



**GOLD RESOURCE**  
C O R P O R A T I O N

REPORT ON THE ESTIMATES OF  
MINERAL RESOURCES

and

MINERAL RESERVES

for the

DON DAVID MINE

OAXACA, MEXICO

for

DON DAVID GOLD MEXICO, S.A de C.V.

(a wholly-owned subsidiary of Gold Resource Corp.)

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# 1 EXECUTIVE SUMMARY

## 1.1 Introduction

This report was prepared as a technical report for Don David Gold Mexico S.A. de C.V. (DDGM), a wholly-owned subsidiary of Gold Resource Corporation (GRC), on its 100%-controlled Don David Mine, an underground and open pit gold, silver and base-metal mining operation in Oaxaca, Mexico.

Mineral Reserves, as defined by Industry Guide 7 promulgated by the U.S. Securities and Exchange Commission (SEC), are that part of a mineral deposit which could be economically and legally extracted or produced at the time of the reserve determination (SEC, 1992). The mineral resources and reserves stated in this report are effective as of December 31, 2020.

On October 31, 2018, the SEC announced that it was adopting amendments to modernize the property disclosure requirements for mining registrants, and related guidance, under the Securities Act of 1933 and the Securities Exchange Act of 1934 (SEC, 2018 a, b). Under the new rules (“New Rules”), a registrant with material mining operations must disclose specified information in Securities Act and Exchange Act filings concerning its mineral resources, in addition to its mineral reserves. The new rules provide a two-year transition period so that a registrant is not required to comply with the new rules until its first fiscal year beginning on or after January 1, 2021. The SEC states that a registrant may voluntarily comply with the new rules prior to the compliance date, subject to the SEC’s completion of necessary EDGAR reprogramming changes. While DDGM has provided an estimate of mineral resources in this report, GRC has decided not to early adopt the New Rules; therefore, GRC will not disclose the estimate of resources contained herein in any SEC filing prior to December 31, 2021.

## 1.2 Property Description

DDGM has developed a significant precious and base metals epithermal deposit at its Don David Mine in Mexico. The project is located in the Sierra Madre Sur Mountains of southern Mexico, in the central part of the State of Oaxaca. The project is located along a major paved highway approximately 120 kilometers (km) southeast of Oaxaca City, the state’s capital city.

DDGM controls 100% interest in the Aguila Project and five other properties, which now comprise its Don David Mine. On December 31, 2020, DDGM controlled twenty-nine (29) mining concessions in Oaxaca State totaling 55,119 hectares. Expiration dates associated with the Don David Mine concessions range from March 4, 2023 to November 7, 2066.

DDGM is required to pay concession fees to the Mexican government to maintain its interest in the Don David Mine concessions. The annual 2020 concession tax paid for the mining concessions controlled by



DDGM was US\$744,561. In 2020, DDGM satisfied the minimum investment and assessment work requirements for these concessions based on its work programs and past work completed. DDGM has also paid the total mining duty required annually to keep the Don David Mine concessions in good standing.

DDGM has established surface rights agreements with the San Pedro Totolapam Ejido and the individuals impacted by current and proposed operations which allow disturbance of the surface where necessary for DDGM's exploration activities and mining operations.

### **1.3 Geological Setting, Mineralization, and Deposit**

The Don David Mine area is dominated by multiple volcanic domes of various scales that compose the district geology. These volcanogenic features are superimposed on a pre-volcanic basement of sedimentary rocks. Gold and silver mineralization in this district is related to the manifestations of this classic volcanogenic system and is considered epithermal in character. The Don David Mine mineralization occurs as structurally-controlled epithermal deposits in veins and stockwork zones consisting of concentrations of sulfides containing gold, silver, lead, copper, and zinc, associated with gangue minerals such as quartz, calcite, and other minor elements. Primary sulfide mineralization consists of pyrite, galena, sphalerite, chalcopyrite associated with minor amounts of argentite and silver sulfosalts.

DDGM's exploration investigations have been mainly focused on the Aguila open pit and Arista underground mine areas. These areas include the significant Aguila, Arista, Baja and Aire veins as well as other ancillary mineralized structures. A area of mineralization, referred to as "Switchback", has been identified approximately 500 meters northeast of the Arista deposit, for which drill results showed multiple veins over a 40 to 100-meter wide alteration zone containing numerous mineralized veins associated with rhyolite dikes and hosted in andesite, similar to the Arista vein system. Other mineralized zones and properties have been investigated, including some preliminary drilling in areas such as Escondida, Chacal and Salina Blanca on the Aguila Project, and the Margaritas, Alta Gracia and Rey properties.

### **1.4 Exploration**

The Don David Mine is located in the mining sub district of San Jose de Gracia. Only small-scale artisanal mining has been historically conducted in the district and no reliable production records exist for historic production conducted in the Don David Mine area. The two mining areas developed by DDGM in this sub-district, the Aguila open pit mine and the Arista underground mine, had not been previously explored by modern methods. However, they occur along a mineralized trend with potential extension of about 55 km in which DDGM has identified numerous exploration targets.

DDGM has carried out a continuous drilling program since 2003 when the company took control of the Don David Mine mining concessions. DDGM continues the development of an aggressive exploration program that includes extensive surface and underground drilling, along with underground mine

development, such as access ramps, drifts and crosscuts into the Arista and Baja veins. Total exploration drilling (core and reverse circulation) by DDGM through the end of December 2020 amounts to 390,036 meters including 1,459 drill holes.

## **1.5 Mineral Resource Estimates**

The modeling and estimation of Mineral Resources presented herein is based on technical data and information available as of December 31, 2020. DDGM models and estimates Mineral Resources from available technical information prior to the generation of Mineral Reserves.

As part of its modernization of the property disclosure requirements for mining registrants, the SEC is adopting the Combined Reserves International Reporting Standards Committee (CRIRSCO) framework for reporting Mineral Resources. According to CRIRSCO, a Mineral Resource is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust (a deposit) in such form, grade or quality, and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource.

Three-dimensional models were constructed by DDGM staff as triangulated irregular network wireframes defining the extent of underground workings and mineralized structures and incorporates all significant vein systems identified to date. A total of 43 individual wireframes were modeled for the Arista system, 28 for the Switchback system, 60 for the Alta Gracia system and one for the Tapada vein on the Margaritas property. Measured, Indicated and Inferred mineral resources inclusive of Mineral Reserves and Mineralized Material reported for the Don David Mine as of December 31, 2020 are summarized in Table 1.1.

**Table 1.1 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) for the Don David Mine as of December 31, 2020\***

Vein System	Description	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	\$77	850,800	1.97	175	0.25	0.96	2.83
	Indicated	\$77	1,118,400	1.41	168	0.17	1.2	3.3
	Meas+Ind	\$77	1,969,200	1.65	171	0.2	1.09	3.1
	Inferred	\$77	251,500	0.36	64	0.15	1.4	5.02
Switchback	Measured	\$77	1,220,400	2.25	79	0.44	1.91	5.23
	Indicated	\$77	646,500	1.71	113	0.34	1.22	3.28
	Meas+Ind	\$77	1,866,900	2.06	91	0.41	1.67	4.56
	Inferred	\$77	410,900	1.26	81	0.47	1.05	3.17
Altagracia	Measured	2.33 g/t	70,500	0.73	311			
	Indicated	2.33 g/t	164,000	0.74	364			
	Meas+Ind	2.33 g/t	234,400	0.74	348			
	Inferred	2.33 g/t	53,300	0.75	370			
Margaritas (Tapada Vein)	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
<b>DON DAVID MINE TOTAL</b>	Measured	NA	2,141,700	2.09	125			
	Indicated	NA	1,952,000	1.44	168			
	Meas+Ind	NA	4,093,600	1.78	145			
	Inferred	NA	751,800	0.89	107			

\*Notes on Mineral Resources in Table 1.1:

1. Mineral Resources are as defined by new guidelines proposed by the SEC and CRIRSCO definitions for Mineral Resources.
2. Mineral Resources are estimated as of December 31, 2020 and take into account production-related depletion through December 31, 2020.
3. Mineral Resources reported herein are inclusive of Mineral Reserves and Mineralized Material.
4. Metal prices used for Mineral Resources were \$1,477 per ounce of gold, \$17.47 per ounce of silver, \$2.83 per pound of copper, \$0.92 per pound of lead and \$1.17 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
5. A breakeven Net Smelter Return (NSR) cutoff grade of \$77 per tonne was used for estimations of Mineral Resources. The term "cutoff grade" means the lowest NSR value considered economic to process.
6. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.33 g/t gold-equivalent (AuEq) was used for Mineral Resources at the Alta Gracia project and 2.55 g/t AuEq for the Margaritas project using gold and silver only to calculate gold equivalencies.
7. Minimum mining width for Mineral Resources is 1.5 meters.
8. Arista Mine metallurgical recovery assumptions used were 76% for gold, 92% for silver, 80% for copper, 79% for lead and 80% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 85% for gold and 72% for silver. These recoveries reflect 2020 actual average recoveries for the Aguila and Alta Gracia Projects.
9. Mineral Resources are not diluted and factored for expected mining recovery.
10. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

## 1.6 Mineral Reserve Estimates

Mineral Reserves were prepared according to the guidelines of the SEC Guide 7 "Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations". The reserve estimate is based on technical data and information available as of December 31, 2020.

The Arista and Mirador Underground Mine mineral reserves comply with SEC Guide 7 standards and definitions of Proven and Probable mineral reserves. Mineral Reserve blocks that meet dilution and cutoff grade requirements, and that are deemed feasible and economic for extraction in a life-of-reserve mine

plan, are classified as Proven and Probable, respectively, after further adjustment of tonnage for expected mining recovery. Mining dilution is applied to in situ tonnes depending on the mining method employed. Mining dilution averages about 26% at zero grade; 10% for shrinkage stoping, 26% for long-hole stoping, 25% for cut-and-fill and 15% for drifts. Mining recovery is applied to reserve blocks and depends on the mining method employed. Overall mining recoveries average 91%, after applying 90% for stopes and 95% for drifts.

DDGM uses a breakeven Net Smelter Return (NSR) cutoff grade, which considers actual metal prices, total mining, milling and general administration, smelting/refining costs and plant recoveries for Proven and Probable Reserve estimations. The cutoff grade calculation does not include either exploration or capital costs and the average operating costs used for reserve calculations are net of base metal credits and royalty payments. Plant recoveries used are the average of actual recoveries reported by the plant during the twelve months of 2020. The 2020 breakeven cutoff grade for the Arista underground mine is based on a US\$77 per tonne NSR using gold, silver, copper, lead and zinc metal prices to calculate the NSR value. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia and Margaritas properties. Therefore, a breakeven cutoff grade using gold and silver only was used for these properties. The breakeven cutoff grade used for the Alta Gracia Project, including the Mirador Underground Mine, for proven and probable mineral reserves was 2.33 g/t AuEq using gold and silver only to calculate gold equivalencies.

The Proven and Probable Mineral Reserves for the Don David Mine as of December 31, 2020 are summarized in Table 1.2.

**Table 1.2 Mineral Reserves for the Don David Mine as of December 31, 2020\***

Class	Tonnes	Au	Ag	AuEq	Au	Ag	AuEq	Cu	Pb	Zn
		g/t	g/t	g/t	oz	oz	oz	%	%	%
Arista Mine										
<b>Proven</b>	1,775,600	2.22	116	3.68	126,700	6,648,700	205,400	0.4	1.6	4.5
<b>Probable</b>	490,600	1.88	138	3.61	29,600	2,177,100	55,400	0.4	1.5	3.9
<b>Arista Mine Total</b>	<b>2,266,200</b>	<b>2.15</b>	<b>121</b>	<b>3.58</b>	<b>156,300</b>	<b>8,825,800</b>	<b>260,800</b>	<b>0.4</b>	<b>1.6</b>	<b>4.4</b>
Mirador Mine										
<b>Proven</b>	51,900	0.76	325	4.61	1,300	543,400	7,700			
<b>Probable</b>	10,400	0.82	514	6.90	300	172,500	2,300			
<b>Mirador Mine Total</b>	<b>62,300</b>	<b>0.77</b>	<b>357</b>	<b>5.00</b>	<b>1,600</b>	<b>715,900</b>	<b>10,000</b>			
<b>Don David Mine Total</b>	<b>2,328,500</b>	<b>2.11</b>	<b>127</b>	<b>3.62</b>	<b>157,900</b>	<b>9,541,700</b>	<b>270,800</b>			

\*Notes on Mineral Reserves in Table 1.2:

1. Metal prices used for P & P reserves were \$1,477 per ounce of gold, \$17.47 per ounce of silver, \$2.83 per pound of copper, \$0.92 per pound of lead and \$1.17 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
2. Precious metal gold equivalent is 84.54:1 using gold and silver only to calculate gold equivalencies.
3. A breakeven NSR cutoff grade of \$77 per tonne was used for estimations of P & P reserves at the Arista Underground Mine. The term "cutoff grade" means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Mirador Underground Mine at the Alta Gracia property. A breakeven cutoff grade of 2.33 g/t AuEq was used for proven and probable reserves at the Mirador Underground Mine using gold and silver only to calculate gold equivalencies.
5. Mining, processing, energy, administrative and smelting/refining costs were based on 2020 actual costs for the Don David Mine.

6. Arista Mine metallurgical recovery assumptions used were 76% for gold, 92% for silver, 80% for copper, 79% for lead and 80% for zinc. Mirador Mine metallurgical recovery assumptions used were 85% for gold and 72 for silver. These recoveries reflect 2020 actual average recoveries for the Aguila and Alta Gracia Projects.
7. P & P reserves are diluted and factored for expected mining recovery.
8. Minimum mining width for P & P reserves is 1.5 meters for the Arista and Mirador underground mines.
9. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

DDGM uses the term “mineralized material” to describe mineralization in the Don David Mine mineral deposits that do not constitute “Mineral Reserves” under current U.S. reporting requirements as governed by SEC Industry Guide 7. Mineralized Material is used to describe a mineralized body that has been delineated by appropriate drilling and/or underground sampling to establish continuity and support an estimate of tonnage and an average grade of the selected metal(s). Mineralized material does not have demonstrated economic viability. The SEC only permits issuers to report mineralized material in tonnage and average grade without reference to contained ounces or quantities of other metals.

For Mineralized Material, DDGM applies the same US\$77 per tonne NSR breakeven cutoff grade for the Arista Mine and a breakeven cutoff grade of 2.33 g/t AuEq for the Alta Gracia Project, including the Mirador Mine, and 2.50 g/t AuEq for the Margaritas Project. Gold and silver only are used to calculate gold equivalencies. Mineralized Material meets the same dilution, expected mine recovery and cutoff grade requirements as Mineral Reserves but does not have demonstrated economic viability. Mineralized Material is in addition to Proven and Probable Mineral Reserves.

Mineral Reserve blocks not in the life-of-reserve mine plan are classified by DDGM as Mineralized Material and excluded from the Mineral Reserves tabulation. Mineralized Material is used by DDGM for mine planning and exploration purposes only.

Mineralized Material for the Don David Mine as of December 31, 2020 is summarized in Table 1.3.

**Table 1.3 Mineralized Material (Exclusive of Mineral Reserves) for the Don David Mine as of December 31, 2020\***

Description	Tonnes	Au	Ag	Cu	Pb	Zn
		g/t	g/t	%	%	%
<b>DON DAVID MINE</b>						
<b>Arista Mine</b>	<b>1,569,900</b>	<b>1.42</b>	<b>148</b>	<b>0.2</b>	<b>1.1</b>	<b>3.0</b>
<b>Alta Gracia Project (inc. Mirador Mine)</b>	<b>172,000</b>	<b>0.73</b>	<b>345</b>			
<b>Margaritas Project</b>	<b>26,000</b>	<b>0.51</b>	<b>260</b>			
<b>DON DAVID MINE TOTAL</b>	<b>1,767,900</b>					

\*Notes on Mineralized Material in Table 1.3:

1. Mineralized Material is exclusive of Mineral Reserves
2. Metal prices used for Mineralized Material were \$1,477 per ounce of gold, \$17.47 per ounce of silver, \$2.83 per pound of copper, \$0.92 per pound of lead and \$1.17 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
3. A breakeven NSR cutoff grade of \$77 per tonne was used for estimations of Mineralized Material at the Arista mine. The term “cutoff grade” means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.33 g/t AuEq was used for Mineralized Material at the Alta Gracia project and 2.50 g/t AuEq for the Margaritas project using gold and silver only to calculate gold equivalencies at a ratio of 84.54:1.

5. Arista Mine metallurgical recovery assumptions used were 76% for gold, 92% for silver, 80% for copper, 79% for lead and 80% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 85% for gold and 72% for silver. These recoveries reflect 2020 actual average recoveries for the Aguila and Alta Gracia Projects.
6. Mineralized Material are diluted and factored for expected mining recovery.
7. Minimum mining width for Mineralized Material is 1.5 meters for the Arista and Mirador underground mines.
8. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

DDGM also reports Mineral Resources for the Don David Mine that do not qualify as neither Mineral Reserves nor Mineralized Material. Mineral Resources exclusive of Mineral Reserves and Mineralized Material, as of December 31, 2020, are summarized in Table 1.4.

**Table 1.4 Mineral Resources (Exclusive of Mineral Reserves and Mineralized Material) for the Don David Mine as of December 31, 2020**

Project	Class	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	\$77	252,000	1.57	147	0.24	0.85	2.56
	Indicated	\$77	926,400	1.36	158	0.15	1.17	3.26
	Meas+Ind	\$77	1,178,400	1.41	155	0.17	1.1	3.11
	Inferred	\$77	251,500	0.36	64	0.15	1.4	5.02
Switchback	Measured	\$77	43,600	1.81	46	0.31	1.17	2.4
	Indicated	\$77	347,900	1.44	137	0.26	0.92	2.46
	Meas+Ind	\$77	391,500	1.48	127	0.27	0.95	2.46
	Inferred	\$77	410,900	1.26	81	0.47	1.05	3.17
Altagracia	Measured	2.33 g/t	18,500	0.62	272			
	Indicated	2.33 g/t	153,500	0.74	354			
	Meas+Ind	2.33 g/t	172,100	0.73	345			
	Inferred	2.33 g/t	53,300	0.75	370			
Margaritas	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
<b>DON DAVID MINE TOTAL</b>	Measured	NA	314,100	1.55	140			
	Indicated	NA	1,450,900	1.30	176			
	Meas+Ind	NA	1,765,100	1.35	169			
	Inferred	NA	751,800	0.89	107			

Mineral Resources reported by DDGM exclusive of Mineral Reserves and Mineralized Material do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

## 1.7 Mining Methods

DDGM commenced mining and milling operations at the Aguila Project on July 1, 2010. Mineral production during 2010 consisted of processing Mineral Resources from the Aguila open pit mine, located approximately 0.5 km from the plant. DDGM developed and mined the shallow-dipping accessible portion of the Aguila manto vein by open pit methods.

During 2010, DDGM began developing an underground mine to access two veins called the Arista and Baja veins, part of the “Arista vein system”. The underground mine is approximately two km from the plant. In March 2011, DDGM began transitioning from processing the open pit to the underground mineralization.

Conventional drill and blast methods are currently used to extract the proven and probable reserves from the Arista underground mine. There are two main mining methods used in the Arista underground mine: 1) overhand mechanized cut and fill (CAF) and 2) long-hole open stoping (LHOS) with delayed fill. DDGM is subject to all Mexican federal, state and local laws and regulations governing the protection of the environment, including laws and regulations relating to protection of air and water quality, hazardous waste management and mine reclamation as well as the protection of endangered or threatened species. The Don David Mine is permitted according to mining, environmental, labor, tax and other Mexican regulations for the mining and metallurgical complex.

Since commercial production was declared at the Don David Mine on July 1, 2010, through December 31, 2020, the plant has processed a total of 4,537,678 tonnes of open pit and underground ore to recover 298,125 ounces of gold and 22,339,923 ounces of silver.

Production from the Don David Mine has proven that the project has the grade and continuity required to justify continued development and mining. The known veins and other targets on the Don David Mine are underexplored by drilling. If DDGM maintains its exploration programs, excellent potential exists for reserves to maintain or grow.

## **1.8 Processing and Recovery Methods**

During 2009 and 2010, DDGM constructed a processing plant and infrastructure at the Aguila Project. The processing plant has a differential flotation section capable of processing polymetallic ores and producing up to three separate concentrate products for sale, and an agitated leach circuit capable of producing gold and silver doré for sale. The Aguila mill's flotation circuit processing capacity is a nominal 1,800 tonnes per day. Up until 2018, power was mainly provided by diesel generators at the site. In 2019, DDGM successfully connected a power line to its Aguila project from the Mexican Federal Electricity Commission's (Comisión Federal de Electricidad or CFE) power grid. Prior to this connection, the Aguila project operated 100% from electricity generated from more expensive and higher emission diesel fuel. DDGM has obtained water rights from the Mexican government for an amount of water believed to be sufficient to meet operating requirements and pump it approximately five km to the site from a permitted well located near the Rio Grande River.

A flotation tailings impoundment was constructed in a valley just below the process plant site. The impoundment is double lined with the first liner made of a clay and synthetic material that acts as a leak prevention system with the effective absorption equal to ~ 3 meters of clay. The second liner is a welded High-Density Polyethylene (HDPE), which was a permitting requirement. An embankment was constructed up-stream in order to obtain the full engineered capacity.

## **1.9 Environmental Studies, Permitting, and Plans, Negotiations or Agreements with Local Individuals or Groups**

In connection with mining, milling and exploration activities, DDGM is subject to all Mexican federal, state and local laws and regulations governing the protection of the environment, including laws and regulations relating to protection of air and water quality, hazardous waste management and mine reclamation as well as the protection of endangered or threatened species. Potential areas of environmental consideration for mining companies, including DDGM, include but are not limited to, acid rock drainage, cyanide containment and handling, contamination of water courses, dust and noise.

All mining and environmental activities in México are regulated by the Dirección General de Minas (DGM) and by the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) from México City, under the corresponding laws and regulations. Mining operations in México operate under a unique environmental license (Licencia Ambiental Unica). This environmental license is issued after approval of the Evaluación del Impacto Ambiental (EIA). As well, special permits are issued for certain new developments such as expansions, tailings dams, etc. DDGM is also required to obtain various permits for surface and underground water use and discharge of waste-water discharge. The permissions are granted by the Comisión Nacional del Agua (CONAGUA), the administrative, technical advisory commission of SEMARNAT. CONAGUA administers national waters, manages and controls the country's hydrological system, and promotes social development.

### **1.10 Interpretations and Conclusions**

DDGM is required to prepare a mine closure plan for the possible future relinquishment of the Aguila and Alta Gracia Projects. A Mine Closure Plan and Reclamation Budgets have been prepared by SRK Consulting (U.S.), Inc. (SRK). The closure cost estimate includes funds for covering the tailings ponds, waste rock stockpiles (“tepetateras”), and for securing, and cleaning up the other surface and underground mine facilities. The total estimated closure and reclamation cost for the Aguila Project is estimated to be 55.99 million Mexican Pesos (MXP), which is equal to about US\$2.81 million at an exchange rate of 19.89 pesos to US \$1.00, the exchange rate at the time SRK prepared their report in January 2021. The total estimated closure and reclamation cost for the Alta Gracia Project is estimated to be 11.29 million Mexican Pesos (MXP), which is equal to about US\$567,700.

The Don David Mine owned by DDGM is in the southern state of Oaxaca in México. The main Aguila project was initiated by investigating an old mining district which held numerous mineralization exposures partially developed by mining activity through centuries by small-scale miners and prospectors. DDGM initiated modern exploration investigations with significant investments leading to important precious and base metals discoveries. DDGM acquired its first mining concessions in 2003 and has continued to acquire additional land holdings where an increasing number of exploration targets have been defined. Currently DDGM holds 55,119 hectares within 29 mining concessions registered under DDGM.



Geological regional and detailed studies, geochemical and geophysical surveying have been the basis for an intensive drilling program within three main exploration targets (Aguila, Alta Gracia and Margaritas) in addition to some regional investigations which to December 31, 2020 total 1,459 drill holes with 390,036 m drilled.

Underground exploration development has been developed to confirm mineralization indicated by drilling along the Arista and Switchback vein systems, the most promising vein deposits identified in the Aguila project. These workings confirmed the continuity of the Arista and Switchback vein systems and also led to discovery of accessory veins such as the Baja vein and numerous other vein splays or branches with economic mineralization. DDGM has all the corresponding Environmental Impact Studies and permits to continue operating in accordance with Mexican Laws and Regulations.

DDGM has identified a significant precious metals and base metals epithermal deposit in southern México within an old mining district that had not been explored by modern methods. The primary exploration target area, Arista, is located along a significant mineralized trend with potential extension of about 55 km in which DDGM has identified at least 15 exploration targets.

### **1.11 Recommendations**

A budget of US\$7,295,000 has been proposed which will focus primarily deposit expansion on the Arista mine's Arista and Switchback vein systems. The primary long-term goal of this program is to expand known mineralization and discover new areas.

The exploration program shall focus on exploring the highest priority areas in order to prepare them for an updated Mineral Resource and Reserve report at year-end 2021. Don David Mine exploration priority targets for 2021 are listed in Table 21.2.

In addition to surface and underground exploration drilling, 2021 exploration expenditures shall include underground exploration mine development to provide access and platforms for underground exploration drilling. A total of 1,080 meters is programmed for 2021 with a budget of US\$1,542,000. The new drilling stations will be constructed for drilling the Northeast and Southeast zone targets of the Switchback vein system.

**Table 1.5 Don David Mine Exploration Priority Targets – 2021**

Description	US \$
<b>Surface Exploration</b>	
Total - Surface El Aguila	<i>\$3,045,400</i>
Total - Surface El Rey	<i>\$46,400</i>
Total - Surface Altagracia	<i>\$18,000</i>
Total - Prospects	<i>\$14,000</i>
Total - Rio Grande	<i>\$15,000</i>
Total - Los Trenes	<i>\$9,000</i>
Summary - Surface Exploration	<i>\$3,147,800</i>
Surface Meter	<i>8,000</i>
Cost per Meter	<i>\$ 393</i>
<b>Underground Exploration</b>	
Total - Underground Arista	<i>\$150,300</i>
Total - Underground Switchback	<i>\$200,400</i>
Total - Zona NE	<i>\$1,052,100</i>
Total - Zona SE	<i>\$1,202,400</i>
Summary - Underground Exploration	<i>\$2,605,200</i>
Underground Meter	<i>13,000</i>
Underground Cost per Meter US	<i>\$ 200</i>
<b>Exploration Mine Development</b>	
Total Underground NE	<i>\$899,500</i>
Total Underground SE	<i>\$642,500</i>
Summary Exploration Mine Development	<i>\$1,542,000</i>
Total Exploration & Development Cost	<i>\$7,295,000</i>

## 2 INTRODUCTION

### 2.1 Terms of Reference and Purpose of Report

This report was prepared as a technical report for DDGM, an indirect, wholly-owned subsidiary of GRC on the Don David Mine, an open pit and underground gold-silver-base metal operation located in Oaxaca, Mexico. GRC controls 100% interest in the Aguila Project and five properties, which comprise its Don David Mine.

The quality of information, conclusions, and estimates contained herein is consistent with the level of effort by the QP's, based on: 1) information available at the time of preparation, 2) data supplied by outside sources, and 3) the assumptions, conditions, and qualifications set forth in this report.

This report provides mineral resource and mineral reserve estimates, and a classification of mineral reserves prepared in accordance with the SEC Industry Guide 7 “Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations”.

## **2.2 Qualifications of Qualified Persons**

The qualified persons (QPs) preparing this report are specialists in the fields of geology, exploration, mineral resource and mineral reserve estimation and classification, underground and surface mining, geotechnical, environmental, permitting, metallurgical testing, mineral processing, processing design, capital and operating cost estimation, and mineral economics.

The following individuals, by virtue of their education, experience and professional association, are considered QPs for this report and are members in good standing of appropriate professional institutions. The QPs are employees of either GRC or GRC Nevada Inc. (GRCN), a wholly-owned Nevada subsidiary of GRC, and therefore, the QPs are not independent of DDGM. QP certificates of authors are provided in Appendix B.

Mr. Brown graduated with a Bachelor of Science (B.Sc.) degree in Geology from New Mexico State University in 1987, obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science (M.Sc.) in Engineering (Civil) from the University of the Witwatersrand in 2005. He is registered with Engineers and Geoscientists British Columbia (EGBC) and the Society for Mining, Metallurgy and Exploration as a Registered Member. Mr. Brown has also worked as an Underground Mine Geologist, Mineral Resource Manager, Resident Geologist and Chief Geologist at several mines in South Africa operated by Anglo American, AngloGold and De Beers. Since 2004, before joining GRC Nevada, a wholly-owned subsidiary of GRC in 2017, Mr. Brown was a Consulting Geologist specializing in mineral resource and mineral reserve estimations and reporting. As of January 1, 2021, GRC Nevada is a wholly-owned subsidiary of Fortitude Gold Corporation and Mr. Brown is now independent of GRC and DDGM.

Mr. Garcia holds a Bachelor’s degree in Industrial Engineering from Universidad de Lima (2002) and a Master’s degree in Mining Engineering and Mineral Economics from McGill University (2006). He is a Professional Engineer registered with EGBC. Mr. Garcia has over 15 years of practical experience in mining engineering and capital budgeting. He is the current Corporate Chief Engineer for GRC and is responsible for evaluating, improving and supporting engineering processes, systems and standards at all GRC’s operations and projects. Mr. Garcia has a robust operational background in diverse mining methods and commodities. He has held various roles in operations and all aspects of mining engineering at RPM Global (Canada), Teck’s Coal (Canada) and Copper (Chile) divisions, Hochschild Mining (Peru) and Newmont Mining Corporation (Peru).

Mr. Devlin holds a B.Sc. degree with honors in Geology, 1981, and a M.Sc., 1987, from the University of British Columbia, Vancouver Canada. He is also a Professional Geologist registered with EGBC and is a Member of the Society for Mining, Metallurgy and Exploration and the American Exploration and Mining

Association. Mr. Devlin has worked more than 39 years in both exploration and mine production which includes working for several USA-companies, including US Borax and Chemical Corp., Hecla Mining Company and Gold Resource Corp.

Technical data and information used in the preparation of this report also included some documents prepared by third party contractors. The authors' sourced information from referenced documents as cited in the text and listed in References section of this report.

### **2.3 Details of Inspection**

The QPs referenced above and in Appendix B have visited the Don David Mine on numerous occasions since 2013.

### **2.4 Sources of Information**

DDGM has relied on information and technical documents listed in the References section of this report which are assumed to be accurate and complete in all material aspects.

### **2.5 Effective Date**

This report updates a previous report titled "Report on the Estimate of Mineral Resources and Mineral Reserves for the Don David Mine dated February 26, 2020" (Brown et. al., 2020)

The effective date of this report is December 31, 2020.

### **2.6 Units of Measure**

The metric system for weights and units has been used throughout this report. Mass is reported in metric tons ("tonnes") consisting of 1,000 kilograms per tonne. Gold and silver are reported as grams per tonne (g/t). Copper, lead and zinc are reported as percentages (%). Gold and silver ounces are reported in troy ounces converted using 31.1035 grams per troy ounce. All currency is in U.S. dollars (US\$) unless otherwise stated.

### 3 PROPERTY DESCRIPTION

#### 3.1 Property Location

The Aguila and Alta Gracia Projects are located in the Sierra Madre del Sur Mountains of southern Mexico, in the central part of the State of Oaxaca (Fig. 3.1). The projects are located along a major paved highway approximately 90 to 120 km southeast of Oaxaca City, the state’s capital city. The city of Oaxaca has daily passenger airline service to Mexico City and Guadalajara in Mexico, and Houston, Texas through the nearby Xoxocotlan International airport. The approximate center of the project area is N16.68°, W96.17°.



Figure 3.1 General Location of Properties Comprising the Don David Mine

### 3.2 Mineral Titles

DDGM currently holds an interest in twenty-nine (29) mining concessions in Oaxaca State totaling 55,119 hectares (Table 3.1; Fig. 3.2). Expiration dates associated with the Don David Mine mining concessions range from March 4, 2023 to November 7, 2066.

**Table 3.1 Mining Concessions Owned by Don David Gold Mexico, S.A. de C.V.**

Number	Concession Name	Title Number	Hectares	Term of Mining Concession	
				From	To
1	MINA EL AIRE	158272	72.0000	3/5/1973	3/4/2023
2	EL AGUILA	222844	899.0610	9/9/2004	9/8/2054
3	LA TEHUANA	210029	925.0000	8/31/1999	8/30/2049
4	EL CHACAL	232628	375.0000	9/26/2008	9/25/2058
5	EL PILON	232629	1,070.3463	9/26/2008	9/25/2058
6	PITAYO 1	231124	429.6269	1/17/2008	1/16/2058
7	PITAYO 2	231125	22.0481	1/17/2008	1/16/2058
8	PITAYO3	231126	113.3089	1/17/2008	1/16/2058
9	PITAYO4	231127	2.8205	1/17/2008	1/16/2058
10	EL TALAJE	231128	1,015.9512	1/17/2008	1/16/2058
11	LA HERRADURA	231129	3,628.8500	1/17/2008	1/16/2058
12	DAVID FRAC.1	232851	625.5930	10/30/2008	10/29/2052
13	DAVID FRAC.2	232852	920.7610	10/30/2008	10/29/2052
14	SAN LUIS	233124	2,820.0691	12/12/2008	12/11/2052
15	EL COYOTE	235802	2,799.5484	3/12/2010	2/11/2060
16	EL ZORRITO	235332	8,836.4199	11/12/2009	11/11/2059
17	LA CURVA	235803	1,940.2815	3/12/2010	2/11/2060
18	EL CHAMIZO	238374	17,897.5371	9/23/2011	9/22/2061
19	ZOPI	238875	504.0000	11/8/2011	11/7/2061
20	LA REYNA	225401	692.0000	8/31/2005	8/30/2011
21	EL REY	225373	172.0000	8/26/2005	8/25/2011
22	EL VIRREY	226269	36.0000	12/2/2005	12/1/2011
23	EL MARQUEZ	234213	1,434.8932	6/5/2009	6/4/2059
24	SAN MIGUEL FRACC 2	241818	1,122.8379	3/27/2013	3/26/2063
25	SAN PEDRO FRACC. 1	233694	2,554.0000	3/30/2009	2/23/2054
26	SAN PEDRO FRACC. 2	233693	1,860.2110	3/30/2009	2/23/2054
27	EL AGUILA III	242686	2,250.0000	12/16/2013	12/16/2063
28	CORRECAMINOS	244389	97.8110	8/25/2015	8/24/2065
29	TLACUACHE	245147	1.0396	11/8/2016	11/7/2066
<b>Total</b>			<b>55,119.0156</b>		



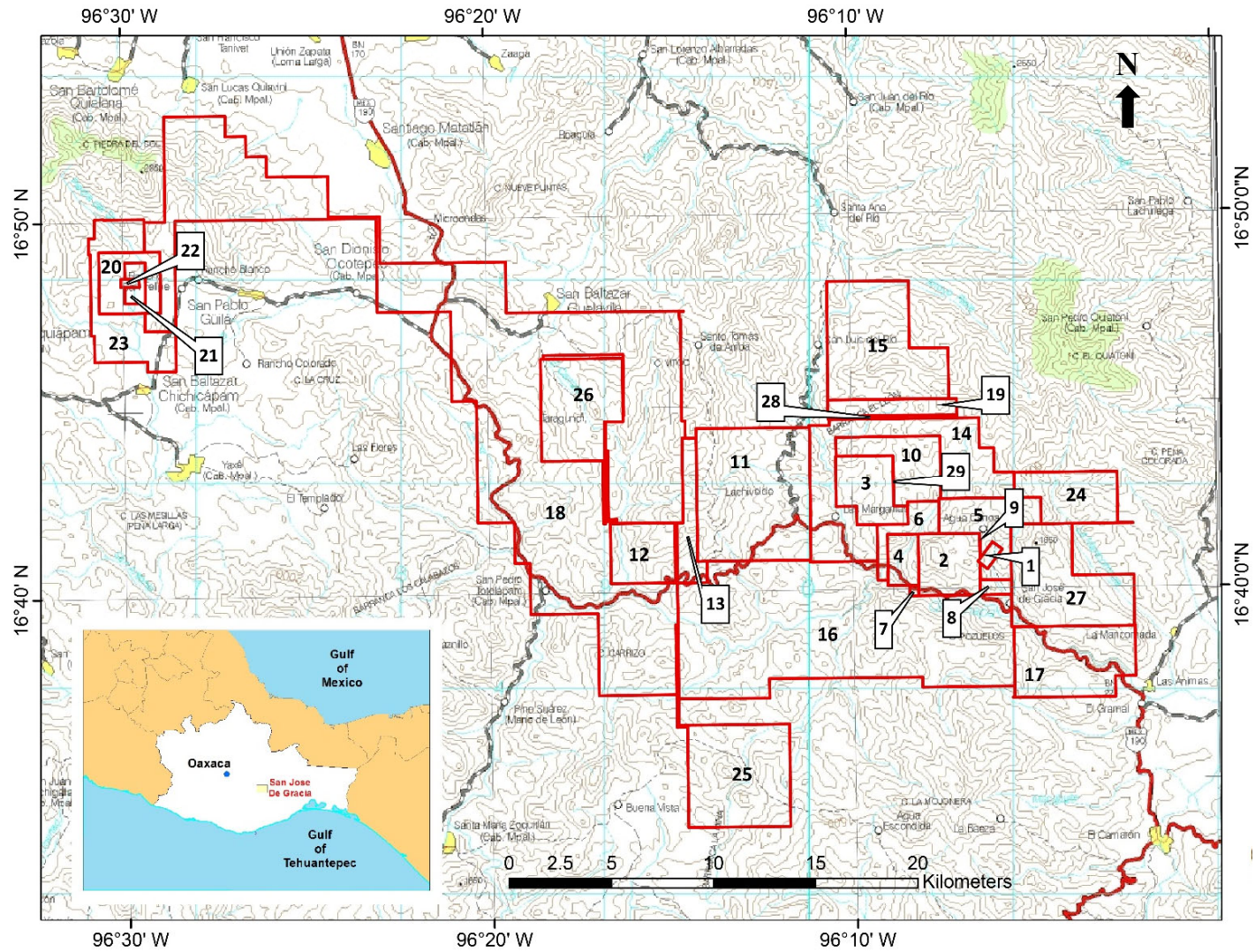


Figure 3.2 Don David Mine Concessions (concession numbers are listed in Table 3.1).

### **3.3 Royalties, Agreements and Encumbrances**

#### **3.3.1 Royalties and Agreements**

On October 14, 2002, DDGM leased its first three mining concessions from a former consultant to the company. These concessions are known as El Aguila, Mina El Aire and La Tehuana, which totaled 1,896 hectares. The El Aguila and El Aire concessions are now part of DDGM's Aguila Project and the La Tehuana concession comprises the Margaritas property.

The Aguila lease agreement with the former consultant is subject to a 4% net smelter return royalty where production is sold in the form of gold/silver doré and 5% for production sold in concentrate form. Subject to meeting minimum exploration requirements, there is no expiration term for the lease. DDGM may terminate the lease at any time upon written notice to the lessor and the lessor may terminate it if DDGM fails to fulfill any of its obligations, which primarily consists of paying the appropriate royalty to the lessor.

In 2010, DDGM subsequently acquired, at no additional cost, two additional concessions from the former consultant, which are referred to as El Chacal and El Pilon, totaling 1,445 hectares, each of which are subject to a 2% royalty to the consultant, but are not subject to the lease.

DDGM has since filed for and received additional concessions for the Don David Mine that total an additional 45,029 hectares which DDGM refers to as El Pitayo 1 to 4, El Talaje, El Coyote, El Zorrito, San Luis, La Curva, La Herradura, David Fracción 1 and 2, El Chamizo, Zopi, San Miguel Fracción 2, El Aguila III, Correcaminos and Tlacuache. These additional concessions are not part of the concessions leased or acquired from DDGM's former consultant.

The Don David Mine also includes the Rey property which adjoins DDGM's El Chamizo concession on the west side. These concessions are known as El Rey, El Virrey, La Reyna and El Marquez. DDGM acquired the El Rey concession from the former consultant and it is subject to a 2% net smelter return royalty payable to the consultant. DDGM obtained the remaining concessions by staking claims and filing for concessions with the Mexican government. These concessions total 2,335 hectares.

In March 2013, DDGM acquired the San Pedro Fracción 1 and San Pedro Fracción 2 concessions from Almaden Minerals Ltd. (Almaden) and are subject to a 2% net smelter return royalty. The San Pedro Fracción 1 concession consists of 2,554 hectares and is located south of DDGM's Alta Gracia and El Chamizo properties. The San Pedro Fracción 2 concession consists of 1,860 hectares and is surrounded by DDGM's El Chamizo concession and will be included as part of the El Chamizo property. Any future production from the San Pedro Fracción 1 and San Pedro Fracción 2 concession is subject to a 2% net smelter return royalty in favor of Almaden.



### 3.3.2 Mineral Rights

Mineral rights in Mexico belong to the Mexican federal government and are administered pursuant to Article 27 of the Mexican Constitution. All mining concessions comprising the Don David Mine are exploitation concessions, which may be granted or transferred to Mexican citizens and corporations. The leases or concessions are held by Mexican subsidiaries of GRC. Exploitation concessions have a term of 50 years and can be renewed for another 50 years. Concessions grant the right to explore and exploit all minerals found in the ground. Maintenance of concessions requires the semi-annual payment of mining duties (due in January and July) and the performance of assessment work, on a calendar year basis, with assessment work reports required to be filed in the month of May for the preceding calendar year. The amount of mining duties and annual assessment are set by regulation and may increase over the life of the concession and include periodic adjustments for inflation. Mining concessions are registered at the Public Registry of Mining in Mexico City and in regional offices in Mexico.

Mexican mining law does not require payment of finder's fees or royalties to the government, except for a discovery premium in connection with national mineral reserves, concessions and claims or allotments contracted directly from the Mexican Geological Survey. None of the claims held by any of DDGM's subsidiaries are under such a discovery premium regime.

DDGM is required to pay concession fees to the Mexican government to maintain its interest in the Don David Mine mining concessions. The annual 2020 concession tax paid for the mining concessions controlled by DDGM (55,119 ha) was US \$744,561.

In 2020, DDGM satisfied the minimum investment and assessment work requirements based on its annual work programs and past work completed. DDGM has also paid the total mining duty required annually to keep the Don David Mine concessions in good standing.

In 2013, the Mexican federal government enacted a tax reform package that was effective as of January 1, 2014. There were a number of significant changes in the Mexican tax reform package. The planned corporate income tax rate reductions to 29% in 2014 and 28% thereafter have been repealed and the corporate tax rate remained at 30%. The tax base for income tax was amplified considering certain limitations on deductions. The business flat tax (IETU) was repealed. A special mining royalty tax of 7.5% was applied to net profits derived by a property concession holder from the sale or transfer of extraction related activities. Net profits for the purpose of this royalty is determined in a manner similar to the calculation of general taxable income with certain deductions not available, including deductions for investment in fixed assets and interest. In addition, owners of mining concessions are required to pay an additional extraordinary 0.5% royalty fee on gross revenue derived from the sale of gold, silver and/or platinum. Further, a 10% withholding tax on dividend distributions was introduced but does not supersede treaty rates.

### **3.4 Sufficiency of Surface Rights**

All mineral resources and mineral reserves in this report is located on mining concessions controlled by DDGM. DDGM has secured and maintained the necessary permits for exploration, development and production of the Don David Mine.

## **4 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **4.1 Topography, Elevation and Vegetation**

The Don David Mine is located in the state of Oaxaca in southern Mexico, which is bordered by the states of Puebla, Veracruz, Chiapas and Guerrero with the Pacific Ocean to the south.

Oaxaca has several mountain chains with elevation varying from sea level to more than 3,700 meters above sea level. Oaxaca has one of the most rugged terrains in Mexico, with mountain ranges that abruptly fall into the sea. Between these mountains are mostly narrow valleys, canyons and ravines. The mountains are mostly formed by the convergence of the Sierra Madre del Sur, Sierra Madre de Oaxaca and Sierra Atravesada into what is called the Oaxaca Complex (Complejo Oaxaqueño).

The Aguila and Alta Gracia projects of the Don David Mine are located within the Municipality of San Pedro Totolapam. The surface of the municipality is irrigated by the Rio Grande. The area is very rocky with vegetation typical of a dry climate. Subsistence farming occurs in the area and the main agricultural crop is agave cactus that is cultivated for the production of mezcal.

### **4.2 Accessibility and Transportation to the Property**

The Municipality of San Pedro Totalapam is located in the Region of the Central Valleys, 89 km southeast of the city of Oaxaca. It belongs to the District of Tlacolula. DDGM's primary operations are located within and near the town of San José de Gracia, in the Municipality of San Pedro Totalapam.

The Aguila Project is approximately 4 km northwest from the town of San Jose de Gracia. A gravel and paved road have been constructed from the village to the mine and mill sites which supports adequate access to the property by small and large vehicles.

The Alta Gracia Project is approximately 20 km northeast from the town of San Pedro Totalapam, the seat of the municipal government. Access to the project is by a gravel road that departs the paved highway

approximately 13 km east of the town of San Pedro Totalapam. The haulage distance by road from Alta Gracia to the Aguila Plant, where the ore is processed, is approximately 32 km.

### **4.3 Climate**

The climate of the Don David Mine area is dry and warm to very warm with most rainfall occurring in the summer and annual precipitation averaging only 423.7 mm. The average yearly temperature is 26.6 degrees centigrade.

### **4.4 Infrastructure Availability and Sources**

#### **4.4.1 Power**

The power for mining operations is provided by electrical grid power available through the public network of the Comisión Federal de Electricidad (CFE).

#### **4.4.2 Water**

Water sources at the Aguila Project include the mine, recycled water from the tailings impoundment facilities, and water available through the water rights allowing for taking water from a permitted well located near the “Rio Grande River.

Water used for mining operations at the Alta Gracia Project are sourced locally and transported to storage tanks in water trucks.

#### **4.4.3 Mining Personnel**

The metropolitan area of the capital city of Oaxaca has a population of approximately 694,000. Tourism is a principal industry in the area, and numerous hotels and restaurants are available. A workforce that is familiar with mining and the necessary support facilities is present in the region.

The village of San Jose de Gracia supplies some of the workforce for the mine, while other workers come from Oaxaca City and other nearby villages. The company provides travel for the workforce to and from their local home bases.

#### **4.4.4 Tailings Storage Areas**

The initial Tailings Storage Facilities, TSF 1 and 2, have nearly reached reach maximum capacity and receive only limited tailings from the Aguila plant. Phase 3 (TSF 3) is currently the active impoundment area for

mill tailings. In 2020, DDGM commenced construction of a dry stack tailings facility for future storage of mill tailings. The facility will store dewatered mill tailings with a portion used as paste backfill in the Arista mine. The majority of the filtered tailings will be transported, deposited, and compacted into a stable, unsaturated tailings residue called a “dry stack”.

#### **4.4.5 Waste Disposal Areas**

DDGM has several permitted waste-rock disposal areas at the Aguila and Alta Gracia projects. These waste disposal areas were designed mainly as valley fill sites.

#### **4.4.6 Processing Plant Site**

The location of the processing plant was considered when selecting sites for tailings storage areas. The Aguila plant site is adjacent to and up-gradient from the current tailings storage areas.

## **5 HISTORY**

### **5.1 Mining History**

The Aguila and Alta Gracia Projects are located in the regional Tlacolula mining district within the southwestern part of the state of Oaxaca, Mexico. According to the Mexican Geological Survey, the Servicio Geologico Mexicano (SGM), mining activity was initiated in the early 1880s in the Tlacolula mining district with production of some 300,000 ounces of gold and silver from an ore shoot of the La Leona mine, although no separate amounts of production were reported for each metal. SGM reports that in 1892 two smelters were built and operated (Magdalena Teitipac and O’Kelly) near the village of Tlacolula for processing ores from the Alta Gracia, La Soledad, San Ignacio y Anexas, La Leona, La Victoria, and San Rafael silver mines. Subsequently, in 1911, Mr. Sken Sanders carried out investigations of the Totolapam mining region with special interest in the Margaritas mine. Most of these historical mines are situated within DDGM’s mining concessions.

The Aguila and Alta Gracia projects are located in the smaller mining sub districts of San Jose de Gracia and Alta Gracia, respectively. Only small-scale artisanal mining has been historically conducted in these districts. No reliable production records exist for the historic production conducted in the Aguila and Alta Gracia Project areas.

## 5.2 Previous Exploration and Development

GRC has carried out a continuous drilling program since 2003 when the company took control of the Aguila Project mining concessions which are now part of GRC's Don David Mine. GRC continues development of an aggressive exploration program that also includes underground mine development, such as access ramps, drifts and crosscuts into the Arista, Switchback and Alta Gracia vein systems.

In 1998 - 1999, prior to GRC's involvement, the Aguila Project concessions were leased to Apex Silver Corporation (Apex). Apex carried out an exploration program involving geologic mapping, surface sampling and an 11-hole reverse circulation (RC) drilling program (1,242 m) into the Aguila flat lying vein (manto-style) deposit.

## 5.3 Don David Mine Production

The Aguila and Alta Gracia Projects are located in the smaller mining sub districts of San Jose de Gracia and Alta Gracia, respectively. Only small-scale artisanal mining has been historically conducted in these districts. No reliable production records exist for the historic production conducted in the Aguila and Alta Gracia Project areas.

Since commencement of production from the Don David Mine in 2010, DDGM has produced 298,125 ounces of gold and 22,339,923 ounces of silver from the 4,537,678 tonnes shipped to the Aguila Plant (Table 5.1). In addition, 12,376 tonnes of copper, 50,306 tonnes of lead and 141,182 tonnes of zinc have been produced from the plant.

**Table 5.1 Don David Mine Production 2010 through 2020**

Year	Milled Tonnes	Gold Oz	Silver Oz	Copper Tonnes	Lead Tonnes	Zinc Tonnes
2010	166,237	10,493	111,316			
2011	214,215	21,586	2,180,309	620	1,840	3,730
2012	282,120	34,417	2,996,743	986	3,374	9,115
2013	316,270	33,942	3,032,841	926	2,742	7,452
2014	375,623	35,552	3,297,204	1,254	4,555	13,195
2015	413,626	29,644	2,506,337	1,310	4,174	13,900
2016	450,221	27,628	1,857,658	1,035	4,049	14,302
2017	449,177	28,117	1,773,263	1,141	5,365	16,301
2018	611,670	26,838	1,672,034	1,652	7,280	19,808
2019	693,173	29,435	1,722,852	1,859	9,202	23,683
2020	565,346	20,473	1,189,366	1,593	7,725	19,696
<b>Totals</b>	<b>4,537,678</b>	<b>298,125</b>	<b>22,339,923</b>	<b>12,376</b>	<b>50,306</b>	<b>141,182</b>

## **6 GEOLOGICAL SETTING, MINERALIZATION AND DEPOSIT**

The Don David Mine area is dominated by multiple volcanic domes of various scales, and it is suspected that non-vented intrusive domes also, dominate the district geology. These volcanogenic features are imposed on a pre-volcanic basement of sedimentary rocks. Gold, silver and base metal mineralization in this district is related to the manifestations of this classic volcanogenic system and is considered epithermal in character.

### **6.1 Regional Geology**

The Don David Mine is located in the physiographic sub-province of Tierras Altas de Oaxaca, which is part of the Sierra Madre del Sur physiographic province, in the southeastern part of Mexico.

The regional geology encompassing the Don David Mine is dominated by volcanic rocks that vary in composition from rhyolitic to andesitic in flows, tuffs, agglomerates, and ignimbrites.

The Don David Mine includes mineral deposits situated along a 55-km NW–SE mineralized trend which is hosted by volcanic, sedimentary, igneous, and metamorphic rocks ranging in age from Miocene to Cretaceous.

Figure 6.1 shows the regional geology for the Don David Mine area taken from SGM (formerly the CRM; Sánchez Rojas et al., 2000). Figure 6.2 shows the stratigraphic column for rock units shown on Figure 6.1 and corresponding to DDGM's local geologic investigations.

### **6.2 Local and Property Geology**

The Aguila and Alta Gracia Projects are located in old mining districts which had been inactive since about the 1950s, until DDGM initiated geologic reconnaissance in search of precious metal deposits.

#### **6.2.1 Aguila Project**

A semi-detailed regional geologic map of the area at scale of 1:5000 was initiated in 2007 by DDGM's on-site geologic staff (Fig. 6.3). The recorded information included lithology, structural, alteration zone features, and hand sample locations. Previous information based on aerial photographic interpretation and field data were incorporated in the geologic map.

A Cretaceous sedimentary lithic sequence, composed of fine-grained sandstones intercalated with shale, siltstone, and calcareous rocks, has been identified in outcrops on the central part of the Aguila Project area surrounding the Cerro Colorado peak and in drill hole intercepts. Younger andesite, rhyolite, intrusive dikes, and small stocks of granitic to granodiorite composition crop out within the area and have been

intercepted in drill holes. The intrusive rocks appear to have caused structural conditions favorable for subsequent deposition of mineralization along dikes, faults and breccia zones, as well as replacement and skarn deposits into favorable contact zones with the sedimentary sequence.

The mineralized structures appear to be associated with a transpressional structural system which intersects an interpreted Tertiary-aged volcanic “caldera.”



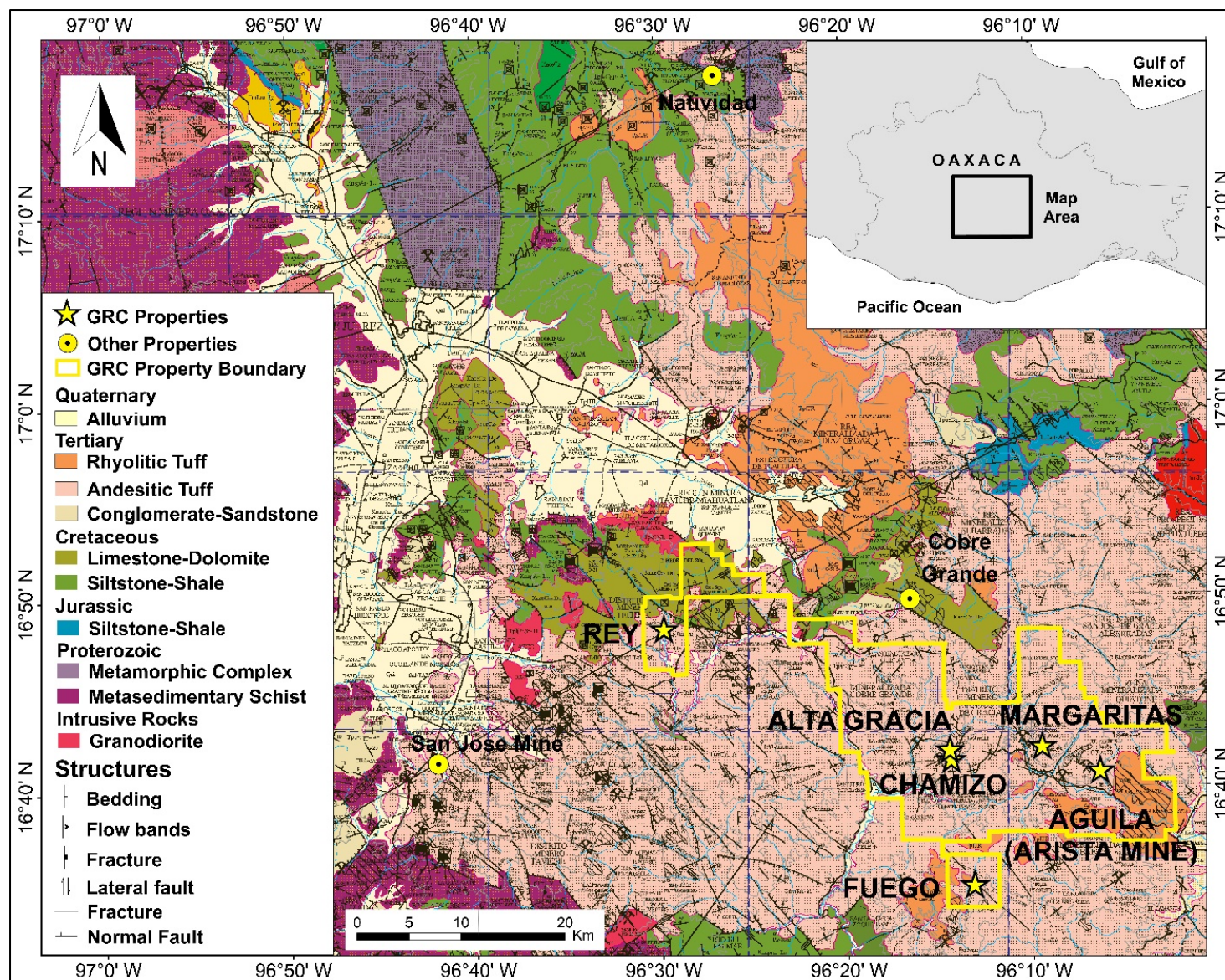


Figure 6.1 Don David Mine Regional Geology Showing DDGM Concession Boundaries in Yellow (after Sánchez Rojas et al., 2000; map insert from INEGI 2019).



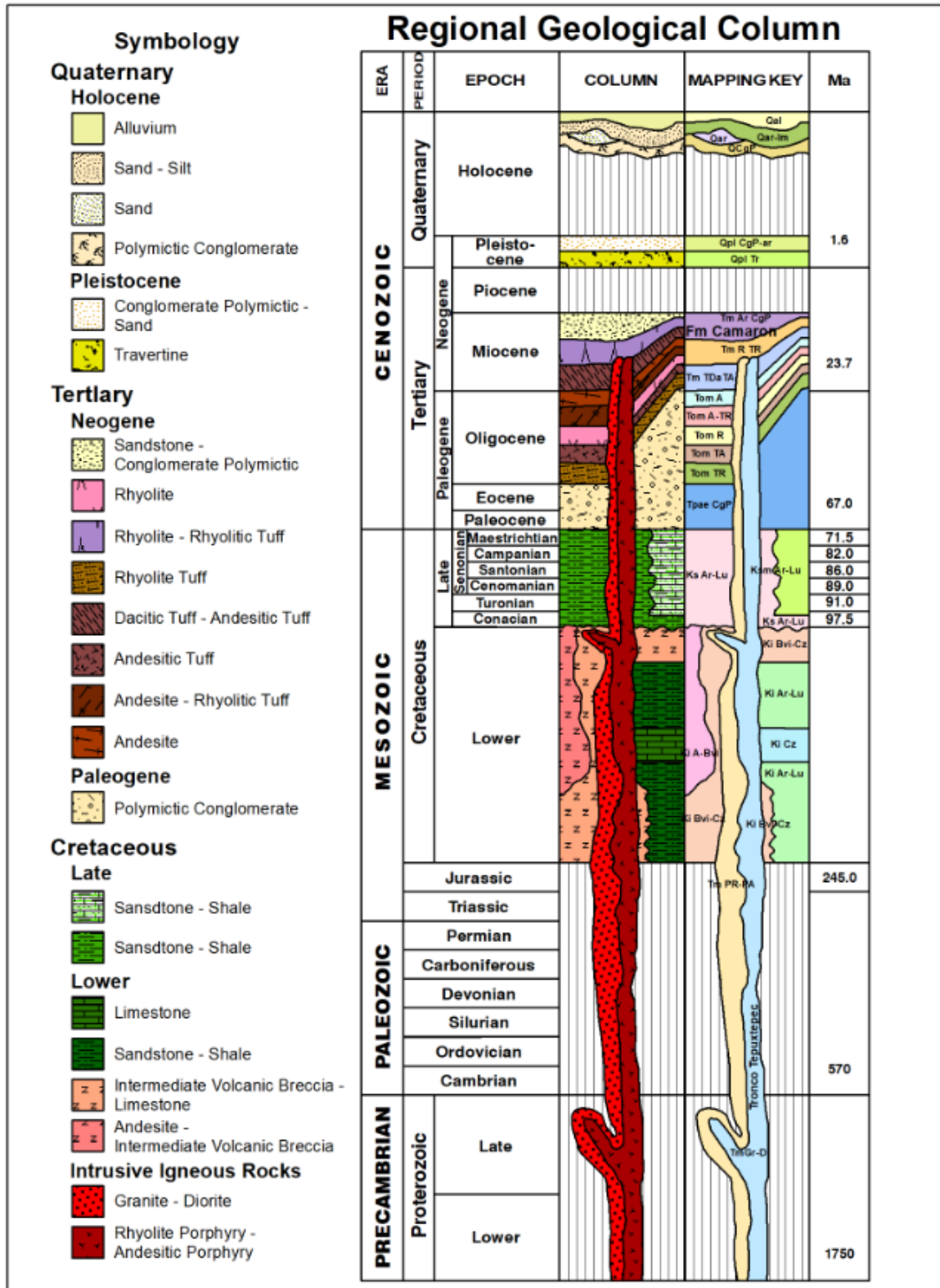


Figure 6.2 Stratigraphic Column for the Don David Mine Area

### 6.2.1.1 Stratigraphy

The stratigraphy of the Aguila Project area can be divided into a Cretaceous basement and overlying Tertiary units, as shown in Figure 6.3. The Cretaceous units are composed of rocks of sedimentary origin, weakly to moderately metamorphosed and intensely deformed by structural (or compressive) shortening. These rocks are unconformably overlain by the Tertiary units comprised mainly of sub aerial volcanic rocks. The rocks of Tertiary cover have experienced only extensional deformation and in some places are gently tilted. The Tertiary-aged rocks correspond to a period of tectonism accompanied by volcanism and intrusive magmatic activity.

According to geologic investigations by DDGM's on-site staff and numerous consultants the predominant rocks identified within the Aguila Project area include volcanic rocks of medium to acid composition (andesite and rhyolite).

#### 6.2.1.1.1 Rocks of Cretaceous Age

- **Black Breccia (KAr-Lm-Md)** - The basement rocks within the Aguila Project area consist of the Late Cretaceous formation locally referred to as "Black Breccia". This formation consists of lithic sedimentary rocks composed of carbonaceous shale, fine-grained sandstone, siltstone, and calcareous rocks including some layers of argillaceous limestone. The Black Breccia strata occur in thicknesses that vary from 5 - 80 cm, while sandstone beds may reach up to 1.00 m in thickness. The formation hosts rounded lithic fragments of a few millimeters up to 1.00 m in diameter and are composed of the same host formation which may have originated as a result of tectonic events. This formation occurs in the area surrounding Cerro Colorado peak. Its thickness is about 300 m to 400 m according to the SGM, and dates from the period of Albian – Maastrichtian (Late Cretaceous), based on fossil identification.

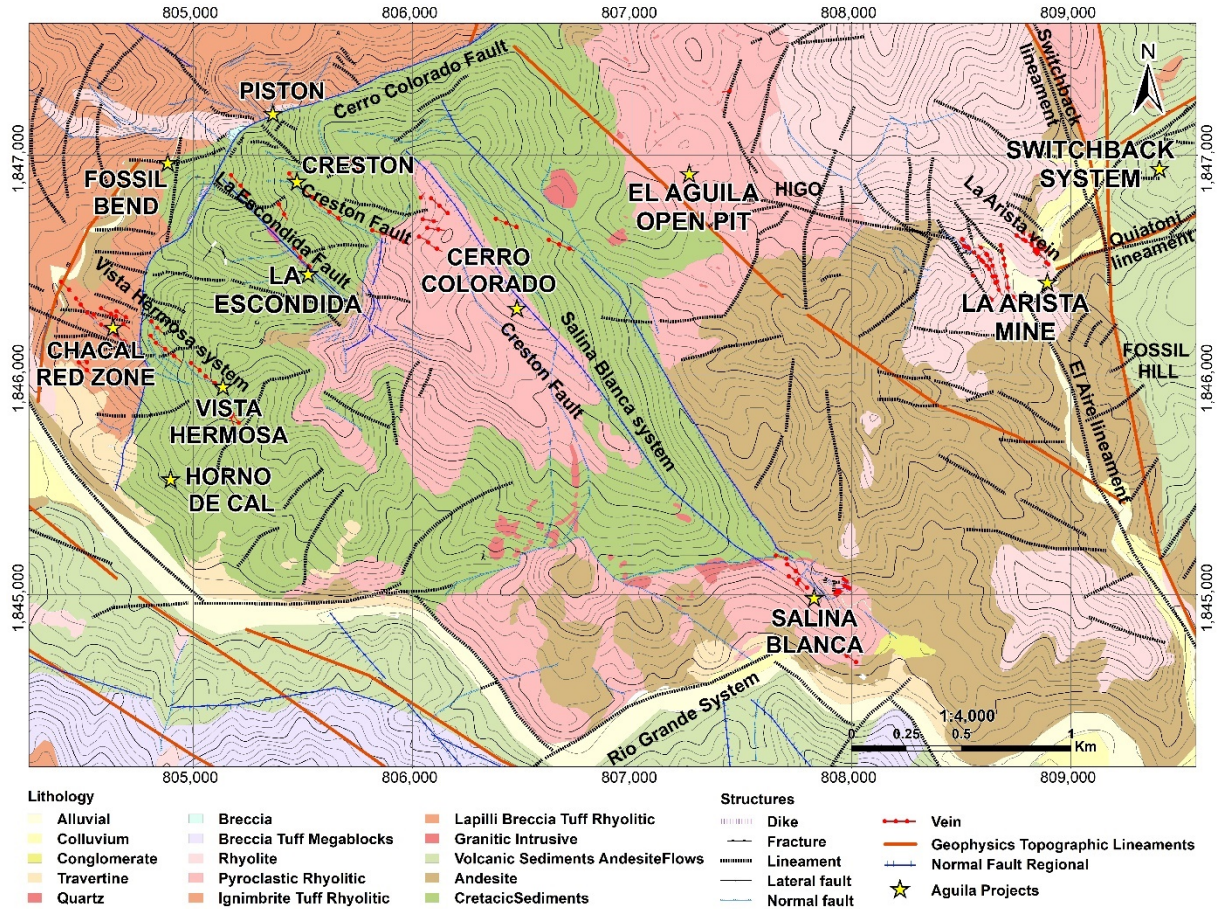


Figure 6.3 Geologic Map of the Aguila Project and Arista Underground Mine Area Highlighting Prominent Structures and Exploration Prospects or Mines

### 6.2.1.1.2 Rocks of Tertiary Age

The Tertiary units consist of a series of volcanic rocks of andesitic and rhyolitic composition occurring as flows, tuffs, ignimbrites, and agglomerates and have been classified as follows:

- Andesite (TM Tan-An)** - This unit was dated by Petr6leos Mexicanos (Murillo and Torres, 1987) as Late Oligocene – Early Miocene age (26.4 +/- 1.3 million years, Ma to 19.0 +/- 0.95 Ma); while SGM dated this unit as Middle to Late Miocene (15.3 to 17.32 Ma). This unit was classified as Laollaga Formation and consists of a series of andesite flows, tuffs, and breccia zones with complex contacts between volcanics. The unit outcrops in about 60 percent of the Aguila Project area proximal to and capping Cerro Colorado Peak.
- Rhyolite (Tm Ry)** - Consists of rhyolite flows with some pyroclastic phases hosting abundant phenocrysts of plagioclase and quartz crystals (“eyes”). Outcrops are noted in the northeast and southeast parts of the project area and overlie the andesite with discordant and structural contacts. In drill holes, it appears as lithic tuff (DH-107021). This unit was dated by SGM as Middle Miocene (16.57 to 15.82 Ma). This rock unit constitutes the core of the Cerro Pil6n dome.
- Pyroclastic Rhyolite (Tm PclRy – Ry)** - This unit crops out within the Aguila open pit, around the western slope of Cerro Pil6n, and on the slopes and top of Cerro Colorado. The unit consists of a sequence of strata with 10 - 30 cm thick beds, exhibiting clastic textures enclosing rock

fragments composed of shale and coarse-grained sandstone within a fine-grained matrix. The unit exhibits strong alteration; including silicification, argillization, and oxidation. This unit may be part of an underlying breccia unit. It has been identified in drill holes 105023, 106005, and 106009 with a thickness of 70 m to 135 m and it has been dated as of Middle Miocene age.

- **Rhyolite Tuff – Ignimbrite (Tm Try – Ig)** - This unit occurs on the north-western part of the Arista underground mine area. It consists of a series of pyroclastic units occurring as lithic tuffs with different degrees of consolidation. Typically, outcrops are present in the Chacal creek area, occurring as thin to massive strata 25 - 30 cm thick. The unit contains abundant lithoclasts enclosed by fine-grained matrix hosting quartz “eyes”. It has been considered to be of Middle Miocene age. According to Lipman (2011) this rock unit may be considered as an intra-caldera unit due to its significant thickness (260 m) intercepted on the southwestern slope of Cerro Pilón (drill hole 111001).
- **Rhyolitic Tuff – Agglomerate (Tm Try – Agl)** - This unit occurs as a mesa on the Tablón mountain to the north-east of San José de Gracia, consisting of a sequence of stratified lithic tuffs with intercalated ignimbrite beds of up to 5 m in thickness. These rocks contain quartz crystals, feldspars, and abundant rounded and sub-rounded, poorly classified, slightly consolidated fragments of ignimbrites. The unit has a thickness of about 200 m at the top of the Tablón Mountain. This unit’s physical characteristics, such as stratification including cross stratification, and rounded to sub-rounded fragments, indicate a volcano-sedimentary sequence where deposition was interrupted by volcanic events that caused deposition of intercalated beds of ignimbrites, rhyolites, and tuffs. It has been defined as of Late Miocene age.
- **Andesite (TPI An)** - This unit consists of massive dark-grey aphanitic andesite with occasional plagioclase crystals. Some dikes and sills of this unit intrude the Rhyolite Tuff – Ignimbrite unit at Chacal creek. The thickness is estimated at about 100 m and is of Pliocene age.

### 6.2.1.1.3 Intrusive Rocks

- **Granite – Porphyry Rhyolite – Felsic Rhyolite (Tm Gr, Pry, Ry-Fel)** - Few small outcrops of this unit have been observed within the Aguila Project area, namely at the eastern side of the Arista underground mine, and on the top of the Cerro Colorado peak. In outcrop, they appear as granular holocrystalline rocks composed of white feldspar with quartz. This unit has been intercepted as dikes in some of the Arista mine area drill holes. The unit appears to be related to other regional rhyolite intrusions and may have played a role in the uplift of the Cerro Colorado dome. These rocks are considered to be Middle Miocene age.

### 6.2.1.1.4 Other Rocks of Quaternary Age

The youngest rocks identified in the Aguila Project area include surficial deposits of alluvium, colluvium, and gravel as products of weathering of the surrounding pre-existing units. Locally and particularly near Salina Blanca, active travertine deposition occurs as a result of infiltration and deposition of carbonate bearing water, which may be an indication of an active hydrothermal system and/or dissolution of carbonate sedimentary rocks.



### 6.2.1.2 Structure

The Aguila Project coincides with a structurally complex system. Numerous lineaments have been identified on satellite images and aerial photographs, many of which were later verified during field investigations and drilling. Figure 6.3 highlights the prominent structures discussed below.

The identified structures have been grouped to define a possible regional transpressional wrench-fault system determined by relative movements and inter-relations between the various individual structures. The most significant regional structures within the Aguila Project area, and shown on Figure 6.3, are summarized as follows:

- **Río Grande System** - Identified along the valley of the Río Grande River in the southern part of the area and is represented by a series of sub-parallel faults, oriented ENE - WSW with an ancillary system of perpendicular fractures with a NW-SE orientation.
- **Aire Lineament** - Occurs as strong quartz vein (Aire vein) along the Aire creek and adjacent to - Arista mine road, striking N25°W cutting the local andesite and rhyolite units. In the Arista mine area this lineament changes orientation to the north, and appears to be intersecting two other lineaments, Quiatoni and Higo.
- **Quiatoni Lineament** - This lineament is oriented N60°E and is located at the eastern side of the Arista mine. It cuts through andesite and a lithic agglomerate tuff unit. A drill hole intercepting an ore shoot at the Arista mine appears to be related to this structure. Other sub-parallel structures have been identified to the north of the Quiatoni structure which appears to indicate a strong and wide structural system.
- **Switchback Lineament** - Occurs as a sub-parallel structure to the Aire Lineament oriented at N17°W. It is enclosed by pyroclastic acid volcanic rocks and rhyolite that constitute part of the Pílon dome. This lineament was intersected in drill hole 108030 as a significant fault zone.
- **Higo Lineament** - Occurs along the Higo creek oriented N78°W and is projected from the Arista underground mine to the Aguila open pit mine. Outcrops exhibit quartz veins and veinlets along fractures within the lineament system.
- **Arista Vein System**- Consists of up to 40cm thick vein exposed along Arista ridge oriented N45°W, 70NE. Drilling has defined this significant vein system to a depth of more than 500m and extending at least 650m along strike with a thickness varying from 3 to 5m. The vein corresponds to high-grade mineralization in the Arista underground mine workings.
- **Salina Blanca System** - Composed of two parallel faults oriented N39W hosting sub-parallel structures, exposed on the northeast side of Cerro Colorado peak. Locally the structure exhibits evidence of lateral and vertical movement, as well as strong silicification and stockwork, quartz veins and often exhibits disseminated oxidation.
- **Crestón Fault** - Exposed as a sub-vertical structure with “en echelon” configuration, the SE extension in the Cerro Colorado area strikes N32°W, while its NW extension exhibits a N66°W orientation. Quartz veins with intense silicification associated with the structure occur at the contact with sedimentary rocks. This structure is associated with the Escondida, Vista Hermosa, and Salina Blanca systems surrounding the Cerro Colorado peak, and appears to bound the Cerro Colorado uplift, generating a horst (or piston-like) configuration.
- **Escondida Fault** - Occurs on the western side of Cerro Colorado peak as a normal fault oriented N40°W, dipping to the SW. At the Escondida mine area, this fault is associated with a quartz vein and a rhyolitic dike, and base metal mineralization is also present within the structure.

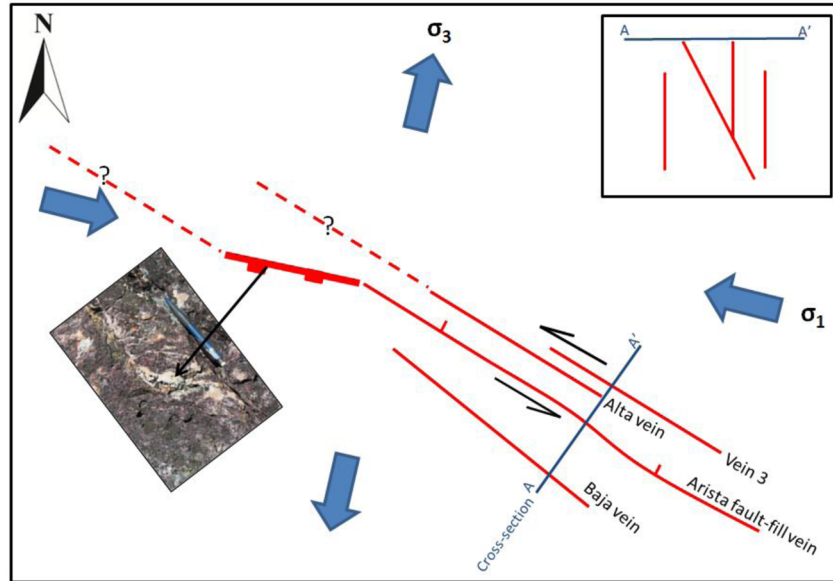
- **Vista Hermosa System** - Consists of a group of sub-parallel normal faults with an average strike of N40°W, dipping to the SW. It is considered as part of the “en echelon” systems of Creston and Escondida in the southwestern area of Cerro Colorado peak. This system shows evidence of vertical movement and hosts quartz veining with associated mineralization.
- **Cerro Colorado Fault** - Occurs as a curvilinear normal fault orientation N7°E, N30°E, and N70°E on the western and north-western sides of Cerro Colorado peak respectively. Quartz veins and mineralization are associated with the fault zone an area nominated as the “Red Zone”.
- **Chacal Fault** - Occurs on the northern side of the Chacal creek oriented N25°E and exhibits evidence of lateral movement. This fault appears to have been displaced by the Escondida and Vista Hermosa structural systems.

#### 6.2.1.2.1 Local Structures

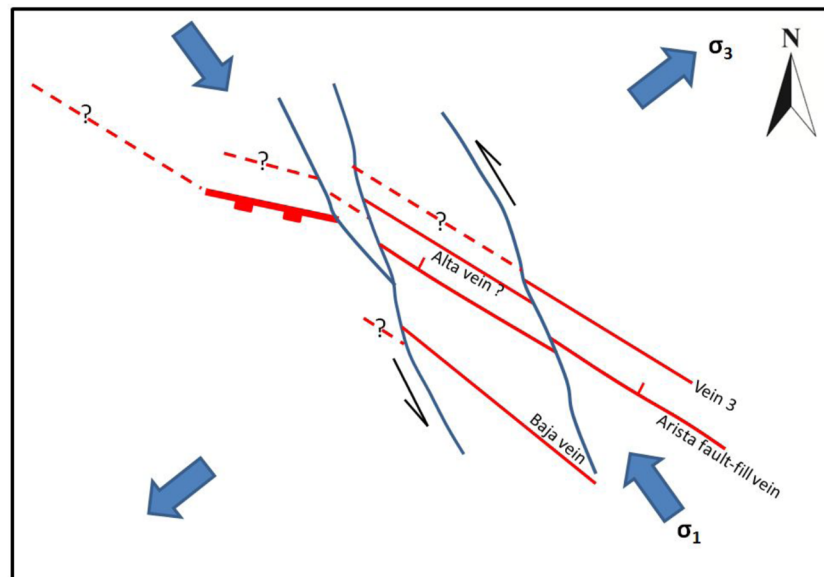
Detailed structural examination from underground mine workings, surface exposures, and drill core intercepts (in context of the regional regime) provide evidence of transpressional-wrench faulting as the dominant structural control at the Aguila Project. Consultants of SRK (Canada) performed site visits and subsequent desktop studies at the mine project in 2012 and 2013 examining the kinematics and overall structural system (Vos et al, 2012; Couture, 2012; Kramer and Couture 2013). Their conclusions support previous conceptual models and are summarized below (Fig. 6.4):

- The Arista Fault is a northwest-striking, steeply northeast-dipping fault zone that comprises breccia and colloform veins and exhibits evidence for sinistral strike-slip fault movement. It is composed of two main segments oriented at 305° and 280° (100°)
- The Alta Vein and Vein 3 are northwest-striking, sub-vertical fault zones that comprise breccia and colloform veins and exhibit evidence for sinistral strike-slip fault movement with minor components of dip-slip movement; additional post mineralization offset is oriented at 345°.
- The 100 Vein (Arista NW trend transitioning to Santiago vein) is a 100° (280°)-striking, sub vertical extensional vein that comprises breccia and colloform veins, and exhibits evidence for normal-dextral movement along a rare sub-fault bounding the vein;
- The Baja Vein is a 320°-striking, sub vertical extensional vein that comprises mainly colloform veins and limited breccia and exhibits only a narrow fault zone along its walls;
- Approximately 345° (165°) striking, sub vertical sinistral strike-slip faults offset gold-silver-lead-zinc-bearing veins and are interpreted to post-date mineralization.

Late structural events are suspected to play a significant role in the current configuration of vein positions (Fig. 6.5) with the most prominent trend oriented 340-350° (sinistral strike-slip, +/- oblique thrust). Many veins including Baja exhibit internal deformation (multiphase concurrent with mineralization and post mineralization), and several splays including Arista and Vein 3 are suspected to have been juxtaposed side-by-side by the post mineralizing events such that an artificial thickening of veins results from transposition or “stacking”. Evidence has been documented on measurable fault surfaces exposed in the upper levels of current mine workings on the Arista fault vein, Vein 3 and Baja vein to support this interpretation. Likewise, bonanza grades have been attributed to these intersecting structural sites.



**Figure 6.4 Simplified Structural Framework Sketch (highlights observed fault-vein geometries for the Arista mine, inset photo illustrates outcrop expression of dilation jog as favorable sites for vein/mineralization) (mod. from Vos et al., 2012)**



**Figure 6.5 Generalized Structural Framework Sketch, indicating post-mineralization deformation of the Arista vein system (mod. from Vos et al., 2012)**

### 6.2.2 Alta Gracia Project

Since April 2010, DDGM's on-site geologic staff has reviewed available information and conducted preliminary geological reconnaissance and semi-detailed surface and underground geological mapping in historic mining areas on the Alta Gracia property (Fig. 6.6). The recorded information included lithology,



structural, alteration zone features, and hand sample locations. Previous information based on aerial photographic interpretation and field data were incorporated in the geologic map.

### **6.2.2.1 Stratigraphy**

Geological mapping by DDGM geologists has shown the historic Alta Gracia mining district to be dominated by rhyolite flows and tuffs which are underlain by andesite flows and tuff. Granodiorite and felsic intrusives are observed to outcrop to north and east of the Mirador mine.

The sedimentary and volcanic units mapped at Alta Gracia are similar to those observed at the Aguila project. Known vein occurrences are mainly hosted in andesite and rhyolite of Tertiary age.

The rock units mapped on the Altagracia Project can be divided as follows:

- Cretaceous-age basement sedimentary rocks consisting mainly of sandstone and calcareous sandstone units. These units are quite deformed and form numerous folds, in moderate to thinly bedded strata. Basement rocks can only be observed in the roadcuts of Panamerican Highway 190 in the vicinity of the town of San Juan Guegoyache. These rocks are possibly correlative with the unit informally named “Black Breccia” of the Aguila project. The basement rocks have not been encountered in DDGM’s drill holes, possibly due to the elevation differences with respect to where it outcrops (1,100 meters above sea level) and the area of the drilling (1,600 meters above sea level). Thick Tertiary volcano-sedimentary cover also unconformably overlies the Cretaceous sedimentary units.
- Tertiary-age volcano-sedimentary units consisting mainly of pseudostratified tuffs of intermediate composition that vary from ash tuffs to volcanic breccias, medium to coarse-grained texture, and containing principally subangular clasts. Pyroclastic units are locally intercalated with porphyritic andesite flows, that are possibly up to more than 400 meters in thickness. Also present are very localized, possible calcareous horizons with interbeds of colloidal silica, within the volcano-sedimentary units. These “exhalative” horizons can easily be confused with limestones interbedded with chert. Rhyolitic flows generally overly the pyroclastic and andesite units and crown the tops of the hills that make up the Alta Gracia area in the vicinity of historic mine workings. Rhyolite flows are typically white in color but become either yellow or brown when weathered. The texture is generally aphanitic with the presence of quartz and feldspars. The thickness is very variable and ranges from one to a few meters up to 150 meters, based on observations in drill holes completed to-date.
- Intrusive dikes of possible granodioritic and felsic composition are also present in Barrancón Creek. In some drill holes, hypabyssal rocks of probable monzonitic composition, have been encountered.

### **6.2.2.2 Structure**

The structural geology of the Alta Gracia area is somewhat masked at surface by the presence of extensive soils and vegetation. Numerous quartz veins, however, are exposed in accessible underground workings and prospect pits at Alta Gracia. Veins cut through two different volcanic formations; rhyolite near the surface and an underlying andesite where observed in deeper underground mine workings and drill holes. Two dominant vein trends have been mapped: N25°E dipping 65° - 85°NW and N50°E dipping 65° - 85°NW. Vein widths generally average from 20cm to just over 2m (true width). At least 9 major veins/vein systems have been identified at Alta Gracia that include the following:

- **Mirador Vein** - The Mirador vein is a fissure filling vein hosted in andesite with a bearing 240 ° - 250 °, dip of 60 ° - 80 ° NW and a variable thickness of 0.80 to 1.80 meters. The Mirador vein is offset by a system of transverse faults bearing 340 ° -350 °NW, dipping 45 ° -60 ° NE, with displacements of 1 to 11 meters.
- **Huaje Veins** - Two principal parallel veins, separated by 25 to 75 meters, comprise the Huaje vein system. These veins strike from 230 ° -240 ° with a dip of 65 ° -70 ° NW and variable thicknesses from 0.80 to 0.90 meters. The Huaje veins occur along faults hosted in andesite.
- **San Juan Veins** - The San Juan and at least 5 subparallel ancillary veins strike 200 ° -210 ° with a dip of 60 ° -80 ° NW and a variable thickness of 0.30 to 1.20 meters. The veins are hosted in rhyolitic flows.
- **Victoria Vein** - The Victoria vein strikes 190 ° -210 °, dipping 70 ° -80 ° NW, and has a variable width from 0.15 to 0.60 meters. It is hosted in rhyolite flows.
- **Independencia Vein** - The Independencia vein has bearing of 240 ° -250 °, a dip of 60 ° -80 ° NW and average thickness of 0.40-1.20 meters with intervals of up to 10 meters (pinch and swell). It is mainly hosted in rhyolitic flows.
- **Aguacatillo Veins** - The Aguacatillo area is comprised of two vein systems with very similar strikes of 40 ° -50 °, dipping 80 ° -85 ° SE, and thicknesses varying between 0.25 to 0.50 meters. To the west, veins are hosted by rhyolitic flows and to the east they occur in andesitic tuff.
- **Chamizo Vein** - The Chamizo vein has bearing of 260 ° -280 ° and dips 45 ° - 70 ° NW. The vein contains good base metal values over very narrow widths (from 0.10 to 0.30 meters). The Chamizo vein is hosted in andesite tuff.
- **Navajas Veins** - Navajas veins consists of a system of subparallel veins of variable thickness (0.20 -0.30 meters) with a bearing of 30 ° -40 °, a dip of 70 ° -80 ° SE and contains significant levels of gold and silver. The veins are hosted in rhyolitic flows.
- **Base Metal Prospect** - In the southwest part of Alta Gracia is a prospective area with significant base metal showings. Mineralization is hosted at the rhyolite tuff and andesite contact with abundant carbonate flooding and local fault gouge. This is an area undefined by any historic mine workings, but mapping indicates that it lies at the intersection of 3 structures. The intersection coincides roughly with a N45E trending fault/contact between andesite and rhyolite.

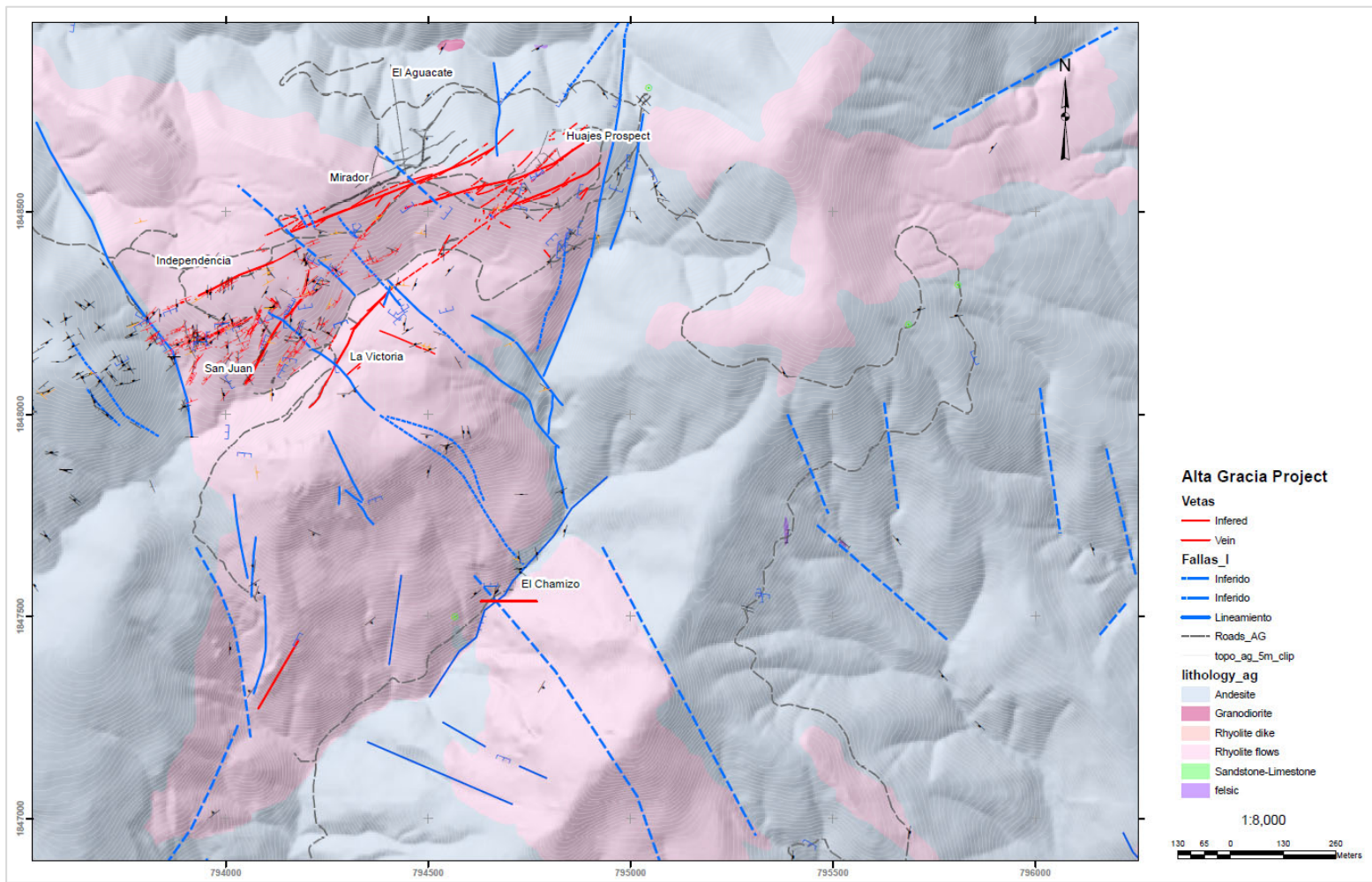


Figure 6.6 Plan Map Showing Geology and Vein Targets/Prospects at the Alta Gracia Property.

### 6.3 Mineralization

The Don David Mine mineralization occurs as structurally-controlled epithermal deposits in veins and stockwork zones consisting of concentrations of sulfides containing gold, silver, lead, copper, and zinc, associated with gangue minerals such as quartz, calcite, and other minor minerals. The economic mineralization at the Arista Mine is gold, silver, copper, lead and zinc. Structurally-controlled epithermal veins and stockwork zones at Alta Gracia Project contain mainly silver-gold bearing sulfides. The economic mineralization currently being exploited at the Alta Gracia Project is only gold and silver.

Primary sulfide mineralization within the mineralized structures, containing pyrite, galena, sphalerite, argentite, some chalcopyrite, and other silver sulfosalts associated with quartz and calcite as gangue minerals, are found at depth.

Weathering of the mineralization has caused oxidization and shallow secondary enrichment zones containing sulfosalts (cerargyrite, pyrargyrite, stephanite) and carbonates (cerussite, hydrozincite, hemimorphite), sulfates (anglesite, willemite), and iron oxides (hematite, limonite, etc.) that may reach depths of up to 150 m from the outcroppings. Other mineralization indicators such as alteration-replacement events recorded in the rocks include the presence of alunite-natrojarosite-jarosite, and widespread sericitization and potassium alteration (adularia) especially in the Margaritas and Trenes prospect areas.

A petrographic study (Hansley, 2014) indicated additional species of silver sulfosalts including miargyrite, freibergite, and acanthite associated with mineralization particularly at the Alta Gracia prospect. Samples from Splay 5 at the Arista mine exhibited abundant gold intimately associated with chalcopyrite and associated with pyrite and galena. Other important determinations included disequilibrium features representing possible hybridization of intrusive units (Chacal-Escondida-Fossil Bend areas), alteration assemblages such as widespread sericitization and potassium alteration (including adularia) at Margaritas and Trenes. And finally, identification of associated Na-K alteration (alunite-natrojarosite-jarosite) indicates a hypogene event was present in the district.

Economic concentrations of precious metals are present in “shoots” distributed vertically and laterally between non-mineralized segments of the veins. Vein intersections are locally the site of important historic bonanzas. Overall, the style of mineralization is pinch-and-swell with some flexures resulting in closures and others generating wide cymoidal breccia zones. A schematic cross section through the deposit illustrates the general geologic configuration based on drilling intercepts (Fig. 6.7). Recent production has mainly been extracted from two principal vein systems, the Arista and Baja, and their related splays at the Arista underground mine at the Aguila Project. Other significant veins and/or deposits at Aguila include the historically exploited Aire and Aguila Manto veins and the more recently identified Switchback vein system. Significant historic underground production was also extracted from the Mirador and other veins at the Alta Gracia Project.



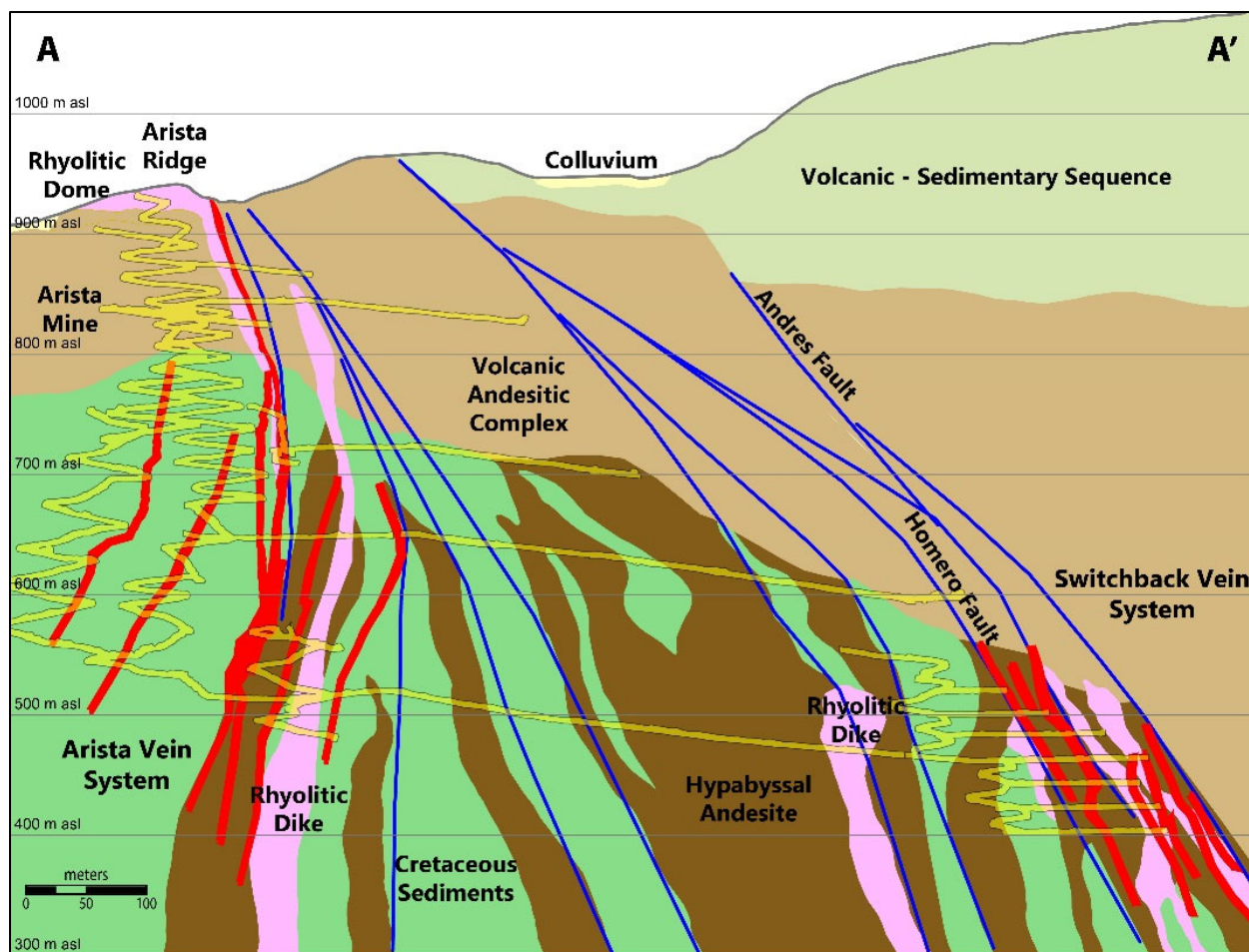


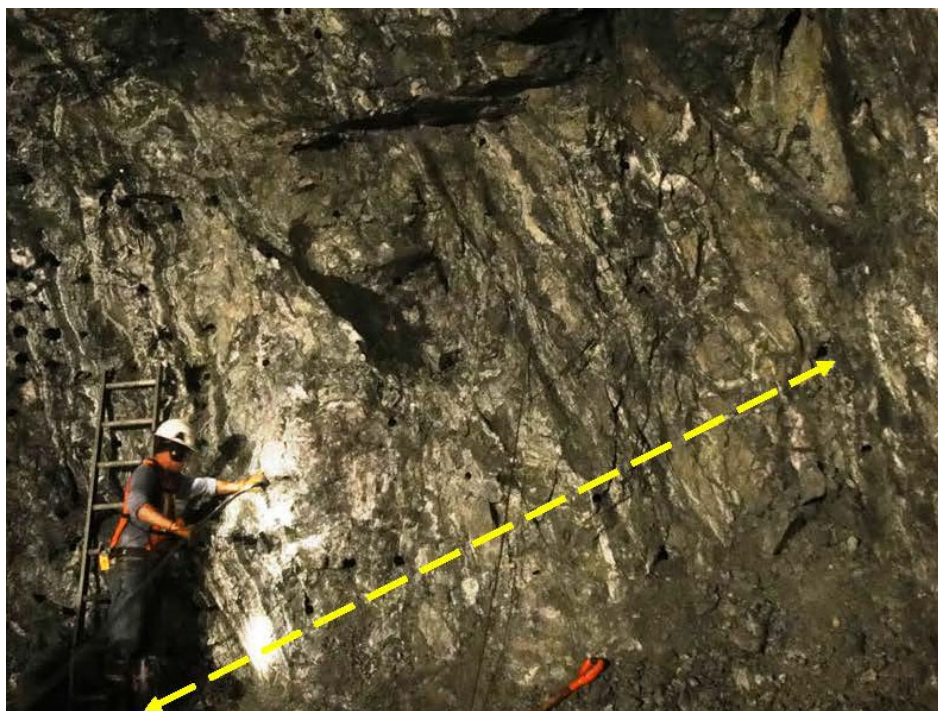
Figure 6.7 Schematic Cross-Section View Looking Northwest at the Arista and Switchback Veins.

### 6.3.1 Arista Vein

The Arista vein consists of multiple parallel veins and splays of varying length and width associated with the predominant fault bounded structure and the vein is enclosed in strongly silicified rhyolite breccia including stockwork zones that occur associated with the vein. Mineralization is present as multi-phase (related to discrete structural and leaching events within the bounding fault) however a restricted mineralogy is associated with variable grades and textures from fault contacts inward. Mineralization is often a range/mix of breccia, colloform banded quartz, crustiform quartz, and multi-phase banded sulfides with coarse-grained quartz intergrowths. Base-metal sulfides include massive galena, sphalerite, and chalcocopyrite; +/- disseminated remnants of pyrite; +/- trace rhodochrosite; later quartz veins cut through sulfides; other trace sulfides include euhedral arsenopyrite overgrowths on dendritic native silver, magnetite, pyrrhotite, pyrite, acanthite, boronite, and tetrahedrite-tennantite. Areas of secondary sericite, clay and microcrystalline quartz are often observed in petrographic analysis with complex intermixtures of hydrothermal, metasomatic, and retrograde minerals including cordierite, diopside, albite, calcite, epidote, adularia, chlorite, and clay. EM-EDX analyses confirmed the presence of argentite and freibergite

associated with leaching of base metals. Gold and silver are suggested as occurring late in the paragenetic sequence (after base metal sulfides and after a leaching/fracturing event). Gold occurs as micron-size “inclusions” in “recrystallized” arsenopyrite around vugs; antimony also appears related to gold in petrographic evidence (Hansley, 2012).

Underground production and exploration of the Arista vein has developed more than 600 m of ore grade mineralization along strike on multiple levels. The Arista vein was first investigated by cross cutting on Level 2 at 872 meters above sea level (masl), where it occurs as a narrow vein (35 cm to 40 cm). There is an indication that the vein was emplaced below the current surface, where only a narrow zone of silicified outcrop represents the expression of the vein. In the mine at 4 Level (831 masl), the vein has a 5.5 m true width. Figure 6.8 illustrates typical vein morphology in underground workings at the Arista mine.



**Figure 6.8 Typical Colloform Banded Style of the Arista Vein (mine Level 6). Vein is nearly 5m wide from foot of miner to upper right of photo as indicated by yellow arrows.**

### 6.3.2 Baja Vein

The Baja vein was discovered during an exploration drilling program on the Arista vein and generally hosts high-grade silver mineralization. The Baja vein occurs as 1.0 m to 1.5+ m wide mineralized structure with mineralization hosted within fractures and opened spaces as crustiform occurrences. The vein is composed of several splays and parallel veins of varying lengths and widths and includes Splay 66. The average orientation is  $310^{\circ}$ , dipping  $70^{\circ}$ E to vertical, and has been developed to date, by underground workings in the Arista mine to 700-800 (masl). It has an indicated strike length (defined through drilling) of at least 500m. The vein appears as multi-phase vuggy textured, crustiform banded, coarse-grained

quartz, with replacement of carbonate, locally adularia replaced by carbonate is noted. Sulfides include very fine to very fine-grained and banded occurrences (often disseminated at vein contacts), including bladed galena (possibly replacing carbonate), massive sphalerite, coarse stibnite, fine grained and disseminated chalcopryite and pyrite, other important sulfides include proustite ( $\text{Ag}_3\text{AsS}_3$ ), pyrargyrite ( $\text{Ag}_3\text{SbS}_3$ ) and other silver minerals. Petrography has identified submicroscopic gold, and argentite (after base metal sulfides), antimony associated with gold and trace amounts of kyanite, corundum, and garnet.

### **6.3.3 Aire Vein**

The Aire vein is located at about 100 m west of the Arista vein and is oriented  $345^\circ$ , dipping  $70^\circ\text{SW}$  to vertical. It is hosted mainly by andesite with some rhyolite occurring to the east of the vein towards the Arista deposit. The Aire vein has been traced for over 400 m along strike. Mineralization styles are similar to those veins previously described with abundant vuggy, replacement (after carbonate), coarse and crustiform quartz (locally recrystallized); sulfides occur often as massive masses including sphalerite, galena, proustite (microveinlets in sphalerite), disseminated arsenopyrite, and native silver; accessory minerals include abundant corundum (inclusions in quartz), adularia (as microveinlets) replaced by alunite, rhodochrosite rhombs (suggested as late stage or post event), calcite, sillimanite and kaolinite, fine grained K-spar and rounded zircon.

### **6.3.4 Aguila Manto Vein**

The Aguila manto vein consists of shallow dipping near surface epithermal quartz vein oriented  $N70^\circ\text{E}$ , dipping  $30^\circ\text{NW}$ , and is composed of sugary to coarse-grained quartz hosted in volcanic hydrothermal breccia (composed of large blocks of volcanic fragments and tuff). The host rock appears to transition from the volcanic breccia to a porphyritic rhyolite, which is highly silicified and cut by quartz veinlets generating a stockwork with strong oxidation after pyrite and marcasite. Some of the fragments contained within the breccia zone are un-silicified and include fragments of basement sedimentary rocks. Typical mineralization is hosted in microcrystalline to coarse and vuggy quartz hosting dominantly “horn silver” cerargyrite ( $\text{AgCl}$ ), with sulfosalts jamesonite, boulangerite common in vugs. In polished thin section gold appears exclusively within the “horn silver” and occurs with traces of pyrite, electrum, native silver, chalcopryite, covellite, +/- galena; abundant black to red oxides are also associated with antimony (bindheimite) and traces of native gold. Accessory minerals include disseminated calcite or aragonite and microcrystalline quartz, jarosite (after pyrite), illite (associated with quartz), leucoxene, and anatase (Hansley, 2008).

### **6.3.5 Switchback Veins**

Surface mapping in the “Switchback” Hill area, approximately 500 meters northeast of the Arista underground mine, indicated the presence of a NNW-SSE trending porphyritic felsic dike with associated intense sulfate (gypsum) alteration and minor quartz-amethyst veining. Geochemical rock chip samples



taken by DDGM geologists from this altered zone returned base metal anomalies with weakly elevated silver values. Subsequent holes drilled from the Arista mine underground workings into (beneath) this area intercepted multiple zones of well-mineralized vein material intimately associated with a strongly porphyritic felsic dike.

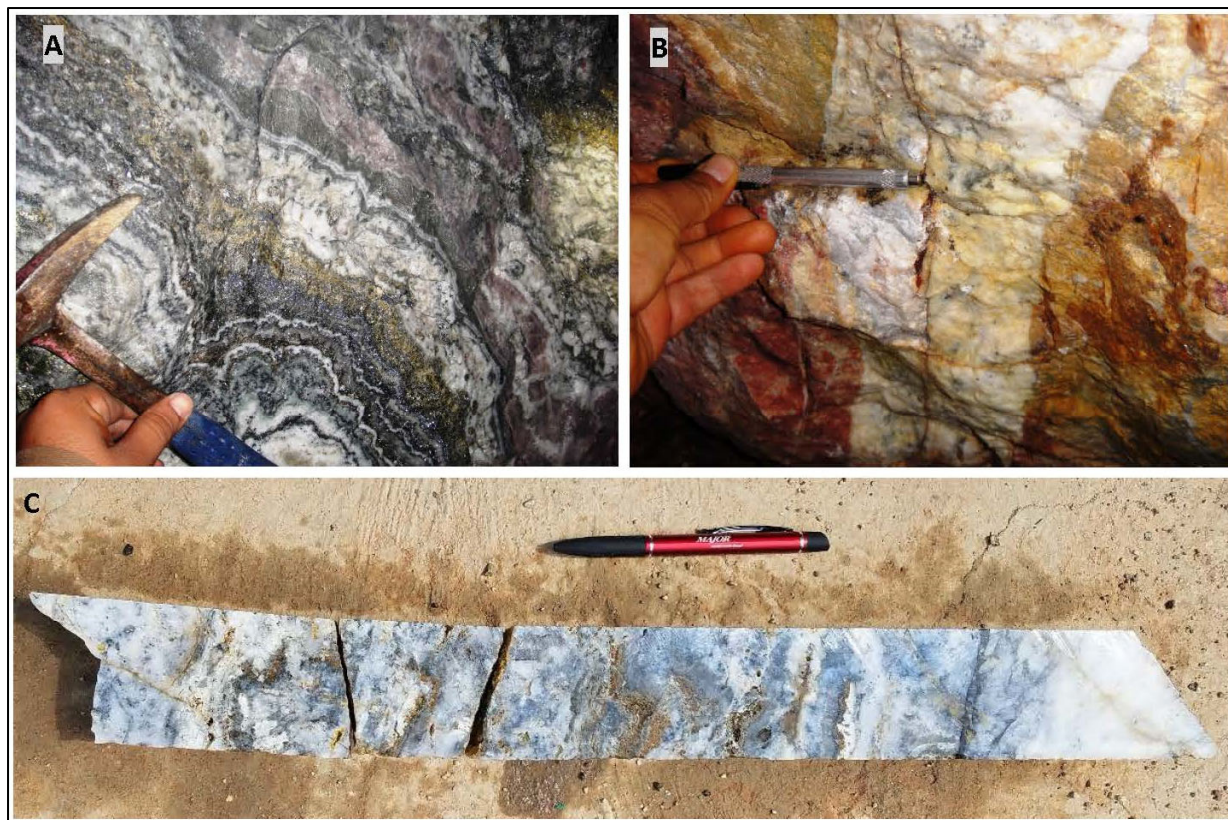
Like the Arista vein system, the Switchback vein system consists of multiple subparallel veins and splays of varying length and width. To-date, seven major veins have been identified in drill holes: Soledad, Sofia, Selene, Silvia, Sabrina, Sagrario and Susana. The quartz +/- calcite +/- dolomite/ankerite veins are hosted in andesite and associated with altered rhyolite porphyry dikes, similar to the Arista vein system. The enclosing andesite and rhyolite are strongly silicified and pyritized with locally intense quartz stockwork veining.

Switchback veins are typically brecciated with fragments of quartz and bleached, silicified andesite wallrock fragments. Colloform and/or crustiform textures are common with bands of quartz, sphalerite and galena in places encrusting breccia fragments. The breccia matrix mainly consists of fine-grained, dark grey quartz, the dark color due to presence of very fine-grained pyrite. Small, drusy quartz crystals filling vugs are observed locally. Mineralization in the Switchback veins is comprised of mainly pyrite with varying amounts of sphalerite, galena and chalcopryrite. The enclosing wallrock of the veins is strongly altered by silica, carbonate, clay (smectite-illite-sericite). Pyrophyllite and kaolinite are also present indicating that acid sulfate alteration took place, probably at the time of mineralization (Hansley, 2014).

### **6.3.6 Alta Gracia Veins**

The Alta Gracia property hosts multiple sub parallel veins and splays of varying length and width. Visible silver mineralization observed in the Alta Gracia veins includes accessory sulfide and sulfosalts such as pyrargyrite-proustite, arsenopyrite, abundant (3-5%) high color euhedral and disseminated pyrite, sphalerite, traces of covelite, jamesonite, tetrahedrite, stibnite, and galena. Vein textures included carbonate coatings on quartz, carbonate replacement by silica, banding/cockade white to grey quartz, drusy quartz coatings, massive amethyst, and open space voids and/or clay fillings. Other evidence of mineralization included minerals such as malachite-azurite, limonite-hematite and other oxides; and alteration as pervasive kaolinite, sericite, illite, extensive argillization, as well as locally vuggy silica flooding. Locally abundant pervasive silicification is noted, and often hosts disseminated pyrite.

Examples of mineralized quartz veins at DDGM's Don David Mine are shown in Figure 6.9.



**Figure 6.9** Examples of mineralized quartz veins at DDGM's Don David Mine. **A)** Colloform banded and crustiform quartz and banded sulfides of the Arista deposit from Mine Level 5 - note red banded mineralization in center (and throughout) is coarse ruby silver bordering banded quartz; view 0.5m wide **B)** Underground photo of narrow, low-sulfidation quartz vein from the Alta Gracia property. **C)** Drill core from Alta Gracia showing banded white to dark-gray quartz, open-space druzy quartz coatings, sulfides of pyrite, silver sulfosalts and arsenopyrite.

## 6.4 Deposit Type

The San Jose de Gracia and Alta Gracia gold- silver sub-districts of the Don David Mine are characterized by classic, high grade silver-gold, epithermal vein deposits with low to intermediate-sulfidation mineralization and quartz-adularia-sericite alteration. The veins are typical of most epithermal silver-gold vein deposits in Mexico with respect to the volcanic or sedimentary host rocks and the paragenesis and tenor of mineralization.

Epithermal systems form near the surface, usually in association with hot springs, and to depths on the order of a few hundred meters. Hydrothermal processes are driven by remnant heat from volcanic activity. Circulating thermal waters rising up through fissures eventually reach a level where the hydrostatic pressure is low enough to allow boiling to occur. This can limit the vertical extent of the mineralization, as the boiling and deposition of minerals is confined to a relatively narrow range of thermal and hydrostatic conditions. In many cases, however, repeated healing and reopening of host structures

can occur, imparting cyclical vertical movement of the boiling zone and resulting in mineralization that spans a much broader range of elevation.

As the mineralizing process is driven by filling of void spaces and fissures, mineralization geometry is affected by the permeability and orientation of the host structures. Mineralization tends to favor dilatant zones in areas where fractures branch or change orientation, which may be driven, in turn, by wall rock competency and/or relative hardness of individual strata.

Low to intermediate-sulfidation deposits are formed by the circulation of hydrothermal solutions that are near neutral in pH, resulting in very little acidic alteration with the host rock units. The characteristic alteration assemblages include quartz, illite, sericite and adularia that are typically hosted either by the veins themselves or in the vein wall rocks. Essentially all of the major veins at the Don David Mine have silicification halos. The hydrothermal fluid can travel along discrete fractures creating vein deposits, or it can travel through permeable lithology such as poorly welded ignimbrite flows, where it may deposit its load of precious metals in a disseminated fashion.

Epithermal veins in Mexico typically have a well-defined, sub horizontal ore horizon about 300 m to 1,000 m in vertical extent, where high grade ore shoots have been deposited by boiling hydrothermal fluids. The minimum and maximum elevations of the mineralized horizons at the Don David Mine have not yet been established but current production spans a vertical elevation range of approximately 400 m, from 850 down to 450 m elevation above sea level. The mineralized horizon has been extended by drilling another 250 m vertically, down to the 200-meter elevation above sea level.

Similar geologic characteristics are present in other mining districts in Oaxaca. Another example includes Fortuna Silver's San José mine, located closer to the city of Oaxaca, where mineralization has been reported to span vertical elevation ranges greater than 600 m.

## 7 EXPLORATION

DDGM's detailed exploration investigations have been mainly focused on the Aguila open pit and Arista underground mine areas. This area includes the significant Aguila manto and Arista, Baja and Aire and Switchback veins as well as other ancillary mineralized structures. Other mineralized zones and properties have been investigated, including some preliminary drilling in areas such as Escondida, Chacal and Salina Blanca on the Aguila Project, and the Margaritas, Alta Gracia and Rey properties.

Primary exploration targets are extensions of vein mineralization at depth and along strike, as well as additional outlying sub-parallel veins present in the main block of contiguous claims that make up the Aguila and Alta Gracia Projects. It is likely that continued exploration will locate sufficient viable mineralization to extend the mine life of the Don David Mine. There are many known gold and silver bearing veins on DDGM's mining concessions that have not been fully explored. Mineralized veins are also known to occur on the Fuego property which is not contiguous with the main concession block, and these veins also warrant further exploration. Relevant exploration work has focused mainly on the Arista and Switchback vein systems of the Aguila Project, and the Mirador and other veins of the Alta Gracia Project.

For more details on previous exploration programs, the reader is referred to earlier reports on mineral resources and mineral reserves for the Don David Mine (Brown et al., 2020; Lopez et al., 2012).

### 7.1 Exploration Work

The Arista deposit is located in an old mining district which had been inactive since about the 1950's [Lopez et al., 2012]. The numerous remnant historic sites of the small-scale mining and prospecting activities included the property namesake Aguila ('Eagle') open-pit mine. This site had exploited a nearly flat lying vein (manto-style) deposit and here GRC focused their initial efforts. Exploration for precious metals deposits on the property included soil and rock chip sampling, spectral field measurement of rock chips using a TerraSpec™ spectroradiometer, petrographic studies, fluid inclusion and geochemical studies, structural mapping and analysis, regional and local detailed geologic mapping, various scaled and themed geophysical studies, specialized reviews, and continuous drilling programs.

#### 7.1.1 Mapping

Geologic mapping included compilation of various data for the Aguila property providing a cohesive base for exploration targeting. During the initial exploration period published maps and geologic investigations (including isotopic and geochemical analyses; petrographic, structural, and mineral resource studies; and regional lithologic definition and correlation) were incorporated and local definition of lithologic units for both surface and mine geology were established. From 2003-2007, GRC's geologic staff (and consultants) completed semi-detailed geologic maps of the Aguila property area at a scale of 1:5,000. Mapping

information including lithologic, structural, and alteration features, were recorded on handheld PC-GPS computers, using the software GeoInfomobile™ and TerraMapper™. Data were stored in a Microsoft® Access® database, and then imported into ArcGIS™ software. Mapping was also based on aerial photographic interpretation and incorporated during the mapping process. Detailed geologic mapping included examination of accessible historic mine and other surface workings, and in conjunction with rock chip sampling aided in delimiting individual veins and splays at surface, specifically related host rock units, and defined associated highly altered areas for follow-up drill targeting.

### **7.1.2 Geochemistry**

Surface geochemical studies were a fundamental part of the exploration programs at Aguila and much of the property area has been covered by stream sediment sampling, systematic-grid soil sampling, trenching, and rock chip sampling. The discovery of the Arista deposit was aided particularly by a regional stream sediment evaluation of the property, undertaken in 2006. The study results were reviewed by Jaacks (Jaacks, 2007) and indicated a strong gold anomaly located in the drainage from Aguila to the Arista deposit (Anomaly #1). Anomalous Ag, As, Sb, and Hg were shown to accompany the Au anomaly and extend for a distance of at least 1.5 km downstream from the deposit. In addition, the discrimination of 7 other potentially anomalous catchment basins were noted within the property, and nearly all were shown to be associated with the occurrence of a rhyolite host rock. The regional anomalies are summarized in Table 7.1 and the associated geochemistry from this study are shown in Table 7.2.

The initial investigation determined that stream sediment sampling was able to locate known mineralization with dispersion of Au extending between 0.8 and 2.0 km<sup>2</sup> down-drainage. Additional areas for detailed exploration were also identified along the regional west-northwest trending corridor known to control gold mineralization. Follow-up work consisting of infill stream sediment sampling conducted along the regional structural corridor (with up to 4-6 samples per km<sup>2</sup>), local detailed rock chip sampling, and denser grid soil sampling within anomalous catchment basins better defined anomalies for other detailed investigation including drilling.



**Table 7.1 Regional Anomalies – Location and Geology (Jaacks, 2007)**

Anomaly #	Sample #	E- UTM14N	N- UTM14N	Location	Lithology	Alteration
<b>1</b>	1973	807677	1846774	Aire - Higo creek	Rhyolite	Silicification
<b>2</b>	1975	807804	1846722	Aire - Higo creek	Rhyolite	Silicification
<b>3</b>	1977	808981	1845907	South El Aire road	Andesite	Silicification
<b>4</b>	2409	808534	1846516	Aire - Higo creek	Rhyolite	Argillic
<b>5</b>	2424	806928	1847523	Ink Water creek	Andesite	Propylitic
<b>6</b>	3017	805484	1847744	Chacal	Rhyolite	Argillic
<b>7</b>	3048	802925	1849130	Las Margaritas	Rhyolite	
<b>8</b>	3062	803151	1849688	Las Margaritas	Rhyolite	Propylitic

**Table 7.2 Regional Anomalies Geochemistry (units ppm unless noted) (Jaacks, 2007)**

Anomaly #	Sample #	Au ppb	Ag	As	Bi	Cu	Hg	Mo	Pb	Sb	Se	Te	Tl	W	Zn
<b>1</b>	1973	139	14.1	392	0.16	13.8	0.21	5.0	17.3	46.4	2.9	0.05	0.60	0.29	31
<b>2</b>	1975	65	2.6	370	0.18	16.1	0.14	5.1	17.4	34.8	2.3	0.04	0.51	0.26	42
<b>3</b>	1977	107	0.2	19	0.29	11.0	0.03	1.3	11.7	1.5	0.2	0.03	0.14	0.26	99
<b>4</b>	2409	52	6.3	899	4.72	21.8	0.19	3.4	48.2	33.4	1.7	0.24	0.92	0.26	158
<b>5</b>	2424	268	3.6	624	0.16	24.2	0.25	7.1	22.9	18.0	3.5	0.02	2.24	0.41	102
<b>6</b>	3017	35	0.1	23	0.21	10.2	0.07	2.4	13.4	0.7	0.2	0.02	0.19	0.11	69
<b>7</b>	3048	100	63.9	19	0.09	13.8	0.40	1.1	99.7	1.5	1.1	0.02	0.12	0.05	133
<b>8</b>	3062	256	3.7	31	0.24	7.4	0.03	2.0	23.2	0.7	0.4	0.01	0.15	0.06	61

In addition, basic statistics, correlation analysis between elements, and geochemical modeling was used to evaluate element associations (Jaacks, 2007), and results suggested several distinct mineralizing signatures were represented in the data. It was noted that precious and base metals were deposited in associations that could be related to two events; one to an earlier skarn event at depth, followed by the main epithermal event of precious-base metal mineralization (Jaacks, 2007). Characteristics of a skarn environment were evident by geochemical sampling studies that demonstrated an association of Au+Ag+As+Sb+Hg+Cu+Pb+Zn+Mo+Bi+W representing Au-Ag-base metal veins developed in skarn setting peripheral to an intrusion. The second more limited element suite of Au+Ag+As+Sb+Hg suggests a signature typical of a volcanic-hosted epithermal Au-Ag vein system. Subsequent studies have also shown that veins are zoned from sulfide-dominant near the surface with increasing amounts of calc-silicate minerals at depth. A third Au association consists of elements Au+Ag+Hg+Mo+Te+Bi within a separate, but adjacent catchment basin called Margaritas. This gold association has the characteristics of a higher-

level volcanic-hosted epithermal gold system which is chemically distinctive from the system located at Aguila.

### **7.1.3 Geophysics**

Numerous geophysical examinations aimed at delimiting possible mineral concentrations or favorable structural settings related to mineable resources were undertaken progressively at the Aguila property. These examinations included airborne and ground magnetometry, airborne radiometry, and ground surveys of induced polarization and magnetotellurics. Specific geophysical programs completed include:

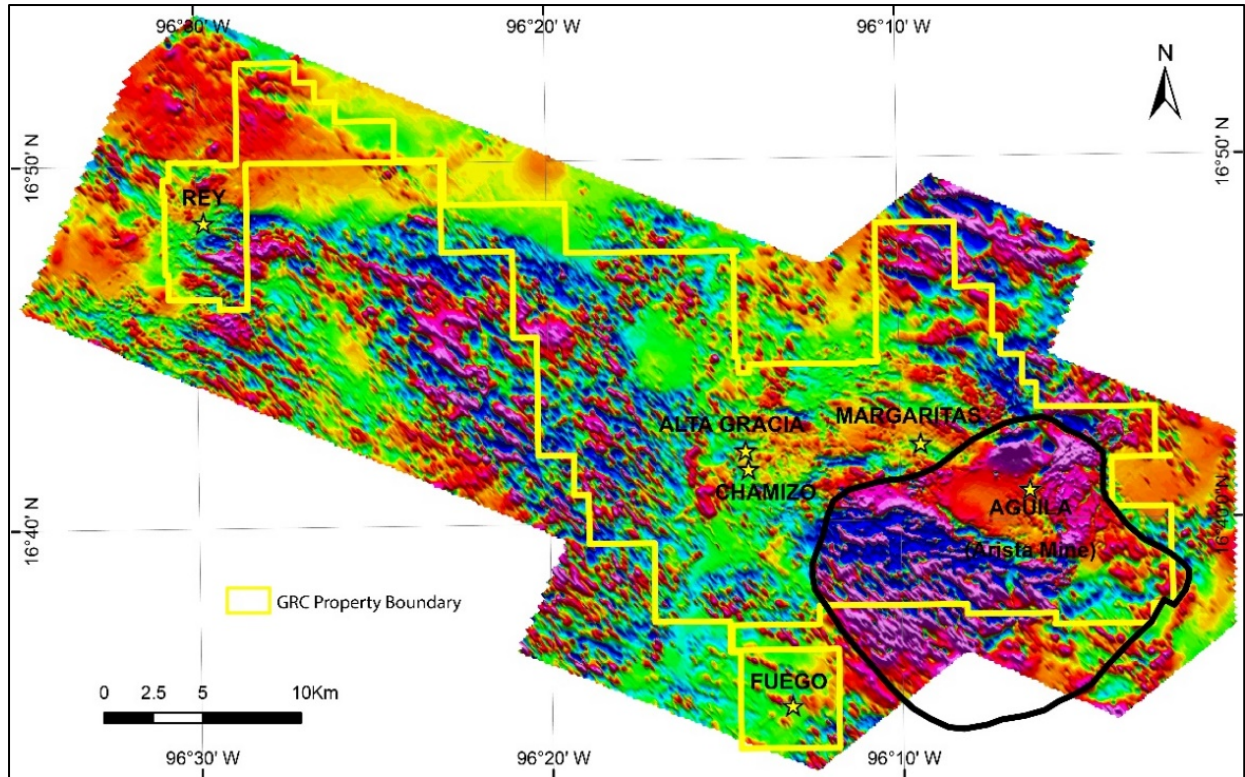
- Ground magnetic survey performed by Zonge Engineering and Research Organization, Inc. (Zonge) completed in 2007 with follow up during 2011 and 2012.
- Titan-24 Direct Current (DC)/Induced Polarization (IP)/Magnetotelluric (MT) ground survey performed by Quantec Geoscience (QG) completed 2010.
- New-Sense Geophysics Limited (NSG) performed airborne magnetometry and radiometry in 2013.

Most geophysical surveys were completed along northeast-southwest oriented lines, perpendicular to the dominant structural trends. Delineation and interpretation of the source of geophysical anomalies were evaluated with respect to mapped geologic features. Extreme value contrast areas (i.e. adjacent high and low magnetic responses) were primary targets, generally representing alteration and potential mineralization.

Radiometric signatures of uranium, thorium, and potassium were useful in following up larger high-response magnetic delineated areas, and often correlated well with intrusive or more intensely altered volcanic rocks. Potassium proved to be a key indicator of hydrothermal alteration. Regional structural lineaments (including some vein systems), and other local structural fabric orientations were interpreted from detailed magnetic contrasts and often supported by corresponding MT and IP signatures.

Interpretation of the airborne magnetic data using standard digital image processing techniques and inversion modeling helped to extend known mineralized structures and identify areas of potential magnetite destructive alteration and skarn mineralization (Ellis, 2013). The magnetic highs were generally interpreted to be related to buried intrusions such as the large magnetic anomaly outlined in Figure 7.1 for the Aguila (Arista Mine) project area. Integrating 3D modeling with geology was helpful in defining drilling targets at the mine scale and provides better understanding of the regional geology. For example, a distinct magnetic low is associated with the Arista epithermal deposit, whereas peripheral magnetic highs typically indicate mixed intrusive rocks and related skarn (Fig. 7.2). This model was made before discovery of the Switchback deposit; a magnetic low was later found to be associated with the Switchback vein system.





**Figure 7.1 Aerial magnetic survey of GRC's Oaxaca properties. Magnetic highs (red and magenta colors) are interpreted to be generally related to buried intrusions. A possible intrusion is interpreted to lie below the Aguilá (Arista Mine) project area (black outline) (Ellis, 2013).**

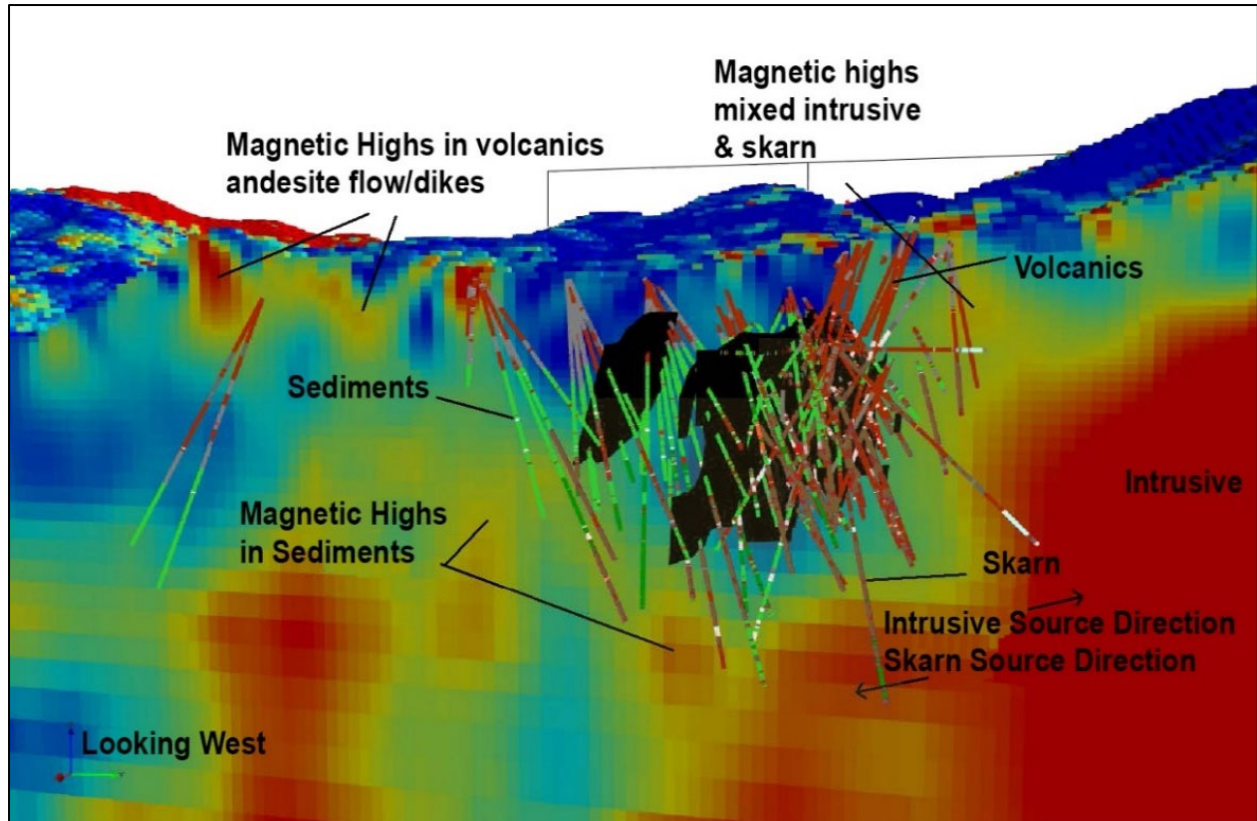


Figure 7.2 3D Voxel model section view of the amplitude component of the magnetic susceptibility inversion model from aerial magnetic survey in the Aguila (Arista Mine) project area. The image is shown looking west. Red is high susceptibility and blue is low susceptibility. The Arista vein system is shown as black shapes (Ellis, 2013). In computer-based modeling or graphic simulation, a voxel is an array of elements of volume that constitute a notional three-dimensional space, especially each of an array of discrete elements into which a representation of a three-dimensional object is divided.

#### 7.1.4 Drilling

Subsurface investigation by drilling was the primary exploration tool and have aided in defining at least 45 major veins and more than 25 splay veins at the Aguila property. Initially in the 1990's shallow testing (<100m) was undertaken by reverse circulation (RC), and later diamond drilling methods were employed to examine the sub-cropping historic Aguila shallow-dipping manto-vein deposit. In 2006, drilling had succeeded in defining the early indications of the Arista deposit as the exploration footprint expanded to test deeper and step out to other nearby historic surface workings as well as targets concurrently derived from surface exploration work. These early drilling programs defined multiple veins including the Baja and Aire veins above (unknowingly at the time) the much larger Arista vein system. Other drill testing included flanking areas such as Escondida, Salina Blanca, Cerro Colorado, Fossil Bend, Chacal – Red Zone, Pilon, and other regional exploration targets. In 2007, the “discovery drill hole” into the Arista deposit (Drill Hole 107080) which intercepted three mineralized zones totaling 35 m averaging 2.81 g/t Au, 137 g/t Ag, 0.38%

Cu, 1.54% Pb and 5.58% Zn including a higher grade interval averaging 8.01 g/t Au, 329 g/t Ag, 0.76% Cu, 1.92% Pb and 9.92% Zn over 7.5 m. This discovery occurred while drill testing beneath a small quartz vein outcrop associated with the historic prospect, the Aire vein. Subsequent drilling led to the definition of the heart of the Arista vein system and by 2010, GRC had declared official production at the Arista mine. By 2013, drilling had intercepted more than 10 major veins and an equal number of vein splays of the Arista system.

During 2013, synthesis of exploration information led company geologists to examine a new area, the Switchback target, following up a suspected parallel structure about 500 m to the northeast of the Arista deposit. Favorable indications from geologic mapping and surface investigations of a hilly area along a narrow switchback road had intrigued the team, as it exhibited similarities to the Arista vein system including the presence of a NNW-SSE trending porphyritic rhyolite dike, gypsum (sulfate alteration), quartz vein fragments, minor quartz-amethyst veining, moderate-intense argillic and patchy intense iron oxide alteration, and a subparallel structural orientation, albeit offset to the northeast. Geochemical rock chips from this altered zone returned base metal anomalies with weakly elevated silver values. However, due to limited surface access it was decided to utilize the nearest underground location in the Arista mine for drill testing, some 500 m to the west. The initial drill program consisted of holes drilled from the Arista mine at shallow dips across the Switchback target zone (more than 500 m below the mapped surface indications). The discovery drill holes included Drill Hole 513016 (the main hole) and Drill Holes 513023, 513024 and 513028 (wedge holes off the main hole).

Total exploration drilling by DDGM through the end of December 2020 on the Don David Mine amounts to 390,036 meters including 1,459 drill holes (Table 7.3). Surface drill holes completed through December 31, 2020 at the Don David Mine are shown on Figure 7.3.

#### **7.1.4.1 Drilling Procedures**

Exploration drilling has been performed by the several contracting firms (e.g. GeoDrill, Major, Maza, Alta Drilling etc.). These companies operate from bases in various localities throughout México. During 2020, DDGM used two diamond drill rigs provided by a contractor for both underground and surface drilling.

The samples used in the mineral reserve estimates include both diamond drill core and underground chip channel samples. Routine samples at the Aguila Project also include process and tailings samples and concentrate samples. Aside from their functions in maintaining good operations performance, these samples are important for reserve validation and reconciliation of production to reserves.

DDGM also utilizes smaller diamond drills mainly for underground development drilling, mainly test holes and definition holes. This equipment is either compressed-air powered or electric-hydraulic (eg. Termite, Ingetrol) which yields small diameter core used only for short term planning. Core samples from these machines are prepared and assayed at the Aguila Project laboratory.

The core from the ongoing surface and underground drilling is logged, sampled and stored at the same core facility. Core from diamond drilling is placed in boxes and drill contractor personnel transport the

core to the central core facility. Sample handling at the core facility follows a standard industry accepted procedure, during which depth markers are checked and confirmed; the outside of the boxes are labeled with interval information; core is washed and photographed; and the recovery and rock quality designation (RQD) are logged for each drill hole.

The geology of the core is logged, and the geologist marks potential mineralized zones for sampling. Sample lengths are determined, where possible, by mineralogical or lithological characteristics. Samples are taken where the geologists believe there is a reasonable chance of obtaining significant results and where sampling is required for continuity of assay data. The core generally is not sampled over the entire length of the drill hole. The sampling crew then splits the core with a diamond saw, as indicated by the geologist, and one half of the core is placed in a numbered bag and sent to the laboratory for analysis. The other half of the core is returned to the core boxes for storage. Generally, the samples represent core lengths of less than 1.50 m. Sample tags are stapled inside the boxes.

Bulk density measurements are routinely determined on whole drill core samples for each potentially mineralized vein. Measurements are performed at the DDGM on-site analytical laboratory utilizing precision instruments. Selection of the particular samples is performed by geologists as part of the routine logging procedure.

The management, monitoring, surveying, and logging of surface exploration holes are carried out under the supervision of the Don David Mine exploration staff. Production and other underground exploration holes are managed by the mine geological staff. All of DDGM's surface and underground exploration samples are processed at the Don David Mine Exploration office and core processing facility.

Table 7.3 Don David Mine Exploration Drilling Activity through December 31, 2020

Project & Year	RC - Surface		Core - Surface		Core - Underground		Total	
	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters
<b>Aguila (including Aguila Manto, Arista &amp; Switchback Veins)</b>								
2003	63	3,840	5	52	0	0	68	3,892
2005	0	0	37	2,808	0	0	37	2,808
2006	0	0	13	1,688	0	0	13	1,688
2007	103	10,527	93	15,186	0	0	196	25,713
2008	0	0	46	17,219	0	0	46	17,219
2009	0	0	12	7,394	0	0	12	7,394
2010	0	0	36	14,000	0	0	36	14,000
2011	0	0	43	21,026	45	5,198	88	26,224
2012	0	0	62	32,204	78	8,993	140	41,197
2013	0	0	94	36,688	64	15,236	158	51,924
2014	0	0	69	30,046	24	8,955	93	39,001
2015	0	0	48	15,488	45	13,557	93	29,045
2016	0	0	0	0	52	15,453	52	15,453
2017	0	0	0	0	41	12,946	41	12,946
2018	0	0	0	0	28	12,287	28	12,287
2019	0	0	0	0	34	11,795	34	11,795
2020			7	3,180	38	9,471	45	12,651
<b>Aguila Total</b>	<b>166</b>	<b>14,367</b>	<b>565</b>	<b>196,979</b>	<b>449</b>	<b>113,891</b>	<b>1,180</b>	<b>325,237</b>
<b>Rey</b>								
2007	0	0	12	1,276	0	0	12	1,276
2008	0	0	36	3,997	0	0	36	3,997
<b>Rey Total</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>5,273</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>5,273</b>
<b>Alta Gracia</b>								
2011	0	0	37	8,270	0	0	37	8,270
2012	0	0	12	3,262	0	0	12	3,262
2014	0	0	39	7,589	0	0	39	7,589
2015	0	0	9	2,554	0	0	9	2,554
2017	0	0	44	9,946	0	0	44	9,946
2018	0	0	20	4,279	0	0	20	4,279
2019	0	0	18	2,327	0	0	18	2,327
<b>Alta Gracia Total</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>38,227</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>38,227</b>
<b>Margaritas</b>								
2012	0	0	15	5,002	0	0	15	5,002
2013	0	0	9	3,033	0	0	9	3,033
2015	0	0	23	10,409	0	0	23	10,409
2016	0	0	5	2,855	0	0	5	2,855
<b>Margaritas Total</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>21,299</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>21,299</b>
<b>GRAND TOTAL</b>	<b>166</b>	<b>14,367</b>	<b>844</b>	<b>261,778</b>	<b>449</b>	<b>113,891</b>	<b>1,459</b>	<b>390,036</b>



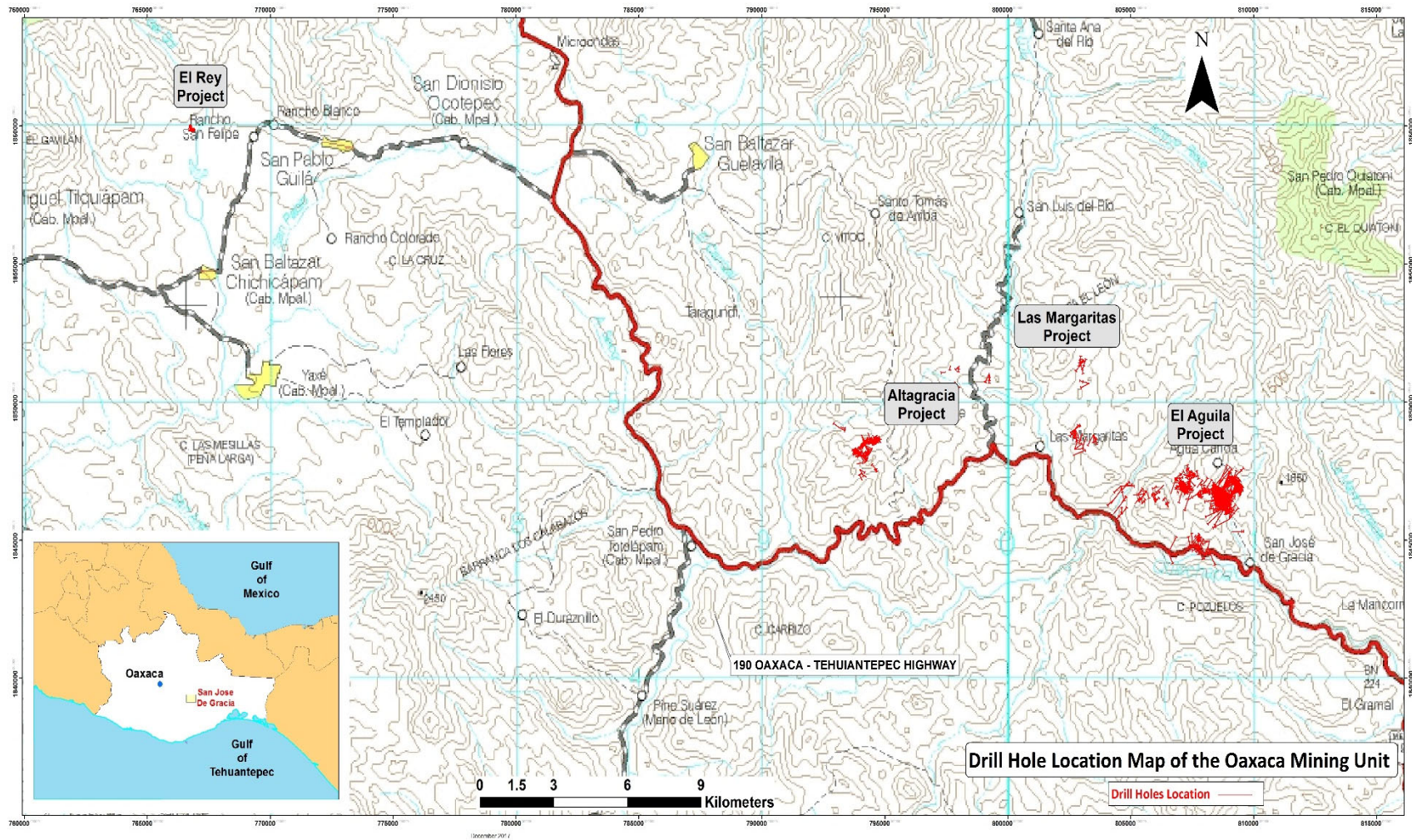


Figure 7.3 Surface Drill Hole Location Map of the Don David Mine (completed drill hole traces shown in red).



## 7.2 2020 Exploration Programs

Exploration activities during 2020 mainly focused on underground and surface exploration drilling at the Arista and Switchback vein systems in the Arista Mine. The Switchback drilling program at the Arista Mine continued to target further expansion and delineation of the multiple high-grade parallel veins for reserve definition, expansion and mine plan optimization. The Switchback vein system extends for over one km and remains open on strike and vertical extent.

### 7.2.1 Aguila

Underground drilling during 2020 continued to explore extensions of veins currently in production in the Arista Mine, including the Soledad, Selene, Sadie and Sasha veins in the Switchback vein system and the Baja, Candelaria, Mercedes, Splay 66 and Splay 31 veins of the Arista vein system. Thirty-eight underground diamond drill holes totaling 9,471 meters and 7 surface diamond drill holes totaling 3,180 meters, were completed at the Aguila project during 2020. Surface geologic mapping and rock chip sampling also continued in the vicinity of the Arista Mine, the Aguila open pit, Cerro Pilon, Cerro Colorado and other prospects of the Aguila project.

From two underground exploration drill stations, one located in a footwall development ramp of the mine's Switchback vein system and the other located approximately 500 meters to the northeast of the Arista vein system, twelve (12) drill holes confirmed the northern strike and up-dip extensions of the Switchback vein system.

Significant drill hole results are summarized in Table 7.4 and highlights include:

**Hole # 520033** (35-meter step-up):

- **10.85 m grading 9.12 g/t gold, 179 g/t silver, 0.58% copper, 3.47% lead, 6.99% zinc**

**Hole# 520034** (35-meter step-up):

- **11.83m grading 17.56 g/t gold, 99 g/t silver, 0.78% copper, 3.73% lead, 6.31% zinc**

**Hole# 520036** (50-meter step-up,):

- **9.97m grading 4.43 g/t gold, 88 g/t silver, 0.35% copper, 0.84% lead, 3.24% zinc**

**Hole # 520010** (50-meter step-up):

- **5.87 m grading 1.51 g/t gold, 871 g/t silver, 0.15% copper, 0.46% lead, 1.01% zinc  
incl. 2.95 m grading 2.00 g/t gold, 1,366 g/t silver, 0.23% copper, 0.67% lead, 1.58% zinc**

**Hole# 520012** (100-meter step-up):

- 3.85m grading 1.66 g/t gold, 1,046 g/t silver, 0.14% copper, 0.27% lead, 0.44% zinc incl. 1.01m grading 2.52 g/t gold, 1,710 g/t silver, 0.22% copper, 0.28% lead, 0.61% zinc
- 7.06m grading 0.71 g/t gold, 286 g/t silver, 0.02% copper, 0.06% lead, 0.15% zinc incl. 1.56m grading 1.46 g/t gold, 652 g/t silver, 0.05% copper, 0.13% lead, 0.30% zinc

**Hole# 520013** (50-meter step-out, 50-meter step-down):

- 9.20m grading 0.47 g/t gold, 283 g/t silver, 0.05% copper, 0.07% lead, 0.23% zinc incl. 1.40m grading 1.14 g/t gold, 796 g/t silver, 0.12% copper, 0.10% lead, 0.29% zinc

From the underground exploration drill station located in a footwall development ramp of the mine's Switchback vein system, five (5) drill holes confirmed the up-dip extensions of the Switchback vein system approximately 35 meters (two mine levels) above the current mine workings. The current intersections of the Selene vein suggest that the Switchback vein system, of which Selene is a constituent element, has been displaced to the northwest at shallower elevations. These intersections extend the known mineralization at Switchback at shallower depths.

**Table 7.4 Significant Drilling Results for the Selene Vein in the Switchback Vein System**

Hole #		From (m)	To (m)	Interval (m)	Vein	Au g/t	Ag g/t	Cu %	Pb %	Zn %
520032		<b>100.81</b>	<b>103.38</b>	<b>2.57</b>	Selene Vein	<b>2.80</b>	<b>74</b>	<b>0.53</b>	<b>1.88</b>	<b>3.35</b>
	inc.	100.81	102.30	1.49		2.55	84	0.47	0.67	2.20
	inc.	102.30	103.38	1.08		3.14	59	0.62	3.56	4.94
		<b>106.69</b>	<b>108.93</b>	<b>2.24</b>	Selene Splay 1	<b>1.22</b>	<b>49</b>	<b>0.24</b>	<b>1.29</b>	<b>2.80</b>
	inc.	106.69	107.49	0.80		2.69	13	0.06	0.14	0.34
	inc.	107.49	108.93	1.44		0.40	70	0.33	1.94	4.17
	<b>113.46</b>	<b>114.40</b>	<b>0.94</b>	Selene Splay 2	<b>0.28</b>	<b>55</b>	<b>0.30</b>	<b>5.75</b>	<b>13.55</b>	
520033		<b>128.00</b>	<b>138.85</b>	<b>10.85</b>	Selene Vein	<b>9.12</b>	<b>179</b>	<b>0.58</b>	<b>3.47</b>	<b>6.99</b>
	inc.	128.00	129.50	1.50		34.20	82	1.49	3.22	15.75
	inc.	129.50	131.00	1.50		15.55	82	0.80	5.39	13.10
	inc.	131.00	132.50	1.50		2.76	49	0.39	3.61	4.03
	inc.	132.50	133.70	1.20		3.05	147	0.21	8.94	8.42
	inc.	133.70	134.50	0.80		0.12	23	0.34	0.85	2.83
	inc.	134.50	136.00	1.50		1.98	43	0.27	3.31	4.57
	inc.	136.00	137.30	1.30		2.35	51	0.34	0.68	2.13
	inc.	137.30	138.85	1.55		6.70	835	0.59	1.31	2.94
520034		<b>140.73</b>	<b>152.56</b>	<b>11.83</b>	Selene Vein	<b>17.56</b>	<b>99</b>	<b>0.78</b>	<b>3.73</b>	<b>6.31</b>
	inc.	140.73	141.89	1.16		26.10	40	0.33	3.42	8.05
	inc.	141.89	143.30	1.41		28.20	81	2.39	5.22	9.20
	inc.	143.30	143.78	0.48		1.02	8	0.19	0.15	1.80
	inc.	143.78	144.58	0.80		10.20	26	0.25	2.21	4.70
	inc.	144.58	145.64	1.06		2.77	28	0.23	1.19	2.45
	inc.	145.64	146.62	0.98		0.59	43	0.48	1.47	3.93
	inc.	146.62	147.67	1.05		2.45	41	0.27	2.54	2.91
	inc.	147.67	148.93	1.26		23.20	126	0.50	6.02	7.16

	inc.	148.93	149.86	0.93		16.35	352	0.98	4.27	8.62
	inc.	149.86	151.30	1.44		42.50	124	1.10	8.09	12.05
	inc.	151.30	151.83	0.53		0.70	40	0.19	0.34	1.59
	inc.	151.83	152.56	0.73		23.20	253	1.32	3.10	4.13
		<b>154.27</b>	<b>155.37</b>	<b>1.10</b>		<b>0.64</b>	<b>71</b>	<b>0.68</b>	<b>3.24</b>	<b>9.11</b>
	inc.	154.27	154.76	0.49	<b>Selene Splay 1</b>	0.59	67	0.92	0.52	7.95
	inc.	154.76	155.37	0.61		0.69	75	0.49	5.43	10.05
<b>520035</b>		<b>174.18</b>	<b>174.50</b>	<b>0.32</b>	<b>Vein</b>	<b>2.69</b>	<b>19</b>	<b>0.22</b>	<b>1.24</b>	<b>7.17</b>
		<b>176.59</b>	<b>178.06</b>	<b>1.47</b>	<b>Selene Vein</b>	<b>18.60</b>	<b>58</b>	<b>0.32</b>	<b>4.79</b>	<b>5.95</b>
<b>520036</b> (not shown on map)		<b>111.07</b>	<b>111.62</b>	<b>0.55</b>	<b>Vein</b>	<b>2.09</b>	<b>133</b>	<b>0.02</b>	<b>0.24</b>	<b>0.40</b>
		<b>147.97</b>	<b>157.94</b>	<b>9.97</b>		<b>4.43</b>	<b>88</b>	<b>0.35</b>	<b>0.84</b>	<b>3.24</b>
	inc.	147.97	149.45	1.48	<b>Selene Vein</b>	0.65	52	0.57	0.31	3.10
	inc.	149.45	150.93	1.48		0.50	46	0.54	0.41	3.23
	inc.	150.93	152.45	1.52		9.35	129	0.50	1.20	3.27
	inc.	152.45	153.94	1.49		9.66	45	0.32	2.07	5.49
	inc.	153.94	155.41	1.47		3.51	20	0.14	0.70	2.65
	inc.	155.41	156.74	1.33		3.86	168	0.13	0.66	2.82
	inc.	156.74	157.94	1.20		2.95	182	0.20	0.38	1.81
		<b>166.50</b>	<b>166.99</b>	<b>0.49</b>		<b>Selene Splay 1</b>	<b>0.50</b>	<b>84</b>	<b>2.10</b>	<b>1.65</b>
		<b>170.30</b>	<b>171.18</b>	<b>0.88</b>	<b>Selene Splay 2</b>	<b>3.94</b>	<b>516</b>	<b>0.40</b>	<b>0.35</b>	<b>1.01</b>

A plan view and typical cross-section of the Switchback mining area for reference is shown in Figures 7.4 and 7.5. Note that Hole 520036 is not shown but is located west of hole 520035 and is stepped out 50 degrees.

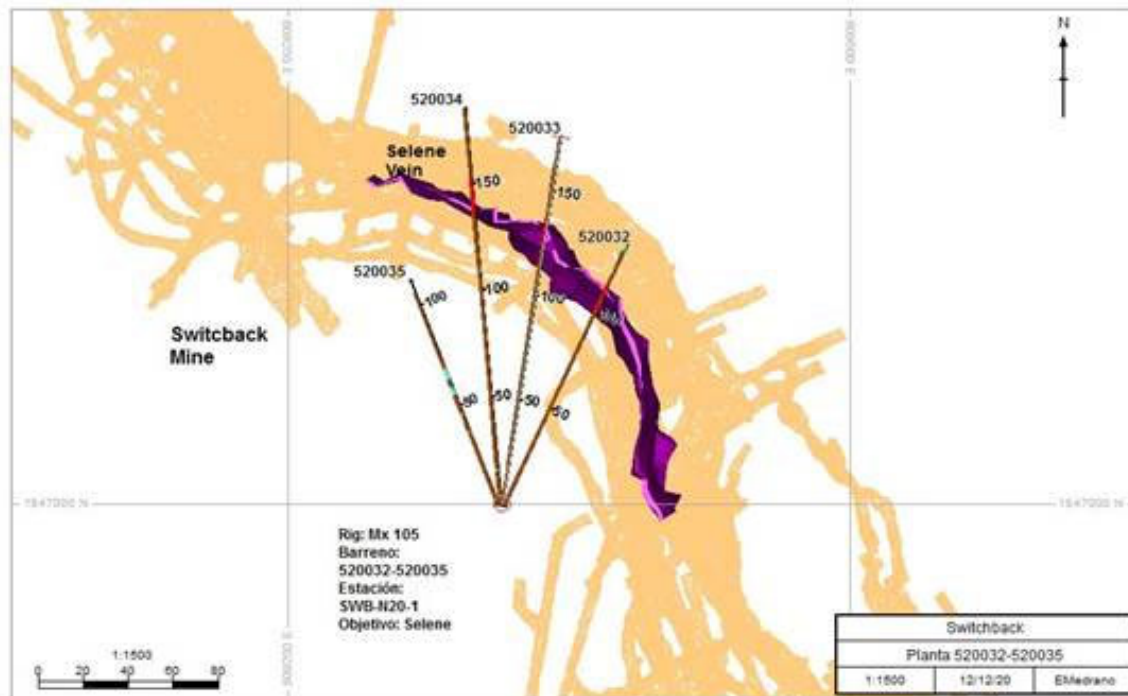
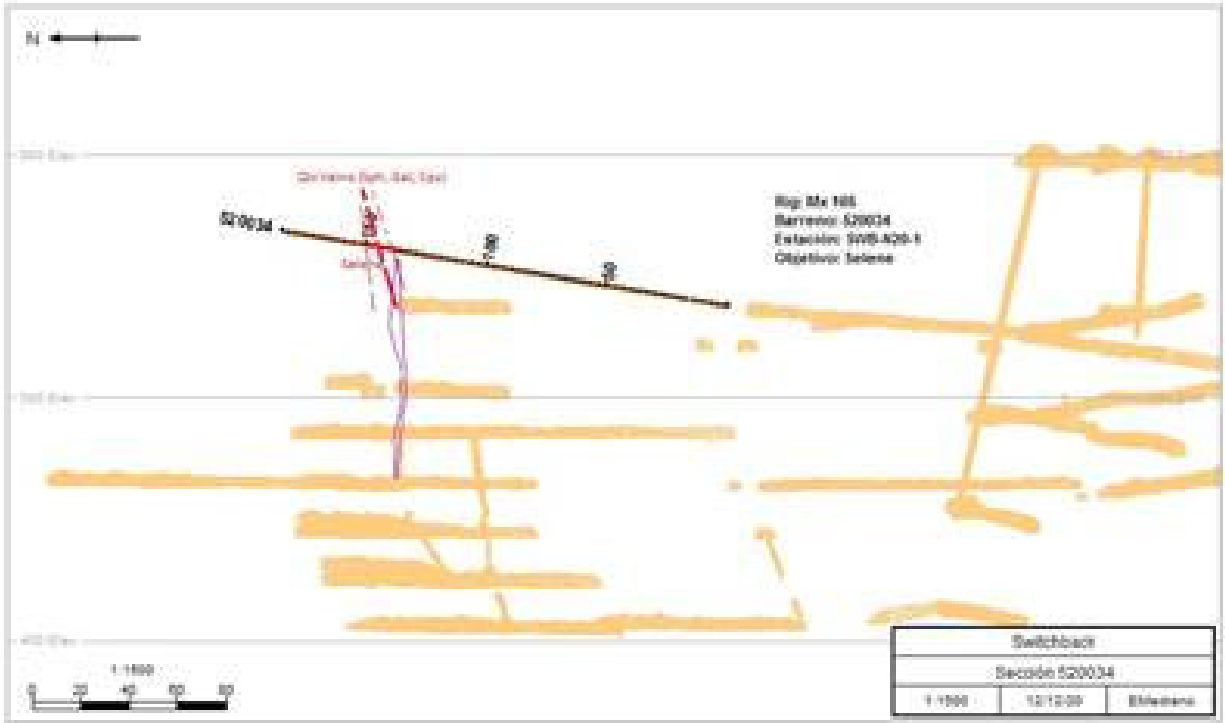


Figure 7.4 Plan view of Switchback mining area showing holes drilled during 2020 to test up dip on the Selene vein.



**Figure 7.5 Typical cross section view of Switchback mining area showing Hole 520034 to provide context for elevation of holes relative to mine workings.**

In addition, from the underground exploration drill station located approximately 500 meters to the northeast of the mine’s Arista vein system, seven (7) drill holes confirmed the northern strike and up-dip extensions of the Switchback vein system. Multiple en echelon veins were encountered, further extending the known mineralization at Switchback both along strike and at shallower elevations (Table 7.5; Figs. 7.6 and 7.7).

**Table 7.5 Significant Drilling Results for the Sadie and Sasha Veins in the Switchback Vein System**

Hole #	Vein		From	To	Interval	Au	Ag	Cu	Pb	Zn
			Meters	Meters	Meters	g/t	g/t	%	%	%
520010	Sadie 2 Vein		79.77	80.15	0.38	0.73	813	0.02	0.17	0.54
	Sadie 1 Vein		130.15	130.47	0.32	0.66	249	0.03	0.08	0.24
	Sasha Vein		147.28	153.15	5.87	1.51	871	0.15	0.46	1.01
		Inc.	147.28	153.15	2.95	2.00	1,366	0.23	0.67	1.58
520011	Sasha Vein		141.54	143.43	1.89	0.40	407	0.04	0.02	0.06
		Inc.	142.73	143.43	0.70	0.97	933	0.08	0.01	0.05
	Vein		169.76	172.75	2.99	0.50	213	0.03	0.12	0.27
520012	Sadie 2 Vein		138.58	139.89	1.31	1.69	196	0.02	0.10	0.19
	Sadie 1 Vein		142.66	146.51	3.85	1.66	1,046	0.14	0.27	0.44
		Inc.	143.71	144.72	1.01	2.52	1,710	0.22	0.28	0.61
	Sasha Vein		153.24	160.30	7.06	0.71	286	0.02	0.06	0.15
		Inc.	158.74	160.30	1.56	1.46	652	0.05	0.13	0.30
520013	Sadie 2 Vein		136.60	145.80	9.20	0.47	283	0.05	0.07	0.23
		Inc.	144.40	145.80	1.40	1.14	796	0.12	0.10	0.29
	Sadie 1 Vein		157.21	158.35	1.14	2.66	18	0.11	1.18	5.39
520015	Sadie 2 Vein		138.03	143.43	5.40	0.30	290	0.02	0.03	0.09
		Inc.	138.03	139.16	1.13	0.53	833	0.07	0.04	0.15
	Sadie 1 Vein		145.04	145.55	0.51	0.13	275	0.06	0.08	0.31
520017	Vein		93.36	93.74	0.38	0.59	280	0.15	0.21	0.42
	Vein		111.63	112.81	1.18	0.36	281	0.04	0.06	0.20
	Sadie 2 Vein		136.79	137.14	0.35	0.50	321	0.03	0.04	0.12
	Sadie 1 Vein		187.96	189.20	1.24	3.12	19	0.02	0.06	0.09
	Vein		71.50	71.79	0.29	0.53	353	0.00	0.05	0.14
520020	Vein		86.80	87.10	0.30	0.57	376	0.00	0.03	0.13
	Vein		100.41	101.81	1.40	0.31	233	0.01	0.02	0.07
	Vein		103.04	103.39	0.35	0.16	364	0.02	0.04	0.07
	Sadie 2 Vein		116.54	117.21	0.67	0.39	350	0.01	0.03	0.08
	Vein		71.50	71.79	0.29	0.53	353	0.00	0.05	0.14

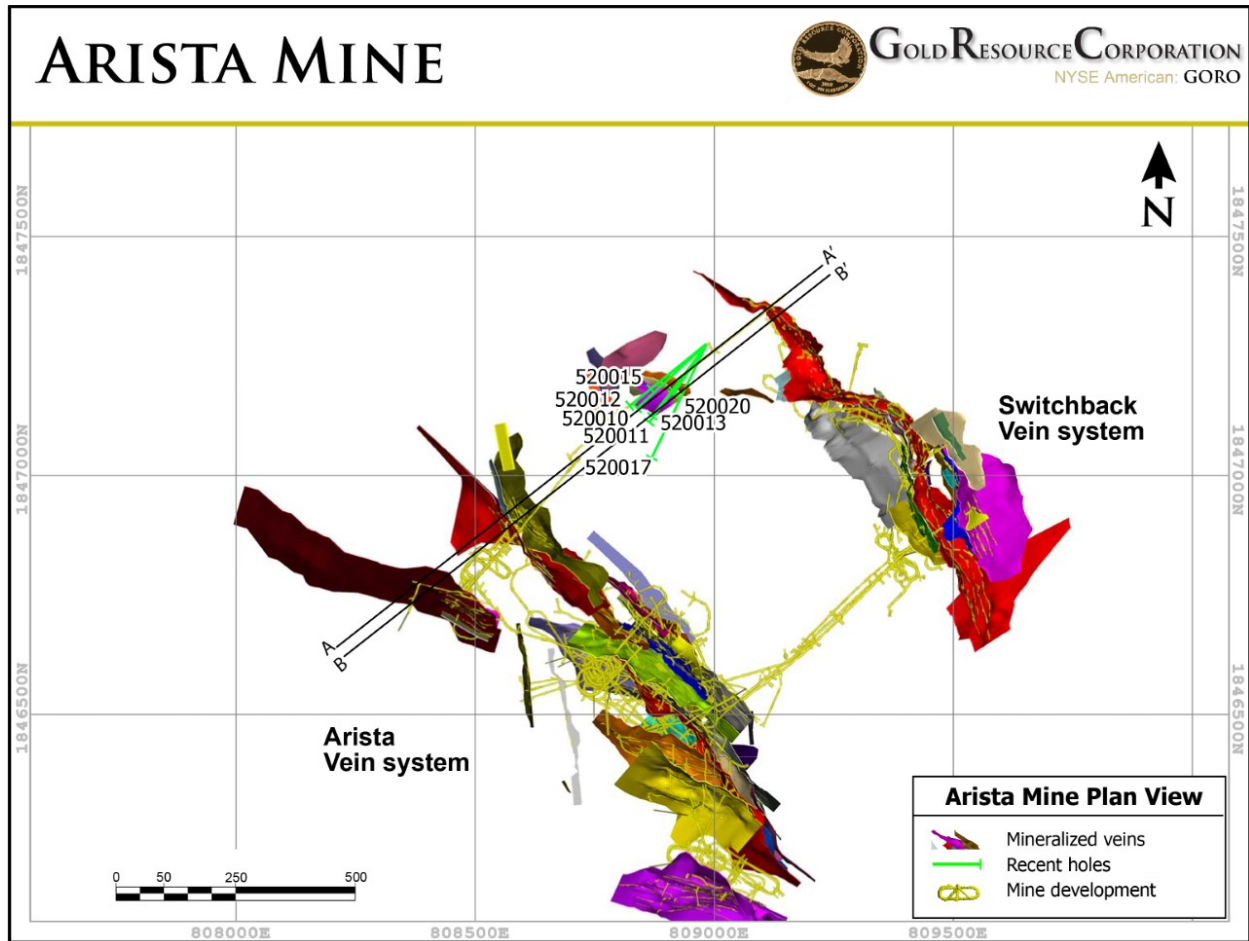


Figure 7.6 Plan view of Arista and Switchback vein systems showing holes drilled during 2020 to test the Sadie and Sasha vein in northern exploration development area.

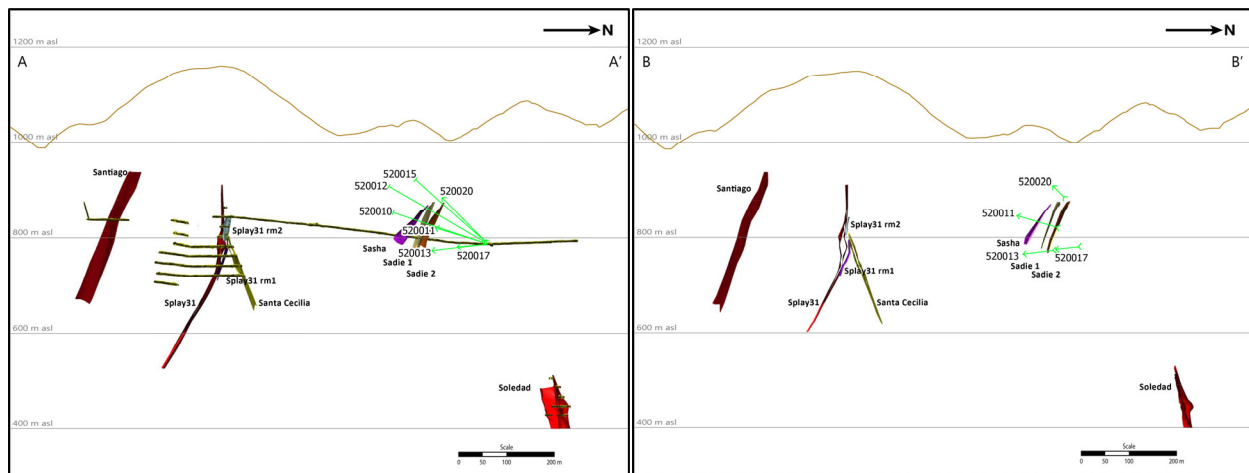


Figure 7.7 Typical Cross-Sectional Views A-A' & B-B' (Looking Northwest) showing holes drilled to test the up-dip extensions of the Sasha and Sadie veins.



### **7.2.2 Alta Gracia**

The 2020 Alta Gracia exploration program mainly included surface geological mapping along with rock chip and grid soil sampling in the historic mining areas at Alta Gracia, mainly at the Aguacatillo prospect. The new information will be used to guide future surface drilling programs.

### **7.2.3 Margaritas**

In 2020, review continued on results from previous surface drilling, surveying, detailed geological mapping and rock chip channel sampling for the Margaritas property. This included the Trenes area where a future follow-up surface diamond drilling program is targeted.

## **7.3 Other Exploration Activities**

Regional and local detailed geological studies including geochemical and geophysical examinations were the focus of past exploration programs on the Don David Mine. The results of these studies currently serve as the basis for four main exploration target areas including Aguila, Alta Gracia, Margaritas and Rey.

The reader is referred to earlier versions of Don David Mine resource and reserve reports which describe in more detail geochemical, geophysical and other exploration activities including surface and underground channel sampling of historic mine workings (Brown et al., 2020; Lopez et al., 2012).

## **8 SAMPLE PREPARATION, ANALYSIS AND SECURITY**

### **8.1 Surface Exploration Samples**

All of DDGM's surface exploration samples of rock and soil and surface and underground exploration drill core were bagged and tagged at the Don David Mine core facility and shipped to the ALS-Chemex (ALS) preparation facility in Guadalajara, Mexico. After preparation, the samples were shipped to the ALS laboratory in Vancouver, Canada, for analysis. At the ALS preparation facility in Guadalajara, samples were dried and jaw crushed to 70 percent -10 mesh. A subsample of 250 grams was pulverized with a ring pulverizer and then sent to ALS in Vancouver for assaying. Preparation (crush) duplicates and analytical (pulp) duplicates were split from the samples at crushing and pulverization phases of sample preparation, respectively. Certified reference materials (standards) were inserted into the sample stream prior to submittal and the laboratory was asked to analyze the samples in the sequence submitted.

In Vancouver, ALS analyzed the samples for gold using a 30-gram fire assay digestion with an atomic absorption finish (Method Au-AA23). Silver was analyzed by three methods depending upon the grade of the sample. All samples were analyzed for silver using an aqua regia digestion of 0.5 g sample with an ICP-OES finish (Method ME-ICP41). Any sample exceeding 100 ppm Ag, was reanalyzed using an aqua regia digestion on 0.4 g of sample followed with an ICP-AES finish (Method Ag-OG-46). Any samples exceeding 1,500 ppm Ag were reanalyzed using a 30-gram fire assay with a gravimetric finish (Method Ag-GRA21). All of the samples were analyzed for copper, lead and zinc using an aqua regia digestion of a 0.5 g sample with an ICP-OES finish (Method ME-ICP41). Any sample with copper, lead or zinc concentrations exceeding 10,000 ppm was reanalyzed using an aqua regia digestion of a 0.4 g sample followed by an ICP-AES finish (Method OG46). Samples with Pb concentrations exceeding 20,000 ppm and zinc concentrations exceeding 30,000 ppm were reanalyzed using a 4-acid digestion with a titrated end point to determine Pb and Zn concentrations.

Underground development drill core samples are sent to DDGM's in-house laboratory at the Aguila Project. Check assaying of underground channel samples was done by ALS.

### **8.2 Chip Channel Sampling**

The chip channel sampling process is managed by the mine geologists. Underground channel samples are taken by the geologists from mineralized zones, hanging wall and footwall in the faces after blasting each round.

Chip channel sampling is conducted along the sub-level drifts in the mineralized zones. Channel samples are the primary means of sampling in the mine and are taken perpendicular to the vein structures, across the back of the drift and across the faces of drifts and other workings. While facing the heading sampling is generally from the left side of the drift towards the right side of the drift, consisting of multiple samples

across the mineralized zones and one sample into the footwall and an additional sample into the hanging wall.

Sampling crews typically take channel samples at regular intervals of 4 to 5 m along the working, depending on daily mine development, with five to eight samples along every sample channel on new openings (drifts, crosscuts, ramps, stopes, etc.). Channel samples are taken in consecutive lengths of less than 1.50 m along the channel, depending on geologic features such as wall rock type, mineralization type and intensity, quartz characteristics, silicification, veinlets, stockwork zones, and other features. The channel sample assays are composited to determine the average grade of each channel.

Channel samples are taken with chisel and hammer, collected in a canvas tarp and deposited in numbered bags for transportation to the laboratory. Currently there are multiple underground openings along the Arista and Switchback veins. About 15 to 20 samples are taken per day from mine development and stoping areas in the Arista underground mine. The samples are sealed in plastic bags with a string before being sent to the company laboratory.

A channel "line" typically consists of three to five or more individual samples taken to reflect changes in geology and/or mineralogy across the structural zone. If there is more than one vein present, or it is divided by waste rock, then each of the divisions is sampled separately. Each sample weighs approximately 3 kg. All channels for sampling are painted by the geologist and numbered on the drift's walls for proper orientation and identification.

Sample locations are subsequently surveyed by underground surveyors. The start and end point for each sample is surveyed and then presented a single string of samples, like a drill hole, in the database. Sample locations are plotted on stope plans using various software applications. The sample numbers and location data are recorded in the database. Upon receipt of assays, technicians and geologists produce reports used for day-to-day monitoring and grade control.

### **8.3 Mill Sampling**

DDGM maintains sample preparation and laboratory facilities at the Aguila plant for process samples, concentrate, mine production samples, chip samples, and core from underground exploration drilling. The Aguila assay laboratory is set up in one building, located near the plant. The facilities are located within the plant compound and guarded 24 hours per day.

### **8.4 Quality Assurance Quality Control Procedures**

A quality assurance/quality control (QA/QC) program has been established for exploration programs conducted at the Don David Mine. Drill core sampling is subject to a QAQC program administered by the company which includes submission of blind blank samples, duplicate split samples of quarter core, duplicate pulp splits, Certified Reference Material (CRM) standards and analysis of check samples. Additionally, internal laboratory reporting of quality control and assurance sampling is monitored by mine

staff on an on-going basis. The primary independent assay laboratory used is ALS Chemex Labs, S.A. De C.V. in Guadalajara, Mexico. Certified Reference Material standards and blanks are obtained from CDN Resource Laboratories Ltd. of Langley, British Columbia, Canada. CRM standards are received in individually vacuum sealed tin-top kraft bags containing 60 g of pulverized blended material. All exploration core is subject to data verification procedures through the sequential insertion of duplicate and control samples introduced into the sample stream at a targeted rate of one duplicate, one CRM standard, one blank, one coarse reject, and one pulp sample for every fifty regular samples.

For the Don David Mine drilling program, sample reproducibility is measured with analyses of quarter split-core sample duplicates. Preparation reproducibility was measured with duplicate crush splits collected after crushing the sample. Analytical reproducibility was measured by analysis of duplicate pulp splits collected after pulverizing the sample.

The quarter core duplicate core samples were taken by DDGM crew from the remaining half of the core, by re-splitting the core to a one quarter size. Therefore, one quarter of the core still remains in the box for future reference.

The Aguila laboratory's quality controls include the use of a primary or secondary standard sample which is certified for analysis in fire assay, atomic absorption and X-ray fluorescence. These standard samples are analyzed at the end of each month, evaluating the assay results. This determines the quality control of the Aguila lab's analysis. Some duplicate samples are sent to ALS for lab quality controls.

## **8.5 Opinion on Adequacy**

DDGM considers that the drilling and chip channel sampling programs meet industry standards and have been reviewed and confirmed in sufficient detail to permit inclusion of the information in the Don David Mine database.

## 9 DATA VERIFICATION

### 9.1 Procedures

The DDGM staff follow a stringent set of procedures for data storage and validation, performing verification of data on an on-going basis. The operation employs a Database Manager who is responsible for overseeing data entry, verification and database maintenance.

Data used for Mineral Resource estimation are stored in one database relating to the mine, mainly channel samples, and diamond drilling results, both exploration and in-mine in-fill drilling. The database is in a Microsoft SQL database format.

Preliminary validation of the database was performed by the database manager in January 2021. The on-site database has a series of automated import, export, and validation tools to minimize potential errors. Any inconsistencies were corrected during the analysis with the databases being handed over for final review and validation by Mr. Fred Brown, P. Geo. The data verification procedures involved the following:

- Inspection of selected drill core to assess the nature of the mineralization and to confirm geological descriptions
- Inspection of geology and mineralization in underground workings of the Arista, Switchback and Mirador veins
- Verification that collar coordinates coincide with underground workings or the topographic surface
- Verification that downhole survey bearing and inclination values display consistency
- Evaluation of minimum and maximum grade values
- Investigation of minimum and maximum sample lengths
- Randomly selecting assay data from the databases and comparing the stored grades to the original assay certificates
- Assessing for inconsistencies in spelling or coding (typographic and case sensitivity errors)
- Ensuring full data entry and that a specific data type (collar, survey, lithology, and assay) is not missing
- Assessing for sample gaps or overlaps

Any and all inconsistencies were subsequently corrected.

### 9.2 Opinion on Data Adequacy

Investigations of all aspects of current and historical data quality indicates that the quality of the information is suitable for Mineral Resource and Mineral Reserve estimation.

## **10 MINERAL PROCESSING AND METALLURGICAL TESTING**

### **10.1 Summary of Mineral Processing and Metallurgical Testing**

Mineralization processed from the Arista underground mine consists entirely of sulfides. The principal economic components are gold, silver and zinc; however, the ores also contain economically significant amounts of copper and lead. The main metallurgical recovery method selected for processing the Arista sulfide mineralization is differential flotation. The flotation circuit designed Aguila plant produces three concentrates for sale: a copper concentrate with gold-silver, a lead concentrate with gold-silver, and zinc concentrate with gold-silver. All concentrates are sold to a broker or directly to a smelter in Mexico.

A separate agitated leach circuit with its own grinding circuit was also installed at the Aguila plant. Gold-rich or silver-rich deposits with little or no base metal components, or a combination of these, are currently being processed in the agitated-leach circuit. This includes ore produced from the Aguila open pit and the veins being mined by underground methods at the Mirador mine of the Alta Gracia project.

For more details on previous mineral processing and metallurgical testing programs, the reader is referred to earlier reports on mineral resources and reserves for the Don David Mine (Brown et al., 2020; Lopez et al., 2012).



## **11 MINERAL RESOURCE ESTIMATES**

### **11.1 Introduction**

On October 31, 2018, the SEC announced that it was adopting amendments to modernize the property disclosure requirements for mining registrants, and related guidance, under the Securities Act of 1933 and the Securities Exchange Act of 1934. Under the New Rules, a registrant with material mining operations must disclose specified information in Securities Act and Exchange Act filings concerning its mineral resources, in addition to its mineral reserves. The New Rules provide a two-year transition period so that a registrant will not be required to begin to comply with the new rules until its first fiscal year beginning on or after January 1, 2021. The SEC states that a registrant may voluntarily comply with the new rules prior to the compliance date, subject to the SEC's completion of necessary EDGAR reprogramming changes. DDGM has decided not to early adopt the New Rules for SEC reporting purposes until the required 2021 compliance date.

The modeling and estimation of Mineral Resources presented herein is based on technical data and information available as of December 31, 2020. DDGM models and estimates Mineral Resources from available technical information prior to the generation of Mineral Reserves.

The modeling and Mineral Resource estimation work reported herein was mainly carried out by Fred H. Brown, P.Geo., a QP by reason of education, affiliation with a professional association and past relevant work experience as described in Section 2.2. Mr. Brown is employed as a Senior Resource Geologist by GRCN, now a wholly-owned Nevada subsidiary of Fortitude Gold Corporation, and is independent of GRC and DDGM.

Modeling and estimation of mineral resources were carried out using the commercially available Maptek Vulcan software program, version 12.0.5.

Any statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading as of the effective date of this report.

### **11.2 Mineral Resource Definitions**

The SEC is adopting the Combined Reserves International Reporting Standards Committee (CRIRSCO) framework for reporting Mineral Resources (Miskelly, 2003).

According to CRIRSCO, a Mineral Resource is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust (a deposit) in such form, grade or quality, and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological

confidence, into Inferred, Indicated and Measured categories. Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource.

A mineral resource is a reasonable estimate of mineralization, taking into account relevant factors such as cut-off grade, likely mining dimensions, location or continuity, that, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable. It is not merely an inventory of all mineralization drilled or sampled.

Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters.

### **11.2.1 Inferred Mineral Resource**

An Inferred Mineral Resource is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which is limited or of uncertain quality and/or reliability. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource.

### **11.2.2 Indicated Mineral Resource**

An Indicated Mineral Resource is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes. The locations are too widely or inappropriately spaced to confirm geological continuity and/or grade continuity but are spaced closely enough for continuity to be assumed. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource but has a higher level of confidence than that applying to an Inferred Mineral Resource.

### **11.2.3 Measured Mineral Resource**

A Measured Mineral Resource is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes. The locations are spaced closely enough to confirm geological and/or grade continuity.

## 11.3 Database

Mineral Resources described in this report are gold, silver and base metal-bearing material that has been physically delineated by one or more of a number of methods including drilling and surface mapping and other types of sampling. This material has been found to contain a sufficient amount of mineralization of an average grade to have potential that warrants further exploration evaluation. This material is reported as Mineral Resources only if the potential exists for reclassification into the Mineral Reserves category. Mineral Resources cannot be classified into the Mineral Reserves category until technical, economic and legal factors have been evaluated.

The modeling and estimation reported herein utilized the drill hole database compiled by DDGM. Drill holes with assay samples within the immediate project area were imported into a Maptek Vulcan database. The extracted drill hole database contains 29,917 unique collar records (Fig. 11.1) and 192,446 assay records, broken down by sample type as:

- Drill Holes: 93,652 drill hole samples for 88,607.4 m, and
- Channel Samples: 98,187 channel and trench samples for 94,425.5 m.

Industry standard validation checks of the database were carried out with minor corrections made where necessary. The database was interrogated for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields. No significant discrepancies with the data were noted.

### 11.3.1 Drill Data

DDGM staff has compiled a master database at the mine site in Microsoft SQL Server. Drill data mainly consists of drill hole collar coordinates, down hole surveys, QAQC results, lithology data and assays. Assay data used for reserve reporting include gold, silver, copper, lead and zinc. Summary assay statistics were tabulated for the assay data (Table 11.1).

Underground chip channel sampling data accounts for a large proportion of the reserve database. Samplers, under the supervision of the geologists, collect the chip samples and record the sample numbers and location information in sample ticket books. These are returned to the mine office for processing by the geologists and data entry clerks.

Chip samples are collected along channels in the underground workings. These channel samples are surveyed and entered into the database as a data string and treated as a drill hole.

The coordinate datum used is Universal Transverse Mercator (UTM)-Zone 14N, WGS 84. The reserve models have been constructed in metric units (meters, metric tonnes, etc.). Gold and silver grades are in grams of metal per metric tonne. Copper, zinc, and lead grades are expressed in percent metal.

**Table 11.1 Summary Assay Statistics**

Assays	Alta Gracia	Arista	Switchback	Total
Count	23,331	120,776	48,339	192,446
Ag Avg	87.72	109.53	48.49	91.56
Ag Count	23,331	120,776	48,335	192,442
Au Average	0.22	1.26	1.16	1.11
Au Count	23,331	120,776	48,339	192,446
Cu Average	0.01	0.19	0.28	0.19
Cu Count	23,260	120,636	48,327	192,223
Pb Average	0.04	0.75	1.11	0.76
Pb Count	23,261	120,653	48,339	192,253
Zn Average	0.09	1.96	3.13	2.03
Zn Count	23,261	120,653	48,339	192,253

### 11.3.2 Database Backup

All data is centrally stored on the Aguila Project server, which is backed-up every night at 3:00 am. DDGM company policy also includes Windows personal computer folder backup that automatically synchronizes Microsoft Desktop, Documents and Pictures folders to a OneDrive cloud storage.

### 11.4 Bulk Density

DDGM has periodically performed bulk density determinations, which is used for converting volumes to tonnes for reserve estimates. The bulk density of a material is defined as its [mass](#) per unit [volume](#). The bulk density is expressed in grams per mL (g/mL) or tonnes per cubic meter (t/m<sup>3</sup>) although the international unit is kilograms per cubic meter (1 g/mL = 1000 kg/m<sup>3</sup> or 1 tonne/m<sup>3</sup>).

For the Arista and Switchback veins, the Don David Mine staff currently applies a factor of 2.79 tonnes/m<sup>3</sup> to convert volumes to tonnes for Mineral Resource and Mineral Reserve estimates. For the Alta Gracia and Margaritas veins, a factor of 2.59 is used. A factor of 2.50 tonnes/m<sup>3</sup> is used to convert volumes to tonnes for wall rock dilution applied to reserve and Mineral Resource and Mineral Reserve estimates. This factor is based on bulk density measurements on vein samples by water immersion methods. DDGM density determinations are performed on 10 cm portions of selected whole drill core from mineralized zones, dried naturally in air; in the Aguila Project lab the weight is recorded, after immersion in calibrated

water filled cylinder yield volume is determined by displacement, and the final density is calculated with the simple formula: mass/volume.

## 11.5 Wire-frame Modeling

Three-dimensional models were constructed by DDGM staff as triangulated, irregular network wire-frames defining the extent of underground workings and mineralized structures and incorporates all significant vein systems identified to-date (Table 11.2). Vulcan mine planning software was used for construction of the wire-frames.

Wire-frames were developed using successive polylines constructed in cross-section and oriented perpendicular to the overall trend of the mineralization. The outlines of the polylines were determined by the defined economic cutoff with demonstrated continuity between sections and include low-grade material where necessary to maintain continuity. All polyline vertices were snapped directly to drill hole assay intervals in order to generate a true three-dimensional representation of the extent of the mineralization and minimize undesired dilution from lower-grade assays. Where underground channel sampling is present, the channel samples were treated as a drill hole. A total of 43 individual wireframes were modeled for the Arista system, 28 for the Switchback system, 60 for the Alta Gracia system and one for Margaritas (Table 11.2). The resulting wireframes were used for rock coding, statistical analysis and compositing limits. Figure 11.1 is a three-dimensional view of the wire frame solids of the veins modeled for the Arista and Switchback vein systems. Figure 11.2 illustrates the corresponding plan view of the Arista and Switchback veins. Figure 11.3 is a three-dimensional view of the wire frame solids of the veins modeled for the Alta Gracia Vein System.

For the Arista and Switchback vein systems, mineralized zones were defined based on a nominal drill-hole intercept of a composited 1.5-meter of assay length that had a minimum average grade above US\$77 per tonne NSR using gold, silver, copper, lead and zinc metal prices to calculate the NSR value. For the Alta Gracia vein systems, mineralized zones were defined based on a composited drill hole intercept that had a minimum gold-equivalent grade of 2.33 g/t. For Margaritas, mineralized zones were defined based on a composited drill hole intercept that had a minimum gold-equivalent grade of 2.50 g/t. Gold and silver vein mineralization identified to date at Alta Gracia and Margaritas is not associated with any appreciable base metals, so only gold and silver are used to calculate gold equivalencies.

NSR values are determined by the three-year trailing average price for gold, silver, copper, lead and zinc. Gold-equivalent grades were calculated using the three-year trailing average price for gold and silver.

**Table 11.2 Description of Significant Vein Structures Modeled at the Don David Mine**

<b>Vein</b>	<b>Description</b>
<b>Arista Mine</b>	
Aire	Minor Vein southwest of Arista
Alta	Minor Vein northeast of Arista
Arista	Major Vein
Chuy 1	Minor Vein – probable extensions of Arista Vein at depth on Chuy Fault
Chuy 2	Minor Vein – probable extensions of Arista Vein at depth on Chuy Fault
Baja	Major Vein parallel to Arista
Baja_rm1	Minor Splay of Baja
Vein 3	Major Vein east of Arista
Splay 66	Major Splay parallel to Baja and Arista
Splay 66 RM1	Minor Splay of Splay 66
Luz	Major Vein southwest of Baja
Candelaria	Major Vein southwest of Luz
Gisela	Minor Vein of Baja
Santiago	Major Vein - probable extension Vein 1 (100° trend)
Santiago-R1	Minor Splay of Santiago
Splay 5	Major Vein southwest of Candelaria
Splay 5 RM1	Minor Splay of Splay 5
Splay 6	Minor Vein, parallel to Aire Vein, west of Arista
Splay 6 - SUR	Minor Splay, probable southern extension of Splay 6
Santa Lucia	Minor Vein – parallel and east of Arista
Este-Norte	Minor Vein northeast of Baja
Esten-rm1	Minor Splay of Este-Norte
Este-Sur	Minor Vein southeast of Baja
Estes-rm1	Minor Splay of Este-Sur
Splay 31	Major Vein north of Arista
Splay 31_r1	Minor Splay of Splay 31
Splay 31_r2	Minor Splay of Splay 31
Splay 31_r3	Minor Splay of Splay 31
Splay 31_r4	Minor Splay of Splay 31
Marena	Minor vein northeast of Arista
Mercedes	Minor vein east of Baja
Santa Cecilia	Minor Vein northeast of Splay 31
Santa Clara	Minor Vein northeast of Santa Lucia
Santa Helena	Minor Vein northeast of Arista
Viridiana	Major Vein east of Arista
Viri-rm1	Major Splay of Viridiana
Viri-rm2	Major Splay of Viridiana
<b>Switchback</b>	
Soledad	Major Vein in Switchback Vein System
Soledad_R1	Minor Splay of Soledad
Soledad_R2	Minor Splay of Soledad
Soledad_R3	Minor Splay of Soledad
Soledad_R5	Minor Splay of Soledad
Sadie 1	Major Vein in Switchback Vein System
Sadie 2	Major Vein in Switchback Vein System
Sasha 1	Major Vein in Switchback Vein System
Sofia	Minor Vein in Switchback Vein System
Silvia	Major Vein in Switchback Vein System
Sagrario	Major Vein in Switchback Vein System
Sagrario_rm1	Minor Splay of Sagrario
Selene	Minor Vein in Switchback Vein System
Selene RM1	Minor Splay of Selene
Samantha1	Minor Vein of Switchback Vein System
Samantha2	Minor Vein of Switchback Vein System
Sara	Minor Vein in Switchback Vein System
Sonya	Minor Vein in Switchback Vein System
Susana_N	Major Vein in Switchback Vein System
Susana_S	Major Vein in Switchback Vein System



SB-N1	Minor Vein in Switchback Vein System, possible extension of Susana Vein
SB-N2	Minor Vein in Switchback Vein System, possible extension of Susana Vein
<b>Alta Gracia</b>	
Mirador	Major Vein at Alta Gracia
Huaje 1_RM1	Minor Vein at Alta Gracia
Huaje 1_hw	Major Vein at Alta Gracia
Huaje 2	Major Vein at Alta Gracia
Indep-W	Major Vein at Alta Gracia
Ind M1	Minor Splay of Independencia Vein
Ind M2	Minor Splay of Independencia Vein
Ind-S-RM1	Minor Splay of Independencia Vein
Jarillas 1	Major Vein at Alta Gracia
San Juan NW 11	Major Vein at Alta Gracia
San Juan	Major Vein at Alta Gracia
San Juan_fw	Minor Splay of San Juan
Victoria 1	Major Vein at Alta Gracia
Victoria NE	Major Vein at Alta Gracia
<b>Margaritas</b>	
Tapada	Major Vein at Margaritas

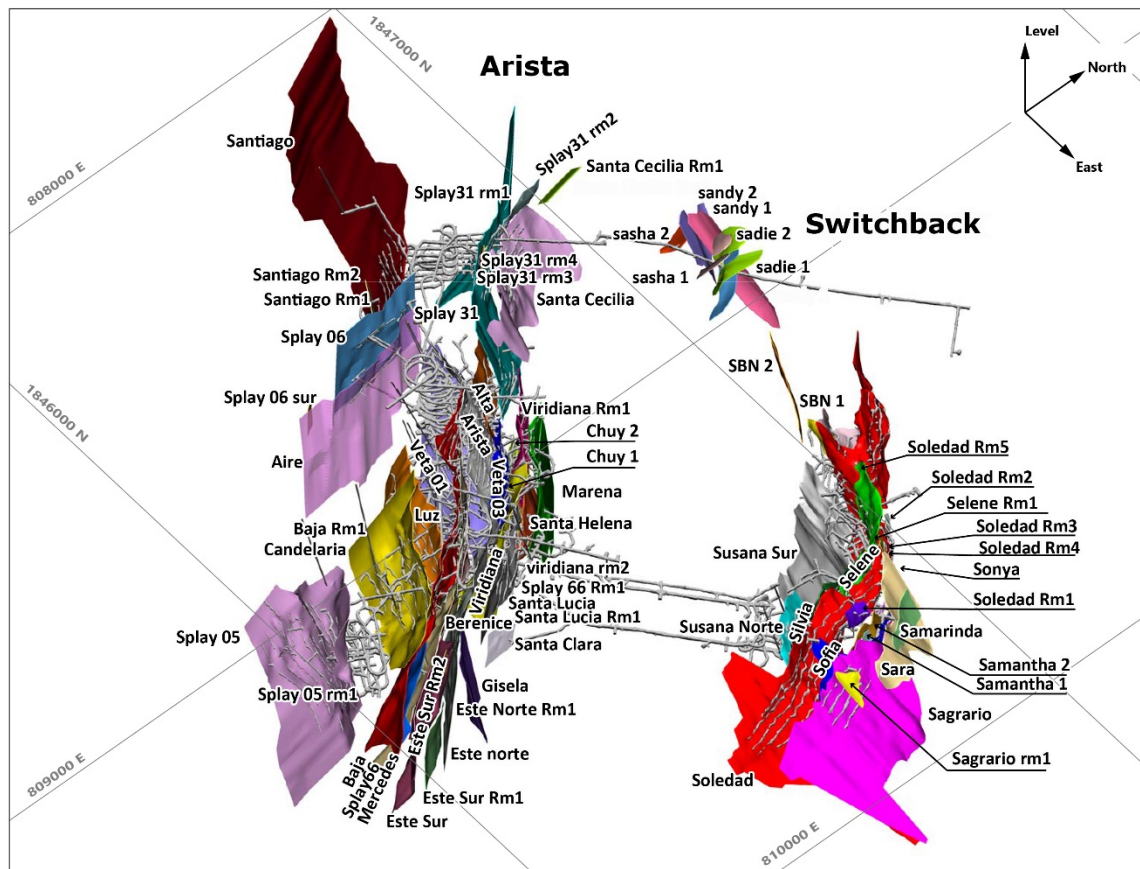


Figure 11.1 Three-dimensional view of the wire frame solids of the veins modeled for the Arista and Switchback vein systems

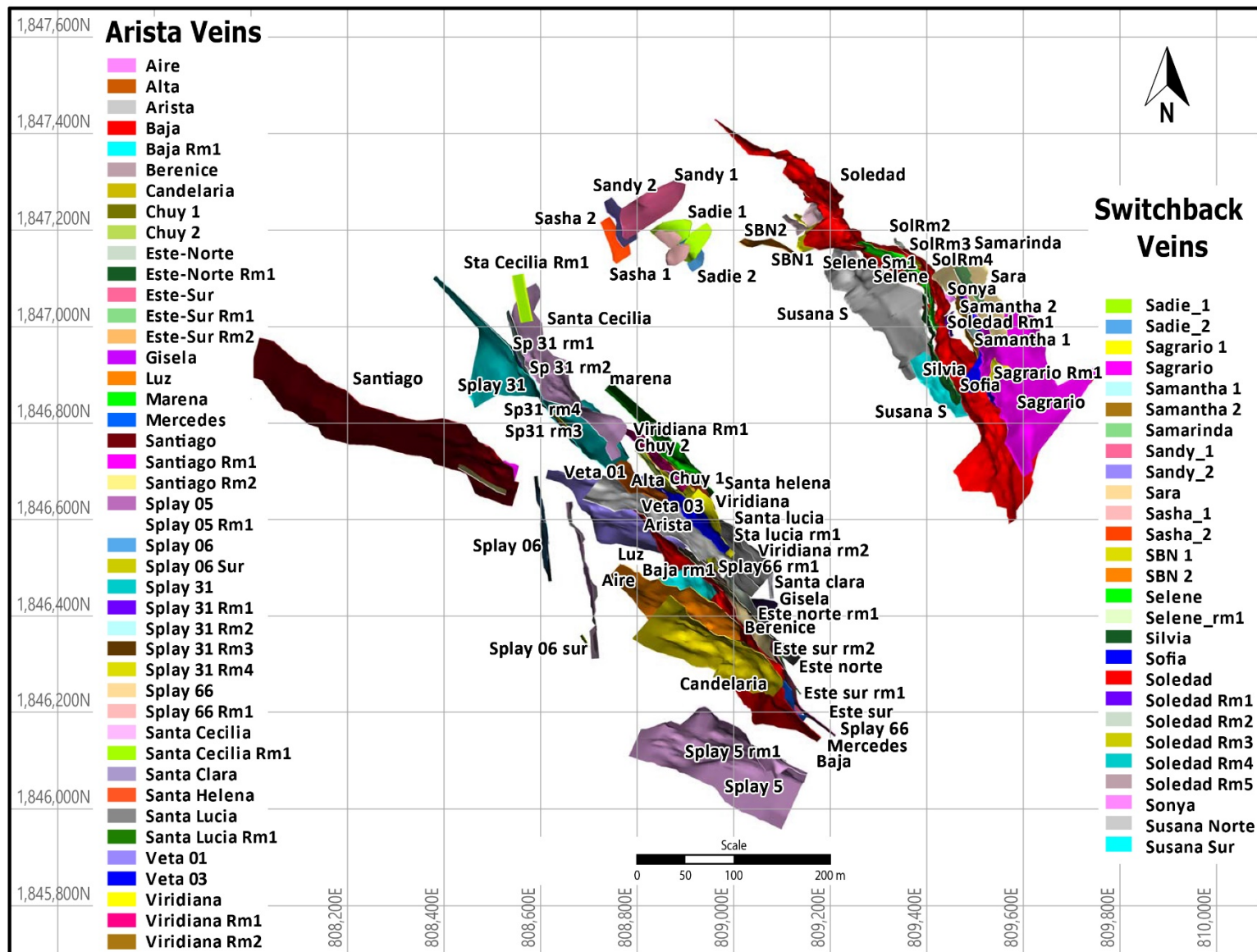
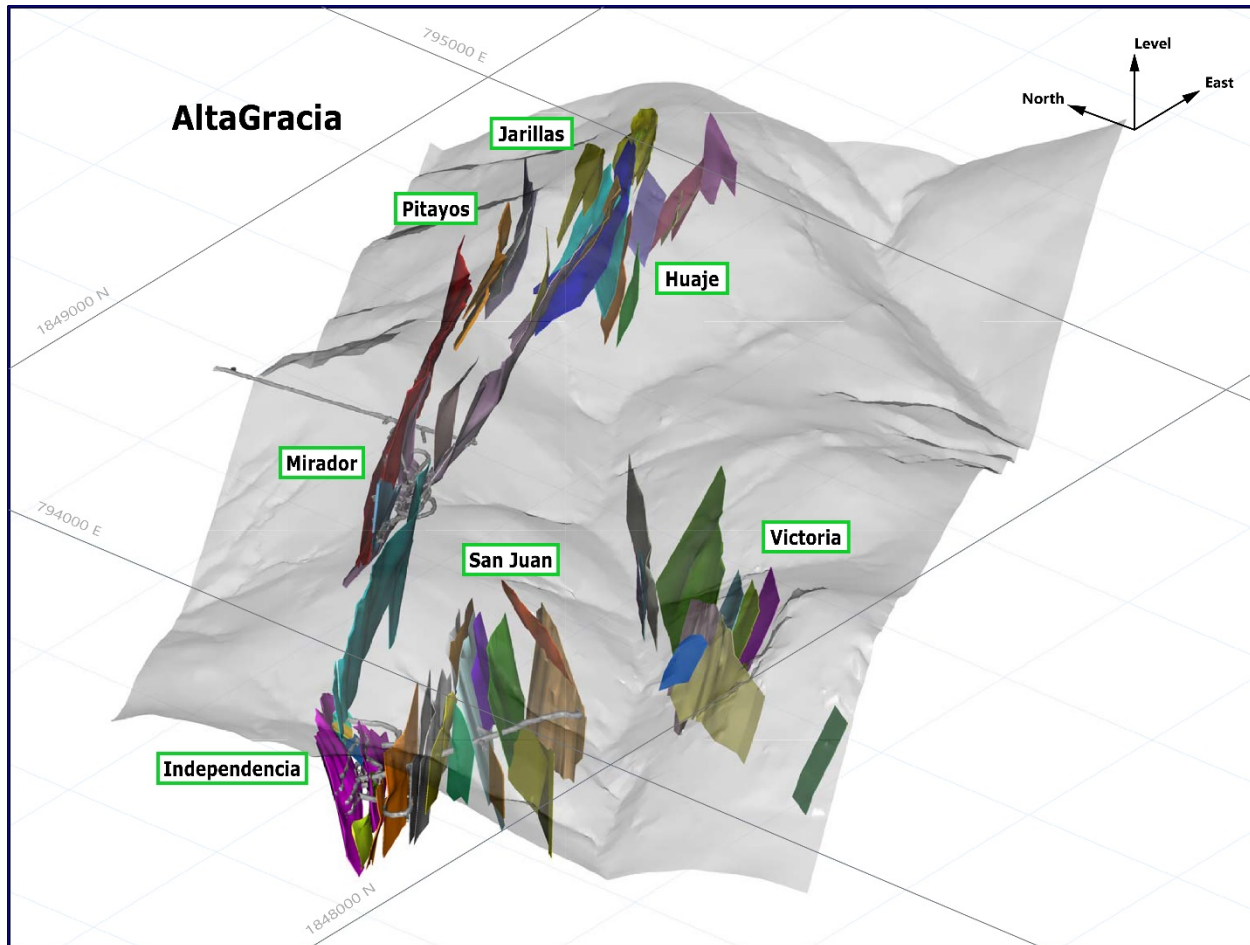


Figure 11.2 Plan View Map of Wire Frame Solids of the Veins Modeled for the Arista and Switchback Vein Systems



**Figure 11.3 Three-Dimensional View Map of Wire Frame Solids of the Veins Modeled for the Alta Gracia Vein System**

## 11.6 Compositing and Capping

Length-weighted composites for drill holes and channel samples were calculated within each modeled vein. The compositing process started at the first point of intersection between the drill hole and the vein intersected and halted upon exit from the vein wire-frame. The wire-frames that represent the modeled veins were also used to back-tag a rock code field into the drill hole workspace. A nominal value of 0.0001 was used to populate a small number of un-sampled intervals. Composites that were less than one-half of the compositing length were merged with the prior composite interval.

For Arista, Switchback and Margaritas, the compositing interval selected was 1.00m. Due to the narrow nature of the individual veins at Alta Gracia, a compositing interval of 0.50 m was used for Alta Gracia.

DDGM developed basic statistical parameters for gold, silver, copper, lead and zinc values from final composites. The statistics indicated that data are positively skewed and it is necessary to limit the influence of high-grade outlier samples. To determine the appropriate capping thresholds, composite sample population statistics, lognormal probability plots and cumulative frequency plots were examined

for each modeled vein. Capping thresholds were generally selected based on disintegration of the upper tail of the cumulative distribution (Table 11.3). Composite samples above this threshold were capped prior to estimation. In addition, the influence of capped composite samples was restricted to 60 m.

**Table 11.3 Composite Capping Values Inside Wire-Framed Veins of the Don David Mine**

System	Vein	Ag g/t	Au g/t	Cu %	Pb %	Zn %
Arista	aire	800	5	0.4	3	6
Arista	alta	2000	70	3	20	30
Arista	arista	7000	60	4	20	20
Arista	baja	7000	70	8	15	30
Arista	baja_rm1	1100	20	2	13	30
Arista	berenice	100	20	1	1.2	2.6
Arista	candelaria	3000	40	3	12	8
Arista	chuy1	2500	70	4	15	30
Arista	chuy2	400	10	1	7	20
Arista	este_nor	360	7	2	3	20
Arista	este_nor_rm1	160	1	0.4	4	12
Arista	este_sur	3600	7	3	5	20
Arista	este_sur_rm1	200	7	1	5	9
Arista	este_sur_rm2	100	1	1	5	9
Arista	gisela	1000	0.3	0.6	10	15
Arista	luz	4200	30	2	8	12
Arista	marena	1500	15	4	5	20
Arista	mercedes	600	4	2	3	5
Arista	santiago	300	30	2	20	20
Arista	santiago_rm1	25	0.04	0.4	5	9
Arista	santiago_rm2	30	0.2	0.2	2	4
Arista	splay05	6500	40	4	20	16
Arista	splay05_rm1	1700	10	0.6	10	16
Arista	splay06	1100	5	0.6	6	10
Arista	splay06_sur	700	3	0.1	0.15	4
Arista	splay31	7000	100	8	16	20
Arista	splay31_rm1	700	4	1	5	16
Arista	splay31_rm2	1000	10	0.8	10	7
Arista	splay31_rm3	1000	10	1	4	4
Arista	splay31_rm4	2000	2	0.5	1	2
Arista	splay66	4000	40	4	12	40
Arista	splay66_rm1	2400	20	2	10	30
Arista	stcecilia	300	11	1.5	10	16
Arista	stcecilia_rm1	na	na	na	na	na
Arista	stclara	600	1	2.5	12	15
Arista	sthelena	900	30	4	12	20
Arista	stlucia	2000	40	2.4	9	10
Arista	stlucia_rm1	30	1	1	2	7
Arista	veta01	2500	100	2	9	23
Arista	veta03	2700	60	4	17	42
Arista	viridiana	2100	50	4	15	34
Arista	viridiana_r1	2000	60	7	12	10
Arista	viridiana_r2	300	25	1.5	5	30
Switchback	sadie_1	380	4	0.5	1	5
Switchback	sadie_2	1280	4	0.5	1	5
Switchback	sagram1	70	2	1	6	5
Switchback	sagrario	1000	30	3	20	12
Switchback	sam1	35	3	1	11	10
Switchback	sam2	900	8	2	6	6
Switchback	samarinda	100	0.5	0.2	4	4
Switchback	sandy_1	130	0.4	0.5	1	5
Switchback	sandy_2	300	3	0.5	1	5
Switchback	sara	600	14	1.1	6	20
Switchback	sasha_1	1300	2.8	0.5	1	5
Switchback	sasha_2	7	0.1	0.5	1	5

Switchback	sbn1	450	9	2.2	10	7
Switchback	sbn2	450	9	2.2	10	7
Switchback	selene	900	20	0.5	3	4
Switchback	selene_rm1	40	9	0.5	3	4
Switchback	silvia	600	12	1	9	17
Switchback	sofia	500	30	2.7	10	12
Switchback	soledad	1100	20	4	17	34
Switchback	solram1	1000	20	1	5	15
Switchback	solram2	100	3	1	3	8
Switchback	solram3	600	9	0.7	6	10
Switchback	solram4	100	1	1.8	6	15
Switchback	solram5	300	14	1.8	6	15
Switchback	sonya	100	5	2.7	10	12
Switchback	susana_n	300	3	0.5	1	5
Switchback	susana_s	600	50	1	14	15
Altagracia	huaje1_fw	1700	4			
Altagracia	huaje1_hw	800	3			
Altagracia	huaje2	1700	4			
Altagracia	ind_m1	300	0.3			
Altagracia	ind_m2	300	0.3			
Altagracia	ind_s_rm1	600	3			
Altagracia	ind_w	1700	2			
Altagracia	jarillas1	1700	10			
Altagracia	mirador	1700	4			
Altagracia	sanjuan	900	2			
Altagracia	sanjuan_fw	1700	4			
Altagracia	sanjuan_nw11	1800	1			
Altagracia	victoria_ne	1700	4			
Altagracia	victoria1	1700	4			
Margaritas	Tapada	700	1			

## 11.7 Block Models

Three-dimensional block models were used to facilitate the modeling of veins as longitudinal-view sections oriented parallel to the main strike direction for each vein system and/or deposit. Rotated block models were established across the modeled mineralization for each system, with the block model limits selected so as to cover the extent of the mineralized systems and the block size reflecting the generally narrow widths of the individual veins. Generally, the model blocks are fixed in size at 1.0 meter vertically and 1.0 meter horizontally, parallel to the average strike of the vein system. Perpendicular to strike the thickness is determined by the actual width of the individual vein, and block resolution was set to 0.1 meter in the cross-strike direction.

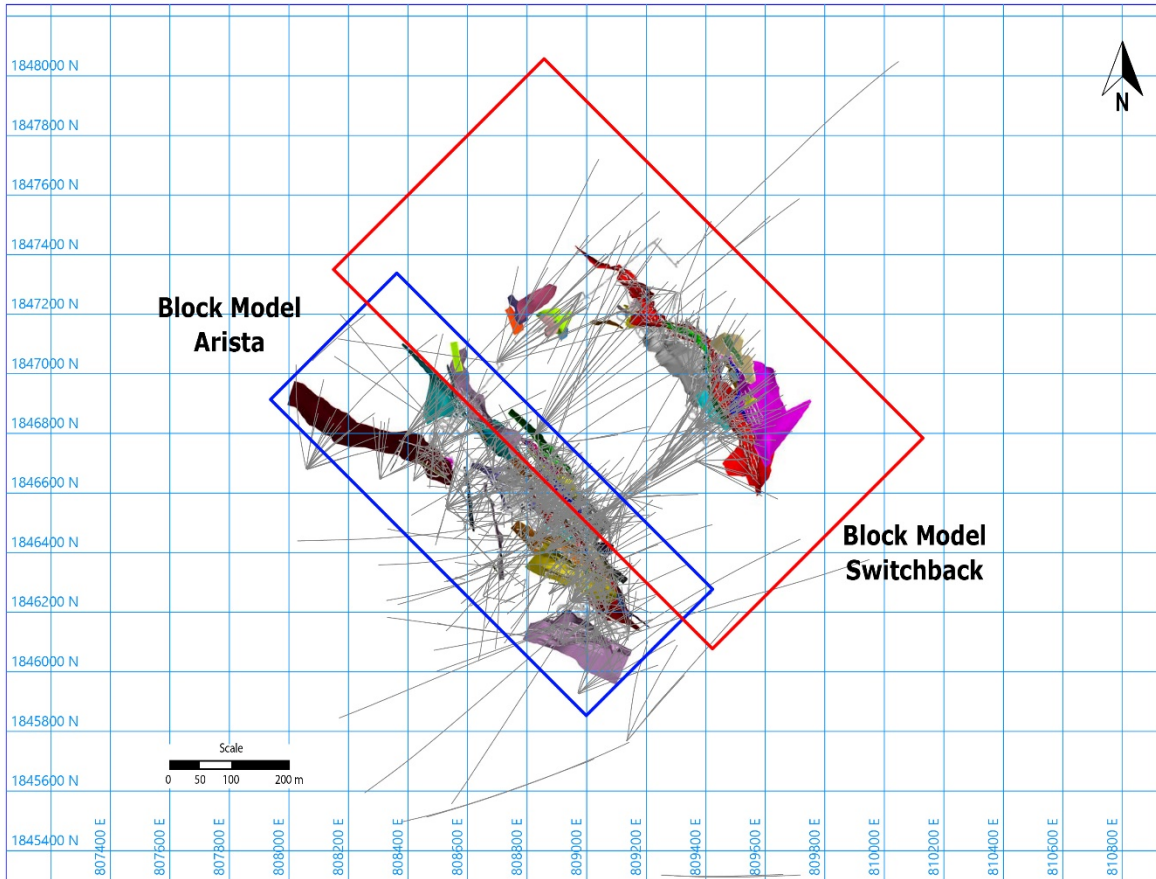
Block models consist of separate variables for estimated grades, vein codes, vein widths, density and classification attributes. The sub-celled block model accurately represents the volume and tonnage contained within the constraining wire-frame. Block model size and rotation parameters are shown for Vulcan model structures of the Arista, Switchback, Alta Gracia and Margaritas vein systems (Table 11.4).

**Table 11.4 Block Model Specifications – Arista, Switchback, Alta Gracia and Margaritas Vein Systems**

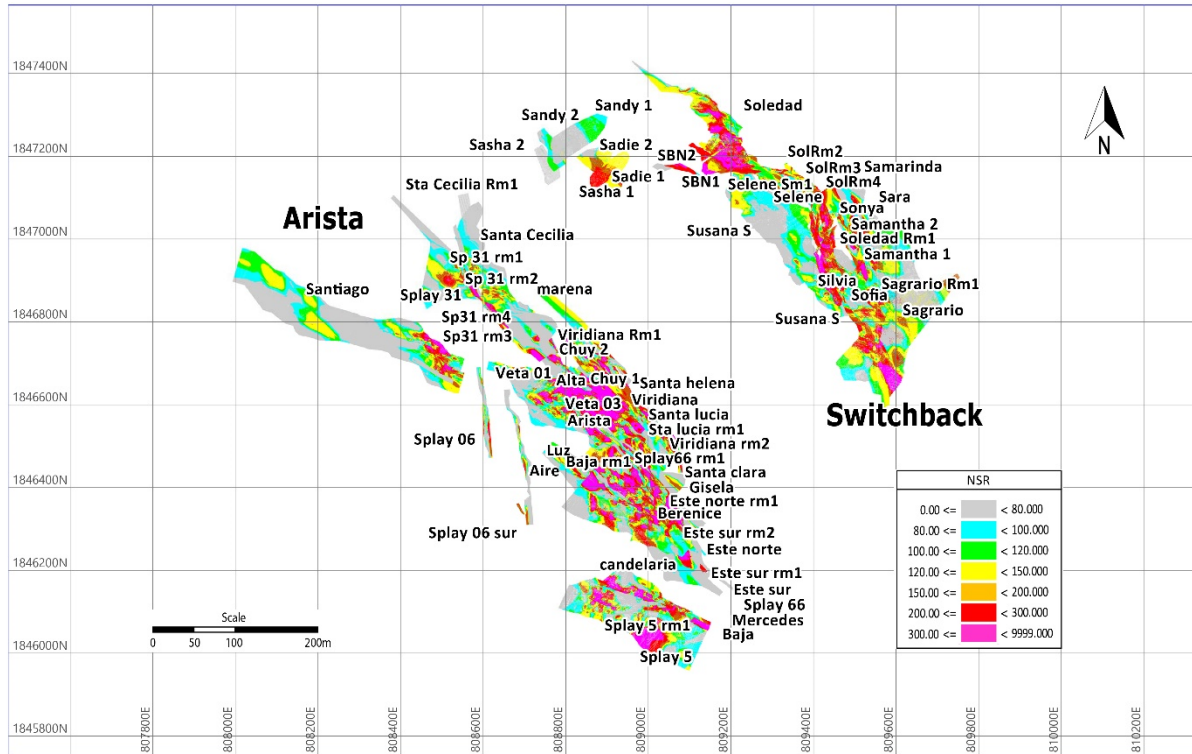
<b>Arista</b>	<b>Origin</b>	<b>Offset (m)</b>	<b>Block Size (m)</b>
X	807938.283	1500	1.0
Y	1846913.636	600	Variable
Z	150.0	800	1.0
<b>Rotation</b>	135 degrees		
<b>Switchback</b>	<b>Origin</b>	<b>Offset (m)</b>	<b>Block Size (m)</b>
X	808150.0	1800	1.0
Y	1847350.0	1000	Variable
Z	1000.0	850	1.0
<b>Rotation</b>	135 degrees		
<b>Alta Gracia</b>	<b>Origin</b>	<b>Offset (m)</b>	<b>Block Size (m)</b>
X	793960.0	1300	1.0
Y	1847700.0	750	Variable
Z	1200.0	500	1.0
<b>Rotation</b>	65 degrees		
<b>Margaritas</b>	<b>Origin</b>	<b>Offset (m)</b>	<b>Block Size (m)</b>
X	803500.0	1500	1.0
Y	1847700.0	1500	1.0
Z	400.0	900	1.0
<b>Rotation</b>	30 degrees		

The block model limits are shown relative to drilling, underground workings, and mineralized vein zones at the Arista underground mine in Figure 11.4. Figure 11.5 illustrates a NSR plan view of the veins. Figure 11.6 shows corresponding view of the Alta Gracia veins. Figure 11.7 shows corresponding view of the Tapada vein of the Margaritas project.

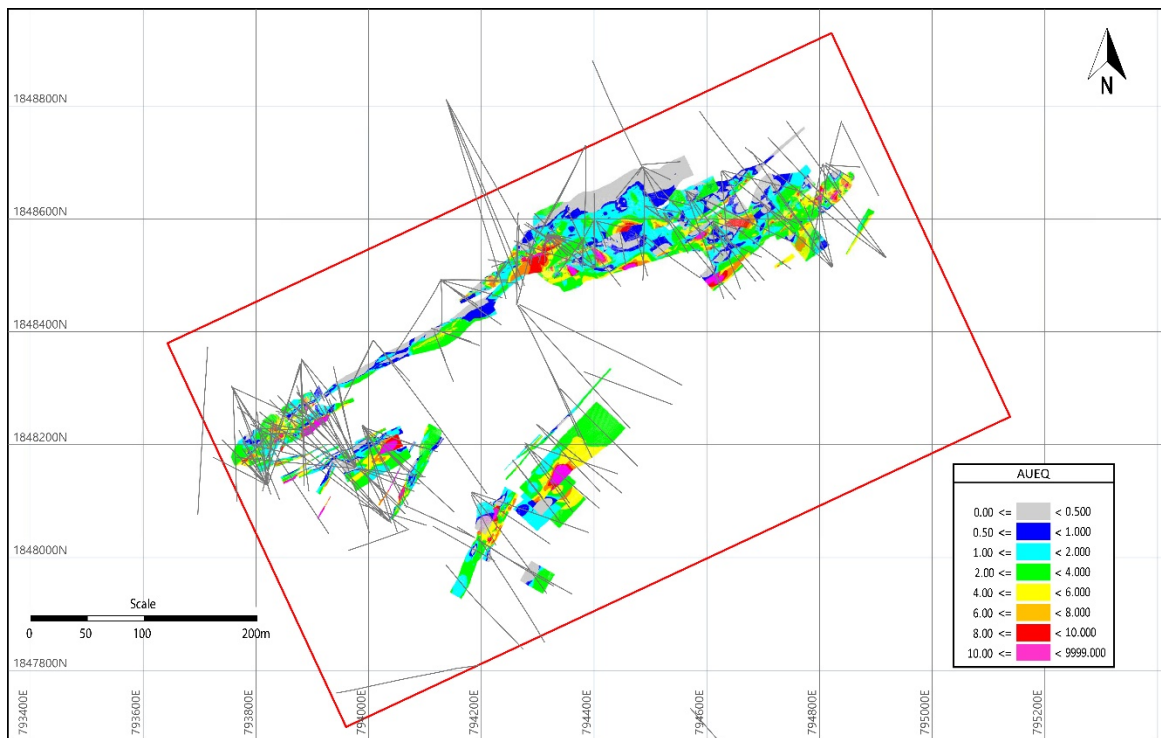




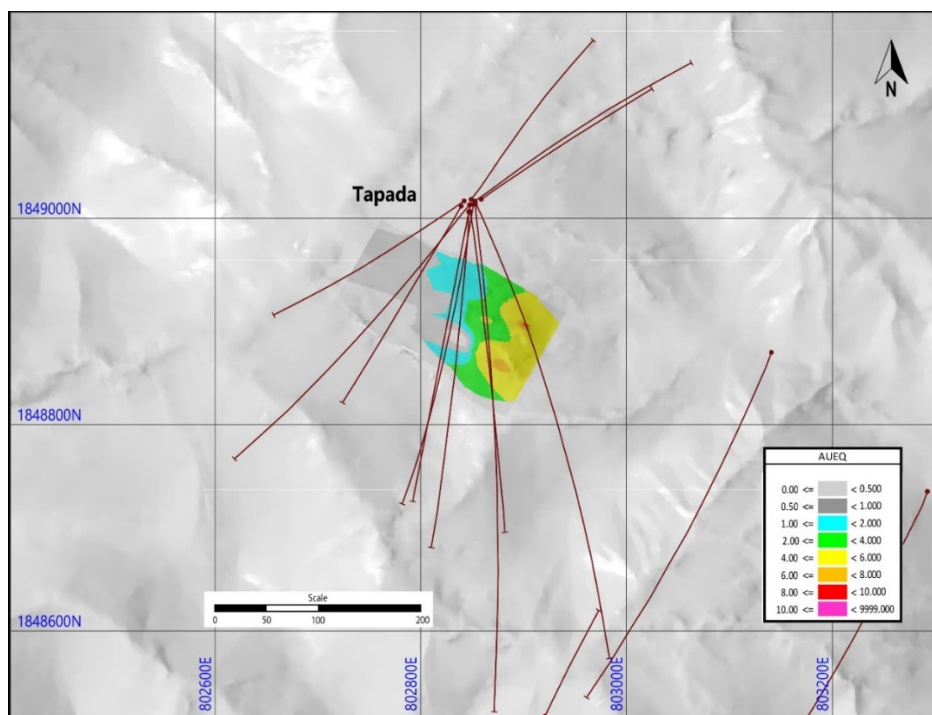
**Figure 11.4 Block Model Location and Size Parameters for the Arista and Switchback Vein Systems at the Arista Underground Mine**



**Figure 11.5 Plan View of Modeled Veins in the Arista Underground Mine Showing Distribution of Corresponding NSR values.**



**Figure 11.6 Plan View of Modeled Veins at the Alta Gracia Project, including Mirador Underground Mine, Showing Block Model Location and Distribution of Corresponding AuEq Values**



**Figure 11.7 Plan View of Modeled Tapada Vein at the Margaritas Project, Showing Block Model Location and Distribution of Corresponding AuEq Values**

## 11.8 Estimation and Classification

Anisotropic inverse distance cubed ( $ID^3$ ) linear weighting of capped composite values was used for the estimation of Au and Ag block grades, with the anisotropy defined by the axes of the search ellipsoid. Anisotropic inverse distance squared ( $ID^2$ ) linear weighting of capped composite values was used for the estimation of Cu, Pb and Zn block grades, with the anisotropy defined by the axes of the search ellipsoid.

A three-pass series of expanding search ellipsoids were used for sample selection, grade estimation and classification. Composite data used during grade estimation were restricted to samples located within their respective vein. Spatial grade continuity and grade trends were modeled using the overall best fit strike and dip of the individual vein, variography, historical stoping, trend analysis and global estimation plots. The modeled continuity was used to define the overall orientation of the search ellipsoid for each individual vein (Table 11.5).

During the first pass, three to fifteen composites from drillholes or channel samples within a rotated search ellipsoid were selected for estimation. The length of the major axis was set at 30 m, the semi-major axis was set at 20 m, and the minor axis was set at 15 m. Blocks estimated during the first pass were classified as Measured Mineral Resources.

During the second pass, three to fifteen composites from drillholes or channel samples within a rotated search ellipsoid were selected for estimation. The length of the major axis was set at 90 m, the semi-major

axis was set at 60 m, and the minor axis was set at 45 m. Blocks estimated during the second pass were classified as Indicated Mineral Resources.

During the third pass, three to fifteen composites from drillholes or channel samples within a rotated search ellipsoid were selected for estimation. The length of the major axis was set at 300 m, the semi-major axis was set at 200 m, and the minor axis was set at 150 m. Blocks estimated during the third pass were classified as Inferred Mineral Resources.

For each vein silver, gold, copper, lead and zinc block grades were estimated. Individual block grades were then used to calculate an NSR value and an AuEq grade. Nearest Neighbor (NN) block grades were also assigned for validation and comparative purposes using the same search parameters.

**Table 11.5 Grade Estimation Search Parameters**

System	Vein	Bearing	Plunge	Dip	System	Vein	Bearing	Plunge	Dip
Arista	aire	164	82	-50	Switchback	sadie_1	120	0	20
Arista	alta	120	80	-25	Switchback	sadie_2	120	0	20
Arista	arista	110	-25	-50	Switchback	sagram1	131	-50	-41
Arista	baja	145	90	-65	Switchback	sagrario	131	-50	-41
Arista	baja_rm1	176	133	-52	Switchback	sam1	129	-24	-44
Arista	berenice	220	-80	0	Switchback	sam2	129	-24	-44
Arista	candelaria	159	144	-58	Switchback	samarinda	129	-24	-44
Arista	chuy1	145	10	-60	Switchback	sandy_1	120	0	-20
Arista	chuy2	145	10	-60	Switchback	sandy_2	120	0	-20
Arista	este_nor	130	90	-55	Switchback	sara	110	-45	-44
Arista	este_nor_rm1	140	90	-45	Switchback	sasha_1	120	0	30
Arista	este_sur	150	90	-45	Switchback	sasha_2	135	-45	-40
Arista	este_sur_rm1	150	90	-45	Switchback	sbn1	85	-15	-45
Arista	este_sur_rm2	150	90	-45	Switchback	sbn2	85	-15	-45
Arista	gisela	-40	-80	0	Switchback	selene	124	-43	-50
Arista	luz	135	25	-50	Switchback	selene_rm1	120	0	0
Arista	marena	137	84	-35	Switchback	silvia	120	-29	-41
Arista	mercedes	200	0	-65	Switchback	sofia	124	-40	-43
Arista	santiago	127	113	-48	Switchback	soledad	124	-50	-43
Arista	santiago_rm1	150	-25	-45	Switchback	solram1	170	0	-90
Arista	santiago_rm2	150	-45	-25	Switchback	solram2	170	0	-90
Arista	splay05	195	0	-70	Switchback	solram3	170	0	-90
Arista	splay05_rm1	172	160	-63	Switchback	solram4	170	0	-90
Arista	splay06	175	90	-30	Switchback	solram5	170	0	-90
Arista	splay06_sur	180	15	-45	Switchback	sonya	170	0	-90
Arista	splay31	127	0	70	Switchback	susana_n	135	-40	-45
Arista	splay31_rm1	127	75	-30	Switchback	susana_s	110	-45	-45
Arista	splay31_rm2	127	75	-30	Altagracia	huaje1_fw	230	55	0
Arista	splay31_rm3	160	-80	-50	Altagracia	huaje1_hw	240	55	0
Arista	splay31_rm4	160	-80	-50	Altagracia	huaje2	235	55	0
Arista	splay66	156	98	-50	Altagracia	ind_m1	60	0	-45
Arista	splay66_rm1	130	90	-50	Altagracia	ind_m2	60	0	-45
Arista	stcecilia	131	63	-42	Altagracia	ind_s_rm1	60	0	-90
Arista	stcecilia_rm1	260	-60	0	Altagracia	ind_w	60	63	0
Arista	stclara	175	90	-75	Altagracia	jarillas1	240	60	0
Arista	sthelena	136	83	-40	Altagracia	mirador	240	70	0
Arista	stlucia	149	117	-42	Altagracia	sanjuan	250	85	0
Arista	stlucia_rm1	149	117	-42	Altagracia	sanjuan_fw	210	90	0
Arista	veta01	121	120	-50	Altagracia	sanjuan_nw11	210	0	-90
Arista	veta03	125	90	-60	Altagracia	victoria_ne	220	0	-65
Arista	viridiana	137	84	-30	Altagracia	victoria1	210	-70	0
Arista	viridiana_r1	137	67	-28					
Arista	viridiana_r2	170	-58	-50	Vulcan Rotation Convention Used				

## 11.9 Mineral Resource Estimate

A Measured Mineral Resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a Measured Mineral Resource is sufficient to allow a QP to apply modifying factors in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit. A Measured Mineral Resource has a higher level of confidence than the level of confidence of either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

An Indicated Mineral Resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an Indicated Mineral Resource is sufficient to allow a QP to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. An Indicated Mineral Resource has a lower level of confidence than the level of confidence of a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

An Inferred Mineral Resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of geological uncertainty associated with an Inferred Mineral Resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. An Inferred Mineral Resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability. An Inferred Mineral Resource, therefore, may not be converted to a mineral reserve.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters.

Measured, Indicated and Inferred Mineral Resources inclusive of Mineral Resources and Mineralized Material reported for the Don David Mine as of December 31, 2020 are summarized in Table 11.6, and by particular vein systems in Tables 11.7, 11.8 and 11.9.

**Table 11.6 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) for the Don David Mine as of December 31, 2020\***

Vein System	Description	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	\$77	850,800	1.97	175	0.25	0.96	2.83
	Indicated	\$77	1,118,400	1.41	168	0.17	1.2	3.3
	Meas+Ind	\$77	1,969,200	1.65	171	0.2	1.09	3.1
	Inferred	\$77	251,500	0.36	64	0.15	1.4	5.02
Switchback	Measured	\$77	1,220,400	2.25	79	0.44	1.91	5.23
	Indicated	\$77	646,500	1.71	113	0.34	1.22	3.28
	Meas+Ind	\$77	1,866,900	2.06	91	0.41	1.67	4.56
	Inferred	\$77	410,900	1.26	81	0.47	1.05	3.17
Altigracia	Measured	2.33 g/t	70,500	0.73	311			
	Indicated	2.33 g/t	164,000	0.74	364			
	Meas+Ind	2.33 g/t	234,400	0.74	348			
	Inferred	2.33 g/t	53,300	0.75	370			
Margaritas (Tapada Vein)	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
OAXACA MINING UNIT TOTAL	Measured	NA	2,141,700	2.09	125			
	Indicated	NA	1,952,000	1.44	168			
	Meas+Ind	NA	4,093,600	1.78	145			
	Inferred	NA	751,800	0.89	107			

**Table 11.7 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) by Vein for the Arista Vein System of the Don David Mine as of December 31, 2020\***

Description	Vein	Cutoff US\$	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Measured	AIRE	\$77	7,500	1.49	215	0.10	0.53	1.00
	ALTA	\$77	17,600	2.89	133	0.37	1.34	3.64
	ARISTA	\$77	43,200	1.56	110	0.25	1.14	3.17
	BAJA	\$77	130,800	1.88	203	0.23	0.87	3.08
	BAJA-RM1	\$77	19,200	1.82	78	0.22	2.25	5.45
	CANDELARIA	\$77	75,600	2.39	244	0.17	0.53	1.02
	CHUY1	\$77	13,300	1.39	60	0.18	1.07	4.00
	CHUY2	\$77	-	0.51	24	0.03	0.39	5.36
	ESTE-NORTE	\$77	11,100	1.14	71	0.33	0.91	2.56
	ESTE-SUR	\$77	13,900	1.89	318	0.55	1.01	1.98
	ESTE-SUR-RM1	\$77	-	0	0	0.00	0.00	0.00
	ESTE-SUR-RM2	\$77	-	0	0	0.00	0.00	0.00
	GISELA	\$77	-	0	0	0.00	0.00	0.00
	LUZ	\$77	26,100	2.5	297	0.28	0.49	0.76
	MARENA	\$77	20,700	2.19	99	0.34	1.07	2.67
	MERCEDES	\$77	400	0.84	204	0.09	0.56	1.05
	SANTIAGO	\$77	19,900	2.19	34	0.23	0.95	2.63
	SANTIAGO-RM1	\$77	-	0	0	0.00	0.00	0.00
	SANTIAGO-RM2	\$77	-	0	0	0.00	0.00	0.00
	SPLAY05	\$77	116,600	1.4	271	0.14	0.81	1.58
	SPLAY05-RM1	\$77	7,400	1.21	228	0.13	0.79	1.82
	SPLAY05-RM2	\$77	-	0	0	0.00	0.00	0.00
	SPLAY06	\$77	8,200	1.25	146	0.17	0.51	0.89
	SPLAY06-SUR	\$77	-	0	0	0.00	0.00	0.00
	SPLAY31	\$77	64,100	1.32	113	0.21	0.84	2.65
	SPLAY31-RM1	\$77	4,100	0.45	85	0.37	0.95	5.62
	SPLAY31-RM2	\$77	2,100	1.42	109	0.20	1.66	2.03
	SPLAY31-RM3	\$77	4,400	2.18	292	0.27	0.61	0.84
	SPLAY66	\$77	46,900	2.8	288	0.38	0.87	2.85
	SPLAY66-RM1	\$77	7,400	1.71	101	0.23	0.74	1.94



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	STA-CECILIA	\$77	25,200	0.58	57	0.24	1.56	4.22
	STA-CLARA	\$77	7,200	0.23	171	0.66	3.24	4.83
	STA-HELENA	\$77	15,800	1.9	91	0.47	2.24	6.70
	STA-LUCIA	\$77	4,000	2	116	0.35	0.53	1.07
	STA-LUCIA-RM1	\$77	-	0	0	0.00	0.00	0.00
	VETA01	\$77	3,700	0.59	34	0.10	1.16	2.84
	VETA03	\$77	35,400	4.41	152	0.42	1.40	6.15
	VIRIDIANA	\$77	71,800	1.91	76	0.14	0.86	3.87
	VIRIDIANA-R1	\$77	17,500	4.5	154	0.57	0.64	1.18
	VIRIDIANA-R2	\$77	9,700	1.6	98	0.05	0.68	4.94
	TOTAL	\$77	850,800	1.97	175	0.25	0.96	2.83
Indicated	AIRE	\$77	13,800	0.94	207	0.07	0.30	0.61
	ALTA	\$77	200	0.89	84	0.18	0.63	1.10
	ARISTA	\$77	14,800	1.55	116	0.21	0.59	2.60
	BAJA	\$77	90,000	3	121	0.10	0.82	3.08
	BAJA-RM1	\$77	29,300	0.55	60	0.15	3.14	5.46
	CANDELARIA	\$77	53,500	2.89	508	0.16	0.38	0.81
	CHUY1	\$77	2,800	2.89	53	0.31	1.38	4.23
	CHUY2	\$77	-	0	0	0.00	0.00	0.00
	ESTE-NORTE-RM1	\$77	-	0	0	0.00	0.00	0.00
	ESTE-NORTE	\$77	64,400	0.13	86	0.09	1.39	5.31
	ESTE-SUR	\$77	61,300	0.79	144	0.26	1.73	4.84
	ESTE-SUR-RM1	\$77	20,000	1.19	54	0.14	1.12	2.62
	ESTE-SUR-RM2	\$77	-	0	0	0.00	0.00	0.00
	GISELA	\$77	44,400	0.04	148	0.05	1.72	3.44
	LUZ	\$77	17,200	1.32	235	0.17	0.32	0.74
	MARENA	\$77	65,100	0.44	51	0.09	1.26	5.83
	MERCEDES	\$77	21,500	0.99	161	0.10	0.64	1.18
	SANTIAGO	\$77	104,000	0.73	94	0.16	1.31	2.30
	SANTIAGO-RM1	\$77	3,900	0.02	17	0.22	2.08	4.48
	SPLAY05	\$77	91,300	1.78	339	0.15	1.71	1.76
	SPLAY05-RM1	\$77	1,100	0.46	174	0.08	0.27	0.40
	SPLAY06	\$77	32,200	0.83	259	0.16	0.40	0.73
	SPLAY06-SUR	\$77	3,800	1.12	261	0.02	0.06	0.10
	SPLAY31	\$77	88,400	0.62	106	0.18	1.45	4.93
	SPLAY31-RM1	\$77	7,400	0.7	30	0.25	1.76	6.74
	SPLAY31-RM2	\$77	-	0	0	0.00	0.00	0.00
	SPLAY31-RM3	\$77	3,900	2.22	299	0.28	0.64	0.88
	SPLAY31-RM4	\$77	1,500	0.37	320	0.13	0.36	0.47
	SPLAY66	\$77	63,500	1.91	514	0.35	0.47	2.48
	SPLAY66-RM1	\$77	4,300	1.88	109	0.25	0.46	1.11
	STA-CECILIA	\$77	31,000	0.36	49	0.41	1.04	3.18
	STA-CLARA	\$77	16,000	0.24	153	0.54	2.39	3.81
	STA-HELENA	\$77	77,700	1.88	62	0.12	1.73	6.15
	STA-LUCIA	\$77	1,300	2.01	33	0.18	0.26	0.67
STA-LUCIA-RM1	\$77	-	0	0	0.00	0.00	0.00	
VETA01	\$77	1,800	0.75	50	0.16	1.01	1.94	
VETA03	\$77	200	2.3	70	0.22	0.66	3.78	
VIRIDIANA	\$77	73,800	3.8	83	0.17	0.55	1.81	
VIRIDIANA-R1	\$77	11,100	1.86	107	0.27	0.27	0.60	
VIRIDIANA-R2	\$77	2,100	0.21	66	0.02	0.58	5.09	
TOTAL	\$77	1,118,400	1.41	168	0.17	1.20	3.30	
Mea + Ind	AIRE	\$77	21,400	1.13	210	0.08	0.38	0.75
	ALTA	\$77	17,800	2.87	132	0.37	1.33	3.62
	ARISTA	\$77	58,000	1.56	111	0.24	1.00	3.02
	BAJA	\$77	220,700	2.33	170	0.18	0.85	3.08
	BAJA-RM1	\$77	48,400	1.05	68	0.18	2.79	5.45
	CANDELARIA	\$77	129,100	2.6	353	0.17	0.47	0.93
	CHUY1	\$77	16,100	1.65	59	0.20	1.13	4.04
	CHUY2	\$77	-	0	0	0.00	0.00	0.00
	ESTE-NORTE-RM1	\$77	11,100	1.14	71	0.33	0.91	2.56
	ESTE-NORTE	\$77	78,200	0.44	127	0.17	1.32	4.72
ESTE-SUR	\$77	61,300	0.79	144	0.26	1.73	4.84	

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	ESTE-SUR-RM1	\$77	20,000	1.19	54	0.14	1.12	2.62
	ESTE-SUR-RM2	\$77	-	0	0	0.00	0.00	0.00
	GISELA	\$77	70,500	0.95	203	0.13	1.26	2.44
	LUZ	\$77	37,900	1.8	161	0.27	0.73	1.79
	MARENA	\$77	65,600	0.44	52	0.09	1.25	5.80
	MERCEDES	\$77	41,400	1.57	100	0.17	0.79	1.88
	SANTIAGO	\$77	104,000	0.73	94	0.16	1.31	2.30
	SANTIAGO-RM1	\$77	3,900	0.02	17	0.22	2.08	4.48
	SPLAY05	\$77	207,900	1.57	301	0.14	1.21	1.66
	SPLAY05-RM1	\$77	8,500	1.12	222	0.12	0.72	1.65
	SPLAY06	\$77	32,200	0.83	259	0.16	0.40	0.73
	SPLAY06-SUR	\$77	12,000	1.21	182	0.12	0.37	0.64
	SPLAY31	\$77	88,400	0.62	106	0.18	1.45	4.93
	SPLAY31-RM1	\$77	71,500	1.25	105	0.21	0.94	3.07
	SPLAY31-RM2	\$77	4,100	0.45	85	0.37	0.95	5.62
	SPLAY31-RM3	\$77	6,000	1.95	234	0.26	0.99	1.28
	SPLAY31-RM4	\$77	6,000	1.71	299	0.24	0.55	0.75
	SPLAY66	\$77	110,400	2.29	418	0.37	0.64	2.64
	SPLAY66-RM1	\$77	11,700	1.77	104	0.24	0.64	1.64
	STA-CECILIA	\$77	56,200	0.46	52	0.33	1.27	3.64
	STA-CLARA	\$77	23,200	0.24	159	0.58	2.66	4.12
	STA-HELENA	\$77	93,500	1.88	67	0.18	1.81	6.25
	STA-LUCIA	\$77	5,300	2	96	0.31	0.46	0.97
	STA-LUCIA-RM1	\$77	-	0	0	0.00	0.00	0.00
	VETA01	\$77	5,500	0.65	40	0.12	1.11	2.54
	VETA03	\$77	35,600	4.4	152	0.42	1.40	6.14
	VIRIDIANA	\$77	145,600	2.87	80	0.15	0.70	2.83
	VIRIDIANA-R1	\$77	28,600	3.47	136	0.45	0.50	0.96
	VIRIDIANA-R2	\$77	11,800	1.36	92	0.04	0.66	4.97
	TOTAL	\$77	1,969,200	1.65	171	0.20	1.09	3.10
Inferred	ARISTA	\$77	-	0	0	0	0	0
	BAJA_RM1	\$77	800	0.26	45	0.19	2.94	4.35
	ESTE_NOR_RM1	\$77	-	0	0	0	0	0
	ESTE_NORTE	\$77	2,400	0.18	83	0.12	0.75	4.71
	ESTE_SUR	\$77	49,200	0.1	44	0.14	2.28	7.41
	ESTE_SUR_RM1	\$77	700	0.39	65	0.11	0.93	2.70
	MARENA	\$77	135,900	0.07	56	0.02	1.36	5.53
	SANTIAGO	\$77	42,400	1.31	70	0.56	0.49	0.80
	SPLAY05	\$77	1,400	0.52	90	0.09	2.06	2.75
	SPLAY06	\$77	2,200	1.12	267	0.12	0.16	0.37
	SPLAY31	\$77	600	0.59	120	0.27	1.02	2.88
	SPLAY66_RM1	\$77	-	0	0	0	0	0
	STA_HELENA	\$77	3,300	2.26	85	0.42	2.84	8.17
	VETA03	\$77	-	0	0	0.00	0.00	0.00
	VIRIDIANA	\$77	12,600	0.81	161	0.25	1.22	4.97
	TOTAL	\$77	251,500	0.36	64	0.15	1.40	5.02

**Table 11.8 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) by Vein for the Switchback Vein System of the Don David Mine as of December 31, 2020\***

Description	Vein	Cutoff US\$	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Measured	SADIE-1	\$77	3,000	0.98	185	0.05	0.13	0.27
	SADIE-2	\$77	-	0	0	0.00	0.00	0.00
	SAGRAM1	\$77	1,200	0.87	32	0.54	1.31	2.32
	SAGRARIO	\$77	48,800	2.7	47	0.52	1.58	2.53
	SAM1	\$77	-	0	0	0.00	0.00	0.00
	SAM2	\$77	11,700	1.69	15	0.44	1.54	2.40
	SAMARINDA	\$77	-	0	0	0.00	0.00	0.00
	SANDY-1	\$77	-	0	0	0.00	0.00	0.00
	SANDY-2	\$77	-	0	0	0.00	0.00	0.00

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	SARA	\$77	5,700	1.95	32	0.32	1.07	2.77
	SASHA-1	\$77	-	0	0	0.00	0.00	0.00
	SASHA-2	\$77	-	0	0	0.00	0.00	0.00
	SBN1	\$77	2,000	0.9	20	0.36	1.28	2.70
	SBN2	\$77	-	0	0	0.00	0.00	0.00
	SELENE	\$77	85,200	2.97	54	0.24	0.97	2.33
	SELENE-RM1	\$77	1,200	2.43	4	0.07	0.32	1.29
	SILVIA	\$77	78,900	3.4	71	0.39	2.21	6.85
	SOFIA	\$77	56,900	3.99	26	0.53	1.32	3.05
	SOLEDAD	\$77	774,400	2.07	92	0.48	2.26	6.16
	SOLRAM1	\$77	-	0	0	0.00	0.00	0.00
	SOLRAM2	\$77	3,300	1.06	36	0.45	1.04	3.46
	SOLRAM3	\$77	4,000	0.94	85	0.27	0.78	2.66
	SOLRAM4	\$77	-	0	0	0.00	0.00	0.00
	SOLRAM5	\$77	63,900	2.5	65	0.40	1.14	3.89
	SONYA	\$77	-	0	0	0.00	0.00	0.00
	SUSANA-N	\$77	55,600	0.4	69	0.38	0.63	3.09
	SUSANA-S	\$77	24,700	1.28	87	0.19	1.27	3.30
	TOTAL	\$77	1,220,400	2.25	79	0.44	1.91	5.23
Indicated	SADIE-1	\$77	39,000	0.55	238	0.04	0.10	0.20
	SADIE-2	\$77	23,600	0.62	391	0.06	0.05	0.15
	SAGRAM1	\$77	-	0	0	0.00	0.00	0.00
	SAGRARIO	\$77	36,400	0.85	40	0.36	1.34	2.71
	SAM1	\$77	2,800	1.37	17	0.49	2.75	4.28
	SAM2	\$77	25,000	1.24	92	0.50	1.24	2.16
	SAMARINDA	\$77	-	0	0	0.00	0.00	0.00
	SANDY-1	\$77	1,200	0.18	24	0.41	0.73	3.48
	SANDY-2	\$77	9,600	0.18	78	0.23	0.65	2.93
	SARA	\$77	65,600	2.67	83	0.27	0.94	3.15
	SASHA-1	\$77	34,600	0.8	406	0.08	0.23	0.67
	SASHA-2	\$77	-	0	0	0.00	0.00	0.00
	SBN1	\$77	33,400	2.01	91	0.33	1.79	2.41
	SBN2	\$77	3,500	3.41	153	0.16	0.33	0.28
	SELENE	\$77	55,000	2.43	25	0.22	0.58	1.97
	SELENE-RM1	\$77	-	0	0	0.00	0.00	0.00
	SILVIA	\$77	2,700	2.02	79	0.31	2.29	6.36
	SOFIA	\$77	13,100	1.67	27	0.30	0.65	2.17
	SOLEDAD	\$77	262,500	2.02	85	0.48	1.84	5.07
	SOLRAM1	\$77	-	2.21	113	0.27	0.82	2.48
	SOLRAM2	\$77	-	0	0	0.00	0.00	0.00
	SOLRAM3	\$77	-	0	0	0.00	0.00	0.00
	SOLRAM4	\$77	-	0	0	0.00	0.00	0.00
	SOLRAM5	\$77	1,200	3.77	79	0.63	1.73	3.90
	SONYA	\$77	-	0	0	0.00	0.00	0.00
	SUSANA-N	\$77	34,500	0.75	66	0.32	0.62	3.07
	SUSANA-S	\$77	2,800	1	30	0.18	1.86	2.46
	TOTAL	\$77	646,500	1.71	113	0.34	1.22	3.28
Mea + Ind	SADIE-1	\$77	42,000	0.58	234	0.04	0.10	0.20
	SADIE-2	\$77	23,600	0.62	391	0.06	0.05	0.15
	SAGRAM1	\$77	1,200	0.87	32	0.54	1.31	2.32
	SAGRARIO	\$77	85,100	1.91	44	0.45	1.48	2.61
	SAM1	\$77	2,800	1.37	17	0.49	2.75	4.28
	SAM2	\$77	36,700	1.38	68	0.48	1.33	2.24
	SAMARINDA	\$77	-	0	0	0.00	0.00	0.00
	SANDY-1	\$77	1,200	0.18	24	0.41	0.73	3.48
	SANDY-2	\$77	9,600	0.18	78	0.23	0.65	2.93
	SARA	\$77	71,300	2.61	79	0.28	0.95	3.12
	SASHA-1	\$77	34,600	0.8	406	0.08	0.23	0.67
	SASHA-2	\$77	-	0	0	0.00	0.00	0.00
	SBN1	\$77	35,400	1.94	87	0.34	1.76	2.42
	SBN2	\$77	3,500	3.41	153	0.16	0.33	0.28
	SELENE	\$77	140,200	2.76	43	0.24	0.81	2.19
	SELENE-RM1	\$77	1,200	2.43	4	0.07	0.32	1.29

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	SILVIA	\$77	81,600	3.35	72	0.38	2.22	6.83
	SOFIA	\$77	70,000	3.55	26	0.49	1.19	2.89
	SOLEDAD	\$77	1,036,900	2.06	90	0.48	2.15	5.89
	SOLRAM1	\$77	-	2.21	113	0.27	0.82	2.48
	SOLRAM2	\$77	3,300	1.06	36	0.45	1.04	3.46
	SOLRAM3	\$77	4,000	0.94	85	0.27	0.78	2.66
	SOLRAM4	\$77	-	0	0	0.00	0.00	0.00
	SOLRAM5	\$77	65,000	2.52	66	0.41	1.15	3.89
	SONYA	\$77	-	0	0	0.00	0.00	0.00
	SUSANA-N	\$77	90,100	0.54	68	0.35	0.63	3.09
	SUSANA-S	\$77	27,500	1.25	81	0.19	1.33	3.21
	TOTAL	\$77	1,866,900	2.06	91	0.41	1.67	4.56
Inferred	SARA	\$77	200	0.83	10	0.54	0.44	2.64
	SBN1	\$77	900	6.05	258	0.53	2.24	3.81
	SBN2	\$77	12,000	6.19	275	0.28	0.58	0.47
	SOFIA	\$77	9,000	0.4	61	0.45	0.80	2.71
	SELENE	\$77	20,400	2.32	19	0.22	0.52	1.87
	SADIE_1	\$77	4,800	0.33	366	0.05	0.05	0.13
	SADIE_2	\$77	400	0.81	269	0.05	0.07	0.34
	SANDY_1	\$77	26,600	0.12	26	0.48	0.80	3.73
	SANDY_2	\$77	700	0.85	68	0.26	0.68	1.94
	SASHA_1	\$77	100	0.78	217	0.07	0.19	0.53
	SOLEDAD	\$77	226,200	1.24	76	0.50	1.21	3.42
	SOLRAM5	\$77	11,000	4.2	83	0.73	2.05	4.49
	SAGRARIO	\$77	78,300	0.61	57	0.56	1.00	3.40
	SUSANA_N	\$77	20,400	0.2	164	0.14	0.42	1.94
	TOTAL	\$77	410,900	1.26	81	0.47	1.05	3.17

**Table 11.9 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) by Vein for the Alta Gracia Vein System of the Don David Mine as of December 31, 2020\***

Description	Vein	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Measured	HUAJE1-HW	2.33 g/t	1,400	0.64	237	0.01	0.26	0.59
	HUAJE1-RM1	2.33 g/t	-	0	0	0.00	0.00	0.00
	HUAJE2	2.33 g/t	4,100	0.54	229	0.01	0.05	0.02
	IND-M1	2.33 g/t	3,800	0.54	458	0.00	0.06	0.01
	IND-M2	2.33 g/t	900	0.34	311	0.00	0.03	0.01
	IND-S-RM1	2.33 g/t	1,100	1.17	167	0.01	0.06	0.11
	IND-W	2.33 g/t	19,500	0.45	298	0.00	0.04	0.03
	JARILLAS1	2.33 g/t	10,800	1.08	255	0.01	0.10	0.20
	MIRADOR	2.33 g/t	19,900	0.94	349	0.02	0.17	0.36
	SAN-JUAN	2.33 g/t	4,600	0.76	298	0.01	0.05	0.09
	SANJUAN-FW	2.33 g/t	-	0	0	0.00	0.00	0.00
	SANJUAN-NW11	2.33 g/t	1,300	0.53	680	0.00	0.01	0.01
	VICTORIA1	2.33 g/t	2,400	0.28	209	0.00	0.01	0.00

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	VICTORIA-NE	2.33 g/t	700	0.36	307	0.00	0.02	0.01
	TOTAL	2.33 g/t	70,500	0.73	311	0.01	0.09	0.16
Indicated	HUAJE1-HW	2.33 g/t	14,100	0.52	336	0.02	0.49	2.38
	HUAJE1-RM1	2.33 g/t	5,800	0.3	418	0.00	0.01	0.00
	HUAJE2	2.33 g/t	-	0	0	0.00	0.00	0.00
	IND-M1	2.33 g/t	500	0.37	289	0.00	0.02	0.01
	IND-M2	2.33 g/t	-	0	0	0.00	0.00	0.00
	IND-S-RM1	2.33 g/t	-	0	0	0.00	0.00	0.00
	IND-W	2.33 g/t	48,900	0.84	366	0.03	0.28	0.63
	JARILLAS1	2.33 g/t	16,900	0.87	263	0.01	0.07	0.12
	MIRADOR	2.33 g/t	15,900	0.72	343	0.01	0.10	0.14
	SAN-JUAN	2.33 g/t	6,700	0.71	319	0.01	0.06	0.13
	SANJUAN-FW	2.33 g/t	11,800	0.79	389	0.01	0.14	0.29
	SANJUAN-NW11	2.33 g/t	6,900	0.53	797	0.00	0.01	0.01
	VICTORIA1	2.33 g/t	7,600	0.65	325	0.00	0.03	0.01
	VICTORIA-NE	2.33 g/t	28,900	0.79	342	0.01	0.06	0.02
	TOTAL	2.33 g/t	164,000	0.74	364	0.02	0.17	0.45
	Mea + Ind	HUAJE1-HW	2.33 g/t	15,500	0.53	327	0.02	0.46
HUAJE1-RM1		2.33 g/t	5,800	0.3	418	0.00	0.01	0.00
HUAJE2		2.33 g/t	4,100	0.54	229	0.01	0.05	0.02
IND-M1		2.33 g/t	4,300	0.52	437	0.00	0.05	0.01
IND-M2		2.33 g/t	900	0.34	311	0.00	0.03	0.01
IND-S-RM1		2.33 g/t	1,100	1.17	167	0.01	0.06	0.11
IND-W		2.33 g/t	68,500	0.73	347	0.03	0.21	0.46
JARILLAS1		2.33 g/t	27,700	0.95	260	0.01	0.08	0.15
MIRADOR		2.33 g/t	35,800	0.84	346	0.01	0.14	0.26
SAN-JUAN		2.33 g/t	11,200	0.73	310	0.01	0.05	0.11
SANJUAN-FW		2.33 g/t	11,800	0.79	389	0.01	0.14	0.29
SANJUAN-NW11		2.33 g/t	8,200	0.53	779	0.00	0.01	0.01
VICTORIA1		2.33 g/t	10,000	0.56	298	0.00	0.02	0.01

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	VICTORIA-NE	2.33 g/t		0.78	341	0.01	0.05	0.02
	TOTAL	2.33 g/t	29,600	0.74	348	0.01	0.14	0.36
			234,400					
Inferred	HUAJE1_HW	2.33 g/t	300	0.37	182	0.01	0.24	1.14
	HUAJE1_RM1	2.33 g/t	5,900	0.31	421	0.00	0.01	0.01
	HUAJE2	2.33 g/t	-	0	0	0.00	0.00	0.00
	IND_M1	2.33 g/t	100	0.36	429	0.01	0.02	0.02
	IND_W	2.33 g/t	10,300	0.79	261	0.04	0.48	1.02
	JARILLAS1	2.33 g/t	3,900	0.42	197	0.01	0.12	0.28
	MIRADOR	2.33 g/t	23,800	0.98	479	0.01	0.10	0.00
	SAN_JUAN	2.33 g/t	100	0.55	245	0.01	0.04	0.11
	SANJUAN_FW	2.33 g/t	600	0.63	218	0.01	0.16	0.31
	SANJUAN_NW11	2.33 g/t	700	0.71	1002	0.00	0.01	0.01
	VICTORIA1	2.33 g/t	600	0.61	283	0.00	0.02	0.01
	VICTORIA_NE	2.33 g/t	7,000	0.5	183	0.01	0.05	0.02
	TOTAL	2.33 g/t	53,300	0.75	370	0.01	0.16	0.23

\*Notes on Mineral Resources in Tables 11.6 through 11.9:

1. Mineral Resources are as defined by New Rules adopted by the SEC definitions for Mineral Resources.
2. Mineral Resources are estimated as of December 31, 2020 and take into account production-related depletion through December 31, 2020.
3. Mineral Resources reported herein are inclusive of Mineral Reserves and Mineralized Material.
4. Metal prices used for Mineral Resources were \$1,477 per ounce of gold, \$17.47 per ounce of silver, \$2.83 per pound of copper, \$0.92 per pound of lead and \$1.17 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
5. A breakeven NSR cutoff grade of \$77 per tonne was used for estimations of Mineral Resources. The term "cutoff grade" means the lowest NSR value considered economic to process.
6. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.33 g/t AuEq was used for Mineral Resources at the Alta Gracia project and 2.50 g/t AuEq for the Margaritas Project, using gold and silver only to calculate gold equivalencies.
7. Minimum mining width for Mineral Resources is 1.5 meters.
8. Arista Mine metallurgical recovery assumptions used were 76% for gold, 92% for silver, 80% for copper, 79% for lead and 80% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 85% for gold and 72% for silver. These recoveries reflect 2020 actual average recoveries for the Aguila and Alta Gracia Projects.
9. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.



## 11.10 Mineral Resource Estimate Sensitivity

The sensitivity of the mineral resources inventory to changes in cutoff grade was also examined by summarizing tonnes and grade at varying cutoff grades for Measured and Indicated mineral resources inclusive of mineral reserves (Table 11.10). The results suggest that the mineral resource estimate is relatively insensitive to changes in cutoff grade.

**Table 11.10 Cutoff Grade Sensitivity for the Measured and Indicated Mineral Resources (inclusive of Mineral Reserves and Mineralized Material) as of December 31, 2020**

Vein System	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	\$105	1,435,200	3.92	397	0.30	1.73	4.51
	\$90	1,703,700	2.41	249	0.24	1.35	3.67
	\$77	1,969,200	1.65	171	0.20	1.09	3.10
	\$60	2,358,600	1.20	122	0.18	0.88	2.59
	\$45	2,721,500	0.89	88	0.16	0.68	2.06
Switchback	\$105	1,498,700	4.56	240	0.38	2.75	6.66
	\$90	1,692,400	2.94	142	0.41	2.08	5.44
	\$77	1,866,900	2.06	91	0.41	1.67	4.56
	\$60	2,081,000	1.53	61	0.38	1.33	3.75
	\$45	2,271,700	1.07	44	0.35	1.03	3.04
Altagracia	3.50	146,000	2.16	414			
	3.00	177,400	1.19	402			
	2.33	234,400	0.74	348			
	2.00	270,300	0.52	296			
	1.50	347,400	0.39	240			

## 11.11 Opinion on Adequacy

DDGM considers that drilling program results meet industry standards for drilling and QA/QC measures. DDGM also considers that drilling results have been reviewed and confirmed in sufficient detail to permit the generation of Measured and Indicated mineral resource estimates, and that sufficient technical information is available to convert mineral resources to Proven and Probable mineral reserves.

## 11.12 Validation

The undiluted block models were validated visually by the inspection of successive section lines in order to confirm that the block models correctly reflect the distribution of high-grade and low-grade assay values.

The undiluted block model estimates were checked for global bias by comparing the average metal grades to nearest neighbor model means for Measured and Indicated mineral resources (Table 11.11). A nearest neighbor estimator produces a theoretically unbiased estimate of the average value when no cutoff grade is imposed and is a reasonable basis for checking the performance of different estimation methods (typically the target comparison should be less than 5%).

**Table 11.11 Measured and Indicated Nearest Neighbor Comparison**

Domain	Ag Block Average	Ag NN Average	Au Block Average	Au NN Average	Ag Ratio	Au Ratio
Alta Gracia	199	186	0.50	0.46	107%	102%
Arista	150	149	1.89	1.84	100%	103%
Switchback	74	72	1.60	1.51	103%	106%
Tapada	129	137	0.27	0.25	94%	108%

### 11.13 Risk Factors

Relevant factors which may affect the estimation of mineral resources include changes to the geological, geotechnical and geometallurgical models, infill drilling to convert material to a higher classification, drilling to test for extensions to known mineral resources, collection of additional bulk density data and significant changes to commodity prices. It should be noted that these and other factors pose potential risks and opportunities, of greater or lesser degree, to the estimate as the model is based on currently available data. Risks associated with key estimation parameters include the following:

- Survey errors associated with channel samples may locate some assay results outside the modeled vein structures;
- Complex structural geology can make it difficult to assign high-grade drill hole samples to the correct vein;
- The changing orientations of the veins over short distances are difficult to model in terms of their local anisotropy;
- High variance in on-site assay results may artificially bias local estimates.

## **12 MINERAL RESERVE ESTIMATES**

### **12.1 Introduction**

The mineral reserve estimates presented herein were prepared according to the requirements for calculation of Mineral Reserves as contained in Guide 7 (SEC, 1992 & 2018 a, b).

The mineral reserve estimate for the Arista and Mirador Underground Mines is based on technical data and information available, mainly results of underground chip channel and drill hole sampling, as of December 31, 2020. The current mineral reserve estimate was prepared by the QPs described in Section 2.2 with contributions provided by DDGM project technical staff.

### **12.2 Mineral Reserve Definitions**

The SEC is adopting the Combined Reserves International Reporting Standards Committee (CRIRSCO) framework of applying modifying factors to indicated or measured mineral resources in order to convert them to mineral reserves.

According to CRIRSCO, a Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified. Mineral Reserves are subdivided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves.

#### **12.2.1 Probable Mineral Reserve**

A Probable Mineral Reserve is the economically mineable part of an Indicated and, in some circumstances, Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve

## 12.2.2 Proven Mineral Reserve

A Proven Mineral Reserve is the economically mineable part of a Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified.

## 12.3 Previous Mineral Reserve Estimates

A previous estimate of Proven and Probable Mineral Reserves was released by DDGM with an effective date of December 31, 2019 (Tables 12.1 and 12.2).

**Table 12.1 Proven and Probable Mineral Reserves for the Don David Mine as of December 31, 2019\* Don David Mine**

Description	Tonnes	Au	Ag	AuEq	Au	Ag	AuEq	Cu	Pb	Zn
		g/t	g/t	g/t	oz	oz	oz	%	%	%
<b>Arista Mine</b>										
Proven	2,591,700	2.04	112	3.43	169,600	9,295,900	285,900	0.42	1.68	4.88
Probable	163,700	1.47	172	3.62	7,800	906,400	19,000	0.34	1.25	4.01
<b>Arista Mine Total</b>	<b>2,755,400</b>	<b>2.00</b>	<b>115</b>	<b>3.44</b>	<b>177,400</b>	<b>10,202,300</b>	<b>304,900</b>	<b>0.42</b>	<b>1.65</b>	<b>4.83</b>
<b>Mirador Mine</b>										
Proven	75,500	0.75	365	5.31	1,800	885,700	12,900			
Probable	700	1.33	393	6.25	100	8,400	100			
<b>Mirador Mine Total</b>	<b>76,200</b>	<b>0.76</b>	<b>365</b>	<b>5.32</b>	<b>1,900</b>	<b>894,100</b>	<b>13,000</b>			
<b>Don David Mine Total</b>	<b>2,831,600</b>	<b>1.97</b>	<b>122</b>	<b>3.58</b>	<b>179,300</b>	<b>11,096,400</b>	<b>317,900</b>			

**Table 12.2 Mineral Reserves by Vein for the Don David Mine as of December 31, 2019\***

Description	Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
<b>Arista Mine</b>											
<b>Arista Veins</b>											
Proven	ALTA	32,400	2.27	108	3.62	2,400	112,300	3,800	0.36	1.62	4.16
	ARISTA	37,000	1.55	123	3.09	1,800	146,400	3,700	0.26	1.13	3.59
	BAJA	110,100	2.09	227	4.92	7,400	802,000	17,400	0.23	0.89	3.03
	BAJA-RM1	36,400	1.48	81	2.50	1,700	94,600	2,900	0.23	3.08	5.94
	CANDELARIA	78,500	3.10	367	7.69	7,800	927,000	19,400	0.18	0.50	1.07
	ESTE-SUR	20,900	2.22	308	6.07	1,500	207,300	4,100	0.49	1.02	1.79
	LUZ	21,300	2.15	276	5.60	1,500	188,900	3,800	0.25	0.37	0.62
	MARENA	27,900	1.95	80	2.96	1,700	72,200	2,700	0.33	1.66	4.26
	SANTIAGO	55,300	1.51	32	1.91	2,700	57,400	3,400	0.29	1.88	4.58
	SPLAY05	78,300	1.59	295	5.27	4,000	742,900	13,300	0.14	0.74	1.36
	SPLAY05-RM1	5,500	1.92	283	5.45	300	50,000	1,000	0.16	1.12	2.62
	SPLAY06	11,700	1.04	258	4.26	400	97,100	1,600	0.20	0.37	0.66
	SPLAY31	61,700	0.89	110	2.27	1,800	218,100	4,500	0.22	1.61	5.06
	SPLAY31-RM3	2,300	2.50	314	6.42	200	23,600	500	0.29	0.66	0.88
	SPLAY66	41,900	2.87	282	6.39	3,900	380,200	8,600	0.35	0.83	2.93
STA-CECILIA	37,600	0.60	51	1.23	700	61,500	1,500	0.31	1.48	4.09	

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	STA-CLARA	21,400	0.45	224	3.25	300	154,400	2,200	0.71	2.59	4.68
	STA-HELENA	36,000	1.22	88	2.32	1,400	102,400	2,700	0.31	2.42	7.76
	VETA03	27,500	5.26	172	7.42	4,600	152,200	6,500	0.47	1.51	6.20
	VIRIDIANA	78,200	2.46	89	3.57	6,200	223,200	9,000	0.15	0.89	4.08
	VIRIDIANA-R1	13,000	5.42	184	7.72	2,300	77,200	3,200	0.63	0.60	1.03
	VIRIDIANA-R2	9,700	1.52	97	2.73	500	30,000	800	0.06	0.70	5.06
	<b>TOTAL</b>	<b>844,600</b>	<b>2.03</b>	<b>181</b>	<b>4.30</b>	<b>55,100</b>	<b>4,920,900</b>	<b>116,600</b>	<b>0.27</b>	<b>1.24</b>	<b>3.52</b>
<b>Probable</b>	ALTA										
	ARISTA	4,400	2.45	149	4.31	300	21,100	600	0.22	0.87	2.82
	BAJA	4,900	1.41	88	2.51	200	14,000	400	0.14	0.93	3.69
	BAJA-RM1	7,800	1.55	76	2.50	400	19,100	600	0.19	2.15	5.03
	CANDELARIA	8,400	4.51	806	14.59	1,200	216,500	3,900	0.17	0.34	0.74
	ESTE-SUR	9,800	2.07	437	7.52	600	137,000	2,400	0.60	1.15	2.16
	LUZ	500	3.26	174	5.43	100	2,600	100	0.21	0.16	0.37
	MARENA	7,800	0.77	22	1.04	200	5,400	300	0.17	1.31	4.92
	SANTIAGO	6,500	0.49	29	0.85	100	6,000	200	0.20	2.18	5.06
	SPLAY05										
	SPLAY05-RM1										
	SPLAY06	2,100	0.86	282	4.38	100	19,400	300	0.12	0.17	0.35
	SPLAY31	10,900	0.41	60	1.17	100	21,000	400	0.21	1.78	6.26
	SPLAY31-RM3										
	SPLAY66	10,200	2.48	737	11.69	800	242,300	3,800	0.45	0.67	1.66
	STA-CECILIA	7,100	1.05	48	1.65	200	11,000	400	0.23	1.53	3.80
	STA-CLARA	900	0.42	255	3.61	100	7,300	100	0.71	2.35	4.05
	STA-HELENA	6,700	0.65	69	1.51	100	14,700	300	0.15	1.79	5.66
	VETA03										
	VIRIDIANA	7,100	4.26	39	4.75	1,000	8,900	1,100	0.12	0.66	1.79
VIRIDIANA-R1	1,500	3.97	89	5.08	200	4,400	200	0.46	0.65	1.27	
VIRIDIANA-R2											
<b>TOTAL</b>	<b>96,600</b>	<b>1.85</b>	<b>242</b>	<b>4.87</b>	<b>5,700</b>	<b>750,700</b>	<b>15,100</b>	<b>0.26</b>	<b>1.25</b>	<b>3.49</b>	
<b>Proven &amp; Probable</b>	ALTA	32,400	2.27	108	3.62	2,400	112,300	3,800	0.36	1.62	4.16
	ARISTA	41,400	1.65	126	3.22	2,200	167,500	4,300	0.26	1.10	3.51
	BAJA	115,000	2.06	221	4.81	7,600	816,000	17,800	0.23	0.89	3.06
	BAJA-RM1	44,200	1.50	80	2.50	2,100	113,700	3,500	0.22	2.91	5.78
	CANDELARIA	86,900	3.24	409	8.35	9,000	1,143,600	23,300	0.18	0.49	1.04
	ESTE-SUR	30,700	2.17	349	6.54	2,100	344,400	6,400	0.53	1.06	1.90
	LUZ	21,700	2.18	274	5.60	1,500	191,500	3,900	0.25	0.37	0.61
	MARENA	35,800	1.70	68	2.54	2,000	77,700	2,900	0.29	1.58	4.40
	SANTIAGO	61,800	1.40	32	1.80	2,800	63,400	3,600	0.28	1.91	4.63
	SPLAY05	78,300	1.59	295	5.27	4,000	742,900	13,300	0.14	0.74	1.36
	SPLAY05-RM1	5,500	1.92	283	5.45	300	50,000	1,000	0.16	1.12	2.62
	SPLAY06	13,800	1.01	262	4.28	400	116,500	1,900	0.19	0.34	0.61
	SPLAY31	72,600	0.82	103	2.10	1,900	239,200	4,900	0.22	1.64	5.24
	SPLAY31-RM3	2,300	2.50	314	6.42	200	23,600	500	0.29	0.66	0.88
	SPLAY66	52,200	2.79	371	7.43	4,700	622,500	12,500	0.37	0.80	2.68
	STA-CECILIA	44,600	0.67	50	1.30	1,000	72,400	1,900	0.30	1.49	4.04
	STA-CLARA	22,300	0.45	226	3.27	300	161,700	2,300	0.71	2.58	4.66
	STA-HELENA	42,700	1.13	85	2.19	1,600	117,000	3,000	0.28	2.33	7.44
	VETA03	27,400	5.26	172	7.42	4,600	152,200	6,500	0.47	1.51	6.20
	VIRIDIANA	85,300	2.61	85	3.67	7,200	232,000	10,100	0.15	0.87	3.89
VIRIDIANA-R1	14,600	5.27	174	7.45	2,500	81,500	3,500	0.62	0.60	1.06	
VIRIDIANA-R2	9,700	1.52	97	2.73	500	30,000	900	0.06	0.70	5.06	
<b>TOTAL</b>	<b>941,200</b>	<b>2.01</b>	<b>187</b>	<b>4.35</b>	<b>60,900</b>	<b>5,671,600</b>	<b>131,800</b>	<b>0.27</b>	<b>1.24</b>	<b>3.52</b>	
<b>Switchback Veins</b>											
<b>Proven</b>	SAGRARIO	60,900	2.27	66	3.09	4,400	128,700	6,100	0.42	1.28	2.21
	SAM2	16,800	1.76	28	2.11	900	15,400	1,100	0.67	1.66	3.05
	SBN1	11,200	3.03	115	4.46	1,100	41,100	1,600	0.50	2.67	3.68
	SELENE	71,900	2.86	23	3.15	6,600	53,000	7,300	0.26	1.03	2.50
	SILVIA	94,700	3.47	75	4.41	10,600	227,200	13,400	0.40	2.29	6.91
	SOFIA	56,900	4.03	27	4.37	7,400	49,800	8,000	0.55	1.40	3.15
	SOLEDAD	1,291,400	1.84	86	2.91	76,200	3,565,700	120,800	0.46	2.04	6.09
	SOLRAM1										
	SOLRAM2	2,500	1.10	43	1.63	100	3,500	100	0.50	1.08	3.52
	SOLRAM3	5,100	0.79	84	1.83	100	13,800	300	0.30	1.12	3.40
	SOLRAM4	1,100	0.30	37	0.76		1,300		0.71	2.43	9.95
	SOLRAM5	58,100	2.41	58	3.14	4,500	109,000	5,900	0.46	1.38	5.01
	SUSANA-N	52,800	0.86	61	1.62	1,500	103,100	2,700	1.94	0.63	3.01

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	SUSANA-S	23,700	1.43	83	2.47	1,100	63,400	1,900	0.18	1.49	3.23
	<b>TOTAL</b>	<b>1,747,100</b>	<b>2.04</b>	<b>78</b>	<b>3.01</b>	<b>114,500</b>	<b>4,375,000</b>	<b>169,200</b>	<b>0.49</b>	<b>1.89</b>	<b>5.53</b>
<b>Probable</b>	SAGRARIO										
	SAM2										
	SBN1										
	SELENE										
	SILVIA	1,100	2.62	62	3.40	100	2,200	100	0.31	2.27	5.16
	SOFIA										
	SOLEDAD	42,900	0.65	74	1.57	900	101,300	2,200	0.51	1.28	4.90
	SOLRAM1	12,300	1.93	76	2.88	800	30,200	1,100	0.44	1.64	5.60
	SOLRAM2										
	SOLRAM3										
	SOLRAM4										
	SOLRAM5										
SUSANA-N	10,800	0.68	63	1.46	200	22,000	500	0.33	0.63	3.17	
SUSANA-S											
	<b>TOTAL</b>	<b>67,100</b>	<b>0.93</b>	<b>72</b>	<b>1.83</b>	<b>2,000</b>	<b>155,700</b>	<b>3,900</b>	<b>0.46</b>	<b>1.26</b>	<b>4.75</b>
<b>Proven &amp; Probable</b>	SAGRARIO	60,900	2.27	66	3.09	4,400	128,700	6,100	0.42	1.28	2.21
	SAM2	16,800	1.76	28	2.11	900	15,400	1,100	0.67	1.66	3.05
	SBN1	11,200	3.03	115	4.46	1,100	41,100	1,600	0.50	2.67	3.68
	SELENE	71,900	2.86	23	3.15	6,600	53,000	7,300	0.26	1.03	2.50
	SILVIA	95,800	3.46	74	4.39	10,700	229,400	13,500	0.40	2.29	6.89
	SOFIA	56,900	4.03	27	4.37	7,400	49,800	8,000	0.55	1.40	3.15
	SOLEDAD	1,334,300	1.80	85	2.87	77,100	3,667,000	123,000	0.46	2.01	6.05
	SOLRAM1	12,300	1.93	76	2.88	800	30,200	1,100	0.44	1.64	5.60
	SOLRAM2	2,500	1.10	43	1.63	100	3,500	100	0.50	1.08	3.52
	SOLRAM3	5,100	0.79	84	1.83	100	13,800	300	0.30	1.12	3.40
	SOLRAM4	1,100	0.30	37	0.76		1,300		0.71	2.43	9.95
	SOLRAM5	58,100	2.41	58	3.14	4,500	109,000	5,900	0.46	1.38	5.01
	SUSANA-N	63,700	0.83	61	1.59	1,700	125,100	3,200	1.67	0.63	3.04
	SUSANA-S	23,600	1.43	83	2.47	1,100	63,400	1,900	0.18	1.49	3.23
	<b>TOTAL</b>	<b>1,814,200</b>	<b>2.00</b>	<b>78</b>	<b>2.97</b>	<b>116,500</b>	<b>4,530,700</b>	<b>173,100</b>	<b>0.49</b>	<b>1.86</b>	<b>5.50</b>
<b>Mirador Mine</b>											
<b>Proven</b>	IND-M1	4,600	0.55	428	5.90	100	63,800	900			
	IND-M2	1,300	0.29	271	3.67		11,500	200			
	IND-S-RM1	1,100	1.17	167	3.26		5,900	100			
	IND-W	34,500	0.54	374	5.22	600	415,600	5,800			
	JARILLAS1	8,600	1.20	263	4.48	300	72,400	1,200			
	MIRADOR	21,800	0.97	409	6.08	700	286,500	4,300			
	SAN-JUAN	3,600	0.71	260	3.95	100	30,000	400			
	<b>TOTAL</b>	<b>75,500</b>	<b>0.75</b>	<b>365</b>	<b>5.31</b>	<b>1,800</b>	<b>885,700</b>	<b>12,900</b>			
<b>Probable</b>	IND-M1										
	IND-M2										
	IND-S-RM1										
	IND-W										
	JARILLAS1	700	1.33	393	6.25		8,400	100			
	MIRADOR										
	SAN-JUAN										
<b>TOTAL</b>	<b>700</b>	<b>1.33</b>	<b>393</b>	<b>6.25</b>		<b>8,400</b>	<b>100</b>				
<b>Proven &amp; Probable</b>	IND-M1	4,600	0.55	428	5.90	100	63,800	900			
	IND-M2	1,300	0.29	271	3.67		11,500	200			
	IND-S-RM1	1,100	1.17	167	3.26		5,900	100			
	IND-W	34,500	0.54	374	5.22	600	415,600	5,800			
	JARILLAS1	9,300	1.21	272	4.61	400	80,900	1,400			
	MIRADOR	21,800	0.97	409	6.08	700	286,500	4,300			
	SAN-JUAN	3,600	0.71	260	3.95	100	29,900	400			
<b>TOTAL</b>	<b>76,200</b>	<b>0.76</b>	<b>365</b>	<b>5.32</b>	<b>1,900</b>	<b>894,100</b>	<b>13,000</b>				
<b>Don David Mine Total</b>		<b>2,831,600</b>	<b>1.97</b>	<b>122</b>	<b>3.58</b>	<b>179,300</b>	<b>11,096,400</b>	<b>317,900</b>			

Notes on Mineral Reserves in Tables 12.1 and 12.2:

1. Metal prices used for P & P reserves were \$1,306 per ounce of gold, \$16.32 per ounce of silver, \$2.83 per pound of copper, \$0.99 per pound of lead and \$1.27 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
2. Precious metal gold equivalent is 80.03:1 using gold and silver only to calculate gold equivalencies.



3. A breakeven NSR cutoff grade of \$76 per tonne was used for estimations of P & P reserves at the Arista Underground Mine. The term “cutoff grade” means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Mirador Underground Mine at the Alta Gracia property. A breakeven cutoff grade of 2.5 g/t AuEq was used for proven and probable reserves at the Mirador Underground Mine using gold and silver only to calculate gold equivalencies.
5. Mining, processing, energy, administrative and smelting/refining costs were based on 2019 actual costs for the Don David Mine.
6. Arista Mine metallurgical recovery assumptions used were 78% for gold, 91% for silver, 78% for copper, 78% for lead and 81% for zinc. Mirador Mine metallurgical recovery assumptions used were 87% for gold and 80% for silver. These recoveries reflect 2019 actual average recoveries for the Aguila and Alta Gracia Projects.
7. P & P reserves are diluted and factored for expected mining recovery.
8. Minimum mining width for P & P reserves is 1.5 meters for the Arista and Mirador underground mines.
9. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

## 12.4 Mineral Reserve Confidence

Reserve classification considers a number of aspects affecting confidence in reserve estimations, such as:

- Geological continuity (including geological understanding and complexity)
- Data density and orientation
- Data accuracy and precision
- Grade continuity (including spatial continuity of mineralization)

There is substantial information to support a good understanding of the geological continuity of the primary veins at the Arista Underground Mine. Development and exploration drilling have defined the geological continuity along strike and up and down dip of the primary veins currently in production, mainly the Soledad and Selene veins at Switchback and the Baja and Splay 5 veins in the Arista vein system.

Confidence in the geological continuity of secondary veins and splays is lower as there tend to be fewer intercepts. The uncertainty in the geology of the secondary veins has been taken into account during Mineral Reserve classification.

Understanding of the vein systems has been greatly increased by the presence of extensive underground workings allowing detailed mapping of the geology. Underground observations have increased the ability to accurately model the mineralization. The proximity of Mineral Reserves to underground workings has been taken into account during Mineral Reserve classification.

## 12.5 Dilution and Mining Recovery

DDGM uses available information upon which to estimate actual dilution and mining recovery in the development headings, stopes, and transport system. Dilution and mining recoveries are functions of many factors including workmanship, heading design, vein width, mining method, extraction, and

transport. Misclassification of economic material and waste by mine operations personnel due to a variety of factors also contributes to variations in both dilution and mining recovery. It is nearly certain that the dilution and recovery experienced in the mine is a combination of many factors and is at best valid on a global basis over relatively long-time periods.

DDGM uses different dilution and mining recovery factors depending on the underground mining method employed. These factors are estimated for the four underground mining methods employed at the Arista and Mirador mines: 1) Development Drifting (DRIFT), 2) Long Hole Open Stopping (LHOS), 3) Cut-and-Fill mining (CAF) and 4) Shrinkage Stopping (SH).

Mining methods and corresponding dilution factors are as follows:

<b>Mining Method</b>	<b><u>Dilution (%)</u></b>
Shrinkage Stopping (SH)	10
Long Hole Open Stopping (LHOS)	26
Overhand Mechanized Cut and Fill (CAF)	25
Development Drifting along Vein (DRIFT)	<u>15</u>
<b>Average</b>	<b>26</b>

Mining dilution averages 26% at zero grade; 10% for SH (up to 20%), 26% for LHOS (up to 40%), 25% for CAF (up to 66%) and 15% for DRIFT (up to 50%).

Mining dilution has been estimated by DDGM as a minimum 0.2 m of overbreak wallrock dilution for SH and a minimum operational width of 1.8 m. For LHOS, mining dilution has been estimated as a minimum 0.4 m of overbreak wallrock dilution and a minimum operational width of 1.5 m. Mining dilution applied for CAF is a minimum 0.6m of overbreak wallrock dilution and a minimum operational width of 2.5 m. Mining dilution for DRIFT is estimated to be 0.5 m of overbreak wallrock dilution and a minimum operational width of 3.0 m. Additional 0.1 m of dilution is derived from re-mucking of floor fill. Dilution applied is given a value of zero.

Mine recovery factor estimation is based on the mine design and whether pillars are required in ore blocks for ground support, and ore recovery inefficiencies due to losses in stopes that can occur from inefficient drilling and blasting and remote-control mucking resulting in ore being left behind in stopes. Overall mining recoveries are estimated to average 84%, after applying 90% for LHOS and CAF stopes, 95% for SH and 95% for DRIFT.

Mining methods and corresponding mining recovery factors of reserve blocks are as follows:

<b>Mining Method</b>	<b><u>Mining Recovery (%)</u></b>
Shrinkage Stopping (SH)	95

Long Hole Open Stopping (LHOS)	90
Overhand Mechanized Cut and Fill (CAF)	90
Development Drifting along Vein (DRIFT)	95
Remnant Blocks & Pillars (REMANENT)	<u>60</u>
<b>Average</b>	<b>84</b>

## 12.6 Cutoff Grade

Copper, lead and zinc base metal production currently contributes approximately 50% of the revenues generated from economic material extracted from the Arista underground mine. In order to represent the base metal contribution, DDGM uses an economic breakeven NSR cutoff grade for Mineral Resources and Mineral Reserves estimations. The NSR cutoff grade calculation considers actual metal prices, total mining, milling and general administration costs, plant recoveries, smelting/refining costs and metal price participation by the smelters. NSR values are determined by using the three-year trailing average price for gold, silver, copper, lead and zinc. Current smelter contract terms and plant recoveries used are the average of actual recoveries reported by the plant during the twelve months of 2020. The cut-off grade does not include either exploration or capital costs.

The breakeven NSR cutoff grade is determined by the actual average cash operating costs for the Don David Mine for the twelve-month period from January through December 2020 determined by DDGM's mine site accounting department (Table 12.3).

**Table 12.3 2020 Mine Site Cash Operating Costs Used for Breakeven NSR Cutoff Grade Calculations**

Description	Value US\$ per tonne milled
Mining	40
Plant	19
Energy	6
General & Administration	12
<b>Total Mine Site Operating Cash Cost</b>	<b>77</b>

The average cash operating cost for 2020 was US\$77 per tonne milled. All material with a NSR greater than this value is regarded as having the potential for economic extraction. The breakeven NSR cutoff grade is applied to the estimated Proven and Probable reserve blocks, and those that exceed the breakeven NSR cutoff grade are considered for inclusion in the mine plan and for reporting as reserves. The breakeven NSR cutoff grade for the Arista Underground Mine is US\$77 per tonne. Parameters used for estimation of the economic breakeven NSR cutoff grade are in Table 12.4.

The NSR multiplier values calculated for each element which takes into consideration the commercial terms for 2020 are detailed in Table 12.5. For each reserve block, gold, silver, copper, lead and zinc grades are multiplied by their respective NSR multiplier value and then summed together to determine the total NSR value for the block. If the total NSR value (diluted) is above the breakeven NSR cutoff grade of US\$ 77/tonne, then the reserve block is further evaluated for economic extraction.

The same breakeven NSR cutoff grade of US\$77/tonne was applied to Mineralized Material at the Arista Underground Mine (including the Switchback Veins). The mineralized material, however, has been excluded from reported Mineral Reserves.

No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia and Margaritas properties. Therefore, a breakeven cutoff grade using gold and silver only was used for these properties. Gold equivalencies are determined by taking the three-year trailing average price for gold and silver and converting them to gold equivalent ounces using the gold to silver average price ratio for the period.

The breakeven cutoff grade used for the Alta Gracia Project, including the Mirador Underground Mine, was 2.33 g/t AuEq for Mineral Reserves and Mineral Resources. The cutoff grade for the Margaritas Project Mineral Resources was 2.5 g/t AuEq. Only gold and silver were used to calculate gold equivalencies.

**Table 12.4 Parameters Used for Breakeven NSR Cutoff Grade Calculations (\* All amounts in US Dollars)**

Item	Unit	Value		Unit	Value	Source / Comments
<b>Metal Prices</b>						
Copper	\$/lb	2.83		\$/t	6,233	3 year trailing average
Zinc	\$/lb	1.17		\$/t	2,580	3 year trailing average
Lead	\$/lb	0.92		\$/t	2,022	3 year trailing average
Silver	\$/oz	17.47		\$/g	0.56	3 year trailing average
Gold	\$/oz	1477		\$/g	47.49	3 year trailing average
Item	Unit	Cu Concentrate	Zn Concentrate	Pb Concentrate	Knelson Concentrate	Source / Comments
<b>Flotation Recovery</b>						
Ag	%	39.9%	3.8%	47.3%	1.2%	2020 Met Balance FINAL
Au	%	41.6%	6.1%	16.7%	11.6%	2020 Met Balance FINAL
Cu	%	80.0%	3.8%	7.8%	1.5%	2020 Met Balance FINAL
Pb	%	9.3%	3.5%	79.6%	0.7%	2020 Met Balance FINAL
Zn	%	1.3%	79.9%	6.4%	0.1%	2020 Met Balance FINAL
<b>Concentrate Grade</b>						
Ag	g/t	2113.50	42.26	1132.93	907.58	2020 Met Balance FINAL
Au	g/t	43.53	1.34	7.87	174.72	2020 Met Balance FINAL
Cu	%	22.44	0.23	0.99	6.16	2020 Met Balance FINAL
Pb	%	12.67	1.00	49.12	14.39	2020 Met Balance FINAL
Zn	%	4.41	58.70	9.98	6.34	2020 Met Balance FINAL
<b>Moisture content</b>						
	%	6.3%	9.9%	7.1%	0%	2019 Metal Sales
<b>Smelter Payables</b>						
Ag payable	%	92.0%	70%	95%	99.250%	2021 contract terms
Au payable	%	97.5%	70%	95%	99.925%	2021 contract terms
Cu payable	%	96.5%				2021 contract terms
Pb payable	%			95%		2021 contract terms
Zn payable	%		85%			2021 contract terms
<b>Minimum Deductions</b>						
Ag	g/t in conc		93.3	50.0		2021 contract terms
Au	g/t in conc		1.0	1.0		2021 contract terms
Cu	% dry net weight of con	1%				2021 contract terms
Pb	% dry net weight of con			3%		2021 contract terms
Zn	% dry net weight of con		8%			2021 contract terms
<b>Treatment Charges/Refining Charges</b>						
Base Treatment Charge	\$/dmt conc or oz metal received	137.0	250.0	124.5	0.3	2021 contract terms
Ag	\$/pay oz	0.75		1.60		2021 contract terms
Au	\$/pay oz	7.5		15.0	0.32	2021 contract terms
Cu	\$/lb	0.132				2021 contract terms
Pb	\$/lb					2021 contract terms
Zn	\$/lb					2021 contract terms
<b>Deleterious Element Penalties</b>						
2020 Conc Produced	dmt conc					
Se penalty	\$/dmt conc			17.25		2020 actual & contract
Pb+Zn penalty	\$/dmt conc	25.00				2020 actual & contract
Bi Penalty		11.00				2020 actual & contract
Sb Penalty		11.00				2020 actual & contract
As Penalty	\$/dmt conc	5.00				2020 actual & contract
Hg + Se Penalty	\$/dmt conc					2020 actual & contract
SiO2 Penalty	\$/dmt conc		2.50			2020 actual & contract
Cd Penalty	\$/dmt conc		2.70			2020 actual & contract
F + Cl Penalty	\$/dmt conc					2020 actual & contract
Total Penalty Unit Cost	\$/dmt conc	52.00	5.20	17.25		2020 actual & contract
<b>Transport Costs</b>						
Transport to smelter	\$/wmt	156.18	165.25	156.18		Contract costs \$3,124 & 3,305 MXN
Dore fixed transport fee	\$/bar				1500.00	ASAHI contract
Dore incremental transport fee	\$/thousand dollars in value				0.30	ASAHI contract
Dore bar weight	kg				20.00	USD / MXN 20.0
Dore bars shipped per shipment	units per shipment				1	
<b>Royalties</b>						
Royalty	%NSR	5%	5%	5%	4%	
<b>Zn Price Participation - Zn Con</b>						
Zn Base Treatment Charge	\$/dmt Zn Conc	250				
Base Price	\$/dmt Zn	2,400				
Zn Treatment Charge w/ Participation	\$/dmt Zn Conc	250.00				
<b>Pb Price Participation - Pb Con</b>						
Pb Base Treatment Charge	\$/dmt Pb Conc	125				
Base Price	\$/dmt Pb	2,150				
First price escalation	\$/ \$1.0 increase in Pb price above \$ 2,150	0.120				

Escalator Price	\$/dmt Pb	2,150
First Pb Treatment Escalation	\$/dmt Pb Conc	0.00
	\$/1.0 increase in Cu price	
Second price escalation	above \$ 2,250	0.16
Second Pb Treatment Escalation	\$/dmt Pb Conc	0.00
Pb Treatment Charge w/ Participation	\$/dmt Pb Conc	124.50
<b>Cu Price Participation -Cu Con</b>		
Cu Base Treatment Charge	\$/dmtCu Conc	137
Base Price	\$/dmt Cu	8,100
	\$/1.0 increase in Cu price	
First price escalation	above \$ 8,100	0.100
Escalator Price	\$/dmt Cu	8,100
First Cu Treatment Escalation	\$/dmt Cu Conc	0.00
	\$/1.0 increase in Cu price	
Second price escalation	above \$ 8,400	0.20
Second Cu Treatment Escalation	\$/dmt Cu Conc	0.00
Cu Treatment Charge w/ Participation	\$/dmt Cu Conc	137.00

**Table 12.5 NSR and AuEq Multiplier Values used for Breakeven Cutoff Grade Calculations**

Metal (Units)	NSR Multiplier Value Arista & Switchback	Gold-Equivalent Factors Alta Gracia/Margaritas
Gold (US\$ /g)	27.90	1.00
Silver (US\$ /g)	0.36	84.54
Copper (US\$ /%)	39.55	na
Lead (US\$ /%)	11.97	na
Zinc (US\$ /%)	11.06	na

## 12.7 Reserve Estimation Methodology

The following describes DDGM's Mineral Reserve estimation methodology conducted during January and February 2021 based on mineral zone block models created as of December 31, 2020. Reserves reported reflect mining depletion as of December 31, 2020. The flow chart for the Mineral Reserve estimation process at the Arista and Mirador Underground Mines is shown in Figure 12.1 and described below.



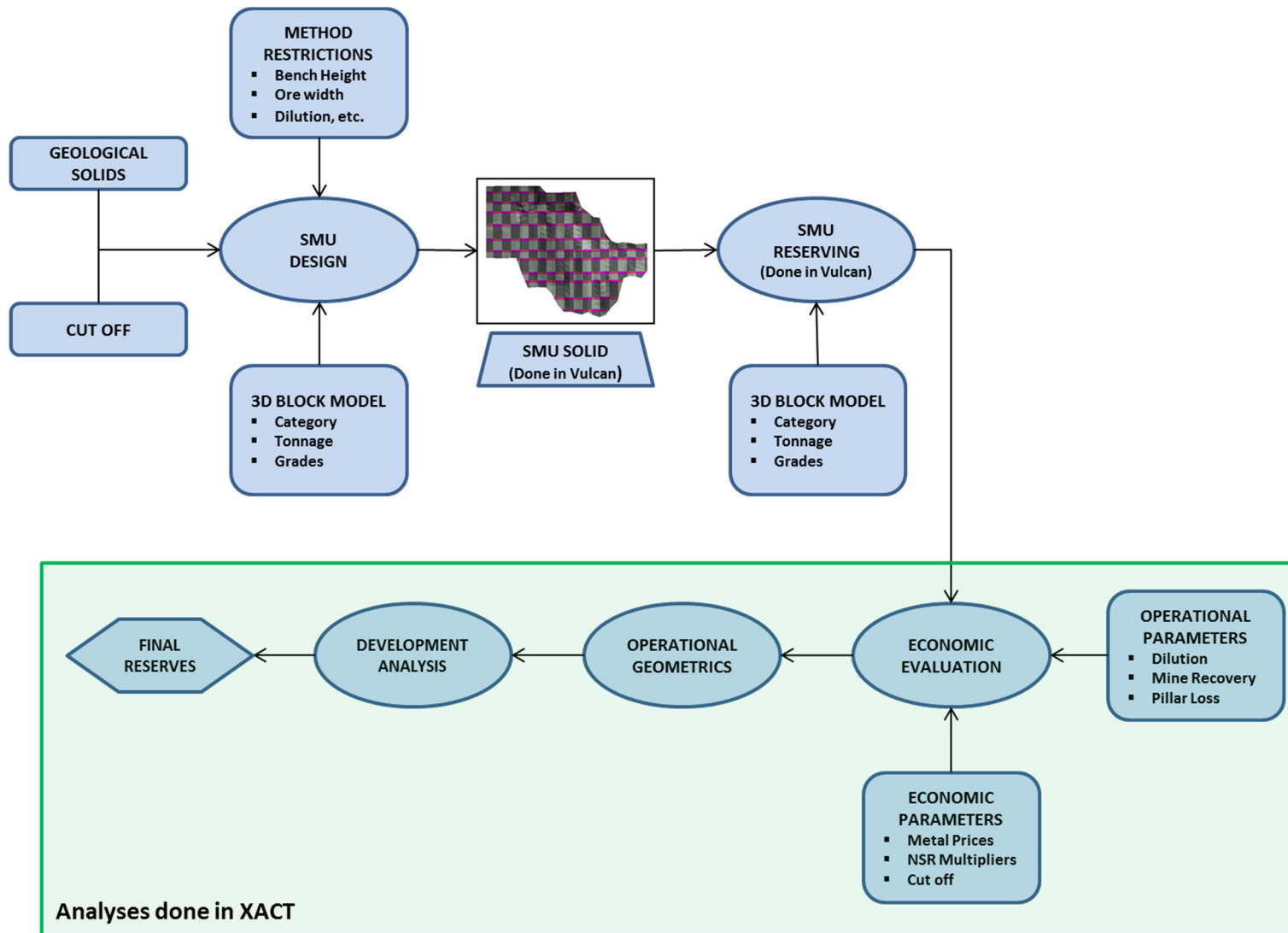


Figure 12.1 DDGM's Flow Chart for the Mineral Reserve Estimation Process at the Arista and Mirador Underground Mines

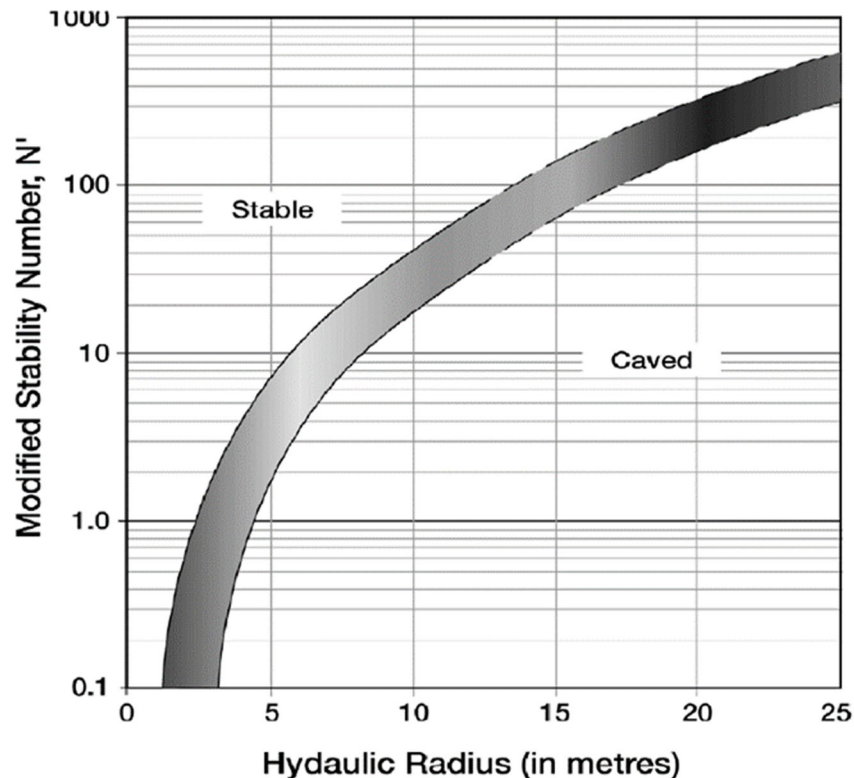
### 12.7.1 Selective Mining Unit (SMU)

The Mineral Reserve estimation process for the Arista and Mirador Underground Mines first involves a review of Mineral Resource block models created from the 3D vein wire-framed solids.

Block models are mainly reviewed to confirm that estimation of reserve and Mineral Resources blocks was done correctly and to validate the various fields in the model (e.g. Class, Tonnage, Grades, Width, in-situ NSR, etc.).

A Selective Mining Unit (SMU) is then designed based on the 3D vein wire-framed solids and other factors including hydraulic radius, ore width, potential dilution, nearby development etc.

The hydraulic radius (HR) is the area of a stope divided by its perimeter. For example, a stope having a strike length of 20 meters by a 25-meter level height has a HR of  $500/90$  equal to 5.5 meters in comparison to a stope that has dimensions of 50 meters of strike length by a 25-meter level height which has a larger HR of  $1250/150$  equal to 8.3 meters. The chart shown in Figure 12.2 shows that a lower HR is more stable as indicated by its modified stability number (N).



**Figure 12.2 Chart of Hydraulic Radius (in meters) versus Modified Stability Number (N)**

The design and evaluation of the SMU solids is currently done in Maptek Vulcan. The vein solids are cut into benches and drifts and then subdivided into stopes (SMU), which are usually 15 meters along the

strike direction of the vein. Typically, especially in new mining areas, heights are 4 meters high for drifts and 16 meters high for benches. Examples of specific SMU solids are shown in Figure 12.3.

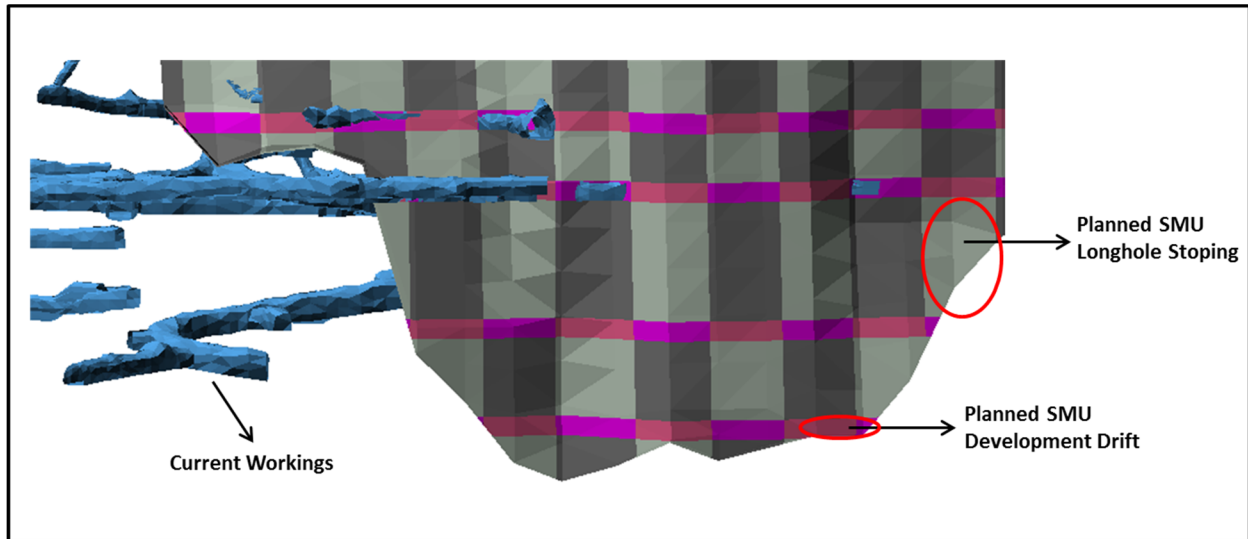


Figure 12.3 Example of Vein Divided into Selective Mining Units (SMU)

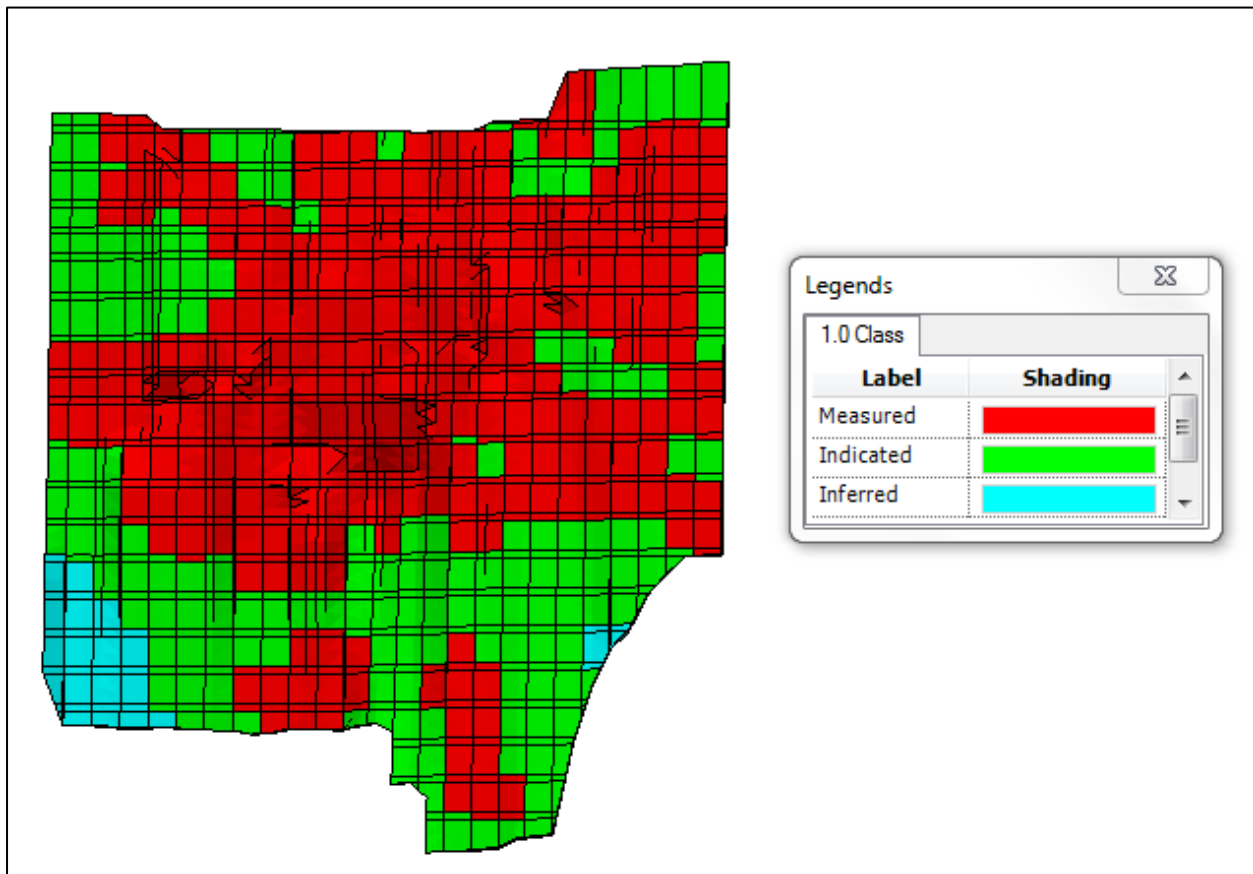
Vulcan reserve routines are run on the SMU solids to create a TXT file that can be imported into XACT (Reserving and Mine Scheduling software designed by RPM Global). XACT is a mining software that makes use of spreadsheet and database functionalities to facilitate reserve calculations and their subsequent mine scheduling.

Figure 12.4 is a screen capture of the imported data section of the Main Database within XACT.

	Code	Description	Units	Arista	Switchback	AltaGracia
1	GRC	Gold Resource Corp				
2	Imp	Imported Data				
3	Vol	Volume	m3	2,275,774	460,099	21,871
4	Ton	Tonnage	t	6,349,410	1,283,675	56,865
5	Wth	Width	m	2.42	3.69	2.19
6	Au	Gold grade	g/t	2.35	1.46	1.08
7	Ag	Silver grade	g/t	168.63	82.86	333.96
8	Cu	Copper grade	%	0.30	0.42	0.00
9	Pb	Lead grade	%	1.20	1.26	0.00
10	Zn	Zinc grade	%	2.96	4.08	0.00
11	NSR	NSR In situ	\$/t	202.9	151.6	184.7
12	TMea	Tonnage Measured	t	4,434,206	772,883	39,975
13	TInd	Tonnage Indicated	t	1,405,224	360,737	13,389
14	TInf	Tonnage Inferred	t	190,549	111,122	573

Figure 12.4 XACT's Main Database

The SMU is given a classification of Measured, Indicated or Inferred based on the predominant Mineral Resource class tonnage within it. Figure 12.5 presents a vein with SMUs classified by class.



**Figure 12.5 Vein Resource Classification (XACT)**

Other databases are also setup in XACT to store operational and economic parameters. These parameters include minimum mining widths, dilution, recoveries, metal prices, NSR multipliers and breakeven cut-offs.

The imported data from the Main Database in XACT are processed using auditable and easy to read formulas or expressions that link these data to the economic and operational parameters mentioned above.

### **12.7.2 Dilution and Minimum Mining Widths**

Dilution and minimum mining width assumptions are made for tonnes and grades based on factors estimated by DDGM's geology and mine planning departments. Three sources of dilution are usually considered: mining (planned), extraction (unplanned) and loading (mucking) dilution. Figure 12.6 illustrates the basic components of the applied dilution in an underground mine (loading dilution not shown on this illustration).

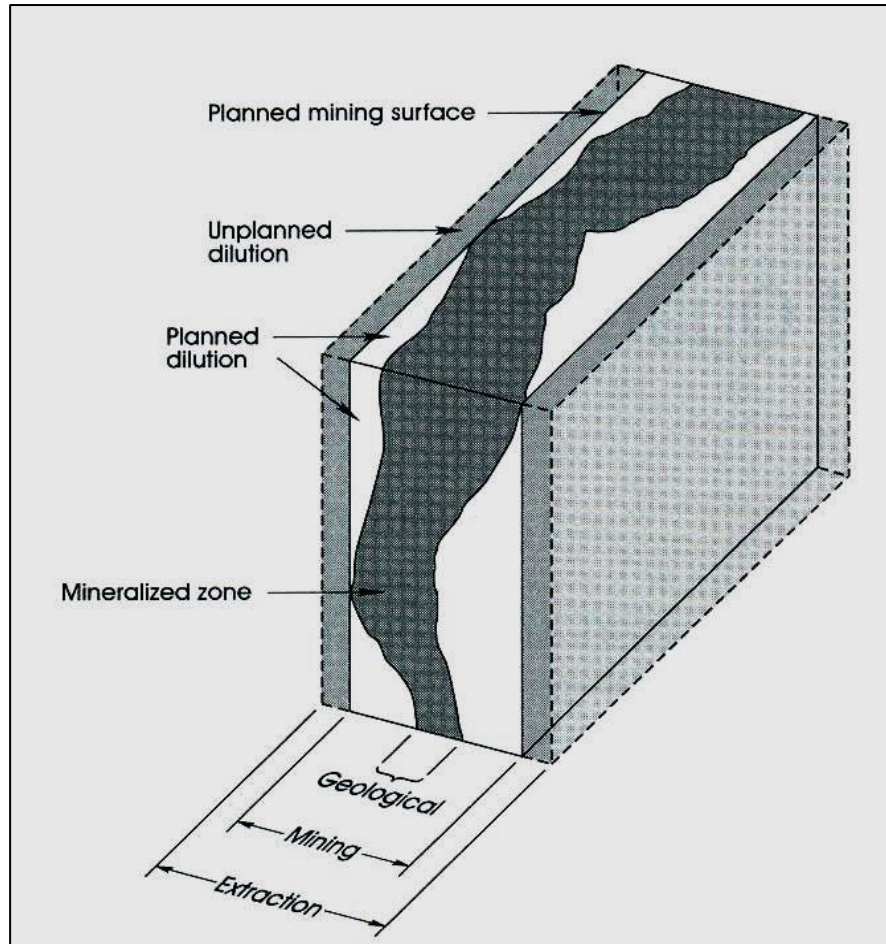
The dilution for the economic evaluation is determined by the mineralized zone modeled by the geologists, the dip of the vein and the average width of the SMU. During the mine design, the material that is outside of the economic limits is incorporated as applied dilution. Waste material is considered to contain no mineralization, with gold, silver and base metal grades set at a zero value.

In the Arista and Mirador underground mines different dilution factors are applied to each vein and operating mining method (e.g. Longhole Stopping, development Drift, cut-and-fill) as part of the evaluation process.

For example, in a particular longhole stope, where 0.20 meters of dilution is applied to each side of a 2-meter wide vein, the percentage dilution can then be calculated as follows:

$$\% \text{ Applied Dilution} = \frac{0.4 \text{ m} * 100}{2.0 \text{ m}} = 20\%$$

Loading (mucking) dilution is usually based on the underground surveys of the stopes and estimates of the amount of back fill extracted during mucking. In the Arista and Mirador underground mines, 0.1 meter of floor dilution is applied to drifts and cut-and-fill stopes. Back fill is considered to contain no mineralization with gold, silver and base metal grades set at a zero value.



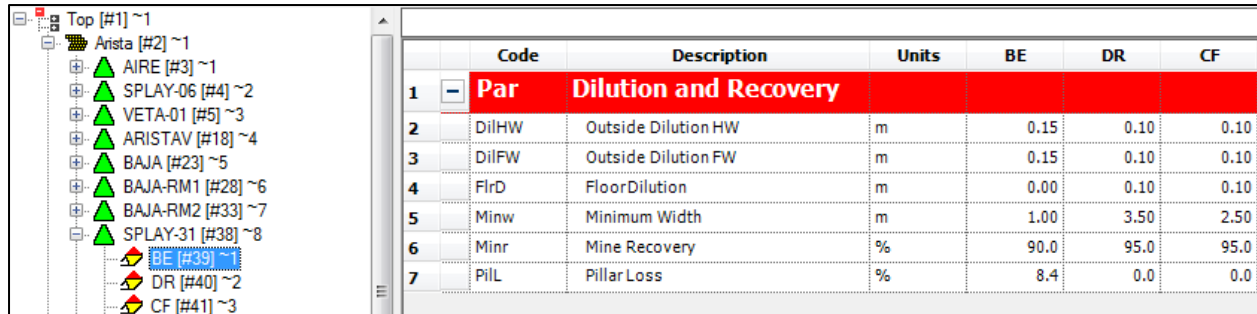
**Figure 12.6 Conceptual Model Illustrating the Basic Contributing Components of the Applied Dilution in an Underground Mine**

### 12.7.3 Mining Recovery and Pillar Losses

Different mine recovery factors are applied to each vein, and associated operating mining method, based on field experience and geological characterization of the ore bodies. Figure 12.7 is an example of the dilution and recovery factors loaded into a database in XACT.

Additional pillar losses of up to 8.4% are applied to Longhole Stopping benches based on geotechnical studies developed at the Arista underground mine.





	Code	Description	Units	BE	DR	CF
1	Par	Dilution and Recovery				
2	DilHW	Outside Dilution HW	m	0.15	0.10	0.10
3	DilFW	Outside Dilution FW	m	0.15	0.10	0.10
4	FlrD	FloorDilution	m	0.00	0.10	0.10
5	Minw	Minimum Width	m	1.00	3.50	2.50
6	Minr	Mine Recovery	%	90.0	95.0	95.0
7	PIL	Pillar Loss	%	8.4	0.0	0.0

Figure 12.7 XACT's Dilution and Recovery Factors Database

### 12.7.4 Operational Geometrics and Development Analysis

After the economic evaluation, an analysis is conducted on the operational geometrics of each vein in XACT. This mainly involves:

- Identification of accessible blocks using current mining practices including stope design
- Removal of block models from the mined-out areas within the vein wire-frames
- Separation of any structural lineaments/features
- Checking and cleaning of SMU's and filter of infrastructure

For this operational analysis, current working outlines are brought from Vulcan into XACT. The objective is to flag the SMU's that have been mined-out, so they are excluded from the reported Mineral Reserves.

An infrastructure filter is also undertaken. This mainly consists of discarding any SMU solids of satellite bodies which are too far from the primary infrastructure and economic development is not justified to access them.

Figure 12.8 outlines the SMU operational classification for reserve reporting of a particular vein after the final checks have conducted on it.

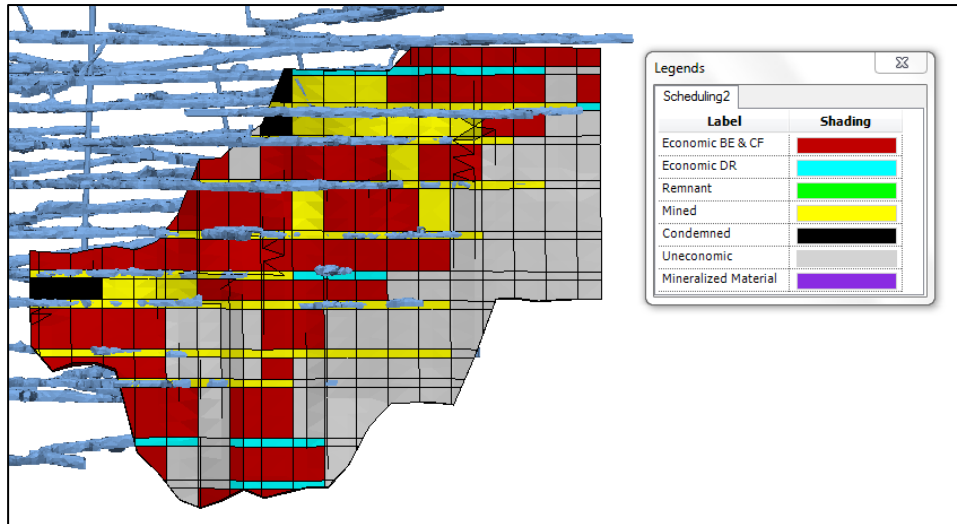


Figure 12.8 Vein Operational Classification (XACT)

### 12.7.5 Mineral Reserve Estimation

After applying dilution, mining recovery and pillar losses, the value per tonne of each SMU is determined based on metal prices and metallurgical recoveries for each metal, which is accounted for in the NSR multipliers.

An economic evaluation of the SMUs is then undertaken using established economic parameters (Table 12.6).

**Table 12.6 Economic Parameters used for Economic Evaluation**

Description	Units	Arista	Switchback	Alta Gracia
<b>Mine Parameters</b>				
Grams in Troy Ounce	g	31.10	31.10	31.10
Pounds in Kilogram	lb	2.20	2.20	2.20
<b>NSR Factors</b>				
Gold	\$/gr.	27.90	27.90	45.11
Silver	\$/gr.	0.36	0.36	0.53
Copper	\$/%	39.55	39.55	0.00
Lead	\$/%	11.97	11.97	0.00
Zinc	\$/%	11.06	11.06	0.00
<b>Metal Prices</b>				
Gold	\$/oz.	1,477	1,477	1,477
Silver	\$/oz.	17.47	17.47	17.47
Copper	\$/lb.	2.83	2.83	0.00
Lead	\$/lb.	0.92	0.92	0
Zinc	\$/lb.	1.17	1.17	0
<b>Gold Equivalent Factors</b>				
Gold	\$/gr.	1.00	1.00	1.00
Silver	\$/gr.	84.54	84.54	84.54
Copper	\$/%	0.67	0.67	0.00
Lead	\$/%	1.92	1.92	0.00
Zinc	\$/%	1.50	1.50	0.00
<b>Density</b>				
Waste density	t/m3	2.50	2.50	2.50
Mineral density	t/m3	2.79	2.79	2.59
<b>Cutoff</b>				
Bench	\$/t	77.00	77.00	105.00
Drift	\$/t	77.00	77.00	105.00
Cut and Fill	\$/t	77.00	77.00	105.00
Ramp	\$/t	10.00	10.00	10.00

The breakeven cut-off grade is determined based on operational costs of production, processing, energy and general administration (total operating cost in US\$ /t). If the NSR (or AuEq for Alta Gracia) of a SMU is higher than the breakeven cut-off grade, and the resource class is either measured or indicated, the SMU has the potential to be considered as part of the Mineral Reserves. Final checks are required to give the SMU a reserve status.

The final step of the mineral reserve estimation process is to deliver the mineral reserve values in a reportable format. XACT with its reporting capabilities is suited for this task. The reports are populated automatically from the economic evaluation and checks previously performed. The process maintains records of the formulas and expressions used and thus allowing monitoring and validation of such.

The final Mineral Reserve tabulation and reporting is effective as of December 31, 2020.

## 12.8 Mineral Reserve Statement

The SEC has adopted the Combined Reserves International Reporting Standards Committee (CRIRSCO) framework for reporting Mineral Resources (Miskelly, 2003). The Mineral Reserve for the Arista and Mirador Underground Mines comply with the SEC and CRIRSCO definitions of Proven and Probable Mineral Reserves. Mineral Reserve blocks that meet dilution and cutoff grade requirements, and that are deemed feasible and economic for extraction in a life-of-reserve mine plan, are classified as Proven and Probable Mineral Reserves, respectively, after further adjustment of tonnage for expected mining recovery.

Measured, Indicated and Inferred Mineral Resources are used to describe mineralization in mineral deposits that do not constitute Mineral Reserves under the SEC New Rules. Mineral Resources exclusive of Mineral Reserves reported herein by DDGM meet the same dilution, expected mine recovery and cutoff grade requirements as Mineral Reserves but do not have demonstrated economic viability.

The estimation of Mineral Resources involves greater uncertainty as to their existence and economic feasibility than the estimation of Mineral Reserves. Therefore, one cannot assume that all or any part of Mineral Resources will be converted into SEC compliant Mineral Reserves.

Calculations required during the Mineral Reserve estimating process arrive at totals and weighted averages with some variability in precision. Rounding to normalize to significant digits has resulted in minor apparent discrepancies in some tables, and these discrepancies are not material in the opinion of the QPs.

### 12.8.1 Proven and Probable Reserves

During 2020, DDGM's exploration and development programs targeted replacement of mined-out Mineral Reserves at its Don David Mine.

As of December 31, 2020, Mineral Reserves for the Arista Underground Mine totaled 2,266,200 tonnes grading 2.15 g/t Au, 121 g/t Ag, 0.4 % Cu, 1.6 % Pb and 4.4 % Zn. Contained ounces of proven and probable reserves totaled approximately 156,300 gold ounces and 8,825,800 silver ounces. A total of 260,800 gold equivalent ounces were estimated for the Arista Underground Mine using only gold and silver in the calculation of gold equivalencies.

As of December 31, 2020, Mineral Reserves for the Mirador Underground Mine at the Alta Gracia Project totaled 62,300 tonnes grading 0.77 g/t Au and 357 g/t Ag. Contained ounces of proven and probable reserves totaled approximately 1,600 gold ounces and 715,900 silver ounces. A total of 10,000 gold equivalent ounces were estimated for the Mirador Underground Mine using only gold and silver in the calculation of gold equivalencies.

Proven and Probable reserves for the Arista and Mirador Underground Mines as of December 31, 2020 are summarized in Table 12.7, and by particular vein in Table 12.8.

**Table 12.7 Mineral Reserves for the Don David Mine as of December 31, 2020\***

Description	Tonnes	Au	Ag	AuEq	Au	Ag	AuEq	Cu	Pb	Zn
		g/t	g/t	g/t	oz	oz	oz	%	%	%
<b>Arista Mine</b>										
Proven	1,775,600	2.22	116	3.68	126,700	6,648,700	205,400	0.4	1.6	4.5
Probable	490,600	1.88	138	3.61	29,600	2,177,100	55,400	0.4	1.5	3.9
<b>Arista Mine Total</b>	<b>2,266,200</b>	<b>2.15</b>	<b>121</b>	<b>3.58</b>	<b>156,300</b>	<b>8,825,800</b>	<b>260,800</b>	<b>0.4</b>	<b>1.6</b>	<b>4.4</b>
<b>Mirador Mine</b>										
Proven	51,900	0.76	325	4.61	1,300	543,400	7,700			
Probable	10,400	0.82	514	6.90	300	172,500	2,300			
<b>Mirador Mine Total</b>	<b>62,300</b>	<b>0.77</b>	<b>357</b>	<b>5.00</b>	<b>1,600</b>	<b>715,900</b>	<b>10,000</b>			
<b>Don David Mine Total</b>	<b>2,328,500</b>	<b>2.11</b>	<b>127</b>	<b>3.62</b>	<b>157,900</b>	<b>9,541,700</b>	<b>270,800</b>			

**Table 12.8 Mineral Reserves by Vein for the Don David Mine as of December 31, 2020\***

Description	Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
<b>Arista Mine</b>											
<b>Arista Veins</b>											
<b>Proven</b>	ALTA	12,100	3.01	118	4.41	1,200	46,000	1,700	0.41	1.41	4.29
	ARISTA	34,900	1.50	120	2.92	1,700	135,000	3,300	0.26	1.23	3.57
	BAJA	109,600	1.94	223	4.58	6,800	786,800	16,100	0.25	0.91	2.92
	BAJA-RM1	19,200	1.82	78	2.75	1,100	48,300	1,700	0.22	2.25	5.45
	CANDELARIA	60,200	2.59	240	5.44	5,000	465,100	10,500	0.17	0.56	1.00
	ESTE-SUR	12,800	2.03	334	5.98	800	137,700	2,500	0.57	0.91	1.73
	LUZ	23,600	2.53	291	5.97	1,900	220,600	4,500	0.28	0.48	0.75
	MARENA	11,900	2.04	64	2.80	800	24,700	1,100	0.32	1.47	3.78
	SANTIAGO	9,300	3.46	47	4.02	1,000	14,200	1,200	0.24	0.71	1.43
	SPLAY05	76,800	1.46	285	4.84	3,600	704,200	11,900	0.14	0.82	1.56
	SPLAY05-RM1	4,700	1.59	239	4.42	200	36,400	700	0.15	1.08	2.61
	SPLAY06	2,300	1.30	169	3.30	100	12,500	200	0.21	0.49	0.78
	SPLAY31	36,200	1.26	115	2.62	1,500	133,400	3,000	0.21	0.76	2.74
	SPLAY31-RM3	2,300	2.50	314	6.21	200	23,600	500	0.29	0.66	0.88
	SPLAY66	39,300	2.87	277	6.14	3,600	349,100	7,800	0.38	0.94	3.04
	STA-CECILIA	21,300	0.56	60	1.27	400	40,900	900	0.25	1.68	4.32
	STA-CLARA	4,500	0.28	200	2.64	100	29,100	400	0.63	3.78	5.65
	STA-HELENA	12,500	2.15	102	3.35	900	40,900	1,300	0.53	2.57	7.45
	VETA03	22,100	5.33	145	7.04	3,800	102,700	5,000	0.37	1.14	5.14
	VIRIDIANA	66,300	1.93	77	2.85	4,100	165,100	6,100	0.14	0.89	4.05
VIRIDIANA-R1	7,200	7.49	224	10.13	1,700	51,400	2,300	0.75	0.55	0.98	
VIRIDIANA-R2	9,700	1.60	98	2.76	500	30,400	900	0.05	0.68	4.94	
<b>TOTAL</b>	<b>598,800</b>	<b>2.13</b>	<b>187</b>	<b>4.34</b>	<b>41,000</b>	<b>3,598,100</b>	<b>83,600</b>	<b>0.25</b>	<b>1.00</b>	<b>2.94</b>	
<b>Probable</b>	ALTA	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	ARISTA	9,900	1.55	137	3.17	500	43,400	1,000	0.23	0.58	2.68
	BAJA	16,300	1.65	123	3.10	900	64,300	1,600	0.15	1.05	3.86
	BAJA-RM1	16,700	0.76	64	1.52	400	34,600	800	0.17	3.24	5.51
	CANDELARIA	20,400	4.39	781	13.62	2,900	510,900	8,900	0.16	0.46	0.81
	ESTE-SUR	19,700	2.08	311	5.76	1,300	197,400	3,600	0.46	1.04	1.86
	LUZ	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	MARENA	17,300	1.22	31	1.59	700	17,100	900	0.22	2.01	6.17
SANTIAGO	11,400	0.42	28	0.75	100	10,200	300	0.14	1.71	4.31	

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	SPLAY05	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	SPLAY05-RM1	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	SPLAY06	8,400	1.00	320	4.78	300	86,400	1,300	0.15	0.29	0.56
	SPLAY31	22,700	0.31	87	1.34	200	63,500	1,000	0.22	2.07	6.78
	SPLAY31-RM3	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	SPLAY66	9,300	2.68	768	11.76	800	230,800	3,500	0.45	0.63	1.54
	STA-CECILIA	12,000	0.36	49	0.95	100	19,000	400	0.43	1.17	3.43
	STA-CLARA	3,300	0.37	271	3.58		28,800	400	0.76	2.02	3.94
	STA-HELENA	5,700	2.02	47	2.58	400	8,700	500	0.38	1.48	3.98
	VETA03	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	VIRIDIANA	18,900	2.45	76	3.34	1,500	45,900	2,000	0.19	0.37	1.25
	VIRIDIANA-R1	0									
	VIRIDIANA-R2	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	<b>TOTAL</b>	<b>192,000</b>	<b>1.64</b>	<b>220</b>	<b>4.25</b>	<b>10,100</b>	<b>1,361,000</b>	<b>26,200</b>	<b>0.26</b>	<b>1.31</b>	<b>3.46</b>
<b>Proven &amp; Probable</b>	ALTA	12,100	3.01	118	4.41	1,200	46,000	1,700	0.41	1.41	4.29
	ARISTA	44,800	1.51	124	2.97	2,200	178,400	4,300	0.25	1.08	3.37
	BAJA	125,900	1.90	210	4.39	7,700	851,100	17,800	0.24	0.93	3.05
	BAJA-RM1	35,900	1.33	72	2.18	1,500	83,000	2,500	0.20	2.71	5.48
	CANDELARIA	80,600	3.05	377	7.50	7,900	975,900	19,400	0.17	0.53	0.95
	ESTE-SUR	32,600	2.06	320	5.85	2,200	335,200	6,100	0.50	0.99	1.81
	LUZ	23,600	2.53	291	5.97	1,900	220,600	4,500	0.28	0.48	0.75
	MARENA	29,200	1.56	44	2.08	1,500	41,700	2,000	0.26	1.79	5.20
	SANTIAGO	20,700	1.78	37	2.22	1,200	24,400	1,500	0.19	1.26	3.01
	SPLAY05	76,700	1.46	285	4.84	3,600	704,200	11,900	0.14	0.82	1.56
	SPLAY05-RM1	4,700	1.59	239	4.42	200	36,400	700	0.15	1.08	2.61
	SPLAY06	10,700	1.06	287	4.46	400	98,900	1,500	0.16	0.33	0.61
	SPLAY31	58,900	0.89	104	2.12	1,700	196,900	4,000	0.22	1.26	4.30
	SPLAY31-RM3	2,300	2.50	314	6.21	200	23,600	500	0.29	0.66	0.88
	SPLAY66	48,600	2.83	371	7.22	4,400	579,900	11,300	0.39	0.88	2.75
	STA-CECILIA	33,300	0.49	56	1.15	500	59,900	1,200	0.31	1.49	4.00
	STA-CLARA	7,800	0.32	230	3.04	100	57,900	800	0.69	3.04	4.93
	STA-HELENA	18,200	2.11	85	3.11	1,200	49,600	1,800	0.48	2.23	6.36
	VETA03	22,100	5.33	145	7.04	3,800	102,700	5,000	0.37	1.14	5.14
	VIRIDIANA	85,200	2.04	77	2.96	5,600	211,000	8,100	0.15	0.78	3.43
VIRIDIANA-R1	7,200	7.47	223	10.11	1,700	51,400	2,300	0.74	0.54	0.98	
VIRIDIANA-R2	9,700	1.60	98	2.76	500	30,400	900	0.05	0.68	4.94	
	<b>TOTAL</b>	<b>790,800</b>	<b>2.01</b>	<b>195</b>	<b>4.32</b>	<b>51,200</b>	<b>4,959,100</b>	<b>109,800</b>	<b>0.25</b>	<b>1.08</b>	<b>3.07</b>
<b>Switchback Veins</b>											
<b>Proven</b>	SADIE-2	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	SAGRARIO	45,000	2.89	47	3.45	4,200	68,200	5,000	0.52	1.47	2.51
	SAM2	7,600	1.64	17	1.85	400	4,300	500	0.51	1.78	2.88
	SELENE	79,300	2.98	56	3.64	7,600	142,200	9,300	0.25	0.97	2.35
	SILVIA	78,400	3.40	71	4.24	8,500	179,900	10,700	0.39	2.22	6.87
	SOFIA	48,700	4.10	27	4.41	6,400	41,700	6,900	0.55	1.28	3.13
	SOLEDAD	773,900	2.07	92	3.16	51,600	2,289,900	78,700	0.48	2.26	6.16
	SOLRAM2	2,100	1.09	38	1.54	100	2,600	100	0.48	1.01	3.52
	SOLRAM3	3,200	0.94	85	1.94	100	8,700	200	0.27	0.82	2.68
	SOLRAM5	63,800	2.50	65	3.27	5,100	134,000	6,700	0.40	1.14	3.89
	SUSANA-N	53,000	0.41	67	1.20	700	114,800	2,000	0.38	0.63	3.12
	SUSANA-S	21,800	1.41	92	2.50	1,000	64,300	1,700	0.17	1.35	3.22
		<b>TOTAL</b>	<b>1,176,800</b>	<b>2.27</b>	<b>81</b>	<b>3.22</b>	<b>85,700</b>	<b>3,050,600</b>	<b>121,800</b>	<b>0.45</b>	<b>1.94</b>
<b>Probable</b>	SADIE-2	7,800	0.65	496	6.51	100	123,600	1,600	0.07	0.05	0.13
	SAGRARIO	4,200	1.54	26	1.84	200	3,500	200	0.33	1.23	2.86
	SAM2	10,300	1.73	33	2.13	600	11,100	700	0.68	1.43	2.87
	SELENE	50,300	2.49	26	2.80	4,000	42,700	4,500	0.23	0.59	1.99
	SILVIA	2,300	2.05	80	2.99	100	5,900	200	0.31	2.32	6.27
	SOFIA	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00

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	SOLEDAD	199,500	2.15	91	3.22	13,800	582,300	20,700	0.50	1.97	5.18
	SOLRAM2	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	SOLRAM3	0	0.00	0	0.00	0	0	0	0.00	0.00	0.00
	SOLRAM5	1,200	3.77	79	4.71	100	3,000	200	0.63	1.73	3.90
	SUSANA-N	21,000	0.69	62	1.42	500	42,100	1,000	0.34	0.61	3.09
	SUSANA-S	2,000	1.03	30	1.38	100	1,900	100	0.17	1.88	2.48
	<b>TOTAL</b>	<b>298,600</b>	<b>2.04</b>	<b>85</b>	<b>3.04</b>	<b>19,500</b>	<b>816,100</b>	<b>29,200</b>	<b>0.43</b>	<b>1.56</b>	<b>4.24</b>
Proven & Probable	SADIE-2	7,800	0.65	496	6.51	100	123,600	1,600	0.07	0.05	0.13
	SAGRARIO	49,200	2.78	45	3.31	4,400	71,700	5,200	0.51	1.45	2.54
	SAM2	17,900	1.70	27	2.01	1,000	15,400	1,200	0.61	1.58	2.88
	SELENE	129,500	2.79	44	3.31	11,600	184,900	13,800	0.24	0.82	2.21
	SILVIA	80,700	3.36	72	4.21	8,700	185,800	10,900	0.39	2.23	6.85
	SOFIA	48,700	4.10	27	4.41	6,400	41,700	6,900	0.55	1.28	3.13
	SOLEDAD	973,500	2.09	92	3.17	65,400	2,872,200	99,300	0.48	2.20	5.96
	SOLRAM2	2,100	1.09	38	1.54	100	2,600	100	0.48	1.01	3.52
	SOLRAM3	3,200	0.94	85	1.94	100	8,700	200	0.27	0.82	2.68
	SOLRAM5	65,000	2.52	66	3.30	5,200	137,000	6,900	0.41	1.15	3.89
	SUSANA-N	74,000	0.49	66	1.27	1,200	156,900	3,100	0.37	0.63	3.11
	SUSANA-S	23,800	1.38	87	2.40	1,100	66,200	1,800	0.17	1.40	3.16
		<b>TOTAL</b>	<b>1,475,400</b>	<b>2.22</b>	<b>82</b>	<b>3.18</b>	<b>105,300</b>	<b>3,866,700</b>	<b>151,000</b>	<b>0.45</b>	<b>1.86</b>
<b>Mirador Mine</b>											
Proven	IND-M1	3,800	0.54	458	5.95	100	55,700	700			
	IND-M2	900	0.34	311	4.01		8,600	100			
	IND-S-RM1	1,100	1.17	167	3.15		5,900	100			
	IND-W	17,600	0.47	310	4.14	300	175,500	2,300			
	JARILLAS1	6,500	1.18	259	4.24	200	54,200	900			
	MIRADOR	18,400	0.94	359	5.18	600	213,000	3,100			
	SAN-JUAN	3,600	0.72	265	3.86	100	30,500	500			
		<b>TOTAL</b>	<b>51,900</b>	<b>0.76</b>	<b>325</b>	<b>4.61</b>	<b>1,300</b>	<b>543,400</b>	<b>7,700</b>		
Probable	IND-M1	500	0.37	289	3.79		5,000				
	IND-M2	0	0.00	0	0.00	0	0	0			
	IND-S-RM1	0	0.00	0	0.00	0	0	0			
	IND-W	8,900	0.81	548	7.29	200	155,900	2,100			
	JARILLAS1	1,000	1.12	343	5.18	100	11,600	200			
	MIRADOR	0	0.00	0	0.00	0	0	0			
	SAN-JUAN	0	0.00	0	0.00	0	0	0			
		<b>TOTAL</b>	<b>10,400</b>	<b>0.82</b>	<b>514</b>	<b>6.90</b>	<b>300</b>	<b>172,500</b>	<b>2,300</b>		
Proven & Probable	IND-M1	4,300	0.52	437	5.69	100	60,700	700			
	IND-M2	900	0.34	311	4.01		8,600	100			
	IND-S-RM1	1,100	1.17	167	3.15		5,900	100			
	IND-W	26,500	0.59	389	5.19	500	331,400	4,400			
	JARILLAS1	7,500	1.17	271	4.37	300	65,800	1,100			
	MIRADOR	18,400	0.94	359	5.18	600	213,000	3,100			
	SAN-JUAN	3,600	0.72	265	3.86	100	30,500	500			
		<b>TOTAL</b>	<b>62,300</b>	<b>0.77</b>	<b>357</b>	<b>5.00</b>	<b>1,600</b>	<b>715,900</b>	<b>10,000</b>		
<b>Don David Mine Total</b>		<b>2,328,500</b>	<b>2.11</b>	<b>127</b>	<b>3.62</b>	<b>157,900</b>	<b>9,541,700</b>	<b>270,800</b>			

Notes on Mineral Reserves in Tables 12.7 and 12.8:

1. Metal prices used for P & P reserves were \$1,477 per ounce of gold, \$17.47 per ounce of silver, \$2.83 per pound of copper, \$0.92 per pound of lead and \$1.17 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
2. Precious metal gold equivalent is 84.54:1 using gold and silver only to calculate gold equivalencies.
3. A breakeven NSR cutoff grade of \$77 per tonne was used for estimations of P & P reserves at the Arista Underground Mine. The term "cutoff grade" means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Mirador Underground Mine at the Alta Gracia property. A breakeven cutoff grade of 2.33 g/t AuEq was used for proven and probable reserves at the Mirador Underground Mine using gold and silver only to calculate gold equivalencies.



5. Mining, processing, energy, administrative and smelting/refining costs were based on 2020 actual costs for the Don David Mine.
6. Arista Mine metallurgical recovery assumptions used were 76% for gold, 92% for silver, 80% for copper, 79% for lead and 80% for zinc. Mirador Mine metallurgical recovery assumptions used were 85% for gold and 72% for silver. These recoveries reflect 2020 actual average recoveries for the Aguila and Alta Gracia Projects.
7. P & P reserves are diluted and factored for expected mining recovery.
8. Minimum mining width for P & P reserves is 1.5 meters for the Arista and Mirador underground mines.
9. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

## 12.8.2 Mineralized Material (Exclusive of Mineral Reserves)

GRC uses the term “Mineralized Material” to describe mineralization in the Don David Mine mineral deposits that do not constitute “Mineral Reserves” under current U.S. reporting requirements as governed by SEC Industry Guide 7. Mineralized Material is used to describe a mineralized body that has been delineated by appropriate drilling and/or underground sampling to establish continuity and support an estimate of tonnage and an average grade of the selected metal(s). Mineralized material does not have demonstrated economic viability. The SEC only permits issuers to report mineralized material in tonnage and average grade without reference to contained ounces or quantities of other metals.

For Mineralized Material, DDGM applies the same US\$ 77 per tonne NSR breakeven cutoff grade for the Arista Mine and the breakeven cutoff grade of 2.33 g/t AuEq for the Alta Gracia Project, including the Mirador Mine, and 2.50 g/t AuEq for the Margaritas Project. Gold and silver only are used to calculate gold equivalencies. Mineralized Material meets the same dilution, expected mine recovery and cutoff grade requirements as Mineral Reserves but does not have demonstrated economic viability. Mineralized Material is in addition to Proven and Probable Reserves.

Mineral Reserve blocks not in the life-of-reserve mine plan are classified by DDGM as Mineralized Material and excluded from the Mineral Reserves tabulation. Mineralized Material is used by DDGM for mine planning and exploration purposes only.

Mineralized Material for the Don David Mine as of December 31, 2020 is summarized in Table 12.9.

**Table 12.9 Mineralized Material (Exclusive of Mineral Reserves) for the Don David Mine as of December 31, 2020\***

Description	Tonnes	Au	Ag	Cu	Pb	Zn
		g/t	g/t	%	%	%
<b>DON DAVID MINE</b>						
<b>Arista Mine</b>	1,569,900	1.46	148	<b>0.2</b>	<b>1.1</b>	<b>3.0</b>
<b>Alta Gracia Project (inc. Mirador Mine)</b>	172,000	0.77	345			
<b>Margaritas Project</b>	26,000	0.51	260			
<b>DON DAVID MINE TOTAL</b>	<b>1,767,900</b>					

Notes on Mineralized Material in Table 12.9:

1. Mineralized Material is exclusive of Mineral Reserves
2. Metal prices used for Mineralized Material were \$1,477 per ounce of gold, \$17.47 per ounce of silver, \$2.83 per pound of copper, \$0.92 per pound of lead and \$1.17 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.

3. A breakeven NSR cutoff grade of \$77 per tonne was used for estimations of Mineralized Material at the Arista mine. The term “cutoff grade” means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.33 g/t AuEq was used for Mineralized Material at the Alta Gracia project and 2.5 g/t Au for the Margaritas project using gold and silver only to calculate gold equivalencies at a ratio of 84.54:1.
5. Arista Mine metallurgical recovery assumptions used were 76% for gold, 92% for silver, 80% for copper, 79% for lead and 80% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 85% for gold and 72% for silver. These recoveries reflect 2020 actual average recoveries for the Aguila and Alta Gracia Projects.
6. Mineralized Material are diluted and factored for expected mining recovery.
7. Minimum mining width for Mineralized Material is 1.5 meters for the Arista and Mirador underground mines.
8. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

### 12.8.3 Mineral Resources (Exclusive of Mineral Reserves and Mineralized Material)

Mineral Resources for the Don David Mine that do not qualify neither as Mineral Reserves nor Mineralized Material, as of December 31, 2020, are summarized in Table 12.10.

**Table 12.10 Mineral Resources (Exclusive of Mineral Reserves and Mineralized Material) for the Don David Mine as of December 31, 2020**

Project	Class	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	\$77	252,000	1.57	147	0.24	0.85	2.56
	Indicated	\$77	926,400	1.36	158	0.15	1.17	3.26
	Meas+Ind	\$77	1,178,400	1.41	155	0.17	1.1	3.11
	Inferred	\$77	251,500	0.36	64	0.15	1.4	5.02
Switchback	Measured	\$77	43,600	1.81	46	0.31	1.17	2.4
	Indicated	\$77	347,900	1.44	137	0.26	0.92	2.46
	Meas+Ind	\$77	391,500	1.48	127	0.27	0.95	2.46
	Inferred	\$77	410,900	1.26	81	0.47	1.05	3.17
Altagracia	Measured	2.33 g/t	18,500	0.62	272			
	Indicated	2.33 g/t	153,500	0.74	354			
	Meas+Ind	2.33 g/t	172,100	0.73	345			
	Inferred	2.33 g/t	53,300	0.75	370			
Margaritas	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
<b>DON DAVID MINE TOTAL</b>	Measured	NA	314,100	1.55	140			
	Indicated	NA	1,450,900	1.30	176			
	Meas+Ind	NA	1,765,100	1.35	169			
	Inferred	NA	751,800	0.89	107			

Mineral Resources reported by DDGM exclusive of Mineral Reserves and Mineralized Material do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

#### **12.8.4 Selected Long Section Views of Mineral Resources and Mineral Reserves for Significant Veins of the Don David Mine**

Figures 12.9 through 12.13 show individual long section views of the most significant modeled veins highlighting search areas for Measured, Indicated and Inferred mineral resources and the corresponding distribution of NSR values, and Proven and Probable mineral reserves, for the Arista and Switchback veins and AuEq grades for the Independencia West vein (IND-W) at the Mirador mine.

### 12.8.4.1 Arista Veins (Arista Mine)

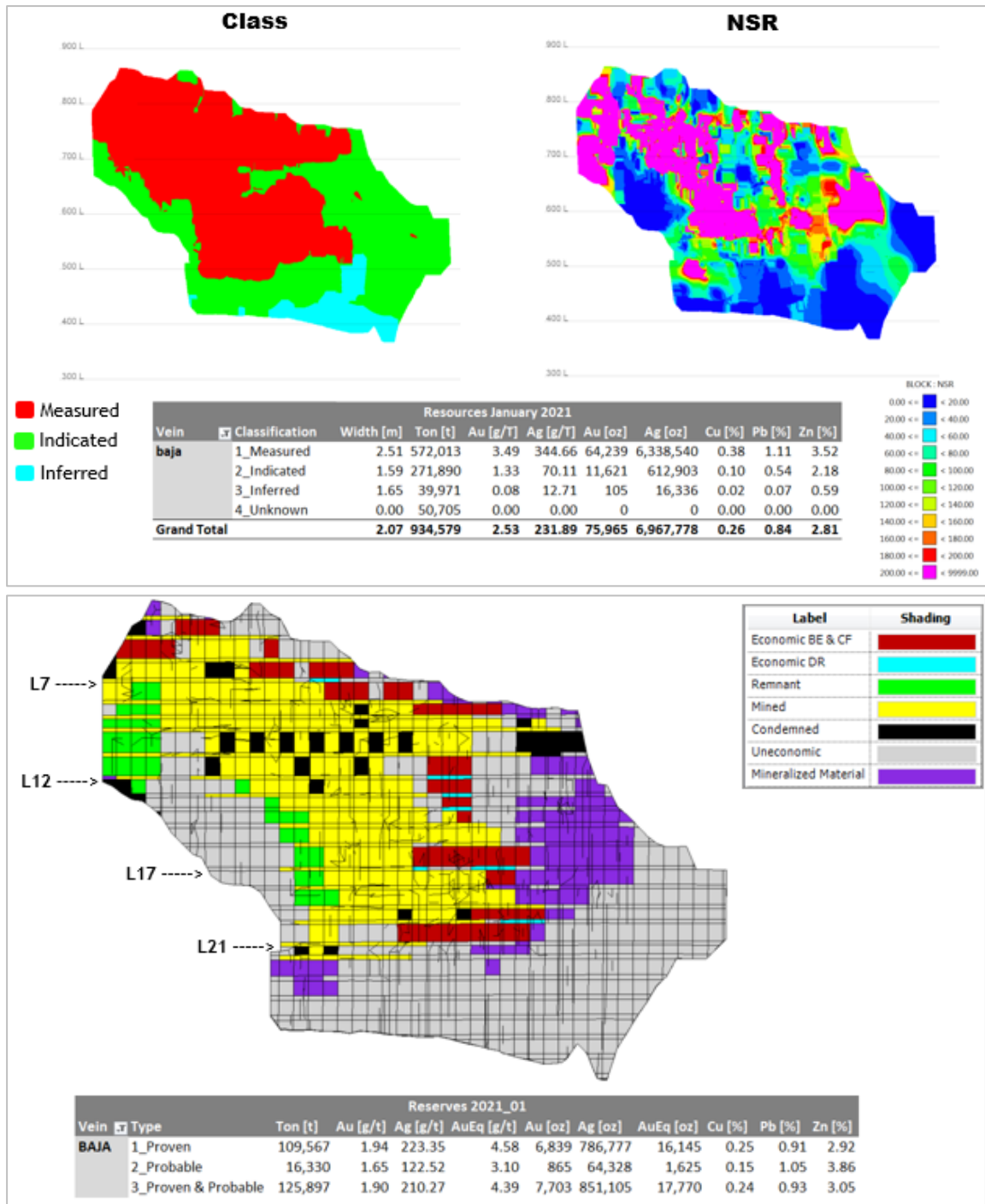


Figure 12.9 Long Section Views (Looking Northeast) of the Baja Vein in the Arista Mine

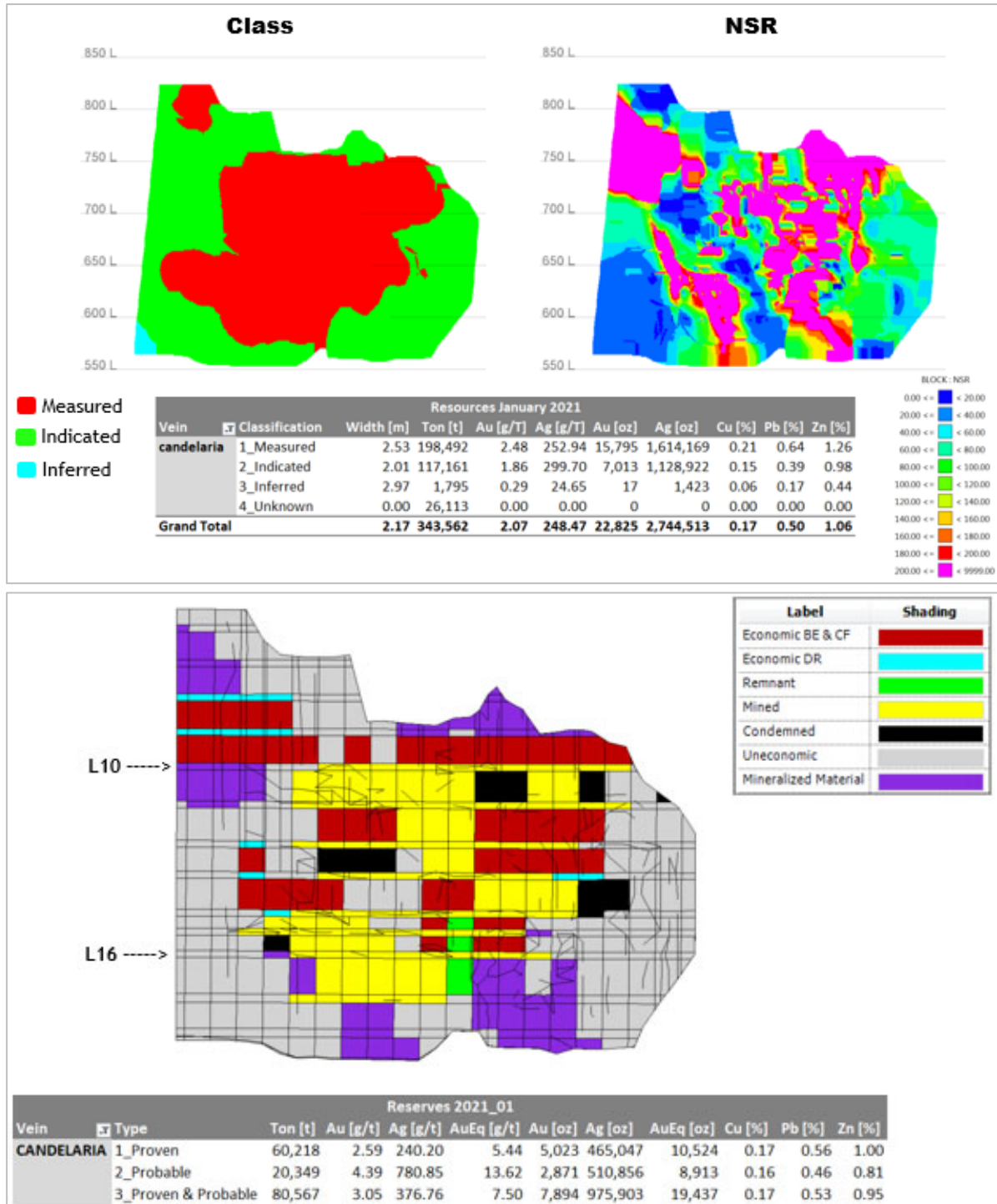


Figure 12.10 Long Section Views (Looking Northeast) of the Candelaria Vein in the Arista Mine

12.8.4.2 Switchback Veins (Arista Mine)

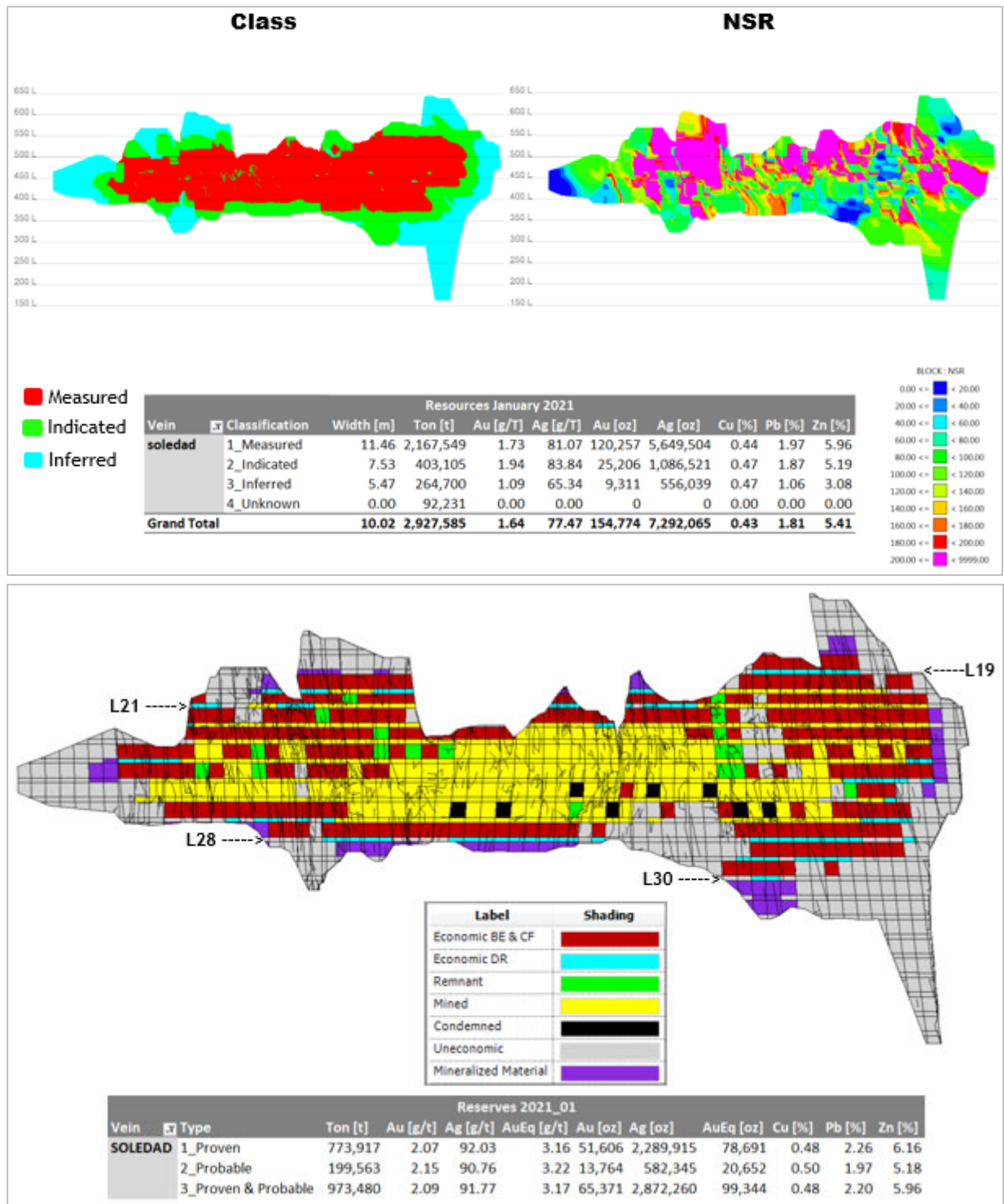


Figure 12.11 Long Section Views (looking Northeast) of the Soledad Vein in the Arista Mine



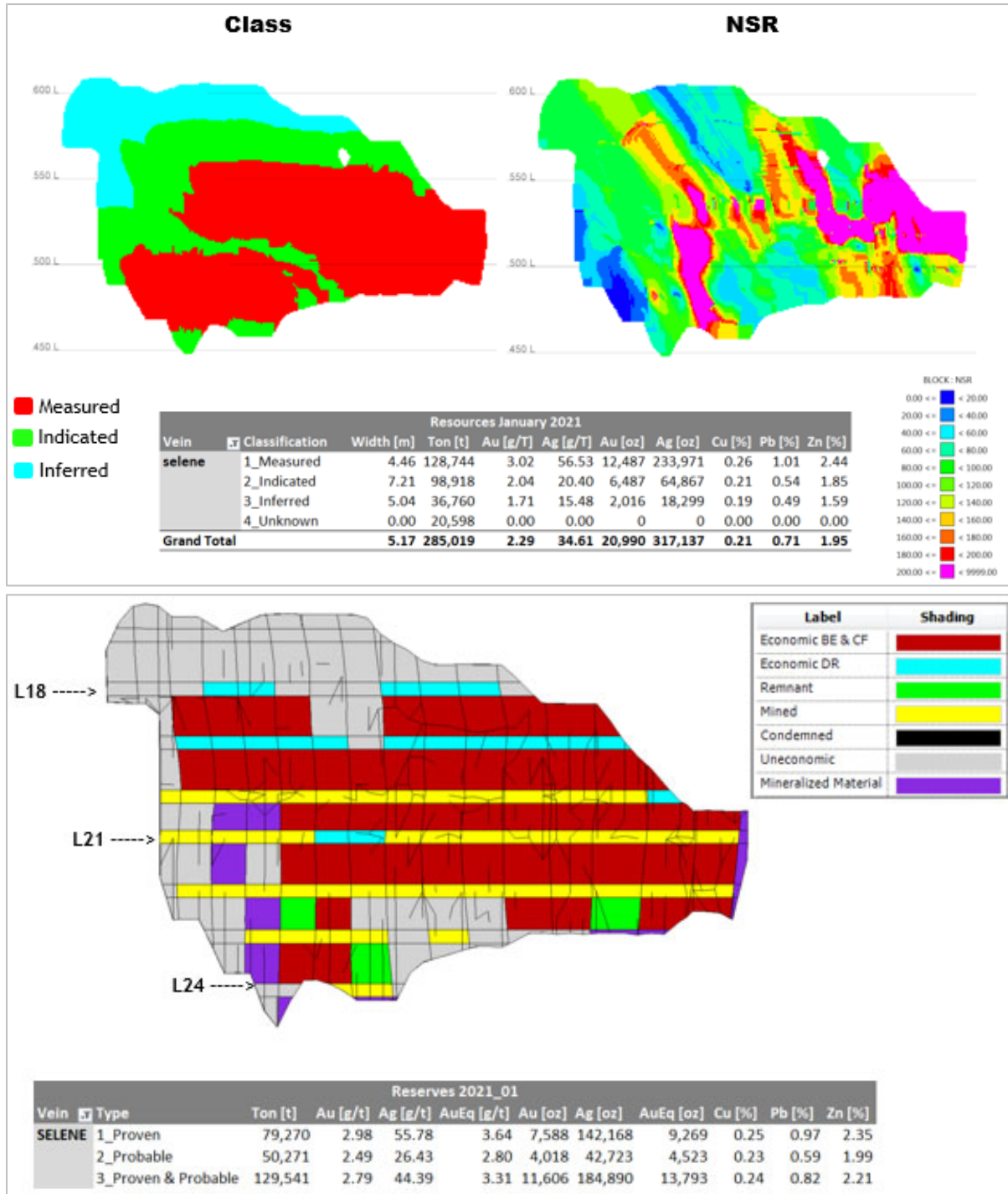


Figure 12.12 Long Section Views (Looking Northeast) of the Selene Vein in the Arista Mine



### 12.8.4.3 Independencia West Vein (Mirador Mine)

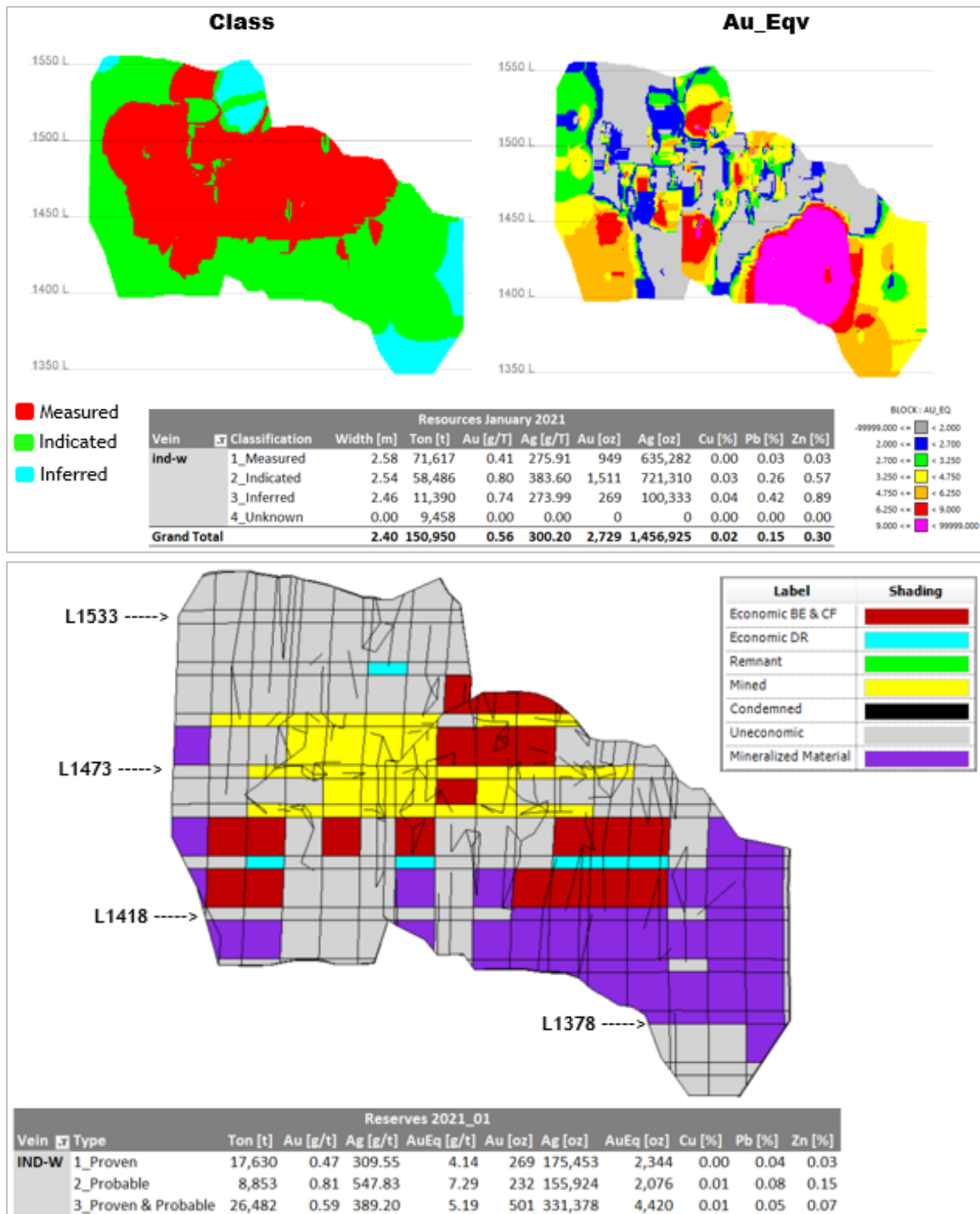


Figure 12.13 Long Section Views (Looking North) of the Independencia West Vein in the Mirador Mine

## 12.9 Production Reconciliation

Production reconciliation is the process of comparing, balancing and adjusting production estimates between mine and plant for consistency in reporting. Reserve models are also used for short and long-term mine planning, mining selectivity, dilution, losses and ore allocation records, stockpile records, plant feed records and production results. A comparison can then be made of what is planned versus what is actually mined. GRC currently maintains records of reserves, mine production and plant processing for tonnage and grade reconciliation.

### 12.9.1 Mine Production and Plant Processing versus Block Model

During the past 12 months, (January 2020 through December 2020), DDGM has kept a record of the material mined from underground at Arista and haulage by trucks to the plant (Aguila mill as described in Section 14) for processing. There was no mine and plant production in April and only reduced production in May due to a CoVID-19 shutdown mandated by Mexican government.

For the period, January 2020 through December 2020, a total of 494,287 tonnes of sulfide ore was mined from Arista and shipped to the flotation circuit of the Aguila plant (Table 12.11). The grades of mined material averaged 1.39 g/t gold, 64 g/t silver, 0.39% copper, 1.68% lead and 5.30% zinc.

For the same period, January 2020 through December 2020, the flotation circuit of the Aguila plant processed a total of 506,748 tonnes with average grades of 1.47 g/t gold, 74 g/t silver, 0.39% copper, 1.92% lead and 4.87% zinc (Table 12.12).

For the same period, January 2020 through December 2020, a total of 581,519 tonnes was planned to be mined from the 2020 Arista block model and shipped to the plant (Table 12.13). The average grades of the material planned to be mined from the block model were 1.66 g/t gold, 76 g/t silver, 0.41% copper, 1.79% lead and 5.78% zinc.

**Table 12.11 2020 Mine Production for the Arista Underground Mine\***

MONTH	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	51,562	1.29	48.76	0.33	1.18	3.90	2,131	80,836
FEBRUARY	49,111	1.20	75.55	0.36	1.64	5.42	1,889	119,286
MARCH	50,500	1.30	65.33	0.38	1.92	5.90	2,104	106,065
APRIL								
MAY	8,241	0.97	41.20	0.38	1.80	4.74	258	10,915
JUNE	40,934	1.21	62.76	0.37	1.93	5.89	1,594	82,593
JULY	49,217	1.01	62.82	0.46	1.39	4.87	1,591	99,397
AUGUST	53,951	0.96	64.64	0.39	1.72	5.94	1,670	112,126
SEPTEMBER	39,742	1.80	73.73	0.43	1.90	5.31	2,305	94,209
OCTOBER	53,862	1.94	57.17	0.39	2.09	5.22	3,356	98,997
NOVEMBER	46,702	1.67	65.04	0.41	1.41	5.01	2,504	97,656
DECEMBER	50,464	1.63	71.12	0.39	1.70	5.71	2,643	115,392
<b>TOTALS</b>	<b>494,287</b>	<b>1.39</b>	<b>64.03</b>	<b>0.39</b>	<b>1.68</b>	<b>5.30</b>	<b>22,045</b>	<b>1,017,471</b>

**Table 12.12 2020 Plant Production for the Arista Underground Mine \***

MONTH	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	53,472	1.75	78.29	0.37	1.63	4.08	3,012	134,596
FEBRUARY	51,144	1.24	74.45	0.36	1.72	4.26	2,046	122,417
MARCH	53,420	1.59	91.87	0.43	2.60	5.64	2,736	157,792
APRIL								
MAY	23,995	1.06	71.78	0.38	1.68	5.24	820	55,374
JUNE	54,746	1.20	71.31	0.40	2.02	4.78	2,117	125,507
JULY	49,160	1.02	69.06	0.40	1.75	4.57	1,607	109,149
AUGUST	47,132	0.97	79.43	0.35	1.99	5.38	1,467	120,360
SEPTEMBER	40,326	1.86	81.11	0.45	2.08	5.15	2,407	105,155
OCTOBER	50,145	1.96	55.97	0.37	2.11	4.85	3,164	90,230
NOVEMBER	41,358	1.86	62.99	0.45	1.66	4.84	2,467	83,761
DECEMBER	41,850	1.57	80.49	0.39	1.67	5.10	2,114	108,305
<b>TOTALS</b>	<b>506,748</b>	<b>1.47</b>	<b>74.43</b>	<b>0.39</b>	<b>1.92</b>	<b>4.87</b>	<b>23,957</b>	<b>1,212,644</b>

**Table 12.13 2020 Planned Production (Block Model) for the Arista Underground Mine \***

MONTH	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	66,899	1.74	68	0.39	1.56	5.11	3,743	145,879
FEBRUARY	48,269	2.01	74	0.39	1.66	5.56	3,114	115,001
MARCH	56,565	1.68	72	0.40	2.19	6.68	3,063	130,100
APRIL								
MAY	10,445	1.95	75	0.39	1.94	5.54	654	25,131
JUNE	53,196	1.39	64	0.39	1.75	6.06	2,385	108,843
JULY	76,933	1.10	57	0.41	1.27	4.59	2,712	142,016
AUGUST	58,202	1.34	77	0.42	1.94	6.64	2,503	144,598
SEPTEMBER	54,202	2.04	72	0.47	1.95	6.00	3,558	125,855
OCTOBER	65,947	1.91	81	0.45	2.20	6.32	4,043	171,344
NOVEMBER	35,938	1.54	105	0.42	1.62	5.26	1,781	120,828
DECEMBER	54,923	1.95	107	0.41	1.81	5.88	3,442	188,088
<b>TOTALS</b>	<b>581,519</b>	<b>1.66</b>	<b>76</b>	<b>0.41</b>	<b>1.79</b>	<b>5.78</b>	<b>30,997</b>	<b>1,417,684</b>

\* Production from the Aguila Open Pit and Mirador Underground mines excluded; No production in April and reduced production in May due to CoVID-19 shutdown mandated by Mexican government.

The mine monitors model performance using key reconciliation parameters. Mine reconciliation parameters compare the grade and tonnage of material processed by the mill with the grade and tonnage predicted by the reserve model. Reconciliation performance is then analyzed by “factors”, which the mine has defined as follows:

- The ratio between tonnage and grade for the short-range estimate and the planning model is used to develop the F1 Factor:

$$F1 = \text{mine production} / \text{planned production}$$

- The ratio between tonnage and grade received at the mill and delivered to the mill is used to develop the F2 factor:

$$F2 = \text{mine production} / \text{mill production}$$

- The ratio between the F1 and F2 factors examines reconciliation between the mill and the long-range model:

$$F3 = \text{mill production} / \text{planned production}$$

The F1 Factor therefore provides information on the performance of grade control estimates and the reserve model (short-range reconciliation). The 2020 ratios between mined and planned tonnes and grade (F1 Factors) for the Arista underground mine are shown in Table 12.14. The average 2020 monthly F1 Factors for copper, lead and zinc are within the annual reconciliation target of 10%. However, the average monthly F1 Factors for tonnes, gold grade, silver grade and contained gold and silver ounces are outside of the annual reconciliation target of 10%, ranging from 15% for tonnes to 29% for contained gold ounces.

Possible sources of error for the tonnage F1 factor are wide-spaced drilling and incorporation of too much dilution. A likely source of error for the gold and silver grade F1 factor is over-projection of higher grades into sparsely drilled areas. The source of error for contained gold and silver F1 factor is then related to overestimation of tonnage and gold and silver grades. Closer-spaced drilling is likely needed to upgrade orebody knowledge and possibly utilizing a revision to the inverse distance method for estimating block grades.

**Table 12.14 2020 Monthly Ratios between Mine Production and Planned Production (F1 Factors) for the Arista Underground Mine**

Month	F1 FACTORS							
	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	77%	74%	72%	83%	76%	76%	57%	55%
FEBRUARY	102%	60%	102%	93%	99%	97%	61%	104%
MARCH	89%	77%	91%	96%	88%	88%	69%	82%
APRIL								
MAY	79%	50%	55%	98%	93%	86%	39%	43%
JUNE	77%	87%	99%	94%	110%	97%	67%	76%
JULY	64%	92%	109%	113%	109%	106%	59%	70%
AUGUST	93%	72%	84%	94%	89%	89%	67%	78%
SEPTEMBER	73%	88%	102%	92%	98%	89%	65%	75%
OCTOBER	82%	102%	71%	87%	95%	83%	83%	58%
NOVEMBER	130%	108%	62%	97%	87%	95%	141%	81%
DECEMBER	92%	84%	67%	97%	94%	97%	77%	61%
AVERAGE	0.85	0.84	0.84	0.94	0.94	0.92	0.71	0.72

The F2 Factor provides information on the grade control estimate as a predictor of the metallurgical grade, which also impacts on daily decisions made as to whether the material is ore grade, waste or stockpile grade (grade control reconciliation). The 2020 ratios between milled and mined tonnes and grade (F2

Factors) for the Arista underground mine are shown in Table 12.15. The average 2020 monthly F2 Factors for tonnes, gold grade, copper grade, zinc grade and contained gold ounces are all within the annual reconciliation target of 10%. The average monthly F2 Factors for silver grade, lead grade and contained silver ounces are outside of the annual reconciliation target of 10%, ranging from 12% for lead grade to 16% for contained silver ounces.

**Table 12.15 2020 Monthly Ratios between Mine Production and Mill Processing (F2 Factors) for the Arista Underground Mine**

MONTH	F2 FACTORS							
	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	96%	73%	62%	88%	72%	96%	71%	60%
FEBRUARY	96%	96%	101%	101%	95%	127%	92%	97%
MARCH	95%	81%	71%	89%	74%	105%	77%	67%
APRIL								
MAY	34%	92%	57%	99%	107%	90%	32%	20%
JUNE	75%	101%	88%	94%	96%	123%	75%	66%
JULY	100%	99%	91%	115%	79%	107%	99%	91%
AUGUST	114%	99%	81%	114%	87%	110%	114%	93%
SEPTEMBER	99%	97%	91%	96%	91%	103%	96%	90%
OCTOBER	107%	99%	102%	104%	99%	108%	106%	110%
NOVEMBER	113%	90%	103%	92%	85%	104%	101%	117%
DECEMBER	121%	104%	88%	102%	102%	112%	125%	107%
<b>AVERAGE</b>	<b>0.98</b>	<b>0.94</b>	<b>0.86</b>	<b>0.99</b>	<b>0.88</b>	<b>1.09</b>	<b>0.92</b>	<b>0.84</b>

The F3 Factor provides information on the reserve model as a predictor of the metallurgical grade (long-range reconciliation). Because the planned grade is derived in part from the block model, the F3 factor also provides an indication as to the performance of the underlying model assumptions. The 2020 ratios between milled and planned tonnes and grade (F3 Factors) for the Arista underground mine are shown in Table 12.16.

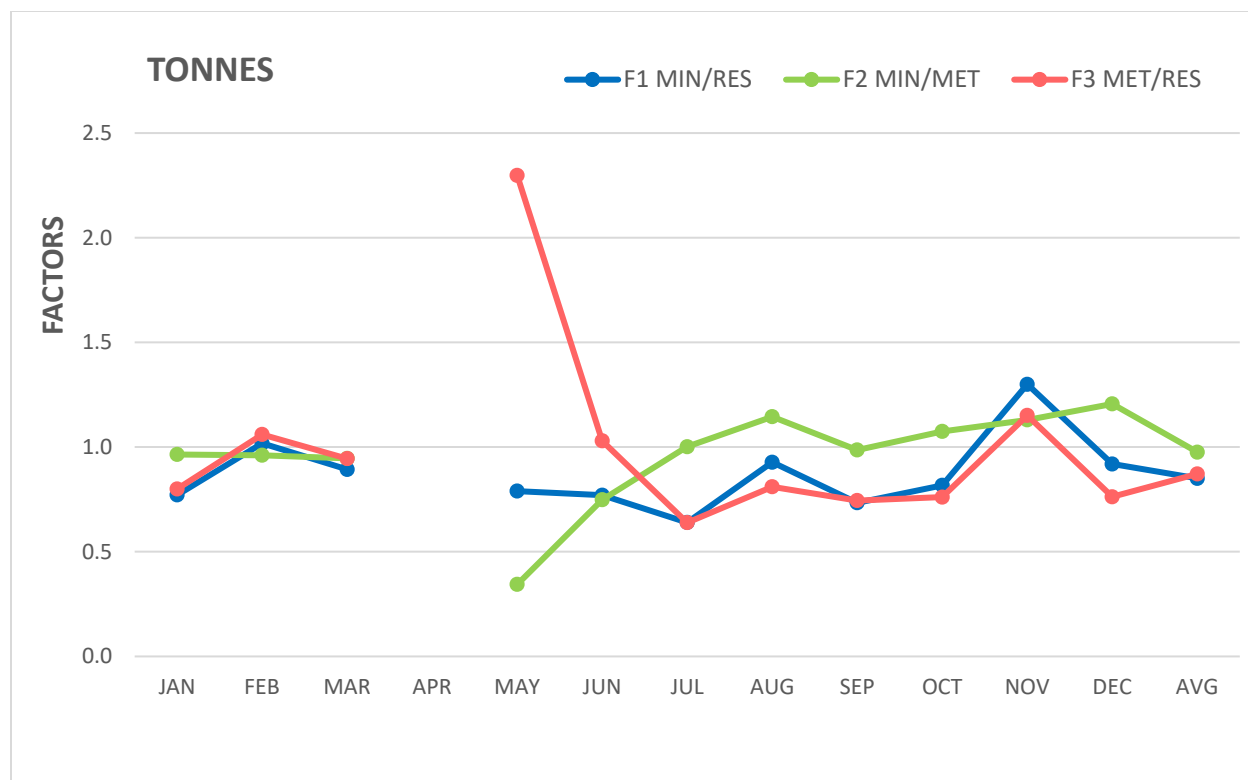
The average 2020 monthly F3 Factors for silver, copper and lead grades are within the annual reconciliation target of 10%. However, the average monthly F3 Factors for tonnes, gold and zinc grades and contained gold and silver ounces are outside of the annual reconciliation target of 10%, ranging from 11% for gold grade to 23% for contained gold ounces.

Possible sources of error for the tonnage, gold and zinc grades and contained gold and silver F3 factors are likely the same as those for F1 factors.

**Table 12.16 2020 Monthly Ratios between Mill Processing and Planned Production (F3 Factors) for the Arista Underground Mine**

MONTH	F3 FACTORS							
	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	80%	101%	115%	94%	105%	80%	80%	92%
FEBRUARY	106%	62%	100%	92%	104%	77%	66%	106%
MARCH	94%	95%	128%	107%	119%	84%	89%	121%
APRIL								
MAY	230%	55%	96%	98%	87%	95%	125%	220%
JUNE	103%	86%	112%	100%	115%	79%	89%	115%
JULY	64%	93%	120%	98%	138%	100%	59%	77%
AUGUST	81%	72%	103%	82%	102%	81%	59%	83%
SEPTEMBER	74%	91%	112%	96%	107%	86%	68%	84%
OCTOBER	76%	103%	69%	83%	96%	77%	78%	53%
NOVEMBER	115%	120%	60%	105%	103%	92%	139%	69%
DECEMBER	76%	81%	76%	95%	92%	87%	61%	58%
<b>AVERAGE</b>	<b>0.87</b>	<b>0.89</b>	<b>0.98</b>	<b>0.95</b>	<b>1.07</b>	<b>0.84</b>	<b>0.77</b>	<b>0.86</b>

Reconciliation plots for tonnes, grade and contained gold and silver ounces for 2020 production are shown in Figures 12.14 through 12.21.



**Figure 12.14 Tonnage Reconciliation Plot for 2020**

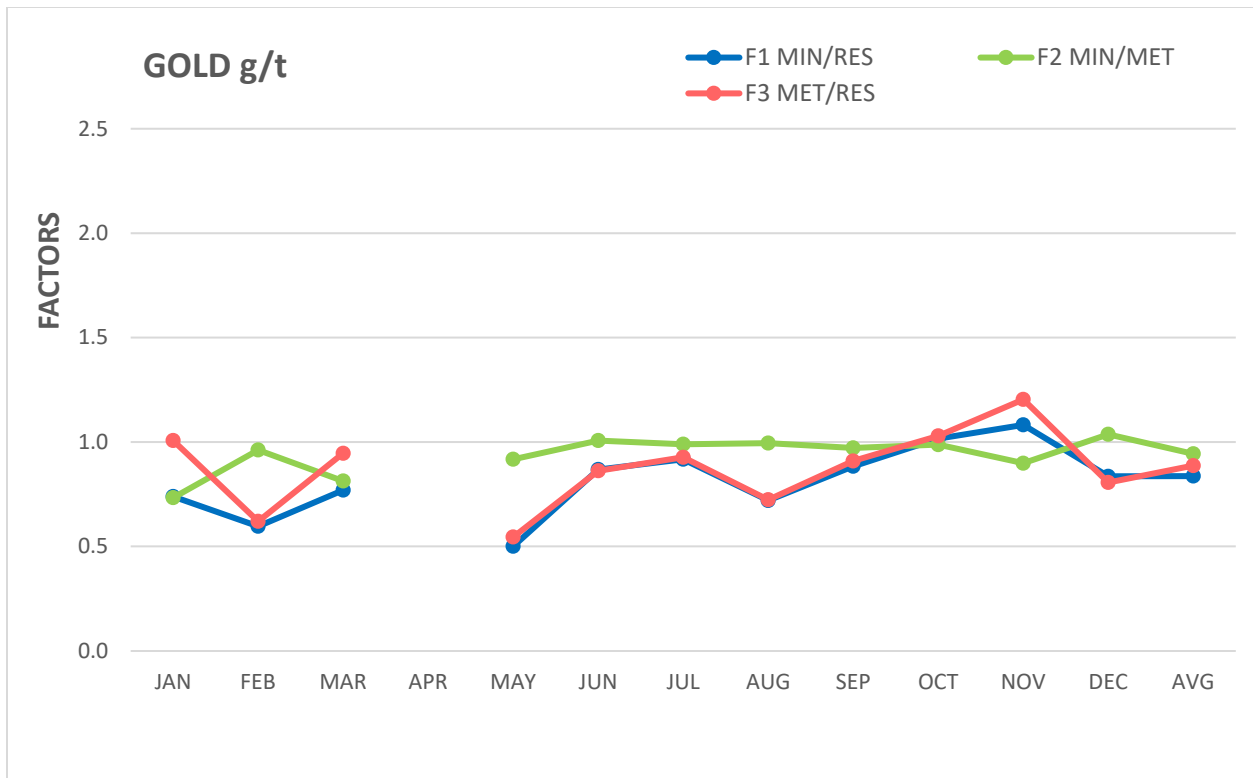


Figure 12.15 Gold Grade Reconciliation Plot for 2020

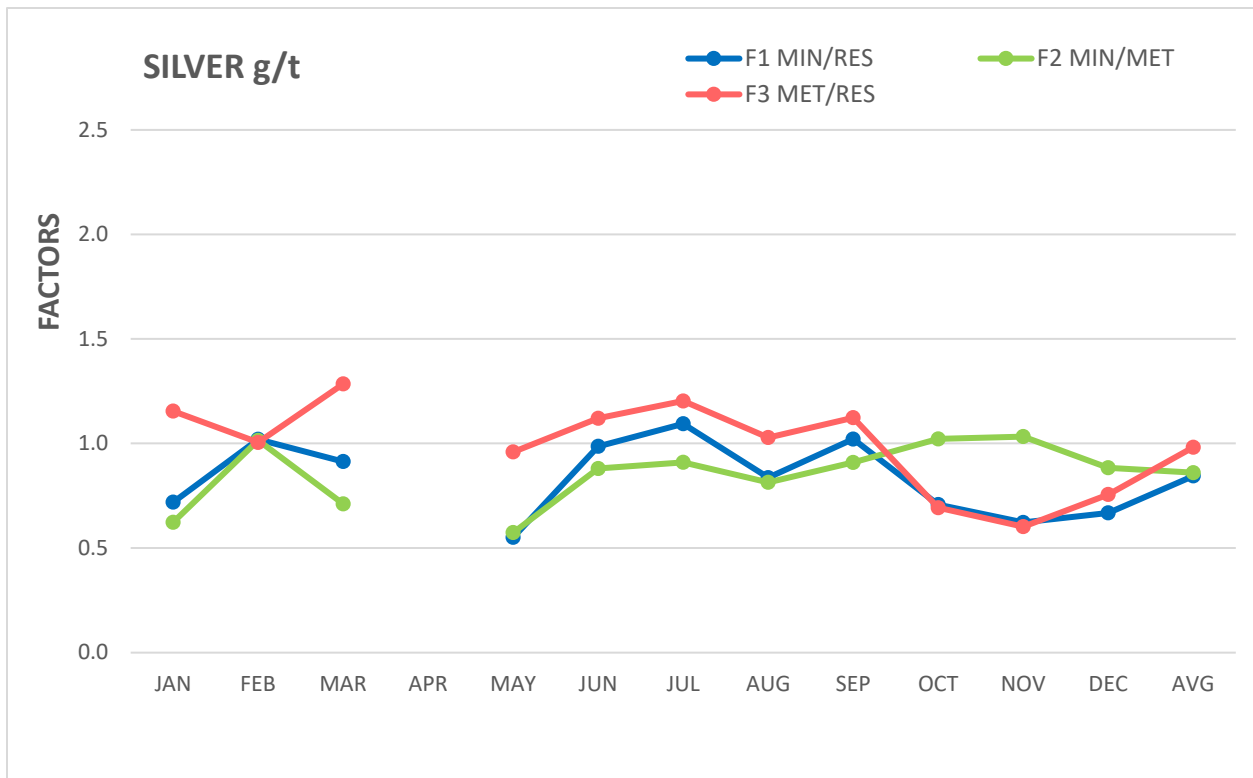


Figure 12.16 Silver Grade Reconciliation Plot for 2020



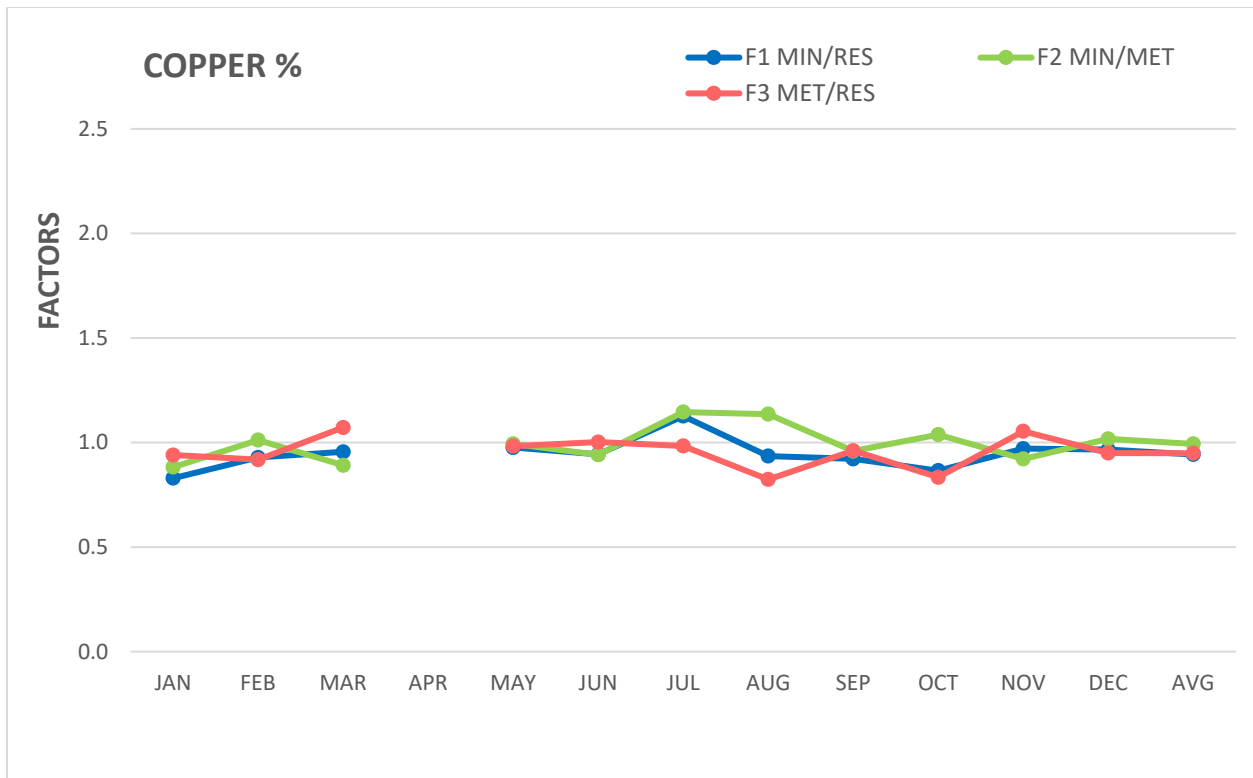


Figure 12.17 Copper Grade Reconciliation Plot for 2020

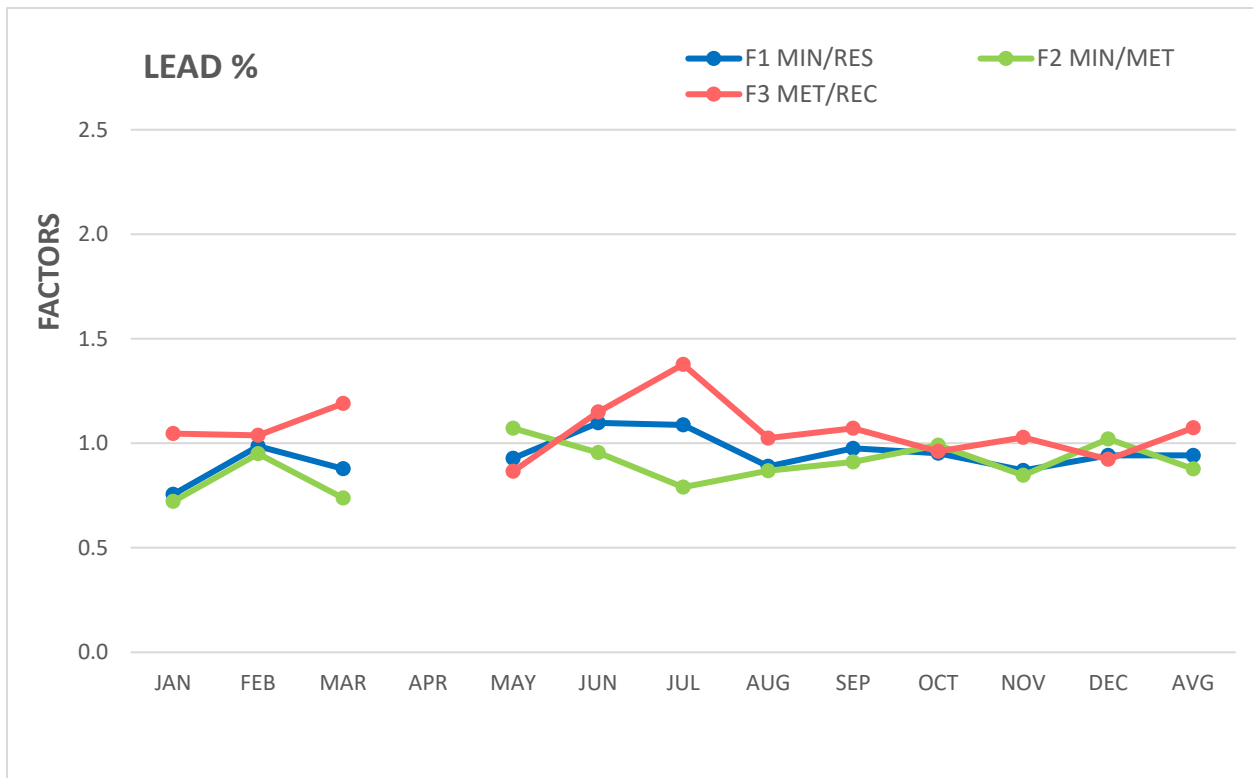


Figure 12.18 Lead Grade Reconciliation Plot for 2020

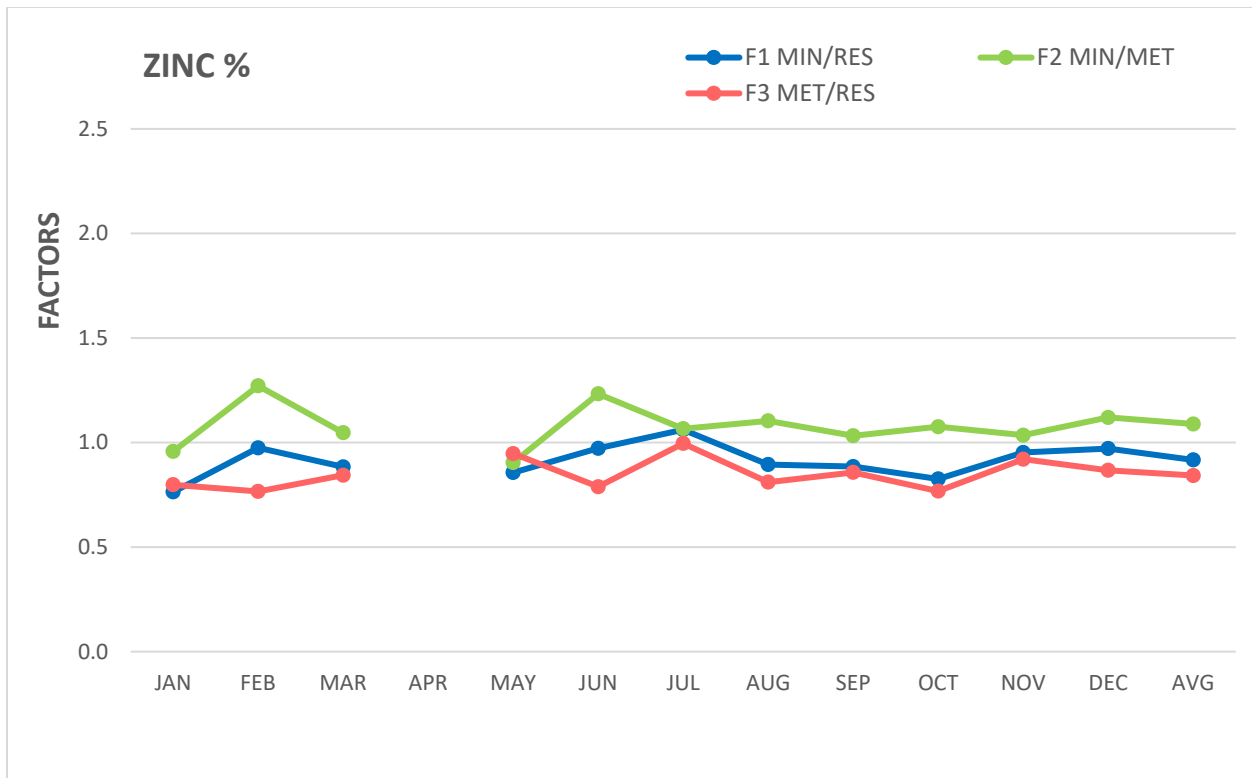


Figure 12.19 Zinc Grade Reconciliation Plot for 2020

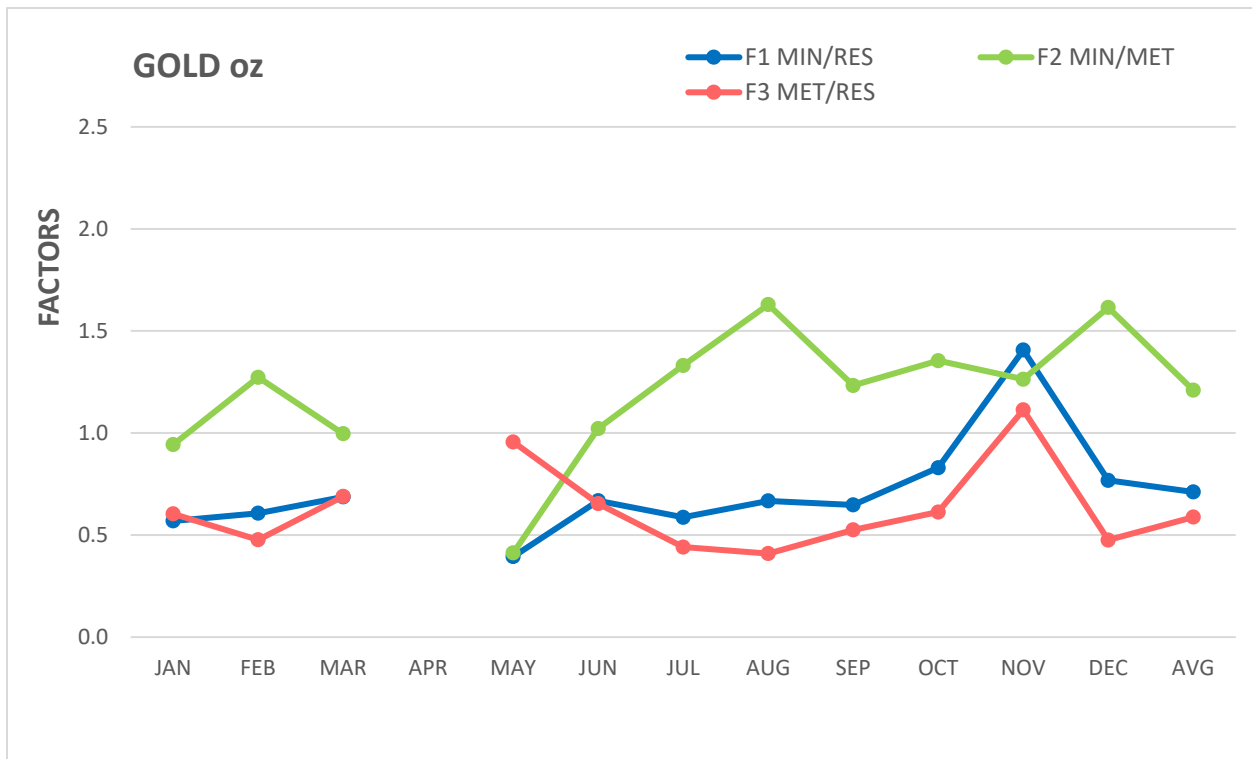


Figure 12.20 Contained Gold Reconciliation Plot for 2020

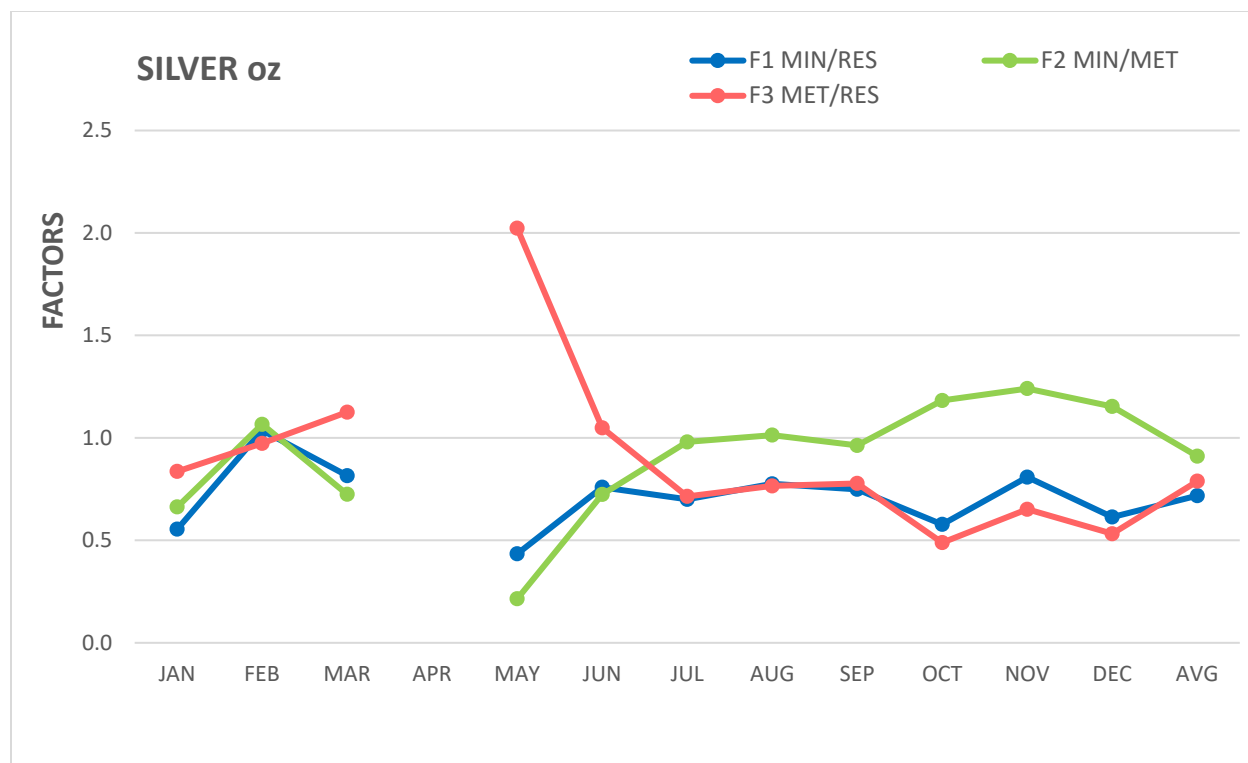


Figure 12.21 Contained Silver Reconciliation Plot for 2020

### 12.9.2 Block Model Reconciliation

The ultimate validation of the block model is to compare actual grades to predicted grades using the established estimation parameters. This is typically done by evaluating reserve blocks identified as being above cut-off mainly from grade control chip channel sampling.

All underground development and stopes are regularly surveyed using Total Station and Electronic Scanner methods at the Arista Underground Mine as a component of monitoring the underground workings. The survey information is imported into Vulcan and used to generate 3D solids defining the extracted regions of the mine.

Mine geologists and computer technicians subsequently combine the geology reported with the surveyed outlines to create three-dimensional models of the mining areas. These three dimensional "solids" or wireframes represent the production volume for a given vein during a given month. It has been found that this type of wireframe model accurately approximates the true volume of excavated rock.

Over-estimations of tonnes and grade, mainly gold, silver and zinc, shall be further evaluated to provide a better understanding of the model and the reconciliation process. Possible sources of grade differences include one or more of the following: 1) the dilution factors at zero grade applied to the resource blocks are too low, 2) the width of the vein in the models is too narrow, and 3) capping levels are too high, resulting in higher average grades gold and silver and too low for copper, lead and zinc.

Mine geology staff shall also continue to review grade control data to better estimate the grades of ore hauled to the plant.

## **12.10 Risk Factors**

During the reserve estimation process, potential risk factors were identified:

- Although care was taken to snap the interpreted vein strings to drill holes, the positional accuracy of the veins is poor unless underground workings are available to correct for inaccuracies in down-hole surveys. This problem is particularly evident when drill holes intersect veins at oblique angles, and where drill holes are widely spaced.
- There were some difficulties in determining which intervals in different drill holes represent the same vein owing to multiple closely-spaced mineralized structures. This problem is very difficult to solve when drill holes are widely spaced, and some of the apparently continuous veins may be broken up by faulting and/or the continuity may not be verified by more detailed drilling.
- Some of these veins are simple splays from the Arista-Baja vein system and so represent relatively low tonnage and strike length.
- Removal of extracted material often results in remnant resource blocks being left in the model that will likely never be exploited. These represent inevitable components of mining such as pillars and sills, or lower grade peripheral material that was left behind.
- In many cases, negative mine-mill reconciliations may be handled by application of mine call factors (MCF) to provide realistic forecasts of expected tonnage and grade. However, it is always important to understand whether the MCF is due to sampling, reserves, operational constraints, or poor performance, otherwise it can simply mask these problems and lower expectations more than necessary. Reserves should reflect expectations of performance over the life of the mine. DDGM currently does not apply a MCF to its reserves. Further evaluation by DDGM may be required to determine whether that is appropriate going forward.

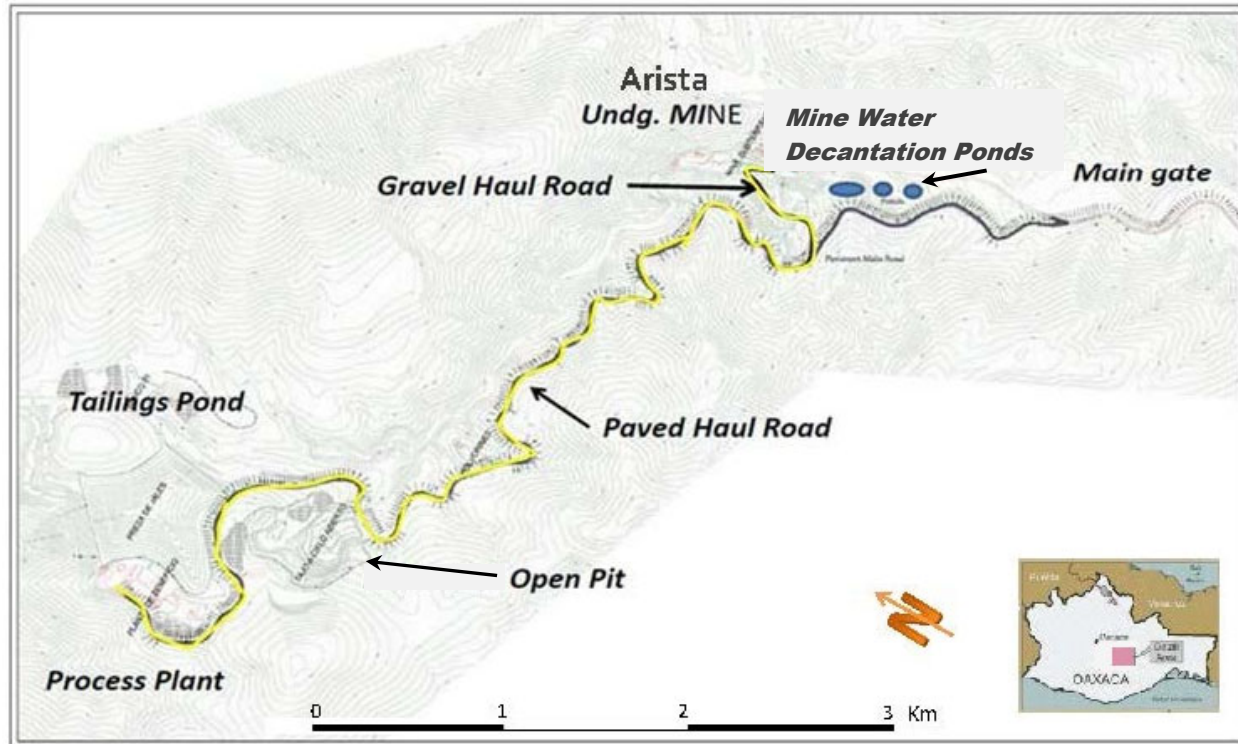
## 13 MINING METHODS

### 13.1 Surface Mining

DDGM declared commercial production at the Aguila Project on July 1, 2010. Mineral production during 2010 consisted of processing Mineral Resources from the Aguila open pit located approximately 0.5 km from the mill (Fig. 13.1).

DDGM developed and mined the shallow-dipping accessible portion of the Aguila vein (manto) by open pit methods, while the projection of the vein to depth indicated additional underground mine potential. Initial, tonnes and grade open pit mined from the Aguila vein (manto) was approximately 345,000 tonnes at an average grade of 4.4 g/t Au and 43 g/t Ag.

Initial mining of the open pit Mineral Resource was essentially completed in 2010. A low-grade stockpile of open pit material estimated at approximately 60,000 tonnes grading 1.4 g/t Au and 19 g/t Ag was processed through the Agitated Leach circuit at the Aguila plant during 2016 and 2017. Open pit mining resumed on the Aguila vein (manto) in 2017. During 2019, DDGM commenced underground mining of the Aguila vein exposed in the high wall of the open pit. From 2017 through 2020, approximately 157,400 tonnes of Mineral Resource grading 1.7 g/t Au and 40 g/t Ag on the Aguila vein was mined by open pit/underground and processed through the Aguila's plant agitated leach circuit.



**Figure 13.1 Surface Layout Map for Underground and Open Pit Mines, Process Plant and Tailings Pond of DDGM's Aguila Project**

## 13.2 Underground Mining

Substantial development was undertaken from 2010-2011 to access the Mineral Resources of the Arista vein system and to provide ancillary access for further exploration and development. In addition, a significant amount of mining on the Arista vein system was achieved to determine the "mineability" of the orebody and to optimize an extraction method(s) for mining the mineralized zones. The principal exploration access and haulage decline ramp was opened at surface positioned along Aire Creek. The portal opening is located at an elevation at 902 (masl) accessing the mineralized area of the Arista vein system. The decline was driven as a spiral with a minus 10 percent grade in the footwall of the mineralized area. Underground mine planning and exploitation is based on a typical vertical separation of mine levels of approximately 18m. DDGM has advanced the primary decline ramp down to Level 27, approximately 4,200 meters ramp distance from the mine portal. DDGM has also constructed a safety/ventilation decline ramp in conjunction with the primary decline ramp along with various drifts, raises and stopes encompassing approximately 500 m vertically and 1,300 m along strike length.

In 2017, in addition to the Arista underground mine, DDGM completed development of the Mirador Mine at the Alta Gracia Project and began delivering development ore to the Aguila processing facility. Two mine portals were developed to provide access to the Mirador vein. Mine site offices and mobile

equipment maintenance facilities were established adjacent to the mine portals. Additionally, a diesel power generation plant, compressed air and a mine water pumping stations were developed.

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the underground mining methods employed at the Don David Mine (Brown et al., 2020). Specific topics covered in earlier reports include:

- Underground Mining Methods
  - Overhand Mechanized Cut and Fill (CAF)
  - Long Hole Open Stopping (LHOS)
  - Shrinkage Stopping (SH)
- Underground Mine Equipment
- Geotechnical Factors
- Ventilation
- Ore Stockpiles



## 14 PROCESSING AND RECOVERY METHODS

### 14.1 Process Description Summary - Aguila Plant

DDGM currently mills and processes the Arista underground mine ore through the flotation circuit at the Aguila Plant (Fig. 14.1). The Aguila processing plant was built near the mine site and consists of both a sequential flotation (sulfide) circuit and an agitated cyanide leach (oxide) circuit. The flotation circuit produces three separate concentrate products (gold-copper, silver-lead and zinc) from polymetallic ore extracted from the Arista underground mine (Fig. 14.2 a). The agitated cyanide leach circuit processes ore mainly from the Aguila open-pit (Fig. 14.2 b). In 2013, a FLSmidth Knelson Semi-Continuous Concentrator™ has been added to the flotation circuit to recover fine particles of free gold and silver (Fig. 14.2 c). The gravity concentrator receives feed material from the cyclone underflow and utilizes the principles of a centrifuge to enhance the gravitational force experienced by feed particles to effect separation based on particle density. In 2014, a Gekko Systems InLine Leach Reactor™ (ILR) and zinc dust precipitation circuit was installed to upgrade the gravity concentrate to doré (Fig. 14.2 c). ILR is a relatively new method using an intense cyanide leaching process and precipitation on zinc dust to recover gold and silver in doré from gravity concentrate. Concentrates are sold to various concentrate buyers located in Mexico. DDGM sells its doré to various precious metals refiners and mints, currently Asahi Refining USA, Inc.

Mining and milling operations at the Aguila property commenced in 2010. Initial production processed ore from the open-pit of the Aguila manto-vein. Subsequently, after their discovery, a new underground mine was developed to access the Arista and Baja veins composing the heart of the Arista vein system. The Arista mine was developed via a decline and spiral ramps utilizing rubber-tired vehicles and conventional drill and blast methods to extract the ore. Mining methods are mainly overhand mechanized cut and fill and long-hole open stoping with most mining voids backfilled with waste rock. In 2019, a surface paste fill plant was constructed and now in addition to waste rock backfill, a slurry containing about 30% of mill tailings are mixed with cement and pumped back underground.

The flotation tailings storage facility is located in a valley just below the process plant site (Fig. 14.1), and a dry stack tailings facility is in construction for future storage of mill tailings. The facility will store dewatered mill tailings with a portion used as paste backfill in the Arista mine. The majority of the filtered tailings will be transported overland by conveyor, deposited, and compacted into a stable, unsaturated tailings residue called a “dry stack”.



**Figure 14.1 The Aguila Processing Plant**

Detailed schematic flow sheets for the differential flotation circuit and the agitated leach (oxide) circuit processing plant at the Aguila processing plant are shown in Figures 14.3 and 14.4, respectively.

In summary, the principal stages of the Aguila Plant are as follows:

<b><u>Flotation Circuit</u></b>	<b><u>Agitated Leach Circuit</u></b>
Crushing and Milling	Crushing and Milling
Differential Flotation	Leaching
Thickening, filtering and shipping	Counter Current Decantation (CCD)
	Merrill Crowe Zinc Precipitation
	Bullion Furnace/Doré

During 2020, the average production rate of the Aguila plant was 1,829 tpd, down from the 2019 average of 1,980 tpd. The agitated leach section of the plant is currently processing about 195 tpd but the grinding section of this circuit can handle up to 300 tpd. Metallurgical recoveries at the Aguila plant for ore produced from the Arista mine averaged 76 percent for gold, 92 percent for silver, 80 percent for copper, 79 percent for lead and 80 percent for zinc. Recoveries for ore produced from the Mirador mine average 85 percent for gold and 72 percent for silver.

Since July 1, 2010, the Don David Mine has produced 298,125 ounces of gold and 22,339,923 ounces of silver from the 4,537,678 tonnes of ore. In addition, 12,376 tonnes of copper, 50,306 tonnes of lead and

141,182 tonnes of zinc have been produced. Overall production grades for the Arista deposit have averaged approximately 3 g/t Au, 200 g/t Ag, 0.4% Cu, 1.5% Pb and 4.5% Zn.

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the recovery methods employed at the Don David Mine (Brown et al., 2020). Specific topics covered in earlier reports include:

- Crushing and Milling
- Differential Flotation
- Agitated Leaching
- Tailings and Water Management
- Laboratory Facilities
  - Sample Preparation
  - Fire Assaying
  - X-Ray Fluorescence Analysis
  - Atomic Adsorption Spectroscopy
  - Metallurgical Testing
  - Laboratory Quality Assurance/Quality Control
  - Laboratory Equipment

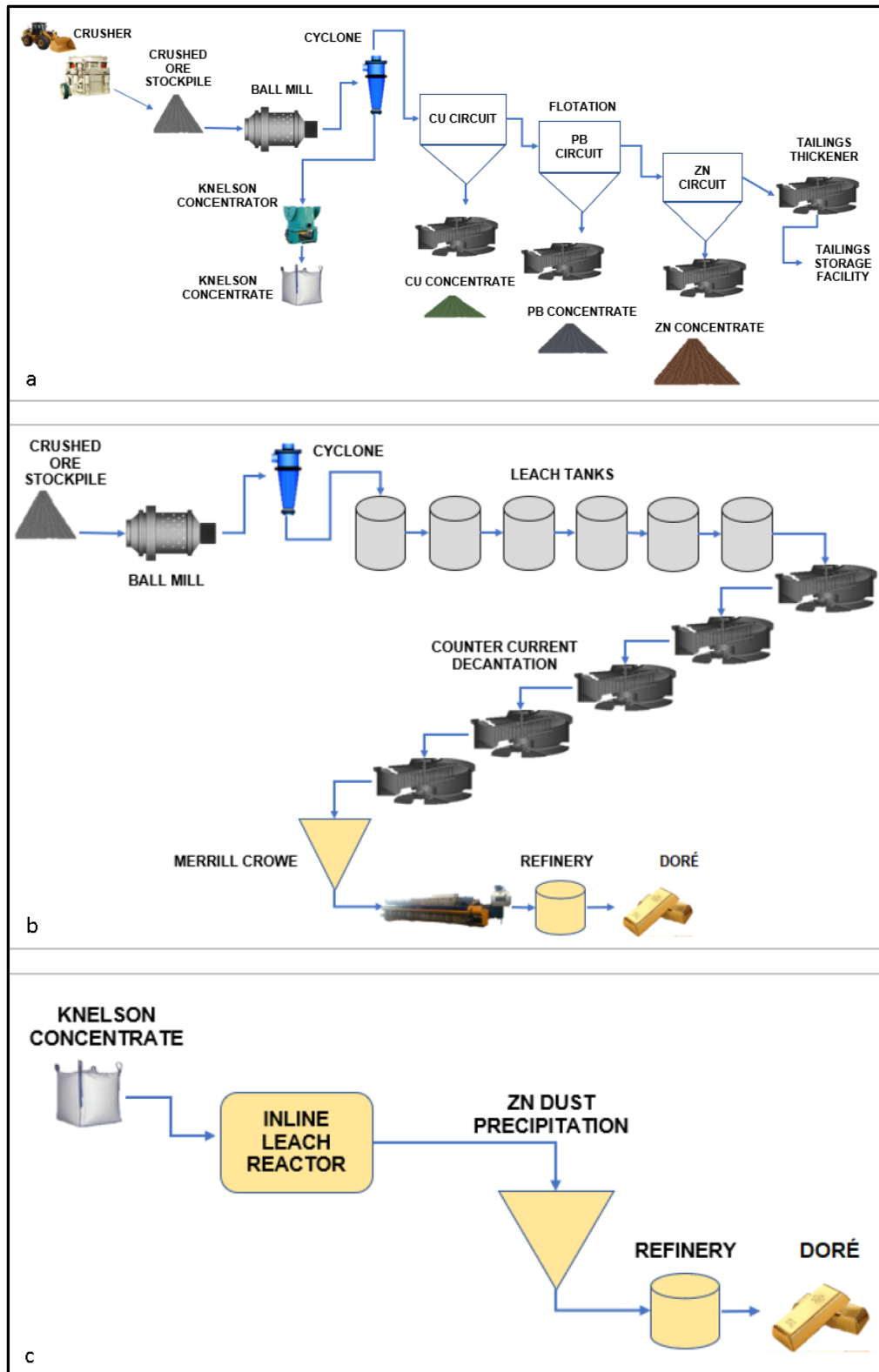


Figure 14.2 Simplified flowsheets for the production circuits of the Aguila processing a) Sequential flotation (sulfide) circuit with Knelson Semi-Continuous Concentrator™. b) Agitated cyanide leach (oxide) circuit. c) ILR™ and zinc dust precipitation circuit

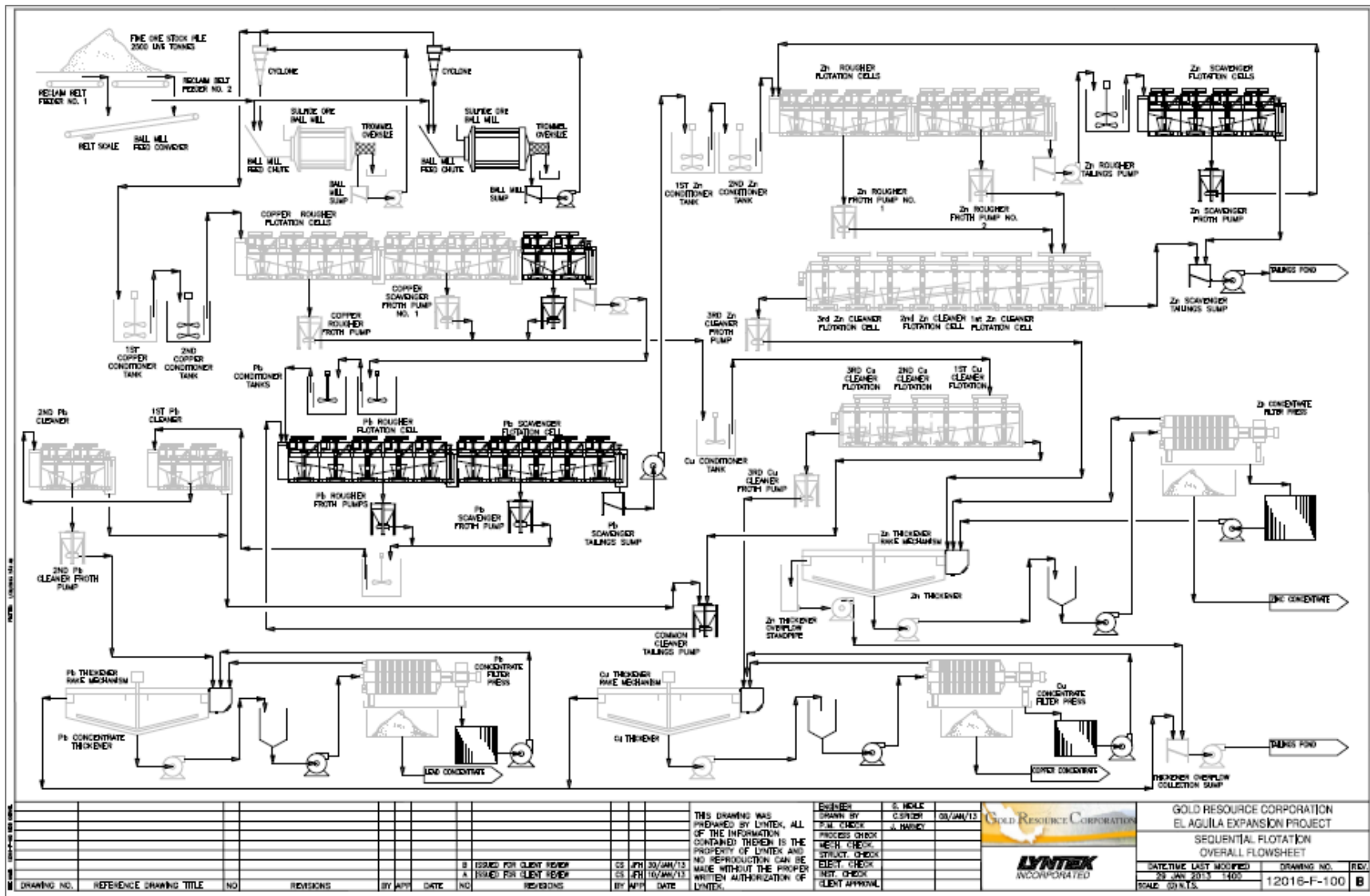


Figure 14.3 Schematic Flow Sheet for the Differential Flotation Circuit at the Aguila Processing Plant

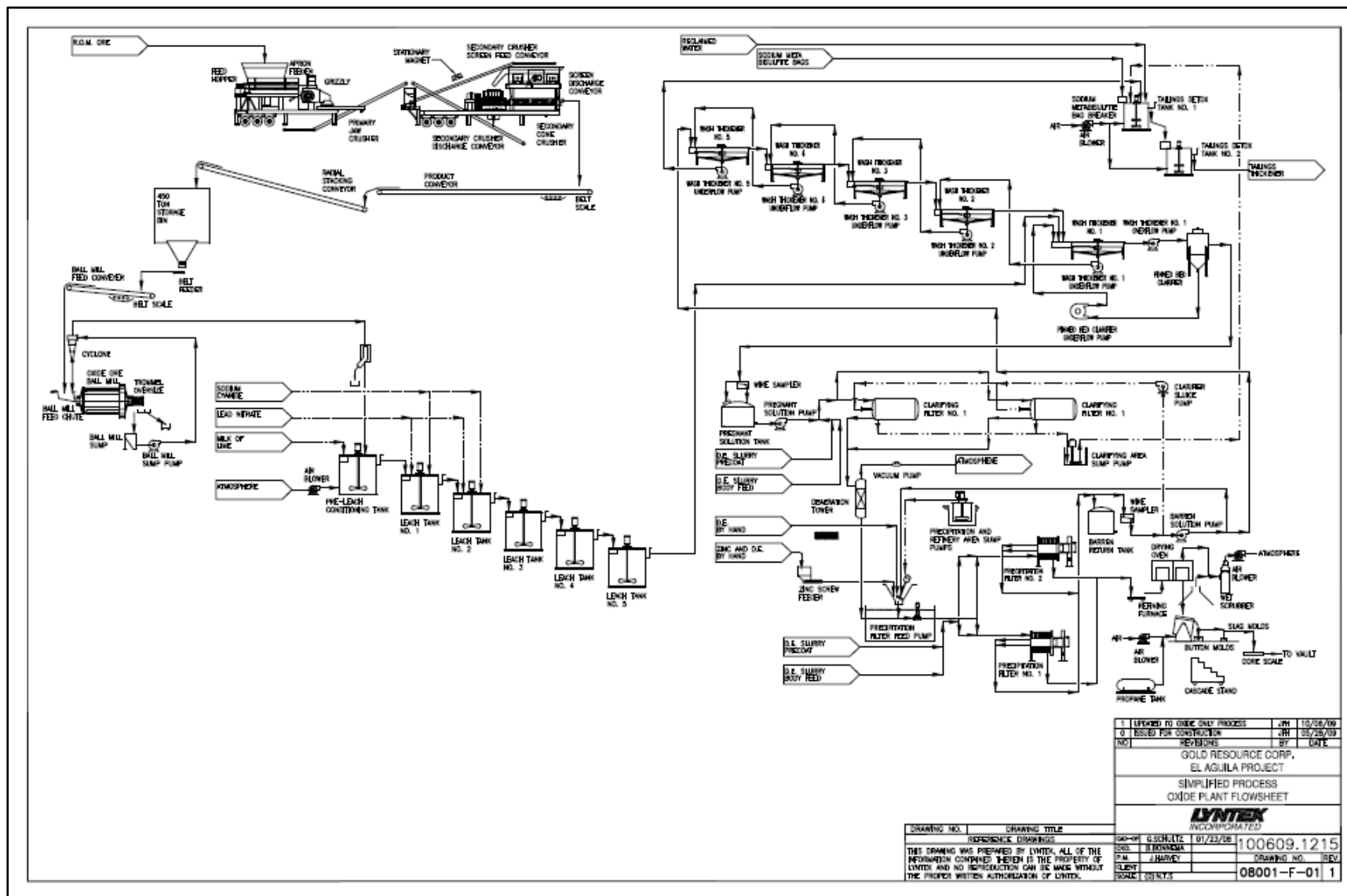


Figure 14.4 Schematic Flow Sheet for the Agitated Leach (Oxide) Circuit Processing Plant

## **15 PROJECT INFRASTRUCTURE**

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the existing infrastructure at the Don David Mine (Brown et al., 2020). A brief description of some key infrastructure items are described below.

### **15.1 Roads and Transportation**

The Aguila Project is on paved Mexican Federal Highway No. 190, 115 km from the capital city of Oaxaca. The highway, which is a leg of the Pan American Highway system, runs through the nearby village of San José de Gracia. The distances from San José de Gracia to the mine and plant sites are 4.0 km and 6.0 km respectively.

As the final products consist of metal concentrates and bullion (doré), and because the property and facilities are easily connected to the paved Pan American highway (and from there to major cities by means of the national paved road system), there is no need for construction of new external processing facilities.

Tractor trailers that can transport two 26-tonne trailers each are used to transport concentrate. The containers must be made of stainless steel. Each container is registered and weighed at the mine scales before the loading, sampling and weighing process is performed of the concentrate prior to the unit being sealed and registered. The concentrate is then transported by road to a port in Mexico for subsequent shipping to purchasers in 400, 600 and 1,200 tonne lots for copper, lead and zinc concentrates, respectively. Concentrate trucks are formed into convoys and escorted by contracted security personnel during the entire trip to the purchaser's warehouse.

### **15.2 Electrical Power**

The Aguila Project area is remote, so the Mexican national power company, Comisión Federal de Electricidad (CFE), provides only limited 500 Kilowatt (Kw) electrical power to the community of San José de Gracia and DDGM's mine and camp.

Up until 2018, power for the Aguila Project was mainly provided by diesel generators at the site. In 2019, DDGM successfully connected a power line to its Aguila project from the CFE power grid. Prior to this connection, the Aguila project operated 100% from electricity generated from more expensive and higher emission diesel fuel.



### **15.3 Water**

DDGM has a permit granted by the Mexican federal water authority, Comisión Nacional del Agua (CONAGUA) for the usage of 150,000 cubic meters annually. Mine service and potable water are pumped up to the underground mine and mill sites from a pump station on a well that has been constructed on the edge of the Rio Grande River, located a short distance south of the community of San José de Gracia. Water is pumped to the sites via a 6-in. dia. steel pipeline to holding tanks at both locations. The approximate pumping head to the mill site tanks is 400 meters.

The majority of process water for the operation of the plant, however, is recycled water from the tailings pond. Only a small amount of fresh water is pumped from the well near the Rio Grande River to account for water lost to evaporation.

### **15.4 Offices and Buildings**

DDGM has constructed substantial infrastructure to support the Aguila Project operations. The main administration and offices are located in the vicinity of the Aguila Plant. The mine office is located 2 km to the southeast, near the entrance to the Arista underground mine ramp. Nearly all the administrative personnel and activities are currently conducted from these offices.

The underground mine site has a small mobile equipment maintenance and repair shop, a parts and supply warehouse, dining hall and offices and workspace for engineering, geology, exploration and mine administration. Most building construction consists of concrete-block buildings, although the shop structures are steel frame buildings with steel sheet cladding. DDGM has also constructed exploration offices near the lower end of the open pit. These are similar block buildings with patios covered with steel structures, roofed with steel sheets.

DDGM has constructed a good quality housing, recreation and dining hall facility, called “Tres Palmas”, in the town of San José de Gracia, which is situated in the Rio Grande River valley. Buildings are constructed of concrete blocks and all are designed for the tropical climate. This housing area is mainly for salaried employees and their families, and there are more than 50 employees housed in the facility.

Mexican government medical services (Servicios de La Secretaría de Salud) are close by the operation in the villages of El Camerón (first aid), and Nejapa de Madero (hospitalization, surgery, etc.). DDGM has two ambulances at the mine site available to transport injured or sick employees to one of these facilities.

### **15.5 Core Storage Facilities**

DDGM has constructed permanent core storage facilities to store the thousands of meters of diamond drill core collected during past drilling program. The core storage facility is located near the Exploration Office, above the Aguila open pit and in close proximity to the Aguila Plant.

## **16 MARKET STUDIES AND CONTRACTS**

DDGM produces metal concentrates that contain gold, silver, copper, lead and zinc, and doré containing gold and silver from the Aguila and Alta Gracia projects of the Don David Mine. Shipments of concentrates and doré are sold to various customers. Sale prices are obtained based on either world spot or London Metals Exchange market pricing and are easily transacted.

### **16.1 Contracts and Status**

A market study for the gold product was not undertaken for this study. Gold, silver and base metals are sold through commercial banks and market dealers.

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

### 17.1 Environmental Permitting and Compliance

In connection with mining, milling and exploration activities, DDGM is subject to all Mexican federal, state and local laws and regulations governing the protection of the environment, including laws and regulations relating to protection of air and water quality, hazardous waste management and mine reclamation as well as the protection of endangered or threatened species. Potential areas of environmental consideration for mining companies, including DDGM, include but are not limited to, acid rock drainage, cyanide containment and handling, contamination of water courses, dust and noise.

All mining and environmental activities in México are regulated by the Dirección General de Minas (DGM) and by the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) from México City, under the corresponding laws and regulations. The DDGM mining operations are subject to environmental regulation by SEMARNAT. Regulations governing advancement of new projects or significant changes to existing projects require an environmental impact statement, known in Mexico as a Manifiesto Impacto Ambiental (MIA). DDGM may also be required to submit proof of local community support for a project to obtain final approval.

Mining operations in México operate under a unique environmental license (Licencia Ambiental Unica). This environmental license is issued after approval of the Evaluación del Impacto Ambiental (EIA). As well, special permits are issued for certain new developments such as expansions, tailings dams, etc.

The Aguila Project of the Don David Mine is permitted according to mining, environmental, labor, tax and other Mexican regulations for the mining and metallurgical complex.

DDGM is also required to obtain various permits for surface and underground water use and discharge of waste-water discharge. The permissions are granted by the Comisión Nacional del Agua (CONAGUA), the administrative, technical advisory commission of SEMARNAT. CONAGUA administers national waters, manages and controls the country's hydrological system, and promotes social development.

The Don David Mine currently operates under the permits and status as indicated in Table 17.1. These types of documents are based on the information contained in the document to be registered. Documents are currently handled under the codes shown in Table 17.2.

**Table 17.1 Don David Mine Environmental Permits and Issuing Agencies**

No.	Name	Unit	Permit No.	Description	Date Authorized	Validity (days)	Validity (years)	Expiry Date	Comments	Evidence of Authorization	Evidence of Study
1	Ampliación y Apertura de brecha de acceso de la Planta de Beneficio El Águila al entronque con Carretera Federal Oaxaca-Istmo km 113+000	"El Águila"	SEMARNAT-SGPA-DIRA-049-2008	Impacto ambiental	2/26/2008	5840	16.0	2/22/2024	Vigente para la etapa operativa	Ninguna	Ninguna
2	"Exploración el águila"	"El Águila"	SEMARNAT-SGPA-DIRA-152-2010	Impacto ambiental	4/8/2010	NA	NA	12/16/2024	Vigente	Original	Expediente electrónico
3	Construcción y operación de una rampa de acceso denominada El Águila	"El Águila"	SEMARNAT-SGPA-DIRA-858-2010	Impacto ambiental	6/2/2010	4019	11.0	6/3/2021	Vigente etapa operativa	Electrónico	Físico y electrónico
4	Modificación a proyectos autorizados en materia de impacto ambiental del proyecto "Construcción y Operación de una Rampa de Acceso Denominada El Águila"	"El Águila"	<a href="#">SEMARNAT-SGPA-DIRA-858-2010</a>	Impacto ambiental	12/16/2010	3822	10.5	6/3/2021	Vigencia ligada a autorización de origen	Electrónico	Físico y electrónico
5	"Construcción de la Tepetatera No. 5 y el contrapozo tipo "Robbins"	"El Águila"	SEMARNAT-SGPA-UGA-1304-2015	DTU	9/19/2015	5236	14.3	1/19/2030	Vigente	Original	Electrónico y físico
6	"Almacén de Núcleos para Geología"	"El Águila"	SEMARNAT-SGPA-UGA-2180-2015	Impacto ambiental	12/11/2015	NA	NA	12/16/2024	Vigente	Original	Expediente electrónico
7	Mantenimiento y rehabilitación de Caminos para la Exploración Las Margaritas	"Exploración Margaritas"	SEMARNAT-SGPA-DIRA-0290-2016	Impacto ambiental	3/22/2016	NA	NA	12/16/2024	Vigente	Original	Electrónico
8	Proyecto de Exploración Minera Las Margaritas	Exploración Margaritas	SEMARNAT-SGPA-DIRA-0289-2016	Impacto ambiental	3/22/2016	NA	NA	12/16/2024	Vigente	Original	Electrónico
9	Antena Repetidora de Radio	"Alta Gracia"	SEMARNAT-SGPA-UGA-0024-2017	Impacto ambiental	2/1/2017	NA	NA	12/16/2024	Vigente	Original	Electrónico y físico
10	"Exploración Minera Altagracia, Fase II"	" Alta Gracia "	SEMARNAT-SGPA-DIRA-0318-2017	Impacto ambiental	6/16/2017	NA	NA	12/16/2024	Vigente	Original	Informe de cumplimiento NOM-120-SEMARNAT-2011
11	"Tepetatera Altagracia"	" Alta Gracia "	SEMARNAT-SGPA-UGA-1419-2017	DTU	10/18/2017	2922	8.0	10/18/2025	Vigente	Original	Electrónico y físico
12	Ampliación de la Fase Tres de la Presa de Jales del Proyecto Minero El Águila.	"El Águila"	SEMARNAT-SGPA-UGA-1685-2017	Impacto ambiental	11/1/2017	2130	5.8	9/1/2023	Vigente, condicionada a permisos CONAGUA previo a inicio de cualquier obra o actividad	Original	Electrónico y físico
13	Operación y Cierre del Tajo a Cielo Abierto El Águila.	"El Águila"	SEMARNAT-SGPA-UGA-0016-2018	Impacto ambiental	3/7/2018	2920	8.0	3/5/2026	Vigente	Original	Electrónico y físico
14	"Exploración Minera Altagracia, Fase III"	" Alta Gracia "	SEMARNAT-SGPA-UGA-0484-2018	Impacto ambiental	5/31/2018	NA	NA	12/16/2024	Vigente	Original	Electrónico y físico

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15	"Exploración Minera Altagracia, Zona Victoria"	" Alta Gracia "	SEMARNAT-SGPA-UGA-0485-2018	Impacto ambiental	5/31/2018	NA	NA	12/16/2024	Vigente	Original	Electrónico
16	"Exploración Minera Trenes, Fase I"	"El Águila"	SEMARNAT-UGA-0025-2019	Impacto ambiental	2/5/2019	NA	NA	12/16/2024	Vigente	Original	Expediente electrónico
17	Exploración Minera Trenes Fase II, Barreno Capilla Altagracia.	" Alta Gracia "	SEMARNAT-UGA-1468-2019	Impacto ambiental	10/28/2019	NA	NA	12/16/2024	Vigente	Original	Expediente electrónico
18	"Barreno de exploración Horno de cal"	"El Águila"	SEMARNAT-UGA-1469-2019	Impacto ambiental	10/28/2019	NA	NA	12/16/2024	Vigente	Original	Expediente electrónico
19	"Barreno de exploración Cerro Colorado"	"El Águila"	SEMARNAT-UGA-1470-2019	Impacto ambiental	10/28/2019	NA	NA	12/16/2024	Vigente	Original	Expediente electrónico
20	Modificación a plazos "Construcción y Operación de una Planta de Beneficio de minerales denominada El Águila"	"El Águila"	<a href="#">SEMARNAT-UGA-1312-2019</a>	Impacto ambiental	12/6/2019	2005	5.5	12/16/2024	Vigente	Original	Expediente electrónico
21	Modificación a plazos "Exploración y Explotación Minera Altagracia"	" Alta Gracia "	<a href="#">SEMARNAT-UGA-1313-2019</a>	Impacto ambiental	12/6/2019	615.0	1/1/1900	3/31/2021	Vigente	Original	Expediente electrónico

**Table 17.2 Description of Information and Codes for DDGM's Environmental Documents**

Code	Description
<b>AIA</b>	Environmental Impact Authorization
<b>ACS</b>	Land Use Change Authorization
<b>AIP</b>	Exploration Preventive Report Authorization
<b>ETJ</b>	Technical Justification Study (land use change study)
<b>MIA</b>	Environmental Impact Statement (study for environmental impact valuation)
<b>IP</b>	Preventive Reports (exploration mining claims)
<b>ERA</b>	Environmental Risk Valuation
<b>PPE</b>	Plans, Programs and Studies
<b>PFP</b>	PROFEPA (Documentation related to administrative records we have with Profepa)
<b>GIR</b>	Waste (Information related to integrated waste management)
<b>DIV</b>	Miscellaneous.
<b>NRIA</b>	No Environmental Impact Requirement
<b>COA</b>	Annual Operating Report
<b>LAU</b>	Single Environmental License
<b>PMRP</b>	Management plan for hazardous waste
<b>PMRME</b>	Management plan for special waste (scrap)
<b>PMRM</b>	Management plan for mining waste

### 17.1.1 Solid Waste Disposal

The process plant, underground mine and mine camp have individual sewage treatment plants. The treatment systems are biochemical tanks and filtration. The treated water is returned to the soil through an absorption well.

### 17.1.2 Water and Air Sampling

DDGM has established strict procedures of operation and monitoring water and air quality in accordance to accepted standards.

The tailing facilities require the main environmental and operation control. Water in the tailings facility is returned to the Aguila processing plant.

Some water pumped from the underground workings is discharged at the surface into decantation ponds. DDGM has the necessary permits to discharge underground mine water at the surface.

To reduce the possibility of an incident regarding any potential contamination, the following aspects are treated with special care by DDGM as they represent potential risks to the operation:

- Tests of water for pollutants into rivers near to the tailings dams.
- Tests of discharge sewage pollutants.
- Tests of running water in the intermittent streams within the property for mineral elements and contaminants.

- Tests of the combustion gases from laboratory's chimneys and foundry, and lead exposure for lab workers.

Sampling of surface waters in rivers and creeks is conducted every six months, and underground water sampling is completed every three months. The water samples are sent for analysis to an external laboratory (Laboratorios ABC, Mexico City), which has been accredited by the Entidad Mexicana de Acreditación A.C. (EMA).

### **17.1.3 Mine Closure Plan**

DDGM is required to prepare a mine closure plan for the possible future abandonment of the Aguila and Alta Gracia Projects. In compliance with environmental obligations, DDGM is required to consider two levels of care:

1. Works and actions that are specifically identified in the current environmental regulations, or in case of modifications or new regulations arising and,
2. Those particular terms and conditions listed in the permissions, registers or certificates, as established in the authorization in terms of environmental impact and land use change (CUS), and although not specifically identified in any order, are the result of case-specific analysis.

The environmental authority in all cases, however, makes it clear that individual or project specific conditions are additional to what the legislation requires. In this case, it is necessary to maintain constant reviews and updates of the information related to either new regulations or other legal instruments that affects DDGM, including that Mexican law principle is such that the lack of knowledge does not imply exemption from its obligation.

The environmental study presented here is mainly an exercise in self environmental evaluation involving monitoring and systematic review of the facilities and business processes, in terms of their environmental practices and procedures, in order to check the level of compliance with both matters governed by the laws, regulations, and existing standards, that affect the good performance and process improvement in the permits that have been granted by SEMARNAT, PROFEPA and CONAGUA.

To be compliant, any mine closure activities should broadly consist of the following:

1. Prevent erosion in all areas where authorized land use changes involve placing containment structures such as buttresses, retaining walls, rock gabions and balances. There shall be a buffer zone of native vegetation around the perimeter of polygons of various facilities such as Processing Plant, Open Pit Mine, Plant Access Road, Ramp, waste dumps (No.'s 3 & 4, etc.), at least a 4.0 meters width.
2. Consider within the main points, installing wells to monitor water quality in the pits and tailings dams, in order to analyze whether the runoff from these areas alter the quality of surface water, soil, or subsoil in the rainy season. Perform technical and environmental examinations that determined the location of these wells, likewise, attach the graphic



material showing its location relative to mine workings. Integrate the results of the trimestral monitoring of the wells in the Annual Technical Report of Environmental Monitoring, and finally, record the results of these actions in the field logbook including description of activities.

3. Determine the Ecological Restoration Program plans and actions for the conservation of soil, which must be proposed according to the parameters that the petitioner stated in Soil Management Program and considering the Ecological Restoration Program; must conform to functional and operational integration in space and time to provide continuity-discontinuity of the processes of nature and thus, improve the basic benefit-cost ratio to ensure the achievement of sustainable development.
4. Maintain the equipment use in good condition in such a way that the emissions are within permissible limits. Maintain the equipment units to prevent spills on the floor, draining or dumping into water bodies present in the area, including waste fats, oils, solvents and any substance or hazardous waste encountered at different stages of the project.

### **17.1.3.1 2020 Estimate of Current Closure Costs**

A Mine Closure Plan and Reclamation Budgets have been prepared by SRK Consulting (U.S.), Inc. (SRK). The closure cost estimate includes funds for covering the tailings ponds, waste rock stockpiles (“tepetateras”), and for securing, and cleaning up the other surface and underground mine facilities. In December 2020, SRK provided an evaluation of the closure costs liabilities that exist at the Aguila and Alta Gracia Projects as of the end-of-the-year 2020 and prepared a schedule for the direct costs of the various tasks in accordance with a mine plan provided by DDGM (Perez, 2021). The total estimated closure and reclamation cost for the Aguila Project is estimated to be 55.99 million Mexican Pesos (MXP), which is equal to about US\$ 2.81 million at an exchange rate of 19.89 pesos to US \$1.00, the exchange rate at the time SRK prepared their report in January 2021. The total estimated closure and reclamation cost for the Alta Gracia Project is estimated to be 11.29 million Mexican Pesos (MXP), which is equal to about US\$ 567,700.

SRK Consulting’s conceptual closure and reclamation cost summaries for the Aguila and Alta Gracia projects are in Tables 17.3 and 17.4.

**Table 17.3 Conceptual Mine Closure and Reclamation Cost Summary for the Aguila Project**

Activity	Cost 2020 (MXN)	Comments
<b>1.0 Direct Costs</b>		
<b>1.1 Mine Portal and Support Facilities Area</b>		
Dismantle and remove machinery and abandoned equipment	2,529,915	Unchanged from 2019
Revegetate and maintain disturbed areas (assuming a period of drought)	207,415	Unchanged from 2019
Slope stabilization (pits, waste dumps, haulage, and backfill)	2,628,028	Unchanged from 2019
Surface cleanup and securing portal	400,000	Unchanged from 2019
<b>1.1 Subtotal</b>	<b>5,765,358</b>	
<b>1.2 Mineral Processing Area</b>		
Dismantling and removal of machinery and abandoned equipment	2,789,917	Unchanged from 2019
Revegetation and maintenance of disturbed areas (assuming a period of drought)	295,368	Unchanged from 2019
Phase 1 tailings: regrade and cover	5,612,972	Unchanged from 2019
Phase 2 tailings: revegetation	140,914	Unchanged from 2019
Phase 3 tailings: regrade and cover	8,995,641	Unchanged from 2019
Phase 3 tailings: revegetation	225,836	Unchanged from 2019
Open pit: regrade and cover	3,131,402	Final surface area of dry-stack back filling
Open pit: revegetation	78,614	Final surface area of dry-stack back filling
Slope stabilization (waste dumps, haulage, and backfill)	2,297,269	12.16% lower than 2019. Excluding the original reclamation of the Open Pit.
Reclamation of another surface disturbance <sup>(1)</sup>	299,220	5.36% higher than 2019. Considering the reclamation of the dry-stack filtration plant currently under construction (final area to be confirmed).
<b>1.2 Subtotal</b>	<b>23,867,152</b>	
<b>1.3 Haul Road and Ancillary Area</b>		
Reclaim roads	2,770,747	Unchanged from 2019
<b>1.3 Subtotal</b>	<b>2,770,747</b>	
<b>1.0 Total</b>	<b>32,403,257</b>	<b>9.09% higher than 2020</b>
<b>2.0 Indirect Costs</b>		
1-year owner's supervision	3,500,000	
Contingency and contractor profit	2,500,000	
Permitting support (amendments)	3,500,000	
<b>2.0 Total</b>	<b>9,500,000</b>	<b>Unchanged from 2018</b>
<b>3.0 Post-Closure</b>		
Compensation areas <sup>(1)</sup>	2,275,000	
Soil and plant surveys	2,275,000	
Erosion control	3,250,000	
Water quality monitoring	1,170,000	
TSF inspection	1,625,000	
Environmental surveillance reporting	3,500,000	
<b>3.0 Total</b>	<b>14,095,000</b>	<b>Unchanged from 2019</b>
<b>Grand Total</b>	<b>55,988,227</b>	

<sup>(1)</sup>: Environmental impact assessment (EIA) documentation includes reference to additional areas outside of the current mine disturbance. This compensation is assumed to involve a limited degree of monitoring and habitat enhancement activity.

**Table 17.4 Conceptual Mine Closure and Reclamation Cost Summary for the Alta Gracia Project**

Activity	Cost 2020 (MXN)	Comments
<b>1.0 Direct Costs</b>		
<b>1.1 Support Facilities Area</b>		
Revegetate and maintain disturbed areas (assuming a period of drought)	14,776	Considering 1 Ha as total area
Slope stabilization (pits, waste dumps, haulage, and backfill)	187,222	Considering 1 Ha as total area
<b>1.1 Subtotal</b>	<b>201,998</b>	
<b>1.2 Haul Road and Ancillary Area</b>		
<b>1.2 Subtotal</b>	<b>1,588,963</b>	<b>Assuming 7.914 kilometers of roads surrounding the WRD</b>
<b>1.0 Total</b>	<b>1,790,961</b>	
<b>2.0 Indirect Costs</b>		
1-year owner's supervision	3,500,000	
Contingency and contractor profit	2,500,000	
Permitting support (amendments)	3,500,000	
<b>2.0 Total</b>	<b>9,500,000</b>	<b>Assuming indirect costs and lump sum for 1 year</b>
<b>Grand Total</b>	<b>11,290,961</b>	

Notes: One or more EIA approvals specifies a 5-year post-closure monitoring period. The post-closure monitoring effort for Altagracia will be covered by El Águila.

## 17.2 Ejido Lands and Surface Rights Acquisitions

Surface lands of the Don David Mine mining properties are Ejido lands (agrarian cooperative lands granted by the federal government to groups of Campesinos [farmers] pursuant to Article 27 of the Mexican Constitution of 1917). Prior to January 1, 1994, Ejidos could not transfer Ejido lands into private ownership. Amendments to Article 27 of the Mexican Constitution in 1994 now allow individual property ownership within Ejidos and allow Ejidos to enter into commercial ventures with individuals or entities, including foreign corporations.

Mexican law recognizes mining as a land use generally superior to agricultural. However, the law also recognizes the rights of the Ejidos to compensation in the event mining activity interrupts or discontinues their use of the agricultural lands. Compensation is typically made in the form of a cash payment to the holder of the agricultural rights. The amount of such compensation is generally related to the perceived value of the agricultural rights as negotiated in the first instance between the Ejidos and the owner of the mineral rights. If the parties are unable to reach agreement on the amount of the compensation, the decision will be referred to the government.

DDGM has established surface rights agreements with the San Pedro Totolapam Ejido and the individuals impacted by current and proposed operations which allow disturbance of the surface where necessary for DDGM's exploration activities and mining operations.

## **17.3 Social and Community Impact**

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the social or community impact at the Don David Mine (Brown et al., 2020). Specific topics covered in earlier reports include:

- Manpower
- Health and Safety
- Mine Rescue Team
- Community Relations

## **18 ADJACENT PROPERTIES**

### **18.1 Registrant Properties**

DDGM has consolidated ownership of the area consisting of the Don David Mine. Concessions totaling 55,119 hectares (551 km<sup>2</sup>) cover numerous old mine workings and exploration targets. This includes the 17 contiguous mining concessions surrounding the Aguila Project. These claims have been registered at the Dirección General de Minas under DDGM. According to the legal opinion by DDGM's legal advisers, all of these mining concessions are current in legal standing.

Many old mine workings in Oaxaca have been in operation intermittently since the seventeenth century, when many of the Mexican mining districts were discovered, such as Zacatecas, Guanajuato, Fresnillo, San Martín, Taxco, Sombrerete, Tayoltita, etc. Silver and gold production from the Aguila project area is unknown. SGM reports historical production estimated in about 300,000 ounces of gold and silver in the 1880s from the La Leona mine (located within the Aguila Project area) without specifying the amount of each metal.

Several historic mines, including: Bellavista, El Rey, La Escondida, El Aguila, El Aire, Cerro Colorado, Mirador, and other mines, are covered by mining concessions owned by DDGM.

### **18.2 Third-Party Properties**

No adjacent operating properties exist within the immediate area surrounding the Don David Mine.

Other operating properties in Oaxaca include the following:

- **San José Mine:** located in the Taviche Mining District, 47 km south of the city of Oaxaca. This mine is operated by Compania Minera Cuzcatlan S.A. de C.V., a wholly-owned subsidiary of Fortuna Silver Mines Incorporated. This 100%-owned underground mine began operating in 2011 and is currently operating at a processing rate of 3,000 tonnes per day. The mining method is overhand cut-and-fill from vein deposits with gold and silver. No base metals are recovered.
- **Natividad Mine:** located 48 km northeast of the city of Oaxaca. The Natividad mine began producing gold in 1792 and has been in operation intermittently at a small-scale since that time. It represents one of the most important past-producing gold mines in southern Mexico. Recorded historical production from 1937 to 1992 was 1.95 million tonnes (Mt) at a grade of 9.51 g/t Au (960,000 oz Au) and 276 g/t Ag (23 M oz Ag). The majority of the landholdings covering the historic mining área are owned by Compania Minera Natividad y Anexas, S.A. de C.V.

## **19 OTHER DATA AND RELEVANT INFORMATION**

There are no other additional information or explanation necessary to provide a complete and balanced presentation of the value of the property to the registrant. This technical report was prepared to be as understandable as possible and to not be misleading.

## **20 INTERPRETATION AND CONCLUSIONS**

### **20.1 Interpretation**

The Don David Mine owned by DDGM is in the southern state of Oaxaca in México. The main Aguila project was initiated by investigating an old mining district which held numerous mineralization exposures partially developed by mining activity through centuries by small-scale miners and prospectors. DDGM initiated modern exploration investigations with significant investments leading to important precious and base metals discoveries. DDGM acquired its first mining concessions in 2003 and has continued to acquire additional land holdings where an increasing number of exploration targets have been defined. Currently DDGM holds 55,119 hectares within 29 mining concessions registered under DDGM.

Geological regional and detailed studies, geochemical and geophysical surveying have been the basis for an intensive drilling program within three main exploration targets (Aguila, Alta Gracia and Margaritas) in addition to some regional investigations which to December 31, 2020 total 1,459 drill holes with 390,036 m drilled.

Underground exploration development has been developed to confirm mineralization indicated by drilling along the Arista and Switchback vein systems, the most promising vein deposits identified in the Aguila project. These workings confirmed the continuity of the Arista and Switchback vein systems and also led to discovery of accessory veins such as the Baja vein and numerous other vein splays or branches with economic mineralization. DDGM has all the corresponding Environmental Impact Studies and permits to continue operating in accordance with Mexican Laws and Regulations.

### **20.2 Conclusions**

DDGM has identified a significant precious metals and base metals epithermal deposit in southern México within an old mining district that had not been explored by modern methods. The primary exploration target area, Arista, is located along a significant mineralized trend with potential extension of about 55 km in which DDGM has identified at least 15 exploration targets.

A significant exploration budget for 2021 has been allocated by DDGM to continue drilling and investigating other targets where high grade precious metals concentrations have been located.



## 21 RECOMMENDATIONS

Exploration in 2020 followed-up on prospective targets that were generated from previous exploration programs while generating additional targets. Field mapping, geochemical sampling and geophysical surveys have all been successful in identifying anomalous areas that appear worthy of further work including drilling.

### 21.1 2020 District Exploration Expenditures

An exploration budget for 2020 was allocated by DDGM to continue drilling and investigating other targets where high grade precious metals concentrations have been located. Table 23.1 shows actual expenditures for surface and underground exploration at the Don David Mine during 2020. This includes underground mine development allocated to exploration. The program was managed by DDGM's exploration and mining geology staff with support as needed from Don David Mine operations.

The 2020 district exploration work program included 3,180 meters of surface diamond drilling requiring an expenditure of US\$ 2.04 Million and 9,471 meters of underground diamond drilling with expenditures totaling US\$ 1.53 Million. Exploration mine development in 2020 totaled 640 meters at a total cost of US\$1.02 million. The exploration program took place from January through December 2020, utilizing one electric-hydraulic rig for both surface and underground drilling, at an average rate of about 1,200 meters per month. A second underground drill rig was incorporated into the exploration program in October. The second drill rig was mobilized to make up for lost meters due to the temporary suspension of drilling operations from April 1, 2020 to mid-June, 2020 as a result of the worldwide COVID-19 pandemic.

The budget accounted for costs associated with the drilling contractors, assays, personnel, field expenses, road and drill site preparation, and surface use agreements. The surface exploration budget also included property holding costs, mainly annual tax payments to the Mexican federal government. Capital was provided for exploration equipment. Other costs included mobilization, hourly charges, survey instrument rental, drilling mud, assays, core boxes, labor, miscellaneous tools and supplies and provision for database support. The targets were chosen for their immediate accessibility and favorable chances to prove additional reserves.

The 2020 exploration program covered testing of several readily accessible targets from the surface and underground. Diamond drilling at the Don David Mine was conducted under two general modes of operation: one by the surface exploration staff (surface exploration drilling and geological and geochemical studies) and the other by the mine exploration staff (production and underground exploration drilling). Production drilling was predominantly concerned with definition and extension of the known mineralized zones in order to guide development and mining. Exploration drilling was

conducted farther from the active mining area with the goal of expanding the reserve base. Drilling results from both diamond and production programs were used in the reserve estimates presented in this report.

**Table 21.1 2020 Exploration Expenditures for the Don David Mine**

Description	US\$
<b>Surface Exploration</b>	
<b>Aguila/Arista</b>	
Contractors - Drilling	430,997
Salaries	484,165
Other Administrative Contractor Services	13,752
Laboratory Assays	39,082
Maintenance - Transportation Equipment	2,801
Transportation - Other Freight	28,729
Computer Equipment (non-cap)	94
Software & Licenses (non-cap)	19,061
Professional Fees - Others	27,991
Legal Fees	10,569
Insurance - Vehicles	1,649
Gasoline	9,513
Diesel	1,903
Security Equipment	2,814
Replacement Parts	8,537
Light Equipment Tires	781
Tools	2,343
Hardware, Paint & Others	5,998
Office Supplies	1,066
Land Rights	836,431
Validation Rights	578
Easement Permits	7,925
Allocation of Power Costs	21,293
Maintenance Machinery & Equipment	100
Electrical Materials	989
Construction Materials	19
Furniture and Minor Equipment	1,117
Rent Machinery & Equipment	120
<b>Total - Aguila/Arista</b>	<b>1,960,420</b>
<b>El Rey</b>	
Land Rights	38,872
<b>Total - El Rey</b>	<b>38,872</b>
<b>Alta Gracia</b>	
Laboratory Assays	14,237
<b>Total - Alta Gracia</b>	<b>14,237</b>
<b>Prospects</b>	
Easement Permits	13,111
Laboratory Assays	42
<b>Total - Prospects</b>	<b>13,153</b>
<b>Los Trenes</b>	
Easement Permits	9,951
Laboratory Assays	1,503
<b>Total - Los Trenes</b>	<b>11,453</b>
<b>Total - Surface Exploration</b>	<b>2,038,136</b>
<b>Underground Exploration</b>	
<b>Arista</b>	
Contractors - Drilling	223,910
Laboratory Assays	42,856
Electrical Materials	11,159
Anchoring	2,609
Allocation of Power Costs	6,129
<b>Total - Arista</b>	<b>286,664</b>
<b>Switchback</b>	
Contractors - Drilling	243,508

Laboratory Assays	17,085
Explosives	937
Drilling Steel	166
Anchoring	14,805
Mine Services	12,211
Mine Transport	1,112
Mine Labor Costs	7,509
Allocation of Power Costs	7,954
Mine Maintenance Equipment	12,595
<b>Total - Switchback</b>	<b>317,881</b>
<b>Northeast Zone</b>	
Contractors - Drilling	577,893
Laboratory Assays	37,011
Electrical Materials	8,917
Explosives	0
Anchoring	18,615
Mine Services	0
Mine Labor Costs	0
Allocation of Power Costs	5,768
Mine Maintenance Equipment	0
Replacement Parts	329
Drilling Steel	2,543
Tools, Paint & Others	6
<b>Total -Northeast Zone</b>	<b>651,081</b>
<b>Southeast Zone</b>	
Anchoring	0
Allocation of Power Costs	727
Mine Labor Costs	0
Mine Services	0
Contractors - Drilling	264,008
Laboratory Assays	13,958
Explosives	0
Mine Maintenance Equipment	0
Electrical Materials	0
Drilling Steel	0
Mine Transport	0
Replacement Parts	0
<b>Total - Southeast Zone</b>	<b>278,694</b>
<b>Total - Underground Exploration</b>	<b>1,534,320</b>
<b>Exploration Mine Development</b>	
<b>Underground NE</b>	
Mine Transport	184,435
Mine Labor Costs	96,298
Mine Services	153,943
Mine Maintenance Equipment	118,079
Drilling Steel	29,437
Anchoring	112,914
Explosives	84,921
Tools, Paint & Others	8,651
Electrical Materials	97,844
Replacement Parts	841
Construction Materials	15
Tubes & Valves in General	46
<b>Total - Underground NE</b>	<b>887,425</b>
<b>Underground SE</b>	
Drilling Steel	8,505
Anchoring	17,156
Mine Transport	37,133
Mine Labor Costs	14,304
Mine Services	14,326
Laboratory Assays	181
Explosives	15,999
Mine Maintenance Equipment	19,350

Replacement Parts	1,058
<b>Total - Underground SE</b>	<b>128,011</b>
<b>Total - Exploration Mine Development</b>	<b>1,015,435</b>
<b>TOTAL EXPLORATION</b>	<b>4,587,892</b>

## 21.2 Exploration Programs

In January 2020, underground and surface drilling continued on targets within DDGM's concessions at the Don David Mine. The focus of the exploration program was to expand the mineralization of the mine outside of the footprint of current mine operations. The program shall continue into 2021.

Work on exploration targets also included detailed mapping and geochemical sampling, including soil geochemistry, to better define drill targets.

### 21.2.1 Sampling Methods and Sample Quality

The Don David Mine maintains the highest of industry standards, including well defined and applied QA/QC controls to determine the quality of the mineralization. DDGM plans to continue with the high-level investigations currently taking place at the Don David Mine.

The drill holes are generally oriented to intersect the veins at as large an angle as possible. Drill holes are typically drilled from the hanging wall, perpendicular to, and passing through the target structure into the footwall. The drilling is designed to avoid intercepts with angles less than about 35° to the target, and most are between 45° and 90°. Surface drill holes are typically HQ to NQ in size.

Drill hole spacing is variable, ranging from 20 m to greater than 50 m for underground drilling. Surface drilling programs are designed for approximately 50 m spacing.

On the drill site, the drill set-up is surveyed for azimuth, inclination and collar coordinates, with the drilling subject to daily scrutiny and coordination by DDGM's geologists. Drill holes are surveyed using a Reflex multi-shot down-hole survey instrument normally at 50 m intervals from the bottom of the hole back up to the collar. The survey data obtained from the drill holes are transferred to the databases and corrected for local magnetic declination. Information for each drill hole is stored in a Microsoft SQL Server database.

The full drill core boxes are collected daily and brought to the core storage building where the core is laid out, measured, logged for geotechnical and geological data, and marked for sampling.

When assay results are received from the laboratory, they are merged to the Microsoft SQL Server database for interpretation using various software applications. The starting and ending point of each vein and/or vein/vein breccia intercept is determined from a combination of geology notes in the logs and assay results. The center point of the intercept interval length, and gold and silver assay values are plotted on vertical longitudinal projections of each vein. These are used to guide further drilling, and to interpret potentially mineralized ore shoots.

### **21.2.2 Aguila Project Area**

The exploration program at the Aguila Project during 2020 continued to focus on expanding known, and discovery of new mineralization on the Arista and Switchback vein systems at the Arista underground mine. Exploration and development of these vein systems remain the highest exploration priority. Through 2020, a total of 1,014 core holes (both surface and underground) equaling 310,870 meters and 166 reverse circulation holes equaling 14,367 meters for a total of 1,180 holes totaling 325,237 meters have been completed on the Aguila Project.

Underground drilling during 2020 continued to explore extensions of veins currently in production in the Arista Mine, including the Soledad, Selene, Sadie and Sasha veins in the Switchback vein system and the Baja, Candelaria, Mercedes, Splay 66 and Splay 31 veins of the Arista vein system. Thirty-eight underground diamond drill holes totaling 9,471 meters were completed at the Aguila project during 2020. In addition, 7 surface diamond drill holes totaling 3,180 meters targeted new veins on Aguila project in 2020. Surface geologic mapping and rock chip sampling also continued in the vicinity of the Arista Mine, the Aguila open pit, Cerro Pilon, Cerro Colorado and other prospects of the Aguila project.

In 2020, a total of US\$ 1,960,420 was spent for exploration at Aguila (including the Arista Mine), mainly for land rights (concession holding fees), contractor drilling and salaries.

### **21.2.3 Rey Property Area**

No significant exploration activity was conducted on the Rey Project since 2012. In 2020, DDGM conducted the acceptable minimum amount of work required to maintain the claims.

Concession holding costs for the Rey Project totaled US\$ 38,872 during 2020.

### **21.2.4 Alta Gracia Property Area**

Alta Gracia experienced small-scale artisanal mining in the past but with only limited historical exploration. Previous surface sampling and geologic mapping at Alta Gracia has identified several structural targets containing gold and silver mineralization, including three high-grade polymetallic veins that outcrop on the surface near some historic workings. To-date, 179 exploratory core holes for a total of 38,227 meters has been completed at Alta Gracia. Initial drill results were encouraging and warrant continued drilling to test other targets generated from surface sampling and the deeper zones of veins encountered to date. To date, over 49 veins have been identified and modelled at the Alta Gracia Project at or near its Mirador Mine.

The 2020 Alta Gracia exploration program mainly included surface geological mapping along with rock chip and grid soil sampling in the historic mining areas at Alta Gracia, mainly at the Aguacatillo prospect. The new information will be used to guide future surface drilling programs.

A total of US\$ 14,237 was spent for exploration at Alta Gracia in 2020, mainly for laboratory assays on rock and soil samples collected from Aguacatillo.

### 21.2.5 Other Areas

In 2020, a limited amount of surface mapping and sampling was conducted in other areas, mainly the Trenes prospect on the Margaritas property and other prospects at the Don David Mine.

A total of US\$ 24,606 was spent on other areas in 2020, mainly for easement permits granted by the local communities.

### 21.3 2021 Proposed District Exploration

DDGM's 2020 exploration program was successful warranting a similar district exploration budget of for 2021. A budget of US\$ 7,295,000 has been proposed which will focus primarily deposit expansion on the Arista mine's Arista and Switchback vein systems. The primary long-term goal of this program is to expand known mineralization and discover new areas.

The proposed exploration program shall focus on exploring the highest priority areas in order to prepare them for an updated Mineral Resource and Reserve report at year-end 2021. Don David Mine exploration priority targets for 2021 are listed in Table 23.2.

Exploration expenditures may vary from those listed below depending on variable including, but not limited to, metal prices, expenditures and available cash flows.

**Table 21.2 Don David Mine Exploration Priority Targets – 2021**

Description	US \$
<b>Surface Exploration</b>	
Total - Surface El Aguila	\$3,045,400
Total - Surface El Rey	\$46,400
Total - Surface Altagracia	\$18,000
Total - Prospects	\$14,000
Total - Rio Grande	\$15,000
Total - Los Trenes	\$9,000
Summary - Surface Exploration	\$3,147,800
Surface Meter	8,000
Cost per Meter	\$ 393
<b>Underground Exploration</b>	
Total - Underground Arista	\$150,300
Total - Underground Switchback	\$200,400
Total - Zona NE	\$1,052,100
Total - Zona SE	\$1,202,400
Summary - Underground Exploration	\$2,605,200
Underground Meter	13,000
Underground Cost per Meter US	\$ 200
<b>Exploration Mine Development</b>	
Total Underground NE	\$899,500
Total Underground SE	\$642,500
Summary Exploration Mine Development	\$1,542,000

<b>Total Exploration &amp; Development Cost</b>	<b>\$7,295,000</b>
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### 21.3.1 Surface Exploration Program

The 2021 surface exploration program mainly includes 8,000 meters in twenty (20) surface drill holes at Aguila/Arista with a budget of US\$ 3,147,800 (Table 23.3). This budget also includes administration, mainly exploration staff salaries, and concession holding costs.

**Table 21.3 2021 Surface Exploration Budget for the Don David Mine**

Description	US \$
<b>Aguila/Arista</b>	
Contractors - Drilling	\$1,280,000
Salaries	\$540,000
Other Administrative Contractor Services	\$12,000
Laboratory Assays	\$120,000
Transportation Equipment Maintenance	\$6,000
Transportation Various Freight	\$33,000
Computer Equipment (non-cap)	\$2,400
Software & Licenses (non-cap)	\$24,000
Professional Fees	\$24,000
Legal Fees	\$7,800
Vehicle Insurance	\$2,400
Travel	\$300
Meals	\$300
Gasoline	\$12,000
Diesel	\$3,000
Security Equipment	\$3,300
Replacement Parts	\$7,200
Light Equipment Tires	\$1,200
Tools	\$1,200
Hardware, Paint & Others	\$9,900
Office Material	\$1,200
Training & Administration	\$6,000
Land Rights	\$920,000
Validation Rights	\$900
Easement Permits	\$2,400
Customs Expenses	\$300
Allocation of Energy Costs	\$24,000
Furniture & Minor Equipment	\$600
<b>Total - Aguila/Arista</b>	<b>\$3,045,400</b>
<b>El Rey</b>	
Land Rights	\$46,400
<b>Total - El Rey</b>	<b>\$46,400</b>
<b>Alta Gracia</b>	
Laboratory Assays	\$11,000
Transportation Various Freight	\$6,000
Hardware, Paint & Others	\$1,000
<b>Total - Alta Gracia</b>	<b>\$18,000</b>
<b>Prospects</b>	
Easement Permits	\$12,000
Laboratory Assays	\$2,000
<b>Total - Prospects</b>	<b>\$14,000</b>
<b>Rio Grande</b>	<b>\$0</b>
Environmental Studies	\$10,000
Easement Permits	\$5,000
<b>Total - Rio Grande</b>	<b>\$15,000</b>
<b>Los Trenes</b>	
Easement Permits	\$5,000
Laboratory Assays	\$4,000
<b>Total - Los Trenes</b>	<b>\$9,000</b>
<b>Total - Surface Exploration</b>	<b>\$3,147,800</b>



### 21.3.2 Underground Mine Exploration Program

The main objective of the Arista underground mine exploration program is to increase reserves on known veins and discover new vein structures. A total of 13,000 meters in 25 holes is planned for 2021 with a budget of US\$ 2,605,200 (Table 23.4). The drilling program will be conducted from existing underground workings in the Arista mine including new drilling stations to be constructed for drilling the Northeast and Southeast zone targets of the Switchback vein system.

**Table 21.4 2021 Underground Exploration Budget for the Arista Mine at the Aguila Project**

Description	US \$
<b>Arista</b>	
Contractors - Drilling	\$127,500
Laboratory Assays	\$19,500
Anchoring	\$2,250
Allocation of Energy Costs	\$750
Drilling Steels	\$300
<b>Total - Arista</b>	<b>\$150,300</b>
<b>Switchback</b>	
Contractors - Drilling	\$170,000
Laboratory Assays	\$26,000
Anchoring	\$3,000
Allocation of Energy Costs	\$1,000
Drilling Steels	\$400
<b>Total - Switchback</b>	<b>\$200,400</b>
<b>Northeast Zone</b>	
Contractors - Drilling	\$892,500
Laboratory Assays	\$136,500
Anchoring	\$15,750
Allocation of Energy Costs	\$5,250
Drilling Steels	\$2,100
<b>Total - Northeast Zone</b>	<b>\$1,052,100</b>
<b>Southeast Zone</b>	
Contractors - Drilling	\$1,020,000
Laboratory Assays	\$156,000
Anchoring	\$18,000
Allocation of Energy Costs	\$6,000
Drilling Steels	\$2,400
<b>Total - Southeast Zone</b>	<b>\$1,202,400</b>
<b>Total - Underground Exploration</b>	<b>\$2,605,200</b>

### 21.3.3 Underground Exploration Mine Development

In addition to surface and underground exploration drilling, 2021 exploration expenditures shall include underground exploration mine development to provide access and platforms for underground exploration drilling. A total of 1,080 meters is programmed for 2021 with a budget of US\$ 1,542,000 (Table 23.5). The new drilling stations will be constructed for drilling the Northeast and Southeast zone targets of the Switchback vein system.

**Table 21.5 2021 Underground Exploration Mine Development Budget for the Arista Mine at the Aguila Project**

Description	US \$
<b>Northeast Zone</b>	
Transport Costs	<i>\$182,000</i>
Mine Labor	<i>\$91,000</i>
Mine Services	<i>\$175,000</i>
Mine Equipment Maintenance	<i>\$112,000</i>
Drilling Steels	<i>\$35,000</i>
Anchoring	<i>\$112,000</i>
Explosives	<i>\$84,000</i>
Hardware, Paint & Others	<i>\$14,000</i>
Electrical Materials	<i>\$84,000</i>
Replacement Parts	<i>\$7,000</i>
Construction Equipment	<i>\$0</i>
Tubes & Valves	<i>\$3,500</i>
<b>Total - Northeast Zone</b>	<b><i>\$899,500</i></b>
<b>Southeast Zone</b>	
Transport Costs	<i>\$130,000</i>
Mine Labor	<i>\$65,000</i>
Mine Services	<i>\$125,000</i>
Mine Equipment Maintenance	<i>\$80,000</i>
Drilling Steels	<i>\$25,000</i>
Anchoring	<i>\$80,000</i>
Explosives	<i>\$60,000</i>
Hardware, Paint & Others	<i>\$10,000</i>
Electrical Materials	<i>\$60,000</i>
Replacement Parts	<i>\$5,000</i>
Tubes & Valves	<i>\$2,500</i>
<b>Total - Southeast Zone</b>	<b><i>\$642,500</i></b>
<b>Total - Exploration Mine Development</b>	<b><i>\$1,542,000</i></b>

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## **23 RELIANCE ON INFORMATION PROVIDED BY REGISTRANT**

Preparation of this technical report has relied on information provided by the registrant for matters discussed herein. This technical report was prepared to be as understandable as possible and to not be misleading.

## APPENDIX A GLOSSARY

### A.1 Definition of Terms

The following terms used in this report shall have the following meanings:

Andesite:	An extrusive igneous, volcanic rock, of intermediate composition, with aphanitic to porphyritic texture characteristic of subduction zones (e.g. western margin of South America).
Doré:	Unrefined gold and silver bars usually containing more than 90% precious metal.
Epithermal:	Used to describe gold deposits found on or just below the surface close to vents or volcanoes, formed at low temperature and pressure.
Gram:	A metric unit of weight and mass, equal to 1/1000 <sup>th</sup> of a kilogram. One gram equals .035 ounces. One ounce equals 31.1035 grams.
Hectare:	Another metric unit of measurement, for surface area. One hectare equals 1/200 <sup>th</sup> of a square kilometer, 10,000 square meters, or 2.47 acres. A hectare is approximately the size of a soccer field.
Kilometer:	Another metric unit of measurement, for distance. The prefix “kilo” means 1000, so one kilometer equals 1,000 meters, one kilometer equals 3,280.84 feet, which equals 1,093.6 yards, which equals 0.6214 miles.
Manto:	A mineralogy term meaning a layer or stratum.
Mineralized Material:	Minerals or any mass of host rock in which minerals of potential commercial value occur.
Net Smelter Return Royalty:	A share of the net revenue generated from the sale of metal produced by the mine. Usage-based payments made by one party (the “licensee”) to another (the “licensor”) for the right to ongoing use of an asset, sometimes called an intellectual property. Typically agreed upon as a percentage of gross or net revenues derived from the use of an asset or a fixed price per unit sold.
Ore or Ore Deposit:	Rocks that contain economic amounts of minerals in them and that are expected to be profitably mined.
Portal:	The entrance to the mine at the surface.
Silicified:	Is combined or impregnated with silicon or silica.
Skarn:	A coarse-grained metamorphic rock formed by the contact metamorphism of carbonate rocks. Skarn typically contains garnet, pyroxene, epidote, and wollastonite combined or impregnated with silicon or silica. Many skarns also include ore minerals. Several productive deposits of copper or other base metals have been found in and adjacent to skarns.
Tonne:	A metric ton. One tonne equals 1000 kg. It is approximately equal to 2,204.62 pounds.
Volcanic domes:	These are mounds that form when viscous lava is erupted slowly and piles up over the vent, rather than moving away as lava flow. The sides of most domes are very steep and typically are mantled with unstable rock debris formed during or shortly after dome emplacement. Most domes are composed of silica-rich lava which may contain enough pressurized gas to cause explosions during dome extrusion.
Volcanogenic	Of volcanic origin
Vulcan™:	Maptek-Vulcan world’s premier 3D mining software; validate and transform raw mining data into dynamic 3D models, accurate mine designs and operating plans

#### Conversion Table

Metric System    Imperial System

1 meter (m)	3.2808 feet (ft)
1 kilometer (km)	0.6214 mile (mi)
1 square kilometer (km <sup>2</sup> )	0.3861 square mile (mi <sup>2</sup> )
1 square kilometer (km <sup>2</sup> )	100 hectares (has)
1 hectare (ha)	2.471 acres (ac)
1 gram (g)	0.0322 troy ounce (oz)
1 kilogram (kg)	2.2046 pounds (lbs)
1 tonne (t)	1.1023 tons (t)
1 gram/tonne (g/t)	0.0292 ounce/ton (oz/t)

Unless stated otherwise, all measurements reported here are metric and currencies are expressed in constant U.S. dollars.



## A.2 Abbreviations

Other common abbreviations encountered in the text of this report are listed below:

°C	degree Centigrade
AA	atomic absorption
Ag	silver
Au	gold
AuEq	Precious Metal Gold Equivalent (unless otherwise noted)
cm	centimeter
Cu	copper
dmt	dry metric tonne
ft or (')	feet = 0.3048 meter
g/T	gram/tonne
g	1 g = 0.001 kg
GPS	Global Positioning System
ha	hectare(s)
in or (")	inches, 2.54 cm
kg	kg, or kg/T (kilogram per tonne)
km	skarn
Ma	million years old
masl	meters above sea level
mean	arithmetic average of group of samples
mm	millimeter
Ounce	Troy ounce, or 31.1035 g
oz.	ounce
Pb	lead
ppm	parts per million = g/T
RQD	Rock Quality Designation
QA/QC	Quality Assurance/Quality Control
QP	Qualified Person
Standard	Standard Reference Material
T, tonne	metric tonne = 1.1023 short tonnes
Tpd, or tpd	tonnes per day
wt	weight
Zn	zinc

## APPENDIX B: CERTIFICATES OF QUALIFIED PERSONS

FRED H. BROWN, P.GEO.

I, Fred H. Brown, do hereby certify that:

1. I have worked as a geologist continuously since my graduation from university in 1987.
2. This certificate applies to the technical report titled "Report on estimates of reserves and mineralized material at the Don David Mine, Oaxaca Mexico" (the "Technical Report"), with an effective date of December 31, 2020.
3. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005. I am registered with Engineers and Geoscientists of British Columbia as a Professional Geoscientist (#171602) and the Society for Mining, Metallurgy and Exploration as a Registered Member (#4152172).
4. I am currently employed as Senior Resource Geologist with GRCN, a Nevada corporation, a wholly-owned subsidiary of Fortitude Gold Corporation a Colorado corporation. I am independent of DDGM and GRC.
5. I certify that by reason of my education, affiliation with a professional organization and past relevant work experience, I fulfill the requirements to be a "qualified person".

My relevant experience for the purpose of the Technical Report is:

Underground Mine Geologist, Freegold Mine, AAC .....	1987-1995
Mineral Resource Manager, Vaal Reefs Mine, AngloGold.....	1995-1997
Resident Geologist, Venetia Mine, De Beers .....	1997-2000
Chief Geologist, De Beers Consolidated Mines .....	2000-2004
Consulting Geologist .....	2004-2017
Senior Resource Geologist, GRCN .....	2017-Present

6. I am a co-author of this technical report and specifically responsible for Section 11 and parts of Sections 1, 2, 9, and 12.

Effective Date: December 31, 2020

{SIGNED}

[Fred H. Brown]

/s./ Fred H. Brown

Fred H. Brown, P.Geo

J. RICARDO GARCIA, P.ENG.

I, Ricardo Garcia, do hereby certify that:

1. I have worked as an engineer continuously since my graduation from university in 2002.
2. This certificate applies to the technical report titled "Report on estimates of reserves and mineralized material at the Don David Mine, Oaxaca Mexico" (the "Technical Report"), with an effective date of December 31, 2020.
3. I graduated in 2002 with a Bachelor of Engineering degree in Industrial Engineering from Universidad de Lima, Lima Peru. I obtained in 2006 a Master of Engineering degree in Mining Engineering and Mineral Economics from McGill University, Montreal Canada. I am registered with Engineers and Geoscientists of British Columbia as a Professional Engineer (#152677).
4. I am currently employed as Corporate Chief Engineer with Gold Resource Corporation, a Colorado corporation.
5. I certify that by reason of my education, affiliation with a professional organization and past relevant work experience, I fulfill the requirements to be a "qualified person".

My relevant experience for the purpose of the Technical Report is:

Business Analyst, Hochschild Mining .....	2002-2003
Education Assistant, Engineering and Economics, McGill University.....	2004-2006
Mining Engineer, Teck Resources .....	2006-2012
Senior Mining Engineer, RPM Global.....	2012-2016
Corporate Chief Engineer, Gold Resource Corp.....	Jan 2016-Present

6. I am a co-author of this technical report and specifically responsible for Sections 12, 18 and 19 and parts of Sections 1, 2 and 13.

Effective Date: December 31, 2020

{SIGNED}  
[J. Ricardo Garcia]

/s./ J. Ricardo Garcia  
J. Ricardo Garcia, P.Eng

BARRY D. DEVLIN, P.GEO.

I, Barry D. Devlin, do hereby certify that:

1. I have worked as a geologist continuously since my graduation from university in 1981.
2. This certificate applies to the technical report titled "Report on estimates of reserves and mineralized material at the Don David Mine, Oaxaca Mexico" (the "Technical Report"), with an effective date of December 31, 2020.
3. I graduated with a Bachelor of Science degree with honors in Geology in 1981 and a Masters in Geology, 1987, from the University of British Columbia, Vancouver Canada. I am registered with Engineers and Geoscientists of British Columbia as a Professional Geoscientist (#109658).
4. I am currently employed as Vice President, Exploration with Gold Resource Corporation, a Colorado corporation.
5. I certify that by reason of my education, affiliation with a professional organization and past relevant work experience, I fulfill the requirements to be a "qualified person".

My relevant experience for the purpose of the Technical Report is:

Project Geologist, U.S. Borax & Chemical Corp.....1981-1984  
Project Geologist, Derry, Michener, Booth & Wahl/Dolly Varden Minerals.....1985-1986  
Chief Mine Geologist, Total Erickson Resources Ltd.....1987  
Senior Project Geologist, Welcome North Mines Ltd.....1988-1989  
Chief Mine Geologist/District Geologist/Exploration Manager, Hecla Mining Company.....1990-April 2007  
Vice President, Exploration, Endeavour Silver Corp.....May 2007-Dec2012  
Vice President, Exploration, Gold Resource Corp.....Jan2013-Present

6. I am lead and co-author of this technical report and specifically responsible for Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17, 20, 21, 22, 23, 24 and 25 and parts of Sections 11, 12, 13, 18 and 19.

Effective Date: December 31, 2020

{SIGNED}

[Barry D. Devlin]

/s./ Barry D. Devlin  
Barry D. Devlin, P.Geo