Abundancia_4: Variogram Model | 14.9 | 286.0 | 9.6 | Data | 1 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 1 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Abundancia_5: Variogram Model | 84.0 | 258.6 | 158.2 | Data | 0 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 0 | 0.840 | Spherical | | 195 | 96 | 500 |

*table continues…*

| General | Direction | | | | | | | Structure 1 | | | | | | | Structure 2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variogram Name | Dip | Dip Azimuth | Pitch | Model space | Variance | Nugget | Normalized Nugget | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor |
| True_thick_Abundancia_Bajo: Variogram Model | 30.8 | 264.1 | 150.2 | Data | 2 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 2 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Abundancia_Bajo_2: Variogram Model | 58.6 | 255.3 | 156.3 | Data | 3 | 0 | 0.060 | 1 | 0.290 | Spherical | | 30 | 39 | 500 | 3 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Abundancia_Bajo_3: Variogram Model | 19.9 | 252.3 | 11.9 | Data | 1 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 1 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Abundancia_Splay_1: Variogram Model | 42.5 | 266.0 | 174.2 | Data | 2 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 2 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Carmen: Variogram Model | 77.8 | 16.0 | 37.3 | Data | 1 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 1 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Gloria: Variogram Model | 84.0 | 258.6 | 158.2 | Data | 3 | 0 | 0.141 | 0 | 0.136 | Spherical | | 22 | 21 | 500 | 2 | 0.724 | Spherical | | 226 | 42 | 500 |
| True_thick_Gloria_2: Variogram Model | 31.6 | 274.9 | 174.5 | Data | 1 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 1 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Gloria_Alto: Variogram Model | 52.6 | 278.9 | 154.5 | Data | 2 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 2 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Gloria_Alto_2: Variogram Model | 31.9 | 278.1 | 131.5 | Data | 0 | 0 | 0.060 | 0 | 0.290 | Spherical | | 39 | 30 | 500 | 0 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Martha: Variogram Model | 21.4 | 228.6 | 4.7 | Data | 35 | 4 | 0.105 | 13 | 0.382 | Spherical | | 54 | 47 | 500 | 18 | 0.517 | Spherical | | 243 | 168 | 500 |
| True_thick_Martha_2: Variogram Model | 17.1 | 271.5 | 145.5 | Data | 11 | 0 | 0.000 | 5 | 0.420 | Spherical | | 47 | 31 | 500 | 6 | 0.576 | Spherical | | 148 | 91 | 500 |
| True_thick_Martha_3: Variogram Model | 24.7 | 258.7 | 167.5 | Data | 4 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 3 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Martha_5: Variogram Model | 28.5 | 254.2 | 164.2 | Data | 3 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 2 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Martha_6: Variogram Model | 29.4 | 272.3 | 164.1 | Data | 10 | 1 | 0.060 | 3 | 0.290 | Spherical | | 39 | 30 | 500 | 8 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Martha_7: Variogram Model | 22.9 | 267.8 | 155.5 | Data | 11 | 1 | 0.060 | 3 | 0.290 | Spherical | | 39 | 30 | 500 | 9 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Martha_8: Variogram Model | 21.5 | 267.3 | 6.5 | Data | 19 | 1 | 0.060 | 6 | 0.290 | Spherical | | 39 | 30 | 500 | 16 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Splay_1: Variogram Model | 52.4 | 261.9 | 146.9 | Data | 3 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 2 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Splay_2: Variogram Model | 48.1 | 260.8 | 169.3 | Data | 2 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 2 | 0.840 | Spherical | | 195 | 96 | 500 |

*table continues…*

| General | Direction | | | | | | | Structure 1 | | | | | | | Structure 2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variogram Name | Dip | Dip Azimuth | Pitch | Model space | Variance | Nugget | Normalized Nugget | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor | Sill | Normalized sill | Structure | Alpha | Major | Semi-major | Minor |
| True_thick_Transversal : Variogram Model | 39.7 | 266.0 | 165.0 | Data | 3 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 3 | 0.840 | Spherical | | 195 | 96 | 500 |
| True_thick_Transversal _Norte: Variogram Model | 45.0 | 170.8 | 26.4 | Data | 5 | 0 | 0.060 | 1 | 0.290 | Spherical | | 39 | 30 | 500 | 4 | 0.840 | Spherical | | 195 | 96 | 500 |

## 14.10 Estimation/Interpolation Methods

Block estimates require at least five relevant vein intercepts within the search ellipsoid. In addition, to reduce the marginal effects of extrapolation, an octant search was also applied. Variable orientations, with the variograms rotated parallel to the mid-vein reference surface of the relevant domain. Search parameters are detailed in Table 14-6.

**Table 14-6: Grade Interpolant and Search Parameters**

| General | | Ellipsoid Ranges | | | | Number of Vein Intercepts | | Sector Search | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Interpolant Name | Numeric Values | Maximum | Intermediate | Minimum | Variable Orientation | Minimum | Maximum | Method | Max Samples | Max Empty Sectors |
| ID, Ag_m_gpt_Abundancia | linear_grade | 520 | 210 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, Ag_m_gpt_Gloria | linear_grade | 540 | 230 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, Ag_m_gpt_Martha | linear_grade | 380 | 580 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, Ag_m_gpt_Martha_2 | linear_grade | 126.4 | 139.4 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, Au_m_gpt_Abundancia | linear_grade | 340 | 300 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, Au_m_gpt_Gloria | linear_grade | 126.4 | 139.4 | 63.71 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, Au_m_gpt_Martha | linear_grade | 250 | 280 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, Au_m_gpt_Martha_2 | linear_grade | 300 | 500 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, True_thick_Abundancia | true_length | 320 | 160 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, True_thick_Gloria | true_length | 450 | 140 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, True_thick_Martha | true_length | 500 | 300 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| ID, True_thick_Martha_2 | true_length | 300 | 170 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Ag_m_gpt_Abundancia | linear_grade | 520 | 210 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Ag_m_gpt_Gloria | linear_grade | 540 | 230 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Ag_m_gpt_Martha | linear_grade | 380 | 580 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Ag_m_gpt_Martha_2 | linear_grade | 126.4 | 139.4 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Au_m_gpt_Abundancia | linear_grade | 340 | 300 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Au_m_gpt_Gloria | linear_grade | 126.4 | 139.4 | 63.71 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Au_m_gpt_Martha | linear_grade | 260 | 280 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, Au_m_gpt_Martha_2 | linear_grade | 300 | 500 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, True_thick_Abundancia | true_length | 320 | 160 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, True_thick_Gloria | true_length | 450 | 140 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, True_thick_Martha | true_length | 500 | 300 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |
| Kr, True_thick_Martha_2 | true_length | 300 | 170 | 500 | Variable Orientation | 5 | 20 | Octant | 4 | 6 |

## 14.11 Block Model Parameters

Block Models were generated for each of the 23 veins that were estimated. Estimates were made into blocks with dimensions 15 m x 15 m x vein thickness oriented in the best fit plane of each vein. Sub-blocking was applied to a minimum block size of 5 m x 5 m x vein thickness. Unique Block Models parameters are summarized in Table 14-7.

### Table 14-7: Block Model Parameters

| Vein | Base point | | | Block Size | | Orientation | | Block Count | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | X | Y | Z | dx | dy | Dip | Azimuth | nx | ny | nz |
| **Abundancia_2** | 555,271.63 | 2,700,844.59 | 2,289.05 | 15 | 15 | 33.35 | 260.52 | 48 | 37 | 1 |
| **Abundancia_3** | 555,502.00 | 2,700,584.73 | 2,317.58 | 15 | 15 | 20.03 | 262.08 | 75 | 40 | 1 |
| **Abundancia_4** | 555,647.44 | 2,700,470.98 | 2,364.39 | 15 | 15 | 20.03 | 262.08 | 85 | 60 | 1 |
| **Abundancia_5** | 555,630.95 | 2,699,823.61 | 2,208.91 | 15 | 15 | 9.94 | 206.94 | 58 | 60 | 1 |
| **Abundancia_Bajo_2** | 555,201.96 | 2,702,285.54 | 2,209.54 | 15 | 15 | 60.65 | 257.81 | 37 | 34 | 1 |
| **Abundancia_Bajo_3** | 555,378.93 | 2,701,949.44 | 2,142.58 | 15 | 15 | 17.71 | 259.03 | 41 | 49 | 1 |
| **Abundancia_Bajo** | 555,148.66 | 2,701,667.00 | 2,318.06 | 15 | 15 | 35.40 | 270.39 | 36 | 31 | 1 |
| **Abundancia** | 555,054.24 | 2,701,007.04 | 2,369.73 | 15 | 15 | 35.40 | 270.39 | 166 | 52 | 1 |
| **Abundancia_Splay_1** | 555,054.38 | 2,702,040.75 | 2,285.77 | 15 | 15 | 36.60 | 269.21 | 36 | 34 | 1 |
| **Carmen** | 554,539.57 | 2,702,643.01 | 2,215.39 | 15 | 15 | 80.82 | 16.51 | 46 | 29 | 1 |
| **Gloria_2** | 554,889.56 | 2,701,582.63 | 2,264.01 | 15 | 15 | 83.35 | 258.67 | 40 | 22 | 1 |
| **Gloria_Alto_2** | 554,882.84 | 2,701,887.31 | 2,197.20 | 15 | 15 | 27.82 | 278.20 | 14 | 10 | 1 |
| **Gloria_Alto** | 554,929.68 | 2,701,833.83 | 2,225.69 | 15 | 15 | 49.63 | 268.87 | 17 | 22 | 1 |
| **Gloria** | 554,917.09 | 2,701,445.23 | 2,264.01 | 15 | 15 | 83.35 | 258.67 | 98 | 32 | 1 |
| **Martha_2** | 555,652.22 | 2,702,045.98 | 2,090.43 | 15 | 15 | 19.83 | 252.22 | 44 | 58 | 1 |
| **Martha_3** | 555,594.45 | 2,702,147.37 | 2,027.39 | 15 | 15 | 25.92 | 266.55 | 20 | 23 | 1 |
| **Martha_5** | 555,297.74 | 2,702,229.18 | 1,868.14 | 15 | 15 | 28.11 | 254.32 | 19 | 17 | 1 |
| **Martha_6** | 555,457.16 | 2,701,958.70 | 1,943.06 | 15 | 15 | 29.66 | 269.32 | 40 | 47 | 1 |
| **Martha_7** | 555,375.00 | 2,702,040.00 | 1,910.00 | 15 | 15 | 21.53 | 267.34 | 28 | 22 | 1 |
| **Martha_8** | 556,191.85 | 2,701,899.06 | 2,054.51 | 15 | 15 | 16.64 | 274.78 | 18 | 20 | 1 |

*table continues…*

| Vein | Base point | | | Block Size | | Orientation | | Block Count | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | X | Y | Z | dx | dy | Dip | Azimuth | nx | ny | nz |
| **Martha** | 557,779.25 | 2,700,595.47 | 2,383.22 | 15 | 15 | 25.00 | 226.36 | 264 | 114 | 1 |
| **Splay_1** | 555,024.89 | 2,701,626.57 | 2,307.21 | 15 | 15 | 48.09 | 260.84 | 35 | 20 | 1 |
| **Splay_2** | 555,005.01 | 2,701,869.36 | 2,307.21 | 15 | 15 | 40.99 | 265.32 | 19 | 20 | 1 |
| **Transversal_Norte** | 555,800.94 | 2,701,870.69 | 2,269.61 | 15 | 15 | 44.99 | 170.95 | 66 | 44 | 1 |
| **Transversal** | 555,524.68 | 2,701,615.21 | 2,341.73 | 15 | 15 | 66.64 | 181.97 | 59 | 41 | 1 |

## 14.12 Block Model Validation

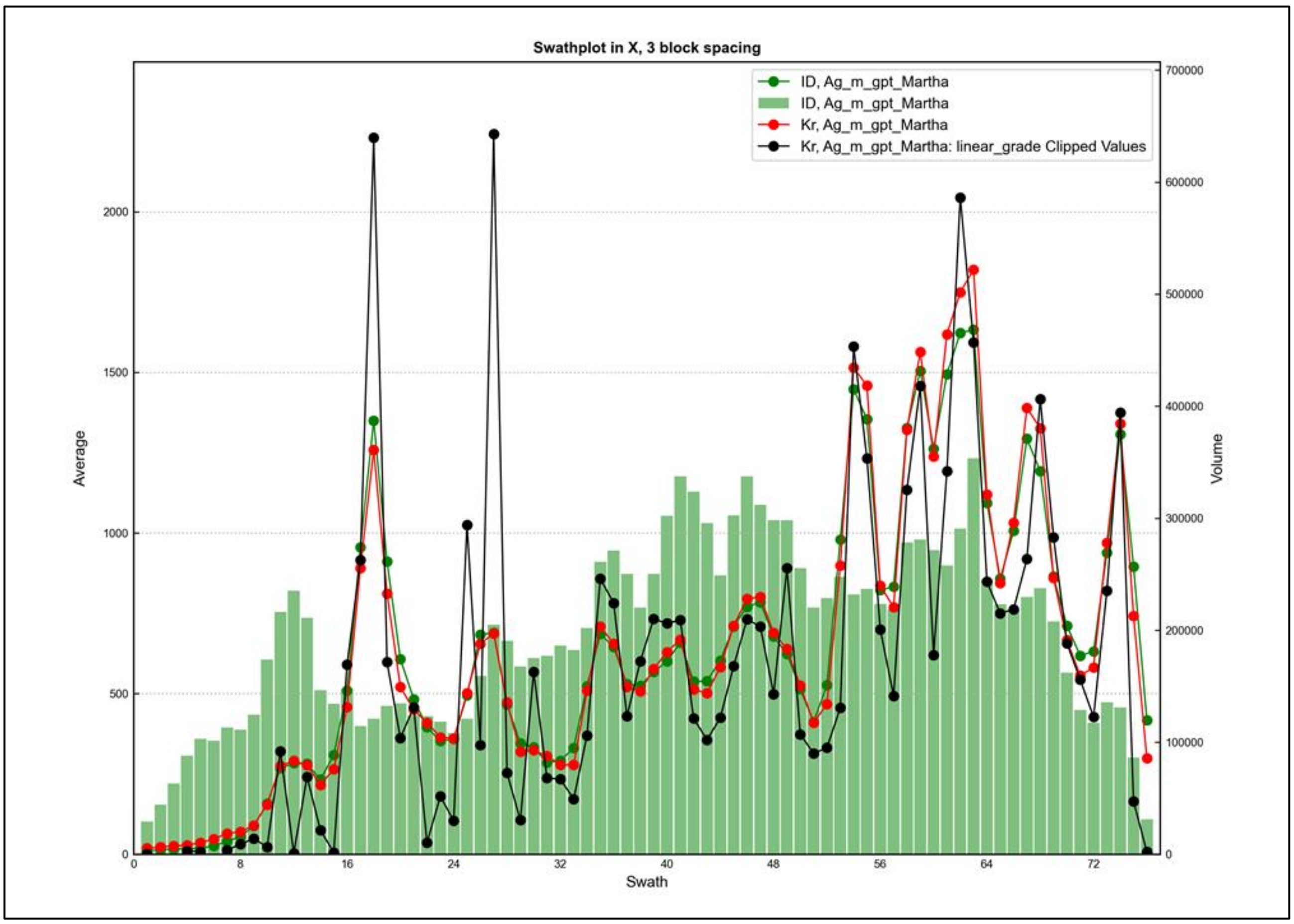
Several validation techniques have been utilized to ensure that the estimates are reasonable.

Swath plots comparing composite grade to the kriged estimate in corridors in the rotated X and Y directions. Comparison was also made with inverse distance to the second power (ID2) estimates (examples are shown in Figure 14-14 to Figure 14-17.

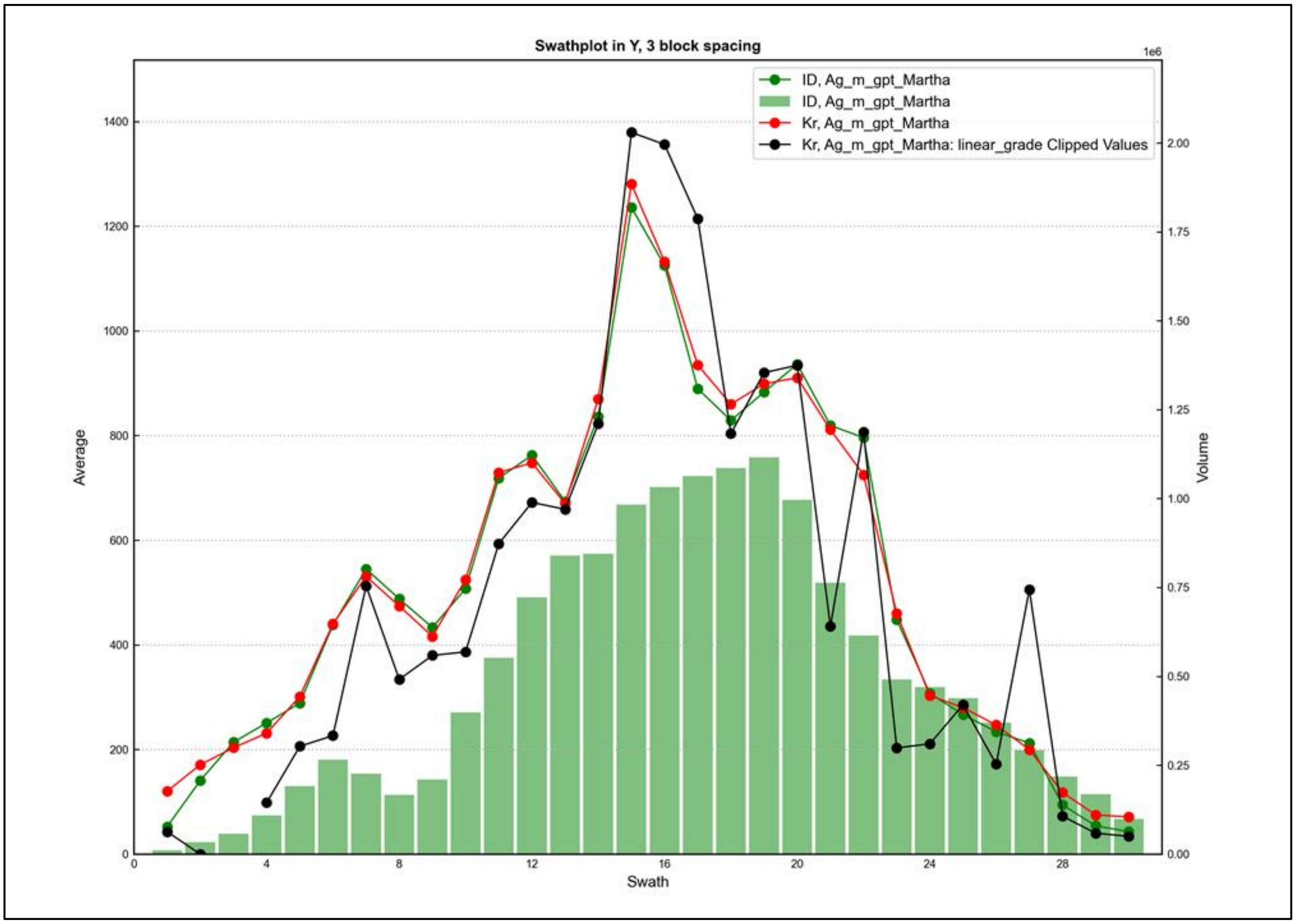
Visual comparisons of block estimates and vein composites are shown in Figure 14-18 to Figure 14-25.

Comparison of grade–tonnage curves for the kriged estimates and the previous MREs and the inverse distance estimates (see Figure 14-12 to Figure 14-15).

**Figure 14-14: Silver Rotated X Swathplot Example (all estimated blocks, bars represent number of blocks)**

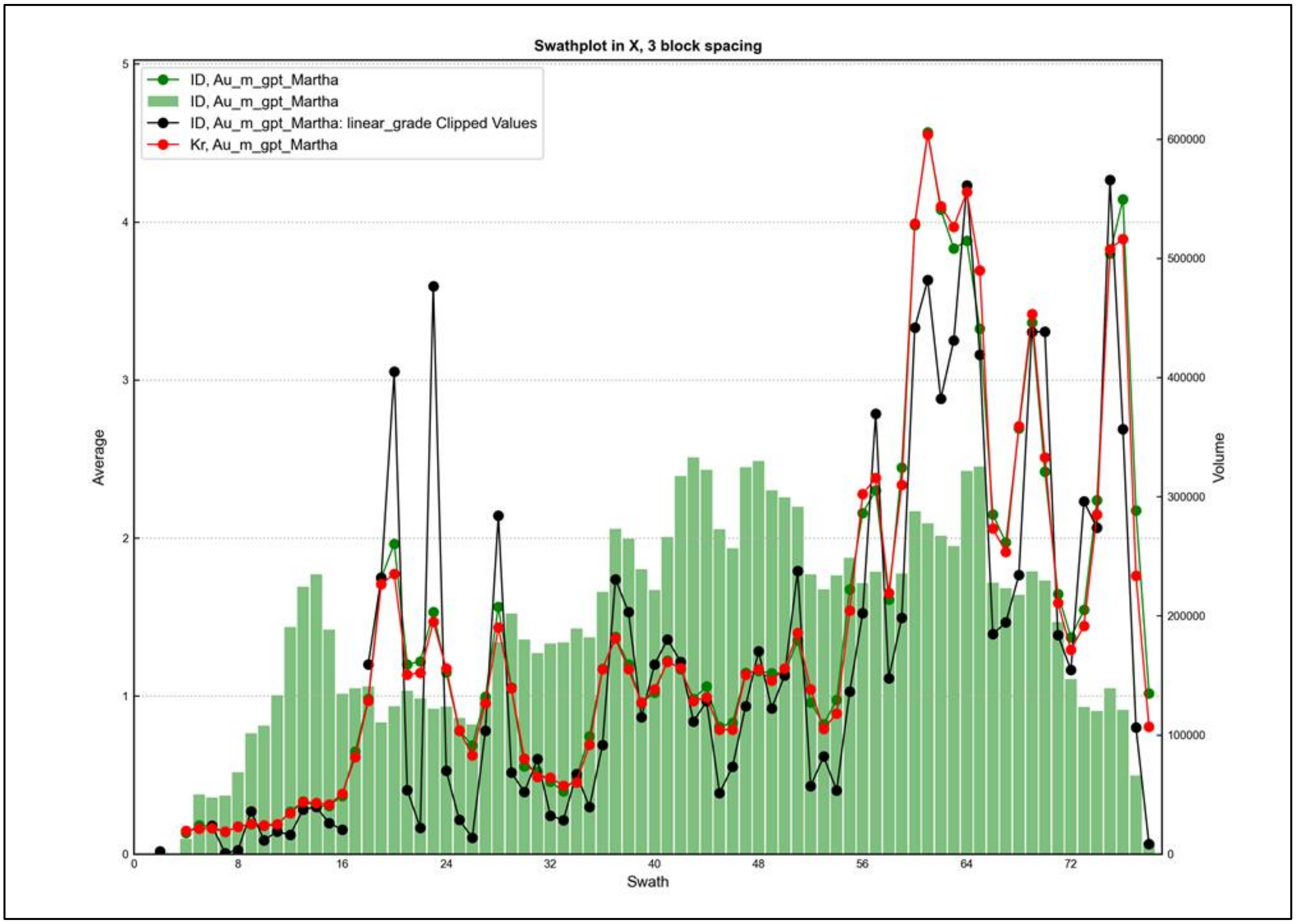


## Figure 14-15: Silver Rotated Y Swathplot Example



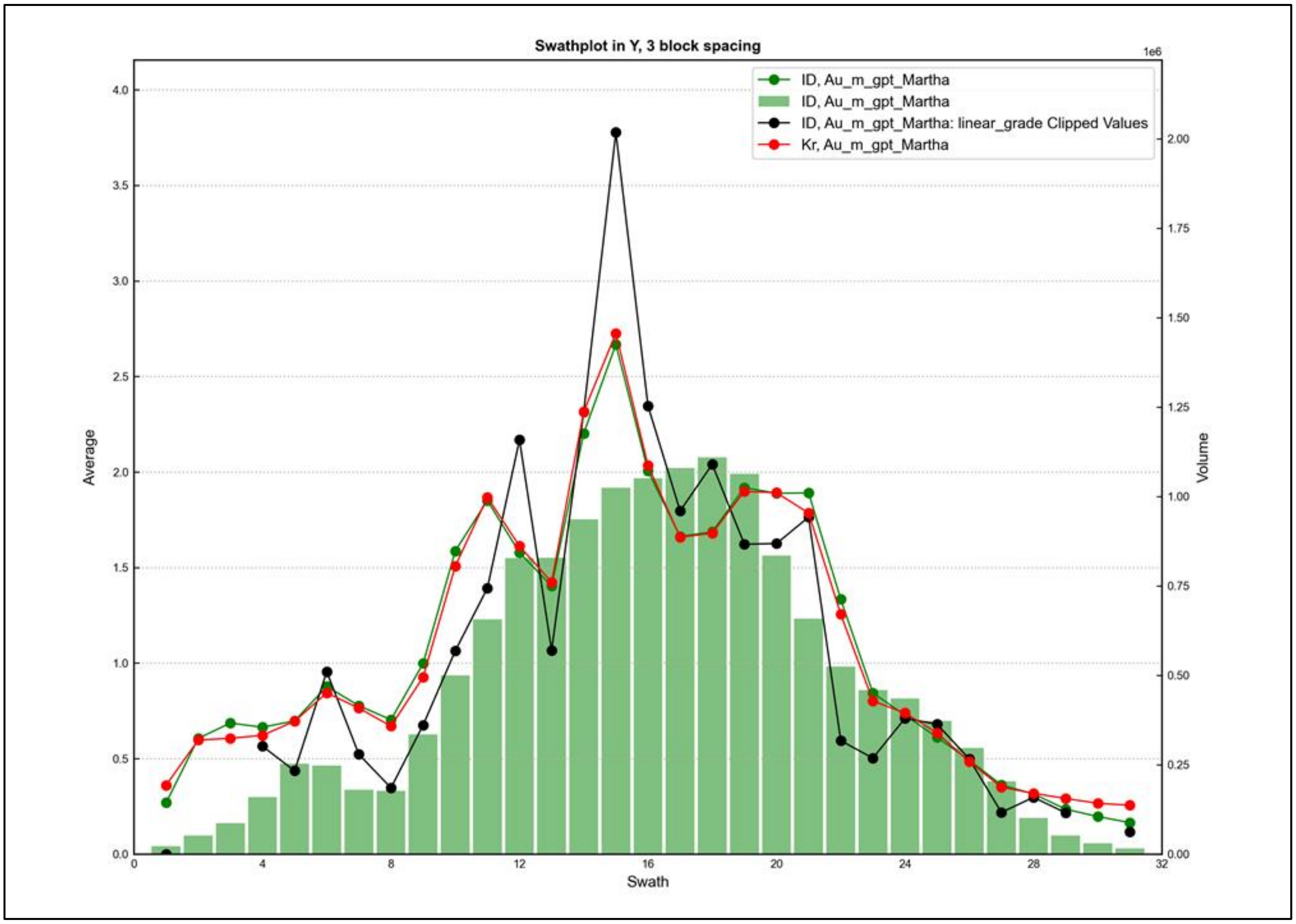

Source: Red Pennant

## Figure 14-16: Gold Rotated X Swathplot Example

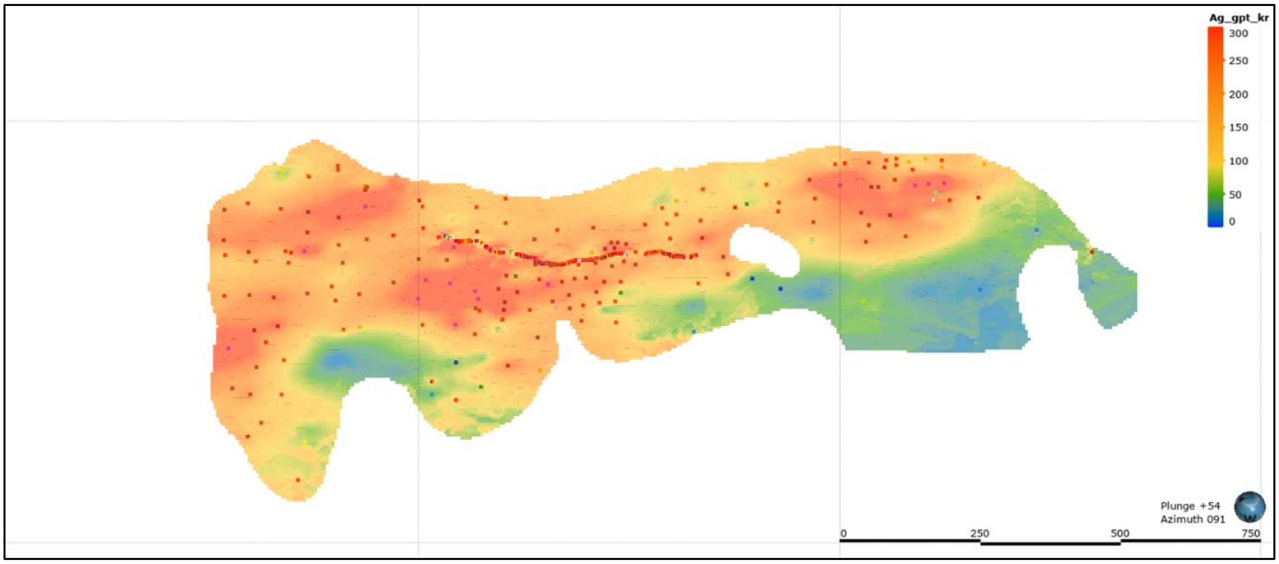



Source: Red Pennant

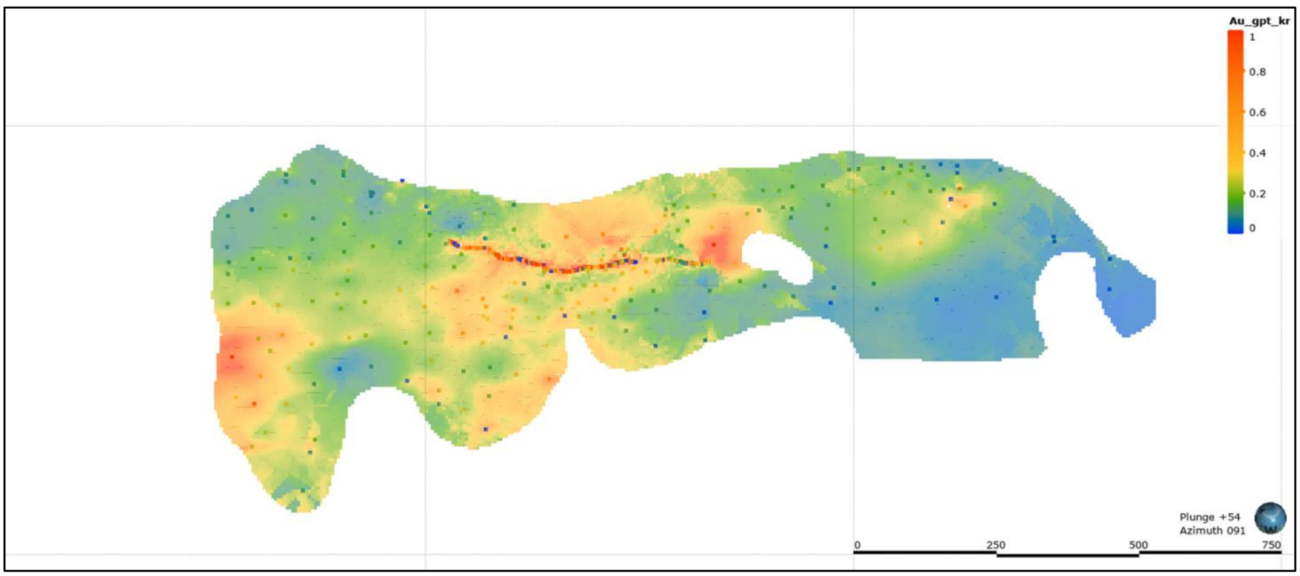
**Figure 14-17: Gold Rotated Y Swathplot Example**



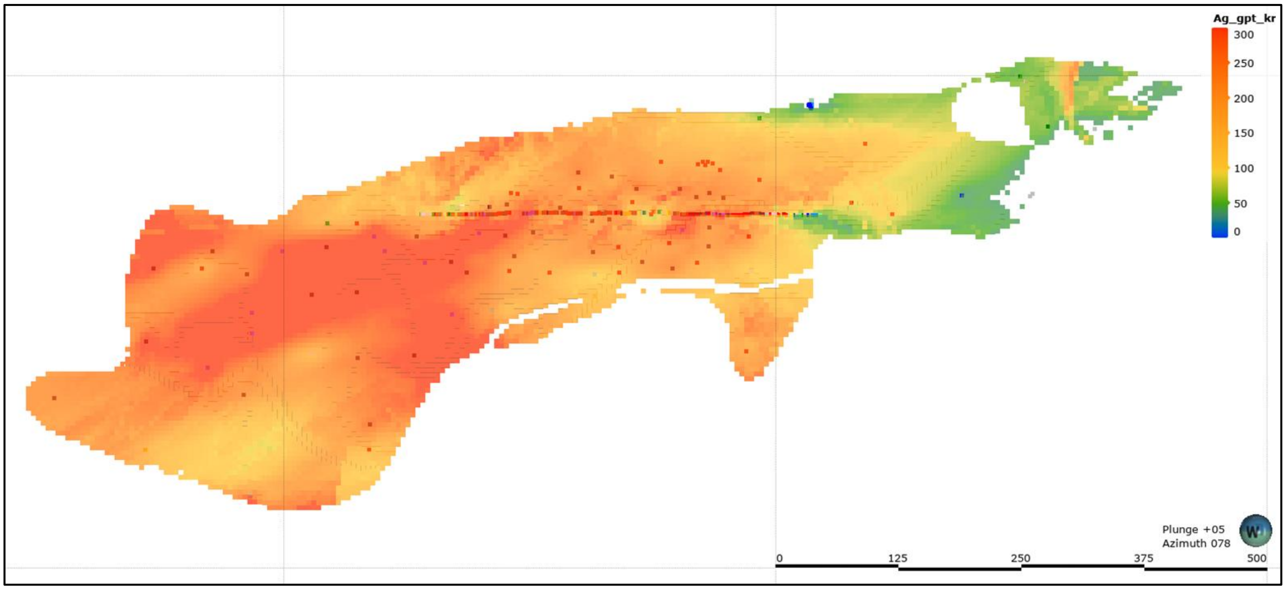
### Figure 14-18: Silver Grade Estimates – Abundancia Vein



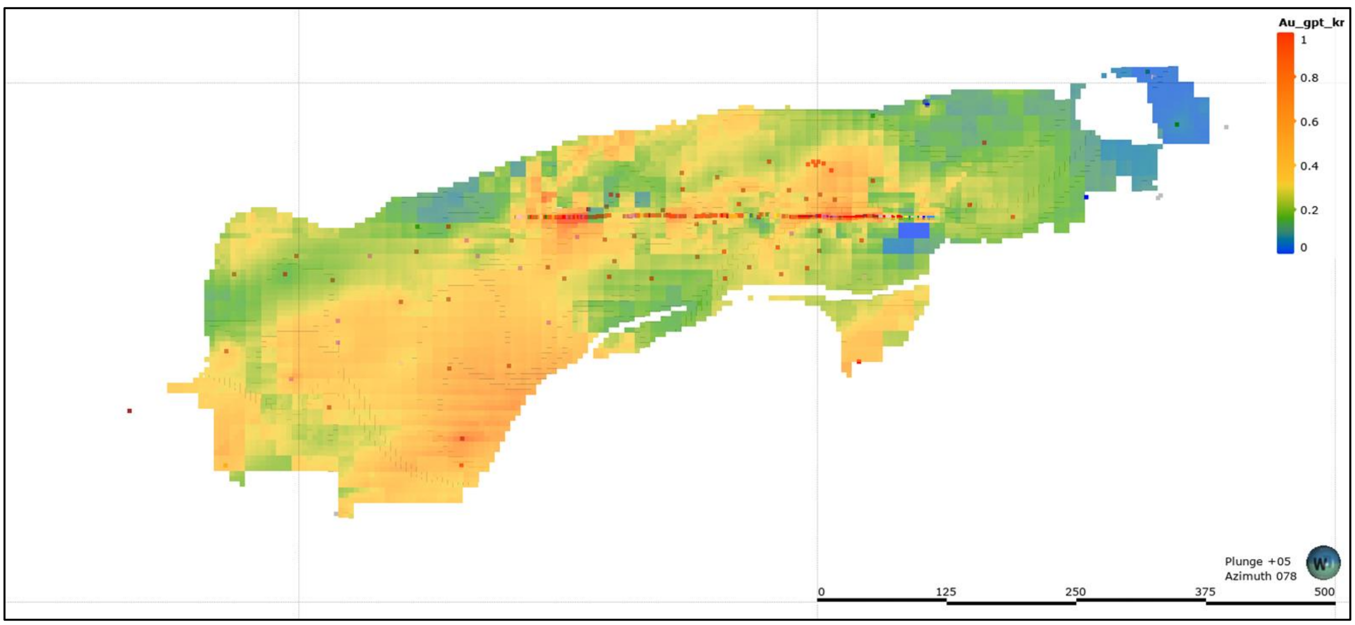

### Figure 14-19: Gold Grade Estimates – Abundancia Vein



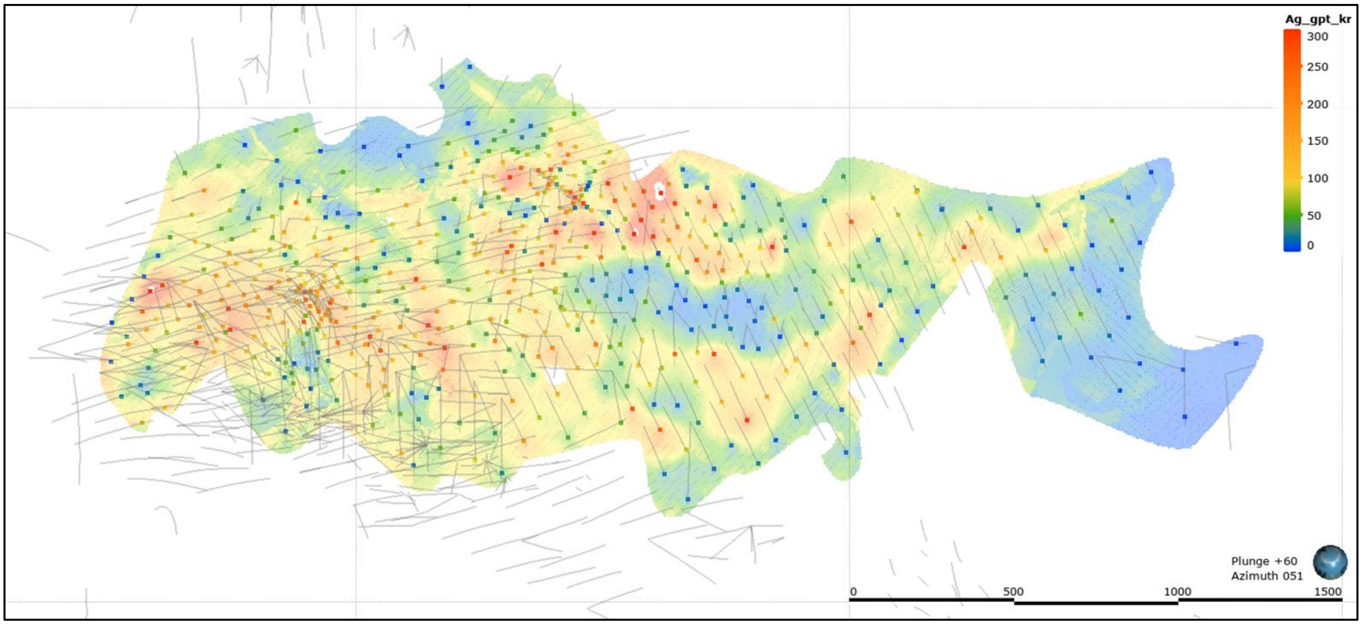
## Figure 14-20: Silver Grade Estimates – Gloria Vein



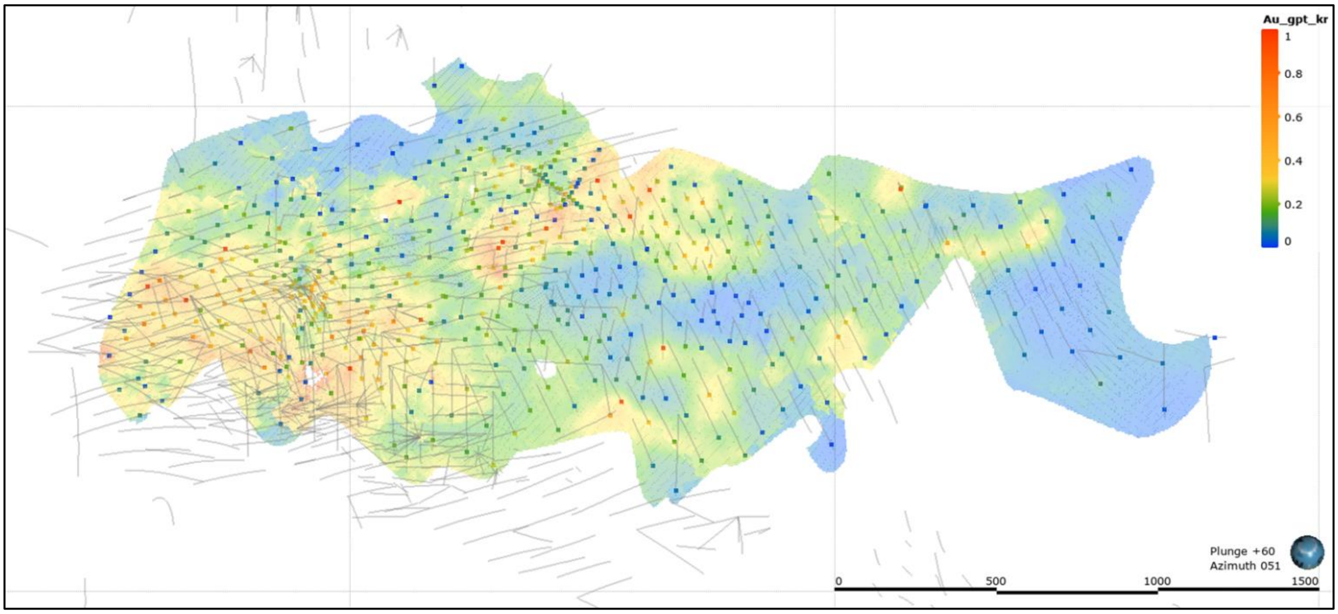

## Figure 14-21: Gold Grade Estimates – Gloria Vein



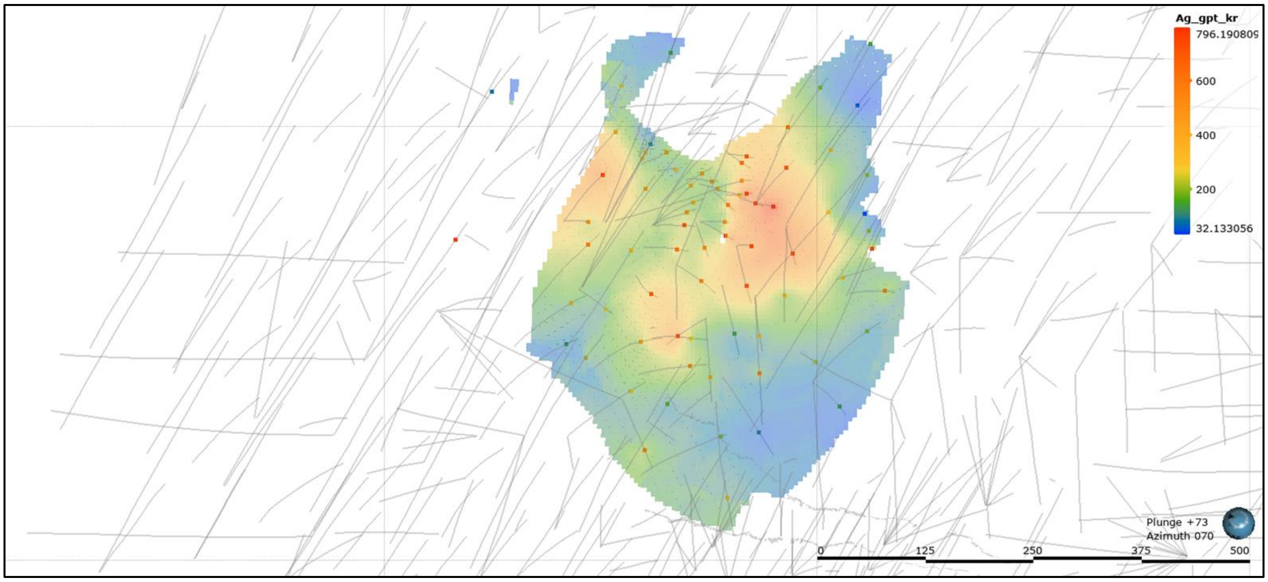
### Figure 14-22: Silver Grade Estimates – Martha Vein



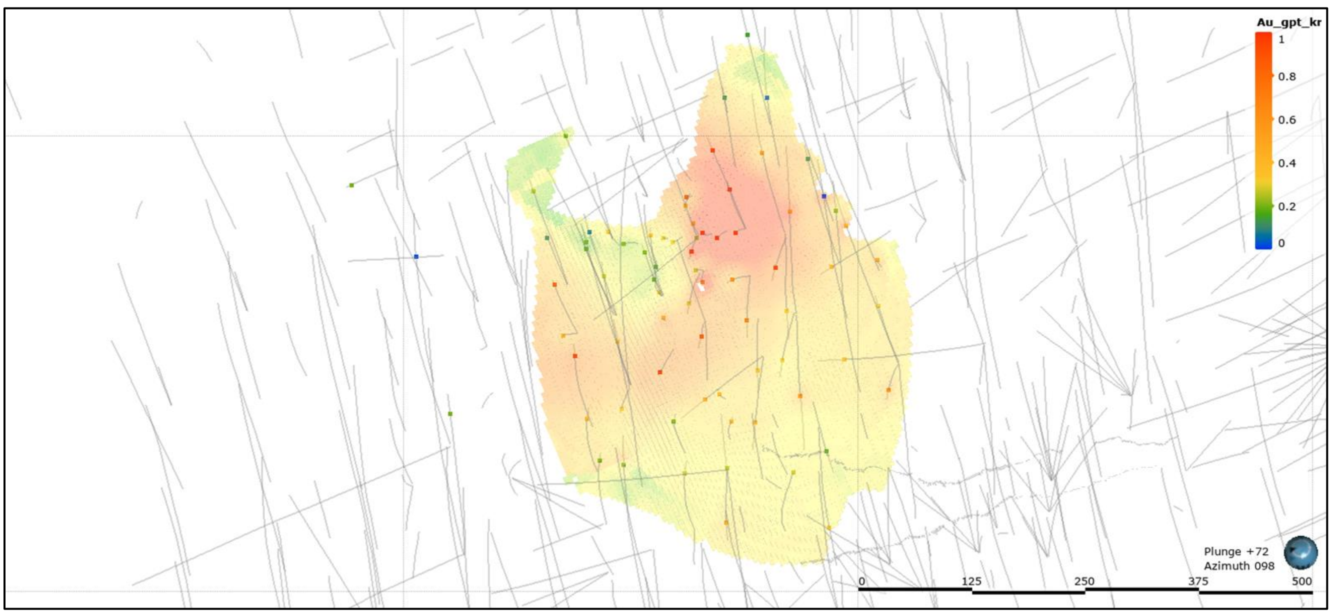

### Figure 14-23: Gold Grade Estimates – Martha Vein



### Figure 14-24: Silver Grade Estimates – Martha 2 Vein




### Figure 14-25: Gold Grade Estimates – Martha 2 Vein



## 14.13 Classification of Mineral Resources

The Kriging Slope of Regression was generated during the estimation and is a measure of confidence related to distance from data in the context of the spatial uncertainty (corresponding with the variogram models). The Silver Kriging Slope of Regression was used as the main driver of uncertainty.

Measured, Indicated, and Inferred Mineral Resources were classified using the parameters outlined in Table 14-8.

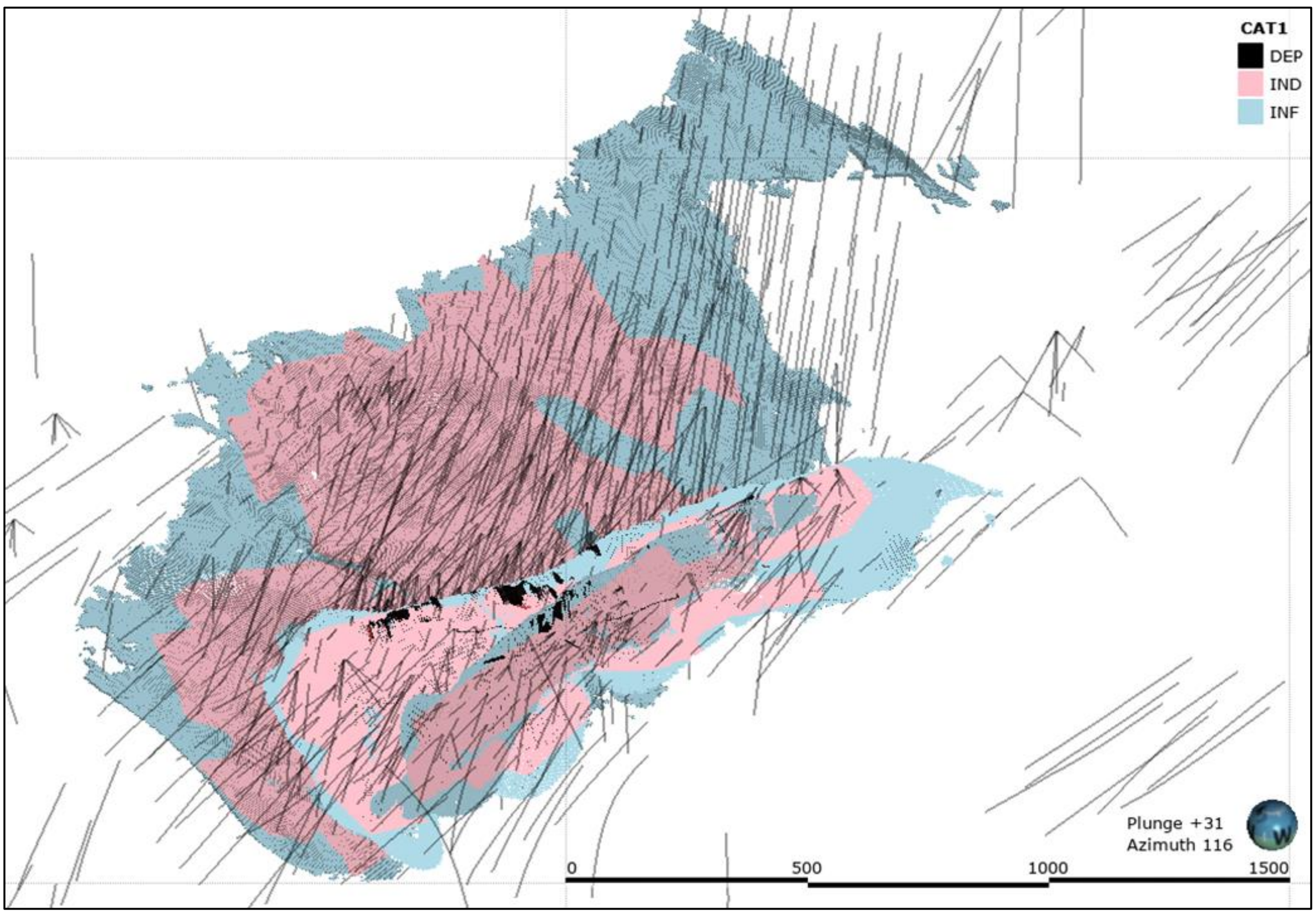
**Table 14-8: Confidence Classification Criteria**

| Categories | Average Distance to Estimation Composites | Slope of Regression |
|---|---|---|
| Indicated | < 125 m | > 0.9 |
| Inferred | < 220 m | -- |

**The extents of measured, indicated, and inferred mineral resources within the deposit are illustrated in Figure 14-26 to**

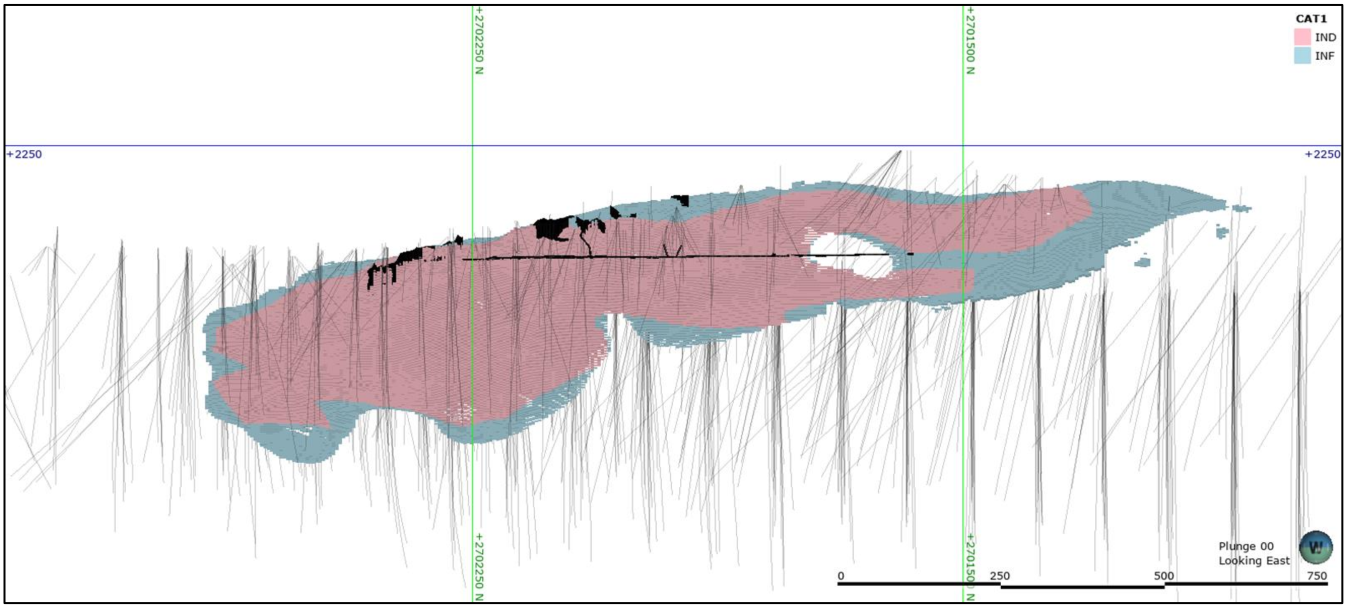
Figure 14-30, inclusive.

**Figure 14-26: View of La Preciosa Mineral Resource Categories**



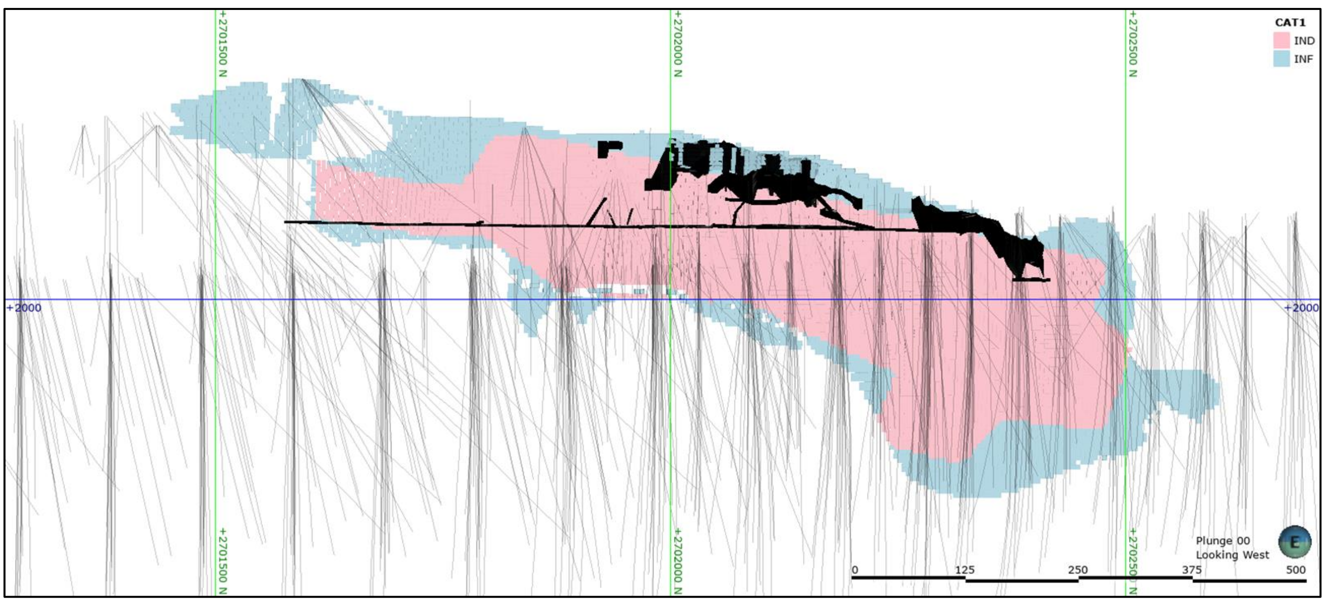

Source: Red Pennant

**Figure 14-27: Normal View of Categorized Mineral Resource Blocks, Abundancia Vein**



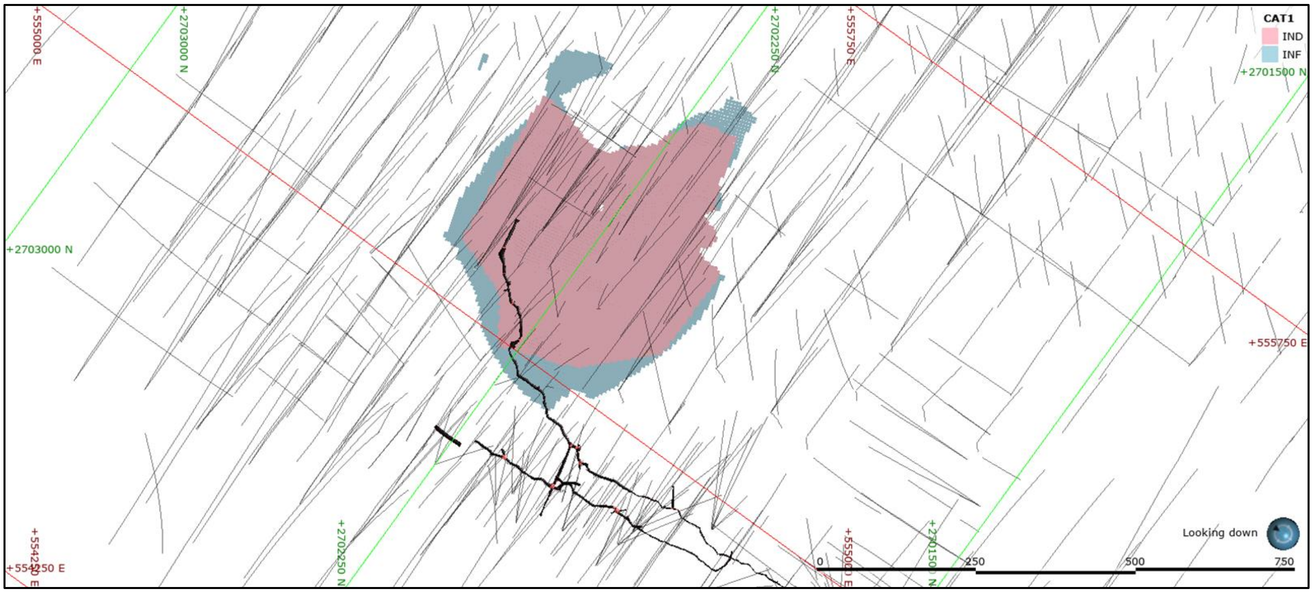

Source: Red Pennant

**Figure 14-28: Normal View of Categorized Mineral Resource Blocks, Gloria Vein**



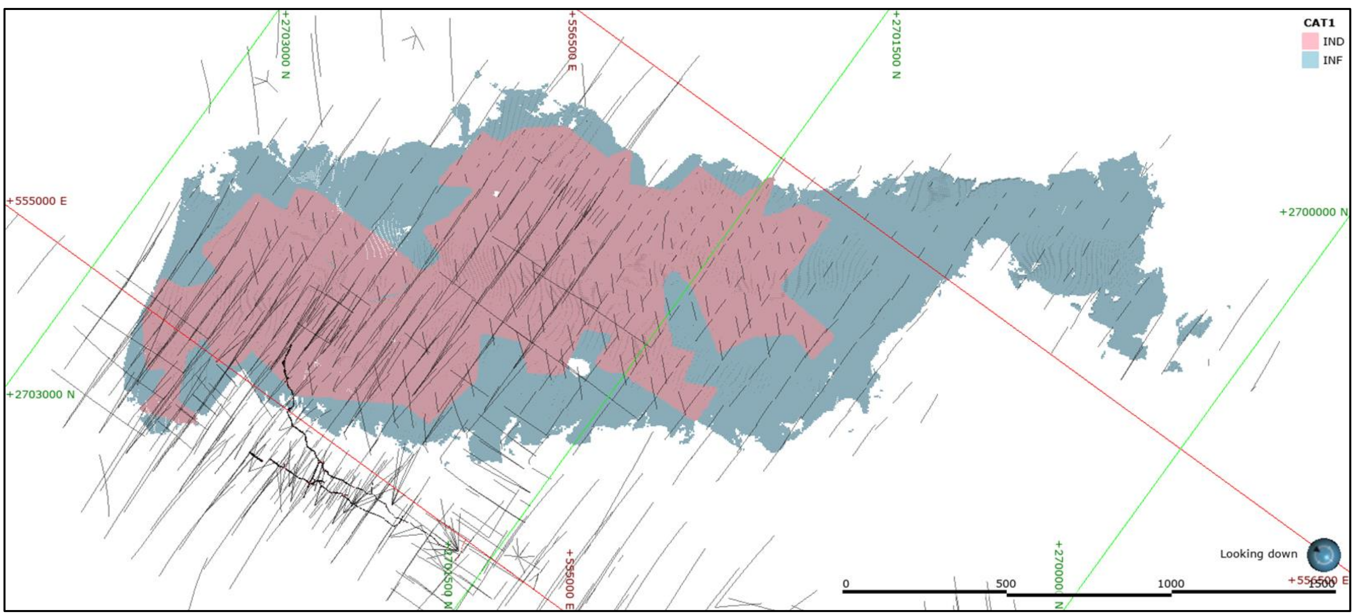

Source: Red Pennant

## Figure 14-29: Normal View of Categorized Mineral Resource Blocks, Martha 2 Vein




Source: Red Pennant

## Figure 14-30: Normal View of Categorized Mineral Resource Blocks, Martha Vein




Source: Red Pennant

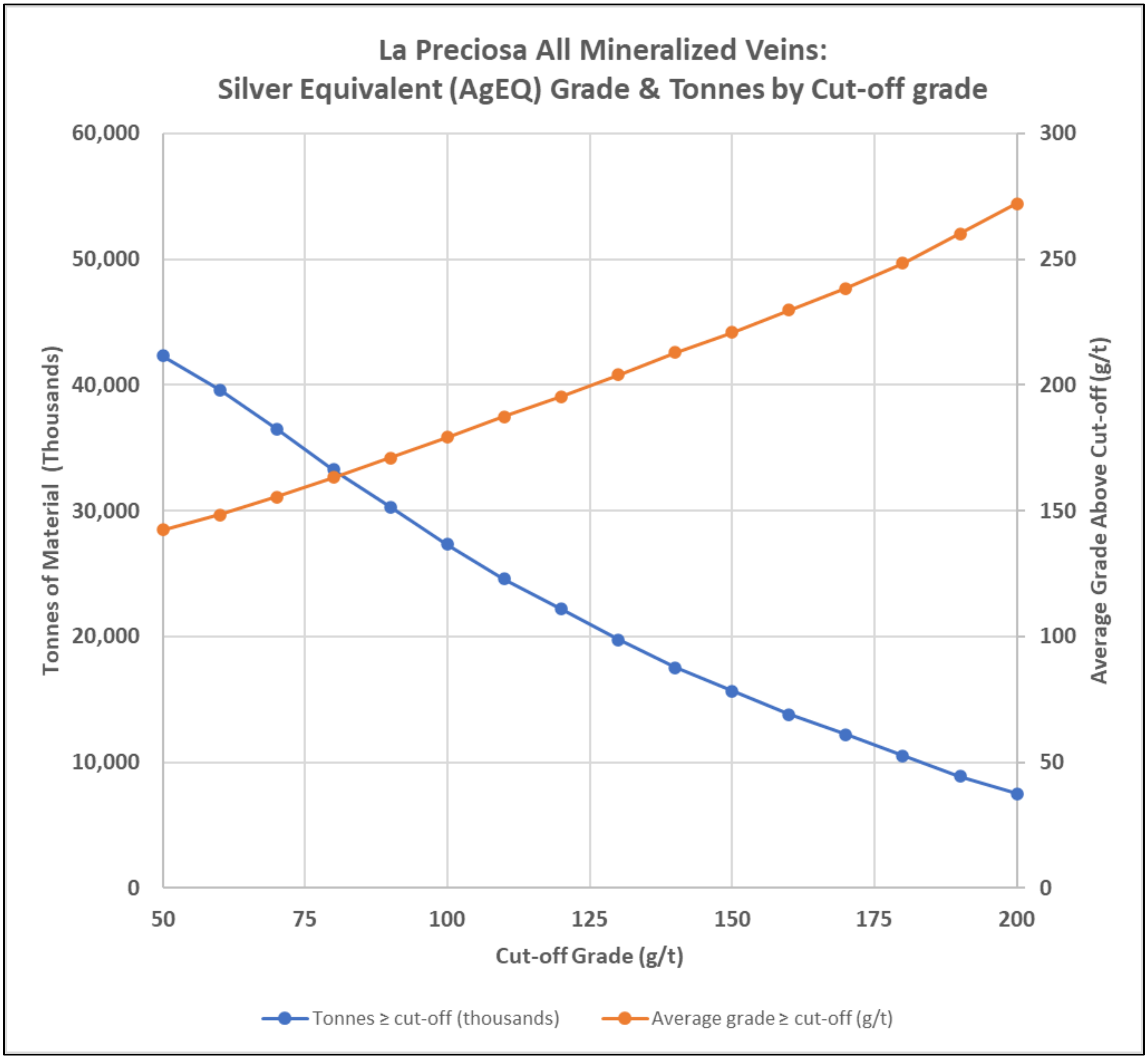
## 14.14 Reasonable Prospects of Eventual Economic Extraction

MREs were constrained within the four highest-grade veins and no more 500 m from surface. The cut-off grade applied to the mineral resource is conceptual and based on selective narrow-vein cut-and-fill mining for the steeper veins (e.g., Gloria and Abundancia) and room and pillar for the flat-lying veins (e.g., Martha).

## 14.15 Resource Sensitivity to Cut-off

The tonnage and grade sensitivities for all mineralized vein material over a range of cut-off (AgEQ) values are illustrated in Figure 14-31, for all estimated vein material.

**Figure 14-31: Mineralized Vein Material Grade and Tonnage**




Source: Red Pennant

The tonnages and grades at a series of cut-off (AgEQ) values are summarized in Table 14-9.

**Table 14-9: Tonnages and Silver Equivalent Grades of Mineralized Vein Material at La Preciosa**

| AgEQ Cut-off grade g/t | Material Thousand Tonnes | average AgEQ grade g/t | AgEQ Million Tr. Oz |
|---|---|---|---|
| 50 | 42,300 | 142 | 194 |
| 60 | 39,600 | 148 | 189 |
| 70 | 36,500 | 156 | 183 |
| 80 | 33,300 | 163 | 175 |
| 90 | 30,300 | 171 | 167 |
| 100 | 27,300 | 179 | 158 |
| 110 | 24,600 | 188 | 148 |
| 120 | 21,800 | 195 | 137 |
| 130 | 19,800 | 204 | 130 |
| 140 | 17,500 | 213 | 120 |
| 150 | 15,700 | 221 | 111 |
| 160 | 13,800 | 230 | 102 |
| 170 | 12,200 | 239 | 94 |
| 180 | 10,500 | 249 | 84 |
| 190 | 8,900 | 260 | 74 |
| 200 | 7,500 | 272 | 66 |

## 14.16 Mineral Resource Statement

The Mineral Resource was estimated in October 2021 and restricted to continuous regions amenable to underground exploitation using costs derived from the nearby Avino Mine to provide reasonable prospects for eventual extraction. The Mineral Resources are summarized in Table 14-10.

**Table 14-10: Mineral Resource Summary**

| La Preciosa Mineral Resource Summary October 2021 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Cut-off: AgEQ_kr ≥ 120 g/t | | | | | | | | | |
| | | | | | | | | | |
| Density: 2.55 g/cm³ | | | | | | | | | |
| | | | *Average Value* | | | | *Material Content* | | |
| **Vein** | **CATEGORY** | **Mass** | **AgEQ** | **Ag** | **Au** | **True_Thickness** | **AgEQ** | **Ag** | **Au** |
| | | 000 Tonnes | g/t | g/t | g/t | m | thousand t. oz | thousand t. oz | thousand t. oz |
| Abundancia_2 | IND | 2.6 | 148 | 139 | 0.13 | 0.7 | 12.5 | 11.7 | 0.0 |
| | INF | 0.3 | 214 | 203 | 0.14 | 0.8 | 1.9 | 1.8 | 0.0 |
| Abundancia_3 | IND | 75.4 | 174 | 161 | 0.18 | 2.0 | 422.0 | 389.0 | 0.0 |
| | INF | 202.4 | 161 | 147 | 0.18 | 1.8 | 1,046.0 | 957.0 | 1.0 |
| Abundancia_4 | IND | 2.2 | 274 | 270 | 0.05 | 0.7 | 19.0 | 19.0 | 0.0 |
| | INF | 202.6 | 165 | 162 | 0.03 | 1.2 | 1,073.0 | 1,058.0 | 0.2 |
| Abundancia_5 | IND | 4.0 | 124 | 104 | 0.26 | 2.1 | 16.0 | 13.0 | 0.0 |
| | INF | 1.3 | 123 | 103 | 0.25 | 1.9 | 5.0 | 4.0 | 0.0 |
| Abundancia_Bajo_2 | IND | 263.7 | 166 | 158 | 0.10 | 3.2 | 1,409.5 | 1,341.5 | 0.9 |
| | INF | 99.7 | 197 | 188 | 0.12 | 2.2 | 631.4 | 601.3 | 0.4 |
| Abundancia_Bajo_3 | IND | 111.4 | 211 | 193 | 0.23 | 2.3 | 755.2 | 692.0 | 1.0 |
| | INF | 52.9 | 242 | 222 | 0.25 | 2.0 | 411.7 | 378.6 | 0.0 |
| Abundancia_Bajo | IND | 167.6 | 186 | 172 | 0.18 | 3.1 | 1,003.4 | 928.2 | 1.0 |
| | INF | 157.8 | 222 | 206 | 0.21 | 2.9 | 1,124.5 | 1,043.7 | 1.1 |
| Abundancia | IND | 2553.5 | 234 | 213 | 0.27 | 3.8 | 19,211.9 | 17,527.2 | 21.9 |
| | INF | 360.4 | 179 | 157 | 0.28 | 3.1 | 2,072.3 | 1,822.0 | 3.3 |
| Abundancia_Splay_1 | IND | 116.3 | 170 | 149 | 0.28 | 2.0 | 636.6 | 557.5 | 1.0 |
| | INF | 13.0 | 152 | 132 | 0.27 | 1.6 | 63.6 | 55.0 | 0.1 |
| Carmen | IND | 36.0 | 159 | 146 | 0.17 | 1.2 | 184.4 | 169.0 | 0.2 |
| | INF | 50.4 | 149 | 136 | 0.17 | 1.2 | 241.2 | 220.0 | 0.3 |
| Gloria_2 | IND | 72.2 | 151 | 130 | 0.27 | 1.8 | 350.7 | 302.2 | 0.6 |
| | INF | 48.8 | 190 | 160 | 0.39 | 1.5 | 297.6 | 250.9 | 0.6 |
| Gloria_Alto | IND | 1.3 | 159 | 145 | 0.18 | 1.8 | 6.7 | 6.1 | 0.0 |
| | INF | 0.4 | 145 | 135 | 0.14 | 0.7 | 1.9 | 1.8 | 0.0 |

*table continues…*

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gloria | IND | 1093.6 | 269 | 243 | 0.33 | 4.0 | 9,455.9 | 8,555.7 | 11.7 |
| | INF | 178.5 | 255 | 229 | 0.35 | 3.5 | 1,463.8 | 1,311.9 | 2.0 |
| Martha2 | IND | 1391.0 | 291 | 248 | 0.56 | 6.0 | 13,012.7 | 11,076.6 | 25.2 |
| | INF | 72.8 | 185 | 153 | 0.42 | 3.1 | 433.4 | 357.2 | 1.0 |
| Martha_3 | IND | 40.8 | 129 | 118 | 0.14 | 3.7 | 169.5 | 155.0 | 0.2 |
| | INF | 14.3 | 131 | 118 | 0.17 | 2.7 | 60.1 | 54.2 | 0.1 |
| Martha_5 | INF | 34.3 | 160 | 124 | 0.47 | 2.3 | 176.5 | 136.7 | 0.5 |
| Martha_6 | IND | 388.7 | 155 | 136 | 0.25 | 6.4 | 1,931.2 | 1,695.8 | 3.1 |
| | INF | 109.4 | 177 | 154 | 0.30 | 2.9 | 623.1 | 541.7 | 1.1 |
| Martha_7 | IND | 55.9 | 157 | 146 | 0.14 | 6.3 | 281.5 | 262.7 | 0.2 |
| | INF | 193.9 | 141 | 130 | 0.14 | 6.5 | 879.1 | 813.5 | 0.9 |
| Martha | IND | 10579.1 | 182 | 155 | 0.35 | 9.7 | 61,790.3 | 52,627.5 | 119.4 |
| | INF | 2252.8 | 162 | 139 | 0.29 | 5.7 | 11,701.7 | 10,084.6 | 21.1 |
| Splay_1 | IND | 172.8 | 159 | 142 | 0.22 | 3.5 | 883.6 | 789.6 | 1.2 |
| | INF | 95.9 | 147 | 134 | 0.17 | 3.5 | 451.6 | 411.9 | 0.5 |
| Splay_2 | IND | 24.8 | 192 | 181 | 0.14 | 1.7 | 153.1 | 144.4 | 0.1 |
| | INF | 6.0 | 141 | 132 | 0.11 | 2.0 | 27.1 | 25.5 | 0.0 |
| Transversal_Norte | IND | 8.9 | 173 | 158 | 0.20 | 2.5 | 49.5 | 45.1 | 0.1 |
| | INF | 67.3 | 146 | 130 | 0.22 | 1.7 | 316.5 | 280.8 | 0.5 |
| Transversal | IND | 279.0 | 154 | 142 | 0.15 | 3.7 | 1,382.5 | 1,277.2 | 1.4 |
| | INF | 181.2 | 170 | 158 | 0.17 | 2.4 | 992.2 | 917.8 | 1.0 |
| | | | ***Average Value*** | | | | ***Material Content*** | | |
| **All Veins** | **CATEGORY** | **Mass** | **AgEQ** | **Ag** | **Au** | **True_Thickness** | **AgEQ_kr** | **Ag_gpt_kr** | **Au_gpt_kr** |
| | | kt | g/t | g/t | g/t | m | thousand t. oz | thousand t. oz | thousand t. oz |
| | IND | 17440.6 | 202 | 176 | 0.34 | 2.3 | 113,137.7 | 98,586.0 | 189.2 |
| | INF | 4396.5 | 170 | 151 | 0.25 | 1.3 | 24,095.2 | 21,329.8 | 35.5 |
| Differences may occur in totals due to rounding. | | | | | | | | | |
| Notes: | Ag price | | 19 | $/oz | | | | | |
| | Au Price | | 1750 | $/oz | | | | | |
| | Ag recovery | | 90 | % | | | | | |
| | Au recovery | | 75 | % | | | | | |

Notes on Table 14-10:
kt=thousands of tonnes, Cu=Silver, Au=gold, t. ozs.= thousands of ounces.
Mineral Resources are reported using CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) and CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (November 2019).
The QP for the estimate is Mr. Michael F O'Brien, P.Geo., Red Pennant Resources.Geoscience.
The Mineral Resources have an effective date of July 23, 2021.
Mineral Resources are reported using a silver equivalent cut-off of 120 g//t, Metal prices are in $US.
Totals may not sum due to rounding.
Areas of uncertainty that may materially impact the MREs include:
- Changes to long-term metal price assumptions;
- Changes in local interpretations of mineralization geometry, fault geometry and continuity of mineralized zones;
- Changes to metallurgical recovery assumptions;
- Changes to resource classification approach
- Variations in geotechnical, hydrogeological, and mining assumptions;
- Changes to environmental, permitting, and social license assumptions.

## 14.17 QP Comments

The QP believes that the Mineral Resources have been estimated using good industry practice and conform to the 2014 CIM Definition Standards. Mineral Resources are constrained by reasonable open pit mining assumptions.

There are no other known environmental, legal, title, taxation, socioeconomic, marketing, political, or other relevant factors that would materially affect the estimation of Mineral Resources that are not discussed in this Report.

# 15.0 MINERAL RESERVE ESTIMATE

A Mineral Reserve has not been estimated for the Project as part of this Technical Report.

A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource.

# 16.0 MINING METHODS

This section is not applicable.

# 17.0 RECOVERY METHODS

This section is not applicable.

# 18.0 PROJECT INFRASTRUCTURE

This section is not applicable.

# 19.0 MARKET STUDIES AND CONTRACTS

This section is not applicable.

# 20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This section is not applicable.

# 21.0 CAPITAL AND OPERATING COSTS

This section is not applicable.

# 22.0 ECONOMIC ANALYSIS

This section is not applicable.

# 23.0 ADJACENT PROPERTIES

Arcelia Gold Corp., through its wholly owned subsidiary, Arcelia Gold, S.A. de C.V. owns two (2) Mining Concessions (La Peña, Título #204828 and El Niño, Título #236219) that are adjacent to and contiguous with the El Choque Tres, El Choque Cuatro, La Preciosa, and San Juan Mining Concessions of PMLP;

Canasil Resources, Inc., through its wholly owned subsidiary, Minera Canasil, S.A. de C.V. owns two (2) Mining Concessions (Carina, Título #233344 and Reducción Victoria Fracción B, Título #235845) that are adjacent to and contiguous with the San Juan Mining Concession of PMLP.

# 24.0 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

# 25.0 INTERPRETATIONS AND CONCLUSIONS

## 25.1 Geology

The Project is located in an area with moderate climate, workable topography and regional work force that has experience in construction and operations of mining projects. The Project is located near a major population center and has proximity to infrastructure. The permitting process in Mexico is relatively straightforward and a reasonable permitting schedule is achievable. The preparation of permitting documents is essentially complete, with only the source of power and final water permit to be resolved, prior to submission.

The mineral resources for the Project were developed using a computer block model, the drillhole data, and the geologic and structural interpretations. The mineral resources are summarized in Table 25-1.

**Table 25-1: Summary of Project Mineral Resources (Effective Date October 27, 2021)**

| La Preciosa Property - Mineral Resources Summary - Effective Date October 27, 2021 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Grade | | | | Metal Contents | | | |
| All Veins | Classification | Tonnage kt | Ag g/t | Au g/t | Cu % | AgEq g/t | Ag M oz | Au k oz | Cu % | AgEq M oz |
| | Total Measured | - | - | - | - | - | - | - | - | - |
| | Total Indicated | 17,441 | 176 | 0.34 | - | 202 | 99 | 189 | - | 113 |
| | **Total M&I** | **17,441** | **176** | **0.34** | **-** | **202** | **99** | **189** | **-** | **113** |
| | **Total Inferred** | **4,397** | **151** | **0.25** | **-** | **170** | **21** | **35** | **-** | **24** |

## 25.2 Metallurgy

The historical and 2021 test programs show that in general the samples tested responded reasonably well to the cyanidation and flotation processes. Further test work should be conducted to optimize the process conditions, especially flotation conditions, to improve silver and gold recovery.

# 26.0 RECOMMENDATIONS

## 26.1 Geology

The QA/QC and data validation procedures used by the previous owner (Coeur) should be maintained in future exploration drilling to maintain consistency of data and approach.

## 26.2 Metallurgy

It is recommended metallurgical developments continue to support optimization of process parameters to improve silver and gold recovery. The test work and studies should be able to provide sufficient support data for next phase study and design work, including:

- Optimize process routine, including a flotation alone and a flotation-cyanidation hybrid process;
- Verify and optimize metallurgical performances on the samples representing future mill feeds, especially the life of mine average mill feed and the initial year mill feeds based on the updated mine plan;
- Test metallurgical responses of variability samples representing various lithological characters, alterations, grades, and spatial locations;
- Develop preliminary metallurgical performance projection based on the updated mine plan and proposed process.

The estimated cost to implement the recommended test work is USD$160,000.

# 27.0 REFERENCES

Aguirre-Díaz, G.J., and McDowell, F.W., 1993. Nature and timing of faulting and synextensional magmatism in the southern Basin and Range, central-eastern Durango, Mexico: Geological Society of America Bulletin, v. 105, p. 1435-1444.

ALS Metallurgy Kamloops, 2014. Metallurgical testwork for the La Preciosa Project, Durango Mexico: Report No. KM4052, April 22, 2014.

AMBA Consultoria (AMBA), 2020. La Preciosa – Resource Estimation report prepared by AMBA Consultoria e Serviços Ltda. ('AMBA') on behalf of COEUR Mining Inc.

ASTM International (ASTM), 2007. ASTM D422 - 63 Standard test method for particle-size analysis of soils, Pennsylvania, USA.

ASTM International (ASTM), 2009. ASTM D2488-09a Standard practice for description identification of soils (Visual-Manual Procedure), Pennsylvania, USA.

ASTM International (ASTM), 2010a. ASTM D2216 – 10 Standard test methods for laboratory determination of water (Moisture) content of soil and rock by mass, Pennsylvania, USA.

ASTM International (ASTM), 2010b. ASTM D4318 – 10 Standard test methods for liquid limit, plastic limit, and plasticity index of soils, Pennsylvania, USA.

Bertoli, 0., Job, M., Vann, J., and Dunham, S., 2003. Two-Dimensional Geostatistical Methods — Theory, Practice and a Case Study from the 1A Shoot Nickel Deposit, Leinster, Western Australia. 5th International Mining Geology Conference.

Bieniawski, Z.T., 1989. Engineering rock mass classifications – A complete manual for engineers and geologists in mining, civil, and petroleum engineering: Wiley, New York, 251 p.

Canadian Dam Association (CDA), 2007. Dam safety guidelines.

Canadian Geotechnical Society, 2006. Canadian foundation engineering manual. 4th Edition: BiTech Publishers Ltd. British Columbia, Canada.

Cardenas Vargas, J., Carrasco Centeno, M., Saenz Reyes, R., and Macedo Palencia, R., 1993, Monografía geológico-minera del Estado de Durango: in Consejo de recursos minerales: Publication M-10e, p 132-139.

Chiles, J P and Delfiner, P, 1999. Geostatistics, Modelling Spatial Uncertainty (Wiley Series in Probability and Statistics: Wiley Inter-Science: New York).

Clifton Associates, 2009. Línea base ambiental, Proyecto La Preciosa: unpublished report prepared for Pan American Silver Corp Mexico, 148 p., 12 Appendices.

Coeur, 2012. Exploration quality assurance and quality control (QA/QC) program and protocols: unpublished proprietary guidance document prepared by Coeur Mines Corporation. 31 January 2012.

Commission National de Agua (CONAGUA), 2009a. Actualización de la disponibilidad media anual de agua subterranea: Acuífero (1005) Madero-Victoria, Diario Oficial de la Federación.

Commission National de Agua (CONAGUA), 2009b. Actualizacion de la disponibilidad media annual de agua subterranea: Acuifero (1003) Valle del Guadiana, Diario Oficial de la Federación.

Coote, A., 2010, Petrological studies of diamond core from La Preciosa silver deposit, Durango State, Mexico: Unpublished report prepared by Applied Petrologic Services and Research, 58 p.

Cordova, D., 1988, Estratigrafía de las rocas volcánicas de la región entre sierra de Gamón y laguna de Santiaguillo, estado de Durango: UNAM, Instituto de Geología, Revista, v. 7, no. 2, p. 136-147.

Ferrari, L., Valencia-Moreno, M., and Bryan, S., 2007, Magmatism and tectonics of the Sierra Madre Occidental and its relation with the evolution of the western margin of North America, in Alaniz-Álvarez, S.A., and

Nieto-Samaniego, Á.F., eds., Geology of Mexico: Celebrating the Centenary of the Geological Society of Mexico: Geological Society of America Special Paper 422, p. 1–39.

FLSmidth, 2014. Coeur La Preciosa (M-845-01) Crusher work index testing: unpublished report, 7 March 2014.

Hazen Research Inc., 2014a. Clay analysis of composites samples (variability) from the La Preciosa Project feasibility study: unpublished report for Coeur Mining, Hazen Project 11841 (Part 1), 23 January 2014.

Hazen Research Inc., 2014b. Comminution testing – McClelland half core composites: unpublished report for Coeur Mining, Hazen Project 11841-02, 4 February 2014, 2 p., 4 appendices.

Hazen Research Inc., 2014c. Comminution testing – Variability comminution composites: unpublished report for Coeur Mining, Hazen Project 11841-02, 4 February 2014, 3 appendices.

Hazen Research Inc., 2014d. Bulk leaching on the variability master composite: unpublished report for Coeur Mining, Hazen Project 11841-03, 11 February 2014, 7 p., 2 p., 2 appendices.

Hazen Research Inc., 2014e. Mineralogical characterization by QEMSCAN of a quartz vein lithology composite from the La Preciosa Project feasibility study: unpublished report prepared for Coeur Mining, 17 February 2014.

Hazen Research Inc., 2014f. Mineralogical Characterization by QEMSCAN of a three (variability) composites from the La Preciosa Project Feasibility Study: unpublished report prepared for Coeur Mining, 24 February 2014.

Hazen Research Inc., 2014g. Comminution testing – Quartz vein (QV), sedimentary (SED), and volcanic (VOL): unpublished report, Hazen Project 11841-02, 17 March 2014.

Hazen Research Inc., 2014h. Mineralogical characterization by QEMSCAN of two (lithology) composites from the La Preciosa Project feasibility Study: unpublished report prepared for Coeur Mining, 20 March 2014.

Hazen Research Inc., 2014i. Clay analysis of composites samples (lithology) from the La Preciosa Project feasibility study: unpublished report for Coeur Mining, Hazen Project 11841 (Part 2), 7 April 2014.

Hazen Research Inc., 2014j. Metallurgical program to support the La Preciosa project feasibility study: unpublished report prepared for Coeur Mining, Inc., 30 May 2014, p. 14-22.

Hedenquist, J.W., 2014. Observations on epithermal Ag-Au veins in the Palmarejo, Chihuahua, and La Preciosa, Durango districts, Mexico: unpublished report prepared for Coeur Mining by Hedenquist Consulting, Inc., 28 p.

Instituto Nacional de Antropología e Historía, 2013. Letter from Dr. Alberto Ramirez, Delegado Centro INAH Durango to Ms. Janeth Walttraud Wagner de Rollins, Coeur, 13 October 2013, 1 p.

Knight Piésold, 2014a. La Preciosa Project – Open pit slope design – Preliminary slope angle summary: unpublished PowerPoint presentation to Dave Tyler [Proyectos Mineros La Preciosa, S.A. de C.V.] prepared by Ben Peacock, North Bay, Ontario, Ref. No. NB201-431/2, 16 April 2014, 29 p.

Knight Piésold, 2014b. 2014 Site investigation summary: unpublished report prepared for Proyectos Mineros La Preciosa, S.A. de C.V. by R. McIsaac, North Bay, Ontario, Ref. No. NB201-431/2-1 Rev. 0, 15 May 2014, 23 p., 4 appendices.

Knight Piésold, 2014c. Tailings storage facility water balance: unpublished draft memorandum prepared for D. Tyler, Proyectos Mineros La Preciosa, S.A. de C.V. by A. Rees, North Bay, Ontario, Ref No. NB14-00305, 30 May 2014, 10 p.

Knight Piésold, 2014d. Groundwater inflow estimates to the proposed main pit, La Preciosa Project: unpublished letter report prepared for D. Tyler, Proyectos Mineros La Preciosa, S.A. de C.V. by E. Westberg, Vancouver, British Columbia, Ref. No. VA14-00864, 20 June 2014, 19 p.

Knight Piésold, 2014e. Tailings storage facility feasibility design: unpublished draft report prepared for Proyectos Mineros La Preciosa, S.A. de C.V. by R. McIsaac, North Bay, Ontario, Ref. No. NB201-431/3-1 Rev A, 25 June 2014, 37 p. 6 appendices.

Knight Piésold, 2014f. Open pit slope design: unpublished report prepared for Proyectos Mineros La Preciosa, S.A. de C.V. by A. Jackson, North Bay, Ontario, Ref. No. NB201-431/2-2 Rev. 0, July 31, 2014, 51 p., 11 appendices.

M3 Engineering & Technology (M3), 2013. La Preciosa silver-gold project, Preliminary economic assessment, Durango, Mexico: published NI 43-101 report prepared for Coeur Mining Inc., 26 July 2013, 176 p., 1 appendix.

M3 Engineering & Technology Corporation of Tucson, Arizona, 2014. NI 43-101 Technical Report Feasibility Study for La Preciosa Silver-Gold Project.

McClelland Laboratories, Inc., 2014. Report on milling / cyanidation testing – La Preciosa master drill core composite, MIL Job No. 3633, for Coeur Mining Inc., 4 March 2014.

Mine Development Associates (MDA), 2009. Technical report on the La Preciosa project, Durango State, Mexico: unpublished report prepared for Orko Silver Corp., 31 March 2009, 115 p., 7 appendices.

Mining Plus, 2012. La Preciosa Silver Deposit, Updated mineral resource estimate statement, Durango, Mexico: unpublished report prepared for Orko Silver Corp., 5 November 2012, 156 p.

Nieto-Samaniego, A., Barajas-Gea, C.I, Gómez-González, J.M., Rojas, A., Alaniz-Álvarez, S.A., and Xu, S., 2012. Geología, evolución estructural (Eoceno al actual) y eventos sísmicos del Graben de Santiaguillo, Durango, Mexico: Revista Mexicana de Ciencias Geológicas, v. 29, no. 1, p. 115-130.

Nieto-Samaniego, Á.F., Ferrari, L., Alaniz-Álvarez, S.A., Labarthe-Hernández, G., and Rosas-Elguera, J., 1999. Variation of Cenozoic extension and volcanism across the southern Sierra Madre Occidental volcanic province, Mexico: Geological Society of America Bulletin, v. 111, p. 347-363.

Proyectos Mineros La Preciosa, 2014. Site health and safety program and training: unpublished training document prepared in Spanish, June 2014, 12 p.

Pocock Industrial, Inc., 2014. Flocculant screening, gravity sedimentation, pulp rheology, vacuum filtration, pressure filtration, and pressure clarification studies: unpublished report prepared for Coeur Mining, La Preciosa Project, March-April, 2014.

SEMARNAT, 2004. Norma Oficial Mexicana NOM-0141-SEMARNAT-2003, Guidelines to establish tailings characteristics: Mexican federal regulatory guidance published by Secretaría de Medio Ambiente y Recursos Naturales.

SGS Minerals at Durango, Mexico, 2021. An Investigation into "Metallurgical Study to Determine the Recovery of Au, Ag, Pb and Zn in Two Ores Composites".

Snowden Mining Industry Consultants, 2011a. Pan American Silver Corp. and Orko Silver Corp, La Preciosa silver property, Durango Mexico, Preliminary economic assessment – Technical report: NI 43-101 report prepared by A. Finch, M. Stewart, J. Snider, T.L. Drielick, T.L., and G. Hawthorn for Pan American Silver Corp. and Orko Silver Corp., 30 June 2011, 219 p.

Snowden Mining Industry Consultants, 2011b. Analysis of QA/QC data for La Preciosa Project: unpublished report prepared for Pan American Silver, July 2011.

Spectral International, Inc., 2014. VIS/SWIR spectral analysis, La Preciosa, Mexico, Metallurgical Support, Part 1: unpublished report, January 2014.

Spectral International, Inc., 2014. VIS/SWIR spectral analysis, La Preciosa, Mexico, Metallurgical Support, Part 2: unpublished report, March 2014.

SRK Consulting, 2014a. La Preciosa PMP estimation: unpublished memorandum by M. Salguero for Coeur Mining, Inc., 7 February 2014, 6 p.

SRK Consulting, 2014b. Storm design calculations: unpublished memorandum by M. Salguero for Coeur Mining, Inc., 5 March 2014, 6 p.

SRK Consulting, 2014c. Conceptual closure and reclamation plan, La Preciosa Project: unpublished report prepared by J. Romero and C. Hoag for Proyectos Mineros La Preciosa S.A. de C.V., April 4, 2014, 32 p., 3 appendices.

SRK Consulting, 2014d. Chemical and petroleum spill prevention and control plan – La Preciosa Project: unpublished management plan prepared by J. Begay and C. Hoag for Proyectos Mineros La Preciosa S.A. de C.V., 15 May 2014, 19 p., 6 appendices.

SRK Consulting, 2014e. Monitoring plan for the tailings storage facility – La Preciosa Project: unpublished plan prepared for Proyectos Mineros La Preciosa S.A. de C.V., 3 June 2014, 12 p., 1 appendix.

SRK Consulting, 2014f. Alteration study of the La Preciosa silver-gold deposit, Durango State, Mexico: unpublished report by A. Fonseca, for Coeur Mining, Inc., 5 June, 2014, 52 p.

SRK Consulting, 2014g. Structural geological analysis of the La Preciosa silver-gold deposit, Durango State, Mexico: unpublished report by I. Vos and S. Craggs for Proyectos Mineros La Preciosa S.A. de C.V., 5 June 2014, 53 p.

SRK Consulting, 2014h. Televiewer analysis of the La Preciosa Project, Mexico: unpublished memo by I. Vos and S. Craggs for Coeur Mining, Inc., 15 June 2014, 12 p.

SRK Consulting, 2014i. La Preciosa hydrological assessment: unpublished memorandum by J. Begay for Proyectos Mineros La Preciosa S.A. de C.V., 21 July 2014, 15 p., 2 attachments.

SRK Consulting, 2014j. Steady state site-wide water balance for La Preciosa: unpublished memorandum for Proyectos Mineros La Preciosa S.A. de C.V. by J. Begay, 22 July 2014, 8 p.

SRK Consulting, 2014k. Geochemical characterization of La Preciosa Project – Results of geochemical static testing of drill core and metallurgical test residuals: unpublished report for Proyectos Mineros La Preciosa S.A. de C.V. by D. Bird, D. Russin, and C. Hoag, 23 July 2014, 99 p., 5 appendices.

SRK Consulting, 2014l. La Preciosa waste rock monitoring plan: unpublished plan prepared for Proyectos Mineros La Preciosa S.A. de C.V. by C. Hoag and D. Russin, 24 July 2014, 15 p.

SRK Consulting, 2014m. Plan de muestreo y análisis – Proyectos La Preciosa: unpublished groundwater monitoring plan prepared for Proyectos Mineros La Preciosa S.A. de C.V., 25 July 2014, 15 p.

SRK Consulting, 2014n. Hydrogeologic and surface water site characterization report: unpublished report by A. Pérez Morán, M. Salguero Lazo de la Vega, J. Begay, and D. Russin, 8 August 2014, 31 p., 2 appendices.

# 28.0 QP CERTIFICATES

I, Michael F. O'Brien, P.Geo., do hereby certify that:

- I am an independent consultant and director of Red Pennant Communications Corp. a British Columbia Corporation, with a business address at 81-1380 Pinetree Way, Coquitlam, BC, V3E 3S6.
- This certificate applies to the technical report entitled "Resource Estimate Update for the Proposed Acquisition of the La Preciosa Property, Durango, Mexico", with an effective date of October 27, 2021 (the "Technical Report").
- I am a graduate of the University of Natal, (B.Sc. Hons. Geology, 1978) and the University of the Witwatersrand (M.Sc. Engineering, 2002).
- I am a member in good standing of Engineers and Geoscientists British Columbia (#41338).
- I am a member in good standing of the South African Council for Natural Scientific Professions (South Africa, 400295/87). My relevant experience is 36 years of experience in operations, mineral project assessment and I have the experience relevant to Mineral Resource estimation of metal deposits. I have estimated Mineral Resources for greenstone-hosted gold, diatreme complex epithermal gold deposits, porphyry copper-gold, volcanogenic massive sulphide deposits and shear zone-hosted deposits. I am a "Qualified Person" for the purposes of National Instrument 43-101 (the "Instrument").
- My recent personal inspection of the Property was on July 20, 2021. The core shack and core processing facilities were visited, and several representative cores were reviewed and compared with logging sheets. Underground drift development on the Gloria and Abundancia Vein and outcrops were visited and the veins were examined..

I am responsible for Sections 1.1, 1.3, through 1.9, 1.11.1, 4.0 through 12.0, 14.0, 23.0, 25.1, 26.1, and 27.0 (only references from sections for which I am responsible).

- I am independent of Avino Silver & Gold Mines Ltd. as Independence is defined by Section 1.5 of NI 43-101.
- I have had no prior involvement with the La Preciosa Property that is the subject of the Technical Report.
- I have read NI 43-101 and the sections of the Technical Report that I am responsible for have been prepared in compliance with NI 43-101.
- As of the date of this certificate, to the best of my knowledge, information and belief, the section of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: October 27, 2021
Signing Date: December 10, 2021

*"signed and stamped"*

Michael F. O'Brien, P.Geo.
Owner
Red Pennant Geoscience Ltd.

I, Hassan Ghaffari, P.Eng., M.A.Sc., do hereby certify that:

- I am a Director of Metallurgy with Tetra Tech Canada Inc. with a business address at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, BC, V6C 1N5.
- This certificate applies to the technical report entitled "Resource Estimate Update for the Proposed Acquisition of the La Preciosa Property, Durango, Mexico", with an effective date of October 27, 2021 (the "Technical Report").
- I am a graduate of the University of Tehran (M.A.Sc., Mining Engineering, 1990) and the University of British Columbia (M.A.Sc., Mineral Process Engineering, 2004).
- I am a member in good standing of the Engineers and Geoscientists British Columbia (#30408).
- My relevant experience includes 30 years of experience in mining and mineral processing plant operation, engineering, project studies and management of various types of mineral processing, including hydrometallurgical processing for porphyry mineral deposits.
- I am a "Qualified Person" for the purposes of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) for those sections of the Technical Report that I am responsible for preparing.
- My recent personal inspection of the Property on July 20, 2021. I conducted a general overview of the Project site.
- I am responsible for Sections 1.2, 2.0, 3.0, 15.0 through 22.0, and 24.0.
- I am independent of Avino Silver & Gold Mines Ltd. as Independence is defined by Section 1.5 of NI 43-101.
- I have had no prior involvement with the La Preciosa Property that is the subject of the Technical Report.
- I have read NI 43-101 and the sections of the Technical Report that I am responsible for have been prepared in compliance with NI 43-101.
- As of the date of this certificate, to the best of my knowledge, information and belief, the section of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: October 27, 2021

Signing Date: December 10, 2021

*"signed and stamped"*

Hassan Ghaffari, P.Eng., M.A.Sc.
Director of Metallurgy
Tetra Tech Canada Inc.

I, Jianhui (John) Huang, Ph.D., P.Eng., do hereby certify that:

- I am a Senior Metallurgist with Tetra Tech Canada Inc. with a business address at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5.
- This certificate applies to the technical report entitled "Resource Estimate Update for the Proposed Acquisition of the La Preciosa Property, Durango, Mexico", with an effective date of October 27, 2021 (the "Technical Report").
- I am a graduate of North-East University, China (B.Eng., 1982), Beijing General Research Institute for Non-ferrous Metals, China (M.Eng., 1988), and Birmingham University, United Kingdom (Ph.D., 2000).
- I am a member in good standing of the Engineers and Geoscientists British Columbia (#30898).
- My relevant experience includes over 35 years involvement in mineral processing for base metal ores, gold and silver ores, and rare metal ores, and mineral processing plant operation and engineering including hydrometallurgical mineral processing for porphyry mineral deposits.
- I am a "Qualified Person" for purposes of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) for those sections of the Technical Report that I am responsible for preparing.
- I have not conducted a personal inspection of the La Preciosa Property.
- I am responsible for Sections 1.10, 1.11.2, 13.0, 25.2, 26.2, and 27.0 (only references from sections for which I am responsible).
- I am independent of Avino Silver & Gold Mines Ltd. as Independence is defined by Section 1.5 of NI 43-101.
- I have had no prior involvement with the La Preciosa Property that is the subject of the Technical Report.
- I have read NI 43-101 and the sections of the Technical Report that I am responsible for have been prepared in compliance with NI 43-101.
- As of the date of this certificate, to the best of my knowledge, information and belief, the section of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: October 27, 2021
Signing Date: December 10, 2021

*"signed and stamped"*

Jianhui (John) Huang, Ph.D., P.Eng.
Senior Metallurgist
Tetra Tech Canada Inc.