Report to:

Avino Silver & Gold Mines Ltd.

Resource Estimate Update for the Avino Property, Durango, Mexico

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TETRA TECH

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AVINO SILVER & GOLD MINES LTD.

RESOURCE ESTIMATE UPDATE FOR THE AVINO PROPERTY, DURANGO, MEXICO

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GLOSSARY

Units of Measure

above mean sea level	amsl
acre	ac
ampere	A
annum (year)	a
cubic centimetre	cm^3
cubic metre	m^3
cubic yard	yd^3
Coefficient of Variation	CV
day	d
days per year (annum)	d/a
degree	°
degrees Celsius	°C
dollar (American)	US$
dollar (Canadian)	Cdn$
feasibility study	FS
foot	ft
gram	g
grams per litre	g/L
grams per tonne	g/t
greater than	>
hectare (10,000 m^2)	ha

horsepower	HP
hour	h
hours per day	h/d
inch	in
kilogram	kg
kilometre	km
kilopascal	kPa
kilotonne per year	kt/a
kilowatt	kW
kilowatt hour	kWh
kilowatt hours per tonne	kWh/t
less than	<
litre	L
megawatt	MW
metre	m
metres above sea level	masl
milligram	mg
milligrams per litre	mg/L
millilitre	mL
millimetre	mm
Million cubic metres	Mm^3
million tonnes per year	Mt/a
ounce	oz
parts per million	ppm
percent	%
peso (Mexican)	MXN$
pound(s)	lb
pounds per square inch (gauge)	psig
prefeasibility study	PFS
preliminary economic analysis	PEA
revolutions per minute	rpm
second (time)	s
square metre	m^2
three-dimensional	3D
tonne (1,000 kg) (metric ton)	t
tonnes per day	t/d
tonnes per hour	t/h
tonnes per year	t/a

ABBREVIATIONS AND ACRONYMS

acid-base accounting	ABA
atomic absorption	AA
Avino Silver & Gold Mines Ltd.	Avino
Bi	Bismuth
Canadian Institute of Mining, Metalurgy, and Petroleum	CIM
Cannon-Hicks & Associates Ltd.	Cannon-Hicks
Compañía Minera Mexicana de Avino	CMMA
Compañía Minera Mexicana de Avino, S.A. de C.V.	Avino Mexico
Convention on International Trade in Endangered Species of Wild Fauna and Flora	CITES
copper sulphate	$CuSO_4$
copper	Cu
dissolved oxygen	dO_2
east	E
Electrometals Electrowinning	EMEW
Elena Tolosa	ET
Environmental Impact Assessment Matter Regulation/ Reglamento en Materia de Evaluacion del Impacto Ambiental	REIA
Environmental Impact Assessment/Evaluación de Impacto Ambiental	EIA
Environmental Impact Statement/Manifestación de Impacto Ambiental	EIS/MIA
Environmental Quality Monitoring Program/ Programa de Seguimiento de la Calidad Ambiental	EQMP
Federal Attorney for Environmental Protection/ Procuraduría Federal de Proteccíon al Ambiente	PROFEPA
general and administrative	G&A
General Law for the Prevention and Comprehensive Management of Waste/ Ley General Para la Prevención y Gestión Integral de Residuos	LGPyGIR
General Law for the Prevention and Management of Waste/ Ley General Para la Prevención y Gestión Integral de los Residuos	LGPGIR
General Law of Ecological Equilibrium and Environmental Protection/ Ley General del Equilibrio Ecológico y la Protección al Ambiente	LGEEPA
global positioning system	GPS
gold equivalent	AuEQ
gold	Au
half absolute relative distance	HARD
induced polarization	IP
inductively coupled plasma	ICP
inductively coupled plasma mass spectroscopy method	ICP-MS
internal rate of return	IRR
International Organization for Standardization	ISO
inverse distance	ID
inverse distance squared	ID^2
lead	Pb
life of mine	LOM
Minerales de Avino, Sociedad Anonima de Capital Variable	Minerales
MineStart Management Inc.	MMI

Ministry of Environment and Natural Resources/ Secretaría de Medio Ambiente y Recursos Naturales	MENR/SEMARNAT
National Instrument 43-101	NI 43-101
nearest neighbour	NN
net present value	NPV
net smelter return	NSR
north	N
ordinary kriging	OK
potassium amyl xanthate	PAX
preliminary economic assessment	PEA
PricewaterhouseCoopers	PwC
Process Research Associates Ltd.	PRA
Qualified Person	QP
quality assurance	QA
quality control	QC
Selco Mining and Development	Selco
SGS Mineral Services	SGS
silver equivalent	Ag_Eq
silver	Ag
sodium carbonate	Na_2CO_3
sodium cyanide	NaCN
south	S
the Avino mine site	the Property or the Project
Toronto Stock Exchange	TSX
Universal Transverse Mercator	UTM
water displacement	WD
west	W
zinc	Zn

1.0 SUMMARY

1.1 INTRODUCTION

Avino Silver & Gold Mines Ltd. (Avino) is a Canadian-based mining and exploration company listed on the Toronto Stock Exchange (TSX) and the NYSE-American with precious metal properties in Mexico and Canada.

The Avino mine site (the Property or the Project), near Durango, Mexico, is Avino's principal asset and is the subject of this Technical Report, which includes a current Mineral Resource estimate for the Avino Veins at the Elena Tolosa (ET) Mine, San Gonzalo Veins at the San Gonzalo Mine and for the oxide tailings deposit.

Avino holds a 99.67% interest in the Property through its subsidiary companies called Compañía Minera Mexicana de Avino, S.A. de C.V. (CMMA) and Promotora Avino, S.A. de C.V. Avino commenced development, including drilling and bulk sampling, on the San Gonzalo Vein in 2010 and this work is ongoing. This marks the resumption of activity on the Property since 2001, when low metal prices and the closure of a key smelter caused the mine to close after having been in operation continuously for 27 years. Between 1976 and 2001, the mine produced approximately 497 t of silver, 3 t of gold, and 11,000 t of copper (Slim 2005a), as well as an apparently undocumented amount of lead.

The majority of the information has been sourced from the data provided by Avino: Avino internal reports, Tetra Tech (2018; 2017; 2013), Slim (2005d), Gunning (2009), and a process plant review memo by Tetra Tech (2019). The majority of the information was provided in English, but some information was written in Spanish and subsequently translated into English.

The purpose of this report is to support an updated Mineral Resource estimated as a result of modified current metal price parameters, new drilling information at the ET Mine (Avino and San Luis) and improved interpretation of the San Gonzalo mineralization trends. There has been no change to the oxide tailings estimate.

1.2 PROPERTY DESCRIPTION AND LOCATION

The Property is located in Durango State in North Central Mexico, within the Sierra Madre Silver Belt, 82 km northeast of Durango City (Figure 1.1). CMMA (Avino's Mexican subsidiary company) holds 42 mineral concessions, totalling 5,271.521 ha (see Table 1.1 and Appendix A).

Table 1.1 CMMA Mineral Concessions

Property	Title Certificate	Area (Ha)	Expiry
Ana Maria	215702	733.376	August 2, 2052
Ana Maria 2	211271	8.336	April 27, 2050
Ana Maria 3	211741	87.664	June 29, 2050
Ana Maria 4	212385	315.147	October 3, 2050
Ana Maria 6	213291	28.000	April 19, 2051
Ana Maria 5	213811	90.000	July 2, 2051
Ana Maria 5 Fracc.	213812	28.702	July 2, 2051
Ana Maria Reduc. Frac. 1	215703	293.928	March 4, 2052
Ana Maria Reduc. Fracc. 2	215704	963.896	August 2, 2049
Ampl. de la Potosina	185326	84.000	December 13, 2039
Ampl. a San Gonzalo	191837	5.850	December 18, 2041
Ampl. La Malinche	204177	6.010	December 17, 2046
El Potrerito	185328	9.000	December 13, 2039
La Malinche	203256	9.000	June 27, 2046
Potosina	185336	16.000	December 13, 2039
San Gonzalo	190748	12.000	April 28, 2041
Yolanda	191083	43.458	April 28, 2041
San Jose	164985	8.000	August 12, 2029
El Trompo	184397	81.547	October 12, 2039
Gran Lucero	189477	161.468	December 4, 2040
Purisima Chica	155597	136.708	September 29, 2021
San Carlos	117411	4.451	December 16, 2061
San Pedro y San Pablo	139615	12.000	June 21, 2061
Aguila Mexicana	215733	36.768	June 29, 2044
Aranjuez	214612	96.000	October 1, 2051
Avino Grande IX	216005	19.558	April 1, 2052
Avino Grande VIII	215224	22.882	February 13, 2052
El Caracol	215732	102.382	April 28, 2044
El Fuerte	216103	100.327	December 14, 2048
Fernando	205401	72.129	August 28, 2047
La Cruz	215672	16.000	March 4, 2052
Estela	179658	14.000	December 10, 2036
Los Angeles	154410	23.713	March 24, 2021
Negro Jose	218252	58.000	October 16, 2052
San Martin de Porres	222909	30.000	September 14, 2054
Santa Ana	195678	136.182	September 13, 2042
El Laberinto	218799	91.710	January 16, 2053

table continues…

Property	Title Certificate	Area (Ha)	Expiry
El Hueco	224519	602.897	May 16, 2055
El Hueco 2	210421	595.198	October 7, 2049
El Hueco 2 Frac.	210422	95.239	October 7, 2049
El Hueco 3	213004	15.000	February 19, 2051
El Hueco 4	213021	5.000	March 1, 2051
Total		**5271.521**	

Figure 1.1 General Location of the Property

Source: Avino

Avino entered into an agreement (the Agreement) on February 18, 2012 through its subsidiary company, with Minerales de Avino, Sociedad Anonima de Capital Variable (Minerales), whereby Minerales has indirectly granted to Avino the exclusive mining and occupation rights to the La Platosa concession. The La Platosa concession covers 98.83 ha and hosts the Avino Vein and ET Zone.

Pursuant to the Agreement, Avino has the exclusive right to explore and mine the concession for an initial period of 15 years, with the option to extend the agreement for another 5 years. In consideration of the grant of these rights, Avino has paid to Minerales the sum of US$250,000 by the issuance of 135,189 common shares of Avino. Avino has also agreed to pay to Minerales a royalty equal to 3.5% of net smelter returns (NSRs), at the commencement of commercial production from the concession.

All concessions are current and up to date based on information received. Mineral concessions in Mexico do not include surface rights and Avino has entered into agreements with communal landowners (Ejidos) of San Jose de Avino, Panuco de Coronado and Zaragoza for the temporary occupation and surface rights of the concessions.

1.3 GEOLOGY AND MINERALIZATION

The Property is located within the Sierra de Gamon, on the east flank of the Sierra Madre Occidental. The area is a geological window into the Lower Volcanic series and consists of volcanic rocks of mainly Andesitic affiliation with other rock types occurring more sparsely to the north (Slim 2005d).

A large monzonitic intrusion is observed in the region in the form of dykes and small stocks, which may be related to the Avino Vein mineralization. Several younger, thin mafic sills are also found in various parts of the region.

The Avino concession is situated within a 12 km north-south by 8.5 km caldera, which hosts numerous low sulphidation epithermal veins, breccias, stockwork, and silicified zones. These zones grade into a “near porphyry” environment in the general vicinity of the Avino property. The caldera has been uplifted by regional, north-trending block faulting (a graben structure), exposing a window of andesitic pyroclastic rocks of the lower volcanic sequence, which is a favourable host rock. The upper volcanic sequence consists of rhyolite to trachytes with extensive ignimbrite and is intruded by monzonite bodies. The basal andesite-bearing conglomerate and underlying Paleozoic basement sedimentary rocks (consisting of shales, sandstones, and conglomerates) have been identified on the Avino concession in the south-central portion of the caldera, covering the Guadalupe, Santiago, San Jorge, the San Gonzalo Trend, Malinche, Porterito, and Yolanda areas.

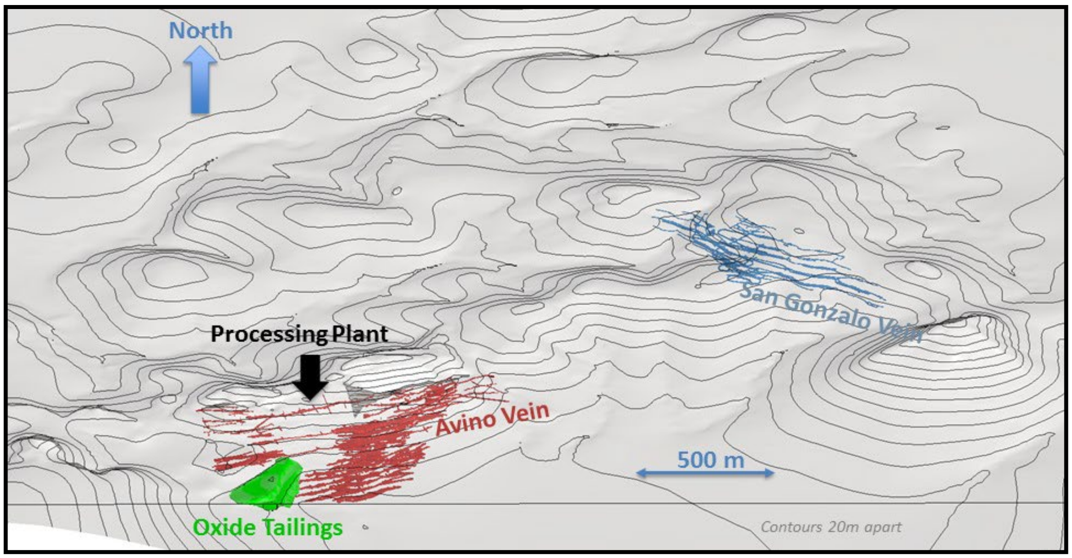
A northerly trending felsic dyke, probably a feeder to the upper volcanic sequence, transects the Property and many of the veins. The Aguila Mexicana low temperature vein system, with significant widths but overall low precious metal values, trends north-northwest, similar to the felsic dyke and with similar continuity across the Property. The two structures may occupy deep crustal faults that controlled volcanism and mineralization, with the felsic dyke structure controlling the emplacement of the Avino, Nuestra Senora, and El Fuerte-Potosina volcanic centres and the Aguila Mexicana controlling the Cerro San Jose and El Fuerte-Potosina volcanic centres (Paulter 2006).

Silver- and gold-bearing veins crosscut the various lithologies and are generally oriented north-northwest to south-southeast (the Avino Vein trend) and northwest to southeast the San Gonzalo trend). In Mexico, these vein deposits may have large lateral extents, but can be limited in the vertical continuity of grades due to the effects of pressure on boiling levels for mineralizing fluids. The rocks have been weathered and leached in the upper sections, as a result of contact with atmospheric waters. The oxide tailings material is derived primarily from these shallow zones, whereas the sulphide tailings are predominantly from material sourced at depth from the underground workings.

The valuable minerals found during the period of mining of the oxide zone are reported to be argentite, bromargyrite, chalcopyrite, chalcocite, galena, sphalerite, bornite, native silver and gold, and native copper.

Three deposits, the Avino Vein, the San Gonzalo Vein, and the oxide tailings deposit, are the subject of Mineral Resource estimates disclosed in this report. Recent exploration drilling reported at the Guadalupe and San Juventino veins is at an early stage and no Mineral Resources have been estimated for these two veins.

Figure 1.2 Perspective View of the Property Looking North and Showing the Three Deposits



Source: Red Pennant

1.3.1 THE AVINO VEIN

The Avino Vein (see Figure 1.2 for location) has been and continues to be the primary deposit mined on the Property since at least the 19th century. It is 1.6 km long and up to 60 m wide on the surface. The deepest level is at the 1,930 m amsl level (430 m below surface).

1.3.2 THE SAN GONZALO VEIN

The San Gonzalo Vein system (see Figure 1.2 for location), including the crosscutting Angelica Vein, is located 2 km northeast of the Avino Vein. It constitutes a strongly developed vein system over 25 m across, trending 300° to 325°/80° northeast to 77° south. Banded textures and open-space filling are common and individual veins have an average width of less than 2 m. The vein was mined historically and underground workings extend approximately 1.1 km along strike and to the 1,970 m amsl (300 m below surface).

1.3.3 THE OXIDE TAILINGS

The oxide tailings deposit (see Figure 1.2 for location) comprises historic recovery plant residue material that was wasted from processing plants during the earlier period of open pit mining of the Avino Vein. The oxide tailings are partially covered by younger unconsolidated sulphide tailings on the northwest side.

1.4 RESOURCE ESTIMATES

The Avino system, San Gonzalo system, and oxide tailings Mineral Resources were modelled and estimated using Leapfrog EDGE™ software version 4.2.3. The reported Mineral Resource estimated by Red Pennant Geoscience was interpolated using ordinary kriging (OK) and capped grades and inverse distance squared (ID^2) and nearest neighbour (NN) for model validation purposes. The Avino system was estimated for silver, gold, and copper. The San Gonzalo Vein system and oxide tailings were estimated for silver and gold. Under current economic and technical conditions, gold and silver and copper are recoverable from the Avino system and all three metals are included in the Mineral Resource and for the silver equivalent (AgEQ) calculation for the Avino system. Under current economic and technical conditions, only gold and silver are recoverable from the San Gonzalo system and the oxide tailings, and consequently, only silver and gold are included in the Mineral Resource and for the AgEQ calculation for the San Gonzalo system and oxide tailings. Cut-off reporting (to consider "eventual prospects for eventual economic extraction") utilizes an AgEQ calculation where the total metal value is converted into an in situ silver resource. For reporting purposes, a base case AgEQ cut-off of 60 g/t is used for the Avino system, an AgEQ cut-off of 130 g/t is used for the San Gonzalo system, and an AgEQ cut-off of 50 g/t is used for the oxide tailings based on current economic parameters.

Table 1.2 is the Mineral Resource statement. Other grade tonnage graphs and tables found in Section 14.0 are intended to show sensitivity of the mineralized material and must not be considered Mineral Resources.

It must be noted that no Mineral Resource has been estimated for the sulphide tailings portion of the Property.

Table 1.2 Mineral Resources at the Avino Property

Resource Category	Deposit	Cut-off (AgEQ g/t)	Metric Tonnes	Grade				Metal Contents			
				AgEQ (g/t)	Ag (g/t)	Au (g/t)	Cu (%)	AgEQ (million tr oz)	Ag (million tr oz)	Au (thousand tr oz)	Cu (tonnes)
Measured and Indicated Mineral Resources											
Measured	Avino – ET	60	4,760,000	120	74	0.63	0.55	18.4	11.3	97	26,300
Measured	San Gonzalo System	130	267,000	356	263	1.36	0.00	3.1	2.3	12	0
Total Measured	**All Deposits**		**5,027,000**	133	84	0.67	0.52	21.5	13.6	109	26,300
Indicated	Avino – ET	60	13,890,000	107	59	0.68	0.41	47.9	26.5	304	56,700
Indicated	San Gonzalo System	130	216,000	304	230	1.09	0.00	2.1	1.6	8	0
Indicated	Oxide Tailings	50	1,120,000	124	89	0.42	0.00	4.5	3.2	15	0
Total Indicated	**All Deposits**		**15,226,000**	111	64	0.67	0.37	54.5	31.3	327	56,700
Total Measured and Indicated	**All Deposits**		**20,253,000**	117	69	0.67	0.41	75.9	44.9	436	83,000
Inferred Mineral Resources											
Inferred	Avino – ET	60	5,230,000	95	51	0.64	0.34	16.0	8.5	108	17,700
Inferred	San Gonzalo System	130	85,000	298	233	0.96	0.00	0.8	0.6	3	0
Inferred	Oxide Tailings	50	1,230,000	125	85	0.47	0.00	5.0	3.4	19	0
Total Inferred	**All Deposits**		**6,545,000**	103	59	0.61	0.27	21.8	12.5	129	17,700

Notes: Figures may not add to totals shown due to rounding.
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
The Mineral Resource estimate is classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum's (CIM) Definition Standards for Mineral Resources and Mineral Reserves incorporated by reference into National Instrument 43-101 (NI 43-101) Standards of Disclosure for Mineral Projects.
Based on recent mining costs (Section 21) Mineral Resources are reported at cut-off grades 60 g/t, 130 g/t, and 50 g/t AgEQ grade for ET, San Gonzalo, and oxide tailings, respectively.
AgEQ or silver equivalent ounces are notational, based on the combined value of metals expressed as silver ounces
Cut-off grades were calculated using the following consensus metal price assumptions: gold price of US$1,875/oz, silver price of US$24.00/oz, and copper price of US$3.10/lb.
Metal recovery is based on operational results and column testing and is shown in Table 14.2.
The silver equivalent was back calculated using the following formulas: ET AgEQ = Ag + 65.1 * Au + 8.66 * Cu ppm / 10,000 ; SG AgEQ = Ag + 72.54 * Au; Oxide Tailings AgEQ = Ag + 84.55 * Au.

1.5 MINERAL PROCESSING, METALLURGICAL TESTING AND RECOVERY METHODS

There are three separate mineralization sources in the Property, including the ET Mine, San Gonzalo Mine, and the potential tailings resource from previous milling operations. Only the ET Mine is currently in operation. The San Gonzalo Mine has reached the end of its current resources, and underground mining activities at the mine were stopped in Q4 2019. However, the mine remains open for continued exploration at different levels of the mine. There is no operation for the potential tailings resource; a Preliminary Economic Assessment (PEA) for the oxide tailings resources was completed in 2017, The San Gonzalo Mine entered commercial production in October 2012, followed by reopening the ET Mine in January 2015. The two mines feed a conventional flotation mill that has three separate circuits and a total capacity of 1,500 t/d. In 2018, a new circuit (Circuit #4), which has a processing capacity of 1,000 t/d, was installed and commissioned to process materials from the historic above ground stockpiles (HAGS) in the initial stage and now the circuit is used to process the material from the ET Mine. The overall mill capacity was increased to 2,500 t/d.

The existing crushing plant has also been upgraded to accommodate the higher throughput by installing a new larger tertiary cone crusher. A centrifugal gravity concentrator has also been installed in all four processing circuits to recover a high-grade gold/silver concentrate suitable for dispatching directly to a smelter.

This Mineral Resource Update (Technical Report) should not be considered to be a PEA, Prefeasibility Study (PFS), or Feasibility Study (FS), as the economics and technical viability of the Project have not been demonstrated at this time. The information listed in this section of the Mineral Resource Update is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the technical report will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Avino has not based its production decisions on any FS or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. Information in this section was provided by Avino.

1.5.1 AVINO VEIN

Avino is currently conducting mining activity on the Avino Vein and processing Avino Vein material at the mine plant. Historically, prior to the mine shutting down in 2001, Avino operated a 1,000 t/d processing plant, achieving up to 1,300 t/d, producing a copper concentrate that was sold to a smelter in San Luis Potosi for approximately 27 years. The mine and mill operations were then suspended. Following several years of redevelopment, Avino completed the mine and mill expansion in Q4 2014. On January 1, 2015, full-scale operations commenced and commercial production was declared effective April 1, 2016 following a 19 month advancement and test period.

The processing plant consists of conventional crushing, grinding, flotation, and dewatering circuits. After upgrading, the plant now has a total capacity of 2,500 t/d for processing the materials from the Avino Veins. The crushing plant consists of a conventional three-stage crushing circuit with the tertiary crusher in closed circuit with a screen. The crushed material is fed to a ball mill and classified with a hydrocyclone at a grind size of approximately 65% to 75% passing 200 mesh. There are four grinding/flotation processing lines. The fines from the hydrocyclone reports to the flotation circuit where typical flotation reagents for floating copper minerals are used. Centrifugal gravity concentrators have also been installed in the processing circuits to recover coarse nugget precious metals into a high-grade gold/silver concentrate. The concentrates from the rougher and scavenger circuits are upgraded in a cleaner circuit with the final concentrate reporting to three dewatering systems, each consisting of a thickener and a pressure filter. The moisture of the filter cakes is approximately 9%, and the concentrates are then shipped for sale overseas.

All the flotation tailings from the four flotation circuits are pumped to a thickener, which was installed in Q1 2019 and in operation in Q2 2019. The tailings thickening process has improved the deposition of the tailings and the water management and usage. The thickener overflow, together with the decant water from the permitted tailings impoundment areas, is reclaimed for process use. The thickened tailings is now stored in the lined historical open pit. Also, dry stacking tailings with pressure filters (plate-frame type) has been planned to further conserve the process water consumption. The tailings cakes are planned to be stored in a new tailings storage facility, which has been permitted.

1.5.2 SAN GONZALO VEIN

Avino is currently not conducting mining activity on the San Gonzalo Vein, including processing of San Gonzalo Vein material at the mill plant at the Avino mine site. The San Gonzalo Mine stopped its operation in Q4 2019 due to it reaching the end of its resources at that time.

Previously, the processing circuit consisted of crushing and grinding circuits, followed by a gravity and flotation to recover and upgrade lead, zinc, silver, and gold from the feed material. Common reagents were used within the flotation circuit as well. The flotation concentrate was thickened, filtered to 9.0% moisture content, and sent to the concentrate stockpile for subsequent shipping to customers. The circuit has now been upgraded to process the materials from the Avino Vein.

The final flotation tailings was disposed of in the existing permitted tailings storage facility.

1.5.3 Oxide Tailings

Currently there is no metal recovery operation on the stored tailings. As reported by MineStart Management Inc. (MMI) and Process Research Associates Ltd. (PRA), several metallurgical work programs were conducted to investigate silver and gold recovery from the tailings.

The test work investigated various treatment methods, including gravity separation, flotation, and cyanide leaching (tank leaching and heap leaching). The preliminary test results appear to show that the tailings materials responded reasonably well to the cyanide leaching treatment, including tank leaching and column leaching testing procedures. An updated preliminary economical assessment was conducted in 2017 to evaluate the recovery of silver and gold from the oxide tailings using heap leaching technology followed by the Merrill-Crowe treatment on the pregnant leach solution.

The processing step will consist of tailings reclamation, agglomeration, and cyanide heap leaching followed by the Merrill-Crowe process to recover silver and gold from the pregnant solution. The process plant will operate at a throughput rate of 1,370 t/d on a 24 h/d, 365 d/a basis, with an overall utilization of 90%.

1.5.4 Sulphide Tailings

Avino is not currently conducting mining activity on the sulphide tailings. Because some of the oxide tailings and sulphide tailings were co-deposited, and the oxide tailings are partially covered by younger unconsolidated sulphide tailings on the northwest side of the tailings storage dam, the sulphide tailings materials will be reclaimed as required during the oxide tailings reclamation. The reclaimed sulphide tailings is planned to be stored in a separate sulphide tailings storage facility for further evaluation, while some of the sulphide tailings could be used for constructing the heap leach pad and facilities for the oxide tailings retreatment; however, no quantities have been estimated at this stage. In addition, no recovery methods are currently proposed for the sulphide tailings, which have been excluded from this estimate.

1.6 MINING METHODS

1.6.1 AVINO VEIN

Avino is currently conducting mining activity on the Avino Vein using sublevel stoping and room and pillar mining methods and has been processing the HAGS material since 2018.

Avino has not based its production decisions on the Avino Vein with any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. The information in this section was provided by Avino.

Production from the Avino Vein is summarized in Table 1.3, up to the most recent activities in the third quarter of 2020. This data is summarized from the information listed in Avino's press releases. The production rate and processing of the HAGS material is presented in Table 1.3 and Table 1.4.

Table 1.3 Production from the Avino Vein (2017 to Q3 2020)

Production Description	As of Q3, 2020	2019	2018	2017
Mill Feed Tonnage				
Tonnes Milled (t)	199,575	427,147	426,794	460,890
Feed Grade				
Silver (g/t)	54	44	53	64
Gold (g/t)	0.40	0.45	0.49	0.52
Copper (%)	0.58	0.56	0.55	0.48
Recovery				
Silver (%)	90	85	84	85
Gold (%)	75	73	69	69
Copper (%)	88	86	87	89
Total Metal Produced				
Silver Produced (oz)	312,819	510,265	614,369	803,438
Gold Produced (oz)	1,916	4,473	4,625	5,259
Copper Produced (lb)	2,263,082	4,563,195	4,546,952	4,373,166

Source: Avino (2018; 2019; 2020)

Table 1.4 Recent Material Feed from the Avino Historic Above Ground Stockpile

Production Description	2020 (Q1)	2019	2018
Mill Feed Tonnage			
Tonnes Milled (t)	4,711	306,334	202,830
Feed Grade			
Silver (g/t)	59	55	58
Gold (g/t)	0.31	0.36	0.41
Copper (%)	0.15	0.18	0.16
Recovery			
Silver (%)	50	54	57
Gold (%)	41	53	52
Copper (%)	31	35	38
Total Metal Produced			
Silver Produced (oz)	4,481	295,176	215,312
Gold Produced (oz)	19	1,859	1,397
Copper Produced (lb)	4,857	407,059	272,070

Source: Avino (2019; 2020)

1.6.2 SAN GONZALO VEIN

Avino reported that by the fourth quarter of 2019, mining at the San Gonzalo Vein reached the end of its current resources, and underground mining activities at the mine were stopped. However, the mine remains open for continued exploration at different levels of the mine. Historic mine production from the San Gonzalo Vein is summarized in Table 1.5.

Avino has not based its production decisions on the San Gonzalo Vein with any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. The information in this section was provided by Avino.

Table 1.5 Recent Production from the San Gonzalo Vein

Production Description	2019	2018	2017
Mill Feed Tonnage			
Tonnes Milled (t)	56,179	79,140	81,045
Feed Grade			
Silver (g/t)	118	222	269
Gold (g/t)	0.46	1.03	1.32
Recovery			
Silver (%)	69	77	84
Gold (%)	66	75	78
Total Metal Produced			
Silver Produced (oz)	153,372	456,709	590,770
Gold Produced (oz)	581	2,070	2,675

Source: Avino (2017; 2018; 2019; 2020)

1.6.3 Oxide Tailings

Avino plans to mine and move the oxide tailings Mineral Resource on site using a conventional truck and loader surface mining equipment. The production cycle consists of loading and trucking (Tetra Tech 2018). However, based on the Qualified Person's (QP's) understanding, currently this plan has not been realized.

1.7 Project Infrastructure

The Property is easily accessible by road and is an important part of the local community from which skilled workers are available. The history of operations at the Avino mine site provides ample evidence of sufficient infrastructure and services in the area. The San Gonzalo Mine entered commercial production in October 2012, followed by reopening the ET Mine in January 2015. Currently, only the ET Mine is in operation and the mined materials are fed to a conventional flotation mill that has four separate circuits. The mill, including crushing, grinding, flotation, and downstream dewatering processes, had been upgraded from 1,500 t/d to a total capacity of 2,500 t/d in 2017/2018.

All the flotation tailings from the four flotation circuits are pumped to a thickener, which started operation in Q2 2019. The thickener overflow, together with the decant water from the permitted tailings impoundment areas, is reclaimed for process use. The thickened tailings is now stored in the lined historical open pit. Also, dry stacking tailings with pressure filters (plate-frame type) has been planned to further conserve the process water consumption. The tailings cakes are planned to be stored in a new tailings storage facility, which has been permitted.

The offices, miner's quarters, secured explosives storage facilities, warehouse, laboratory and other associated facilities are all in place. The proposed tailings leach facilities are planned to be located southeast of the existing tailings storage pond.

Before 2016, the mill was serviced with an existing power line providing only 1,000 kW of power with 500 kW servicing the mill; 400 kW for San Gonzalo Mine; and the balance for the well at Galeana, employee accommodation facility, and water reclaim from the tailings dam. The new power line from Guadelupe Victoria to the mine site was completed in June 2016. The power line was energized and tested on June 8, 2016. The line was fully functional at the design capacity of 5.0 MW. Current power consumption at the mine is approximately 3.5 MW, leaving sufficient additional power for potential future expansion projects, including the proposed oxide tailings retreatment project using heap leach followed by gold and silver recovery by Merrill-Crowe precipitation, and possible further expansion or upgrading of the processing plant. Additionally, the previous power line was left in place to service local communities and provides backup power for the mine. A C-27 CAT diesel power generator, which can produce 700 kW, is now used as backup.

There is a water treatment plant for treating excess water from the Avino underground mine operation before discharging to El Caracol Dam. The effluent is being monitored on a daily basis when the treatment plant is operational.

1.8 ENVIRONMENTAL

Environmental settings, permits and registrations, and environmental management strategies that may be required for the Project are summarized in Section 20.0. Permits and authorizations required for the operation of the Project may include an operating permit, an application for surface tenures, a wastewater discharge registration, a hazardous waste generator's registration, and an Environmental Impact Assessment (EIA) or Evaluación de Impacto Ambiental. Acid-base accounting (ABA) tests have indicated that mild acid generation may already have started on the tailings dam. A gap analysis and additional tests to further characterize current conditions of the tailings should be completed to properly design a tailings management plan.

1.9 CAPITAL AND OPERATING COSTS

1.9.1 CAPITAL COST ESTIMATES

AVINO VEIN AND SAN GONZALO VEIN

Avino is currently conducting mining activity on the Avino Vein. There is no cost estimate applicable and all costs are based on actual expenditures.

Avino has not based its production decisions on any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

The actual capital expenditures (in US dollars) to date on the Avino Vein, including HAGS and San Gonzalo Vein operations, are summarized in Table 1.6 and Table 1.7, respectively. The capital expenditures have been broken down by year and area.

Table 1.6 Capital Costs for the Avino Vein and Historical Stockpiles (US$)

Description	Q1–Q3 2020	2019	2018	2017
Office Furniture	6,774	7,284	12,657	31,468
Computer Equipment	4,846	11,635	57,807	19,790
Mill Machinery and Processing Equipment	29,182	646,024	5,856,952	1,507,709
Mine Machinery and Transportation Equipment	22,721	150,023	864,697	826,298
Buildings and Construction	877,797	1,817,341	855,731	2,863,712
ET Mineral Property – Avino	28,495	106,395	692,992	800,606
Total Capital Costs	**969,815**	**2,738,702**	**8,340,836**	**6,049,583**

Source: Avino (2020)

Table 1.7 Capital Costs for the San Gonzalo Vein (US$)

Description	Q1–Q3 2020	2019	2018	2017
Office Furniture	-	862	4,320	11,579
Computer Equipment	-	1,377	19,732	7,282
Mill Machinery and Processing Equipment	-	76,452	1,999,208	554,786
Mine Machinery and Transportation Equipment	-	17,754	295,155	304,050
Buildings and Construction	-	204,229	276,808	63,494
San Gonzalo Vein Mineral Property	-	6,455	336,270	430,721
Total Capital Costs	-	**307,129**	**2,931,493**	**1,371,912**

Source: Avino (2020)

TAILINGS RESOURCES

The capital costs for retreating the oxide tailings portion of the Property, including reclaiming the oxide tailings, constructing the heap leach pad, and the treatment facilities, were estimated and reported in the technical report entitled “Technical Report on the Avino Property”, dated April 11, 2017.

The estimated capital cost was US$28.8 million (US$24.4 million of initial capital plus US$4.4 million sustaining capital).

A PEA should not be considered to be a PFS or FS, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No capital costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

1.9.2 OPERATING COST ESTIMATES

AVINO VEIN AND SAN GONZALO VEIN

Avino is currently conducting mining activity on the Avino Vein. The San Gonzalo Mine has reached the end of its current resources, and underground mining activities at the mine were stopped in Q4 2019. However, the mine remains open for continued exploration at different levels of the mine. The materials from the HAGS were processed between 2018 and Q1 2020. There is no cost estimate applicable and all costs are based on actual expenditures.

Avino has not based its production decisions on any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

The actual operating costs (in US dollars) for the Avino Vein, the HAGS and the San Gonzalo Mine between 2017 and Q3 2020 are presented in Table 1.8 to Table 1.10.

The mine and milling costs include operating and maintenance labour together with the operation-associated consumable supplies. The cost for electrical power is included in the milling costs. The geological component is mostly related to technical labour.

Table 1.8 Operating Costs for the Avino Vein (US$)

Description	Q1–Q3 2020	2019	2018	2017
Mining Cost	4,966,974	8,777,422	7,169,065	6,481,920
Milling Cost	2,651,478	4,281,708	4,024,935	4,221,422
Geological and Other	2,809,488	3,571,538	3,447,220	3,253,354
Royalties	458,353	499,368	690,004	734,732
Depletion and Depreciation	1,677,638	2,552,149	1,598,581	1,396,967
Total Direct Costs	**12,563,930**	**19,682,185**	**16,929,804**	**16,088,395**
G&A	2,989,270	2,658,761	2,706,890	16,976,642
Total Operating Costs	**15,553,200**	**22,340,946**	**19,636,694**	**33,065,037**

Source: Avino (2020)

Table 1.9 Operating Costs for the Historical Stockpile Materials (US$)

Description	Q1 2020	2019	2018	2017
Mining Cost	79,620	505,341	269,565	-
Milling Cost	392,075	4,210,514	1,667,595	-
Geological and Other	104,793	857,843	353,026	-
Royalties	19,141	228,241	0	-
Depletion and Depreciation	14,409	416,861	247,834	-
Total Direct Costs	**610,038**	**6,218,800**	**2,538,020**	**-**
G&A	136,547	1,175,291	354,902	-
Total Operating Costs	**746,585**	**7,394,091**	**2,892,922**	**-**

Source: Avino (2020)

Table 1.10 Operating Costs for the San Gonzalo Vein (US$)

Description	Q1-Q3 2020	2019	2018	2017
Mining Cost	-	4,208,889	4,953,380	3,615,976
Milling Cost	-	725,350	1,028,396	596,656
Geological and Other	-	82,766	1,015,950	644,784
Royalties	-	0	0	0
Depletion and Depreciation	-	711,145	1,384,274	1,160,319
Total Direct Costs	**-**	**5,728,150**	**8,382,000**	**6,017,735**
G&A	-	448,775	1,133,698	5,738,873
Total Operating Costs	**-**	**6,176,925**	**9,515,698**	**11,756,608**

Source: Avino (2020)

TAILINGS RESOURCES

The operating costs for retreating the oxide tailings portion of the Property, including reclaiming the oxide tailings, were estimated to be US$15.06/t. The detailed estimates are reported in the technical report entitled "Technical Report on the Avino Property", dated April 11, 2017.

A PEA should not be considered to be a PFS or FS, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No operating costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

1.10 ECONOMIC ANALYSIS

1.10.1 AVINO AND SAN GONZALO VEINS

Avino is currently conducting mining activity, including mineral processing, on the Avino Vein. There is no economic analysis performed on the vein.

Avino has not based its production decisions on the Avino Vein with any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

1.10.2 Tailings Resources

In 2017, Tetra Tech prepared a PEA technical report for the silver and gold recoveries from the oxide tailings, entitled “Technical Report on the Avino Property”, dated April 11, 2017.

A PEA should not be considered to be a PFS or FS, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The report includes a preliminary economic evaluation for the oxide tailings retreatment based on a pre-tax financial model. Metal prices used in the base case for the preliminary economic evaluation were:

- gold – US$1,250/oz
- silver – US$18.50/oz.

The pre-tax financial results were:

- 48.4% internal rate of return (IRR)
- 2.0-year payback period
- US$40.5 million net present value (NPV) at an 8% discount rate.

Avino commissioned PricewaterhouseCoopers (PwC) in Vancouver to prepare the tax component of the model for the post-tax economic evaluation for this updated PEA with the inclusion of applicable income and mining taxes.

The following post-tax financial results were calculated:

- 32% IRR
- 2.6-year payback period
- US$22.2 million NPV at an 8% discount rate.

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No economical assessments have been conducted for any potential mining activity on the sulphide tailings portion of the Property.

1.11 Recommendations

Recommendations for further Mineral Resource estimates are presented in Section 26.0.

2.0 INTRODUCTION

Avino is a Canadian-based mining and exploration company listed on the TSX and the NYSE-American trading under the symbol ASM. Avino has precious metal properties in Mexico and Canada and has a head office located at 900-570 Granville Street, Vancouver, British Columbia, Canada, V6C 3P1.

Avino retained Tetra Tech, in conjuction with Red Pennant Geoscience, to prepare an update of resource estimate on the Avino Property in Durango, Mexico. The purpose of this Technical Report is to disclose three updated mineral resource estimates for the Avino Vein, the San Gonzalo Vein, and Oxide Tailings portions of the Property. This Technical Report also includes a summary of the information previously disclosed in the Tetra Tech report filed in 2017, comprising a preliminary economic assessment on the oxide tailings portion of the Property. This Technical Report has been prepared in accordance with National Instrument 43-101 (NI 43-101) and Form 43-101F1.

2.1 EFFECTIVE DATES

The effective date of this Technical Report is January 13, 2021. The effective date of the Mineral Resource estimate is October 31, 2020.

Latest information on mineral tenure, surface rights, and Property ownership: December 30, 2020.

2.2 SITE VISITS AND QUALIFIED PERSONS

A summary of the Qualified Persons (QPs) responsible for this Technical Report is provided in Table 2.1. The following QPs conducted site visits of the Property:

- Hassan Ghaffari, P.Eng., M.A.Sc., visited the site on March 30, 2011; December 12, 2017; and from August 12 to 14, 2019.
- Michael F. O'Brien, P.Geo., M.Sc., Pr.Scit.Nat., FAusIMM, FSAIMM, visited the site from June 12 to 15, 2017 and February 12 to 14, 2020.

Table 2.1 Summary of QPs

Report Section	Company	QP
1.0 Summary	All	Sign-off by Section
2.0 Introduction	Tetra Tech	Hassan Ghaffari, P.Eng., M.A.Sc.
3.0 Reliance on Other Experts	Red Pennant Geoscience Tetra Tech	
4.0 Property Description and Location	Red Pennant Geoscience	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
5.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography	Red Pennant Geoscience	
6.0 History	Red Pennant Geoscience	
7.0 Geological Setting and Mineralisation	Red Pennant Geoscience	
8.0 Deposit Types	Red Pennant Geoscience	
9.0 Exploration	Red Pennant Geoscience	
10.0 Drilling	Red Pennant Geoscience	
11.0 Sample Preparation, Analyses and Security	Red Pennant Geoscience	
12.0 Data Verification	Red Pennant Geoscience	
13.0 Mineral Processing and Metallurgical Testing	Tetra Tech	Jianhui (John) Huang, Ph.D., P.Eng.
14.0 Mineral Resource Estimates	Red Pennant Geoscience	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
15.0 Mineral Reserve Estimates	Tetra Tech	Hassan Ghaffari, P.Eng., M.A.Sc.
16.0 Mining Methods	Tetra Tech	Barnard Foo, P.Eng., M.Eng.
17.0 Recovery Methods	Tetra Tech	Jianhui (John) Huang, Ph.D., P.Eng.
18.0 Project Infrastructure	Tetra Tech	Hassan Ghaffari, P.Eng., M.A.Sc.
19.0 Market Studies and Contracts	Tetra Tech	Jianhui (John) Huang, Ph.D., P.Eng.
20.0 Environmental Studies, Permitting and Social or Community Impact	Tetra Tech	Hassan Ghaffari, P.Eng., M.A.Sc.
21.0 Capital and Operating Costs	Tetra Tech	
22.0 Economic Analysis	Tetra Tech	
23.0 Adjacent Properties	Red Pennant Geoscience	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
24.0 Other Relevant Data and Information	Tetra Tech	Hassan Ghaffari, P.Eng., M.A.Sc.
25.0 Interpretation and Conclusions	All	Sign-off by Section
26.0 Recommendations	All	
27.0 References	All	
28.0 Certificates of Qualified Persons	All	

2.3 INFORMATION AND DATA SOURCES

In preparation of this Technical Report, various historical engineering, geological, and management reports compiled about the Project or site were reviewed and supplemented by direct site examinations and investigations. All the data files reviewed for this study were provided by Avino in the form of hard copy documents, electronic .pdf reports, .xls files, email correspondence, and personal communication with management and personnel from Avino. Work completed by Avino includes several decades of open pit and underground mining, drilling and sampling, trenching, metallurgical testing, and geophysical surveying.

The main sources of information in preparing this Technical Report are:

- Gunning, D. (2009). Resource Estimate on the San Gonzalo Vein – A Part of the Avino Mine, Durango, Mexico, for Avino Silver and Gold Mines Ltd. Prepared by Orequest. August 31, 2009.
- Slim, B. (2005d). A Tailings Resource. Prepared for Avino Silver & Gold Mines Ltd. Report prepared by Bryan Slim, MineStart Management Inc. October 25, 2005.
- Tetra Tech and QG Australia (Pty) Ltd. (2016). Amended Resource Estimate Update for the Avino Property, Durango, Mexico. Prepared for Avino Silver & Gold Mined Ltd. October 27, 2016.
- Tetra Tech (2017). Technical Report on the Avino Property, Durango, Mexico. Prepared for Avino Silver & Gold Mined Ltd. April 11, 2017.
- Tetra Tech (2018). Amended Mineral Resource Estimate Update for the Avino Property, Durango, Mexico. Prepared for Avino Silver & Gold Mined Ltd. February 21, 2018.
- Tetra Tech (2019). Process Plant Review Memo by Andre de Ruijter and Hassan Ghafari, September 20, 2019.

A complete list of references is provided in Section 27.0.

2.4 UNITS OF MEASUREMENT

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

3.0 RELIANCE ON OTHER EXPERTS

This Technical Report Update has been prepared by Michael O'Brien, P.Geo,, M.Sc., Pr.Scit.Nat., FAusIMM, FSAIMM, of Red Pennant Geoscience, and Hassan Ghaffari, P.Eng., M.A.Sc., Jianhui Huang, Ph.D., P.Eng., and Barnard Foo, P.Eng., M.Eng., all of Tetra Tech. All authors are independent QPs as defined within the requirements of NI 43-101.

Michael F. O'Brien, P.Geo., Pr.Sci.Nat., FAusIMM, FSAIMM relied on Mr. Bufete González Olguín, President of Bufete González Olguín Abogado/Attorney-at-Law, for matters relating to mineral claims status and ownership. The reliance is based on a letter from Bufete Gonzalez Olguin to Avino's Mexican Subsidiary Compañía Minera Mexicana de Avino, S.A.de C.V. titled "Avino Mexican Mineral Properties (the 'Properties')", dated February 11, 2020. Michael F. O'Brien, P.Geo., Pr.Sci.Nat., FAusIMM, FSAIMM, who is responsible for the information in Section 4.0, has relied entirely on the information provided by Mr. Bufete González Olguín regarding the claims, which comprise the Avino property, their ownership, and their status in Section 4.0.

The information, conclusions, opinions, and estimates contained herein are based on:

- information available to the authors at the time the report was prepared
- assumptions, conditions, and qualifications as outlined in this report
- production and expenditure data, reports, and other information supplied by Avino and other third-party sources.

Avino reported to the authors that, to the best of its knowledge, there is no known litigation that could potentially affect the Project.

Note: The authors of this report are not qualified to provide extensive commentary on legal or political issues associated with the Property, which are considered to be outside the scope of this Technical Report. For the portions of this Technical Report (Sections 1.2, 4.2, and 4.3) that deal with the types and numbers of mineral tenures and licenses; the nature and extent of title and interest in the Property; and the terms of any royalties, back-in rights, payments, or other agreements and encumbrances to which the Property is subject, we have relied upon the title opinion dated February 11, 2020 by Juan Manuel Gonzalez Olguin of the Mexican law firm Bufete Gonazalez Olguin, S.C., (a copy of which is appended to this report, see Appendix A).

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

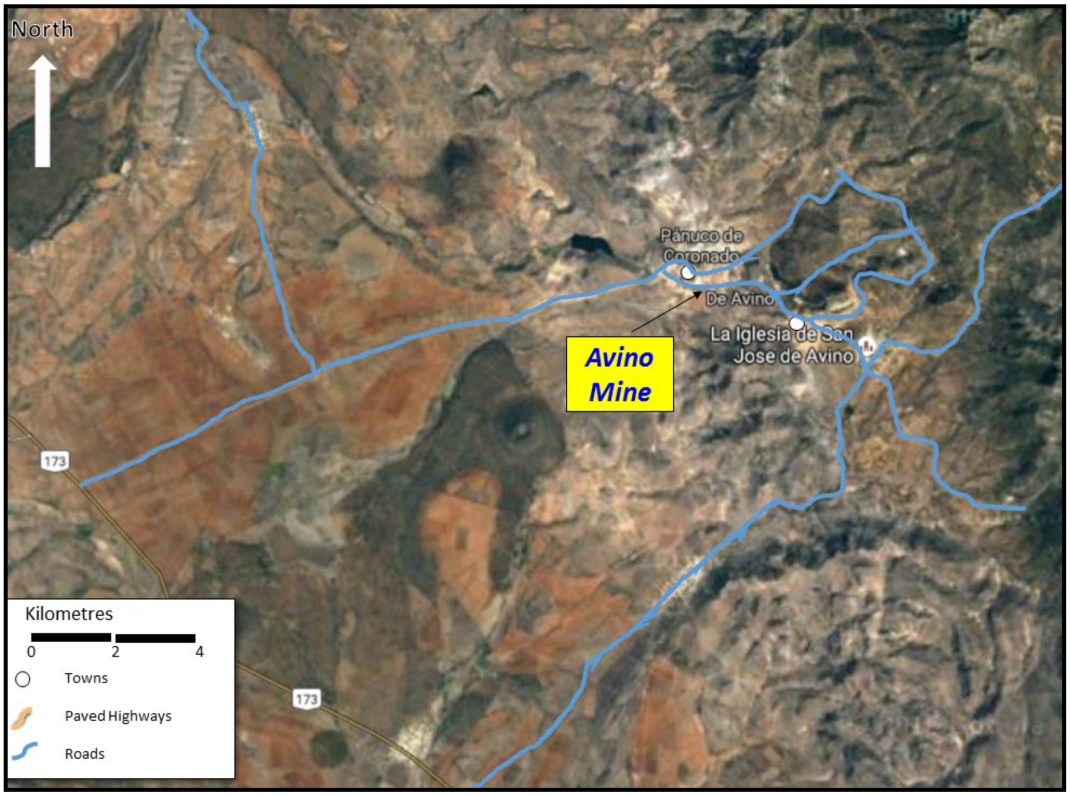
The Property is in Durango State in North Central Mexico, within the Sierra Madre Silver Belt on the eastern edge of the Sierra Madre Occidental mountain range. The nearest major centre is the city of Durango, 82 km to the southwest of the Property. The Property is within the municipality of Pánuco de Coronado between the towns of Pánuco de Coronado and San José de Avino. The Property is located at latitude N 24° 53', longitude W 104° 31', 14 km northwest of Highway 40D.

The Property location is situated as illustrated in Figure 4.1 and Figure 4.2.

Figure 4.1 General Location of the Property

Source: Avino

Figure 4.2 Local Property Location



Source: Avino

4.2 PROPERTY OWNERSHIP

The current Property comprises 23 mineral concessions, totalling 1,103.934 ha.

In 1968, Avino Mines and Resources Ltd. acquired a 49% interest in the company Compañía Minera Mexicana de Avino (CMMA) and Minera San José de Avino SA, which together held mineral claims totalling 2,626 ha (6,488 ac). Avino Mines and Resources Ltd. retained Vancouver based Cannon-Hicks & Associates Ltd. (Cannon-Hicks), a mining consulting firm, to conduct the exploration and development of the Property. Cannon-Hicks's exploration activities included surface and underground sampling and diamond drilling (VSE 1979).

On July 17, 2006, the Company completed the acquisition of Compañía Minera Mexicana de Avino, S.A. de C.V. (Avino Mexico), a Mexican corporation, through the acquisition of an additional 39.25% interest in Avino Mexico, which combined with the Company's pre-existing 49% share of Avino Mexico, brought the Company's ownership interest in Avino Mexico to 88.25%. The additional 39.25% interest in Avino Mexico was obtained through the acquisition of 79.09% of the common shares of Promotora Avino S.A. de C.V., referred to as "Promotora", which in turn owns 49.75% of Avino Mexico's common shares, and the direct acquisition of 1% of the common shares of Avino Mexico.

The July 17, 2006 acquisition was accomplished by a share exchange by which the Company issued 3,164,702 shares as consideration, which we refer to as the "Payment Shares", for the purchase of the additional 39.25% interest in Avino Mexico. The Payment Shares were valued based on the July 17, 2006 closing market price of the Company's shares on the TSX.

The Company acquired a further 1.1% interest in Avino Mexico through the acquisition from an estate subject to approval and transfer of the shares to the Company by the trustee for the estate. On December 21, 2007 approval was received and the Company obtained the 1.1% interest from the estate for no additional consideration.

On February 16, 2009, the Company converted existing loans advanced to Avino Mexico into new additional shares of Avino Mexico. As a result, the Company's ownership interest in Avino Mexico increased to 99.28%.

On June 4, 2013, the Company converted existing loans advanced to Avino Mexico into new additional shares of Avino Mexico, resulting in the Company's ownership increasing by 0.38% to an effective 99.67%. The issuance of shares to the Company by Avino Mexico on June 4, 2013 resulted in a reduction in the non-controlling interest from 0.72% to 0.34%.

On August 26, 2015, the Company converted existing loans advanced to Avino Mexico into new additional shares, resulting in an increase of the Company's ownership by 0.01% to an effective 99.67%. The intercompany loans and investments are eliminated upon consolidation of the financial statements. The Company had a pre-existing effective ownership interest of 99.66% in Avino Mexico prior to the 0.01% increase. The issuance of shares to the Company by Avino Mexico on August 26, 2015, resulted in a reduction in the non-controlling interest from 0.34% to 0.33%.

4.3 MINERAL CONCESSIONS AND AGREEMENTS

The current Property comprises 23 mineral concessions, totalling 1,103.934 ha (Figure 4.3). Of these, 22 mineral concessions totalling 1,005.104 ha, are held by CMMA (Avino's Mexican subsidiary company), Promotora Avino SA de CV, and Susesion de la Sra. Elena del Hoyo Algara de Ysita. Ownership proportions and mineral concessions are summarized in Table 4.1 and Table 4.2, respectively.

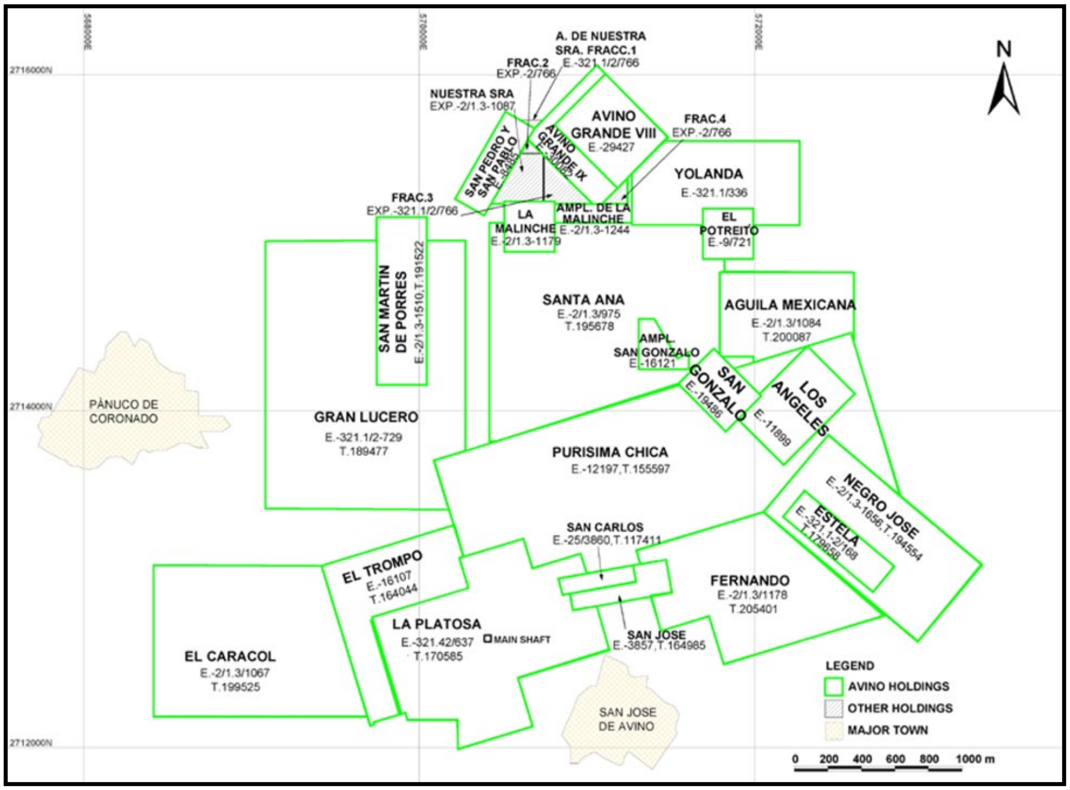
Table 4.1 Summary of Property Ownership

Company	Relationship to Avino Silver and Gold Mines Ltd.	Effective Ownership of Avino Mine Property (%)
CMMA	Subsidiary	98.45
Promotora Avino, S.A. de C.V.	Subsidiary	1.22
Total Effective Ownership of Avino Mine Property	-	99.67
Estate of Ysita	Non-controlling interest	0.33
Total	-	**100.00**

Table 4.2 Mineral Concessions – Avino Property

Concession Name	Concession No.	Location	Hectares (ha)	Date Acquired	Expiration Date	Cost (US$/ha)	Payment (US$)
Agrupamiento San Jose (Purisma Chica)	155597	Pánuco	136.708	30/09/1971	29/09/2021	124.74	17,052.91
Agrupamiento (San Jose)	164985	Pánuco	8.000	13/08/1979	12/8/2029	124.74	997.92
Agrupamiento San Jose (El Trompo)	184397	Pánuco	81.547	13/10/1989	12/10/2039	124.74	10,172.12
Agrupamiento San Jose (Gran Lucero)	189477	Pánuco	161.468	5/12/1990	4/12/2040	124.74	20,141.57
Agrupamiento San Jose (San Carlos)	117411	Pánuco	4.451	5/2/1961	16/12/2061	124.74	555.16
Agrupamiento San Jose (San Pedro Y San Pablo)	139615	Pánuco	12.000	22/06/1959	21/06/2061	124.74	1,496.88
Aguila Mexicana	215733	Pánuco	36.768	12/3/2004	29/06/2044	70.88	2,606.12
Ampliacion La Malinche	204177	Pánuco	6.010	18/12/1996	17/12/2046	124.74	749.72
Ampliacion San Gonzalo	191837	Pánuco	5.850	19/12/1991	18/12/2041	124.74	729.67
Avino Grande Ix	216005	Pánuco	19.558	2/4/2002	1/4/2052	70.88	1,386.24
Avino Grande Viii	215224	Pánuco	22.882	14/02/2002	13/02/2052	70.88	1,621.85
El Caracol	215732	Pánuco	102.382	12/3/2002	28/04/2044	70.88	7,256.84
El Potrerito	185328	Pánuco	9.000	14/12/1989	13/12/2039	124.74	1,122.66
Fernando	205401	Pánuco	72.129	29/08/1997	28/08/2047	124.74	8,997.33
La Estela	179658	Pánuco	14.000	11/12/1986	12/12/2036	124.74	1,746.36
La Malinche	203256	Pánuco	9.000	28/06/1996	27/06/2046	124.74	1,122.66
Los Angeles	154410	Pánuco	23.713	25/03/1971	24/03/2021	124.74	2,957.96
Negro Jose	218252	Pánuco	58.000	17/10/2002	16/10/2052	70.88	4,111.04
San Gonzalo	190748	Pánuco	12.000	29/04/1991	28/04/2041	124.74	1,496.88
San Martin De Porres	222909	Pánuco	30.000	15/09/2004	14/09/2054	70.88	2,126.40
Santa Ana	195678	Pánuco	136.182	14/09/1992	13/09/2042	124.74	16,987.38
Yolanda	191083	Pánuco	43.458	29/04/1991	28/04/2041	124.74	5,420.91
Total	-	-	**1005.106**	-	-	**110.29**	**110,856.58**

Figure 4.3 **Map of Avino Property Concessions**



Source: after Tetra Tech (2013)

In May 1970, Avino Mines and Resources Ltd. signed a formal agreement with Selco Mining and Development (Selco), a division of Selection Trust Company. Due to other commitments, Selco abandoned its interest in the Project in 1973 (VSE 1979). On February 18, 2012, through its subsidiary company CMMA, Avino re-entered into an agreement (the Agreement) with Minerales, whereby Minerales has indirectly granted to Avino the exclusive mining and occupation rights to the La Platosa concession. The La Platosa concession covers 98.83 ha and hosts the Avino Vein and ET Zone.

Pursuant to the Agreement, Avino has the exclusive right to explore and mine the concession for an initial period of 15 years, with the option to extend the agreement for another 5 years. In consideration of the grant of these rights, Avino has paid to Minerales the sum of US$250,000, by the issuance of 135,189 common shares of Avino. Avino will have a period of 24 months for the development of mining facilities.

Avino has agreed to pay to Minerales a royalty equal to 3.5% of NSRs, at the commencement of commercial production from the concession. In addition, after the development period, if the minimum monthly processing rate of the mine facilities is less than 15,000 t, then Avino must pay to Minerales in any event a minimum royalty equal to the applicable NSR royalty based on processing at a minimum monthly rate of 15,000 t. In the event of a force majeure, Avino shall pay the minimum royalty as follows:

- first quarter: payment of 100% of the minimum royalty
- second quarter: payment of 75% of the minimum royalty
- third quarter: payment of 50% of the minimum royalty
- fourth quarter: payment of 25% of the minimum royalty
- in the case of force majeure still in place after one year of payments, payment shall recommence at a rate of 100% of the minimum royalty and shall continue being made as per the quarterly schedule.

Minerales has also granted to Avino the exclusive right to purchase a 100% interest in the concession at any time during the term of the Agreement (or any renewal thereof), upon payment of US$8 million within 15 days of Avino's notice of election to acquire the Property. The purchase would be completed under a separate purchase agreement for the legal transfer of the concession. This agreement replaces all other previous agreements.

During the month of May of each year, Avino must file assessment work made on each concession for the immediately preceding calendar year. During the months of January and July of each year, Avino must pay in advance the mining taxes which are based on the surface of the concession and the number of years that have elapsed since it was issued.

Consistent with the mining regulations of Mexico, cadastral surveys have been carried out for all the listed mineral concessions as part of the field staking prior to recording (Slim 2005d). It is believed that all concessions are current and up to date. Mineral concessions in Mexico do not include surface rights. Avino has entered into agreements with communal land owners (Ejidos) of San José de Avino, for the temporary occupation and surface rights of the concessions.

A current title opinion dated February 11, 2020, has been prepared by Juan Manuel González Olguin of the Mexican law firm Bufete González Olguin S.C. (a copy of which is appended to this report [Appendix A]).

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 TOPOGRAPHY, ELEVATION AND VEGETATION

The average elevation of the Property is approximately 2,200 masl. Local relief is estimated to be roughly 100 m ranging from the bottom bench of the tailings to the top of the open pit.

Vegetation is sparse and consists of shrubs and grasses typical of the high desert.

5.2 ACCESSIBILITY AND LOCAL RESOURCES

The Property is easily accessible by road and the mine is an important employer of the local community from which skilled workers are available. Access is provided by Highway 40, a four-lane highway leading from Durango, past the airport and on to the city of Torreon in Coahuila. Successive turn-offs for the Property are at Francisco I Madero, Ignacio Zaragoza, and San José de Avino (Slim 2005d). The Avino mineral concessions are covered by a network of dirt roads, which provide easy transport access between all areas of interest on the Property and the mill at the Avino Property (Gunning 2009).

The nearest major city is Durango, with a population of approximately 465,000. Durango is a major mining centre in Mexico where experienced labour and services can be obtained. The two towns nearest the mine are Pánuco de Coronado and San José de Avino, where the majority of the employees lived while working at the mine when it was in operation. Pánuco de Coronado has a population of approximately 12,000, and San José de Avino is a small centre with a population of less than 1,000.

5.3 CLIMATE AND LENGTH OF OPERATING SEASON

The climate is temperate and semi-arid. In the region, the mean annual rainfall is 580.6 mm and the average annual temperature is 16.9°C. July and January average temperatures are 21.8°C and 11.3°C, respectively (www.worldclimate.com – Durango). The majority of the rainfall occurs between June and September. In the winter months, the temperature can drop below freezing and frost and even light snowfall can occur.

Exploration, development, and mining activities may take place throughout the year without any significant seasonal impact.

5.4 INFRASTRUCTURE

Infrastructure is disclosed in Section 18.0.

6.0 HISTORY

6.1 AVINO MINE, 1555 TO 1968

The Avino deposit was originally discovered around 1555 by the Spanish conquistador, Don Francisco de Ibarra. In 1562, Francisco de Ibarra, was appointed governor of the newly formed province of Nueva Vizcaya, in the Viceroyalty of Nueva España (New Spain) and, in 1563, founded the town of Durango. Francisco de Ibarra led several expeditions in search of silver deposits in the region and is recognized as having established Minas de Avino, present day Avino Mine; San Martín, Durango; and Pánuco, Sinaloa. Mining operations at the Avino Mine are said to have commenced in 1562–1563 and have been in production until the early 1900s. Operations at the Avino Mine continued up to the onset of the War of Independence (1810) when operations were interrupted but then restarted and continued through to the early 1900s.

In 1880, the mines were taken over by Avino Mines Ltd., a company controlled by American and British interests. The introduction of more modern industrial technology helped the Avino Mine develop into a significant mining operation at the beginning of the 20th century. By 1908, the Avino Mine was considered one of the largest open pit mines in the world and equipped with one of the largest lixification smelters (Gallegos 1960; VSE 1979; Slim 2005d).

During the early phases of the Mexican Revolution in 1910, proceeds from the mine supplied funds to the revolutionary forces. Since much of the fighting occurred in and around Durango and the risk posed by brigands hiding in the mountains was high, the mine was abandoned in 1912.

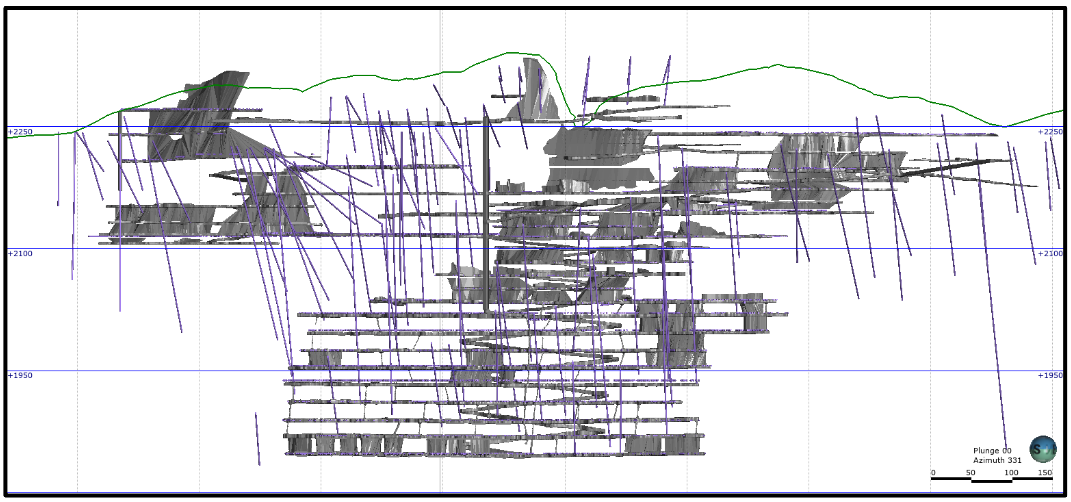
Between 1912 and 1968, the mine was worked intermittently on a small scale (Avino Annual Report 1980). There is no documentary record of production from the Avino Mine during this period.

The Property was acquired under current ownership in 1968.

6.1.1 Avino Vein System Deposit

The Avino Vein system was the mainstay of historic exploitation and is situated adjacent to the mine offices and processing plant. The upper portion of the deposit was extensively mined in an open pit and the lower portion is currently accessible via a ramp and has been extensively developed and mined from more than 6 km of horizontal drifts, with vertical spacings between 15 m and 25 m. The ET Mine workings extend to a maximum depth of 360 m vertically below the portal of the ramp. An old vertical shaft, no longer used for hoisting, is used for ventilation and to supply water and power for development and mining. A vertical section of Avino Mine is shown in Figure 6.1. The western portion of the Avino Vein system is referred to as the San Luis. In 2016–2017, the focus of exploration drilling was on the region between the ET Mine and San Luis. The eastern extension of the Avino Vein system is known as Chirumbo.

Figure 6.1 Elena Tolosa Mine: Vertical Section View Showing Development and Stoping



6.2 San Gonzalo Vein Deposit

Shallow workings from an old mine are present in the San Gonzalo Vein, and consist of small underground workings which were originally accessed by a five-level vertical shaft.

Current access to the San Gonzalo Deposit (SG Mine) is via a ramp that is being actively developed. All old working levels have been dewatered. The deposit has been explored and exploited by more than 4 km of horizontal drifts with upper levels at 40 m vertical spacing and lower levels at 25 m vertical spacing. A vertical section of the San Gonzalo Mine is shown in Figure 6.2.

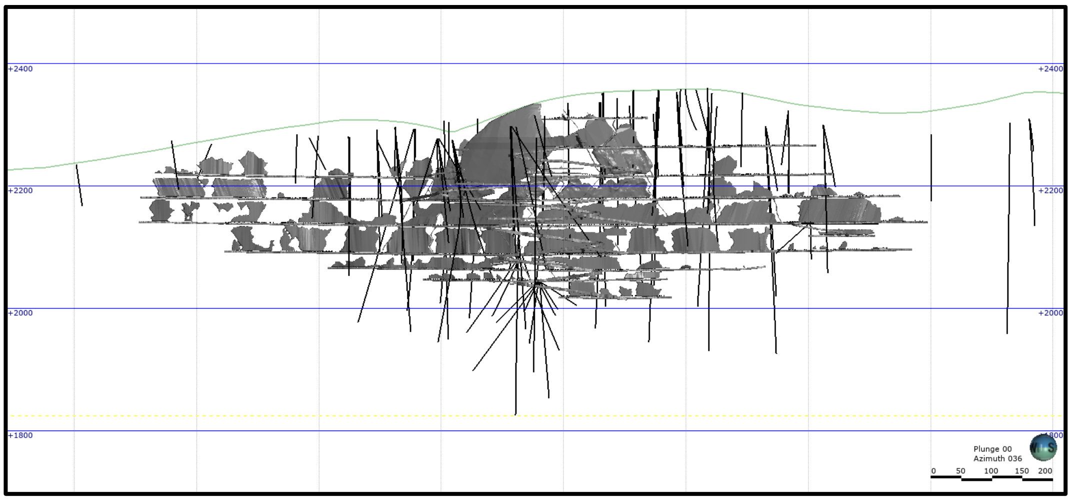
6.3 GUADALUPE VEIN DEPOSIT

The Guadalupe Vein (see Figure 7.1) extends between the Avino Vein and the San Gonzalo Vein and is a current exploration target.

6.4 SAN JUVENTINO VEIN DEPOSIT

The San Juventino Vein (see Figure 7.1) is adjacent to the eastern end of the Avino Vein and is a current exploration target.

Figure 6.2 San Gonzalo Mine: Vertical Section View Showing Development and Stoping



7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Property is located within the Sierra de Gamon, on the east flank of the Sierra Madre Occidental. The area is a geological window into the Lower Volcanic series and consists mainly of volcanic flows, sills, and tuffaceous layers of andesite, rhyolite, and trachyte. Individual rock units typically vary from 300 m to 800 m in thickness. Andesitic rocks outcrop over most of the region with other rock types occurring more sparsely to the north (Slim 2005d).

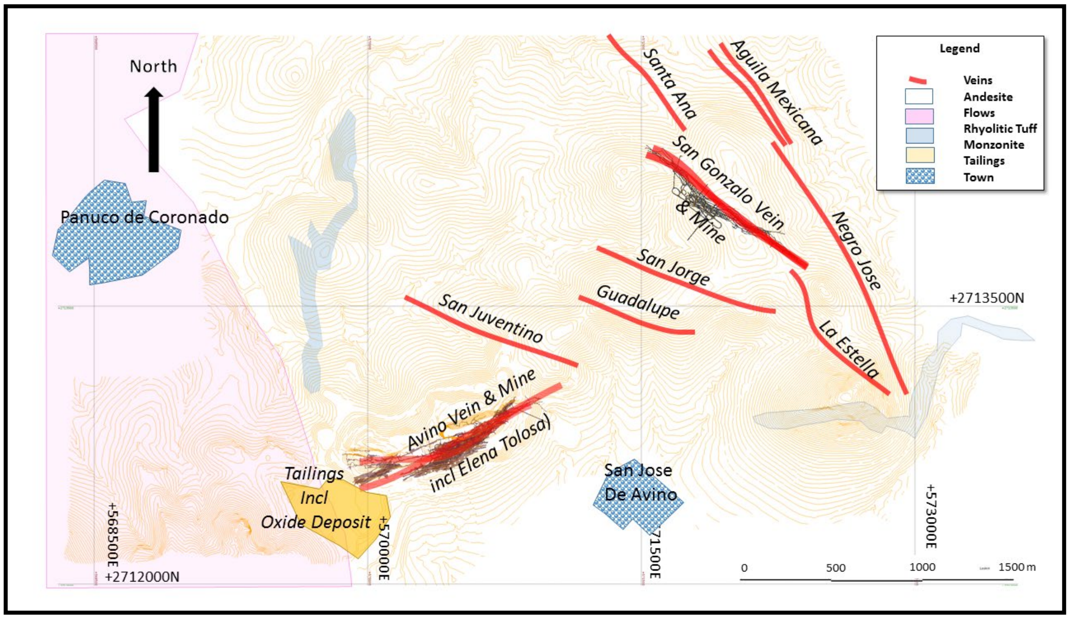
A large monzonitic intrusion is observed in the region in the form of dykes and small stocks, which appear to be linked to the onset of the Avino Vein mineralization. Other post-mineralization dykes of intermediate to felsic composition crop out in various areas and appear to cause minor structural displacements. Occurrences of thin mafic sills are also found in various parts of the region and are believed to be related to recent volcanism.

Higher areas of the Sierra Madre Occidental surrounding the mine are composed of rhyolites and ignimbrites of the Upper Volcanic Series, with thicknesses approaching 1,500 m.

The Laramide orogenic event is believed to have affected the Avino district. Later extrusive and intrusive igneous events appear to have caused the formation of various systems of pre-mineralization faulting. These fault systems usually produced normal displacement of the pre-existing rocks, and generally strike northwest–southeast (subparallel to the Avino Vein system). Additional normal fault systems are also observed in the region, striking northeast–southwest and dipping towards the south (subparallel to the San Gonzalo Vein system).

The rugged topography is a result of erosion of the post-mineralization faulted blocks. One of the most significant regional features of the district is the Avino Fault which strikes northwest 20° southeast, dips southeast and which appears to terminate the Avino Vein mineralization, juxtaposing the Upper and Lower Volcanic series (Figure 7.1).

Figure 7.1 General Map of Property Geology



Source: Avino

7.2 PROPERTY GEOLOGY AND MINERALIZATION

The Avino concession is located within a 12 km (north–south) by 8.5 km (east–west) caldera. The Property contains numerous low-sulphidation epithermal veins, breccias, stockwork, and silicified zones that grade into a "near porphyry" environment, particularly in the Avino Mine area. The caldera has been uplifted by regional north-trending block faulting (a graben structure), exposing a window of andesitic pyroclastic rocks of the lower volcanic sequence within the caldera. The Lower Volcanic Sequence is overlain by the Upper Volcanic Sequence, consisting of rhyolite to trachyte flows and extensive ignimbrites and intruded by monzonite bodies.

The basal andesite-bearing conglomerate and underlying Paleozoic basement sedimentary rocks (consisting of shales, sandstones, and conglomerates) have been identified on the Avino concession in the south-central portion of the caldera, covering the Guadalupe, Santiago, San Jorge, the San Gonzalo Trend, Malinche, Porterito, and Yolanda areas. A northerly trending felsic dyke, possibly a feeder to the upper volcanic sequence, transects the Property and many of the veins. The Aguila Mexicana low temperature vein system, trends north-northwest at a similar orientation to the felsic dyke and with similar continuity across the Property. The two structures have been interpreted to occur along deep crustal faults that controlled volcanism and mineralization, with the felsic dyke structure controlling the emplacement of the Avino, Nuestra Senora and El Fuerte-Potosina volcanic centres and the Aguila Mexicana structure controlling the Cerro San Jose and El Fuerte-Potosina volcanic centres (Paulter 2006).

Silver- and gold-bearing veins cross-cut the various lithologies and are generally oriented north-northwest–south-southeast and northwest–southeast (Figure 7.1). The rocks have been weathered and leached in the upper sections, as a result of contact with atmospheric waters; the oxide tailings material (Section 7.2.3) is primarily from this source, whereas the sulphide tailings are predominantly from material sourced at depth, below the leached zone. In Mexico, these types of deposits can have large lateral extents, but can be limited in the vertical continuity of grades.

In the oxide zone, mineralization is primarily hosted by the minerals argentite, bromargyrite, chalcopyrite, chalcocite, galena, sphalerite, bornite, native silver, gold, and native copper. Other minerals present in mineralized areas, but not hosting the metals of interest, include hematite, chlorite, quartz, barite, pyrite, arsenopyrite, and pyrrhotite. Malachite, anglesite, and limonite are common in the quartz zones of the weathered parts of the oxide material.

7.2.1 AVINO VEIN

Geology and mineralization of the Avino Vein are summarized from Slim (2005d).

The Avino Vein is 1.6 km long and 60 m wide on the surface. The Avino Vein is the most striking and important example of the epithermal mineralization of the district whose structures are normally weathered and leached in their upper section as a result of contact with atmospheric waters producing a band of oxide minerals and zones of supergene enrichment to a depth of about 70 m.

In the oxide portion of the Avino Vein, the common minerals encountered include hematite, limonite, anglesite, and copper carbonate in white or green, somewhat chloritized, quartz zones. The common primary and secondary minerals encountered are argentite, bromargyrite, chalcopyrite, chalcocite, galena sphalerite, bornite, native silver, free gold, and native copper. Other minerals present in mineralized areas include quartz, pyrite, chlorite, barite, arsenopyrite, pyrrhotite, and specularite.

Higher silver values are reported to decrease overall with depth, except at vein intersections and vein inflections, where higher values persist to depth. The same can be said for gold, although the higher values start just below the onset of silver mineralization, at or near the surface. In contrast, higher copper values coincide with vein intersections and may increase with depth. Sporadic, localized copper enrichment occurs toward the footwall contact and may represent a different phase of fluid emplacement. Despite the overall decrease in precious metal grade with depth, local increases in metal grades are apparent in the mine sampling and exploration drilling, possibly reflecting changes in boiling level with pressure variations in the epithermal system.

The Avino Vein has been followed longitudinally for more than 1,300 m and vertically for more than 600 m. It strikes north 66° east with an east-west splay, and dips to the south and southeast at 60° to 70°. Steeply dipping, high grade zones within the vein and stock-work zones are frequently found in the upper part of the vein, as well as at its intersections with a number of lateral veins. An example of a higher-grade area of mineralization encountered with major lateral vein intersecting the Avino was the

El Hundido, which exceeded 40 m in thickness. In the lower areas of the vein and mine, mineralized cross-veins, branch-veins, and stockwork zones have been found in the footwall at San Luis and at El Hundido, and are assumed to persist with depth.

The hanging wall of the Avino Vein is andesite, while the footwall is a monzonite intrusive with andesite sections. A post-mineralization fault parallel with the vein occurs in the hanging wall at a distance of several metres in the area of San Luis, while in the central part of El Hundido, this fault is located at the contact with the vein over a distance of about 300 m, up to the area of Santa Elena and San Antonio. From that point, and proceeding toward the El Chirumbo Mine, this fault cuts the vein between the face at San Carlos and the exposure at the underground ramp. The fault then enters the footwall where it remains until a point about 30 m east of the west face of the Chirumbo area, producing a downward displacement of the vein of between 50 m to 100 m.

At Chirumbo, the fault largely replaces the vein due to strong leaching by post-mineralization circulating of water in the gouge. On the east face at Chirumbo, the fault again enters the hanging wall; in this zone the vein is composed of branches and stockwork, and to the east of this point, the fault crosses the vein numerous times.

The deposit is epithermal and made up of veins and dependent stockwork structures, mainly in the hanging wall and often associated with vein intersections. Four vein systems have been described which, in decreasing order of importance, are:

- system striking east–west, dipping south at 60° to 70°, including the Avino Vein and its possible extension in the Cerro de San Jose
- system striking north 60° to 70° west, dipping 60° to 80° southwest, comprising the following important veins: El Trompo, San Juventino, San Jorge, Platosa, Los Reyes, Potosina, El Fuerte, and Conejo
- system striking north 20° to 30° west, dipping between 60° to 80° to either the southwest or northeast, comprising the following significant veins: San Gonzalo, Aguila Mexicana, and La Calcita, as well as the Stockwork La Potosina, and the Stockwork El Fuerte
- systems striking north 60° to 80° east, dipping 60° to 80° southeast, comprising the following veins: Santiago, Retana, Nuestra Senora, and San Pedro and San Pablo.

Alteration has been reported in three main types:

- Propylitic alteration is most common in andesite, giving the andesite a greenish tint.
- Argillaceous alteration appears mainly in the upper parts of the veins and manifests itself as a whitening of the country rock due to alunite and montmorillonite clays.
- Silicification, chloritization, and pyritization alteration is observed in the hanging wall and footwall, and is more prominent closer to the vein.

7.2.2 SAN GONZALO VEIN

The San Gonzalo Vein is located approximately 1.4 km northeast of the eastern modelled extent of the Avino Vein. The San Gonzalo Vein system constitutes a strongly developed vein system over 25 m wide, trending 300° to 325°/ 80° northeast to 77° south. It is characterized by banded textures and open-space filling. The main vein has an average width of 2 m, but the silica-pyrite or iron oxide-sericite alteration with additional stock working extends across 300 m, south of the main San Gonzalo Vein to the Los Angeles Vein.

The San Gonzalo is a typical narrow vein precious metal deposit with some erratic values and extends approximately 2 km to the northwest to the Santa Ana-Malinche area (Gunning 2009).

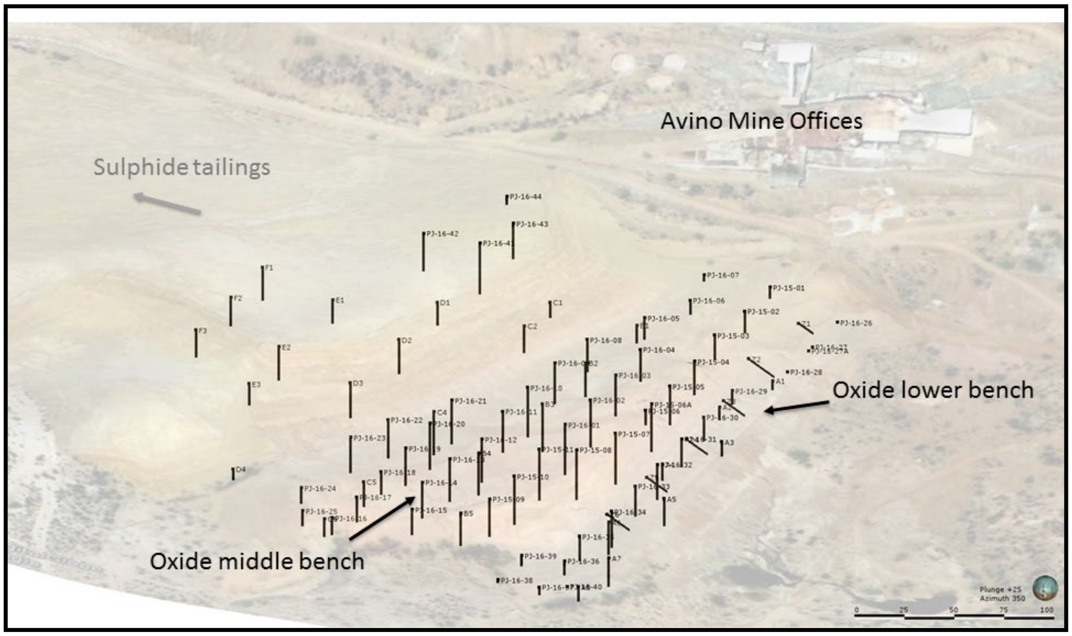
The Cerro San Jose-La Estella-San Gonzalo Cerro San Jose represents a distinct hydrothermal centre with similar characteristics to the Avino system, which include the following (Paulter 2006):

- occur on a topographic high
- strong to intense silicification and brecciation
- easterly trending stockwork system similar to the trend of the Avino Vein
- similar temperatures of formation to Avino
- presence of an intersecting northwesterly trending vein system (la Estella at San Jose and San Juventino at Avino)
- emplacement along a northerly trending, deep crustal fault zone (defined by the Aguila Mexicana Vein at Cerro San Jose and the felsic dyke at Avino).

7.2.3 OXIDE AND SULPHIDE TAILINGS

The Avino tailings dam is located approximately 500 m west-southwest of the main shaft to the old underground workings and 2.5 km southwest of the San Gonzalo Vein. An orthogonal view of the oxide tailings deposit, looking northwards and with the drillholes indicated, is shown in Figure 7.2.

Figure 7.2 Orthogonal View of the Oxide Tailings Deposit and Drillholes



Source: Red Pennant

Within the tailings dam, there are three distinct benches:

- lower oxide bench
- middle oxide bench
- upper bench or sulphide bench.

Due to the historical processing sequence, the oxide tailings are primarily derived from weathered and oxidized rocks close to the surface on the Property, whereas the sulphide tailings are predominantly derived from material sourced at depth from the underground workings, below the weathered/leached zone.

The oxide tailings (both the middle and lower benches) have been analyzed in greater detail than the sulphide tailings and are included in the current Mineral Resource for the oxide tailings. The sulphide tailings, in the absence of any definitive sampling data penetrating the depth of the pile, are an exploration target (Section 14.15).

8.0 DEPOSIT TYPES

Regionally, the Property is situated within a 12 km by 8.5 km caldera that hosts numerous low- to intermediate-sulphidation silver-gold epithermal veins, breccias, stockwork, and silicified zones, grading into a "near porphyry" environment in the Avino Property.

The historic mining on the Property was on the Avino Vein, a silver-gold-copper rich epithermal vein. The San Gonzalo Vein, however, has a much lower copper content than the Avino Vein and is more equivalent to other silver-lead-zinc deposits of the Sierra Madres.

Low-sulphidation vein systems are commonly characterized by low concentrations of sulphide minerals, alteration mineralogy dominated by quartz-adularia-sericite, and a lack of extensive wall-rock alteration. Conversely, high-sulphidation vein systems are commonly characterized by sulphur saturation leading to the presence of native sulphur and sulphide minerals, quartz-alunite alteration, and extensive wall-rock alteration. The Mexican silver deposits are usually within the intermediate sulphidation range, rather than either of the end member classifications.

In Mexico, and particularly within the Mexican Silver Belt, these types of deposits can have large lateral extents, but may be limited vertically. There are many silver-gold mines in Mexico, some of which form large mining districts, and others that exploit multiple veins over limited vertical horizons that are sometimes only 100 m in depth (Gunning 2009).

On the Property, the oxide tailings have been predominantly sourced from earlier open pit operations and the sulphide tailings have been predominantly sourced from later underground workings. Exposure to surface weathering and historic process activities has homogenised the oxide tailings material to produce a deposit with little or no sulphides.

9.0 EXPLORATION

9.1 EARLY EXPLORATION (PRIOR TO MINE CLOSURE), 1968 TO 2001

Exploration on the Property has been ongoing since before production commenced, and the majority of the recorded work has been focused on the main Avino Vein and surrounding area. The following is a summary of significant exploration work conducted either by Avino, or on behalf of Avino, until the mine closed in 2001.

Pre-production exploration was carried out by CMMA and others, and covered 2,500 m of drifting and cross-cuts, as well as 8,000 m of surface and underground diamond drilling. Extensive rehabilitation was completed involving Selco, including connecting three of the old—possibly pre-1900—underground mine workings.

In 1970, a contract was signed with Selco, who spent more than US$1 million in exploration and FSs before returning the Property back to CMMA in 1972, reportedly because of low metal prices. The majority of the documentation examined covered feasibility work and was related to investigations of old underground workings that were likely developed in the late 1800s. A contract was signed in October 1973 with S.G.L. Ltd. and Sheridan Geophysics Ltd., under which a new 500 t/d plant was completed in May 1974.

Since 1992, exploration in/for the mine has been limited to traditional underground mine development with associated sampling and planning for production feed. In the late 1990s it appears that development was not kept up as company monthly reports showed decreasing historical reserve allocations for production and mill feed.

The only recorded property exploration, apart from limited prospecting, is documented in the 1993 report by Servicios Administratos Luismin, SA de CV, the engineering branch of Cía Minera de San Luis Exploration. The study reported on detailed analysis and sampling of the then known showings on the Property with the emphasis on the Avino Vein and Potosina/El Fuerte area. The extensive underground sampling program carried out by Luismin provided later direction for underground mining. The report made recommendations for follow-up for drilling and underground development for the main Avino Vein, as well as trenching and drilling recommendations for the Potosina/El Fuerte area. It is believed that these recommendations were never implemented for the prospective areas. Additionally, the report included a property-scale geological mapping and lithogeochemical sampling program, which was contoured and coloured for gold, silver, copper, lead, zinc, arsenic, antimony, and mercury.

Other notable observations from the study include the following:

- All mineralization, except for Nuestra Senora and Potosina / El Fuerte radiate outwards in a west to north-west direction from the Cerro San Jose. The Cerro San Jose is a silicified and partly hornfelsed body of volcanic rock probably overlying an intrusive stock, which could have been the source of most mineralization on the Property.
- Mineralization in all radiating structures is described as being strongest 2 km to 3 km from Cerro San Jose. This resembles many of the gold deposits in Nevada where the source of mineralization is a near surface acid-intrusive but with mineralized bodies lying 1 km to 5 km away along high angle faults.
- The two strongest and widest structures appear to be the Avino and Aguila Mexicana veins.
- The Avino Vein has three main mineralized zones—San Luis, ET (La Gloria / Hundido) and Chirumbo areas—which rake to the west and are open at depth.
- The existence of other mineralization cutting the Cerro San Jose mineralization in the Nuestra Senora and Potosina / El Fuerta areas could offer the potential for bulk mineable stockwork zones.

Assay values from outcrop sampling of surface-mapped veins towards the San Jose hill ranged from lows of 2 g/t silver and trace gold over true thicknesses from 0.1 m to 2.3 m up to a high of 755 g/t silver with a corresponding 1.5 g/t gold over a thickness of 0.45 m.

No systematic sampling, trenching, or drilling of either the outcrops or the veins is known to have occurred during the program undertaken in 1993.

9.2 RECENT EXPLORATION, 2001 TO PRESENT

Since mine closure in 2001, Avino has intermittently conducted exploration work on the Property, with the intention of expanding and better defining known areas of mineralization. Historic near-to-surface mining activities are being relied upon for guidance, and modern techniques are being employed to integrate, manage, and interpret results. Included in the list of exploration activities is an induced polarization (IP) geophysical survey, 1,500 soil samples, satellite imagery, mapping, trenching, tailings investigations, bulk sampling, and underground channel sampling.

9.2.1 Tailings Investigations (Oxides), 2003 and 2004

Two specific mineralogical assessments were conducted in 2003 and 2004 on samples from the tailings on the Property. The purpose of the program was to provide data for independent investigation of the 1990 drilling results on the oxide tailings (discussed in Section 10.0) in terms of verifying assay grades and volumes, as well to examine the metallurgical characteristics of the material. The results and implications of these findings are discussed further in Section 13.0.

The following information regarding the 2004 sampling is summarized from Slim (2005d).

The 2004 tailings field-work was under the direction of MineStart and excavation of the sample pits was under contract to Desarrollos Rod Construcciones of Durango. Given the hydraulic deposition of the tailings, four important factors required examination: anomaly characteristics of the samples and total population, assay comparison by fence, examination of downstream decrease in assays, and factors arising from the downstream construction.

Comparison of the 2004 assays with those from 1990 show consistency in assay values and provide confidence in the 1990 sampling and assaying program.

The preliminary investigations in 2003 showed the need for a sampling of the oxide tailings to validate the assay results of the 1990 drilling and to carry out metallurgical characterization, the latter requiring large samples.

The sampling exercise carried out in 2004, using shallow (4 m deep) backhoe trenches and hand-dug pits, represented a local corroboration of the previous sampling but could not be considered to constitute a representative random sampling of the oxide tailings.

The trench sampling material (Z-series) from the 1993 campaign was also considered to be non-representative.

9.2.2 Tailings Sampling (Sulphides), 2005

Some sampling was carried out in 2005 by means of hand-dug pits on the “upper bench” of sulphide tailings. The silver and gold values generally ranged from 40.0 g/t to 100.0 g/t and 0.3 g/t to 0.6 g/t, respectively. While these values give a general idea of the potential grade of the sulphide tailings, they have not been verified to be representative of the sulphide tailings, even at a local scale.

9.2.3 Bulk Sample Program of San Gonzalo Vein, 2011

Avino completed a 10,000 t bulk sample program at the San Gonzalo deposit following a comprehensive review of the data and discussions with Tetra Tech. The bulk sample feed grade was 261 g/t silver and 0.9 g/t gold. Silver and gold recoveries were stated to be 76% and 59%, respectively, and 232 dry tonnes of flotation concentrate were produced.

9.2.4 UNDERGROUND CHANNEL SAMPLING OF SAN GONZALO AND AVINO VEINS, 2010 TO PRESENT

Underground channel sampling began in 2010 and has continued to the present at ET Mine (Avino Vein system) and San Gonzalo Mine. Channel sampling generated since 2010 data are summarized in Table 9.1 and Table 9.2.

Table 9.1 Summary Underground Channel Sampling by Level for the Avino (ET) Underground Mines

Level	Elevation (m)	Number of Channels	Total Sampled (m)	Average Channel Length (m)	Ag (g/t)	Au (g/t)	Cu (%)
6.5	2,271.0	97	373.6	3.9	113.01	0.98	0.51
7	2,241.8	195	1,197.6	6.1	72.50	0.42	0.44
7.5	2,212.8	33	230.5	7.0	66.15	0.49	0.50
8	2,199.1	79	486.3	6.2	141.32	1.14	0.22
8.5	2,171.9	87	576.9	6.6	123.19	1.37	0.48
9	2,147.1	178	1,343.8	7.5	121.65	1.52	0.57
9.5	2,128.0	84	768.2	9.1	122.42	2.26	0.76
10	2,115.0	399	2,905.9	7.3	72.12	0.60	0.49
10.5	2,101.0	207	1,468.0	7.1	106.90	0.77	0.65
11	2,083.0	127	1,214.7	9.6	87.57	0.48	0.73
11.5	2,067.2	171	1,289.9	7.5	89.65	0.44	0.63
12	2,051.0	133	1,092.0	8.2	94.87	0.41	0.76
12.5	2,034.3	173	1,356.5	7.8	84.94	0.51	0.69
13	2,016.1	106	645.8	6.1	61.64	0.24	0.63
13.5	1,995.5	75	386.3	5.2	57.01	0.24	0.51
14	1,975.0	107	578.0	5.4	54.56	0.13	0.52
14.5	1,954.3	419	2,622.4	6.3	54.18	0.38	0.56
15	1,932.5	390	2,341.1	6.0	63.98	0.48	0.58
15.5	1,910.0	379	2,182.4	5.8	59.15	0.41	0.57
16	1,886.5	63	433.6	6.9	49.69	0.28	0.51

Table 9.2 Summary of Underground Channel Sampling by Level for the San Gonzalo Mine

Level	Elevation (m)	Number of Channels	Total Sampled (m)	Average Channel Length (m)	Ag (g/t)	Au (g/t)	Cu (%)
1	2,311.9	114	272.8	2.4	157.65	0.43	-
2	2,265.3	314	840.6	2.7	115.75	0.40	-
3	2,218.3	378	1,046.1	2.8	119.92	0.41	-
4	2,180.0	685	1,814.2	2.6	241.59	1.15	-
5	2,138.5	740	2,031.9	2.7	285.70	1.57	-
6	2,091.8	603	1,667.8	2.8	186.70	1.14	-
6.5	2,064.4	243	682.4	2.8	177.17	0.86	-
7	2,046.9	190	517.4	2.7	111.50	0.71	-
7.5	2,020.0	114	295.6	2.6	179.90	1.01	-

9.2.5 UNDERGROUND CHANNEL SAMPLING OF SAN GONZALO AND ANGELICA VEINS, 2010 TO PRESENT

Underground channel sampling began in 2010 and has continued to the present. Channel sampling between 2010 and 2012 was summarized in Tetra Tech (2013). Results of underground sampling since 2013 are summarized in Table 9.2.

Figure 9.1 and Figure 9.2 show the location of all channels, colour coded by grade, included in the current resource estimate (Section 14.2), within and adjacent to the Avino and San Gonzalo Vein systems respectively. Drillholes are also shown for orientation.

Figure 9.1 Channel and Drillhole Samples, Colour Coded by Silver Grade, within the Avino System

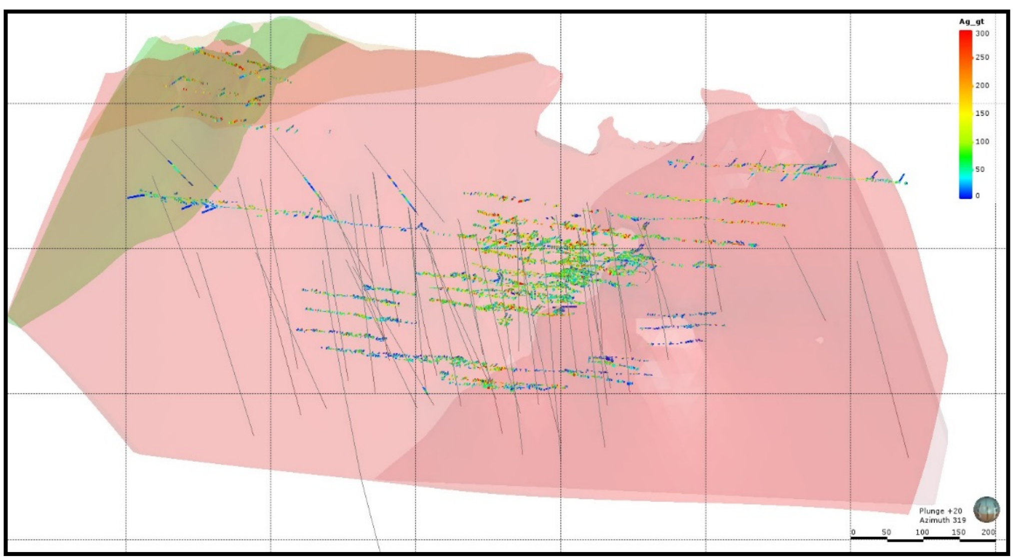
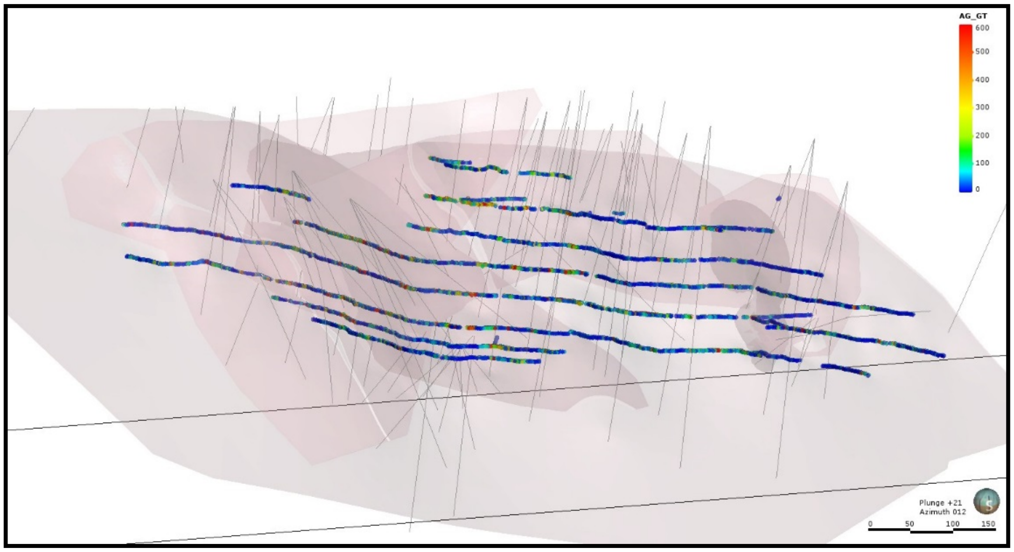


Figure 9.2 Channel Samples, Colour Coded by Silver Grade, within the San Gonzalo Vein System



10.0 DRILLING

Drilling activities performed by Avino since acquisition of the Property are summarized in the following sections. Drillhole assay results have been previously reported (except ET-12-07 to ET-12-09; Appendix A) by Gunning (2009), Tetra Tech (2012), and Tetra Tech (2013) and are not disclosed here.

The most recent exploration drilling was carried out in 2018 and is summarised in Table 10.1. The location of this 2018 drilling is summarised in Figures 10.1 (ET section) and 10.2 (San Gonzalo section) where the holes are indicated by red traces.

Table 10.1 Exploration Drilling 2018

Hole	Azimuth (°)	Dip (°)	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Target Zone
AM_18_01	61.5	-29.7	572342.4	2713762.1	2094.3	363.0	Aguila_Mexicana_Vein
AM_18_02	42.2	-15.4	572343.1	2713764.2	2094.5	290.0	Aguila_Mexicana_Vein
AM_18_03	62.0	-15.5	572343.6	2713762.5	2094.7	295.2	Aguila_Mexicana_Vein
ET_18_01	337.0	-55.2	571011.1	2712974.1	2231.2	102.5	Avino_Vein
ET_18_02	340.0	-38.0	570841.9	2712720.6	2231.8	318.1	Avino_Vein
ET_18_03	154.9	-29.4	570403.4	2712912.4	2336.2	118.6	Avino_Vein
ET_18_04	155.5	-44.9	570403.4	2712912.4	2336.2	120.8	Avino_Vein
ET_18_05	153.5	-33.7	570445.8	2712940.4	2335.9	105.6	Avino_Vein
ET_18_06	153.3	-23.4	570445.8	2712940.4	2335.9	85.1	Avino_Vein
ET_18_07	155.1	-33.3	570489.1	2712962.8	2337.4	113.9	Avino_Vein
ET_18_08	156.6	-20.0	570489.1	2712962.8	2337.4	96.2	Avino_Vein
ET_18_09	336.2	-34.6	570418.0	2712758.5	2321.7	65.6	Avino_Vein
ET_18_10	334.5	-59.6	570418.0	2712758.5	2321.7	65.8	Avino_Vein
ET_18_11	334.6	-20.1	570390.4	2712757.4	2323.1	52.8	Avino_Vein
ET_18_12	334.5	-53.0	570390.4	2712757.4	2323.1	59.9	Avino_Vein
ET_18_13	336.1	-26.3	570362.0	2712757.8	2324.6	40.6	Avino_Vein
GPE_18_01	208.5	-43.5	571349.4	2713700.1	2285.9	179.8	Guadalupe_Vein
GPE_18_02	177.2	-43.4	571503.9	2713558.0	2311.3	134.1	Guadalupe_Vein
GPE_18_03	180.8	-22.0	571553.4	2713519.6	2326.6	72.7	Guadalupe_Vein
GPE_18_04	179.3	-48.3	571603.8	2713521.3	2332.2	118.9	Guadalupe_Vein
GPE_18_05	169.1	-38.5	571538.1	2713586.2	2307.4	158.2	Guadalupe_Vein
GPE_18_06	208.8	-45.4	571366.8	2713800.7	2242.4	290.5	Guadalupe_Vein
GPE_18_07	209.2	-47.9	571253.2	2713776.7	2247.6	218.8	Guadalupe_Vein
GPE_18_08	178.8	-44.9	571599.8	2713695.4	2291.8	290.6	Guadalupe_Vein

table continues…

Hole	Azimuth (°)	Dip (°)	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Target Zone
SG_18_01	217.9	-17.2	571549.9	2714351.4	2285.1	102.2	San_Gonzalo_Vein
SG_18_02	217.8	-43.7	571583.4	2714349.8	2283.2	121.4	San_Gonzalo_Vein
ST_18_01	146.8	-53.8	571713.5	2714264.5	2296.5	211.0	Santiago_Vein
ST_18_02	165.0	-65.3	571812.3	2714288.5	2304.5	249.2	Santiago_Vein
ST_18_03	319.1	-61.0	571769.5	2714095.2	2314.3	181.9	Santiago_Vein

Historic drillholes and drillholes drilled since 2007 are summarized in Appendix B.

10.1 Early Drilling (Prior to Mine Closure), 1968 to 2001

10.1.1 Avino Vein

Between 1968 and 2001, at least 25 diamond drillholes, ranging in length from 132.20 to 575.20 m, are reported to have been drilled from surface into the Avino Vein. Included in this total are 10 holes that were drilled by Selco in 1970 when they were re-habilitating some of the old underground workings to provide access for sampling (Slim 2005d). No further information on these drillholes was available to the QP, and they are not included in the resource estimate for the Avino Vein.

10.1.2 Oxide Tailings, 1990 to 1991

Between November 10 and December 5, 1990 and March 8 and May 30, 1991, Avino completed six trenches and 28 vertical drillholes in the tailings (Table 10.1) along 7 fences at a spacing of roughly 50 m by 50 m (Figure 10.1) (Benitez Sanchez 1991). Drilling was completed transversely to the drainage pattern of the tailings. Cut at 1 m vertical increments, 461 samples were assayed for silver and gold at the mine assay lab and occasional moisture contents were reported. Assay results from these drillholes have been previously reported (Tetra Tech 2012). Although the Z-series trenches are included in Table 10.1 and Figure 10.1, they are not included in the oxide tailings resource estimate (Section 14.3) as they are not considered representative of the tailings at a local scale (see Section 9.2.1). During 2015 and 2016 further drilling was carried out on the oxide tailings.

10.2 Recent Drilling (Post-mine Closure), 2001 to Present

A total of 112 drillholes with a total length of 26,907 m have been completed on the Avino Vein system and 140 holes 26,026 m on the San Gonzalo Vein system, totalling 252 holes and 52,933 m of core drilling. Additional exploration holes have been drilled elsewhere on the Property, but those drilling results are not considered material. Most holes were surveyed downhole using a Tropari single-shot magnetic instrument.

10.2.1 AVINO VEIN

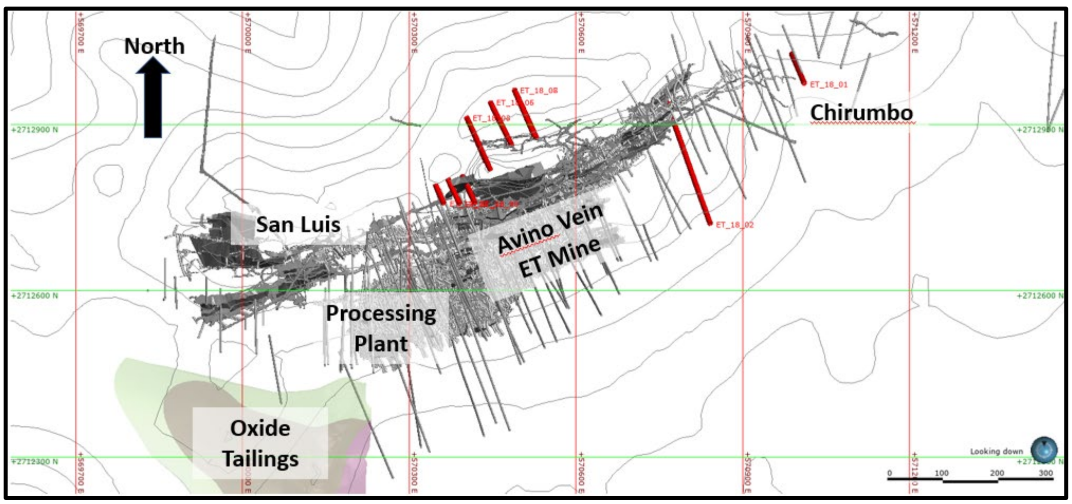
In 2016, 5,510 m (34 holes see Figure 10.1) were drilled in an infill program in the San Luis / Avino Vein system. In 2017, 1,478 m (7 holes, see Figure 10.1) were drilled in the Chirumbo section (eastern extension) of the Avino Vein. In 2018, 1,345 m (13 holes, see Figure 10.1) were drilled north of the historic open pit and in the Chirumbo section on the Avino Vein.

A total of 25,845 m (97 holes, see Table 10.1) of documented drilling has been used for Mineral Resource estimation on the Avino Vein system.

10.2.2 SAN GONZALO VEIN

A total of 23,804 m (105 holes, see Table 10.2 of documented drilling has been used for Mineral Resource estimation on the San Gonzalo Vein system.

Figure 10.1 Drillholes Completed in 2018 on the Avino Vein System, ET Mine. 2018 drill traces in red, previous drilling in black.

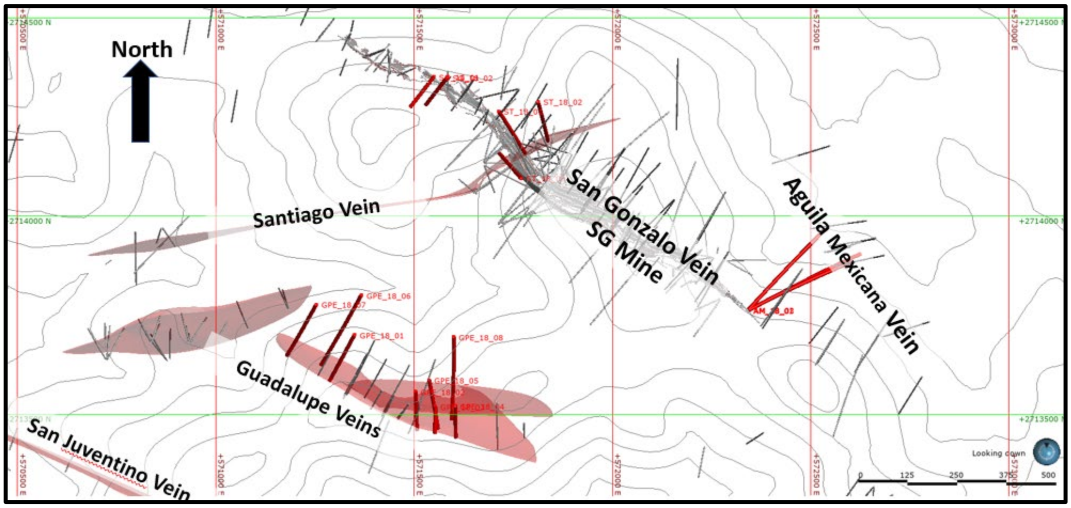


Source: Red Pennant

10.2.3 SAN JUVENTINO AND GUADALUPE VEINS

During 2016 and 2017, exploration drilling was carried out on the San Juventino and Guadalupe veins (see Figure 10.2 and Table 10.3). These veins are strategically well-positioned close to and between the ET and San Gonzalo mining operations. A total of 936 m (six holes) of documented drilling has been drilled on the Guadalupe Vein. A total of 846 m (five holes) of documented drilling has been drilled on the San Juventino Vein.

Figure 10.2 Location of 2018 Drillholes on the San Gonzalo, Santiago, Guadalupe, and Aguila Mexicana Veins



Source: Red Pennant

10.2.4 Oxide Tailings

During 2015 and 2016, Avino drilled 57 new holes on the oxide tailings deposit. Collar coordinates are provided in Table 10.2. Drillholes completed before 2015 on the oxide tailings have been previously reported (Tetra Tech 2013). A location map of oxide tailings drillholes is provided in Figure 10.3. The 2015/16 holes are indicated in red.

Table 10.2 Drillholes Drilled on Oxide Tailings 2003 to 2016

Hole ID	Azimuth (°)	Dip (°)	Easting (m)	Northing (m)	Elevation (m)	Depth (m)
A1	0	90	570205	2712340	2,203.8	5.2
A2	0	90	570184	2712306	2,203.5	7.2
A3	0	90	570192	2712267	2,203.1	8.2
A4	0	90	570167	2712236	2,203.0	9.2
A5	0	90	570175	2712197	2,202.9	15.2
A6	0	90	570152	2712167	2,202.0	18.2
A7	0	90	570159	2712128	2,201.0	16.2
A8	0	90	570150	2712094	2,200.4	8.2
B1	0	90	570132	2712365	2,217.1	10.2
B2	0	90	570114	2712318	2,216.7	19.2
B3	0	90	570101	2712268	2,216.4	26.6
B4	0	90	570079	2712207	2,216.1	23.7
B5	0	90	570082	2712140	2,214.3	18.2
C1	0	90	570085	2712383	2,217.6	8.7
C2	0	90	570077	2712354	2,217.1	15.2
C4	0	90	570049	2712250	2,216.1	24.2

table continues…

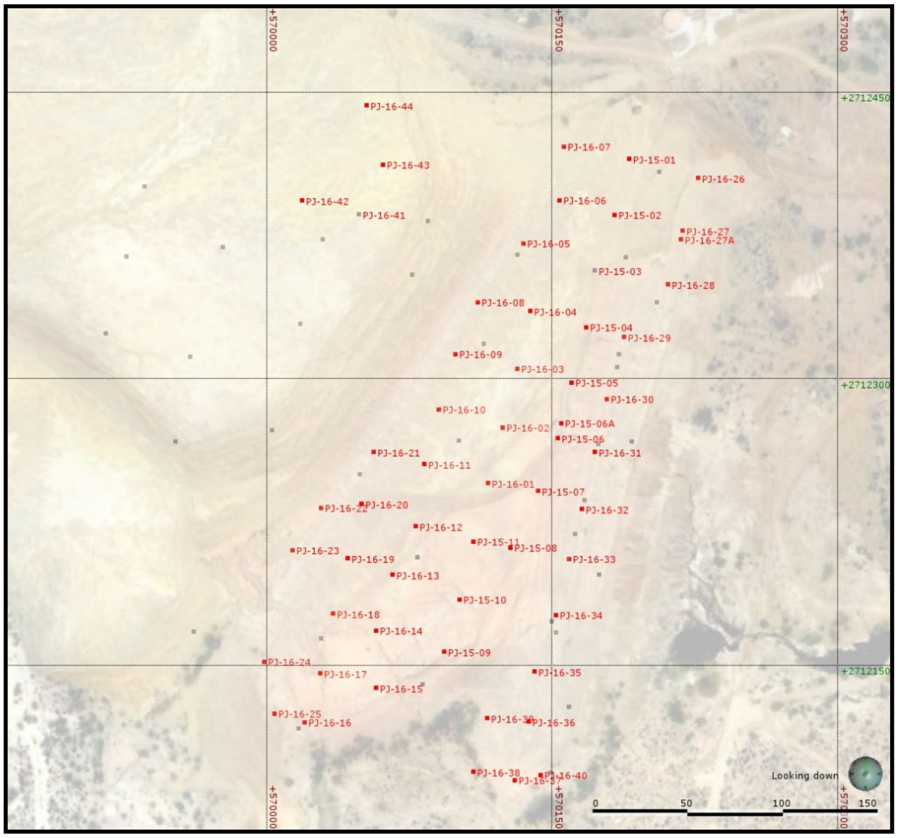
Hole ID	Azimuth (°)	Dip (°)	Easting (m)	Northing (m)	Elevation (m)	Depth (m)
C5	0	90	570028	2712164	2,216.0	14.2
C6	0	90	570017	2712117	2,216.4	10.2
D1	0	90	570029	2712373	2,217.6	13.2
D2	0	90	570018	2712329	2,216.7	19.2
D3	0	90	570003	2712273	2,217.6	19.7
D4	0	90	569962	2712167	2,215.9	6.2
E1	0	90	569977	2712369	2,216.5	13.2
E2	0	90	569960	2712311	2,216.1	18.7
E3	0	90	569952	2712267	2,215.8	12.2
F1	0	90	569936	2712401	2,216.4	18.7
F2	0	90	569926	2712364	2,216.1	16.2
F3	0	90	569915	2712324	2,215.8	15.2
PJ-15-01	0	90	570191	2712415	2,219.5	6.5
PJ-15-02	0	90	570183	2712386	2,219.2	12.4
PJ-15-03	0	90	570173	2712357	2,218.6	13.4
PJ-15-04	0	90	570168	2712327	2,217.7	18.9
PJ-15-05	0	90	570160	2712298	2,216.8	21.8
PJ-15-06	0	90	570153	2712269	2,216.4	8.3
PJ-15-06A	0	90	570155	2712277	2,216.5	26.8
PJ-15-07	0	90	570143	2712241	2,215.7	28.5
PJ-15-08	0	90	570128	2712212	2,219.5	28.0
PJ-15-09	0	90	570093	2712157	2,214.9	21.2
PJ-15-10	0	90	570101	2712184	2,215.2	27.0
PJ-15-11	0	90	570109	2712215	2,216.8	28.5
PJ-16-01	0	90	570116	2712245	2,216.7	27.9
PJ-16-02	0	90	570124	2712274	2,217.2	26.4
PJ-16-03	0	90	570132	2712305	2,217.4	23.0
PJ-16-04	0	90	570139	2712335	2,218.0	18.0
PJ-16-05	0	90	570135	2712371	2,218.5	12.0
PJ-16-06	0	90	570154	2712393	2,219.2	8.0
PJ-16-07	0	90	570156	2712422	2,220.3	3.9
PJ-16-08	0	90	570111	2712340	2,218.8	18.0
PJ-16-09	0	90	570099	2712313	2,217.8	22.9
PJ-16-10	0	90	570091	2712284	2,216.9	27.5
PJ-16-11	0	90	570083	2712255	2,216.6	23.0
PJ-16-12	0	90	570078	2712223	2,216.0	24.1
PJ-16-13	0	90	570066	2712197	2,216.0	24.0
PJ-16-14	0	90	570057	2712168	2,215.9	20.0
PJ-16-15	0	90	570057	2712138	2,215.1	14.5
PJ-16-16	0	90	570020	2712120	2,215.8	9.5
PJ-16-17	0	90	570028	2712145	2,216.0	14.0
PJ-16-18	0	90	570035	2712177	2,215.9	13.1

table continues...

Hole ID	Azimuth (°)	Dip (°)	Easting (m)	Northing (m)	Elevation (m)	Depth (m)
PJ-16-19	0	90	570042	2712206	2,216.0	21.0
PJ-16-20	0	90	570050	2712234	2,217.1	26.0
PJ-16-21	0	90	570056	2712261	2,217.5	24.5
PJ-16-22	0	90	570029	2712232	2,218.2	21.5
PJ-16-23	0	90	570014	2712210	2,217.7	20.0
PJ-16-24	,0	90	569999	2712152	2,215.8	8.9
PJ-16-25	0	90	570004	2712125	2,216.2	8.4
PJ-16-26	0	90	570227	2712405	2,207.6	0.6
PJ-16-27	0	90	570219	2712377	2,206.3	0.5
PJ-16-27A	0	90	570218	2712373	2,206.0	0.7
PJ-16-28	0	90	570211	2712349	2,205.0	0.6
PJ-16-29	0	90	570188	2712322	2,205.5	7.9
PJ-16-30	0	90	570179	2712289	2,205.3	13.5
PJ-16-31	0	90	570173	2712261	2,205.8	16.0
PJ-16-32	0	90	570166	2712232	2,204.9	19.6
PJ-16-33	0	90	570159	2712206	2,204.5	17.0
PJ-16-34	0	90	570152	2712176	2,203.8	20.5
PJ-16-35	0	90	570141	2712147	2,202.9	13.7
PJ-16-36	0	90	570138	2712120	2,201.3	8.1
PJ-16-37	0	90	570130	2712090	2,200.6	4.3
PJ-16-38	0	90	570109	2712094	2,200.9	2.0
PJ-16-39	0	90	570116	2712122	2,201.7	6.0
PJ-16-40	0	90	570144	2712093	2,200.6	0.6
PJ-16-41	0	90	570049	2712386	2,245.9	28.5
PJ-16-42	0	90	570019	2712393	2,245.4	21.0
PJ-16-43	0	90	570061	2712412	2,245.5	20.0
PJ-16-44	0	90	570052	2712443	2,245.5	5.0
Z1	100	30	570206	2712408	2,203.7	9.0
Z2	100	30	570189	2712363	2,203.7	16.0
Z3	100	30	570185	2712313	2,203.7	13.0
Z4	100	30	570174	2712266	2,203.7	13.0
Z5	100	30	570162	2712219	2,203.7	13.0
Z6	100	30	570150	2712173	2,203.7	14.0

Note: Datum NAD27 Mexico

Figure 10.3 Location of Drillholes Completed from 2015 to 2016 on the Oxide Tailings



Source: Tetra Tech (2017)

10.2.5 SPECIFIC GRAVITY RESULTS

Bulk density samples were analyzed from all 2006 to 2012 drilling programs on both the Avino and San Gonzalo Veins. Analytical procedures are discussed in Section 11.7. Table 10.3 summarizes the results of these specific gravity measurements.

Table 10.3 Avino and San Gonzalo Density Data Summary

Domain	Number	Minimum	Maximum	Mean	Variance	Coefficient of Variation
Avino Vein System						
10 (Main)	40	2.53	3.00	2.71	0.02	0.05
20	42	2.43	2.90	2.68	0.01	0.03
wall rock	93	2.29	3.00	2.65	0.04	0.07
Combined	175	2.29	3.00	2.67	0.03	0.06
San Gonzalo Vein System						
10	50	2.40	3.00	2.64	0.03	0.07
20	2	2.73	2.78	2.76	0.00	0.01
Wall Rock	41	2.40	3.00	2.69	0.02	0.05
Combined	93	2.40	3.00	2.67	0.03	0.06

11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

11.1 DRILLING AND TRENCHING OF OXIDE TAILINGS, 1990 TO 1991

The oxide tailings were sampled prior to institution of NI 43-101 and associated quality assurance (QA) / quality control (QC) requirements, and as such no QA/QC measures were utilized during the 1990–1991 program. As a result, the resource estimate for the oxide tailings in Section 14.3 is all classified as Inferred. Twenty-eight holes were drilled and six trenches completed, from which a total of 461 samples were collecting for assaying. The analyses were completed in the on-site laboratory, which is described in Section 11.7 and was visited during the site visit, as summarized in Section 12.4.

Avino's current on-site, non-certified, laboratory facility consists of sample preparation, crushing and pulverizing, a fire assay and an atomic absorption (AA) section. However, the procedures and facilities used in 1990 to 1991 may be different from the current sample analysis procedures. Because of the uncertainty associated with these analyses, two separate verification exercises have been completed. Slim (2005d) collected several samples from the oxide tailings, and the results of this verification are discussed in Section 11.2. In 2012, Mr. M.F. O'Brien, QP, collected numerous verification samples from the oxide tailings, and these results are discussed in Section 12.3.2.

11.2 TAILINGS INVESTIGATIONS (TEST PITS IN OXIDE TAILINGS), 2004

The sampling method and approach adopted by Slim (2005d) on the test pits in the oxide tailings incorporated the following steps:

1. A backhoe was used to excavate sample pits to a depth of 4 m. Hand samples were taken at 1 m vertical increments from the sidewalls of each pit.
2. The sample mass collected from each sampling point generally amounted to between 2 kg and 5 kg.
3. The sampling program was ostensibly based on the 1990 CMMA sampling program. Fourteen sample pits were excavated to a depth of 4 m and generated 86 samples.

The samples were air-freighted to PRA labs in Vancouver, British Columbia, from Durango, Mexico. The samples had been initially bagged and sealed with identification tags attached. The samples were allotted new identification numbers and were subsequently un-bagged and dried. The dry samples were individually mixed and blended, and then split into four one-quarter fractions as directed by Slim (2005d).

One fraction was used to determine the head grade assay, while another quarter was used to create composite samples used for the subsequent metallurgical test work program. Instructions were followed with the compositing of the samples, and the test work program.

Excess sample was archived for future test work or analyses. For analytical techniques employed during the test work program, the standard fire assay (with AA spectrophotometric finish) was initially used for the silver analyses.

However, this method is not very accurate for silver values of less than 100 g/t. Subsequently, the inductively coupled plasma mass spectroscopy (ICP-MS) method, which uses multi-acid digestion, was used for silver. This method also resulted in analyses being obtained for other elements of interest (e.g., copper, zinc, lead). The standard fire assay method was used for gold analyses. Cyanide and lime concentrations were measured using standard titrimetric methods. Total sulphur was measured using a standard Leco furnace, and sulphide sulphur assays were measured using the standard wet chemical gravimetric analysis (Slim 2005d).

The PRA labs (part of Inspectorate labs) in Nevada and British Columbia are International Organization for Standardization (ISO) 9001:2008 certified, full service laboratories that are independent of Avino. The QP did not independently verify nor compare the results of the sampling program.

11.3 Drilling Program, San Gonzalo, 2007 to Present

For the drilling programs at San Gonzalo, core is sawed at Avino's core storage facility at the secure mine site. Samples of vein material, usually from a few centimeters to 1.5 m, are placed and sealed in plastic bags, which are collected by personnel from Inspectorate Labs in Durango at the mine site facilities. Samples are prepared in Durango, and pulps are sent to the Inspectorate facility in Sparks, Nevada for analysis. Since 2016, all drill core samples have been sent to SGS Durango for sample preparation and assaying. Switch was made for faster turnaround times.

Sample preparation in Durango involves the initial drying of the entire sample. Two-stage crushing is used to create a product which is at least 80% minus 10 mesh. A Jones riffle splitter is then used to separate a nominal 300 g portion of the sample. This 300 g sub-sample is then pulverized to more than 90% passing a 150-mesh screen. Inspectorate Labs states that they use sterile sand to clean the pulverizer between samples (Gunning 2009).

Gold analyses are by 30 g fire assay with an AA finish. Silver, zinc, and lead are analyzed as part of a multi-element inductively coupled argon plasma package using a four-acid digestion with over-limit results for silver being reanalyzed with assay procedures using fire assay and gravimetric. Avino employs a rigorous QC program that includes standardized material, blanks, and core duplicates. However, for the 2007 program, Avino did not perform any independent QA/QC and relied on the internal QA/QC procedures completed by the labs (Gunning 2009).

Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino.

Avino used a series of standard reference materials (SRMs), blank reference materials (blanks), and duplicates as part of their QA/QC program during analysis of assays from San Gonzalo Vein drillholes. The QP compiled and reviewed these results in Section 12.1.4.

11.4 Drilling Programs, ET Zone of the Avino Vein, 2006 to Present

Sample lengths of NQ drill core were diamond sawed into halves by mine staff and shipped to Inspectorate Labs in Durango for preparation into pulps and rejects. Pulps were analyzed at Inspectorate Labs in Sparks, Nevada. Gold and silver were analyzed by fire assay using aqua regia leach and AA finish. Other elements are reported from a 29-element ICP-MS package. Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino. Sample preparation and analysis and QA/QC procedures are as described in Section 11.3.

Avino used a series of certified reference materials (CRMs), blank reference materials (blanks), and duplicates as part of their QA/QC program during analysis of assays from Avino Vein drillholes. The QP compiled and reviewed these results in Section 12.1.4.

11.5 Underground Channel Sampling of San Gonzalo Vein, 2010 to Present

Samples from channels cut across the San Gonzalo Vein were assayed by Inspectorate Labs. Samples were crushed and ground in Durango with pulps assayed in Richmond, British Columbia using fire assay and AA finish for gold, four acid digestion and AA for most silver with fire assay and gravimetric finish for very high silver. Base metals were analyzed via aqua regia digestion and ICP-MS. Inspectorate Labs in Durango and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino. Sample preparation and analysis and QA/QC procedures are as described in Section 11.3.

For the 2011 bulk sampling program of San Gonzalo, samples were obtained from channels cut across the vein, and were assayed by Inspectorate Labs. Samples were crushed and ground in Durango with pulps assayed in Richmond, British Columbia using fire assay and AA finish for gold, four acid digestion and AA for most silver with fire assay and gravimetric finish for very high silver. Base metals were analyzed via aqua regia digestion and ICP-MS for base metals. Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino.

Samples from 2012 and 2013 underground channel sampling of the San Gonzalo Vein are shipped to Inspectorate Labs for analysis for gold, silver, arsenic, bismuth, copper, molybdenum, lead, antimony, zinc, and mercury. Samples are crushed and ground in Durango with pulps assayed in Reno, Nevada using fire assay and AA finish for gold, four acid digestion and AA for most silver with fire assay and gravimetric finish for very high silver, and aqua regia digestion and ICP-MS for base metals. Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino. Sample QA/QC procedures are as described in Section 11.3.

11.6 AVINO LABORATORY

The Avino laboratory has fire assay, AA, and sieving analysis equipment and has been recently upgraded with new AA equipment. A high standard of neatness and cleanliness is being maintained to reduce the risk of contamination. The laboratory was reviewed by Mr. O'Brien during site visits in 2012 and 2016.

11.7 SPECIFIC GRAVITY SAMPLES

Avino completed specific gravity measurements on drillcore from both the Avino and San Gonzalo Veins. All measurements were completed by Avino staff on the mine site. Two different methods were employed to obtain these specific gravity values: caliper volume calculation and water displacement (WD). The procedures followed for each method are summarized in the following sections.

A total of 262 samples were measured for bulk density, 110 from the Avino Vein and 152 from the San Gonzalo Vein. The QP provides recommendations regarding specific gravity sampling procedures in Section 26.1.4 and a QP opinion in Section 12.5.1.

11.7.1 CALIPER VOLUME CALCULATION METHOD

The caliper volume calculation method of determining the specific gravity of drillcore samples involved the following procedures, based on the methodology outlined by Lipton (2001):

- Each measurement involves pieces of whole core with the ends neatly cut perpendicular to the core axis.
- The core diameter is determined using a pair of vernier calipers, and the diameter should be measured at several points along the length of core and averaged.
- The core length is measured using a tape measure.
- The mass is determined by weighing the core; weighing should be completed once the core is dried.
- The dry bulk density is calculated by: density = mass/volume where volume = Pi x (average core diameter/2)^2 x core length.

11.7.2 Water Displacement Method

The WD method of determining the specific gravity of drill core samples involved the following procedures, based on Archimedes' Principle:

- The mass is determined by weighing the core; weighing should be completed once the core is dried.
- A graduated cylinder, of an appropriate size to completely submerse the core, is used to determine the volume. The volume of water in the graduated cylinder is measured prior to submersing the core.
- The core is then submersed in water in the graduated cylinder and the total volume is measured.
- The difference in the volume of water before and after sample submersion is the volume of the sample.
- The dry bulk density = mass/volume.

11.8 QP Opinion

The QP is not aware of any drilling, sampling, or recovery factors affecting the reliability of the samples. It is the QP's opinion that the sample preparation, security, and analytical procedures followed by Avino are fit for the purpose of this Technical Report.

12.0 DATA VERIFICATION

12.1 AVINO AND SAN GONZALO VEIN DRILLHOLE DATABASE VERIFICATION

The QP reviewed the drillhole data provided by Avino in the form of a Microsoft Access database before and after loading the data into Leapfrog Geo™. on a hole-by-hole basis, including drillhole collar, survey, lithology, and assay data.

During several site visits in between 2012 and February 2020, the QP verified several drill hole logs against the physical cores for ET06_02, ET07_01, ET07_03, SG15_03, and SG15_02. No significant discrepancies were found.

Collars for exploration drillholes are marked by concrete monuments, and the collars have been surveyed. Subsequent collars have been similarly marked and were observed during a site visit in June 2016.

A check of the coordinates with a handheld global positioning system (GPS) during a site visit in 2016 revealed a possible 4 m constant error, which may indicate the existence of a small surveying error on the Property.

The QP opinion of the reliability of the Avino drillhole data is discussed in Section 12.5.1 and detailed recommendations are provided in Section 26.1.

12.1.1 COLLAR AND ASSAY DATA

Table 12.1 summarizes the database validation results. In early 2020, Tatiana Alva of Ausenco validated the drillhole database and it was consolidated into a consistent and comprehensive Microsoft Access database that is maintained by mine personnel with offsite backup in the Avino office in Durango and on the Cloud using Egnyte.

The QP subsequently reviewed the data and The Avino Vein lithology data for 13 historic drillholes at the Avino ET Mine and all channel samples, is very sparse owing to the age of the records. The upper part of the deposit model has consequently been modelled using assay data and development mapping information. As the deficient lithology information pertains mainly to parts of the deposit that have been mined out, The QP does not consider it to be a material deficiency.

Table 12.1 Number of Records and Discrepancies for the Avino (ET and San Gonzalo) Drillhole and Channel Sampling Data

Avino Vein	Number of Records	Discrepancies	Discrepancy Rate (%)
Avino Vein			
Survey Data	11,415	-	
No Surveys for Collar		0	
Duplicate Collar and Surveys		0	
Duplicate Survey Depths		0	
Assays	42,564		0
No Sample for Collars		0	
Overlapping Segments		0	
Collar Max Depth Exceeded		0	
Lithology	99 holes		54.2
From to Depth Overlap		0	
No Samples for Collar	13	13 historic holes	13
Collar Max Depth Exceeded		0	
San Gonzalo Vein			
Survey Data	3,636		0
No Survey for Collar		0	
Duplicate Collar and Surveys		0	
Duplicate Survey Depths		0	
Incomplete Survey Data		0	
Assays	17,514		0
No Samples for Collars		0	
Overlapping Segments		0	
Collar Max Depth Exceeded		0	
Lithology	140 holes		0
From to Depth Overlap		0	
No Samples for Collar		0	
Collar Max Depth Exceeded		0	

A previous validation exercise was completed for assay results from post-2009 drilling by Tetra Tech (2012). Original assay certificates were compared against the data as reported by Avino. Assay results from drillholes SG-11-13 to SG-11-17, and ET-12-01 to ET-12-09 were verified. For all metals in the database (gold, silver, copper, lead, zinc, and bismuth), the error incidence was less than 1%.

Assay certificates from SGS Durango were verified against the drillhole assay database. The method was to select random samples from the certificates for comparison with the final values residing in the assay table. One hundred samples from the 2017 and 2018 campaigns were checked for silver, gold, and copper assays integrity. The results are summarized in Table 12.2.

Table 12.2 Assay Data Verification Result

	Number of Random Data	% errors
Samples	100	18
Ag	100	7
Au	100	13
Cu	100	1

Errors were encountered in 18% of the data lines. Gold data entry was particularly badly affected by transcription errors, with decimals misplaced to reduce many entries by a factor of 10. For both silver and gold, some inductively coupled plasma (ICP) assays with low precision, were entered in the drillhole database, while the more precise and larger fire assay data was ignored. These problems mainly affect the 2018 assay data and will have the effect of biasing the 2018 gold assays low.

The effect of this high frequency of entry error on the mineral resource is likely to be conservative and is limited to the 2018 assay data. The QP does not believe this problem is material to the Mineral Resource. Nevertheless the drillhole database should be verified against the assay certificates as a matter of urgency as this high rate of error is not acceptable as a risk to data integrity.

12.1.2 Downhole Survey Data

Downhole survey data exists for 87 of the 98 drillholes completed in the Avino and San Gonzalo Veins. Most drillholes have three or fewer downhole survey points, which is less frequent than typical industry practice. Many of these holes contain a survey data point at the collar and near the end of hole, and sometimes part-way down the hole. However, 26 of the 87 holes for which downhole survey data exists were not surveyed to within 10 m of the end of the hole. All measurements were completed by a magnetic survey method, which is not recommended in general, and particularly not in locations with extensive underground infrastructure such as those present on the Property. Given the abundance of historical infrastructure on the Property and the potential for any drillholes to intersect active workings, downhole survey measurements should be collected at a frequency of at least every 10 m and all drillholes should be cemented following completion.

Downhole survey data for hole SG-07-06 was disregarded below 50 m depth due to an unrealistic kink in the drillhole orientation below this depth, which could be due to an instrument malfunction or to magnetic interference.

12.1.3 Geology Data and Interpretation

The QP has the following observations on the Avino geology database and interpretation:

To the QP's knowledge, routine photography of drillcore and underground drifts is being completed. A digital photographic record is kept of all drillcore and underground drifts for future reference and to facilitate consistent core logging and geology interpretation.

12.1.4 Review of Drillhole Quality Assurance/Quality Control Samples

QA/QC samples were submitted in the sample stream during all 2006 to 2012 drilling programs on both the Avino and San Gonzalo Veins, although not in a consistent manner. These results were reviewed in detail by Tetra Tech and were discussed in Tetra Tech's 2013 report. Avino used a number of SRMs, blank reference materials (blanks), and duplicates as part of their 2015/2016 QA/QC program.

Standards for Oxide Tailings Campaign 2015 to 2016

Three standards were analyzed during the 2015 to 2016 oxide tailings drilling campaign. Three laboratory-certified standards (see Table 12.3) were used, and the silver and gold results are discussed below.

The standards were submitted at a rate of 10% (total of 561 samples), which is higher than the industry norm of 5%. They were submitted to both Inspectorate and SGS Laboratories.

The three standards appear to have been determined within the limits in most of cases, but standard CDN-ME-1305 showed some anomalies for silver, notably one high grade return above the upper limit and a run of four over the upper limit returns for the Inspectorate results. This is a high-grade silver sample, so it may be that the standard was not well mixed and is showing some nugget behaviour.

Standards for Exploration Drilling 2016 to 2017

During the period of March 2016 to February 2018, 5,912 samples were submitted for assay, 5,462 to SGS Durango, and 450 to Inspectorate America Corporation. Totals of 628 standard samples, 181 blanks, and 138 duplicates were submitted. Thus, a relative submission rate of 10.6% SRMs, 3.1% blanks, and 2.3% duplicate samples was maintained during the period. This is within industry norms.

Nine different reference standards, bracketing the expected ranges of grades for gold, silver, and copper, were analyzed during the 2016 to 2017 period drilling campaigns for Avino-ET, San Gonzalo, Guadalupe, and San Juventino. The silver, gold, and copper results are discussed below.

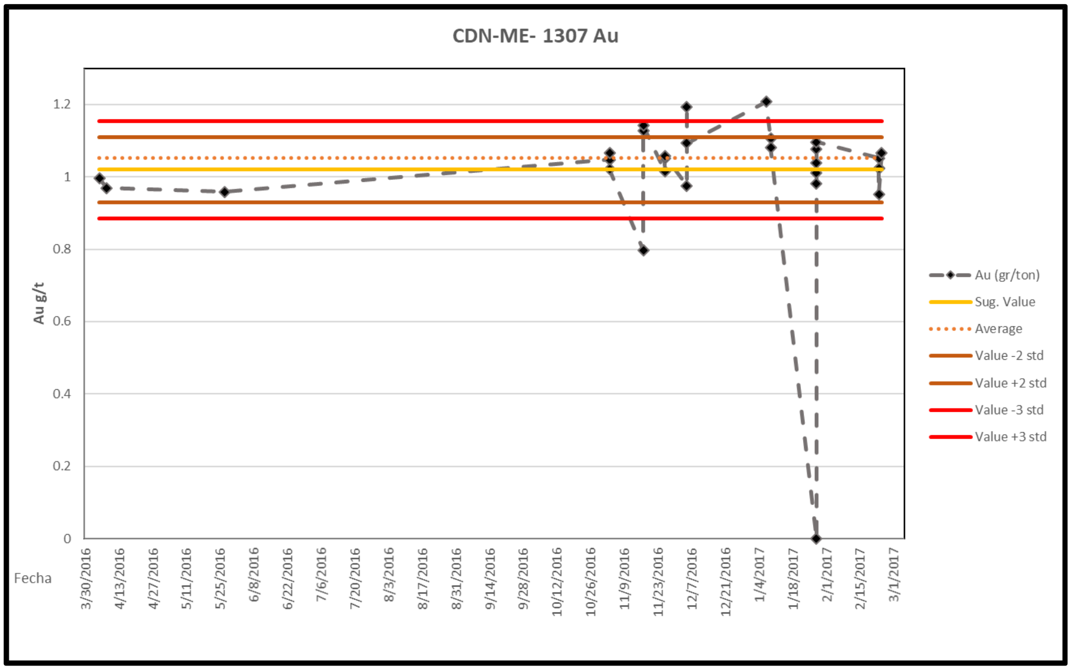
Table 12.3 Standards Specification and Performance

Au (g/t)					
Standard	number	mean	std dev	Au_out2SD	Au_out_3SD
CDN-ME-1303	31	0.924	0.050	12.9%	6.5%
CDN-ME-1305	30	1.920	0.090	10.3%	6.9%
CDN-ME-1307	29	1.020	0.045	20.7%	13.8%
CDN-ME-1406	37	0.678	0.027	0.0%	0.0%
CDN-ME-1413	36	1.010	0.057	11.1%	0.0%
CDN-ME-1414	37	0.284	0.013	5.4%	0.0%
CDN-ME-1602	37	1.310	0.050	18.9%	8.1%
CDN-ME-1603	37	0.995	0.033	5.4%	0.0%
CDN-ME-1604	21	2.510	0.060	19.0%	4.8%
Ag (g/t)					
Standard	number	mean	std dev	Ag_out_2SD	Ag_out_3SD
CDN-ME-1303	31	152.000	5.000	35.5%	25.8%
CDN-ME-1305	30	231.000	6.000	41.4%	24.1%
CDN-ME-1307	29	54.100	1.550	44.8%	31.0%
CDN-ME-1406	37	57.100	1.850	0.0%	0.0%
CDN-ME-1413	36	52.200	1.400	30.6%	8.3%
CDN-ME-1414	37	18.200	0.600	0.0%	0.0%
CDN-ME-1602	37	137.000	3.000	35.1%	10.8%
CDN-ME-1603	37	86.000	1.500	8.1%	2.7%
CDN-ME-1604	21	299.000	7.500	19.0%	19.0%
Cu (g/t)					
Standard	number	mean	std dev	Cu_out_2SD	Cu_out_3SD
CDN-ME-1303	31	0.344	0.008	41.9%	29.0%
CDN-ME-1305	30	0.617	0.012	48.3%	37.9%
CDN-ME-1307	29	0.537	0.010	55.2%	48.3%
CDN-ME-1406	37	0.320	0.006	35.1%	10.8%
CDN-ME-1413	36	0.452	0.008	50.0%	33.3%
CDN-ME-1414	37	0.219	0.005	16.2%	2.7%
CDN-ME-1602	37	0.372	0.007	NA	NA
CDN-ME-1603	37	0.279	0.007	10.8%	5.4%
CDN-ME-1604	21	0.733	0.015	23.8%	14.3%

The standards performances are colour-coded in the two right hand columns of Table 12.3. Shades of red indicate relatively high percentage of assay returns recorded outside the two and three standard deviation confidence limits, while shades of green reflect low percentage of assays falling outside the limits. The pattern of performance for all three metals is similar for each of the standards. CDN-ME-1307 is the worst performer for gold, silver, and copper.

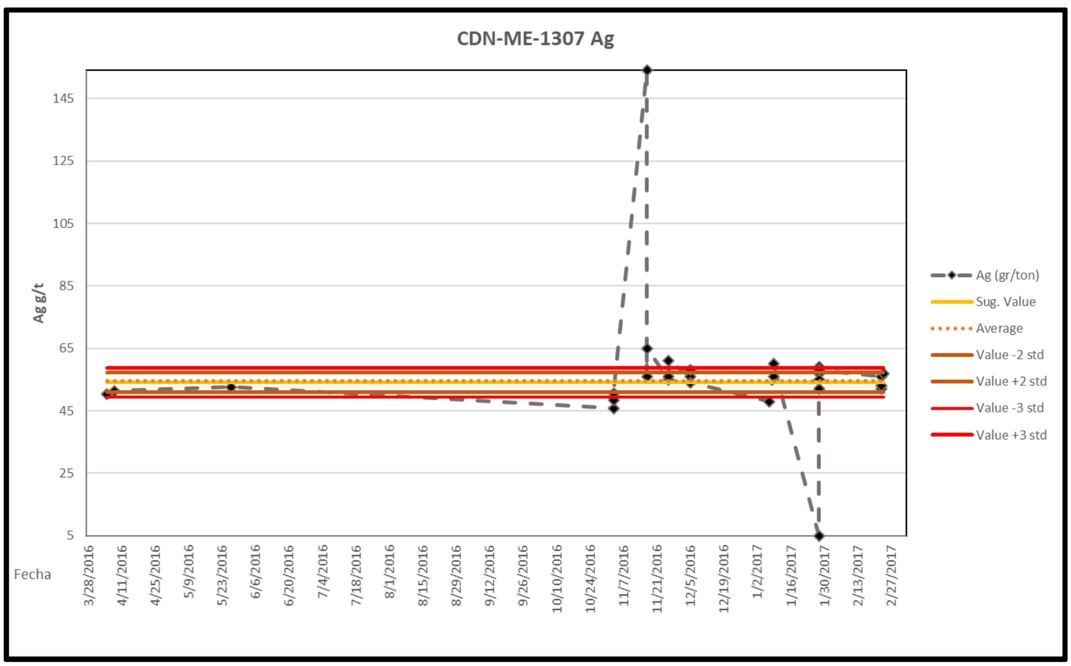
Performance graphs showing the results for CDN-ME-1307 are shown as an example of a poorly performing standard in Figure 12.1, Figure 12.2, and Figure 12.3 for gold, silver, and copper, respectively. In the following graphs, good performance is indicated by consistent appearance of the assays within the red lines (representing three standard deviations from the mean of the material) and the brown lines (representing two standard deviations from the mean of the material). Poor performance is indicated by assays falling outside the confidence limits.

Figure 12.1 Standard 1307_ME-1307 – Gold Performance



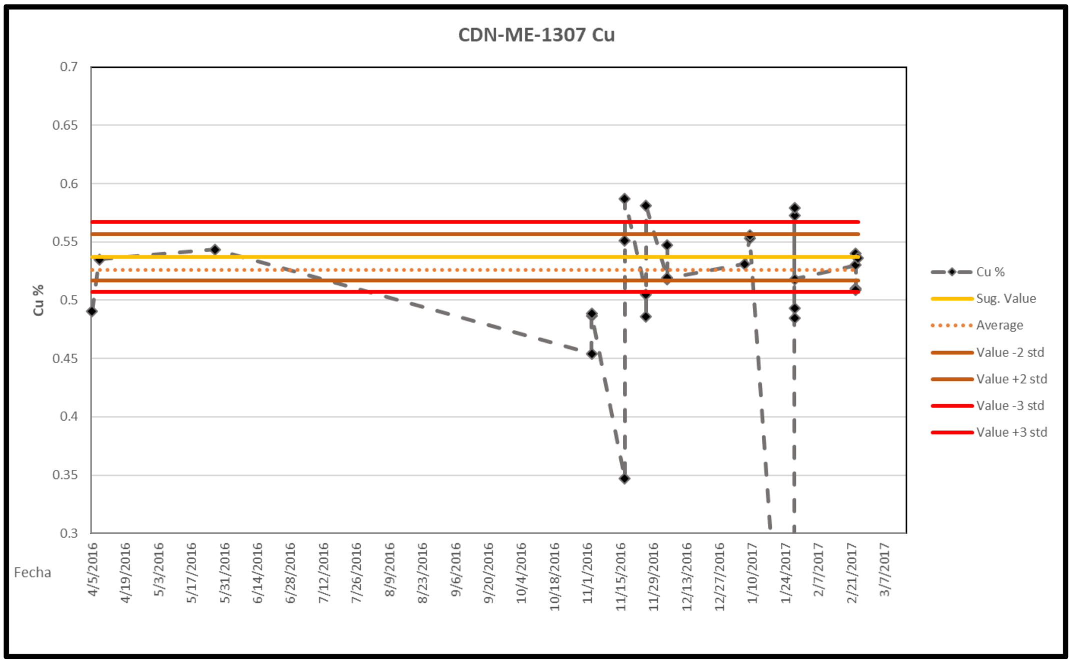
Source: Avino

Figure 12.2 Standard CDN-ME-1307 – Silver Performance



Source: Avino

Figure 12.3 Standard CDN-ME-1307 – Copper Performance

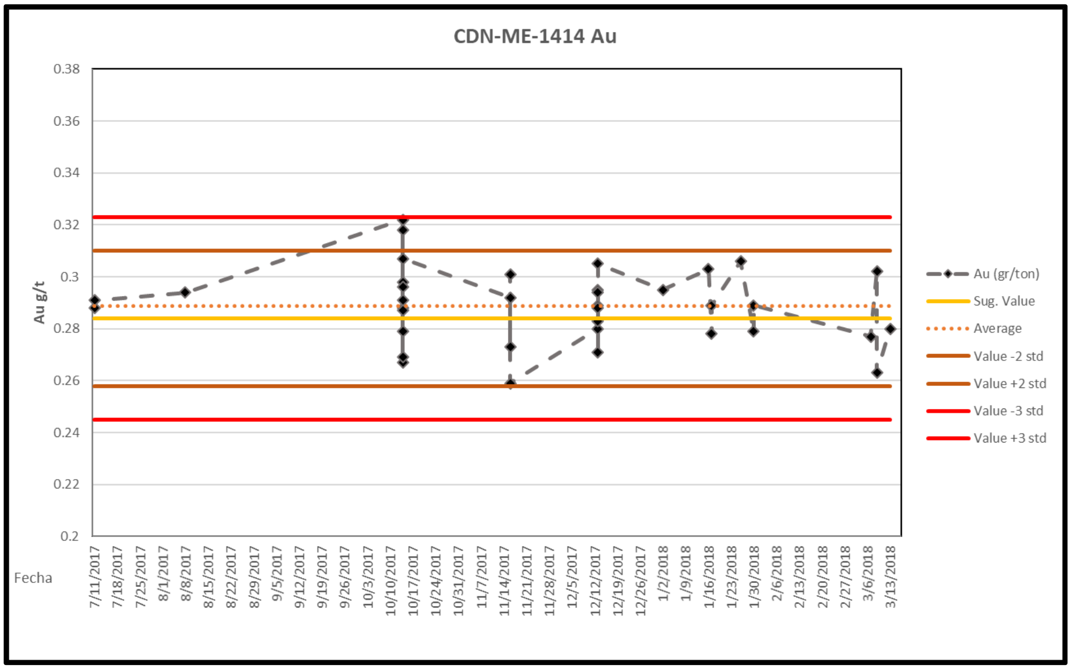


Source: Avino

Standard CDN-ME-1307 has produced quite erratic results for all three metals. This standard was not employed for a period of six months, between May and November 2016. Standard materials can become less homogenous and thus less amenable to act as a standard material, if they are allowed to remain in place for a long period of time, particularly if they are subjected to low frequency consistent vibration. This may occur on a mine site with heavy equipment or a laboratory crushing equipment in frequent prolonged use. This is one possibility for the pattern of assay results. It is best to keep consistently using a standard material until it is used up, as it may deteriorate through physical segregation of light and heavy particles and also possibly undergo chemical changes that can affect assay performance.

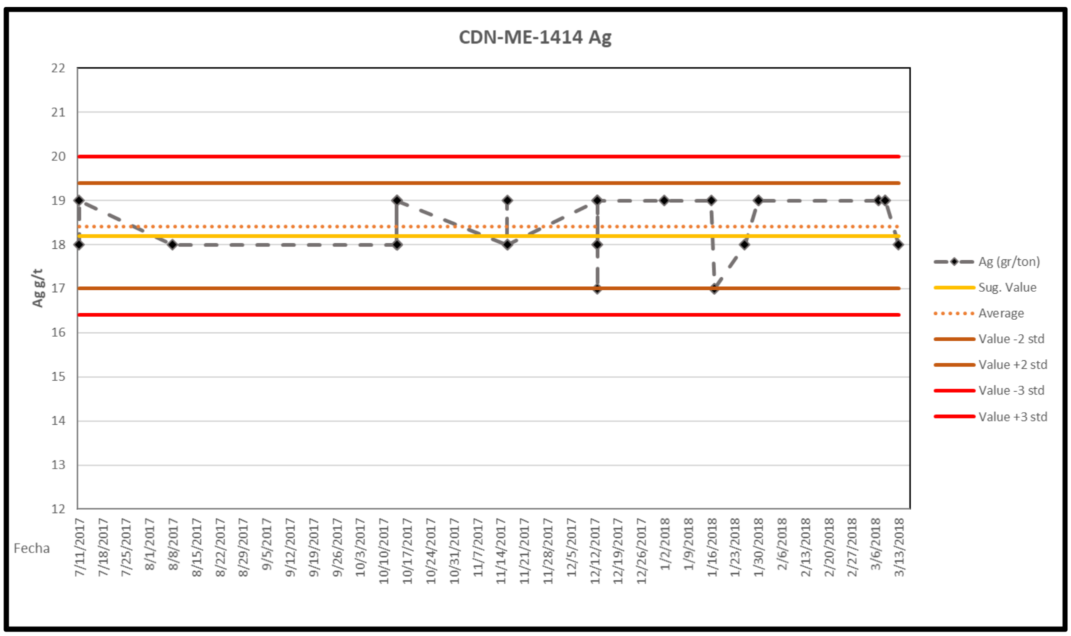
Performance graphs showing the results for CDN-ME-1414 are shown as an example of a well-performing standard in Figure 12.4, Figure 12.5, and Figure 12.6 for gold, silver, and copper, respectively.

Figure 12.4 Standard CDN-ME-1414 – Gold Performance



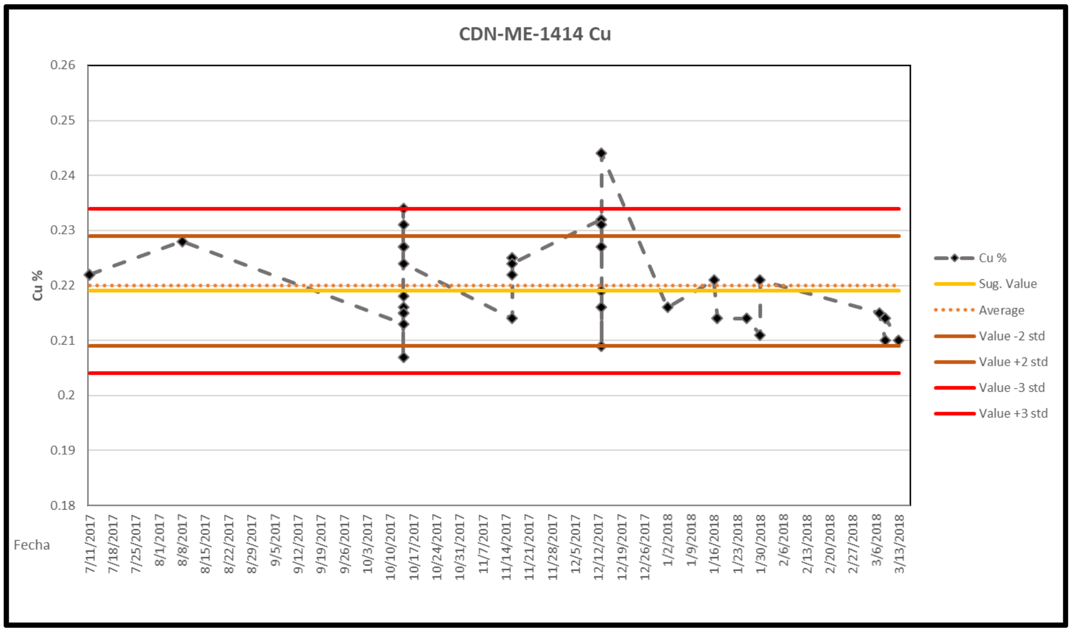
Source: Avino

Figure 12.5 Standard CDN-ME-1414 – Silver Performance



Source: Avino

Figure 12.6 Standard CDN-ME-1414 – Copper Performance



Source: Avino

CDN-ME-1414 displays consistent results and was frequently used during the period July 2017 to March 2018.

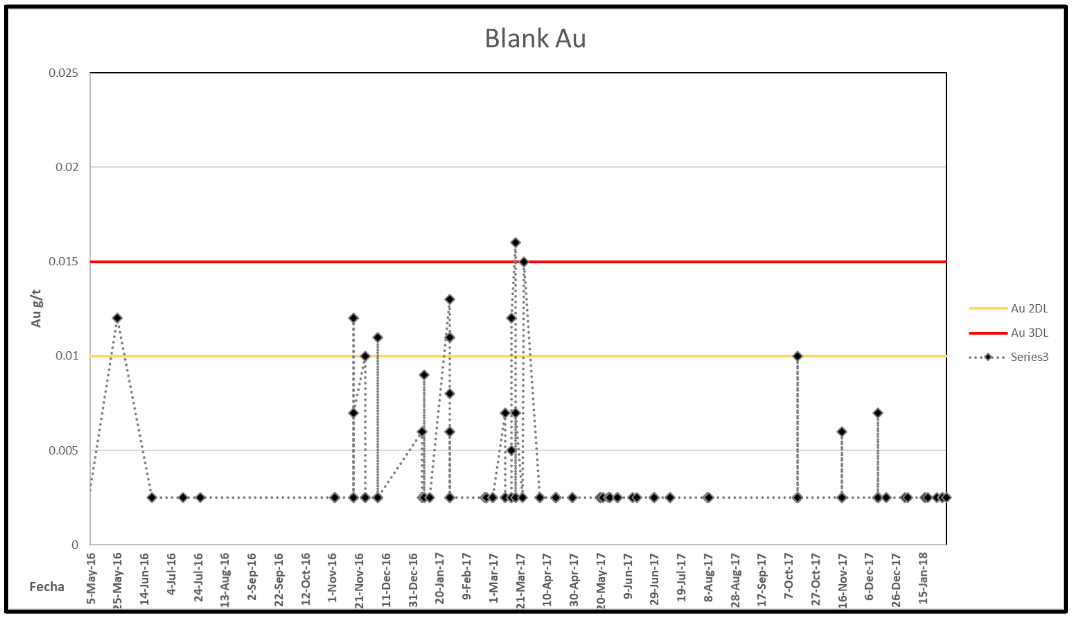
BLANKS

Blank performance is shown in Figure 12.7, Figure 12.8, and Figure 12.9, for gold, silver, and copper, respectively. All three graphs cover the period May 2016 to March 2018. Clusters of anomalous grades are present for all three metals, from November 2016 to March 2017, and may represent laboratory contamination that could be due to:

- consignments of high volumes of samples, or
- high grade material from another operation, or
- end-of-year staff turnover.

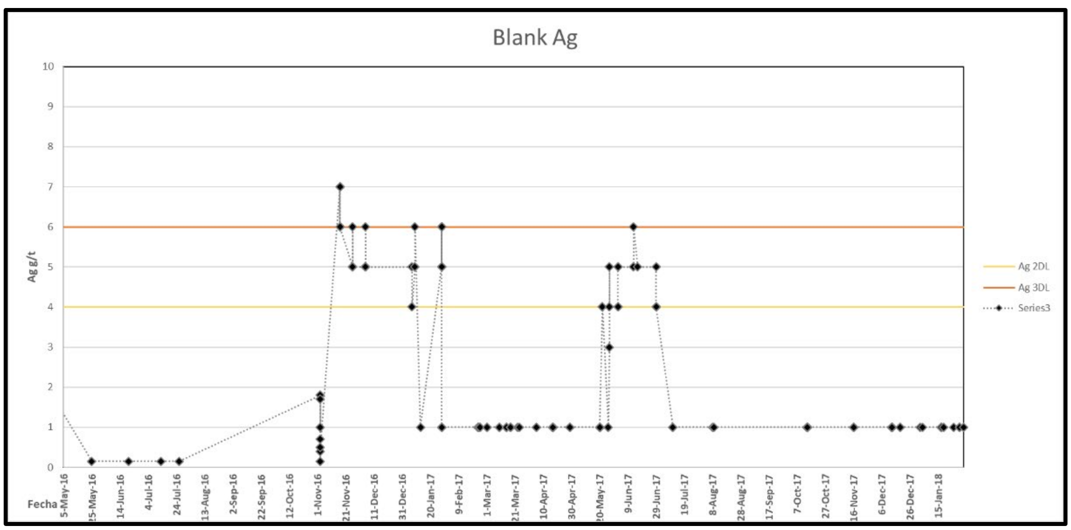
In any case, these sporadic incidents of blank failure are relatively few and contamination does not appear to be significant. Nevertheless, Avino should continue to monitor blanks and inform external laboratories if failures occur in clusters.

Figure 12.7 Blank – Gold Performance



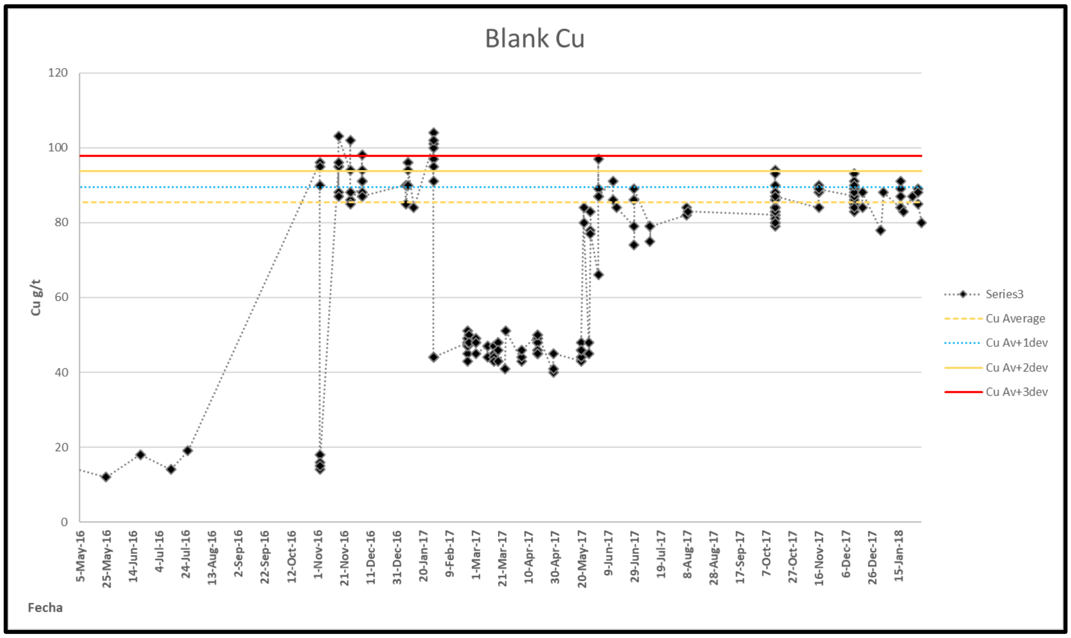
Source: Avino

Figure 12.8 Blank – Silver Performance



Source: Avino

Figure 12.9 Blank – Copper Performance



Source: Avino

Duplicate Assays

Duplicate results for gold, silver, and copper are summarized in Figure 12.10 to Figure 12.15. Scatterplots (Figure 12.10, Figure 12.12, and Figure 12.14) show good correspondence across the spectrum of assay values. Power fit curves have been generated to show the relationships telescoped across the logarithmic axes.

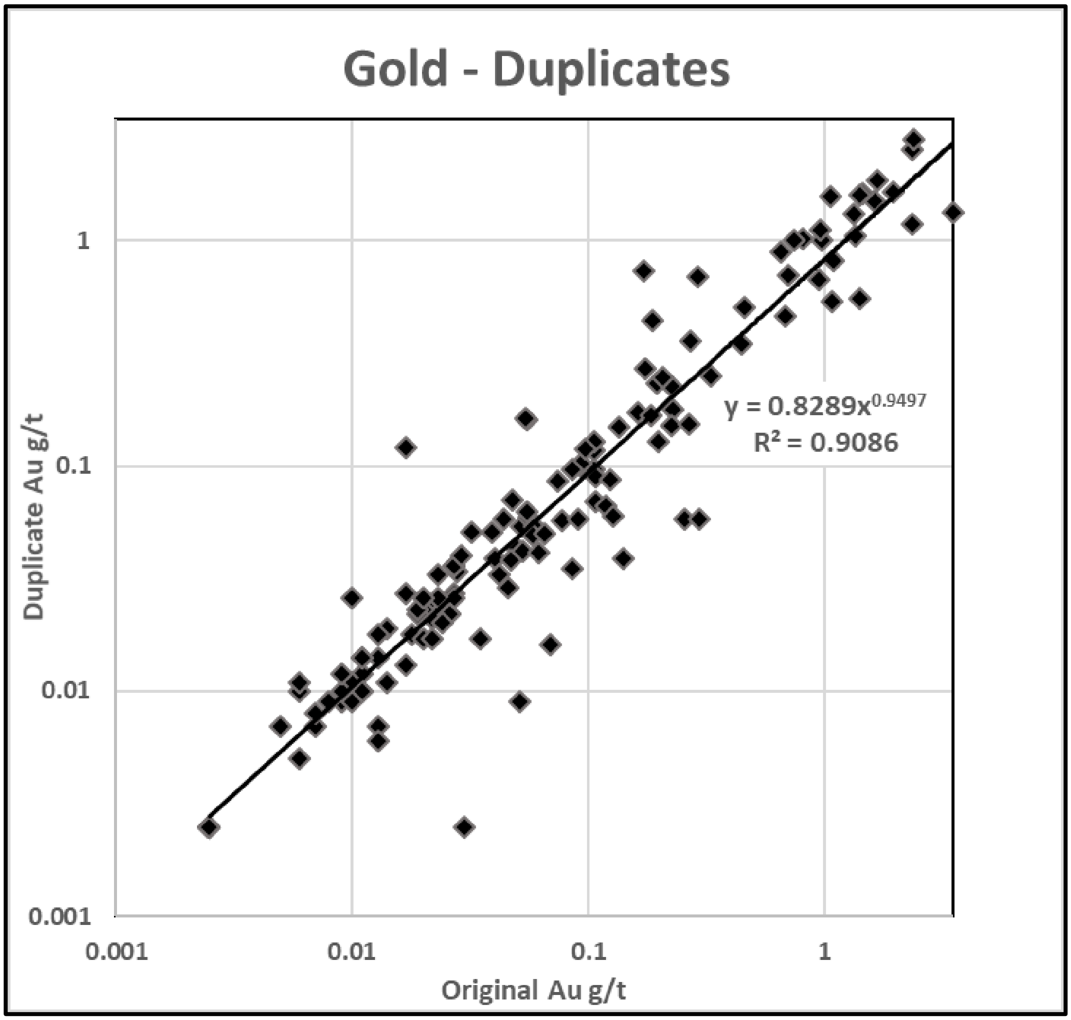
Half absolute relative difference (HARD) charts are useful for assessing the precision of a set of duplicates and are shown in Figure 12.11, Figure 12.13, and Figure 12.15, for gold, silver, and copper, respectively. In all three cases, the plots do not pass through the nominal target of 90th percentile passing 20% HARD for pulp duplicates.

This could be due to:

- retaining low-grade data close to detection limit level data (high variability), or
- too small a sample, or
- insufficient crushing before splitting, or
- insufficient pulverising before splitting,

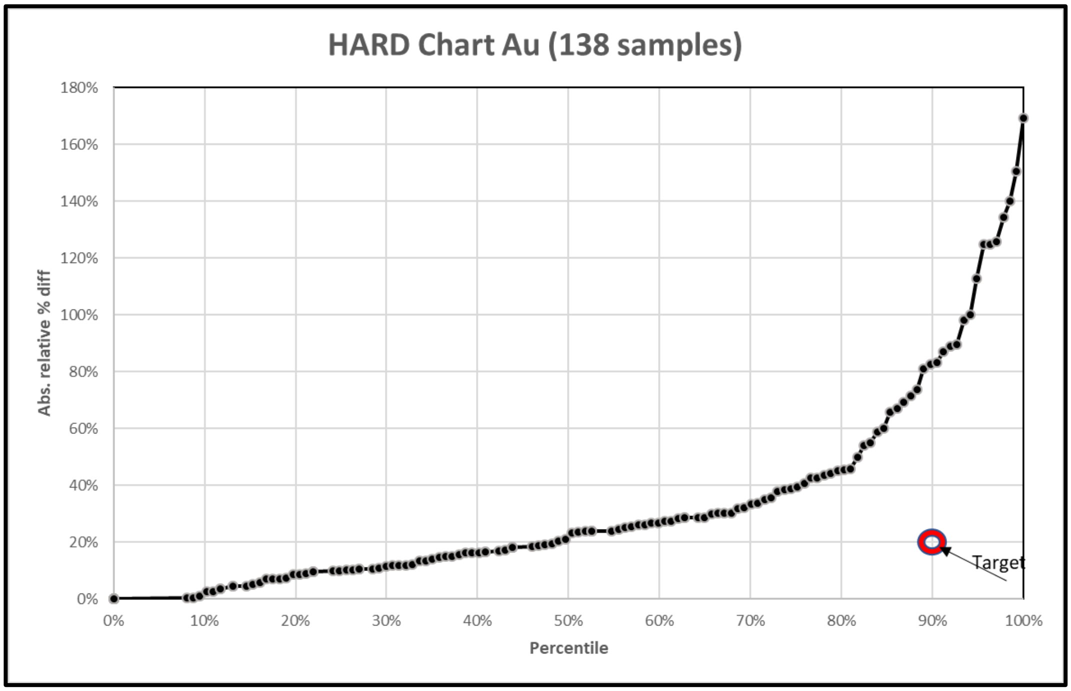
The QP recommends that some experiments be carried out to improve assay precision.

Figure 12.10 Gold – Duplicate Correlation



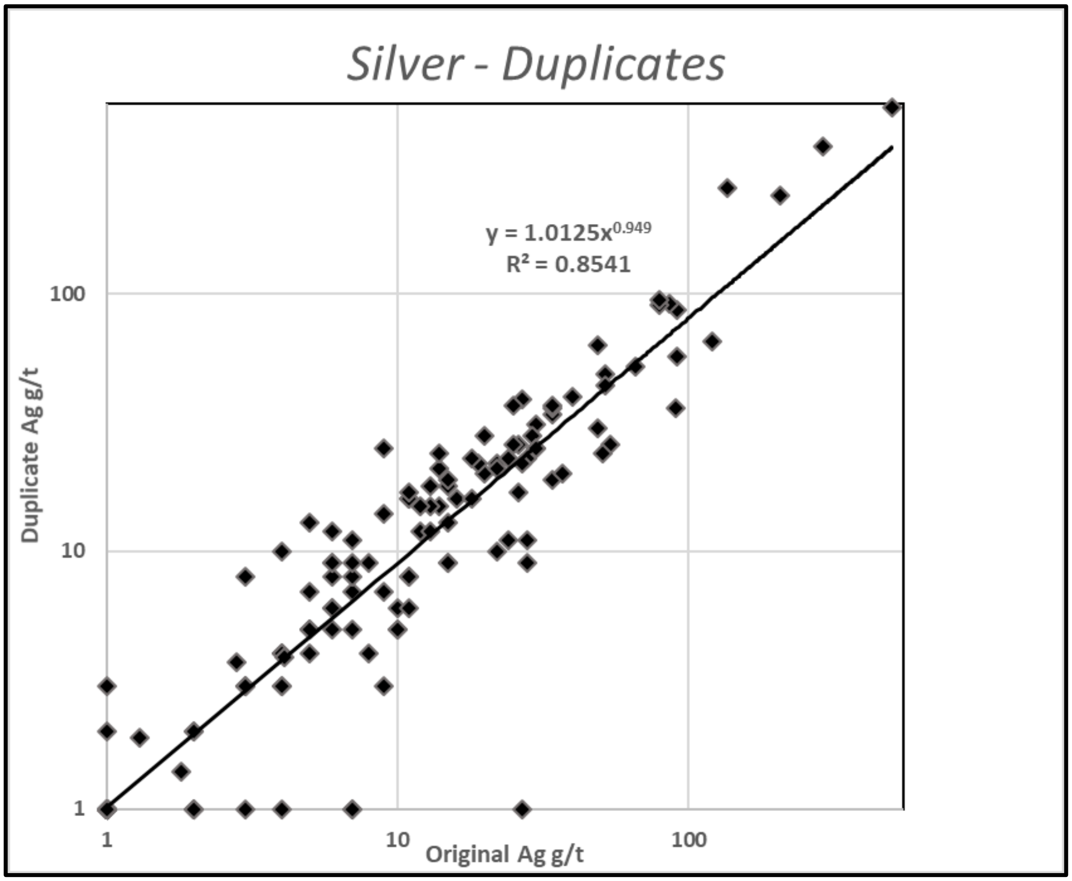
Source: Avino

Figure 12.11 Gold – Half Absolute Relative Difference Chart



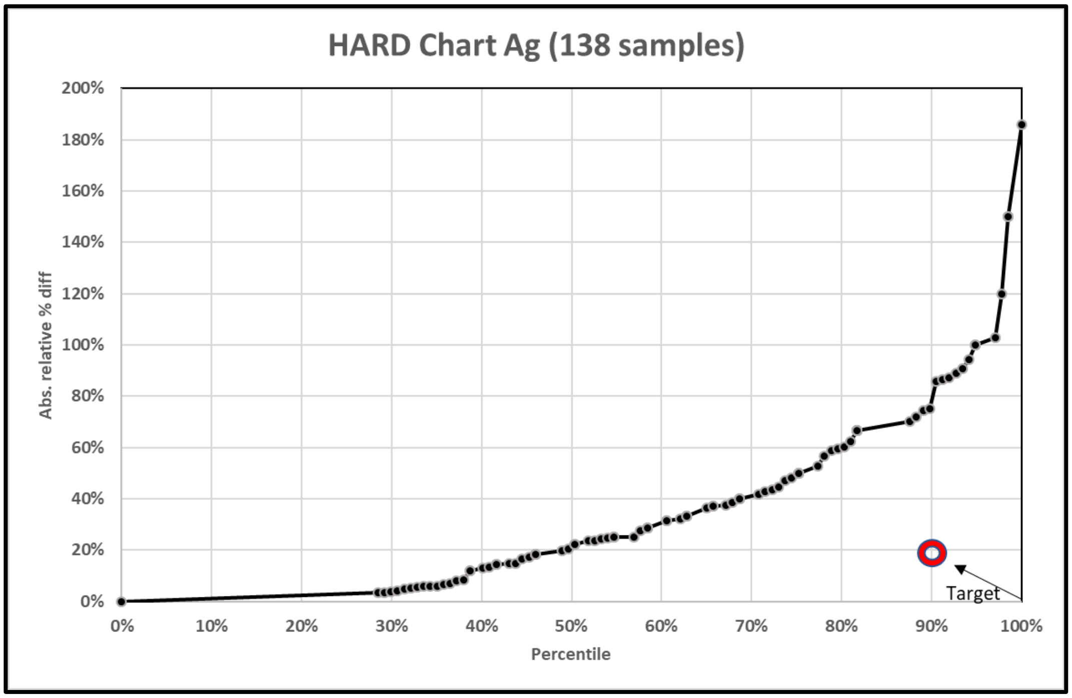
Source: Avino

Figure 12.12 Silver – Duplicate Correlation



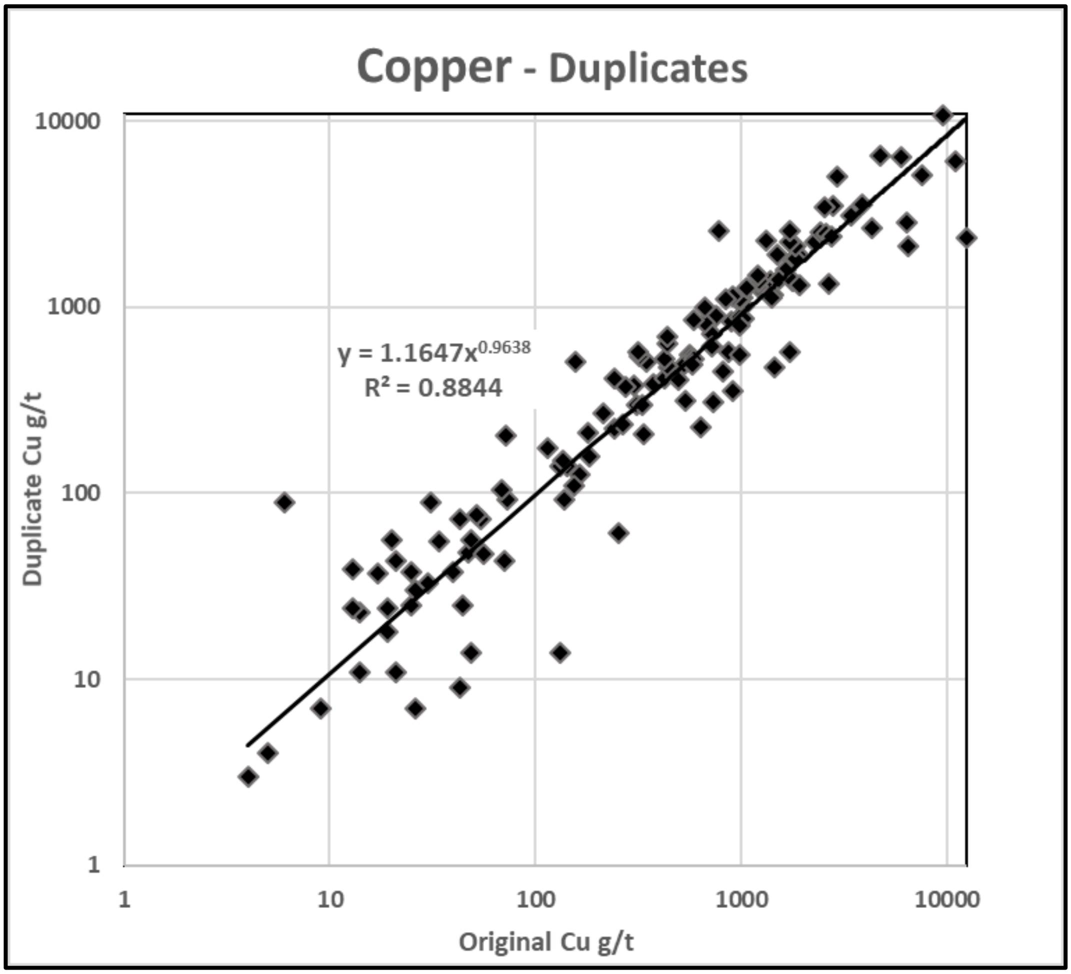
Source: Avino

Figure 12.13 Silver – Half Absolute Relative Difference Chart



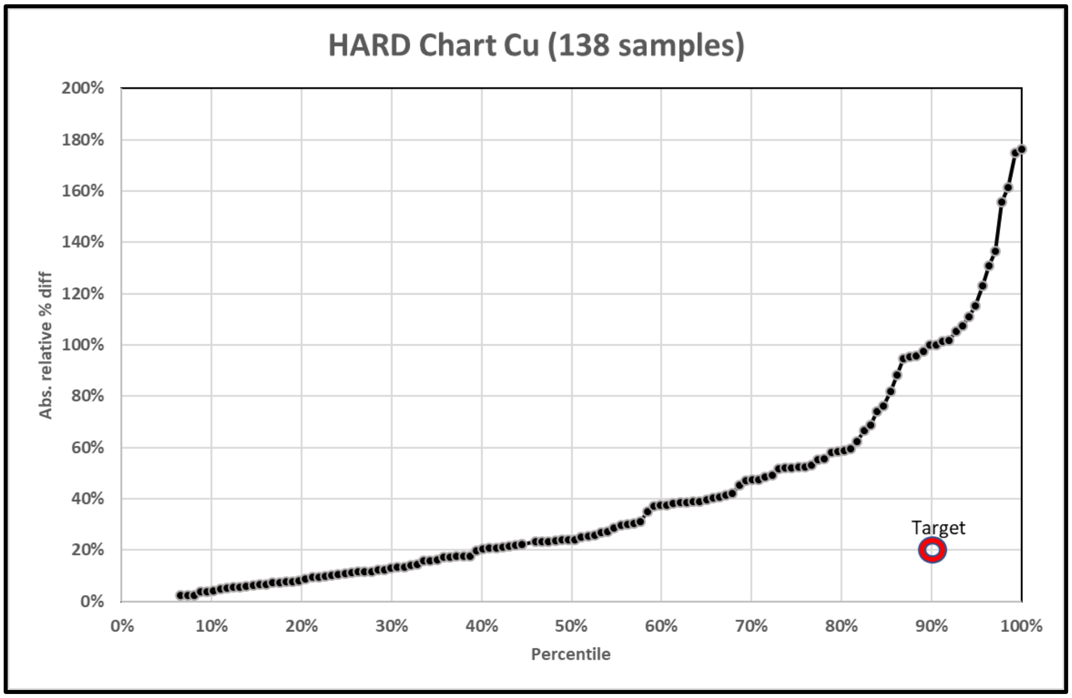
Source: Avino

Figure 12.14 Copper – Duplicate Correlation



Source: Avino

Figure 12.15 Copper – Half Absolute Relative Difference Chart



Source: Avino

The correlation graphs for the three metals (Figure 12.10, Figure 12.12, and Figure 12.14) show no significant bias between originals and repeats.

12.2 Bulk Density

12.2.1 Avino and San Gonzalo Vein Bulk Density

A limited number of specific gravity measurements were originally collected by Avino from drillholes in the Avino and San Gonzalo Veins. These measurements were not representative of the veins spatially or by drilling program, and Tetra Tech (2012) requested additional specific gravity measurements be completed on drillcore from both veins. These additional measurements were completed by Avino in 2013. Review of these measurements (see Section 14.6) suggests that they are a limited basis for spatial estimation. Consequently, the long-term historic production average value of 2.63 has been assigned as a density factor to the Avino and San Gonzalo Mineral Resources disclosed in Section 14.0.

A QP opinion of the reliability of the Avino specific gravity data is discussed in Section 12.5.1.

12.3 OXIDE TAILINGS DRILLHOLE DATABASE

Tetra Tech (2012) compiled the assay data used in the oxide tailings resource estimate by referring to original mine sections, and verification of this data is described below. The 1:1,000 scale plans drafted for this exercise were scanned and used to verify the positions of the old drillholes. One transposition error on a collar elevation in mine coordinates was observed and subsequently corrected (drillhole E3 was incorrectly recorded at an elevation of 2,275 m, and was corrected to 2,257 m).

Avino provided the following formulae to convert the collar coordinate data from local mine grid coordinates to Universal Transverse Mercator (UTM) coordinates:

- local mine grid X + 560421.245 = X UTM
- local mine grid Y + 2707618.312 = Y UTM
- local elevation - 41.306 = elevation amsl.

Since the trenches (named with Z-series) from the 1990 to 1991 program represent incomplete surface sampling of an unrepresentative part of the pile (at the wall where the outlets for the hydraulic emplacement of the material were sited), these data were not used in the oxide tailings resource estimate.

12.3.1 ASSAY VERIFICATION OF 1990/1991 DRILLHOLES IN OXIDE TAILINGS

Tetra Tech (2013) verified 54% of drillholes in this database (15 of 28 drillholes) and 58% of both silver and gold assays (444 of 766 values) used for this estimation. QG Consulting verified the oxide tailings data in 2016 and the QP reviewed the work again in 2017 and is not aware of any significant errors.

The QP opinion of the reliability of the 1990 to 1991 oxide tailings assays is discussed in Section 12.5.2.

12.3.2 OXIDE TAILINGS VERIFICATION SAMPLES

As was reported by Tetra Tech (2013), during a previous site visit conducted on June 7 and 8, 2012, Michael F. O'Brien visited the tailings heaps and supervised the collection of eight samples from the oxide tailings (3 kg to 4 kg each). The samples were collected from gulleys that had eroded into the tailings pile and provided a vertical section through the tailings. It is believed that while such samples cannot provide a statistically representative reflection of overall grade, they do provide some insight into the grade of the tailings near surface. The eight samples were each split into three separate sub-samples, which were submitted in turn to the Avino Mine laboratory together with SGS laboratories in Durango and Vancouver.

Statistical analysis of the three sets of results demonstrated that there is good correlation between the three laboratories and this conclusion remains valid.

The sampling exercise in 2012 provided the opportunity to review the artificial sedimentary deposit that comprises the Avino oxide tailings and supported the previous assumptions of the tailings, such as regarding the oxide tailings as two superimposed units with slightly different chemical and particle size characteristics and pronounced horizontal continuity. The source data and plans prepared more than 20 years ago after the initial drilling campaign were examined at the mine and found to be of professional standard and provide support for their use in the estimation of the oxide tailings. The overall homogeneity of the material, horizontal continuity, and relatively high confidence in the volume and tonnage, mitigate any uncertainty in the historical dataset. The pattern of sample grades (see Figure 14.6) from the 2015/2016 drill campaigns the earlier drilling form a coherent pattern with no obvious discontinuity between campaigns.

12.4 Site Visit

Michael F. O'Brien conducted site visits on June 7 and 8, 2012; June 6 and 7, 2016; June 12 to 15, 2017; and February 11 to 13, 2020. During the latest visit, Mr. O'Brien visited Avino and San Gonzalo underground mines to review the Avino and San Gonzalo Vein systems. The surface drill sites and exposure to the Guadalupe Vein were examined.

12.5 The QP Conclusions and Opinion

The drill dataset has been produced over a long period of time within a brownfield property. All data used for this study is obtained from work carried out by staff of the current issuer, which has owned the Property continuously since the start of this work.

12.5.1 Avino and San Gonzalo Veins

Drillhole Database

The drillhole data for the property has been consolidated into a single Microsoft Access database with the exception of the shallow surface drilling for the oxide tailings deposit. The consolidated database with offsite and cloud-based backup has materially improved the consistency and security of the exploration data. The QP recommends that the exploration data pertaining to the oxide tailings deposit and the QA/QC information be integrated into the database.

Downhole Survey Data

Downhole survey data and the location of the Avino and San Gonzalo Vein intersections observed in drillholes have been verified by both surface and underground mapping, providing confidence in the location, orientation, and true width of both veins.

Geology Data and Interpretation

The legacy data from the Avino Vein is understandably deficient in recorded lithology data. Modelling of the Avino Vein and San Gonzalo Vein systems made use of grade as well as lithology data. Consequently, the QP regards the lithology database adequate and fit for the purposes of resource estimation. The recent mining history supports that the potentially economic units persistently demonstrate continuity as new exposures become available.

Specific Gravity Samples

Based on a review of specific gravity data from drillholes in the Avino and San Gonzalo Veins, the QP concludes that future bulk density measurements should be completed using a water displacement method. A comparison of the two measurement techniques used for these specific gravity samples indicates that the results are acceptable for this study. However, the QP considers that the current level of data is inadequate for meaningful spatial estimation and recommends that the frequency at which specific gravity measurements are collected should be increased. To supplement the specific gravity data generated from drillhole samples, the QP recommends that large grab samples be obtained from the underground development at approximately 30 m intervals and subjected to the water displacement method of specific gravity determination.

QA/QC Samples

The rate of QA/QC SRMs, blanks, and duplicates insertions meets recommended industry standards. HARD charts indicate less assay precision than would be expected for pulp duplicates.

The QP has found no evidence of systematic laboratory bias, indicating that the assay results are reliable, but the QP recommends that some experiments be carried out to improve assay precision.

12.5.2 Oxide Tailings

The identified grade pattern is similar in character to other tailings deposits, such as overall homogeneity and a pronounced horizontal continuity.

Verification samples taken by Mr. O'Brien have confirmed the presence of gold and silver mineralization at grades similar to those obtained in the original tailings drilling campaign, with a low silver bias consistent with the superficial position of the samples in the zone most likely to have suffered surface leaching. The verification samples also confirm that the mine lab assays are not materially different from those of external labs.

12.5.3 QP Opinion

There were no limitations on or failure to conduct data verification.

The QP believes the assay, sample location, vein lithology, and specific gravity data from the Avino and San Gonzalo Veins are sufficiently reliable to support the purpose of this Technical Report and a current Mineral Resource on both veins and the oxide tailings.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The Avino mill is currently processing mineralization materials from the Avino Property. The target metal values are gold, silver, and copper. There is potential tailings resource from previous milling operations; currently, there is no operation on tailings material. The materials from the previous San Gonzalo Mine were processed from October 2012 to Q4 2019 with the target values of gold, silver, lead, and zinc. There are four grinding and flotation lines with a total capacity of 2,500 t/d, including two 1,000 t/d and one 250 t/d lines to recover copper, gold, and silver into a copper concentrate, and a separate 250 t/d line, which was used to produce materials from the previous San Gonzalo Mine, which has ceased operation since the end of 2019.

13.1 AVINO VEIN

The Avino Vein material is currently been processed at the Avino mill using froth flotation to produce a marketable copper concentrate with silver and gold credits. A gravity concentration circuit was also incorporated in three of the four processing lines. The material has been successfully processed in the past.

The Avino Vein was mined during the 27 years of open pit and underground production prior to 2001. From 1997 to 2001, the mine and mill production averaged 1,000 t/d and achieved up to 1,300 t/d. The mine and mill operations were then suspended. Following several years of redevelopment, in Q4 2014 Avino completed its Avino mining facility and mill expansion. On January 1, 2015, full-scale operations commenced and commercial production was declared effective April 1, 2016 following a 19-month advancement and test period.

The mill feed from the Avino Vein has been processed using froth flotation to produce a copper concentrate with silver and gold credits. In the 2019 operation, the average copper, silver, and gold recoveries reporting to a copper/gold/silver concentrate and a gravity concentrate were 86%, 85%, and 73% respectively. The total material processed was 427,147 t.

Bismuth was identified as a deleterious material in the concentrate and Avino had conducted preliminary test work in an effort to reduce the bismuth content in the concentrate to improve the smelter return. Six batch flotation tests were completed by SGS Mineral Services (SGS) to explore the possibility of bismuth and copper separation from a copper concentrate produced from the Avino mill. The separation tests included 1) floating copper minerals with suppressing bismuth-bearing minerals; 2) floating bismuth-bearing minerals with suppressing copper minerals on the copper concentrate reground to 80% passing approximately 25 µm. The test results showed that approximately 30% of the bismuth in the bulk copper concentrate can be floated into a concentrate containing 18.7% Bi from the copper concentrate containing 1.8% Bi using flotation separation. The copper and silver reporting to the bismuth concentrate were 1.3% and 14.7%, respectively. SGS indicated that compared to the floating copper and suppressing bismuth process, it appears that the process with floating bismuth and suppressing copper is feasible and promising. SGS recommended that further copper and bismuth separation test work using the flotation procedure, including mineralogical study, be conducted.

Avino has not based its production decisions on any FS or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

13.2 OXIDE TAILINGS

The potential for processing the oxide tailings resource from previous milling operations has been studied. The subsections summarize the metallurgical characterization obtained from previous test work and the study conducted by MMI in 2005 (Slim 2005c). MMI's report used the metallurgical results obtained and conclusions drawn by PRA (Huang 2003; Huang and Tan 2005). The revised and final report by MMI was dated October 2005 (Slim 2005d).

The following sections are reproduced from the 2013 PEA (Tetra Tech 2013), with some minor modifications to summarize the findings of the metallurgical test programs conducted so far.

HISTORICAL METALLURGICAL TEST RESULTS

A number of metallurgical evaluations have been completed on various samples from the oxide tailings storage facility, according to the MMI report produced in 2003 (Slim 2003). Apparently, the first cyanidation tests were conducted in 1982, followed by further tests performed over the years. The summarized cyanidation test results are shown in Table 13.1 taken from the 2003 MMI report (Slim 2003), while the reported flotation test results are given in Table 13.2. The results obtained from the test work program initiated by MMI in 2003 and 2004 were reported in the MMI 2005 technical report (Slim 2005d) and are included in Table 13.1 for purposes of comparison. The results will be discussed in greater detail later in this section.

Table 13.1 Cyanidation Test Results

Author	Date of Test	Extraction (%)		Leaching Time (h)	Particle Size (µm)
		Ag	Au		
Denver Equipment	1982	69.3	66.7	24	66.6% < 149
Penoles	1987	78.3	88.9	24	87% < 74
Maja	1990	85.9	80.9	24	100% < 105
Chryssoulis	1990	85.9	80.9	24	no data
Rosales	1996	83.9	76.9	23	75% < 74
MMI	2003	77.1	71.4	24	86% < 74
MMI	2003	88.8	88.4	48	86% < 74

Source: Slim (2003)

Table 13.2 Flotation Test Results

Author	Date of Test	Recovery (%)		Particle Size (µm)
		Ag	Au	
Penoles	1987	60.2	47.1	87% < 74
Rosales	1996	69.4	66.9	75% < 74

For the tests outlined in Table 13.1 and Table 13.2, no details have been provided regarding:

- the location or the manner in which the samples were taken
- why these particular samples were taken
- the test parameters employed
- the assay techniques used, etc.

The first set of results for tests conducted on MMI samples from the 2003 sampling campaign indicate a silver extraction of 77.1% and gold extraction 71.4%. However, these results cannot be verified since the origin of this set of numbers as quoted in the MMI technical report (Slim 2005d) is not known. The second set of results was reported in the 2003 PRA report (Huang 2003). Considered in general terms, it would appear as if the cyanidation test results are reasonably consistent over the indicated period of time. However, no specific conclusions should be drawn since nothing is known about the head grades of the samples, the samples used, or the test and assay procedures used at the time that these tests were conducted.

The flotation results vary widely for similar particle sizes with recoveries ranging from 60% to 69% for silver and 47% to 67% for gold. However, the test details of these reported cyanidation and flotation tests are unknown.

The MMI Technical Report

Avino commissioned MMI to produce a document that was NI 43-101 compliant with respect to detailing the indicated oxide tailings resource (subsequently referred to as an Inferred Resource) and to define the metallurgical characterization and assay results for this material. The proposed economic processing of this tailings material could then be used to form the financial analysis basis for restarting the mine.

The first report prepared by MMI was titled "Tailings Valuation" and was dated November 2003 (Slim 2003). Two further reports by MMI titled "Preliminary Feasibility" (Slim 2005a) and "Tailings Valuation" (Slim 2005b) were produced in May 2005. The "Tailings Valuation" report (Slim 2005b) was subsequently revised and re-titled "A Tailings Resource" in July 2005 (Slim 2005c). This July 2005 MMI report (Slim 2005c) was reviewed by the Canadian Securities Administrators and returned to MMI for revision. The revised MMI report was re-issued as "A Tailings Resource" and dated October 2005 (Slim 2005d) and was resubmitted to the CSRA for review. The October 2005 report (Slim 2005d) was produced for Avino Mines, Cia Minera Mexicana, Durango, Mexico, by Bryan Slim, of MMI, North Vancouver, British Columbia, Canada. The document was submitted as a technical report to the CSRA.

Two sets of test programs were conducted by PRA under direction of MMI. One was conducted during 2003 for which no sample origin can be determined (Huang 2003), and the other, more detailed test program was conducted during 2004 (Huang and Tan 2005). The 2004 test work and assaying program was designed and supervised by MMI. It was conducted on the samples collected from the tailings dam by MMI during 2004, while also using the results from the preliminary metallurgical scoping tests completed during 2003 as a guide. PRA staff, at their facilities in Vancouver, British Columbia, conducted all the test work from both MMI test programs.

Introduction to the MMI 2003 Metallurgical Test Program

The 2003 test program consisted of the following tests as summarized in Table 13.3. The cyanidation extraction results obtained were used in a preliminary report by MMI (Slim 2003). MMI considered using a 2,000 t/d vat leaching process to recover silver and gold from the oxide tailings; however, this treatment process option was revised when the results of the 2004 test program became available.

Table 13.3 Test Procedures MMI 2003 Test Program

Process/Procedure	Details of Test	Sample Identify
Sample Preparation	No details documented	Sample L and Sample U
Head Assays	Fire assays, AA, and ICP multi-acid	Composite of L and U
Specific Gravity	Standard pycnometer test	Composite of L and U
Cyanidation Leach	P_{80} = 68 µm; 40% solids; pH 10.5; 1.0 g/L NaCN; 48 h; dO_2 > 7.9 mg/L 0.4 kg sample	Composite of L and U
Flotation	Rougher and two scavenger stages; P_{80} = 85 µm; 35% solids; pH 5.5; PAX & A208 with MIBC; 1 kg sample	Composite of L and U
Mineralogical	Examination of flotation tailings	Composite of L and U

Source: Slim (2003)

Note: dO_2 – dissolved oxygen; PAX – potassium amyl xanthate; NaCN – sodium cyanide

The exact origin of Sample L and Sample U is not known and does not appear to have been documented. The manner in which each of the samples was collected by MMI has apparently also not been documented. The size of both samples, namely 0.8 kg for Sample L and 0.9 kg for Sample U, is small and its representation is questioned. Also, there appears to be no documentation relating to the arrival and receipt of these samples at PRA. There is no receiving log in the PRA Report No. 0302303 (Huang 2003). Also, no assay certificates have been recovered to date. Even though these tests were considered to be scoping tests only, the results cannot be validated. When considering all the above factors, it is apparent that these results cannot be used with any degree of validity in the review of process options for the recovery of silver and gold.

Introduction to the MMI 2004 Metallurgical Test Program

The 2004 test program was a better structured program, which included the pre-concentration processes such as gravity concentration and flotation, both with and without regrinding, in an attempt to upgrade the material into a smaller mass for the subsequent treatment for the recovery of silver and gold. Also, cyanidation leach tests were conducted on as-received samples, as well as samples that were reground to attempt to improve the liberation of silver and gold from the associated minerals. A single column leach test was also performed.

Additional work completed included establishing the specific gravity and bulk density of the material, determining the Bond Mill Work Index on an oxide sample from the open pit, settling and filtration tests following cyanidation tests, and electrowinning tests using Electrometals Electrowinning (EMEW) technology. All the different test procedures are summarized in Table 13.4.

Table 13.4 Test Procedures – MMI 2004 Test Program

Process/Procedure	Details of Test	Sample Identify
Sample Preparation	Individually numbered; dried; weighed; subsequently composited	Composites A, B, and C
Head Assays	Fire assays, AA and ICP multi-acid	Individual Samples, and Composites A, B, and C
Specific Gravity	Standard pycnometer test	Composites A, B, and C
Bulk Density	Standard volume displacement test	Composites A, B, and C
Mineralogical Examination	Examination of as-received samples	Selected Samples
Test Product Assays	Fire assays, AA and ICP multi-acid	All test Products
Bond Mill Work Index	Six cycles; closing screen size 150 µm	Oxide Sample
Size-assay Distribution	Screened and assayed the size fractions	Selected Samples
Gravity Concentration	Various test conditions	Composites A, B, and C
Cyanidation Leach	Various test conditions	Composites A, B, and C
Flotation	Various test conditions	Composites A, B, and C
Column Leach Test	Agglomerated feed; 81 d duration; 0.5 to 1.0 g/L NaCN; pH 10.5; 0.05 mL/s	Composite of A and B
EMEW	Various test conditions	PLS from Leach Test
ABA	Acid generation tests	Composites A, B, and C

The results obtained from this test program led MMI to include the heap leach process as the recommended treatment option in their report dated May 2005 (Slim 2005a).

Evaluation and Review of Metallurgical Tests

Tetra Tech reviewed the metallurgical tests conducted during the MMI 2004 test program. The most promising process option should be selected as the recommended process treatment route based on the evaluation of the results obtained from the test program. This process option should then be evaluated with respect to capital and operating cost estimates. The process implications of the procedures and processes investigated, and the results obtained, are discussed in this section.

Sample Preparation and Characteristics

Bagged samples carrying the MMI identification tags were prepared at Avino mine site under the direct supervision of MMI personnel. These samples were then transported from the mine site to Durango, Mexico, and shipped via airfreight to Vancouver, British Columbia. The samples were delivered to the PRA facility and unpacked in the presence of MMI personnel to ensure that no tampering had occurred to the samples en route. The samples were subsequently renumbered by MMI prior to PRA staff un-bagging and drying the samples. These details are shown on the PRA sample receiving log (Huang and Tan 2005). The individual samples were initially air-dried, followed by a low-temperature of less than 50°C of oven drying.

The individual samples were subsequently homogenized and riffled and split into four one-quarter fractions. One of these fractions was used for head assay determinations. A second fraction was used for compositing selected individual samples to create the sample Composite A, representing the oxide material of the lower bench of the tailings dam. Similarly, Composite B, representing the oxide material of the middle bench of the tailings dam, was prepared by compositing selected individual samples, as was Composite C, representing the sulphide tailings of the upper bench.

Although the samples had arrived at PRA from the Avino mine site without any indication of tampering, it is the sampling regime itself, which is considered to be deficient. First, the sampling of the oxide section of the tailings dam was incomplete. The sampling did not replicate the 1990 CMMA program, and certain parts of the tailings dam were not sampled. Second, the samples that were taken by MMI only represented the first 4 m of depth of the tailings dam. Indications are, however, that the overall depth of the oxide section of the tailings dam varies between 7 m and 27 m. These two major deficiencies were also recognized by the Canadian Securities Administrators as deficiencies during their review. Both these items were addressed in the final MMI report dated October 2005 (Slim 2005d). The October 2005 report recommended a more detailed program of sampling of the whole tailings dam up to bedrock or ground soil level, as well as conducting metallurgical characterization tests using representative material from this more detailed sampling process, whenever this is to be performed. However, since the MMI technical report (as reviewed by the Canadian Securities Administrators subsequently referred to the oxide tailings as an Inferred Resource (Slim 2005d), this and other sampling discrepancies noted in the MMI test program, will not be discussed any further.

Moisture Content

The moisture contents of the samples as received from the Avino mine site tailings dam were found to vary widely, namely from a low value of 5.12% to a high value of 28.25% moisture. A frequency distribution for moisture content of all the oxide tailings samples as received by PRA is given in Table 13.5. The bi-nodal distribution is apparent.

Table 13.5 Moisture Content of Samples

Frequency Distribution	
Moisture Content Range (%)	Number
5.00-7.50	9
7.51-10.00	14
10.01-12.50	19
12.51-15.00	16
15.01-17.50	5
17.51-20.00	5
20.01-22.50	12
22.51-25.00	5
25.01-27.50	0
27.51 -30.00	1

The particular presence of these high moisture content values in the tailings dam apparently confirms the high moisture content values found during the 1990 sampling program conducted by CMMA. Although the precise sampling procedure and drying conditions are unrecorded, a data sheet provided by Avino as ostensibly related to this sampling program, provides assay values and moisture contents obtained during the program. The moisture values obtained varied from a low moisture value of 13.89% to a high value of 29.4%, and a calculated average of 22.87% moisture.

A possible reason for the high moisture content of the tailings material is that the mine was operational during this period when the sampling program was undertaken, i.e., 1990, and that routine tailings deposition was still in progress.

The specific reason for the relatively high moisture contents found during the 2004 MMI sampling program is not apparent. The MMI technical report (Slim 2005d) has referred to the possibility of the original manner of deposition of the tailings, which has resulted in localized areas of high moisture content. Also, the presence of artesian springs under the tailings dam has also been mentioned as a possible reason. It was also observed that any rainwater run-off from the higher levels above the tailings dam would collect at the head of the tailings dam and subsequently seep through the dam, exiting at the foot of the dam. Whatever the reason(s) may be, areas of high moisture content do exist and will influence the method of recovery of the tailings and the subsequent agglomeration process.

Head Assays and Test Products Assays

Gold assaying was completed using the standard fire assay procedure. Initially, the silver was also analyzed by the fire assay procedure followed by an AA spectrophotometric finish. However, this fire assay-based method for silver is not very accurate in the low concentration range of less than 100 g/t for silver. Assaying for silver was then done using ICP-MS preceded by the total digestion of the sample in a suite of mineral acids. A further method was also investigated, namely that of total acid digestion followed by an AA finish. The results obtained with this acid digestion and AA method were similar to the ICP-MS. The assay method selected for all the silver assays was therefore the ICP-MS method preceded by the total digestion of the sample in a suite of mineral acids (ICP-MS). All the other analyses for the various products arising from the metallurgical tests were done by the standard and universal methods using titration, ICP-MS or AA methods.

All the various head sample analyses conducted during the test program are listed in Table 13.6. The reference to the test number relates to the stage of the test work that the sample was submitted for analysis. The average values for the four different composite samples tested, namely Composite A, Composite B, Composite C, and the Composite A + B blended sample, have all been calculated and are given in the table together with the respective standard deviation values. The standard deviation of the head samples representing Composite A and Composite B are shown to be within 10% of the deviation from the average value. This is considered to be reasonable.

However, the average silver value of all the head assay analyses assayed as head samples representing both Composite A and Composite B together is only 86.8 g/t silver. This average silver grade is less than the 95.5 g/t silver as given in the MMI technical report as being the overall silver grade of the material of the whole oxide tailings dam (Slim 2005d). Similarly, the average gold value of all the head assay analyses assayed as head samples representing both Composite A and Composite B (i.e., representing the oxide tailings dam) taken during the test work program, is 0.44 g/t gold, which also is less than the 0.53 g/t gold, as quoted in the MMI technical report (Slim 2005d). For silver, this amounts to a difference of about 9% based on the MMI quoted head grade of 95.5 g/t silver, while for gold the difference is larger at 17% based on the MMI quoted gold value of 0.53 g/t gold. It is of interest that the average head assay for the Composite A + B sample is closer to the calculated average from Composite A and for Composite B, namely 89.6 g/t compared with 86.8 g/t for silver, and 0.41 g/t compared with 0.44 g/t for gold. The above discussion assumes that the tonnages of the tailings dam labelled Composite A (lower bench) will be mixed in equal proportion to the area of the tailings dam designated as Composite B (middle bench). In the absence of specific tailings dam volumes, or tonnages, this assumption may be an oversimplification and may therefore not be entirely valid. However, the assay values for Composite B is lower than the overall average head grade of the tailings samples collected.

Table 13.6 Head Assays

Test No.	Assays (g/t)		Test No.	Assays (g/t)	
	Ag	Au		Ag	Au
Composite A			**Composite B**		
SA9	99.8	0.37	SA10	88.3	00.55
Ave. 1	103.4	0.34	Ave. 1	82.6	0.68
Ave. 2	105.3	0.36	Ave. 2	88.4	0.51
C1	95.2	0.35	C4	76.3	0.52
C2	94.3	0.35	C5	70.6	0.49
C3	94.1	0.36	C6	71.4	0.50
C7	88.7	0.36	C9	70.3	0.52
C8	88.7	0.36	C10	70.3	0.52
C13	95.9	0.28	C15	77.2	0.49
C14	98.9	0.37	C16	78.3	0.52
C17	95.2	0.35	C18	77.2	0.49
Average Value	**96.32**	**0.350**	**Average Value**	**77.35**	**0.526**
Standard Deviation	**5.27**	**0.025**	**Standard Deviation**	**6.72**	**0.054**
Composite C			**Column Composite A+B**		
C11	39.8	0.34	C4	87.4	0.42
C12	39.8	0.34	C5	90.1	0.40
Ave. 1	31.7	0.29	C6	91.4	0.42
Ave. 2	39.8	0.39	C9	-	-
Average Value	**37.78**	**0.340**	**Average Value**	**89.63**	**0.413**
Standard Deviation	**4.05**	**0.041**	**Standard Deviation**	**2.04**	**0.012**

A further comment regarding the assay results above relates to the methods employed for the assaying techniques for silver from these samples. The MMI technical report (Slim 2005d) states that for the CMMA 1990 tailings drilling program, the silver assaying was completed using the mine standard practice of fire assay followed by acid digestion and AA finish. The PRA metallurgical test work program used multi-acid digestion followed by ICP assay method for silver analyses. It is anticipated that there will not be a significant difference between the silver assays as reported in 1990 and those from the MMI test program as conducted by PRA, but the extent of this difference cannot be quantified in this review. Similarly, no comment can be given as to the accuracy of the assays conducted by CMMA, since the standards of precision of sampling, sample preparation, and detailed methodology of the assaying methods are unknown. However, a summary sheet containing assay values has been provided by Avino as being the silver and gold grades obtained from the 1990 CMMA sampling program. No calculations have been performed using these assay values and it is only included in this report since it is part of the CMMA sampling program. The MMI report (Slim 2005d) provides a grid map identifying the various sample holes.

Mineralogical Evaluation

At the start of the 2004 metallurgical test program, MMI requested that a sample from some of the individual samples be submitted for mineralogical analysis. The mineralogical findings have not been reported in the PRA Report No. 0406407 (Huang and Tan 2005), and also were not alluded to in the MMI technical report (Slim 2005d), nor in any of the preceding reports. The reason(s) why these results have apparently not been communicated to Avino or to the investigators of the test program at PRA is not known.

Bond Ball Mill Work Index

Although this information was not required for the treatment of the oxide tailings dam material, a Bond Ball Mill Work Index determination test was done on an oxide material sample. The work index was determined to be 12.3 kWh/t using a closing screen size of 74 µm (200 mesh) with convergence of the specific energy input (grams of product per revolution) found after five cycles of testing. This makes the sample tested a moderately hard rock type. The details regarding the origin of this sample have not been documented and its relevance as data is therefore questioned.

Bulk Density and Specific Gravity

Bulk density and specific gravity determinations were conducted on samples specifically identified by MMI. The specific gravity measurements were done using the standard pycnometric method, while the bulk density values were obtained by measuring the volume of dry solids in a measuring cylinder. The values obtained are reproduced in Table 13.7.

Table 13.7 Bulk Density and Specific Gravity

Location/ Bench	Sample Identify	P_{80} Size (µm)	Bulk Density (g/cm³)	Specific Gravity
Upper Bench	S2	226	1.66	2.74
Lower Bench	S10	326	1.73	2.62
Lower Bench	S22	367	1.73	2.76
Middle Bench	S45	254	1.60	2.76
Middle Bench	S50	201	1.63	2.74
Upper Bench	S74	301	1.57	2.72
Average	-	-	1.65	2.72

The bulk density values determined for the oxide tailings material were found to vary between 1.57 g/cm³ and 1.73 g/cm³ with an average of 1.65 g/cm³. This average value is in reasonable accord with the bulk density of 1.605 g/cm³ as quoted in the MMI technical report. The specific values obtained were generally consistent with an average value of 2.72.

Particle Size – Assay Analysis

A particle size–fraction analysis was done on the same samples as were used for the bulk density and specific gravity determinations. These tests were conducted to determine whether the silver and gold were predominantly occurring in a particular particle size range. The size-assay analyses indicated that the metal distributions were varied according to the location, but that all displayed the bi-nodal distribution for silver, gold, and mass to varying degrees.

Sample S10 from Composite A from the Lower Bench of the tailings dam indicated one maximum metal distribution occurring in the size range of 149 µm to 210 µm, and another in the minus 37 µm size range. The maximum mass distributions are generally similar, although it occurs over a wider size range in the coarse size, namely 105 µm to 210 µm. The second sample from this bench, Sample S22, was similar but with a shifted maximum metal and mass distribution in the 210 µm to 297 µm size range, and a secondary maximum metal and mass distribution in the minus 37 µm size range.

Sample S45 from the Middle Bench of the tailings dam, and part of Composite B, indicated maximum metal distribution in the 149 µm to 210 µm size range with maximum mass distribution in the 105 µm to 149 µm size range. The secondary maximum metal and mass distribution was found in the minus 37 µm size range. The second sample from the Middle Bench, namely Sample S50, had the maximum metal and mass distributions in the 105 µm to 149 µm size range as well as the minus 37 µm size range.

The two samples from the Upper Bench of the tailings dam of Composite C displayed totally different particle size distributions. Sample S2 was bi-nodal with one maximum for metal and mass distribution in the size range of 105 µm to 149 µm and the second maximum occurring for the size range of minus 37 µm. Sample S74 displayed only one maximum metal and mass distribution over the relatively wide coarse particle size range of 105 µm to 297 µm. This sample was almost entirely devoid of slimes or minus 37 µm material.

These samples reflect the operating discharge conditions and history at the time of plant operations and tailings deposition. The results typify the use of a tailings cyclone situated on the tailings dam wall discharging the coarse undersize material onto the wall area with the finer cyclone overflow material flowing downstream and settling within the tailings dam. Changes in the size distribution would be anticipated with downstream distance from the point of discharge by the cyclones at the tailings dam wall. This is typified by the size distribution of Sample S74, which purports to be a cyclone underflow sample taken at the point of discharge and which was found to be almost totally devoid of fines or minus 37 µm material.

Gravity Concentration Tests

Pre-concentration tests using the centrifugal gravity concentration method were conducted to evaluate the potential upgrading of silver and gold. The laboratory size concentrator used was the Falcon Model SB40 centrifugal concentrator. The tests were conducted on samples from Composites A, B, and C. MMI dictated the test parameters used for these tests, including a set of tests where the samples were reground prior to conducting the gravity concentration test. The results from the gravity concentration tests are summarized in Table 13.8.

Table 13.8 Summary of Results of Gravity Concentration Tests

Sample Identify	Head Grade		Concentrate Grade		Recovery (%)			P_{80} (µm)	Remarks (Note: All tests are 3-pass tests)
	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (g/t)	Mass	Ag	Au		
Composite A	93.8	0.35	124.7	0.52	24.1	32.1	36.5	269	Pressure 1.5 psig; no regrind
Composite B	70.3	0.50	96.9	0.71	23.6	32.5	33.3	180	-
Composite C	39.7	0.33	58.0	0.65	24.1	35.2	47.0	254	-
Composite A	92.1	0.33	126.1	0.71	19.7	27.2	42.1	76	Pressure 1.0 psig; reground
Composite B	70.5	0.56	96.5	1.29	22.4	30.7	51.5	77	-
Composite C	40.7	0.38	65.5	0.98	24.8	39.9	64.3	79	-

Note: psig = pounds per square inch (gauge)

The mass recoveries varied between 20% and 25% indicating that the tests were performed in a uniform and consistent manner. The highest silver recovery obtained was 40% (after regrind) for Composite C and decreasing to 31% for Composite B (after regrind) and about 27% for Composite A, also after regrind. The gold recoveries were higher than the equivalent silver recoveries, particularly after regrind, indicating that the liberation of the precious metals could be incomplete.

However, the upgrading factor for both silver and gold is very low, namely about 1.4 for silver and up to 2.3 for gold. No further upgrading or silver and gold recovery tests were conducted on the gravity concentrates, possibly as a result of the relatively low grades and recoveries obtained. Also of interest is the fact that no historical test work was documented by MMI where gravity concentration was used to produce a saleable high-grade concentrate.

Flotation

Different scoping flotation tests were conducted on samples from Composite A and Composite B using various reagent schemes and conditions as dictated by MMI. The results of the flotation tests are summarized in Table 13.9. The test results reported led to the following conclusions.

For Composite A, a regrind from a P_{80} size of 238 µm (as received particle size) to a P_{80} of 72 µm, improved the flotation recovery of silver from 18% to 23% and that of gold from 18% to 39%. The standard suite of reagents was used for these tests (Tests F1, F3, and F4). For Composite B, a regrind from a P_{80} size of 173 µm (as received particle size) to a P_{80} of 74 µm, improved the flotation recovery of silver from 22% to 33% and that of gold from 12% to 32% (Tests F2, F5, and F6). A particle size fraction analysis distribution conducted on the tailings of Test F4 (Composite A) indicated that the major proportion of the mass and the silver and gold is present in the slimes or minus 37 µm size fraction. However, significant losses of silver, and particularly gold, occurred in the coarser sizes, namely the size range 53 µm to 105 µm. This indicates that the degree of liberation could be improved and that some metal appears to be occluded in the coarser particle sizes. Some silver may also occur within secondary oxide minerals and be unrecoverable by flotation. A similar mass and metal distribution was obtained in the case of Test F9 (also Composite A), which was a flotation test performed using a sulphidization reagent.

In testing the various flotation reagent suites, variable mass and metal recoveries and concentrate grades were obtained. However, the maximum silver grade obtained for a rougher concentrate was 909 g/t silver, while the overall recoveries for silver could not be improved beyond approximately 40%. This indicated that mineral surface alteration or oxidation, or occlusion of precious metals in gangue, was inhibiting the concentration by the flotation process. Since the silver recoveries obtained were deemed low and unsatisfactory, no further flotation tests were conducted and no extraction tests were performed on flotation concentrates.

The head assays obtained during the flotation testing stage gave inconsistent results. Table 13.9 shows the actual head assays obtained for each flotation test compared with the head assay obtained for silver for the composite samples. For Composite A, the individual silver head values for each flotation test conducted are all higher than the assay for the composite sample, except in the case of Test F11. The gold (and silver) values obtained for Tests F7, F8, and F9 are known to have been the result of poor sampling technique adopted for these three tests. The composite head assay gold value of 0.36 g/t gold is probably a reasonably representative assay value for Composite A. For Composite B, the silver head value for the composite sample is slightly lower than the assays for the individual flotation tests. For gold, the composite sample value is higher at 0.52 g/t gold than the assays for the individual tests.

The historical results of the flotation tests reported in Table 13.2 are significantly higher at 60% to 69% recovery for silver and 47% to 67% for gold. However, in the absence of information regarding the origins of these samples, the lack of head grade data and the absence of sampling and flotation procedures involved, these results will not be taken into consideration in selecting the processing options for the oxide tailings dam material.

Table 13.9 Summary of Results of Flotation Tests

Sample Identify & Test No.	Head Grade		Concentrate Grade		Recovery (%)			P_{80} (µm)	Remarks
	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (g/t)	Mass	Ag	Au		
Composite A/F1	112.2	0.35	908.7	3.17	2.1	17.8	18.4	238	3-stage ro., pH 8;
Composite A/F3	119.2	0.39	734.6	3.88	2.6	21.0	30.4	103	Conditioning NaCN +
Composite A/F4	104.6	0.40	630.9	3.36	3.8	22.6	38.6	72	Na_2CO_3; A404, PAX
Composite A/F7	111.9	1.39	654.6	5.56	2.3	16.3	34.9	~75	2-stage ro., nil NaCN
Composite A/F8	108.5	2.38	887.2	11.91	0.9	7.8	30.7	~75	2-stage ro., nil NaCN
Composite A/F9	114.5	1.67	723.9	5.86	2.7	20.8	45	~75	2-stage ro., NaS_2, PAX
Composite A/F10	103.5	0.58	401.3	1.62	8.9	34.6	39.8	~75	With $NaCO_3$, $CuSO_4$
Composite A/F11	99.6	0.34	484.8	1.83	8.8	42.2	48.3	~75	With $CuSO_4$, A208
Composite B/F2	88.4	0.42	695.4	2.65	2.6	22.0	12.2	173	3-stage ro., pH 8
Composite B/F5	89.7	0.47	806.1	4.18	2.9	27.0	24.6	92	Conditioning NaCN +
Composite B/F6	89.9	0.51	867.1	5.45	2.9	32.5	32.1	74	Na_2CO_3; A404, PAX
Composite A: Head	99.8	0.36	-	-	-	-	-	-	-
Composite B: Head	88.3	0.52	-	-	-	-	-	-	-

Note: $CuSO_4$ = copper sulphate; $NaCO_3$ = sodium carbonate

Cyanidation Tests

Cyanide leaching tests were conducted on samples from Composite A, Composite B, and Composite C using different leaching conditions. The first set of tests were to determine the effect of regrinding the tailings samples prior to leaching while subsequent tests determined the effect of cyanide concentration in the leach solution.

For Composite A, the silver extractions varied from 66% for the un-milled (as received) sample to 80% for the samples that were reground, while the gold extractions varied from 82% to 89%, respectively. For Composite B, the silver extractions ranged between 69% for as-received material, to 77% for samples that were reground. The corresponding gold extractions varied between 82% and 87%. Although the cyanide consumption increased with the regrinding of samples tested for both Composite A and Composite B, the increase in extraction may compensate for the additional cost of cyanide reagent and regrinding provided that the filtration characteristics are not detrimentally affected. Higher cyanide concentrations in the leach solution tended to improve the extractions of silver and gold but increased the cyanide consumption significantly as well.

The results from the sulphide tailings, namely Composite C, indicate that between 73% and 87% of the silver can be extracted, with between 77% and 85% of the gold. However, the cyanide consumption values were higher than the results from the oxide tailings. Only two leach tests were conducted on reground samples from Composite C, each having a P_{80} of about 69 µm. A summary of the cyanide leach test results is given in Table 13.10.

Table 13.10 Summary of Results of PRA Cyanidation Tests

Sample Identify & Test No.	Extraction (%)		Reagent Usage (kg/t)		NaCN Concentration (g/L)	P_{80} (µm)
	Ag	Au	NaCN	Lime		
Composite A+/C1	66.4	81.5	1.8	1.4	1.0	269
Composite A+/C2	79.3	85.7	1.6	1.8	1.0	103
Composite A+/C3	80.4	89.1	2.6	1.6	1.0	78
Composite A+/C7	78.6	82.7	2.2	1.8	0.5	74
Composite A+/C8	89.7	85.5	5.1	0.8	2.0	74
Composite A*/C13	79.7	86.8	1.5	1.3	0.5	74
Composite A*/C14	83.1	82.1	3.7	0.8	2.0	74
Composite A*/C17	79.4	90.9	1.0	1.2	1.0	74
Composite B+/C4	69.1	82.0	2.6	1.8	1.0	180
Composite B+/C5	77.1	88.3	1.7	1.8	1.0	100
Composite B+/C6	77.3	86.9	1.7	1.9	1.0	84
Composite B+/C9	73.2	86.0	2.6	1.2	0.5	84
Composite B+/C10	79.5	86.4	4.5	1.0	2.0	84
Composite B*/C15	72.9	82.6	1.6	2.0	0.5	84
Composite B*/C16	75.4	83.4	3.8	1.0	2.0	84
Composite B*/C18	67.7	78.6	0.9	1.3	1.0	84
Composite C+/C11	73.8	77.3	4.0	2.8	1.0	69
Composite C+/C12	86.6	85.0	7.3	2.6	2.0	67

Notes: "+" indicates Original Composite Sample.
"*" indicates New Composite Sample.
Tests C17 & C18 = 24 h leach duration; other tests + 72 h leach duration.

During the cyanide leach test program, a new Composite A and Composite B sample had to be prepared since the original composite samples had been exhausted. Comparison of results from the two composite samples indicated similar behaviour patterns, although there are some noticeable differences in the extractions. Also, the cyanide and lime consumption values as recorded are inconsistent. This indicates that absolute numbers cannot be assigned to a single test, although any observed trends would be valid. The averages of similar tests would more likely predict the overall responses more accurately. It is also apparent that non-systematic variations in the assay results could have arisen from subtle variations in mineralogy, sample preparation, the sample regrinding process, and possibly daily variations in temperature.

The cyanide leach extraction results quoted by MMI in Table 13.1, and the averaged results from the present test program, are summarized below in Table 13.11, and will be discussed in the following section.

Table 13.11 Summary of Cyanidation Test Results Used by the MMI Reports

Sample Identify & Test No.	Extraction (%)		Remarks
	Ag	Au	
Composite A/C1	66	82	As-received; 1.0 g/L NaCN
Composite A/C7 & C13	80	85	Average; reground; 0.5 g/L NaCN
Composite B/C4	69	82	As-received; 1.0 g/L NaCN
Composite B/C9 & C15	73	84	Average; reground; 0.5 g/L NaCN
MMI 2003	77	71	Results from 2003 test program
MMI 2003	88	88	Origin of results unrecorded
MMI 2004/C8 & C10	85	86	Average; reground; 2.0 g/L NaCN

The average extraction results obtained from samples from Composite A and Composite B in the present study are generally lower than the results from the historical test work as detailed in Table 13.11. However, in the absence of details, these historical results cannot be used in the overall evaluation of this process. The MMI claim of a 77% silver extraction, based on the MMI (2003) test program, cannot be considered an acceptable result since only one test was done. The sample origin is purported to be four holes dug at approximately 25 m intervals with samples scraped into a bag, one for the lower bench and one for the upper bench of the oxide tailings dam. Clearly, a sample collected in this manner cannot be considered to be representative. Also, the other MMI (2003) claim for an extraction result of 89% silver and 88% gold cannot be validated. All these test results can therefore not be considered as valid and will not be used in any further discussions or evaluations.

The MMI (2004) results, as claimed in the technical report and listed in Table 13.11 above, are also considered unusable. The reasons for this statement are that these results were obtained with a reground sample and leached at a high cyanide concentration of 2.0 g/L sodium cyanide, whereas the other tests were done using 1.0 g/L sodium cyanide. Both these conditions, that is, the regrinding of the tailings material and a high cyanide concentration leach condition, will not be implemented in a recovery process and these results are considered to be unrealistic.

The extraction results from the cyanidation tests obtained using as-received samples from Composite A and Composite B, namely 66% to 69% for silver and 82% for gold, were encouraging.

Column Leach Test

One column leach test was conducted on a 30.9 kg sample of an equal mix of material from Composite A and Composite B. The sample was mixed with water, Portland Cement, and lime and then agglomerated to a P_{80} size of 2,614 µm. After curing, the sample was put into a column with a diameter of 102 mm and a height of 3 m. The column test was run for a total of 81 days after the solution flowrate and pH had been stabilized. The silver extraction obtained was 73.0% while the gold extraction was 78.9%. These results compare very well to the average extraction values calculated from the cyanidation tests of the individual composite samples leached in the as-received condition, namely 67.8% for silver and 81.8% for gold. The cyanide consumption values are also comparable. The results obtained from the column test, as well as the calculated average extraction values obtained from the tests conducted on the as-received samples of Composite A and Composite B, have been summarized in Table 13.12.

Table 13.12 Summary of Results of Column Leach Tests

Sample & Test No.	Extraction (%)		Reagent Consumption (kg/t)			NaCN Concentration (g/L)	P_{80} (µm)	Remarks
	Ag	Au	NaCN	Lime	Cement			
Column Test, Composites A and B	73.0	78.9	2.32	13.73	21.8	0.5 & 2.0	2,614	pH 11; flowrate 0.05 mL/s
Composites A and B Average, Tests C1&C4	67.8	81.8	2.18	1.59	-	1.0	225	pH 10.5/11; bottle roll

The kinetics of leaching had slowed down significantly by Day 81 when the test was terminated, although there was evidence that some leaching was still in progress.

A particle size assay analysis of the leach residue of the column test found that the highest unleached (undissolved) silver grade was in the coarsest size range of plus 210 µm, while the highest gold value was found in the minus 37 µm size range. This suggests both inadequate liberation of the silver grains and/or minerals, and occlusion of gold possibly by clay minerals, or the presence of tarnished/coated mineral surfaces, or the presence of refractory minerals. The subsequent leaching of de-agglomerated column leach test residue resulted in a negligible extraction of silver and gold. This indicates that the column leach test had virtually reached its maximum potential extraction, which confirms the observation that the leaching rate had slowed down.

Only one column leach test was conducted. Also, the material tested was a mixture of samples from Composite A and Composite B, that is, a mixture of material from the lower and the middle benches of the oxide tailings dam. During the test, flow problems were encountered, which resulted in the column having to be unloaded and the material having to be re-agglomerated with the test subsequently re-started after filling the column. In general terms, the results from one test only cannot be regarded as representative of the whole oxide tailings dam. However, despite these limitations and problems encountered, the encouraging results obtained and the close comparison with the bottle-roll tests, implies that the results are relatively reliable. The extraction values obtained from the column test, namely 73.0% for silver and 78.9% for gold, will therefore be used in the evaluation of this treatment process. The reagent consumption values also appear to be very high, namely 13.73 kg/t for lime, 21.8 kg/t for cement, and 2.32 kg/t for cyanide. However, lime and cement consumption values obtained in laboratory tests generally approximate commercial operations, although in this case they seem to be unrealistically high. The cyanide consumption of a commercial operation would typically only be 30% to 50% of that measured in a laboratory test.

Acid-base Accounting

The ABA results predict the overall acid generating potential of selected samples. A net acid general potential was found for the sulphide tailings but not the oxide tailings. The processing of the sulphide tailings for silver and gold recovery could modify the ABA and increase the stability of the ultimate residues. Alternatively, the sulphide tailings would require the addition of lime during the process of relocating this material. This would ensure that the sulphide tailings would not cause acid-generating environmental problems.

Electrowinning

Electrowinning metal recovery tests were conducted using EMEW technology (from the Electrometals Electrowinning company), specifically designed for the electrodeposition of metals from dilute solution tenors. The tests were carried out using filtered cyanide leach pregnant solutions. Although the test results were favourable, it appears unlikely at this stage that this technology could be applied in this situation given the high solution volumes generated and the very low silver concentrations anticipated in the pregnant solution from the heap. However, further test work using the EMEW metal recovery system should be undertaken if the Project advances to the FS level because the potential for savings in capital cost and operating cost needs to be investigated.

Test Result Review

Gravity Concentration

Review of Results

As indicated in Table 13.8, the upgrading for silver from the as-received oxide tailings was poor with a maximum concentrate grade of 125 g/t silver at a mass recovery of 20%. The upgrading of gold is similarly poor. The re-grinding of the samples prior to gravity concentration leads to an almost negligible improvement in the upgrading of silver to 126 g/t silver, while for gold a maximum concentrate grade of 1.29 g/t gold was obtained. The sulphide tailings response to gravity concentration is equally poor with even lower grade gravity concentrates being obtained despite slightly improved recoveries being observed for both silver and gold.

Conclusion

The poor results obtained, in that no high-grade metal concentrate could be produced, coupled with the fact that no extraction tests for silver and gold were conducted on the gravity concentrates produced, has resulted in the gravity concentration treatment option not being selected for further consideration.

Flotation

Review of Results

The flotation results have been summarized in Table 13.9. The results indicate that the overall recoveries for both silver and gold are low, namely between 8% and 42% for silver and 12% to 48% for gold. The re-grinding of both the tailings samples (Composite A and Composite B) are seen to improve the recoveries, while the testing of various reagent regimes also resulted in improvements to the overall recoveries of both silver and gold in some cases. However, the overall recoveries are generally considered to be low at less than 40% for silver and less than 48% for gold, and this is coupled with a very low-grade concentrate being produced. This poor flotation response is probably the result of surface alterations and/or inadequate liberation of the silver- and gold-bearing minerals. No extraction tests were conducted on any of the flotation concentrates produced and so the total extent of extraction is not known. No tests were conducted on the sulphide tailings material (Composite C), and its response to flotation as a pre-concentration process is therefore not known.

Conclusion

Flotation will not be considered as a treatment option for the recovery of silver and gold from the oxide tailings dam material. For the reasons specified above, namely a generally low recovery of silver and gold, the option of using flotation to recover silver and gold will not be considered as a processing method in the treatment of the oxide tailings dam material.

Cyanide Leaching

Review of Results

Cyanidation leach tests were done on samples from Composite A and Composite B under different conditions of particle size and solution cyanide concentration. The results have been summarized in Table 13.10. The results generally indicated that cyanidation was still occurring after 72 h of the leaching time used for the laboratory tests, but at a much reduced rate. The base metals copper and zinc also dissolved during the cyanide leach and will contribute to the overall consumption of cyanide. Increasing the cyanide concentration in the leach solution generally improved the extraction of silver and gold, but also increased the overall cyanide consumption. The extraction of silver and gold from Composite A increased with fineness of grind, while Composite B did not improve the extraction for finer grinds than P_{80} of 100 µm. The cyanide consumption figures are inconsistent in some cases, although trends are apparent. Although limited test work was done on material from Composite C, namely the sulphide tailings, a set of results have been included in Table 13.13 below for purposes of comparison.

Table 13.13 Cyanide Leaching Parameters

Sample Identify	Head Grade		Extraction (%)		Reagent Consumption (kg/t)		NaCN Concentration (g/L)	P80 (µm)	Remarks
	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (g/t)	NaCN	Lime			
Composite A	94.7	0.35	66.4	81.5	1.8	1.4	1.0	269	As-received sample
Composite B	95.9	0.28	69.1	82.0	2.6	1.8	1.0	180	
Average of A & B	95.3	0.32	67.8	81.8	2.2	1.6	1.0	225	
Composite A	94.7	0.35	79.3	85.7	1.6	1.8	1.0	103	Reground sample
Composite B	70.3	0.52	77.1	88.3	1.7	1.8	1.0	100	
Average of A & B	82.5	0.44	78.2	87.0	1.7	1.8	1.0	102	
Composite C	39.8	0.34	73.8	77.3	4.0	2.8	1.0	69	

Conclusions

As-received (unmilled) and reground tailings dam material will be expected to show the following extraction results under normal leaching conditions of approximately 68% for silver and 82% for gold. The reground material will give higher extractions at approximately 78% for silver and 87% for gold (see results in Table 13.12). Although the regrinding of tailings material is considered to be an expensive treatment method, cyanidation with and without regrinding as a treatment option is discussed in Section 17.3.

Column Leach Test

Review of Results

One column leach test was conducted using a blend of equal proportions of as-received (unmilled) Composite A and Composite B oxide tailings material. Despite interruptions in the leaching cycle as a result of the de-agglomeration of material in the column and the resultant percolation of fines, the overall extraction of silver was 73% and 79% for gold (see Table 13.12 for the results). Although the test was terminated after a total leaching time of 81 days, indications were that the leaching process was nearing completion but had not finalized at that stage. The above extraction results compare very well with the average extraction results obtained from the bottle roll leach tests, namely 68% extraction for silver and 82% for gold. The cyanide consumption of 2.3 kg/t for the column test was also comparable with that obtained for the bottle roll leach tests, namely 2.2 kg/t. The lime consumption for the column test was significantly higher, probably as a result of the two repeated agglomeration exercises.

Conclusions

Although only one column leach test was performed, the extraction results are in keeping with those obtained from the bottle roll tests. The results as given in Table 13.12 will be used for developing the process design criteria.

Precious Metal Recovery

Review of Results

Only one technology was tested for recovering precious metals from cyanide leach solutions. The pregnant solution arising from leach tests performed on oxide tailings material was used to conduct electrowinning tests. Three tests were conducted using the EMEW technology. These tests indicated that silver could be electrowon from solutions with a starting concentration of about 58 mg/L silver to a depleted electrolyte with about 3 mg/L silver. The deposition was also shown to be very selective with respect to the co-deposition of base metals. However, the pregnant solution from a leaching heap is expected to be significantly less than 58 mg/l silver, possibly as low as 16 mg/L silver. It is unclear whether the EMEW technology could operate efficiently under such low silver tenors.

The alternative process options for the recovery of precious metals would likely be either activated carbon or the zinc precipitation method. No tests were conducted on these two process options. The use of an activated carbon circuit to recover silver is not recommended because of the added operational complexity. Also, the relatively high grade of the silver in solution will result in the treating of relatively large amounts of carbon, which will add to the cost of the Project.

Conclusions

No other historical test work results were reported by MMI, nor are any alternative technology results known to have taken place that tested the recovery of silver from the Avino mine site tailings material. The Merrill-Crowe process will therefore be the preferred technology to recover silver and gold from pregnant leach solution.

13.3 SULPHIDE TAILINGS

Limited test work has been completed on material from the sulphide tailings before 2012. The two sets of results on the reground sulphide samples indicate that 73% and 87% of the silver and 77% and 85% of the gold can be extracted using 1 g/L and 2 g/L cyanide solutions, respectively. However, the cyanide consumptions were higher than the results from the oxide tailings. No further testing has been conducted on the sulphide tailings samples after 2012.

14.0 MINERAL RESOURCE ESTIMATES

14.1 RESOURCE SUMMARY

The following tables provide a synopsis of the reported Mineral Resources reported in this section. Table 14.1 summarizes the base case values for all current Mineral Resources on the Property.

The reporting cut-off for the Avino Vein is 60 g/t AgEQ and the cut-off for the San Gonzalo Vein is 130 g/t AgEQ. These cut-offs were determined by Avino based on actual mining scenarios and a silver price of US$18.50/oz.

The reporting cut-off for the oxide tailings is 50 g/t AgEQ.

Mineral Resources have been depleted to account for mined volumes and topographic changes since 2017 as of October 30, 2020.

No Mineral Resource for the sulphide tailings is disclosed in this Technical Report.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 14.1 Avino Property – Mineral Resources

Resource Category	Deposit	Cut-off (AgEQ g/t)	Metric Tonnes	Grade				Metal Contents			
				AgEQ (g/t)	Ag (g/t)	Au (g/t)	Cu (%)	AgEQ (million tr oz)	Ag (million tr oz)	Au (thousand tr oz)	Cu (tonnes)
Measured and Indicated Mineral Resources											
Measured	Avino – ET	60	4,760,000	120	74	0.63	0.55	18.4	11.3	97	26,300
Measured	San Gonzalo System	130	267,000	356	263	1.36	0.00	3.1	2.3	12	0
Total Measured	**All Deposits**		**5,027,000**	133	84	0.67	0.52	21.5	13.6	109	26,300
Indicated	Avino – ET	60	13,890,000	107	59	0.68	0.41	47.9	26.5	304	56,700
Indicated	San Gonzalo System	130	216,000	304	230	1.09	0.00	2.1	1.6	8	0
Indicated	Oxide Tailings	50	1,120,000	124	89	0.42	0.00	4.5	3.2	15	0
Total Indicated	**All Deposits**		**15,226,000**	111	64	0.67	0.37	54.5	31.3	327	56,700
Total Measured and Indicated	**All Deposits**		**20,253,000**	117	69	0.67	0.41	75.9	44.9	436	83,000
Inferred Mineral Resources											
Inferred	Avino – ET	60	5,230,000	95	51	0.64	0.34	16.0	8.5	108	17,700
Inferred	San Gonzalo System	130	85,000	298	233	0.96	0.00	0.8	0.6	3	0
Inferred	Oxide Tailings	50	1,230,000	125	85	0.47	0.00	5.0	3.4	19	0
Total Inferred	**All Deposits**		**6,545,000**	103	59	0.61	0.27	21.8	12.5	129	17,700

Notes: Figures may not add to totals shown due to rounding.
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
The Mineral Resource estimate is classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum's (CIM) Definition Standards for Mineral Resources and Mineral Reserves incorporated by reference into National Instrument 43-101 (NI 43-101) Standards of Disclosure for Mineral Projects.
Based on recent mining costs (Section 21) Mineral Resources are reported at cut-off grades 60 g/t, 130 g/t, and 50 g/t AgEQ grade for ET, San Gonzalo, and oxide tailings, respectively.
AgEQ or silver equivalent ounces are notational, based on the combined value of metals expressed as silver ounces
Cut-off grades were calculated using the following consensus metal price assumptions: gold price of US$1,875/oz, silver price of US$24.00/oz, and copper price of US$3.10/lb.
Metal recovery is based on operational results and column testing and is shown in Table 14.2.
The silver equivalent was back calculated using the following formulas: ET AgEQ = Ag + 65.1 * Au + 8.66 * Cu ppm / 10,000 ; SG AgEQ = Ag + 72.54 * Au; Oxide Tailings AgEQ = Ag + 84.55 * Au.

Table 14.2 Metallurgical Recovery for Deposits based on Operational Performance and Column Tests

Metallurgical Recovery %			
	ET	SG	Oxide Tails
Ag	90	84	73
Au	75	78	79
Cu	88	-	-

14.2 DATA

Drillhole data for the Avino and San Gonzalo resource estimates was supplied by Avino to the QP in the form of several Microsoft® Excel spreadsheet and Microsoft® Access files, and this data was verified and compiled into .csv files (see Section 12.1).

Wireframe meshes (.dxf files) of the topography, underground development, previous 3D models of the San Gonzalo and Avino Veins and cross-section and plan view images were supplied by Avino. Drillhole data was imported into Leapfrog Geo™ software (version 4.2.3).

Data includes underground channel sampling and diamond drill data.

14.3 AVINO VEIN

14.3.1 GEOLOGICAL INTERPRETATION

The Avino Vein and the surrounding system are interpreted as part of a low- to intermediate-sulphidation system of silver-gold epithermal veins, breccias, stockworks, and silicified zones. The Avino system is relatively thick (up to 40 m thick in places) and exhibits lower silver but higher copper grades than the San Gonzalo Vein system. The San Gonzalo Vein system is narrow with high silver grades and the system is vertically restricted to a vertical interval less extending from surface down to 350 m below surface.

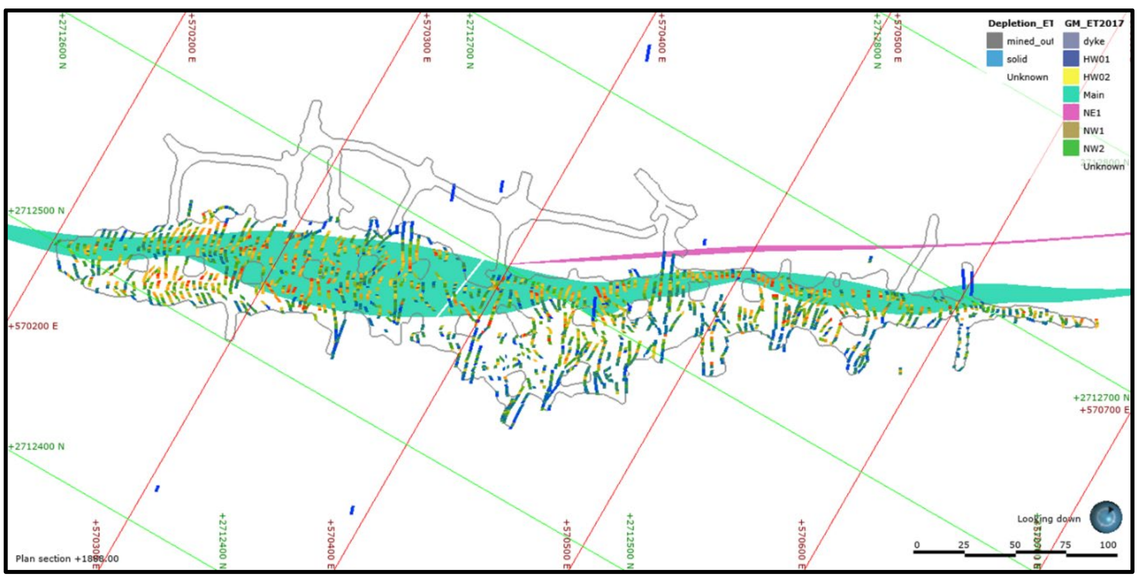
Historically, exposure and sampling of the deposit in underground development has been understandably biased towards the higher end of the silver grade spectrum. This presents problems when making decisions on what should be included as mineralized vein material, as the position of the mineralization to barren interface was either not exposed or recorded in the development data. In many cases, the edge of the mineralized zones was approximated by the end of sampling, the edge of the development, or a 40 g/t silver grade.

Unlike the San Gonzalo Vein system, the Avino Veins system at ET Mine is a broad zone of (up to 60 m thick) of anastomosing veins, breccias, and stockworks, and with more persistent downdip continuity. In 2017, there were indications that the average dip of the veins was maintained at 60° to 65° and were thinning at depth (see Figure 14.1 and Figure 14.3). Subsequently, the mineralised system has been exposed to a down-plunge extent of 550 (to 1,850 m AMSL) and is still open to depth. Underground development and stoping at the ET Mine below elevations of 1,950 m AMSL have revealed that the mineralized veins are flattening (to approximately 45° dip) in a listric fashion, and detailed underground sampling have revealed that the stockworks surrounding the veins are significantly better mineralized than previously believed (see Figure 14.2 and Figure 14.4). The Avino system can be summarised as two persistent vein structures with a stockwork containing mineralised veinlets between the veins and similar stockworks in the hanging wall and footwall.

Horizontal sections highlighting interpretation and model changes are shown in Figure 14.1 and Figure 14.2. The QP believes that it is reasonable to extend the geometric interpretation of the Avino Vein system to accommodate the mineralization physically sampled in the underground development (see Figure 14.2).

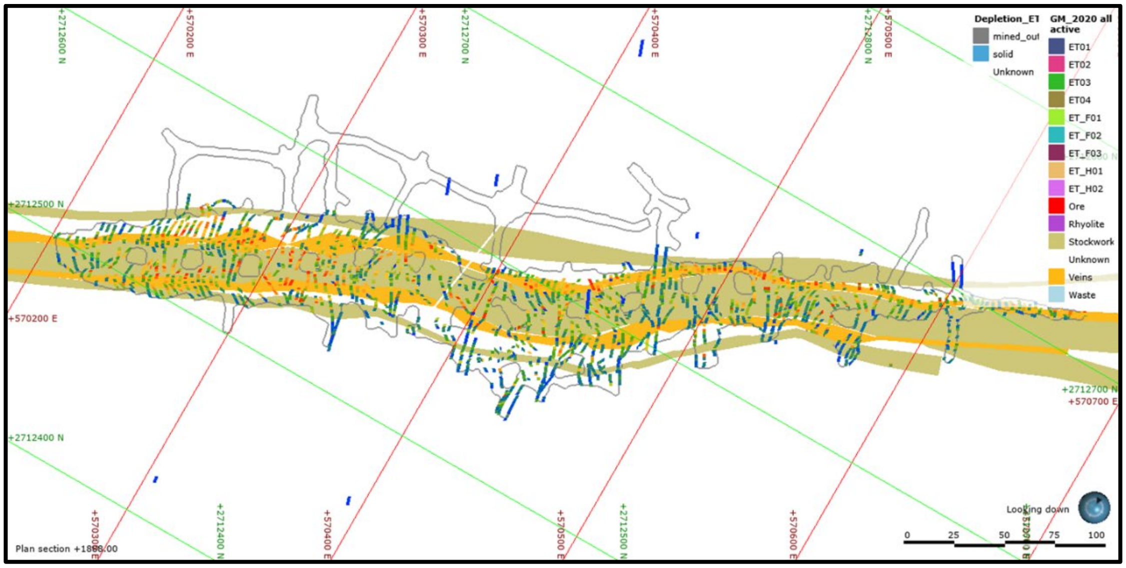
In 2020, the Avino Vein system was remodelled using Leapfrog Geo to account for the broader extents of the stockworks, deeper vein extension, and listric geometry.

Figure 14.1 Horizontal Section Elevation 1,888 m AMSL, 2017 Interpretation, Avino Main Vein Shown in Green. Note high grade underground sampling extending into the hanging wall of the vein as stockwork and veins are exposed by underground development.



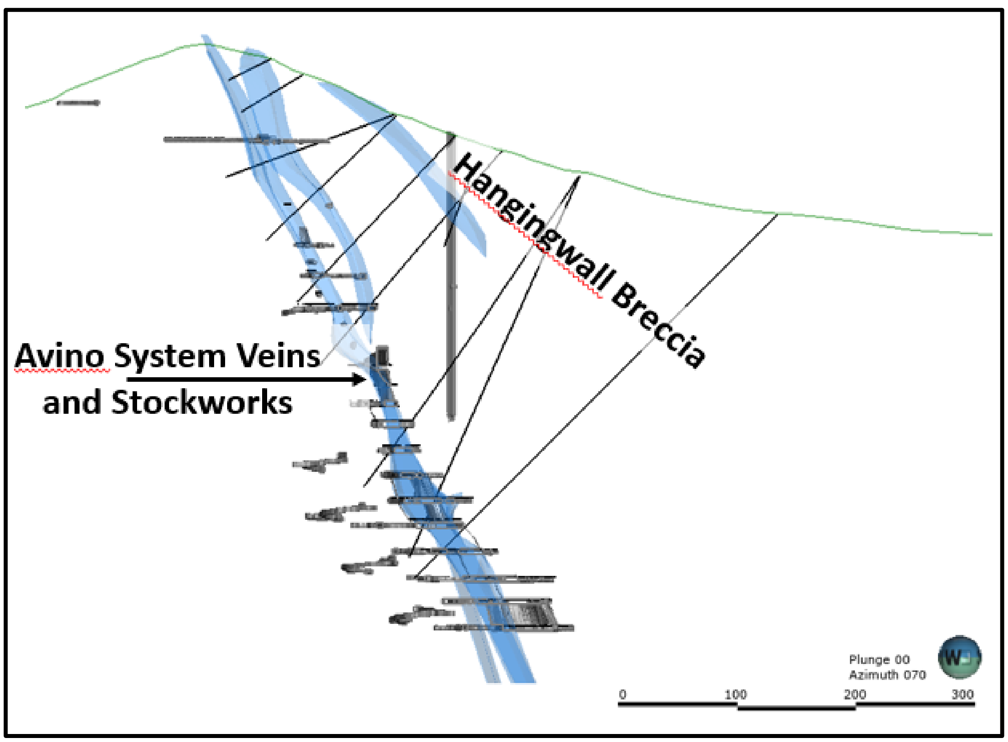
Source: Red Pennant (2020)

Figure 14.2 Horizontal Section Elevation 1888m AMSL, 2020 Interpretation, Avino Veins Shown in Yellow, Stockwork in Buff. Two veins modelled with lower grade stockwork exposed by underground development.



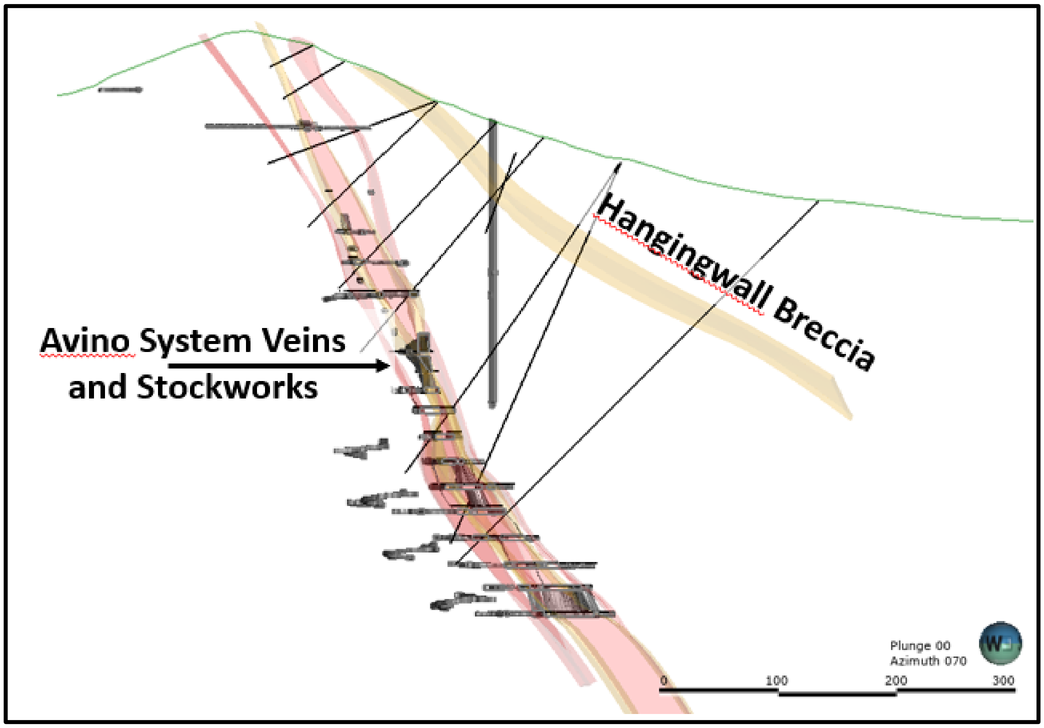
Source: Red Pennant (2020)

Figure 14.3 Vertical Section (reference +2712601.00, Y+570400.00, Azimuth 070) Showing 2017 Avino Vein System Model



Source: Red Pennant (2020)

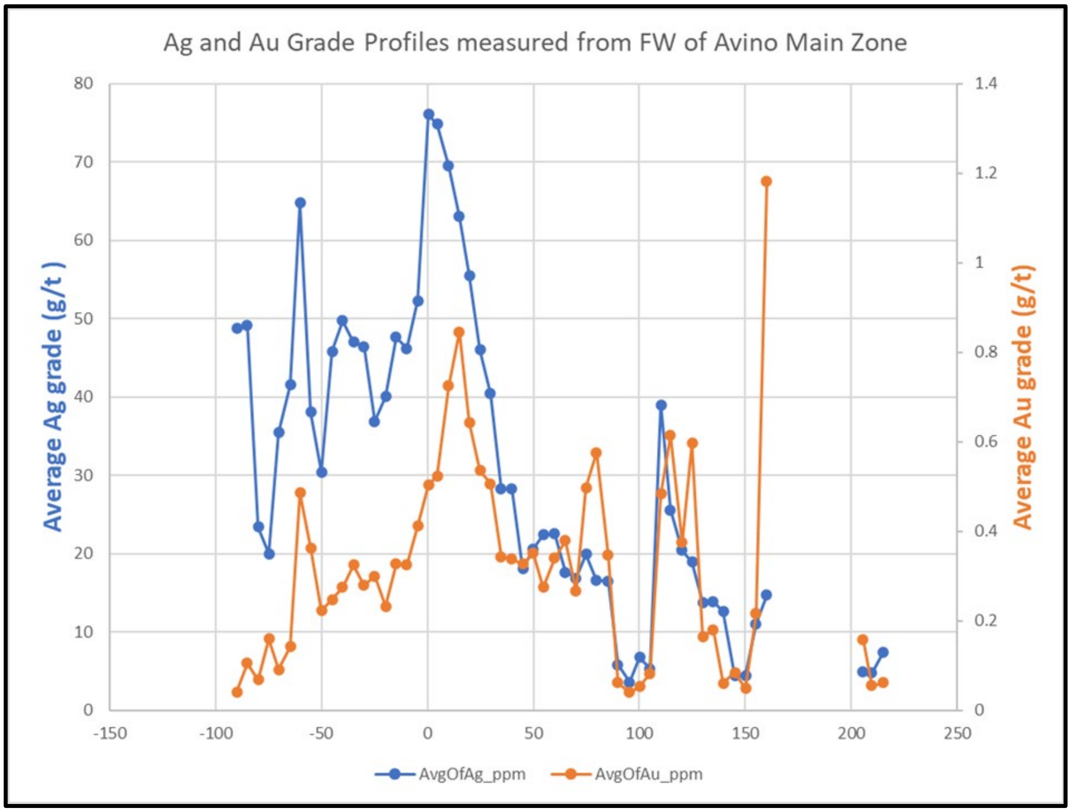
Figure 14.4 Vertical Section (reference +2712601.00, Y+570400.00, Azimuth 070) Showing 2020 Avino Vein System Model. Note system flattening at depth.



Source: Red Pennant (2020)

The distribution of grades relative to a reference stratigraphic position of the footwall of the persistent main vein of the Avino system was investigated by plotting composite sampled metal grades relative to position (see Figure 14.5 and Figure 14.6). Grades were averaged over 5 m intervals above and below this reference surface.

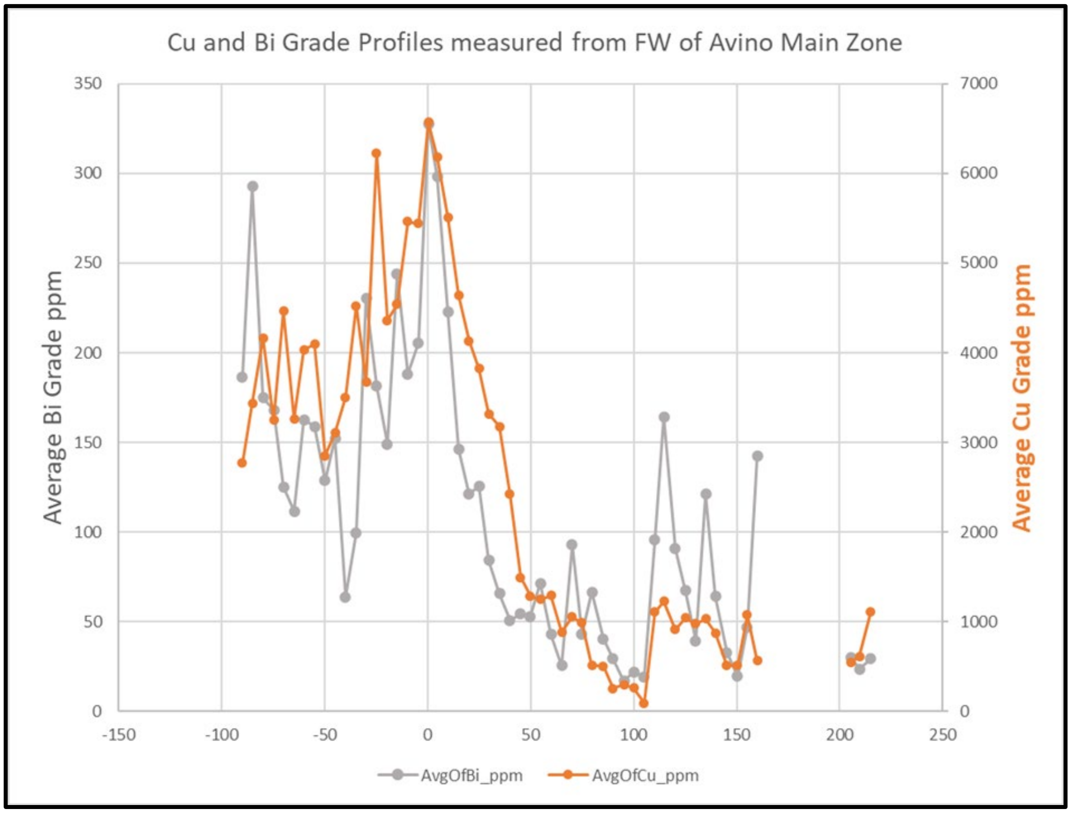
Figure 14.5 Silver and Gold Grade Profiles Relative the Avino Vein Main Zone Footwall



Source: Red Pennant (2020)

As can be seen in Figure 14.5, there is significant precious metal zonation across the deposit. The highest silver grades persist at the contact, while the highest gold grades are offset about 10 m above the contact. Significant mineralization gradually decreases from the contact to 75 m with secondary concentration developed at 100 m to 120 m in the hanging-wall (corresponding partly to the Hangingwall Breccias).

Figure 14.6 Copper and Bismuth Grade Profiles Relative the Avino Vein Main Zone Footwall

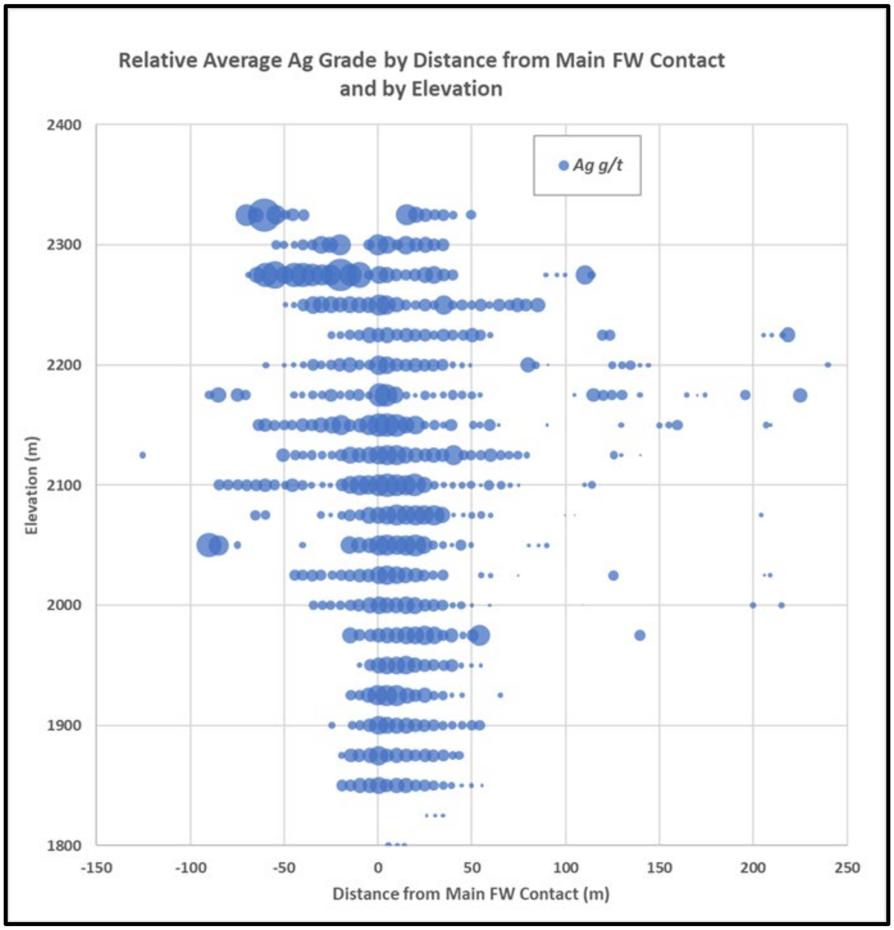


Source: Red Pennant (2020)

As can be seen in Figure 14.6, there is also significant copper and bismuth zonation across the deposit. The highest copper and bismuth grades exist at the contact. Significant mineralization gradually decreases from the contact to 75 m with secondary concentration developed at 100 m to 140 m in the hanging-wall (corresponding partly to the Hangingwall Breccias).

To assess the behaviour of Avino Vein system metal grades with depth, bubble charts were plotted showing silver, gold, and copper grade changes with depth (25 m intervals), as well as relative to the Avino Vein Main Zone Footwall (see Figure 14.7, Figure 14.8, and Figure 14.9, respectively). The relative grades are represented by the size of the solid circles plotted at each point.

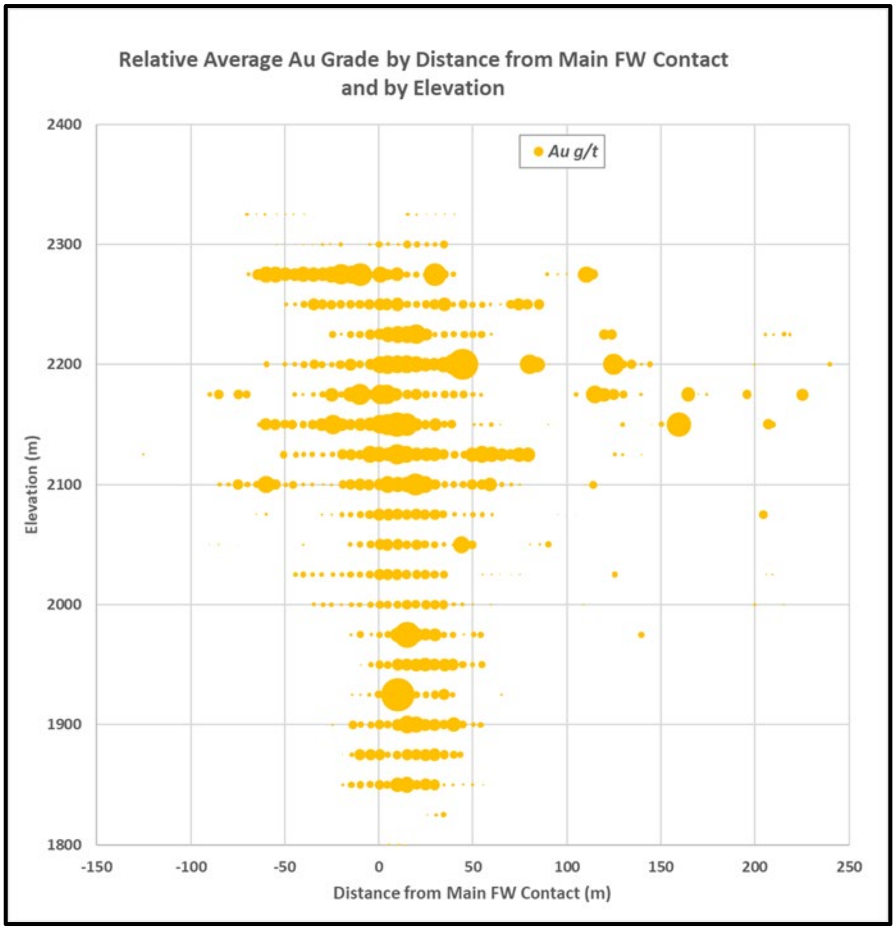
Figure 14.7 Relative Silver Grades Plotted by Elevation (AMSL, Y-axis) and Distance to Vein Main Zone Footwall Contact



Source: Red Pennant (2020)

As can be seen in Figure 14.7, based on underground channel and drill sampling, the silver grades appear to be gradual in magnitude but consistent in the extent below 2,000 m elevation, with no sign of an imminent termination.

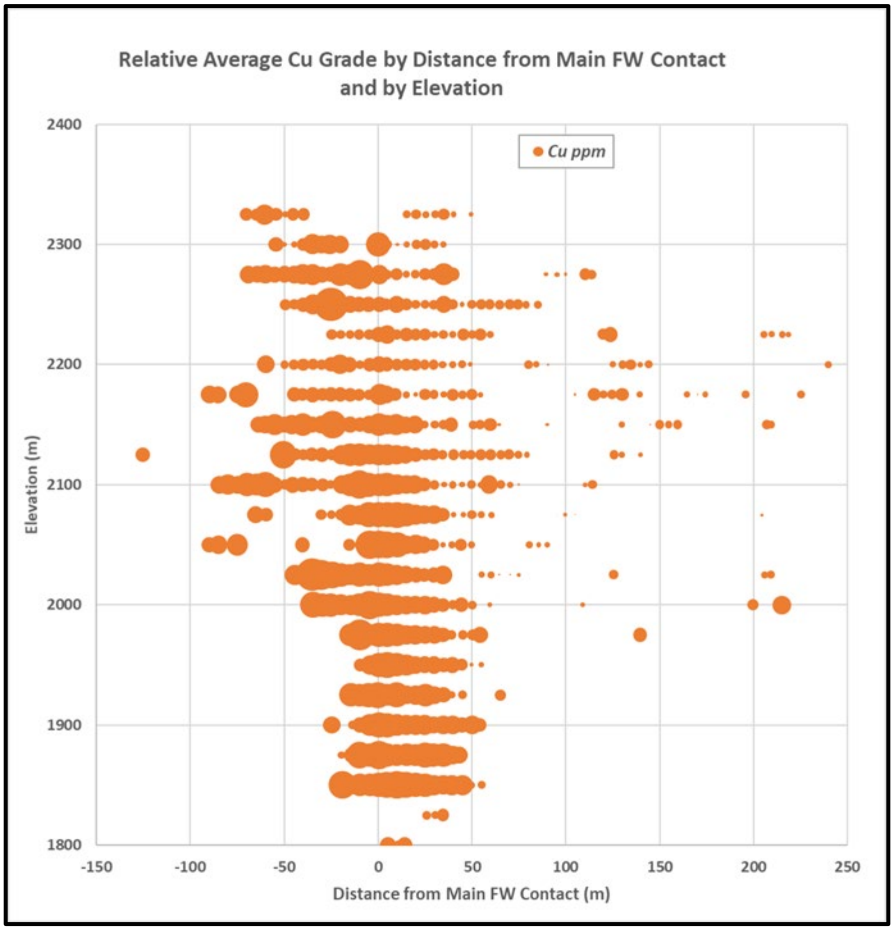
Figure 14.8 Relative Gold Grades Plotted by Elevation (AMSL, Y-axis) and Distance to Vein Main Zone Footwall Contact



Source: Red Pennant (2020)

As can be seen in Figure 14.8, based on underground channel and drill sampling, the gold grades between 2,100 m and 2,000 m elevations were relatively low but have increased again below 2,000 m elevation, albeit they are more erratic than the silver grades.

Figure 14.9 Relative Copper Grades Plotted by Elevation (AMSL, Y-axis) and Distance to Vein Main Zone Footwall Contact



Source: Red Pennant (2020)

As can be seen in Figure 14.9, based on underground channel and drill sampling, the copper grades appear to be consistent in grade and extent below 2,000 m elevation with no sign of an imminent termination.

The QP believes that the sampling of the metal grades by stratigraphic position and depth below surface and verified by underground exposures and channel sampling, provide a strong case to model the Avino Vein system with wider and flatter geometry to reflect the existence of stockworks fringing the veins. The revised modelling is reflected in the estimation domain models and Mineral Resource estimates of the Avino Vein system at ET Mine.

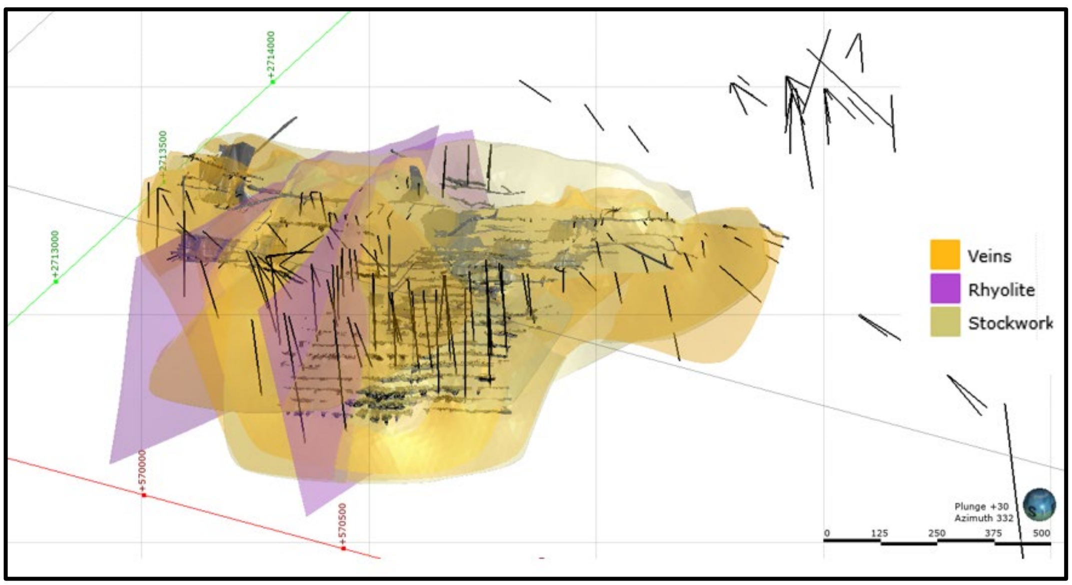
14.3.2 WIREFRAMING

Mineralized zones were modeled by the QP in Leapfrog Geo™ software, utilizing the drillhole data, topography, and the underground development information. Wireframes and scans of cross-sectional interpretations and underground mappings supplied by Avino assisted in modelling the deposit.

The modelling was carried out independently by the QP using Leapfrog Geo™ software applying an implicit "vein system"-style of modelling workflow to produce a series of seamless 3D units.

The Avino mineralized vein system (see Figure 14.10) was modelled as a vein system, with four subparallel but cross-cutting veins corresponding to higher metal contents with a lower-grade stockwork system consisting of four units between and fringing the veins system. The units are aligned east-northeast–west-southwest and dip steeply (40° to 80°) south. The Hangingwall Breccia (coded ET_HO2) is aligned east–west with increasing separation from the main Avino Vein towards the east. The system appears to be flattening with increasing depth (see Figure 14.24). Lithology information and grade information were both used to interpret the extents of the veins and to flag sampled and logged intervals as country rock or as one of the units of interest. Two late-age steep, northerly striking barren rhyolite dykes transect the system (Figure 14.10).

Figure 14.10 Oblique View, Looking North, of the Avino Vein System Model



Source: Red Pennant (2020)

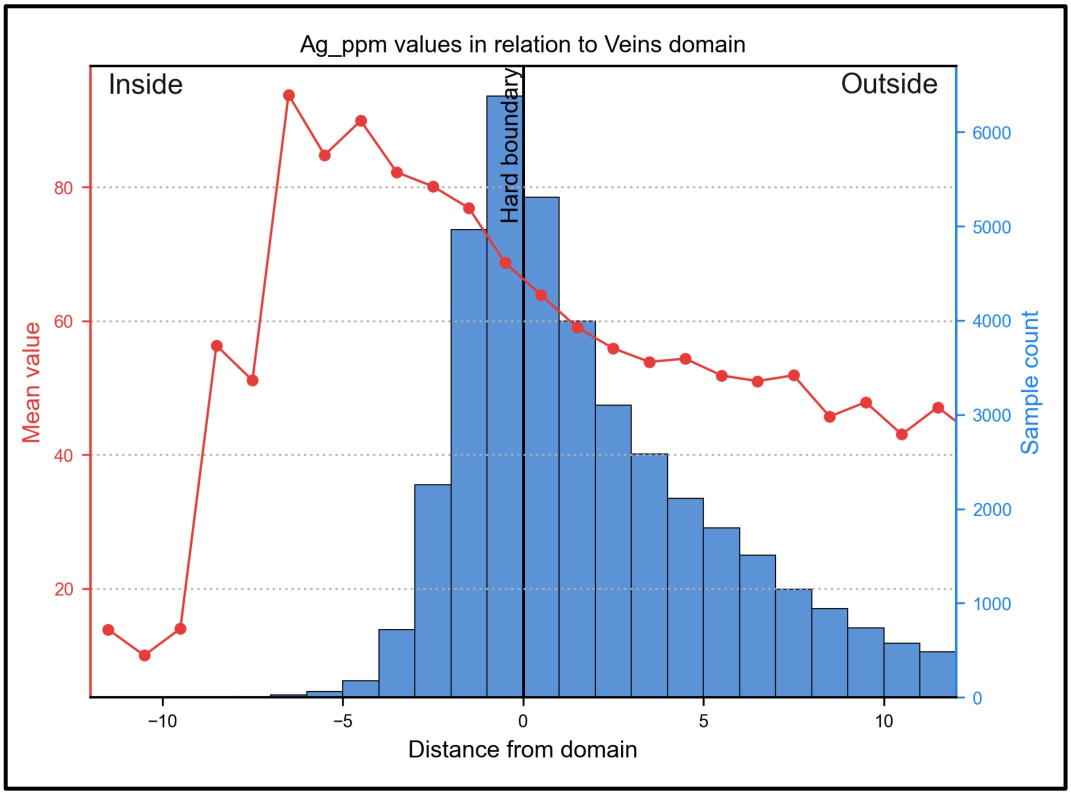
To test the robustness of the model, grade contact profiles were generated.

Grade contact profiles demonstrate how well the wireframe meshes segregate the metal, based on the assayed samples. These contact profiles were generated by determining the average grades for sampled metals within successive 5 m wide slices inside and outside the Avino Vein System models for a range of distances from −10 m (inside the system) to +50 m (outside) from the contact.

The profiles are shown in graphs in Figure 14.11 and the number of samples per 1 m slice is shown in Figure 14.12. There is a moderately rapid decrease with increasing distance from the vein contacts in silver, gold, zinc, and copper profiles (as shown in Figure 14.11). To better display the profiles on a single graph, silver has been re-scaled to fit and copper and zinc are in percentage units. For example, the silver grade is generally in excess of 80 g/t within the vein but decreases to an average of less than 30 g/t at a distance of 30 m from the vein contact. Zinc appears to be a good indicator element for the mineralized system and rapidly decreases in abundance within 5 m of the contact. This may be used to advantage in future modelling of the system.

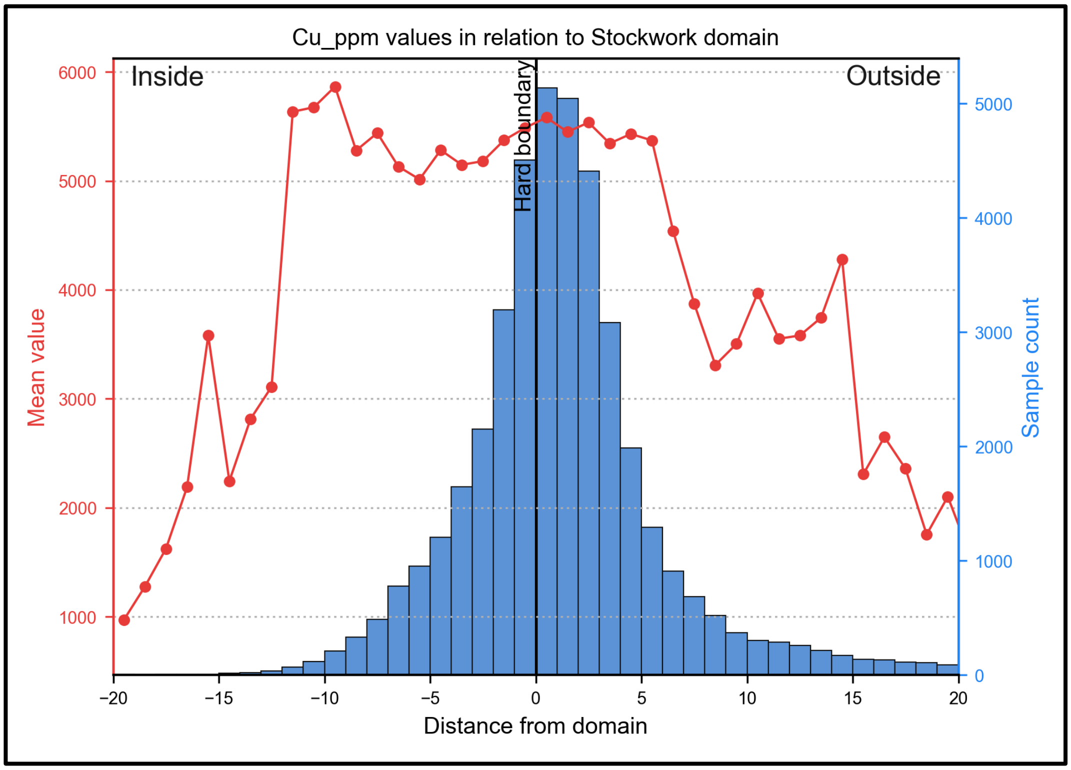
As can be seen (Figure 14.12), there is a rapid decrease of information at ranges greater than 20 m from the contact (contact is represented by “0” on the horizontal axis). This is to be expected as the information has been generated in underground workings that have been designed to preferentially expose and sample material that is better mineralized in the vein system. Information is biased towards the underground excavations and the understandable historic tendency to only sample material at any distances away from the known veins that display good mineralization characteristics. However, the profiles do provide an indication that the Avino Vein system has a gradational or soft boundary tendency from an estimation point of view. Silver, gold, and copper show the gradational profile, while zinc has a relatively sharp profile. This should be followed up to develop future estimation strategies.

Figure 14.11 Silver Grade Profiles Across the Avino Vein System Contacts



Source: Red Pennant (2020)

Figure 14.12 Copper Grade Profile Across the Avino Stockwork Contacts



Source: Red Pennant (2020)

14.4 San Gonzalo Vein

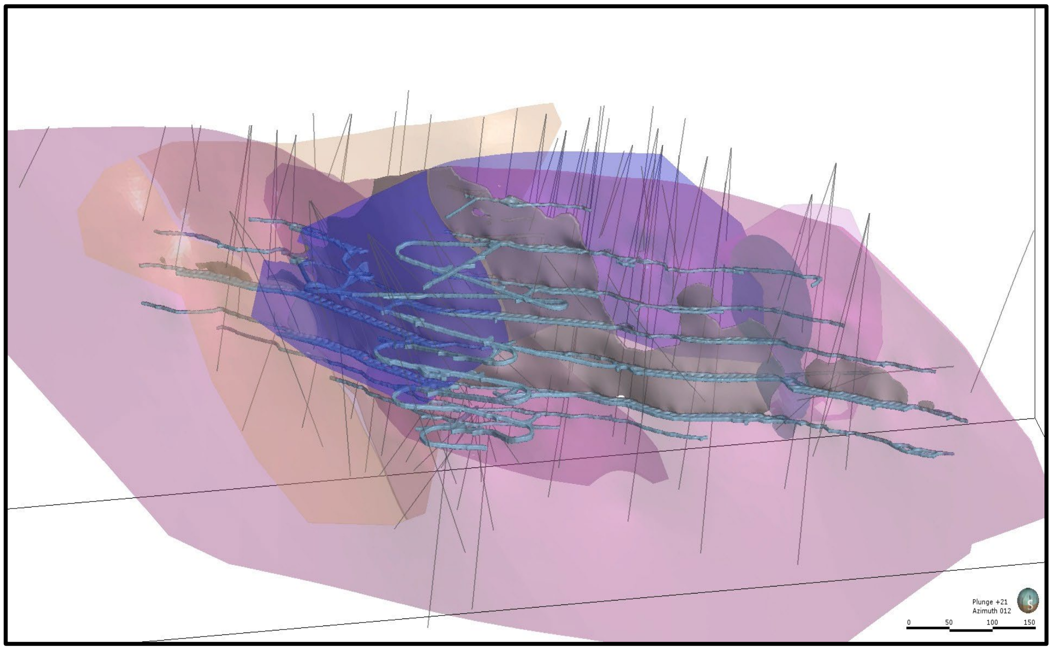
14.4.1 Geological Interpretation

The San Gonzalo Vein is interpreted as part of a low- to intermediate-sulphidation system of silver-gold epithermal veins and silicified zones. The individual veins in the San Gonzalo system are relatively narrow (mostly less than 3 m thick in places) and exhibit higher silver but lower copper grades than the Avino Vein system.

14.4.2 Wireframing

The system was modelled using Leapfrog Geo™ software as six sub-parallel but cross-cutting veins consisting of a main vein (SG1) and five subsidiary units (SG2 through SG6). Lithology information and grade information were both used to interpret the extents of the veins and to flag sampled and logged intervals as country rock or as one of the units of interest. Figure 14.13 displays the modeling results graphically.

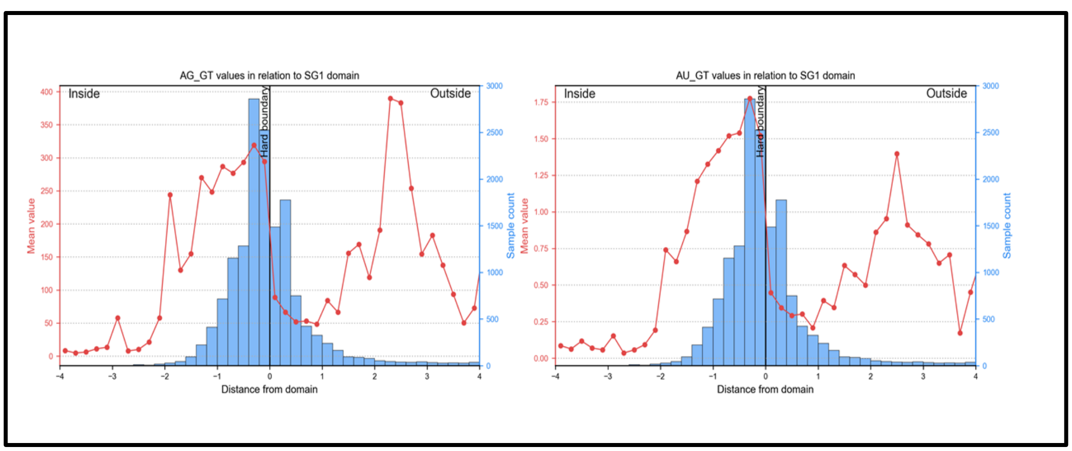
Figure 14.13 Oblique View, Looking North, of the San Gonzalo Vein System Model



Source: Red Pennant (2020)

To assess the level to which the interpreted San Gonzalo Veins have honoured the selection, contact profiles were generated to examine how well the wireframe meshes segregate the metal, based on the assayed samples. The San Gonzalo Veins are more compact than the Avino Veins and the metal grades at San Gonzalo are confined to the vein material. The contact profiles were generated by determining the average grades for several metals within successive 5 m wide slices inside and outside the San Gonzalo Vein system models for a range of distances from −1.5 m (inside the system) to +1.7 m (outside) from the contact. The profiles are shown in Figure 14.14. There is a rapid decrease with increasing distance from the vein contacts in silver, gold, and copper profiles.

Figure 14.14 Silver and Gold Grade Profiles Across the Main San Gonzalo Vein Contacts



Source: Red Pennant (2020)

For example, the silver grade is generally in excess of 200 g/t within the vein but decreases to an average of less than 50 g/t at a distance of 1 m from the vein contact.

For gold, the contacts were less conspicuous, but average grade data still showed that the populations were statistically distinct. All contacts between mineralized and wall rock populations were treated as hard boundaries in estimation.

The San Gonzalo Vein system model is more robust when compared to the data and displays more abrupt metal profiles than the equivalent for the Avino Vein. This may reflect real differences in the mineralization styles (thickness and metal grade differences also support a different process) but may also to some degree be a result of the sparse legacy lithology data in the upper part of the Avino mine site.

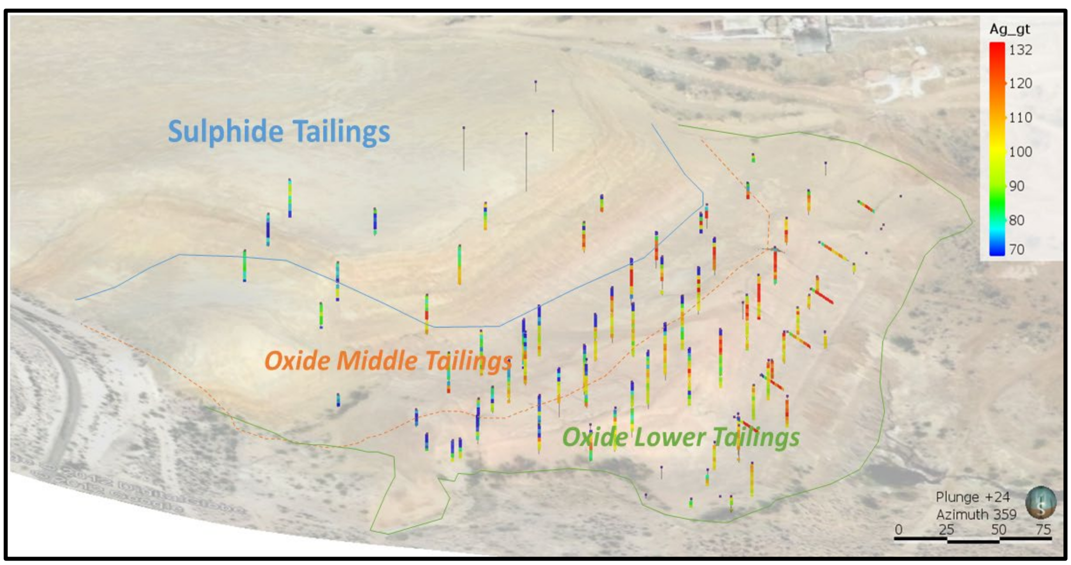
14.5 Oxide Tailings

14.5.1 Geological Interpretation

In the Avino oxide tailings, a prominent bench separates the lower portion of the deposit (referred to as the "oxide lower bench" in various documents) from the upper portion of the oxide tailings (the "middle bench"). Overlying the oxide tailings is a volume of sulphide tailings material (the "upper bench" or "sulphide tailings"). The sulphide tailings material lacks representative sampling data.

Figure 14.15 is a perspective view looking north, showing the oxide lower bench, oxide lower bench and sulphide tailings and the positions of drillholes and silver assays.

Figure 14.15 Perspective View of Oxide Tailings Drilling and Silver Assays



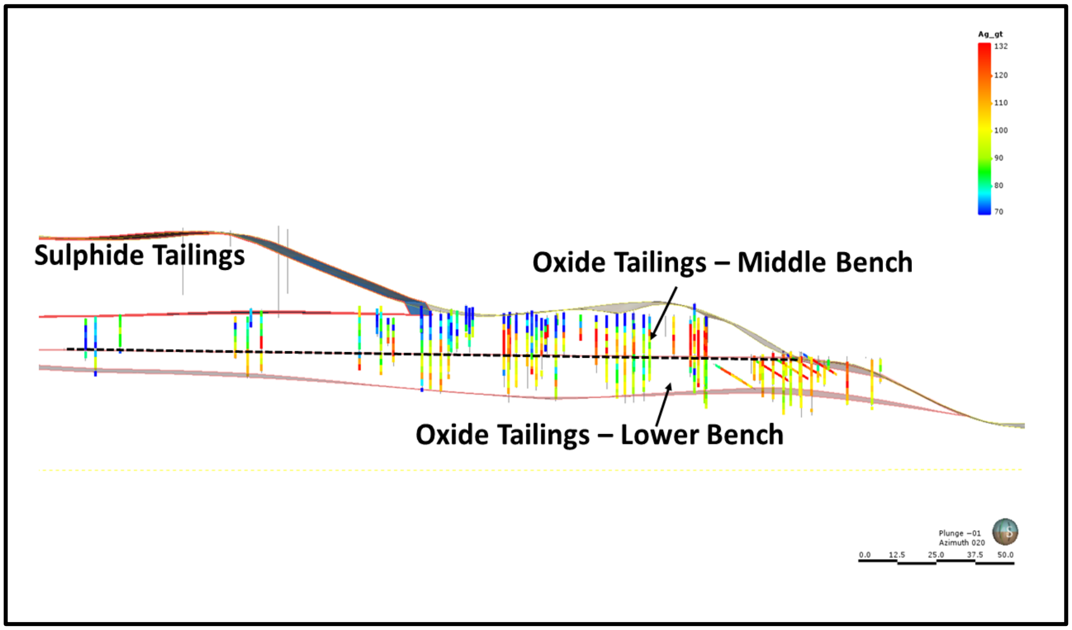
Source: Red Pennant (2020)

14.5.2 WIREFRAMING

The tailings deposit was modelled using topography information supplied by Avino and bedrock contact information from the drilling data.

The grade pattern of the upper and lower and middle benches has been better defined by the addition of the recent drilling information (more than doubling the amount of assays, see Table 14.3). Previously, the middle and lower oxide benches were considered separately from an estimation perspective based on the colour difference, the middle bench appearing to be more reddish than the lower material. This may reflect a change in iron content but not necessarily the gold or silver grades. The sampling data (see Figure 14.16) shows a pattern of silver depletion at the top of the middle bench with enrichment immediately below.

Figure 14.16 Section View, Looking Northeast, Showing Silver Grades in Oxide Tailings Benches



Source: Red Pennant (2020)

The spatial pattern indicates gradational changes between the middle and lower oxide benches, except for silver, which appears to have been leached downwards from the top of the middle bench. While the colour difference between the two units may be significant for iron-bearing species, there is not a great statistical difference between the silver and gold grades in the middle and lower benches, and the leaching effect (see Figure 14.15) appears to affect the upper portion of the middle bench. Consequently, it was decided to estimate the middle and lower bench as a single domain. The use of a variogram and search ellipse, flattened in the horizontal direction also reduces the risk of smearing grade vertically. In future it may be preferable to evaluate the leached cap of the tailings separately from the remainder. The risk of not doing so at this time, is ameliorated by the horizontal variogram continuity which reduces the risk of mixing.

14.6 EXPLORATORY DATA ANALYSIS

14.6.1 RAW DATA ASSAYS AND STATISTICS

AVINO AND SAN GONZALO

Table 14-3 shows the length-weighted metal statistics for the sample data for the Avino and San Gonzalo mineralization. Assayed metals include silver, gold, and copper. Metals considered in the Avino ET resource estimate include silver, gold, and copper. Metals considered in the San Gonzalo Vein resource estimate include silver and gold.

OXIDE TAILINGS

The oxide tailings drillhole dataset included 91 drillholes with a total metreage of 1,396 m that was completed in the tailings from 1990 to 2016. The data are summarized by campaign in Table 14-4. Only the gold and silver are considered to be of economic interest in the oxide tailings deposit.

Table 14.3 Metal Grade Statistics for 2 m Composites for the Avino and San Gonzalo Vein Systems

Metal	Domain	Number of Composites	Mean	CV	Variance	Minimum	Maximum	Capping Value	Number Capped
Avino Vein and Stockworks									
Ag (g/t)	ET01	5,204	83.57	1.01	7,073.09	0.003	1036.000	630	9
Ag (g/t)	ET02	7,188	60.13	1.15	4,796.86	0.003	1242.950	630	12
Ag (g/t)	ET03	2,802	63.73	1.27	6,577.92	0.003	1851.198	790	3
Ag (g/t)	ET04	1,080	45.99	1.46	4,537.71	0.003	1058.000	500	3
Ag (g/t)	ET_F01	1,777	52.59	1.65	7,487.15	0.003	1993.750	630	4
Ag (g/t)	ET_F02	247	45.97	1.03	2,222.18	0.503	338.515	250	2
Ag (g/t)	ET_F03	80	105.12	0.82	7,434.85	0.003	451.219	300	2
Ag (g/t)	ET_H01	182	37.25	0.86	1,015.01	0.005	227.450	130	3
Ag (g/t)	ET_H02 (HW Breccia)	254	34.45	1.98	4,672.41	0.002	871.697	320	2
Au (g/t)	ET01	5,204	0.60	1.90	1.29	0.0002	42.110	12	6
Au (g/t)	ET02	7,188	0.57	4.59	6.90	0.0003	113.820	20	18
Au (g/t)	ET03	2,802	0.73	2.63	3.65	0.0003	58.278	20	3
Au (g/t)	ET04	1,080	0.59	2.02	1.43	0.0003	23.460	15	2
Au (g/t)	ET_F01	1,777	0.42	5.88	5.97	0.0003	64.091	8	5
Au (g/t)	ET_F02	247	0.35	2.48	0.75	0.0003	10.856	5	1
Au (g/t)	ET_F03	80	1.01	0.74	0.55	0.0003	3.818	2.5	3
Au (g/t)	ET_H01	182	0.10	1.13	0.01	0.0003	0.803	0.6	3
Au (g/t)	ET_H02 (HW Breccia)	254	0.60	1.71	1.05	0.0003	8.795	6	2
Bi (ppm)	ET01	322	312.22	1.60	250,449.18	8.648	4116.878	1500	6
Bi (ppm)	ET02	426	178.86	2.02	129,948.59	2.000	5646.154	1500	4
Bi (ppm)	ET03	156	179.04	1.63	85,314.19	6.780	2204.922	600	12
Bi (ppm)	ET04	147	115.53	2.06	56,814.15	2.000	1411.111	800	6

table continues...

Metal	Domain	Number of Composites	Mean	CV	Variance	Minimum	Maximum	Capping Value	Number Capped
Bi (ppm)	ET_F01	324	282.48	1.48	175,688.48	2.000	2824.140	1500	11
Bi (ppm)	ET_F02	47	336.06	0.96	103,452.21	26.968	1739.328	250	21
Bi (ppm)	ET_F03	11	338.90	0.49	28,102.78	83.668	549.137	-	0
Bi (ppm)	ET_H01	18	67.18	1.20	6,511.10	24.875	302.676	130	3
Bi (ppm)	ET_H02 (HW Breccia)	130	118.55	1.53	32,722.93	2.000	1218.267	800	2
Cu (ppm)	ET01	5,204	6,769.68	0.83	31,604,725	0.005	106242.638	32000	16
Cu (ppm)	ET02	7,188	5,344.41	0.91	23,699,133	0.005	91100.000	32000	13
Cu (ppm)	ET03	2,802	4,036.78	0.95	14,574,237	0.005	73218.350	32000	1
Cu (ppm)	ET04	1,080	3,137.45	1.10	11,916,624	0.005	36200.000	25000	5
Cu (ppm)	ET_F01	1,777	5,287.33	1.00	28,161,156	0.005	59379.562	50000	1
Cu (ppm)	ET_F02	247	5,316.29	0.89	22,633,614	1.000	28469.950	25000	1
Cu (ppm)	ET_F03	80	6,036.12	0.87	27,631,866	0.005	24689.793	16000	5
Cu (ppm)	ET_H01	182	5,094.17	0.77	15,504,450	64.738	26437.130	20000	1
Cu (ppm)	ET_H02 (HW Breccia)	254	1,224.60	1.22	2,231,692	0.005	10472.296	9000	2
San Gonzalo Vein									
Ag (g/t)	SG1	6,669	283.66	2.08	349,328.43	0	14,768.40	5000	25
Ag (g/t)	SG2	117	72.32	1.11	6,500.57	0.9	890.24	0	-
Ag (g/t)	SG3	38	95.94	1.39	17,852.42	1.69	604.45	0	-
Ag (g/t)	SG4	168	200.05	2.81	315,058.50	3.72	5,265.20	3000	2
Ag (g/t)	SG5	40	111.98	1.71	36,807.33	1.5	708.1	600	2
Ag (g/t)	SG6	54	40.25	1.99	6,418.32	0.7	331.2	0	-
Au (g/t)	SG1	6,669	1.48	2.8	17.22	0	204.17	0	-
Au (g/t)	SG2	117	0.56	1.04	0.35	0.01	3.79	0	-
Au (g/t)	SG3	38	0.58	1.07	0.38	0.02	3.05	0	-

table continues...

Metal	Domain	Number of Composites	Mean	CV	Variance	Minimum	Maximum	Capping Value	Number Capped
Au (g/t)	SG4	168	0.69	2.24	2.41	0.01	13.96	10	2
Au (g/t)	SG5	40	0.74	2.26	2.78	0.01	9.84	4	2
Au (g/t)	SG6	54	0.3	2.08	0.39	0	2.77	0	-

Table 14.4 Oxide Tailings Samples by Sampling Campaign

By campaign	Pre-2012	2015-16
Campaign	0	1
Number (Ag)	448	561
Number (Au)	448	556
Number (Cu)	0	566
Number (Pb)	0	563
Number (Zn)	0	566
Mean Ag (g/t)	95.39	97.81
Mean Au (g/t)	0.53	0.47
Mean Cu (%)	-	0.14
Mean Pb (%)	-	0.99
Mean Zn (%)	-	0.19
Variance Ag	814.94	1073.20
Variance Au	0.03	0.06
Variance Cu	-	0.01
Variance Pb	-	0.18
Variance Zn	-	0.04
Minimum Ag	11.00	4.00
Minimum Au	0.10	0.01
Minimum Cu	-	0.00
Minimum Pb	-	0.00
Minimum Zn	-	0.00
Maximum Ag	222.00	309.00
Maximum Au	1.28	2.02
Maximum Cu	-	0.66
Maximum Pb	-	3.26
Maximum Zn	-	1.65
CV Ag	0.09	0.11
CV Au	0.10	0.26
CV Cu	-	0.53
CV Pb	-	0.18
CV Zn	-	1.19

The oxide tailings data have been subdivided by unit and the metal assay statistics are summarized in Table 14.5.

Table 14.5 Oxide Tailings Assays by Unit

Unit	Unknown	Lower	Middle	Bedrock
Length (m)	139.7	608.9	619.2	28.2
Number (Ag)	50	497	482	11
Number (Au)	50	497	482	11
Number (Cu)	41	186	207	3
Number (Pb)	41	186	207	3
Number (Zn)	41	186	207	3
Mean Ag (g/t)	97.72	103.85	89.27	77.55
Mean Au (g/t)	0.39	0.47	0.51	0.29
Mean Cu (%)	0.15	0.13	0.12	0.14
Mean Pb (%)	1.24	1.12	0.85	1.28
Mean Zn (%)	0.18	0.18	0.12	0.20
Variance Ag	20.60	20.60	52.00	20.60
Variance Au	0.20	0.11	0.13	0.11
Variance Cu	0.00	0.00	0.00	0.00
Variance Pb	0.00	0.00	0.00	0.00
Variance Zn	0.00	0.00	0.00	0.00
Minimum Ag	148.13	182.01	193.13	115.00
Minimum Au	0.74	1.08	1.21	0.44
Minimum Cu	0.27	0.27	0.26	0.15
Minimum Pb	1.75	1.83	2.02	1.50
Minimum Zn	0.34	0.38	0.26	0.22
Maximum Ag	542.01	428.63	525.92	1257.48
Maximum Au	0.01	0.02	0.01	0.01
Maximum Cu	24.41	22.01	9.75	3.51
Maximum Pb	479.10	531.34	528.62	453.94
Maximum Zn	18.67	25.97	12.96	6.20
CV Ag	0.00	0.00	0.01	0.00
CV Au	1.30	0.52	0.48	1.34
CV Cu	0.00	0.00	0.00	0.00
CV Pb	0.00	0.00	0.00	0.00
CV Zn	0.00	0.00	0.00	0.00

14.6.2 Outlier Management and Capping Strategy

It is common practice in the mineral industry to restrict the influence of high assays through “top-cutting” or “capping”. Capping was implemented for each element and for each domain, after sample length compositing. Capping limits were chosen based on a review of sampling histograms using Snowden Supervisor™ software and examination of coefficient of variation statistic for each domain. The coefficient of variation, also known as relative standard deviation, is a standardized measure of dispersion of a probability distribution and provides an indication of the presence of significant outliers. Coefficient of variation statistics greater than two and the visual detection of irregular behaviour in the upper portion of log histogram of the data were used as an indicator that capping should be applied.

14.6.3 Drillhole Compositing

Compositing is carried out to ensure a common ‘change of support’ length. If samples are not composited, small length samples with a high grade (and the converse) might bias the estimation process.

Inspection of the raw data from the Avino and San Gonzalo systems indicated that a common composite length of 2 m would accommodate most sample lengths as the majority of sample lengths were less than 2 m and 2 m was used as the standard composite length for the deposit.

Compositing in Leapfrog™ included all samples in the composites with a minimum width of 1 m within the mineralized zones. New composites were thus created each time the domain changed.

14.7 Density

14.7.1 Density Data

Density data was supplied by Avino in the form of a set of measurements made at site. Summary statistics for these measurements are provided in Table 14.6 and Table 14.7.

Table 14.6 Avino Vein System Density Data Summary

Domain	Number	Minimum	Maximum	Mean	Variance	Coefficient of Variation
10 (Main)	40	2.53	3.00	2.71	0.02	0.05
HW01	42	2.43	2.90	2.68	0.01	0.03
Wall Rock	93	2.29	3.00	2.65	0.04	0.07
Combined	175	2.29	3.00	2.67	0.03	0.06

Table 14.7 San Gonzalo Vein System Density Data Summary

Domain	Number	Minimum	Maximum	Mean	Variance	Coefficient of Variation
SG1	50	2.40	3.00	2.64	0.03	0.07
SG2	2	2.73	2.78	2.76	0.00	0.01
Wall Rock	41	2.40	3.00	2.69	0.02	0.05
Combined	93	2.40	3.00	2.67	0.03	0.06

The Avino Vein system density data is widely spaced in drillholes across the lower portion of the mine and more than half of the measurements are not in the vein material. The San Gonzalo Vein system density data is more comprehensive but more than 40% of the measurements are not in the vein material.

A global average of 2.63 t/m^3 was used for the resource tonnage estimation as it reflects the historic average used at the mine for both the Avino and the San Gonzalo Vein Systems.

Avino conducted bulk density measurements on 432 samples from 20 drillholes in the oxide tailings. Based on these data, Slim (2005d) determined a global average specific gravity value of 1.605 for the oxide tailings. No new specific gravity data that can be considered representative of the tailings pile has been collected, so the QP used the specific gravity value of 1.605 for the current oxide tailings estimate.

14.8 BISMUTH

Bismuth is relevant as a penalty element in the Avino Vein material at ET Mine and San Luis. The spatial distribution of the bismuth grade is important for any future planning for possible selective mining or blending. However, there are only 11,483 bismuth assays, compared with 65,512 silver assays. Statistical analysis of the coordinated assay data shows that bismuth is correlated with silver and copper.

Bismuth was estimated by simple kriging, using each of the global domain means as a target for estimation. OK would have likely underestimated low bismuth grades in parts of the model with sparse information.

The QP believes that this method of estimating bismuth as a penalty element is useful to estimate in situ bismuth. In the future, bismuth should be assayed at the same rate as copper to provide more detailed information for mine planning.

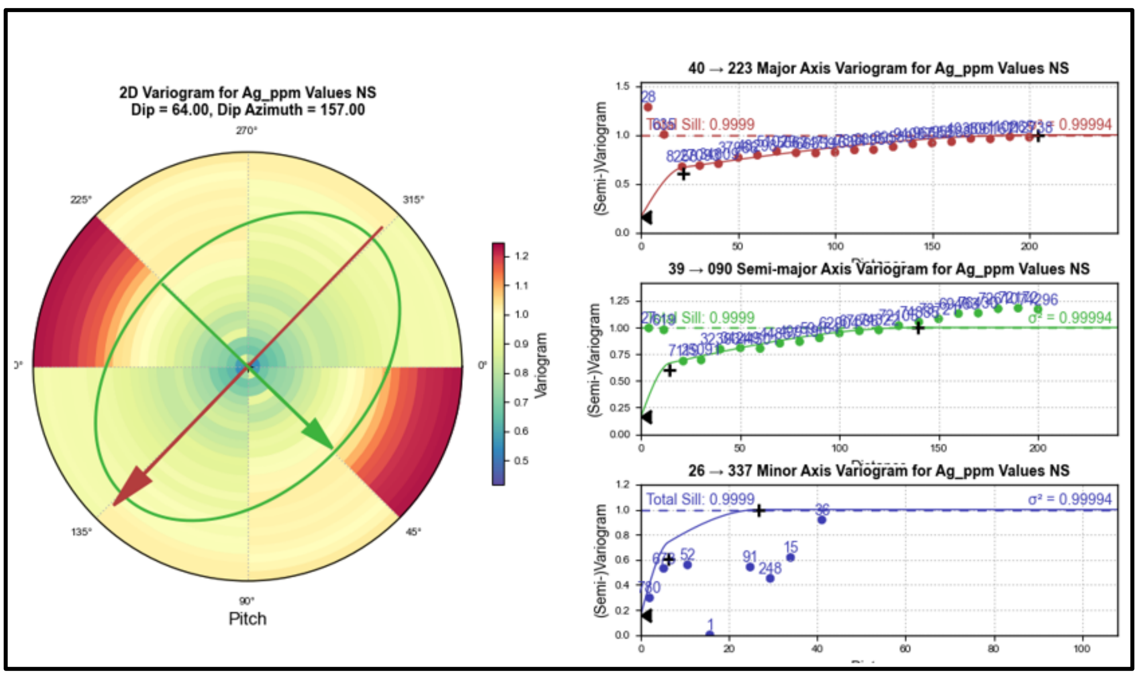
14.9 VARIOGRAPHY AND SPATIAL ANALYSIS

Variography was conducted utilizing Snowden Supervisor™ software for the San Gonzalo and oxide tailings deposits. Leapfrog EDGE software was used to model the Avino Vein domain variograms using a normal scores transform to reduce the effect of extreme values. The experimental variograms were modelled parallel to the orientations of the veins in the case of the Avino and San Gonzalo Veins and horizontal for the oxide tailings.

Experimental variograms were modelled for the Avino Vein system and the oxide tailings, for all domains and for the relevant potentially useful metals, silver, gold, and copper. Experimental variograms were modelled for the San Gonzalo Vein system for all domains and for the relevant, potentially useful metals, silver and gold. The variogram models for San Gonzalo have been revised since 2016 to incorporate the observed sub-horizontal trends in grade that appear to reflect telescoping of the mineralization into a vertical window some two to three hundred metres in vertical extent.

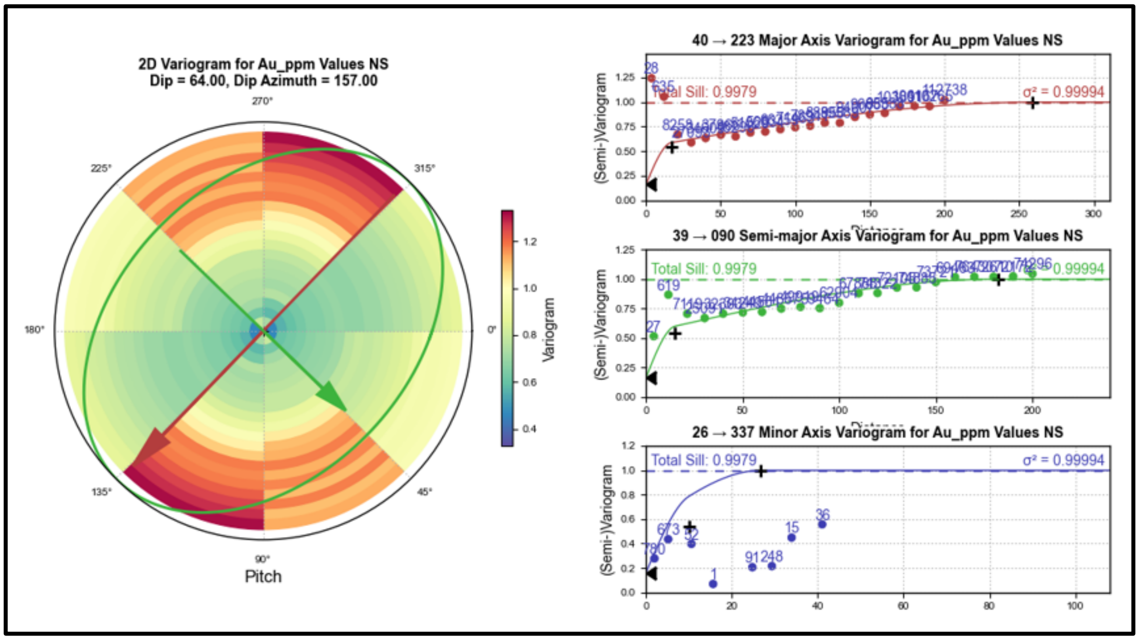
Figure 14.17 through Figure 14.23 show representative variograms. Variograms were modelled in a normal scores transform, using Snowden Supervisor™ and then back-transformed and used for estimation on the untransformed grade data in Leapfrog Edge™. NN and inverse distance (ID) estimates used the same search ellipses applied for the corresponding OK estimators.

Figure 14.17 Avino Vein: Main Zone Experimental and Modelled Silver Variograms



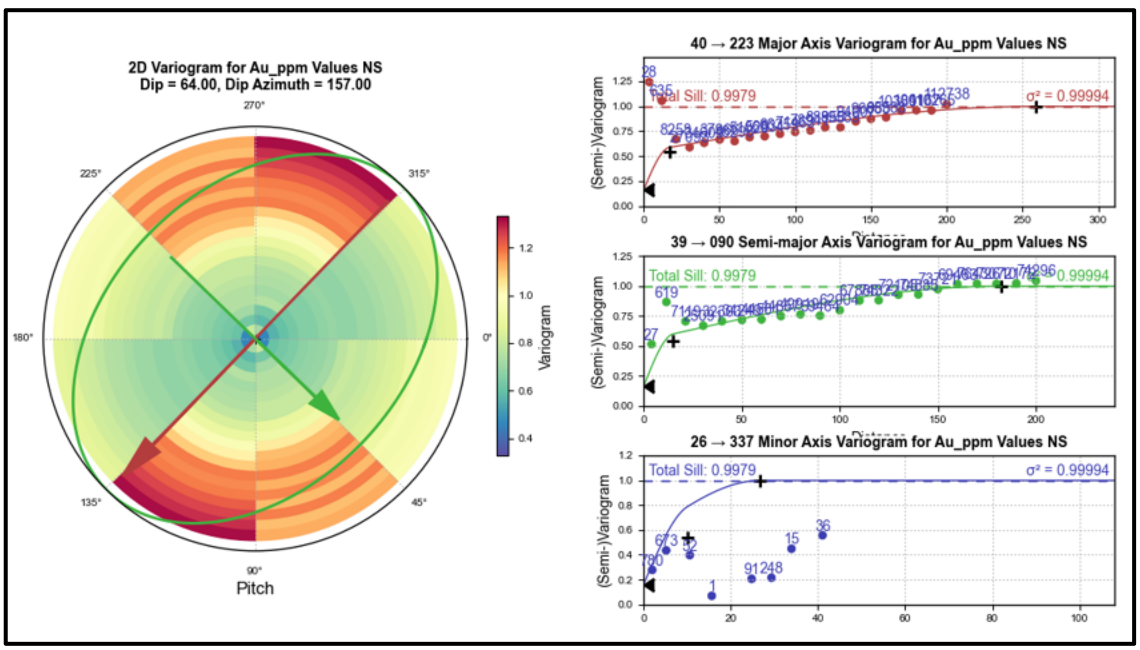
Source: Red Pennant (2020)

Figure 14.18 Avino Vein: Main Zone Experimental and Modelled Gold Variograms



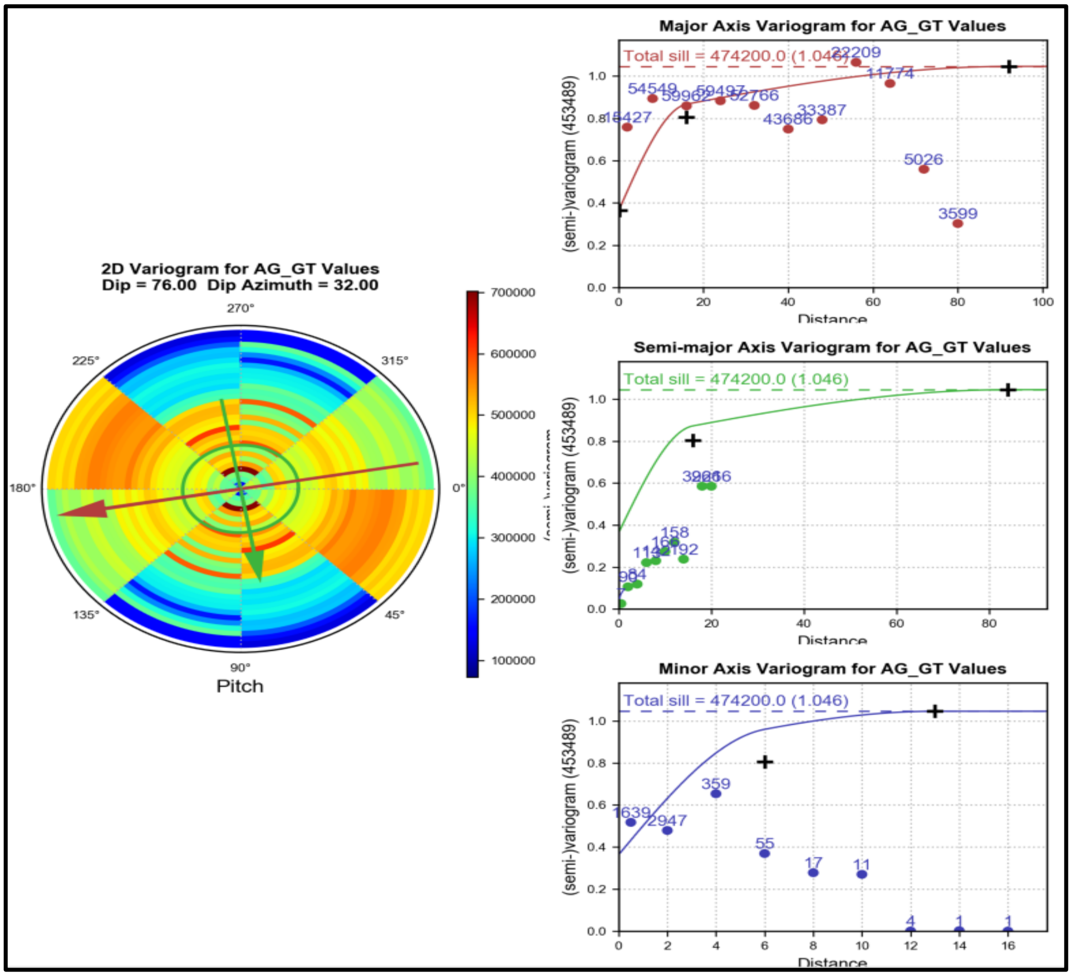
Source: Red Pennant (2020)

Figure 14.19 Avino Vein: Main Zone Experimental and Modelled Copper Variograms



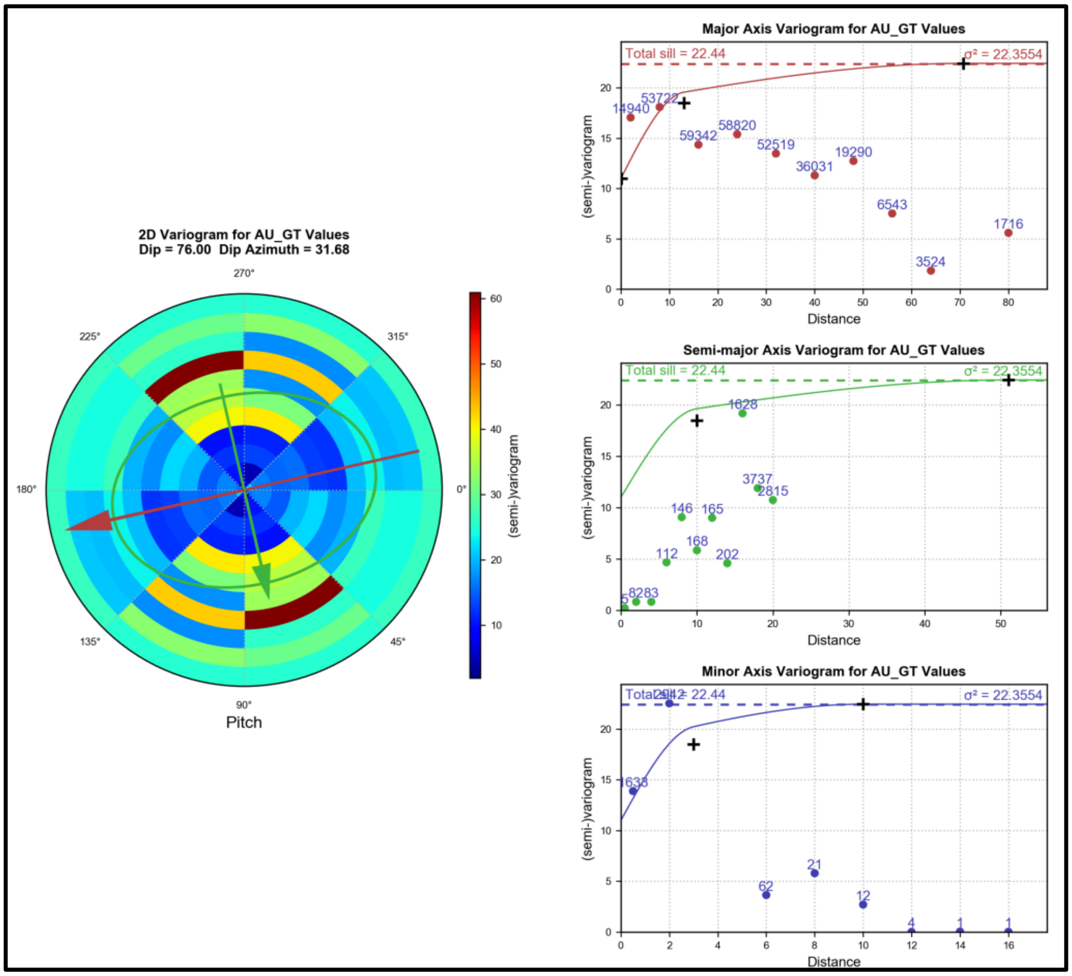
Source: Red Pennant (2020)

Figure 14.20 San Gonzalo Vein: SG1 Experimental and Modelled Silver Variograms



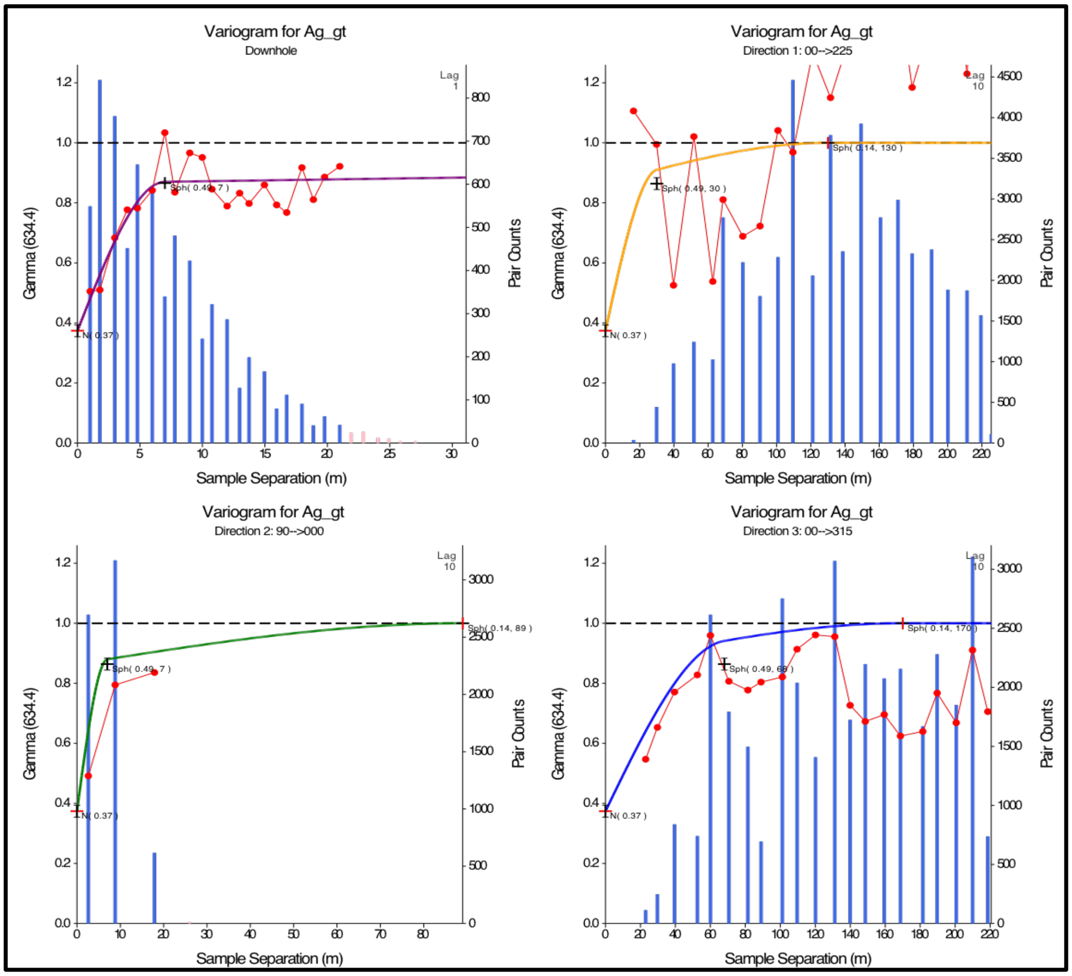
Source: Red Pennant (2020)

Figure 14.21 San Gonzalo Vein: SG1 Experimental and Modelled Gold Variograms



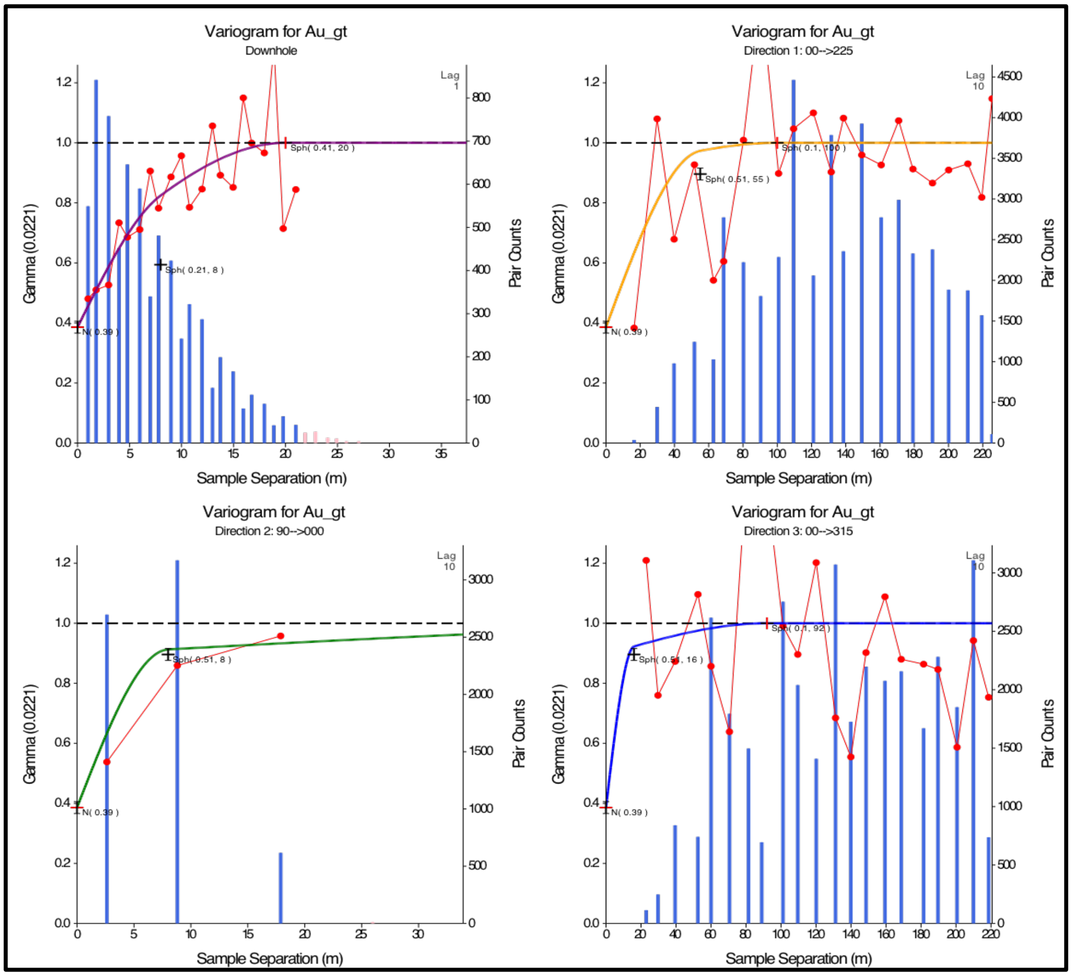
Source: Red Pennant (2020)

Figure 14.22 Oxide Tailings: Domain 10 Experimental Silver Variograms



Source: Red Pennant (2020)

Figure 14.23 Oxide Tailings: Domain 10 Experimental Silver Variograms



Source: Red Pennant (2020)

14.10 INTERPOLATION PLAN AND KRIGING PARAMETERS

Estimation for the Avino and San Gonzalo Vein systems was carried out using Leapfrog Edge™ software and parameters optimized by kriging neighbourhood analysis (KNA) carried out using Supervisor™ software. Optimization was achieved by minimising the number of negative kriging weights and maximising the theoretical slope of regression of the estimates.

14.10.1 AVINO

A sub-blocked block model was created to cover the Avino system. The parent block size of 20 m by 10 m by 10 m was used for block model and resource estimate. Sub-blocks of 4 m by 2 m by 2 m were used to better fill the vein system model shapes. Sub-blocks were populated with grades corresponding to those estimated in the parent blocks. The interpolation method used for populating the block model was OK with locally variable anisotropy, following the orientation of the veins and stockworks.

Estimation parameters for the Avino Vein System are summarised in Table 14.8 and Table 14.9.

14.10.2 SAN GONZALO

A single block model was created to cover the San Gonzalo system. A block size of 10 m by 10 m by 10 m was used for block model and resource estimate. The interpolation method used for populating the block model was OK following a kriging neighbourhood specification tested in Snowden Supervisor™ software. A minimum of 16 and maximum of 48 composites were used per block with a maximum of 40 samples per drillhole.

Estimation parameters used for the San Gonzalo system are summarised in Table 14.10.

14.10.3 OXIDE TAILINGS

A single block model was created to cover the Avino oxide tailings deposit. A block size of 20 m by 20 m by 2 m was used for block model and resource estimate, as the average distance between sample drillholes approximates 30 m and the composite length is 2 m. The interpolation method used for populating the block model was OK following a kriging neighbourhood specification tested in Snowden Supervisor™ software. A minimum of 8 and maximum of 32 composites were used per block with a maximum of 40 samples per drillhole.

Estimation parameters used for the oxide tailings deposit are summarised in Table 14.11.

Table 14.8 Avino Vein System Variogram Parameters

General	Direction						Structure 1							Structure 2						
NS Transformed Variogram Model	Dip	Dip Azimuth	Pitch	Variance	Nugget	Normalised Nugget	Sill	Normalised Sill	Structure	Alpha	Major	Semi-major	Minor	Sill	Normalised Sill	Structure	Alpha	Major	Semi-major	Minor
Cu_ppm in ET_H02	64.17	157.21	133.9936	4621.559	936.7901	0.2027	2208.181	0.4778	Spherical		21.75	14.62	6.227	1473.353	0.3188	Spherical		204.4	139.2	26.79
Cu_ppm in ET_H01	64.17	157.21	133.9936	15475680	3136920	0.2027	7549037	0.4878	Spherical		21.75	14.62	6.227	4768057	0.3081	Spherical		74.5	45.82	16.47
Cu_ppm in ET_F03	64.17	157.21	133.9936	7915.139	1601.233	0.2023	3806.391	0.4809	Spherical		21.75	14.62	6.227	2528.887	0.3195	Spherical		128.6	139.2	26.79
Cu_ppm in ET_F02	64.17	157.21	133.9936	22146700	4489136	0.2027	7625109	0.3443	Spherical		17.37	11.63	6.227	9950512	0.4493	Spherical		159.4	111	26.79
Cu_ppm in ET_F01	64.17	157.21	133.9936	28254257	5732789	0.2029	13773950	0.4875	Spherical		14.15	19.95	6.227	8741867	0.3094	Spherical		127.9	148.9	28.4
Cu_ppm in ET04	64.17	157.21	133.9936	13359779	2710699	0.2029	5049996	0.378	Spherical		21.43	14.62	6.227	2941823	0.2202	Spherical		110.4	71.62	26.79
Cu_ppm in ET03	64.17	157.21	133.9936	7074.763	1435.469	0.2029	3383.152	0.4782	Spherical		21.75	14.62	6.227	2256.142	0.3189	Spherical		204.4	139.2	26.79
Cu_ppm in ET02	64.17	157.21	133.9936	24359931	4942630	0.2029	8121601	0.3334	Spherical		13.4	9.861	6.227	7271439	0.2985	Spherical		107.8	81.49	25.44
Cu_ppm in ET01	64.17	157.21	133.9936	31817929	6455858	0.2029	11740816	0.369	Spherical		14.21	14.62	6.227	9294017	0.2921	Spherical		202.9	100.9	26.79
Bi_ppm in ET_H02	64.17	157.21	133.9936	4621.559	936.7901	0.2027	2208.181	0.4778	Spherical		21.75	14.62	6.227	1473.353	0.3188	Spherical		204.4	139.2	26.79
Bi_ppm in ET_H01	64.17	157.21	133.9936	2163.58	438.7741	0.2028	1057.342	0.4887	Spherical		21.75	14.62	6.227	654.2667	0.3024	Spherical		69.21	100.3	26.79
Bi_ppm in ET_F03	64.17	157.21	133.9936	7915.139	1601.233	0.2023	3806.391	0.4809	Spherical		21.75	14.62	6.227	2528.887	0.3195	Spherical		128.6	139.2	26.79
Bi_ppm in ET_F02	64.17	157.21	133.9936	2369.105	480.2177	0.2027	1131.959	0.4778	Spherical		21.75	14.62	6.227	755.2708	0.3188	Spherical		204.4	139.2	26.79
Bi_ppm in ET_F01	64.17	157.21	133.9936	7736.629	1569.762	0.2029	3693.467	0.4774	Spherical		21.75	14.62	6.227	2454.059	0.3172	Spherical		225.2	113	38.91
Bi_ppm in ET04	64.17	157.21	133.9936	7046.654	1429.766	0.2029	3369.71	0.4782	Spherical		21.75	14.62	6.227	2247.178	0.3189	Spherical		204.4	139.2	26.79
Bi_ppm in ET03	64.17	157.21	133.9936	7074.763	1435.469	0.2029	3383.152	0.4782	Spherical		21.75	14.62	6.227	2256.142	0.3189	Spherical		204.4	139.2	26.79
Bi_ppm in ET02	64.17	157.21	133.9936	136696	27735.63	0.2029	41541.93	0.3039	Spherical		18.08	13.74	4.651	66981.06	0.49	Spherical		156.8	140	18.35
Bi_ppm in ET01	64.17	157.21	133.9936	136696	27735.63	0.2029	41541.93	0.3039	Spherical		18.08	13.74	4.651	66981.06	0.49	Spherical		156.8	140	18.35
Au_ppm in ET_H02	64.17	157.21	133.9936	4621.559	936.7901	0.2027	2208.181	0.4778	Spherical		21.75	14.62	6.227	1473.353	0.3188	Spherical		204.4	139.2	26.79
Au_ppm in ET_H01	64.17	157.21	150.2386	0.013356	0.002707	0.2027	0.0066	0.4947	Spherical		26.63	14.62	6.227	0.004	0.3013	Spherical		76.85	137.5	26.79

table continues…

General	Direction						Structure 1							Structure 2						
NS Transformed Variogram Model	Dip	Dip Azimuth	Pitch	Variance	Nugget	Normalised Nugget	Sill	Normalised Sill	Structure	Alpha	Major	Semi-major	Minor	Sill	Normalised Sill	Structure	Alpha	Major	Semi-major	Minor
Au_ppm in ET_F03	64.17	157.21	133.9936	0.527164	0.106645	0.2023	0.2557	0.485	Spherical		21.75	14.62	6.227	0.1632	0.3096	Spherical		87	87	27
Au_ppm in ET_F02	64.17	157.21	133.9936	0.744035	0.150816	0.2027	0.2414	0.3245	Spherical		24.41	26.52	9.662	0.3503	0.4708	Spherical		110.6	139.2	33.51
Au_ppm in ET_F01	64.17	157.21	133.9936	5.199326	1.054943	0.2029	1.5109	0.2906	Spherical		17.92	14.62	6.227	2.6366	0.5071	Spherical		250	185.4	39.41
Au_ppm in ET04	64.17	157.21	133.9936	1.822118	0.369708	0.2029	0.8737	0.4795	Spherical		21.75	14.62	6.227	0.5798	0.3182	Spherical		167.7	110.6	32.48
Au_ppm in ET03	64.17	157.21	133.9936	7074.763	1435.469	0.2029	3383.152	0.4782	Spherical		21.75	14.62	6.227	2256.142	0.3189	Spherical		204.4	139.2	26.79
Au_ppm in ET02	64.17	157.21	133.9936	8.443554	1.54517	0.183	4.0267	0.4769	Spherical		17.18	17.52	9.776	2.8776	0.3408	Spherical		172.9	122.6	60.77
Au_ppm in ET01	64.17	157.21	133.9936	1.305068	0.264798	0.2029	0.5455	0.418	Spherical		17.05	15.16	10	0.4928	0.3776	Spherical		258.8	182.1	26.79
Ag_ppm in ET_H02	64.17	157.21	133.9936	4621.559	936.7901	0.2027	2208.181	0.4778	Spherical		21.75	14.62	6.227	1473.353	0.3188	Spherical		204.4	139.2	26.79
Ag_ppm in ET_H01	64.17	157.21	133.9936	2163.58	438.7741	0.2028	1057.342	0.4887	Spherical		21.75	14.62	6.227	654.2667	0.3024	Spherical		69.21	100.3	26.79
Ag_ppm in ET_F03	64.17	157.21	133.9936	7915.139	1601.233	0.2023	3806.391	0.4809	Spherical		21.75	14.62	6.227	2528.887	0.3195	Spherical		128.6	139.2	26.79
Ag_ppm in ET_F02	64.17	157.21	133.9936	2369.105	480.2177	0.2027	1131.959	0.4778	Spherical		21.75	14.62	6.227	755.2708	0.3188	Spherical		204.4	139.2	26.79
Ag_ppm in ET_F01	64.17	157.21	133.9936	7736.629	1569.762	0.2029	3693.467	0.4774	Spherical		21.75	14.62	6.227	2454.059	0.3172	Spherical		225.2	113	38.91
Ag_ppm in ET04	64.17	157.21	133.9936	7046.654	1429.766	0.2029	3369.71	0.4782	Spherical		21.75	14.62	6.227	2247.178	0.3189	Spherical		204.4	139.2	26.79
Ag_ppm in ET03	64.17	157.21	133.9936	7074.763	1435.469	0.2029	3383.152	0.4782	Spherical		21.75	14.62	6.227	2256.142	0.3189	Spherical		204.4	139.2	26.79
Ag_ppm in ET02	64.17	157.21	133.9936	6544.979	1327.976	0.2029	3381.136	0.5166	Spherical		21.75	17.52	6.227	1831.285	0.2798	Spherical		177.4	144.2	60.77
Ag_ppm in ET01	64.17	157.21	133.9936	7039.369	1428.288	0.2029	3366.226	0.4782	Spherical		21.75	14.62	6.227	2244.855	0.3189	Spherical		204.4	139.2	26.79

Table 14.9 Avino Vein System Search Parameters

General			Ellipsoid Ranges				Number of Samples		Drillhole Limit
Name	Domain	Values	Maximum	Intermediate	Minimum	Variable Orientation	Minimum	Maximum	Max Samples per Hole
Kr, Ag_ppm in ET01	GM_2020: ET01	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET02	GM_2020: ET02	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET03	GM_2020: ET03	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET04	GM_2020: ET04	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET_F01	GM_2020: ET_F01	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET_F02	GM_2020: ET_F02	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET_F03	GM_2020: ET_F03	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET_H01	GM_2020: ET_H01	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Ag_ppm in ET_H02	GM_2020: ET_H02	Ag_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET01	GM_2020: ET01	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET02	GM_2020: ET02	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET03	GM_2020: ET03	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET04	GM_2020: ET04	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3

table continues...

General			Ellipsoid Ranges				Number of Samples		Drillhole Limit
Name	Domain	Values	Maximum	Intermediate	Minimum	Variable Orientation	Minimum	Maximum	Max Samples per Hole
Kr, Au_ppm in ET_F01	GM_2020: ET_F01	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET_F02	GM_2020: ET_F02	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET_F03	GM_2020: ET_F03	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET_H01	GM_2020: ET_H01	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Au_ppm in ET_H02	GM_2020: ET_H02	Au_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET01	GM_2020: ET01	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET02	GM_2020: ET02	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET03	GM_2020: ET03	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET04	GM_2020: ET04	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET_F01	GM_2020: ET_F01	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET_F02	GM_2020: ET_F02	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET_F03	GM_2020: ET_F03	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET_H01	GM_2020: ET_H01	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3
Kr, Cu_ppm in ET_H02	GM_2020: ET_H02	Cu_ppm	204.4	139.2	26.79	Variable Orientation	7	20	3

table continues...

General			Ellipsoid Ranges			Variable Orientation	Number of Samples		Drillhole Limit
Name	Domain	Values	Maximum	Intermediate	Minimum		Minimum	Maximum	Max Samples per Hole
SKr, Bi_ppm in ET02	GM_2020: ET02	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2
SKr, Bi_ppm in ET03	GM_2020: ET03	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2
SKr, Bi_ppm in ET04	GM_2020: ET04	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2
SKr, Bi_ppm in ET_F01	GM_2020: ET_F01	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2
SKr, Bi_ppm in ET_F02	GM_2020: ET_F02	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2
SKr, Bi_ppm in ET_F03	GM_2020: ET_F03	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2
SKr, Bi_ppm in ET_H01	GM_2020: ET_H01	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2
SKr, Bi_ppm in ET_H02	GM_2020: ET_H02	Bi_ppm	204.4	139.2	26.79	Variable Orientation	3	20	2

Table 14.10 San Gonzalo Vein System: Variogram and Search Parameters

Metal	Domain	Nugget C0	C1	C2	R11	R12	R13	R21	R22	R23	Ellipsoid Rotation		Pitch	Min Comps	Max Comps
											Dip	Azimuth			
Ag	SG1	165000	200000	109160	16	16	6	92	84	13	76	32	170	8	32
Ag	SG2	4060	6156	900	16	16	6	92	84	16	84	358	168	8	32
Ag	SG3	5000	9000	4013	16	16	6	92	84	16	73	42	166	8	32
Ag	SG4	160000	180000	72635	16	16	6	92	84	16	86	9	117	8	32
Ag	SG5	10000	15000	6487	16	16	6	92	84	16	76	198	14	8	32
Ag	SG6	2000	2000	1400	16	16	6	92	84	16	87	34	168	8	32
Au	SG1	11	7.5	3.94	13	10	3	71	51	10	76	32	170	8	32
Au	SG2	0.17	0.1	0.071	13	10	3	71	51	10	82	358	12	8	32
Au	SG3	0.27	0.2	0.069	13	10	3	71	51	10	73	42	166	8	32
Au	SG4	2.03	0.7	0.33	13	10	3	71	51	10	86	9	168	8	32
Au	SG5	1.6	0.9	0.66	13	10	3	71	51	10	76	198	14	8	32
Au	SG6	0.16	0.1	0.06	13	10	3	71	51	10	87	34	89	8	32

Table 14.11 Oxide Tailings Deposit: Variogram and Search Parameters

Domain 10		C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Metal	Nugget													
Ag	0.37	0.49	30	7	68	0.14	130	20	170	0	-90	135	8	32
Au	0.39	0.51	55	8	16	0.1	100	20	92	0	-90	135	8	32
Cu	0.2	0.59	68	8	24	0.21	195	19	112	0	-90	135	8	32
Pb	0.45	0.35	63	13	70	0.2	269	14	170	0	-90	135	8	32
Zn	0.23	0.42	190	11	51	0.35	191	12	165	0	-90	135	8	32

14.11 RESOURCE BLOCK MODELS

14.11.1 BLOCK MODEL CONFIGURATIONS

The specifications for the estimation block models for the Avino Vein system and the San Gonzalo Vein system (built using Leapfrog Edge™) and the oxide tailings (built using Datamine Studio™) are summarized in Table 14.12 and Table 14.13. Both the hard rock vein deposit models for the Avino and San Gonzalo systems are rotated about a vertical axis passing through the bottom left hand corner to better conform to the strike of the veins. Sub-blocking was used to optimize volume filling of the vein models by preferentially minimizing block dimension in the Y-dimension for the vein models, while the sub-blocking used for the oxide tailings block model minimized the block dimension in the vertical direction. The block models were not inclined to avoid potential geometric confusion when the models are used for planning and reconciliation.

Table 14.12 Estimation Block Model Specifications

Model	X0	Y0	Z0	NX	NY	NZ	DX	DY	DZ	MinDX	MinDY	MinDZ	RotV
Avino Vein (Leapfrog)	569840	2712270	1800	137	44	65	20	10	10	5	1	2	335
San Gonzalo Vein (Leapfrog)	571065	2714432.5	2355	163	72	56	10	5	10	2.5	0.25	2.5	35
Oxide Tailings (Datamine)	569680	2712020	2170	16	15	37	40	40	2	4	4	0.2	0

Table 14.13 Explanation of Table 14.12

Variable	Meaning
X0	minimum easting
Y0	minimum northing
Z0	minimum elevation
NX	number of primary blocks in easting direction
NY	number of primary blocks in northing direction
NZ	number of primary blocks in elevation direction
DX	primary easting block dimension
DY	primary northing block dimension
DZ	primary vertical block dimension
MinDX	minimum sub-block easting dimension
MinDY	minimum sub-block northing dimension
MinDZ	minimum sub-block vertical dimension
RotV	Rotation angle of model about a vertical axis

14.11.2 Interpolation

The reported resource relies on OK as the best unbiased linear estimator of grade. Other methods of interpolation, including ID^2 and NN were employed for model validation purposes and are retained in the block models.

14.12 Model Validation

14.12.1 Statistics

Mean metal grade values (silver, gold, and copper) for estimated blocks using OK and ID^2 for the Avino Vein system domains are shown in Table 14.14. The two types of estimates are comparable particularly in the Main Zone, which is the largest domain.

Mean metal grade values (silver and gold) for estimated blocks using OK and ID^2 for the San Gonzalo Vein system domains are shown in Table 14.15. The two types of estimates are comparable particularly in the Main Zone, which is the largest domain.

Table 14.14 Avino Vein: Block Estimates and Composite Sample Grades

Name		Block Count	Volume	Mean	Standard Deviation	Coefficient of Variation	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
ET01		214,556	3,432,896									
	AgID	212,985	3,407,760	56.50427	42.14579	0.745887	1776.268	1.201617	28.77382	43.90088	72.9712	370.5751
	AgOK	212,985	3,407,760	59.20095	39.1893	0.661971	1535.801	9.361378	33.50759	45.56231	74.67363	355.8367
	AuID	212,985	3,407,760	0.562652	0.539689	0.959189	0.291265	0.010918	0.172333	0.421372	0.766501	4.907288
	AuOK	212,985	3,407,760	0.57164	0.464617	0.81278	0.215869	0.028234	0.220051	0.456883	0.768961	4.004576
	BiID	202,707	3,243,312	273.8597	221.7509	0.809725	49173.48	11.74154	119.1647	224.4432	362.0451	1497.116
	BiSK	202,707	3,243,312	293.2462	105.9621	0.361342	11227.96	61.46036	228.1229	287.1853	323.2452	872.9588
	CuID	212,985	3,407,760	4517.196	3110.363	0.688561	9674357	49.97433	2130.89	3815.382	6386.102	20392.87
	CuOK	212,985	3,407,760	4810.081	2926.918	0.608497	8566848	400.1437	2365.239	4316.704	6622.1	15927.5
ET02		507,864	9,544,384									
	AgID	492,779	9,255,408	31.84309	28.54673	0.896481	814.9159	0.0025	12.72864	22.72692	40.70591	343.7041
	AgOK	492,779	9,255,408	34.71374	26.40623	0.760685	697.2887	0.0025	17.67261	25.56588	42.20281	244.3945
	AuID	492,779	9,255,408	0.311187	0.473356	1.521129	0.224066	0.0025	0.074127	0.153463	0.415556	17.04301
	AuOK	492,779	9,255,408	0.326319	0.3998	1.225185	0.15984	0.0025	0.10485	0.211524	0.401245	8.118353
	BiID	428,354	8,067,872	155.4189	148.0588	0.952643	21921.4	9.576074	38.26347	98.03881	246.2291	1307.027
	BiSK	428,354	8,067,872	167.0552	66.54148	0.39832	4427.769	38.19252	129.0373	161.3242	182.3572	746.7772
	CuID	492,779	9,255,408	3258.593	2627.984	0.806478	6906300	0.005	1326.421	2506.15	4610.873	19244.12
	CuOK	492,779	9,255,408	3592.563	2457.116	0.683945	6037417	0.005	1534.222	3182.542	5022.71	18973.85
ET03		114,073	1,825,168									
	AgID	102,671	1,642,736	48.62851	37.73484	0.775982	1423.918	0.390887	21.06595	39.19197	62.69655	304.0255
	AgOK	102,671	1,642,736	50.74072	34.27285	0.675451	1174.628	7.22461	27.06347	40.3004	64.34858	231.007
	AuID	102,671	1,642,736	0.66795	0.706952	1.058391	0.499781	0.005689	0.198926	0.472196	0.910943	7.269951
	AuOK	102,671	1,642,736	0.761534	0.642707	0.843963	0.413072	0.028222	0.273425	0.584976	1.1251	6.563045

table continues...

Name		Block Count	Volume	Mean	Standard Deviation	Coefficient of Variation	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
	BiID	99,434	1,590,944	129.3677	90.14979	0.696849	8126.984	12.20713	60.96151	108.7289	174.5199	566.3663
	BiSK	99,434	1,590,944	164.3583	47.33722	0.288012	2240.812	61.3978	138.1337	161.2102	186.5427	361.2972
	CuID	102,671	1,642,736	2773.444	2030.578	0.73215	4123247	12.50812	1182.667	2359.561	3941.44	13297.75
	CuOK	102,671	1,642,736	2889.084	1886.902	0.653114	3560400	229.3093	1412.085	2441.275	4091.941	12169.27
ET04		106,954	1,760,864									
	AgID	106,627	1,755,632	38.4482	33.51055	0.871577	1122.957	0.24565	16.78296	30.77729	50.08237	396.5642
	AgOK	106,627	1,755,632	38.50961	25.96065	0.674134	673.9553	2.842124	21.04674	31.07316	48.54896	181.6084
	AuID	106,627	1,755,632	0.370349	0.389018	1.050409	0.151335	0.003582	0.12188	0.245086	0.469858	3.015903
	AuOK	106,627	1,755,632	0.378864	0.362579	0.957015	0.131463	0.010456	0.133089	0.242665	0.50792	2.469631
	BiID	102,107	1,683,312	101.8013	112.1971	1.102118	12588.19	10.43113	28.31177	46.12323	145.8481	741.5721
	BiSK	102,107	1,683,312	101.7994	39.78284	0.390796	1582.674	44.78568	74.36295	90.86473	116.3718	371.8611
	CuID	106,627	1,755,632	1819.38	1578.8	0.867768	2492608	14.30932	691.1243	1295.082	2499.148	11353.82
	CuOK	106,627	1,755,632	2003.415	1544.183	0.770775	2384500	96.7775	816.548	1469.548	2793.133	9221.055
ET_F01		271,195	4,914,480									
	AgID	243,038	4,434,208	37.97022	33.11668	0.872175	1096.715	0.163562	16.4382	27.28946	47.99248	281.6229
	AgOK	243,038	4,434,208	38.6346	29.05144	0.751954	843.9863	2.970375	17.44555	29.87203	50.76432	213.6942
	AuID	243,038	4,434,208	0.222441	0.2754	1.238081	0.075845	0.003083	0.064267	0.127799	0.274327	3.274574
	AuOK	243,038	4,434,208	0.225472	0.257049	1.140052	0.066074	0.010781	0.070028	0.136977	0.279877	2.490183
	BiID	207,117	3,833,680	230.3916	212.7928	0.923614	45280.77	11.88858	73.50036	144.6266	319.5632	1443.169
	BiSK	207,117	3,833,680	248.2066	92.1754	0.371366	8496.304	96.47452	185.6345	229.8909	277.3684	740.4272
	CuID	243,038	4,434,208	3554.94	2299.443	0.64683	5287438	31.55641	2061.392	2958.04	4523.835	22043.45
	CuOK	243,038	4,434,208	3641.659	2100.928	0.576915	4413897	328.3324	2217.119	3002.569	4620.21	14936.79

table continues...

Name		Block Count	Volume	Mean	Standard Deviation	Coefficient of Variation	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
ET_F02		40,275	690,032									
	AgID	40,265	689,872	52.19862	26.69603	0.511432	712.6782	12.05338	34.73363	45.14881	62.787	188.5445
	AgOK	40,265	689,872	49.57832	17.65259	0.356055	311.614	12.65507	38.02701	48.0347	59.2699	110.9772
	AuID	40,265	689,872	0.662454	0.229356	0.346221	0.052604	0.5025	0.506441	0.525422	0.763282	1.983309
	AuOK	40,265	689,872	0.653697	0.212123	0.324497	0.044996	0.502189	0.507364	0.537299	0.740682	1.881175
	BiID	31,814	554,656	201.0754	32.80216	0.163134	1075.982	103.0188	177.984	206.9256	228.0357	249.8886
	BiSK	36,759	633,776	288.8504	25.10055	0.086898	630.0376	198.0975	273.0043	287.9646	307.3484	335.6711
	CuID	40,265	689,872	4434.437	1744.723	0.393448	3044057	1689.886	3129.437	4025.576	5244.987	11553.27
	CuOK	40,265	689,872	4367.739	1678.838	0.384372	2818498	1253.813	3181.401	4043.017	5187.923	11624.21
ET_F03		11,594	185,504									
	AgID	11,546	184,736	82.35333	59.1898	0.71873	3503.433	1.775786	35.9265	59.41319	130.0014	266.9562
	AgOK	11,546	184,736	83.14771	50.03666	0.60178	2503.668	21.20375	39.83353	62.87401	129.6729	192.9825
	AuID	11,546	184,736	1.002813	0.337583	0.336635	0.113962	0.05494	0.75463	0.929803	1.206004	2.025203
	AuOK	11,546	184,736	1.000492	0.285504	0.285364	0.081513	0.407239	0.786757	0.933976	1.145114	1.871305
	BiID	10,335	165,360	360.476	82.9417	0.230089	6879.325	204.7675	288.9789	350.7106	432.4433	539.0161
	BiSK	10,335	165,360	341.2246	25.63186	0.075117	656.9921	285.9362	321.7267	339	356.848	425.5329
	CuID	11,546	184,736	4758.071	2681.015	0.563467	7187839	138.6311	2456.536	4195.317	7177.422	12955.05
	CuOK	11,546	184,736	4883.218	2094.204	0.428857	4385689	1674.548	3103.441	4707.26	6670.3	10347.27
ET_H01		15,201	243,216									
	AgID	14,825	237,200	27.31028	10.47496	0.383554	109.7247	9.797392	18.6482	27.43106	31.45853	113.5887
	AgOK	14,825	237,200	29.41767	10.34728	0.351737	107.0662	12.34508	21.99483	30.03462	34.56049	82.88335
	AuID	14,825	237,200	0.087748	0.045359	0.516921	0.002057	0.02951	0.050875	0.08147	0.117178	0.328735
	AuOK	14,825	237,200	0.088095	0.045035	0.511208	0.002028	0.026082	0.050634	0.086376	0.121477	0.420761
	BiID	14,277	228,432	66.14345	36.57493	0.552964	1337.726	25.09649	40.96105	55.41596	76.24025	209.9251

table continues...

Name		Block Count	Volume	Mean	Standard Deviation	Coefficient of Variation	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
	BiSK_1	14,277	228,432	64.92759	6.3128	0.097228	39.85145	51.68139	61.39423	64.64717	66.96756	116.5143
	CuID	14,825	237,200	4268.246	1901.275	0.445446	3614845	792.5036	2677.274	4447.885	5477.026	12697.92
	CuOK	14,825	237,200	4271.163	1759.062	0.411846	3094298	1833.73	2851.127	3882.663	5156.793	12199.01
ET_H02		82,888	1,326,208									
	AgID	71,694	1,147,104	24.60867	22.04957	0.896008	486.1835	0.024228	8.362851	19.31954	34.32365	209.8928
	AgOK	71,694	1,147,104	23.9677	17.35838	0.72424	301.3134	1.366853	10.58387	20.01448	32.46044	120.6774
	AuID	71,694	1,147,104	0.432094	0.352074	0.814808	0.123956	0.002875	0.216183	0.36253	0.57718	3.799954
	AuOK	71,694	1,147,104	0.455899	0.264734	0.580686	0.070084	0.011797	0.262143	0.403956	0.601673	1.885537
	BiID	73,529	1,176,464	126.2546	76.61307	0.606814	5869.562	13.19804	73.2408	112.3863	158.5353	639.5893
	BiSK	73,529	1,176,464	118.6999	34.17935	0.287947	1168.228	39.06369	98.46386	114.0838	132.9009	347.9956
	CuID	71,694	1,147,104	1112.216	791.763	0.711879	626888.7	1.340194	633.9509	966.964	1387.285	6668.2
	CuOK	71,694	1,147,104	1080.95	592.4864	0.548116	351040.2	122.8639	727.079	941.2472	1293.039	4641.244

Table 14.15 San Gonzalo Vein: Block Estimates and Composite Sample Grades

Name		Block Count	Volume	Mean	Std. Dev.	CV	Variance	Minimum	L. Quartile	Median	U. Quartile	Maximum
SG1		356842	568531.25									
	Ag_ID	318859	509182.81	159.86	195.31	1.22	38144.29	2.30	37.33	94.93	211.95	3946.41
	Ag_OK	318859	509182.81	156.18	181.65	1.16	32995.31	3.04	42.33	100.38	203.94	2301.70
	Au_ID	271130	434606.25	0.81	1.19	1.47	1.41	0.01	0.19	0.41	0.99	28.14
	Au_OK	271130	434606.25	0.81	1.23	1.51	1.50	0.02	0.19	0.41	1.01	23.15
SG2		47936	74900.00									
	Ag_ID	36088	56387.50	38.81	30.67	0.79	940.36	5.98	21.94	31.47	44.11	624.41
	Ag_OK	36088	56387.50	47.95	33.71	0.70	1136.40	10.92	20.70	37.65	69.21	257.38
	Au_ID	24189	37795.31	0.31	0.27	0.85	0.07	0.05	0.09	0.16	0.50	1.16
	Au_OK	24189	37795.31	0.33	0.24	0.73	0.06	0.05	0.11	0.24	0.50	1.06
SG3		10025	15664.06									
	Ag_ID	5840	9125.00	78.37	23.01	0.29	529.47	22.23	65.38	79.68	92.21	200.60
	Ag_OK	9693	15145.31	80.66	24.89	0.31	619.35	29.95	70.31	75.23	82.29	249.26
	Au_ID	4535	7085.94	0.40	0.18	0.44	0.03	0.18	0.35	0.37	0.39	1.67
	Au_OK	4535	7085.94	0.40	0.17	0.43	0.03	0.22	0.32	0.34	0.38	1.24
SG4		122062	190721.88									
	Ag_ID	27942	43659.38	255.74	179.66	0.70	32277.38	27.03	105.08	179.65	416.42	1466.25
	Ag_OK	27942	43659.38	263.03	174.03	0.66	30285.34	33.52	100.17	239.88	402.12	821.71
	Au_ID	13551	21173.44	0.84	0.56	0.67	0.32	0.12	0.46	0.68	1.06	5.07
	Au_OK	13551	21173.44	0.91	0.61	0.67	0.37	0.21	0.47	0.64	1.49	2.75
SG5		47581	74345.31									
	Ag_ID	24108	37668.75	98.25	80.16	0.82	6426.00	14.83	19.64	80.86	170.84	326.19
	Ag_OK	24108	37668.75	94.40	64.34	0.68	4139.40	13.57	22.95	93.00	156.26	259.26
	Au_ID	14339	22404.69	0.68	0.63	0.93	0.40	0.06	0.12	0.43	1.23	2.42
	Au_OK	14339	22404.69	0.67	0.57	0.85	0.33	0.09	0.14	0.48	1.29	2.02

table continues...

Name		Block Count	Volume	Mean	Std. Dev.	CV	Variance	Minimum	L. Quartile	Median	U. Quartile	Maximum
SG6		100563	157129.69									
	Ag_ID	45332	70831.25	47.82	44.86	0.94	2012.74	4.21	10.78	29.16	77.66	197.34
	Ag_OK	45332	70831.25	48.69	28.05	0.58	786.74	3.76	22.14	48.89	68.46	123.33
	Au_ID	26683	41692.19	0.30	0.31	1.04	0.10	0.01	0.05	0.16	0.49	1.57
	Au_OK	26683	41692.19	0.39	0.28	0.73	0.08	0.01	0.11	0.37	0.66	0.94

Mean values for estimated blocks and composites used for the estimation in the oxide tailings model are shown in Table 14.16. The block estimates show lower silver grades than the composites due to the declustering effect of kriging and the large numbers of relatively high-grade composites in the development sampling.

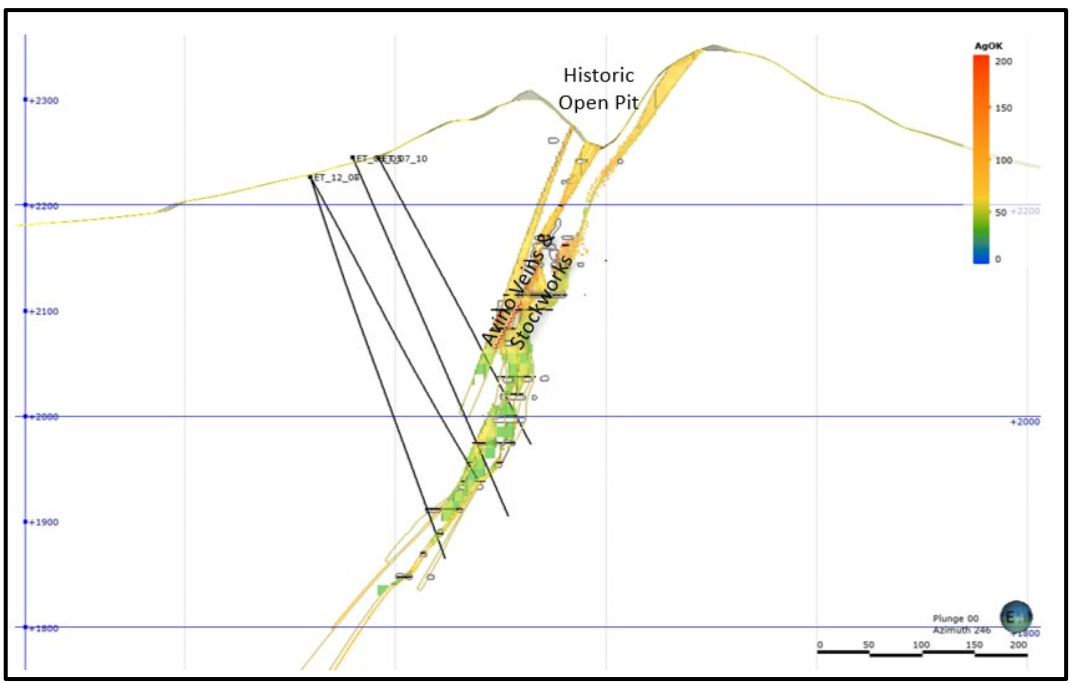
Table 14.16 Oxide Tailings: Block Estimates and Composite Sample Grades

Estimator	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)
Ordinary Kriging	93.24	0.48	0.130	0.950	0.150
Nearest Neighbour	92.56	0.48	0.129	0.930	0.150
Inverse Distance	93.94	0.48	0.128	0.949	0.151
Composites	96.48	0.46	0.125	0.958	0.153
Number of Blocks	45,607	-	-	-	-

14.12.2 Sections

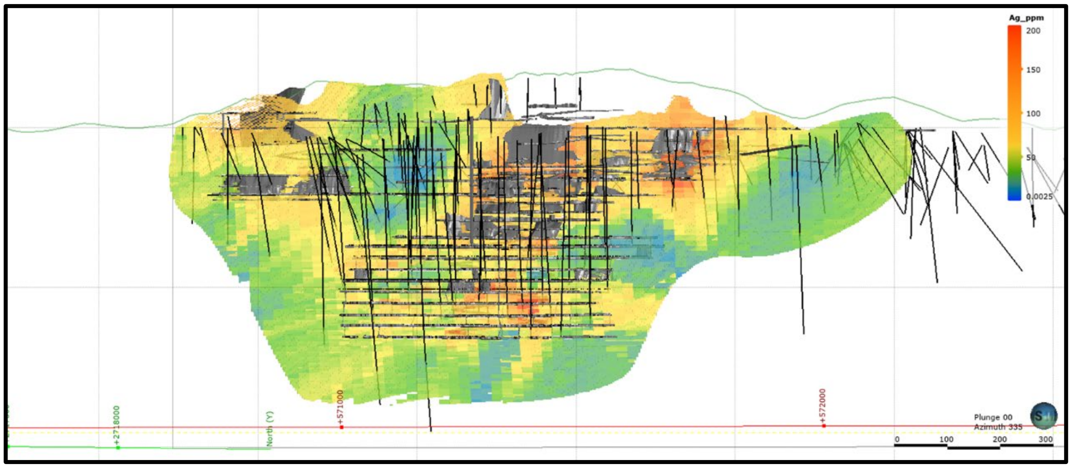
The spatial pattern of metal grade distributions for the Avino Vein is shown in Figure 14.24 to Figure 14.27, inclusive. Figure 14.24 shows a typical transverse section illustrating the interaction between the secondary (NE1) zone developed on the footwall side of the main the Avino Vein system. Figure 14.25 to Figure 14.27 are longitudinal sections viewed from the south showing silver, gold, and copper grades with high-grade zones tending to plunge at about 40° to the west (Horner 2017).

Figure 14.24 Avino Vein: Typical Transverse Section, Looking Northwest through Drillhole ET07-10, Showing the Block Model Centroids Colour Coded by Silver Grade



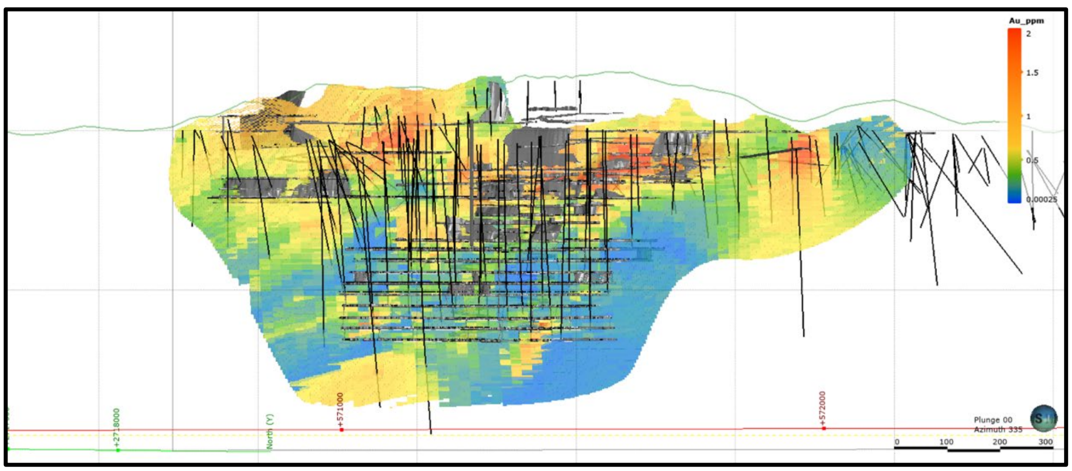
Source: Red Pennant (2020)

Figure 14.25 Avino Vein: Longitudinal Section Showing the Block Model Colour Coded by Silver Grade



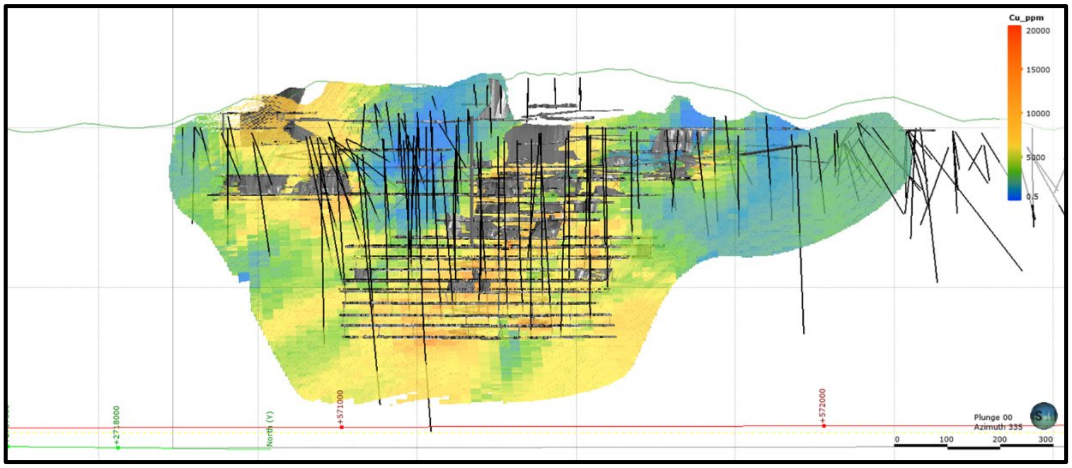
Source: Red Pennant (2020)

Figure 14.26 Avino Vein: Longitudinal Section Showing the Block Model Colour Coded by Gold Grade



Source: Red Pennant (2020)

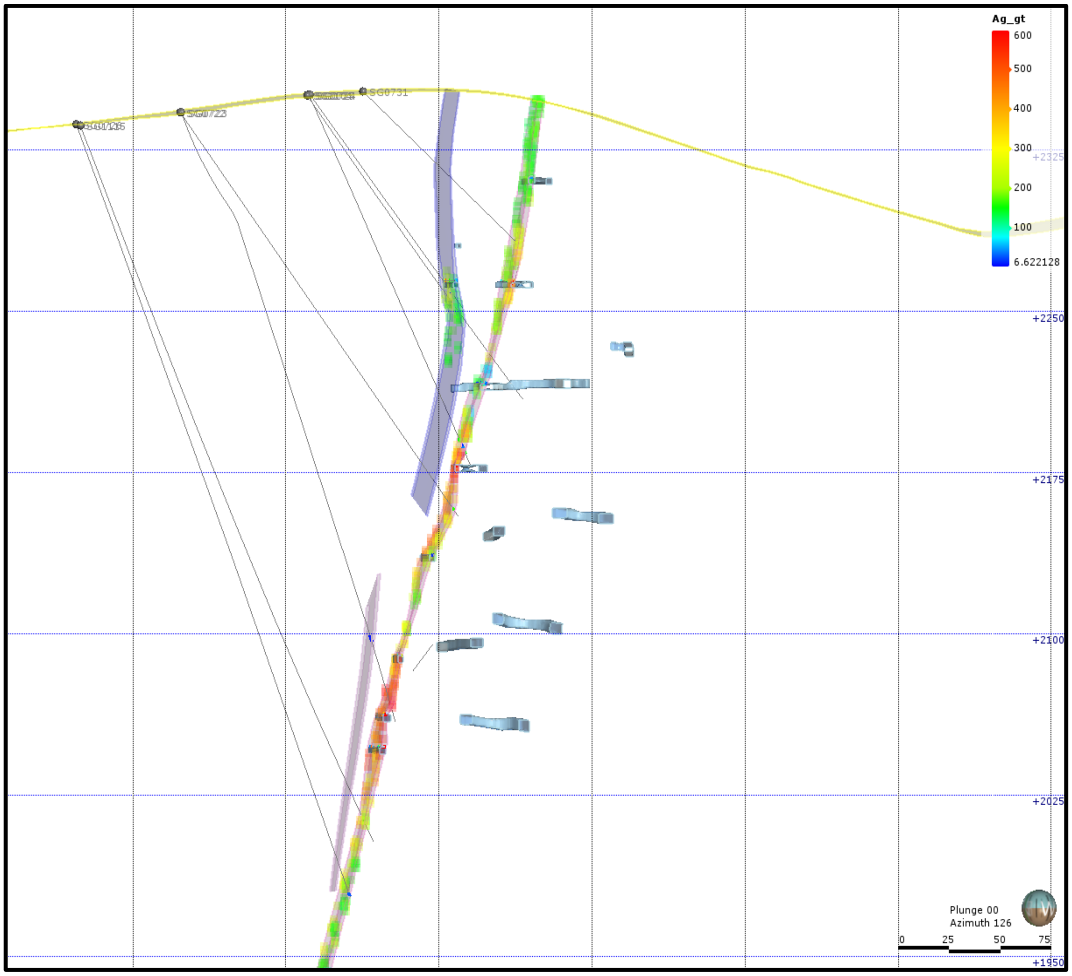
Figure 14.27 Avino Vein: Longitudinal Section Showing the Block Model Colour Coded by Copper Grade



Source: Red Pennant (2020)

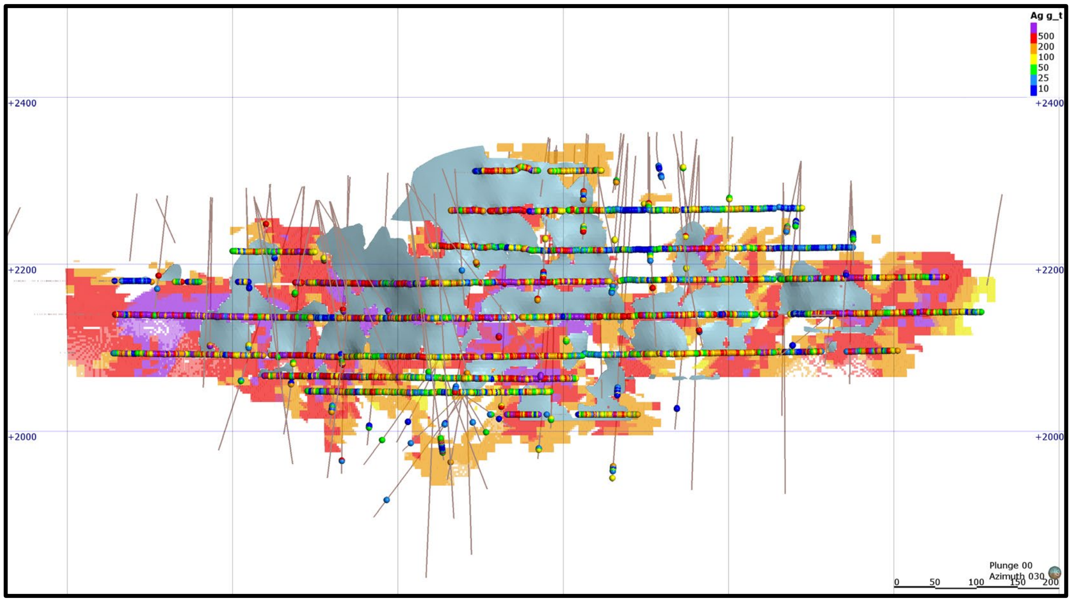
The spatial pattern of metal grade distributions for the San Gonzalo Vein is shown in Figure 14.28 to Figure 14.31, inclusive. Figure 14.28 shows a typical transverse section illustrating the relatively narrow San Gonzalo Vein and the Anjelica Vein (SG4). Figure 14.29 to Figure 14.31 are longitudinal sections viewed from the south showing silver, gold, and copper grades with high-grade zones with a subhorizontal tendency despite some local steepening. It has become clear by continued underground mapping and sampling that the San Gonzalo mineralization is depth-constrained within a 250 m interval, probably due to pressure constraining boiling levels during the residence time of the mineralizing fluids.

Figure 14.28 San Gonzalo Vein: Typical Transverse Section, Looking East Aligned Along Drillhole SG1115 Showing the Block Model Centroids Colour Coded by Silver Grade



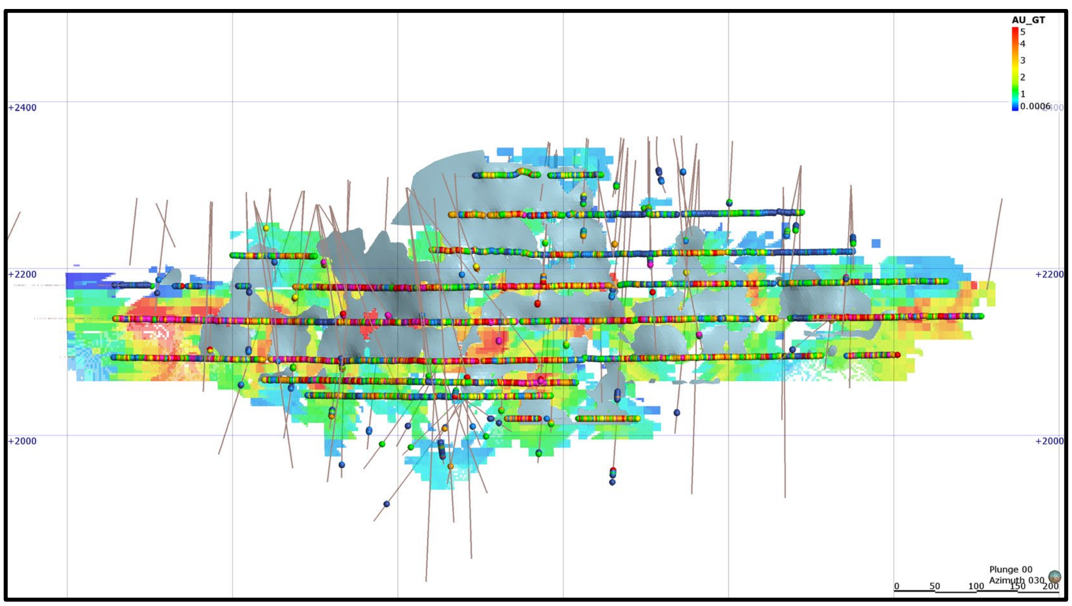
Source: Red Pennant (2020)

Figure 14.29 San Gonzalo Vein: Longitudinal Section Showing the Block Model Centroids Colour Coded by Silver Grade



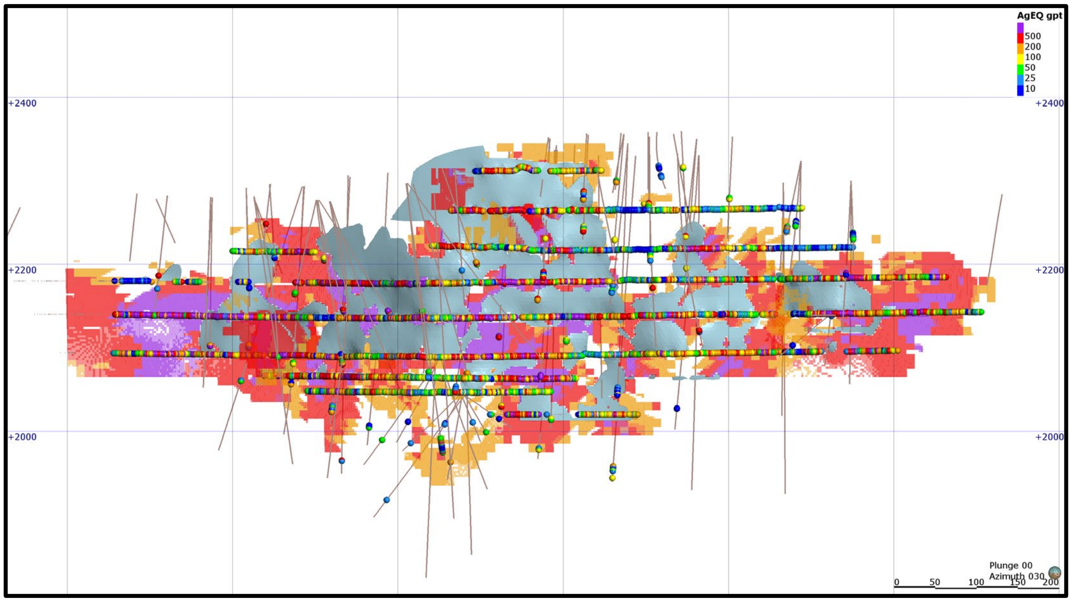
Source: Red Pennant (2020)

Figure 14.30 San Gonzalo Vein: Longitudinal Section Showing the Block Model Centroids Color Coded by Gold Grade



Source: Red Pennant (2020)

Figure 14.31 San Gonzalo Vein: Longitudinal Section Showing the Block Model Centroids Colour Coded by Silver Equivalent



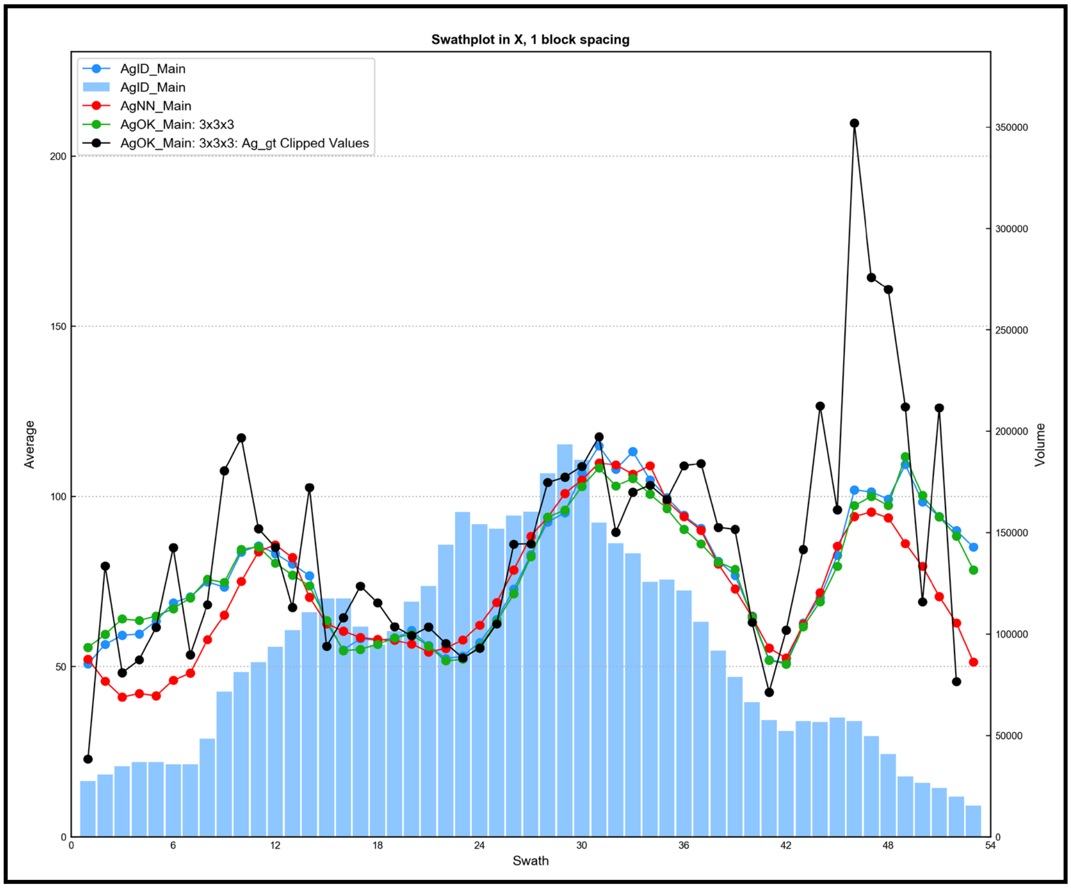
Source: Red Pennant (2020)

14.12.3 Swath Plots

Swath plots were generated for the underground vein deposits to compare trends in the estimated grades for the three estimation methods (OK, ID, and NN) in the block models to the source sampling data. The estimation methods for comparison are OK (green), NN (red), and ID^2 (blue) block estimates for silver, gold, and copper, and averages were generated for slices oriented parallel to the eastings, northings, and elevations. The widths of the swaths (or slices) are 20 m for eastings and 10 m for elevations, and the number of blocks is plotted as histograms. The average of assay composites is shown as a black line.

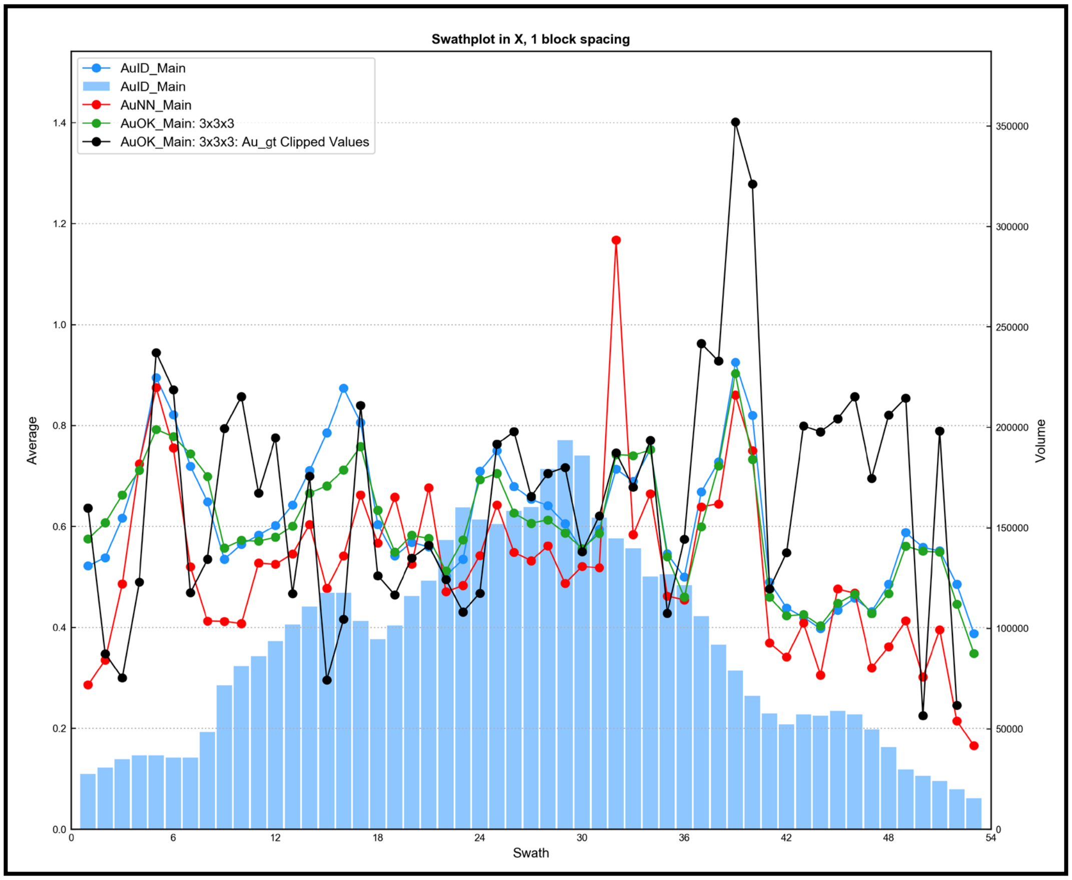
Figure 14.32 through Figure 14.37 display the swath plots for the Avino deposit, comparing block model estimates and sample grades.

Figure 14.32 Avino Vein, Swath Plot for Silver, Eastings



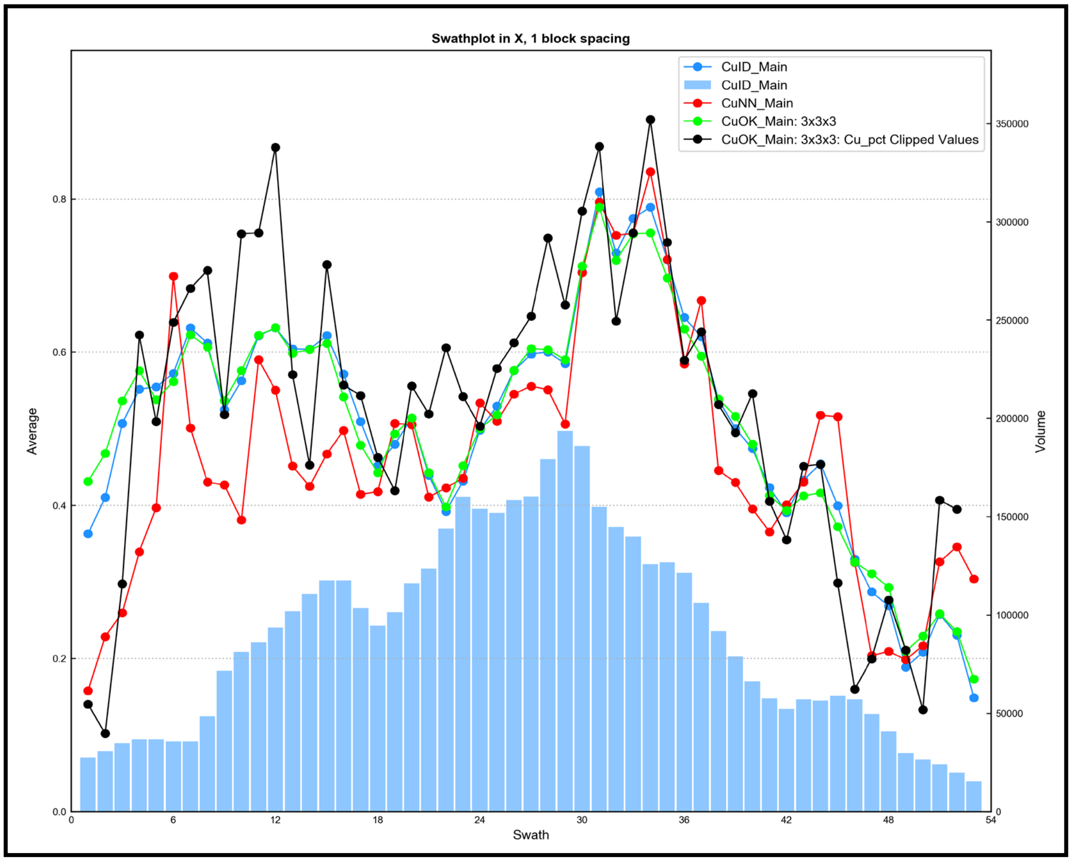
Source: Red Pennant (2020)

Figure 14.33 Avino Vein, Swath Plot for Gold Eastings



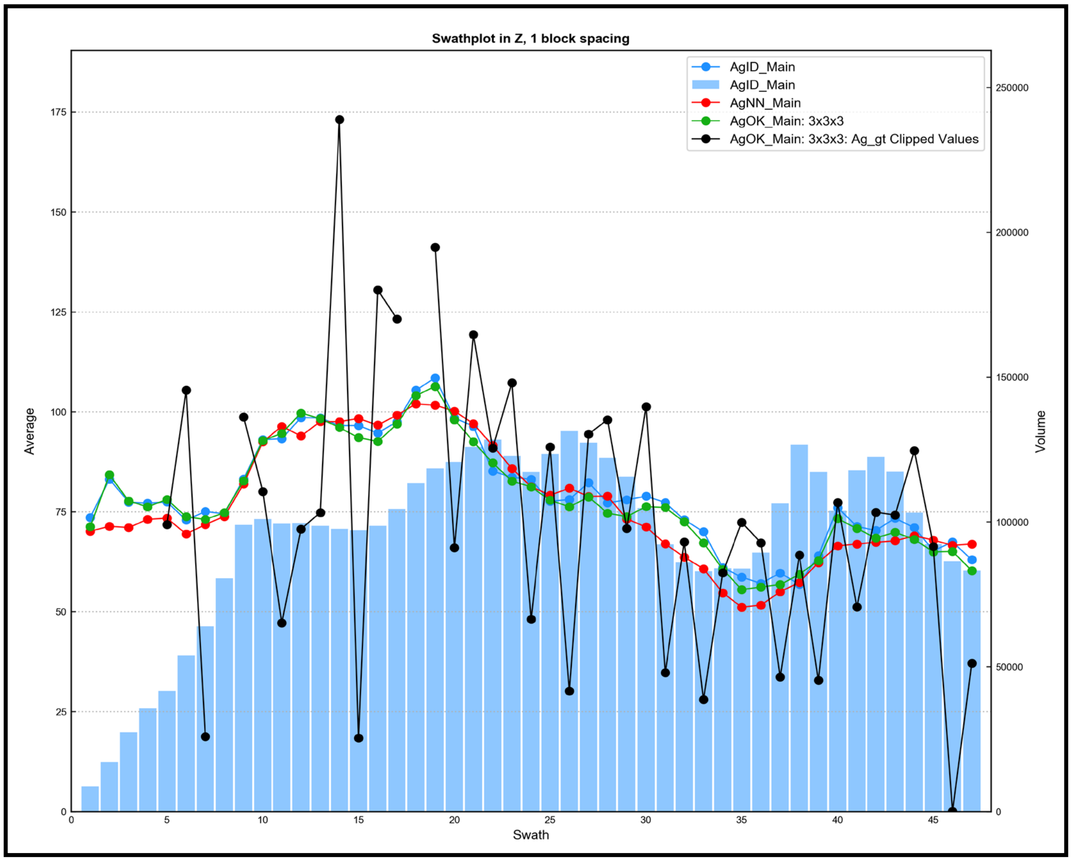
Source: Red Pennant (2020)

Figure 14.34 Avino Vein, Swath Plot for Copper, Eastings



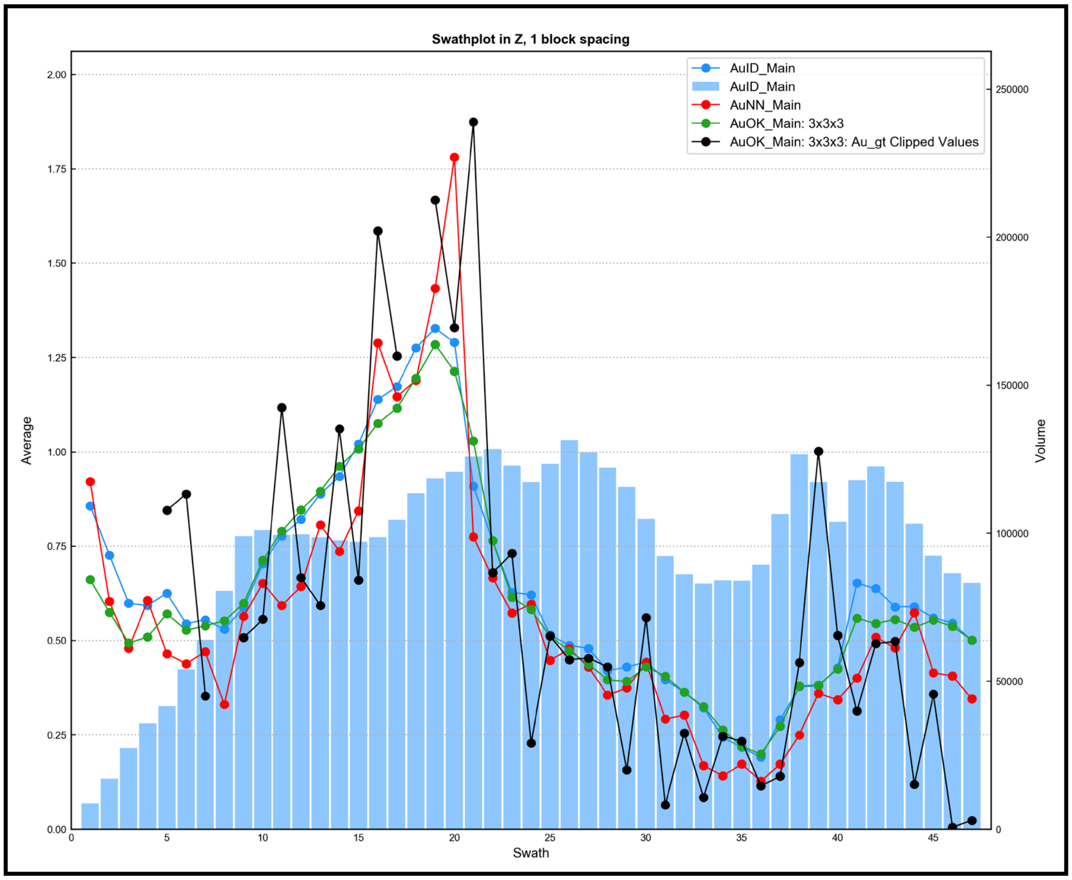
Source: Red Pennant (2020)

Figure 14.35 Avino Vein, Swath Plot for Silver, Elevation



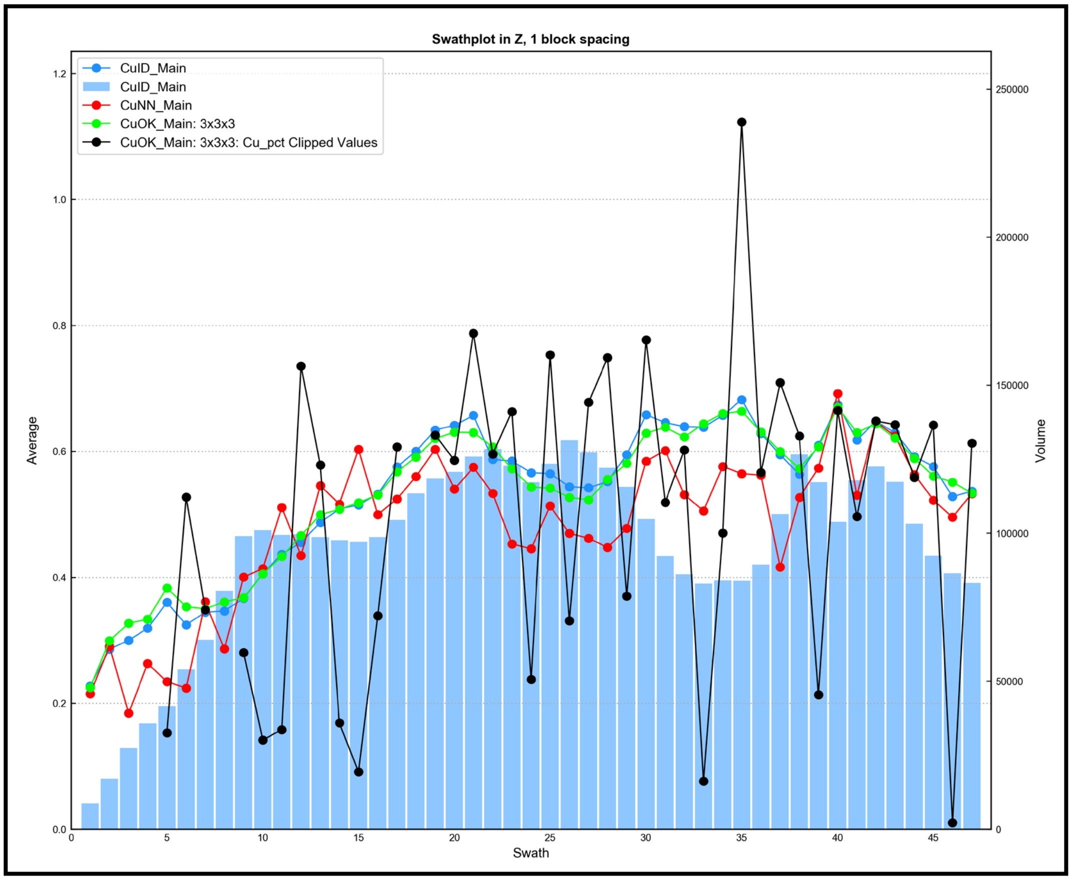
Source: Red Pennant (2020)

Figure 14.36 Avino Vein, Swath Plot for Gold, Elevation



Source: Red Pennant (2020)

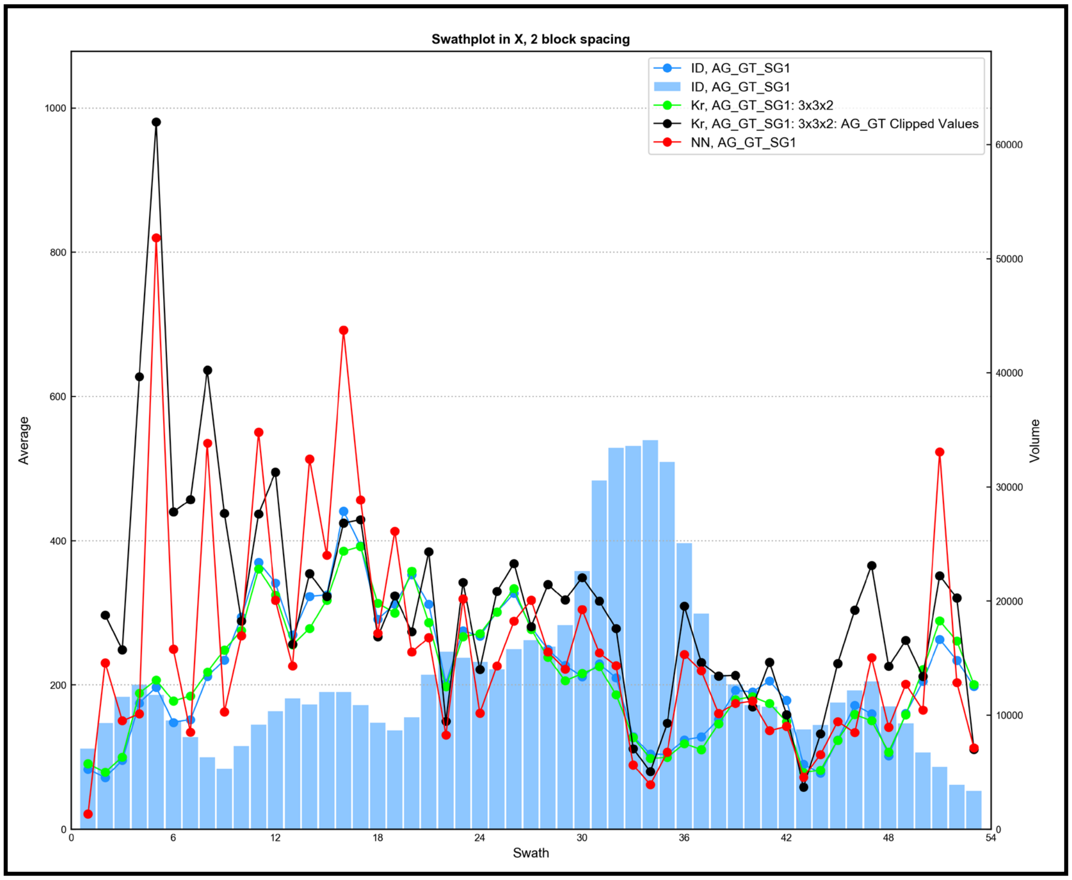
Figure 14.37 Avino Vein, Swath Plot for Copper, Elevation



Source: Red Pennant (2020)

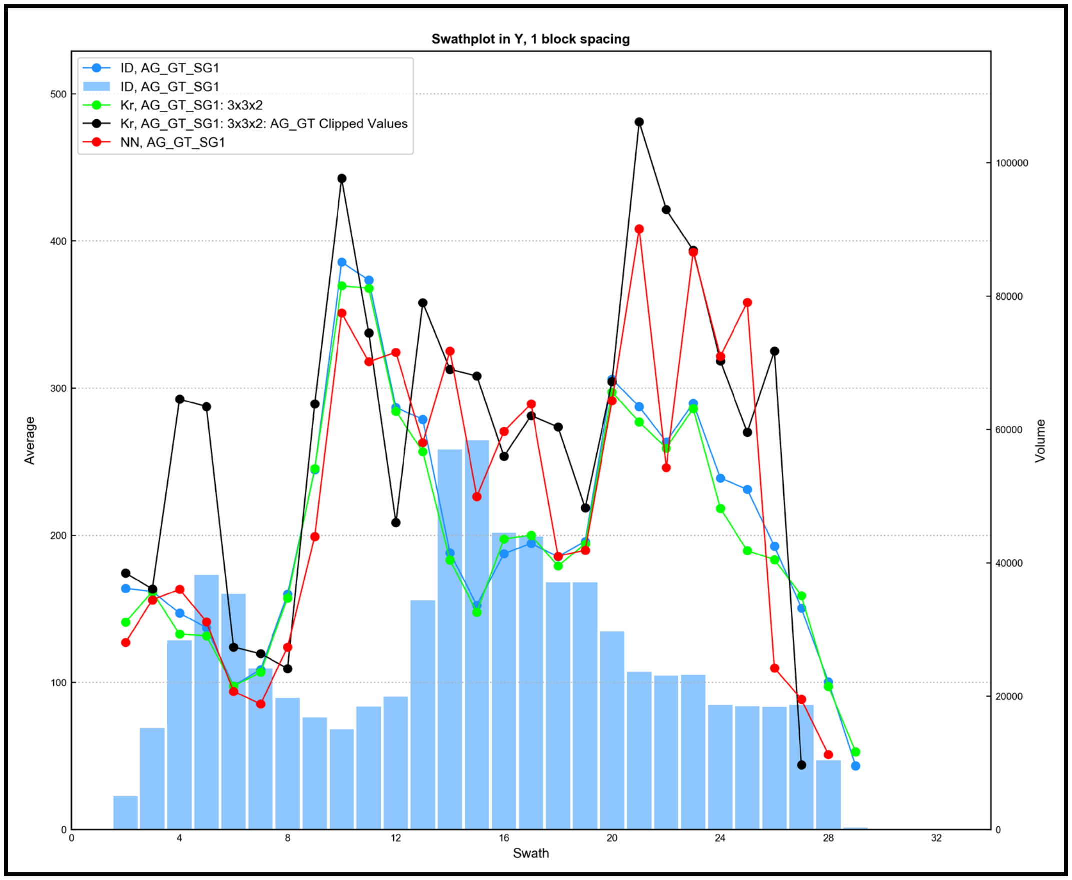
Figure 14.38 through Figure 14.43 display the swath plots for San Gonzalo deposit, comparing block model estimates and sample grades.

Figure 14.38 San Gonzalo Vein, Swath Plot for Silver, Eastings



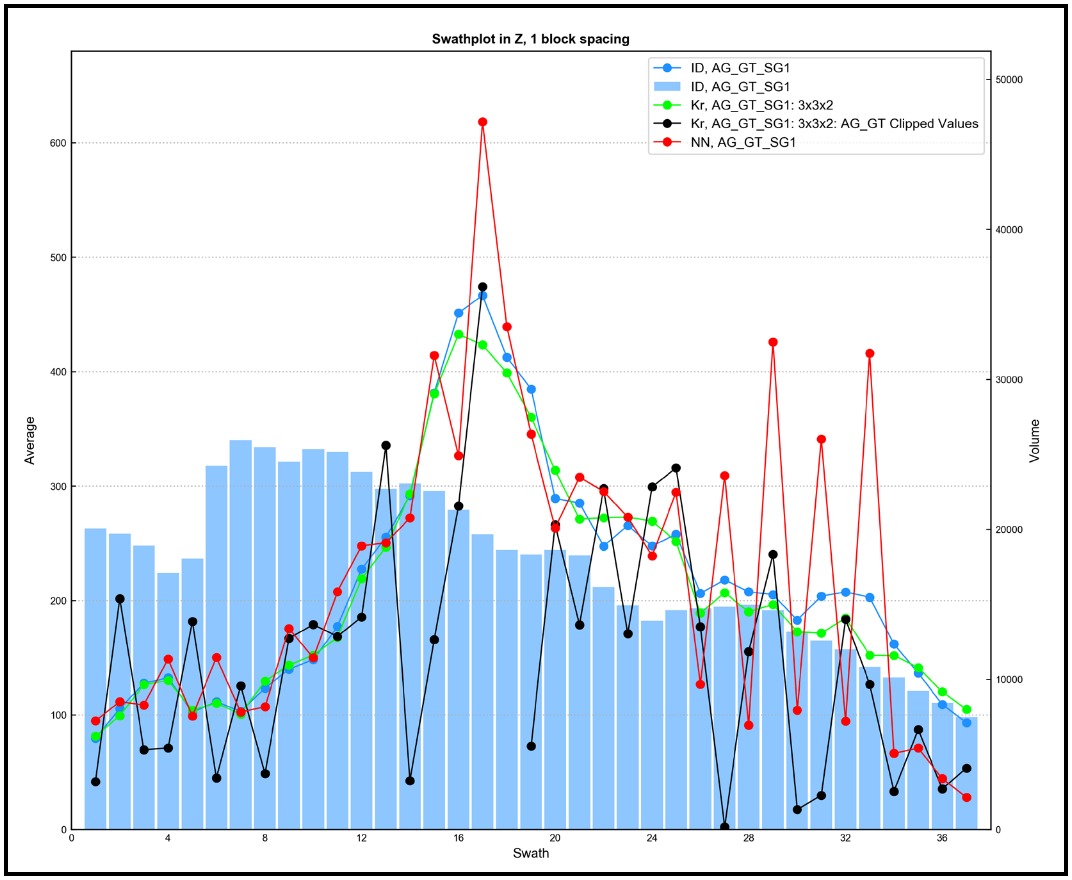
Source: Red Pennant (2020)

Figure 14.39 San Gonzalo Vein, Swath Plot for Silver, Northings



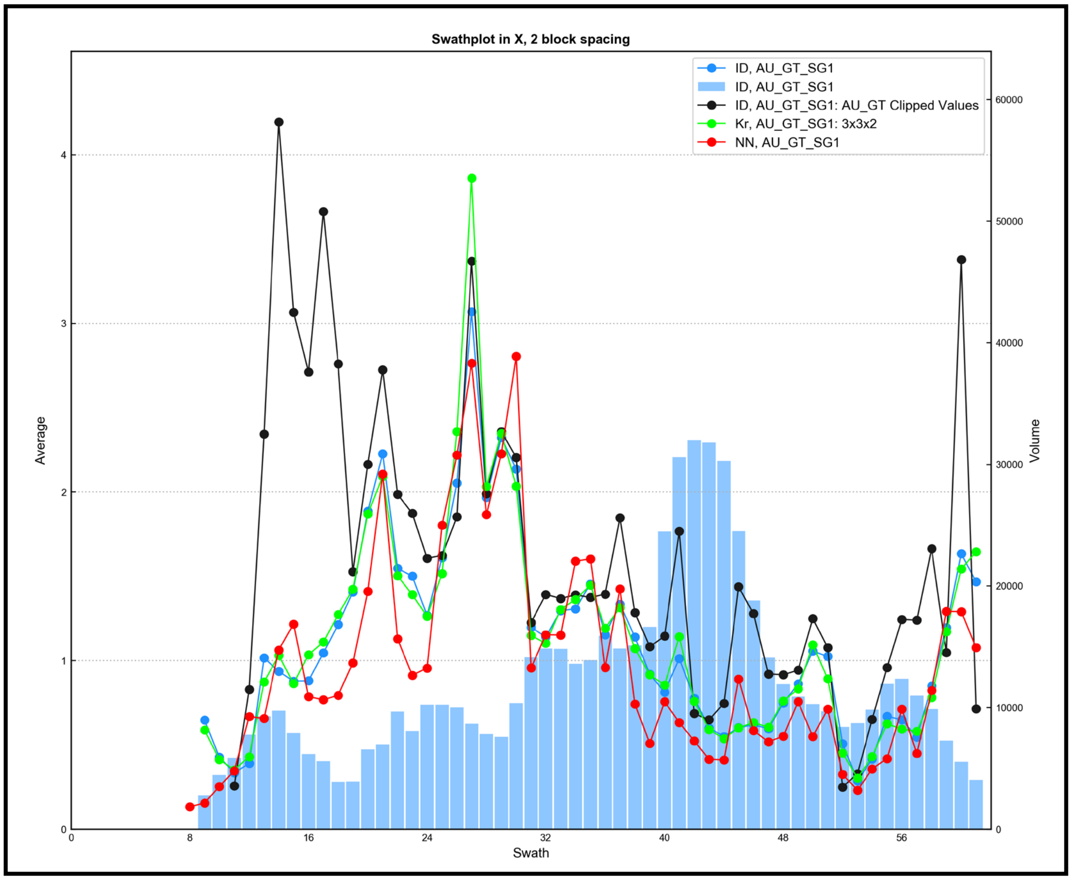
Source: Red Pennant (2020)

Figure 14.40 San Gonzalo Vein, Swath Plot for Silver, Elevation



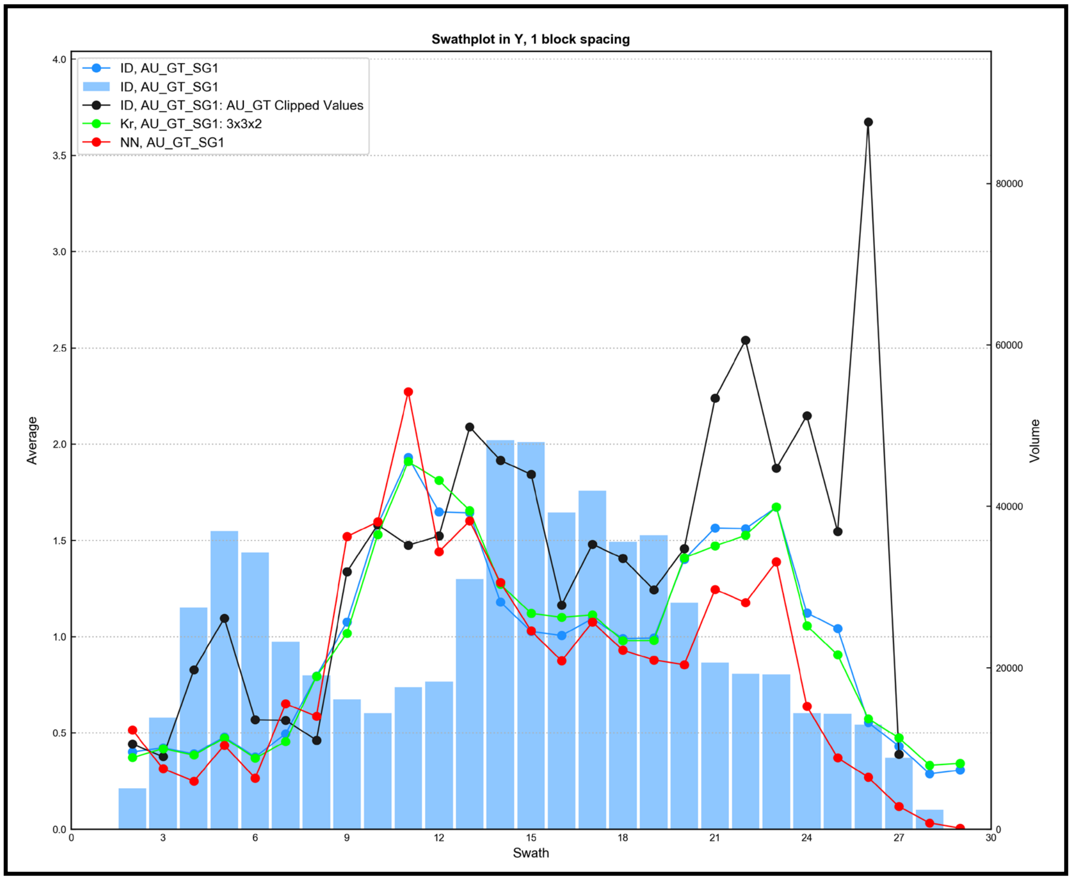
Source: Red Pennant (2020)

Figure 14.41 San Gonzalo Vein, Swath Plot for Gold, Eastings



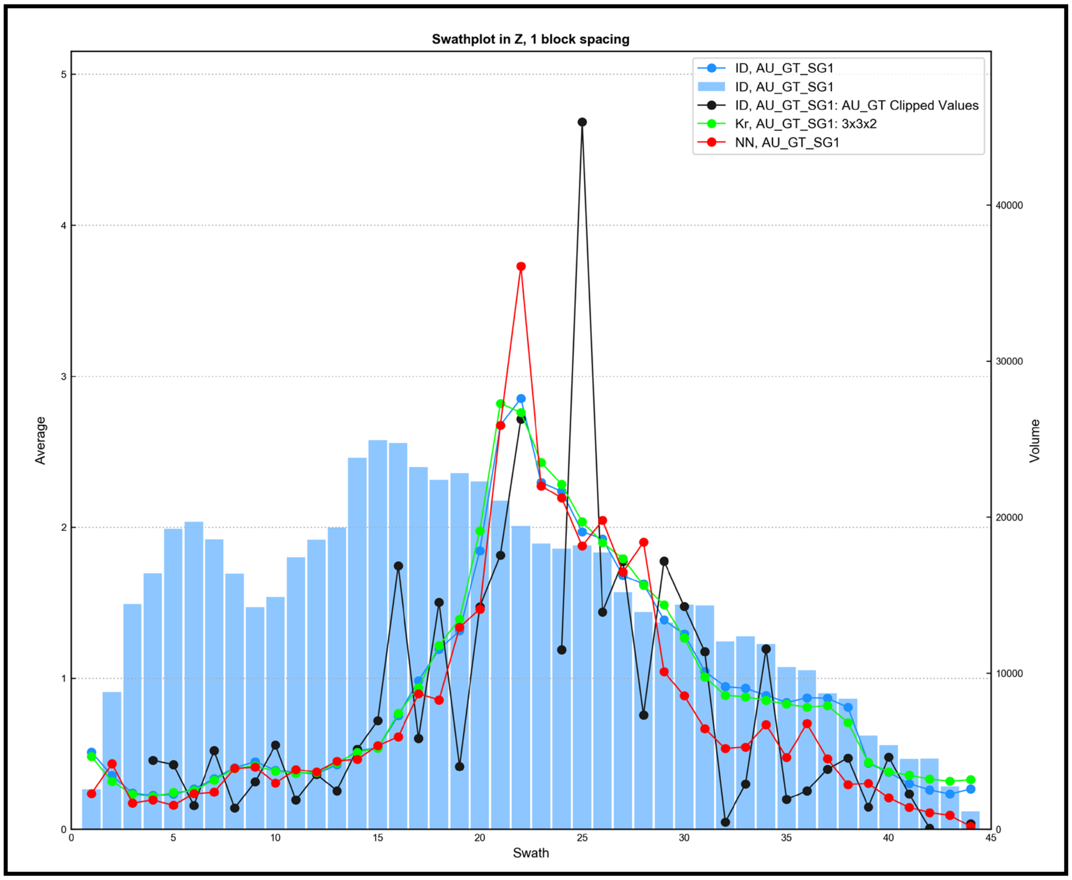
Source: Red Pennant (2020)

Figure 14.42 San Gonzalo Vein, Swath Plot for Gold, Northings



Source: Red Pennant (2020)

Figure 14.43 San Gonzalo Vein, Swath Plot for Gold, Elevation

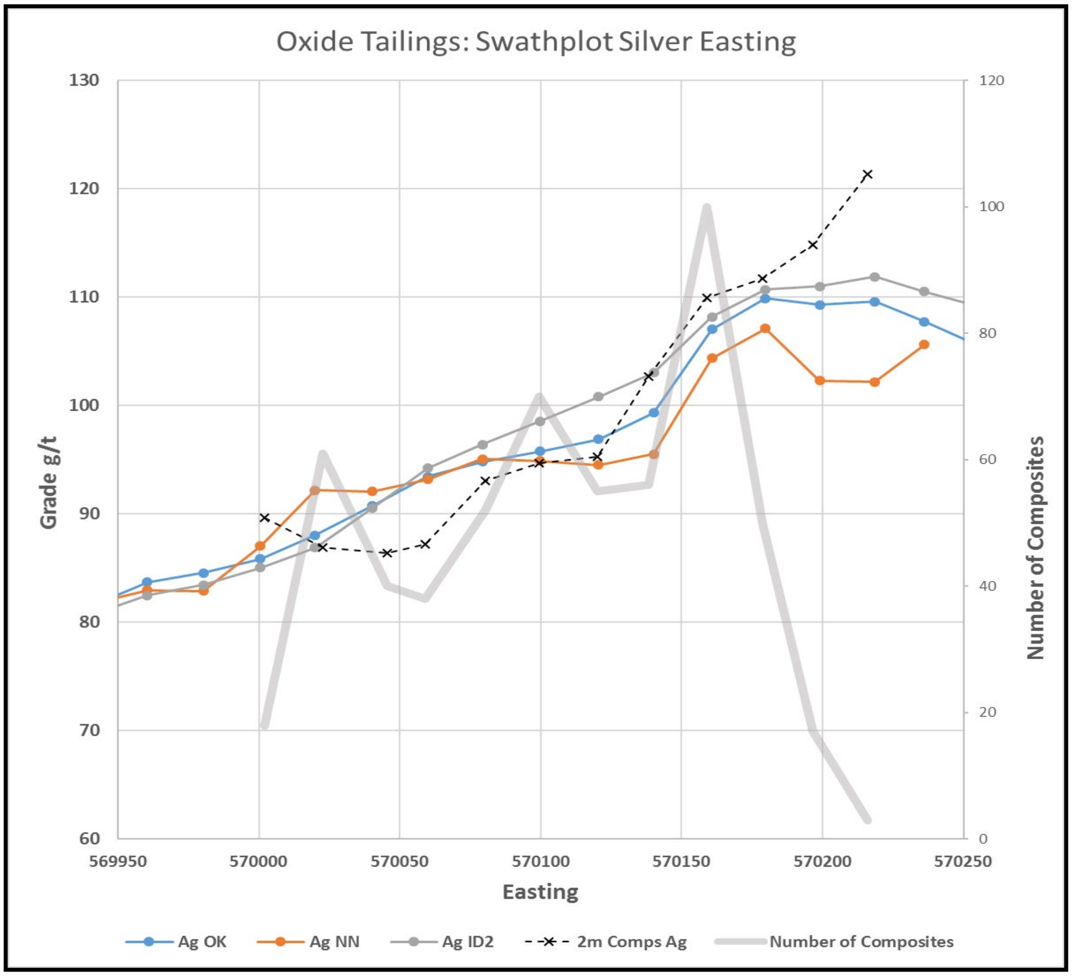


Source: Red Pennant (2020)

Figure 14.40 and Figure 14.43 illustrate the restricted vertical interval within which the pressure conditions for silver and gold grade mineralization were operative in the San Gonzalo mineralization event. Figure 14.36 shows a similar pattern for gold in the Avino Vein. However, Figure 14.35 and Figure 14.37 indicate that the silver and copper mineralization window for the Avino Vein system is more persistent with depth.

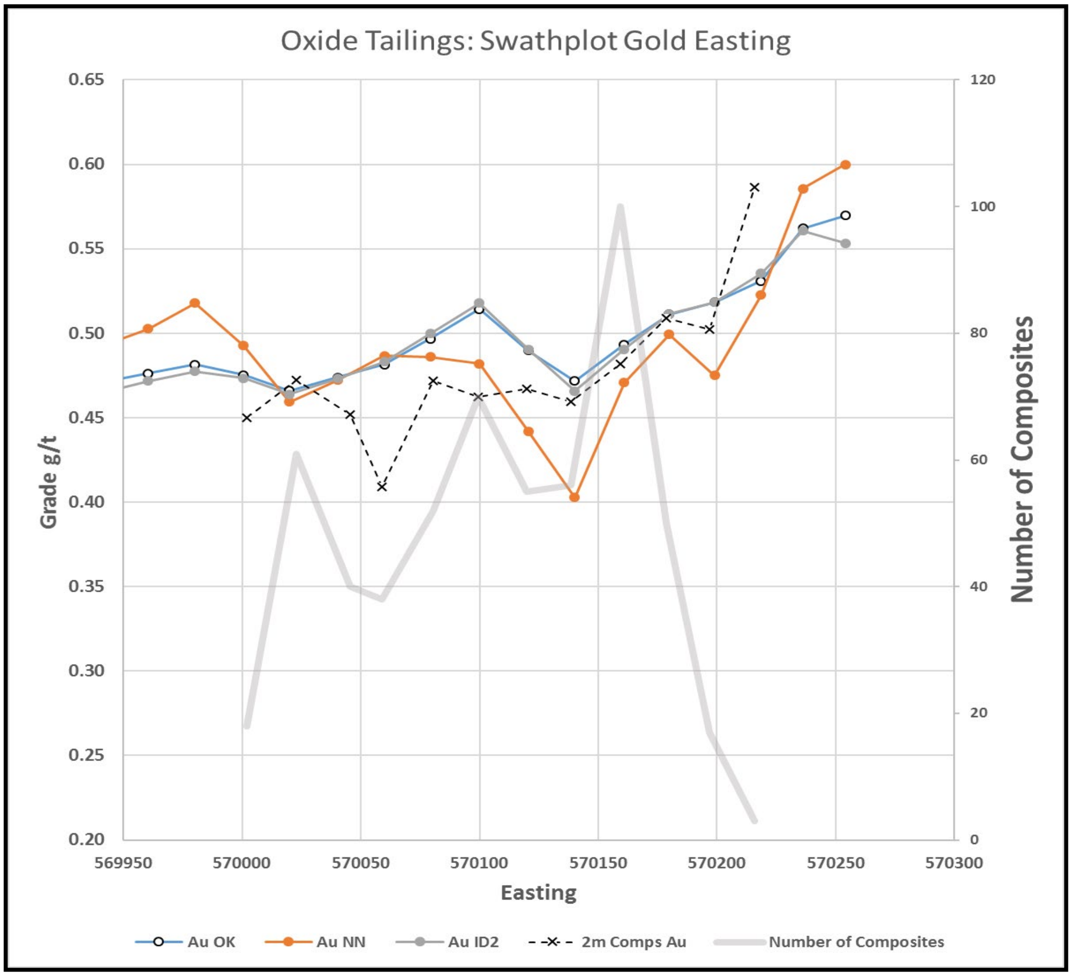
Figure 14.44 through Figure 14.49 display the swath plots for the oxide tailings deposit, comparing block model estimates and sample grades.

Figure 14.44 Oxide Tailings Deposit, Swath Plot for Silver, Easting



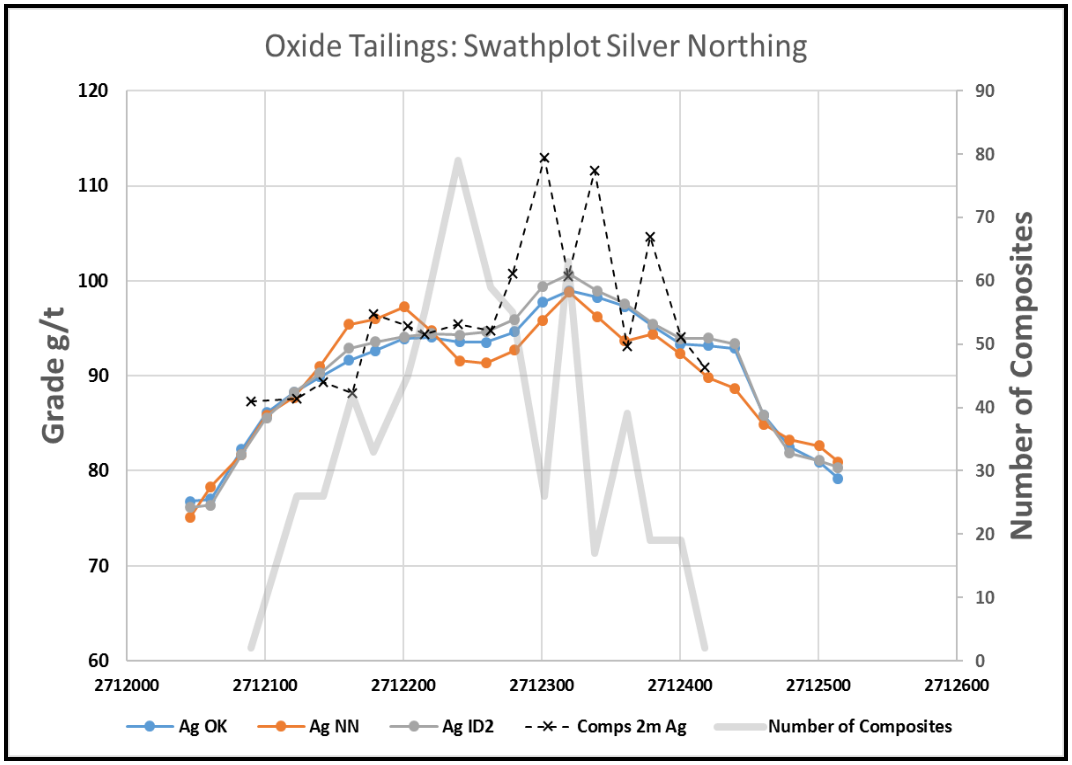
Source: Red Pennant (2020)

Figure 14.45 Oxide Tailings Deposit, Swath Plot for Gold, Easting



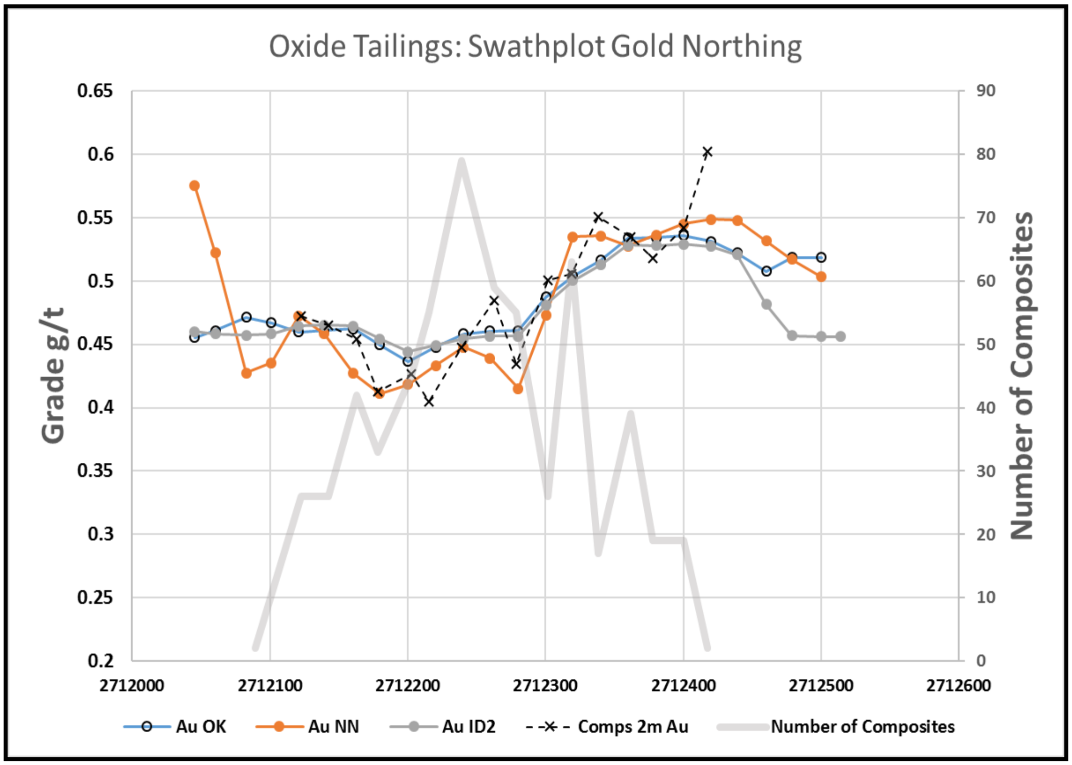
Source: Red Pennant (2020)

Figure 14.46 Oxide Tailings Deposit, Swath Plot for Silver, Northing



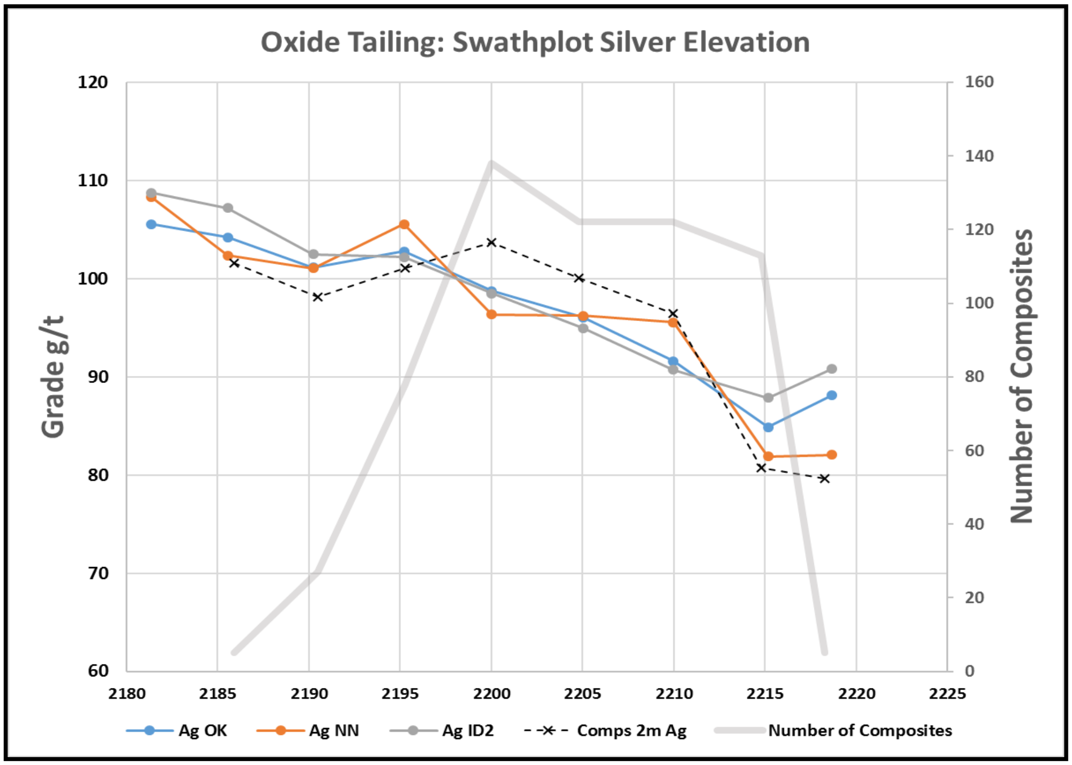
Source: Red Pennant (2020)

Figure 14.47 Oxide Tailings Deposits, Swath Plot for Gold, Northing



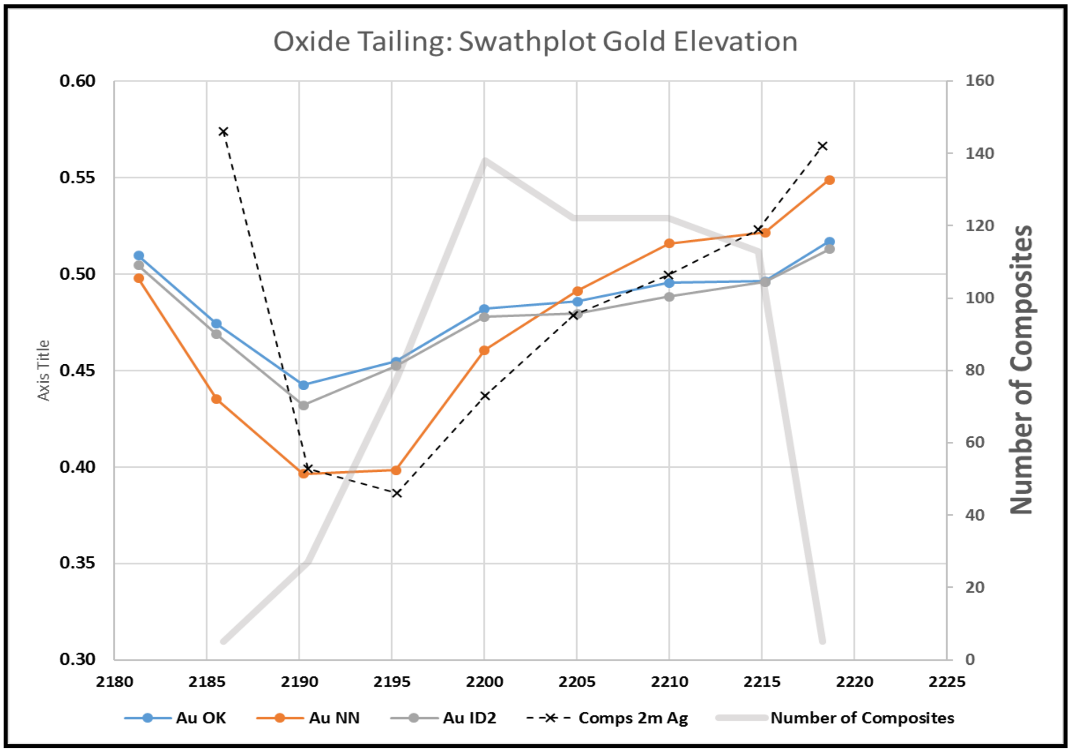
Source: Red Pennant (2020)

Figure 14.48 Oxide Tailings Deposit, Swath Plot for Silver, Elevation



Source: Red Pennant (2020)

Figure 14.49 Oxide Tailings Deposit, Swath Plot for Gold, Elevation



Source: Red Pennant (2020)

The swath plot comparisons show reasonable correspondence between block estimates and sampling data. As expected, the OK and ID estimates show less extreme values than the NN estimates, particularly near the edges of the models.

14.13 MINERAL RESOURCE CLASSIFICATION

14.13.1 INTRODUCTION

CIM Definition Standards (adopted by the CIM Council on May 10, 2014) for reporting on Mineral Resources are stated below:

Mineral Resource

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

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Material of economic interest refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals.

The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of Modifying Factors. The phrase 'reasonable prospects for eventual economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction. Assumptions should include estimates of cutoff grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs. The Qualified Person should state if the assessment is based on any direct evidence and testing.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.

Inferred Mineral Resource

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. Geological evidence is sufficient to imply but not verify geological and grade or quality *continuity.*

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.

There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource.

Indicated Mineral Resource

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

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

Measured Mineral Resource

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to 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.

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

The Avino resource has estimates for silver, gold, and copper. Silver, gold, and copper are recovered from the Avino material and gold and copper are included in the silver equivalent calculation. The bismuth grade has been estimated into the block model for guidance as a potential smelter penalty but is not included in the Mineral Resource statement.

The San Gonzalo resource estimates only silver and gold.

Resource classification for both Avino and San Gonzalo is in part based on kriging variance, geological considerations, and distance of estimated blocks from data.

The 2014 CIM Definition Standards of indicated Mineral Resources includes the phrase that “quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit”.

Quantitative criteria used for the classification of the Mineral Resources are summarized in Table 14.17.

In the opinion of the QP, the current information available for estimating in situ density is insufficient to support localized (block) estimates to the same level of detail as the metal grades. However, the current data shows that the wall-rock and vein material of the Avino and San Gonzalo deposits have small differences (density difference of vein to wall-rock less than 2%) and low variability within the veins as measured by the coefficient of variation (less than 0.08, see Table 14.6). The variability of the metal grades shows levels of variability orders of magnitude higher as measured by the coefficient of variation (between 0.4 and 4.4, see Table 14.3). It would be ideal to have density measurements sufficient for local block estimation. However, potential error resulting from the use of a global density mean is likely to be less than 2%. No significant density anomalies have been reported during the current phase of production at the Avino property. Based on the data from the Avino and San Gonzalo Veins, grade is a much more material risk factor than the density information. The QP considers the restricted amount of density information to be less material and significant than the metal grade variability. The QP used the kriging variance of the silver grade estimates as the main factor for resource classification.

The QP has also noted that, despite the lack of metallurgical bulk sampling, there have been several years of metal production from ore of all operating levels on the Avino and San Gonzalo Veins using current processing facilities and that there has been no report of unforeseen metallurgical recovery issues. The QP considers that this production history mitigates the lack of a formal bulk sampling program or density data and has allowed Mineral Resources to be defined with sufficient confidence to support detailed mine planning and evaluation of the economic viability of the deposit.

Table 14.17 Criteria for Classification of Underground Mineral Resources

Avino	
Measured:	Ag_kvar <=0.75 (up to 20 m from sampled development)
Indicated:	Ag_kvar <=0.50 (35 m from sampling, contiguous with development and measured)
Inferred:	Up to 200 m from sampling data (with demonstrated vein continuity)
San Gonzalo	
Measured:	Ag_kvar <=0.18 (up to 15 m from sampled development)
Indicated:	Ag_kvar <=0.24 (up to 30 m from sampling, contiguous with development and measured)
Inferred:	Up to 200 m from at least 3 holes data (with demonstrated vein continuity)

14.14 MINERAL RESOURCE TABULATION

14.14.1 CUT-OFFS AND SILVER EQUIVALENT CALCULATIONS

The San Gonzalo and Avino reported Mineral Resources are tabulated on the basis of AgEQ cut-offs (Table 14.18).

Table 14.18 Silver Equivalent Based Metal Prices and Operational Recovery Parameters

Metal	Price	Unit	Recovery (%)	Rev. (US$/t)	AgEQ per Grade Unit
San Gonzalo Vein System					
Ag	17.50	US$/oz	83	0.52	1.00
Au	1,300.00	US$/oz	73	29.34	56.38
Avino Vein System					
Ag	18.50	US$/oz	86	0.54	1.00
Au	1,450.00	US$/oz	75	30.14	55.90
Cu	3.00	US$/lb	85	39.35	72.99
Avino Oxide Tailings					
Ag	19.50	US$/oz	73	0.46	1.00
Au	1,250.00	US$/oz	79	31.75	69.37

Silver equivalent was calculated from metal grade estimates using operational recovery parameters and the metal prices based on price trends over the last three years. The gold price used is US$1,450/oz for the Avino and US$1,300/oz for the San Gonzalo Veins and US$1,300/oz for the oxide tailings. The silver price used is US$18.50/oz for the Avino and US$17.50 for the San Gonzalo Veins and US$19.50/oz for the oxide tailings. The copper price used is US$3.00/lb. Copper was only used in the equivalent calculation for the Avino system, the only mineralization where the copper grade justifies extraction.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

14.14.2 GRADE-TONNAGE TABLES

Table 14.19 to Table 14.26 inclusive, provide a summary of the grade and tonnage for the Avino, San Gonzalo, and oxide tailings models at a series of cutoffs. These tables show the grade and tonnages for mineralized material at levels of confidence (see Table 14.16) equivalent to Measured, Indicated, and Inferred for the three deposits. Each table contains a grey-highlighted line that represents the cut-off selected for the Mineral Resource summarized in Table 14.1.

These tables give an indication of the sensitivity of the deposits to cut-off grade.

Table 14.19 Avino Vein (ET Mine) – High Confidence

Cut-off AuEQ (g/t)	Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)	Cu (%)
40	5,793,322	108	67	0.56	0.54
50	5,309,107	113	70	0.59	0.54
60	4,763,414	120	74	0.63	0.55
70	4,259,758	126	78	0.68	0.56
80	3,758,375	133	81	0.72	0.57

Table 14.20 Avino Vein– Medium Confidence

Cut-off AuEQ (g/t)	Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)	Cu (%)
40	19,769,731	90	51	0.56	0.38
50	16,627,744	99	55	0.62	0.39
60	13,886,947	107	59	0.68	0.41
70	11,553,779	116	64	0.74	0.42
80	9,469,515	125	69	0.8	0.36

Table 14.21 Avino Vein– Low Confidence

Cut-off AuEQ (g/t)	Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)	Cu (%)
40	8,674,708	77	43	0.48	0.31
50	6,654,826	87	47	0.56	0.33
60	5,234,920	95	51	0.64	0.34
70	4,154,222	103	54	0.71	0.36
80	3,280,515	111	58	0.76	0.37

Table 14.22 San Gonzalo Vein – High Confidence

Cut-off AuEQ (g/t)	Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)
90	360,000	338.8	267.5	1.43
110	320,000	366.6	290.1	1.53
130	**290,000**	**396.8**	**314.4**	**1.65**
150	260,000	425.4	336.8	1.77
170	230,000	456.1	361.3	1.90

Table 14.23 San Gonzalo – Medium Confidence

Cut-off AuEQ (g/t)	Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)
90	330,000	265.4	213.5	1.04
110	280,000	293.9	236.4	1.15
130	**240,000**	**319.1**	**256.8**	**1.25**
150	220,000	336.6	270.9	1.31
170	190,000	360.2	290.2	1.40

Table 14.24 San Gonzalo – Low Confidence

Cut-off AuEQ (g/t)	Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)
90	160,000	220.7	184.6	0.72
110	140,000	245.3	204.9	0.81
130	**120,000**	**262.3**	**219.2**	**0.86**
150	110,000	276.9	231.1	0.92
170	90,000	293.0	244.7	0.96

Table 14.25 Oxide Tailings – Medium Confidence

Cut-off AgEQ (g/t)	Million Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)
40	1.12	124	89	0.42
50	**1.12**	**124**	**89**	**0.42**
60	1.12	124	89	0.42
70	1.11	125	89	0.42
80	1.11	125	89	0.42

Table 14.26 Oxide Tailings – Low Confidence

Cut-off AgEQ (g/t)	Million Tonnes (t)	AgEQ (g/t)	Ag (g/t)	Au (g/t)
40	1.23	125	85	0.47
50	**1.23**	**125**	**85**	**0.47**
60	1.23	125	85	0.47
70	1.23	125	85	0.47
80	1.23	125	85	0.48

14.15 SULPHIDE TAILINGS

There is no current resource estimate for the sulphide tailings (the upper bench of the tailings heap shown in Figure 14.15).

No Mineral Resource for the sulphide tailings is disclosed in this Technical Report.

15.0 MINERAL RESERVE ESTIMATES

There are currently no Mineral Reserves reported on the Property and Project.

16.0 MINING METHODS

The information provided in the following subsections of this Technical Report should not be considered an FS, as the economics and technical viability of the Project have not been demonstrated at this time. The information listed in this section of the Technical Report is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have any economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there are no certainties that the conclusions or results reported in this Technical Report will be realized. Mineral Resources that are not Mineral Reserves do not demonstrate economic viability.

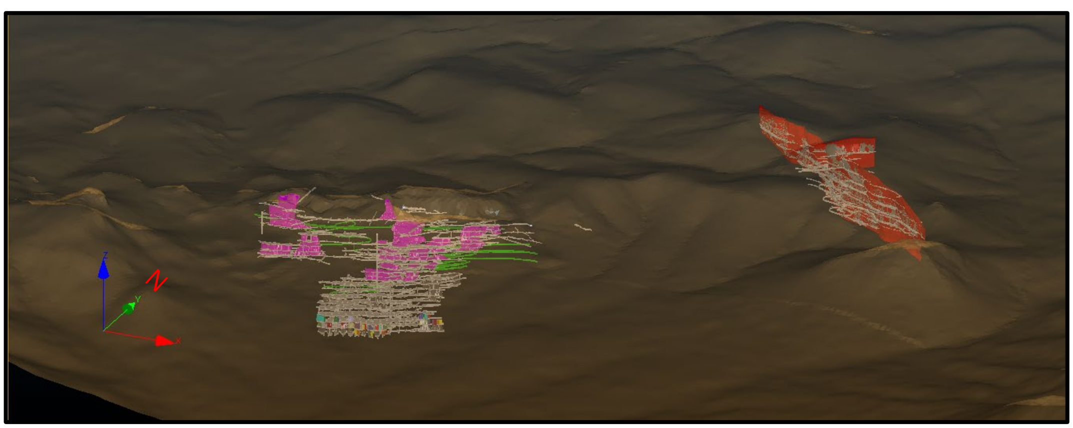
The QP has not conducted a site visit to the Property as of the Report effective date. The information presented below are excerpts summarized from a previous technical report (Tetra Tech 2018) but revised with more recent press release material to reflect the mining activities at the Project site.

16.1 MINING ACTIVITIES AT THE AVINO PROPERTY

In early April of 2020, Avino suspended mining-related activities at the Project site due to the COVID-19 pandemic. In early June of 2020, the company was provided authorization by the Mexican Secretariat of Health to commence regular operational activities in an orderly, gradual, and cautious manner.

Mine operation activities were later interrupted up to the end of the third quarter of 2020, until Avino reached an agreement with the union (Avino 2020e). Figure 16.1 illustrates the extent of historic and present mining activities at the Project site.

Figure 16.1 Isometric View of the Avino Property, the Elena Tolosa Mine (left) and San Gonzalo Mine (Right)



Source: Avino (2020g)

16.2 AVINO VEIN

Avino has not based its production decisions on the Avino Vein with any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. The information presented in this section was based on excerpts summarized from a previous technical report (Tetra Tech 2018) and revised with more recent press release material to reflect the mining activities at the Project site.

Avino is currently mining on the Avino Vein using sublevel stoping and room and pillar mining methods. Levels are spaced 20 m apart and accessed via crosscuts from the main ramp (Tetra Tech 2018). Access into the Avino Vein is through the ET Mine.

The room and pillar mining method is used on each sublevel to mine out each level to the extents of the mineralization. Long holes are then drilled between the sublevels to facilitate blasting of the mineralization between the sublevels (Tetra Tech 2018). In 2020, Avino reported it will transition from development-style mining to full-scale production mining to feed all four circuits using the long hole retreat mining method, which is anticipated to incur lower mining costs.

Avino has not yet developed a life of mine (LOM) plan for the Mineral Resources in the Avino Vein; however, mine development and production have been scheduled on a monthly basis for 2018 to 2022.

Historically from 1997 to 2001, it was reported that mining in the Avino Vein consistently yielded 1,000 t/d of mill feed. During that period, mine production was comprised of Mineral Resource development mining (drift and slash) and long hole stoping with production averaging at approximately 1,000 t/d (Tetra Tech 2018).

Production from the Avino Vein is summarized in Table 16.1, up to the most recent activities in the third quarter of 2020. This data is summarized from the information listed in Avino's press releases.

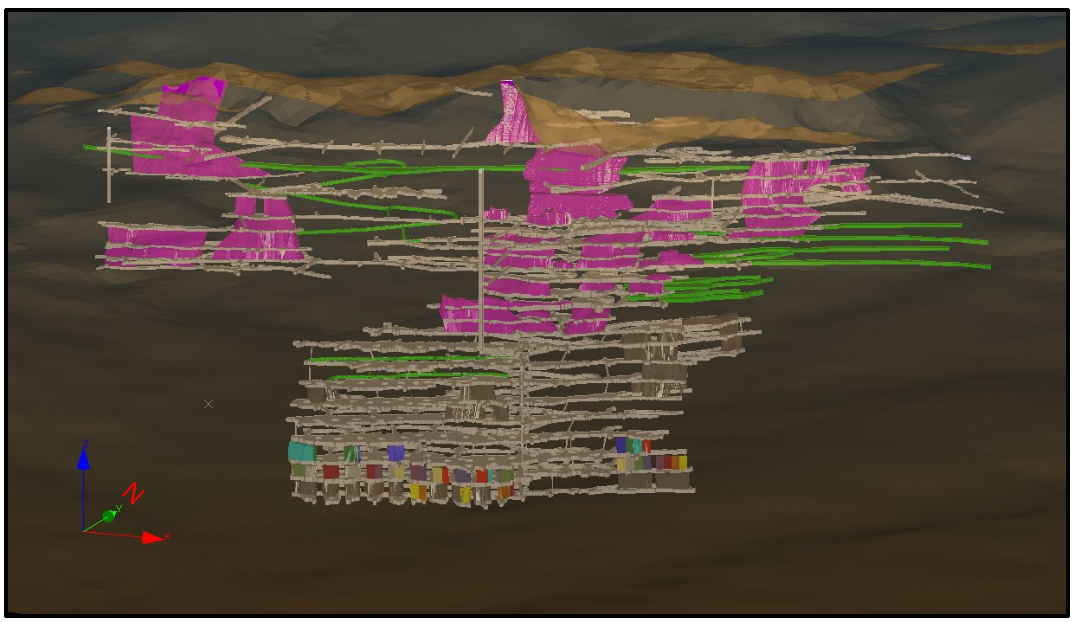
The mining activities were conducted at the Avino Vein; the area is presented in Figure 16.2.

Table 16.1 Recent Production from the Avino Vein

Production Description	Q1 to Q3 2020	2019	2018	2017
Mill Feed Tonnage				
Tonnes Milled (t)	199,575	427,147	426,794	460,890
Feed Grade				
Silver (g/t)	54	44	53	64
Gold (g/t)	0.4	0.45	0.49	0.52
Copper (%)	0.58	0.56	0.55	0.48
Recovery				
Silver (%)	90	85	84	85
Gold (%)	75	73	69	69
Copper (%)	88	86	87	89
Total Metal Produced				
Silver Produced (oz)	312,819	510,265	614,369	803,438
Gold Produced (oz)	1,916	4,473	4,625	5,259
Copper Produced (lb)	2,263,082	4,563,195	4,546,952	4,373,166

Source: Avino (2018; 2019; 2020)

Figure 16.2 Isometric View of Mining Activities at the Avino Vein Area



Source: Avino (2020g)

As part of the mine expansion program of its mining activities in 2018, Avino commenced rehabilitation of work at the San Luis portal in preparation to commence mining activities at the deposit and started to process some historic stockpile material (Avino 2018i).

By the second quarter of 2018, the Avino Vein underground advancement totalled 844 m and 102,512 t of material were broken. Haulage of mill feed totalled 123,478 t. Mining took place at levels 16 and 16.5 where the copper grades were higher and the silver and gold grades were lower due to variability in the mineralization within the deposits (Avino 2018i).

During 2018, the work at the San Luis area was primarily focused on the restoration of the main haulage to provide access to mining areas from levels 6 to 9, some of which were partially developed during the 1980s and 1990s prior to the mine closure (Avino 2018i).

However by 2019, development into these areas were placed on hold as part of Avino's mine plan optimization, mainly because all the milling circuit feed capacities were met from the ET deposit, which is located in the Avino mine site and from the Avino HAGS feed (Avino 2019c).

A summary of the material processed from the Avino HAGS is presented in Table 16.2.

Table 16.2 Recent Material Feed from the Avino Historic Above Ground Stockpile

Production Description	2020 (Q1)	2019	2018
Mill Feed Tonnage			
Tonnes Milled (t)	4,711	306,334	202,830
Feed Grade			
Silver (g/t)	59	55	58
Gold (g/t)	0.31	0.36	0.41
Copper (%)	0.15	0.18	0.16
Recovery			
Silver (%)	50	54	57
Gold (%)	41	53	52
Copper (%)	31	35	38
Total Metal Produced			
Silver Produced (oz)	4,481	295,176	215,312
Gold Produced (oz)	19	1,859	1,397
Copper Produced (lb)	4,857	407,059	272,070

Source: Avino (2019; 2020)

16.3 San Gonzalo Vein

Avino has not based its production decisions on the San Gonzalo Vein with any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. The information presented in this section was based on excerpts summarized from a previous technical report (Tetra Tech 2018) and revised with more recent press release material to reflect the mining activities at the Project site.

Avino reported that by the fourth quarter of 2019, mining at the San Gonzalo Vein reached the end of its current resources, and underground mining activities at the mine were stopped; however, the mine remains open for continued exploration at different levels of the mine (Avino 2019e).

Figure 16.3 presents an isometric view of the mining activities at the San Gonzalo Vein area until it was shut down in 2019.

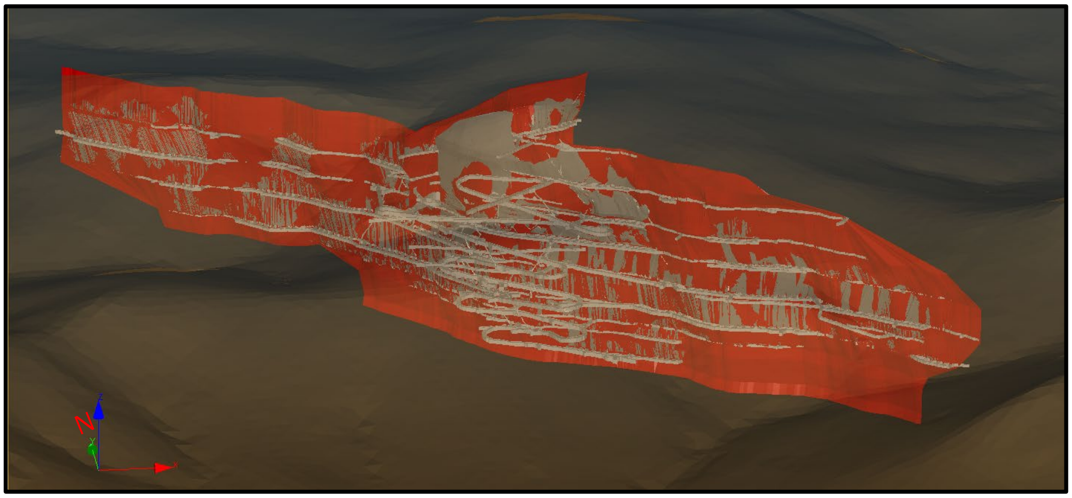
Historic mine production from the San Gonzalo Vein is summarized in Table 16.3.

Table 16.3 Recent Production from the San Gonzalo Vein

Production Description	2019	2018	2017
Mill Feed Tonnage			
Tonnes Milled (t)	56,179	79,140	81,045
Feed Grade			
Silver (g/t)	118	222	269
Gold (g/t)	0.46	1.03	1.32
Recovery			
Silver (%)	69	77	84
Gold (%)	66	75	78
Total Metal Produced			
Silver Produced (oz)	153,359	434,035	590,770
Gold Produced (oz)	581	1,955	2,675

Source: Avino (2018; 2019; 2020)

Figure 16.3 Isometric View of Mining Activities at the San Gonzalo Vein Area



Source: Avino (2020g)

16.3.1 Production

Note that the information in this section was provided by Avino.

Recent and historic mine production information for the Avino Vein and San Gonzalo Vein are summarized in Table 16.1 and Table 16.3, respectively.

Concentrate has been sold on a regular basis to a concentrate-trading firm, with shipments taking place monthly. The Q3 2020 financial results indicate that the cost as cash per ounce silver for Avino was US$12.56. Mining and milling operations continue, even though there has been no up-to-date PEA, PFS, or FS undertaken on the Project.

16.4 Oxide Tailings

Avino plans to mine and move the oxide tailings Mineral Resource on site using a conventional truck and loader surface mining equipment. The production cycle consists of loading and trucking (Tetra Tech, 2018). However, based on the QP's understanding, currently this plan has not been carried out. The following subsections of this Technical Report present the approach that would be taken if the oxide tailings were extracted.

16.4.1 Schedule

The production schedule has been developed for the oxide tailings based on a treatment rate of 500 kt/a. This would be equivalent to a throughput rate of 1,370 t/d. This will give an overall Project duration of approximately eight years. This eight-year period includes one year of pre-production and excludes the time required for remediation of the heap after the leaching process has been completed. Only oxide tailings will be considered for treatment, while sulphide materials will be considered waste. The production schedule is shown in Table 16.4 (Tetra Tech 2018).

Table 16.4 Mining Production Schedule

Year	Mineralized Material (t)	Head Grade		Waste (t)	Total Material Moved (t)
		Ag (g/t)	Au (g/t)		
-1	-	-	-	500,000	500,000
1	350,000	88.83	0.51	558,906	908,906
2	500,000	100.11	0.48	497,101	997,101
3	500,000	94.95	0.44	498,995	998,995
4	500,000	78.28	0.45	75,148	575,148
5	499,673	82.99	0.44	500,327	1,000,000
6	500,000	87.95	0.36	295,829	795,829
7	272,641	76.27	0.28	12,405	285,046
LOM	3,122,314	87.75	0.43	2,938,711	6,061,025

Source: Tetra Tech (2018)

16.4.2 EQUIPMENT

The mining operations include loading and trucking. Loading/trucking operations will be conducted in two, 12 h shifts per day. A 3.85 m^3 rated (5.0 yd^3) front-end loader will be used to load three, 24 t articulated trucks that will either deliver the sulphide tailings to the sulphide waste stockpile or the oxide tailings to the oxide tailings hopper (Tetra Tech 2018).

16.4.3 MODIFYING SITE CONSIDERATIONS

Certain areas of the tailings may contain high amounts of moisture that can lead to equipment getting stuck. To mitigate this challenge, wider, oversized tires with chains will be installed on the front-end loader. Also, the front-end loader bucket will be downsized to 3.06 m^3 (4.0 yd^3). This will lighten the load on the front tires preventing them from sinking into saturated material. The trucks will not enter the soft zones, so there will be no modifications to the trucks (Tetra Tech 2018).

16.5 SULPHIDE TAILINGS

Avino is not currently conducting treatment activity on the sulphide tailings. In this Technical Report, sulphide tailings are considered as waste.

17.0 RECOVERY METHODS

There are two separate mineralization sources on the Property, one of which is currently in operation, as well as potential tailings resource from previous milling operations. The San Gonzalo Mine, which entered commercial production in October 2012, stopped its operation in Q4 2019 due to it reaching the end of its resources at that time. After shutting down in 2001, the ET Mine was reopened in January 2015. In 2018, a new circuit (Circuit #4) was installed and commissioned to process materials from the HAGS. The mill stopped processing the HAGS materials after Q2 2020. The circuit now processes materials from the ET Mine.

Historically, prior to the mine shutting down in 2001, Avino operated a 1,000 t/d processing plant, producing a copper concentrate that was sold to a smelter in San Luis Potosi for approximately 27 years. From 1997 to 2001, the mill process rate averaged 1,000 t/d and achieved up to 1,300 t/d. The mine and mill operations were then suspended. Following several years of redevelopment, Avino completed the Avino mine and mill expansion in Q4 2014. On January 1, 2015, full-scale operations commenced and commercial production was declared effective April 1, 2016 following a 19 month advancement and test period.

The mill feed is processed in a conventional flotation mill that has four separate circuits and a capacity of 2,500 t/d. The four circuits include the following:

- Circuit #1 was used to process materials from the San Gonzalo Mine, which has been stopped since the end of 2019. The circuit was used to produce a lead concentrate containing gold and silver, as well as a zinc concentrate. The circuit has now been modified to process materials from the ET Mine and produces a copper flotation concentrate containing silver and gold. The processing rate is 250 t/d.
- Circuit #2 is used to process mill feed from the ET Mine and produces a copper flotation concentrate containing silver and gold. The processing rate is 250 t/d.
- Circuit #3 is used to process materials from the ET Mine and produces a copper flotation concentrate containing silver and gold. The processing rate is 1,000 t/d.
- Circuit #4 is currently used to process materials from the ET Mine, although it also processed low-grade materials from historic stockpiles before Q2 2020. This circuit produces a copper flotation concentrate containing silver and gold at a process rate of 1,000 t/d.

A centrifugal gravity concentrator has also been installed in all four processing circuits to recover a high-grade gold/silver concentrate suitable for dispatching directly to a smelter.

A Courier Model 5 on-line analyzer has also been installed to monitor the performance of the #3 and #4 flotation circuits.

A newly installed tailings thickener has operationally improved the deposition of the tailings while improving water management and usage. Dry stacking tailings with pressure filters (plate-frame type) has also been planned to further conserve the process water consumption.

Currently, there is no operation for the tailings resource. The PEA study conducted in 2017 proposed heap leaching treatment for the silver and gold recovery from the oxide tailings portion of the Property. The proposed treatment was discussed in detail in the technical report entitled "Technical Report on the Avino Property", dated April 11, 2017.

Avino is not currently conducting mining activity on the sulphide tailings. No recovery methods are currently proposed for the sulphide tailings.

17.1 CRUSHING FACILITY

The existing crushing plant was upgraded to accommodate the higher throughput. Mill feeds from different sources will be crushed separately, and the crushed materials will be conveyed to separate bins that are dedicated to the different grinding and flotation circuits.

The upgraded crushing facility includes:

- one 30 ft. by 42 ft. jaw crusher with an installed power of 150 HP
- one 20 in. by 36 in. jaw crusher (standby unit) with an installed power of 75 HP
- one 5.5 ft. standard cone crusher with an installed power of 300 HP
- one 4.25 ft. standard cone crusher with an installed power of 200 HP
- one Nordberg HP500 crusher with an installed power of 300 HP
- one 5 ft. by 16 ft. scalping screen with apertures of 3/8 in.
- one 8 ft. by 20 ft. scalping screen with apertures of 3/8 in.
- other ancillary equipment, such as feeders, surge bins, conveyors, belt magnet, and metal detector.

With the upgrades, the crushing circuit is capable of crushing mill feeds at the rate of 2,500 t/d.

17.2 GRINDING / GRAVITY CONCENTRATION / FLOTATION

As discussed previously, there are four grinding and flotation circuits in the processing plant to recover valuable metals from the ET Mine. Historically, up to three circuits were used to process feed from the San Gonzalo Mine and the HAGS. The grinding circuits have incorporated gravity concentration circuits to recover coarse precious metal particles.

As discussed in Section 17.1, the plant consists of a conventional three-stage crushing circuit with the tertiary crusher in closed circuit with a screen. The crushed material is fed to each of the grinding lines, each consisting of a ball mill and related classification hydrocyclone(s) to grind the crushed mill feeds to a grind size of approximately 65% to 75% passing 200 mesh. The grinding mills used are 2.4 m diameter by 1.8 m long ball mills for Circuits #1 and #2, each with an installed power of 225 HP, and 3.2 m diameter by 4.6 m long ball mills for Circuits #3 and #4, each with an installed power of 1,000 HP.

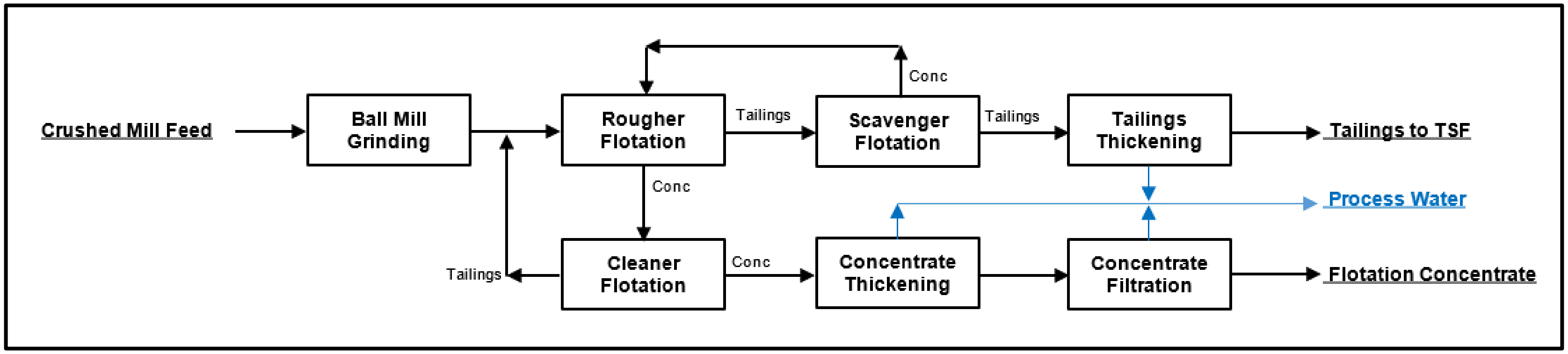
A centrifugal gravity concentrator has also been installed in the grinding circuits to recover coarse precious metal particles into a high-grade gold/silver concentrate suitable for dispatching directly to a smelter.

The cyclone overflows from different circuits are fed to their own flotation circuits, consisting of rougher flotation, scavenger flotation, and cleaner flotation. The rougher flotation tailings report to the scavenger flotation. The scavenger flotation concentrate is recycled back to the rougher flotation, while the tailings is pumped to the tailings thickener.

The concentrates from the rougher and scavenger circuits are upgraded in a single stage of cleaner flotation to produce the final concentrate grading of 20% to 25% copper. The cleaner flotation tailings is recycled back to the rougher flotation. The final flotation concentrates produced from Circuits #2 and #3 are pumped to one shared concentrate dewatering circuit, consisting of one thickener and one pressure filter, while the final flotation concentrates produced from Circuits #1 and #4 are pumped to two separate concentrate dewatering circuits, each consisting of one thickener and one pressure filter. The final concentrate is dewatered to approximately 9% moisture prior to being shipped to an off-site smelter.

The simplified flowsheet, including grinding and flotation circuits, is shown in Figure 17.1.

Figure 17.1 Simplified Flowsheet – Avino Mill



The flotation circuit has air blowers and compressors to provide the air required for the flotation cells as well as the filter presses. A Courier Model 5 on-line sampling system has been installed to monitor production performance in Circuits #3 and #4. This system samples the feed, tailings, and concentrate streams of the two circuits. The Courier Model 5 on-line sampling system complements the existing six sampling points. The system continuously measures copper, lead, zinc, and iron contents, as well as the slurry density of the streams.

Hand samples are collected at predetermined times for sample preparation and analysis. The plant samples are routinely analyzed by an AA Spectrophotometer for copper, lead, zinc, bismuth, antimony, and iron, and by fire assay for gold and silver.

For the Avino materials, several reagents have been used to separate copper minerals from gangues. Lime is added in the ball mills to raise flotation pH to approximately 10.5 to depress pyrite. Flotation reagents used include Aero 404 and Aerophine 3418A as collectors, together with CC-1065 (Dowfroth 250 equivalent) as frother. Diluted flocculant solutions are added into concentrate thickeners and the tailings thickener separately to assist in the settling of fine particles.

Further process optimization should be conducted by focusing on reducing the bismuth content in the concentrate and improving gold recovery.

A tailings thickener was installed in Q1 2019 and in operation in Q2 2019. All the flotation tailings from the four flotation circuits are pumped to the thickener. The upgrading has improved the deposition of the tailings and the water management and usage. The thickener overflow, together with the decant water from the permitted tailings impoundment areas, is reclaimed for process use. The thickened tailings is stored in the lined historical open pit. Also, dry stacking tailings with pressure filters (plate-frame type) has been planned to further conserve the process water consumption. The tailings cakes are planned to be stored in a new tailings storage facility, which has been permitted.

Typical copper recoveries for the Avino's materials range from 85% to 90%, silver in the mid 80% range, and gold between 70% and 75%. Table 17.1 to Table 17.3 show the summary of the mill productions from the three different mill feed sources since 2017.

Table 17.1 Avino Vein Mill Production

Production Description	2020 (Q1 to Q3)	2019	2018	2017
Mill Feed Tonnage				
Tonnes Milled (t)	199,575	427,147	426,794	460,890
Feed Grade				
Silver (g/t)	54	44	53	64
Gold (g/t)	0.40	0.45	0.49	0.52
Copper (%)	0.58	0.56	0.55	0.48
Recovery				
Silver (%)	90	85	84	85
Gold (%)	75	73	69	69
Copper (%)	88	86	87	89
Total Metal Produced				
Silver Produced (oz)	312,819	510,270	614,361	803,447
Gold Produced (oz)	1,916	4,473	4,625	5,259
Copper Produced (lb)	2,263,082	4,563,195	4,546,952	4,373,166

Source: Avino (2018; 2019; 2020)

Table 17.2 Avino Historic Above Ground Stockpiles Production

Production Description	2020 (Q1 to Q2)	2019	2018	2017
Mill Feed Tonnage				
Tonnes Milled (t)	4,711	306,334	202,830	-
Feed Grade				
Silver (g/t)	59	55	58	-
Gold (g/t)	0.31	0.36	0.41	-
Copper (%)	0.15	0.18	0.16	-
Recovery				
Silver (%)	50	54	57	-
Gold (%)	41	53	52	-
Copper (%)	31	35	38	-
Total Metal Produced				
Silver Produced (oz)	4,481	295,169	215,312	-
Gold Produced (oz)	19	1,859	1,397	-
Copper Produced (lb)	4,857	407,059	272,070	-

Source: Avino (2018; 2019; 2020)

Table 17.3 San Gonzalo Vein Mill Production

Production Description	2020	2019	2018	2017
Mill Feed Tonnage				
Total Mill Feed (t)	-	56,179	97,140	81,045
Feed Grade				
Silver (g/t)	-	118	222	269
Gold (g/t)	-	0.46	1.03	1.32
Recovery				
Silver (%)	-	69	77	84
Gold (%)	-	66	75	78
Total Produced				
Silver (oz)	-	153,372	456,709	590,770
Gold (oz)	-	581	2,070	2,675

Source: Avino (2018; 2019; 2020)

17.3 Tailings Resources

There are two types of tailings produced from the previous mining operations: oxide tailings and sulphide tailings. Currently, there is no operation to recover metals from both tailings resources.

A PEA Update study was conducted in 2017, focusing on the oxide tailings treatment for the recovery of silver and gold from the tailings dam.

17.3.1 Oxide Tailings

Treatment Selection

An earlier PEA was conducted in 2012 (Tetra Tech 2013) to compare three potential processing treatment routines for the oxide tailings retreatment project, including:

- cyanidation (tank leaching) of the oxide tailings without regrinding
- cyanidation (tank leaching) of the oxide tailings with regrinding
- heap leaching of the oxide tailings without regrinding.

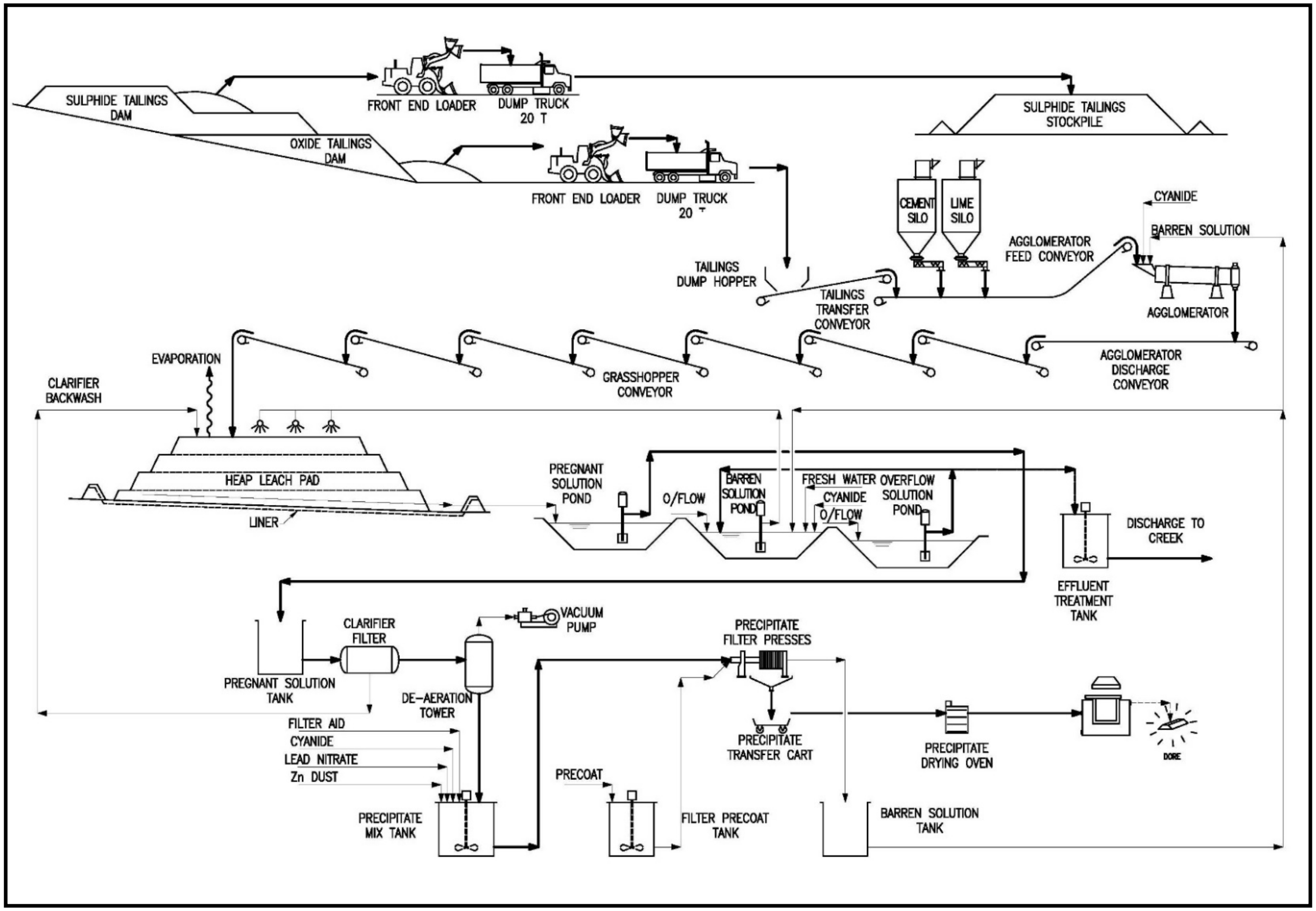
A preliminary economical evaluation, at a mill feed rate of 1,370 t/d, shows that heap leaching treatment is more favourable than the other two treatment options, in terms of initial capital cost and operating cost. The 2017 PEA Update was based on the heap leaching treatment technology that was used for the previous PEA (Tetra Tech 2013).

Process Flowsheet

The proposed treatment plant will consist of agglomeration and cyanide heap leaching, followed by a Merrill-Crowe process to recover silver and gold from pregnant solution. The process plant will operate on a 24 h/d, 365 d/a basis, with an overall utilization of 90%.

The simplified flowsheet is shown in Figure 17.2.

Figure 17.2 Simplified Process Flowsheet



Major Design Criteria

The heap leach was designed to process 0.5 Mt/a of oxide tailings. This would be equivalent to a throughput rate of 1,370 t/d and equivalent to 63.4 t/h at a 90% running time.

The major criteria used in the design are outlined in Table 17.4.

Table 17.4 Major Design Criteria

Criteria	Unit	Number
Operating Year	d	365
Overall Plant Availability	%	90
Annual Processing Rate	t	500,000
Daily Processing Rate	t/d	1,370
Tailing Bulk Density	t/m³	1.605
Agglomerated Tailing Bulk Density	t/m³	1.24
Agglomerated Feed Size, P_{80} Passing	µm	225
Agglomerated Product Size, P_{80} Passing	mm	6 to 15
Moisture Content of Agglomerated Feed	%	12.5
Total Loading/Curing/Leaching/Rinsing Cycle	d	142
Cyanide Solution Strength	g/L	0.5

The design parameters were based on test work results obtained by PRA but directed by MMI using the results from Huang (2005) and Slim (2005d).

Process Plant Description

For an oxide tailings treatment rate of 0.5 Mt/a, an equivalent throughput rate of 1,370 t/d or 63.4 t/h is required. This will give an overall Project duration of approximately seven years. This seven-year period will exclude the time required for site establishment and remediation of the heap after the leaching process has been completed.

The mining equipment will operate on a different schedule than the process plant. Loading operations will be conducted during one 8 h shift per day, 365 d/a. A 3.85 m³ rated (5.0 yd³) front-end loader will be used to load a 24-t articulated truck that will either deliver the sulphide tailings to the sulphide stockpile or the oxide tailings to the 160 t oxide tailings hopper. Once the hopper is filled, excess tailings will be stockpiled around the hopper to be loaded by the process plant group.

Certain areas of the tailings might contain high amounts of moisture that can lead to equipment getting stuck. To mitigate this challenge, wider, oversized tires with chains will be installed on the front-end loader. Also, the front-end loader bucket will be downsized to 3.06 m³ (4.0 yd³). This will lighten the load on the front tires preventing them from sinking into saturated material. The trucks will not enter the soft zones, so there will be no modifications to the trucks.

A dribble chute will feed the tailings from the hopper onto a conveyor belt. Cement and lime will be added to the tailings at controlled addition rates. Although some operations add solid, dry, flake cyanide to the agglomerator feed material, this option will not be exercised in this case. Cement and lime will be added from their respective bulk storage silos. A 50-t capacity cement storage silo equipped with a dust collection filter and a cement blower will be required, as well as a 30-t capacity lime storage silo similarly equipped with a dust collection filter and a lime blower. Each reagent delivery system will be controlled by a weightometer prior to feeding the reagents to the tailings material conveyor belt feeding the agglomerator drum. The design treatment rate will be 63.4 t/h of tailings material with an average moisture content of 10%. Water, or barren solution, will be added to the agglomerator to provide for an overall moisture content of approximately 12.5% to 15% to the leach pad feed material. Two, 1-t capacity cyanide mixing and storage tanks will be positioned at the Merrill-Crowe facility. The cyanide preparation system will produce a cyanide solution with a strength of 20% sodium cyanide. The cyanide solution will then be injected into the solution distribution system going to the heap pad and precipitation filter press.

The agglomerator will be a drum-type unit with a diameter of 1.8 m and a length of 6.7 m rotating at 10.5 rpm and with a variable angle of 2.5°, 5.0°, or 7.5°. Agglomerated material will be discharged onto a conveyor belt, then onto a series of jump conveyors, and then deposited on the heap leach pad by a radial telestacker. A curing time of 5 d will be allowed before the agglomerates are sprayed with a cyanide-bearing leach solution.

There will be only one leach pad. The leach heap pad dimensions are estimated to be 288 m wide and 428 m long and includes a surrounding berm of 6.5 m in width. There will be four lifts over the seven-year treatment period. Each lift will be 6.5 m high giving the heap an overall height of 26 m.

The heap leach process will operate with three solution ponds:

- a barren solution pond
- a pregnant solution pond
- an event or overflow pond.

Solution from the barren solution pond will be pumped to the leach heap. Concentrated cyanide solution will be added to the barren solution pond where it will be mixed to give a controlled cyanide concentration of approximately 0.5 g/L sodium cyanide strength. The pH will be maintained at 10.5. This solution will be distributed over the leach pad using irrigation pipes and drips for an overall solution feeding rate of approximately 7.3 L/h/m^2 (0.002 L/s/m^2). A total leaching duration of 130 d will be allowed, followed by a wash/rinse cycle of seven days, resulting in a total loading, leaching, and rinsing cycle of 142 d.

The total calculated amount of area of pad under irrigation per day will be approximately 22,000 m^2, with 1,210 m^2 being rinsed every day. The calculated volume of solution pumped to the heap will be 173 m^3/h of which a nominal 9 m^3/h will be rinse solution. A total solution evaporation loss of 10% is assumed.

The 173 m^3/h pregnant solution collected from the leach pad will be directed to the pregnant solution pond. The solution from the pregnant solution pond will be pumped to the Merrill-Crowe plant for silver and gold recovery by precipitation with zinc dust and filtration of the precipitate. The barren solution will then be returned to the barren solution pond. Solution from the pregnant solution pond can overflow into the barren solution pond should this be required. Solution from the barren solution pond can also overflow into the overflow solution pond. This overflow solution pond will also collect excess water and drainage solution from the heaps and plant environs. The overflow solution pond will also supply make-up water to the process by pumping the water back to the barren solution pond. Alternatively, excess solution from this pond will be treated with calcium hypochlorite in an agitated treatment tank to reduce the cyanide levels to acceptable limits prior to discharging this water to the environment or re-using this water as process water.

The Merrill-Crowe section will receive the pregnant solution, which will be pumped to the clarifier filter together with filter aid pre-coat and body feed. The slurry from the backwash cycles will be pumped to an inactive part of leach heap. The clarified solution will be pumped to the de-aeration tower where the solution will be de-oxygenated and a slurry of zinc dust, lead nitrate, cyanide, and filter aid will be pumped into the de-aerated solution after the tower but ahead of the precipitate filters. The zinc dust, lead nitrate, and filter aid will be made up into a slurry at the required dosage rate in the precipitate mixing tank and cyanide will be added as needed. The cementation reaction occurs at the point of introduction of the slurry to the de-aerated solution. This reaction normally requires approximately 2 to 5 minutes for completion. The reaction should be complete by the time the new-barren solution exits the precipitate filter to barren solution tank, and from there, it will flow into the barren solution pond where the pH will be adjusted to 10.5 with lime if necessary and then be pumped back to the heap pad for leaching after cyanide concentration is adjusted to approximately 0.5 g/L sodium cyanide.

The addition of zinc dust has been calculated on the basis of 10 g of zinc dust per 1 g of silver plus gold in order to ensure that the cementation reaction will be driven to completion. Although precipitation efficiencies are normally considered to be higher than 99.5%, in this case, 96% has been selected since no test work has been conducted on the pregnant solution from this material. The cyanide concentration of the pregnant solution should be a minimum of about 100 mg/L as free cyanide and will be monitored on a regular basis. The lead nitrate addition will be added to improve the precipitation efficiency, and its dosage is based on approximately 2 mg lead nitrate per litre of solution. Approximately 50% of the total required amount of lead nitrate will be added to the pregnant solution prior to the clarifier filter where impurities present in the solution will be removed by the clarifier filter. Although no anti-scalant reagents have been included in the study, any reagents of this nature should be tested to determine its effect on the precipitation efficiency.

The silver-rich precipitate, which contains the gold and excess zinc, will flow to the acid vat tank where the excess zinc can be dissolved by mixing with an adequate amount of sulphuric acid. From there, it will be pumped to the digest precipitate filter press. This precipitate from the filter press will be dried in an oven prior to being melted in a smelting furnace for doré production. It is anticipated that the total metal precipitate production per day will be approximately 420 kg (dry basis) with approximately 20% of silver and gold, or approximately 85 kg of silver and gold.

Heap Leach Layout

The maximum height has been restricted to 26 m as a result of the proximity of the proposed heap leach facility to the community of San Jose de Avino and possibly weak compressive strength of the agglomerates. This proposed height for the heap would require geotechnical verification. The relatively low heap pad height proposed has resulted in a relatively large surface area being required for the leach pad. The site layout and available space, site drainage, and pad size have been designed according to the area topography and the best available information. However, the close proximity of the proposed heap leach facility to the community of San Jose de Avino, and its agricultural workings, may yet result in site and/or layout revisions.

17.3.2 Sulphide Tailings

Avino is not currently conducting mining activity on the sulphide tailings. No recovery methods are currently proposed for the sulphide tailings.

Because some of the oxide tailings and sulphide tailings were co-deposited, and the oxide tailings are partially covered by younger unconsolidated sulphide tailings on the northwest side of the tailings storage dam, the sulphide tailings materials will be reclaimed as required during the oxide tailings reclamation. As noted in the 2017 PEA, the reclaimed sulphide tailings are planned to be stored in a separate sulphide tailings storage facility for further exploration. While some of the sulphide tailings could be used for constructing the proposed heap leach pad and facilities for the oxide tailings retreatment, no quantities were estimated for the PEA.

18.0 PROJECT INFRASTRUCTURE

18.1 INTRODUCTION

The history of operations at the Avino Mine provides ample evidence of sufficient infrastructure and services in the area. The San Gonzalo Mine entered commercial production in October 2012, followed by reopening the ET Mine in January 2015. At that time, these two mines fed a conventional flotation mill that had three separate circuits and a capacity of 1,500 t/d.

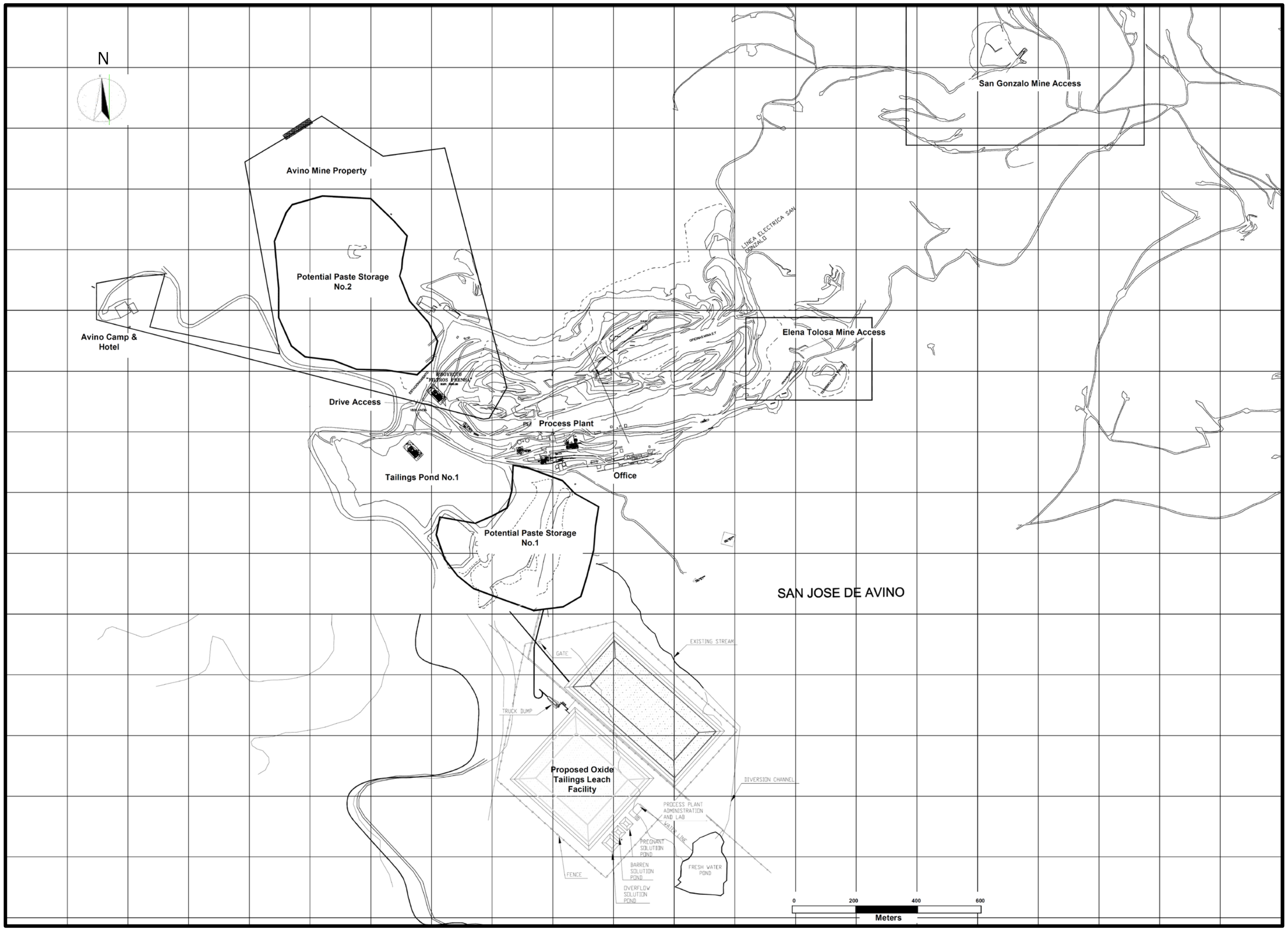
From January 2017, Avino has been constructing a new separate processing line identified as Circuit #4. Circuit #4 has an identical throughput capacity as Circuit #3 and is currently used for processing materials from the ET Mine, although the circuit also processed the materials from HAGS. The overall mill expansion has been increased to 2,500 t/d. The processing for both the mill feeds from the San Gonzalo Mine and HAGS has ceased in Q4 2019 and Q1 2020, respectively. In Q4 2019, mining at the San Gonzalo Vein reached the ends of its current resources. However, the mine remains open for continued exploration at different levels of the mine.

The existing crushing plant has been upgraded to accommodate the higher throughput. The grinding, flotation, and dewatering circuits have been updated for the increased mill feed rate, including incorporating gravity concentration circuits in all the four grinding circuits. Circuit #1 has been modified to process materials of the ET Mine after the San Gonzalo Mine ceased its operation.

A common tailings thickener was installed to conserve process water consumption by directly recycling the thickener overflow to the proceeding processing circuits. The thickener underflow now is deposited into a lined facility, which is a historical open pit. Under planning, the thickened underflow will be further dewatered by pressure filtration and the filter cakes produced will be stored in a separate and permitted tailings dry stacking facility while the filtrate will be recycled back as process makeup water.

The offices, miner's quarters, secured explosives storage facilities, warehouse, laboratory, and other associated facilities are all in place. The general mine site arrangement, including the proposed oxide tailings leach facility, is shown in Figure 18.1. The proposed tailings leach facilities for processing the historical oxide tailings materials are planned to be located southeast of the existing tailings storage pond. The preliminary arrangement for these facilities has been detailed in the technical report entitled "Technical Report on the Avino Property", dated April 11, 2017.

Figure 18.1 Overall Tailings Heap Leach Facility Layout



Source: Avino and Tetra Tech (2020)

18.2 ACCESSIBILITY

The Property is easily accessible by road and is an important part of the local community from which skilled workers are available. Access is provided by Highway 40, a four-lane highway leading from Durango, past the airport, and on to the city of Torreon in Coahuila. Successive turn-offs for the Property are at Francisco I Madero, Ignacio Zaragoza, and San Jose de Avino (Slim 2005d). The Avino mineral concessions are covered by a network of dirt roads, which provide easy transport access between the San Gonzalo deposit and the mill at the main Avino mine site (Gunning 2009). In 2008, a 1.7 km road accessing to the San Gonzalo deposit was widened and upgraded so it would be suitable for use by the mineralized material haul trucks and heavy equipment.

18.3 POWER

The Avino mine site was connected to the local power grid with a line capacity quoted at 4 MW when the mine last operated in 2001. With the shutdown, much of this excess power was diverted to the surrounding towns in the district. Before 2016, the existing power line provided only 1,000 kW of power with 500 kW servicing the mill; 400 kW for San Gonzalo; and the balance for the well at Galeana, employee accommodation facility, and water reclaim from the tailings dam. The San Gonzalo power line was built in 2009 to replace the contractor's diesel generator used during mine development.

The new power line from Guadelupe Victoria to the mine site was completed in June 2016. The power line was energized and tested on June 8, 2016. The test was successful and the line was then fully functional at the design capacity of 5 MW. Current power consumption at the mine is approximately 3.5 MW, leaving sufficient additional power for potential future expansion projects, including the proposed oxide tailings retreatment project using heap leach followed by gold and silver recovery by Merrill-Crowe precipitation, planned pressure filtration for further tailings dewatering, and possible further expansion or upgrading of the processing plant. Additionally, the existing power line was left in place to service local communities and provide backup power for the mine.

A C-27 CAT diesel power generator, which can produce 700 kW, is now used as backup.

18.4 WATER SUPPLY

While water supply was found to be limiting in the past, Avino has taken the necessary steps to secure adequate supply. To supplement the 1 Mm^3 dam built by Avino in 1989, a well (Galeana) was drilled to the west of the mine site in 1996 to a depth of 400 m and is reported to have a water level at 40 m below the collar. From this, a pipeline connection has been installed to the mine. Additionally, CMMA, in cooperation with the government, has repaired a government dam (El Caracol) and raised the dam wall by 6 m. A pipeline to the mine has also been installed. This dam is shared with the population of Pánuco de Coronado for their irrigation needs, as 60% for the mine and

40% for the town, with government setting the annual total take to which percent sharing applies. The tailings thickener in operation in Q2 2019 has improved the deposition of the tailings and the water management and usage. The thickener overflow, together with the decant water from the permitted tailings impoundment areas, is reclaimed for process use. Also, dry stacking tailings with pressure filters (plate-frame type) has been planned to further conserve the process water consumption. The dewatered water from San Gonzalo and ET underground mines are used as mill processing and agricultural irrigation.

18.5 WATER TREATMENT PLANT

Underground mine water at the Avino Mine is acidic. Since October 2012, dewatering of the Avino Mine began and a water treatment plant using lime to raise the pH and to precipitate the heavy metals was constructed and built. The water treatment facility is a typical Mexican design, and the effluent water quality had to meet the agricultural standards for discharge. Test results to date show the results do meet the required agricultural standards for being discharged to the El Caracol Dam via gravity. Treatment of the Avino underground water had been completed with the commencement of production in 2015. The water treatment plant is in place for treating excess water before discharging to El Caracol Dam. The effluent is being monitored on a daily basis when the treatment plant is operational. Sludge, which is considered low density, is sent to the tailings dam.

19.0 MARKET STUDIES AND CONTRACTS

19.1 MINED MATERIAL HAULAGE FROM UNDERGROUND

Currently, the processing plant undertakes materials from the ET Mine only. Haulage of the materials from the mine is contracted out, and the contract terms are within industry norms.

19.2 FLOTATION CONCENTRATES

There is a ready market for the Avino copper, silver, and gold flotation concentrates. The concentrates are currently being sold on an exclusive basis to Samsung C&T UK Ltd until December 2024. The concentrate sale agreement was extended in November 2018 from the original contract announced in July 9, 2015. The terms and conditions of these contracts are based on industry norms, and the terms have been used to establish the revenues from various mining operations, including the previous operation at the San Gonzalo Mine, which has now stopped operation.

Under the terms of the agreement, the concentrates are delivered by truck to the Port of Manzanillo located on the Pacific coast of Mexico, loaded into containers, and shipped to smelters overseas.

The metal prices used for the payable metals, namely copper, silver, and gold, are based on the average market prices of the first month after the month of delivery to the loading port.

19.3 GOLD-SILVER DORÉ

For the doré produced from the proposed oxide tailings retreatment project, currently there are no letters of interest or letters of intent from potential smelters or buyers of gold and silver doré.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 ENVIRONMENTAL STUDIES

Construction of the new tailings storage facility by depositing the tailings in an historical open pit is ongoing and the facility is in operation now.

The new tailings storage facility construction was conducted based on the recommendations contained in the 2013 PEA (Tetra Tech 2013), intended to advance the tailings resource towards a production decision for a Merrill-Crowe precipitation heap leach operation.

In November 2015, in order to get a head start on the assessment work, Avino began a program of sampling the lower oxide bench in areas not in use. The program consisted of using a hydraulic drill with a 2 m split spoon auger to drill vertical holes to a depth of 20 m to 30 m; 12 holes were drilled by the end of 2015 totalling 227 m. By the end of February 2016, a further 40 holes had been drilled, totalling over 650 m; assays have been received and compiled.

Avino will decommission the current tailings storage facility and begin installing wells that will be used to pump out the retained water in the dam. This will speed up the sonic drilling program planned for the upper benches, provide samples for the metallurgical program, and increase confidence in the oxide resource located below the sulphide tailings.

20.1.1 ENVIRONMENTAL SETTING

Flora and fauna of the surrounding San Gonzalo Property is anticipated to be similar to what may be found in the area of oxide tailings, although presence of these species has not been confirmed at the oxide tailings site. Vegetation observed on the San Gonzalo Property at the time of permitting includes catclaw mimosa; cactus species, such as paddle cactus and desert christmas cactus; needle bush, gobernadora; and persimmon trees.

Within the adjacent San Gonzalo Mine Project area, there were 15 species of major mammals, 51 species of birds, 10 species of reptiles, and 3 species of amphibians reported at the time of permitting. Of these species, four mammal species, 14 species of birds, 9 reptiles, and 3 amphibians species are listed by Official Mexican Standard NOM-059-SEMARNAT-2001 or in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Ministry of Environment and Natural Resources [MENR 2008a]) (Table 20.1 to Table 20.4).

Table 20.1 Mammal Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-2001 or CITES
Abert's Squirrel	*Sciurus aberti*	Resident. Endemic. Special Protection.
White-throated Woodrat	*Neotoma albigula*	Resident. Endemic. Threatened.
Swift Fox	*Vulpex velox*	Resident. Endemic. Threatened.
American Badger	*Taxidea taxus*	Resident. Threatened.

Source: MENR (2008a)

Table 20.2 Bird Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-200 or CITES
Great Blue Heron	*Ardea herodias*	Migratory. Special Protection.
Blue-winged Teal	*Anas discors*	Migratory. Special Protection. Hunting.
Common Black Hawk	*Buteogallus anthracinus*	Resident. Special Protection. Indicator.
Red-Tailed Hawk	*Buteo jamaicensis*	Resident. Indicator.
Great Horned Owl	*Bubo virginianus*	Resident. Threatened.
American Kestrel	*Falco sparverius*	Resident. Indicator.
Scaled Quail	*Callipepla squamata*	Resident. Endemic. Self-consume.
Blue Mockingbird	*Melanotis caerulescens*	Resident. Endemic. Threatened. Esthetic.
Northern Mockingbird	*Mimus polyglotos*	Resident. Esthetic.
Curve-billed Thrasher	*Toxostoma curvirostre*	Resident. Esthetic.
Gray Silky-flycatcher	*Ptilogonys cinereus*	Resident. Endemic.
Golden Vireo	*Vireo hypochryseus*	Resident. Endemic.
Desert Cardinal	*Cardinalis sinuatus*	Resident. Esthetic.
Painted Bunting	*Passerina ciris*	Migratory. Esthetic.

Source: MENR (2008a)

Table 20.3 Reptile Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-2001 or CITES
Mexican Spinytail Iguana	*Ctenosaura pectinata*	Resident. Endemic. Threatened.
Bolsón Night Lizard	*Xantusia bolsonae*	Resident. Endemic. Threatened.
Horrible Spiny Lizard	*Sceloporus horridus*	Resident. Endemic.
Mexican Black-bellied Garter Snake	*Nerodia melanogaster*	Resident. Endemic. Threatened.
Mexican Pine Snake	*Pituophis deppei*	Resident. Endemic. Threatened.
Mexican Garter Snake	*Thamnophis eques*	Resident. Threatened.
Western Diamondback Rattlesnake	*Crotalus atrox*	Resident. Special Protection.
Black-tailed Rattlesnake	*Crotalus molossus*	Resident. Special Protection.
Red-eared Slider	*Chrysemys scripta*	Resident. Special Protection.

Source: MENR (2008a)

Table 20.4 Amphibian Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-2001 or CITES
Tarahumara Salamander	*Ambystoma rosaceum*	Resident. Endemic. Special Protection.
Sinaloa Toad	*Bufo mazatlensis*	Resident. Endemic.
Mexican Cascades Frog or White-striped Frog	*Lithobates (prev. Rana) pustulosa*	Resident. Endemic. Special Protection.

Source: MENR (2008a)

20.2 ENVIRONMENTAL PERMITTING

Permits and authorizations required for the Project operation include:

- an operating permit
- an application for surface tenures
- a wastewater discharge registration
- a hazardous waste generator's registration.

An EIA under the Ley General del Equilibrio Ecológico y la Protección al Ambiente (LGEEPA), Article 28 (General Law of Ecological Equilibrium and Environmental Protection), is required by the Ministry of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales [SEMARNAT]). Prior to this EIA, an authorization regarding environmental impact matters is required by the SEMARNAT.

Additional surface tenures will likely be required for the re-location of any tailings to areas outside of the current surface tenure rights.

20.2.1 CURRENT PERMITS FOR THE OXIDE TAILINGS

There are no current operating permits for the mining and exploitation of the oxide tailings. However, a conditionally approved Environmental Impact Statement (EIS) (Manifestación de Impacto Ambiental [MIA]) for the exploitation and associated transmission line is in place for the Avino mine site where the tailings are located. Changes to the operating methods may be required if mining of the tailings was not included in the original mining plan. Based on this information, revisions to the permits will be required. If new operating permits are required, an EIA and EIS (MIA) will be mandatory.

20.2.2 CURRENT PERMITS

In order to obtain an authorization regarding environmental impact matters, Avino must prepare an EIS or MIA. Avino prepared an EIS, known as “Manifestación de Impacto Ambiental, modalidad Particular” (MIA-P) for the San Gonzalo Mine and submitted it to the MENR in August of 2008. The applicable regulations fall under federal jurisdiction, Article 28, sections II, III, and VII of the LGEEPA and the Reglamento en Materia de Evaluacion del Impacto Ambiental (REIA), sections K, L, and O (Environmental Impact Assessment Matter Regulation).

Given the planned activities for the site, the Ministry also required an assessment in “Environmental Impact Matter for Change of Land Use” (Materia de Impacto Ambiental para el Cambio de Uso de Suelo) for forested areas and mining infrastructure and electrification, for a surface area of 9.08 ha.

The authorization from the Ministry also requires the mine to present mitigation measures for all potential environmental impacts, as per Article 30, LGEEPA and Article 44, REIA, which Avino detailed in its EIS to the authorities.

Based on the information provided by Avino to the Mexican authorities, a conditional authorization was granted, subject to additional prevention and mitigation measures in order to avoid, minimize, or compensate for any environmental impacts during the different stages of the adjacent San Gonzalo Mine (Article 35, section II, LGEEPA), which include an assessment of the “Environmental Impact Matter for Change of Land Use” described above. This permit is valid for 11 years from the date it was issued, to perform various activities on site. Any modification to the Project must be sent to the MENR in writing before commencing changes.

Aside from complying with all prevention, protection, control, and mitigation measures laid out in the proposed MIA-P, Avino must develop an Environmental Quality Monitoring Program (EQMP) or Programa de Seguimiento de la Calidad Ambiental. The proposed EQMP must be presented to the MENR within six months of receiving the conditional authorization. Once the MENR has assessed the monitoring program, Avino needs to deliver progress reports semi-annually for a period of at least five years. Lastly, Avino must obtain proper authorization from the MENR for “Change of Land Use” as well as the corresponding “Change of Use for Forested Ground to Mining Infrastructure”.

It is important to note that the current conditional authorization can be cancelled for many reasons; one of them includes improper disposal of liquid/solid waste (hazardous or non-hazardous).

A second permit for "Change of Forest Land Use to Mining Infrastructure" (Cambio de Utilización de Terreno Forestal a Infraestructura Minera) was requested to the SEMARNAT and granted in September of 2008 for the adjacent San Gonzalo Mine. The corresponding legislation is Article 62, section IX of the Ley General de Desarrollo Forestal Sustentable (General Law for Sustainable Forest Development) and Article 27 of the Regulation. In addition, the Official Mexican Standards NOM-060-SEMARNAT-1994 and NOM-061-SEMARNAT-1994 must be adhered to. As per the authorization, Avino must complete its change in land use within 18 months of the date of the permit.

20.2.3 Applicable Legislation

In order to remain in compliance with current permits, the following eight applicable Official Mexican Standards for the Project must be complied with:

- Official Mexican Standards NOM-001-SEMARNAT-1996, which establishes the maximum limits allowed for contaminants in wastewater discharges in national waters and goods
- Official Mexican Standard NOM-041-SEMARNAT-1999, which establishes the maximum limits allowed for the emission of polluted gas generated from the exhaust pipe of automotive vehicles circulating, which utilize gas as fuel
- Official Mexican Standard NOM-043-SEMARNAT-1993, which establishes the maximum levels allowed for emissions from fixed sources of solid particles to the atmosphere
- Official Mexican Standard NOM-045-SEMARNAT-1996, which establishes the maximum levels of emission (smokes opacity) generated from automotive vehicles circulating, which utilize diesel or mixtures that include diesel as fuel
- Official Mexican Standard NOM-052-SEMARNAT-2005, which establishes the characteristics, the process of identification, classification, and listing of hazardous waste
- Official Mexican Standard NOM-054-SEMARNAT-1993, which establishes the procedure to determine the incompatibility between two or more types of residues considered as harmful by NOM-052-SEMARNAT-2005
- Official Mexican Standard NOM-059-SEMARNAT-2001, which regulates the environmental protection of Mexico's native species of wild flora and fauna and specifications for their inclusion, exclusion, or change-list of species in risk
- Official Mexican Standard NOM-060-SEMARNAT-1994, which establishes protection measures for forestry grounds.

In addition, other Official Mexican Standards regarding change in land use and mining must be followed and may include:

- Official Mexican Standard NOM-061-SEMARNAT-1994, which refers to the specifications to mitigate the adverse effects caused to the Wild Animals and Uncultivated Vegetation as a result of the forestry utilization, and which nomenclature was modified
- Official Mexican Standard NOM-062-SEMARNAT-1994, which establishes specifications to mitigate adverse effects on biodiversity that are caused by change of land use in forested areas
- Official Mexican Standard NOM-120-SEMARNAT-1997, which establishes environmental protection specifications for mining exploration activities in dry and temperate climate regions
- Official Mexican Standard NOM-141-SEMARNAT-2003, which establishes requirements for tailings characterization and specifications and criteria for site preparation, design, construction, operation, and post-operation of tailings dams.

Dependent on the mining plan, additional Official Mexican Standards for mining operations will also be required for the Project:

- Official Mexican Standard NOM-147-SEMARNAT/SSA1-2004, which establishes criteria for determining the concentrations of remediation of soils contaminated with arsenic, barium, beryllium, cadmium, hexavalent chromium, mercury, nickel, silver, lead, selenium, thallium, and/or vanadium; published in the Official Gazette on March 2, 2007
- Draft Official Mexican Standard PROY-NOM-XXX-SEMARNAT-2009, which establishes the elements and procedures to implement management plans for mining waste
- Draft Official Mexican Standard NOM-155-SEMARNAT-2007, which establishes environmental protection requirements for systems leaching gold and silver ores
- General Law for the Prevention and Management of Waste (Ley General para la Prevención y Gestión Integral de los Residuos [LGPGIR]) and applicable regulations, which regulated the following registrations and authorizations:
    - Hazardous Waste Generator's Registration and other compliance documents such as Manifest, Monthly Log of Hazardous Waste Generation; Ecological Waybills for the Importation and/or Exportation of Hazardous Materials and Wastes; Semi-annual Report on Hazardous Wastes Sent to Recycling, Treatment or Final Disposition; and Accidental Hazardous Waste Spill Manifest
    - LGEEPA

- Official Mexican Standard NOM-023-STPS-2003, which establishes standards for work in mines and health and safety conditions at these sites
- Official Mexican Standard NOM-055-SEMARNAT-2003, which establishes the requirements to be met by sites that will use a hazardous waste landfill
- Official Mexican Standard NOM-147-SEMARNAT/SSA1-2004, which establishes criteria for determining the concentrations of remediation of soils contaminated by arsenic, barium, beryllium, cadmium, and chromium.

20.3 ENVIRONMENTAL MONITORING AND REPORTING

The conditional authorization sets out the requirements for environmental monitoring and reporting, on a semi-annual basis, for a minimum of five years. Details are provided in Section 20.2.

20.4 ENVIRONMENTAL MANAGEMENT

Environmental liabilities (pasivos ambientales) of brownfields, or site recycling as it is called within the Mexican environmental legislation, are regulated by Articles 68, 69, and 70 of the Ley General Para la Prevención y Gestión Integral de Residuos (LGPyGIR) or General Law for the Prevention and Comprehensive Management of Waste. It is based on the “polluter pay” principle, according to the LGEEPA, and the LGPyGIR. The federal government coordinates with both provincial and municipal authorities to manage the environmental liabilities, whether the sites are orphaned or not. The LGPyGIR requires complete clean-up of contaminated sites.

20.5 WATER MANAGEMENT

Fresh water for the Project is available from a well drilled in 1996, west of the mine site, and surface water from a dam, which is divided 60%/40% with the town of Panuco de Coronado. The Project has previously been charged annually for water use. Piping infrastructure from these water sources is still in place.

Additional water was also obtained from underground workings and re-circulation from the tailings thickener and tailings dam. There is potential for the water from the underground workings to be acid producing (Slim 2005d). Treatment of water from the underground workings is ongoing prior to use, depending on the water quality.

20.6 SULPHIDE TAILINGS MANAGEMENT

ABA tests have indicated that mild acid generation may already have started on the tailings dam. A gap analysis and additional tests to further characterize current conditions of the tailings should be completed to properly design a tailings management plan.

Three preliminary options have been identified for the management of the sulphide tailings:

- reprocessing the tailings
- retreating of the tailings on the heap
- re-location and treatment for remediation.

The feasibility of these options is not known at this stage.

The absence of complete sulphide tailings metallurgical information makes identification of the feasibility of the options difficult. A detailed trade-off study should be undertaken to characterize current conditions of the tailings and to determine whether the retreatment of this material would contribute to the profitability of the Project. However, at this stage, only limited metallurgical test data is available, since no detailed metallurgical test work was undertaken on this material during the MMI 2004 test program.

Alternatively, the treatment of the sulphide tailings for gold recovery will afford an opportunity to recover silver and gold from the material as well as treating this material with the lime to ensure that this material will not be a net acid producer. Indications are that the sulphide tailings will also require treatment for environmental remediation purposes in the future. These costs could be partially or completely off-set by treating this material separately or together with the oxide material by the heap leach process.

Re-locating the sulphide tailings may afford a more expedient option to address this potential environmental problem. For the purposes of this Technical Report, it will be assumed that the sulphide tailings will be moved to another location northeast of the proposed site for the leach pad.

20.7 MINE CLOSURE AND RECLAMATION

An updated mine closure plan and reclamation will be required for the Project. The mine closure plan should include information such as:

- justification for the closure plan considering technical, environmental, and legal aspects
- objectives and how they will be met
- photo evidence and details of the environmental situation prior to commencing closure activities
- schedule of activities
- the progressive reclamation of the site during the life of the operation
- the design of tailings disposal areas

- the reclamation and re-vegetation of the surface disturbances wherever practicable
- a cost estimate of the work required to close and reclaim the mine
- a plan for ongoing and post-closure monitoring and reporting at the site.

No cost estimates have been generated at this time to ensure the Project meets the environmental requirements once the processing of the heap material has been terminated.

As per federal regulations, under LGEEPA, both the SEMARNAT and Procuraduría Federal de Proteccíon al Ambiente (PROFEPA) (Federal Attorney for Environmental Protection) ministries require Avino to present in its first semi-annual report for a General Plan to Remediate the Site dates, activities, techniques, and costs that will guarantee restoration of affected areas, considering complete reforestation of impacted sites, removal of foundations and infrastructure that are no longer useful, roads that no longer have any use, removal of all rubbish and properly dispose of them, closing off adits that are no longer needed, and restoration of the tailings facility when its operational life is finished. Avino will also need to present a reforestation program for the entire surface area affected during mining operations. This program will include caveats to safeguard flora and fauna.

20.8 Socio-economic and Community Considerations

This socio-economic section of the Technical Report:

- identifies communities that may potentially be affected by the development of the Project
- identifies potential positive and adverse effects of the Project on local communities
- advises on further study requirements.

20.8.1 Project Location

The Project is located approximately 82 km northeast of the City of Durango, in the state of Durango. The Property lies between the communities of Panuco de Coronado and San Jose de Avino.

20.8.2 Consultation with Communities

The community is currently being consulted on a regular basis in conjunction with respect to both the dry stack tailings project and the fresh-water requirements for local agriculture. In addition, Avino provides a number of resources for schools and churches within the adjacent towns. A list of activities and related costs are summarized in Table 20.5 to Table 20.12.

Table 20.5 Apoyos Realizados en Zaragoza, 2017

Unidad	Consepto	Costo (MXN$)
	Apoyo del dia del niño primaria y Kinder	4,010
60 pza	Costal de cemento iglesia	10,200
	Acondicionamiento de baño presidencia	7,000
	Tablets	16,000
	Material deportivo secundaria	3,000
	Material didactico educacion inicial	4,000
	limpia de basureros	
	Emparejado de calles	29,000
	Total	**73,210**

Table 20.6 Apoyos Realizados en Avino, 2017

Unidad	Consepto	Costo (MXN$)
	Apoyo del dia del niño primaria y Kinder	9,779
	Pintura para la iglesia	12,713
	Regalos dia del padre	12,000
	50% pago de recibo del energia del pozo	11,000
	Cople dresen 4"	900
	Instalacion de soket de medidor del pozo	500
	Tablet graduaciones	13,000
	Bastones y sillas de ruedas	20,000
	Emparejado de calles	29,000
	Total	**108,892**

Table 20.7 Apoyos Realizados en Zaragoza, 2018

Uniad	Consepto	Costo (MXN$)
	Apoyo del dia del niño primaria y Kinder	3,900
4 lata	Pintura acrilica iglesia	8,727
lote	Material par construccion de porton primaria	6,791
	Apoyo para la polvora	3,000
	Apoyo para dia de las madres	2,500
	Regalos de graduacion primaria	1,700
	Limpia de basureros	4,000
	Brecha para alambrado para recuperacion de pastos	10,000
	Aguinaldo posadas	3,900
	Total	**44,518**

Table 20.8 Apoyos Realizados en Avino, 2018

Uniad	Consepto	Costo (MXN$)
	Apoyo del dia del niño primaria y Kinder	3,900
	Cuetes para la iglesia	1,400
	Apoyo para el dia de las madres	2,500
	Desmonte en area de panteon	2,000
	Desmonte y emparejado del camino al ranchito	6,000
	Desmonte y aplanillado del ranchito	7,000
	Limpieza del campo de beibol	2,000
	Mantenimiento a caminos de parcelas	18,000
	Aguinaldo posadas	3,900
	Total	**46,700**

Table 20.9 Apoyos Realizados en Panuco, 2018

Unidad	Consepto	Costo (MXN$)
Lote	Apoyo de $ 3,000.00 anual por héctarea de ocupación temporal para ayuda de la comunidad	180,000
Lote	Agua de la mina San Gonzalo para abrevaderos (Incluye bomba, transformador, manguera, conexiones, etc.)	188,265
	Total	**368,265**

Table 20.10 Apoyos Realizados en Zaragoza, 2019

Uniad	Consepto	Costo (MXN$)
	Apoyo del dia del niño primaria y Kinder	3,900
4 lata	Pintura acrilica iglesia	8,727
	Apoyo para la polvora	3,000
	Apoyo para dia de las madres	2,500
	Limpia de basureros	5,000
	Emparejado de calles	10,000
	Apoyo para fiestas de septiembre	1,000
	Aguinaldo posadas	3,900
	Total	**38,027**

Table 20.11 Apoyos Realizados en Avino, 2019

Uniad	Concepto	Costo (MXN$)
	Apoyo del dia del niño primaria y Kinder	3,900
	Polbora para la iglesia	3,000
	Apoyo para el dia de las madres	1,000
	Construcion de abrebadero	40,000
	Camisetas para equipo de basebol	2,000
	Instalacion de linea de tuberia de 3" para agua	260,000
	Limpieza del campo de beibol	2,000
	Limpieza del Basurero	1,000
	Mantenimiento a pozo de agua potable	5,000
	Mantenimiento a caminos de parcelas	20,000
	Refacciones para lineas de agua potable	15,000
	Tuberia de 2" para ampliacion de red agua	15,000
	Aguinaldo posadas	3,900
	Total	**371,800**

Table 20.12 Apoyos Realizados en Panuco, 2019

Unidad	Concepto	Costo (MXN$)
Lote	Apoyo de $ 3,000.00 anual por héctarea de ocupación temporal para ayuda de la comunidad	180,000
	Agunaldos para la secundaria	3,000
	Apoyo con la Ambulacia para carrera	1,000
	Donacion de Bomba de agua , arrancador y tuberia para abrebadero	80,000
	Emparejado de calles y caminos	20,000
	Recipiente para agua	50,000
	Limpieza del Basurero	2,000
	Reparacion de bordos de abrebaderos	66,000
	Total	**402,000**

The implementation of an effective community engagement program is fundamental to the successful environmental permitting of mining projects. A comprehensive community engagement program should be initiated as soon as possible. Consultation will include addressing concerns of the heap-leach pile that may be present within or adjacent to the Property.

Consultation and the development of a working relationship with local communities typically involves the development of a series of agreements that lay the groundwork for conversations. These include:

- memorandums of understanding
- protocol agreements
- community consultation / participation agreements.

As project exploration and development proceeds, other agreements will become necessary, including:

- socio-economic/community economic benefits agreements
- environmental monitoring agreements
- training agreements
- accommodation/impact benefit agreements.

Potential Positive Effects on Local Communities

Potential positive effects of the proposed project development include:

- long-term, meaningful employment in mining operations and related positions (e.g., environmental monitors, service industry sector)
- economic development and contract opportunities for local communities (existing and new businesses), and community infrastructure improvements.

Potential Adverse Effects on Local Communities

For potential adverse effects of the proposed project development, it will be assumed that the sulphide tailings will be moved to another location northeast of the proposed site for the leach pad. Again, it should also be mentioned that this proposed site is very close to the town of San Jose de Avino, and this may result in objections from the local community.

21.0 CAPITAL AND OPERATING COST ESTIMATES

21.1 AVINO VEINS

Avino is currently conducting mining activity, including mineral processing, on the materials from the ET Mine. There is no cost estimate applicable for the on-going operations and all costs below are based on actual expenditure, excluding the proposed tailings reprocessing project completed in 2017 for the PEA study.

Avino has not based any of its production decisions on any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

21.1.1 CAPITAL COSTS

The actual capital expenditures to date on the Avino Vein and historical stockpiles and San Gonzalo Vein are summarized in Table 21.1 and Table 21.2, respectively. The San Gonzalo Mine ceased its operation at the end of 2019.

Mine and mill capital costs were mainly attributed to equipment purchases and construction and site upgrading.

Table 21.1 Capital Costs for the ET Mine and Historical Stockpiles (US$)

Description	Q1–Q3 2020	2019	2018	2017
Office Furniture	6,774	7,284	12,657	31,468
Computer Equipment	4,846	11,635	57,807	19,790
Mill Machinery and Processing Equipment	29,182	646,024	5,856,952	1,507,709
Mine Machinery and Transportation Equipment	22,721	150,023	864,697	826,298
Buildings and Construction	877,797	1,817,341	855,731	2,863,712
ET Mineral Property – Avino	28,495	106,395	692,992	800,606
Total Capital Costs	**969,815**	**2,738,702**	**8,340,836**	**6,049,583**

Source: Avino

Table 21.2 Capital Costs for the San Gonzalo Mine (US$)

Description	Q1–Q3 2020	2019	2018	2017
Office Furniture	-	862	4,320	11,579
Computer Equipment	-	1,377	19,732	7,282
Mill Machinery and Processing Equipment	-	76,452	1,999,208	554,786
Mine Machinery and Transportation Equipment	-	17,754	295,155	304,050
Buildings and Construction	-	204,229	276,808	63,494
San Gonzalo Vein Mineral Property	-	6,455	336,270	430,721
Total Capital Costs	**-**	**307,129**	**2,931,493**	**1,371,912**

Source: Avino

21.1.2 Operating Costs

The mine and milling operating costs for processing materials from the ET Mine, historical stockpiles, and the San Gonzalo Mine are summarized in Table 21.3 to Table 21.5. The costs include operating and maintenance labour together with the operation-associated consumable supplies. The cost for electrical power was included in the milling costs. The geological component was mostly related to technical labour. The San Gonzalo Mine ceased its operation at the end of 2019. Avino also ceased processing the materials from HAGS after Q1 2020.

Table 21.3 Operating Costs for the ET Mine (US$)

Description	Q1–Q3 2020	2019	2018	2017
Mining Cost	4,966,974	8,777,422	7,169,065	6,481,920
Milling Cost	2,651,478	4,281,708	4,024,935	4,221,422
Geological and Other	2,809,488	3,571,538	3,447,220	3,253,354
Royalties	458,353	499,368	690,004	734,732
Depletion and Depreciation	1,677,638	2,552,149	1,598,581	1,396,967
Total Direct Costs	**12,563,930**	**19,682,185**	**16,929,804**	**16,088,395**
G&A	2,989,270	2,658,761	2,706,890	16,976,642
Total Operating Costs	**15,553,200**	**22,340,946**	**19,636,694**	**33,065,037**

Source: Avino
Note: G&A – general & administrative

Table 21.4 Operating Costs for the Historical Stockpile Materials (US$)

Description	Q1 2020	2019	2018	2017
Mining Cost	79,620	505,341	269,565	-
Milling Cost	392,075	4,210,514	1,667,595	-
Geological and Other	104,793	857,843	353,026	-
Royalties	19,141	228,241	0	-
Depletion and Depreciation	14,409	416,861	247,834	-
Total Direct Costs	**610,038**	**6,218,800**	**2,538,020**	**-**
G&A	136,547	1,175,291	354,902	-
Total Operating Costs	**746,585**	**7,394,091**	**2,892,922**	**-**

Source: Avino

Table 21.5 Operating Costs for the San Gonzalo Mine (US$)

Description	Q1-Q3 2020	2019	2018	2017
Mining Cost	-	4,208,889	4,953,380	3,615,976
Milling Cost	-	725,350	1,028,396	596,656
Geological and Other	-	82,766	1,015,950	644,784
Royalties	-	0	0	0
Depletion and Depreciation	-	711,145	1,384,274	1,160,319
Total Direct Costs	**-**	**5,728,150**	**8,382,000**	**6,017,735**
G&A	-	448,775	1,133,698	5,738,873
Total Operating Costs	**-**	**6,176,925**	**9,515,698**	**11,756,608**

Source: Avino

21.2 Tailings Resources

21.2.1 Oxide Tailings

The capital costs and operating costs for retreating the oxide tailings portion of the Property, including reclaiming the oxide tailings and constructing the heap leach pad and the treatment facilities, were estimated and reported in the technical report entitled "Technical Report on the Avino Property", dated April 11, 2017.

The estimated capital cost was US$28.8 million (US$24.4 million of initial capital plus US$4.4 million sustaining capital), and the estimated operating cost was US$15.06/t.

A PEA should not be considered to be a PFS or FS, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The updated capital costs for the Project were developed based on 1,370 t/d or 500,000 t/a treatment of oxide tailings and construction of the heap leach pad in two phases.

The updated capital cost estimate includes the following items:

- An updated equipment list was generated with process engineering and new quotations for major equipment were obtained and replaced the previous costs.
- Other items in the previous estimate in 2012 were escalated to reflect the 2016 Q4 costs.

21.2.2 Basis of Estimate

The estimate was a PEA, Class IV estimate prepared in accordance with industry standard. The accuracy of the estimate is −25%/+40%.

Pricing and Currency

This PEA estimate was prepared with a base date of Q4 2016 and had not included any escalation beyond this date.

For major equipment, costing was based on budgetary quotations from vendors. Other mechanical equipment costs were based on in-house data.

All capital costs are expressed in US dollars. No provision was made for fluctuations in the currency exchange rates.

The currency exchange rates used in the estimate are shown in Table 21.6.

Table 21.6 Currency Exchange Rate

Currency	Exchange
Cdn$1.00	US$0.7454
MXN$19.23	US$1.0000

Construction Labour Rates

A blended labour rate of US$13.50/h had been used and calculated based on the assessment of current labour conditions as compared to the labour rate of US$12.68 in the previous estimate from 2012.

Inflation Rate

An inflation rate had been applied to reflect the PEA's cost of the Project (Table 21.7). The escalation was based on the inflation rate (consumer prices) in Mexico (Trading Economics 2016 www.tradingeconomics.com).

Table 21.7 Inflation Rates in Mexico

Year	Rate (%)
2013	4.4
2014	5.6
2015	2.7
2016	3.5

The average rate of inflation from 2012 to 2016 is 17%. Due to a combination of factors such as inflation, supply/demand, and other effects such as environmental, technological, and political changes, an escalation of 2% per year was applied in the updated capital cost estimate.

DIRECT COSTS

The equipment list had been updated based on the process flow diagram document. The cost of equipment was estimated based on changes to the process flow diagram.

Disciplines other than mechanical equipment used costs from the previous cost estimate, with escalation applied only.

INDIRECT COSTS

All indirect costs were estimated based on a percentage of direct costs.

CONTINGENCY AND RISK

A contingency assessment was completed and applied to various areas of the direct and indirect costs to meet anticipated, foreseen, but incompletely defined costs to satisfy the approved scope (Table 21.8).

Table 21.8 Contingency by Area

Contingency (%) by Area
12.0% of Mining, Agglomeration & Pad Loading
20.0% of Process Facilities
15.0% of Reagents / Auxiliary Services
15.0% of Buildings
30.0% of Leach Pad & Infrastructure
20.0% of Power Supply and Distribution
15.0% of EPCM & Vendor Representatives
15.0% of Freight & Construction Indirects
10.0% of Owners Costs

21.2.3 CAPITAL COST SUMMARY

The capital cost for the Project had been assessed at US$28.8 million (including initial capital of US$24.4 million) and is summarized in Table 21.9.

Table 21.9 Capital Cost Summary

Item/Description	Total Initial Capital Cost (US$000)	Total Sustaining Capital Cost (US$000)
Direct Costs		
Mining, Agglomeration, and Pad Loading	2,899	818
Process Facilities	3,979	-
Reagents/Auxiliary Services	526	-
Buildings	1,003	-
Leach Pad and Infrastructure	4,522	1,819
Power Supply and Distribution	1,571	
Total Direct Costs	**14,500**	**2,637**
Indirect Costs		
Engineering, Procurement, Construction Management, Quality Assurance and Vendor Representatives	2,338	386
Freight and Construction Indirects	2,898	430
Owner's Costs	725	132
Contingency	3,902	767
Total Indirect Costs	**9,863**	**1,715**
Total Capital Costs	**24,363**	**4,352**

MINING, AGGLOMERATION, AND PAD LOADING

These costs included the facilities required for transferring the tailings from the existing tailing dam to the dump bin for oxide tailings and to the sulphide stockpile for the sulphide tailings, using the front-end loader and trucks. It also included the facilities required for the loading of the tailings into a bin to feed the conveyor to the agglomerator and included the agglomerator and its structural supports as well as the ancillary equipment. These costs also included the lime and cement silos.

PROCESS FACILITIES

The costs in this section included the various items of equipment, the tanks and their attendant pumps and agitators (if equipped), the Merrill-Crowe circuit (supplied as a modular package unit) and other miscellaneous process-related equipment. The process equipment was estimated as new-cost items.

Reagents and Auxiliary Services

The costs derived for this section included reagent preparation and holding tanks and related equipment as well as civil construction costs. Water was assumed to be supplied from existing sources, namely from the dams and/or the wells. The costs shown for the fresh water supply included the refurbishing of the equipment and pumps. Safety items related to reagent handling had also been included.

Buildings

The existing buildings and offices of the Avino mine site will be utilized for the Project. An allowance had been included for the refurbishment of these facilities. No costs had been allocated for the truck shop since it was intended to have a transport contractor to provide all the transportation needs for the Project. An allowance had been included for the procurement/refurbishing of laboratory equipment. The costs for constructing building to house the Merrill-Crowe circuit and reagent preparation related equipment had been included in the cost estimates.

Leach Pad and Infrastructure

The leach pad with liners and a leak detection system will be constructed in two phases. The barren, pregnant and event solution ponds will all be lined. Also included is the cost of fencing off the plant area, the telephone system, sewage disposal, water supply and treatment, and fuel storage facilities. The existing fuel storage facilities will be used, but this will require refurbishing; this cost had been provided in the cost estimate.

Power Supply and Distribution

The refurbishing and expanding of the existing electrical power supply system, along with lighting, had been included in this section. It also included power to the agglomerated area and the Merrill-Crowe area.

Indirect Costs

Indirect costs had been included as costs associated with construction services, consulting services, spare parts, and freight. Contingency had been included in the indirect costs.

No sunk costs or taxes had been added to the capital cost estimate.

21.2.4 Operating Costs Summary

The LOM overall operating costs for the Project, including the costs for mining, process, and G&A, had been estimated to be approximately $15.06/t milled. Table 21.10 gives the LOM overall unit operating cost summary, based on a nominal processing rate of 1,370 t/d. The operating cost estimate was reported in US dollar with an exchange rate of Mexican Peso to US dollar at 19.23.

Table 21.10 LOM Unit Operating Cost Estimate Summary

Description	Personnel	Unit Cost (US$/t treated)
Mining	15*	1.13
Process	39	12.53
G&A	11	1.41
Total Operating Cost	**65**	**15.06**

Note: *Labour requirement for trucking of the tailings and waste is excluded as it will be by a contractor.

Mining Operating Costs

The mining production cycle consists of loading, hauling, and unloading; no drilling or blasting is required. Oxide tailing materials will be loaded using a 3.8 m^3 wheel loader and hauled to the leach pad using a 24 t articulated truck. Sulphide tailing materials are treated as waste and will be hauled to the waste dump. Trucking of oxide and sulphide materials will be performed by a contractor (Tetra Tech 2018). Table 21.11 summarizes the mining operating costs.

Table 21.11 Mining Cost Summary

Mining Cost Item	LOM Cost* (US$ 000)	Unit Cost (US$/t mined)
Loading	226	0.037
Hauling	969	0.160
Support Equipment	649	0.107
Ancillary Equipment	274	0.045
Dewatering	252	0.042
Labour	1,153	0.190
Total Costs	**3,523**	**0.581**

Note: *Excludes pre-production costs

Process Operating Cost Estimate

The process operating cost for the Project included the costs for agglomeration, heap leaching, solution handling, and Merrill-Crowe refinery plant to produce a silver/gold doré.

Table 21.12 gives the overall LOM process operating cost summary based on a nominal processing rate of 1,370 t/d with an availability of 90% and 365 operating days per year.

The LOM annual average operating cost for the process facilities was estimated to be US$6.0 million per year or US$12.53/t of tailings treated.

Table 21.12 LOM Process Operating Cost

Description	Personnel	Annual Cost (US$)	Unit Cost (US$/t treated)
Process Manpower			
Maintenance Labour	7	105,200	0.221
Operations Labour	25	318,100	0.667
Laboratory	7	89,600	0.188
Subtotal	***39***	***512,900***	***1.076***
Process Supplies			
Operating Supplies	-	4,617,600	9.679
Maintenance Supplies	-	569,000	1.193
Power Supply	-	276,900	0.581
Subtotal	***-***	***5,463,500***	***11.453***
Total Process Operating Costs	**39**	**5,976,400**	**12.529**

The annual operating cost included the following:

- staffing and maintenance manpower complements, and base salaries including an average burden of 60% (salary information is based on staffing complements, similar project salary costs as supplied by Avino, and Tetra Tech in-house data)
- power consumption based on the estimated power drawn by the equipment
- reagent consumption rates and associated costs based on test work results and recent prices received from reagent suppliers
- estimated maintenance costs based on approximately 10% of equipment costs.

G&A Cost Estimate

Average LOM G&A operating cost was estimated to be US$672,000 per year or US$1.41/t of tailings treated. Table 21.13 and Table 21.14 detail the manpower requirement estimates, annual G&A expenses, and LOM unit G&A expenses operating cost.

Table 21.13 G&A Manpower Requirements

Description	Manpower	Annual Cost/ Employee (US$)	Total Annual Cost Payroll (US$)	Unit Cost (US$/t milled)
General Manager	1	64,514	64,515	0.135
Administration Manager	1	35,574	35,574	0.075
First Aid Attendant	1	10,821	10,821	0.023
Purchasing Agent	1	17,380	17,380	0.036
Office Clerk	1	9,623	9,623	0.020
Computer Technician	1	9,623	9,623	0.020
Safety and Security	2	22,650	45,300	0.095
Warehouse Staff	2	10,663	21,325	0.045
Environmental Supervisor	1	22,650	22,650	0.047
Total G&A Manpower	**11**	-	**236,811**	**0.496**

Table 21.14 G&A Expenses

Description	Total Cost (US$/a)	Unit Cost (US$/t milled)
Communications	36,000	0.076
Consulting	30,000	0.063
Human Resources and Employee Costs	10,000	0.021
Vehicle Costs	15,000	0.032
Site Costs	24,000	0.050
Office Costs	24,000	0.050
Safety and Security	24,000	0.050
Travel	36,000	0.076
Water Costs	24,000	0.050
Housing Costs	30,000	0.063
Insurance	60,000	0.126
General & Others	50,000	0.105
Environmental		
Consumables and Supplies	24,000	0.050
Permitting	24,000	0.050
Water Analysis	24,000	0.050
Total G&A Expenses	**435,000**	**0.912**

21.2.5 SULPHIDE TAILINGS

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No capital or operating costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

22.0 ECONOMIC ANALYSIS

22.1 AVINO VEIN

Avino is currently conducting mining activity, including mineral processing on the materials from the Avino Vein, ET Mine. There is no economic analysis performed on this vein.

Avino has not based its production decisions on any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

22.2 TAILINGS RESOURCES

22.2.1 OXIDE TAILINGS

In 2017, Tetra Tech prepared a PEA technical report for the silver and gold recoveries from the oxide tailings, entitled “Technical Report on the Avino Property”, dated April 11, 2017.

A PEA should not be considered to be a PFS or FS, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The report includes a preliminary economic evaluation of the oxide tailings retreatment based on a pre-tax financial model. Metal prices used in the base case for the preliminary economic evaluation were:

- gold – US$1,250/oz
- silver – US$18.50/oz.

The pre-tax financial results were:

- 48.4% IRR
- 2.0-year payback period
- US$40.5 million NPV at an 8% discount rate.

Avino commissioned PwC in Vancouver to prepare the tax component of the model for the post-tax economic evaluation for this updated PEA with the inclusion of applicable income and mining taxes.

The following post-tax financial results were calculated:

- 32% IRR
- 2.6-year payback period
- US$22.2 million NPV at an 8% discount rate.

The pre-tax financial model was established on a 100% equity basis, excluding debt financing and loan interest charges. The financial results for the base case are presented in Table 22.1.

Table 22.1 Summary of Pre-tax Financial Results

Description	Base Case
Gold Price (US$/oz)	1,250
Silver Price (US$/oz)	18.5
Total Payable Metal Value (US$000)	148,892
Refining (US$000)	6,123
Transportation, Insurance (US$000)	214
At-mine Revenue (US$000)	142,555
Operating Costs (US$000)	47,034
Operating Cash Flow (US$000)	95,521
Initial Capital (US$000)	24,363
Sustaining Capital (US$000)	4,352
Salvage Value (US$000)	-861
Reclamation Cost (US$000)	606
Total Capital Expenditure, Including Reclamation and Salvage (US$000)	28,460
Net Cash Flow (US$000)	67,061
Discounted Cash Flow NPV (US$000) at 5.00%	48,922
Discounted Cash Flow NPV (US$000) at 8.00%	40,554
Discounted Cash Flow NPV (US$000) at 10.00%	35,786
Payback (years)	2.0
IRR (%)	48.4

The post-tax financial results estimated by the 2017 PEA Update are summarized in Table 22.2.

Table 22.2 Summary of Post-tax Financial Results

	Unit	Base Case
Gold	US$/oz	1250.00
Silver	US$/oz	18.50
Undiscounted NCF	US$ million	40.743
NPV (at 5%)	US$ million	28.006
NPV (at 8%)	US$ million	22.187
NPV (at 10%)	US$ million	18.892
IRR	%	32.0
Payback	years	2.6

22.2.2 SULPHIDE TAILINGS

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No economical assessments have been conducted for any potential mining activity on the sulphide tailings portion of the Property.

23.0 ADJACENT PROPERTIES

There are no material properties adjacent to the Property.

24.0 OTHER RELEVANT DATA AND INFORMATION

There is no additional information or explanation necessary to make the Technical Report understandable and not misleading.

25.0 INTERPRETATIONS AND CONCLUSIONS

25.1 GEOLOGY

The Property is located in Durango State in North Central Mexico, within the Sierra Madre Silver Belt, and 82 km northeast of Durango City. The current Property is comprised of 23 mineral concessions, totalling 1,103.934 ha.

The Property is located within a large caldera, which hosts numerous epithermal veins and breccias, grading into a “near porphyry” environment. The dominant rock types in the region of the Avino Property include andesitic, rhyolitic, and trachytic pyroclastic rocks. The area was intruded by monzonite dykes and stocks, which appear to be related to mineralization. Silver- and gold-bearing veins crosscut the various lithologies and are generally oriented north-northwest to south-southeast and northwest to southeast. The rocks have been weathered and leached in the upper sections from contact with atmospheric waters, resulting in an oxidized and a reduced, or sulphide, portion of the mine.

Three deposits are present on the Property: the Avino Vein, the San Gonzalo Vein, and the tailings dam (which includes an oxide and a sulphide portion). Current Mineral Resource estimates are reported in this study for the Avino and San Gonzalo Veins, as well as the oxide tailings.

25.2 RESOURCE ESTIMATES

The Mineral Resources of the Property are summarized in Table 14.1.

25.3 MINERAL PROCESSING

Avino is currently conducting mining activities on the Avino Vein at the flotation processing plant at the Avino mine site. Production decisions for both the existing operation and the San Gonzalo Mine were being made without Mineral Reserves or any studies of economic viability that have been prepared in accordance with NI 43-101. As a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

For the oxide tailings, the preliminary test results indicate that the tailings samples responded well to cyanide leaching, including column leaching treatment. The proposed gold and silver extraction was by heap leaching. Further evaluations are required to better understanding the metallurgical performance of the oxide tailings and the economics of reprocessing the tailings.

For the sulphide tailings, Avino is not currently conducting mining activity on the tailings. No recovery methods are currently proposed for the sulphide tailings. The gold and silver recovery from the sulphide tailings has been excluded from this study.

25.4 MINING

Avino is currently conducting mining activity on the Avino Vein. Sublevel stoping mining method is used to feed the mill. Mining activities at the San Gonzalo Vein reached the ends of its current resources, and underground mining activities at the mine was stopped. However, the mine remains open for continued exploration at different levels of the mine (more information can be found in Section 16.0).

The oxide tailings Mineral Resource is proposed to be mined/moved using a conventional truck/loader surface mining method. However, currently this plan has not been realized.

25.5 CAPITAL AND OPERATING COSTS

25.5.1 AVINO VEIN

Avino is currently conducting mining activity on the Avino Vein. There is no cost estimate applicable and all costs are based on actual expenditures. The capital and operating costs are detailed in Section 21.0.

25.5.2 TAILINGS RESOURCES

The capital costs and operating costs for retreating the oxide tailings portion of the Property, including reclaiming the oxide tailings, constructing the heap leach pad, and the treatment facilities, were detailed in Section 21.0 and reported in the technical report entitled “Technical Report on the Avino Property”, dated April 11, 2017. The 2017 PEA Update results are summarized in the following subsections.

CAPITAL COSTS

The capital cost for the oxide tailing tailings part of the Property had been developed based on the treatment of 1,370 t/d, or 500,000 t/a of oxide tailings. A total initial capital cost of US$24.4 million, including contingency, was estimated for the oxide tailings retreatment by the proposed heap leaching processing. The breakdown of the estimate is shown in Table 25.1. The exchange rate used for the cost estimates was Mexican Peso to US dollar at 19.23.

Table 25.1 Capital Cost Summary

Item/Description	Total Initial Capital Cost (US$ 000)	Total Sustaining Capital Cost (US$ 000)
Direct Costs		
Mining, Agglomeration, and Pad Loading	2,899	818
Process Facilities	3,979	-
Reagents/Auxiliary Services	526	-
Buildings	1,003	-
Leach Pad and Infrastructure	4,522	1,819
Power Supply and Distribution	1,571	
Total Direct Costs	**14,500**	**2,637**
Indirect Costs		
Engineering, Procurement, Construction Management, Quality Assurance and Vendor Representatives	2,338	386
Freight and Construction Indirects	2,898	430
Owner's Costs	725	132
Contingency	3,902	767
Total Indirect Costs	**9,863**	**1,715**
Total Capital Costs	**24,363**	**4,352**

OPERATING COSTS

The LOM overall operating cost for the oxide tailings retreatment, including costs for mining, process and G&A, had been estimated to be approximately US$15.06/t milled and is detailed in Table 25.2. The LOM overall unit operating cost estimate was based on a nominal processing rate of 1,370 t/d.

Table 25.2 LOM Unit Operating Cost Estimate Summary

Description	Personnel	Unit Cost (US$/t treated)
Mining	15*	1.13
Process	39	12.53
G&A	11	1.41
Total Operating Cost	**65**	**15.06**

Note: *Labour requirement for trucking of the tailings and waste was excluded as it will be by a contractor.

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No capital or operating costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

25.6 Economic Analysis

Avino is currently conducting mining activity, including mineral processing, on the Avino Vein. There is no economic analysis performed on this vein.

Avino has not based its production decisions on any FS or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in an FS, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

In 2017, Tetra Tech prepared an economic evaluation ("Technical Report on the Avino Property", dated April 11, 2017) for the oxide tailings retreatment based on a pre-tax financial model. The assessment results are detailed in Section 22.0 and the technical report dated on April 11, 2017.

The economic evaluation for the oxide tailings retreatment was based on a pre-tax financial model. Metal prices used in the base case were:

- gold – US$1,250/oz
- silver – US$18.50/oz.

The pre-tax financial results were:

- 48.4% IRR
- 2.0-year payback period
- US$40.5 million NPV at an 8% discount rate.

Avino commissioned PwC in Mexico to prepare the tax component of the model for the post-tax economic evaluation for the updated PEA with the inclusion of applicable income and mining taxes.

The following post-tax financial results were calculated:

- 32.0% IRR
- 2.6-year payback period
- US$22.2 million NPV at an 8% discount rate.

26.0 RECOMMENDATIONS

26.1 GEOLOGY

The QP's recommendations are itemized in the following subsections. These recommendations are not required for continued mine development on the Property, and therefore, a cost estimate for this work is not provided.

26.1.1 DATABASE MANAGEMENT

Tetra Tech has the following recommendations regarding Avino database management:

The drillhole and channel sampling database for both the Avino and San Gonzalo Veins has been consolidated. The QP recommends that the tailings sampling and QA/QC data be added.

26.1.2 UNDERGROUND SAMPLING

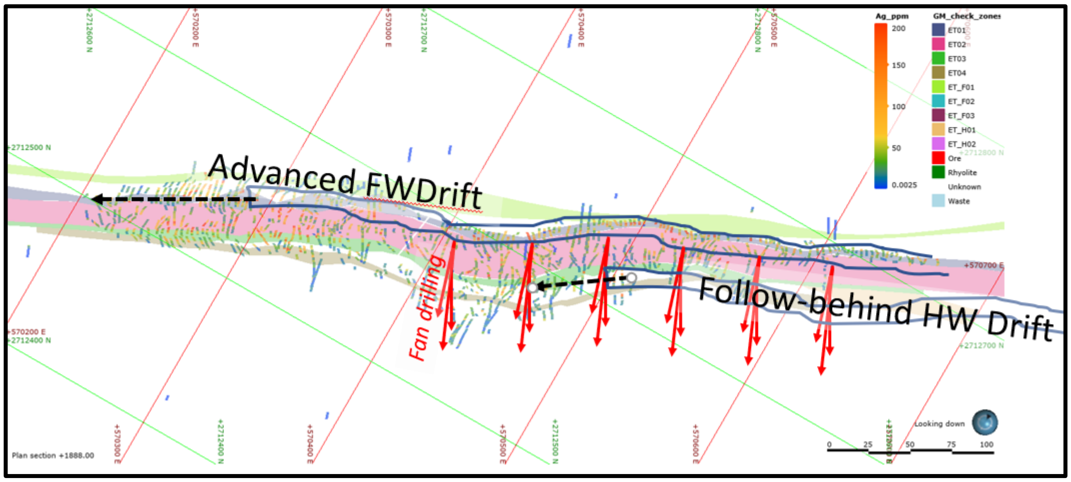
The QP has the following recommendations regarding Avino geology data and interpretation:

The QP recommends that level sampling strategy at the Avino Vein be improved. Currently the development drifts bracketing the individual bodies are manually sampled across the width of the tunnels.

The Avino Vein system is very wide (in excess of 40 m in places) and channel sampling across the full width of the veins takes place during several episodes as development probes across the zone to establish the limit of mineralization. This episodic sampling creates the opportunity for gaps and bias in the sampling. The QP recommends that the drift on the footwall side of the Avino Vein system be driven in advance of the hanging wall drift along the locus of better mineralization (see Section 14.3.1).

Figure 26-1 illustrates the concept in the plan view on elevation 1,888 m. Previous channel sampling is superimposed on the current Avino Vein model, but previous development and level stoping is not shown to prevent confusion. A conceptual advanced drift along the best mineralized portion (footwall) of the vein system is shown, with clusters of fan drilled holes at 40 m intervals shown in plan. Once the limits of mineralization are determined by the fan drilling, a follow-behind hanging wall drift can driven along the predetermined stoping limit.

Figure 26-1 Proposed Drift and Drill Development Concept on 1888 elevation.



Source: Red Pennant (2020)

Advantages are:

- allow fans of short holes to be drilled at intervals (estimated 3 m to 40 m)
- to provide advanced and balanced sample coverage
- optimal positioning of hanging wall drift to preserve the geotechnical integrity of the hanging wall of the vein, and
- allow the possibility of stoping on retreat (with improved safety and more planning flexibility, see Section 26.2.2).

26.1.3 Density Sampling and Analysis

The QP recommends that Avino continues to develop the database for specific gravity data using drill cores. The QP also recommends that grab samples from controlled underground exposures (location, and lithology description) be used to supplement the data. The QP further recommends that some large samples be cut from the faces of the oxide tailings deposit weighed and measured to determine specific gravity for the deposit.

26.1.4 QA/QC Sampling

The QP recommends that standards and blank submissions be included in the master database for the Property to avoid the difficulty of locating such data when it is resides in separate spreadsheet reports.

The QP recommends that QA/QC performance graphs be updated on a monthly basis to allow questionable sample batches to be repeated timeously.

26.1.5 BISMUTH

Bismuth is a significant deleterious penalty element and should be assayed at the same rate as copper (including in channel samples) to provide detailed information for the mine planning at ET/San Luis.

26.1.6 RESOURCE ESTIMATION

An internal capacity to perform mineral resource estimation, using geostatistical methods should be developed. The Surpac™ software should provide the tools to be able to do this in the long term.

26.1.7 EXPLORATION FOR THE WESTERN EXTENSION OF THE AVINO VEIN

Horner (2017), in his recent structural geology report, concludes that the known portion of the Avino Vein system west of San Luis terminates on a post-mineralization fault and recommends that the extension to the system be investigated. The QP supports this investigation.

26.2 MINING

26.2.1 LONG-TERM MINE PLANNING

Tetra Tech recommends that Avino prepare a long-term mine plan based on the resource estimate.

26.3 PROCESS

26.3.1 AVINO VEIN

Avino is currently conducting mining activities on the Avino Vein, ET Mine, including metal recovery using a flotation process. Tetra Tech recommends that Avino further optimize the processing conditions, including metallurgical tests, to improve metallurgical performances for the Avino Vein mill feeds. Further metallurgical test work should be conducted to investigate separating bismuth from copper-gold-silver concentrate. The bismuth removal should reduce the impurity penalty; however, a trade-off study should also be required to assess copper, gold, and silver loss into the bismuth product and how to handle the high bismuth material.

The costs for the metallurgical tests are estimated to be approximately Cdn$80,000.

26.3.2 Oxide and Sulphide Tailings

Further tests are recommended to evaluate the metallurgical performances of the tailings samples, including the sulphide tailings samples. The test work should be conducted on samples that better represent the tailings Mineral Resources. The test work should include:

- head characterization and mineralogical determination
- leaching condition optimization, including cyanide concentration, leaching retention time, agglomeration binding material types and dosages
- determination of the effect of the particle size distribution on metal extraction and agglomeration
- further confirmation of the effect of flotation pre-concentration on improving overall metal recovery
- residual cyanide management tests, including residual cyanide management and valuable metal recoveries from the barren solution
- further evaluations to compare heap leach vs. tank leach should be investigated.

For the sulphide tailings, systematic test work should be conducted to effectively recover silver and gold values from the tailings, including co-processing of the sulphide tailings with the oxide tailings.

The estimated costs for the test work, excluding sampling, is approximately Cdn$150,000.

26.4 Environmental

The cost of permitting has not been considered at this stage of the oxide tailings project. Government agencies should be consulted prior to the permitting process to determine if current permits for the San Gonzalo Mine can been revised. The cost of expropriating agricultural land for the leach pad, and the cost of water, which would have to be redirected to the heap leach project but is currently used for agricultural purposes, have also not been assessed. Once the mine plan, site layout, and tailings management plan are further along and have definitive locations, the cost of these factors should be addressed. The cost for monitoring environmental effects post mine closure needs to be estimated.

A detailed trade-off study should be undertaken to characterize current conditions of the sulphide tailings and to determine whether the re-treatment of this material would contribute to the profitability of the oxide tailings project.

26.5 MINING OF SULPHIDE TAILINGS

Potential for handling sulphide tailings as a mineralized material, rather than waste material, should be investigated based on appropriate metallurgical tests. Further optimization of the mine plan for the oxide tailings should be conducted.

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28.0 CERTIFICATES OF QUALIFIED PERSONS

CERTIFICATE OF QUALIFIED PERSON

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

- I am a Director of Metallurgy with Tetra Tech Inc. with a business address at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, BC, V6C 1N5.
- This certificate applies to the technical report entitled “Avino Silver & Gold Mines Ltd. Resource Estimate Update for the Avino Property, Durango, Mexico”, with an effective date of January 13, 2021 (the “Technical Report”).
- I am a graduate of the University of Tehran (M.A.Sc., Mining Engineering, 1990) and the University of British Columbia (M.A.Sc., Mineral Process Engineering, 2004).
- I am a member in good standing of the Engineers and Geoscientists British Columbia (#30408).
- My relevant experience includes 30 years of experience in mining and mineral processing plant operation, engineering, project studies and management of various types of mineral processing, including hydrometallurgical mineral processing for porphyry mineral deposits.
- I am a “Qualified Person” for the purposes of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) for those sections of the Technical Report that I am responsible for preparing.
- I conducted a personal inspection of the Avino property on March 30, 2011; December 12, 2017; and from August 12 to 14, 2019.
- I am responsible for Sections 1.0, 2.0, 3.0, 15.0, 18.0, 20.0, 21.0, 22.0, 24.0, 25.0, 26.0 and 27.0 (only references from sections for which I am responsible) of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as Independence is defined by Section 1.5 of NI 43-101.
- I have had involvement with the Avino property that is the subject of the Technical Report, in acting as a Qualified Person for the “Amended Mineral Resource Estimate Update for the Avino Property, Durango, Mexico” with an effective date of February 21, 2018 and an amended date of December 19, 2018 (the “Technical Report”).
- I have read NI 43-101 and the sections of the Technical Report that I am responsible for have been prepared in compliance with NI 43-101.
- As of the date of this certificate, to the best of my knowledge, information and belief, the section of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and dated this 13th day of January, 2021

"signed and stamped"

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

CERTIFICATE OF QUALIFIED PERSON

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

- I am a Senior Metallurgist with Tetra Tech Inc. with a business address at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5.
- This certificate applies to the technical report entitled “Avino Silver & Gold Mines Ltd. Resource Estimate Update for the Avino Property, Durango, Mexico”, with an effective date of January 13, 2021 (the “Technical Report”).
- I am a graduate of North-East University, China (B.Eng., 1982), Beijing General Research Institute for Non-ferrous Metals, China (M.Eng., 1988), and Birmingham University, United Kingdom (Ph.D., 2000).
- I am a member in good standing of the Engineers and Geoscientists British Columbia (#30898).
- My relevant experience includes over 34 years involvement in mineral processing for base metal ores, gold and silver ores, and rare metal ores, and mineral processing plant operation and engineering including hydrometallurgical mineral processing for porphyry mineral deposits.
- I am a “Qualified Person” for purposes of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) for those sections of the Technical Report that I am responsible for preparing.
- I have not completed a personal inspection of the Property that is the subject of this Technical Report.
- I am responsible for Sections 1.0, 13.0, 17.0, 19.0, 25.0, 26.0 (for matters related to metallurgy, process, product marketing and process/G&A operating costs) and 27.0 (only references from sections for which I am responsible) of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as Independence is defined by Section 1.5 of NI 43-101.
- I have had involvement with the Avino property that is the subject of the Technical Report, in acting as a Qualified Person for the “Amended Mineral Resource Estimate Update for the Avino Property, Durango, Mexico” with an effective date of February 21, 2018 and an amended date of December 19, 2018 (the “Technical Report”).
- I have read NI 43-101 and the sections of the Technical Report that I am responsible for have been prepared in compliance with NI 43-101.
- As of the date of this certificate, to the best of my knowledge, information and belief, the section of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and dated this 13th day of January, 2021

"signed and stamped"

____

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

CERTIFICATE OF QUALIFIED PERSON

I, Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, do hereby certify:

- I am an independent consultant and director of Red Pennant Communications Corp. a British Columbia Corporation, with a business address at 81-1380 Pinetree Way, Coquitlam, BC, V3E 3S6.
- This certificate applies to the technical report entitled "Avino Silver & Gold Mines Ltd. Resource Estimate Update for the Avino Property, Durango, Mexico", with an effective date of January 13, 2021 (the "Technical Report").
- I am a graduate of the University of Natal, (B.Sc. Hons. Geology, 1978) and the University of the Witwatersrand (M.Sc. Engineering, 2002).
- I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (#41338).
- I am a member in good standing of the South African Council for Natural Scientific Professions (South Africa, 400295/87). My relevant experience is 36 years of experience in operations, mineral project assessment and I have the experience relevant to Mineral Resource estimation of metal deposits. I have estimated Mineral Resources for greenstone-hosted gold, diatreme complex epithermal gold deposits, porphyry copper-gold, volcanogenic massive sulphide deposits and shear zone-hosted deposits. I am a "Qualified Person" for the purposes of National Instrument 43-101 (the "Instrument").
- My recent personal inspection of the Property was from June 12 to 15, 2017 and February 12 to 14, 2020.
- I am responsible for Sections 1.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 14.0, 23.0, 25.0, 26.0 (for matters related to geology and resource estimate) and 27.0 (only references from sections for which I am responsible) of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as Independence is defined by Section 1.5 of NI 43-101.
- I have had involvement with the Avino property that is the subject of the Technical Report, in acting as a Qualified Person for the "Amended Mineral Resource Estimate Update for the Avino Property, Durango, Mexico" with an effective date of February 21, 2018 and an amended date of December 19, 2018 (the "Technical Report").
- I have read NI 43-101 and the sections of the Technical Report that I am responsible for have been prepared in compliance with NI 43-101.
- As of the date of this certificate, to the best of my knowledge, information and belief, the section of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and dated this 13th day of January, 2021

"signed and stamped"

Michael F. O'Brien,
P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM,
FSAIMM
Owner
Red Pennant Geoscience Ltd.

CERTIFICATE OF QUALIFIED PERSON

I, Barnard Foo. M.Eng. MBA, P. Eng., do hereby certify:

- I am a Senior Mining Engineer with Tetra Tech Inc. with a business address at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5.
- This certificate applies to the technical report entitled "Avino Silver & Gold Mines Ltd. Resource Estimate Update for the Avino Property, Durango, Mexico", with an effective date of January 13, 2021 (the "Technical Report").
- I am a graduate of:
    - University of Northern British Columbia, Executive MBA, 2010
    - University of British Columbia, M.Eng., Rock Mechanics, 2007
    - Laurentian University, B.Eng., Mining Engineering, 1998
- I am a registered Professional Engineer in Ontario (membership number 100052925)
- I am familiar with NI 43-101 and by reason of education, experience and professional registration and fulfill the requirements of a Qualified Person as defined in NI 43-101. I have been continuously employed in the mining industry since graduation and my work experience includes over 20 of in underground mine operations, design and evaluations in the engineering consulting sector.
- I am a "Qualified Person" for the purposes of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) for those sections of the Technical Report that I am responsible for preparing.
- I have not visited the site. The mining and relevant sections of this report was prepared from the press release information made available and provided by Avino Silver & Gold Mines Ltd.
- I am responsible for Section 16.0, and summary therefrom in Sections 1.0, 25.0, 26.0, and 27.0 (only references from sections for which I am responsible) of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as Independence is defined by Section 1.5 of NI 43-101.
- I have no prior involvement with the Avino Project that is the subject of the Technical Report.
- I have read the NI 43-101 and the sections of the Technical Report that I am responsible for have been prepared in compliance with the NI 43-101.
- As of the date of this certificate, to the best of my knowledge, information and belief, the section of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and dated this 13th day of January, 2021

"signed and stamped"

Barnard Foo, P.Eng., M.Eng.
Tetra Tech Inc.

APPENDIX A

TITLE OPINION

BUFETE GONZÁLEZ OLGUÍN
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February 11th, 2020

Manning Elliott LLP,
Chartered Accountants
17th floor, 1030 West Georgia Street
Vancouver, BC, V6E 2Y3

Attention: **Jessica Fung**
Email: jfung@manningelliott.com

"Privileged and Confidential"

Dear Sirs/Mesdames:

Re: Avino Mexican Mineral Properties (the "Properties")

Pursuant to the request of Nathan Harte, Chief Financial Officer of **Avino Silver & Gold Mines Ltd.**, and in connection with the preparation and audit of its financial statements for the fiscal period ended December 31, 2019, and with respect to its Mexican subsidiary Compañía Minera Mexicana de Avino, S.A. de C.V. ("**Cia Minera**"), we are providing hereinbelow with our opinion, which is effective at December 31, 2019, regarding title to the Properties held by Cia Minera and other related matters.

1. **Cia Minera.**

1.1 Cia Minera is a *sociedad anónima de capital variable* (limited liability stock company) organized under the laws of the United Mexican States ("**Mexico**").

1.2 Cia Minera: (a) has a corporate purpose that provides, among other things, for the exploration or exploitation of minerals or substances subject to the application of the Mining Law; (b) has its legal domicile within Mexico[1]; and c) has participation by foreign investors that complies with the provisions of the Foreign Investment Law[2].

[1] Its corporate domicile is in the city of Durango, State of Durango, Mexico.
[2] Requirements set forth by Article 11 of the Mining Law in order to be a holder of mineral properties.

1.3 Cia Minera has been duly recorded in the Public Registry of Commerce for Durango, State of Durango, Mexico[3], under Electronic Folio 14221*1; and under number 93 at pages 116 front to 117 back of volume XVII of the General Companies Book of the Public Registry of Mining ("**PRM**") dated July 29, 1969.

2 Properties.

The information provided with respect to the Properties is based on research for that purpose done on 7 February 2020 at the General Mining Bureau ("**GMB**") within the Ministry of Economy at Mexico City.

Cia Minera is duly recorded in the PRM within the GMB as legal holder of the following Properties:

2.1 "Ana Maria": Title Certificate No. 215702; Area: 733.3756 hectares; Location: Municipalities of Gomez Palacio and Lerdo, State of Durango, Mexico; Effective term: From March 5, 2002 to August 2, 2052[4].

2.2 "Ana Maria 2": Title Certificate No. 211271; Area: 8.3356 hectares**;** Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From April 28, 2000 to April 27, 2050.

2.3 "Ana Maria 3": Title Certificate No. 211741; Area: 87.6644 hectares; Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From June 30, 2000 to June 29, 2050.

2.4 "Ana Maria 4": Title Certificate No. 212385; Area: 315.1465 hectares**;** Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From October 04, 2000 to October 03, 2050.

2.5 "Ana Maria 6": Title Certificate No. 213291; Area: 28.0000 hectares; Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From April 20, 2001 to April 19, 2051.

2.6 "Ana Maria 5": Title Certificate No. 213811; Area: 90.0000 hectares; Location: Municipality of Lerdo, State of Durango, Mexico; Effective term: From July 3, 2001 to July 2, 2051.

[3] Corporate domicile of Cia Minera.
[4] It should be March 4, 2052

2.7 "Ana Maria 5 Fracc.": Title Certificate No. 213812; Area: 28.7016 hectares; Location: Municipality of Lerdo, State of Durango, Mexico; Effective term: From July 3, 2001 to July 2, 2051.

2.8 "Ana Maria Reduc. Frac. 1": Title Certificate No. 215703; Area: 293.9276 hectares; Location: Municipalities of Gomez Palacio and Lerdo, State of Durango, Mexico; Effective term: From March 5, 2002 to March 4, 2052.

2.9 "Ana Maria Reduc. Fracc. 2": Title Certificate No. 215704; Area: 963.8957 hectares; Location: Municipalities of Gomez Palacio and Lerdo, State of Durango, Mexico; Effective term: From March 5, 2002 to August 2, 2049.

2.10 "Ampl. de la Potosina": Title Certificate No.185326; Area: 84.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 14, 1989 to December 13, 2039.

2.11 "Ampl. a San Gonzalo": Title Certificate No. 191837; Area: **5.**8495 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 19, 1991 to December 18, 2041.

2.12 "Ampl. La Malinche": Title Certificate No. 204177; Area: 6.0103 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 18, 1996 to December 17, 2046.

2.13 "El Potrerito": Title Certificate No.185328; Area: 9.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 14, 1989 to December 13, 2039.

2.14 "La Malinche": Title Certificate No. 203256; Area: 9.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From June 28, 1996 to June 27, 2046.

2.15 "Potosina": Title Certificate No. 185336; Area: 16.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 14, 1989 to December 13, 2039.

2.16 "San Gonzalo": Title Certificate No. 190748; Area: 12.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From April 29, 1991 to April 28, 2041.

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2.17 "Yolanda": Title Certificate No.191083; Area: 43.4577 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From April 29, 1991 to April 28, 2041.

2.18 "San Jose": Title Certificate No. 164985; Area: 8.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From August 13, 1979 to August 12, 2029.

2.19 "El Trompo": Title Certificate No. 184397; Area: 81.5466 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From October 13, 1989 to October 12, 2039.

2.20 "Gran Lucero": Title Certificate No.189477; Area: 161.4684 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 5, 1990 to December 4, 2040.

2.21 "Purisima Chica": Title Certificate No. 155597; Area: 136.7076 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From September 30, 1971 to September 29, 2021.

2.22 "San Carlos": Title Certificate No. 117411; Area: 4.4505 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From February 5, 1961 to December 16, 2061.[5]

2.23 "San Pedro y San Pablo"; Title Certificate No. 139615; Area: 12.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From June 22, 1959 to June 21, 2061.[6]

2.24 "Aguila Mexicana": Title Certificate No. 215733; Area: 36.7681 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From March 12, 2002 to June 29, 2044.

2.25 "Aranjuez"; Title Certificate No. 214612; Area: 96.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From October 2, 2001 to October 1, 2051.

2.26 "Avino Grande IX": Title Certificate No. 216005; Area: 19.5576 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico. Effective term: From April 2, 2002 to April 1, 2052.

[5] A 50-year extension term was granted by the GMB in 2011.
[6] A 50-year extension term was granted by the GMB counted as of 22 June 2011.

2.27 <u>"Avino Grande VIII":</u> Title Certificate No. 215224; Area: 22.8816 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From February 14, 2002 to February 13, 2052.

2.28 <u>"El Caracol":</u> Title Certificate No. 215732; Area: 102.3821 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From March 12, 2002 to April 28, 2044.

2.29 <u>"El Fuerte":</u> Title Certificate No. 216103; Area: 100.3274 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From April 9, 2002 to December 14, 2048.

2.30 <u>"Fernando":</u> Title Certificate No. 205401; Area: 72.1287 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From August 29, 1997 to August 28, 2047.

2.31 <u>"La Cruz":</u> Title Certificate No. 215672; Area: 16.0000 hectares; Location: Municipality of Durango, State of Durango, Mexico; Effective term: From March 5, 2002 to March 4, 2052.

2.32 <u>"Estela":</u> Title Certificate No. 179658; Area: 14.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 11, 1986 to December 10, 2036.

2.33 <u>"Los Angeles":</u> Title Certificate No. 154410; Area: 23.7130 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From March 25, 1971 to March 24, 2021.

2.34 <u>"Negro Jose":</u> Title Certificate No. 218252; Area: 58.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From October 17, 2002 to October 16, 2052.

2.35 <u>"San Martin de Porres":</u> Title Certificate No. 222909; Area: 30.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From September 15, 2004 to September 14, 2054.

2.36 <u>"Santa Ana":</u> Title Certificate No. 195678; Area: 136.1823 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From September 14, 1992 to September 13, 2042.

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2.37 <u>"El Laberinto":</u> Title Certificate No. 218799; Area: 91.7097 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From January 17, 2003 to January 16, 2053.

2.38 <u>"El Hueco":</u> Title Certificate No. 224519; Area: 602.8965 hectares; Location: Municipality of Santiago Papasquiaro, State of Durango, Mexico; Effective term: From May 17, 2005 to May 16, 2055.

2.39 <u>"El Hueco 2":</u> Title Certificate No. 210421; Area: 595.1978 hectares; Location: Municipality of Santiago Papasquiaro, State of Durango, Mexico; Effective term: From October 8, 1999 to October 7, 2049.

2.40 <u>"El Hueco 2 Frac.":</u> Title Certificate No. 210422; Area: 95.2385 hectares; Location: Municipality of Santiago Papasquiaro, State of Durango, Mexico; Effective term: From October 8, 1999 to October 7, 2049.

2.41 <u>"El Hueco 3":</u> Title Certificate No. 213004; Area: 15.0000 hectares; Location: Municipality of El Oro, State of Durango, Mexico; Effective term: From February 20, 2001 to February 19, 2051.

2.42 <u>"El Hueco 4":</u> Title Certificate No. 213021; Area: 5.0000 hectares; Location: Municipality of El Oro, State of Durango, Mexico; Effective term: From March 2, 2001 to March 1, 2051

In accordance with the PRM records all the Properties are in force, and except for the notation related to the "Purisima Chica", "San Jose" and "San Carlos" Properties[7], they are free of liens and encumbrances.

3. <u>Mining Obligations.</u>

The obligations with which holders of mineral properties must comply in order to maintain their properties in full force and effect, pursuant to the mining legislation and the Federal Fees Law of Mexico are as follows:

3.1 <u>Work Assessment Report</u>. During the month of May of each year, they must file with the GMB, the work assessment report made on each property or group of properties for the immediately preceding calendar year. The Regulations to

[7] The PRM has a notation on an Exploration Agreement entered with the Mineral Resources Council (presently Mexican Geologic Survey) registered on August 14, 1980. The PRM has no evidence of termination of this Agreement, because its file was lost as a consequence of the 1985 Mexico City earthquake. Proceedings for cancelation of said notation are still in process.

the Mining Law establish the tables containing the minimum investment amounts that must be made on a property. The amount will be updated annually in accordance with the variation to the Consumer Price Index.

3.2 Production Report. During the first 21 working days of each year, they must file before the GBM, using the authorized forms and applications, the ore production reports including accurate information on the minerals and production obtained on each concession or group of concessions for the immediately preceding calendar year for statistical purposes.

3.3 Technical Report. They must file the technical information, using the authorized forms and applications, including information in respect of the works performed in the property during its concession validity. This obligation starts on the 6^{th} year of its concession validity.

3.4 Mining Duties. During the months of January and July of each year, they must pay in advance the surface mining taxes (technically called "mining duties"), which are based on the surface of the property and the number of years that have elapsed since its certificate is being issued.

3.5 Other Mining Duties. They must pay annually: i) the special mining duty, applying a 7.5% rate on certain income derived from the alienation or sale of ores; and ii) the extraordinary mining duty, applying a 0.5% rate to income derived from the alienation of gold, silver and platinum.[8]

4. Opinion.

Based on that stated in paragraphs 1 and 2 above, we are of the opinion that:

4.1 Cia Minera**,** having been validly incorporated pursuant to the commercial and mining legislation of Mexico, and since it: (a) has a corporate purpose that provides, among other things, the exploration or exploitation of minerals or substances subject to the application of the Mining Law; (b) has its legal domicile within Mexico; and (c) has participation by foreign investors that complies with the provisions of the Foreign Investment Law, it is our opinion that Cia Minera is legally qualified to hold the Properties.[9]

4.2 Representatives of Cia Minera have provided us with copy of the exploitation work assessment reports duly filed in May 2020 with respect to the Properties.

[8] Articles 268 and 270 of the Federal Fees Law
[9] Pursuant to Article 11 of the Mining Law

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This evidences fulfilment of the obligation to which paragraph 3.1 above refers.

4.3 Based on our research done at the GBM, and in accordance with written confirmation provided to us by representatives of Cia Minera, it is evidenced that the surface mining taxes pertaining to the Properties were paid covering the period ending 31 December 2019. This confirms fulfilment of the obligation to which paragraph 3.4 above refers.

4.4 No opinion is given regarding the obligation to pay the taxes or mining duties referred to in paragraph 3.5 above, due to the fact that in our review we did not have access to Cia Minera's mineral sales information.

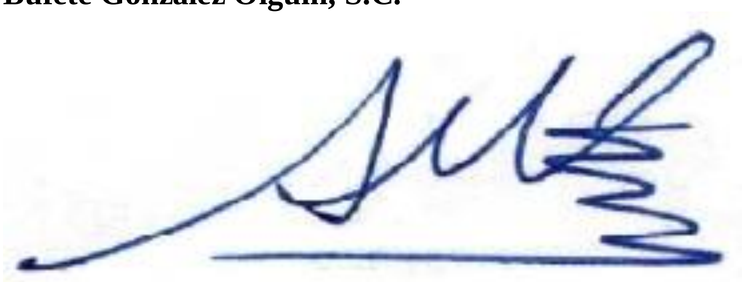
4.5 Based on our research done at the GBM, it is our opinion that the Properties are in good standing, free of any liens or encumbrances[10], and currently valid for purposes of exploitation of the properties covered by their certificates issued by the GBM, pursuant to the Mexican mining legislation.

This opinion shall be governed by and construed in accordance with the federal laws of Mexico, and is solely for the benefit of the addressee, and no other entity or person shall be entitled to rely on its contents without the express written consent of Avino Silver & Gold Mines Ltd., and/or Bufete Gonzalez Olguin, S.C.

Should you have any questions with respect to this opinion, please do not hesitate to call on us.

Yours truly,

Bufete Gonzalez Olguin, S.C.



By: Juan Manuel Gonzalez Olguin

[10] Except for the non canceled notation mentioned in foot note 4 above.

APPENDIX B

SUMMARY OF DIAMOND DRILLHOLES

Summary of Diamond Drillholes

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
AM_18_02	42.2	-15.4	572343.1	2713764.2	2094.5	290.0	Aguila_Mexicana_Vein
AM_18_03	62.0	-15.5	572343.6	2713762.5	2094.7	295.2	Aguila_Mexicana_Vein
AM_18_01	61.5	-29.7	572342.4	2713762.1	2094.3	363.0	Aguila_Mexicana_Vein
AM_11_02	60.0	-60.0	571896.0	2715347.3	2240.4	100.3	Aguila_Mexicana_Vein
AM_11_01	60.0	-55.0	571978.4	2715225.6	2230.8	138.1	Aguila_Mexicana_Vein
AM_08_07	262.0	-49.0	572641.2	2713988.2	2253.0	220.0	Aguila_Mexicana_Vein
AM_08_05	259.0	-63.0	572601.8	2713922.1	2268.3	150.5	Aguila_Mexicana_Vein
AM_08_04	261.0	-61.0	572665.3	2713942.9	2259.1	248.7	Aguila_Mexicana_Vein
AM_08_03	253.0	-49.0	572548.8	2714177.2	2243.2	232.6	Aguila_Mexicana_Vein
AM_08_02	253.0	-53.0	572662.8	2713945.5	2259.0	211.0	Aguila_Mexicana_Vein
AM_08_01	252.0	-53.0	572799.3	2713733.6	2265.3	202.1	Aguila_Mexicana_Vein
AM_08_06	258.0	-53.0	572685.5	2713901.1	2262.8	215.3	Aguila_Mexicana_Vein
AM_07_01	212.0	-57.0	572780.9	2713596.0	2294.7	201.9	Aguila_Mexicana_Vein
ET_17_10	339.4	-23.4	570348.7	2712649.1	2274.2	129.3	Avino_Vein
ET_16_10	9.0	-20.9	570195.0	2712466.5	2224.4	254.2	Avino_Vein
ET_16_11	2.1	-44.2	570178.8	2712457.8	2224.1	265.1	Avino_Vein
ET_16_12	358.9	-62.8	570148.0	2712464.6	2225.7	266.6	Avino_Vein
ET_17_01	360.0	-62.3	569935.5	2712575.7	2263.3	103.8	Avino_Vein
ET_17_02	357.9	-55.4	569881.5	2712567.9	2242.5	100.8	Avino_Vein
ET_17_04	250.9	-89.5	569860.9	2712585.2	2243.8	182.7	Avino_Vein
ET_17_06	338.4	-48.0	570301.2	2712634.9	2271.0	144.5	Avino_Vein
ET_17_08	336.4	-53.8	570263.7	2712631.1	2268.8	119.3	Avino_Vein
ET_16_09	337.1	-49.3	570411.2	2712570.0	2246.8	237.5	Avino_Vein
ET_12_09	332.0	-71.0	570646.0	2712555.1	2222.4	395.4	Avino_Vein
ET_17_07	337.3	-28.8	570300.9	2712634.9	2271.3	121.5	Avino_Vein

table continues…

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
ET_16_08	336.8	-46.8	570399.2	2712605.9	2261.1	194.3	Avino_Vein
ET_16_06	5.5	-74.4	570221.5	2712667.5	2290.7	118.0	Avino_Vein
ET_16_05	338.6	-42.3	570295.1	2712566.1	2250.5	196.0	Avino_Vein
ET_16_04	340.2	-44.6	570274.7	2712634.1	2269.7	126.6	Avino_Vein
ET_16_03	338.3	-46.7	570325.1	2712641.2	2273.1	161.8	Avino_Vein
ET_17_16	0.6	-20.5	570196.9	2712460.1	2223.3	247.6	Avino_Vein
ET_16_01	337.9	-20.8	570394.7	2712659.8	2277.6	151.3	Avino_Vein
ET_17_24	337.3	-44.6	570964.2	2712882.0	2229.5	208.2	Avino_Vein
ET_12_08	336.0	-72.0	570678.3	2712593.8	2226.8	384.4	Avino_Vein
ET_12_07	336.0	-61.0	570678.3	2712593.8	2226.8	327.6	Avino_Vein
ET_12_06	334.0	-69.0	570589.4	2712523.1	2219.5	396.1	Avino_Vein
ET_16_02	335.8	-43.6	570395.5	2712657.8	2277.3	152.4	Avino_Vein
ET_17_28	336.1	-46.0	570835.6	2712811.1	2261.8	274.4	Avino_Vein
SELCO_2_1800	342.3	-67.6	570434.8	2712337.4	2194.5	575.2	Avino_Vein
SELCO_3	339.3	-53.0	570356.6	2712450.9	2217.3	325.7	Avino_Vein
SELCO_3_1800	351.0	-71.0	570321.2	2712317.2	2190.0	497.5	Avino_Vein
SELCO_4A	350.0	-60.0	570070.0	2712396.0	2214.5	251.0	Avino_Vein
ET_18_07	155.1	-33.3	570489.1	2712962.8	2337.4	113.9	Avino_Vein
ET_18_05	153.5	-33.7	570445.8	2712940.4	2335.9	105.6	Avino_Vein
ET_18_04	155.5	-44.9	570403.4	2712912.4	2336.2	120.8	Avino_Vein
ET_18_03	154.9	-29.4	570403.4	2712912.4	2336.2	118.6	Avino_Vein
ET_18_02	340.0	-38.0	570841.9	2712720.6	2231.8	318.1	Avino_Vein
ET_18_01	337.0	-55.2	571011.1	2712974.1	2231.2	102.5	Avino_Vein
ET_17_22	357.0	-8.5	570235.9	2712454.1	2220.4	234.9	Avino_Vein
ET_17_29	339.6	-39.1	570840.8	2712851.8	2263.7	280.8	Avino_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
ET_17_17	358.4	-52.9	570196.9	2712460.0	2222.7	261.6	Avino_Vein
ET_17_27	340.6	-46.1	570925.7	2712853.7	2229.5	223.3	Avino_Vein
ET_17_26	337.5	-38.1	570887.7	2712933.8	2264.9	160.0	Avino_Vein
ET_17_25	338.8	-38.4	570964.8	2712961.5	2231.8	140.8	Avino_Vein
ET_17_09	337.4	-31.4	570262.9	2712632.1	2269.0	101.5	Avino_Vein
ET_17_23	344.9	-49.5	570998.6	2712915.3	2224.9	190.6	Avino_Vein
ET_12_05	336.0	-62.0	570566.1	2712507.6	2217.5	369.2	Avino_Vein
ET_17_21	335.6	-59.4	570357.5	2712551.5	2243.2	248.4	Avino_Vein
ET_17_20	336.0	-50.8	570368.8	2712553.6	2242.7	220.3	Avino_Vein
ET_17_19	356.1	-52.1	570154.6	2712467.0	2225.6	225.7	Avino_Vein
ET_17_18	354.9	-37.7	570236.2	2712452.0	2218.9	249.5	Avino_Vein
ET_17_30	337.2	-35.0	570787.4	2712703.2	2237.8	289.9	Avino_Vein
ET_06_02	340.0	-50.0	570336.9	2712308.8	2190.4	416.7	Avino_Vein
SJ_08_02	4.0	-54.0	572830.1	2712668.7	2264.8	283.5	Avino_Vein
SJ_08_04	27.0	-45.0	572833.3	2712809.8	2311.0	193.2	Avino_Vein
ET_12_04	339.0	-64.0	570544.1	2712496.8	2216.2	373.6	Avino_Vein
SJ_08_06	8.0	-81.0	571926.8	2712680.7	2215.6	431.3	Avino_Vein
ET_07_05	333.0	-65.5	570439.8	2712510.2	2226.1	351.5	Avino_Vein
ET_07_04	331.0	-56.0	570439.5	2712510.8	2226.0	318.7	Avino_Vein
ET_07_03	336.0	-71.0	570344.4	2712498.4	2226.0	349.5	Avino_Vein
ET_07_02	351.0	-76.0	570206.1	2712467.5	2223.7	311.9	Avino_Vein
ET_07_01	1.0	-69.0	570176.3	2712453.4	2222.4	298.6	Avino_Vein
CH_06_03	338.3	-51.3	571013.1	2712796.0	2207.8	454.3	Avino_Vein
ET_06_03	339.0	-48.0	570456.8	2712361.2	2194.1	421.2	Avino_Vein
SJ_08_03	4.0	-75.0	572914.7	2712669.1	2246.0	424.4	Avino_Vein
ET_06_01	337.0	-55.0	570270.8	2712261.8	2186.7	431.2	Avino_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
DDH_8_2200	0.0	-45.0	569961.0	2712489.0	2232.5	162.0	Avino_Vein
DDH_4_1950	339.6	-70.0	570302.0	2712480.0	2220.5	331.7	Avino_Vein
DDH_3_2200	0.0	-50.0	570286.0	2712594.0	2258.5	175.1	Avino_Vein
SL_06_01	0.0	-90.0	569956.2	2712528.7	2241.7	219.2	Avino_Vein
DDH_2_2200	0.0	-50.0	570155.0	2712550.0	2252.5	178.8	Avino_Vein
DDH_2_2075	340.0	-45.0	570296.0	2712488.0	2221.5	287.1	Avino_Vein
DDH_1_2200	358.6	-45.0	570025.0	2712487.0	2232.5	151.1	Avino_Vein
DDH_1_1950	340.0	-45.0	570481.0	2712348.0	2193.5	433.1	Avino_Vein
ET_17_11	335.8	-23.9	570435.6	2712672.4	2279.7	143.4	Avino_Vein
ET_06_04	340.0	-50.0	570500.6	2712467.7	2214.8	444.1	Avino_Vein
ET_08_02	330.0	-55.0	570341.0	2712549.0	2243.5	234.5	Avino_Vein
ET_12_03	336.0	-59.0	570507.0	2712471.4	2214.2	367.8	Avino_Vein
ET_12_02	335.0	-53.0	570506.7	2712472.0	2214.2	360.9	Avino_Vein
ET_12_01	336.0	-63.0	570354.4	2712501.3	2226.3	288.2	Avino_Vein
ET_08_08	336.0	-45.0	570905.6	2712766.2	2226.7	269.1	Avino_Vein
ET_08_07	336.0	-60.0	570746.9	2712655.8	2234.0	160.4	Avino_Vein
ET_08_06	336.0	-60.0	570675.9	2712654.4	2242.9	292.5	Avino_Vein
ET_08_05	336.0	-67.0	570657.5	2712628.7	2245.0	371.1	Avino_Vein
SJ_08_05	4.0	-55.0	572580.1	2712521.0	2243.3	492.5	Avino_Vein
ET_08_03	330.0	-65.0	570341.2	2712548.7	2243.5	265.1	Avino_Vein
SJ_08_01	9.0	-50.0	572581.9	2712672.3	2282.5	326.8	Avino_Vein
ET_08_01	329.0	-45.0	570806.6	2712711.8	2236.0	221.5	Avino_Vein
SJ_06_02	0.0	-60.0	572333.8	2712694.3	2273.6	373.7	Avino_Vein
BDVD1	37.6	-55.0	570374.0	2712575.0	2248.5	100.1	Avino_Vein
ET_08_04	336.0	-65.0	570587.6	2712568.1	2230.5	358.7	Avino_Vein
SJ_07_01	232.0	-50.0	572984.0	2713036.3	2281.3	197.3	Avino_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
ET_07_12	337.0	-48.0	570735.4	2712653.7	2234.3	284.7	Avino_Vein
SJ_06_01	0.0	-60.0	572085.9	2712721.1	2240.4	320.6	Avino_Vein
ET_07_06	336.0	-55.0	570519.6	2712523.8	2224.8	320.1	Avino_Vein
ET_07_07	330.0	-56.5	570584.7	2712568.6	2230.5	304.9	Avino_Vein
ET_07_08	346.0	-69.0	570584.2	2712568.5	2230.5	399.7	Avino_Vein
ET_07_09	336.0	-62.0	570629.4	2712603.6	2235.4	328.6	Avino_Vein
ET_07_10	338.0	-62.0	570645.4	2712649.7	2245.0	308.7	Avino_Vein
ET_07_11	337.0	-69.0	570682.4	2712653.9	2241.0	329.8	Avino_Vein
CHI_07_01	17.9	-43.8	572557.2	2713445.3	2340.1	305.9	Chihuahua_Vein
GAP_07_02	9.0	-46.0	571731.8	2712771.7	2191.0	212.9	GAP_Zone
GAP_07_03	22.0	-45.0	571448.6	2712887.5	2204.2	116.3	GAP_Zone
GAP_07_01	351.0	-45.0	571731.8	2712771.7	2191.0	328.7	GAP_Zone
GFA_07_01	181.0	-60.0	572164.8	2714398.2	2290.0	360.8	Geophysical_Anomaly
GL_11_04	216.0	-42.0	569442.1	2714573.9	2193.5	99.3	Gran_Lucero_Vein
GL_11_03	221.0	-44.0	569449.8	2714616.4	2199.0	141.3	Gran_Lucero_Vein
GL_11_01	222.0	-48.0	569770.4	2714791.7	2193.2	138.2	Gran_Lucero_Vein
GL_11_02	53.0	-45.0	569532.7	2714668.1	2208.1	115.2	Gran_Lucero_Vein
GL_11_05	41.0	-44.0	569518.2	2714514.4	2186.9	125.2	Gran_Lucero_Vein
GPE_18_02	177.2	-43.4	571503.9	2713558.0	2311.3	134.1	Guadalupe_Vein
GPE_17_02	208.1	-38.3	571488.5	2713624.4	2290.8	179.7	Guadalupe_Vein
GPE_17_04	199.0	-32.4	571553.5	2713639.0	2292.2	193.2	Guadalupe_Vein
GPE_17_05	180.6	-56.0	571553.7	2713522.2	2326.1	110.4	Guadalupe_Vein
GPE_17_06	178.9	-48.3	571708.3	2713530.9	2340.8	180.8	Guadalupe_Vein
GPE_17_07	1.2	-74.8	570884.5	2713640.5	2245.1	300.7	Guadalupe_Vein
GPE_17_09	209.7	-47.7	571367.8	2713625.3	2308.8	131.2	Guadalupe_Vein
GPE_17_01	208.7	-50.5	571382.2	2713655.2	2298.5	179.7	Guadalupe_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
GPE_18_01	208.5	-43.5	571349.4	2713700.1	2285.9	179.8	Guadalupe_Vein
GPE_17_08	209.8	-52.0	571430.8	2713640.0	2294.1	185.2	Guadalupe_Vein
GPE_18_04	179.3	-48.3	571603.8	2713521.3	2332.2	118.9	Guadalupe_Vein
GPE_18_05	169.1	-38.5	571538.1	2713586.2	2307.4	158.2	Guadalupe_Vein
GPE_18_06	208.8	-45.4	571366.8	2713800.7	2242.4	290.5	Guadalupe_Vein
GPE_18_07	209.2	-47.9	571253.2	2713776.7	2247.6	218.8	Guadalupe_Vein
GPE_18_08	178.8	-44.9	571599.8	2713695.4	2291.8	290.6	Guadalupe_Vein
GPE_07_01	21.0	-47.0	571386.1	2713352.5	2271.1	209.4	Guadalupe_Vein
GPE_11_14	334.0	-76.0	570836.8	2713681.2	2241.2	131.8	Guadalupe_Vein
GPE_17_10	205.4	-49.7	571400.8	2713687.7	2285.2	240.3	Guadalupe_Vein
GPE_11_24	325.0	-71.0	570877.6	2713635.4	2245.1	223.7	Guadalupe_Vein
GPE_11_07	209.0	-58.0	571449.6	2713549.1	2316.9	115.8	Guadalupe_Vein
GPE_11_09	5.0	-42.0	570725.8	2713640.9	2216.5	110.7	Guadalupe_Vein
GPE_11_10	329.0	-42.0	570723.1	2713639.0	2216.5	119.7	Guadalupe_Vein
GPE_11_11	28.0	-44.0	570727.3	2713639.9	2216.5	122.9	Guadalupe_Vein
GPE_11_01	204.0	-45.0	571515.3	2713518.2	2323.0	102.5	Guadalupe_Vein
GPE_11_13	331.0	-55.0	570836.0	2713682.4	2241.5	113.4	Guadalupe_Vein
GPE_11_02	206.0	-43.0	571450.4	2713549.0	2316.9	121.7	Guadalupe_Vein
GPE_11_15	18.0	-61.0	570838.4	2713682.8	2241.5	113.0	Guadalupe_Vein
GPE_11_16	22.0	-71.0	570838.3	2713682.3	2241.5	148.5	Guadalupe_Vein
GPE_11_18	345.0	-44.0	570932.5	2713682.6	2238.5	104.2	Guadalupe_Vein
GPE_11_19	348.0	-70.0	570932.7	2713681.9	2238.6	119.2	Guadalupe_Vein
GPE_11_20	360.0	-82.0	570932.9	2713681.3	2238.6	156.6	Guadalupe_Vein
GPE_11_21	32.0	-53.0	570936.9	2713682.9	2238.3	122.0	Guadalupe_Vein
GPE_11_22	30.0	-53.0	570995.6	2713674.9	2235.3	110.7	Guadalupe_Vein
GPE_11_23	320.0	-62.0	570877.6	2713635.8	2245.1	183.3	Guadalupe_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
GPE_11_12	3.0	-61.0	570726.1	2713638.4	2216.6	125.3	Guadalupe_Vein
LBL_08_02	11.0	-45.0	572217.1	2713341.0	2254.8	111.9	La_Blanca_Vein
LBL_08_01	237.0	-63.0	572381.9	2713454.2	2308.7	115.5	La_Blanca_Vein
BL_16_01	214.6	-0.5	572271.7	2713789.2	2139.5	114.7	La_Blanca_Vein
LE_06_01	220.0	-45.0	572658.0	2713317.2	2347.3	200.6	La_Estela_Vein
LE_06_02	215.0	-45.0	572624.7	2713341.8	2345.5	236.3	La_Estela_Vein
LE_06_03	185.0	-45.0	572659.3	2713318.2	2347.3	251.9	La_Estela_Vein
LE_16_01	213.0	-37.9	572722.6	2713286.4	2350.3	206.4	La_Estela_Vein
LE_16_02	201.2	-51.9	572723.3	2713286.9	2350.0	241.5	La_Estela_Vein
LE_16_03	221.6	-35.5	572706.9	2713296.7	2348.5	210.6	La_Estela_Vein
LE_16_04	235.4	-31.7	572706.5	2713296.7	2348.5	242.5	La_Estela_Vein
LE_16_05	238.9	-54.3	572707.5	2713297.5	2348.5	363.3	La_Estela_Vein
LE_16_06A	207.2	-13.1	572775.4	2713239.3	2355.8	205.8	La_Estela_Vein
LP_11_09	102.0	-54.0	570852.8	2718123.5	2221.0	141.9	La_Potosina_Vein
LP_11_01	130.0	-49.0	570924.0	2718247.1	2217.1	112.0	La_Potosina_Vein
LP_11_02	167.0	-50.0	570924.6	2718246.2	2217.3	155.5	La_Potosina_Vein
LP_11_04	184.0	-51.0	570858.6	2718200.9	2212.9	154.0	La_Potosina_Vein
LP_11_05	87.0	-50.0	570831.8	2718130.7	2220.4	130.2	La_Potosina_Vein
LP_11_06	86.0	-65.0	570831.1	2718130.7	2220.4	163.0	La_Potosina_Vein
LP_11_07	83.0	-48.0	570822.3	2718165.7	2213.8	156.5	La_Potosina_Vein
LP_11_03	142.0	-51.0	570861.0	2718203.9	2213.7	160.8	La_Potosina_Vein
LA_07_04	233.0	-44.0	572226.3	2713915.8	2323.8	115.3	Los_Angeles_Vein
LA_07_01	40.0	-44.0	571944.5	2713726.5	2332.7	358.9	Los_Angeles_Vein
LA_07_03	222.0	-70.0	572226.8	2713916.6	2323.6	140.4	Los_Angeles_Vein
LA_07_05	205.0	-45.0	572080.2	2713971.3	2356.1	149.8	Los_Angeles_Vein
LA_07_02	223.0	-42.0	572226.2	2713915.9	2323.8	185.3	Los_Angeles_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
ME_08_02	190.0	-60.0	570935.1	2714495.3	2246.1	177.0	Mercedes_Area
ME_11_02	23.0	-53.0	570596.7	2714921.8	2193.5	229.5	Mercedes_Area
ME_08_04	35.0	-50.0	570680.4	2714865.5	2217.7	201.9	Mercedes_Area
ME_08_03	190.0	-60.0	571054.1	2714318.4	2244.8	166.5	Mercedes_Area
ME_08_01	220.0	-50.0	571636.4	2714701.2	2227.8	178.3	Mercedes_Area
ME_11_01	179.0	-43.0	570646.7	2714858.8	2214.9	129.9	Mercedes_Area
NS_07_01	333.0	-47.0	570612.5	2715290.3	2224.7	167.1	Nuestra_Senora_Vein
NS_07_02	331.0	-61.0	570612.7	2715289.8	2224.7	134.1	Nuestra_Senora_Vein
NS_07_03	6.0	-46.0	570613.2	2715290.7	2224.8	121.4	Nuestra_Senora_Vein
NS_07_05	202.0	-47.0	570605.8	2715506.4	2217.3	124.9	Nuestra_Senora_Vein
NS_07_04	166.0	-46.0	570606.2	2715504.7	2217.3	101.6	Nuestra_Senora_Vein
SG_14_15	210.0	-70.8	572293.7	2713911.6	2300.0	257.4	San_Gonzalo_Vein
SG_14_14	208.8	-31.6	572293.9	2713911.9	2300.1	192.2	San_Gonzalo_Vein
SG_14_13	207.6	-63.4	571898.5	2714155.7	2043.4	213.4	San_Gonzalo_Vein
SG_14_11	36.7	-1.0	571864.7	2714158.7	2087.5	224.2	San_Gonzalo_Vein
SG_14_12	287.0	-52.3	571895.9	2714156.6	2043.5	185.0	San_Gonzalo_Vein
SG_15_06	241.8	-73.1	571876.0	2714129.0	2043.2	106.4	San_Gonzalo_Vein
SG_15_09	215.0	-36.0	572255.2	2713894.3	2137.6	99.6	San_Gonzalo_Vein
SG_15_11	204.9	-71.5	571672.2	2714298.2	2291.6	141.2	San_Gonzalo_Vein
SG_15_14	215.1	-59.7	571652.0	2714345.4	2280.3	145.8	San_Gonzalo_Vein
SG_15_15	213.0	-76.1	571652.3	2714346.1	2280.3	195.7	San_Gonzalo_Vein
SG_14_10	212.9	-49.6	572293.3	2713910.8	2300.1	235.3	San_Gonzalo_Vein
SG_15_12	201.4	-83.3	571672.3	2714298.3	2291.3	200.8	San_Gonzalo_Vein
SG_14_09	209.2	-67.4	572285.4	2714061.1	2297.4	401.8	San_Gonzalo_Vein
SG_14_08	210.6	-57.0	572285.3	2714060.9	2297.3	336.0	San_Gonzalo_Vein
SG_14_07	210.9	-26.4	572284.3	2714059.1	2297.4	248.3	San_Gonzalo_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
SG_14_06	212.3	-78.3	572157.7	2714043.6	2330.8	411.0	San_Gonzalo_Vein
SG_14_05	223.9	-71.5	572157.1	2714043.7	2330.3	346.8	San_Gonzalo_Vein
SG_14_04	198.8	-69.7	571688.3	2714269.7	2295.9	120.0	San_Gonzalo_Vein
SG_14_02	258.9	-56.0	571858.0	2714155.1	2086.0	120.1	San_Gonzalo_Vein
SG_15_16	89.0	0.0	572287.8	2713888.1	2138.1	100.8	San_Gonzalo_Vein
SG_11_17	210.0	-70.0	571836.1	2714336.0	2306.5	383.1	San_Gonzalo_Vein
SG_16_04	193.5	-80.6	571339.7	2714462.7	2256.1	111.0	San_Gonzalo_Vein
SG_11_16	209.0	-62.0	572092.0	2714173.3	2330.8	334.3	San_Gonzalo_Vein
SG_11_15	211.0	-68.0	572029.8	2714171.9	2336.6	363.5	San_Gonzalo_Vein
SG_11_18	218.0	-71.0	571765.3	2714320.6	2293.1	318.2	San_Gonzalo_Vein
SG_16_07	218.1	-54.0	571299.5	2714499.2	2245.2	128.8	San_Gonzalo_Vein
SG_18_02	217.8	-43.7	571583.4	2714349.8	2283.2	121.4	San_Gonzalo_Vein
SG_18_01	217.9	-17.2	571549.9	2714351.4	2285.1	102.2	San_Gonzalo_Vein
SG_17_17	216.7	-33.7	571245.7	2714612.4	2219.3	142.0	San_Gonzalo_Vein
SG_17_16	187.9	-47.5	570998.0	2714581.3	2228.8	200.2	San_Gonzalo_Vein
SG_17_10	211.4	-82.3	571992.4	2714074.1	2015.2	121.3	San_Gonzalo_Vein
SG_17_08	207.2	-68.9	571991.7	2714072.1	2015.1	100.2	San_Gonzalo_Vein
SG_17_06	345.1	-42.0	571833.8	2714077.4	2269.7	182.1	San_Gonzalo_Vein
SG_17_05	34.5	-10.8	571835.3	2714077.2	2270.7	258.5	San_Gonzalo_Vein
SG_17_04	14.5	-23.1	572053.9	2713902.9	2263.5	109.2	San_Gonzalo_Vein
SG_17_03	14.6	-9.2	572125.2	2713883.1	2264.2	270.5	San_Gonzalo_Vein
SG_17_01	40.7	-10.1	571913.7	2714049.5	2262.4	315.6	San_Gonzalo_Vein
SG_16_01	245.9	-67.1	571427.9	2714421.3	2268.0	147.7	San_Gonzalo_Vein
SG_16_11	174.0	-52.7	571434.0	2714420.9	2268.1	102.7	San_Gonzalo_Vein
SG_15_17	226.2	-68.4	571593.2	2714352.3	2282.4	145.3	San_Gonzalo_Vein
SG_16_06	217.5	-68.8	571299.7	2714499.6	2245.1	171.7	San_Gonzalo_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
SG_16_05	193.2	-78.8	571347.1	2714494.8	2247.9	159.6	San_Gonzalo_Vein
SG_14_01	286.8	-54.6	571858.5	2714156.0	2086.0	156.6	San_Gonzalo_Vein
SG_16_02	245.2	-77.1	571428.3	2714421.4	2268.0	167.8	San_Gonzalo_Vein
SG_11_14	209.0	-61.0	571939.4	2714213.6	2326.0	330.5	San_Gonzalo_Vein
SG_15_24	214.4	-26.4	572700.3	2713745.4	2284.1	187.7	San_Gonzalo_Vein
SG_15_23	213.0	-59.3	572701.6	2713747.4	2284.0	251.8	San_Gonzalo_Vein
SG_15_22	219.3	-71.6	572569.8	2713772.0	2302.6	401.9	San_Gonzalo_Vein
SG_15_21	212.4	-20.3	572584.3	2713738.6	2309.3	145.6	San_Gonzalo_Vein
SG_15_20	210.7	-51.7	572585.5	2713740.4	2308.8	218.8	San_Gonzalo_Vein
SG_15_19	215.1	-50.1	572479.7	2713867.9	2283.5	290.9	San_Gonzalo_Vein
SG_15_18	216.7	-29.8	572479.0	2713867.0	2283.7	209.8	San_Gonzalo_Vein
SG_16_12	175.7	-64.1	571433.9	2714421.2	2268.0	145.3	San_Gonzalo_Vein
SG_07_12	89.0	-53.0	571678.5	2714133.3	2277.0	175.5	San_Gonzalo_Vein
SG_07_26	216.0	-69.0	572033.5	2714171.8	2337.2	395.4	San_Gonzalo_Vein
SG_07_25	216.0	-65.0	571969.0	2714077.7	2350.9	190.5	San_Gonzalo_Vein
SG_07_24	217.0	-53.0	571968.8	2714077.3	2351.0	124.4	San_Gonzalo_Vein
SG_07_23	216.0	-70.0	572006.8	2714127.5	2342.8	303.5	San_Gonzalo_Vein
SG_07_22	218.0	-54.0	572007.2	2714127.9	2342.7	232.5	San_Gonzalo_Vein
SG_07_21	38.0	-53.0	571712.6	2713979.3	2296.9	294.0	San_Gonzalo_Vein
SG_07_20	215.0	-67.0	571649.7	2714345.4	2280.8	247.4	San_Gonzalo_Vein
SG_07_19	257.0	-66.0	571763.3	2714320.4	2293.1	344.9	San_Gonzalo_Vein
SG_07_18	218.0	-65.0	571765.0	2714318.4	2293.4	238.1	San_Gonzalo_Vein
SG_07_17	249.0	-54.6	571427.7	2714421.5	2268.1	106.1	San_Gonzalo_Vein
SG_07_16	219.0	-54.0	571551.7	2714353.9	2284.5	99.9	San_Gonzalo_Vein
SG_07_27	218.0	-55.0	572077.6	2714077.2	2344.8	237.8	San_Gonzalo_Vein
SG_07_13	55.0	-49.0	571769.6	2713993.2	2315.0	160.6	San_Gonzalo_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
SG_07_11	15.0	-49.0	571676.1	2714135.4	2277.0	158.6	San_Gonzalo_Vein
SG_11_13	218.0	-71.0	571846.5	2714257.5	2309.7	345.4	San_Gonzalo_Vein
SG_07_10	53.0	-58.0	571677.3	2714135.8	2277.1	162.9	San_Gonzalo_Vein
SG_14_03	162.8	-64.0	571861.0	2714152.9	2085.9	173.1	San_Gonzalo_Vein
SG_07_08	41.7	-54.7	571577.7	2714116.2	2281.2	463.5	San_Gonzalo_Vein
SG_07_07	44.0	-44.0	571578.3	2714116.7	2281.3	281.6	San_Gonzalo_Vein
SG_07_06	55.0	-58.0	571650.2	2714058.0	2275.7	387.2	San_Gonzalo_Vein
SG_07_05	59.0	-69.0	571649.9	2714057.9	2275.6	137.0	San_Gonzalo_Vein
SG_07_04	53.0	-49.0	571651.2	2714058.8	2275.7	312.7	San_Gonzalo_Vein
SG_07_03	74.0	-43.0	571714.4	2713981.3	2297.3	315.0	San_Gonzalo_Vein
SG_07_02	38.0	-48.0	571713.8	2713983.4	2297.3	323.7	San_Gonzalo_Vein
SG_07_01	50.0	-60.0	571713.1	2713982.5	2297.2	386.8	San_Gonzalo_Vein
SG_07_14	54.0	-53.0	571716.4	2713971.5	2296.9	295.2	San_Gonzalo_Vein
SG_08_05	35.0	-55.0	571700.8	2713892.9	2284.7	475.3	San_Gonzalo_Vein
SG_07_09	38.0	-45.0	571676.7	2714136.6	2277.1	106.6	San_Gonzalo_Vein
SG_07_28	218.0	-74.0	572078.0	2714077.9	2344.8	319.5	San_Gonzalo_Vein
SG_11_12	218.0	-71.0	571811.0	2714287.8	2304.6	312.2	San_Gonzalo_Vein
SG_11_10	203.6	-60.8	571239.7	2714538.3	2234.8	125.9	San_Gonzalo_Vein
SG_11_08	37.0	-67.0	572042.8	2713887.7	2359.6	125.4	San_Gonzalo_Vein
SG_11_06	189.3	-44.0	571732.2	2714379.3	2274.3	122.3	San_Gonzalo_Vein
SG_11_05	40.0	-43.0	571892.0	2713831.6	2317.2	151.4	San_Gonzalo_Vein
SG_11_04	212.0	-54.0	571968.9	2714078.9	2350.6	176.5	San_Gonzalo_Vein
SG_11_02	215.0	-63.0	571995.1	2714030.1	2355.1	141.2	San_Gonzalo_Vein
SG_08_06	48.0	-64.0	571679.0	2714136.9	2276.8	226.4	San_Gonzalo_Vein
SG_08_04	215.0	-63.0	572029.0	2714121.3	2342.9	270.0	San_Gonzalo_Vein
SG_08_03	215.0	-70.0	571964.3	2714167.8	2335.1	332.0	San_Gonzalo_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
SG_07_35	211.0	-68.0	572069.2	2714010.3	2353.1	272.2	San_Gonzalo_Vein
SG_07_29	221.0	-43.0	572033.2	2714009.9	2355.8	103.6	San_Gonzalo_Vein
SG_07_30	221.0	-64.0	572033.5	2714010.4	2355.7	158.4	San_Gonzalo_Vein
SG_07_32	223.0	-70.0	572122.1	2714135.4	2330.1	408.0	San_Gonzalo_Vein
SG_11_01	215.0	-59.0	571980.9	2714009.4	2356.5	101.0	San_Gonzalo_Vein
SG_07_34	210.0	-58.0	572069.0	2714009.9	2353.2	183.1	San_Gonzalo_Vein
SG_08_02	215.0	-57.0	571964.0	2714167.3	2335.1	269.1	San_Gonzalo_Vein
SG_07_36	215.0	-41.0	572050.3	2713959.5	2358.3	102.2	San_Gonzalo_Vein
SG_07_37	219.0	-53.0	572114.6	2713974.8	2350.6	154.4	San_Gonzalo_Vein
SG_07_38	221.0	-66.5	572115.0	2713975.2	2350.5	214.2	San_Gonzalo_Vein
SG_07_39	220.0	-73.0	572120.2	2713897.8	2353.0	128.1	San_Gonzalo_Vein
SG_07_40	220.0	-74.0	571899.1	2714210.9	2320.5	516.1	San_Gonzalo_Vein
SG_08_01	35.0	-51.0	571776.4	2713974.1	2314.3	210.1	San_Gonzalo_Vein
SG_07_33	211.0	-43.0	572068.6	2714009.1	2353.0	130.6	San_Gonzalo_Vein
SJG_11_03	270.0	-45.0	570514.5	2714192.7	2263.1	107.6	San_Jorge_Vein
SJG_11_01	195.0	-45.0	570465.9	2714244.6	2249.8	152.3	San_Jorge_Vein
SJG_11_02	195.0	-44.0	570505.4	2714231.1	2252.9	137.2	San_Jorge_Vein
SJV_17_02	348.4	-34.5	571037.7	2713019.8	2251.0	140.9	San_Juventino_Vein
SJV_17_05	337.6	-34.6	571007.1	2712993.6	2237.2	112.1	San_Juventino_Vein
SJV_17_04	16.5	-47.5	571091.3	2712907.8	2220.6	190.2	San_Juventino_Vein
SJV_17_03	17.1	-34.9	571037.5	2713025.1	2251.2	222.0	San_Juventino_Vein
SJV_16_01	1.9	-41.6	571449.3	2712892.6	2204.2	255.8	San_Juventino_Vein
SJV_11_03	25.0	-58.0	570621.0	2713355.4	2221.8	100.7	San_Juventino_Vein
SJV_11_01	32.0	-44.0	570286.6	2713468.5	2189.2	110.4	San_Juventino_Vein
SJV_17_01	15.7	-40.8	571076.6	2713001.9	2242.6	180.9	San_Juventino_Vein
SJV_11_02	20.0	-58.0	570480.4	2713411.6	2210.2	105.5	San_Juventino_Vein

table continues...

Hole	Azimuth ()	Dip ()	Easting_UTM	Northing_UTM	Elev_(m)	Depth_(m)	Target Zone
SP&P_07_01	351.0	-44.0	570361.5	2715222.3	2206.2	181.3	San_Pedro_Y_San_Pablo_Vein
STA_08_02	74.0	-48.0	570947.3	2714734.1	2197.2	110.9	Santa_Ana_Vein
STA_08_01	233.0	-63.0	571399.4	2714807.2	2217.3	140.2	Santa_Ana_Vein
STA_07_01	66.0	-50.0	570998.2	2714992.1	2205.6	315.3	Santa_Ana_Vein
ST_16_01	342.7	-79.5	571183.4	2713765.2	2245.1	261.7	Santiago_Vein
ST_18_03	319.1	-61.0	571769.5	2714095.2	2314.3	181.9	Santiago_Vein
ST_18_02	165.0	-65.3	571812.3	2714288.5	2304.5	249.2	Santiago_Vein
ST_18_01	146.8	-53.8	571713.5	2714264.5	2296.5	211.0	Santiago_Vein
ST_17_02	25.9	-36.0	571835.3	2714076.9	2270.3	191.5	Santiago_Vein
ST_17_01	6.5	-29.0	571834.4	2714077.9	2269.9	171.0	Santiago_Vein
ST_16_02	334.6	-68.5	571183.3	2713765.5	2245.2	158.8	Santiago_Vein
ST_07_09	155.0	-49.0	571749.3	2714200.6	2292.8	160.6	Santiago_Vein
ST_07_08	156.0	-57.0	571815.3	2714220.0	2306.3	111.6	Santiago_Vein
ST_07_05	116.0	-45.0	571677.6	2714127.5	2277.1	196.0	Santiago_Vein
ST_07_04	159.0	-44.0	571676.9	2714127.3	2277.0	100.9	Santiago_Vein
ST_07_02	179.0	-48.0	570797.0	2713960.2	2210.4	200.1	Santiago_Vein
ST_07_01	44.0	-50.0	570794.2	2713856.5	2213.3	309.1	Santiago_Vein
ST_16_03	336.0	-68.3	571082.1	2713715.8	2244.8	202.0	Santiago_Vein
TUC_11_01	45.0	-58.0	571805.1	2715045.0	2217.1	166.9	Tuceros_Area
YL_11_02	180.0	-48.0	572035.0	2715590.8	2264.3	130.7	Yolanda_Area
YL_11_01	178.0	-49.0	571904.2	2715574.1	2261.8	159.2	Yolanda_Area