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ECO ORO MINERALS CORP.

# Resource Estimation of the Móngora Gold-Silver Deposit, Santander Department, Colombia

TECHNICAL REPORT

**Prepared for:**

Eco Oro Minerals Corp.  
Suite 1430 - 333 Seymour Street  
Vancouver, British Columbia  
V6B 5A6

**Prepared by:**

Golder Associates Perú S.A  
Edificio Miracorp. Av. La Paz 1049 - Piso 7  
Miraflores - Lima 18, Perú

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**Qualified Person:**

Marcelo Godoy, MAusIMM (CP), Golder Associates.

**Contributors:**

Alfonso Silva Duarte, Geology Superintendent, Eco Oro  
Jorge Paulo Peres, MAusIMM, Golder Associates  
Frederick Felder, Consulting Geologist





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## 1.0 SUMMARY

### 1.1 Scope

Eco Oro Minerals Corp. (Eco Oro) commissioned Golder Associates Peru S.A. (Golder) to undertake a Resource Estimation for the Móngora Silver-Gold Deposit in the northern region of Santander, Colombia, and to prepare a Technical Report as defined in Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects.

The Móngora deposit is one of five deposits (Angostura, Armenia, La Plata, Móngora and Violetal) that have been identified within the Eco Oro's property in Santander, Colombia. An updated NI 43-101 Preliminary Economic Assessment (PEA) for the exploitation of the Angostura Deposit by an underground mining operation dated March 23, 2012 was filed on SEDAR ([www.sedar.com](http://www.sedar.com)) on March 27, 2012. Much of the context for the NI 43-101 Resource Estimation of the Móngora Gold-Silver Deposit is copied from the PEA as it applies equally to both reports. In particular, sections 4, 5, 6, 10, 11 & 12 are very similar in both reports.

The Effective Date of this Report is April 18, 2012 ("Effective Date"). This Technical Report discloses the results of the first resource estimation for the Móngora deposit. As part of the work Golder undertook a detailed review of data capture, sample storage, QAQC, core logging and geological modeling procedures carried out by Eco Oro and their agents.

This Report and the resource estimate have been prepared in compliance with the disclosure and reporting requirements set forth in the current Canadian Securities Administrator's National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1.

### 1.2 Property Location and Ownership

Eco Oro's wholly owned Móngora gold and silver deposit is located in northeastern Colombia near the border with Venezuela, some 400 km north-northeast of the capital city of Bogotá, and approximately 67 km northeast of the city of Bucaramanga in the Department of Santander.

The property is located in steep, mountainous and relatively rugged terrain at elevations ranging from 2,400 to 3,200 metres above sea level (m.a.s.l.). The geographic coordinates of the Móngora deposit are N7° 22' Latitude and W72° 53' Longitude.

Current Project access from Bucaramanga is via the partially-paved Matanza–Surata–California road, a distance of 67 km and travel time of two to three hours by car, depending on weather conditions. Within the Project area, access is by horse and foot trails.

Eco Oro initiated exploration at the Móngora target area in 2008 as part of the evaluation of the area south of the Angostura deposit that straddles the prospective Móngora – Romeral Fault.

The Móngora area is encompassed by former Mining Title 300-68, which was consolidated into the larger 3452 Mining Title. Over the past fifteen years Eco Oro has acquired outright ownership of 14 mining titles either by purchase or by application to governmental agencies (concession contracts, exploitation licenses, and exploration licenses) covering approximately 30,000 hectares in the municipalities of California, Vetás, Suratá, Charta and Tona in the Department of Santander and Cucutilla and Mutiscua in the Department of Norte de Santander. The Móngora deposit is located in the Vetás Municipality.



### 1.3 Project History

Early gold mining activities are reported to have occurred in the general area of the Angostura deposit since pre-colonial times and continued during Spanish rule with the mining of high-grade veins and placers. After independence and throughout the last century, precious metals were mined on a small scale in the districts of Vetas and California.

### 1.4 Deposit Geology

The Móngora deposit is located in the northern Andes ranges, within the western branch of the Eastern Cordillera in northeastern Colombia, and more specifically within the Santander Massif. The oldest rocks in the Massif are Precambrian gneisses and schists that were part of the Guyana Shield, and which have been regionally metamorphosed to upper amphibolite grade in the Palaeozoic.

Gold mineralization occurs within the Angostura–California gold province, a belt of epithermal gold occurrences that has developed along the regional-scale Rio La Baja fault in association with the Middle Miocene stocks.

The Móngora mineral occurrence extends over 1 km in a northeast direction and 700 meters in the WNW – ESE direction and has been drilled between 2,600 to 3,200 m.a.s.l. The deposit is delimited to the east by the Móngora–Romeral fault and is open to the west, southwest and north east.

A suite of porphyritic diorite to quartz monzonite bodies and dyke swarms of Triassic age, are intruded into the amphibolite facies Bucaramanga Gneiss, a series of meta-sediments of Proterozoic age. These rocks have been intersected by a swarm of generally east–northeast trending, steeply north-dipping structures. More than 100 individual veins and composite veins have been identified to date by means of surface mapping and interpretation of drill hole data.

Mineralization occurs in bands, veinlets, stringers, and silicified hydrothermal breccias within the structures. In the upper parts of the mineralized system, alteration and mineralization are stronger in the intrusive host rocks, and the meta-sediments appear to make a poorer host for the gold–silver mineralization.

Mineralized structure widths vary from less than 2 m for individual veins to over 5 m for composite structures, and strike lengths range from less than 250 m to over 400 m and down dip extensions to over 300 m. The intensity of fracturing, and the degree of secondary porosity and permeability of the host rocks controls the density of structures, and therefore the mineralization. Flexures along mineralized structures, vein–vein intersections, and vein–fault intersections are preferred mineralization sites typically displaying higher gold and silver grades.

### 1.5 Data Verification

A number of data verification programs and audits have been performed for the Angostura project throughout the Project's history that also encompassed the Móngora deposit, primarily in support of compilation of technical reports on the Project. A reasonable level of verification has been completed, and no material issues would have been left unidentified from the programs undertaken.

Barry Smee (Smee and Associates Consulting Ltd) is an independent auditor of the preparation laboratory as well as QAQC practices reviewer and has made three visits to the Angostura Camp site since 2004 with the most recent review carried out in September 2010.



Eco Oro applied industry best practices to explore for gold and silver on the Angostura project. The exploration data was collected with care and is appropriately managed to ensure safeguard of exploration information. The same standard has been used for all drilling carried out at Móngora. The resulting exploration data was considered reliable for the purpose of resource estimation.

### 1.6 Mineral Resource Estimate

The mineral resource estimation was carried out by Golder Associates Peru S.A. (Golder) and is dated January 14, 2012 and includes drilling and assay data up to February 2011. The mineral resource estimate includes information from 58 holes, 20,276.2 m of drilling and 9,673 gold samples of which 498 samples and 979.4 m are in structures.

Eco Oro's geologists constructed mineralization wireframes using a cut-off grade of 2 g/t Au for structures up to 2 m thickness. For structures with thickness greater than 2 m, wireframes were snapped to a cut-off grade of 1.5 g/t Au bearing in mind the possibility of using different underground exploitation methods in different thicknesses of mineralized structures. The wireframes were projected 25 m to 50 m horizontally and vertically beyond the last vein intercept.

The spatial continuity of gold grades was inferred based on a single population of grades, which included all samples that intercepted the mineralized structures modeled by Eco Oro geologists. For the estimation procedure each structure was estimated separately.

Codes were assigned to each block to indicate the oxidation degree as oxide or sulphide material. Density values were assigned to each of the weathered zones using a metal content relationship for blocks located in the sulphide and a fixed mean value was applied to blocks located in the oxide zone.

Data inside the structures were composited to a standard 2.0 m length. Grade distributions were evaluated using probability plots for all structures. Grade caps and restrictions were applied to gold, silver, arsenic, copper and sulfur grades. Variograms were constructed to provide the appropriate distances for search ellipsoid radii for each variable. Ordinary Kriging was used to interpolate gold, silver, arsenic, copper and sulfur grades. Each vein was interpolated with its own data and using a search ellipse that follows its own spatial orientation (strike and dip).

The model was validated using visual methods, tabulations and comparison between floating window average grades of composites and block estimates to ensure no bias was present. Block estimates were classified as Inferred due to the preliminary analysis stage. Table 1-1 presents an estimate of mineral resources based upon the above mentioned methodology for a cut-off grade of 1.5 g/t Au.

The mineral resources disclosed in this Technical Report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

**Table 1-1 Mineral Resource Estimates by Material Type (cut-off grade 1.5 g/t Au)**

Material Type	Inferred <sup>1,2,3</sup>			
	Tonnage (kt)	Au Grade (g/t)	Ag Grade (g/t)	Contained Ounces (Oz Gold)
Oxide	1,057	2.83	5.32	96,205
Sulphide	2,019	2.88	4.25	186,940
Total	3,076	2.86	4.62	282,867

- 1) Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.
- 2) Mineral Resource tonnages and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add up due to rounding.
- 3) An assumption was made that Móngora mineralized material has similar metallurgical behaviour to Angostura. Some preliminary leach tests have been carried out on Móngora drill core.

### 1.7 Community

Eco Oro is committed to developing the Angostura project in a socially and environmental responsible manner that will be beneficial for the local and regional people, as well as Colombia as a whole:

- Eco Oro has implemented a Business Practice founded on 3 pillars, Core Business, Support Business and Social Investment Initiatives. All provide employment opportunities and freedom of movement between them.
- Eco Oro has implemented a Sustainable Social Responsibility ("SSR") model that seeks to provide human and capital capacity within the area of operations. Eco Oro is providing institutional capacity building with a program co-financed with the International Finance Corporation - A member of the World Bank Group. The SSR model includes:
  - Support Businesses that are often outsourced to small business in the area of operations.
  - Small Business Initiative established to build human and capital capacity for Support Business in the area of operations.
  - Social Investment Initiatives managed through a Foundation which provides support to local and regional communities in the area of operations.

### 1.8 Qualified Person

The Móngora Mineral Resource Estimate and this Technical Report were prepared by a team comprising Golder and Eco Oro geologists under the supervision and review of Dr. Marcelo Godoy, MAusIMM (CP), who is a qualified person and independent for the purposes of National Instrument 43-101.



### 1.9 Conclusions and Recommendations

Golder has reviewed the project data and the drill hole database and has visited the project site. Golder believes the data provided by Eco Oro, as well as the geological interpretations Eco Oro and their agents have derived from the data, are generally an accurate and reasonable representation of the Angostura's mineralized structures.

The block grade estimates have been derived using methodology and parameters that are appropriate for the observed spatial continuity of grades and style of mineralization. The mineral resources disclosed in this Technical Report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.

The Mongora deposit has the potential to enhance the value of the envisioned Angostura underground mine project. Not only are the prospects for further expansion of the mineralization at Mongora favourable but its close proximity to Angostura also opens up the possibility of developing Mongora as an early source of mineralized feed in the development of the project.

The following studies should be carried out to support the next phase of project development:

- Infill drilling to confirm the continuity of the mineralized veins and improve grade estimation.
- Metallurgical testing to confirm assumption that Móngora mineralized material has similar metallurgical behavior to that of Angostura.
- Geotechnical characterization program including oriented drilling.



## 2.0 INTRODUCTION

Eco Oro Minerals Corp. (Eco Oro) commissioned Golder Associates Peru S.A. (Golder) to undertake a resource estimation of the Móngora deposit and to prepare a Technical Report as defined in Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects.

The Móngora deposit is one of five deposits (Angostura, Armenia, La Plata, Móngora and Violetal) that have been identified within Eco Oro's Angostura project target deposits in Santander, Colombia. An updated NI 43-101 Preliminary Economic Assessment (PEA) for the exploitation of the Angostura Deposit by an underground mining operation dated March 23, 2012 was filed on SEDAR ([www.sedar.com](http://www.sedar.com)) on March 27, 2012. Much of the context for the NI 43-101 Resource Estimation of the Móngora Gold-Silver Deposit is copied from the PEA as it applies equally to both reports. In particular, Sections 4, 5, 6, 10, 11 & 12 are very similar in both reports.

As part of the work Golder undertook a detailed review of data capture, sample storage, QAQC, core logging, geological modeling and grade estimation procedures carried out by Eco Oro and their agents.

This report and the resource estimate have been prepared in compliance with the disclosure and reporting requirements set forth in the current Canadian Securities Administrator's National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1.

Mineral resource disclosed in this document is classified as Inferred mineral resources.

The following professional served as the Qualified Person (QP) as defined in National Instrument 43-101, Standards of Disclosure for Mineral Projects and in compliance with Form 43-101F1. The QP responsible for the preparation of the Report is:

- Marcelo Godoy, PhD, Principal Geostatistician and Mining Engineer with Golder Associates S.A. and Member of the AusIMM (CP) was responsible for the overall preparation of the report and takes responsibility as the author of this report. Dr. Godoy visited the property from 1 to 5 August 2011.

In preparing this report, Golder has relied on various reports, maps and technical papers listed in the References section and on experience gained from similar deposits. The professionals that participated in geological modelling, resource estimation and compilation of this report were Mr. Alfonso Silva Duarte, Geology Superintendent with Eco Oro, Mr. Jorge Paulo Peres, Senior Resource Geologist with Golder and Frederick Felder, Consulting Geologist.

All measurement units used in this Report are metric, and currency is expressed in US dollars unless stated otherwise.

## 3.0 RELIANCE ON OTHER EXPERTS

The qualified person has relied on the information, opinions and statements of other experts most of whom are not qualified persons. Such reliance encompasses information concerning legal, environmental and political issues. All reasonable endeavours have been made to ensure the accuracy and reasonableness of the information supplied by other experts. No warranty or guarantee, be it express or implied, is made by Golder with respect to the completeness or accuracy of such information provided.



### 4.0 PROPERTY DESCRIPTION AND LOCATION

#### 4.1 Location

Eco Oro's wholly owned Móngora gold and silver deposit is located in northeastern Colombia near the border with Venezuela, some 400 km north–northeast of the capital city of Bogotá, and approximately 67 km northeast of the city of Bucaramanga in the Department of Santander.

The property is located in steep, mountainous and relatively rugged terrain at elevations ranging from 2,600 to 3,200 metres above sea level (m.a.s.l.). The geographic coordinates of the Móngora deposit are N7° 22' latitude and W72° 53' Longitude.

Current Project access from Bucaramanga is via the partially-paved Matanza–Surata–California road, a distance of 67 km and travel time of two to three hours by car, depending on weather conditions. Within the Project area, access is by horse and foot trails.

Over the past fifteen years Eco Oro has acquired outright ownership of 14 mining titles either by purchase or by application to governmental agencies (concession contracts, exploitation licenses, and exploration licenses) covering approximately 30,000 hectares in the municipalities of California, Vetás, Suratá, Charta and Tona in the Department of Santander and in Cucutilla and Mutiscua in the Department of Norte de Santander. The Móngora deposit is located in the municipality of Vetás.

Figure 4-1 shows a map indicating the location of the property.





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Figure 4-1 Móngora deposit location







### 4.2 Mineral Tenure

Under Colombian mining law, generally, all minerals, whether they are located on the soil or subsoil, are the property of the State. Obtaining mining rights does not transfer ownership of the mineral estate, but creates a temporary right to explore and benefit from exploitation of the minerals in exchange for royalty payments as long as the mining title remains in good standing. In Colombia, mining titles are subject to the legal regime in force at the time they were granted. Colombia has several mining regimes that currently have application, including: Law 685, 2001 (the “2001 Mining Code”), amended by Law 1382, 2010 (the “2010 Amendment”); Decree 2655, 1988 (the “1988 Mining Code”); Law 20, 1969 and the Civil Code (prior to Law 20, 1969), which are applicable to privately owned minerals. Eco Oro holds mining titles under the 1988 Mining Code and 2001 Code with certain modifications of the 2010 Amendment. In May 2011, the Colombian Constitutional Court declared the 2010 Amendment unconstitutional and limited its enforcement to the following 2 years. Once that period has elapsed, the 2010 Amendment will be abolished. In the meantime, favorable aspects of the 2010 Amendment are applicable but whether they will continue to apply after this time is not clear.

The Ministry of Mines and Energy is the principal mining authority in Colombia and in charge of managing mining resources and formulating mining policies. Currently, the Ministry of Mines and Energy has delegated the administration of non-renewable resources to the Colombian Geological Service (Servicio Geológico Colombiano or “SGC”, which, prior to November 3, 2011, was known as Ingeominas) and some territorial entities until the new mining authority known as National Mining Agency is operational, which is expected to occur later this year. SGC currently has responsibility in the area of the Angostura Project.

Under the Colombian mining regime, exploration and exploitation activities require a mining license or concession. Except for activities done in ethnic minority areas, prospecting activities do not require authorization from the State.

Mining titles may be granted directly from the State or assigned from third parties who previously acquired title. Filing a mining title request does not grant mining rights, however it does grant a preferential right over any further filings in the same or overlapping areas. Mining title requests must be processed by the SGC or the corresponding territorial entity within 180 calendar days but, in practice, processing often takes considerably longer. Assignments of mining titles from third parties are deemed approved whenever the mining authority fails to issue a response within the following 45 business days after filing of the assignment notice. Once a mining title is granted or a mining title assigned, it must be registered before the national authority for the purpose of inscription, authenticity, validity and publicity.

The 1988 Mining Code establishes four types of mining titles: exploration licenses, exploitation licenses, public contributions and concession agreements. An exploitation license grants the right to exploit mineral resources for a term of 10 years, with a right to apply for an additional 10 year extension upon its expiry. It may also be converted into a concession agreement subject to the mining code in force. The conversion will be granted for a 20 year term, extendable according to the applicable regime (currently 20 years). 1988 Mining Code Concession agreements are granted for 30 year terms without the right to extension. Eco Oro holds exploitation licenses and concession agreements that are governed by the 1988 Mining Code.

The 2001 Mining Code provides for only one type of mining title, known as a concession, which is granted for a term of 30 years. The concession is divided into 3 phases: (i) exploration, with a 3 year term, which may be extended up to 8 years in 2 year extensions each, for a total of 11 years according to the 2010 Amendment; (ii)



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

construction and installation, with a 3 year term which may be extended for an additional year according to the 2010 Amendment; and (iii) exploitation, comprising the remainder of the 30 year term. The concession may be extended for an additional 30 years, unless granted under the 2010 Amendment, in which case it may only be extended for an additional 20 years. Under the 2001 Mining Code, the extension is deemed approved whenever the mining authority fails to issue a response before the termination of the phase. Eco Oro holds several concessions, including its principal mineral titles that are governed by the 2001 Mining Code.

Holders of mining titles are required to pay an annual surface tax (canon superficiario) depending on the number of hectares covered by each title and the mining regime applicable to the title ranging from a daily minimum wage (approximately \$10) per hectare to three times the daily minimum wage per hectare. Pursuant to the 1988 Mining Code and 2001 Mining Code, surface taxes are as follows: (i) up to 2000 hectares, 1 daily minimum wage; (ii) above 2000 to 5000 hectares, 2 daily minimum wages; and (iii) above 5,000 and 10,000 hectares, 3 daily minimum wages. Pursuant to the 2010 Amendment, surface taxes are dependent upon the extension and time elapsed in the concession as follows: (i) years 1 to 5, 1 daily minimum wage; (ii) years 6 and 7, 1.25 daily minimum wages, and (iii) years 8 to 11, 1.5 daily minimum wages. Titles in the exploitation phase do not require payment of surface taxes. All Eco Oro's surface tax obligations are governed by the provisions of the 2001 Mining Code.

The 2001 Mining Code requires an environmental mining insurance policy for each concession to ensure compliance with mining and environmental obligations as follows: (i) 5% of the budget for the annual investments during the exploration and the construction phases, and (ii) 10% of the result of multiplying the estimate of annual production (volume) and the price of the mineral at the mine head. The 2010 Amendment provides for the possibility of substituting the insurance with a personal guarantee.

Surface rights are not considered a part of the mining titles or rights and are not governed by mining laws even though the mining regime provides for expropriation of real property and the imposition of easements and rights of way. Surface rights must be acquired directly from the owners of such rights but it is possible to request that judicial authorities facilitate expropriation and/or grant easements or rights of way necessary for a mining operation.

In order to initiate the construction phase, a company must file a PTO within the final three 3 months of the exploration phase. The PTO is a technical document that describes, among others things, the area of operation, the characteristics of reserves to be exploited, the location of facilities and mining works, the mining plan of exploitation, the scale and duration of the expected production, the physical and chemical characteristics of minerals that are going to be exploited and the closure plan of exploitation and abandonment of the assemblies and the infrastructure. During the construction phase, the concessionaire may make changes and additions that are necessary prior to filing with the environmental and mining authorities. During this phase, the concessionaire is authorized to initiate anticipated exploitation and make use of provisional equipment and civil works."

Once a new mining title is granted, or a mining title assigned, it requires registry before the national authority for the purpose of their inscription, authenticity, validity and publicity.

Over the past fifteen years, Eco Oro has acquired outright ownership of a total of 14 mining titles by purchase or by application to governmental agencies (concession contracts, exploitation licenses, and exploration licenses) covering approximately 30,000 hectares in the municipalities of California, Vetás, Surata, Charta and Tona in the Department of Santander, where the Móngora Project is located and in Cucutilla and Mutiscua in the Department



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

of Norte de Santander, as described in Table 4-1, and shown in Figure 4-2. The Móngora deposit falls within mining title 3452.

**Table 4-1 Post List of Eco Oro's Mining Titles**

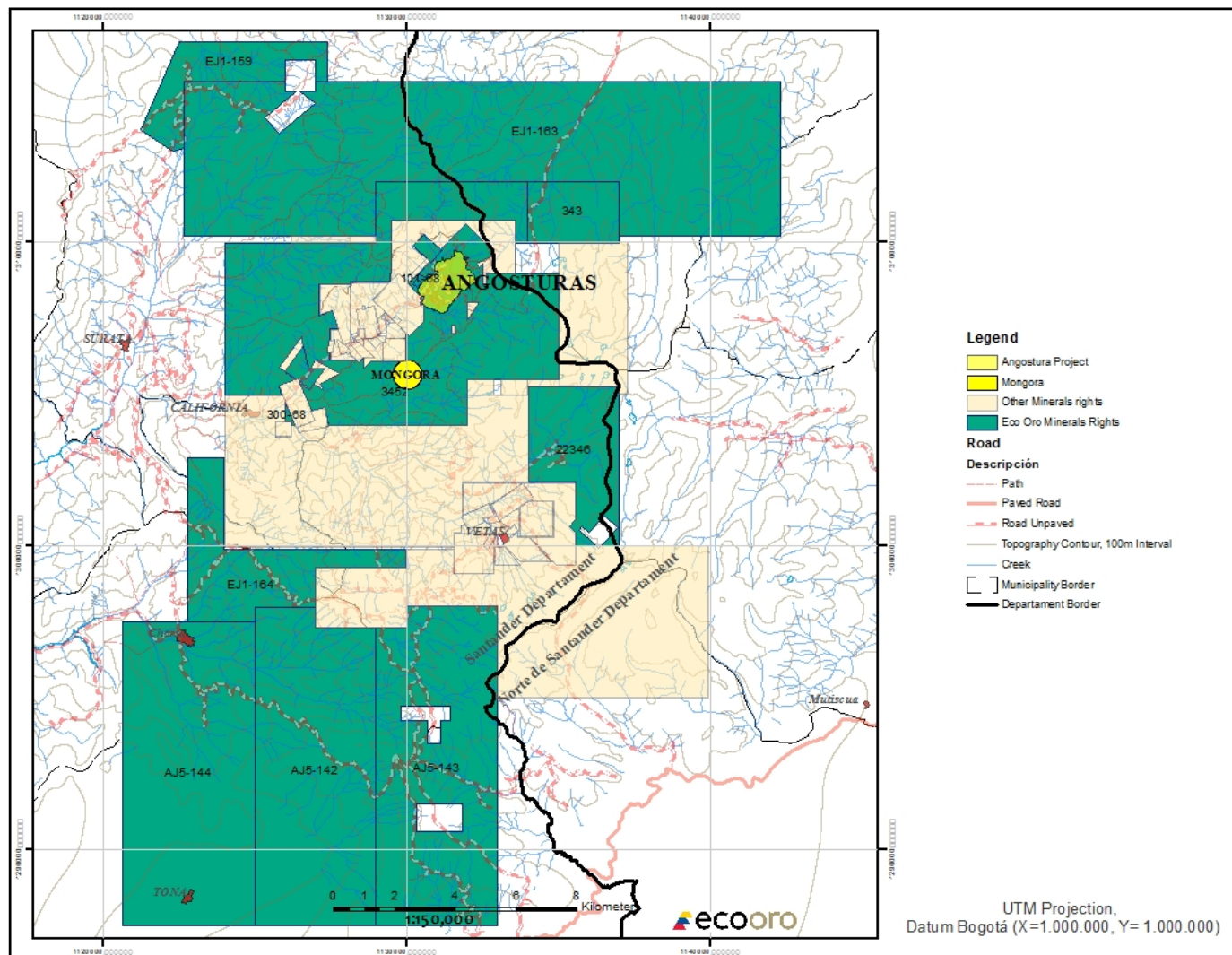
<b>Mining Title</b>	<b>Class of title</b>	<b>Location</b>	<b>Area, Ha</b>	<b>Date of registration</b>
3452	Mining concession contract	California, Vetás, Surata, Cucutilla	5244.85	09/08/2007

Regarding the mining titles it is important to point out that the Principal Mining Concession is Contract No. 3452 which was created by the consolidation of 11 previously existing titles and 3 area requests on February 14, 2007, registered before the National Mining Register on August 9, 2007. This mining title is known as the Angostura Block, and contains 2 of the 4 important mineral deposits, Angostura and Móngora. The total Permit area is 5,244.9 hectares. This mining title is currently undergoing its 5th year of the exploration phase which expires on August 8, 2012. Nevertheless, the mining title is eligible for 3 additional extensions of 2 years each. At expiration, the concession agreement is eligible for a 30 year extension of the exploitation phase.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Figure 4-2 Location of Eco Oro's Mining Titles





### 4.3 Surface Rights, Easements and Rights of Way

Land acquisition in Colombia is subject to the compliance of certain formalities according to the Colombian Civil Code, such as the execution of a public deed and further registry before the Public Acts Registry Office. Forms of acquisition include, amongst others, acquisition agreements, hereditary rights, foreclosures, or by way of prescriptive rights (statute of limitations on possession). Registry before the aforementioned office is required to consolidate property upon the holder.

Mining is considered of public utility and an activity of public interest, therefore the owner of a mining concession is also entitled to request from judicial authorities: (i) the imposition of easements or rights of way necessary for the operation, and (ii) request expropriation of lands needed for the project, when it is not possible to have an agreement with the land owner. In any case, Eco Oro has the obligation of paying the affected third party all amounts determined as compensation by administrative and/or judicial authorities for this purpose. Easement rights may be requested from the moment of the execution of the concession agreement. On the other hand, expropriation will require prior approval of the Civil Works Program (PTO) by the mining authority in order to be enforced.

The region in which the Móngora deposit will be developed is characterized by a high degree of informality in holding of land. Therefore, the most common forms of acquisition are acquisitions agreements with registered owner(s), assignment agreements over owners' hereditary rights from next of kin, and agreements over material possession rights when there is informality in land property. To date Eco Oro has not filed for an imposition of an easement or right of way, nor has it initiated expropriation legal actions against third parties.

As a consequence of informality, the acquisition of surface rights, easements or rights of way, is often a lengthy process. Even though material possession of lands may be easily exercised, the process of property acquisition can take several years when the owners do not have proper registered titles over land. Nevertheless, Colombian law provides for the possibility of settling land titles by the application of a statute of limitations of prescriptive right based on material possession of lands.

Currently Eco Oro has outright ownership of approximately 3,700 ha subject to certain deferred payments being made. These are summarized in Table 4-2 and are shown in Figure 4-3 which shows the location of the Project in relation to the acquired surface rights. Eco Oro has also executed several private agreements with third parties for rights of way on to properties not owned by Eco Oro in order to perform exploration activities and geological scoping.

**Table 4-2 Surface Rights Acquisition Summary Table**

#	Land Property Name	Area (ha)	Municipality/Department
1	Angostura (consolidation of several lots)	736.09	California/Santander
2	Padilla	15.98	Suratá/Santander
3	La Herrera	18.52	California/Santander
4	La Casita	31.00	California/Santander
5	Romeral-Carrizal	383.50	Cucutilla/Norte de Santander
6	Romeral	535.55	Cucutilla/Norte de Santander
7	La Armenia	175.24	California/Santander
8	Miraflores	36.95	California/Santander





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#	Land Property Name	Area (ha)	Municipality/Department
9	La Casita	11.1	California/Santander
10	La Berenciana	16.23	California/Santander
11	Cruz	8.80	California/Santander
12	Los Llanitos	14.63	California/Santander
13	Esmeralda – DIVISO	8.89	California/Santander
14	El Cadillal	68.95	California/Santander
15	El Bosque	9.00	California/Santander
16	El Salibal	28.83	California/Santander
17	Las Pavas	89.98	Vetas/Santander
18	El carbon- Lagunas coloradas	6.19	Vetas/Santander
19	Los Robles	14.57	California/Santander
20	Las Puentes (*)	1,034.35	Vetas/Santander
21	La Esmeralda (*)	86.38	California/Santander
22	El Jordán-El Carbón	34.85	Vetas/Santander
23	Laguna la Virgen	188.7	Vetas/Santander
24	La Venezuela	15.9	Vetas /Santander
25	Pajarito	147.8	Vetas/Santander
	<b>TOTAL</b>	<b>3717.98</b>	

*(\*) Right over the land property as part of a process of succession*

#	Land Property Name	Area (ha)	
1	Lot Cra 4 No 3-10-California (Greystar's House)	0.19	California/Santander
2	Lot San Francisco	6.37	California/Santander
3	Lot 6	0.07	California/Santander
4	Lot 7	0.07	California/Santander
5	Lot Cra 6 No. 3-26 and cll 4No. 5-41/45/49 (Core Shack)	0.3570	California/Santander
	<b>TOTAL</b>	<b>7.05</b>	

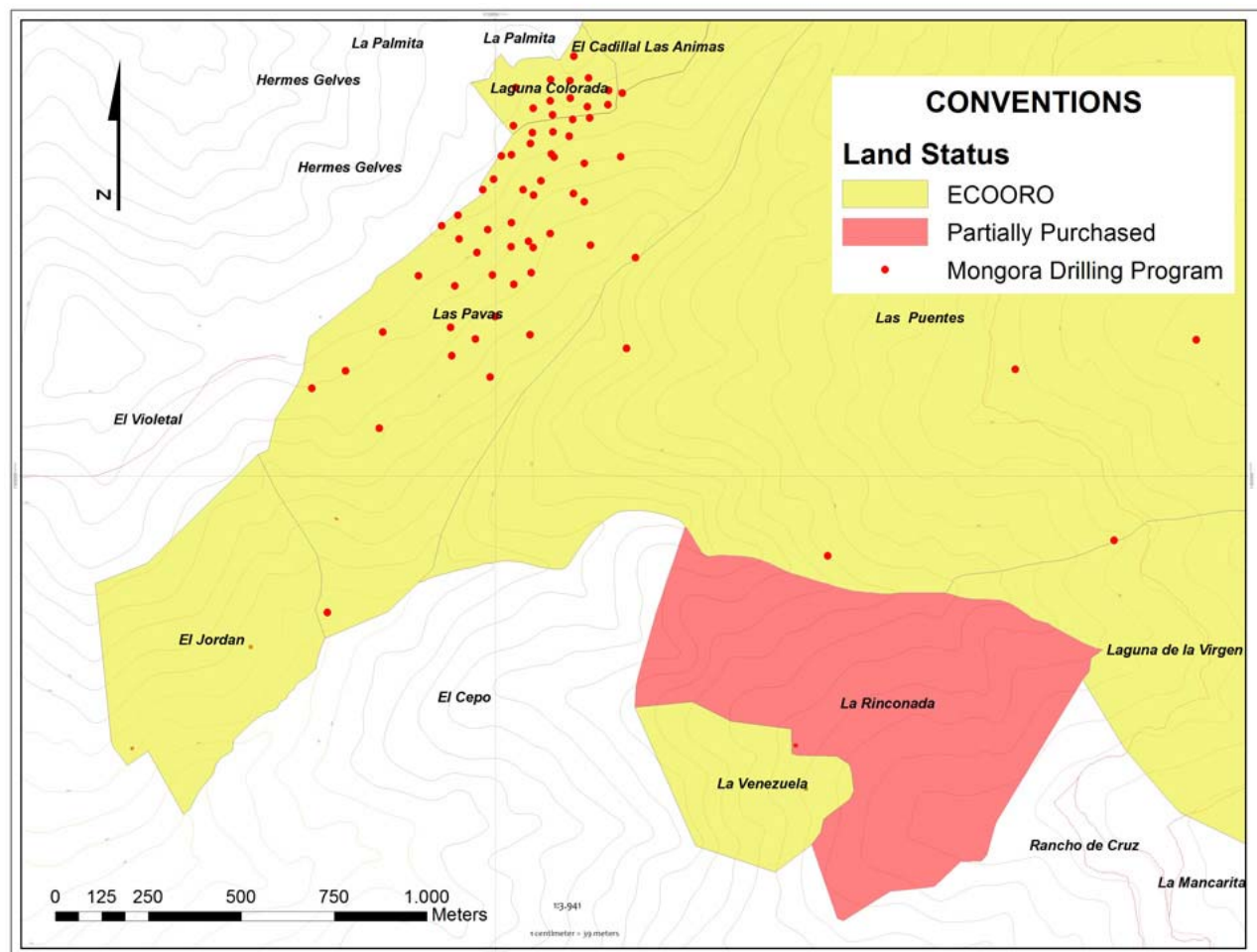
#	Land Property Name	Area (ha)	
1	El Alta - Deed 2176 Reg. 300-242	30.68	California/Santander
2	Padillo	3.54	Suratá/Santander
3	San Julian	18.00	California/Santander
4	La Rinconada	64.5	Vetas/Santander
	<b>TOTAL</b>	<b>116.72</b>	

*/(\*) Right over the land property as part of a process of succession*



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Figure 4-3 Location of Eco Oro's surface rights



### 4.4 Environment

Mining activities are subject to environmental regulations promulgated by government agencies from time to time. Environmental legislation generally provides for restrictions and prohibitions on spills, releases or emissions of various substances produced in association with certain mining industry operations, such as seepage from tailings disposal areas, which would result in environmental pollution. A breach of such legislation may result in imposition of fines and penalties. The Constitution, the National Code of Renewable Natural Resources and Protection of the Environment (Decree – Law 2811 of 1974) as well as Law 99 of 1993, form the basis of environmental regulations in Colombia.

Under the environmental legal regime, the use of water (superficial or underground), air, flora and fauna, as well as the generation of solid and liquid discharges and waste dumps are subject to prior licenses, permissions and concessions. Environmental legislation in Colombia is evolving and the general trend has been towards stricter standards and enforcement, increased fines and penalties for noncompliance, more stringent environmental assessments of proposed projects and increasing liability for companies and their officers, directors and employees.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

The principal environmental authority in Colombia is the Ministry of Environment and Sustainable Development, with national jurisdiction, in charge of formulating environmental and renewable natural resources policies and defining regulations focused on reclamation, conservation, management and use of natural resources and surveillance of all activities that may have an environmental impact. Recently, all activities associated with environmental permitting and controls have been delegated to the National Environmental Licensing Authority (Autoridad Nacional de Licencias Ambientales or “ANLA”). At a regional level, the Ministry of Environment and Sustainable Development and ANLA functions are executed by Regional Autonomous Corporations. Together they constitute the principal environmental authorities. In the Company’s area of operation, the Regional Autonomous Corporation in charge of environmental surveillance is the CDMB (Corporación de Defensa de la Maseta de Bucaramanga). The Ministry of Environment and Sustainable Development is entitled to take control over Regional Autonomous Corporations at its discretion, on a case by case basis, when circumstances require it to do so. Both authorities have the following functions: (i) prevent and/or suspend any activity it deems contrary to environmental standards; (ii) reserve and define areas excluded from mining activities (i.e. forest reserves and páramo ecosystem); and (iii) approve environmental instruments, such as environmental management plans (Planes de Manejo Ambiental or “PMAs”), mining and environmental guides (Guías Minero Ambientales or “GMAs”) and Environmental Impact Assessments (Estudios de Impacto Ambiental or “EIAs”), environmental licences and permits.

PMAs, GMAs and EIAs are the principal environmental instruments that allow the Government to oversee activities that have the potential to impact the environment. These documents must be adopted by the concessionaire and define detailed measures and activities to be implemented for the mitigation, compensation and prevention of adverse environmental effects of a project. They also include follow-up, monitoring, contingency, and abandonment activities. Execution of activities under the exploration, construction and exploitation phase requires the approval of one of these instruments. Prospecting activities are not subject to environmental permitting, without prejudice of any permit or concession necessary for the use of natural renewable resources.

Mining operations (in their exploration, construction and exploitation phases) that started activities before Law 99, 1993 was in force are subject to the application of a PMA previously approved by a Regional Autonomous Corporation. After Law 99, 1993 came into force, construction and exploitation operations required the approval of an environmental license and only exploration phase activities remained subject to the application of a PMA previously approved by a Regional Autonomous Corporation. After Law 685, 2001 came into force, GMAs replaced PMAs for exploration phase activities. Neither a PMA nor a GMA constitute permission to use natural resources and therefore authorization of the corresponding environmental authority is required (e.g. water concessions, dumping permits). Environmental licenses, however, include all necessary permits for the use of natural resources. Initiation of the construction and exploitation phase requires granting of the environmental license. Under the current mining regime, an environmental license for a gold project is granted by ANLA when total tonnage of extracted ore material and waste material is equal or more than 2,000,000 tons per year. Regional Autonomous Corporations will grant environmental licenses whenever total tonnage of extracted ore material and waste material is less than 2,000,000 tons per year. The Angostura Project is expected to be subject to ANLA jurisdiction.

An environmental license request may require public hearings at which the company presents the project and allows the community to understand its scope, as well as to express their opinion on the feasibility of the project. Public hearings have to be expressly requested by third parties. The request also requires filing of an EIA which





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

will contain elements, information, data and recommendations as may be required to describe and characterize the physical, social and economic environment of the place or region of the works of exploitation; the impact of such works with its corresponding evaluation; plans for prevention, mitigation, correction and compensation of those impacts; specific measures to be applied to the abandonment and closure of the mining works and its management plan; and the necessary investment and monitoring required with respect to these activities. Once an environmental license has been granted, the company may initiate construction and exploitation activities.

The 2001 Mining Code, as well as the 2010 Amendment and the National Development Plan define the existence of areas that may be excluded from mining activities, such as regional parks and highland ecosystems referred to as páramo. For an area to be excluded from mining it the geographic boundary must have been determined by the relevant environmental authority based on technical, social and environmental studies, which support the incompatibility of mining activities, or in the specific case of páramo ecosystems, which support the existence of said ecosystems. Currently both the Ministry of Environment and Sustainable Development and CDMB are working on the definition of a regional park, as well as a páramo ecosystem in the area where the Angostura Project is located. A final decision on the regional park and páramo ecosystem will be made by the Ministry of Environment and Sustainable Development and the CDMB but should not directly affect the Móngora deposit.

Eco Oro holds and has the corresponding PMA and GMA approved for its mining operation in the Angostura block. In addition, Eco Oro has received the terms of reference for the preparation of the corresponding EIA for the Angostura Project.

### 4.5 Water Rights

The use of surface or underground water requires prior concession from the Regional Autonomous Corporations (CAR). For the Angostura project, the CAR is the Corporación de Defensa de la Maseta de Bucaramanga (CDMB). Likewise, water discharge requires permitting from the same authority. Both water concessions and discharge permits require payment of fees to the Regional Autonomous Corporation. Eco Oro holds the following Water Rights granted by the CDMB (Table 4-3).

**Table 4-3 Water Rights granted by the CDMB**

Resolution	Creek	L/S	Allowed Uses	Expiration
Res. 768, 2004	El Pozo	0.1764	Mining activities and human consumption	August 2014
Res. 770, 2004	Angostura	4.0101	Industrial use and human consumption	August 2016
Res. 771, 2004	La Venta	3.0174	Industrial use and human consumption	August 2016

Eco Oro has filed requests for discharge which are currently under study by the CDMB.

### 4.6 Royalties

Royalty is payable to the Government for every ounce of mineral produced. Calculation is based on a 4% royalty rate over 80% of the average of the previous month's international price published by the London Metal Exchange.

Eco Oro has no private royalty agreements that relate to the Móngora deposit.



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

### 5.1 Accessibility

Current Project access from Bucaramanga is via the partially-paved Matanza–Surata–California road, a distance of 67 km and travel time of two to three hours, depending on weather conditions. Within the Project area, there are direct accesses only by horse and foot trails.

Bucaramanga has an airport, with daily flights to Bogota, Medellin, Cartagena and Panama City and regional centers serving the interior lowlands (llanos). Helicopter flights to the Project are also conducted from Bucaramanga.

The closest port is Santa Marta, 550 km from the Project site.

### 5.2 Climate

The Project experiences two wet seasons, from April to June and from September to November. January is the driest month, April the wettest. The climate is highland tropical, with the average annual temperature being 8.7- 9.8°C, ranging between 0.8°C and 26.9°C. Rainfall averages 1,182 mm, and the evaporation rate is about 576 mm. Relative humidity averages 73%.

### 5.3 Local Resources and Infrastructure

The Móngora Project is located in a relatively undeveloped region in the department of Santander. The closest communities are the small towns of California (population 393), Vetás (417), Surata (436), Tona (496) and Cucutilla (451). These towns can provide basic services. Most supplies and services are sourced from Bucaramanga. There is currently no existing Project infrastructure.

### 5.4 Physiography

The Project is located in steep and relatively rugged mountainous terrain at elevations ranging from 2,200 m.a.s.l. to 3,200 m.a.s.l.

The Project is situated in the Móngora Creek Catchment basin, which itself is one of the headwaters of the Vetás River, located approximately 4 km east-northeast of the town of California. The principal economic activity in the area is the small-scale exploitation of gold, while agriculture, cattle husbandry and basic commercial activities are of lesser significance. Agriculture is carried out using traditional methods with low yields, and cattle are primarily bred for meat production for local demand.

Vegetation in the higher part of the Móngora area is upper alpine forest where high mountain oak trees occur.

## 6.0 HISTORY

Early mining activity comprised artisanal activities that ranged from pre-Colombian time, and later Spanish excavations. At the end of World War 1, the British company Colombian Mining Association and French company Francia Gold and Silver operated in the area.



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In 1947, The Anaconda Company (Anaconda) completed detailed geologic surface and underground mapping and core drilling (746 m) between the La Baja and La Alta areas. The Nippon Mining Company in 1967 undertook drilling in the La Baja area. Exploration activity was undertaken by Placer Development and Ingeominas in the 1970s and 1980s respectively.

Exploration by Eco Oro commenced in the area of the Móngora deposit in 1994, and to 1999, geologic mapping, surface rock sampling, core drilling (181 drill holes, 52,000 m) and metallurgical test work were completed on the Angostura deposit. A small part of the underground development created by artisanal miners was mapped and sampled, and based on areas that were safely able to be inspected; about 13,000 t at about 8 g/t Au has been excavated. Mineral resource estimates were undertaken in 1997, and updated in 1999. An engineering study, termed a “pre-feasibility study” at the time was also undertaken in 1998, and envisioned either; an open pit/ heap leach operation, or an open pit feeding agitated leach and heap leach facilities.

After completion of the preliminary study, Kinross Gold Corporation, who at the time was a significant shareholder in Eco Oro, performed a mineral resource estimate update in 1999.

From 2000 to 2003, due to security constraints, no work was undertaken. From 2003, work has included geochemical sampling, geologic mapping, adit and tunnel excavation, core drilling, and condemnation drilling. Mineral resource estimates were performed in 2005, 2006, 2007, 2008, and 2010. Preliminary assessment (PA) studies for open pit were completed in 2008. Mineral reserve estimation was undertaken in 2009 together with additional metallurgical testwork.

The pre-feasibility study, completed in 2009 by GRD Minproc, envisaged open pit mining, followed by a conventional processing facility using two process routes, cyanide heap leaching of oxide, transition and low sulphur ore to produce doré, and grinding and flotation of high sulphur/high gold content ore to produce concentrates. Based on the assumptions in the study, the Project returned positive economics.

A feasibility study for an open pit operation was commissioned during 2010. This study did not progress to implementation and some of the technical studies executed in this phase are being used to support the evaluation of underground mining exploitation option for the Angostura deposit.

Eco Oro withdrew the Environmental Impact Assessment (EIA) and the work and investment plan for exploitation (PTO) from the MAVDT and Ingeominas respectively. Both studies were prepared based on open pit mining.

Eco Oro considered that regional and national government and the community of Bucaramanga did not support the project as configured for an open pit operation. Eco Oro is currently studying the underground mining option for the project reported in the updated PEA of March 23, 2012.

In April 2011 an initial underground PEA carried out by NCL Consultores was released. The underground mining potential and the preliminary mine production presented in this PEA were constrained by the terms of reference including a gold price of USD850/oz, a gold cut-off grade of 3.0 g/t and a resource estimation update with effective date March 18, 2011. This resource estimation update included drill and assay data acquired up to July 2010

In March 2012 an updated PEA for the exploitation of the Angostura Deposit by an underground mining was filed on SEDAR. This PEA was developed by Golder and included a resource estimation update using drill and assay data acquired up to May 2011.



## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

The information contained in sections 7.1 and 7.2 include extracts from previous technical reports issued by Eco Oro and their agents.

### 7.1 Regional Geology

The Project is situated in the northern Andes ranges, north of the point of bifurcation of the Eastern Cordillera into the western and eastern branches. The eastern branch, hosting the Project, includes the Santander Massif. The oldest rocks in the Massif are Precambrian gneisses and schists that were part of the Guyana Shield, and which have been regionally metamorphosed to upper amphibolite grade in the Palaeozoic. Figure 7-1 presents a regional geological map covering the area of the deposit.

Intruding the metamorphic rocks is the diorite to granite composition rocks that belong to the Triassic–Jurassic Santander Plutonic Group. These intrusions were accompanied by felsic to andesitic volcanism. During subsequent back-arc development, a number of basins were formed and filled with marine transgressive sediments. During the Late Cretaceous to Paleocene/Eocene, folding and thrusting of the Eastern Cordillera resulted in basin inversion and uplift, and intrusion of Middle Miocene porphyritic bodies of rhyodacitic and dacitic composition.

Uplift and erosion occurred during the Late Eocene to Early Oligocene, with reactivation of older structures and continued uplift during the Middle to Late Miocene. As a result of ongoing tectonic plate movements, the area is currently undergoing additional deformation, with rapid basin inversion and uplift.

Gold mineralization occurs within the Angostura–California gold province, a belt of epithermal gold occurrences that has developed along the regional-scale Rio La Baja fault in association with the Middle Miocene stocks.

### 7.2 Deposit Geology

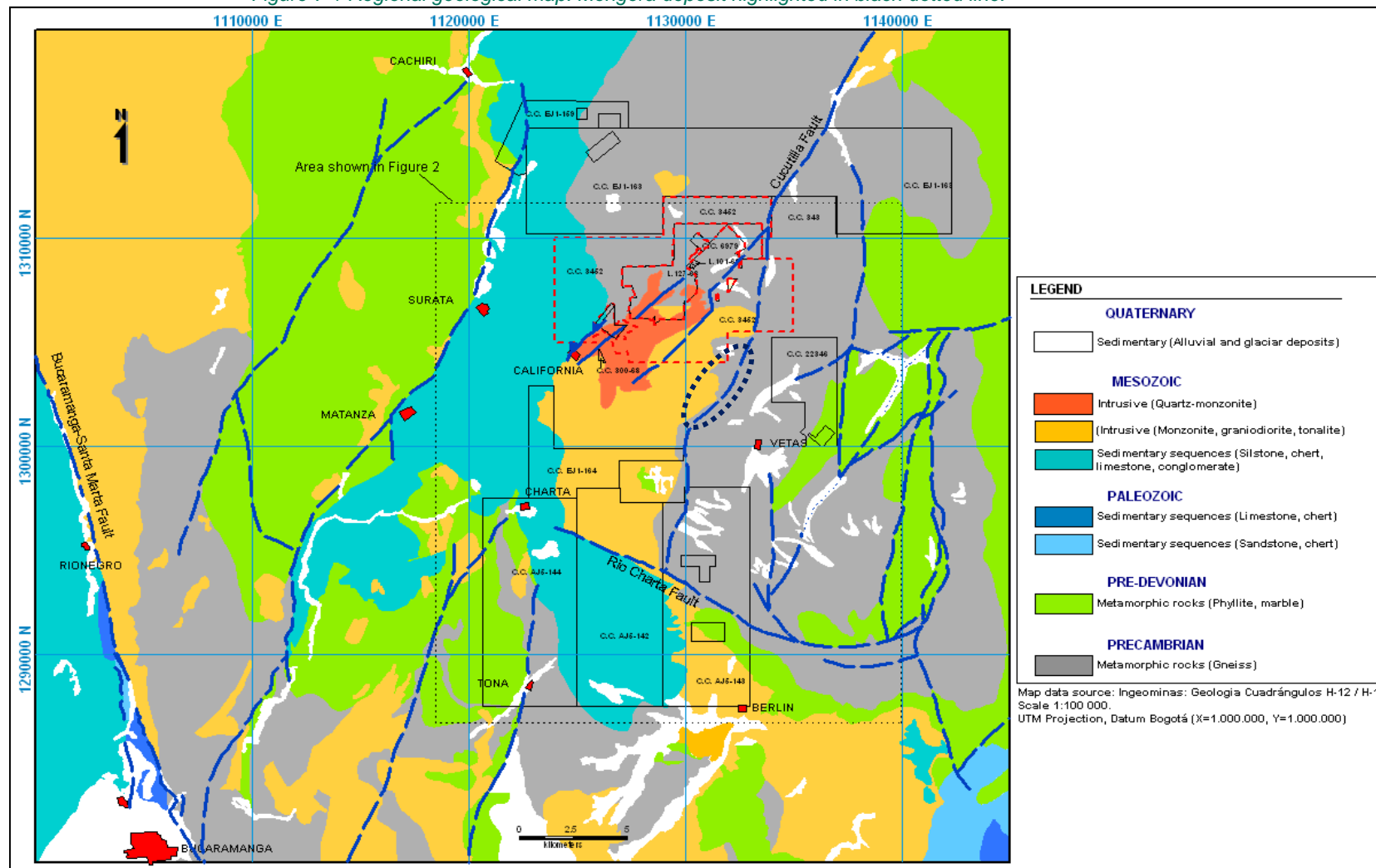
#### 7.2.1 Lithology

In the eastern sector of Móngora the Bucaramanga Gneiss unit occurs, formed by a high-grade metamorphic sequence of paragneisses and feldspathic quartz composition orthogneisses. Augen textures are observed with banded, migmatitic, local quartz lenses and insertions of feldspathic pegmatite. Pre-Cambrian age amphibolite-granulite facies rocks with propylitic alteration characterized mainly by the presence of chlorite, epidote and ankerite. Triassic-Jurassic age quartz diorite and tonalitic intrusive bodies outcrop in the central and western of the Móngora area presenting phyllic and propylitic alteration, silicification and subordinate argillic alteration. In the southwest sector dacitic porphyry bodies and tuffaceous dykes are observed. The occurrence of bipyramidal quartz veins with phyllic, argillic and silicification are also observed. Mineralogy and texture of pre-existing rocks were affected by hydrothermal fluids associated with proximal porphyry bodies.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Figure 7-1 Regional geological map. Móngora deposit highlighted in black-dotted line.







### 7.2.2 Geomorphology

Móngora is characterized by smooth hills in its eastern part, cliffs defined by faults in the center and by narrow and deep valleys in the west. The drainage system is mainly dendritic to parallel characteristic for metamorphic and intrusive rocks. In the central sectors where topography is steep there is an exuberant oak forest (Figure 7-2).



Figure 7-2 Aero photographic mosaic of Móngora sector.

### 7.2.3 Structural Geology

The area is tectonically affected by the La Baja - Cucutilla fault system, within which the parallel Mongora Romeral fault is related to the Mongora deposit. This system has a predominant NE direction. Minor structures with direction N-NW cut this structure generating a graben system (Figure 7-3). The Mongora setting is analogous to Angostura which is confined between two parallel transpressional confining structures with internal extensional structures hosting mineralization.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

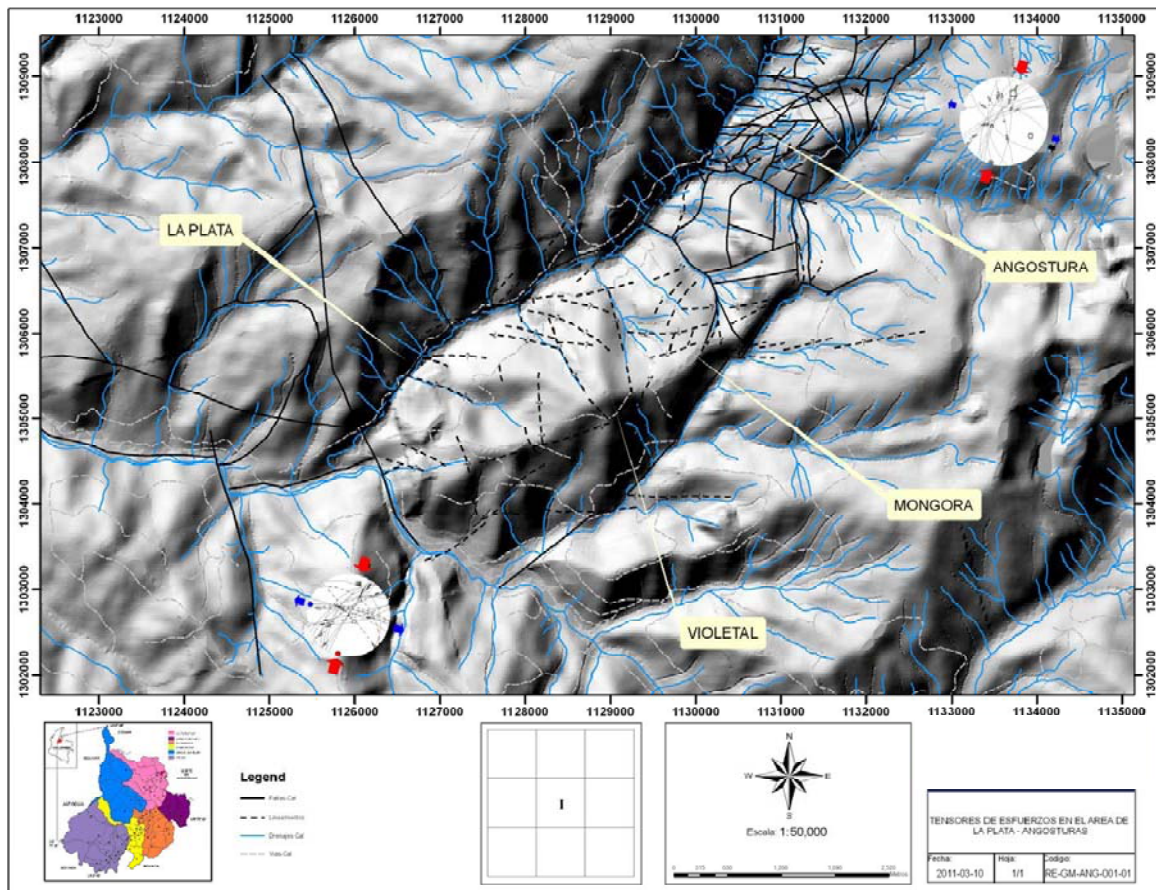


Figure 7-3 Stress diagrams for different types of faults, veins and fractures associated to Violetal, La Plata and Móngora areas and Angostura. Note the N-NE trend fault tensor for faults, veins and fractures (in red).

### 7.2.4 Hydrothermal alteration

Although alteration and mineralization are not as strongly developed as those observed in Angostura Project, The Móngora deposit also presents multiple higher grade mineralized structures with EW, E-SW and NE trends. The hydrothermal alteration observed in field is evidenced by the presence of illite, chlorite, epidote and kaolinite. In deeper zones carbonate (ankerite, kutnohorite, dolomite and calcite) occurs. In the last depths of some drill holes (MO10-10 and MO09-12) gypsum was identified.

According to the intensity of the alteration, presence of isolated structures with internal alteration and mineralogical assemblage, it is possible classify Móngora as a phyllic and propylitic alteration system within a low to intermediate sulphidation system.

The mineralogical assemblages identified in Móngora are (Figure 7-4):

- Carbonate-illite\_Silice-Chlorite\_Epidote
- Carbonate-Kaolinite\_Silice-Chlorite\_Epidote
- Carbonate-Silice-Gypsum Illite

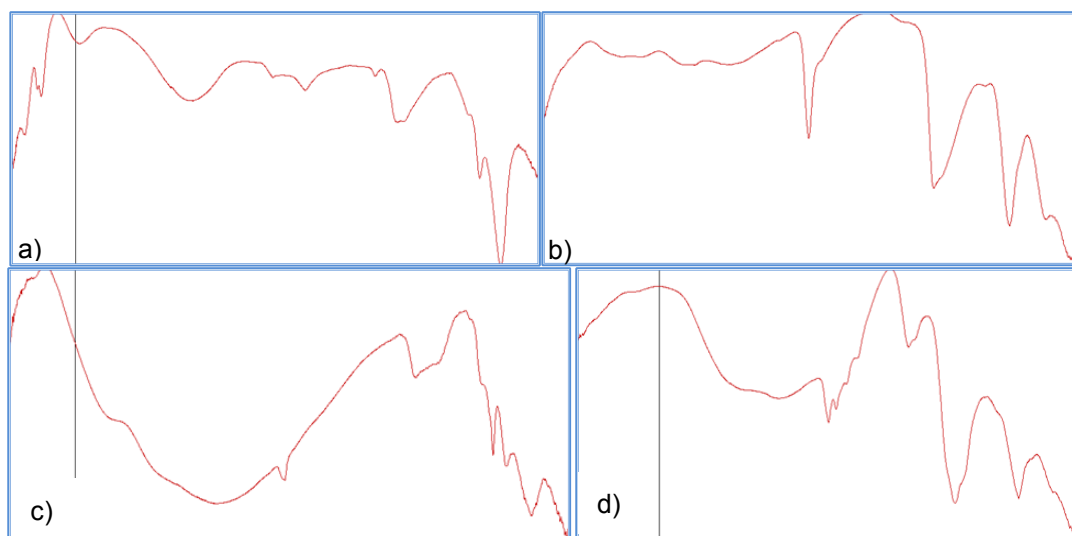


Figure 7-4 Terraspec spectra for alteration minerals in Móngora sector: a) epidote, b) chlorite-illite, c) ankerite-epidote, d) gypsum.

### 7.3 Mineralization

At Angostura mineralization is controlled by a swarm of structures with generally NE-SW, E-W to ENE-WSW and NW-SE trends and commonly steep dips. The intensity of fracturing, and thus the degree of secondary porosity and permeability of the host rocks controls the density of mineralization containing important enrichment in high grade shoots.

Mineralized structures have been correlated either as single veins or as vein composites, the latter consisting of a number of closely-spaced veins.

The width of individual high grade mineralized structures (“Veins”) ranges from 2 m to more than 30 m, the lengths vary from less than 30 m to more than 500 m. Flexures of mineralized structures as well as vein-vein or vein-fault intersections are major sites for higher grade mineralization. The width of these high grade shoots is variable depending on the intensity of fracturing.

The mineralization is in bands, veinlets, stringers, silicified hydrothermal breccias and as stockwork composed predominantly of quartz, pyrite and alunite entirely replacing the primary host rock. Other ore minerals accompanying the pyrite dominant paragenesis include chalcopyrite, digenite, bornite, tetrahedrite (fahlore), marcasite, pyrrhotite and bismuthinite, and minor sphalerite, arsenopyrite, calcosite and covelite. Typical sulphide associations include pyrite-digenite-tetrahedrite and pyrite-chalcopyrite (digenite, tetrahedrite); locally pyrite is the only sulphide.

At least two stages of pyrite formation have been recognized. The older is represented by relatively large crystals and does not appear to be associated with gold, or is so only moderately, while a younger, fine-grained pyrite/marcasite phase is intimately correlated with the intense stages of silicification and with gold deposition.





### 8.0 DEPOSIT TYPES

The Angostura deposit is a typical example of a high-sulphidation epithermal deposit. Global examples of such deposits include Summitville (Colorado, USA); Nansatsu (Japan), El Indio (Chile); Temora (New South Wales, Australia), Pueblo Viejo (Dominica), and Lepanto (Philippines).

The Móngora deposit is part of the California–Vetas gold-silver district province of the Eastern Cordillera in northeastern Colombia, a belt of epithermal gold occurrences developed along the Rio La Baja regional fault, and the parallel Móngora – Romeral Fault that trends in a northeasterly direction from the town of California and from the Vetas River (Felder et al., 2000). The fault transects pre-Devonian granitoid bodies, high-rank metamorphic rocks and overlying Lower Cretaceous sediments – quartzite, shales, limestone and argillite. Middle Miocene (Tortonian) volcanic and subvolcanic stocks represent the last magmatic event in the California–Angostura district (Mantilla, et al., 2009; Leal, et al., this volume). These small, irregular shaped porphyritic bodies of rhyodacitic and dacitic composition have yielded radiometric ages of  $8.4 \pm 0.2$  Ma and  $9.0 \pm 0.2$  Ma (U–Pb) (Mantilla et al., 2009). Intense hydrothermal activity related with these porphyry intrusions gives rise to the gold and silver mineralization.

The California district, of which Móngora is one of the deposits, can be characterized as a structurally controlled, uplifted and deeply eroded, high-sulphidation epithermal gold deposit system. The deposit in this camp are interpreted as being the lower part of a lithocap, as defined by Sillitoe (1995), that was eroded during uplift of the Northern Andes and that exposed the sericite – illite – quartz zone of a Cu–Mo–Au porphyry system, containing important contents of gold and silver, mainly associated with pyrite.

Most of the gold is contained within several sets of anastomosing veins and tabular silicified zones. The hydrothermal alteration in the center of the structures is mainly quartz–alunite, and more distal to this sericite, illite, smectite, kaolinite and finally chlorite, showing a gradual change from acid to basic alteration moving away from the veins.

The discovery of copper–molybdenum mineralization in an intrusive breccia approximately 1.5 kilometres to the west of Angostura suggests that the gold mineralization at Móngora may be associated with a porphyry system at depth. The exploratory works in this area have showed evidence of hydrothermal alteration, and contents of pyrite that suggest a potential that have to be properly investigated.

### 9.0 EXPLORATION

Regional Geochemical soil sampling campaigns have been undertaken in the areas of the Móngora–Angostura area and some of the adjacent showings, and more than 4,000 samples have been taken on a grid with an initial spacing at 100 or 200 meters with later infill sampling in more promising target areas. Samples were taken at an average depth of 0.8 m. The samples were analysed for 37 elements using ICP mass spectroscopy analysis of 15-gram aliquots after aqua regia digestion. As a result of this work, gold anomalies were identified in such areas as Animas, Móngora, Violetal and La Plata.

Similar to the Angostura deposit, the Móngora prospect hosts higher-grade gold mineralization including for example 16.3 grams gold per tonne over 1.05 meters and 12.35 grams over 1.6 meters and 116 grams over 2 meters, within broader zones of lower-grade gold mineralization. The delineation for oxide and transitional gold



mineralization in the Móngora area could be very important for the Angostura project. The potential of outlining a new oxide resource that could be added to the Angostura deposit resources could have favourable implications for the overall economics of the entire Angostura project. In 2010 36 drill holes were drilled comprising 13,263.95 meters and in 2011 a 402.3 meters drill hole was completed resulting in a total of 56 drill holes measuring 19,557.3 meters since 2008.

### 9.1 Grids and Surveys

The coordinate system used for the Project is based upon the Universal Transverse Mercator (UTM) projection (datum Bogota – Zone: 18N).

Topographic data used to delimit the Mineral Resources was provided by Eco Oro, and has a resolution of  $\pm 5$  m within the areas of the mineral deposit. A regional topographic restitution was carried out in 2008 by the Colombian company Aeroestudios Ltda. from Medellin, who took the aerial photographs for 16,000 hectares in the surrounding area of the project covering the mine infrastructure foreseen in the open pit project of the prefeasibility study. Detailed topography was carried out from 2008 to 2010 by Estudio-T Rural from Bucaramanga, for the individual areas of the mine infrastructure, using total stations for surveying.

The drill hole collars measurement was performed by professional surveyor using total station equipment.

The topographic measuring method used for the Angostura project is considered appropriate.

### 9.2 Geological and Structural Mapping

Geological mapping has been performed by the geological staff of Eco Oro since 1995, at map scales that vary from 1:25000 for the surrounding areas of the project and detailed mapping up to 1:5000 on the deposit and potential areas for the placement of infrastructure.

Results of the geological mapping of lithology, structure, hydrothermal alteration and mineralization supported the geological interpretations used for resource estimation, and provided vectors for channel sampling and drill targeting.

### 9.3 Geochemistry

As part of exploration work, soil and stream geochemical samples were collected until May 2011 for a combined total of 12,742 m sampled and 4,307 samples corresponding to the Angostura project and 1,106 samples in different areas around the project. Mello and Felder (2010) report that:

*“Geochemical soil sampling campaigns have been undertaken in the project and some surrounding areas, and more than 4,000 samples have been taken on a grid with an initial spacing at 100 or 200 metres with later in-fill sampling. Samples were taken at an average depth of 0.8 m.”*

This work identified gold anomalies at Cristo Rey, La Alta Este, Los Laches, Animas, Móngora, Violetal and La Plata within the Project area (refer to Figure 9-1 for prospect and anomaly locations).

5,625 soil samples and 769 stream sediment samples have been collected in all of the mining titles owned by Eco Oro. The map of Figure 9-1 shows the rock (surface), soil and stream sediments samples collected in the area of Angostura project.



### 9.4 Drilling

Drilling completed on the Project is discussed in Section 10.

### 9.5 Bulk Density

Bulk density determinations are discussed in Section 11.3.

### 9.6 Petrology, Mineralogy and Other Research Studies

Terraspec Mineral Spectrometer is being used for hydrothermal alteration minerals characterization and for alteration mapping. Limited petrographic work was done at the Industrial University of Santander in Bucaramanga.

### 9.7 Exploration Potential

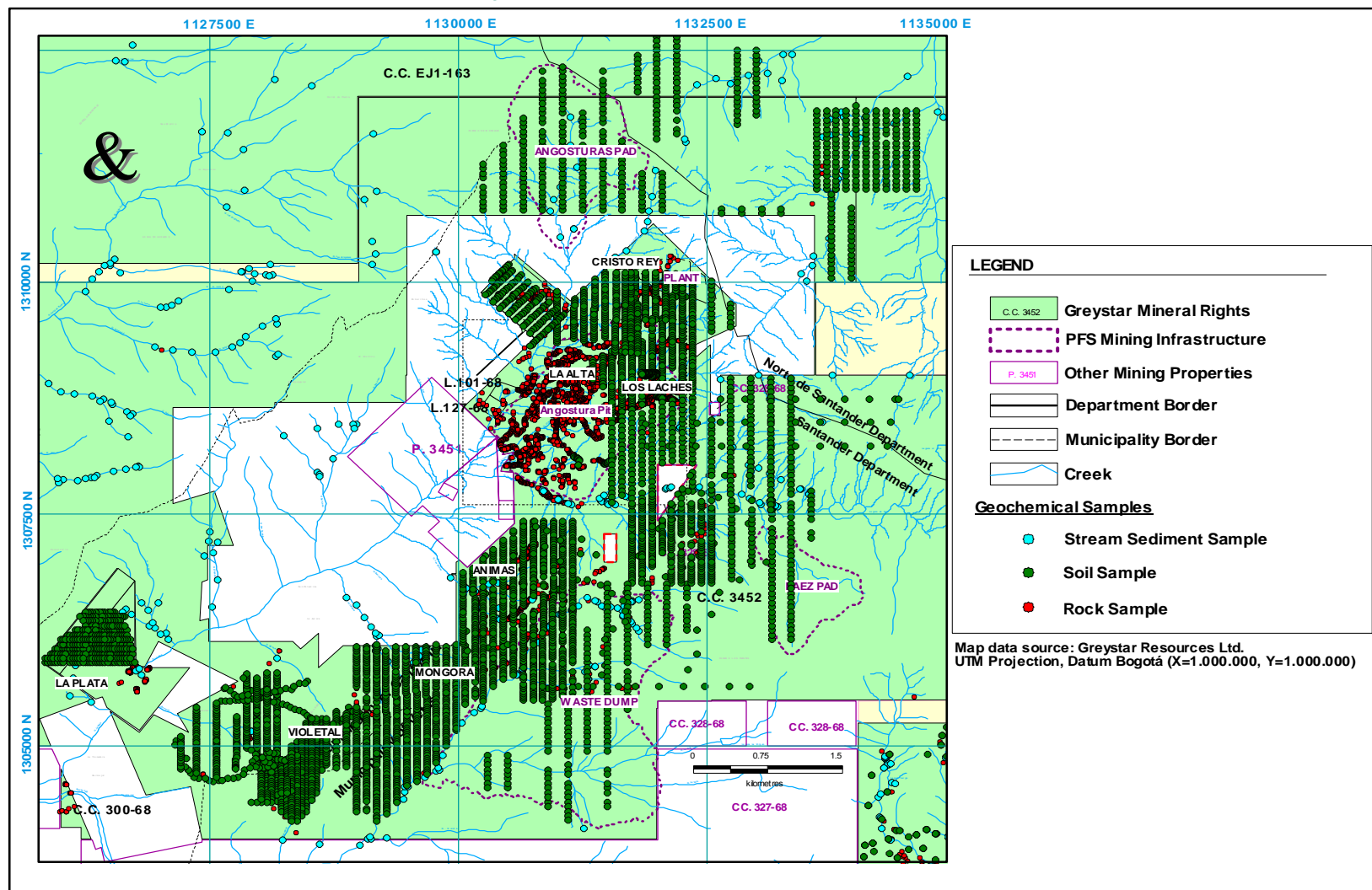
Significant additional exploration potential exists to the west and southwest of the Mongora deposit. Condemnation drilling and soil and rock geochemical studies have shown that to the east of the Mongora Fault there does not appear to be potential for significant mineralization.

Besides the Móngora occurrence major regional targets have been identified, Violetal, and La Plata, to the west of the Móngora deposit (Figure 9-2).



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Figure 9-1 Geochemical Sample Location Plan





**LEGEND**

**Quaternary**  
 □ Glacial deposits: morrains

**Tertiary (Middle Miocene)**  
 ■ Dacitic Porphyry

**Cretaceous**  
 ■ Sedimentary rocks: Shales, limestones, sandstones

**Triassic - Jurassic - Early Cretaceous**  
 ■ Intrusive Rocks: Diorite to granite

**Precambrian**  
 ■ Metamorphic: Gneiss (Biotite-Hornblende), locally Schists

**Structures**  
 - - - Inferred fault  
 — Defined fault

**Geology**  
 — Mineralized structure (Greystar R.)  
 — Mineralized structures  
 ■ Mining Titles not owned by Greystar

Map labels: LA PLATA, LA BAJA, LA MASCOTA, LA BODEGA, PIERRE GALLO, ANIMAS, MONGORA, VIOLETA, LA BODEGA, PIERRE GALLO, ANIMAS, MONGORA, VIOLETA, LA BODEGA, PIERRE GALLO, ANIMAS, MONGORA, VIOLETA.

Scale: 0 0.5 1 kilometres



## 10.0 DRILLING

Drilling has been carried out since 2008 and a total of 20,276 meters have been completed.

### 10.1 Drill Contractors and Methods

All drilling to date has been performed using diamond drills. Two Colombian contractors, Geominas and Perfotec have done all the drilling at Mongora. The contractor has used mainly Longyear wire line drill rigs (38 and 44).

Core size varied from BQ (36.5 mm diameter) to NQ (47.6 mm) to HQ (63.5 mm). By far the majority of the core size has been NQ, with HQ and BQ making up a lower proportion.

### 10.2 Core Logging

All drill core has been photographed with digital records being kept on the company's database system.

After photography, the Eco Oro geologists log the core in detail. Data recorded include the major and minor lithologies, mineralization style, intensity, and key minerals, the type and intensity of alteration, rock color, grain size, structural information such as brecciation and faulting, rock quality designation (RQD) and the degree of oxidation and weathering. The data was initially entered into paper log sheets and later into a computerized relational database.

### 10.3 Collar Surveys

Drill hole collars in the field are clearly marked by wooden stakes bearing the information of hole number, azimuth, inclination, and coordinates. Drill collar locations have been verified by survey, and Eco Oro contracted a professional surveyor to perform the survey readings using total station equipment.

### 10.4 Down-Hole Surveys

Down hole surveys were completed at surface and then at 25 m intervals until the end of the hole using a Reflex EZ-Shot instrument. Sometimes, when there were problems of hole stability, the measurements were taken at different intervals.

In Eco Oro's experience, the 25 m readings indicate a systematic steepening of the holes by about 1.5° in the first 100 m. Azimuth deviations are of a similar order of magnitude, but can be in either direction, right or left. The degree of steepening and change of azimuth at greater depths is somewhat smaller, reducing to 1° for the dip and 0.3° for the azimuth per 100 m. These changes in drill hole attitude are small and reasonably predictable, so that, despite the absence of deviation determinations above a depth of 150 m in the earlier drill holes, the actual location of these holes will not be far from where they are plotted.



Golder considers that down-hole surveying carried out at Móngora is appropriate.

### 10.5 Recovery

The average core recovery for the entire drill-hole database is approximately 93%. About 80% of the intervals are above a 90% recovery, a figure which includes near-surface recoveries that are typically very poor to a depth of about 5–10 m. Core recovery below a depth of approximately 20 m increases to an average 95%.

### 10.6 Drilling Used to Support Mineral Resource Estimation

The data used was that available to October 2011. A total of 58 drill holes were used to prepare the geological model and the resource estimation. The average sample length of the core drill holes is approximately 2.0 m, the longest being 9.0 m long.

Drill holes were generally orientated perpendicular to the main mineralization trend. Dips vary depending on the target and range from  $-40^{\circ}$  to  $-57^{\circ}$ . Average drill spacing in the core of the deposit is approximately 50 m; this widens to 200 m drill spacing on the deposit edges.

## 11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

From project acquisition to date, project staff employed by Eco Oro was responsible for the following:

- Sample collection
- Core splitting
- Density determinations
- Sample preparation from March 2004 to date
- Sample storage
- Sample security

### 11.1 Sample Collection

#### 11.1.1 Surface Sampling

Because of poor outcropping in the Móngora area, very few rock samples have been taken.

#### 11.1.2 Core Samples

Mineralized sections of core are sampled as follows:

- Silicified rocks and zones of sulfides: 0.5 – 1.0 m.
- Altered porphyry with between 1% and 10% alteration/sulfides: 1.0 – 2.0 m.
- Porphyry and gneiss with minor alteration and sulfides 2.0 m.





- Mafic gneiss and dyke without alteration: 2.0 - 3.0 m.

Sample intervals are marked on the core boxes and a paper ticket is placed with the core. The portion of core to be assayed is placed in a plastic sample bag with a sample ticket. A preparation laboratory is located at the Angostura camp and each sample is prepared as is described in the Section 11.4.

In general, longer samples were taken in areas believed to be of below economic cut-off grade. Few samples are less than 0.5 m long. Sampling observes obvious lithological, alteration, and mineralization breaks.

### 11.2 Analytical Laboratories

ALS Chemex in Vancouver B.C., has performed assays on samples. The laboratory is independent of Eco Oro, and holds both ISO:9001:2000 and ISO17025 accreditation. ACME laboratories of Vancouver B.C. was used to perform control duplicates.

### 11.3 Density/Specific Gravity

Eco Oro has undertaken 701 density measurements on drill core samples selected according the lithology, alteration and mineralization, using a wax immersion (ASTM C914-98) methodology. The Table 11-1 shows statistics for database.

**Table 11-1 Density Database used in Modeling**

N. samples	Min.	Max.	Std. Dev.	Mean
701	1.85	3.56	0.041	2.603

Eco Oro has adopted a regression analysis to assign density values to the model. The methodology is presented in section 14.8.

### 11.4 Sample Preparation

In March 2004 a preparation laboratory was established at the Angostura base camp. The site facility employs one Rhino and one Terminator jaw crusher. A charge of barren limestone or granite is passed between samples. After crushing, the sample, of an original mass of typically 1.5 kg to 3 kg, is blended and a sub-sample of nominally 250 g obtained by riffle splitting. Quality control (QC) measures include the weighing and screen analysis of one in 10 samples. Actual crusher output is usually close to 95% passing 1.7 mm. The sample preparation facility capacity is currently around 150 samples per shift, and the facility employs six people.

### 11.5 Sample Analysis

ALS Chemex of Vancouver, Canada, analyses are by fire assay digestion with an atomic absorption spectrometer (FA/AAS) finish using a one assay-ton (29.2 g) aliquot (Code Au-AA23). Gold assays above 10 g/t Au and silver assays above 100 g/t Ag are re-assayed by one assay-ton FA with a gravimetric finish (Codes Au-GRA21, Ag-OG62). Separate splits of these samples are subjected to a multi-element ICP assay, including silver and sulfur, following a four-acid digestion. The limit of the reported sulfur assays by this method is 10%. All





samples with ICP results that show a sulfur grade of >10% are re-assayed using the Leco method (Code S-IR08) with an upper limit of 50% S.

Confirmation resampling was carried out at ACME laboratory in Vancouver, Canada. ACME performed assays using a 15 g aliquot and a 30 element geochemical inductively-coupled plasma (ICP) gold method after aqua regia digestion.

### 11.6 Sample Security

Sample security relied upon the fact that the samples were always attended or locked at the sample dispatch facility. Sample collection and transportation have always been undertaken by company or laboratory personnel using corporately-owned vehicles.

Chain of custody procedures consisted of filling out sample submittal forms that were sent to the laboratory with sample shipments to make certain that all samples were received by the laboratory.

### 11.7 Sample Storage

The core storage facility is located in the town of California and includes a two dedicated warehouses for this purpose. Figure 11-1 shows a general view of one of the warehouse which is also used to store coarse samples and pulps. As the current storage conditions presents lack of space a new warehouse was constructed (Figure 11-2). Rejects are stored in a facility at the laboratory in Canada.



*Figure 11-1 A general view of core shed.*



Figure 11-2 General view of drill hole core storage area and new facility.

### 11.8 Quality Assurance and Quality Control

In June 2003, a QAQC program external to the assay laboratory was instituted, consisting of submission of blanks and standard reference materials (SRMs).

A total of 12 different SRMs were employed. All of the standards were prepared and certified by CDN Resource Laboratories Ltd. (CDN) of Vancouver, British Columbia. Standards are inserted into the sample stream every 15–20 samples or when a particularly mineralization-prospective intersection is logged. Triggers for an individual standard to have failed were generally set at reference value plus or minus three standard deviations (SD). If two adjacent standards were both more than two SD values above or below the reference value, then both standards were failures as well. The SD values were determined during the certification process. When Eco Oro receives SRM results outside of an acceptable range, a request is made to the laboratory to re-analyze the affected batch or batches.

From 2007, Eco Oro geologists have inserted control samples during core sampling. In October 2010, sampling protocols were changed to ensure that a control sample was inserted with each batch dispatched to the laboratory, one blank, one SRM, one core duplicate and a pulp duplicate per batch (35 samples) to follow the industry standards.



Collection of duplicate samples are triggered by a geologist inserting a “repeat” ticket into the sample stream; this indicates to the preparation laboratory that a second split of the sample is required (Burns, 2005). Duplicate samples have been collected at irregular intervals since early 2004.

Acme performed secondary assays on pulp duplicate materials from late 2007 to May 2011. Evaluation of the data indicates a potential low bias at ALS Chemex in the gold range of 50–100 g/t Au (Mello and Felder, 2010).

In October 2011 Golder preformed QAQC review as a part of a Resource Estimation Review for the Angostura Gold Project (Golder, 2011); the results of this review are discussed in Section 11.10.

### 11.9 Databases

Eco Oro has implemented SQL software, produced by the Bucaramanga firm Systemas Integrados de Informacion y Digitalizacion (SIID), to manage the Angostura database. The system is installed in the Eco Oro Bucaramanga office and is fully integrated with the data acquisition activities in the field and downloaded to Bucaramanga by microwave base data transmission. A strict, controlled and structured set of fields and columns is used to manage the data flow, and there are checks to alert the database manager of any import issues (Burns, 2005).

Assays are received electronically from the laboratories and imported directly into the database. Drill hole logging, collar and down hole survey data are manually entered into the database. Data are verified on entry to the database by means of in-built program triggers within the SQL database, and further checked on import to the mining estimation software. Checks are performed on surveys, collar co-ordinates, lithology data, and assay data.

Paper records are kept for all assay and QAQC data, geological logging and bulk density information, downhole, and collar co-ordinate surveys.

### 11.10 QAQC Golder Review, October 2011

Quality Assurance (QA) is the system and set of procedures used to ensure that the sampling and assaying results are of high quality. Quality Control (QC) tests are the data used to prove that the results of sample preparation and chemical analysis are adequate. QAQC procedures at Angostura were updated in 2010. These include the insertion of standards, field and coarse duplicates and blank samples into every batch of samples sent to the laboratories. The QAQC procedures are detailed in the 2010 internal report “A Review of Quality Control Procedures and Data”. This document details QAQC sample types, thresholds values for acceptance, reporting requirements and QAQC samples insertion procedures. It does not specify responsibilities.

The insertion of standards, field and coarse duplicates and blank samples are made by the geologists and technicians during sample preparation.

For a regular 36 sample batch, 1 blank, 1 reference standard, 1 field duplicate and 1 pulp duplicate are inserted as part of the QAQC program (Figure 11-3). Assay values of Au and Ag are checked in the process. To ensure the correct insertion of controls, the field geologist in addition to the normal sampling activities, marks a control insertion in the core box near to the x8<sup>th</sup> sample (8<sup>th</sup>, 16<sup>th</sup>, 24<sup>th</sup>, 36<sup>th</sup>) and registers the insertion in the “table of



controls” to check which of the 4 controls needs to be inserted. The controls do not follow the same sequence and are not always exactly the x8<sup>th</sup> sample. Golder was provided with Au data for all Móngora QAQC samples.

### 11.10.1 Blank Samples

Blank samples for Au are inserted into the sampling stream as a QAQC check for sample contamination and laboratory cleanliness. Eco Oro informed that since 3<sup>rd</sup> quarter 2010 blanks are inserted in the process with same frequency that standards.

The material used for blank samples is obtained from not mineralized zones and it is not standardized. The results presented in Figure 11-4 are considered adequate.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

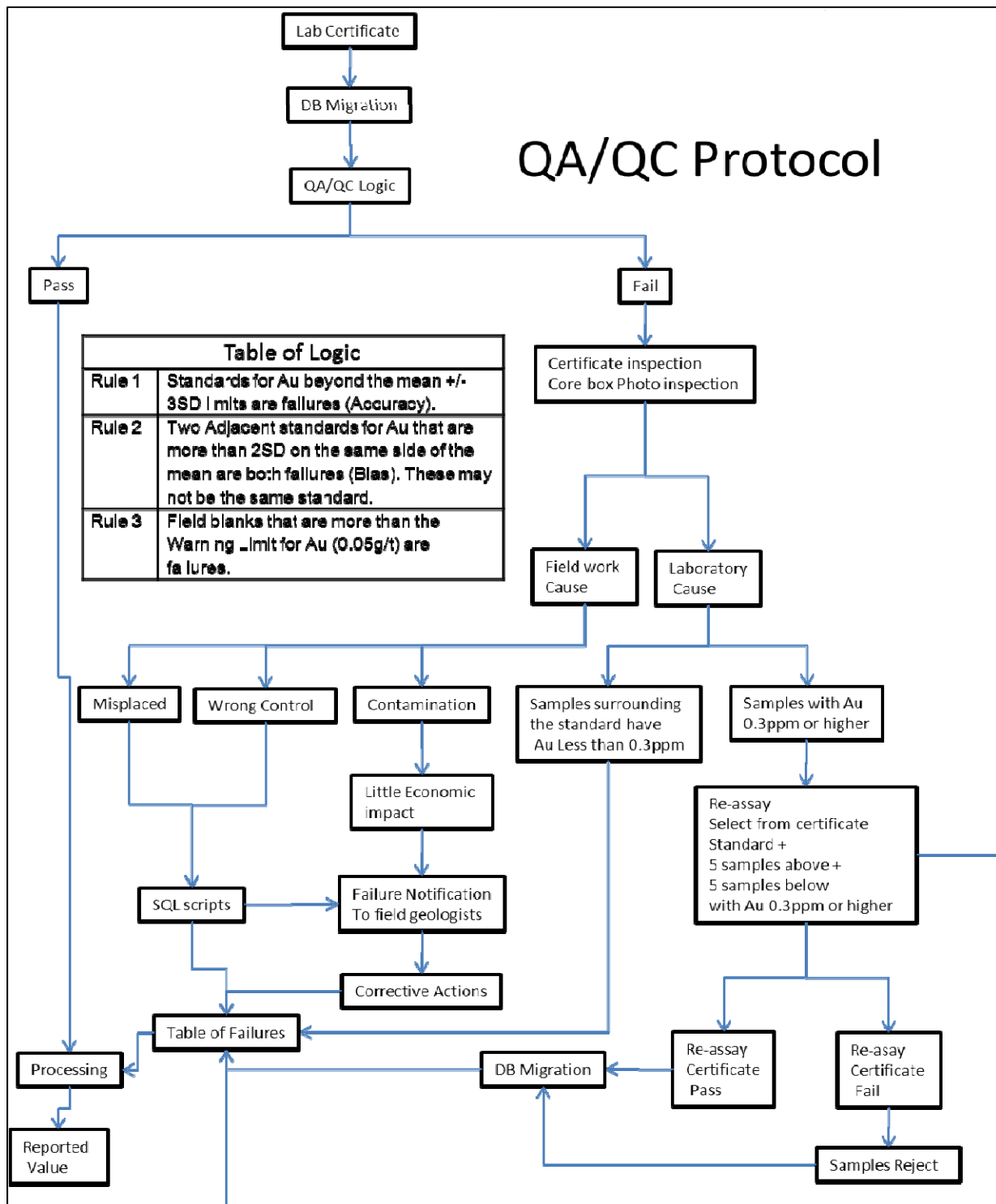


Figure 11-3 Angostura QAQC Protocol



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### Standard BLANK - Au

Mean	0.004 g/t Au	Expected Mean	-999.000 g/t Au
Standard Devn	0.007 g/t Au sq	Expected Std Dev	0.020 g/t Au sq
Counts	139	% Bias (-ve when underestimated)	0.00 %
Minimum	0.002 g/t Au	No of Outlier +/- 3 Std Dev	1
Maximum	0.078 g/t Au	% Outside Tolerance	0.72 %
Median	0.002 g/t Au	CV	1.60 %
Average HRD%	0.00 %	Average HARD	0.00 %

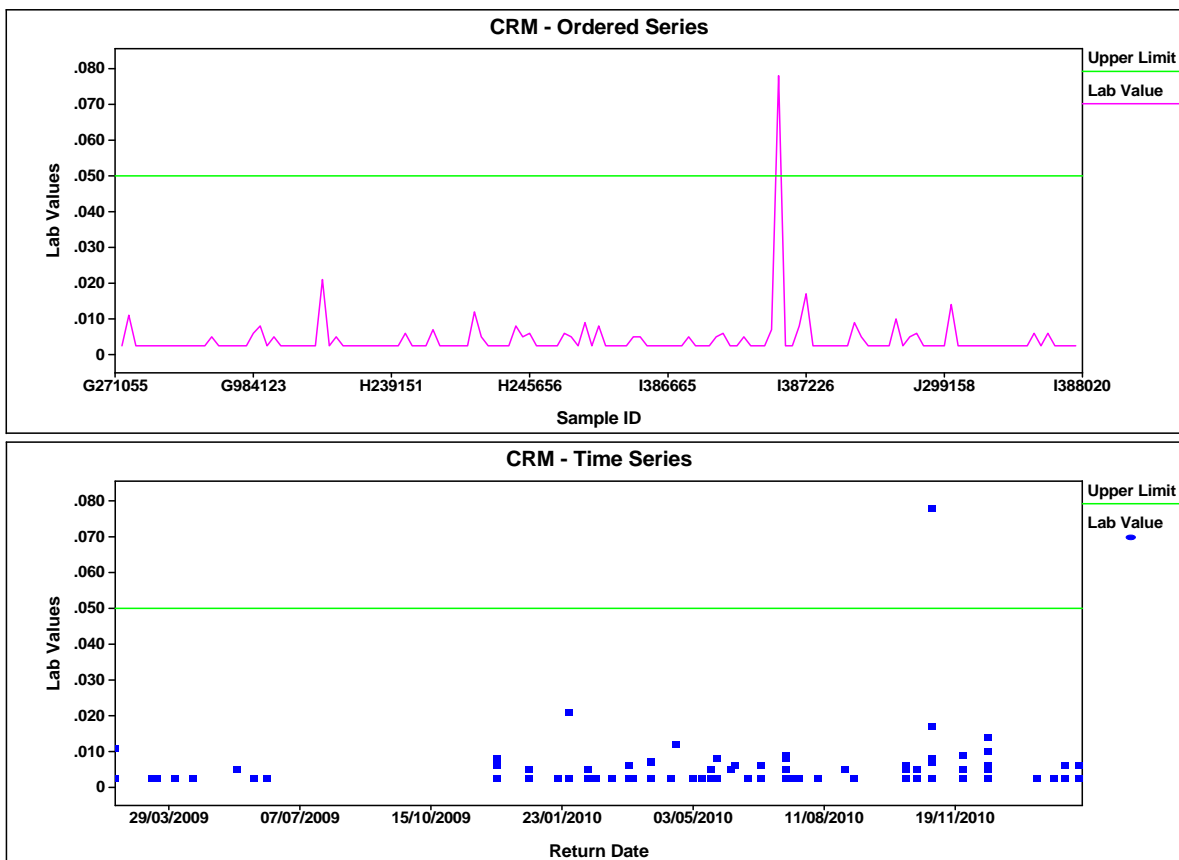


Figure 11-4 Blank results for Au.





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### 11.10.2 Standard Samples

Móngora Project routinely inserts standard samples into the analytical stream to assess the assay laboratory's accuracy and to determine the presence of bias. Eco Oro has utilized a suite of 8 standard samples, developed previously for Angostura project, which covered a range of Au grades. Table 11-2 summarises the expected mean and standard deviation values of the standard samples.

**Table 11-2 Expected mean values and acceptable limits for Móngora standard samples**

Au (g/t)				
Standard	Expected Mean (%)	Std Dev (%)	Accepted Lower (%)	Accepted Upper (%)
CDN-CGS-13	1.01	0.055	0.84	1.18
CDN-CM-8	0.91	0.055	0.75	1.01
CDN-GS-14A	14.90	0.435	13.60	15.37
CDN-GS-5C	4.74	0.140	4.32	5.16
CDN-GS-5D	5.06	0.125	4.68	5.43
CDN-GS-5F	5.30	0.180	4.76	5.65
CDN-GS-8A	8.25	0.300	7.35	8.59
CDN-GS-P7A	0.77	0.030	0.68	0.86

The analyses of the Au values for the standard samples show an acceptable accuracy and precision, all samples have Au values within the tolerance limits adopted by Eco Oro. An example of the results obtained for two standards are presented in Figure 11-5. All QAQC results together with the certificates for the standards are included in Appendix B.

All detected failures were reported and the corrected values were updated in the database.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT



Figure 11-5 Standards CRM-GS-P7A-Au and CDN-CGS-13-Au.

### 11.10.3 Duplicates Analysis

Field duplicates correspond to the second half of the core and are prepared and inserted on-site. Duplicates for both 150 µm and 10 µm coarse and pulp duplicates are created.

Figure 11-6 presents the coarse and pulp duplicate results for Au grades. The field duplicates present some anomalies in the HARD and HRD ranges. The analysis indicates poor and marginal precisions for field and pulp duplicates respectively. Field duplicates also show a slight positive bias. Although the number of field and pulp duplicates is limited further investigation is warranted given the low level of precision indicated by the analysis of duplicate results.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

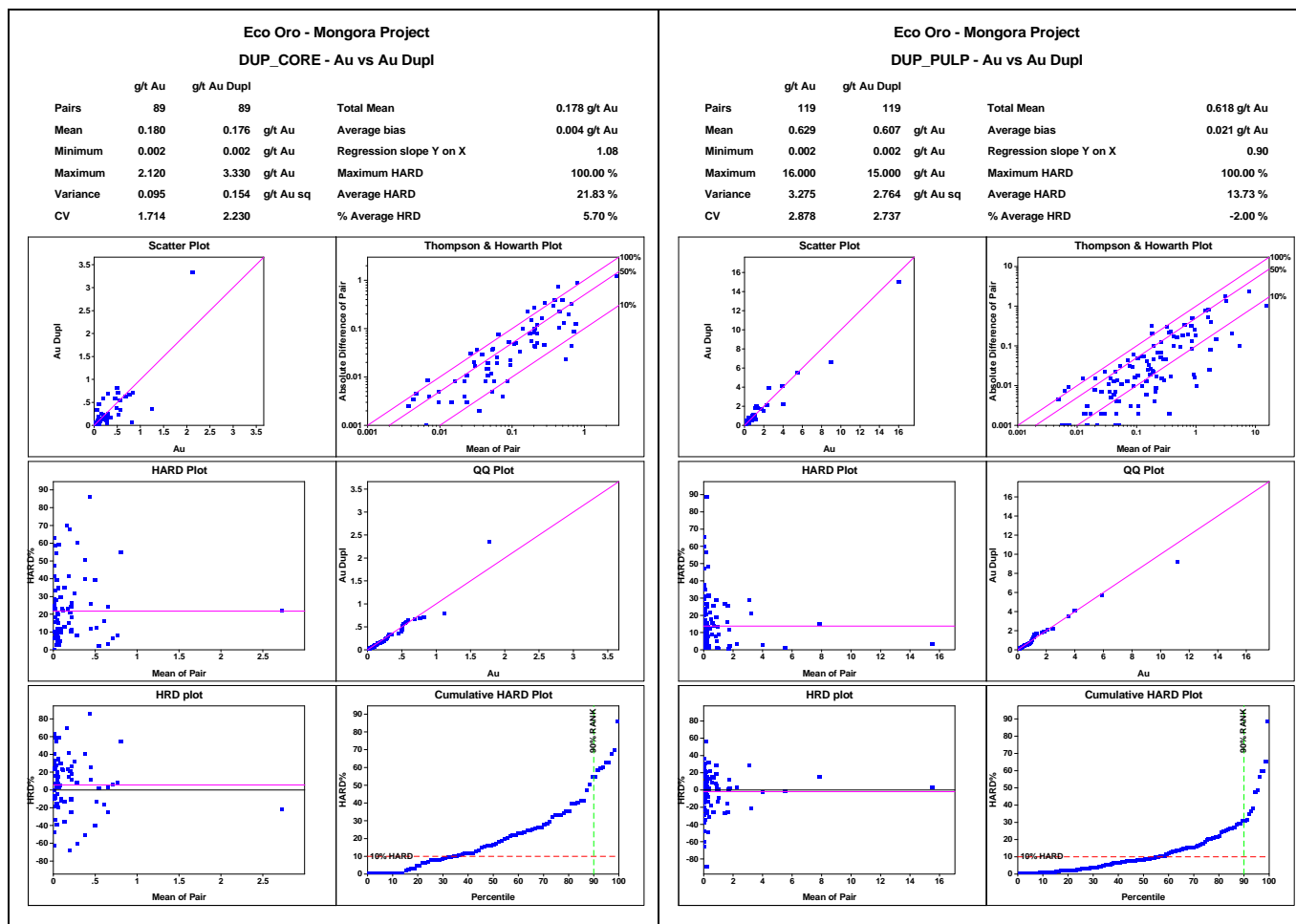


Figure 11-6 Field (core) and Pulp duplicates - Au.

### 11.11 Comment on Section 11

All collection, splitting, and bagging of core samples were carried out by Eco Oro personnel from 1994 to 2011. No material factors were identified with the drilling programs that could affect Mineral Resource estimation.

Data validation of the drilling and sampling program is discussed in Section 10 and 11, and includes review of database audit results.

In the opinion of the QP, the sampling methods are acceptable, meet industry-standard practice, and are adequate for Mineral Resource and mine planning purposes, based on the following:

- Data are collected following Project-approved sampling protocols.
- Sample collection and handling of core was undertaken in accordance with industry-standard practices, with procedures designed to limit potential sample losses and sampling biases. Although the number of



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

field and pulp duplicates is limited further investigation is warranted given the low level of precision indicated by the analysis of duplicate results. This needs to be improved before any Resource is classified as Indicated or Measured.

- Sample intervals, which have been defined on the basis of lithology, alteration, and sulfide content, are considered to be adequately representative of the true thicknesses of mineralization.
- Specific gravity determination procedures completed are consistent with industry-standard procedures.

The QP is of the opinion that the quality of the gold analytical data collected during the Eco Oro drill programs are sufficiently reliable (also see discussion in Section 12) to support Mineral Resource estimation and that sample preparation, analysis, and security are generally performed in accordance with exploration best practices and industry standards as follows:

- Drill sampling has been adequately spaced to first define, then infill, gold and silver anomalies to produce prospect-scale and deposit-scale drill data. Drill hole spacing varies with depth. Drill hole spacing increases with depth as the number of holes decrease and holes deviate apart.
- Sample preparation is in line with industry-standard methods for high-sulphidation epithermal deposits. Preparation prior to 2004 was by independent laboratories; since 2004, preparation has been undertaken by Eco Oro personnel at an on-site preparation laboratory.
- From 2004, Eco Oro drill programs have included insertion of blank and standard reference material samples. Duplicate submission is irregular. QAQC submission rates meet industry-accepted standards of insertion rates. The QAQC program results that have been validated by independent consultants do not indicate any problems with the analytical programs, therefore the gold and silver analyses from the core drilling are suitable for inclusion in Mineral Resource estimation.
- Data that were collected were subject to validation, using in-built program triggers that automatically checked data on upload to the database. This includes checks on surveys, collar co-ordinates, lithology data, and assay data. The results of the checks were appropriate, and consistent with industry standards.
- Sample security has relied upon the fact that the samples were always attended or locked in the on-site sample preparation facility. Chain-of-custody procedures consist of filling out sample submittal forms that are sent to the laboratory with sample shipments to make certain that all samples are received by the laboratory.
- Current sample storage procedures and storage areas are consistent with industry standards.



## 12.0 DATA VERIFICATION

A number of data verification programs and audits have been performed over the Project history, primarily in support of compilation of technical reports on the Angostura Project.

### 12.1 Metálica Consultores S.A., 2009

As part of database verification for mineral resource estimation, Sironvalle (2009) concluded:

*“While the QA/QC system as practiced since 2003 largely conforms to industry standards, it could have been somewhat more systematic and regular. The available check assay and standards assay data indicate that the assay results for the years 2003 to 2008 collectively are reliable, that they are fairly precise individually, and that any contamination was a short-lived problem.*

*Bulk density data added since December 2007 confirmed the analyses made in 2007.”*

### 12.2 GRD Minproc Limited, 2009

Greig et al (2009) did not perform any independent verification, noting:

*“From the checks made by Eco Oro, previous consultants and Metalica, it is concluded that the data has been verified to a sufficient level to permit its use in a 43-101 compliant resource estimate.”*

### 12.3 Smee Consultants, 2006–2010

Barry Smee inspected the preparation laboratory on three occasions, and prepared reports on the QA/QC programs in 2006, 2007, and 2008. Smee (2007) recommended that two high-grade standards be acquired; these were incorporated into the QA/QC program for the 2008 drill program.

Smee (2010) reviewed the QA/QC program conducted between September 2008 and September 2010. The program was conducted as part of exploration drilling at Angostura and Móngora. Smee recommended the following:

- Increase the frequency of control samples to 4 control sample (standard, blank, preparation duplicate and core duplicate) per batch (35 samples).
- Include a Standard Au > 10 g/t.
- Prepare a custom standard (1.2 - 4 g/t Au).
- Prepare and analyze 200 stored rejects to act as preparation duplicates for estimating sample preparation representativeness.

### 12.4 NCL, 2010

NCL conducted a review of the database quality, concluding that it was robust and well managed, and noted that security measures precluded data tampering.



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Four drill holes from the Angostura deposit, representing approximately 1,000 assays, were randomly selected, and checked against the corresponding database entries. No inconsistencies between digital and hardcopy data were identified.

NCL concluded, from these reviews, that:

*“While the QA/QC system as practiced since 2003 conforms to industry standards. The available check assay and standards assay data indicate that the assay results for the years 2003 to 2008 collectively are reliable, that they are fairly precise individually, and that any contamination was a short-lived problem.*

*Considering the results of the verification completed by NCL and the extent of external quality assurance and quality control measures implemented by Eco Oro as well as external data verification and QA/QC controls conducted by Barry Smee, NCL did not consider that further independent verification sampling was required.*

*In the opinion of NCL, Eco Oro used industry best practices to explore for gold and silver on the Angostura project. The exploration data was collected with care and is appropriately managed to ensure the safeguard of exploration information. The resulting exploration data is generally reliable for resource estimation.”*

This study included data available up to July 2010.

### 12.5 Comment on Section 12

The process of data verification for the Angostura Project has primarily been performed by Eco Oro geologists and verification and auditing is performed by external consultants. The QP considers that a reasonable level of verification has been completed, and that no material issues would have been left unidentified from the programs undertaken.

The QP, who relies upon this work, has reviewed the appropriate reports, and is of the opinion that the data verification programs undertaken on the data collected from the Project adequately support the geological interpretations, the analytical and database quality, and therefore support the use of the data in Mineral Resource estimation:

- No significant sample biases were identified from the QAQC programs undertaken by Eco Oro.
- Sample data collected adequately reflect deposit dimensions, true widths of mineralization, and the style of the deposit.
- External reviews of the database were undertaken between 1998 and 2010, producing independent assessments of the database quality. No significant problems with the database, sampling protocols, flowsheets, check analysis program, or data storage were noted.
- Changes and adjustments the QAQC program suggested by Smee 2010 has been implemented, except the preparation and introduction of a custom standard (1.2 – 4 g/t Au) that is currently in process of certification.
- Drill data are typically verified prior to Mineral Resource estimation, by running checking routines.





### 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

In April of 2009, Eco Oro had five quick leach tests performed on oxide, transition and sulfide materials. The results of these tests showed recoveries varying between 53 and 85 %.

Móngora has many similarities with the geological environment of Angostura. Structurally-controlled mineralization is hosted in Triassic–Jurassic intrusive rocks in association with pyrite. The intensity of a hydrothermal alteration does not appear to be as strong as in Angostura, but sericite, illite and chlorite are common. For the purpose to the resource estimation presented in this report an assumption was made that Móngora mineralized material has similar metallurgical behaviour to Angostura.

### 14.0 MINERAL RESOURCE ESTIMATES

The following sections describe the data, methodology and procedures related to the elaboration of the geological model and block grade estimates for the January 2012 Resource estimation.

#### 14.1 Geological Model

The starting point for the interpretation of the Móngora geological model was the structural geology and tectonic study done by Horner in 2005, as well as the analysis of a data collected in the Móngora and Violetal sectors since 2008. Modeling work was also supported by information provided by surface mapping.

For the construction of the mineralized structures a correlation was made between the contents of Au and Ag, alteration and rock types. Modeling was done based on the drilling done up to October 2011. The design criteria for the interpretation were defined by Mr. Frederick Felder (Consultant to Eco Oro) and Mr. Alfonso Silva (Eco Oro's Chief Geologist).

The geological modeling of the Móngora deposit was done using Datamine Studio 3. The geostatistical grade estimation and validation were carried out using Maptek's Vulcan Software. The statistical data analysis and variography were done using Golder's in-house software.

#### 14.2 Database

The database used for the geological modeling and the resources estimation of the Móngora deposit comprises 58 diamond drill holes which correspond to approximately 20,062 m of drilling.

Table 14-1 and

Table 14-2 show the details of the general database and the data selected within the high grade veins modeled by Eco Oro's geologists.

**Table 14-1 Database Basic Statistics**

Type	Nº of Drill holes	Metres
Core	58	20,276.2



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Type	Nº of Drill holes	Metres
Au	9,675	20,062.35
Ag	9,675	20,062.35
As	9,675	20,062.35
Cu	9,675	20,062.35
S	9,675	20,062.35

Table 14-2 Information Inside mineralized zone (High Grade Veins)

Type	Nº of Drillholes	Metres
Core	58	979.4
	Nº of Samples	Metres
Au	498	979.4
Ag	498	979.4
As	498	979.4
Cu	498	979.4
S	498	979.4

### 14.3 3D Modeling

A total of 103 high grade mineralization structures (veins) were modeled by Eco Oro geologists. Wireframes were constructed for each structure based on Au and Ag grades according to the mineralization parameters. In addition, previous studies of structures, rock types, hydrothermal alterations and Au-Ag-Cu correlation were taken in consideration.

To reduce the dilution in the veins, a cut-off grade of 2 g/t Au was used for veins with up to 2m thickness. For veins with thickness greater than 2 m a cut-off grade of 1.5 g/t Au was considered; taking into consideration the possibility of using different underground exploitation methods in different thickness of high grade veins. The solids were projected 25 m to 50 m horizontally and vertically beyond the last vein intercept.

Figure 14-1 and Figure 14-2 show general views of the veins and the drill holes. Surfaces (DTM) were created to define the topographic surface and the limit between the fresh rock (sulphides) and the oxides zone.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

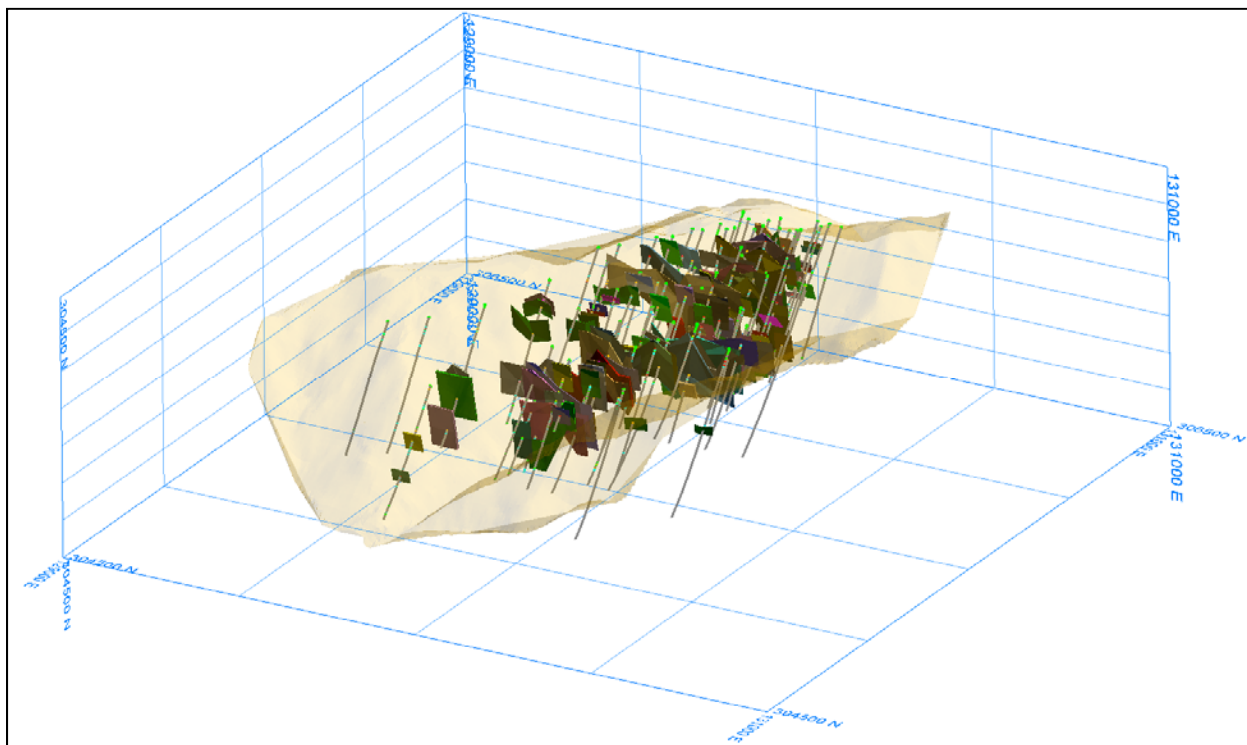


Figure 14-1 Aerial view of the Mongora Deposit.

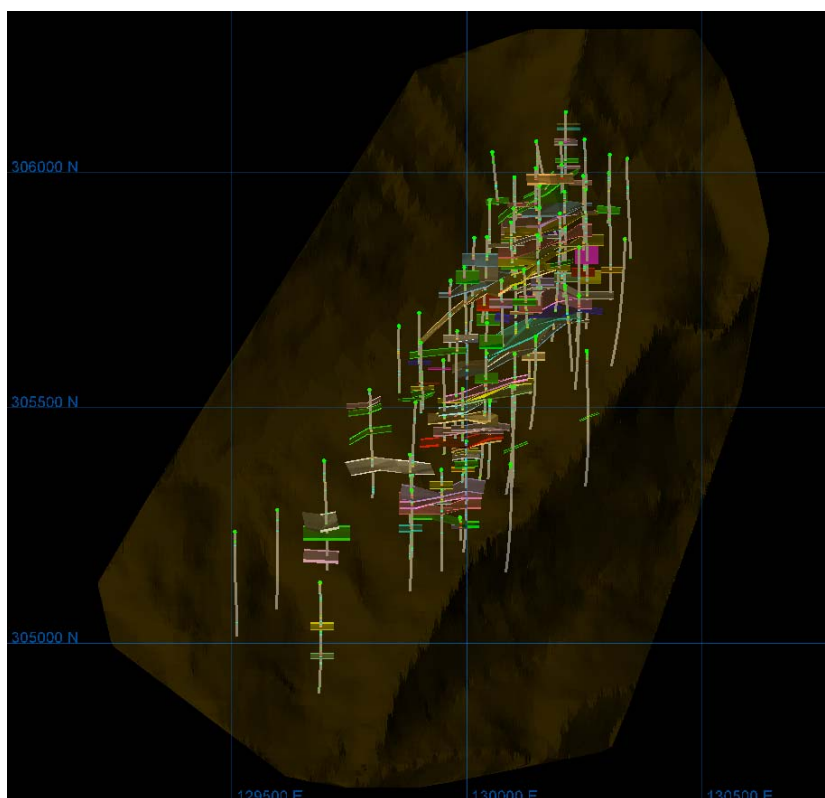


Figure 14-2 Plan view of the Móngora geological model.

### 14.4 Oxidation Model

The oxidation level at Móngora was modelled using the same methodology applied to the Angostura project. It starts with the coding of the drilling data using the criteria presented in Table 14-3.

**Table 14-3 Oxidation level criteria measured form drill hole cores.**

Oxidation type	Limonite	Total S (%)	Visual Sulphides
Oxide	Present	$\leq 1\%$	Trace to $\leq 0.5\%$
Transition	Present	$\geq 1\%$	$\geq 1\%$
Fresh or Sulphides	Absent	Not a criterion	Present

The characterization of oxidation types was made using core photos, core descriptions (logging) and total sulphur content. After defining the oxidation types (oxides, transition and fresh rock) a DTM surface was modelled indicating the top of the fresh zone which means that under this surface oxidation is absent.

Due to the limited occurrence of samples coded as transition type they were modeled as part of the oxide zone. Figure 14-3 and Figure 14-4 present sections showing the surface separating the oxide and sulphide zones.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

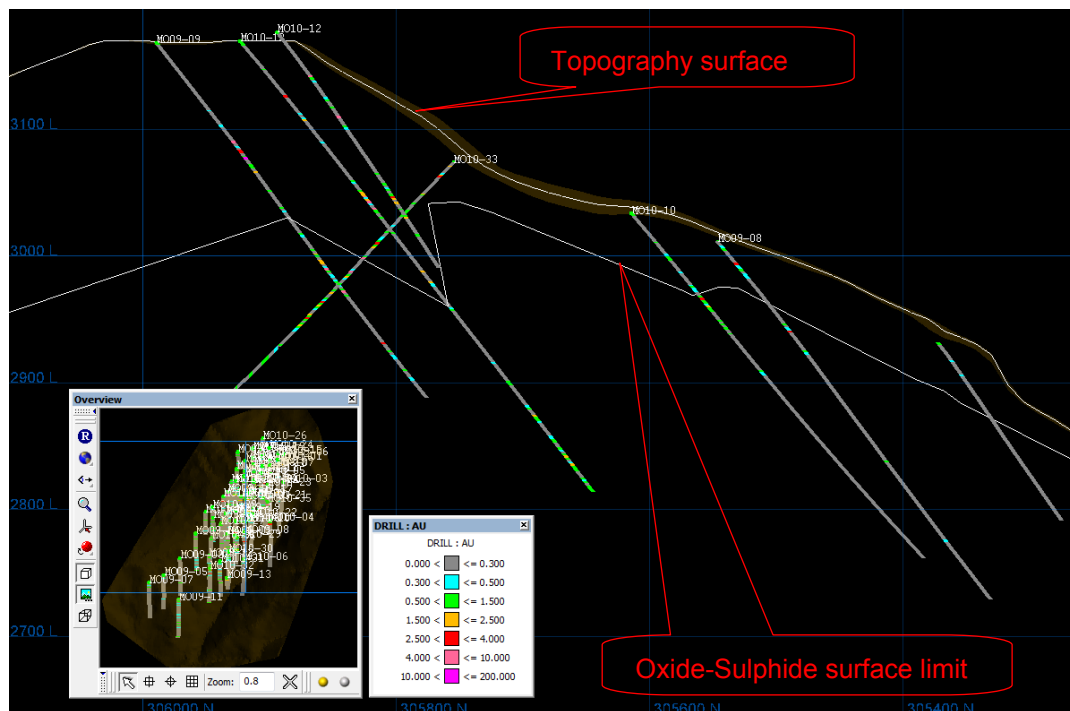


Figure 14-3 Oxide-Sulphide surface limit in section X=130110.

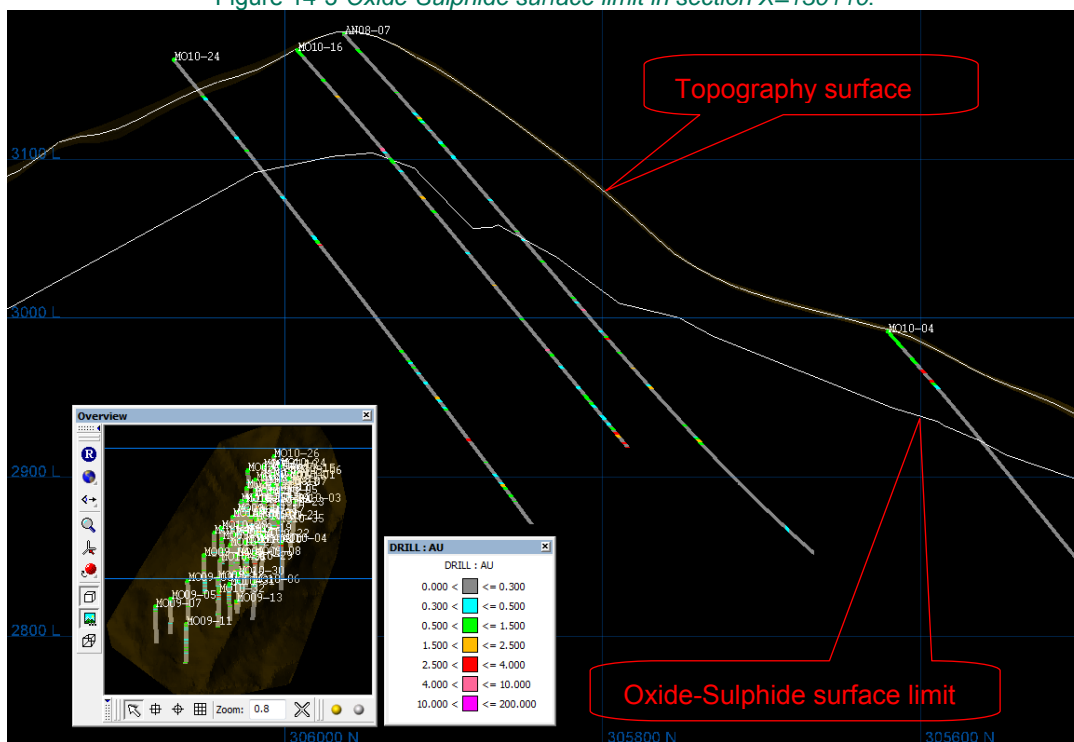


Figure 14-4 Oxide-Sulphide surface limit in section X=130250.



### 14.5 Compositing

Eco Oro took assay samples at every meter considering breaks in the presence of geological contacts (accepted intervals from 0.8 to 9.0 m). The geological interpretation was performed based on this data as well as structures identified by surface mapping and logging information. Then, all intercepts inside each solid were composited to 2.0 m intervals with tolerance of 1.0 to 2.8 m. Only samples with more than 40% recovery were included in the composites database. Figure 14-5 shows the distributions of sample lengths before and after compositing.

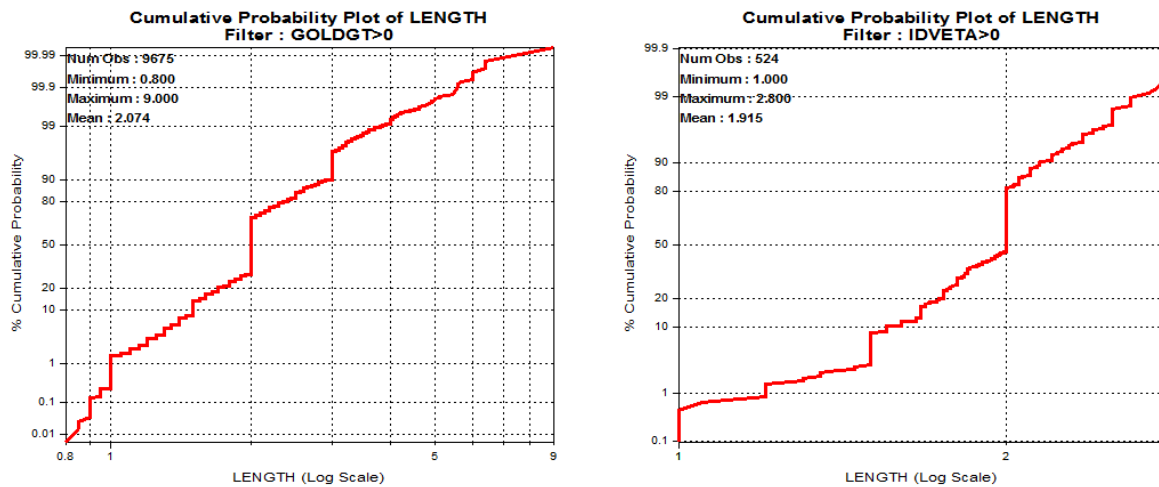


Figure 14-5 Probability plot of sample length – drill hole samples (left) and composites (right).

A total of 20% of the composites located inside the veins have Au grades below 1.0 g/t while 1% of the background composites have Au grades greater than 1.0 g/t. The compositing was considered not to alter the distribution of grades significantly while providing the appropriate level of regularization for the purpose of grade estimation.

### 14.6 Outlier Treatment

To reduce the impact of outliers capping and high yield restrictions were applied to the composited database. Capping and high yield thresholds of gold, silver, arsenic, copper and sulfur grades were determined graphically.

Figure 14-16 illustrates the graphically the threshold obtained for the grade distribution of each element and Table 14-4 presents the actual values.





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

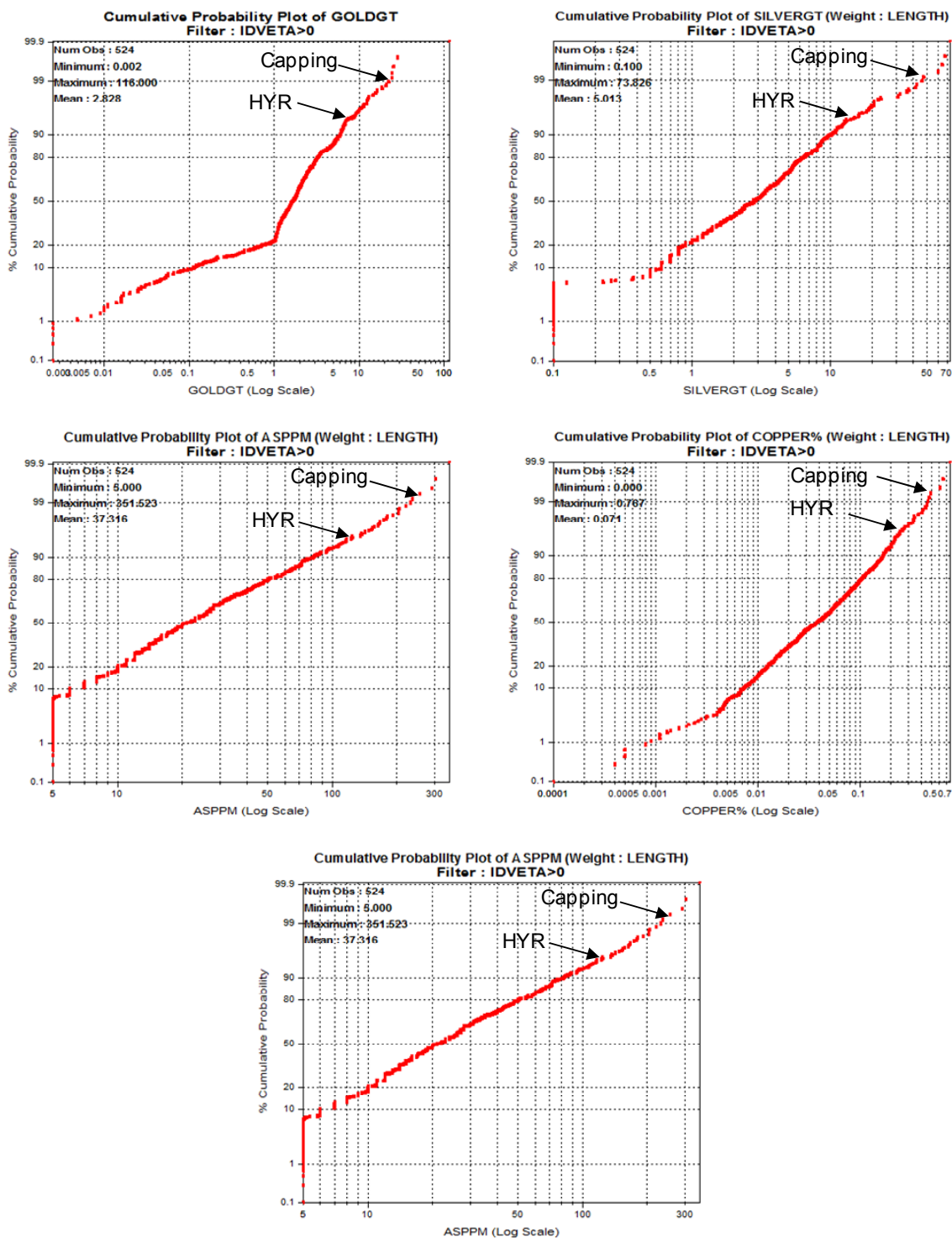


Figure 14-6 Probability Plots showing the threshold values defined for capping and High Yield Restriction.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

**Table 14-4 Thresholds defined for capping and high yield restriction**

Variable	Capping	High Yield Restriction (HYR)
Au	25.0	8.0
Ag	50.0	20.0
As	250.0	120.0
Cu	0.50	0.25
S	7.0	4.0

### 14.7 Exploratory Data Analysis

Exploratory data analysis aims at finding similarities between distributions of different sample populations and determining possible groupings of geological attributes into estimation domains. All the statistical analyses were performed using the composited database with consideration to the treatment of outliers.

Due to the conceptual stage of the model just two domains were identified, one for ore where all the veins are included and other for background that includes low grade material and some isolated high grade samples.

The statistical appropriateness of the domains was analysed using different statistical and geostatistical tools. To perform the analysis, basic statistics and cumulative probability plots were produced.

The estimation domains defined after the geological modelling corresponds to 103 individual veins.

Table 14-5 presents global statistics for all veins. Figure 14-7 to Figure 14-8 presents probability plots for domains “veins” and “background”. For domain “veins” it is possible to observe the presence of two populations split around 1.0 g/t Au which could indicate that inside ore domain it is possible to identify regions for low and high grade. However the limited number of samples prevents such segregation of low and high grade zones inside the veins. The probability plot for background domain indicates that around 1% of samples present grades over 1.0 g/t Au. Appendix C includes probability plots of composite grades for all elements.

**Table 14-5 Summary statistics for Au composites by vein**

Vein	No. Obs.	Minimum	Maximum	Mean	Std. Dev.
1	17	0.786	22.200	3.285	4.951
2	12	0.655	6.876	2.899	2.119
3	29	0.003	11.250	2.341	2.461
4	14	0.039	12.316	2.459	3.076
5	14	0.025	8.110	1.552	2.120
6	17	0.003	10.750	1.727	3.027



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Vein	No. Obs.	Minimum	Maximum	Mean	Std. Dev.
7	26	0.011	18.600	2.776	3.733
8	15	0.186	6.790	1.980	1.646
9	33	0.011	25.371	2.492	4.463
10	16	0.017	9.010	2.118	2.174
11	8	0.014	5.213	2.212	1.638
12	14	0.056	2.960	1.302	0.912
13	5	1.100	9.247	4.217	3.150
14	8	0.016	1.925	1.052	0.836
15	8	0.010	9.770	2.193	3.120
16	4	0.206	1.585	1.061	0.610
17	4	1.055	5.558	2.391	2.145
18	6	0.695	2.140	1.298	0.472
19	11	0.395	28.200	4.915	8.048
20	5	0.750	8.840	3.803	3.849
21	1	5.150	5.150	5.150	-
22	1	1.835	1.835	1.835	-
23	5	1.040	2.910	1.612	0.767
24	3	1.105	6.180	2.943	2.812
25	1	1.415	1.415	1.415	-
26	2	1.005	1.885	1.445	0.622
27	2	1.685	1.870	1.778	0.131
28	3	0.197	1.400	0.961	0.664
29	1	2.230	2.230	2.230	-
30	5	1.065	3.570	2.038	0.923
31	4	1.200	10.650	3.995	4.511
32	5	0.057	4.140	1.472	1.555
33	6	0.020	2.354	1.163	0.958
34	1	3.080	3.080	3.080	-
35	4	0.051	1.780	0.779	0.830
36	1	3.550	3.550	3.550	-



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Vein	No. Obs.	Minimum	Maximum	Mean	Std. Dev.
37	9	1.070	2.260	1.433	0.399
38	14	0.003	6.340	1.565	1.489
39	13	0.974	15.661	3.498	4.361
40	10	0.017	4.180	1.380	1.292
41	13	0.003	6.030	1.816	2.137
42	2	1.925	3.330	2.628	0.993
43	3	0.016	6.120	3.562	3.170
44	9	0.007	3.960	1.799	1.401
45	2	1.485	1.485	1.485	0.000
46	2	0.275	1.325	0.800	0.743
47	1	12.350	12.350	12.350	-
48	1	1.475	1.475	1.475	-
49	1	16.300	16.300	16.300	-
50	1	1.770	1.770	1.770	-
51	1	116.000	116.000	116.000	-
52	6	0.027	6.500	2.618	2.172
53	3	6.088	20.753	12.284	7.592
54	1	2.150	2.150	2.150	-
55	1	5.910	5.910	5.910	-
56	6	1.862	12.650	5.897	4.287
57	9	0.042	5.640	1.216	1.830
58	1	11.400	11.400	11.400	-
59	2	6.900	7.320	7.110	0.297
60	3	1.590	2.590	2.187	0.527
61	1	1.820	1.820	1.820	-
62	2	2.070	2.600	2.335	0.375
63	2	1.915	1.915	1.915	0.000
64	7	0.427	3.400	1.899	1.098
65	3	1.385	5.570	3.721	2.135
66	2	4.830	4.830	4.830	0.000



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Vein	No. Obs.	Minimum	Maximum	Mean	Std. Dev.
67	3	0.053	2.160	1.296	1.103
68	3	5.540	5.920	5.793	0.219
69	1	12.250	12.250	12.250	-
70	1	2.720	2.720	2.720	-
71	3	1.095	1.485	1.318	0.201
72	2	1.100	2.220	1.660	0.792
73	5	0.930	2.990	1.890	0.739
74	4	0.652	8.530	3.508	3.488
75	2	2.620	2.840	2.730	0.156
76	9	0.105	2.998	1.547	1.250
77	4	0.445	14.600	5.166	6.540
78	4	0.027	13.000	4.929	5.797
79	2	2.753	4.760	3.756	1.419
80	3	1.205	3.150	2.195	0.973
81	6	0.586	4.040	1.864	1.203
82	2	24.300	24.300	24.300	0.000
83	1	5.147	5.147	5.147	-
84	1	3.470	3.470	3.470	-
85	1	5.150	5.150	5.150	-
86	1	1.525	1.525	1.525	-
87	2	1.135	1.495	1.315	0.255
88	1	1.245	1.245	1.245	-
89	1	3.590	3.590	3.590	-
90	1	1.050	1.050	1.050	-
91	1	2.560	2.560	2.560	-
92	2	1.935	3.722	2.829	1.264
93	1	2.080	2.080	2.080	-
94	2	1.269	1.985	1.627	0.506
95	1	2.010	2.010	2.010	-
96	1	3.370	3.370	3.370	-



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

Vein	No. Obs.	Minimum	Maximum	Mean	Std. Dev.
97	2	0.373	3.198	1.786	1.998
98	4	0.444	1.720	1.070	0.666
99	1	4.900	4.900	4.900	-
100	1	5.570	5.570	5.570	-
101	1	1.335	1.335	1.335	-
102	1	2.670	2.670	2.670	-
103	1	3.418	3.418	3.418	-

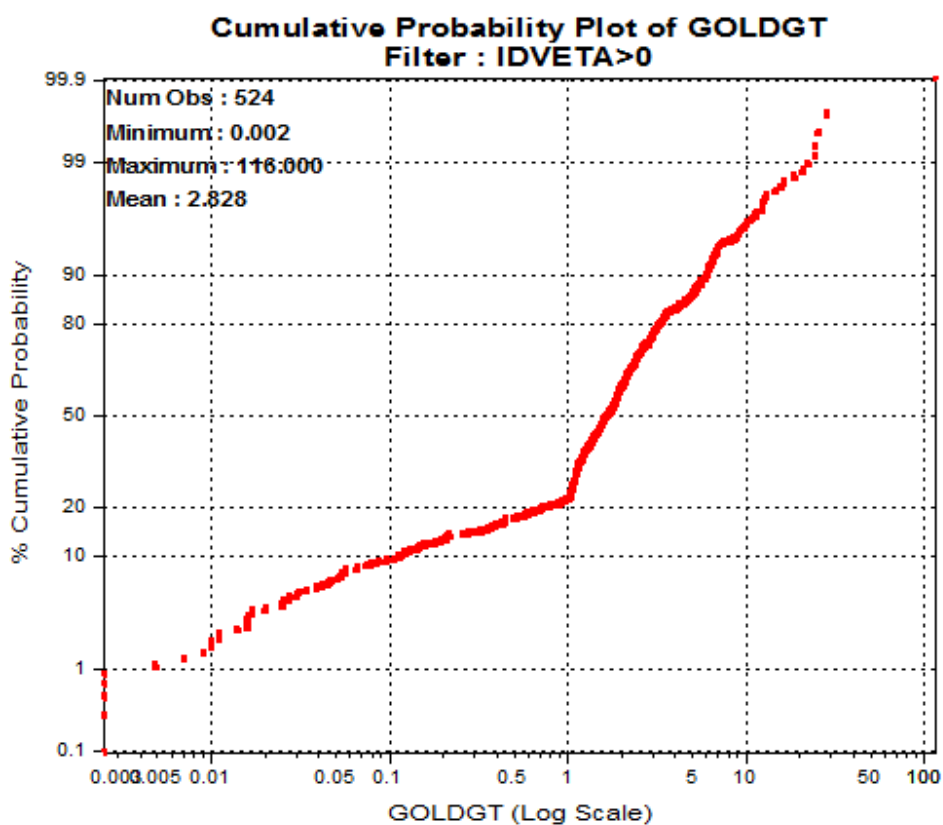


Figure 14-7 Cumulative probability plot for Au – ore domain.



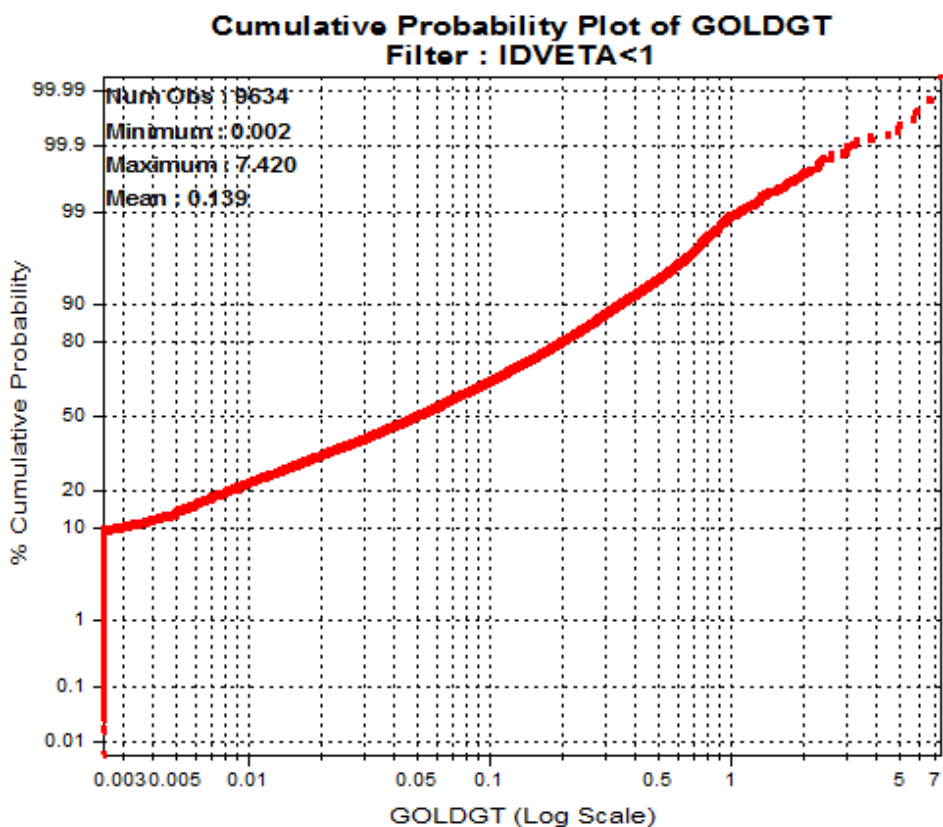


Figure 14-8 Cumulative probability plot for Au – background domain.

### 14.8 Specific Gravity Measurements

Eco Oro has undertaken 701 density measurements on drill core samples selected according the lithology, alteration and mineralization.

The partition of this database in relation to the oxidation surface indicated the presence of two distinct populations. Table 14-6 show statistics for the two domains and Figure 14-9 graphs the difference between populations.

Table 14-6 Density database used in modelling

Ore type	Zone	Density				
		N. samples	Min.	Max.	Std. Dev.	Mean
Oxide	1	218	1.85	3.28	0.051	2.514
Sulphide	3	483	2.12	3.56	0.029	2.643



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

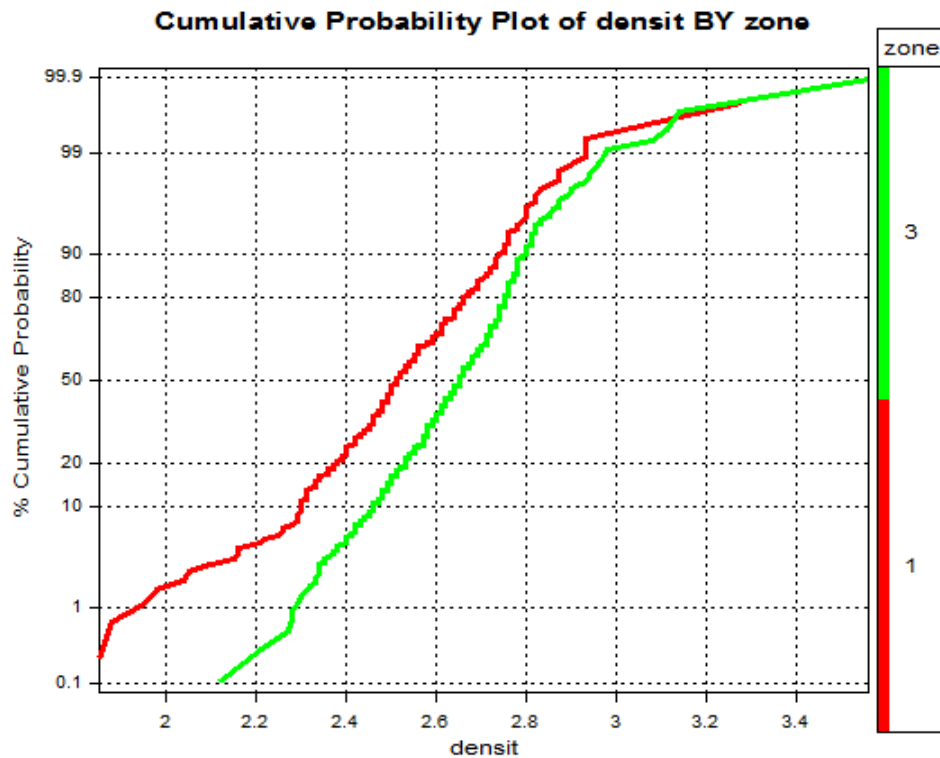


Figure 14-9 Cumulative probability plot for the two density populations.

The methodology adopted by Eco Oro to provide density values to the geological model is presented in the report “Estimacion de la densidad aparente a partir de tenores de oro – Proyecto Angostura” (Bulk density estimation based on Au grades – Angostura Project) in September 2011 where over 9000 samples (from Angostura and Móngora projects) were analysed.

The procedure take into account that rock density is influenced by multiple factors (rock type, alteration, mineralogy) and presents high correlation between Au grade and oxidation level.

Regression analysis performed over the database showed correlation index around 90% for sulphides and 80% for oxides/transition (Figure 14-10).



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

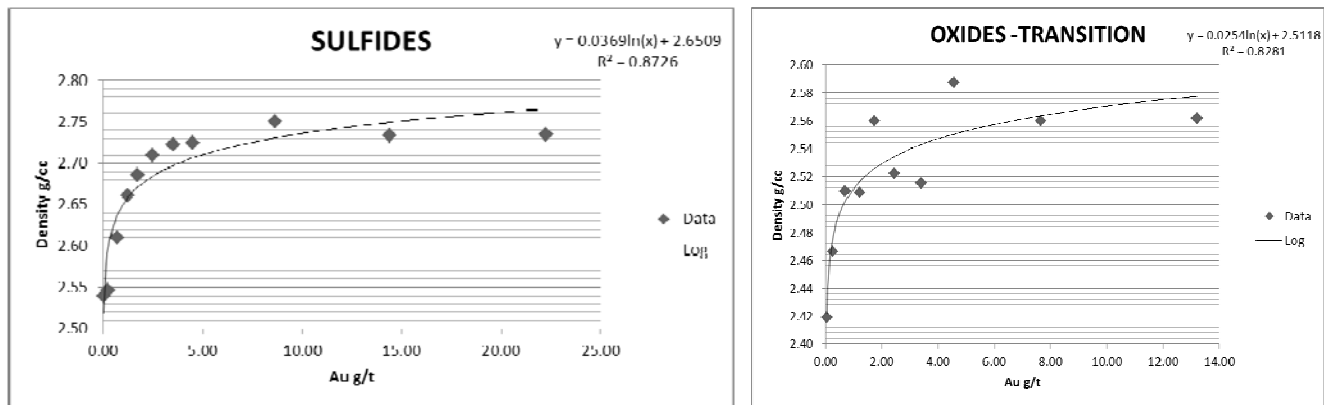


Figure 14-10 Correlation for Au in Sulphides zone (left) and Oxide-Transition zone (right).

Based in this study and the oxidation levels defined for Móngora the criteria adopted to assign density values to the block model were: 1) the application of the correlation function for the sulphide zone; 2) use of the mean samples value for oxide zone. The Table 14-7 resume the procedure:

Table 14-7 Procedure to provide density to Móngora model

Oxidation level	Procedure	Value
Oxide	Mean value for the zone	2.51
Sulphide	Correlation function	$0.0369 \times \ln(\text{Au\_grade}) + 2.6509$

## 14.9 Block Model Parameters

The Móngora resource model was generated in Vulcan®. The resource model was estimated using an irregular block model with a parent block size of 10.0 m (X) by 10.0 m (Y) by 10.0 m (Z) with sub-blocks not smaller than 1.0 m (X) by 1.0 m (Y) by 1.0 m (Z). The block model specifications are presented in Table 14-8.

Table 14-8 Móngora block model definition

Orientation	Bearing	Dip	Plunge
	90	0	0
Origin	East	North	Elevation
	129600	304900	2500
Parent block size	10	10	10
Parent number of block	80	130	80
Extension of block model in direction	800	1300	800
Total number of blocks	3,113,524		



### 14.10 Spatial correlation and variography

Variography calculation and modeling was completed by Golder using Isatis® Software. All composites flagged as being inside any of the vein wireframes participated defined during geological modeling. Golder performed experimental variograms for each grade variable (Au, Ag, As, Cu and S).

Golder performed the calculations of experimental variograms using a pairwise relative variogram function. The process involved the following steps:

- Calculating variogram and assessing directions of anisotropy;
- Calculating directional variograms;
- Down-the-hole relative variograms to derive the nugget effect;
- Fitting the experimental variograms models in the main directions of continuity.

The fitted models together with the experimental variograms are presented in Figure 14-11 to Figure 14-15 and detailed in Table 14-9.

**Table 14-9 Adjusted variogram models.**

VARIOGRAM MODELS – Móngora Project						
Element	Model	Nugget Effect	Sill	Range1	Range2	Range3
Au	Spherical	0.3	0.45	30	10	15
	Spherical		0.123	100	70	55
	Spherical		0.195	250	600	500
Ag	Spherical	0.17	0.45	35	20	15
	Spherical		0.123	90	130	95
	Spherical		0.195	1600	1600	3000
As	Spherical	0.07	0.15	30	10	15
	Spherical		0.11	60	15	25
	Spherical		0.09	600	400	800
Cu	Spherical	0.1	0.4	30	12	5
	Spherical		0.2	120	110	70
	Spherical		0.11	550	3000	2000
S	Spherical	0.1	0.37	50	15	25
	Spherical		0.046	160	100	80
	Spherical		0.437	490	200	650



RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

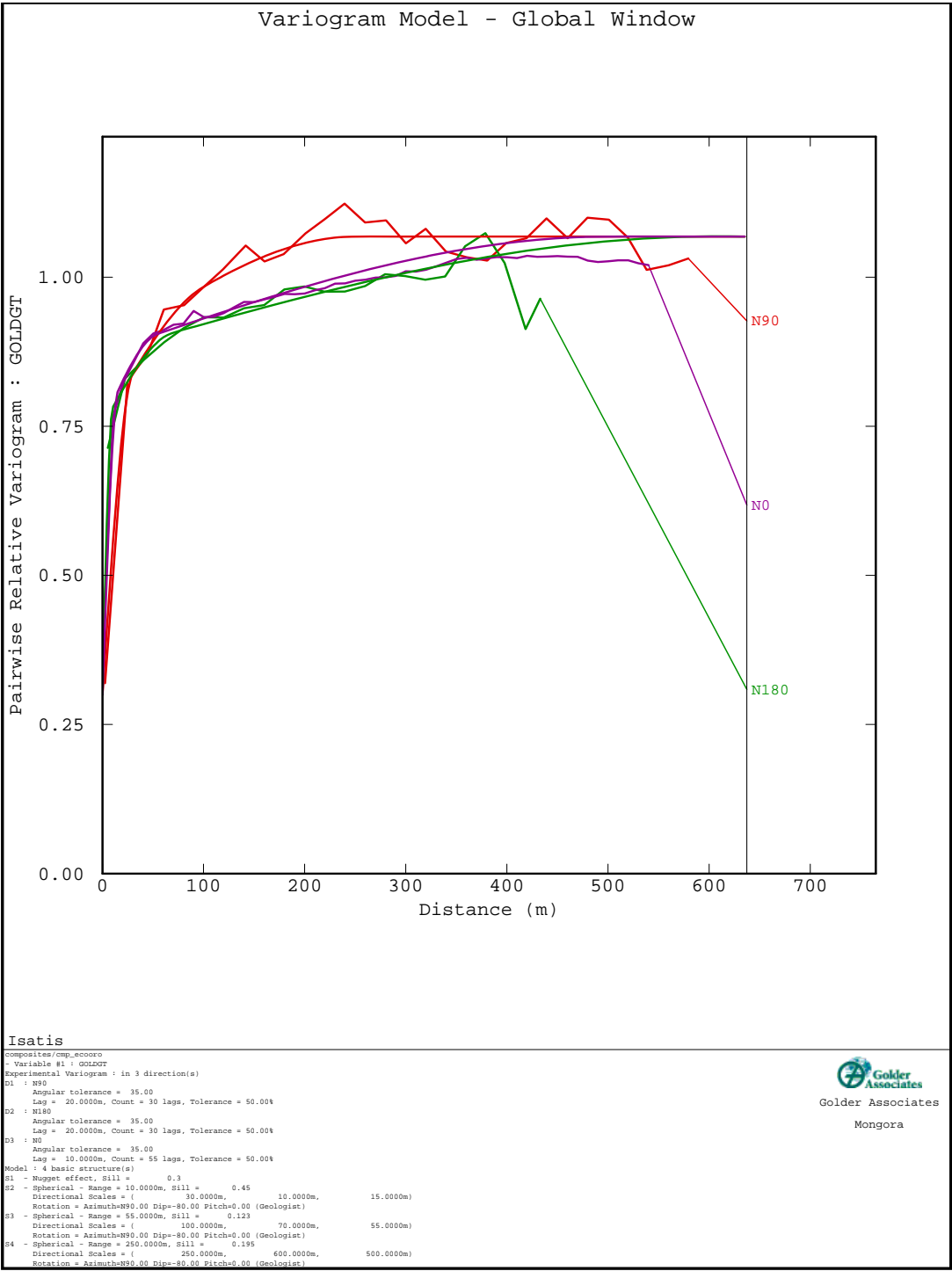


Figure 14-11 Variogram model for Au.



# RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

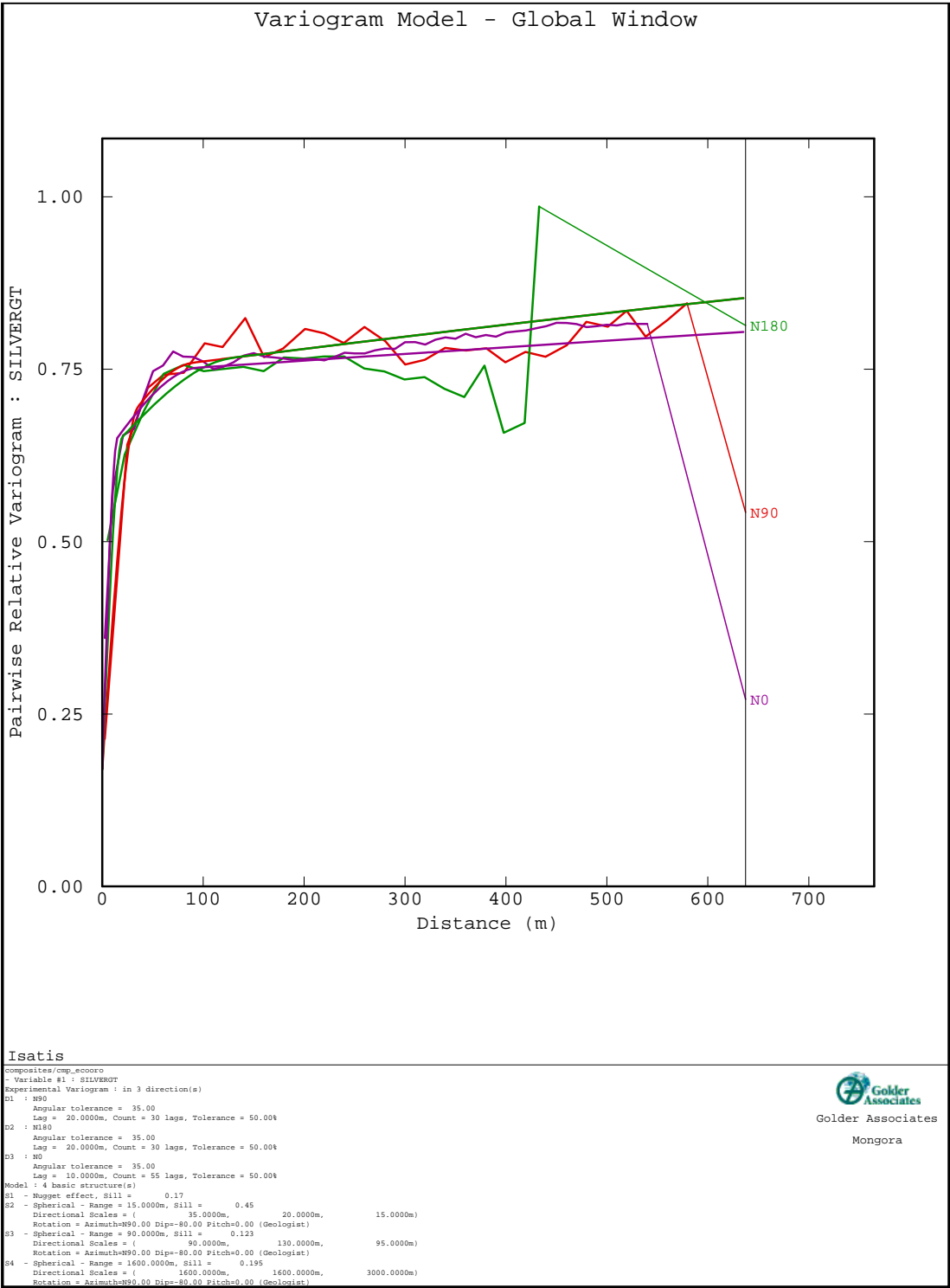


Figure 14-12 Variogram model for Ag.





RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

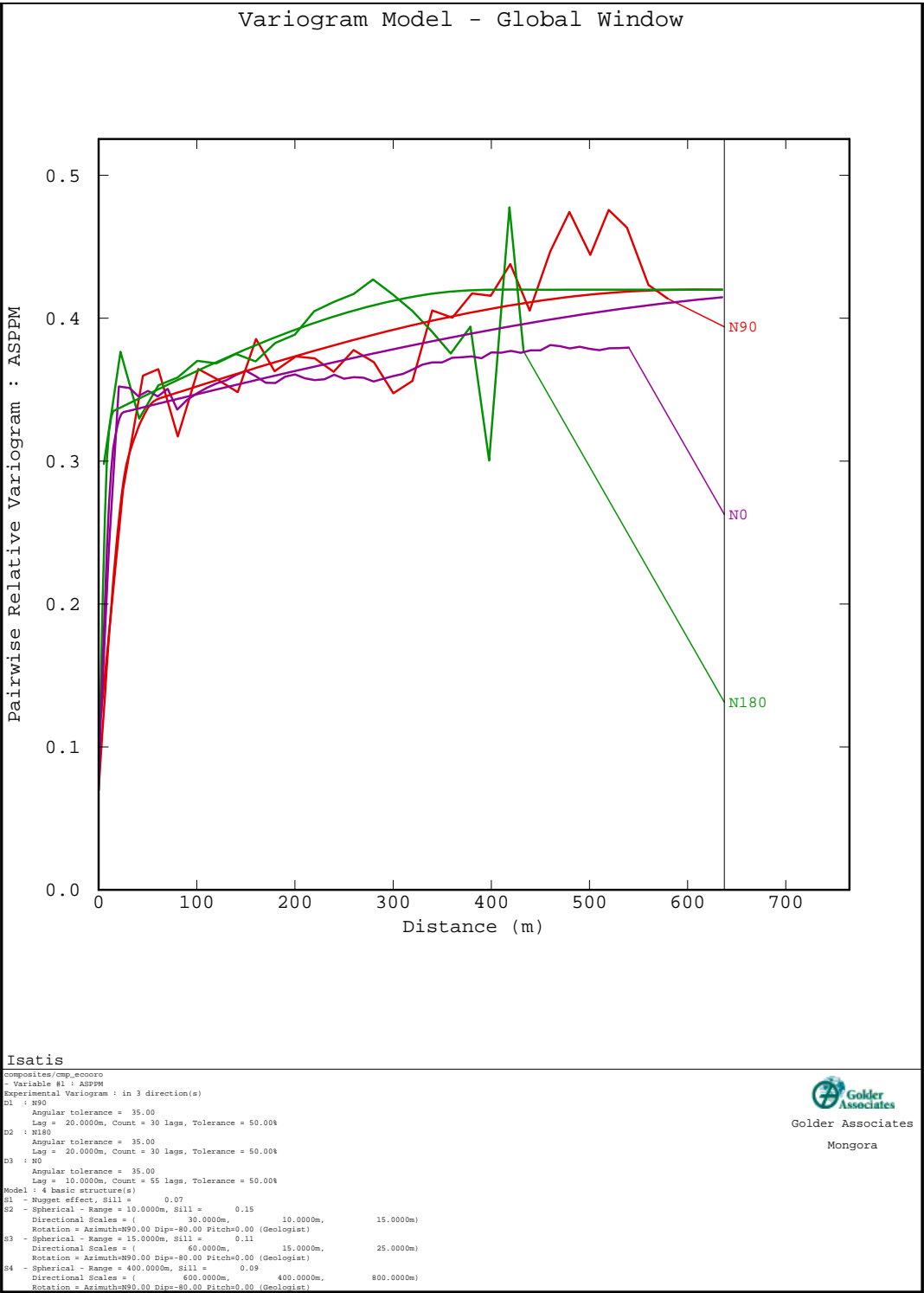


Figure 14-13 Variogram model for As.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

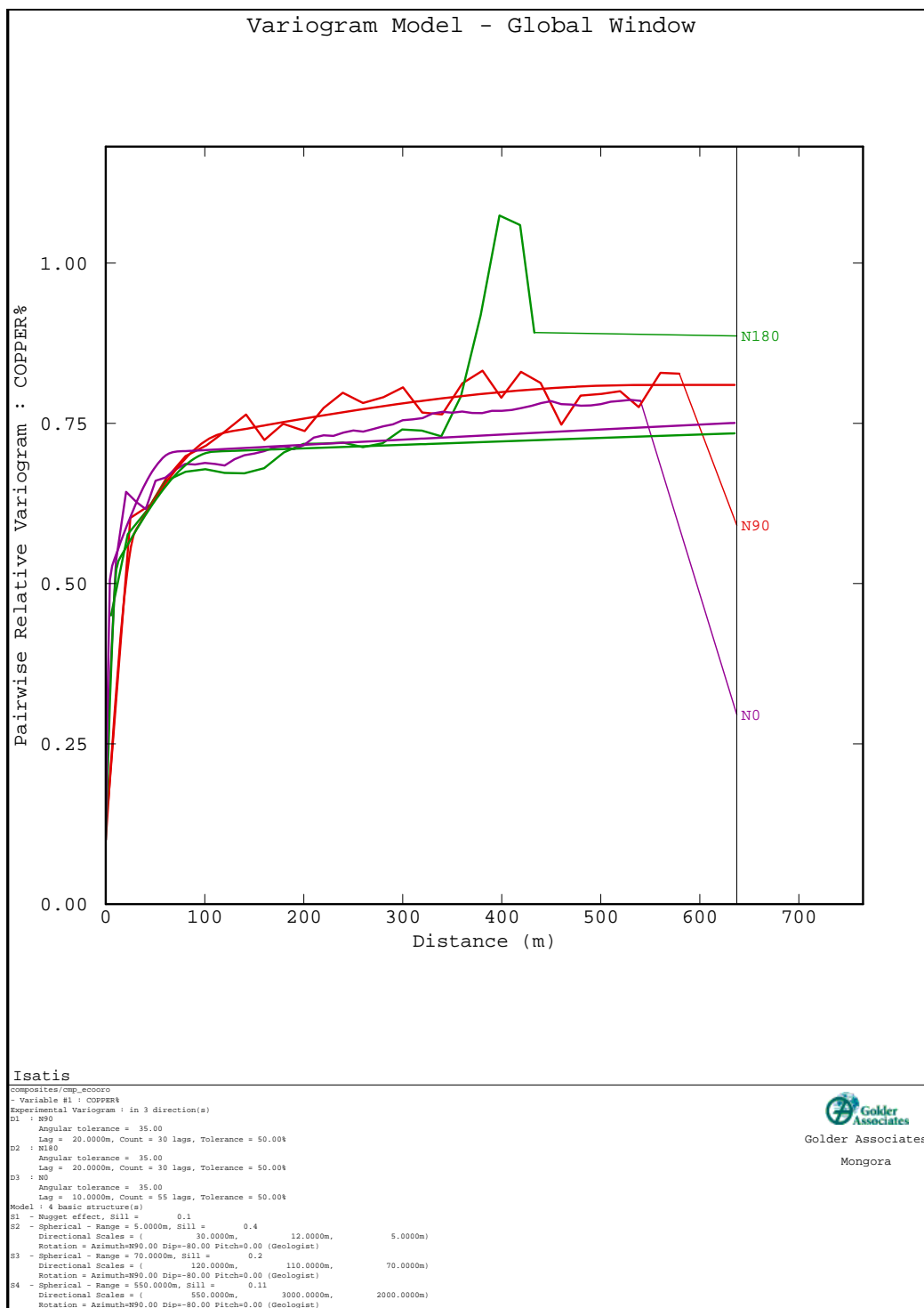


Figure 14-14 Variogram model for Cu.



# RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

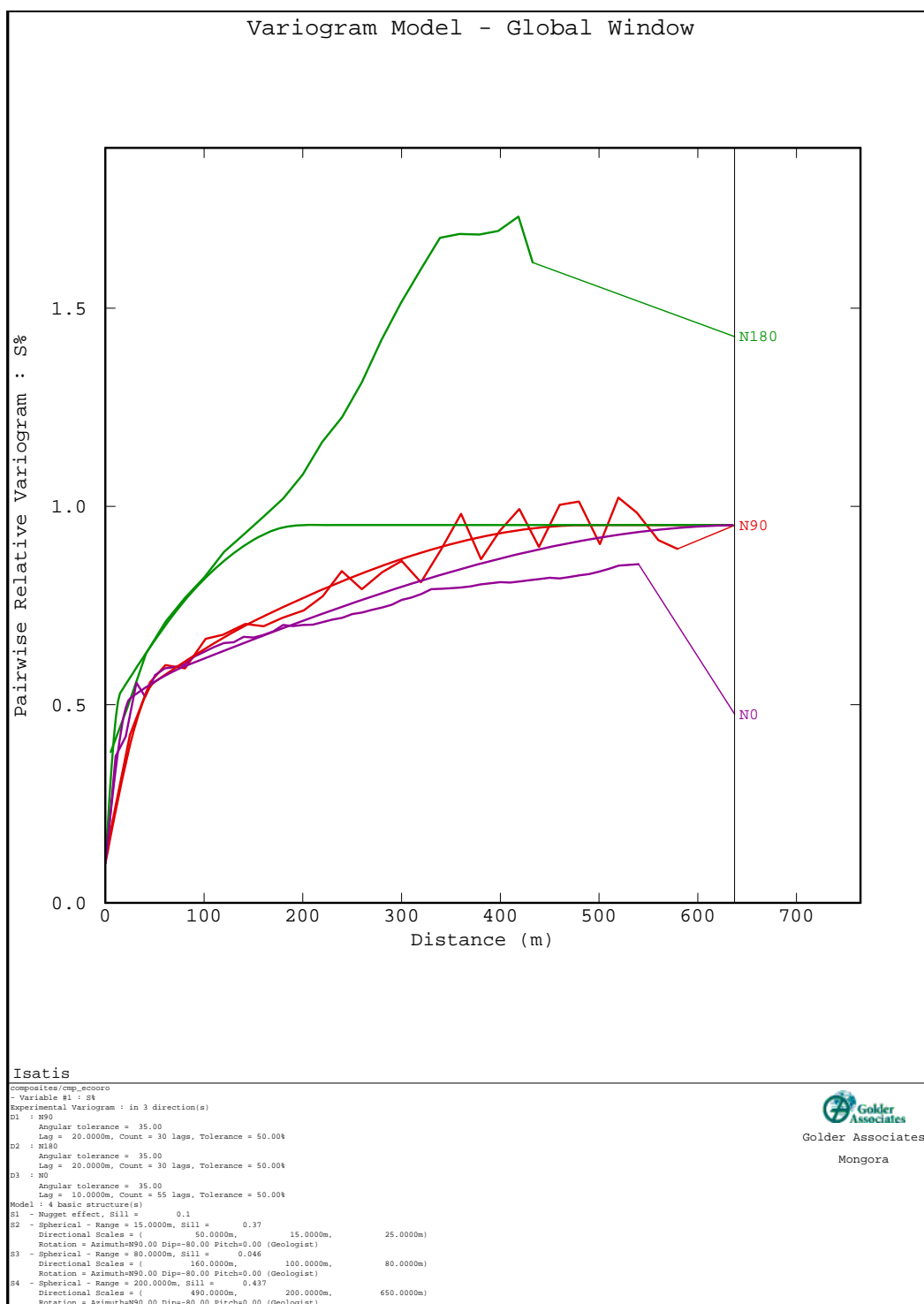


Figure 14-15 Variogram model for S.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### 14.11 Kriging Strategy

The estimation strategy, using Ordinary Kriging, is based on three estimation passes using a specific search radii and a sample configuration scheme. Local adjustments to the estimation parameters are applied to reduce the influence of extremely high grades. Capping and high yield restrictions were applied to each variable according to Table 14-10.

**Table 14-10 Samples limits for the estimation procedure.**

Variable	Capping	High Yield Restriction (HYR)
Au (g/t)	25.0	8.0
Ag (g/t)	50.0	20.0
As (ppm)	250.0	120.0
Cu (%)	0.50	0.25
S (%)	7.0	4.0

The search parameters and sample configurations adopted in the estimation process are listed in Table 14-11.

**Table 14-11 Estimation plan for grade variables – Móngora Project.**

Description		Search Parameters						Sample Configuration					Sample Limits		
		Rotation			Radius			N° min oct	Mix. Samp. per Oct	Min. Samp.	Max. Samp.	Max. Samp. per Drill	Composites	Capping	High Yield Restriction (HYR)
Element	Pass	Bearing	Dip	Plunge	Major	Semi-major	Minor								
Au	1	0	-80	0	10	10	5	-	-	1	8	-	individually by vein	Au=25.0; Ag=50.0; As=250.0; Cu=0.50; S=7.0	-
Ag	2	0	-80	0	50	50	10	-	-	1	8	-	individually by vein	Au=25.0; Ag=50.0; As=250.0; Cu=0.50; S=7.0	Au=8.0; Ag=20.0; As=120.0; Cu=0.25; S=4.0 Ellipse: 10x10x5m
As															
Cu															
S	3	0	-80	0	125	125	30	-	-	1	8	-	individually by vein	Au=25.0; Ag=50.0; As=250.0; Cu=0.50; S=7.0	Au=8.0; Ag=20.0; As=120.0; Cu=0.25; S=4.0 Ellipse: 10x10x5m

obs.: Discretization: 4x4x2

The estimation procedure was considered valid to the veins with more than one sample. Veins with only one sample were excluded from the estimation. These veins are: 21, 22, 25, 29, 34, 36, 47, 48, 49, 50, 51, 54, 55, 58, 61, 69, 70, 83, 84, 85, 86, 88, 89, 90, 91, 93, 95, 96, 99, 100, 101, 102 and 103.

### 14.12 Estimation Procedure

The steps involved in the estimation of block grades were the following:

- Construction of the block model inside the vein solids (wireframes) with sub-cell of minimum 1x1x1 m and a maximum of 5x5x5 m with parental cell of 10x10x10.
- Subtraction the blocks above the surface.



- Ordinary Kriging for Gold, Silver, Arsenic, Copper and Sulfur grades.
- Assign the oxidation level to the block model according to the oxidation surface.
- Assign Density values using criteria defined in section 14.8.

### 14.13 Resource Classification

Due to the low drilling density available at Móngora, which translates into a limited amount of data available for geological modeling and grade estimation, all estimated blocks inside the modeled veins that were estimated with more than 1 composite were classified as Inferred resource. The lack of more extensive metallurgical tests was also considered a factor preventing the classification of Indicated and Measured resources.

### 14.14 Model Validation

To check the validity and consistency of the Móngora grade estimates, a validation of the block model was carried out to assess the Kriging performance and conformance to the input data. A series of comprehensive checks were performed including:

- Comparison between composites and block model statistics;
- Visual validation of estimated grades versus composite grades;
- Swath plots comparing block grades against composite grades.

#### 14.14.1 Statistical comparison

A comparison between declustered composite grades and estimated block grades was performed to confirm that the average composite grades are closely reproduced by the kriging estimates. The results indicate that the block model shows conformance to the input data. The mean grade conformance was tabulated using the following criteria:

- Values close to 0% represent good conformance. Negative values indicate that the model estimates are conservative with respect to the data, and positive values show overestimation of the global average in the estimates. In general, differences lower than 5% are desirable and differences greater than 10% require attention.

The analysis was performed individually by vein using the global statistics for the block model and declustered statistics for the composite grades. The results presented in Table 14-12, Table 14-13 and Table 14-14 indicate that the process honors the database and no significant difference were found. The complete set of tables with the statistical comparisons is included in Appendix D.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

**Table 14-12 Global statistics comparison Composites x Blocks: Vein 1.**

Au (g/t) - Vein: 1						
STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev.
Composites	17	0.786	22.200	2.549	-0.3%	2.618
Blocks	5,714	0.786	22.200	2.542		2.419

**Table 14-13 Global statistics comparison Composites x Blocks: Vein 2.**

Au (g/t) - Vein: 2						
STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	12	0.655	6.876	3.092	-1.0%	2.074
Blocks	4,913	0.917	6.876	3.060		1.004

**Table 14-14 Global statistics comparison Composites x Blocks: Vein 3.**

Au (g/t) - Vein: 3						
STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	29	0.003	11.250	2.017	1.5%	1.735
Blocks	8,902	0.002	11.250	2.048		1.301

### 14.14.2 Visual validation

The visual validation indicated that the block model grades reproduce reasonably well the composite grades throughout the model. Figure 14-16 to Figure 14-21 present some screen shots showing some typical cross sections comparing composite and block grades.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

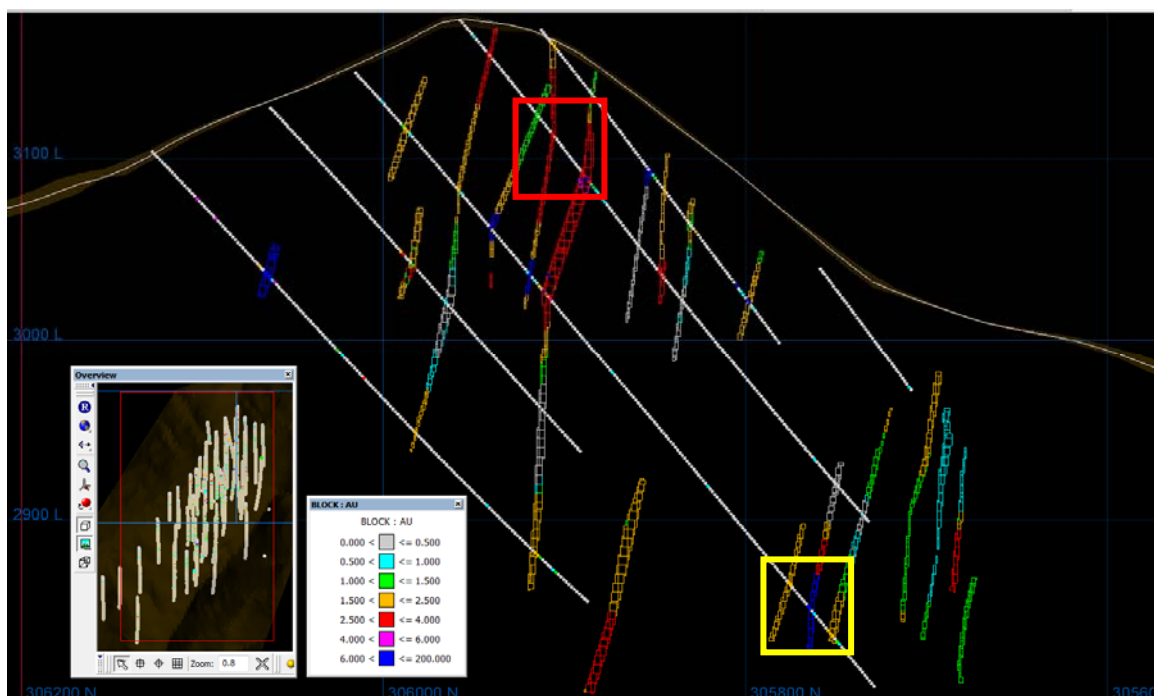


Figure 14-16 Vertical section (X=130205) showing drill hole grades against block model grades.

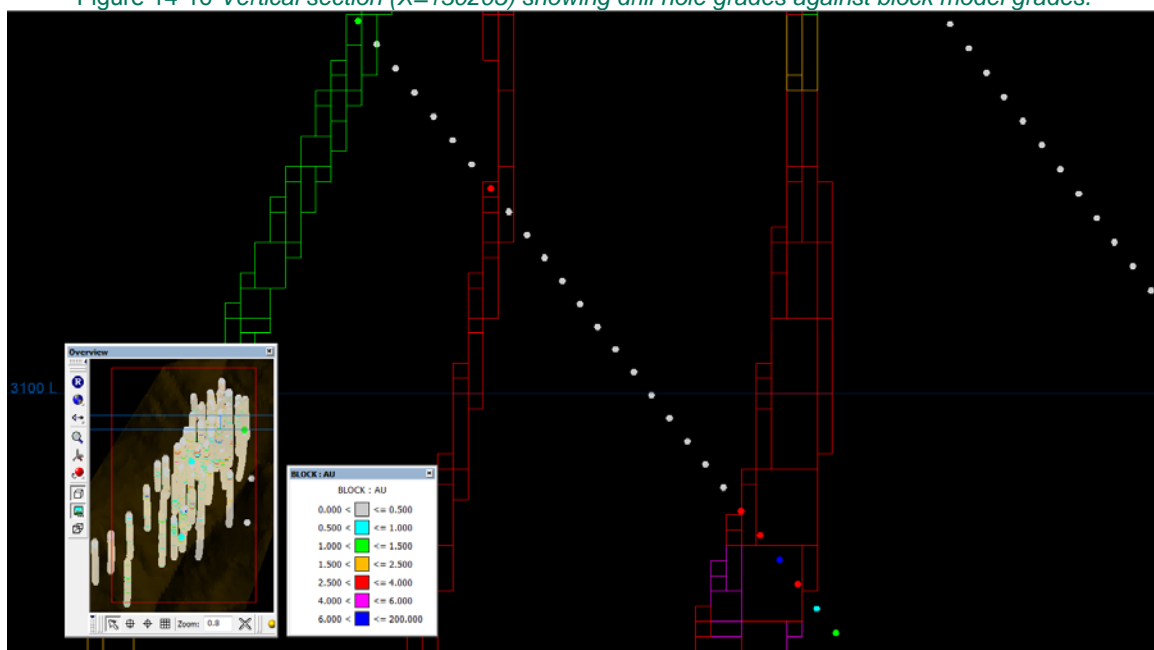


Figure 14-17 Detail of the red square in Figure 14-16 indicating good adjustment between composites and block grades.





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

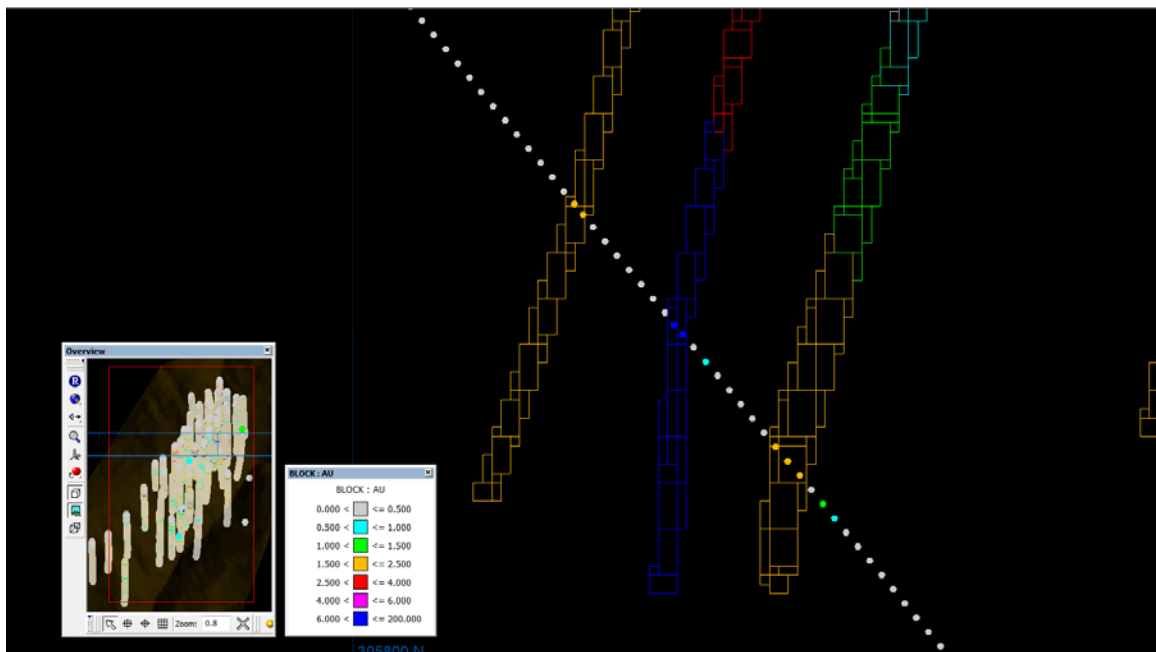


Figure 14-18 Detail of the yellow square in Figure 14-16 indicating good adjustment between composites and block grades.

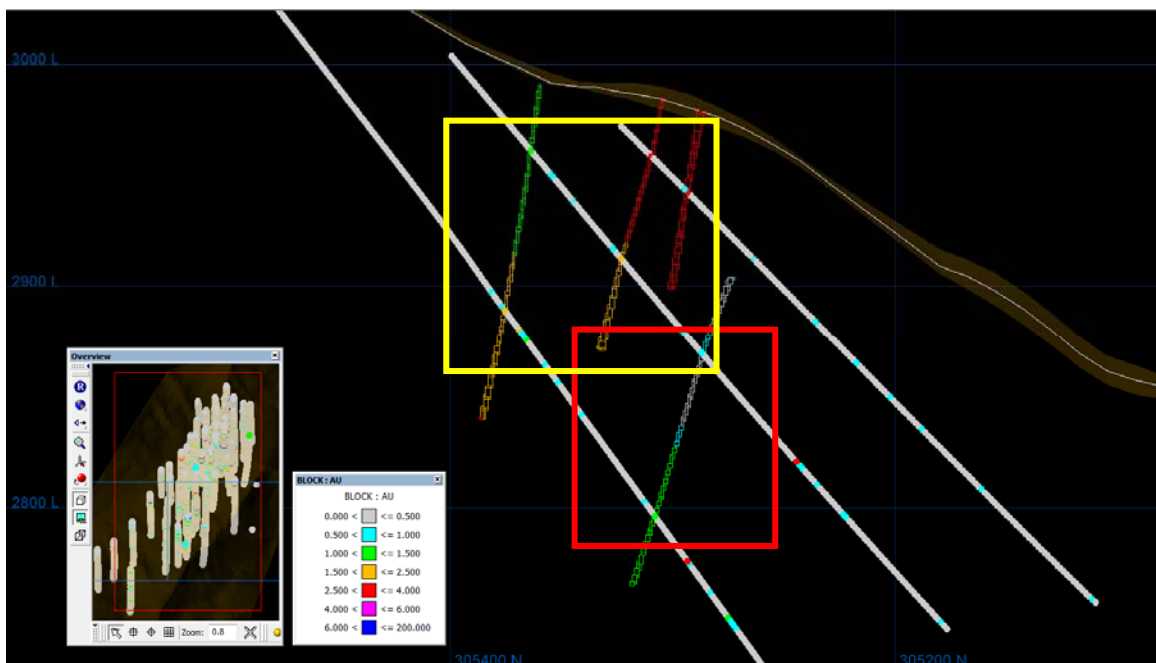


Figure 14-19 Vertical section (X=129890) showing drill hole grades against block model grades.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

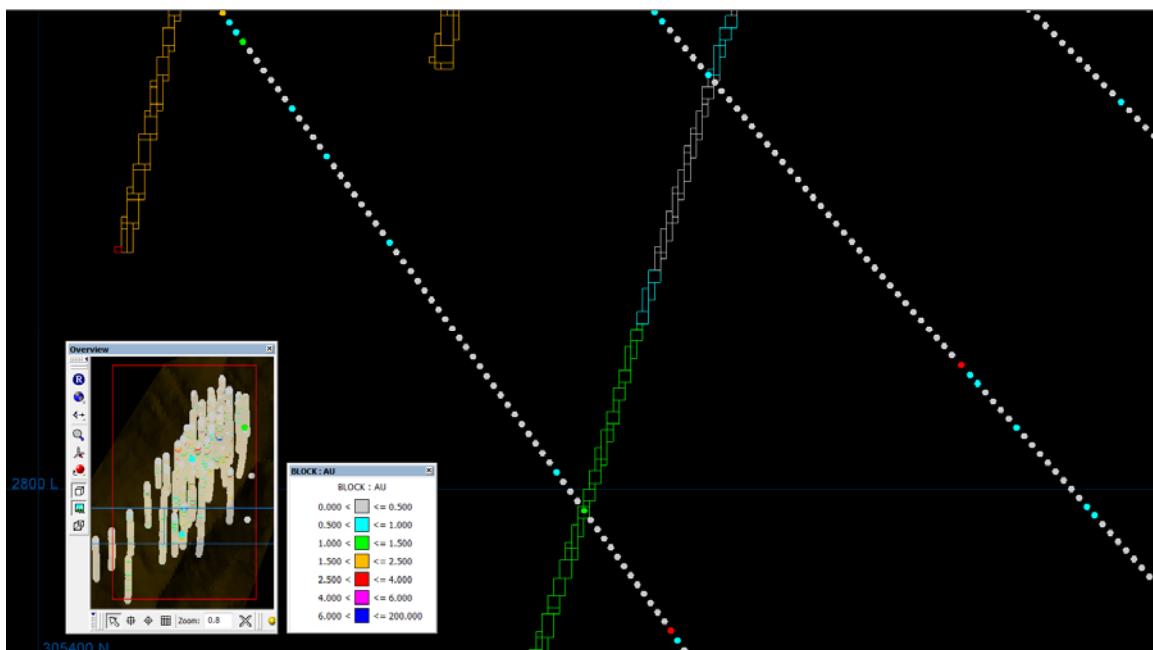


Figure 14-20 Detail of the red square in Figure 14-19 indicating good adjustment between composites and block grades.

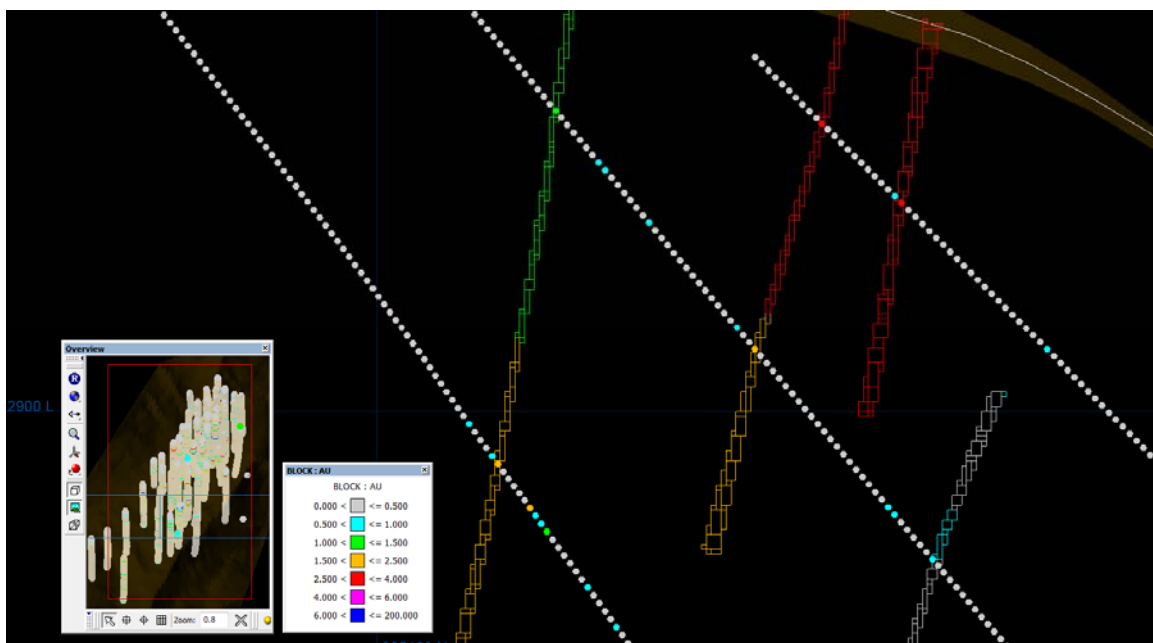


Figure 14-21 Detail of the yellow square in Figure 14-19 indicating good adjustment between composites and block grades.



### 14.14.3 Swath plots

To evaluate the robustness of the conformance of the block grades to the data, in a semi-local approach, swath plots were produced. Swath plot generation involves averaging both the blocks and samples in panels from 25.0m x 25.0m x 10.0m (X, Y and Z), then averaging of the panel averages into Easting, Northing and RL swaths to allow trend plots of block vs. composite values to be constructed. The use of panel averages also allows for the generation of scatter plots and Q-Q plots of panel grades to provide an indication of conditional bias and degree of smoothing. On these plots, two distributions that are very similar would plot over the 45 degrees line. Significant deviations indicate potential for over smoothing and bias.

In general, the swath plots indicates good conformance between block estimates and composite grades. Figure 14-22 and Figure 14-23 present swath plots for vein 1 and 2. Similar results are observed for all veins that have been estimated.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

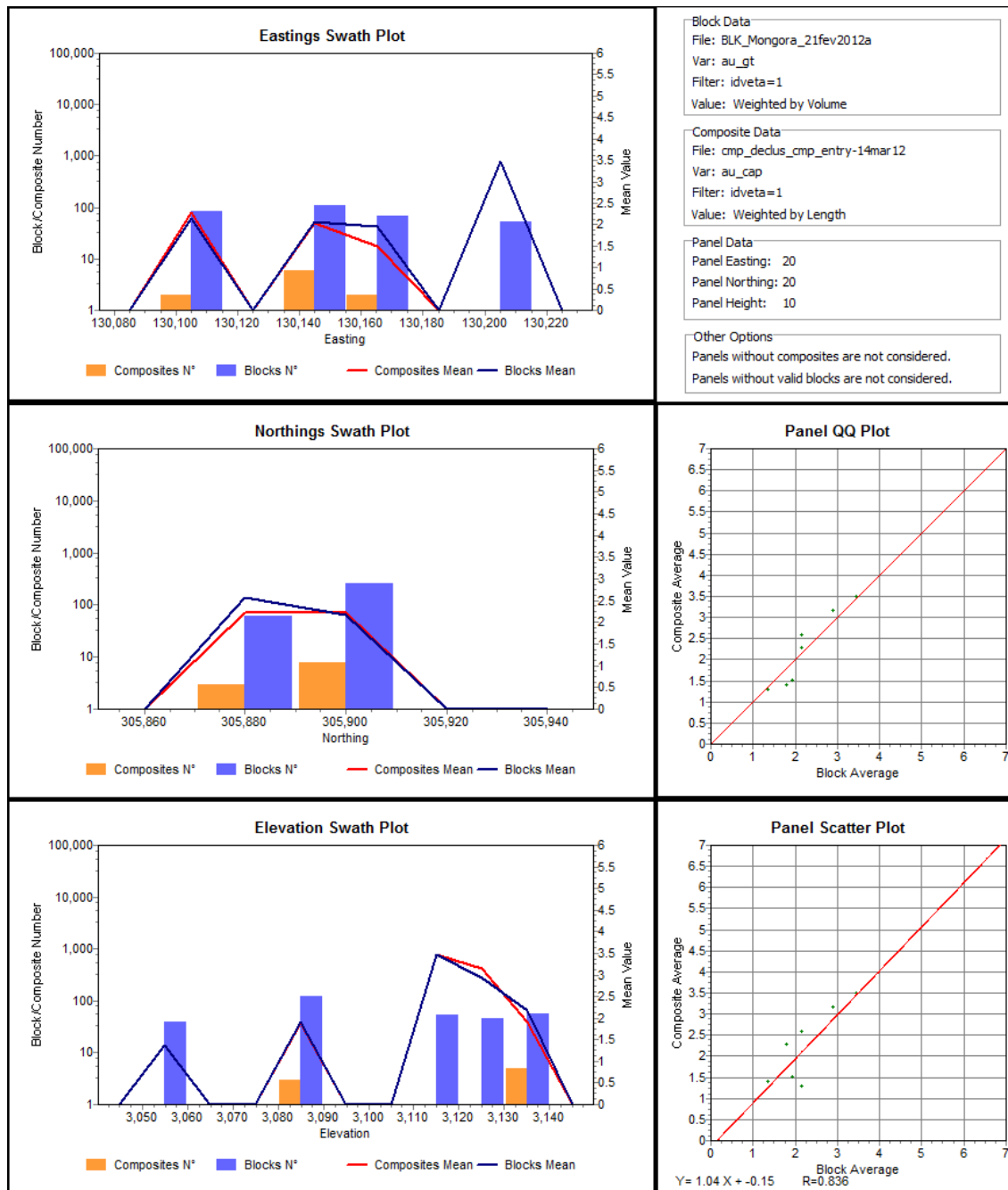


Figure 14-22 Swath plot for Au - vein 1.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

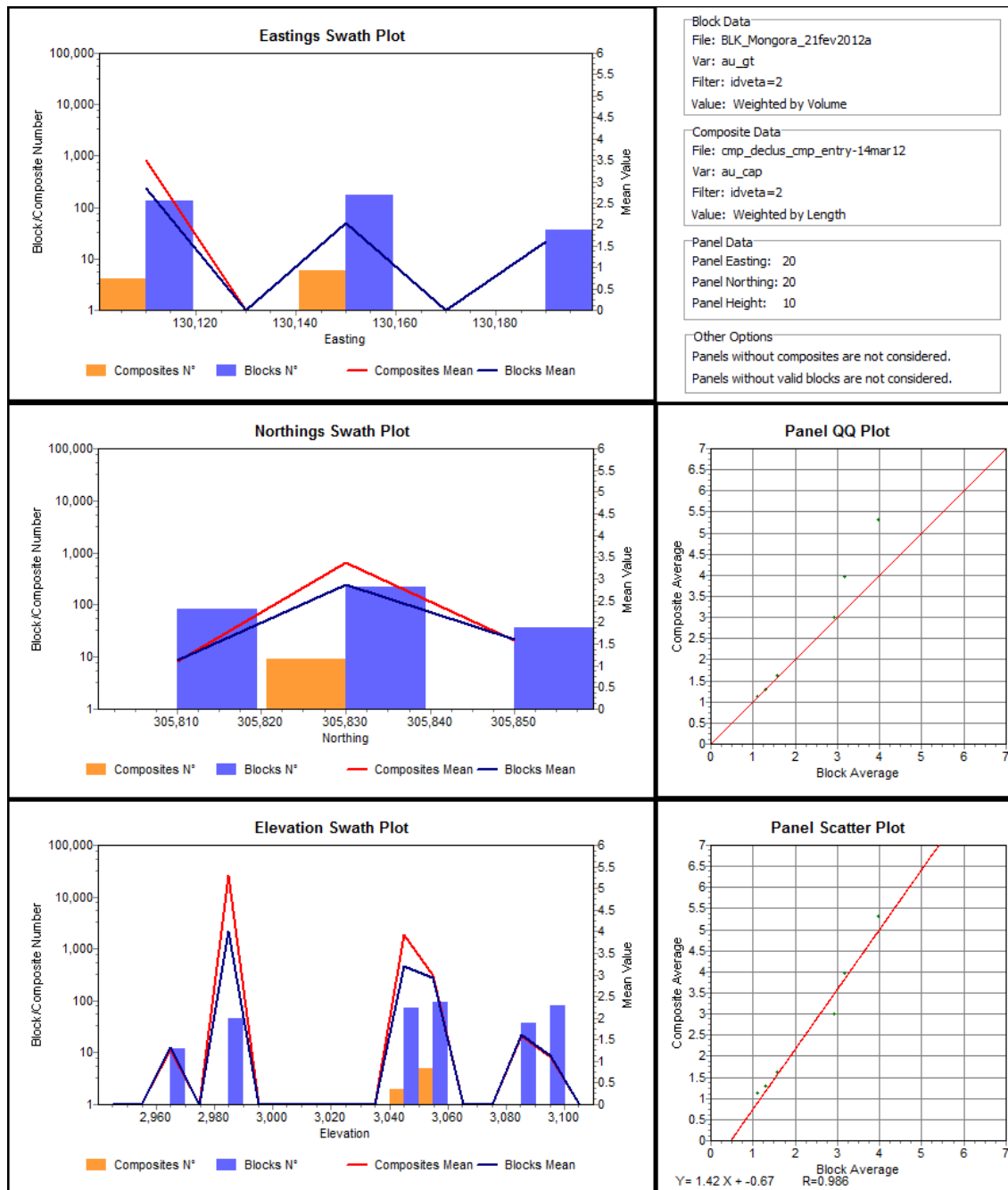


Figure 14-23 Swath plot for Au - vein 2.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### 14.15 Resource Reporting Criteria

The basic criteria followed in this estimation are as follows:

- Cut-off grades of 1.5, 2.0, 2.5, 3.0 and 3.5 g/t Au were used to report the mineral resources. This is consistent with values adopted in the reporting of Mineral Resources for the Angostura deposit.
- Veins with only one sample were not estimated nor reported.
- Veins not reported are those identified with the following codes: 21, 22, 25, 29, 34, 36, 47, 48, 49, 50, 51, 54, 55, 58, 61, 69, 70, 83, 84, 85, 86, 88, 89, 90, 91, 93, 95, 96, 99, 100, 101, 102 and 103.

### 14.16 Results

The resource estimation and classification work carried out by Golder was considered appropriate for the purpose of public disclosure.

Dr. Marcelo Godoy, MAusIMM (CP) and Principal Geostatistician with Golder has reviewed, verified and takes responsibility of the 2012 Resource Estimates of the Móngora Gold-Silver Deposit. Dr. Godoy is a qualified person and independent for the purposes of National Instrument 43-101.

The Mineral Resources for the Móngora deposit at the reporting cut-off of 1.5 g/t is presented in Table 14-15.

Table 14-16 to Table 14-19 show the results of the resource estimation for cut-offs of 2.0, 2.5, 3.0 and 3.5 g/t Au respectively. The estimates resulting from these cut-off grades meet the test of reasonable prospect of economic extraction. This has been demonstrated as part of the PEA for the Angostura Underground Project (Golder, 2012).

**Table 14-15 Eco Oro Mineral Resources @ 1.5 g/t COG.**

Material Type	Inferred Mineral Resources			
	Tonnes (kt)	Au (g/t)	Ag (g/t)	Contained Ounces (Oz Gold)
Oxides	1,057	2.83	5.32	96,205
Sulphides	2,019	2.88	4.25	186,940
<b>Total</b>	<b>3,076</b>	<b>2.86</b>	<b>4.62</b>	<b>282,867</b>

**Table 14-16 Eco Oro Mineral Resources @ 2.0 g/t COG.**

Material Type	Inferred Mineral Resources			
	Tonnes (kt)	Au (g/t)	Ag (g/t)	Contained Ounces (Oz Gold)
Oxides	760	3.25	5.88	79,431
Sulphides	1,307	3.47	4.46	145,853
<b>Total</b>	<b>2,068</b>	<b>3.39</b>	<b>4.98</b>	<b>225,343</b>



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

**Table 14-17 Eco Oro Mineral Resources @ 2.5 g/t COG.**

Material Type	Inferred Mineral Resources			
	Tonnes (kt)	Au (g/t)	Ag (g/t)	Contained Ounces (Oz Gold)
Oxides	500	3.77	6.48	60,653
Sulphides	961	3.94	4.43	121,700
<b>Total</b>	<b>1,461</b>	<b>3.88</b>	<b>5.13</b>	<b>182,269</b>

**Table 14-18 Eco Oro Mineral Resources @ 3.0 g/t COG.**

Material Type	Inferred Mineral Resources			
	Tonnes (kt)	Au (g/t)	Ag (g/t)	Contained Ounces (Oz Gold)
Oxides	313	4.36	6.50	43,885
Sulphides	666	4.48	4.54	95,904
<b>Total</b>	<b>979</b>	<b>4.44</b>	<b>5.17</b>	<b>139,738</b>

**Table 14-19 Eco Oro Mineral Resources @ 3.5 g/t COG.**

Material Type	Inferred Mineral Resources			
	Tonnes (kt)	Au (g/t)	Ag (g/t)	Contained Ounces (Oz Gold)
Oxides	193	5.05	6.38	31,327
Sulphides	532	4.81	4.68	82,323
<b>Total</b>	<b>725</b>	<b>4.87</b>	<b>5.13</b>	<b>113,561</b>

- Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.
- Mineral Resource tonnages have been rounded to reflect the accuracy of the estimate, and numbers may not add up due to rounding.
- An assumption was made that Móngora mineralized material has similar metallurgical behaviour to Angostura. Some preliminary leach tests have been carried out on Móngora drill core.

The mineral resource estimates disclosed in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues. The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured mineral resource category.





### 15.0 ADJACENT PROPERTIES

There are a number of small-scale mining operations in the area of the Angostura project run by Colombian nationals and cooperatives.

AUX Canada (“AUX” formerly Ventana Gold Corp) owns 96.7% of the mineral rights of La Bodega property (Ventana Gold Corp., 2011) which is located to the northwest of the Móngora deposit. AUX has drilled more than 104,774 metres in more than 306 drill holes defining 4 mineralized zones, La Bodega (Extension of Angostura), La Mascota, Las Mercedes and Aserradero ([www.ventanagold.com](http://www.ventanagold.com), 2010). On March 16 Ventana Gold Corp, the previous owner of these properties was acquired by AUX.

Galway Resources Ltd. (TSX-V:GWY) and Calvista Gold Corporation have agreements over the California-Vetas district, including a land position along strike and adjacent to (south west) Ventana’s La Mascota area and are conducting a drilling program in California. Galway acquired the Reina de Oro gold property in Vetas ([www.galwayresources.com](http://www.galwayresources.com), 2010).

Calvista, a Colombian Canadian joint venture holds smaller claims in the La Baja Creek.

Leyhat Colombia, a subsidiary of CB Gold, has mineral properties in the California-Vetas district, but this company does not have adjacent properties.

### 16.0 OTHER RELEVANT A DATA INFORMATION

No additional information is available at this time regarding the Móngora Mineral Resource Estimate disclosed in this report. For other additional relevant information the reader may refer to the Technical Report “Updated Preliminary Economic Assessment for the Angostura Gold-Silver Underground Project, Santander Department, Colombia” of March 23, 2012 (Golder, 2012).

### 17.0 INTERPRETATION AND CONCLUSIONS

Golder has reviewed the project data and the drill hole database and has visited the project site. Golder believes that the data provided by Eco Oro, as well as the geological interpretations Eco Oro has derived from the data, are generally an accurate and reasonable representation of the Móngora’s mineralized structures.

The block grade estimates have been derived using methodology and parameters that are appropriate for the observed spatial continuity of grades and style of mineralization. The mineral resources disclosed in this Technical Report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.

The Mongora deposit has the potential to enhance the value of the envisioned Angostura underground mine project. Not only are the prospects for further expansion of the mineralization at Mongora favourable but its close proximity to Angostura also opens up the possibility of developing Mongora as an early source of mineralized feed in the development of the project.



### 18.0 RECOMMENDATIONS

The following studies are recommended to be carried out to support the next phase of resource definition for the Móngora deposit:

- Infill drilling to confirm the continuity of the mineralized veins and improve grade estimation.
- Metallurgical testing to confirm assumption that Móngora mineralized material has similar metallurgical behavior to that of Angostura.
- Geotechnical characterization program including oriented drilling.



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## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### 20.0 DATE AND SIGNATURE PAGE

The effective date of this Technical Report, entitled "Resource Estimation of the Móngora Gold-Silver Deposit, Santander Department, Colombia" is April 18, 2012.

#### GOLDER ASSOCIATES PERÚ S.A.

Marcelo Godoy  
Principal, Ore Evaluation Services/QP

Marivalda Marques  
Project Manager

MG/MM/Jp/ rm

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# **APPENDIX A**

## **Certificate of Qualified Person**



### CERTIFICATE OF QUALIFIED PERSON

#### Marcelo Godoy, PhD

As the author of the Technical Report entitled “Resource Estimation of the Móngora Gold-Silver Deposit, Santander Department, Colombia”, dated 18 April 2012, on the Angostura Property of Eco Oro Minerals Corporation (the “Report”), I hereby make the following statements:

- My name is Dr Marcelo Godoy and my title is Principal, Ore Evaluation Services with the firm of Golder Associates S.A., with a business address at Magdalena 181 piso 3, Las Condes, Santiago, Chile. My residential address is Onofre Jarpa 9476, La Reina, Santiago, Chile.
- My formal education qualifications include PhD (Doctor of Philosophy) in Mining Engineering from the University of Queensland (2002), MSc (Master of Science) in Mineral Economics from the Federal University of Rio Grande do Sul, Brazil and BEng (Bachelor of Engineering) in Mining from the Federal of Rio Grande do Sul (1995).
- I am a practising Geostatistician and Mining Engineer and a Chartered Professional and Member in good standing of the Australasian Institute of Mining and Metallurgy (MAusIMM).
- I have practiced my profession continuously since 1996.
- I have read the definition of “qualified person” set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a “Qualified Person” for the purpose of NI 43-101.
- My relevant experience with respect to the Móngora Gold-Silver Deposit includes over 15 years experience in Mineral Resource and Mineral Reserve estimation for epithermal gold deposits, grade control, sampling studies and evaluation of mining projects.
- I have had prior involvement with the Property related to the recent development of the Updated PEA for the Angostura Underground Project. I was the principal author of the Technical Report entitled “Updated Preliminary Economic Assessment on the Angostura Gold-Silver Underground Project, Santander Department, Colombia”, dated 23 March 2012.
- I have supervised and reviewed the work carried out by Golder and Eco Oro professionals for the estimation of mineral resources for the Móngora Gold-Silver Deposit. I am responsible for the preparation of all Sections and take responsibility as the principal author of this Technical Report titled “Resource Estimation of the Móngora Gold-Silver Deposit, Santander Department, Colombia”, dated 18 April 2012. I have personally visited the property from 1 to 5 August 2011.





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

- As of the date of this Certificate, to my knowledge, information and belief, the section of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- I am independent of the Issuer as defined by Section 1.5 of the Instrument.
- I have read National Instrument 43-101 and the sections in this Technical Report have been prepared in compliance with National Instrument 43-101, Companion Policy 43-101CP and Form 43-101F1.

Signed and dated this 18<sup>nd</sup> day of April, 2012 at Santiago, Chile

“Original Document signed by  
Dr M C Godoy, MAusIMM (CP).  
Principal, Ore Evaluation Services”

Signature



# **APPENDIX B**

## **QAQC Results**

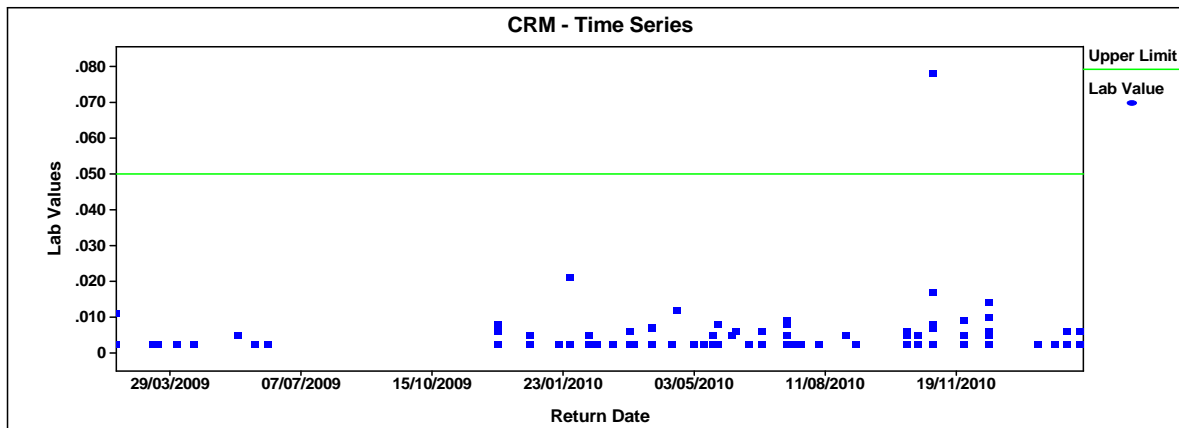
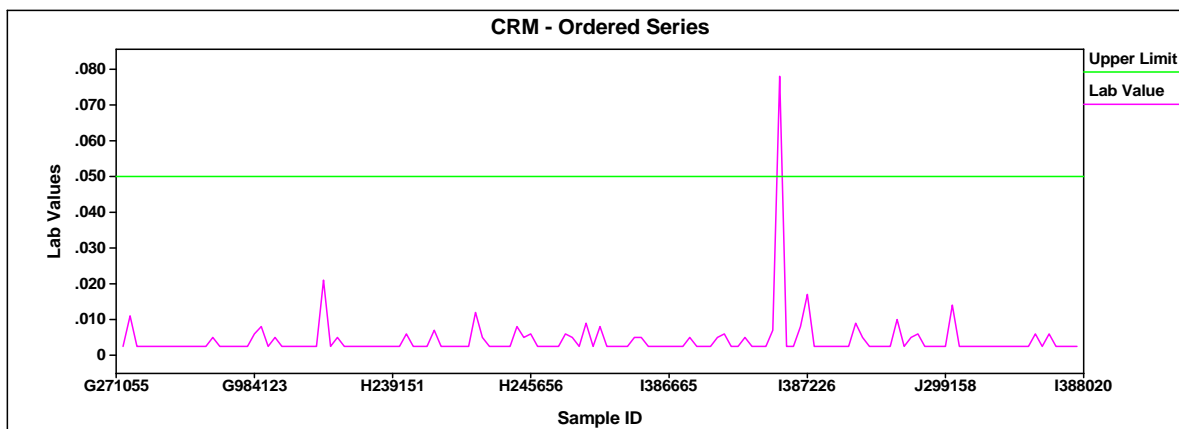


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### Standard BLANK - Au

Mean	0.004 g/t Au	Expected Mean	-999.000 g/t Au
Standard Devn	0.007 g/t Au sq	Expected Std Dev	0.020 g/t Au sq
Counts	139	% Bias (-ve when underestimated)	0.00 %
Minimum	0.002 g/t Au	No of Outlier +/- 3 Std Dev	1
Maximum	0.078 g/t Au	% Outside Tolerance	0.72 %
Median	0.002 g/t Au	CV	1.60 %
Average HRD%	0.00 %	Average HARD	0.00 %



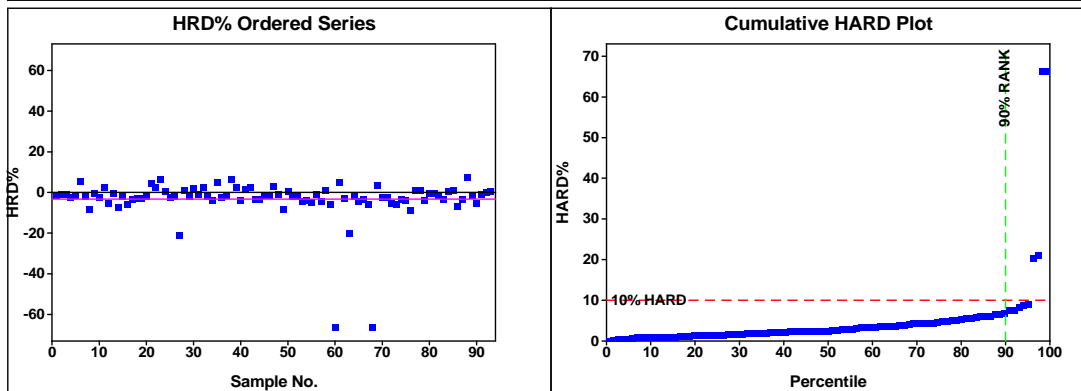
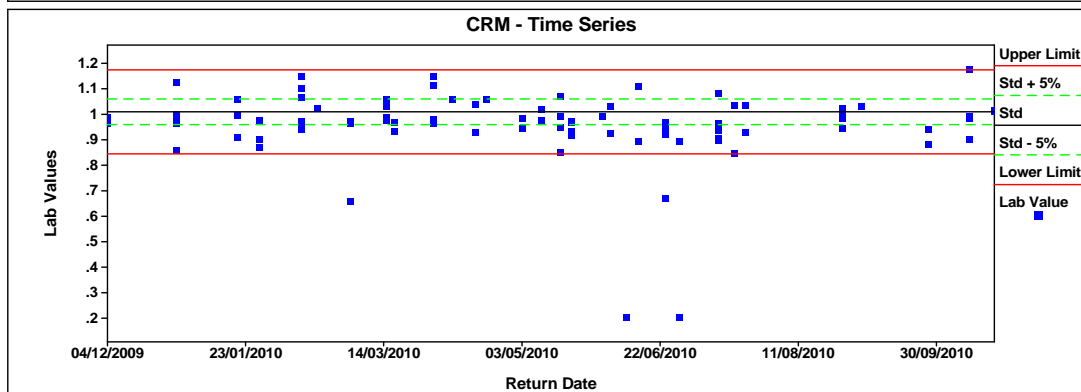
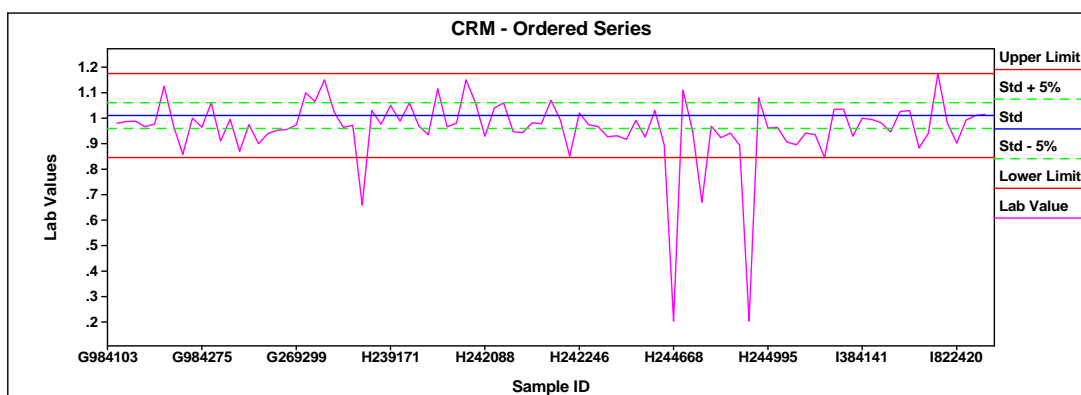


# RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

## Eco Oro - Mongora Project

### Standard CDN-CGS-13 - Au

Mean	0.959 g/t Au	Expected Mean	1.010 g/t Au
Standard Devn	0.138 g/t Au sq	Expected Std Dev	0.055 g/t Au sq
Counts	93	% Bias (-ve when underestimated)	-5.04 %
Minimum	0.204 g/t Au	No of Outlier +/- 3 Std Dev	4
Maximum	1.175 g/t Au	% Outside Tolerance	4.30 %
Median	0.973 g/t Au	CV	0.14 %
Average HRD%	-3.29 %	Average HARD	4.78 %



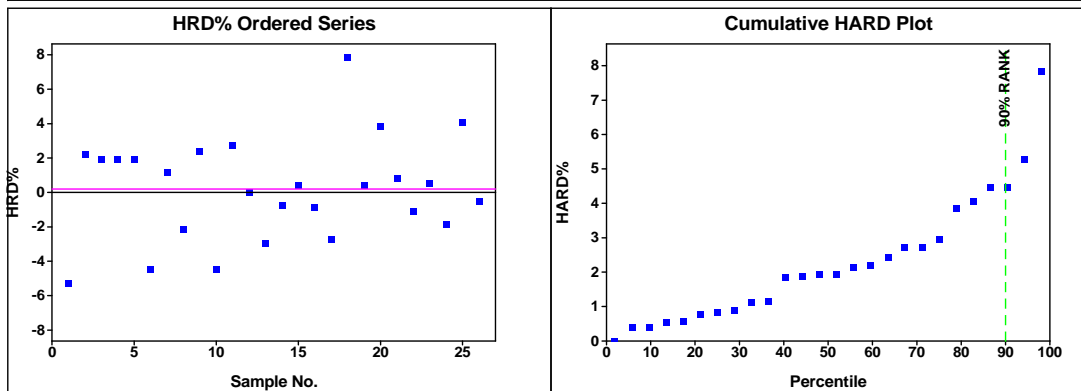
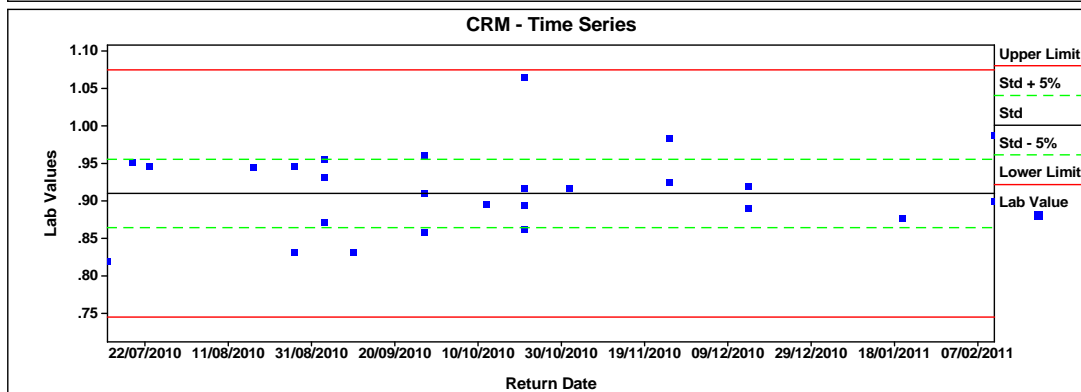
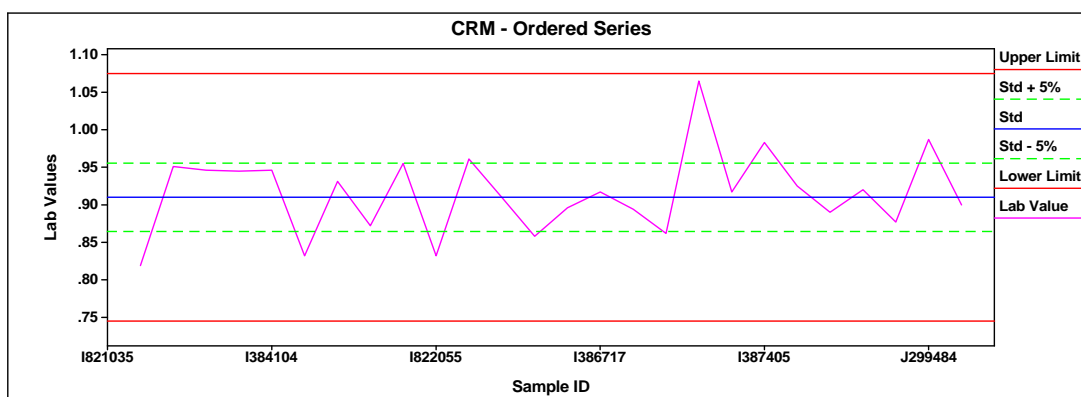


# RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

## Eco Oro - Mongora Project

### Standard CDN-CM-8 - Au

Mean	0.915 g/t Au	Expected Mean	0.910 g/t Au
Standard Devn	0.054 g/t Au sq	Expected Std Dev	0.055 g/t Au sq
Counts	26	% Bias (-ve when underestimated)	0.55 %
Minimum	0.819 g/t Au	No of Outlier +/- 3 Std Dev	0
Maximum	1.065 g/t Au	% Outside Tolerance	0.00 %
Median	0.917 g/t Au	CV	0.06 %
Average HRD%	0.19 %	Average HARD	2.28 %



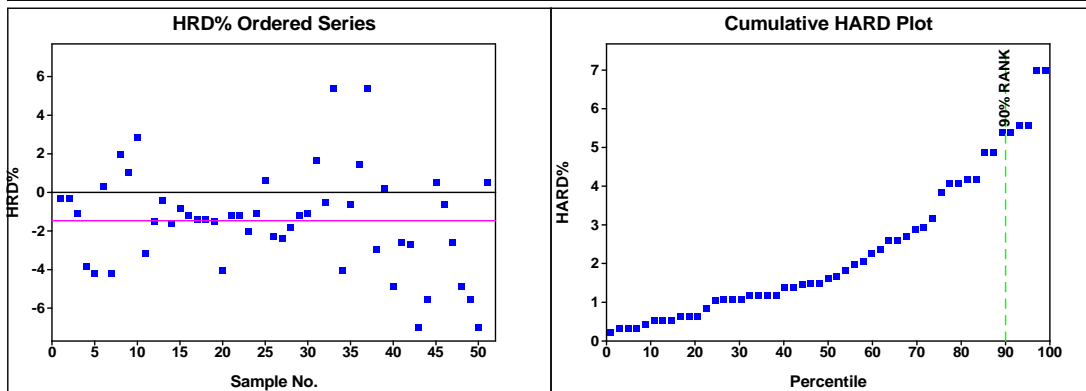
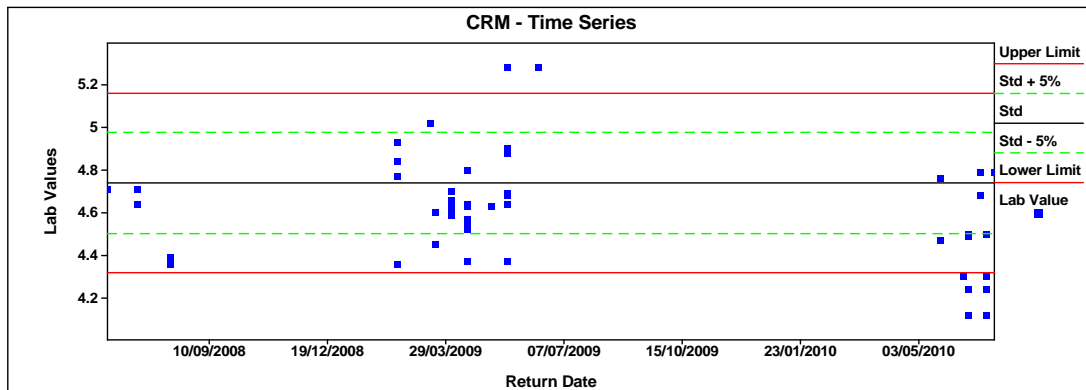
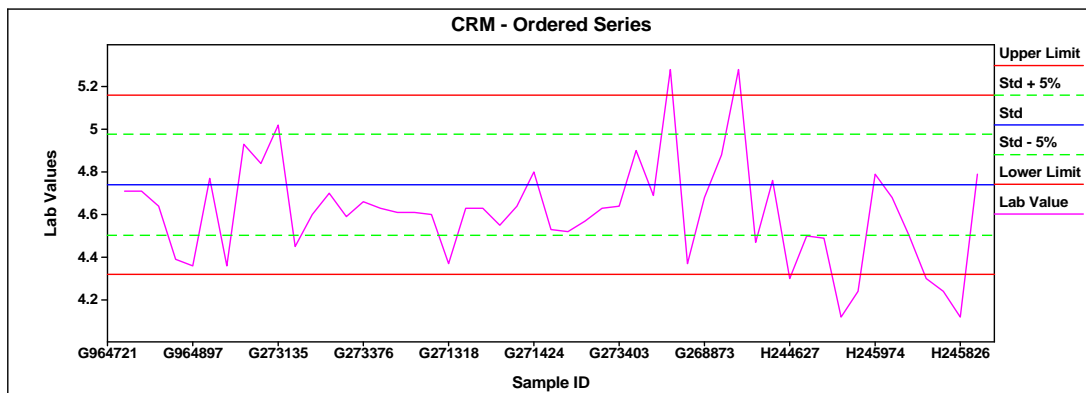


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### Standard CDN-GS-5C - Au

Mean	4.609 g/t Au	Expected Mean	4.740 g/t Au
Standard Devn	0.239 g/t Au sq	Expected Std Dev	0.140 g/t Au sq
Counts	51	% Bias (-ve when underestimated)	-2.76 %
Minimum	4.120 g/t Au	No of Outlier +/- 3 Std Dev	8
Maximum	5.280 g/t Au	% Outside Tolerance	15.69 %
Median	4.630 g/t Au	CV	0.05 %
Average HRD%	-1.46 %	Average HARD	2.33 %



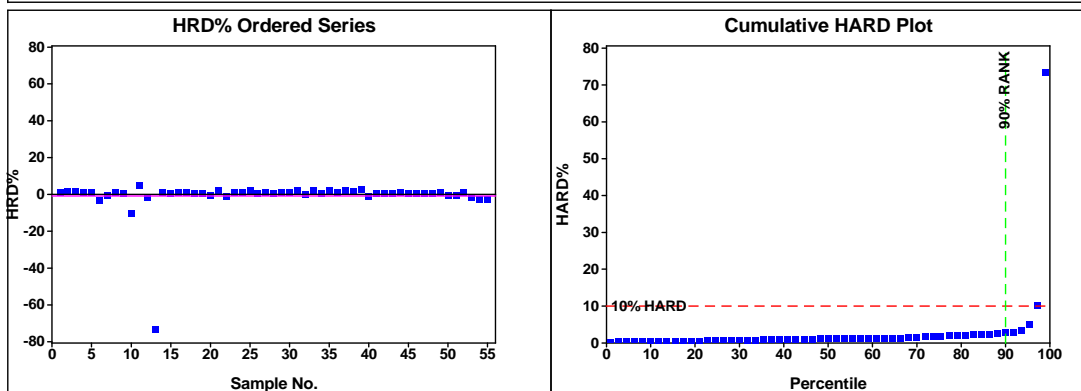
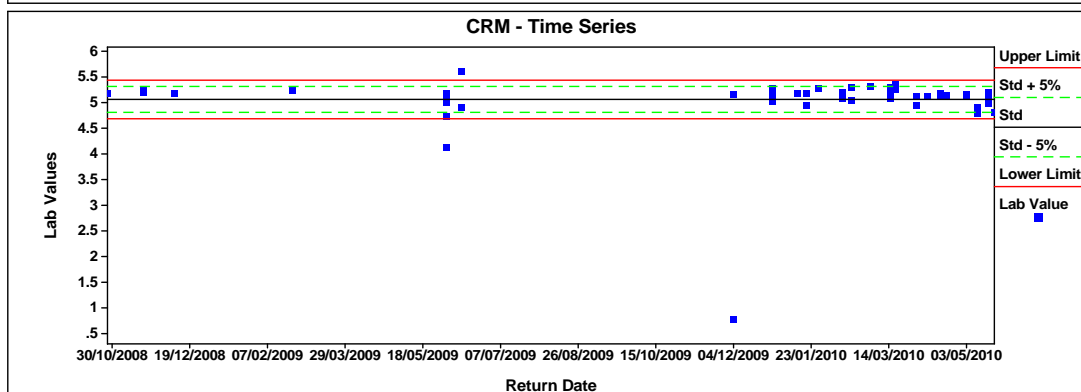
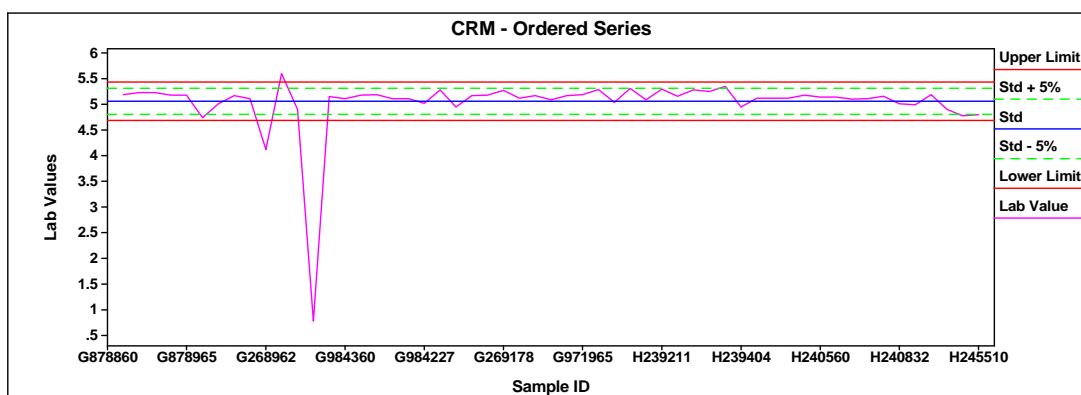


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### Standard CDN-GS-5D - Au

Mean	5.032 g/t Au	Expected Mean	5.060 g/t Au
Standard Devn	0.611 g/t Au sq	Expected Std Dev	0.125 g/t Au sq
Counts	55	% Bias (-ve when underestimated)	-0.55 %
Minimum	0.780 g/t Au	No of Outlier +/- 3 Std Dev	3
Maximum	5.600 g/t Au	% Outside Tolerance	5.45 %
Median	5.140 g/t Au	CV	0.12 %
Average HRD%	-0.88 %	Average HARD	2.76 %





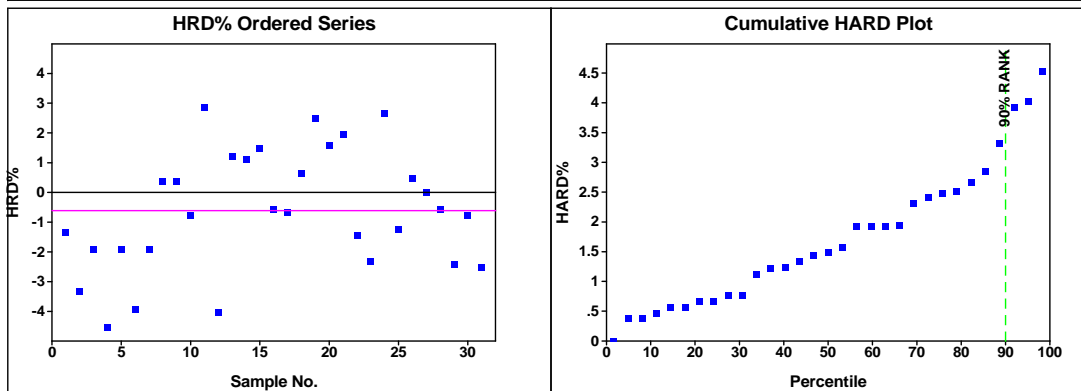
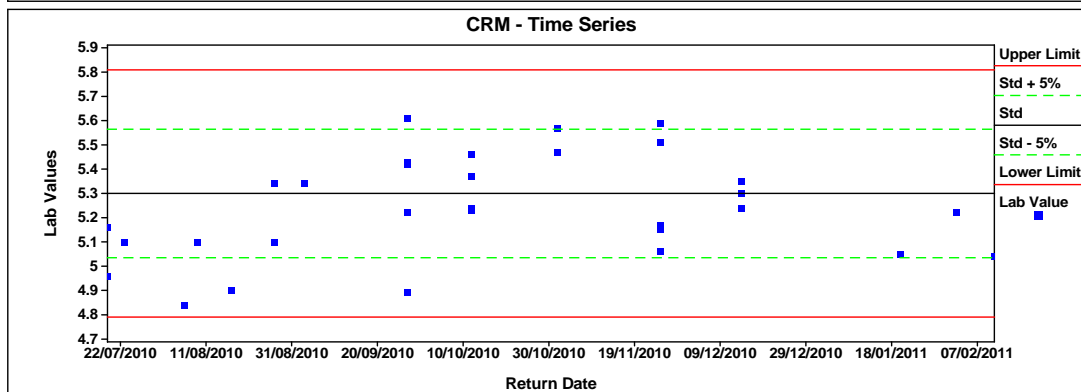
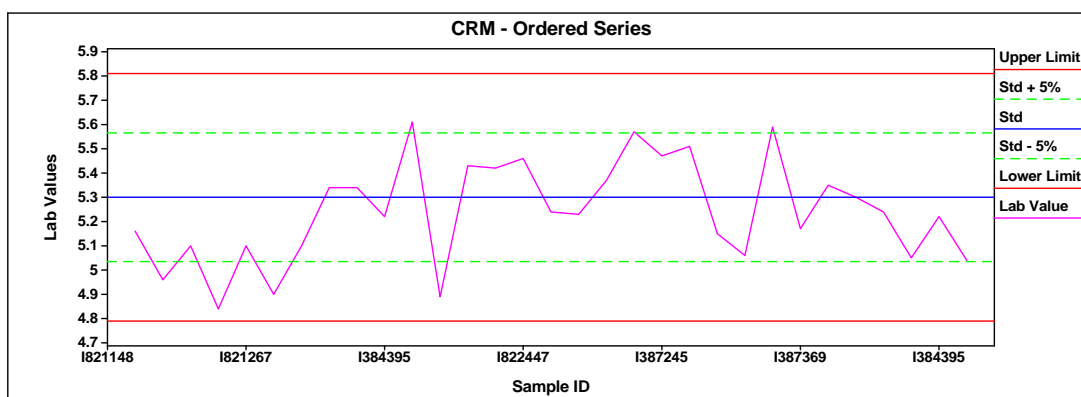


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### Standard CDN-GS-5F - Au

Mean	5.240 g/t Au	Expected Mean	5.300 g/t Au
Standard Devn	0.207 g/t Au sq	Expected Std Dev	0.170 g/t Au sq
Counts	31	% Bias (-ve when underestimated)	-1.14 %
Minimum	4.840 g/t Au	No of Outlier +/- 3 Std Dev	0
Maximum	5.610 g/t Au	% Outside Tolerance	0.00 %
Median	5.230 g/t Au	CV	0.04 %
Average HRD%	-0.61 %	Average HARD	1.72 %



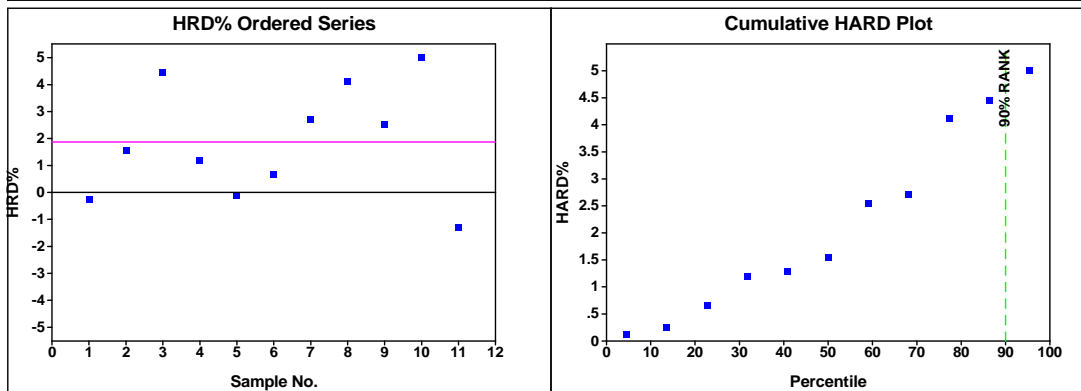
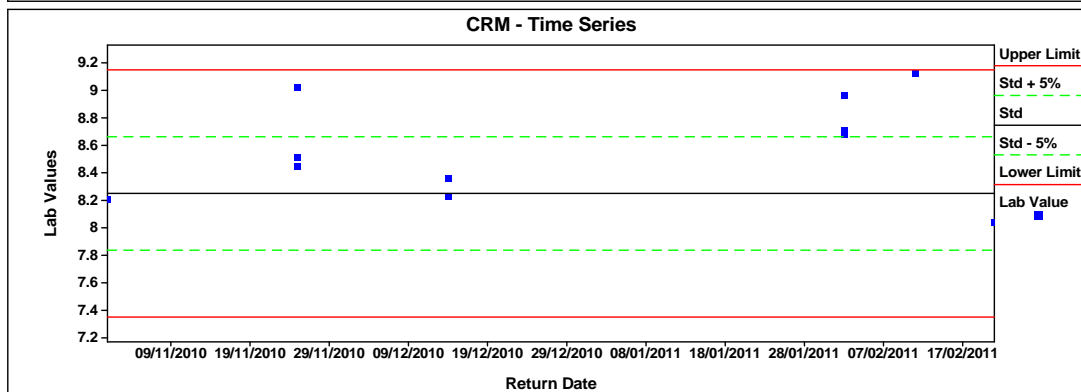
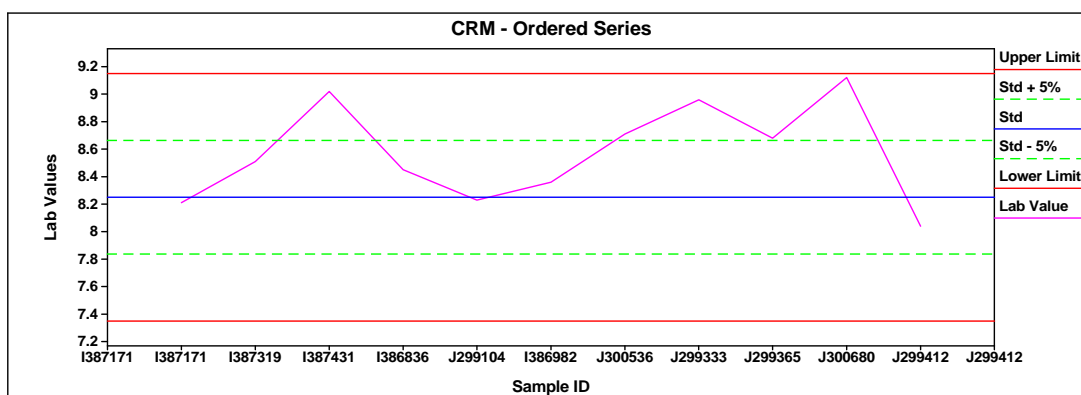


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### Standard CDN-GS-8A - Au

Mean	8.572 g/t Au	Expected Mean	8.250 g/t Au
Standard Devn	0.341 g/t Au sq	Expected Std Dev	0.300 g/t Au sq
Counts	11	% Bias (-ve when underestimated)	3.90 %
Minimum	8.040 g/t Au	No of Outlier +/- 3 Std Dev	0
Maximum	9.120 g/t Au	% Outside Tolerance	0.00 %
Median	8.510 g/t Au	CV	0.04 %
Average HRD%	1.87 %	Average HARD	2.17 %



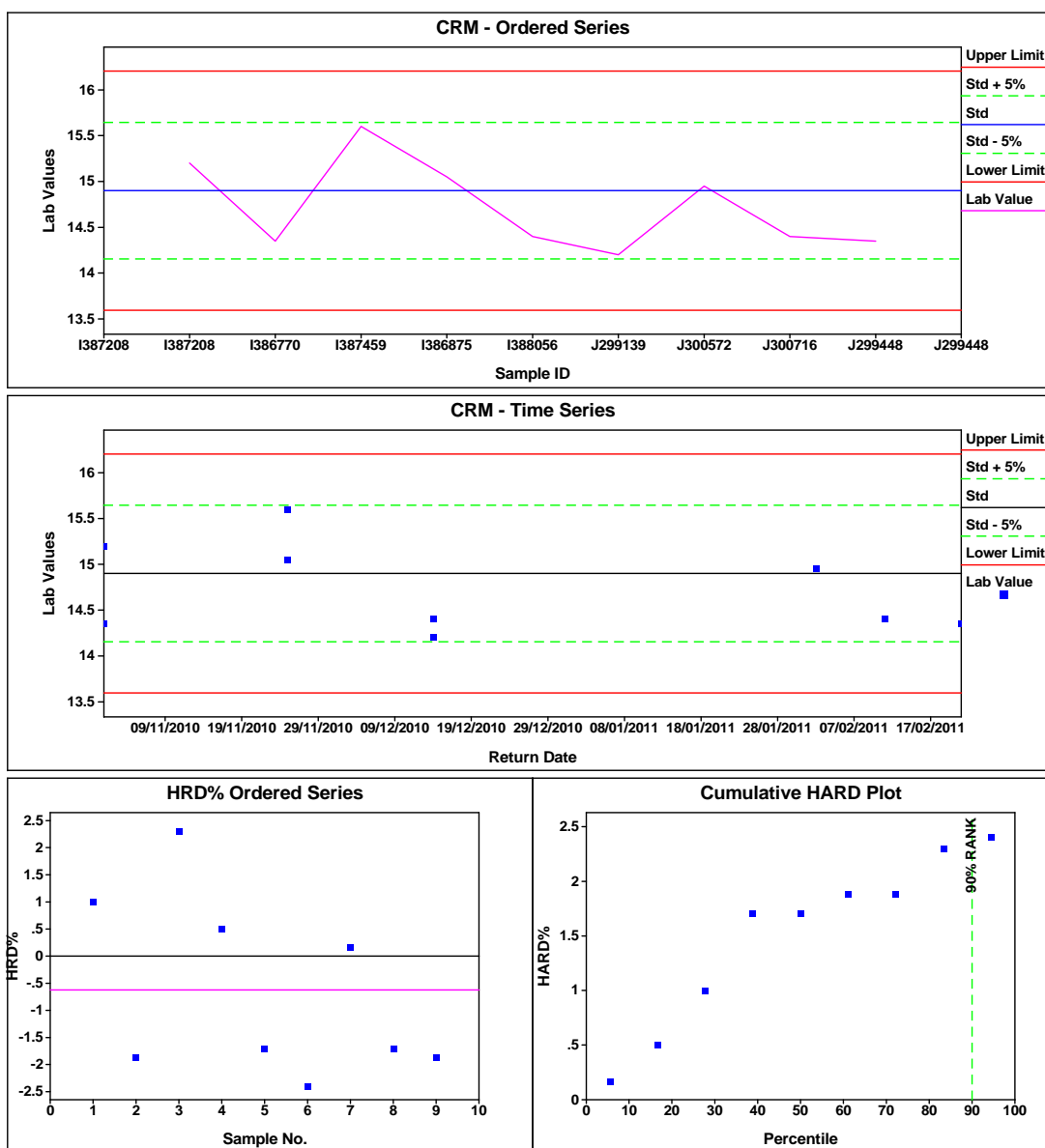


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### Standard CDN-GS-14A - Au

Mean	14.722 g/t Au	Expected Mean	14.900 g/t Au
Standard Devn	0.461 g/t Au sq	Expected Std Dev	0.435 g/t Au sq
Counts	9	% Bias (-ve when underestimated)	-1.19 %
Minimum	14.200 g/t Au	No of Outlier +/- 3 Std Dev	0
Maximum	15.600 g/t Au	% Outside Tolerance	0.00 %
Median	14.400 g/t Au	CV	0.03 %
Average HRD%	-0.62 %	Average HARD	1.50 %



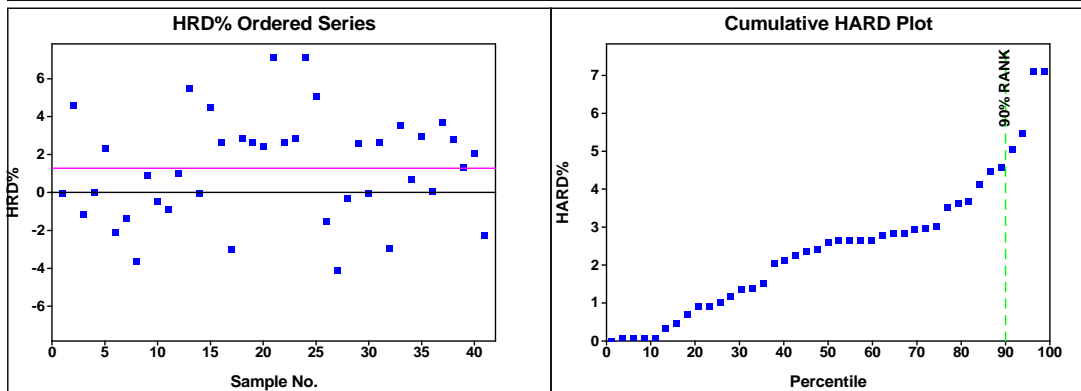
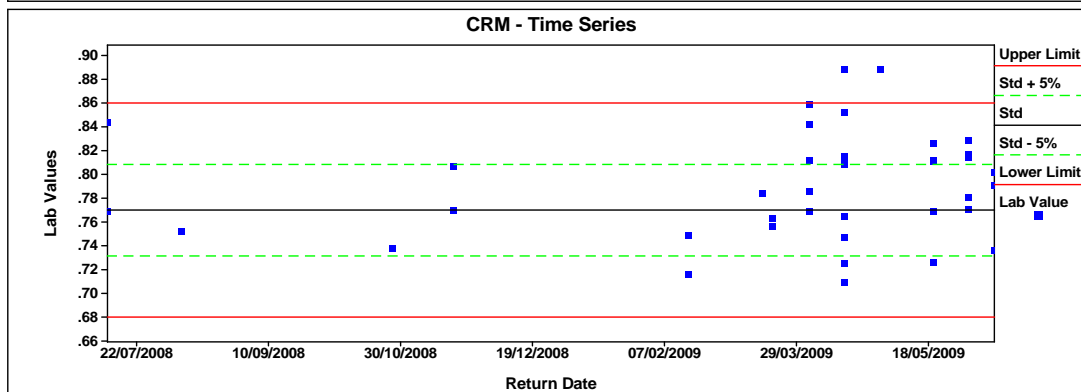
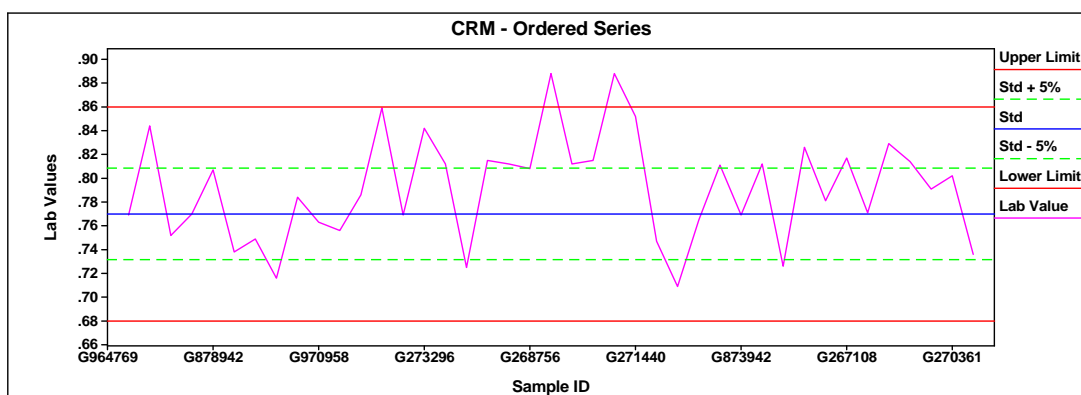


# RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

## Eco Oro - Mongora Project

### Standard CDN-GS-P7A - Au

Mean	0.791 g/t Au	Expected Mean	0.770 g/t Au
Standard Devn	0.043 g/t Au sq	Expected Std Dev	0.030 g/t Au sq
Counts	41	% Bias (-ve when underestimated)	2.75 %
Minimum	0.709 g/t Au	No of Outlier +/- 3 Std Dev	2
Maximum	0.888 g/t Au	% Outside Tolerance	4.88 %
Median	0.791 g/t Au	CV	0.05 %
Average HRD%	1.28 %	Average HARD	2.45 %





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

Unit 2 - 20148, 102nd Avenue, Langley, B.C., Canada, V1M 4B4, Ph: 604-882-8422 Fax: 604-882-8466  
(www.cdnlabs.com)

#### ORE REFERENCE STANDARD: CDN-CGS-13

Recommended values and the "Between Lab" Two Standard Deviations

*Copper concentration:*  $0.329 \pm 0.018 \%$

*Gold concentration*  $1.01 \pm 0.11 \text{ g/t}$

**PREPARED BY:** CDN Resource Laboratories Ltd.

**CERTIFIED BY:** Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

**INDEPENDENT GEOCHEMIST:** Dr. Barry Smee, Ph.D., P. Geo.

**DATE OF CERTIFICATION:** April 12, 2007

#### **METHOD OF PREPARATION:**

Reject ore material was dried, crushed, pulverized and then passed through a 200 mesh screen. The +200 material was discarded. The -200 material was mixed for 7 days in a double-cone blender. Splits were taken and sent to 12 laboratories for round robin assaying.

#### **ORIGIN OF REFERENCE MATERIAL:**

The ore was supplied by Pacific Sentinel from the Casino Property in British Columbia. Copper-gold-molybdenum mineralization is genetically related to a breccia and microbreccia pipe of fine grained quartz monzonites, intrusion breccias, and plagioclase-porphyritic intrusions that may be subvolcanic in origin, comprising part of the 72-74 Ma Casino Intrusive Complex. Roughly centred on the microbreccia pipe, both the alteration and mineralization are zoned. Innermost is the potassic alteration suite consisting of K-feldspar, biotite, magnetite, anhydrite, gypsum, and pyrite, chalcopyrite, molybdenite, and gold.

Standard CDN-CGS-13 was prepared using 723 kg of Casino ore and 2 kg of a high grade gold ore.

**Approximate chemical composition is as follows:**

	Percent		Percent
SiO <sub>2</sub>	64.7	MgO	1.4
Al <sub>2</sub> O <sub>3</sub>	14.6	K <sub>2</sub> O	5.1
Fe <sub>2</sub> O <sub>3</sub>	6.1	TiO <sub>2</sub>	0.5
CaO	1.3	LOI	5.0
Na <sub>2</sub> O	0.3	S	1.6

#### **Statistical Procedures:**

The mean and standard deviation for all data was calculated. Outliers were defined as samples beyond the mean  $\pm 2$  Standard Deviations from all data. These outliers were removed from the data and a new mean and standard deviation was determined. This method is different from that used by Government agencies in that the actual "between-laboratory" standard deviation is used in the calculations. This produces upper and lower limits that reflect actual individual analyses rather than a grouped set of analyses. The limits can therefore be used to monitor accuracy from individual analyses, unlike the Confidence Limits published on other standards.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

#2, 20148 – 102<sup>nd</sup> Avenue, Langley, B.C., Canada, V1M 4B4, 604-882-8422, Fax: 604-882-8466 (www.cdnlabs.com)

#### ORE REFERENCE STANDARD: CDN-CM-8

Recommended values and the “Between Lab” Two Standard Deviations

*Gold:*  $0.91 \pm 0.11$  g/t  
*Copper:*  $0.364 \pm 0.024$  %  
*Molybdenum:*  $0.0160 \pm 0.0014$  %

PREPARED BY: CDN Resource Laboratories Ltd.  
CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia  
INDEPENDENT GEOCHEMIST: Dr. Barry Smeee, Ph.D., P. Geo.  
DATE OF CERTIFICATION: June 14, 2010

#### ORIGIN OF REFERENCE MATERIAL:

Standard CDN-CM-8 was prepared using a North American calc-alkalic copper-gold-molybdenum porphyry ore. It is derived from altered granodiorite, mafic to intermediate volcanic and volcanoclastic sedimentary rocks. Mineralization is principally pyrite, chalcopyrite and molybdenite that occurs in veins, stockworks and disseminations. 792 kg of this ore was blended with 2 kg of a high grade gold ore.

#### METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a double-cone blender. Splits were taken and sent to 15 commercial laboratories for round robin assaying.

Approximate chemical composition (by whole rock analysis) is as follows:

	Percent		Percent
SiO <sub>2</sub>	60.7	MgO	1.5
Al <sub>2</sub> O <sub>3</sub>	15.0	K <sub>2</sub> O	6.9
Fe <sub>2</sub> O <sub>3</sub>	7.5	TiO <sub>2</sub>	0.4
CaO	0.7	LOI	4.5
Na <sub>2</sub> O	1.5	S	2.6
C	0.3		

#### Statistical Procedures:

The final limits were calculated after first determining if all data was compatible within a spread normally expected for similar analytical methods done by reputable laboratories. Data from any one laboratory was removed from further calculations when the mean of all analyses from that laboratory failed a t test of the global means of the other laboratories. The means and standard deviations were calculated using all remaining data. Any analysis that fell outside of the mean  $\pm 2$  standard deviations was removed from the ensuing data base. The mean and standard deviations were again calculated using the remaining data. This method is different from that used by Government agencies in that the actual “between-laboratory” standard deviation is used in the calculations. This produces upper and lower limits that reflect actual individual analyses rather than a grouped set of analyses. The limits can therefore be used to monitor accuracy from individual analyses, unlike the Confidence Limits published on other standards.

Results from round-robin assaying are displayed on the following page.





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

10945-B River Road, Delta, B.C., V4C 2R8, Ph: 604-540-2233, Fax: 604-540-2237 (www.cdnlabs.com)

#### GOLD ORE REFERENCE STANDARD: CDN-GS-5C

Recommended value and the "Between Lab" Two Standard Deviations

*Gold concentration:  $4.74 \pm 0.28$  g/t*

PREPARED BY: CDN Resource Laboratories Ltd.

CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

INDEPENDENT GEOCHEMIST: Dr. Barry Smee, Ph. D., P. Geo.

DATE OF CERTIFICATION: June 15, 2006

#### ORIGIN OF REFERENCE MATERIAL:

Standard CDN-GS-5C was prepared using reject ore material supplied by the Hunter Dickinson Group from the Specogna deposit. The Specogna deposit is a low sulphidation epithermal gold deposit of Miocene age and is localized along the Sandspit fault. Gold bearing breccia, vein and stockwork development occurs along the fault and subsidiary dilational structures extending upward into a thick hanging wall sequence of clastic sediments. Mineralization at Specogna is dominated by pyrite and marcasite which typically comprise 1 to 4% of the host rocks. Gold and silver occur as electrum.

#### METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 200 mesh screen.

The +200 material was discarded. The -200 material was mixed for 7 days in a double cone blender.

Splits were taken and sent to 12 commercial laboratories for round robin assaying. Round robin results are displayed below:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)
	4.90	4.43	4.99	4.86	4.9	4.71	4.83	4.56	4.70	4.60	4.65	4.48
	4.88	4.92	4.81	4.64	4.97	4.67	4.79	4.46	4.84	4.64	4.78	4.66
	4.85	4.61	4.92	4.88	4.92	4.80	4.88	4.82	4.80	4.64	4.58	4.61
	4.77	4.65	4.72	4.65	5.02	4.69	4.79	4.51	4.84	4.62	4.49	4.62
	4.59	4.77	4.89	4.56	5.03	4.84	4.81	4.88	4.94	4.61	4.75	4.64
	4.78	4.89	4.97	4.96	5.14	4.60	4.89	4.66	4.80	4.61	4.72	4.60
	4.53	4.68	4.87	4.65	4.96	4.72	4.83	4.32	4.80	4.67	4.62	4.55
	4.76	4.84	4.88	4.85	4.73	4.62	4.89	4.48	5.00	4.70	4.55	4.52
	4.69	4.62	4.76	4.75	4.76	4.57	4.85	4.23	4.90	4.73	4.69	4.58
	4.78	4.93	4.97	4.63	4.66	4.76	4.75	4.28	4.80	4.65	4.76	4.53
Mean	4.75	4.73	4.88	4.72	4.91	4.70	4.83	4.50	4.84	4.65	4.66	4.58
Std. Dev.	0.115	0.131	0.087	0.125	0.159	0.092	0.050	0.206	0.073	0.040	0.104	0.049
% RSD	2.41	2.77	1.79	2.65	3.24	1.96	1.04	4.58	1.51	0.86	2.23	1.06

*Assay Procedure: assays were fire assay, AA or ICP finish on 30g samples.*





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

10945-B River Road, Delta, B.C., Canada, V4C 2R8, 604-540-2233, Fax: 604-540-2237 (www.cdnlabs.com)

#### GOLD ORE REFERENCE STANDARD: CDN-GS-5D

Recommended value and the "Between Laboratory" two standard deviations

Gold concentration:  $5.06 \pm 0.25$  g/t

PREPARED BY: CDN Resource Laboratories Ltd.

CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

INDEPENDENT GEOCHEMIST: Dr. Barry Smee, Ph.D., P. Geo.

DATE OF CERTIFICATION: November 1, 2007

#### ORIGIN OF REFERENCE MATERIAL:

Standard CDN-GS-5D was prepared using 780 kg of a blank granitic ore and 15 kg of a high grade gold ore.

#### METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 200 mesh screen. The +200 material was discarded. The -200 material was mixed for 6 days in a double-cone blender. Splits were taken and sent to 13 commercial laboratories for round robin assaying. Round robin results are displayed below:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13
	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t
GS5D-1	4.87	5.08	5.28	5.12	4.90	5.10	5.21	5.07	5.22	4.92	5.09	5.07	5.07
GS5D-2	4.97	4.95	5.20	5.11	4.70	5.09	5.26	4.93	5.29	5.01	5.12	4.91	5.25
GS5D-3	5.00	5.13	5.23	5.19	4.89	5.10	5.12	4.89	5.26	4.84	5.00	4.99	5.22
GS5D-4	4.91	5.03	5.10	5.08	4.76	5.08	5.12	5.03	5.32	4.89	5.09	4.85	5.05
GS5D-5	5.20	4.91	5.14	5.21	4.81	5.03	5.05	5.08	5.25	4.90	4.92	4.80	5.21
GS5D-6	5.21	5.09	5.36	5.11	4.77	5.06	5.20	4.77	5.25	4.90	4.99	5.07	5.08
GS5D-7	4.90	4.95	5.12	5.21	5.09	5.07	5.15	5.19	5.17	4.83	5.04	5.05	5.24
GS5D-8	5.18	4.91	5.19	5.10	4.96	5.10	5.04	4.88	5.21	4.95	5.12	5.07	5.12
GS5D-9	5.00	5.15	5.38	5.11	4.92	5.08	5.14	4.95	5.25	4.90	5.02	5.06	5.03
GS5D-10	5.04	4.93	5.20	5.11	4.87	5.11	5.14	4.92	5.21	4.87	5.01	5.19	5.10
Mean	5.03	5.01	5.22	5.13	4.87	5.08	5.14	4.97	5.24	4.90	5.04	5.00	5.14
Std. Dev.	0.127	0.094	0.095	0.048	0.113	0.024	0.068	0.122	0.045	0.052	0.065	0.119	0.084
% RSD	2.53	1.87	1.82	0.94	2.32	0.47	1.33	2.45	0.86	1.06	1.28	2.37	1.64

*Assay Procedure: all assays were fire assay, ICP finish on 30g samples*

#### APPROXIMATE CHEMICAL COMPOSITION:

	Percent		Percent
SiO <sub>2</sub>	70.0	Na <sub>2</sub> O	1.8
Al <sub>2</sub> O <sub>3</sub>	10.0	MgO	2.1
Fe <sub>2</sub> O <sub>3</sub>	5.4	K <sub>2</sub> O	1.3
CaO	4.0	TiO <sub>2</sub>	0.5
MnO	0.1	LOI	3.5
S	0.9		



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

#2, 20148 - 102<sup>nd</sup> Avenue, Langley, B.C., Canada, V1M 4B4, 604-882-8422, Fax: 604-882-8466 (www.cdnlabz.com)

#### GOLD ORE REFERENCE MATERIAL: CDN-GS-5F

Recommended value and the "Between Laboratory" two standard deviations

*Gold concentration: 5.30 ± 0.36 g/t (Fire Assay / ICP)*

*Gold concentration: 5.27 ± 0.34 g/t (Fire Assay / Grav.)*

**PREPARED BY:** CDN Resource Laboratories Ltd.  
**CERTIFIED BY:** Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia  
**INDEPENDENT GEOCHEMIST:** Dr. Barry Smee, Ph.D., P. Geo.  
**DATE OF CERTIFICATION:** November 16, 2009

#### **ORIGIN OF REFERENCE MATERIAL:**

Standard CDN-GS-5F was prepared using ore supplied by Williams Operating Corporation from their Williams Mine in Ontario, Canada. 125 kg of Williams ore was mixed with 675 kg of a blank, granitic ore.

#### **METHOD OF PREPARATION:**

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a double-cone blender. Splits were taken and sent to 15 commercial laboratories for round robin assaying. Round robin results are displayed below:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
ICP	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t
GSSF-1	5.47	5.38	5.60	5.19	5.50	5.45	5.12	5.06		5.29	5.80	5.28	5.28	5.11	4.93
GSSF-2	5.76	5.28	5.58	5.13	5.49	5.23	5.24	5.28		5.04	5.43	5.30	5.13	4.96	5.33
GSSF-3	5.29	5.67	5.58	5.10	5.30	5.19	5.41	5.37		4.83	5.63	5.53	5.22	4.64	5.30
GSSF-4	5.73	5.45	5.54	5.02	5.33	5.50	5.06	5.08		5.82	5.50	5.20	5.07	4.70	5.32
GSSF-5	5.71	5.18	5.74	5.28	5.44	5.17	5.10	5.32		5.66	5.37	5.43	5.23	4.64	5.13
GSSF-6	5.32	5.39	5.42	5.13	5.25	5.11	5.09	5.73		5.14	5.10	5.16	5.20	4.54	5.33
GSSF-7	5.51	5.58	5.35	5.10	5.39	5.29	5.32	5.2		5.33	-	5.49	5.31	5.06	4.56
GSSF-8	5.75	5.55	5.40	5.03	5.51	5.25	5.27	5.24		5.29	5.47	5.52	5.03	5.15	4.80
GSSF-9	5.55	5.63	5.42	5.08	5.62	5.45	5.35	5.54		4.94	5.77	5.48	5.15	4.94	5.16
GSSF-10	5.69	5.28	5.28	5.03	5.46	5.23	5.44	5.14		5.20	5.13	5.33	5.02	5.63	5.33
Mean	5.58	5.44	5.49	5.11	5.43	5.29	5.24	5.30		5.25	5.47	5.37	5.16	4.94	5.12
Std. Dev.	0.177	0.165	0.140	0.079	0.112	0.134	0.140	0.209		0.304	0.247	0.136	0.101	0.327	0.270
% RSD	3.18	3.04	2.54	1.54	2.06	2.53	2.68	3.95		5.79	4.52	2.53	1.96	6.61	5.28
	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
Gravimetric	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t
GSSF-1	5.31	5.63	5.57	5.32	4.97					5.01	5.56	5.29	5.33	5.20	5.01
GSSF-2	5.56	5.70	5.27	5.15	5.36					5.14	5.27	5.45	5.00	5.13	5.18
GSSF-3	5.38	5.43	5.27	5.19	5.63					5.45	5.18	5.32	5.23	5.07	5.31
GSSF-4	5.04	5.40	5.47	4.75	5.52					5.14	5.14	5.19	5.25	5.20	5.21
GSSF-5	5.07	5.40	5.67	5.29	5.26					5.07	5.63	5.35	5.31	5.20	5.35
GSSF-6	5.32	5.20	5.43	5.20	5.15					5.83	5.28	5.10	5.41	5.17	4.77
GSSF-7	5.50	5.27	5.30	5.02	5.52					5.14	5.40	5.49	5.05	5.17	4.87
GSSF-8	5.28	5.57	5.37	5.17	5.36					5.49	5.23	5.23	5.25	5.20	5.35
GSSF-9	5.58	5.30	5.50	5.26	5.57					4.94	5.10	5.14	5.33	5.17	4.94
GSSF-10	5.16	5.23	5.53	5.29	5.36					5.69	5.39	5.31	5.39	5.13	5.21
Mean	5.32	5.41	5.44	5.16	5.37					5.29	5.32	5.29	5.26	5.16	5.19
Std. Dev.	0.191	0.172	0.135	0.171	0.204					0.304	0.176	0.126	0.135	0.043	0.210
% RSD	3.60	3.18	2.49	3.31	3.79					5.75	3.30	2.38	2.57	0.83	4.10

**Note:** ICP results from Laboratory 14 were eliminated for failing the "t test".  
 Lab 9 did not report ICP results and Labs 6, 7 and 8 did not report gravimetric results.

**Assay Procedure:** Fire assay on 30g samples. Both ICP and gravimetric finishes were requested.



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

#2, 20148 – 102 Avenue, Langley, B.C., Canada, V1M 4B4, 604-882-8422, Fax: 604-882-8466 (www.cdnlabs.com)

#### GOLD ORE REFERENCE MATERIAL: CDN-GS-8A

Recommended value and the "Between Laboratory" two standard deviations

*Gold concentration: 8.25 ± 0.60 g/t*

**PREPARED BY:** CDN Resource Laboratories Ltd.  
**CERTIFIED BY:** Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia  
**INDEPENDENT GEOCHEMIST:** Dr. Barry Smee, Ph.D., P. Geo.  
**DATE OF CERTIFICATION:** July 15, 2009

#### **ORIGIN OF REFERENCE MATERIAL:**

Standard CDN-GS-8A was prepared using ore supplied by Comaplex Minerals Corporation. The ore is from the 1100 lode of the Tiriganiaq Gold Deposit north of Rankin Inlet in Nunavut. It is a banded magnetite iron formation zone with gold in quartz shears with accessory pyrrhotite, pyrite, and arsenopyrite. The gold is free milling although there may be a small refractory component.

#### **METHOD OF PREPARATION:**

Reject ore material (640 kg of Comaplex ore plus 160 kg of blank granitic ore) was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 6 days in a double-cone blender. Splits were taken and sent to 13 commercial laboratories for round robin assaying. Round robin results are displayed below:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13
Sample	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)
GS8A-1	8.50	8.46	8.68	7.65	8.01	8.24	8.69	8.29	8.07	8.59	8.35	8.55	8.02
GS8A-2	8.04	8.54	8.01	8.10	7.96	8.21	7.59	8.18	8.31	8.17	8.06	8.35	8.29
GS8A-3	8.01	8.21	8.52	7.82	8.16	8.25	8.91	8.70	7.84	8.64	8.12	8.38	7.89
GS8A-4	8.89	8.2	8.17	8.62	8.27	8.18	8.25	8.54	8.90	7.80	8.18	8.15	8.00
GS8A-5	8.31	8.15	8.09	8.60	8.84	8.19	7.87	8.35	8.71	8.60	8.08	8.41	8.22
GS8A-6	8.83	8.28	8.07	8.10	7.58	8.20	7.96	8.86	8.36	8.24	7.60	8.48	8.13
GS8A-7	7.88	8.61	8.57	8.33	7.42	8.21	8.20	8.29	8.40	8.21	8.07	8.16	8.10
GS8A-8	8.02	8.34	8.58	8.10	7.76	8.21	7.75	8.12	8.91	8.60	7.77	8.56	8.12
GS8A-9	7.94	8.32	8.40	8.78	8.09	8.27	8.39	7.97	8.82	8.54	7.67	8.54	8.32
GS8A-10	8.78	8.09	8.58	7.52	7.54	8.18	8.21	7.85	8.40	8.52	7.81	8.17	7.78
Mean	8.32	8.32	8.37	8.16	7.96	8.21	8.18	8.32	8.47	8.39	7.97	8.38	8.09
Std. Dev.	0.399	0.171	0.255	0.424	0.419	0.031	0.411	0.314	0.359	0.275	0.244	0.165	0.169
%RSD	4.79	2.05	3.05	5.19	5.27	0.38	5.02	3.78	4.24	3.28	3.05	1.97	2.09

*Assay Procedure: all assays were fire assay, ICP finish on 30g samples*

#### APPROXIMATE CHEMICAL COMPOSITION:

	Percent		Percent
SiO <sub>2</sub>	70.6	Na <sub>2</sub> O	1.4
Al <sub>2</sub> O <sub>3</sub>	8.6	MgO	1.7
Fe <sub>2</sub> O <sub>3</sub>	6.9	K <sub>2</sub> O	1.7
CaO	3.5	TiO <sub>2</sub>	0.4
MnO	0.1	LOI	3.6
S	1.0		



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

#2, 20148 – 102 Avenue, Langley, B.C., Canada, V1M 4B4, 604-882-8422, Fax: 604-882-8466 (www.cdnlabs.com)

#### GOLD ORE REFERENCE STANDARD: CDN-GS-14A

Recommended value and the "Between Laboratory" two standard deviations

*Gold concentration: 14.90 ± 0.87 g/t*

PREPARED BY: CDN Resource Laboratories Ltd.

CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

INDEPENDENT GEOCHEMIST: Dr. Barry Smee, Ph.D., P. Geo.

DATE OF CERTIFICATION: April 20, 2009

#### ORIGIN OF REFERENCE MATERIAL:

Standard CDN-GS-14A was prepared using ore supplied by Comaplex Minerals Corporation. The ore is from the 1100 lode of the Tiriganiaq Gold Deposit north of Rankin Inlet in Nunavut. It is a banded magnetite iron formation zone with gold in quartz shears with accessory pyrrhotite, pyrite, and arsenopyrite. The gold is free milling although there may be a small refractory component.

#### METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 6 days in a double-cone blender. Splits were taken and sent to 12 commercial laboratories for round robin assaying. Round robin results are displayed below:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t
GS14A-1	14.10	14.67	14.90	15.28	15.7	14.3	14.79	14.0	14.62	14.1	14.2	14.76
GS14A-2	13.50	14.92	15.05	14.73	15.6	14.5	15.54	15.7	14.92	13.9	13.8	13.41
GS14A-3	15.07	15.41	14.95	14.66	15.3	15.0	15.93	14.3	16.81	13.3	14.0	15.53
GS14A-4	14.13	14.64	14.85	15.22	15.3	15.0	14.63	15.0	16.45	13.7	13.8	15.13
GS14A-5	13.63	14.80	14.70	14.62	15.1	15.2	15.43	14.7	15.06	13.5	14.3	14.73
GS14A-6	14.37	14.89	15.25	15.14	14.8	14.8	14.83	15.3	15.61	13.5	14.4	14.88
GS14A-7	14.77	15.35	14.55	14.90	15.0	14.9	14.43	15.7	15.39	14.2	14.2	14.68
GS14A-8	13.37	14.47	14.95	15.02	14.3	15.4	15.01	14.7	14.69	13.9	14.3	14.78
GS14A-9	15.13	15.03	14.65	15.13	15.3	15.2	15.25	13.7	15.13	14.1	14.6	13.63
GS14A-10	14.80	14.97	15.55	14.97	15.0	15.0	14.95	15.3	15.44	13.2	14.5	15.29
Mean	14.27	14.92	14.94	14.97	15.14	14.93	15.08	14.84	15.41	13.74	14.21	14.68
Std. Dev.	0.633	0.298	0.295	0.235	0.403	0.330	0.457	0.688	0.720	0.353	0.273	0.673
%RSD	4.44	2.00	1.98	1.57	2.66	2.21	3.03	4.64	4.67	2.57	1.92	4.59

*Note: Results from Laboratory 10 were eliminated due to failing the "t test".*

*Assay Procedure: all assays were fire assay, gravimetric finish on 30g samples*

#### APPROXIMATE CHEMICAL COMPOSITION:

	Percent		Percent
SiO <sub>2</sub>	74.8	Na <sub>2</sub> O	0.9
Al <sub>2</sub> O <sub>3</sub>	7.0	MgO	1.1
Fe <sub>2</sub> O <sub>3</sub>	6.8	K <sub>2</sub> O	1.3
CaO	3.2	TiO <sub>2</sub>	0.3
MnO	0.1	LOI	2.8
S	1.0		





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### CDN Resource Laboratories Ltd.

10945-B River Road, Delta, B.C., V4C 2R8, Ph: 604-540-2233, Fax: 604-540-2237 (www.cdnlabs.com)

#### GOLD ORE REFERENCE STANDARD: CDN-GS-P7A

Recommended value and the "Between Lab" Two Standard Deviations

*Gold concentration:  $0.77 \pm 0.06$  g/t*

PREPARED BY: CDN Resource Laboratories Ltd.

CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

INDEPENDENT GEOCHEMIST: Dr. Barry Smee, Ph. D., P. Geo.

DATE OF CERTIFICATION: August 10, 2006

#### ORIGIN OF REFERENCE MATERIAL:

Standard CDN-GS-P7A was prepared using reject ore material supplied by the Hunter Dickinson Group from the Specogna deposit. The Specogna deposit is a low sulphidation epithermal gold deposit of Miocene age and is localized along the Sandspit fault. Gold bearing breccia, vein and stockwork development occurs along the fault and subsidiary dilational structures extending upward into a thick hanging wall sequence of clastic sediments. Mineralization at Specogna is dominated by pyrite and marcasite which typically comprise 1 to 4% of the host rocks. Gold and silver occur as electrum

#### METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 200 mesh screen.

The +200 material was discarded. The -200 material was mixed for 7 days in a double cone blender.

Splits were taken and sent to 12 commercial laboratories for round robin assaying. Round robin results are displayed below:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
Sample	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt	Au gpt
GSP7A-1	0.759	0.76	0.800	0.744	0.781	0.776	0.78	0.787	0.800	0.750	0.771	0.73
GSP7A-2	0.766	0.68	0.836	0.741	0.786	0.715	0.74	0.765	0.824	0.724	0.730	0.76
GSP7A-3	0.809	0.82	0.772	0.744	0.770	0.802	0.76	0.775	0.780	0.735	0.774	0.77
GSP7A-4	0.754		0.718	0.751	0.782	0.713	0.80	0.757	0.790	0.742	0.758	0.79
GSP7A-5	0.756	0.76	0.837	0.749	0.776	0.813	0.79	0.800	0.694	0.784	0.742	0.75
GSP7A-6	0.697	0.82	0.771	0.756	0.822	0.847	0.79	0.804	0.759	0.774	0.770	0.73
GSP7A-7	0.758	0.70	0.793	0.766	0.782	0.821	0.83	0.725	0.731	0.790	0.728	0.75
GSP7A-8	0.81	0.78	0.729	0.745	0.827	0.799	0.78	0.729	0.753	0.785	0.733	0.75
GSP7A-9	0.778	0.72	0.806	0.761	0.762	0.740	0.75	0.748	0.769	0.723	0.750	0.75
GSP7A-10	0.765	0.72	0.723	0.767	0.798	0.762	0.76	0.851	0.801	0.710	0.834	0.73
Mean	0.765	0.760	0.779	0.752	0.789	0.779	0.778	0.774	0.770	0.752	0.759	0.751
Std. Dev.	0.032	0.054	0.044	0.010	0.021	0.046	0.027	0.038	0.038	0.029	0.032	0.019
%RSD	4.14	7.13	5.66	1.27	2.69	5.86	3.42	4.94	4.93	3.82	4.16	2.55

*Assay Procedure: assays were fire assay, AA or ICP finish on 30g samples.*

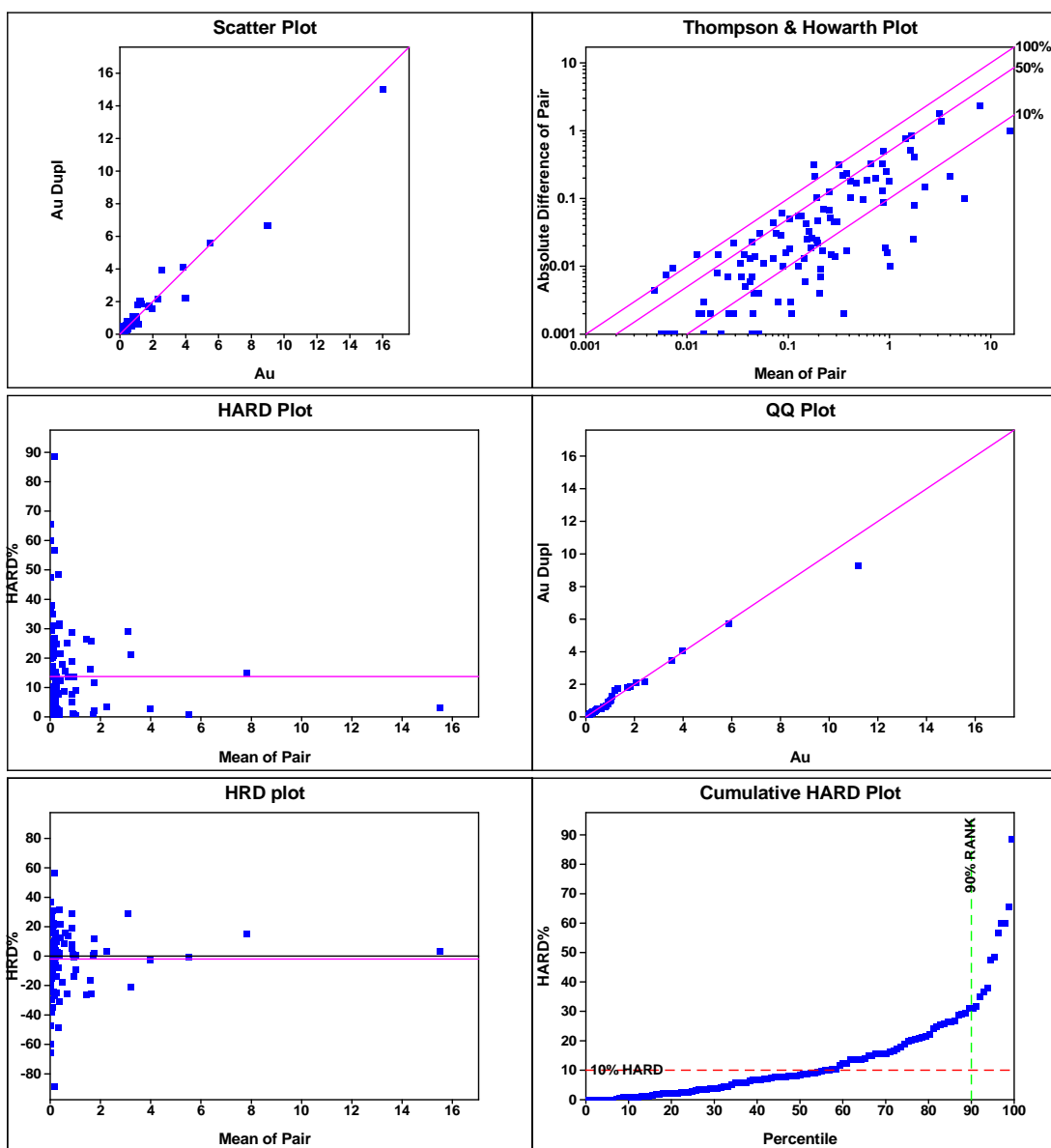


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### DUP\_PULP - Au vs Au Dupl

	g/t Au	g/t Au Dupl		
Pairs	119	119	Total Mean	0.618 g/t Au
Mean	0.629	0.607	Average bias	0.021 g/t Au
Minimum	0.002	0.002	Regression slope Y on X	0.90
Maximum	16.000	15.000	Maximum HARD	100.00 %
Variance	3.275	2.764	Average HARD	13.73 %
CV	2.878	2.737	% Average HRD	-2.00 %



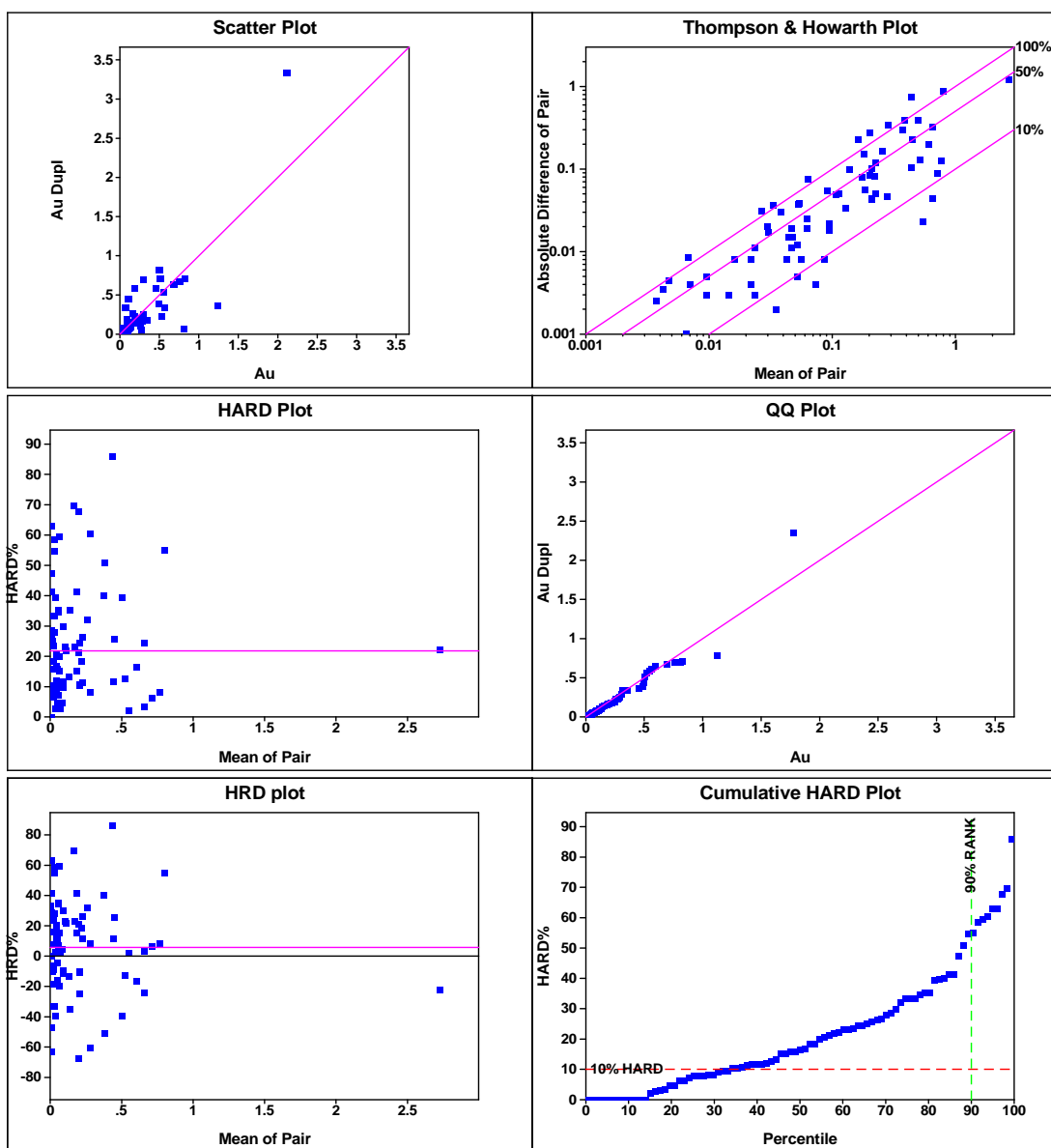


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Eco Oro - Mongora Project

#### DUP\_CORE - Au vs Au Dupl

	g/t Au	g/t Au Dupl		
Pairs	89	89	Total Mean	0.178 g/t Au
Mean	0.180	0.176	Average bias	0.004 g/t Au
Minimum	0.002	0.002	Regression slope Y on X	1.08
Maximum	2.120	3.330	Maximum HARD	100.00 %
Variance	0.095	0.154	Average HARD	21.83 %
CV	1.714	2.230	% Average HRD	5.70 %





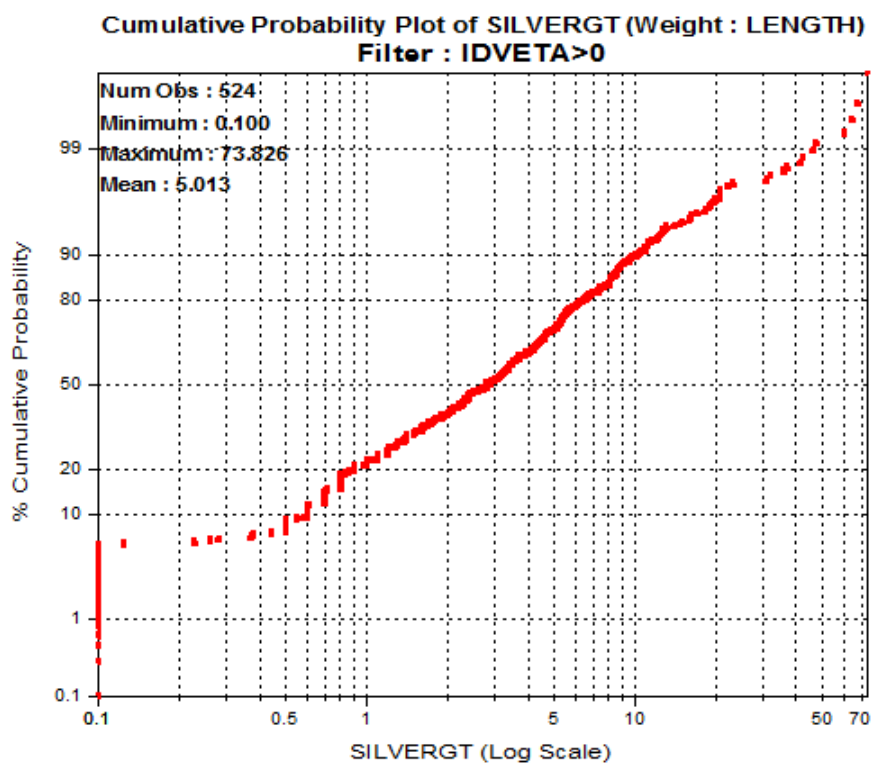
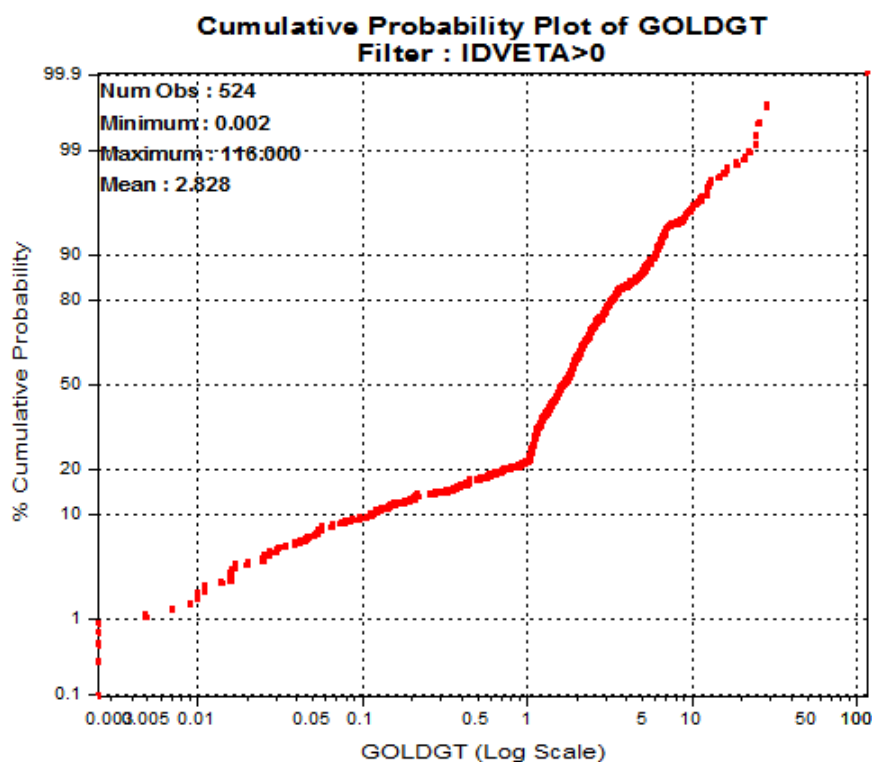


# **APPENDIX C**

## **Exploratory Data Analysis**

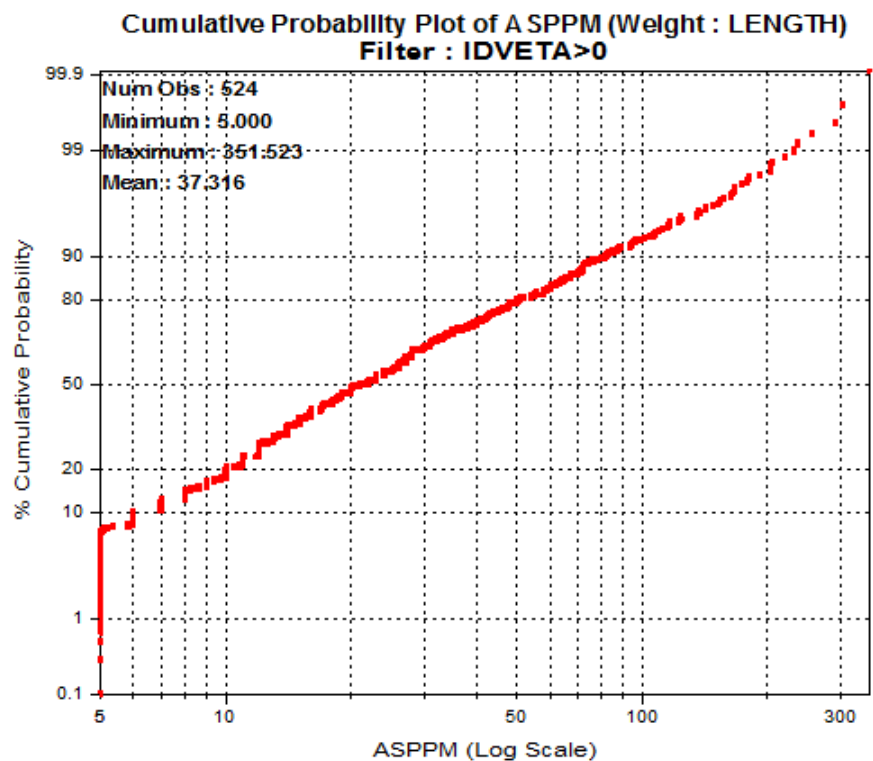
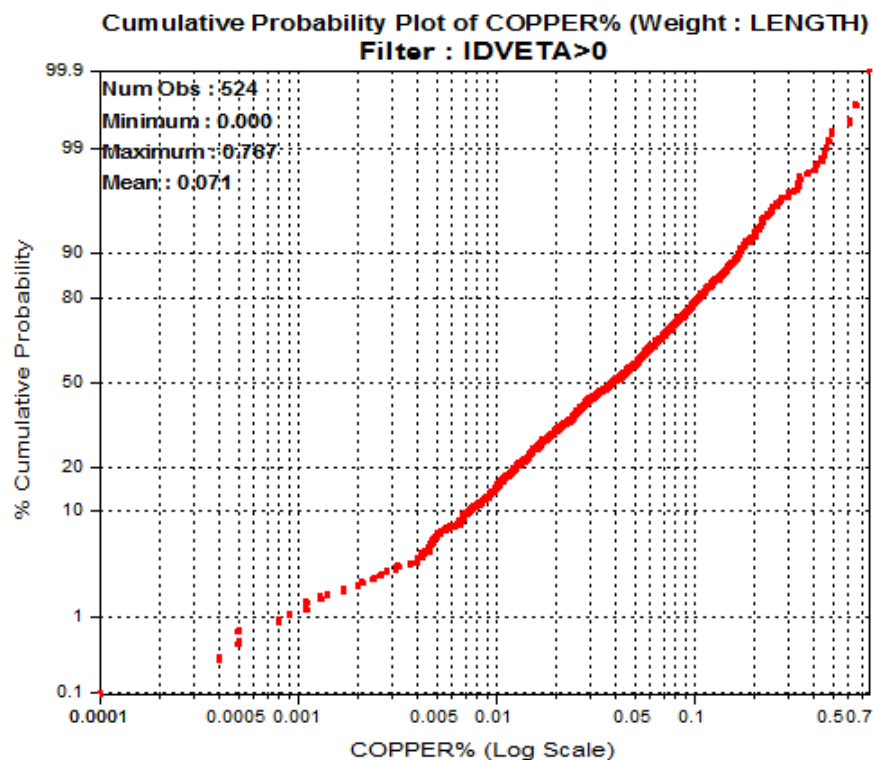


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT



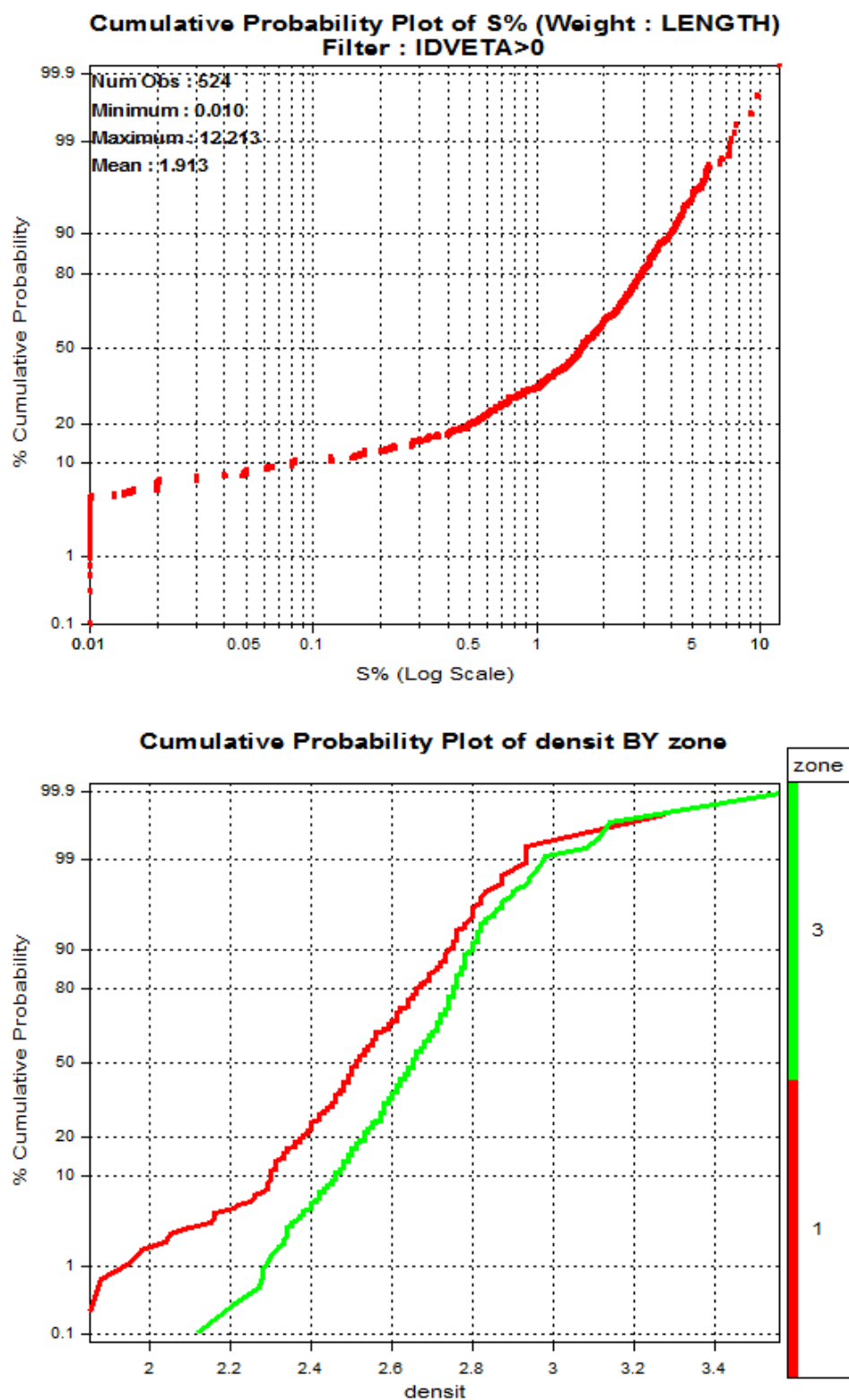


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT



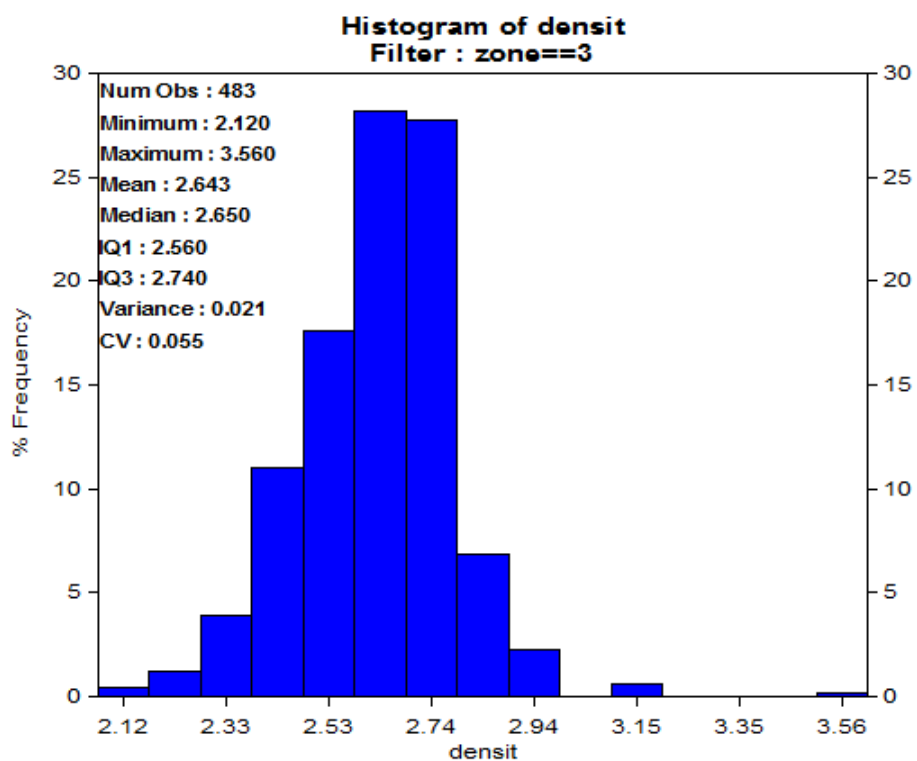
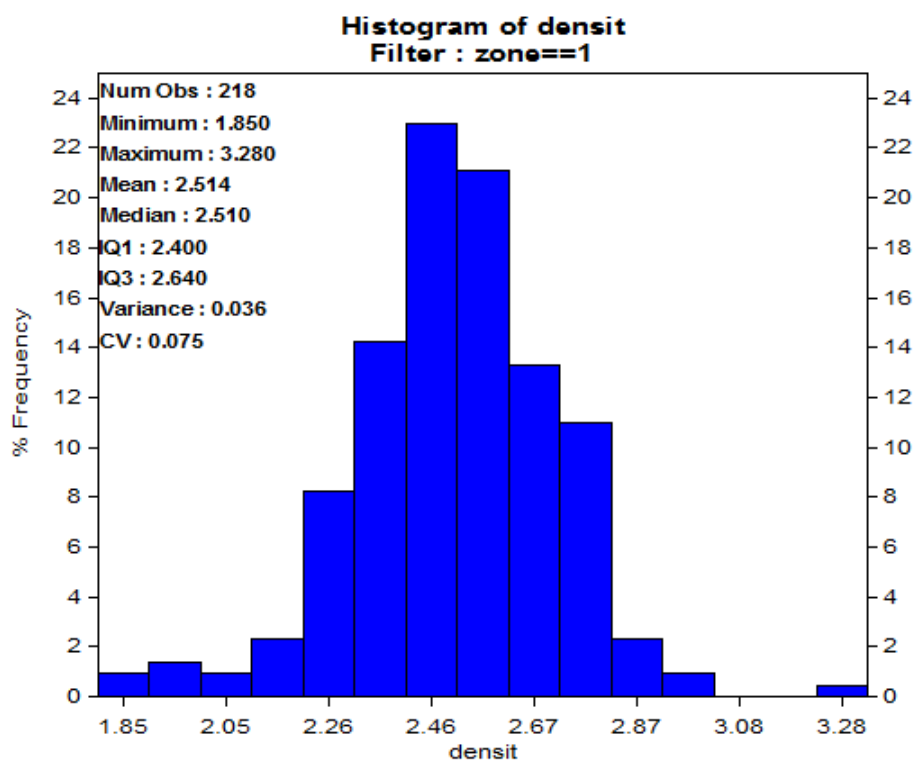


## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT





# **APPENDIX D**

## **Block Model Validation**



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Au (g/t) - Vein: 1

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev.
Composites	17	0.786	22.200	2.549	-0.3%	2.618
Blocks	5,714	0.786	22.200	2.542		2.419

### Au (g/t) - Vein: 2

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	12	0.655	6.876	3.092	-1.0%	2.074
Blocks	4,913	0.917	6.876	3.060		1.004

### Au (g/t) - Vein: 3

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	29	0.003	11.250	2.017	1.5%	1.735
Blocks	8,902	0.002	11.250	2.048		1.301

### Au (g/t) - Vein: 4

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	14	0.039	12.316	1.938	-0.9%	1.659
Blocks	4,928	0.056	12.316	1.920		1.379

### Au (g/t) - Vein: 5

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	14	0.025	8.110	1.284	-0.6%	1.233
Blocks	5,081	0.025	8.110	1.276		1.142

### Au (g/t) - Vein: 6

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	17	0.003	10.750	1.789	-14.7%	2.658
Blocks	5,594	0.002	10.750	1.526		1.949





## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Au (g/t) - Vein: 7

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	26	0.011	18.600	2.306	2.5%	2.216
Blocks	8,521	0.011	18.600	2.363		1.829

### Au (g/t) - Vein: 8

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	15	0.186	6.790	1.917	-2.1%	1.594
Blocks	6,926	0.186	6.790	1.876		1.178

### Au (g/t) - Vein: 9

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	33	0.011	25.000	2.346	-0.9%	1.987
Blocks	14,052	0.011	25.000	2.325		1.636

### Au (g/t) - Vein: 10

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	16	0.017	9.010	1.786	-1.1%	1.097
Blocks	11,477	0.017	9.010	1.766		0.850

### Au (g/t) - Vein: 11

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	8	0.014	5.213	2.359	-2.1%	1.446
Blocks	5,362	0.014	5.213	2.309		1.039

### Au (g/t) - Vein: 12

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	14	0.056	2.960	1.389	0.7%	0.796
Blocks	5,722	0.056	2.960	1.398		0.489



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Au (g/t) - Vein: 13

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	5	1.100	9.247	2.841	2.3%	1.575
Blocks	4,420	1.100	9.247	2.907		1.205

### Au (g/t) - Vein: 14

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	8	0.016	1.925	1.344	-4.3%	0.697
Blocks	3,741	0.016	1.925	1.286		0.528

### Au (g/t) - Vein: 15

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	8	0.010	9.770	1.162	0.4%	0.776
Blocks	4,861	0.010	9.770	1.166		0.766

### Au (g/t) - Vein: 16

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	0.206	1.585	1.112	-0.3%	0.495
Blocks	1,243	0.206	1.585	1.109		0.069

### Au (g/t) - Vein: 17

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	1.055	5.558	2.639	-0.4%	1.901
Blocks	2,069	1.055	5.558	2.630		1.117

### Au (g/t) - Vein: 18

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	6	0.695	2.140	1.283	-0.4%	0.336
Blocks	2,358	0.695	2.140	1.278		0.120



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### Au (g/t) - Vein: 19

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	11	0.395	25.000	3.452	6.8%	2.384
Blocks	5,999	0.395	25.000	3.688		2.851

### Au (g/t) - Vein: 20

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	5	0.750	8.840	2.251	1.5%	2.449
Blocks	2,033	0.750	8.840	2.284		1.481

### Au (g/t) - Vein: 23

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	5	1.040	2.910	1.554	-0.3%	0.662
Blocks	1,978	1.040	2.910	1.549		0.282

### Au (g/t) - Vein: 24

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	1.105	6.180	3.367	5.0%	2.369
Blocks	5,532	1.105	6.180	3.535		2.192

### Au (g/t) - Vein: 26

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.005	1.885	1.354	-3.2%	0.430
Blocks	896	1.005	1.885	1.310		0.419

### Au (g/t) - Vein: 27

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.685	1.870	1.777	-0.0%	0.920
Blocks	341	1.685	1.870	1.777		0.010



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### Au (g/t) - Vein: 28

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	0.197	1.400	1.032	-0.5%	0.511
Blocks	454	0.197	1.400	1.027		0.069

### Au (g/t) - Vein: 30

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	5	1.065	3.570	1.978	-1.3%	0.720
Blocks	5,220	1.065	3.570	1.952		0.603

### Au (g/t) - Vein: 31

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	1.200	10.650	2.272	-9.5%	1.491
Blocks	2,592	1.200	10.650	2.055		1.355

### Au (g/t) - Vein: 32

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	5	0.057	4.140	1.666	3.2%	1.421
Blocks	3,049	0.057	4.140	1.719		1.372

### Au (g/t) - Vein: 33

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	6	0.020	2.354	1.061	-1.6%	0.896
Blocks	3,971	0.020	2.354	1.044		0.797

### Au (g/t) - Vein: 35

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	0.051	1.780	0.746	-0.5%	0.695
Blocks	1,965	0.051	1.780	0.742		0.146



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### Au (g/t) - Vein: 37

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	9	1.070	2.260	1.424	-0.6%	0.369
Blocks	10,651	1.070	2.260	1.416		0.307

### Au (g/t) - Vein: 38

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	14	0.003	6.340	1.623	-0.3%	1.363
Blocks	12,956	0.002	6.340	1.618		0.830

### Au (g/t) - Vein: 39

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	13	0.974	15.661	1.965	-2.0%	1.471
Blocks	9,452	1.010	15.661	1.926		1.225

### Au (g/t) - Vein: 40

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	10	0.017	4.180	1.471	0.0%	1.070
Blocks	4,416	0.017	4.180	1.471		0.757

### Au (g/t) - Vein: 41

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	13	0.003	6.030	2.365	-2.6%	2.163
Blocks	4,378	0.002	6.030	2.303		1.766

### Au (g/t) - Vein: 42

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.925	3.330	2.642	-0.0%	0.702
Blocks	679	1.925	3.330	2.642		0.623



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### Au (g/t) - Vein: 43

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	0.016	6.120	4.007	-1.6%	2.466
Blocks	1,537	0.016	6.120	3.941		1.793

### Au (g/t) - Vein: 44

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	9	0.007	3.960	1.876	-0.8%	1.416
Blocks	6,987	0.007	3.960	1.861		1.090

### Au (g/t) - Vein: 45

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.485	1.485	1.485	0.0%	0.000
Blocks	2,406	1.485	1.485	1.485		0.000

### Au (g/t) - Vein: 46

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	0.275	1.325	0.824	-0.8%	0.525
Blocks	1,356	0.275	1.325	0.817		0.136

### Au (g/t) - Vein: 52

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	6	0.027	6.500	2.335	2.9%	1.771
Blocks	1,415	0.027	6.500	2.402		0.581

### Au (g/t) - Vein: 53

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	6.088	20.753	6.814	1.4%	2.929
Blocks	410	6.088	16.017	6.912		2.248



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### Au (g/t) - Vein: 56

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	6	1.862	12.650	3.671	1.1%	2.010
Blocks	1,869	1.862	12.650	3.712		1.555

### Au (g/t) - Vein: 57

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	9	0.042	5.640	1.752	-1.0%	2.119
Blocks	3,430	0.066	5.640	1.735		1.289

### Au (g/t) - Vein: 59

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	6.900	7.320	7.094	-0.0%	0.209
Blocks	512	6.900	7.320	7.093		0.206

### Au (g/t) - Vein: 60

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	1.590	2.590	2.187	-0.5%	0.429
Blocks	440	1.907	2.590	2.176		0.095

### Au (g/t) - Vein: 62

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	2.070	2.600	2.318	0.0%	0.264
Blocks	495	2.070	2.600	2.318		0.227

### Au (g/t) - Vein: 63

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.915	1.915	1.915	-0.0%	0.000
Blocks	473	1.915	1.915	1.915		0.000



## RESOURCE ESTIMATION OF THE MÓNGORA GOLD-SILVER DEPOSIT

### Au (g/t) - Vein: 64

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	7	0.427	3.400	2.094	-0.7%	0.999
Blocks	946	0.862	3.400	2.080		0.519

### Au (g/t) - Vein: 65

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	1.385	5.570	3.696	0.7%	1.815
Blocks	635	1.385	5.570	3.720		0.320

### Au (g/t) - Vein: 66

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	4.830	4.830	4.830	-0.0%	0.000
Blocks	418	4.830	4.830	4.830		0.000

### Au (g/t) - Vein: 67

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	0.053	2.160	1.351	-5.0%	0.879
Blocks	660	0.053	2.160	1.283		0.593

### Au (g/t) - Vein: 68

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	5.540	5.920	5.784	0.3%	0.182
Blocks	2,264	5.540	5.920	5.799		0.172

### Au (g/t) - Vein: 71

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	1.095	1.485	1.358	-0.1%	0.161
Blocks	1,070	1.095	1.485	1.356		0.125





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### Au (g/t) - Vein: 72

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.100	2.220	1.599	-0.1%	0.557
Blocks	718	1.100	2.220	1.597		0.486

### Au (g/t) - Vein: 73

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	5	0.930	2.990	1.826	5.4%	0.550
Blocks	786	0.930	2.990	1.925		0.116

### Au (g/t) - Vein: 74

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	0.652	8.530	2.157	3.4%	1.443
Blocks	670	0.652	8.530	2.231		1.308

### Au (g/t) - Vein: 75

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	2.6200	2.840	2.730	-0.0%	0.110
Blocks	539	2.620	2.840	2.730		0.016

### Au (g/t) - Vein: 76

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	9	0.105	2.998	1.453	0.6%	1.223
Blocks	950	0.105	2.998	1.462		0.451

### Au (g/t) - Vein: 77

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	0.445	14.600	2.330	1.2%	2.315
Blocks	677	0.445	14.600	2.359		1.133



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### Au (g/t) - Vein: 78

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	0.027	13.000	2.182	-0.2%	2.164
Blocks	1,315	0.027	13.000	2.179		1.078

### Au (g/t) - Vein: 79

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	2.753	4.760	3.734	0.0%	1.003
Blocks	583	2.753	4.760	3.735		0.157

### Au (g/t) - Vein: 80

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	3	1.205	3.150	1.970	-0.4%	0.808
Blocks	519	1.205	3.150	1.962		0.513

### Au (g/t) - Vein: 81

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	6	0.586	4.040	1.905	0.8%	0.999
Blocks	2,438	0.586	4.040	1.919		0.709

### Au (g/t) - Vein: 82

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	24.300	24.300	24.300	-0.0%	0.000
Blocks	47	24.300	24.300	24.300		0.000

### Au (g/t) - Vein: 87

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.135	1.495	1.320	0.1%	0.180
Blocks	1,670	1.135	1.495	1.321		0.177



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### Au (g/t) - Vein: 92

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.935	3.722	2.832	-0.2%	0.894
Blocks	438	1.935	3.722	2.828		0.091

### Au (g/t) - Vein: 94

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	1.269	1.985	1.628	0.0%	0.358
Blocks	429	1.269	1.985	1.628		0.045

### Au (g/t) - Vein: 97

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	2	0.373	3.198	1.787	0.4%	1.413
Blocks	172	0.373	3.198	1.794		0.254

### Au (g/t) - Vein: 98

STATS	No. Obs.	Minimum	Maximum	Mean	%Diff	Std. Dev
Composites	4	0.444	1.720	1.196	-0.5%	0.562
Blocks	451	0.775	1.720	1.190		0.085

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[solutions@golder.com](mailto:solutions@golder.com)  
[www.golder.com](http://www.golder.com)

**Golder Associates Perú S.A.**  
**Edificio Miracorp. Av. La Paz 1049**  
**Piso 7, Miraflores**  
**Lima 18**  
**Perú**  
**T: +51 (1) 610 1700**

