First Majestic Silver Corp.
Santa Elena Silver/Gold Mine

Sonora, Mexico

NI 43-101 Technical Report on
Mineral Resource and Mineral Reserve Estimates

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Report Prepared For: **First Majestic Silver Corp.**

Effective Date: **December 31, 2020**

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I, Ramón Mendoza Reyes, P.Eng., am employed as Vice President of Technical Services with First Majestic Silver Corp. (First Majestic).

This certificate applies to the technical report entitled “Santa Elena Silver/Gold Mine, Sonora, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates” that has an effective date of December 31, 2020.

I graduated from the National Autonomous University of Mexico with a Bachelor of Science Degree in Mining Engineering in 1989, and also obtained a Master of Science Degree in Mining and Earth Systems Engineering from the Colorado School of Mines in Golden, Colorado, in 2003.

I am a member of the Engineers and Geoscientists British Columbia (P.Eng. #158547).

I have practiced my profession continuously since 1990, and have been involved in precious and base metal mine projects and operations in Mexico, Canada, the United States of America, Chile, Peru, and Argentina.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I have visited the Santa Elena Silver/Gold Mine on several occasions from 2015 to 2019. My most recent site visit and inspection was on March 8-10, 2020.

I am responsible for Sections 1.1, 1.2, 1.9.2, 1.10, 1.12 to 1.15, 1.16.3 to 1.16.5, 2 to 5, 15, 16, 18 to 24, 25.1, 25.7 to 25.9, 25.11 to 25.16, 26.1.3 to 26.1.5 and 27 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been involved with the Santa Elena Silver/Gold Mine overseeing technical and operational aspects including mine planning, mining operations and mineral reserves estimation, since the acquisition by First Majestic in October 2015.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

“Signed and sealed”

Ramón Mendoza Reyes, P.Eng.

Dated: March 17, 2021

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This certificate applies to the technical report titled “Santa Elena Silver/Gold Mine, Sonora, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates” that has an effective date of December 31, 2020.

I graduated from the University of British Columbia, Vancouver, British Columbia, Canada, with a Bachelor of Science in Geology in 1988.

I am a member of the Engineers and Geoscientists British Columbia; Professional Geologist (P. Geo. #23492).

I have practiced my profession continuously since 1988 and have been involved in many early and advanced stage base and precious metal exploration programs in Canada, United States, Mexico, South America, Australia, and Asia. Before joining First Majestic I was a Principal Geologist with Wood and AMEC Foster Wheeler during which time I was the qualified person for geology, data quality control and mineral resource estimation for several client NI 43-101 Technical Reports.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Santa Elena Silver/Gold Mine on several occasions in 2019. My most recent site inspection was 31 January 2020 to 03 February 2020.

I am responsible for Section 1.3 to 1.6, 1.16.1, 6 to 10, 25.2, 25.3 and 26.1.1 of the Technical Report.

I am not independent of FMS as that term is described in Section 1.5 of NI 43–101.

I have been involved with the San Elena Silver/Gold Mine in my role as Vice President of Exploration since June 2018.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

“Signed and sealed”

Greg K. Kulla, P. Geo.

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This certificate applies to the technical report “Santa Elena Silver/Gold Mine, Sonora, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates” that has an effective date of December 31, 2020.

I graduated from the University of Technology, Sydney, NSW, Australia, with a Bachelor of Applied Science in Geology in 1999 and obtained a Master of Science in Mineral Economics from Curtin University, Perth, WA, Australia, in 2010.

I am a member of the Engineers and Geoscientists British Columbia; Professional Geologist (P. Geo. #178608).

I have practiced my profession continuously since 1999 and have been involved in geological modelling and mineral resource estimation for several base and precious metal deposits in Australia, Ireland, Saudi Arabia, and Mexico. Prior to the Santa Elena Project, I have been involved in geological modelling and mineral resource estimation of the San Martín, La Guitarra and La Encantada Silver Mines in Mexico.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Santa Elena Silver/Gold Mine on two occasions in 2019. My most recent site visit and inspection was on September 4, 2019.

I am responsible for Section 1.9.1, 1.16.2, 14, 25.6 and 26.1.2 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been involved with the San Elena Silver/Gold Mine in my role as Senior Resource Geologist since September 2018.

I have read NI 43–101, and the section. of the Technical Report for which I am responsible has been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

“Signed and sealed”

Phillip J. Spurgeon, P. Geo.

Dated: March 17, 2021

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I, María Elena Vázquez Jaimes, P.Geo., am employed as Geological Database Manager with First Majestic Silver Corp. (First Majestic).

This certificate applies to the technical report entitled "Santa Elena Silver/Gold Mine, Sonora, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates" that has an effective date of December 31, 2020 (the Technical Report).

I graduated from the National Autonomous University of Mexico with a Bachelor in Geological Engineering degree in 1995 and obtained a Master of Science degree in Geology from the "Ensenada Center for Scientific Research and Higher Education", Ensenada, BC, Mexico, in 2000.

I am a member of the Engineers and Geoscientists British Columbia (P.Geo. #35815).

I have practiced my profession continuously since 1995. I have held technical positions working with geological databases, conducting quality assurance and quality control programs, managing geological databases, performing data verification activities, and conducting and supervising logging and sampling procedures for mining companies with projects and operations in Canada, Mexico, Peru, Ecuador, Brazil, Colombia and Argentina. I have served as the Geologic Database Manager for First Majestic since 2013, and I direct the QAQC programs, sampling and assay procedures, and database verification for all their mines in Mexico.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Santa Elena Silver/Gold Mine on several occasions since 2015. My most recent site visit and inspection was from November 9th to November 14th, 2019.

I am responsible for Sections 1.7, 11, 12 and 25.4 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been directly involved with the Santa Elena Silver/Gold Mine in my role as the Geological Database Manager since 2015.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed in order to make the Technical Report not misleading.

"Signed and sealed"

Maria Elena Vazquez Jaimes, P.Geo.

Dated: March 17, 2021

CERTIFICATE OF QUALIFIED PERSON

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I, Persio Pellegrini Rosario, P.Eng., am employed as Vice President of Processing, Metallurgy & Innovation with First Majestic Silver Corp. (First Majestic).

This certificate applies to the technical report entitled "Santa Elena Silver/Gold Mine, Sonora, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates" that has an effective date of December 31, 2020 (the Technical Report).

I am a graduate of the University of British Columbia, where, in 2003 and 2010, respectively, I obtained a Master in Applied Sciences (MASc) and the Doctor in Philosophy (PhD) degrees in Mineral Processing through the Mining and Mineral Processing Department.

I am a member of the Engineers and Geoscientists British Columbia (P.Eng. # 32355).

I have practiced my profession continuously since 2003 and acquired extensive experience in the design and optimization of mineral processing flowsheets through the elaboration and management of metallurgical test programs and the interpretation of their results. I have been involved in precious and base metal mine projects and operations in Mexico, Canada, the United States of America, Brazil, Chile, Peru, Argentina, and Russia.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I carried out two site inspections of the Santa Elena Silver/Gold Mine in 2018. My most recent site visit and inspection was on the 26th and 27th of June 2018.

I am responsible for sections 1.8, 1.11, 1.16.6 to 1.16.10, 13, 17, 25.5, 25.10, 26.1.6 to 26.1.8 and 26.2 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been involved with the Santa Elena Silver/Gold Mine overseeing technical and operational aspects including processing and metallurgy, since joining First Majestic in January 5, 2021. Prior to that, I had been involved in modernization and expansion projects since May 2018 to December 2020, as a technical consultant for First Majestic.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed and sealed"

Persio Pellegrini Rosario, P.Eng.

Dated: March 17, 2021

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1. SUMMARY

1.1. Introduction

Mr. Ramón Mendoza Reyes, Mr. Greg Kulla, Ms. María Elena Vázquez, Mr. Phillip J. Spurgeon and Mr. Persio P. Rosario prepared this technical report (the Report) on the Santa Elena Silver/Gold Mine (Santa Elena or Santa Elena mine), located in the state of Sonora, Mexico. The mine is owned and operated by Nusantara de Mexico S.A. de C.V. (Nusantara), which is an indirectly wholly-owned subsidiary of First Majestic Silver Corp. (First Majestic). First Majestic acquired the Santa Elena mine from SilverCrest Mines Inc. (SilverCrest) in October 2015.

This Report provides information on Mineral Resource and Mineral Reserve estimates, and mine and process operations and planning for the Santa Elena mine. The Mineral Resource and Mineral Reserve estimates are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 2014; the 2014 CIM Definition Standards).

For the purpose of this Report the following naming convention was adopted:

- “Santa Elena Silver/Gold Mine” (Santa Elena or Santa Elena mine) is used to refer to the property where the underground mine operation, the processing plant and the associated infrastructure is located, Santa Elena also refers to the limits of all of the consolidated mining concessions;
- “Santa Elena deposits” is used to refer to the deposits within the currently-operating underground mine.

Units of measurement are metric unless otherwise noted. All costs are expressed in United States dollars unless otherwise noted.

1.2. Property Description, Location and Access

1.2.1. Description, Location and Access

Santa Elena is an actively producing gold and silver mining complex located in the municipality of Banámichi, approximately 150 km northeast of the state capital city of Hermosillo State of Sonora, Mexico.

1.2.2. Mineral Tenure, Royalties, and Surface Rights, and Permitting

In 2015, First Majestic completed the acquisition of SilverCrest, the then-owner of Nusantara and Santa Elena. In 2016, First Majestic signed an option agreement with Pan American Silver Corp. (PanAm) whereby First Majestic can acquire a 100% interest in the Los Hernandez property, and in 2017, First Majestic expanded the Santa Elena property by purchasing the El Gachi property from Santacruz Silver

Mining Ltd. First Majestic expanded the Santa Elena property again in 2018 by completing the acquisition of a 100% interest in the Ermitaño and Cumobabi properties from Evrim Resource Corp (Evrim). Upon completion of the exercise, Evrim retained a 2% net smelter returns (NSR) royalty from the sale of mineral products extracted from the Ermitaño property and retained a 1.5% NSR from the sale of mineral products extracted from the Cumobabi property. In addition, there is an underlying NSR royalty where Mining Royalties Mexico, S.A de C.V. retains a 2% NSR from the sale of mineral products extracted from the Ermitaño and Cumobabi properties.

In December 2020, First Majestic completed all option payments and work commitments, and acquired 100% interests in the Los Hernandez property from PanAm. Upon completion of the exercise, PanAm retained a 2.5% NSR from the sale of mineral products derived from the Los Hernandez property.

Santa Elena consists of 32 individual concessions covering 102,172 ha and four concessions applications in process which cover 72 ha, for a total of 102,244 ha.

First Majestic has a purchase agreement with Sandstorm Gold Ltd. (Sandstorm). Sandstorm invested $12 million in May 2009 and an additional $10.0 million in March 2014 which entitles Sandstorm to receive 20% of the gold production from the Santa Elena mine in exchange for ongoing payments equal to the lesser of $464/oz Au (as of December 2020 and subject to a 1% annual inflation adjustment) and the prevailing market price, for each gold ounce delivered under the agreement.

Surface rights in the area of the mining concessions are held both privately and through group ownership either as communal or Ejido lands. First Majestic has agreements in place regarding surface rights with Bienes Comunales de Banámichi, Mr. Francisco Maldonado, Dabafa S.P.R. de R.L., Ejido Banamichi, and the Community of Banámichi. At Report effective date all obligations were met for these agreements.

Santa Elena holds the necessary permits to operate, such as the Environmental License, water rights concessions, and federal land occupation concessions.

Environmental liabilities for the operation are typical of those that would be expected to be associated with an operating underground precious metals mine, including the future closure and reclamation of mine portals and ventilation infrastructure, access roads, processing facilities, power lines, filtered tailings and all surface infrastructure that supports the operations.

1.2.3. Accessibility, Local Resources, Infrastructure and Physiography

Santa Elena can be easily accessed year-round by paved highways 90 km east from Hermosillo to Ures, then 50 km north along a paved secondary road to the community of Banamichi, then by a well-maintained gravel road for 7 km to the mine site. The Ermitaño project can be accessed by a 10-km gravel road from the Santa Elena mine.

Mining activities are performed by a combination of First Majestic personnel and contract workers. Mining operations are conducted year-round.

Santa Elena is located on the western edge of the north trending Sierra Madre Occidental mountain range adjacent to the Sonora River Valley. Elevation ranges from 800 masl to 1,000 masl.

The climate at Santa Elena is typical of the Sonoran Desert, with a dry season from October to May. There are two wet seasons, one in the summer and the second in the winter, and average rainfall is estimated at 300 mm per annum. Seasonal temperatures vary from 0°C to 40°C.

The main water supply well currently used at the Santa Elena mine was installed and tested in 2009. A second well was constructed in 2011 as a back-up well to support the primary water supply. The Santa Elena mine has adequate water supply for the life-of-mine (LOM) operations.

Power for current operations is provided by diesel generators. First Majestic is currently commissioning a liquified natural gas (LNG) generation plant that will reduce operating costs, improve reliability, and reduce green-house gas emissions.

The Santa Elena mine is located near the village of Banamichi, which provides accommodations and local food services. The mining centre of Cananea is the closest sizable urban area (pop. est. 30,000) and is located approximately 100 km north by road from the Santa Elena mine. Most services and supplies are available in Cananea. Sonora's capital city, Hermosillo, is located approximately 150 km southwest of the property, and is regarded as the main industrial hub for the majority of the local mining operations. Services are available for heavy machine purchase and repair, materials fabrication, and engineering services. Northern Mexico has significant precious and base metal mines and there is a significant workforce of trained mining and processing personnel.

The Santa Elena mine processing facility was initially constructed between 2009 and 2010, and was further expanded between 2013 and 2014.

The Ermitaño project is an exploration and development project that has the following infrastructure:

- Access roads and drilling pads for exploration drilling;
- A twin decline to access the mineralized zones;
- A test-mine area to investigate geotechnical conditions and assess structural characteristics of the mineralized structures;
- A waste dump to hold rock from development of the access declines.
- Temporary surface facilities;
- Water management ponds that are under construction.

1.3. History

London-based Consolidated Goldfields of Mexico Limited owned and operated the Santa Elena Mine in the late 19th century and mined from surface and underground until around 1910. There is no indication of any further significant mining or exploration at Santa Elena until Industrias Peñoles S.A de C.V. drilled two or three holes on the property in the 1960s. During the early 1980s, Tungsteno de Baviacora

(Tungsteno) owned the property and mined 45,000 tgrading 3.5 g/t Au and 60 g/t Ag from an open cut. Tungsteno periodically surface mined high silica/low fluorine material from Santa Elena.

The property remained under control of Tungsteno until 2009, when SilverCrest acquired 100% of the Santa Elena property. SilverCrest started production of gold and silver in July 2011 and in 2015 was producing gold and silver by processing 3,000 tpd of mineralized material from open pit, and underground mining, and reprocessing previously heap-leached material.

First Majestic acquired the Santa Elena mine through its acquisition of SilverCrest in October 2015. First Majestic expanded the Santa Elena property by purchasing the El Gachi property from Santacruz Silver Mining Ltd. (Santacruz) in March 2017. The El Gachi property includes the past-producing El Gachi mine, a high-grade manto and vein mineralized system located 30 km north of the Santa Elena Mine. In September 2018, First Majestic further expanded Santa Elena by completing the acquisition of a 100% interest in the Ermitaño and Cumobabi properties from Evrim.

In December 2020 First Majestic completed all option payments and work commitments and acquired 100% interests in the Los Hernandez property from Pan American Silver Corp.

1.4. Geological Setting, Mineralization and Deposit Types

1.4.1. Regional Geology

The Santa Elena deposits are hosted in rocks of the Sierra Madre Occidental (SMO), an igneous province that extends from the USA–Mexican border south to Guadalajara, Mexico. The SMO geological province consists of Late Cretaceous to early Miocene volcanic and sedimentary rocks that formed during two main periods of continental magmatic activity. The first period, concurrent with the Laramide orogeny, produced an intermediate intrusive suite and its volcanic counterpart. These rocks, named the Lower Volcanic Complex (LVC), include the Late Cretaceous to Paleocene volcanic succession of the Tarahumara Formation and are intruded by the Sonora batholiths. In the late Eocene, volcanism became dominated by rhyolitic ignimbrites. Extensional basins and associated continental sedimentary deposits formed between 27 Ma and 15 Ma in a north–northwest-trending belt along the western half of the SMO.

Many significant porphyry deposits of the SMO occur in the LVC rocks. Northwest-trending fault zones associated with early Eocene east–west directed extension, appear to control epithermal mineralization in the Sonora region. The Santa Elena Main Vein and the Ermitaño Vein have orientations similar to this extensional trend.

The Santa Elena and the Ermitaño deposits are the most significant zones of gold and silver mineralization currently known within the Santa Elena property.

1.4.2. Santa Elena Deposit Geology and Mineralization

The current geological interpretation for the Santa Elena deposits is based on surface and underground mapping and drill hole logging, which has delineated a package of rhyolite and andesite volcanic rocks currently interpreted to belonging to the LVC. A rhyolite outcrop forms a prominent topographic high in the immediate hanging wall to the north and andesite is present in the immediate hanging wall to the south of the main Santa Elena structures.

Drilling has delineated three primary structures occupied by veins. The Main Vein occupies the most prominent structure. It strikes east and dips at approximately 55–45° south and has been delineated 1,950 m along strike and 750 m down dip. The Alejandra Vein is a splay of the Main Vein that strikes east–southeast, and the America Vein is also a splay of the Main Vein that strikes nearly east. Andesite and granodiorite dykes have been identified at the Santa Elena deposit that are adjacent and sub-parallel to the Main Vein. The primary Main Fault is located in the hanging wall of the Main Vein and runs parallel to it.

Silver and gold mineralization at the Santa Elena mine is hosted in quartz veins and stockworks displaying typical epithermal textures, including banded quartz, vuggy quartz, and brown–black bladed calcite (pseudomorph to quartz) with many of these textures intermixed with hydrothermal breccia. Sulphide abundance is generally low within the veins. The sulphides are dominantly pyrite and pyrrhotite with minor galena, sphalerite, and chalcopyrite. Gold occurs typically as native gold, electrum, and silver occurs as electrum, minor acanthite, and rare native silver.

The Santa Elena deposits are typical of low sulphidation gold and silver epithermal vein-hosted deposits.

1.4.3. Ermitaño Deposit Geology and Mineralization

The current geological interpretation for the Ermitaño deposit area is based on mapping and core logging of volcanogenic textures and has allowed the delineation of a host rock volcanogenic sequence that consists of an older compact brittle volcanic sequence of rhyolitic rocks overlain by less brittle felsic lava flows and an alluvial fan environment of volcanogenic sedimentary rocks, volcaniclastic rocks, and mafic lava flows.

The Ermitaño Fault strikes roughly east, dips steeply to the north and has normal down to the north displacement. Drilling has shown this fault juxtaposes older, compact, brittle volcanic rocks with the younger, less brittle, volcanic and volcaniclastic rocks. Mineralizing fluids are interpreted to have used the Ermitaño Fault as a conduit to form the Ermitaño Vein and sub-parallel tertiary veins that drilling has delineated over 1,800 m along strike and 550 m down dip. The vein is best developed where the structure cuts the older, brittle volcanic rocks.

Gold and silver mineralization is hosted in quartz veins that consist of grey quartz, banded and crustiform textured green to white veins that typically host the highest gold and silver grades, and breccia facies with some calcite pseudomorphs.

Sulphide abundance within the Ermitaño Vein, stockwork, and surrounding veins is typically <1–2%, dominated by pyrite with minor galena, sphalerite, pyrrhotite, and chalcopyrite. Gold occurs as native gold or electrum, and silver occurs as electrum, acanthite, and argentite.

The Ermitaño deposits are typical of epithermal low sulphidation gold and silver vein-hosted deposits.

1.5. Exploration

There have been several surface and airborne exploration surveys and studies completed within the Santa Elena mineral concessions since 2006, including prospecting, mapping, rock and soil geochemical sampling, petrographic and spectrographic studies, magnetic, electromagnetic, and induced polarization surveys. Most of this work has focused on the Santa Elena mine and Ermitaño project areas. The regional satellite and airborne surveys have been useful for developing a conceptual geological framework and local mapping and geochemical soil and rock sampling have been useful for identifying prospective drill targets.

Drilling remains the best and most widely used exploration tool within the Santa Elena property.

1.6. Drilling

Between 2006 and year-end 2020, 841 drill holes totalling 174,859 m were drilled at the Santa Elena mine, including 469 core drill holes and 76 reverse circulation (RC) and reverse circulation collared with core drill tail holes (RCDD). The drilling delineated three primary vein-hosted gold and silver deposits. The Main Vein is the most prominent.

Between 2016 and year-end 2020, 198 core drill holes totalling 69,315 m were drilled at the Ermitaño project, including six metallurgical holes and four geotechnical holes. Drilling has delineated one primary vein, one secondary vein and several tertiary veins. The Ermitaño Vein is the most prominent and strikes east and dips approximately 80° north in the west where the bulk of current gold and silver mineralization occurs, and approximately 60° north in the eastern area. Widely-spaced drilling in 2020 showed that gold and silver mineralization in the Ermitaño Vein remains open to the east.

Between 2011 and year-end 2020, 144 core drill holes totalling 36,657 m of drilling were completed in 11 regional target areas.

1.7. Sampling, Analysis and Data Verification

1.7.1. Sampling

The Santa Elena and Ermitaño Mineral Resource estimates are based on logging and sampling of NQ and HQ diameter core collared from surface and underground at Santa Elena and collared from surface at Ermitaño. The entire length of drill core is photographed and logged for lithology, mineralization, structure, and alteration. Sampling intervals respect lithology and mineralization boundaries. The core is split in half, and half of the core is placed in a plastic bag with a unique sample number tag and a matching sample number tag is placed with the matching half core in the core box at the start of each sample interval.

Sample quality control is monitored using certified reference materials (CRMs), blanks, and quarter-core field duplicates, coarse reject duplicates, and pulp duplicates. Coarse reject and pulp samples are prepared and inserted by the laboratory during sample preparation. Pulp duplicates are also periodically submitted to a secondary laboratory to assess between-laboratory bias.

Before 2016, samples were dispatched to ALS in Hermosillo or Chihuahua, Mexico and Bureau Veritas in Hermosillo, Mexico. Since 2016, samples from Ermitaño are dispatched to SGS in Durango (SGS Durango) or Hermosillo, Mexico. The ALS and SGS laboratories are independent of First Majestic. Samples from the Santa Elena mine underground drill holes are dispatched to First Majestic's Central Laboratory in Jose La Parrilla, Durango, Mexico (Central Laboratory). This laboratory is not independent of First Majestic.

Underground production channel samples, collected at approximately 3 m intervals, are used for grade control and to improve the resource estimates. Channels are taken within a 20 cm wide swath along the line using a hammer and hand chisel and are collected on a tarpaulin. A 1.5 kg sub-sample is bagged and labelled with sample number and location details. Samples are dispatched to the Santa Elena mine laboratory (Santa Elena Laboratory), this laboratory is not independent of First Majestic. Since 2019, sample quality control is monitored with the same system that is applied to drill core samples. The production channel sampling method has some risk of producing samples of lesser quality than drill core samples, which is taken into consideration during resource estimation.

1.7.2. Density

From 2016 to 2019, a total of 4,140 specific gravity (SG) measurements were collected from Ermitaño and 3,094 SG measurements were collected from the Santa Elena mine. Geologists collected specific gravity (SG) measurements from 15 cm long whole HQ core selected from mineralized zones and from wall rocks on either side of the mineralized zones. Control samples such as duplicates, checks and standards were included.

The SG values range from 2.07–3.00 across the Santa Elena mine deposits with an estimated mean value of 2.52.

The SG values range from 2.06–3.30 across the Ermitaño deposits with a mean value of 2.54.

1.7.3. Analysis

Surface drill core samples are sent to SGS Durango. The primary laboratory used for underground drill core and channel samples that support resource estimation is the Central Laboratory. Production channel samples are sent to the Santa Elena Laboratory.

The SGS laboratories conform to the ISO/IEC 17025 standard and most regional facilities have been ISO 9001 certified since 2008. The Central Laboratory received ISO 9001 accreditation in mid-2015 and 2017. The Santa Elena laboratory is not certified or accredited. The Santa Elena Laboratory has been managed by the Central Laboratory since 2015.

SGS

Drill core samples are dried at 105°C, then crushed 75% passing 2 mm and split to a 250 g subsample which was pulverized to 85% passing 75 µm. Samples were analyzed for 34 elements using aqua regia digestion with an inductively-coupled plasma atomic emission spectroscopy (ICP-AES) finish (package GE_ICP14B). Samples were also analyzed for silver by three-acid digestion with an atomic absorption spectroscopy (AAS) finish (package GE_AAS21E). Samples returning greater than 300 g/t Ag from GE_AAS21E were reanalyzed for silver by 30 g fire assay with a gravimetric method (package GE_FAG313). In 2018, the GE_AAS21E reassay threshold was reduced to 100 g/t Ag.

First Majestic Central Laboratory

From 2016 to 2018, underground drill core and sawn-channel samples were dried at 105 °C ± 5°C, then crushed to 80% passing 2 mm, split to a 250-g subsample, and pulverized to 80% passing 75 µm. Since 2019, underground drill core and sawn-channel samples have been dried at 105 °C ± 5°C and then crushed to 85% passing 2 mm, split to a 250-g subsample, and pulverized to 85% passing 75 µm. Samples were analyzed for 34 elements by two-acid digestion with an ICP finish (package ICP34BM). All samples were also analyzed for silver by three-acid digestion with anatomic absorption (AA) finish (package AAG-13). Samples returning greater than 300 g/t Ag from AAG-13 were reanalyzed for silver by a 20 g fire assay with a gravimetric finish (package ASAG-14). Gold was analyzed by two-acid digestion with an AAS finish (package AUAA-13). Samples returning >10 g/t Au were reanalyzed for gold by a 20 g fire assay with a gravimetric finish (package ASAG-14).

Santa Elena Laboratory

Since 2016, production channel samples are dried at 105 °C, weighed, then crushed to 80% passing 2 mm, split to a 300-g subsample, and pulverized to 80% passing 75 µm. Silver is analyzed by a 30 g fire assay gravimetric finish. Gold is analyzed by a 30 g fire assay AA finish. Samples with gold values >10 g/t Au are analyzed by a 30 g, fire assay gravimetric method.

1.7.4. Quality Control and Quality Assurance

From 2016 to present, the quality assurance and quality control (QAQC) program for the SGS laboratories included insertion of CRMs, coarse and pulp blanks, and field, coarse, and pulp duplicates in the sample stream. In 2018 and 2019 checks samples were submitted to the Bureau Veritas laboratory. From 2018 to April 2019, the QAQC program for the Bureau Veritas laboratory included insertion of CRMs, coarse and pulp blanks, and field, coarse and pulp duplicates in the sample stream. During this period check samples were submitted to the SGS Durango laboratory.

From 2016 to present, the QAQC program for the Central Laboratory included insertion of CRMs and blanks. The CRMs and blanks were inserted in the core, production channel and sawn-channel samples. In 2018, field, coarse and pulp duplicates were added to the sample stream. During this period check samples were submitted to the SGS Durango laboratory.

In 2019, First Majestic initiated a QAQC program by including CRMs, blanks and duplicates in the production channel samples submitted to the Santa Elena Laboratory.

The CRMs were purchased from CDN Resource Laboratories Ltd. between 2014 to 2015. Blank material was obtained from a light red quartzite collected from a quarry approximately 9 km north of the Santa Elena mine. Pulp blanks were purchased from Casa Valdivia, a provider of laboratory material in Hermosillo.

Sample Security

The drill core and drill core samples are stored in a secure core processing and storage warehouse at the Santa Elena mine prior to their shipment to the sample processing laboratories. All samples are securely sealed, and chain-of-custody documents are issued for all shipments. Core samples from underground drill holes were transported from sampling areas to the Central Laboratory by commercial transport companies. Core samples from Ermitaño were transported from sampling areas to the SGS laboratories in Hermosillo and Durango with SGS providing the transportation service, and to the Bureau Veritas Mineral Laboratories with First Majestic vehicles.

1.7.5. Data Verification

Data verification included data entry error checks, visual inspections of important data, and a review of QAQC assay results for data collected between 2012 and June 2020 from the Ermitaño, Alejandra, America, Santa Elena Main, and Tortugas veins (the verification dataset). Several site visits were completed as part of the data verification process.

The data entry error checks consisted of comparing data recorded in the database with original collar survey reports, lithology logs and assay reports, and investigation of gaps, overlaps and duplicate intervals in the sample and lithology tables. No significant data entry errors were observed in a 5% random selection of the drill collar locations of the verification dataset. No significant data entry errors were observed in a 5% random selection of the SG weight measurements of the verification dataset.

Visual inspection consisted of verifying the position of collars, down-hole survey deviations relative to the underground workings and the three-dimension geological models. The visual inspection also included comparison of lithology and assay intervals with core photographs. A 5% random selection of drill hole collar and channel locations in the verification dataset indicated no significant position errors.

Numerous site visits were completed by the Qualified Persons responsible for this Report.

The QP personally verified data supporting the Mineral Resource estimates. This included site visits, observation of drilling and sampling at active drill and underground face sampling sites, review of logging and sampling procedures, inspection of drill results relative to interpretations on cross sections and levels, and review of documents, core photos, core logs, and QAQC reports.

1.8. Mineral Processing and Metallurgical Testing

Santa Elena is an operating mine and the metallurgical testwork data supporting the initial plant design has been proven and reinforced by plant operating results though the years of operation, combined with more recent metallurgical studies.

Metallurgical testing along with mineralogical investigation is periodically performed, and the plant is continually running tests to optimize metal recoveries and operating costs. Composite samples are analyzed monthly to determine the metallurgic behaviour of the mineralized material fed into the processing plant. The metallurgical testing is carried out by the Central Laboratory.

The Santa Elena and Ermitaño deposits possess similar mineralogy with the most common non-metallic species including quartz, K-feldspar, calcite, plagioclase, swelling clay, and muscovite. The most common metallic minerals present in low concentrations are pyrite, chalcopyrite, sphalerite, silver sulfides, and native gold.

Samples collected from some of the planned Santa Elena mine stopes are sent to the Central Laboratory for testing to assess the metallurgical behavior of the mineralized material that will be processed in the plant in the near future. Typical metal recovery estimates assumed for the LOM plan were 93% for silver and 95.6% for gold. The recovery projections assumed in the LOM plan for the Santa Elena mine are also supported by the expected similarities between future ore and the ore that has been mined and processed for the last three years.

A treatment charge is levied by weight on the doré produced from the Santa Elena mine due to trace levels of heavy metals, including copper, lead, zinc, cadmium, and bismuth in the doré. However, due to the purity of the Santa Elena doré (>98% silver and gold), no penalties are applied by the refineries for the presence of heavy metals.

Testing has also been conducted on Ermitaño project core samples. Bench-scale metallurgical testwork performed in the Central Laboratory for some of the Ermitaño drill core samples support metallurgical recovery assumptions of 85% for silver and 96% for gold. These results were used to assess the reasonable prospects of eventual economic extraction for the Ermitaño mineralized material.

1.9. Mineral Resource and Mineral Reserve Estimates

1.9.1. Mineral Resource Estimates

The block model Mineral Resource estimates for the Santa Elena and Ermitaño deposits are based on the current database of exploration drill holes and production channel samples, the underground level geological mapping, the geological interpretation and model, as well as surface topography and underground mining excavation wireframes.

Geostatistical analysis, analysis of semi-variograms, block model resource estimation, and validation of the model blocks were completed with Leapfrog EDGE. Stope analysis to determine reasonable prospects for eventual economic extraction was completed with Maptek Vulcan.

The combined drill hole and channel sample database for Santa Elena and Ermitaño was reviewed and verified by the resource geologists and support that the QAQC programs were reasonable. The exploration data were collected with a logger system that captured collar, survey, lithology, and assay information. Integrated validation tools were used to check for gaps, errors, overlapping intervals and total lengths prior to geological modeling and estimation of Mineral Resources. All data were visually inspected in three dimensions (3D).

The Mineral Resource estimates for silver and gold were constrained by 3D geological interpretation and modelled domains of steeply-dipping vein-hosted deposits at Santa Elena and Ermitaño. The gold and silver mineralization is restricted to low sulphidation epithermal quartz–calcite veins and stockwork veining. The modelled veins and stockwork domains were constructed from drill hole logs, assay intervals, underground geological mapping at Santa Elena, and surface geological mapping. The domain model boundaries strictly adhere to the veins and stockwork contacts with the surrounding country rock to produce reasonable representations of each deposit location and volume. Nine resource domains were constructed for Santa Elena and 18 for Ermitaño.

Exploratory data analysis was completed for gold and silver sample values for each estimation domain to assess the statistical and spatial character of the sample data. The sample data were examined in 3D to understand the spatial distribution of mineralized intervals within the deposits. The sample assay data statistics were analyzed within each domain to look for possible mixed sample populations.

Boundary contact analysis was completed on the domains to review the change in metal grade across the domain contacts. There was a sharp grade change across all contacts and hard boundary conditions were observed for all domains. Hard boundaries were used during the construction of sample composite samples and during Mineral Resource estimation.

To select an appropriate composite sample length, the assay sample intervals were reviewed for each resource domain. The composite length selected varies from one domain to another, with short residual composite samples left at the end of the vein intersection added to the previous interval.

The drill hole and channel composite samples were evaluated for high-grade outliers and those outliers were capped to values considered appropriate for estimation. Capping of composite sample values was limited to a select few extreme values. Outlier restriction was also used to restrict the influence of high-grade samples.

The dominant gold and silver mineralization trends were identified based on the 3D numeric models for the metal in each domain. To establish the metal grade continuity within the domains, model variograms for composite values were developed along the trends identified, and the nugget values were established from downhole variograms.

Bulk density was derived from SG measurements. Bulk density for the resource domains was either estimated into the block models from the SG data or the mean SG value was assigned.

Block models were prepared for each domain. Four block models were used at Santa Elena and three were used for Ermitaño. A sub-blocked model type was created that consists of primary parent blocks that were sub-divided into smaller sub-blocks whenever triggering surfaces intersected the parent blocks. Silver and gold grades were estimated into the parent blocks and domains were evaluated into the sub-blocks.

Block model estimates for the Santa Elena and Ermitaño domains were completed for gold and silver. All block grades were estimated from composite samples captured within the respective domains using hard boundaries.

Block grades were estimated by either inverse distance squared (ID2) or ordinary kriging (OK). The method chosen in each case considered the characteristics of the domain, data spacing, variogram quality, and which method produced the best representation of grade continuity.

All channel samples that were used during construction of the geological models were reviewed. Only those channels that completely cross the mineralized deposit were used during grade estimation.

The grade estimation was completed in two successive passes if channel samples were used. The first pass used all composites, including channel samples, and only estimated blocks within a restricted short distance from the channel samples. The second pass applied less restrictive criteria using drill hole composites only. If only drill hole composites were used, the estimation was often completed with a single pass.

Validation of the estimated grades in the block models was completed for each of the resource estimation domains by comparisons with the nearest neighbour model and global mean declustered composite grade. Visual validation and review of swath plots was also done as part of this process. Overall, the block model validations demonstrated that the current resource estimates are a reasonable representation of the primary input sample data.

The Mineral Resources were classified into Measured, Indicated, or Inferred categories based on the confidence in the geological interpretation and models, the confidence in the continuity of metal grades, the sample support for the estimation and reliability of the sample data, and on the presence of underground mining development providing detailed mapping and production channel sample support.

The Mineral Resource estimates were evaluated for reasonable prospects for eventual economic extraction by application of input parameters based on mining and processing information from the last 24 months of operations at the Santa Elena mine. These economic parameters result in a silver equivalent (Ag-Eq) cut-off grade of 95 g/t for wide veins and 90 g/t for narrow veins at Santa Elena, and an Ag-Eq cut-off grade of 110 g/t for the Ermitaño deposits.

The Ag-Eq metal grades for the Mineral Resource estimates were calculated as follow:

Ag-Eq g/t = Ag g/t + (Au g/t * Au Factor)

Au Factor = Au Revenue / Ag Revenue

Au Revenue = (Au Metal Price / 31.1035) x Au Recovery x Au Payable

Ag Revenue = (Ag Metal Price / 31.1035) x Ag Recovery x Ag Payable

In addition to the application of these economic parameters and related Ag-Eq cut-off grades, the Vulcan Underground Stope Analyser was used to identify the blocks that represent mineable volumes that exceed the cut-off value when considering a minimum mining width of 1.2 m and complying with the aggregate of economic parameters.

Models of the underground mining excavations were evaluated into the block models for all resource domains at Santa Elena. These modeled volumes were used to deplete the block model Mineral Resource estimates prior to reporting the estimates. Regions within the mine that are in situ but judged to be un-mineable were also removed from the Mineral Resource estimates.

The Mineral Resource estimates for Santa Elena and Ermitaño are summarized in in Table 1-1 and Table 1-2 using the Ag-Eq cut-off grades appropriate for the mining method assigned to each domain, and an effective date of December 31, 2020. Measured and Indicated Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The Qualified Person for the estimate is Mr. PhillipSpurgeon, P.Geo, a First Majestic employee.

Table 1-1: Santa Elena Mineral Resource Estimates, Measured and Indicated Category (Effective Date December 31, 2020)

Project	Domain	Category	Mineral Type	Tonnage	Grades			Metal Content		
				k tonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Santa Elena	Main Vein	Measured	Sulphides	464	107	1.63	244	1,590	24	3,650
	Alejandras	Measured	Sulphides	230	234	2.67	459	1,730	20	3,390
	America	Measured	Sulphides	137	235	1.74	382	1,030	8	1,680
ALL	**Total Measured**		**Sulphides**	**830**	**163**	**1.94**	**326**	**4,350**	**52**	**8,720**
Santa Elena	Main Vein	Indicated	Sulphides	1,710	91	1.30	200	5,000	71	11,020
	Alejandra	Indicated	Sulphides	259	214	2.23	402	1,780	19	3,350
	Americas	Indicated	Sulphides	189	292	1.39	410	1,780	8	2,490
	Tortuga	Indicated	Sulphides	119	112	2.39	314	430	9	1,200
Heap Leach	Heap Leach Pad	Indicated	Oxides Spent Ore	509	24	0.56	73	400	9	1,190
Ermitano	Ermitano	Indicated	Sulphides	1,402	81	5.62	602	3,640	253	27,120
	Ermitano Stockwork	Indicated	Sulphides	612	40	1.78	204	780	35	4,020
	Intermedias	Indicated	Sulphides	252	58	4.28	454	470	35	3,680
	Other Minor Veins	Indicated	Sulphides	187	20	2.05	210	120	12	1,260
ALL	**Total Indicated**		**All Mineral Types**	**5,238**	**86**	**2.68**	**329**	**14,400**	**452**	**55,330**
ALL	**Total Measured and Indicated**		**All Mineral Types**	**6,069**	**96**	**2.58**	**328**	**18,750**	**503**	**64,050**

Table 1-2: Santa Elena Mineral Resource Estimates, Inferred Category (Effective Date December 31, 2020)

Project	Domain	Category	Mineral Type	Tonnage	Grades			Metal Content		
				k tonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Santa Elena	Main Vein	Inferred	Sulphides	845	64	0.91	141	1,730	25	3,830
	Alejandras	Inferred	Sulphides	443	191	1.67	332	2,720	24	4,730
	America	Inferred	Sulphides	202	311	0.99	394	2,020	6	2,560
	Tortuga	Inferred	Sulphides	30	73	0.91	149	70	1	140
Ermitano	Ermitano	Inferred	Sulphides	3,245	50	3.00	329	5,260	313	34,310
	Ermitano Stockwork	Inferred	Sulphides	901	48	1.67	203	1,400	48	5,870
	Intermedias	Inferred	Sulphides	534	65	3.22	364	1,120	55	6,250
	Other Minor Veins	Inferred	Sulphides	887	28	1.81	196	800	52	5,600
	Soledad	Inferred	Sulphides	455	172	3.62	507	2,510	53	7,420
ALL	**Total Inferred**		**Sulphides**	**7,541**	**73**	**2.38**	**292**	**17,630**	**578**	**70,710**

(1) Mineral Resource estimates are classified in accordance with the CIM Definition Standards on Mineral Resources and Mineral Reserves, whose definitions are incorporated by reference into NI 43-101.

(2) The Mineral Resource estimates are based on internal estimates prepared as of December 31, 2020. The information provided was reviewed and prepared by Phillip Spurgeon, P.Geo., a First Majestic employee.

(3) Silver-equivalent grade is estimated considering metal price assumptions, metallurgical recovery, and the metal payable terms.

Ag-Eq = Ag Grade + (Au Grade x Au Recovery x Au Payable x Au Price) / (Ag Recovery x Ag Payable x Ag Price).

(4) Metal prices used in the Mineral Resources estimates were $22.50/oz Ag and $1,850/oz Au.

(5) Metallurgical recovery was 93% for silver and 95.6% for gold for Santa Elena and the heap leach pad. For Ermitaño, the metallurgical recovery used was 85.2% for silver and 96.1% for gold.

(6) Metal payable used was 99.85% for silver and 99.80% gold.

(7) The cut-off grade used to constrain the Mineral Resource estimate was 95 g/t Ag-Eq for the Main Vein, 65 g/t Ag-Eq for the heap leach pad and 90 g/t Ag-Eq for all other Santa Elena mine domain. The cut-offs used were based on actual and budgeted operating and sustaining costs. The cut-off grade used to constrain Mineral Resources was 110 g/t Ag-Eq for the Ermitaño zone domains.

(8) Tonnage is expressed in thousands of tonnes; metal content is expressed in thousands of ounces.

(9) Totals may not add up due to rounding.

(10) Measured and Indicated Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Risk factors that could materially impact the Mineral Resource estimates include: metal price and exchange rate assumptions; changes to the assumptions used to generate the silver-equivalent grade cut-off grade; changes in the interpretations of mineralization geometry and continuity of mineralized zones; changes to geological and mineralization shape and geological and grade continuity assumptions; changes to geotechnical, mining, and metallurgical recovery assumptions; changes to the assumptions related to the continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate. The production channel sampling method has some risk of non-representative sampling that could result in poor precision and accuracy.

1.9.2. Mineral Reserve Estimates

The Mineral Reserves estimation process consists of converting Mineral Resources into Mineral Reserves by identifying material that exceeds the mining cut-off grades while conforming to specified geometrical constraints determined by the applicable mining method, and applying modifying factors such as mining dilution and mining recovery factors. If the Mineral Resources comply with the previous constraints, Measured Resources could be converted to Proven Reserves and Indicated Resources could be converted to Probable Reserves, and, in some instances, Measured Resources could be converted to Probable Reserves if any or more of the modifying factors reduces the confidence of the estimates.

The Ag-Eq grade is the variable that was used as indicator to segregate if the revenue from the mineralized material in a block, that is part of the Measured and Indicated Mineral Resources, exceeds the operating and capital costs.

NSR formulas were derived from the assumed economic parameters shown in Table 1-3

Table 1-3: Economic Parameters assumed for calculation of NSR.

Concept	Units	Values
Assumed Metal Price Ag	$/oz Ag	20.00
Assumed Metal Price Au	$/oz Au	1,700
Assumed Net Gold Price after Stream	$/oz Au	1,454
Metallurgical Recovery Ag	%	93.0
Metallurgical Recovery Au	%	95.6
Metal Payable Ag and Au	%	99.85
Metal Payable Ag and Au	%	99.80
Dore Transport Cost	$/oz doré	0.030
Insurance and Representation Cost	$/oz doré	0.009
Refining Charge Ag	$/oz Ag	0.240
Refining Charge Au	$/oz Au	0.750

Three types of cut-off grades (COG) were determined for the Santa Elena mine: general COG, incremental COG, and marginal COG. The COGs were expressed as Ag-Eq diluted grades, reflecting the grade that the run-of-mine (ROM) material will carry before it is fed to the processing plant.

The planned dilution assumed a minimum mining width, which will depend on the applied mining method. The minimum mining width for cut-and-fill using jackleg drills was 0.8 m, while when using jumbo drills it was 2.5 m. In the case of longhole mining, the minimum mining width assumed was 1.2 m.

The estimated overbreak in each side of the designed stope was 0.2 m for the two mining methods, longhole and cut-and-fill. An extra dilution from the backfill floor of 0.3 m for longhole and 0.2 m for cut-and-fill was also assumed. The unplanned dilution assumed was an additional 8% of the extracted material before becoming plant-feed.

Other than for sill mining, the average mining loss throughout each mining block for both cut-and-fill and longhole mining was assumed to be 5%. A factor of 25% was used for sill pillars.

The Mineral Reserves for the Santa Elena mine are presented in Table 1-4

Table 1-4: Santa Elena Mineral Reserves Statement (Effective Date December 31, 2020)

Category	Mineral Type	Tonnage	Grades			Metal Content		
		k tonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Proven Main Vein (UG)	Sulphides	312	110	1.71	259	1,100	17.2	2,600
Proven Alejandras (UG)	Sulphides	311	166	1.87	329	1,660	18.7	3,290
Proven America (UG)	Sulphides	203	153	1.10	249	1,000	7.2	1,620
Proven Tortuga (UG)	Sulphides	-	-	-	-	-	-	-
Total Proven	**Sulphides**	**826**	**141**	**1.62**	**283**	**3,760**	**43.1**	**7,510**
Probable Main Vein (UG)	Sulphides	921	88	1.31	202	2,600	38.7	5,980
Probable Alejandras (UG)	Sulphides	307	159	1.64	303	1,570	16.2	2,980
Probable America (UG)	Sulphides	269	184	0.84	257	1,590	7.2	2,220
Probable Tortuga (UG)	Sulphides	109	91	2.19	282	320	7.7	990
Probable (PAD)	Oxides Spent Ore	509	24	0.56	73	400	9	1,190
Total Probable	**Oxides + Sulphides**	**2,114**	**95**	**1.16**	**197**	**6,480**	**78.9**	**13,360**
P&P Main Vein (UG)	Sulphides	1,233	93	1.41	216	3,700	55.9	8,580
P&P Alejandras (UG)	Sulphides	618	163	1.76	316	3,230	34.9	6,270
P&P America (UG)	Sulphides	472	171	0.95	253	2,590	14.4	3,840
P&P Tortuga (UG)	Sulphides	109	91	2.19	281	320	7.7	990
P&P (PAD)	Oxides Spent Ore	509	24	0.56	73	400	9	1,190
Total Proven & Probable	**Oxides + Sulphides**	**2,941**	**108**	**1.29**	**221**	**10,240**	**122.0**	**20,870**

(1) Mineral Reserves have been classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") 2014 Definition Standards on Mineral Resources and Mineral Reserves, whose definitions are incorporated by reference into NI 43-101.

(2) The Mineral Reserves statement provided in the table above is based on internal estimates prepared as of December 31, 2020. The information provided was prepared and reviewed under the supervision of Ramon Mendoza Reyes, P.Eng., a First Majestic employee.

(3) Silver-equivalent grade (Ag-Eq) is estimated based on metal price assumptions, metallurgical recovery for the corresponding mineral type/mineral process and the metal payable of the selling contract.

a) The Ag-Eq grade formula used was:

*Ag-Eq Grade = Ag Grade + Au Grade * (Au Recovery * Au Payable * Au Price) / (Ag Recovery * Ag Payable * Ag Price).*

b) Metal prices considered for Mineral Reserves estimates were $20.00/oz Ag and $1,700.00/oz Au.

c) Other key assumptions and parameters include: metallurgical recoveries of 94.00% for silver, 96.50% for gold; metal payable of 99.85% for silver and 99.80% for gold; direct mining costs of US$25.33/t, mill feed, process and treatment costs of US$31.13/t mill feed and general and administration costs (indirect costs) of US$11.37/t.

(4) A two-step constraining approach was implemented to estimate reserves for each mining method in use: a general cut-off grade (GC) was used to delimit new mining areas that will require development of access, infrastructure and all sustaining costs. A second incremental cut-off Grade (IC) was considered to include adjacent mineralized material which has a recoverable value that pays for all associated costs, including but not limited to the variable cost of mining and processing, indirect costs, treatment, administration costs and plant sustaining costs but excludes the access development assumed to be covered by the block above the GC grade.

(5) Modifying factors for conversion of resources to reserves include consideration of planned dilution due to geometric aspects of the designed stopes and economic zones, and additional dilution consideration due to unplanned events, materials handling and other operating aspects. Mineable shapes were used as geometric constraints.

(6) Tonnage is expressed in thousands of tonnes, metal content is expressed in thousands of ounces. Metal prices and costs expressed in USD.

(7) Numbers have been rounded as required by reporting guidelines. Totals may not sum due to rounding.

Factors which may materially affect the Mineral Reserve estimates for the Santa Elena mine include fluctuations in commodity prices and exchange rates assumptions used; material changes in the underground stability due to geotechnical conditions that may increase unplanned dilution and mining loss; unexpected variations in equipment productivity; material reduction of the capacity to process the mineralized material at the planned throughput and unexpected reduction of the metallurgical recoveries;

higher than anticipated geological variability; cost escalation due to external factors; changes in the taxation considerations; the ability to maintain constant access to all working areas; changes to the assumed permitting and regulatory environment under which the mine plan was developed; the ability to maintain mining concessions and/or surface rights; the ability to renew agreements with the different surface owners in Santa Elena; and the ability to obtain and maintain social and environmental license to operate.

The QP is not aware of any known mining, metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the mineral reserve estimates, other than discussed in this Report.

1.10. Mining Operations

The Santa Elena mine operation consists of an underground mine.

Mining activities are conducted by both First Majestic and contractor personnel.

The Santa Elena deposits vary in dip, thickness, and geotechnical conditions along strike and dip. Multiple mining methods are required to achieve the maximum efficient extraction of mineralized material at site. Three well-established methods were selected for mining extraction at Santa Elena:

- Longitudinal longhole stoping;
- Avoca;
- Cut-and-fill.

Development in mineralized structures and cut-and-fill are carried out by either jumbo or jackleg drills, whereas longitudinal longhole and Avoca methods are carried out with pneumatic or electro-hydraulic drills. Primary access is provided by adits and internal ramps. Vein thicknesses vary from 0.1–15 m, with the average between 1.5–2.0 m. Some veins have a strike length of >1,500 m. Vein dips vary from 45–85°, with the latter being decidedly more prevalent.

Ground conditions throughout most of the Santa Elena underground workings are considered good. Bolting is used systematically in the main haulage ramps, drifts, and underground infrastructure. For those sectors that have poorer rock quality, shotcrete, mesh and/or steel arches are used.

Groundwater inflow has been increasing at depth in the Santa Elena mine. Dewatering systems consist of main and auxiliary pumps in place at each of the mine areas.

The ventilation system consists of a forced air intake system through two main fans located on surface. These fans generate the necessary pressure change for return air to exhaust through the portals and ventilation raises.

The development schedule for the LOM plan is presented in Table 1-5.

Table 1-5: Annual Development Requirements

Lateral Development	Total	Units	2021	2022	2023	2024	2025
Capital	**7,654**	**m**	**4,112**	**2,540**	**1,003**	**0**	**0**
Ramp	4,494	m	2,206	1,620	668	0	0
Level Access	1,387	m	894	351	142	0	0
Other	1,774	m	1,012	569	192	0	0
Operating	**12,060**	**m**	**4,282**	**1,620**	**3,953**	**1,469**	**736**
Ore Drive	11,561	m	4,035	1,464	3,857	1,469	736
Other	499	m	247	156	96	0	0
Total Lateral Development	**19,714**	**m**	**8,394**	**4,160**	**4,956**	**1,469**	**736**

The production schedule for the LOM plan is presented in Table 1-6.

Table 1-6: LOM Plan Production Schedule

Type	Units	Total	2021	2022	2023	2024	2025
ROM Production	k t	2,432	613	604	496	356	363
Silver Grade	g/t Ag	126	92	103	120	162	193
Gold Grade	g/t Au	1.44	1.33	1.57	1.36	1.56	1.42
Silver-Equivalent Grade	g/t Ag-Eq	252	208	240	238	297	317
Leach-Pad Material Production	k t	509	416	93			
Silver Grade	g/t Ag	23	23	24			
Gold Grade	g/t Au	0.56	0.56	0.56			
Silver-Equivalent Grade	g/t Ag-Eq	72	71	73	-	-	-
Total Plant Feed	k t	2,941	1,029	697	496	356	363
Silver Grade	g/t Ag	108	64	93	120	162	193
Gold Grade	g/t Au	1.29	1.02	1.44	1.36	1.56	1.42
Silver-Equivalent Grade	g/t Ag-Eq	221	153	218	238	297	317
Contained Metal							
Contained Silver	k oz Ag	10,214	2,126	2,077	1,905	1,849	2,257
Contained Gold	k oz Au	122.0	33.6	32.2	21.7	17.8	16.6
Contained Silver-Equivalent	k oz Ag-Eq	20,857	5,063	4,883	3,798	3,403	3,709
Metallurgical Recoveries							
Metallurgical Recovery Silver	%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%
Metallurgical Recovery Gold	%	95.6%	95.6%	95.6%	95.6%	95.6%	95.6%
Produced Metal							
Produced Silver	k oz Ag	9,504	1,979	1,932	1,773	1,720	2,100
Produced Gold	k oz Au	116.6	32.2	30.7	20.7	17.0	15.9
Produced Silver-Equivalent	k oz Ag-Eq	19,675	4,785	4,615	3,582	3,206	3,488

A total of 2.94 Mt of ore will be mined and processed in the LOM plan, with grades averaging 108 g/t Ag and 1.29 g/t Au. Total metal produced is estimated at 9.5 Moz Ag and 117 koz Au. Based on the estimated Mineral Reserves, the Santa Elena mine has five years of mine-life remaining.

1.11. Processing and Recovery Operations

The Santa Elena mine processes a blended feed consisting of high-grade underground mineralized material and spent-ore from the existing heap leach pad.

The processing plant has been successfully operating for several years and has continuously improved silver and gold metallurgical recoveries. The process is based on cyanide tank leaching and Merrill-Crowe smelting of fine-ground ore to produce silver–gold doré bars. The installed plant capacity is for 2,800 tpd. Throughput levels averaged 2,500 and 1,830 tpd in 2019 and 2020 respectively. In 2019 and 2020 the average plant-feed contained head grades of 92 g/t Ag and 1.56 g/t Au.

The process plant is mostly built as a single train with the crushing area split from the remaining areas, and connected through a belt conveyor to transfer the crushed product from the screening underflow to the fine stockpiles.

1.12. Infrastructure, Permitting and Compliance Activities

The existing infrastructure can support current and LOM plan mining and mineral processing activities.

Most of the operation's support facilities are located within a 1.5 km radius, facilitating the transportation and logistics of personnel, material, and equipment. Operations personnel are transported by passenger buses from nearby towns. All equipment, supplies and materials are brought in by road.

Most non-local staff and contractor personnel stay in rental homes available in the nearby towns of Banamichi, Huepac and Aconchi. There are multiple hotels available in the area for visitors. In 2020, First Majestic constructed a 270-bed temporary camp within the Santa Elena grounds.

The main infrastructure consists of roads, crushing, grinding and processing facilities, a previously-processed leach-pad, a filtered-tailings storage facility (FTSF), administrative offices, a first-aid station, warehouse, assay laboratory, diesel and natural gas power generation plants, maintenance shop, water storage tanks, and water supply tank.

The FTSF has 15 Mt of storage capacity, which at current throughput rates can support approximately nine years of operation. The storage capacity of the Santa Elena FTSF is sufficient to support the LOM plan presented in this Report.

The electric power required for the Santa Elena mine operation and supporting infrastructure is generated on-site. The power generation plant consists of eight diesel-powered generators with a total capacity of 9.2 MW. Power consumption averaged 7 MW per month in 2020.

A project to upgrade the power generation system to a LNG power generation system with capacity of 14 MW is underway. At the Report effective date, construction of the new LNG generation site and related infrastructure was completed, and commissioning was ongoing with expected completion in the second quarter of 2021.

Industrial water is supplied mainly from the mine dewatering system. A licensed water-well is also equipped and regularly pumps water to an elevated tank for non-process uses.

The Santa Elena mine has implemented the First Majestic Environmental Management System, which supports the implementation of environmental policy and is applied to standardize tasks and strengthen a culture focused on minimizing environmental impacts. The EMS is based on the requirements of the international standard ISO 14001:2015 and the requirements to obtain the Certificate of Clean Industry, issued by the Mexican environmental authorities, the Ministry of Environment and Natural Resources (SEMARNAT), through the Federal Attorney for Environmental Protection in Mexico (PROFEPA). The EMS includes an annual compliance program to review all environmental obligations.

Environmental and social studies are routinely performed to characterize existing conditions and to support the preparation of Risk Assessments and Accident Prevention Programs for the operation and are documented as part of the EMS.

Santa Elena is an operating mine, as such it holds all major environmental permits and licenses required by the Mexican authorities to carry out mineral extracting activities in the mining complex. The environmental permits that are in place at the Report effective date authorize the various works and mining activities that are currently being carried out in the Santa Elena mine, in the surroundings of the site and in the Ermitaño Project.

The main environmental permit is the environmental license “Licencia Ambiental Unica” (LAU) under which the mine operates its industrial facilities in accordance with the Mexican environmental protection laws administered by SEMARNAT as the agency in charge of environment and natural resources. The most recent update to the main environmental permit was approved in July 2018.

Other permits and authorizations include:

- Environmental risk study (ERA);
- Accident prevention program (PPA);
- Mining waste management plan;
- Environmental impact assessment for the Santa Elena mine, FTSF, and the Ermitaño project;
- Change of land use for the Santa Elena mine and the Ermitaño project;
- Industrial water and mine groundwater discharge;
- Power generation permits.

In 2017, the Santa Elena mine started the voluntary process to obtain the Clean Industry Certification. The certification recognizes improvements in environmental management practices, regulatory compliance and environmental performance. At the Report effective date this program was still in process.

In February 2021, for the seventh consecutive year, Nusantara was awarded the Socially Responsible Company (ESR) designation by the Mexican Center for Philanthropy (CEMEFI).

1.13. Capital and Operating Costs

The LOM plan includes estimates for sustaining capital expenditures for the planned mining and processing activities.

Sustaining capital expenditures will mostly be allocated for on-going development, infill drilling, mine equipment rebuilding, major overhauls or replacements, plant maintenance and on-going refurbishing, and for tailings management facilities expansion as needed. Table 1-7 shows the capital costs for the major components.

Table 1-7: Santa Elena Mine Capital Costs Summary (Sustaining Capital)

Type (M USD)	Total	2021	2022	2023	2024	2025
Mine Development	$ 21.5	$ 11.1	$ 7.4	$ 3.0	$ -	$ -
Infill Drilling	$ 1.4	$ 0.4	$ 0.4	$ 0.4	$ 0.2	$ -
Property, Plant & Equipment	$ 19.2	$ 6.3	$ 4.2	$ 3.8	$ 2.7	$ 2.3
Other Sustaining Costs	$ 4.5	$ 1.1	$ 1.1	$ 1.1	$ 1.1	$ -
Total Sustaining Capital Costs	***$ 46.6***	***$ 18.9***	***$ 13.1***	***$ 8.3***	***$ 4.0***	***$ 2.3***
Near Mine Exploration	$ 5.1	$ 1.5	$ 1.5	$ 1.5	$ 0.7	$ -
Total Capital Costs	***$ 51.8***	***$ 20.4***	***$ 14.6***	***$ 9.8***	***$ 4.8***	***$ 2.3***

A summary of the Santa Elena operating costs resulting from the LOM plan and the cost model used for assessing economic viability is presented in Table 1-9. A summary of the annual operating expense is presented in Table 1-10.

Table 1-8: Santa Elena Operating Costs

Type	$USD/tonne
Mining Cost	$ 28.7
Processing Cost	$ 33.0
Indirect Costs	$ 21.1
Total Production Cost	*$ 82.8*
Selling Costs	$ 2.0
Total Cash Cost	*$ 84.9*

Table 1-9: Santa Elena Annual Operating Costs

Type (M USD)	Total	2021	2022	2023	2024	2025
Mining Cost	$ 84.4	$ 20.3	$ 18.8	$ 16.6	$ 14.2	$ 14.5
Processing Cost	$ 97.1	$ 30.2	$ 23.1	$ 17.9	$ 12.8	$ 13.1
Indirect Costs	$ 62.1	$ 17.8	$ 12.4	$ 11.3	$ 10.1	$ 10.4
Total Production Cost	*$ 243.6*	*$ 68.3*	*$ 54.4*	*$ 45.8*	*$ 37.2*	*$ 38.0*
Selling Costs	$ 6.0	$ 1.7	$ 1.4	$ 1.0	$ 0.9	$ 1.0
Total Cash Cost	*$ 249.6*	*$ 69.9*	*$ 55.7*	*$ 46.9*	*$ 38.1*	*$ 38.9*

1.14. Economic Analysis Supporting Mineral Reserve Declaration

First Majestic is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material expansion of current production is planned.

An economic analysis to support presentation of Mineral Reserves was conducted. Under the assumptions presented in this Report, the operations show a positive cash flow, and can support Mineral Reserve estimation.

1.15. Conclusions

Under the assumptions used in this Report, the Santa Elena mine has positive project economics for the LOM plan, which supports the Mineral Reserve statement.

1.16. Recommendations

Work or studies recommended by the QPs are presented in two phases.

The proposed work or studies presented in Phase 1 are not dependent on previous results or the outcome of the different projects or studies. These works or studies can be carried out concurrently. The total expenditure for the Phase 1 works is estimated at $15.5 M and $28.4 M for Phase 2.

1.16.1. Exploration

The following annual drilling programs are recommended.

- At Santa Elena: an annual 4,000 m infill sustaining drill program to support short-term production plans and an annual 15,000 m near-mine drill program to support mid-term production projections;
- At Ermitaño: an annual 1,000 m underground infill drill program to increase confidence in the current Indicated and Inferred Mineral Resources and a 15,000 m near-mine drill program to explore for expansions to the mineralization;
- Regionally: an annual 15,000 m brownfield surface drill program on two or three prospects.

This 50,000 m annual exploration drill program is estimated to costs $5 M per year excluding related underground access development costs.

In addition, an annual prospect generation program consisting of prospecting, soil and rock geochemical surveys, mapping, and geophysical surveys is recommended. This prospect generation program is estimated to cost $250,000 per year.

The amounts and estimated cost of these recommended exploration programs should be reviewed annually.

1.16.2. Production Channel Samples

A study to assess channel sample quality should be performed and could consist of a comparison of 30 sawn channels samples with paired un-sawn channel samples. This study is estimated to cost $10,000.

1.16.3. Reconciliation

It is recommended that reconciliation monitoring be used to continuously improve the comparison of estimates to measured results all along the mine value chain to highlight opportunities to improve the traceability, identification and control of temporary storage areas, transfers and materials handling practices.

The implementation cost for the integral reconciliation system at Santa Elena is estimated at $200,000.

1.16.4. Hydrogeology

It is recommended that a field investigation be completed to assess ground-water conditions at depth for the Santa Elena Main Vein and Alejandras. The estimated cost to complete these field investigations and studies is $300,000.

1.16.5. Ermitaño PFS

A pre-feasibility study for the Ermitaño project is currently ongoing with different programs in progress, including field investigations in hydrogeology and geotechnical drilling and modeling, as well as metallurgical testwork. A test-mine area is being prepared underground at Ermitaño to further investigate geotechnical conditions and to assess the required delineation drilling to support ground-control systems design and detailed stope design.

It is recommended that these field investigations be completed and a study be compiled to support the declaration of Mineral Reserves at Ermitaño. The estimated cost to complete these studies and field investigations is $1.5 M.

1.16.6. Autogenous Grinding Conversion

Savings in specific grinding energy and steel media consumption are expected with the implementation of autogenous and/or semi-autogenous (AG/SAG) grinding.

The AG/SAG grinding conversion is estimated to cost $8.0 M.

1.16.7. Counter-Current Decantation Circuit Upgrade – Phase 1

A preliminary study has been conducted for the design and installation of one additional counter-current decantation (CCD) thickener with the objective of increasing metal recovery. It is recommended that this project be assessed for potential implementation in the Santa Elena processing plant by the completion of a detailed engineering study to support an eventual construction. The estimated cost of this study is $250 k.

1.16.8. Tailings Filtration Upgrade – Phase 1

A preliminary study was conducted for the design and installation of two filter-presses, with one operating and one in stand-by. It is recommended that this project be assessed for potential implementation in the Santa Elena processing plant by the completion of a value engineering study to rationalize capital requirements, to analyze the possibility of installing only one filter-press, and to use the current belt-filters as backup. The estimated cost of this study is $0.5 M.

1.16.9. CCD Circuit Upgrade – Phase 2

If Phase 1 of the CCD circuit upgrade study confirms viability, a second phase could follow for the installation of the filter-press, which as of the Report effective date is estimated to cost $7.0 M.

1.16.10. Tailings Filtration Upgrade – Phase 2

If Phase 1 of the tailings filtration upgrade study confirms viability, a second phase could follow for the installation of the filter-press, which as of the Report effective date is estimated to cost $21.4 M.

2. INTRODUCTION

Mr. Ramón Mendoza Reyes, Mr. Gregory K. Kulla, Ms. María Elena Vázquez, Mr. Phillip Spurgeon and Mr. Persio P. Rosario prepared this technical report (the Report) on the Santa Elena Silver/Gold Mine (Santa Elena or Santa Elena mine), located in the state of Sonora, Mexico.

The mine is owned and operated by Nusantara de Mexico S.A. de C.V. (Nusantara), which is an indirectly wholly-owned subsidiary of First Majestic Silver Corp. (First Majestic). First Majestic acquired the Santa Elena mine from SilverCrest Mines Inc. (SilverCrest) in October 2015.

This Report provides information on Mineral Resource and Mineral Reserve estimates, and mine and process operations and planning for the Santa Elena mine. The Mineral Resource and Mineral Reserve estimates are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves, May 2014; (the 2014 CIM Definition Standards). The Mineral Resource and Mineral Reserve estimates for all areas of Santa Elena were prepared by First Majestic.

For the purposes of this Report, the following naming convention was adopted:

- "Santa Elena Silver/Gold Mine" (Santa Elena or Santa Elena mine) is used to refer to the property where the underground mine operation, the processing plant and the associated infrastructure is located, Santa Elena also refers to the limits of all of the consolidated mining concessions.
- "Santa Elena deposits" is used to refer to the deposits located within the currently operating underground mine.

2.1. Technical Report Issuer

Santa Elena is owned and operated by Nusantara de Mexico S.A. de C.V. (Nusantara), which is a 100% owned Mexican subsidiary of First Majestic.

2.2. Cut-off and Effective Dates

The effective date of the Mineral Resource and Mineral Reserve estimates included in this Report is December 31, 2020, which represents the cut-off date for the scientific and technical information used in the Report, including mineral tenure and permitting, drilling and assaying data, production and operating costs.

2.3. Sources of Information

For the purposes of the Report, all information, data, and figures contained or used in its integration have been provided by First Majestic unless otherwise stated. Information sources are listed in Section 27 of this Report.

The Qualified Persons reviewed the latest information available from the effective date of the Report to the signature date of the Report and there are no material changes to the information provided in this Report.

2.4. Previously-Filed Technical Reports

First Majestic has not previously filed a technical report on the Santa Elena mine. Prior to First Majestic's acquisition of Santa Elena, there were several technical reports filed on the Santa Elena property, among them:

- Update to Santa Elena Pre-Feasibility Study Sonora, México, dated December 31, 2014 and re-addressed to First Majestic Silver Corp. on October 1, 2015. Prepared for First Majestic Silver Corp by N. Eric Fier, CPG., P.Eng., Chief Operating Officer of SilverCrest Metals Inc.
- Santa Elena Expansion Pre-Feasibility Study and Open Pit Reserve Update, Sonora, México, dated April 30, 2013. Prepared for Silvercrest Mines Inc. by Fier, E.N., Barr, J., Tansey, M., Fox, J., Chaparro, C. and Michael, N.
- Technical Report on the Santa Elena Property, Sonora Mexico, dated February 15, 2009. Prepared for Silvercrest Mines Inc. by Nathan Eric Fier, CPG., P.Eng.
- Technical Report on the Pre-Feasibility Study for the Santa Elena Project, Sonora, Mexico, dated August 11, 2008. Prepared for Silvercrest Mines Inc. by Clow, G.G., Rennie, D.W., Wallis, C.S., Allard, G., McDonald, E.J.

Exploration and infill drilling activities at the Santa Elena mine and Ermitaño project are ongoing as of the effective date of the Report. Where applicable, results received to date from this recent drilling activity have generally corroborated the resource models.

2.5. Qualified Persons

This Report has been prepared by employees of First Majestic under the supervision of Ramon Mendoza Reyes, P.Eng., Vice President of Technical Services, Greg Kulla, P.Geo., Vice President of Exploration, Maria E. Vazquez Jaimes, P.Geo., Geological Database Manager, Phillip Spurgeon, P.Geo., Senior Resource Geologist, and Persio P. Rosario, P.Eng. Vice President of Processing, Metallurgy, and Innovation.

2.6. Site Visits and Scope of Personal Inspection

Mr. Ramon Mendoza has visited Santa Elena on several occasions from 2015 to 2019, with the most recent site visit being March 8–10, 2019. During these visits he coordinated the integration of information for Mineral Reserves estimates. During the visits, he inspected the performance of the applied mining methods, mine productivity, the compilation of mine plans and participated in discussions with mine staff regarding operating and capital costs performance. During the most recent visit on March 8-10, 2020, he inspected the performance of the mining operations for the Santa Elena mine, depletion surveys, estimates of the main operating areas of the Santa Elena mine, and inspected the progress of the access and exploration ramp for the Ermitaño project.

Mr. Greg Kulla visited the Santa Elena mine on several occasions, the most recent being January 31 to February 3, 2020, October 7–9, 2019, and June 2–3, 2019. During these and previous visits he reviewed the drilling, logging, and sampling processes, and reviewed core from several drill holes in the Santa Elena mine and Ermitaño project. Mr. Kulla inspected outcrops, active and historic drill sites, and drill core from several regional prospects and reviewed and provided guidance on regional exploration programs.

Ms. Maria Elena Vazquez visited the Santa Elena mine on several occasions between 2016 to 2018 with the most recent visit from November 12–15, 2019. During these visits, she conducted database audits and inspected exploration practices to support Mineral Resource estimates. During the most recent visit, she carried out validation and verification of the resource estimation database, assessment of the quality assurance and quality control (QAQC) data, and validation of core logging, sampling and specific gravity (SG) measurement procedures.

Mr. Phillip Spurgeon visited the Santa Elena mine on two occasions, from March 25–28, 2019 and from September 4–9, 2019. During these visits he inspected the underground workings at Santa Elena mine with mine geology staff and also visited the Ermitaño project to review surface geology and drilling activities. Santa Elena and Ermitaño drill-core was reviewed and core logging and handling facilities were also reviewed. Geology and logging and mapping procedures were discussed with mine and exploration geologists.

Mr. Persio Rosario visited the Santa Elena mine on May 8–10 and June 26–27, 2018. During his visits he inspected the processing plant, the tailings management facility, and the site infrastructure to assess processing performance and general operating conditions.

2.7. Units and Currency and Abbreviations

Units of measurement are metric unless otherwise noted. All costs are expressed in United States dollars unless otherwise noted. Common and standard abbreviations are used wherever possible. Table 2-1 shows the list of abbreviations used in this Report.

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Table 2-1: List of Abbreviations and Units

Distances:	mm – millimetre cm – centimetre m – metre km – kilometre masl – metres above sea level ft - feet	Other:	tpd – tonnes per day ktpd – 1,000 tonnes per day Mtpa - 1,000,000 tonnes per year kW – kilowatt MW – megawatt kVA – kilovolt-ampere MVA – Megavolt-ampere kWh – kilowatt hour MWh – megawatt hour °C – degrees Celsius Ag – silver Au – gold Pb – lead Zn – zinc Cu – copper Mn - manganese Ag-Eq – silver equivalent
Areas:	m^2 – square metre ha – hectare km^2 – square kilometre		
Weights:	oz – troy ounces k oz – 1,000 troy ounces lb - pound g – grams kg – kilograms t – tonne (1,000 kg) kt – 1,000 tonnes Mt – 1,000,000 tonnes		
Time:	min – minute hr – hour op hr – operating hour d – day yr – year	Assay/Grade:	g/t – grams per tonne g/L – grams per litre ppm – parts per million ppb – parts per billion
Volume/Flow:	m^3– cubic metre m^3/hr – cubic metres per hour cu yd – cubic yards	Currency:	$ – United States dollar k – thousand M – million

3. RELIANCE ON OTHER EXPERTS

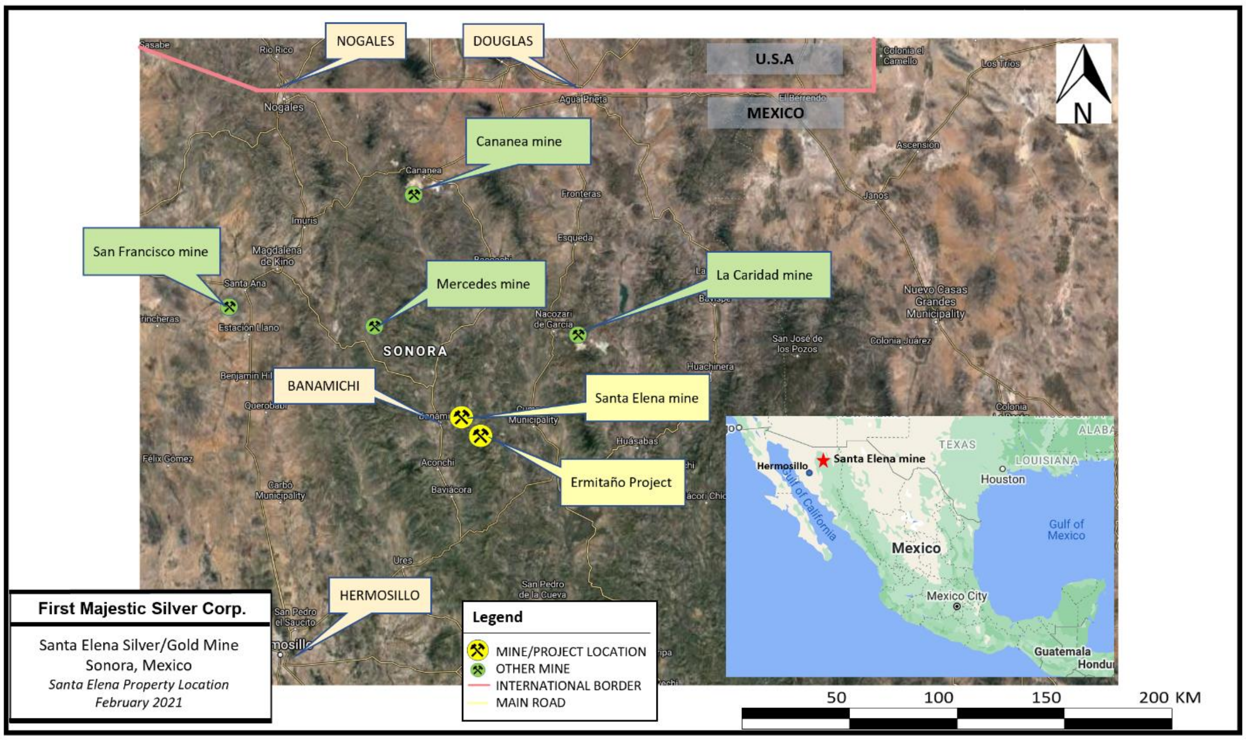
This section is not relevant to this Report. Information pertaining to mineral tenure, surface rights, royalties, environment, permitting and social considerations, marketing and taxation were sourced from First Majestic experts in those fields as required.

4. PROPERTY DESCRIPTION AND LOCATION

4.1. Property Location

The Santa Elena mine is an actively producing mining complex located in the municipality of Banámichi, State of Sonora, Mexico, approximately 150 km northeast of the state capital city of Hermosillo (Figure 4-1). The community of Banámichi is located 7 km west of the mining complex.

Figure 4-1: Location of Santa Elena Mine



Note: Figure prepared by First Majestic, February 2021.

4.2. Ownership and Royalties

On December 8, 2005, Nusantara had the right to acquire a 100% interest in the Santa Elena mine from Tungsteno de Mexico S.A. de C.V. On August 14, 2009, Nusantara exercised the option to acquire 100% of the Santa Elena mine.

On January 30, 2014, Nusantara signed an option agreement with Evrim Resources Corp. (Evrim) whereby Nusantara can acquire a 100% interest in the Ermitaño property. In addition, on November 7, 2014, Nusantara signed a five-year option agreement with Evrim whereby Nusantara can acquire a 100% interest in the Cumobabi property.

On October 1, 2015, First Majestic completed the acquisition of SilverCrest Mines Inc. (SilverCrest), then owner of both Nusantara and the Santa Elena mine.

On December 26, 2016, First Majestic signed an option agreement with Pan American Silver Corp. (PanAm) whereby First Majestic can acquire a 100% interest in the Los Hernandez property.

On March 28, 2017, First Majestic expanded the Santa Elena property by purchasing the El Gachi property from Santacruz Silver Mining Ltd. (Santacruz) which Santacruz had optioned from Minera Hochschild Mexico S.A. de C.V in 2014.

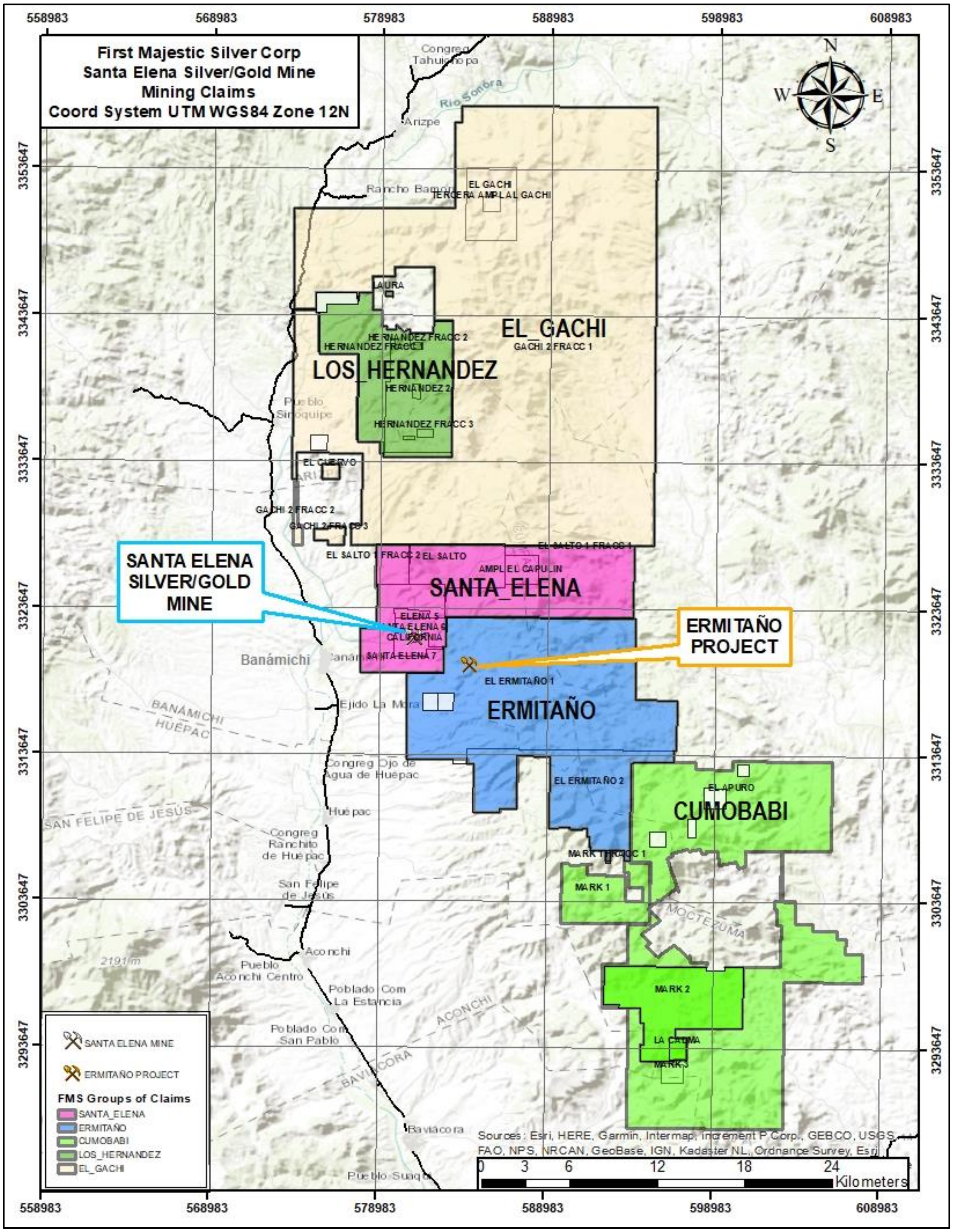
On September 10, 2018, First Majestic further expanded the Santa Elena property by completing the acquisition of a 100% interest in the Ermitaño and Cumobabi properties from Evrim. Upon completion of the exercise, Evrim retained a 2% net smelter returns (NSR) royalty from the sale of mineral products extracted from the Ermitaño property and retained a 1.5% NSR from the sale of mineral products extracted from the Cumobabi property. In addition, there is an underlying NSR royalty where Mining Royalties Mexico, S.A de C.V. retains a 2% NSR from the sale of mineral products extracted from the Ermitaño and Cumobabi properties.

In December 2020, First Majestic completed all option payments and work commitments and acquired a 100% interest in the Los Hernandez property from PanAm. Upon completion of the exercise, PanAm retained a 2.5% NSR from the sale of mineral products derived from the Los Hernandez property.

4.3. Mineral Tenure

In Mexico, mineral rights can be held by private entities in the form of mining concessions granted by the federal government through the Mines Directorate of the Ministry of Economy. The Santa Elena mine consists of 32 individual concessions covering 102,172 ha and four concessions applications in process which cover 72 ha, for a total of 102,244 ha. These concessions were organized into five groups to facilitate land management. The five concession groups are: Santa Elena, Ermitaño, Cumobabi, Los Hernandez and El Gachi. Figure 4-2 shows the five different concessions groups. Table 4-1 lists the consolidated Santa Elena concessions.

Figure 4-2: Santa Elena Mine Concessions Map



Note: Figure prepared by First Majestic, February 2021.

Table 4-1: Mining Concessions for Santa Elena and Surrounding Properties

No.	Group	Concession Name	Concession Number	Date Granted	Expire Date	Surface (ha)
1	Santa Elena	Santa Elena	192174	19-Dec-1991	18-Dec-2041	24.19
2	Santa Elena	Santa Elena No 4 Fraccion SE	178094	11-Jul-1986	10-Jul-2036	0.06
3	Santa Elena	Santa Elena No 3 Fraccion SW	180494	13-Jul-1987	12-Jul-2037	0.06
4	Santa Elena	California	176544	6-Jan-1986	15-Dec-2035	18.00
5	Santa Elena	Elena 5	221460	13-Feb-2004	12-Feb-2054	399.87
6	Santa Elena	Elena 6	223533	13-Jan-2005	12-Jan-2055	416.02
7	Santa Elena	Santa Elena 7	227239	26-May-2006	25-May-2056	1,868.34
8	Santa Elena	El Salto	243669	4-Nov-2014	3-Nov-2064	1,645.39
9	Santa Elena	El Salto 1 Fracc. 1	244393	25-Aug-2015	24-Aug-2065	4,120.22
10	Santa Elena	El Salto 1 Fracc. 2	244394	25-Aug-2015	24-Aug-2065	534.52
11	Santa Elena	Ampl. El Capulin	229411	17-Apr-2007	16-Apr-2057	400.00
	Subtotal Santa Elena Group					**9,426.67**
12	Ermitaño	El Ermitaño 1	230421	24-Aug-2007	23-Aug-2057	12,267.55
13	Ermitaño	El Ermitaño 2	235605	22-Jan-2010	21-Jan-2060	4,259.23
	Subtotal Ermitaño Group					**16,526.78**
14	Cumobabi	El Apuro	228838	19-Feb-2004	18-Feb-2054	16,721.46
15	Cumobabi	Mark 1	232857	30-Oct-2008	29-Oct-2058	1,713.55
16	Cumobabi	Mark 1 Fracción 1	232858	30-Oct-2008	29-Oct-2058	5.71
17	Cumobabi	Mark 2	232856	30-Oct-2008	29-Oct-2058	3,499.14
18	Cumobabi	Mark 3	232855	30-Oct-2008	29-Oct-2058	169.00
19	Cumobabi	La Calma	221119	2-Dec-2003	1-Dec-2053	150.00
	Subtotal Cumobabi Group					**22,258.86**
20	Los Hernandez	Hernandez Fracc. I	235296	6-Nov-2009	5-Nov-2059	2,613.65
21	Los Hernandez	Hernandez Fracc. 2	235297	6-Nov-2009	5-Nov-2059	25.00
22	Los Hernandez	Hernandez Fracc. 3	235298	6-Nov-2009	5-Nov-2059	60.00
23	Los Hernandez	Hernandez Fracc. 4	235299	6-Nov-2009	5-Nov-2059	14.00
24	Los Hernandez	Hernandez Fracc. 5	235300	6-Nov-2009	5-Nov-2059	50.00
25	Los Hernandez	Hernandez 2	235303	6-Nov-2009	5-Nov-2059	3,027.01
26	Los Hernandez	Laura	235370	18-Nov-2009	17-Nov-2059	12.80
	Subtotal Los Hernandez Group					**5,802.46**
27	El Gachi	El Gachi	182543	27-Jul-1988	26-Jul-2038	100.00
28	El Gachi	Tercera Ampl. Al Gachi	228333	8-Nov-2006	7-Nov-2056	1,400.00
29	El Gachi	El Cuervo	230189	27-Jul-2007	26-Jul-2057	100.00
30	El Gachi	Gachi 2 Fracc. 1	235256	4-Nov-2009	3-Nov-2059	46,222.35
31	El Gachi	Gachi 2 Fracc. 2	235257	4-Nov-2009	3-Nov-2059	141.86
32	El Gachi	Gachi 2 Fracc.3	235258	4-Nov-2009	3-Nov-2059	193.12
	Subtotal El Gachi Group					**48,157.33**
	Total Concessions Titled					**102,172.09**
No.	**Group**	**Concession Name**	**Aplication No.**	**Filing Date**	**Status**	**Surface (ha)**
33	Cumobabi	Bavi 1	82/40733	9-Apr-2019	In process	14.04
34	Cumobabi	Bavi 2	82/40734	9-Apr-2019	In process	39.74
35	Cumobabi	Bavi 3	82/40735	9-Apr-2019	In process	17.92
36	Cumobabi	Bavi 4	82/40736	9-Apr-2019	In process	0.51
	Total Concessions Applications					**72.21**
	Total Surface					**102,244.30**

The Santa Elena group consists of 11 contiguous mining concessions covering 9,427 ha that are located near the intersection of 30° 01' north latitude, and 110° 10' west longitude. The concessions group is covered by the INEGI "Banámichi" 1:50,000 topographic map H12-B83.

The Ermitaño group consists of two contiguous mining concessions, Ermitaño I and Ermitaño II, which are contiguous with the Santa Elena group, and cover 16,527 ha. The concessions group is located 12 km west of Banámichi near the intersection of 30° 00' north latitude, and 110° 07' west longitude. The Ermitaño concessions group is covered by the INEGI “Agua Caliente” H12-B84, “Aconchi” H12-D13 and “Cumpas” H12-D14, 1:50,000 topographic maps.

The Cumobabi group consists of six contiguous mining concessions covering 22,259 ha and are located near intersection 29° 45´ north latitude and 110° 00´ west longitude. The Cumobabi concessions are contiguous with the Ermitaño group. The community of Baviácora is located 19 km southwest of the concessions group. The concessions group is covered by the INEGI maps “Aconchi” H12-D13, “Cumpas” H12-D14, “Baviácora” H12-D23 and “Rodeo” H12-D24, 1:50,000 topographic maps.

The Los Hernandez group consists of seven contiguous mining concessions covering 5,802 ha, located near intersection 30° 13´ north latitude and 110° 11´ west longitude. The concessions group is contiguous with the Santa Elena group to the south. The Los Hernandez concessions group is located 9 km northeast of the community of Sinoquipe. The concessions group is covered by the INEGI map “Banamichi” H12-B83, 1:50,000 topographic map.

The El Gachi group consists of six contiguous mining concessions covering 48,157 ha, located near the intersection 30° 15´ north latitude and 110° 02´ west longitude. The concessions group is contiguous to the north with the Santa Elena group. El Gachi property is located 13 km south-east of the community of Arizpe. This area is covered by the INEGI maps “Banamichi” H12-B83 and “Arizpe” H12-B73, 1:50,000 topographic maps.

There are four applications in the Cumobabi group covering 72 ha. The concession title for these applications was in progress at the Report effective date.

All concessions were ground surveyed by a registered land surveyor at the time of staking and at the time of writing of this report are in compliance with the obligations set by the Mexican mining code.

The mining code in Mexico provides that all concessions are valid for a period of 50 years. Holding taxes, known as Mining Rights, are calculated based on the surface area of each mining concession, the age of the concession in years, and are due in January and July of each year. The annual Mining Rights cost in 2020 was approximately $1.62 M. All Mining Rights payments were paid by First Majestic at the Report effective date.

4.4. Surface Rights

On November 12, 2007, Nusantara signed an agreement with Bienes Comunales de Banámichi (the community of Banámichi) for a 20-year lease on surface rights for a maximum of 841 ha with respect to exploration and exploitation activities. At Report effective date, 500 ha were under lease for exploitation and exploration purposes, and the lease obligations were met.

On September 6, 2017, Nusantara signed an agreement with Mr. Francisco Maldonado for a 20-year lease for surface rights over the Ermitaño property area for a maximum of 380 ha with respect to exploration activities and a minimum of 230 ha for exploitation activities. At the Report effective date, all obligations were met.

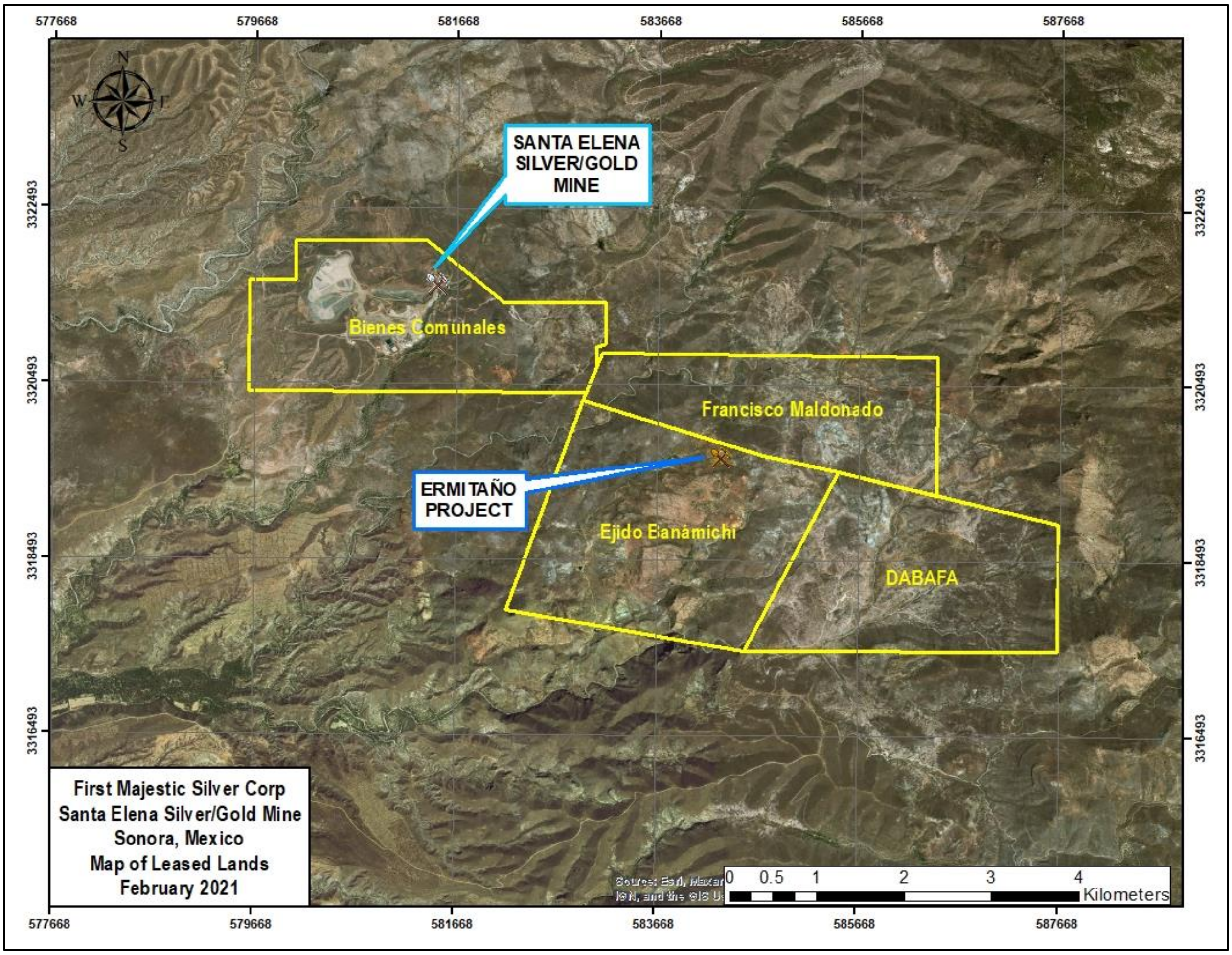
On January 3, 2018, Nusantara signed an agreement with Dabafa S.P.R. de R.L. (Dabafa) for a 20-year lease for surface rights over the Ermitaño property area for a maximum of 312 ha with respect to exploration activities and a minimum of 100 ha for exploitation activities. At the Report effective date, all obligations were met.

On June, 2018, Nusantara reached an agreement with the Ejido Banamichi for a 25 year lease on surface rights on the Ermitaño property area for 600 ha with respect to exploration and exploitation activities. At the Report effective date, all obligations were met.

On December 2020, Nusantara signed an agreement with the Community of Banámichi for a 20-year right-of-way between the Santa Elena mine and the Ermitaño project. The agreement included the right to deposit tailings from any future mining activity within the Ermitaño project in the Community of Banámichi lands leased by Nusantara. All obligations under this agreement were met at the Report effective date.

Figure 4-3 shows the areas covered under these various surface rights agreements.

Figure 4-3: Surface Rights Leased Lands



Note: Figure prepared by First Majestic, February 2021.

4.5. Permitting Considerations

The Santa Elena mine holds all of the necessary permits to operate, such as the Environmental License, water rights concessions, and federal land occupation concessions. Details of the permits held in support of operations are discussed in Section 20 of this Report.

4.6. Environmental Considerations

Environmental considerations are discussed in Section 20 of this Report.

4.7. Existing Environmental Liabilities

Environmental liabilities for the operation are typical of those that would be expected to be associated with an operating underground precious metals mine, including the future closure and reclamation of mine portals and ventilation infrastructure, access roads, processing facilities, power lines, filtered tailings and all surface infrastructure that supports the operations.

Additional information on the environmental considerations for the Santa Elena mine is provided in Section 20.

4.8. Significant Factors and Risks

To the extent known to the QPs, there are no other significant factors and risks that may affect access, title, or the legal right or ability to perform work on the Santa Elena mine that are not discussed in this Report.

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1. Accessibility

The Santa Elena mine can be easily accessed year-round by paved highways 90 km east from Hermosillo to Ures, then 50 km north along a paved secondary road to the community of Banámichi, then by a maintained gravel road that runs for 7 km to the mine site. The Ermitaño project can be accessed by a 10-km gravel road that runs from the Santa Elena mine.

Mining activities are performed by a combination of First Majestic personnel and contract workers. Mining operations are conducted year-round.

5.2. Physiography

The Santa Elena mine is located on the western edge of the north-trending Sierra Madre Occidental (SMO) mountain range geographically adjacent to the Sonora River valley. Elevation ranges from 800 masl to 1,000 masl. The property is located on the range front at a low elevation in relation to the mountains immediately east and west respectively. Vegetation is scarce during the dry season, limited primarily to juvenile and mature mesquite trees and cactus plants. During the wet season, various blooming cactus, trees, and grasses are abundant in drainage areas.

5.3. Climate

The climate at the Santa Elena mine is typical of the Sonoran Desert, with a dry season from October to May. Average rainfall is estimated at 300 mm per annum. There are two wet seasons, one in the summer (July to September) and another in the winter (December). The summer rains are short with heavy thunderstorms whereas the winter rains are longer and lighter. Seasonal temperatures vary from 0^{o}C to 40^{o}C. Summer afternoon thunderstorms are common and can temporarily impact the local electrical service. Flash flooding is common in the area.

5.4. Local Resources and Infrastructure

5.4.1. Water Supply

The main supply well currently used at the mine site, PSA-1, was installed and tested in September 2009, and a pump installed at approximately 109 m depth. Pumping tests indicated the well was located in a confined aquifer with a potential association with geothermal sources, and an estimated sustained supply of 25 L/s, sufficient to support the mining operation (Breckenridge, 2010). Well PSA-2 was constructed in the summer of 2011 as a back-up well to support the primary water supply. The Santa Elena mine a sufficient water supply for operations and the life-of-mine (LOM) plan.

5.4.2. Power

A minor amount of electrical power is available from the adjacent national grid that is currently supplying municipalities and agricultural activities, but that source is insufficient for the Santa Elena mine. Power for current operations is provided by diesel generators. First Majestic is currently commissioning a liquified natural gas (LNG) generation plant, which will reduce operating cost, improve reliability, and reduce green-house emissions. Details of this facility are presented in Section 18 of this Report.

5.4.3. Community Services

The Santa Elena mine is located near the village of Banamichi which provides accommodation and local food services. The mining centre of Cananea is the closest sizable urban area (pop. est. 30,000) and is located approximately 100 km north by road from the Santa Elena mine. Most services and supplies are available in Cananea. Sonora's capital city, Hermosillo, is located approximately 150 km southwest of the property, and is regarded as the main industrial hub for the majority of the local mining operations. Services are available for heavy machine purchase and repair, materials fabrication, and engineering services. Alternatively, Tucson, Arizona is approximately a four-hour drive north across the international Mexico–USA border from the Santa Elena mine. Northern Mexico has numerous precious and base metal mines and there is a significant workforce of trained mining and processing personnel. The nearby Cananea and La Caridad mines are amongst the largest mines in North America.

5.4.4. Existing Infrastructure

The Santa Elena mine processing facility was initially constructed between 2009 and 2010, and was further expanded between 2013 and 2014. The site infrastructure is described in further detail in Section 18. The following operational infrastructure is in place or under ongoing construction at the Santa Elena mine:

- A main underground decline access and mine development;
- A ventilation shaft with ventilation fans;
- A secondary decline which acts as fresh air intake and an escape way;
- Underground water recirculation facilities;
- Underground electrical distribution system;
- Underground maintenance facilities;
- A crushing and grinding facility, including a high-intensity vertical grinding mill (HIG-Mill);
- A counter-current decantation (CCD) and Merrill-Crowe processing facility;
- A diesel power generation facility operating and a LNG power generation facility that is under construction;
- Filtered tailings storage facility, incorporated onto an existing waste rock storage facility;
- Additional surface facilities such as mine dry and maintenance shops for the underground mine;
- Warehouse for storage and inventory;
- On-site analytical laboratory;

- Exploration drill-core storage facility.

The Ermitaño project is an exploration and development project that has the following infrastructure:

- Access roads and drilling pads for exploration drilling;
- A twin decline to access the mineralized zones;
- A test-mine area to investigate geotechnical conditions and assess structural characteristics of the mineralized structures;
- A waste dump to hold rock from development of the access declines;
- Temporary surface facilities;
- Water management ponds in construction.

5.4.5. Surface Rights

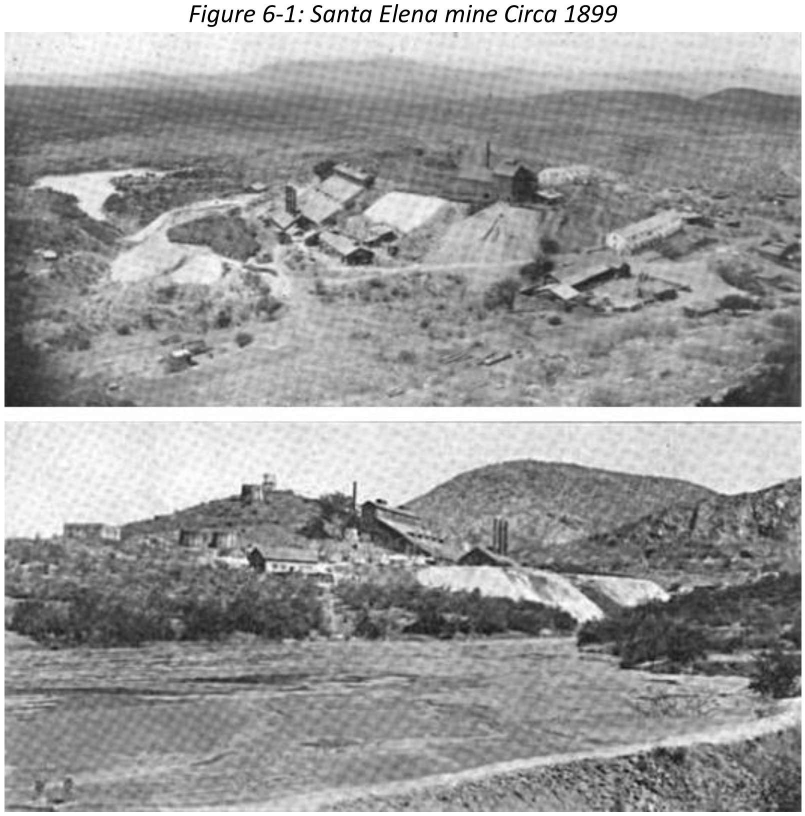
The sufficiency of surface rights to support the LOM plan is discussed in Section 4.4.

6. HISTORY

Dawe (1928) and Montague (1932) report that the Santa Elena mine was discovered and worked by the Spaniards, and then abandoned until 1856 when Jacinto Padilla acquired the property and later transferred it to General Ignacio Pesqueira. The mine was resold in 1883 to the Santa Elena Mining Company of New York. The Santa Elena Mining Company erected a 60-stamp mill with pan amalgamation, a 400-horsepower steam plant, sunk a three-compartment shaft to 170 m, and later introduced a cyanide plant to treat their tailings. There is no known documentation of daily or annual production during this period of operations.

Poisson (1899) reported that London-based Consolidated Goldfields of Mexico Limited owned the Santa Elena property in 1899 and that it had surface workings several hundred yards long, 70 ft wide and 120 ft deep, and underground workings totaling 8,000 ft, including a 420 ft shaft with cross cuts at the 250 ft and 350 ft level. Figure 6-1 is an image of the mine property from that period. Development on the vein included 1,235 ft at the 250 level, 850 ft at the D level 67 feet above the 250 level, and 1,035 feet at the San Juan level 70 ft above the D level. Development widths ranged from 7 feet to 20 feet. Consolidated Gold Fields operated at Santa Elena until the onset of the Mexican Revolution around 1910.

Figure 6-1: Santa Elena mine Circa 1899



Note: Figure prepared by First Majestic, February 2021. Photograph taken from The Engineering and Mining Journal September 1899.

Dawe (1928) reported that Jesus Maria Estrada and his brother were extracting gold from the historical Santa Elena mine in 1928. There is no indication of any further significant mining or exploration at Santa Elena until the 1960s when Industrias Peñoles S.A de C.V. drilled two or three holes on the property. No records are available for this drilling.

During the early 1980s, Tungsteno de Baviacora (Tungsteno) owned the property and mined 45,000 t grading 3.5 g/t Au and 60 g/t Ag from an open cut. This material was shipped for processing to the company's flotation mill near Baviacora, approximately 30 km southwest of Santa Elena. Tungsteno periodically surface mined high silica/low fluorine material from Santa Elena and shipped it to the Grupo Mexico smelter in El Tajo near Nacozari, approximately 60 km to the northeast. In 2003, Tungsteno collected 117 surface and underground samples. There is limited documentation regarding this result of this sampling.

In 2003, Nevada Pacific Gold Inc. of Vancouver, BC completed a brief surface and underground sampling program with the collection of 119 samples. There is limited documentation regarding this result of this sampling.

In 2004, Fronteer Development Group of Vancouver, BC, completed a surface and underground mapping and sampling program. A total of 145 channel samples (89 underground and 56 surface) were collected and analyzed by ALS-Chemex of Hermosillo, Mexico.

The property remained under control of Tungsteno until 2009, when SilverCrest acquired 100% of the Santa Elena property. SilverCrest started production of gold and silver in July 2011 and by 2015 was producing gold and silver from a 3,000 tpd open pit, underground mine, and reprocessing of heap leaching material using a CCD/Merrill Crowe processing facility. Commercial production for the 3,000 tpd mill and plant facility was declared on August 1, 2014. Underground development has been ongoing since January 2013.

First Majestic acquired the Santa Elena property through its acquisition of SilverCrest on October 1, 2015. On March 28, 2017 First Majestic expanded the Santa Elena property by purchasing the El Gachi property from Santacruz Silver Mining Ltd. (Santacruz). Santacruz had optioned the property from Minera Hochschild Mexico S.A. de C.V. (Hochschild) in 2014. The El Gachi property includes the past-producing El Gachi mine, a high-grade manto and vein mineralized system located 30 km north of the Santa Elena mine. Anaconda Mining Company and Peñoles operated the mine in the 1960s and 1970s. During the 1980s, Minera Serrana shipped high grade ore from El Gachi to its nearby San Felipe mill. Boliden Limited completed a 100 m spaced helicopter airborne magnetic, electromagnetic (EM), and radiometric survey in 1989. Hochschild completed a 50 m by 100 m 30 line-km ground magnetic survey in 2007, a 6,496 ha Quickbird multispectral and panchromatic imagery survey in 2007, and a 30-hole 5,400 m drill program in 2008. Santacruz completed no significant work on the project before First Majestic purchased the property.

On September 10, 2018 First Majestic further expanded the Santa Elena property by completing the acquisition of a 100% interest in the Ermitaño and Cumobabi property from Evrim. Work by Evrim included an airborne Z-axis tipper electromagnetic (ZTEM) and magnetic survey in 2011, 114 line-km of induced polarization (IP) surveys, approximately 700 rock chip samples, 684 soil samples, nearly 40 km^2 of regional mapping and a five hole 2,950 m drill program. Figure 6-2 is a location map for the Santa Elena historical exploration areas.

In December 2020 First Majestic completed all option payments and work commitments and acquired 100% interests in the Los Hernandez property from Pan American Silver Corp (Pan American). The Los Hernandez property hosts the past-producing El Carmen mine and several other historical adits and shafts. There was no modern exploration work completed within the Los Hernandez group of concessions until First Majestic began exploring the property in 2018.

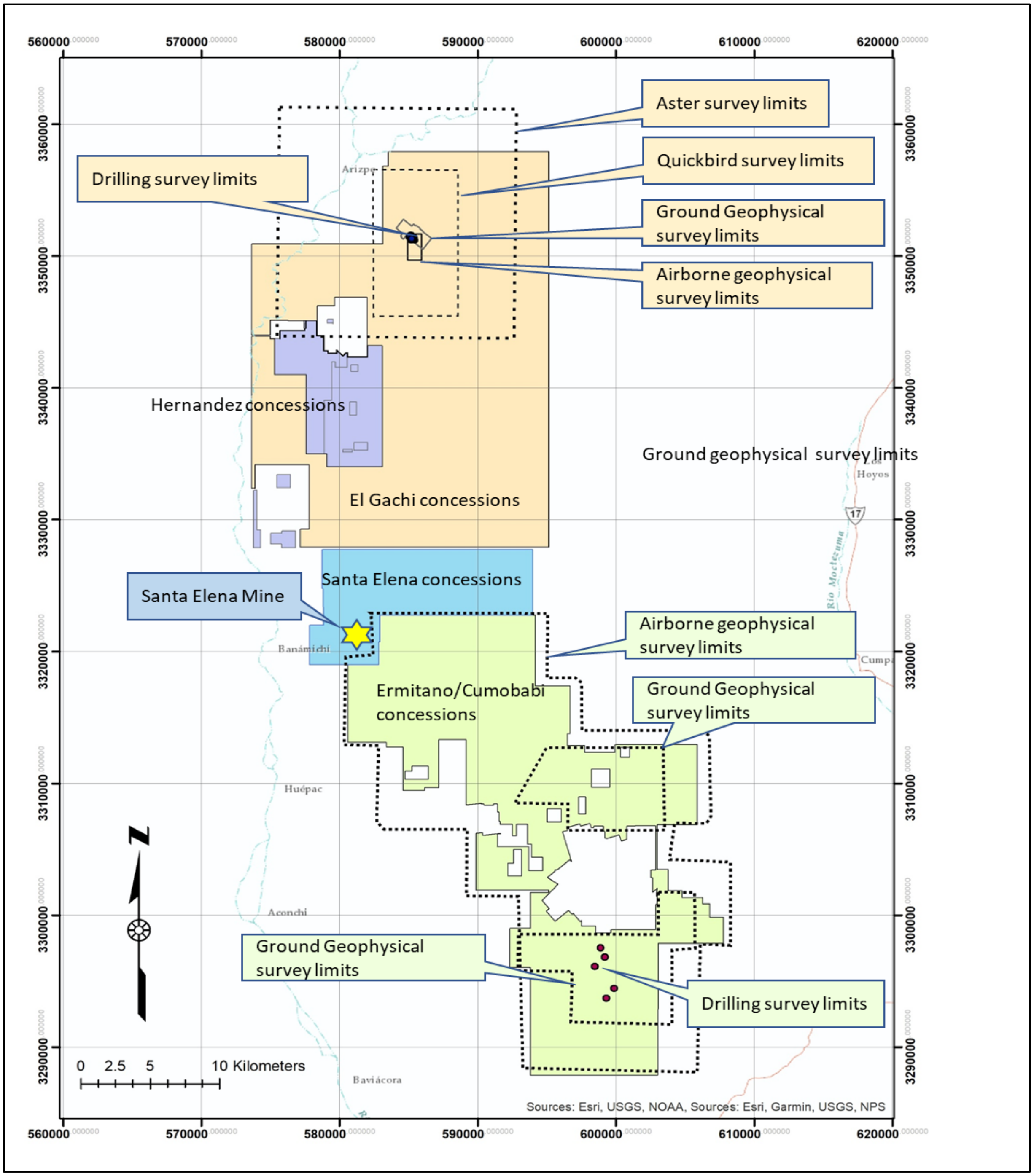
6.1. Production History

SilverCrest commenced production from the Santa Elena open pit in October 2010 and by year end 2014 produced 3.7 Mt at an average grade of 53 g/t Ag and 1.47 g/t Au. First Majestic acquired the property in 2015 and by year end 2020 produced 3.1 Mt at 127 g/t Ag and 2.28 g/t Au from underground and reprocessed 1.3 Mt at 41 g/t Ag and 0.69 g/t Au from the leach pad. The 2010 to 2020 production history is summarized in Table 6-1.

Table 6-1: Santa Elena Production History

Company	Year	Tonnes	Ag g/t	Au g/t	Production area
SilverCrest	2010	336,000	na	na	open pit
	2011	979,461	48	1.95	open pit
	2012	1,092,305	47	1.43	open pit
	2013	1,081,159	73	1.61	open pit
	2014	213,017	68	1.03	leach pad and underground
First Majestic	2015	432,709	151	2.35	underground
	2016	570,723	127	2.24	underground
	2017	553,504	115	2.43	underground
	2018	531,072	123	2.44	underground
	2019	542,085	131	2.31	underground
	2020	422,451	116	1.84	underground
	2015	573,607	46	0.69	leach pad
	2016	417,339	45	0.77	leach pad
	2017	374,232	42	0.71	leach pad
	2018	368,298	35	0.63	leach pad
	2019	333,352	37	0.66	leach pad
	2020	217,826	34	0.64	leach pad

Figure 6-2: Map of Santa Elena Historical Exploration Areas



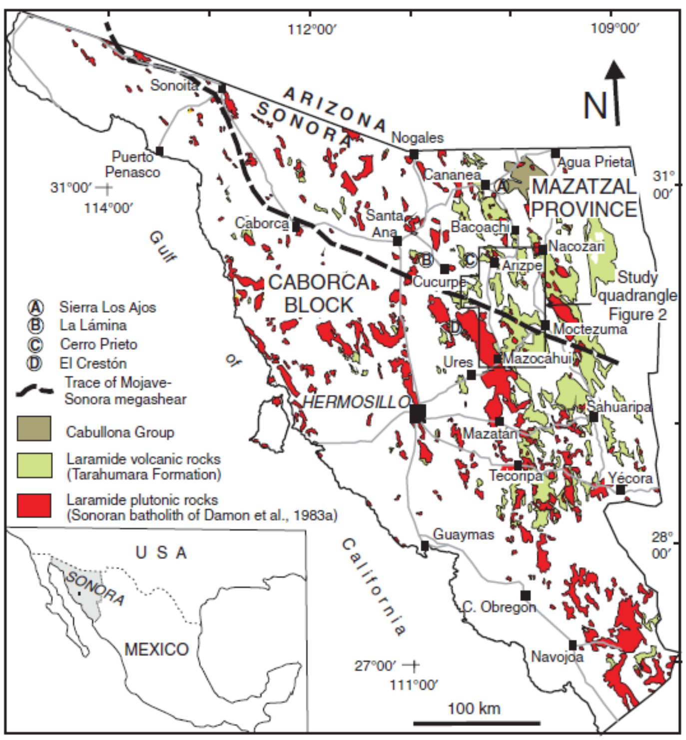
Note: Figure prepared by First Majestic, February 2021.

7. GEOLOGICAL SETTING AND MINERALIZATION

7.1. Regional Geological Setting

The Santa Elena deposits are hosted in rocks of the SMO, an igneous province that extends from the USA–Mexican border south to Guadalajara, Mexico, a distance of over 1,200 km. Montoya (2019) and Ortega (2018) describe the SMO geological province as consisting of Late Cretaceous to early Miocene volcanic and sedimentary rocks formed during two main periods of continental magmatic activity. The first period, concurrent with the Laramide orogeny, produced an intermediate intrusive suite and its volcanic counterpart, associated with a magmatic arc active between 100 Ma and 50 Ma. These rocks, traditionally named the Lower Volcanic Complex (LVC), include the Late Cretaceous to Paleocene volcanic succession of the Tarahumara Formation and are intruded by the Sonora batholiths. Continental conglomerates and sandstones filled intermontane basins during a transitional period that lasted until the late Eocene when volcanism became dominated by rhyolitic ignimbrites. Defined as the Upper Volcanic Supergroup (UVS), these volcanic rocks were emplaced mostly in two episodes at 35 Ma and 29 Ma. Extensional basins and associated continental sedimentary deposits formed between 27 Ma and 15 Ma in a north–northwest-trending belt along the western half of the SMO. A map of plutonic and volcanic rocks of the Laramide magmatic arc in Sonora is shown in Figure 7-1.

Figure 7-1: Plutonic and Volcanic Rocks of the Laramide Magmatic Arc in Sonora



Note: Figure prepared by First Majestic, February 2021. Figure from González-León (2011).

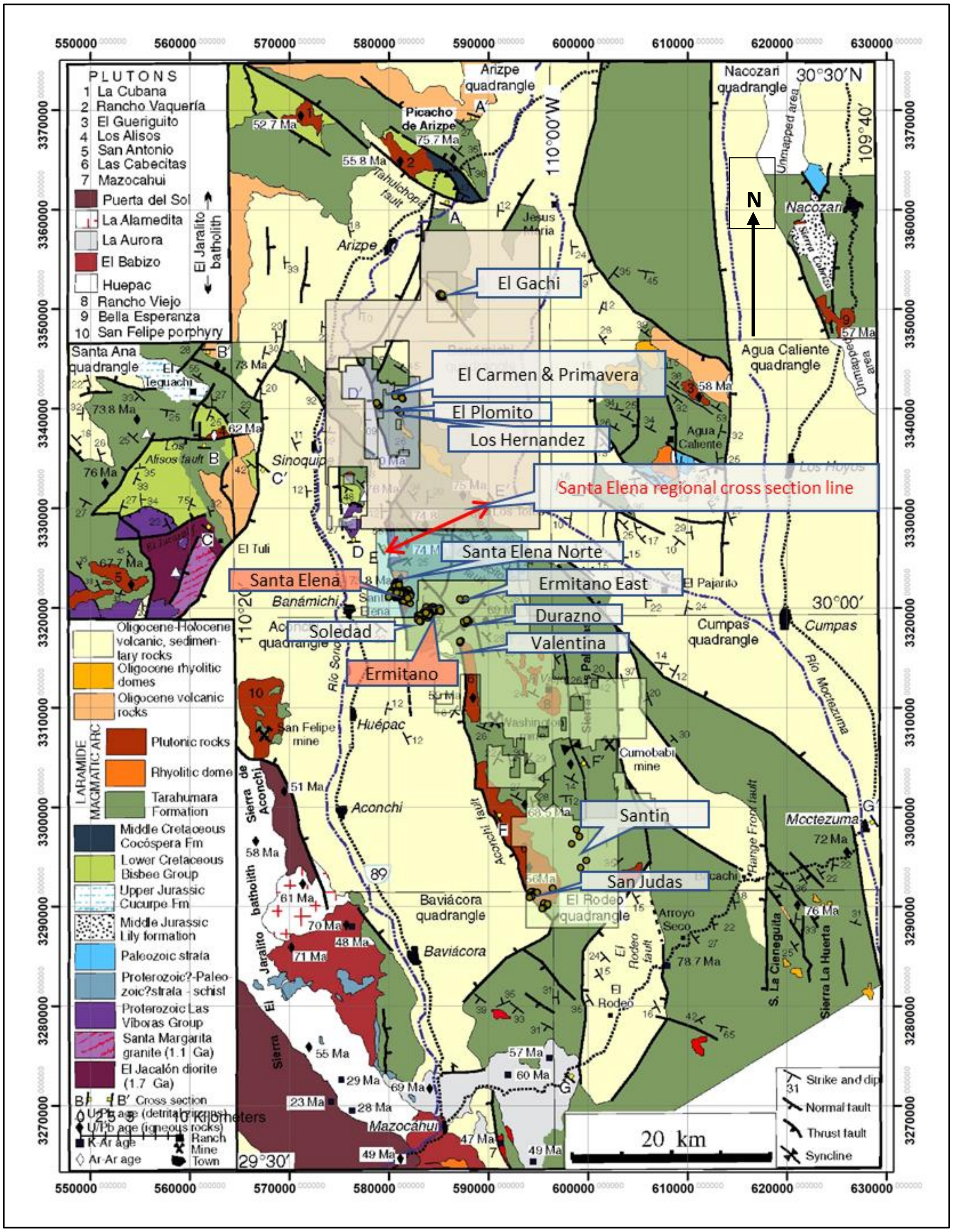
The pre-Mesozoic basement underlying the SMO consists of strongly folded metasedimentary and meta-volcanic rocks and deformed granitoids with ages spanning from Jurassic to Early Cretaceous. These in turn lie on late Paleoproterozoic to the latest Paleozoic rocks that have recorded a protracted evolution, including continent–continent collisions, and intra-oceanic and arc-continent accretionary orogenic processes. The Cenozoic extensional and magmatic processes, as well as the Laramide batholiths have dispersed or obscured the Paleoproterozoic orogenic systems that now occupy the cores of isolated north–northwest-trending narrow mountain ranges.

Many significant porphyry deposits of the SMO occur in the LVC rocks and are correlated with the various Middle Jurassic- to Tertiary-aged intrusions. Northwest-trending shear and fault zones associated with early Eocene east–west and east–northeast–west–southwest directed extension, appear to be an important control on epithermal mineralization in the Sonora region. The faults served as conduits for mineral bearing solutions possibly sourced from Cenozoic intrusions. The Santa Elena Main Vein has an orientation similar to this extensional trend.

7.2. Local Geological Setting

The Santa Elena concessions lie within the Arizpe-Mazocahui quadrangle of north–central Sonora, Mexico. González-León (2011) describes this region as being composed of volcanic rocks assigned to the Tarahumara Formation and several granitic plutons that intrude it. A basal conglomerate of the >4 km thick Tarahumara Formation overlies deformed Proterozoic igneous rocks and Neoproterozoic to Early Cretaceous strata. The lower part of the Tarahumara Formation is composed of rhyolitic ignimbrite and ash-fall tuffs, andesite flows, and interbedded volcaniclastic strata, and its upper part consists of rhyolitic to dacitic ignimbrites, ash-fall tuffs, and volcaniclastic rocks. The local geology is summarized in Figure 7-2.

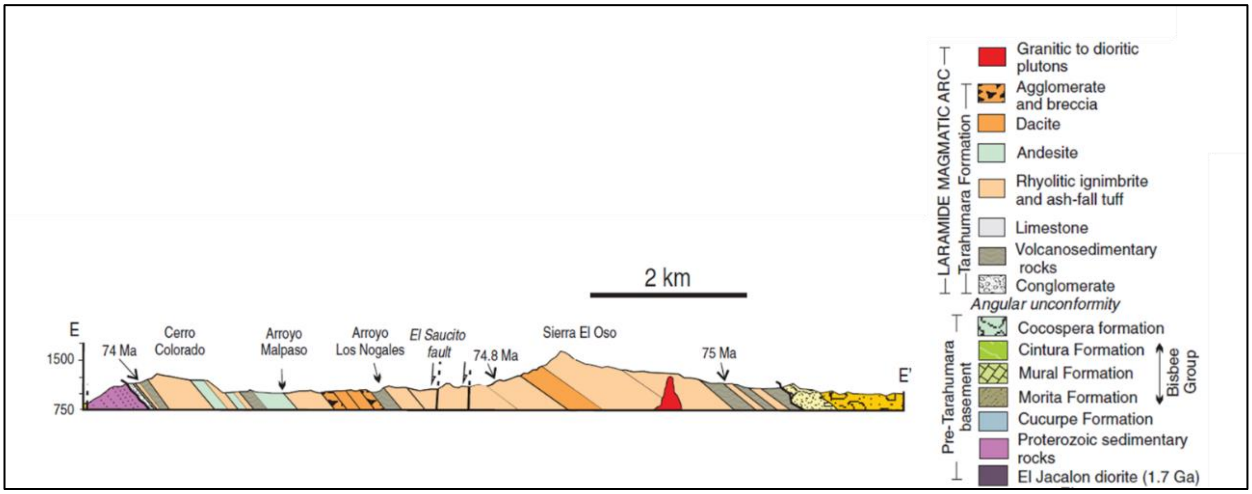
Figure 7-2: Geological Map of the Arizpe-Mazocahui quadrangle of north-central Sonora



Note: Figure prepared by First Majestic, February 2021. Modified from González-León (2011), showing drill prospects and deposits, and First Majestic's concession boundaries.

A northeast-trending regional geological cross section prepared by González-León (2011), included as Figure 7-3, shows the homoclinal-dipping Tarahumara Formation unconformably overlying the Proterozoic Las Víboras Group and offset by the northwest–southeast-trending El Saucito normal fault that dips steeply to the southwest.

Figure 7-3: Santa Elena Area Regional Geology Cross Section



Note: Figure prepared by First Majestic, February 2021. From González-León (2011)

Ausenco (2021) report the rocks hosting the nearby Las Chispas deposit form a gentle syncline and anticline complex indicating greater local structural complexity in these lower volcanic rocks than implied in this cross section. Near the eastern margin, the Tarahumara Formation is unconformably overlain by conglomerate and rhyolite of the Báucarit Formation. The lower portion of the Tarahumara Formation, between the cross-section line and the Santa Elena mine, is intruded by a quartz phenocryst–bearing rhyolite dome dated as 73.56 ± 1.3 Ma (González-León, 2011).

The Santa Elena and the Ermitaño deposits are the most significant zones of gold and silver mineralization known within the Santa Elena concessions. The location of these and several other drilled prospects are shown in Figure 7-2.

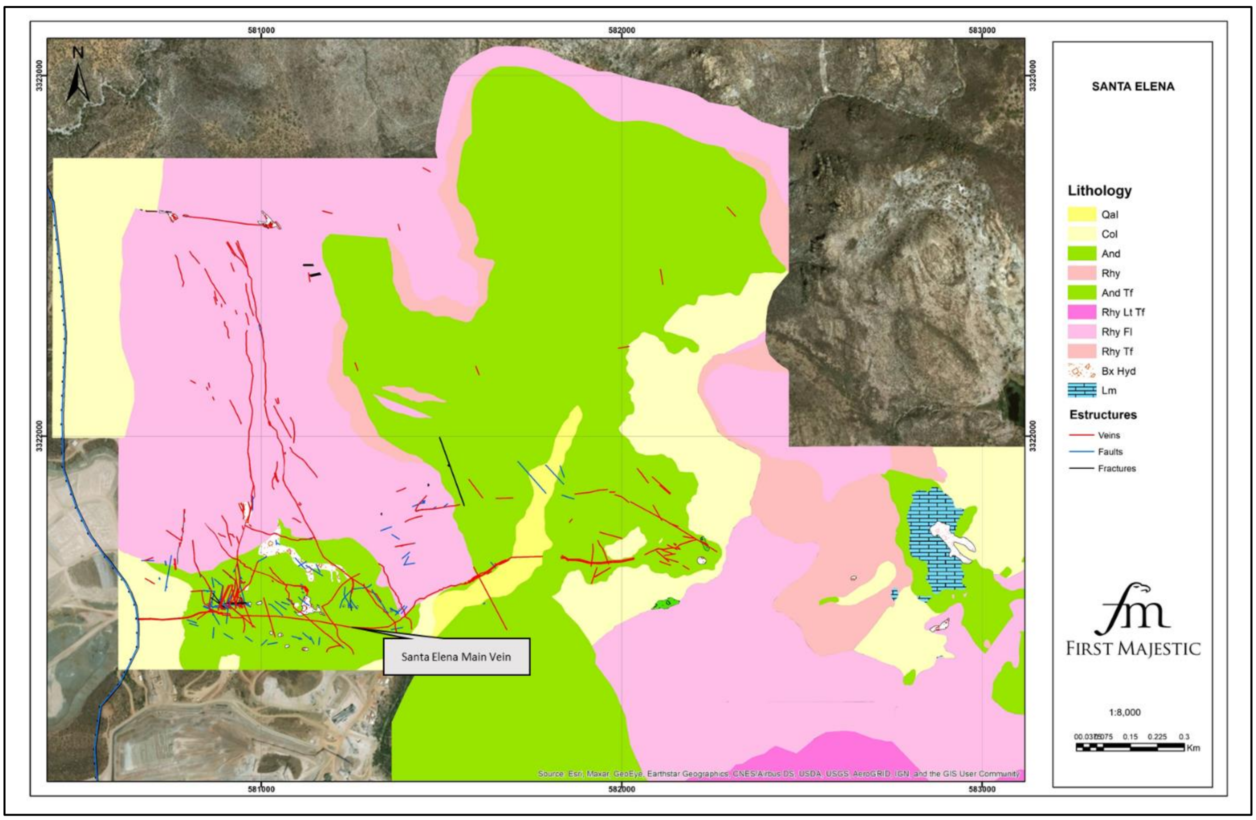
7.3. Santa Elena Mine Geology and Mineralization

7.3.1. Geology

The current geological interpretation for the Santa Elena mine is based on surface and underground mapping and drill hole logging that has delineated a package of rhyolite and andesite volcanic rocks that are currently interpreted to belonging to the LVC. A rhyolite outcrop forms a prominent topographic high in the immediate hanging wall to the north and andesite is present in the immediate hanging wall to the south of the main Santa Elena structures.

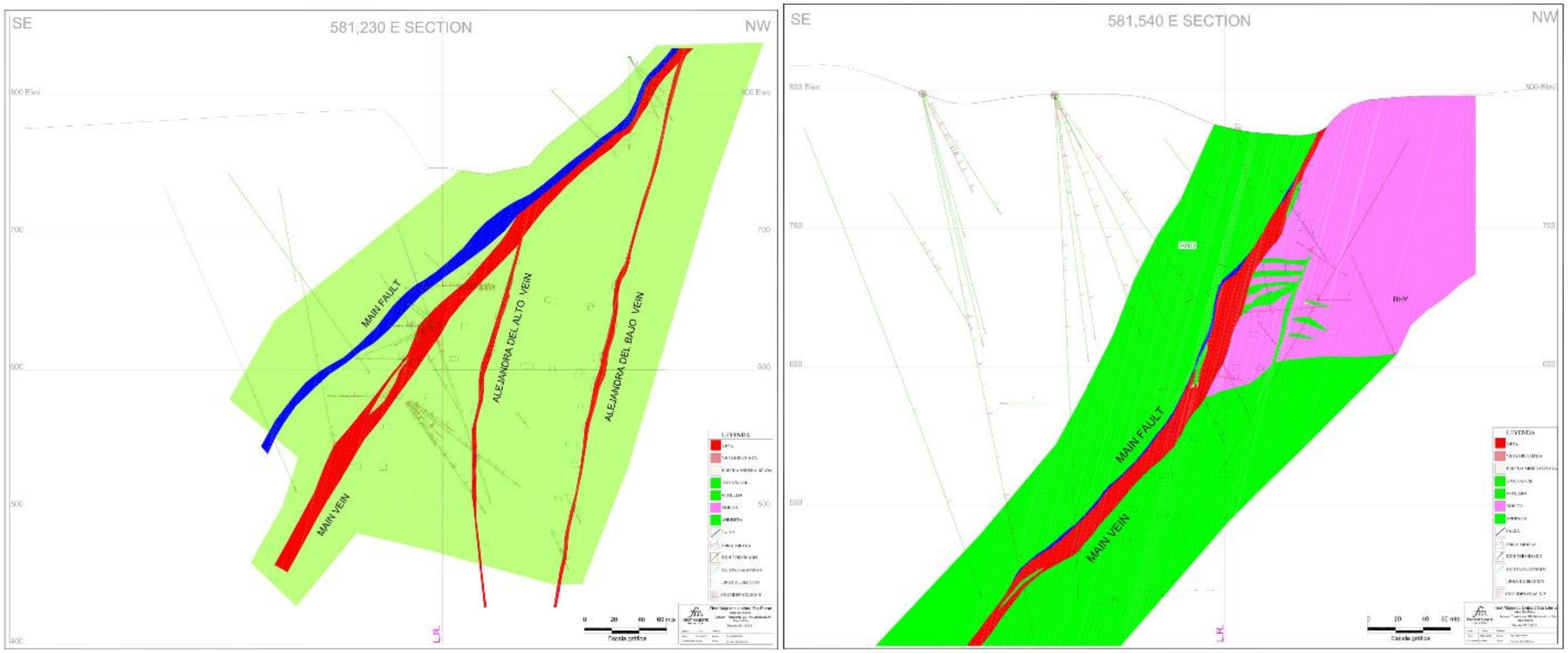
Drilling at the Santa Elena mine has delineated three primary structures occupied by veins. The Main Vein occupies the most prominent structure. It strikes east, dips at approximately 55–45° to the south, and has been delineated for 1,950 m along strike and 750 m down dip. The Alejandra Vein is a splay of the Main Vein, strikes east–southeast and dips at approximately 60–80° to the south–southwest. Drilling has delineated the vein over nearly 1,000 m along strike and over a vertical extent of nearly 600 m. The America Vein is also a splay of the Main Vein that strikes nearly east and dips at 80° to the south. Drilling has delineated the vein over 500 m along strike and 450 m down dip. Andesite and granodiorite dykes have been identified at the Santa Elena mine that are adjacent and sub- parallel to the Main vein. The current Santa Elena mine geology is shown in plan and section views in Figure 7-4 and Figure 7-5.

Figure 7-4: Santa Elena Mine Geology Map



Note: Figure prepared by First Majestic, February 2021.

Figure 7-5: Santa Elena Mine Geology Cross Sections



Note: Figure prepared by First Majestic, February 2021.

7.3.2. Structure

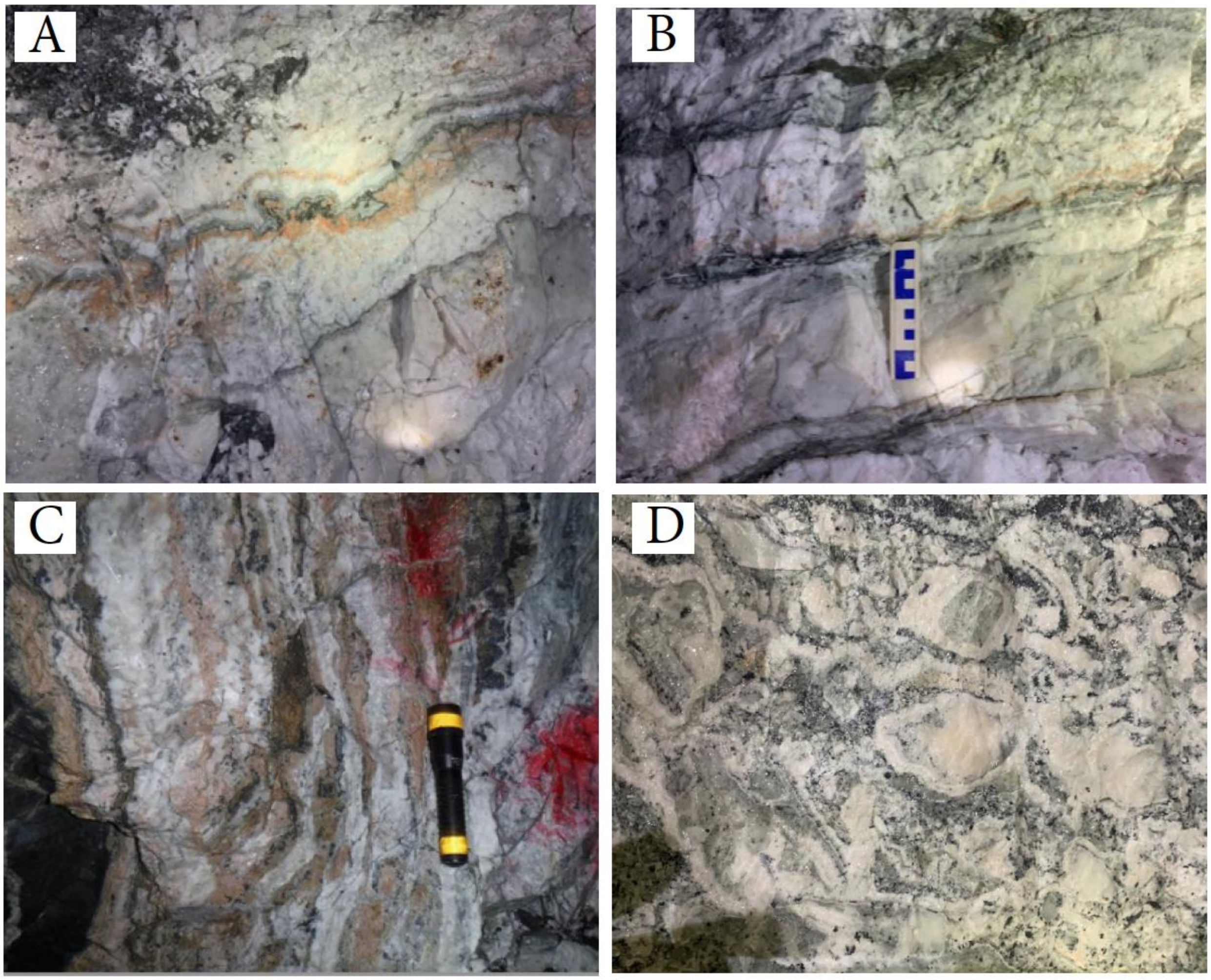
Surface, open pit and underground mapping, and drilling has delineated one primary fault and several secondary faults at the Santa Elena mine. The primary Main Fault is located in the hanging wall of the Main Vein and runs parallel to it. The fault is mapped locally in direct contact with the Main Vein and at distances of greater than 30 m from the vein. The Main Fault tends to diverge from the vein at depth. The fault has evidence of reactivation affecting the Main Vein.

Northwest-trending secondary splay and cross-cutting structures appear to influence mineralization at intersections with the Main Vein and along a northwest–southeast trend in the footwall of the vein. These narrow quartz and calcite filled planar brittle structures appear to crosscut and postdate the emplacement of the Main Vein.

7.3.3. Mineralization

Silver and gold mineralization at the Santa Elena mine is hosted in quartz veins and stockworks displaying typical epithermal textures, including banded quartz, vuggy quartz, and brown–black bladed calcite (pseudomorph to quartz) with many of these textures intermixed with hydrothermal breccia (Figure 7-6).

Figure 7-6: Typical Vein Textures Observed Underground at Santa Elena mine



Note: Figure prepared by First Majestic, February 2021.

Other gangue minerals include calcite, adularia, chlorite, and fluorite. Rhodonite has been noted at approximately 530 m vertical depth.

Bonanza ore shoots appear to be locally present but have not been delineated in detail. A trend of higher grades and thicker veining is apparent with a plunge of approximately 25° to the east. Up to 200 m of a pyrite and calcite matrix breccia in the hanging wall andesite proximal to the Main Vein has been intersected.

Sulphide abundance is generally low within the veins but can be as much as 5–30%. The sulphides are dominantly pyrite and pyrrhotite with minor galena, sphalerite, and chalcopyrite. Gold occurs typically as native gold, electrum, and silver occurs as electrum, minor acanthite, and rare native silver.

7.3.4. Alteration

Alteration within the Santa Elena mine deposit is widespread. The volcanic units in the immediate vicinity of the veins exhibit pervasive propylitic to silicic alteration. Widespread argillic alteration and silicification proximal to quartz veining is common. Chloritic alteration increases away from the mineralized zones.

The permeable nature of the fractured zones has allowed partial oxidation to occur to depths of 400 m below the surface in selective fractured zones. Limonite within the oxide zone is brick-red colour, and is associated with brown goethite and local yellow jarosite. Manganese occurs locally as pyrolusite and minor psilomelane near the surface. Kaolin and alunite occur primarily along deeply weathered and oxidized structures and along the fractured contacts.

7.3.5. Zonation

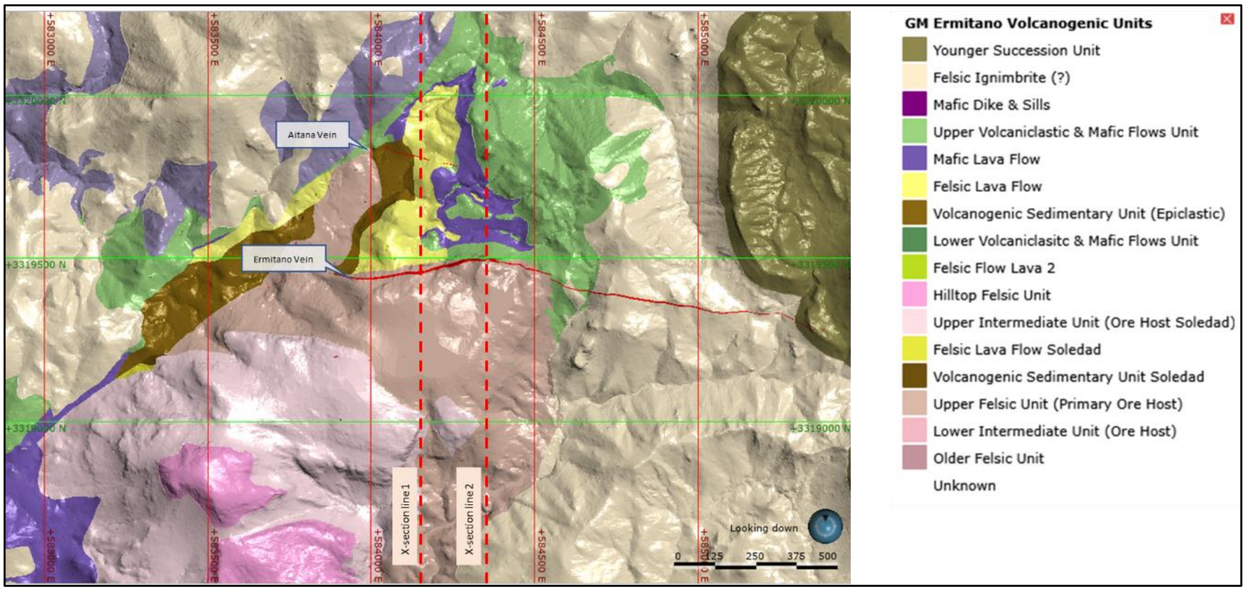
Metal zonation appears to correspond to northwest-trending structures that crosscut the Main Vein forming high-grade gold and silver mineral shoots. Vertical zonation shows gold content consistent with depth and silver content increasing.

7.4. Ermitaño Project Geology and Mineralization

7.4.1. Geology

The current geological interpretation for the Ermitaño project area is based on logging of volcanogenic textures and has allowed the delineation of a host rock volcanogenic sequence that consists of an older compact brittle volcanic sequence or rhyolitic rocks overlain by less brittle felsic lava flows and an alluvial fan environment of volcanogenic sedimentary rocks, volcaniclastic rocks, and mafic lava flows. The current Ermitaño geology model is shown in plan and section views in Figure 7-7 to Figure 7-8.

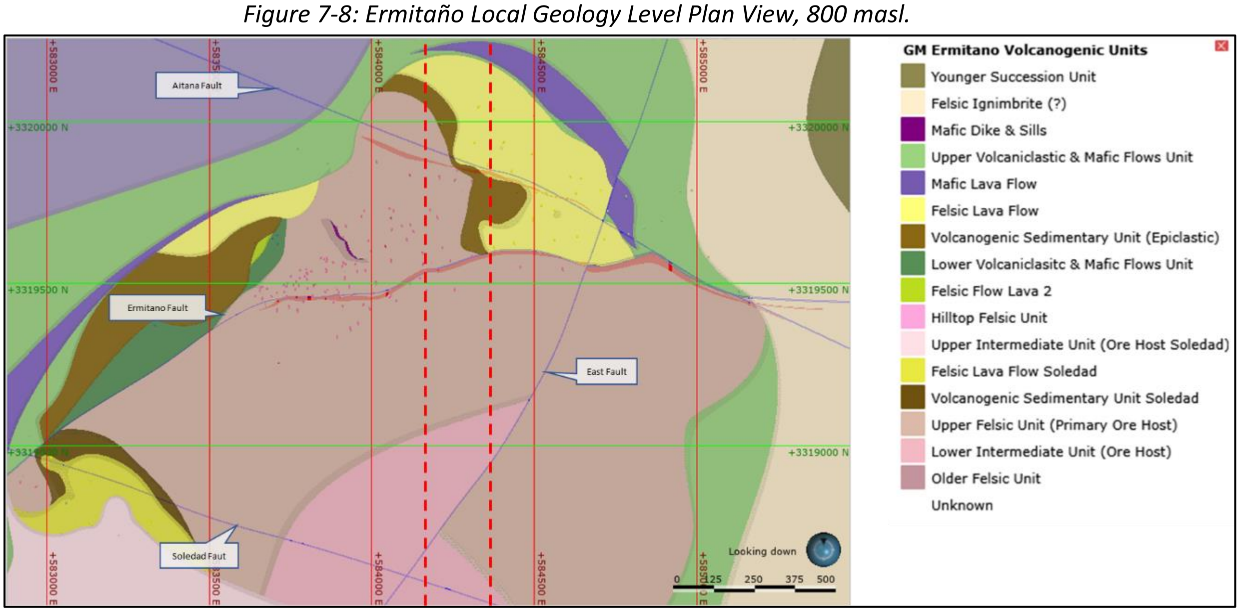
Figure 7-7: Ermitaño Deposit Local Geology Map



Note: Figure prepared by First Majestic, February 2021.

Note: When used for plan maps and figures, this compass symbol is a graphical representation of grid north, with the black triangle marking north. All map scales are in meters.

Figure 7-8: Ermitaño Local Geology Level Plan View, 800 masl.



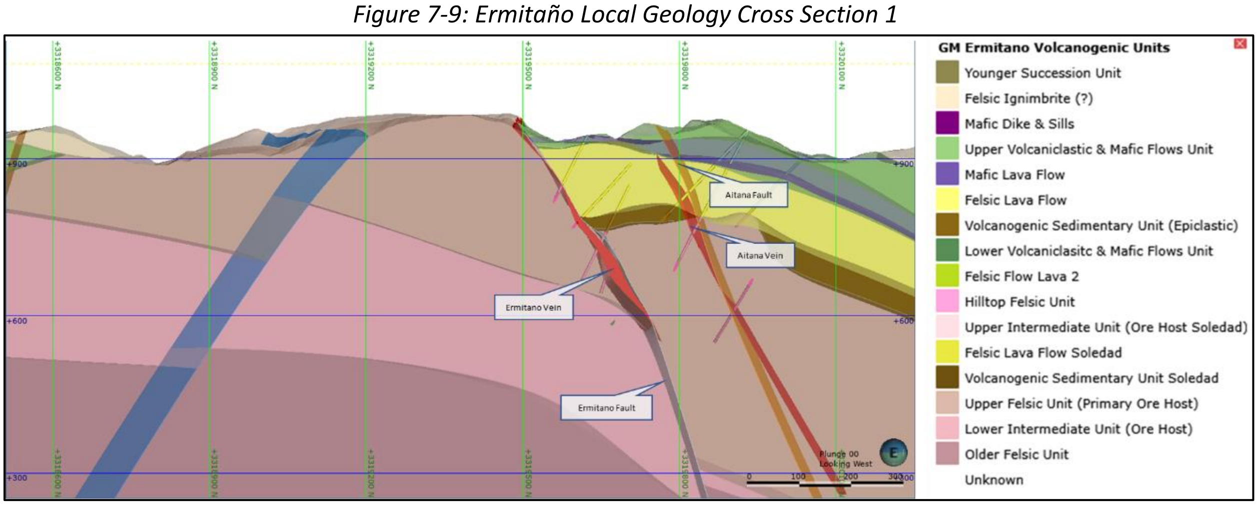
Note: Figure prepared by First Majestic, February 2021.

Drilling at the Ermitaño project has delineated one primary vein, one secondary vein and several tertiary veins. The Ermitaño Vein is the most prominent and strikes east and dips approximately 80° north in the west where the bulk of current gold and silver mineralization occurs, and approximately 60° north in the eastern area. The Ermitaño Vein is mostly defined as a formal vein with an enclosing hanging wall and footwall breccia and stockwork zone. Drilling has delineated the Ermitaño structure for 1,800 m along strike and 550 m down dip. The Ermitaño Vein width varies from 0.2–20.1 m and averages 5.9 m. The Aitana Vein, the second most prominent structure, strikes northwest and dips at approximated 55° to the northeast. Drilling has delineated the Aitana Vein 500 m along strike and 300 m down dip. The Aitana vein width is generally <2 m wide. The tertiary veins range in strike length from 200–800 m and in down dip length from 250–500 m and are generally narrower and discontinuous compared to the Ermitaño and Aitana Veins. Widths are variable from <1–4 m.

7.4.2. Structure

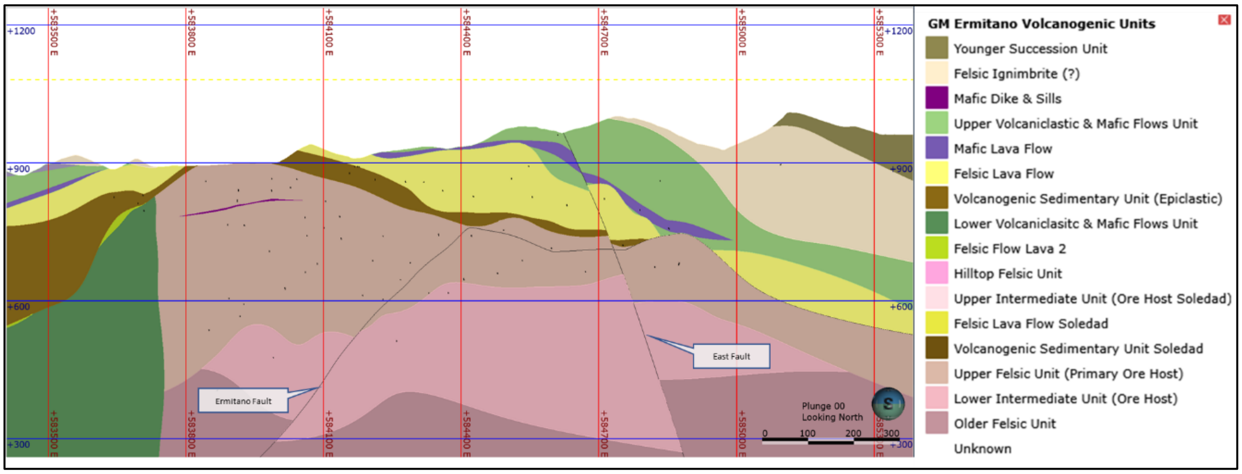
Four major faults dissect the volcanic rocks. The Ermitaño Fault strikes roughly east, dips steeply to the north and has normal down to the north displacement. Drilling has shown this fault juxtaposes the older compact brittle volcanic rocks with the younger less brittle volcanic and volcaniclastic rocks. The Aitana Fault strikes northwest, dips northeast, and has apparent down to the northeast normal displacement. This fault is not as well defined as the Ermitaño Fault. The East Fault strikes northeast, dips steeply to the east and has an apparent down to the southeast normal displacement. This fault is inferred from limited drilling and surface mapping. The Soledad Fault strikes south east, dips steeply to the southwest and has apparent down to the southwest normal displacement and is also inferred from limited drilling and surface mapping. These structures constrain an uplifted horst-like fault block of the older more competent volcanic rocks surrounded by the younger basin-filling volcanic and epiclastic rocks. These structures are shown in Figure 7-9 to Figure 7-10.

Figure 7-9: Ermitaño Local Geology Cross Section 1



Note: Figure prepared by First Majestic, February 2021. Looking to the west.

Figure 7-10: Ermitaño Local Geology Cross Section 2



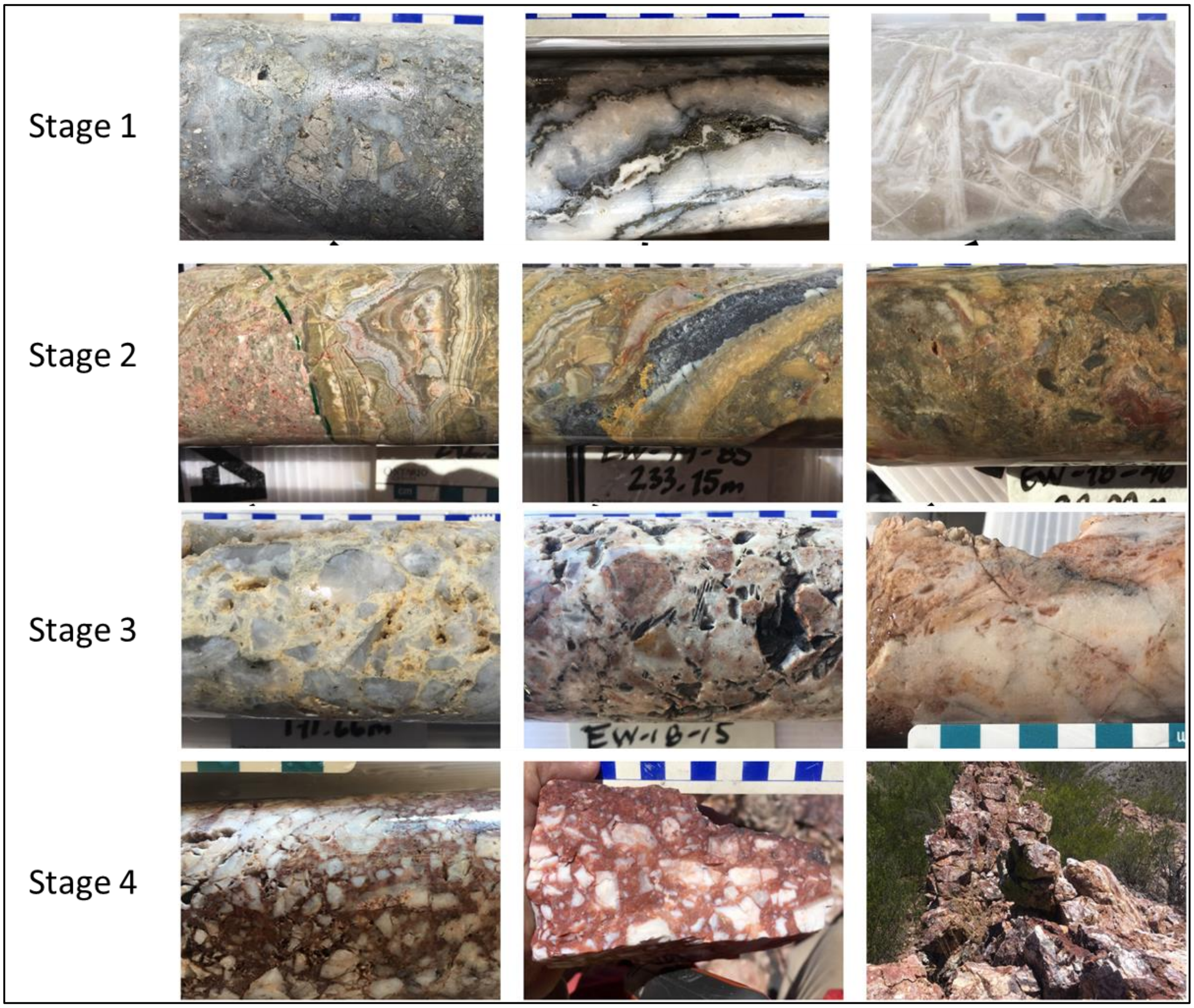
Note: Figure prepared by First Majestic, February 2021. Looking to the west.

7.4.3. Mineralization

Mineralizing fluids are interpreted to have used the Ermitaño Fault as a conduit to form the Ermitaño Vein and sub-parallel tertiary veins which drilling has delineated over 1,800 m along strike and 550 m down dip. The vein is best developed where the structure cuts the older brittle volcanic rocks, where the older volcanic rocks are juxtaposed with younger brittle volcanic rocks, and where the structure shows deflection.

A four-stage vein paragenesis is observed for the Ermitaño Vein. Stage 1 consists of grey quartz, normally cementing breccias, well banded white quartz + pyrite, and calcite pseudomorphs. Stage 2 is dominantly banded and crustiform textured green veins and typically hosts the highest grades of gold and silver. Stage 3 consists of several hydrothermal/tectonic breccia facies with some calcite pseudomorphs, tensile veins, and crack and seal textures. Stage 4 is dominated by white quartz fragments in a hematite + silica cement. The vein assemblage also includes minor adularia, and rarely fluorite and barite. Vein textures are shown in Figure 7-11.

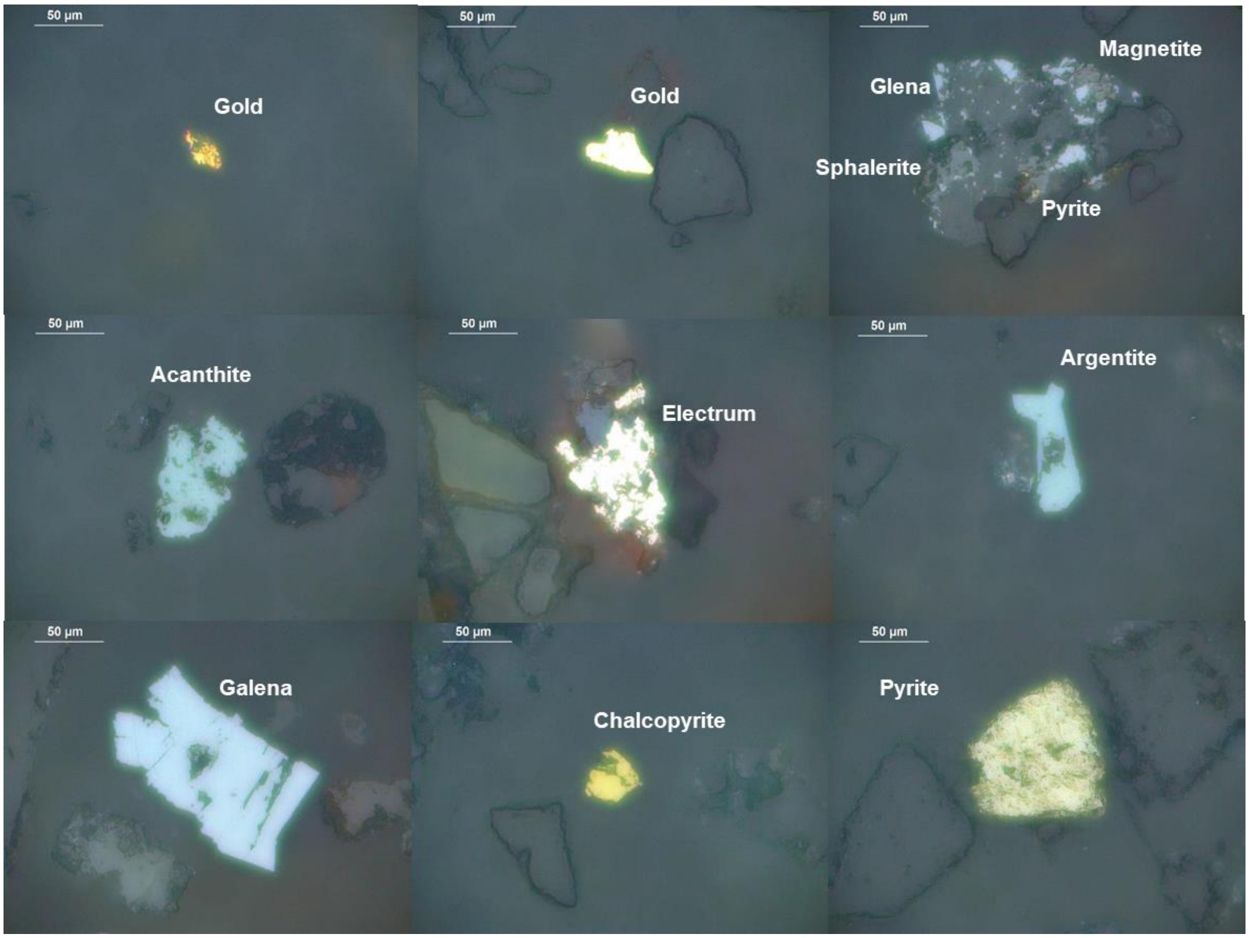
Figure 7-11: Ermitaño Vein Textures



Note: Figure prepared by First Majestic, February 2021.

Sulphide abundance within the Ermitaño Vein, stockwork, and surrounding veins is typically <1–2%, dominated by pyrite with minor galena, sphalerite, pyrrhotite, and chalcopyrite. Gold occurs as native gold or electrum, and silver occurs as electrum, acanthite, and argentite as shown in Figure 7-12.

Figure 7-12: Photomicrographs from the Ermitaño Vein. Native gold, electrum, and sulphide minerals are visible



Note: Figure prepared by First Majestic, February 2021. Revised from Saad (2020).

7.4.4. Alteration

Sericite is common in host rocks immediately surrounding the Ermitaño Vein and stockwork veins. Carbonate veins are present but are typically minor and late.

7.4.5. Zonation

Gold and silver mineral zonation shows silver grades increasing with depth and gold grades typically decreasing with depth. Arsenic, antimony, copper, lead, and zinc grades are generally very low and no apparent zonation is evident yet.

7.5. Regional Exploration Targets

The Santa Elena concessions have high potential to host additional epithermal deposits. There are several drilled prospects within the concessions, each of which hosts mineralized veins. None have been drilled adequately to allow delineation of significant continuity of the structures. The locations of these prospects are shown in Figure 7-2. The drilling results are discussed in Section 10 of this Report.

8. DEPOSIT TYPES

The Santa Elena and Ermitaño deposits are examples of epithermal low to intermediate sulphidation gold–silver vein deposits. The following description of epithermal and specifically low sulfidation epithermal deposits is summarized from Hedenquist (2000, 2003) and, Simmons (2005).

Epithermal deposits are variable in form resulting from near surface lithological, structural, and hydrothermal controls. Deposits and districts, comprising one or more orebodies, can cover areas from <10 to ~200 km^2. Gold and silver deposits of both vein and bulk-tonnage styles may be broadly grouped into high-, intermediate-, and low-sulfidation types based on the sulfidation states of their hypogene sulfide assemblages. The high- and low-sulfidation types may be subdivided using additional parameters, particularly related igneous rock types and metal content. Most low-sulfidation deposits, including nearly 60% of the world's bonanza veins, are associated with basalt-rhyolite volcanic suites in a broad spectrum of extensional tectonic settings.

Low-sulfidation deposits vary from vein through stockwork to disseminated forms with gold–silver, silver–gold, or silver–lead–zinc and are commonly associated with quartz ± calcite ± adularia ± illite. Electrum, acanthite, silver sulfosalts, silver selenides, and gold–silver tellurides are the main gold- and silver bearing minerals, with minor sphalerite, galena, and chalcopyrite. Quartz is the principal gangue mineral accompanied by variable amounts of chalcedony, adularia, illite, pyrite, calcite, and/or rhodochrosite, the latter in more silver- and base metal-rich deposits.

Low sulphidation veins commonly extend 500–2,000 m along strike, and 200–400 m vertically. In some districts such as Pachuca-Real del Monte and Fresnillo, these dimensions are as much as 5,000 m horizontally and 500 m or more vertically. The top level of mineralization can range from tens to hundreds of meters below surface.

Banded crustiform-colloform textures, and lattice textures comprising aggregates of platy calcite and their quartz pseudomorphs are common. In low to intermediate sulfidation deposits, the deep regional alteration is propylitic. Upward through the mineralized horizon, the hydrothermal clay and carbonate abundance increases, except in the vicinity of ores, where quartz, adularia, illite, and pyrite form alteration envelopes. The alteration halos may be two orders of magnitude larger than the actual ore deposit.

Simmons (2005) notes that epithermal mineralization can lie concealed beneath blankets of clay alteration or unaltered volcanic deposits therefore exploration requires integration of all geological, geochemical, and geophysical data, from regional to deposit scale. Vein mineralogy and texture, patterns of hydrothermal alteration, patterns of geochemical dispersion, and three-dimensional interpretation of related geophysical signatures are important guides. Willingness to drill is crucial, as surface features may not reliably indicate what is present at depth.

The Santa Elena mine and Ermitaño project gold and silver deposits form as prominent east–west-trending veins and associated breccias in sub-aerial felsic volcanic rocks. The Santa Elena Main Vein is delineated by drilling along a 1,950 m strike length and 750 m down dip. The Ermitaño Vein is delineated by drilling along an 1,850 m strike length and vertically over 550 m, starting at surface.

The regional geology and the form, textures, alteration, and mineralization observed to date within the Santa Elena and Ermitaño deposits are diagnostic of low-sulphidation epithermal mineralization. The Santa Elena veins display classic epithermal minerals and textures comprising quartz, lattice quartz (and calcite), adularia, and localized crustiform banding with widespread development of strong hydrothermal alteration comprising variable amounts of quartz, calcite, illite, chlorite, pyrite, adularia, and epidote in the host sequence of volcanic lavas and tuffs. The Ermitaño Vein is also hosted in a sequence of volcanic lavas and tuffs and displays epithermal minerals and textures.

Exploration programs that use a low-sulphidation epithermal model are considered appropriate for the Santa Elena and Ermitaño areas.

First Majestic is using geochemical and geophysical surveys, and field X-ray fluorescence analyzers and spectrometers as part of its ongoing regional exploration program. Mapping, rock chip sampling and drilling of vein outcrops remain the primary exploration tools at Santa Elena and the Ermitaño project.

9. EXPLORATION

There have been several surface and airborne exploration surveys and studies completed within the Santa Elena mineral concessions since 2006 including prospecting, mapping, rock and soil geochemical sampling, petrographic and spectrographic studies, magnetic, EM, and IP surveys. Most of this work has focused on the Santa Elena mine and Ermitaño project areas. The regional satellite and airborne surveys have been useful for developing a conceptual geological framework and local mapping and geochemical soil and rock sampling have been useful for identifying prospective drill targets. Exploration work completed since 2006 is summarized in Table 9-1.

Drilling remains the best and most widely used exploration tool within the Santa Elena property and is described in Section 10 of this Report.

Table 9-1: Santa Elena Property Exploration Summary

Year	Study	Service Provider	Dimensions	Company
2006-2007	Sanata Elena Surface and underground mapping and sampling	Santa Elena geologists		Silvercrest
2007	Santa Elena Induce Polarization Survey	Pacific Geoscience Ltd	Santa Elena Main Vein	Silvercrest
2007	Mineral graphic-petrographic study	Dr. Efrén Pérez Segura	1 rock	Silvercrest
2009	Petrographic study	Dr. Efrén Pérez Segura	12 rocks	Silvercrest
2011	Airborne ZTEM and Magnetic Survey	Geotech Ltd.	1,324 line km, 400 m line spacing, 540 km^2	Evrim
2012	Structural Geological Analysis of the Santa Elena district	Dr. Eric P. Nelson	Santa Elena Main Vein	Silvercrest
2012	Dipole Dipole IP survey	Zonge Geophysics Ltd	76.7 line km, 800 m x 300 m spacing	Evrim
2012 to present	Sanata Elena Surface and underground mapping and sampling	Santa Elena geologists		Silvercrest
2013	Dipole Dipole IP survey	Zonge Geophysics Ltd	38.3 line km, 1,200 m x 300 m spacing	Evrim
2013	Petrographic Study of Santa Elena Samples	Dr. W.W. Atkinson Jr	Santa Elena Main Vein	Silvercrest
2014	Ermitano Surface Rock Chip sampling	Santa Elena geologists	924 samples	Silvercrest
2014	Santa Elena Regional Exploration	Dr. Joe Zamudio	Aster, Landsat and NASA Shuttle Radar Topographic Mission	Silvercrest
2014	Airborne ZTEM and Magnetic Survey reprocessing	Sean Scrivens		Evrim
2014-2015	Alteration, vein textures and mineral zonation study	Stuart F Simmons	Santa Elena Main Vein, Ermitaño and others	Silvercrest
2016	Spot Digital Elevation Model	PhotoSat	2 m resolution, 523 km^2	First Majestic
2016	Spot 1.5 m orthophoto	PhotoSat	1.5 m resolution, 762 km^2	First Majestic
2016	Santa Elena Norte Terraspec Rock Sampling	Santa Elena geologists	75 samples, 24.7 line km, 50m x 25m spacing	First Majestic
2017	Santin Terraspec and Geochemical Rock Sampling	Santa Elena geologists	120 samples, 5.6 line km, 50 m x 50 m	First Majestic
2018	El Gachi underground mapping and sampling	Santa Elena geologists	144 channel samples	First Majestic
2019	Airborne Magnetic and Radiometric Survey	New-Sense Geophysics Ltd.	6,300 line km, 100m line spacing, 453 km^2	First Majestic
2019	Carmen/Primavera mapping and rock and soil sampling	Santa Elena geologists	189 soil samples, 164 chip samples in 3.2 line km, 100 m x 25 m spacing, 4.15 km^2 mapping	First Majestic
2019	Hernandez mapping and rock sampling	Santa Elena geologists	330 chip samples, 7.35 km^2 mapping	First Majestic
2019-2020	El Plomito mapping and rock and soil sampling	Santa Elena geologists	352 soil samples, 214 chip samples in 13.8 line km, 50 m x 50 m spacing, 5.80 km^2 mapping	First Majestic
2019	El Gachi surfaceand underground mapping and sampling	Santa Elena geologists	37 chip samples, 1.19 km^2 mapping,	First Majestic
2020	Comillo geochemical soil and spectral scan rock survey	Santa Elena geologists	Soil and rock chip sampling in 38 line km, 200 m x 200 m spacing, 7.2 km, 22.15 km^2 mapping	First Majestic

10. DRILLING

The Santa Elena mine and Ermitaño project Mineral Resource estimates are based on logging and sampling of NQ (47.6 mm) and HQ (63.5 mm) diameter core collared from surface and underground at the Santa Elena mine and collared from surface at the Ermitaño project.

Between 2006 and year end 2020, 841 drill holes totalling 174,859 m were drilled at the Santa Elena mine, including 469 core holes and 76 reverse circulation (RC) and reverse circulation collared drill holes finished with core drill tail holes (RCDD). Reverse circulation drilling was completed as condemnation drilling in the proposed waste rock facility and leach pad areas and as pre-collars for some core drilling. Reverse circulation chips were collected but were not normally assayed. Assays from RCDD holes are generally from the core portion of the hole. Core sampling ranges from 1–100% of the drilled hole length and averages 44%. Sampling intervals range from 0.1–7.0 m, and average 1.2 m in length. Nineteen pre-2020 core drill holes were not assayed. Eighteen core drill holes from the 2020 drill program were not assayed as of year end 2020. The drill hole database also includes 117 holes totalling 1,220 m of hollow core helical leach pad drilling results. The Santa Elena mine drilling is summarized in Table 10-1.

Between 2016 and year end 2020, 198 core drill holes totalling 69,315 m were drilled at the Ermitaño project, including six metallurgical holes and four geotechnical holes. Drill hole sampling ranges from 11–100% of the drilled hole length and averages 53%. Sample lengths range from 0.15–4.95 m, averaging approximately 1 m. The metallurgical and geotechnical holes were not assayed for resource estimation and six holes from the 2020 drill program had not been assayed as of year end 2020. Ermitaño drilling is summarized in Table 10-2.

Between 2011 and year end 2020, 144 core drill holes totalling 36,657 m of drilling have been completed in 11 regional target areas. These holes were drilled using the same approach described for the Santa Elena mine and the Ermitaño project. Starting in 2019, the First Majestic guidance was modified to sample the entire hole length for early-stage exploration drill holes. The Santa Elena regional drilling is summarized in Table 10-3. The location for these prospects was shown in Figure 7-2.

Major Drilling, Cabo Drilling, Intercore Perforaciones, Guardian Drilling, Grupo Drilcor, Globexplore Drilling and Versa Perforaciones (Versa) have been used as drill contractors since 2006. Versa is currently the primary exploration drill contractor and has been so since 2016.

As-drilled underground drill hole collar locations are surveyed by mine surveyors using a Total Station tool, and as-drilled surface drill hole locations are surveyed by mine surveyors using a differential global positioning system (GPS) tool.

Table 10-1: Santa Elena mine Drilling Summary by Category

	Year	Surface Diamond Drilling		Underground Diamond Drilling		Reverse Circulation/Diamond Drill Tails		Leach Pad Drilling		Metallurgical Diamond Drilling		Geotechnical Diamond Drilling	
		No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters
Santa Elena	2006	19	2,580										
	2007	50	5,826										
	2008	34	10,980			21	4,164						
	2009					20	1,461						
	2011	6	1,306										
	2012	77	23,977			35	8,979						
	2013	71	25,541	21	1,591								
	2014	22	9,393	25	2,856								
	2015	4	2,125	66	2,111								
	2016	6	1,688	43	5,915								
	2017	7	1,686	83	10,467			117	1,220				
	2018			83	16,961								
	2019			74	18,929								
	2020			74	16,323								
	Grand Total	**296**	**85,102**	**469**	**75,153**	**76**	**14,604**	**117**	**1,220**				

Table 10-2: Ermitaño project Drilling Summary by Category

	Year	Surface Diamond Drilling		Underground Diamond Drilling		Reverse Circulation/Diamond Drill Tails		Leach Pad Drilling		Metallurgical Diamond Drilling		Geotechnical Diamond Drilling	
		No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters
Ermitaño	2016	7	1,951										
	2017	4	1,758										
	2018	41	17,540										
	2019	88	29,372							4	992		
	2020	48	16,251							2	288	4	1,164
	Grand Total	**188**	**66,871**							**6**	**1,280**	**4**	**1,164**

Table 10-3: Santa Elena Regional Drilling Summary

Target	No. of Holes	Metres	Drilled By
El Carmen	15	4,688	First Majestic
El Durazno	9	2,656	SilverCrest
Ermitaño Este	3	792	SilverCrest
Hernandez	6	1,932	First Majestic
Plomito	4	1,200	First Majestic
Primavera	9	2,174	First Majestic
San Judas	36	8,580	First Majestic
Santa Elena Norte	37	5,929	First Majestic
Santin	5	2,943	Evrim
Soledad	13	4,673	First Majestic
Valentina	7	1,089	SilverCrest
Total	**144**	**36,657**	

Core drill holes are surveyed down hole using a variety of Devico and Reflex magnetic tools which collect azimuth relative to magnetic north, inclination, and magnetic field. Magnetic declination corrections are applied during entry to the database. Down hole measurement intervals range from 1–400 m and averages 37 m. The average down hole interval decreased from 115 m in 2008 to 28 m in 2020.

Core recovery information has been collected at the Santa Elena mine since 2012 and at the Ermitaño project since 2016. Drill core recovery is measured by drilled run length and is recorded for 88% of the metres drilled at the Santa Elena mine and 75% of the metres drilled at the Ermitaño project. Core recovery averaged 96% at both sites, and in both cases more than 95% of the measurements returned greater than 80% recovery. There is no apparent correlation between decreasing core recovery and grade greater than 100 ppm silver-equivalent grade (Ag-Eq) at Santa Elena mine and Ermitaño project across the range of recoveries. Rock quality designation (RQD) has been collected since 2012 and measured by drilled run length. RQD averages 67% and 66% at Santa Elena mine and Ermitaño project, respectively.

Since 2016, First Majestic geologists have collected SG measurements from 15 cm long whole HQ core selected from mineralized zones and from wall rocks on either side of mineralized zones. From 2016 to 2018, SG was determined using a wax-sealed water displacement method. From 2018 SG is estimated using a wax-sealed water immersion method. There is no significant difference in the SG values estimated by either method. Control samples such as duplicates, checks and standards are included. In the wax-sealed water immersion method the samples are dried first in air, weighed, coated with wax, and weighed again. The wax coated sample is then suspended in water and weighed again. The SG is estimated using the following formula:

$$\frac{Wdry}{(Wwc\ air - Wwc\ water) - \frac{Wwc\ air - W\ dry}{Wdensity}}$$

Where:

Wdry: Sample weight in dry in air
Wwc air: Wax Coat sample weight in air
Wwc water: Wax Coat sample weight immersed in water
Wdensity: Density of wax

From 2016 to 2019, a total of 4,140 SG measurements were collected from the Ermitaño project and 3,094 SG measurements were collected from the Santa Elena mine.

The entire length of drill core is photographed and logged for lithology, mineralization, structure, and alteration. Logging observations were originally collected on paper and recorded in Excel. Starting in 2014 observations were entered directly into a database using Geospark, and since 2016 using LogChief.

Sampling intervals are currently based on First Majestic's guidance to respect lithology and mineralization boundaries and for 0.3 m minimum and 1.5 m maximum sample lengths. Shorter and longer lengths occur, but are rare and are usually related to drilling in 2006 to 2008, or to obvious grade boundaries, poor recovery, or longer sampling in the barren zones.

The 2006 to 2008 drill core was split in half with a hydraulic hand splitter. Since 2012 all drill core is cut in half with a diamond blade saw. After splitting or sawing half of the core is placed in a plastic bag with a unique sample number tag and a matching sample number tag is placed with the matching half core in the core box at the start of each sample interval.

Sample quality control is monitored using certified reference materials (CRMs), blanks, and quarter core field, coarse reject, and pulp duplicates. Coarse reject and pulp samples are prepared and inserted by the laboratory during sample preparation. Pulp duplicates are also periodically submitted to a secondary laboratory to assess between-laboratory bias. Quality control results are discussed in Section 11.

No other sample preparation is done before shipping to the laboratory. Before 2016, samples were dispatched to ALS in Hermosillo or Chihuahua, Mexico and Bureau Veritas in Hermosillo, Mexico. Since 2016, samples from the Ermitaño project are dispatched to SGS in Durango or Hermosillo, Mexico, and samples from the Santa Elena mine underground drill holes are dispatched to First Majestic's Central Laboratory in San Jose de La Parrilla, Durango, Mexico (Central Laboratory).

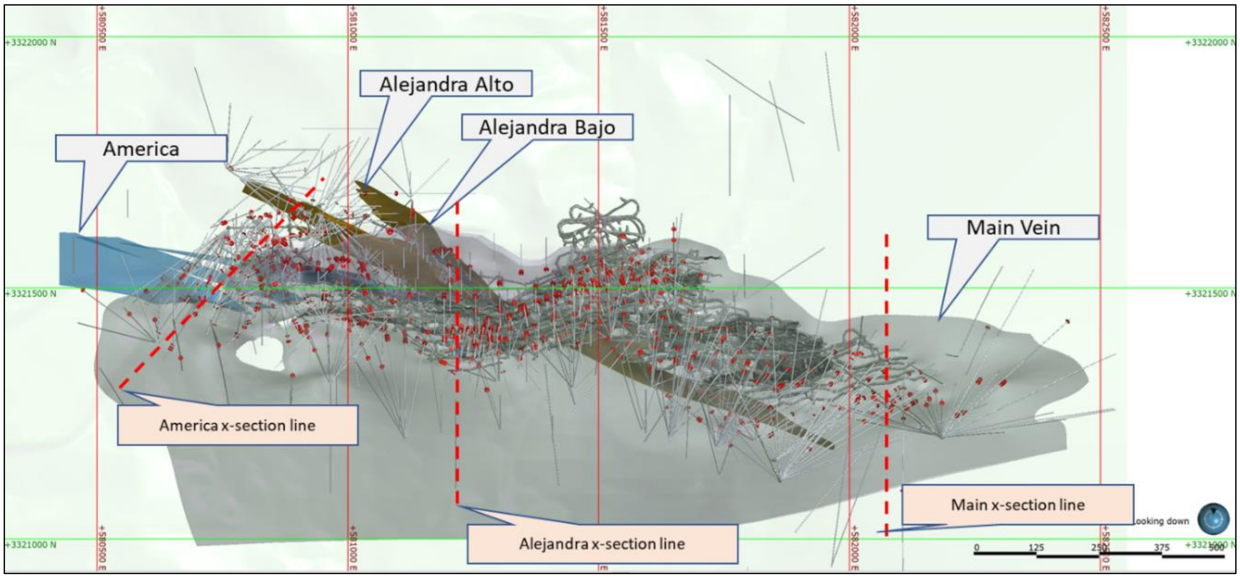
Production channel samples are collected to support the geological modeling, resource estimation, and grade control during production. Channel samples are collected by chipping a channel by hammer and chisel along a line or by cutting a channel line with a saw and chipping out the sample with a hammer and chisel. Channel samples collected at approximately 3 m intervals are used for grade control. Sample intervals from 0.30–1.20 m are marked with a line across each face, respecting vein/wall contacts and textural or mineralogical features. Channel samples are taken within a 20 cm wide swath along the line using a hammer and hand chisel and are collected on a tarpaulin. Fragments larger than 2 cm are broken into small pieces. A 1.5 kg sub-sample is bagged and labelled with sample number and location details.

Sketches are collected of the sampled face, showing the location and length of each sample. The location coordinates from each sample line are surveyed from a referenced survey peg. Samples are dispatched to the Santa Elena mine laboratory. Since 2019 production channel samples taken every 10 m are also submitted to the Central Laboratory. The sampling procedure for production channel samples has some risk of introducing sampling bias but this possible bias has not been fully assessed.

From 2016 to 2017, 25-m spaced sawn underground channel samples were also collected to support resource estimation. Two lines 8–10 cm apart and approximately 3 cm deep were cut with a diamond blade saw. Chips were made within the sawn channel using a pneumatic chisel and were collected on tarpaulins. These samples were sent to ALS in Hermosillo or to the Central Laboratory. Sawn channel sampling was stopped in 2019.

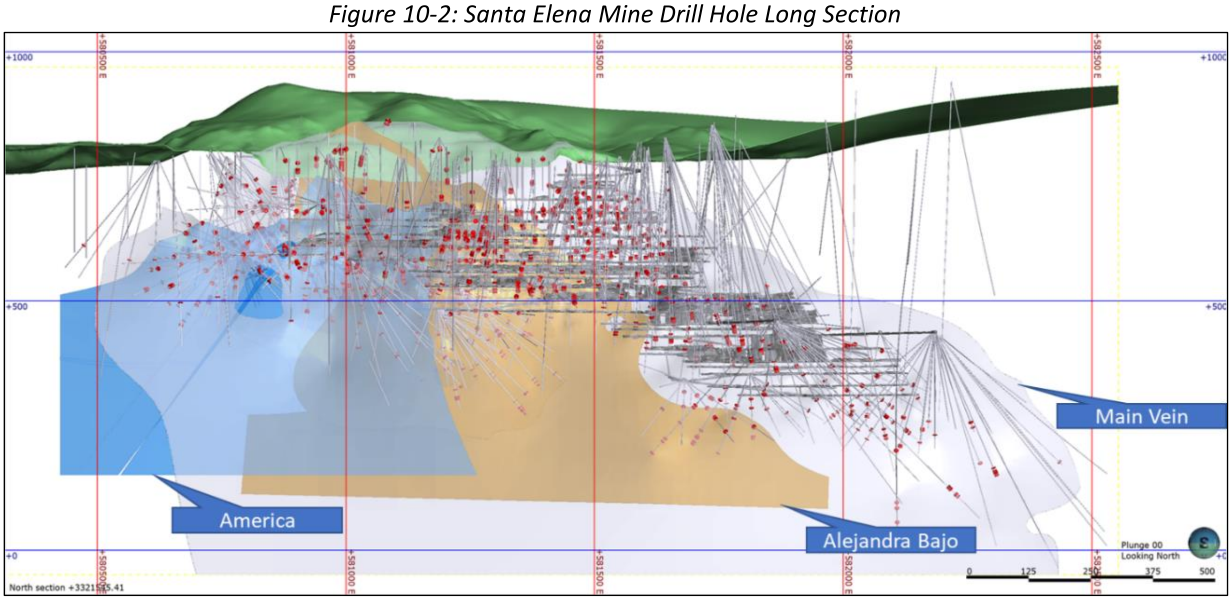
Drilling in 2020 has shown that mineralization in the Alejandra and America Veins remains open at depth. Mineralization is narrowing at depth in the Main Vein, and current drilling has limited the potential local down dip extent. Generalized drill plans, long sections, and cross sections of the Santa Elena Main, Alejandra, and America Veins are shown in Figure 10-1 to Figure 10-8.

Figure 10-1: Santa Elena Mine Drill Plan



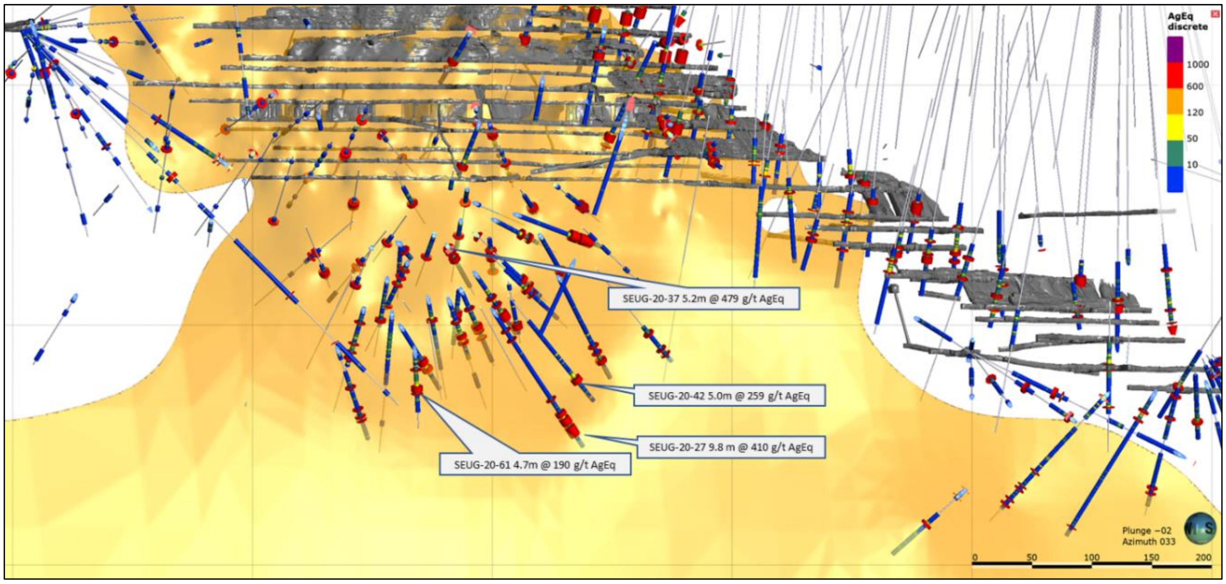
*Note: Figure prepared by First Majestic, February 2021. Section looks down; red dots- exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7).*

Figure 10-2: Santa Elena Mine Drill Hole Long Section



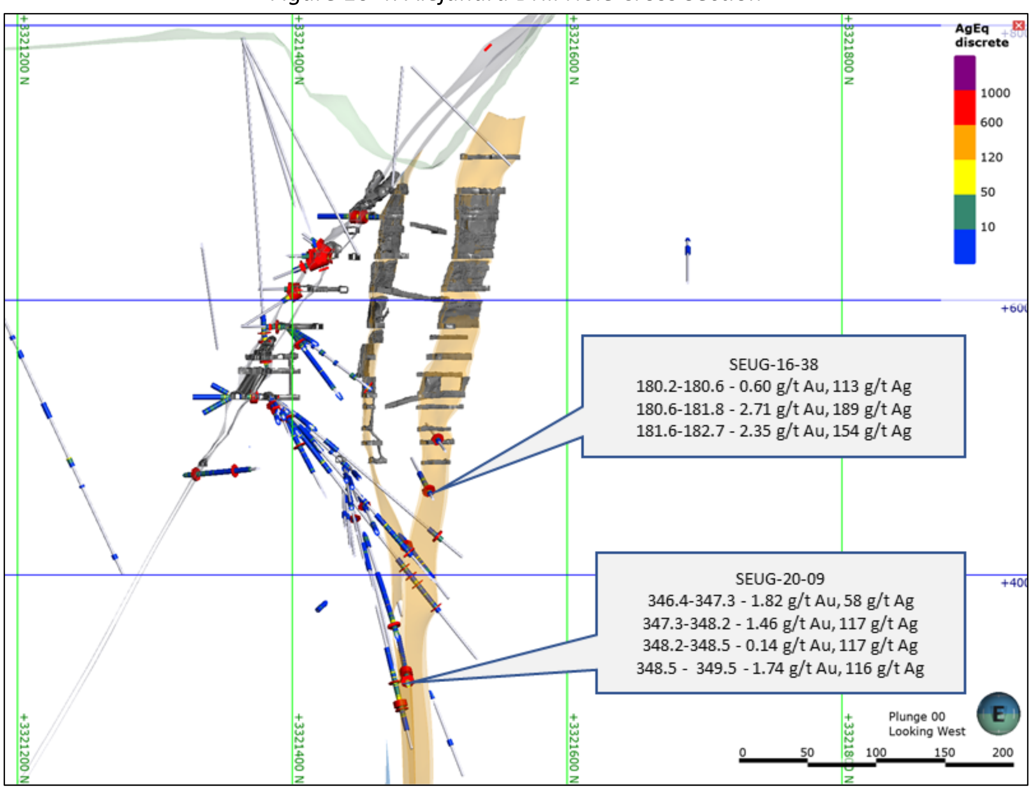
*Note: Figure prepared by First Majestic, February 2021. Section Looks north; red dots- exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7).*

Figure 10-3: Alejandra Drill Hole Long Section



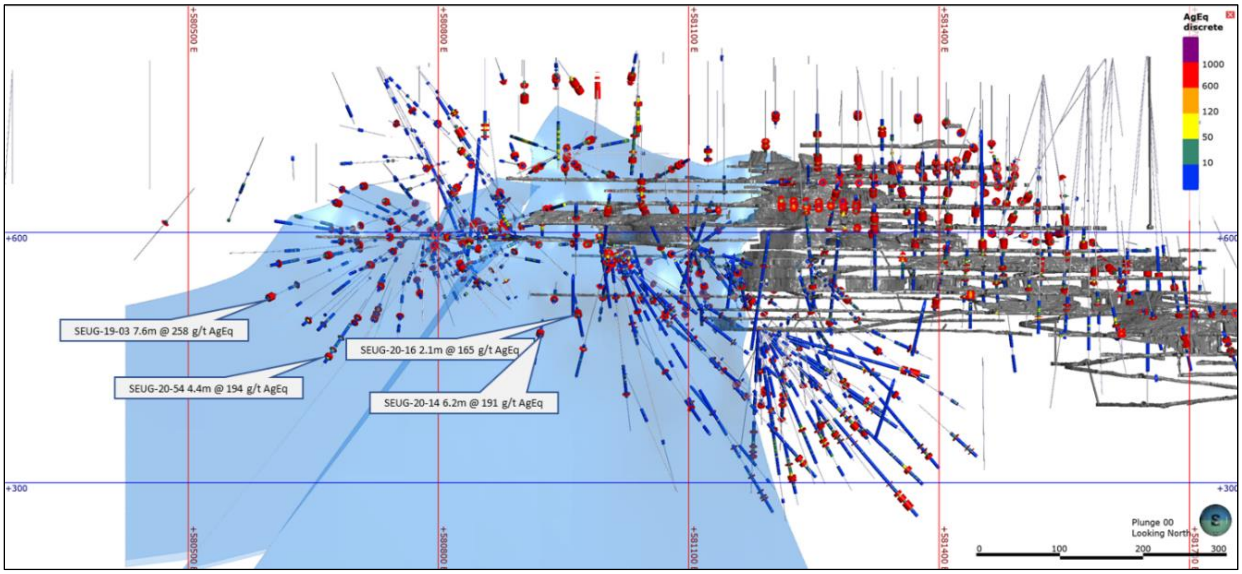
*Note: Figure prepared by First Majestic, February 2021. Section looks north; red dots- exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7); drilled intersections reported; true widths are 20% to 30% less.*

Figure 10-4: Alejandra Drill Hole Cross Section



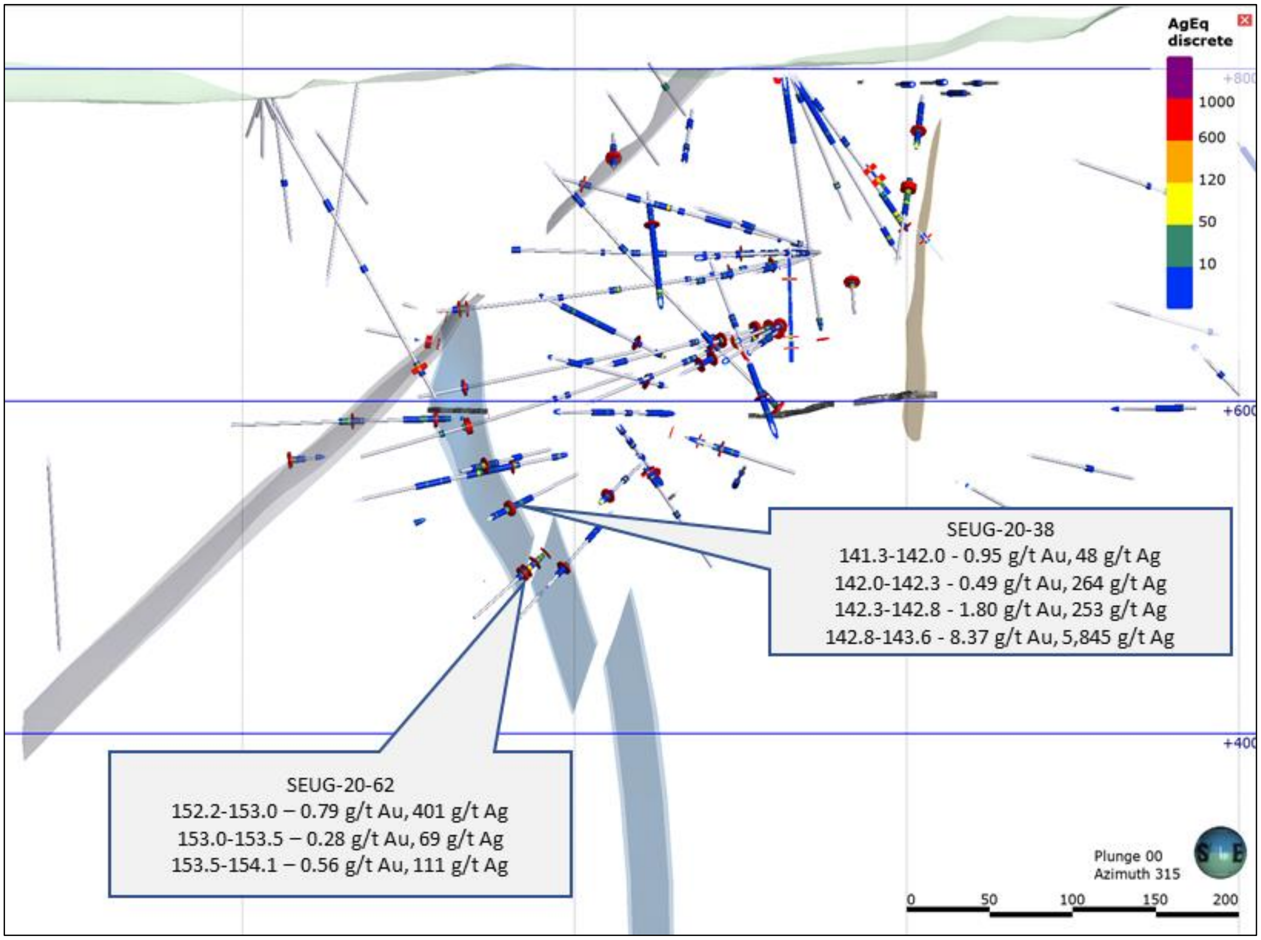
*Note: Figure prepared by First Majestic, February 2021. Section looks west; red dots- exploration composites >120 g/t Ag-Eq and > 0.75 ms; Ag-Eq=Ag+(Au*92.7); from-to intersections reported; true widths are 20% to 30% less.*

Figure 10-5: America Drill Hole Long Section



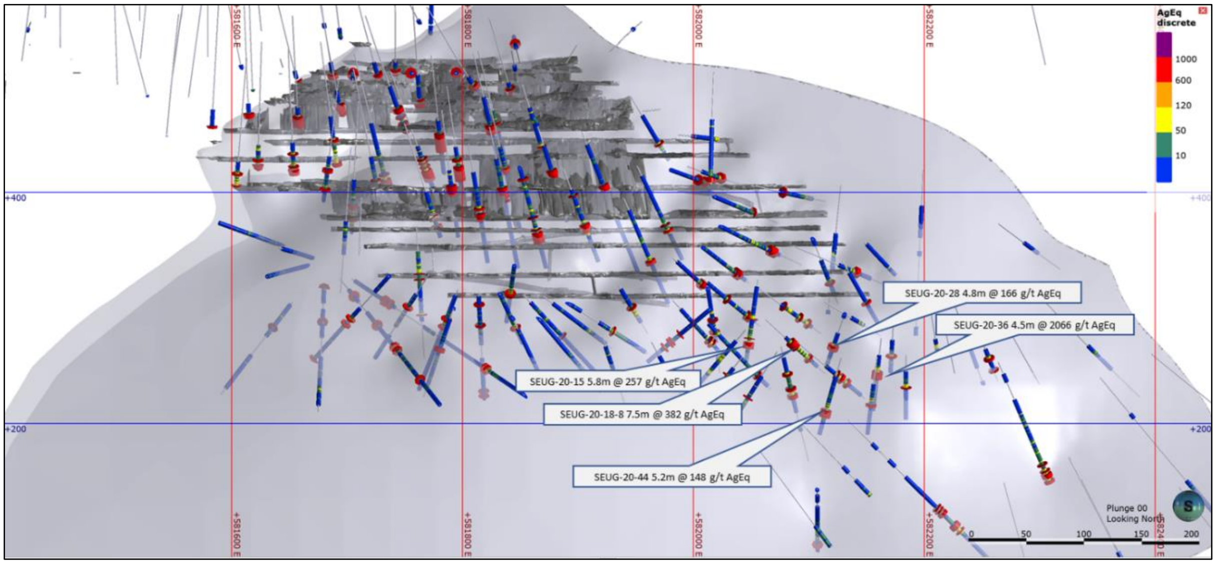
*Note: Figure prepared by First Majestic, February 2021. Section looks north; red dots- exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7); from–to intersections reported; true widths are 20% to 30% less.*

Figure 10-6: America Drill Hole Cross Section



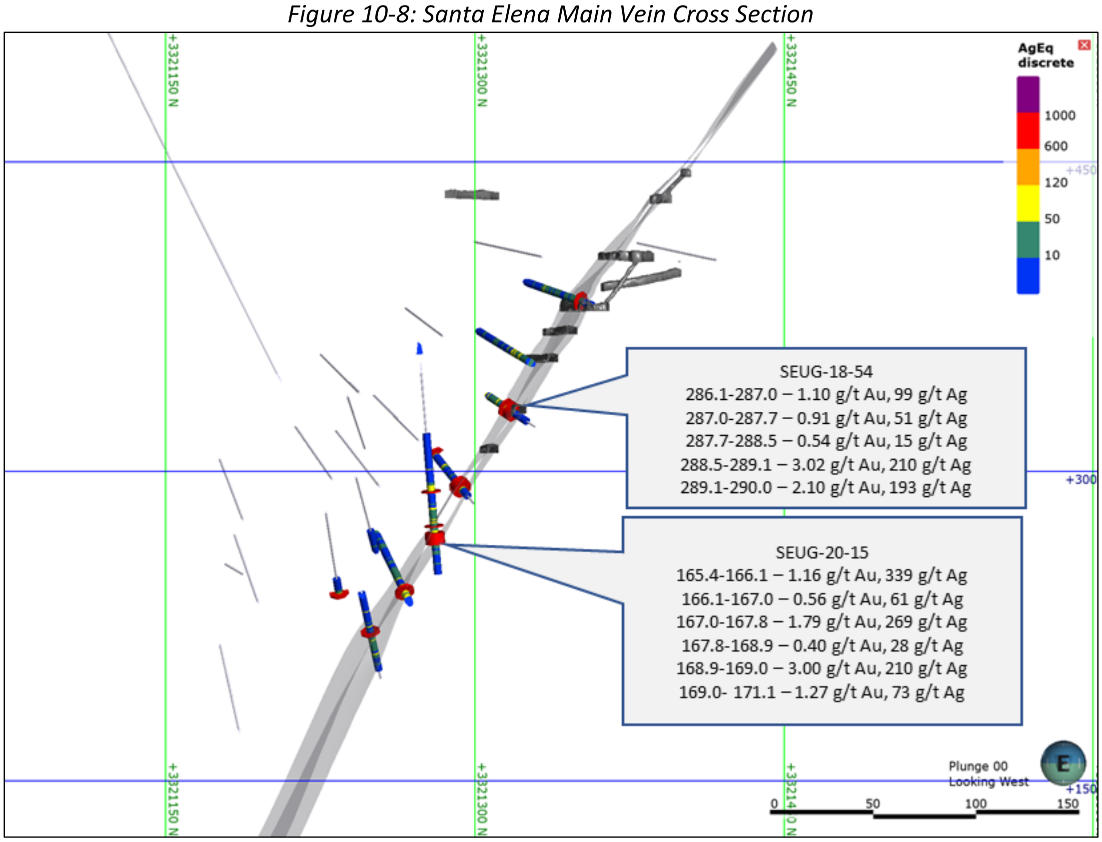
*Note: Figure prepared by First Majestic, February 2021. Section looks west; red dots- exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7); from–to intersections reported; true widths are 20% to 30% less.*

Figure 10-7: Main Vein Drill Hole Long Section



*Note: Figure prepared by First Majestic, February 2021. Section looks north; red dots - exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7); from–to intersections reported; true widths are 20% to 30% less.*

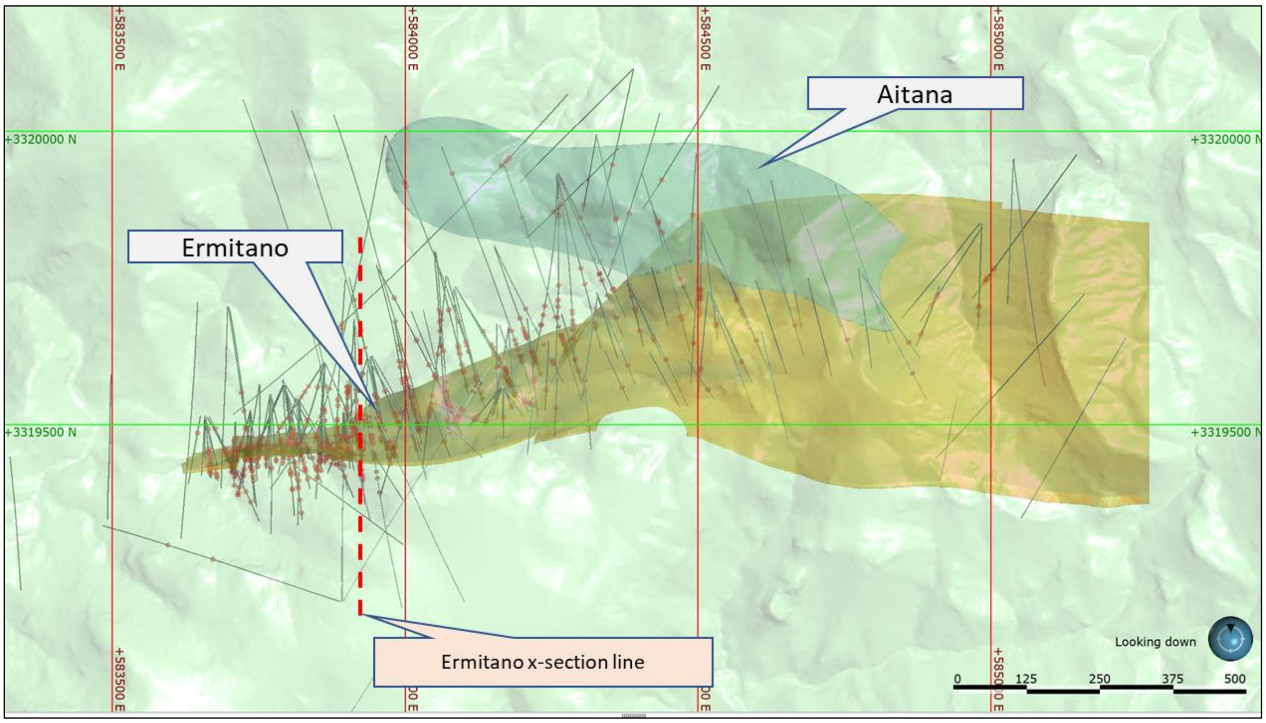
Figure 10-8: Santa Elena Main Vein Cross Section



*Note: Figure prepared by First Majestic, February 2021. Section looks west; red dots - exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7); from–to intersections reported; true widths are 20% to 30% less.*

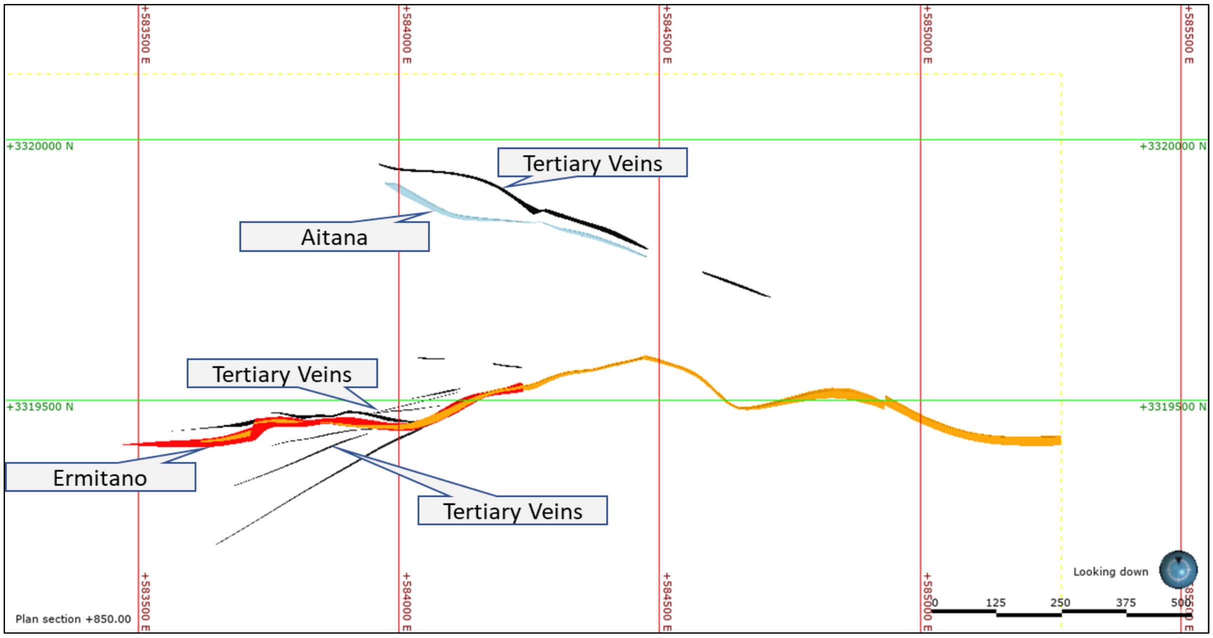
Widely spaced drilling in 2020 on the Ermitaño project has shown that gold and silver mineralization in the Ermitaño Vein remains open at depth to the east. The western end of the Ermitaño Vein rapidly decreases in thickness, and may be offset by a yet to be recognized fault. Generalized drill plans, long sections, and cross sections of the Ermitaño and Aitana Veins, are shown in Figure 10-9 to Figure 10-13.

Figure 10-9: Ermitaño Project Drill Plan



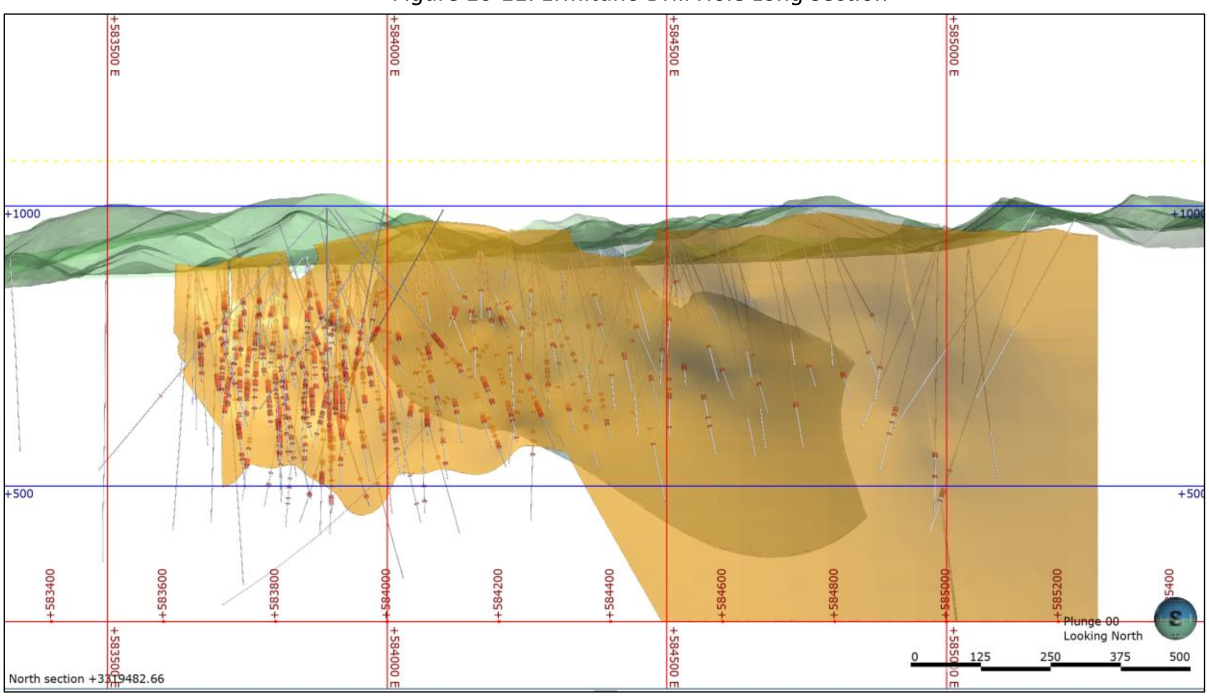
*Note: Figure prepared by First Majestic, February 2021. Section looks down; red dots - exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7); excludes tertiary veins.*

Figure 10-10: Ermitaño 850 Level Plan Showing Tertiary Veins Relative to the Ermitaño Vein and Aitana Veins



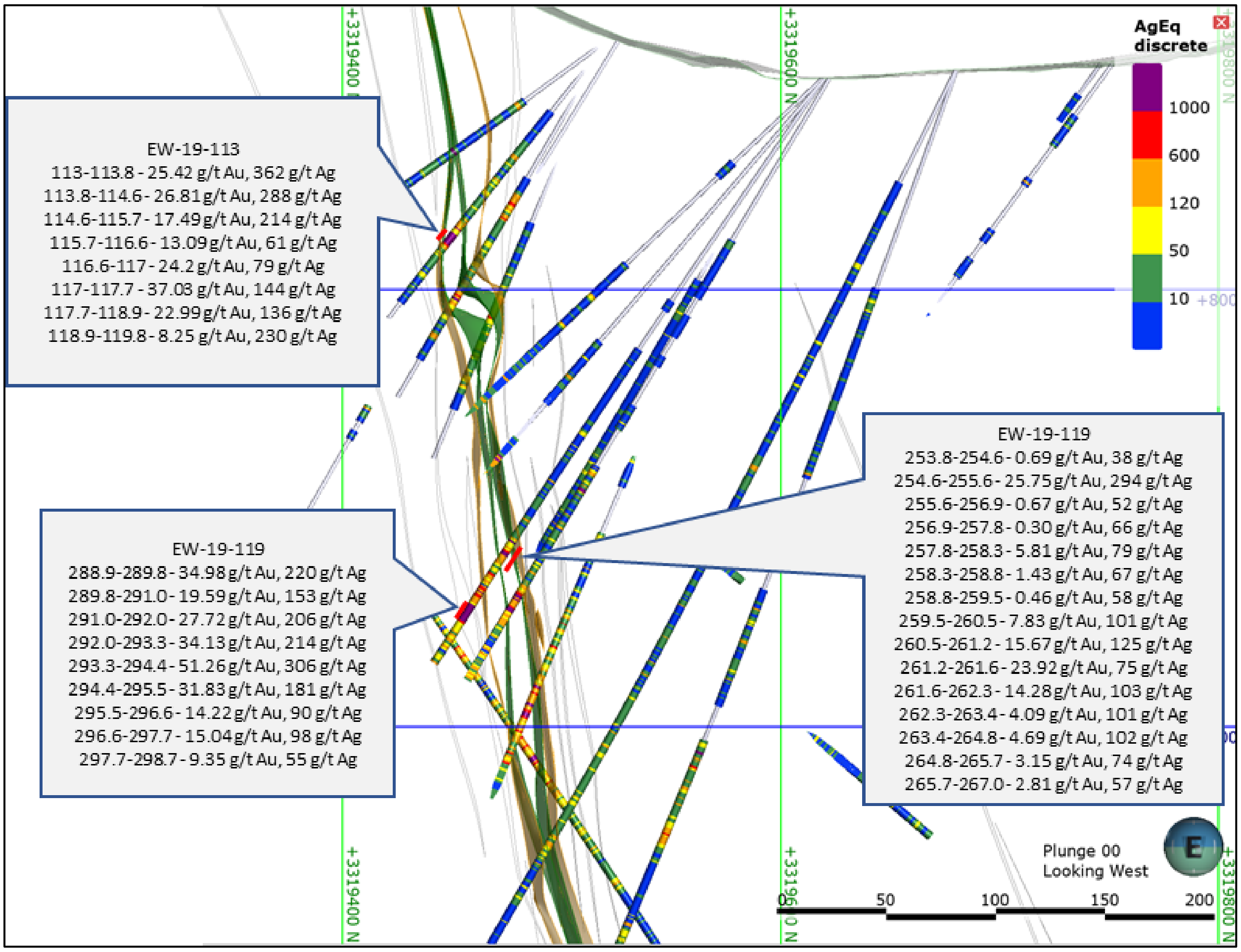
Note: Figure prepared by First Majestic, February 2021.

Figure 10-11: Ermitaño Drill Hole Long Section



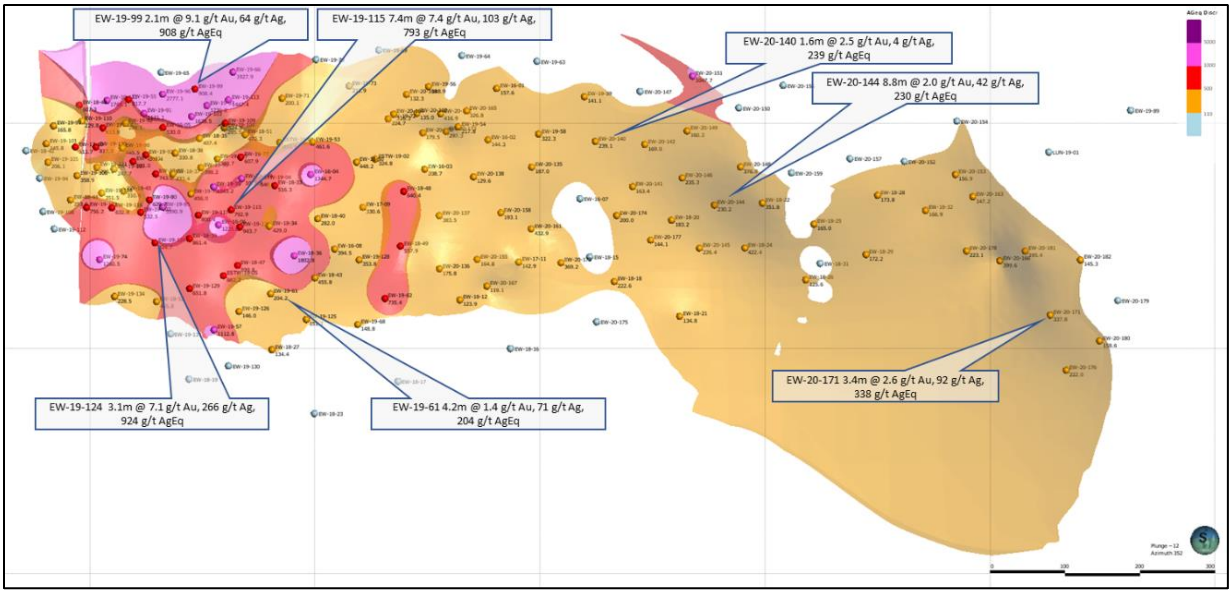
*Note: Figure prepared by First Majestic, February 2021. Section looks north; red dots- exploration composites >120 g/t Ag-Eq and > 0.75 m; Ag-Eq=Ag+(Au*92.7).*

Figure 10-12: Ermitaño Vein Drill Hole Example Intersections, Cross Section



Note: Figure prepared by First Majestic, February 2021. Section looks west; from–to intersections reported; true widths are 20% to 30% less.

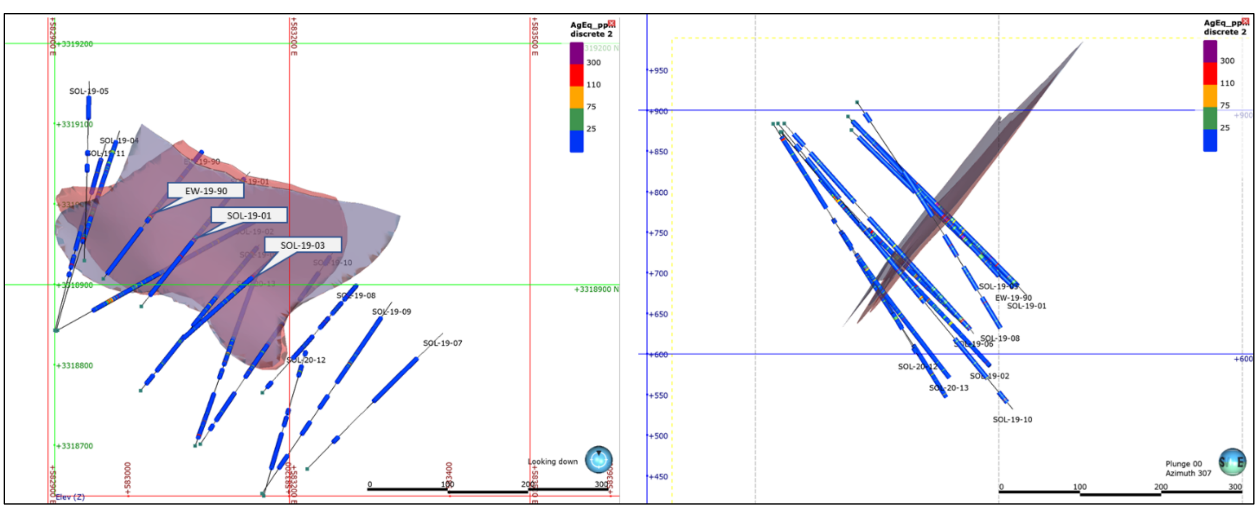
Figure 10-13: Ermitaño Vein Drill Hole Intercepts, Grade x Thickness Long Section



*Note: Figure prepared by First Majestic, February 2021. Section looks north; Ag-Eq=Ag+(Au*92.7); true widths reported.*

Wide spaced drilling in 2019 intersected epithermal vein mineralization approximately one kilometre west of the Ermitaño vein in the Soledad area. Mineralization has been delineated in two subparallel veins approximately 300 m along strike and 300 m down dip starting from surface. These veins vary from 10 cm to 5 m in thickness, and the thickest and highest-grade intersections occur near 750 masl. Step-out drilling down dip and along strike have not yet returned significant mineralization, but there is potential to delineate additional structures in the area. A drill plan and cross section for the Soledad veins are shown in Figure 10-14. Assay results of the most significant intersections are shown in Table 10-4.

Figure 10-14: Drill Hole Plan Map and Vertical Section of the Soledad Veins.



Note: Figure prepared by First Majestic, February 2021. Section looks southeast.

Table 10-4: Significant Santa Elena Regional Drill Results Collected by First Majestic

Hole	From	To	Length	Au_ppm	Ag_ppm	AgEq_ppm
SOL-19-0-1	143.9	144.4	0.5	6.5	93	696
	144.4	144.9	0.5	19.1	1375	3145
SOL-19-0-1	155.4	155.9	0.5	1.95	148	328
	155.9	156.6	0.8	15.3	1190	2609
	156.6	157.5	0.9	6.45	499	1097
	157.5	158.1	0.6	2.2	153	357
	159	160.2	1.2	0.07	208	214
SOL-19-03	170.2	171	0.8	7.21	445	1114
	171	171.8	0.8	1.15	61	168
	171.8	172.5	0.8	1.75	116	278
	172.5	173.5	1	0.75	87	157
	173.5	174.2	0.8	7.17	1204	1869
	174.2	174.9	0.7	0.03	4	7
	174.9	175.6	0.7	0.03	3	7
	175.6	176.6	1	1.21	87	199
	176.6	177.1	0.5	5.11	248	722
	177.1	177.6	0.5	8.77	451	1264
	177.6	178.4	0.9	0.1	14	23
	178.4	178.9	0.5	10.98	508	1525
	178.9	179.3	0.5	3.18	414	709
	179.3	180	0.7	1.54	94	237
	180	180.8	0.8	0.58	52	106
	180.8	181.7	0.9	0.05	12	17
	181.7	182.4	0.8	0.03	8	10
	182.4	183.3	0.9	0.03	4	7
	183.3	183.8	0.5	1.75	137	299
	183.8	184.9	1.1	0.03	5	7
	184.9	186.4	1.5	0.04	10	13
	186.4	187.2	0.8	0.01	5	6
	187.2	187.8	0.6	1.51	85.5	225

Hole	From	To	Length	Au_ppm	Ag_ppm	AgEq_ppm
EW-19-90	132.5	132.9	0.4	1.06	31	129
	132.9	134	1.1	0.76	14	84
	134	135.2	1.3	1.95	13	193
	135.2	135.6	0.4	3.56	108	438
	135.6	136.3	0.8	5.61	45	565
	136.3	137.2	0.9	0.58	72	126
	137.2	137.9	0.8	0.43	12	52
	137.9	138.6	0.7	1.37	47	174
	138.6	139.2	0.6	0.15	10	24
	139.2	139.9	0.7	1.3	31	151
	139.9	140.7	0.9	2.52	37	270
	140.7	141.6	0.9	7.84	64	791
	141.6	142.7	1.1	2.73	140	393
	142.7	143.8	1.1	3.8	45	398
	143.8	145.2	1.4	2.06	104	295
	145.2	146.3	1.1	1.67	148	303
	146.3	147.2	0.9	2.49	217	448
	147.2	147.9	0.7	0.51	49	96
	147.9	148.5	0.6	0.62	53	110
	148.5	149	0.6	0.63	56	114
	149	149.6	0.6	0.65	62	122
	149.6	150.2	0.6	1.04	109	205

11. SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1. Sample Preparation Methods before Dispatch to Laboratories

Sample preparation methods and quality control measures employed before dispatch of samples to analytical laboratories are described in Section 10.

11.2. Analytical Laboratories

The laboratories used for sample preparation and analysis are summarized in Table 11-1.

Table 11-1: Laboratories Summary

Laboratory	Drilling Period	Certification	Independent	Comments
ALS	2006-2008, 2012-2013, 2015	ISO 9001, ISO/IEC 17025	Yes	Primary laboratory for underground drill core. Sample preparation at Hermosillo or Chihuahua, Mexico laboratory. Sample analysis at the Vancouver laboratory in Canada.
Bureau Veritas Minerals Laboratories (BV)	2014-2015	ISO 9001, ISO/IEC 17025	Yes	Primary laboratory for underground and surface drill core and check samples. Sample preparation at the Hermosillo, Mexico laboratory. Sample analysis at the Bureau Veritas Vancouver, Canada laboratory.
Santa Elena Laboratory (Formerly Nusantara Laboratory)	2012-2013, 2015, 2016-2020	None	No	Primary laboratory for underground drill core, ore control and production channel samples. Located at Santa Elena mine. Sample preparation and analysis.
SGS	2016-2020	ISO/IEC 17025, ISO 9001	Yes	Primary laboratory for surface drill core. Sample preparation at the Durango or Hermosillo, Mexico laboratory. Analysis at the Durango laboratory.
Central Laboratory	2016-2020	ISO 9001:2008 in June 2015 and ISO 9001:2015 in June 2018	No	Primary laboratory for underground drill core, underground channel and sawn-channel samples used for Resource Estimation. Located at La Parrilla mine in San Jose La Parrilla, Durango, México. Sample preparation and analysis.

ALS Limited Vancouver (ALS) received ISO 9001 certification in 2005 and received accreditation of ISO/IEC 17025 from Standards Council of Canada in 2005 and 2020. ALS is independent of First Majestic.

ACME Laboratories Ltd. (now Bureau Veritas Commodities Canada Ltd or Bureau Veritas) received ISO 9001 certification in 1996 and received accreditation of ISO/IEC 17025 from Standards Council of Canada in 2011 and 2020. Bureau Veritas is independent of First Majestic.

SGS laboratories conform to the ISO/IEC 17025 standard and most regional facilities have been ISO 9001 certified since 2008. SGS is independent of First Majestic.

The Central Laboratory received ISO 9001:2008 certification in June 2015 and ISO 9001:2015 certification in June 2018. Central Laboratory is not independent of First Majestic.

The Santa Elena Laboratory is not certified or accredited and is not independent of First Majestic. The Santa Elena Laboratory has been managed by the Central Laboratory since 2016.

11.3. Laboratory Sample Preparation and Analysis

11.3.1. ALS

Drill core samples were dried, weighed, then crushed 70% passing 2mm, split to a 250 g subsample which was pulverized to 85% passing 75 µm.

Samples were analyzed for 35 elements by trace level aqua-regia digestion with an inductively-coupled plasma atomic emission spectroscopy (ICP-AES) finish (package ME ICP41). Samples returning >100 g/t Ag were reanalysed for silver by ore grade aqua regia digestion with an ICP-AES finish (package Ag-OG46). Samples returning >1,500 g/t Ag were reanalyzed for silver by 30 g fire assay with a gravimetric finish (package Ag-GRA21).

Gold was analyzed by 30 g fire assay with an atomic absorption spectroscopy (AAS) finish (package Au-AA23). Samples returning >10 g/t Au were reanalyzed for gold by 30 g fire assay with a gravimetric finish (Package Au-GRA21).

11.3.2. Bureau Veritas

Drill core samples were dried, weighed, then crushed 70% passing 2 mm, and split to a 250 g subsample that was pulverized to 85% passing 75 µm.

Samples were analyzed for 33 elements by aqua regia digestion with an inductively-coupled plasma emission spectroscopy (ICP-ES) finish (package AQ300/AR330). Samples returning >100 g/t Ag were reanalyzed for silver by 30 g fire assay with a gravimetric finish (package FA630). Since 2018, samples are also analyzed for silver by four-acid digestion with an atomic absorption (AA) finish (package MA402).

Gold was analyzed by 30 g fire assay with an AA finish (package FA430). Samples returning >10 g/t Au were reanalyzed for gold by 30 g fire assay with a gravimetric finish (package FA530).

11.3.3. SGS

Drill core samples are dried at 105°C, then crushed 75% passing 2 mm and split to a 250 g subsample that was pulverized to 85% passing 75 µm.

Samples were analyzed for 34 elements using aqua regia digestion with an ICP-AES finish (package GE_ICP14B). Samples were also analyzed for silver by three-acid digestion with an AAS finish (package GE_AAS21E).

Samples returning >300 g/t Ag from GE_AAS21E were reanalyzed for silver by 30 g fire assay with a gravimetric method (package GE_FAG313). In 2018, the GE_AAS21E re-assay threshold was reduced to 100 g/t Ag.

Gold was analyzed by a 30 g fire assay with an AA finish (package GE_FAA313). Samples returning >10 g/t Au were reanalyzed for gold by a 30 g fire assay with a gravimetric finish (package GE_FAG303)

11.3.4. Central Laboratory

From 2016 to 2018, underground drill core and sawn-channel samples were dried at 105 °C ± 5°C, then crushed to 80% passing 2 mm, split to a 250 g subsample, and pulverized to 80% passing 75 µm. Since 2019, underground drill core and sawn-channel samples have been dried at 105 °C ± 5°C and then crushed to 85% passing 2 mm, split to a 250 g subsample, and pulverized to 85% passing 75 µm.

Samples were analyzed for 34 elements by two-acid digestion with an ICP finish (package ICP34BM). All samples were also analyzed for silver by three-acid digestion with an AA finish (package AAG-13). Samples returning >300 g/t Ag from AAG-13 were reanalyzed for silver by 20 g fire assay with a gravimetric finish (package ASAG-14).

Gold was analyzed by 20 g fire assay with an AAS finish (package AUAA-13). Samples returning >10 g/t Au were reanalyzed for gold by 20 g fire assay with a gravimetric finish (package ASAG-14).

11.3.5. Santa Elena Laboratory

There is limited information regarding sample preparation before 2015. From 2012 to 2015, drill core and production channel samples were dried, weighed, crushed and pulverized to 90% passing 106 µm (150 mesh).

Gold was analyzed using fire assay fusion with an AA finish and by gravimetric methods. Silver was analyzed using an aqua regia digestion and AA finish.

Since 2016, production channel samples are dried at 105 °C, weighed, then crushed to 80% passing 2 mm, split to a 300 g subsample, and pulverized to 80% passing 75 µm.

Silver is analyzed by 30 g fire assay with a gravimetric finish. Gold is analyzed by 30 g fire assay with an AA finish. Samples with gold values >10 g/t Au are analyzed by a 30 g fire assay with a gravimetric method finish.

11.4. Quality Control and Quality Assurance Procedures for Assays

11.4.1. Quality Control and Quality Assurance Materials and Insertion Rates

Pre-2012

There is no information to suggest that any QAQC program was in place prior to 2012.

2012–2015

From 2012 to 2015, the QAQC program for ALS and Bureau Veritas included insertion of CRMs and coarse blanks. In 2014, Nusantara began inserting field duplicates in the sample stream.

From 2012 to 2013 and 2015, the QAQC program for the Santa Elena mine laboratory included insertion by Nusantara of CRMs and coarse blanks.

2016–2020

From 2016 to present, the QAQC program for SGS included insertion of CRMs, coarse and pulp blanks and field, coarse and pulp duplicates in the sample stream. In 2018 and 2019 check samples were submitted to Bureau Veritas.

From 2018 to April 2019, the QAQC program for Bureau Veritas included insertion of CRMs, coarse and pulp blanks and field, coarse and pulp duplicates in the sample stream. During this period check samples were submitted to SGS.

From 2016 to present, the QAQC program for the Central Laboratory included insertion of CRMs and blanks. The CRMs and blanks were inserted in the core, production channel and sawn-channel sample streams. In 2018, field, coarse and pulp duplicates were added to the sample stream. During this period check samples were submitted to SGS.

In 2019, First Majestic initiated a QAQC program by including CRMs, blanks and duplicates in the production channel samples submitted to the Santa Elena Laboratory.

The CRMs were purchased from CDN Resource Laboratories Ltd. There is no documentation describing the origin of the blank material used before 2014. Between 2014 to 2015, the blank material was obtained from a light red quartzite collected from a quarry approximately 9 km north of the Santa Elena mine. Pulp blanks were purchased from Casa Valdivia, a provider of laboratory material in Hermosillo.

Actual control sample insertion rates from all laboratories are shown in Table 11-2.

Table 11-2: Quality Control Samples Insertion Rates

Laboratory	QAQC Type	2012	2013	2014	2015	2016	2017	2018	2019	2020
ALS	Standards	3%	3%	--	3%	--	--	--	--	--
	Blanks	2%	2%	--	3%	8%	--	--	--	--
	Duplicates	--	--	--	4%	--	--	--	--	--
	Checks					--	--	--	--	--
ACME/BV	Standards	--	--	4%	3%	--	--	9%	11%	--
	Blanks	--	--	4%	3%	--	--	10%	6%	--
	Duplicates	--	--	3%	2%	--	--	10%	8%	--
	Checks	--	--	--	--	--	--	3%	--	--
SGS	Standards	--	--	--	--	10%	10%	11%	4%	4%
	Blanks	--	--	--	--	10%	10%	11%	4%	4%
	Duplicates	--	--	--	--	8%	10%	11%	4%	4%
	Checks	--	--	--	--	--	--	10%	4%	--
FMCL	Standards	--	--	--	--	9%	10%	10%	3%	4%
	Blanks	--	--	--	--	10%	10%	9%	4%	4%
	Duplicates	--	--	--	--	9%	10%	9%	5%	4%
	Checks	--	--	--	--	--	--	3%	--	--
USE	Standards	3%	4%	--	6%	--	--	--	--	--
	Blanks	1%	2%	--	6%	--	--	--	--	--
	Duplicates	--	--	--	--	--	--	--	--	--
	Checks	--	--	--	--	--	--	--	--	--

11.4.2. Accuracy Assessment (Standards)

First Majestic assesses accuracy in terms of bias of the mean values returned for CRMs relative to the CRM expected value. Bias between ± 5% is considered acceptable. Gold and silver results from the CRMs are plotted on time sequence performance charts. Sample swaps and transcription errors are removed before assessing bias. CRMs results that are greater than the CRM mean ± three times the standard deviation are re-assayed.

<u>ALS</u>

There is no information supporting accuracy assessments before 2012. Between 2012 and 2015, six different CRMs were summitted to ALS. No significant bias for silver and gold results is observed and no significant sample handling issues are apparent.

<u>Bureau Veritas</u>

Between 2014 and 2015, three different CRMs were submitted to Bureau Veritas. Two indicate no significant bias and two indicate a marginal but acceptable bias for silver and gold. Results from six different CRMs submitted between 2018 to 2020 indicate no significant bias for silver and gold. No significant sample handling or transcription issues are apparent.

SGS

Between 2016 and 2020, seven different CRMs were submitted to SGS. The results indicate no significant bias for silver or gold, except for three CRMs that indicate a marginal but acceptable bias for silver and gold. No significant sample handling or transcription issues are apparent.

Central Laboratory

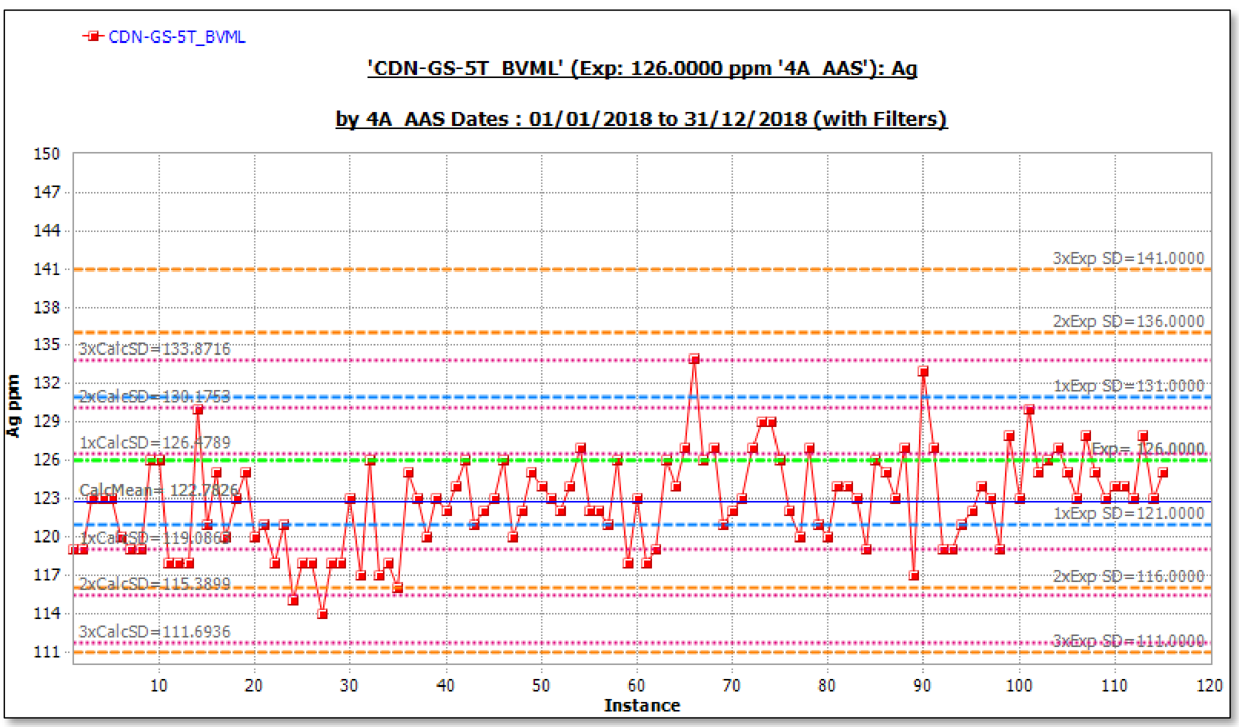
Between 2016 and 2020, six different CRMs were submitted to the Central Laboratory. The results indicate no significant bias for silver and gold except for two CRMs that indicate a marginal but acceptable bias for gold. No significant sample handling or transcription issues are apparent.

Santa Elena Laboratory

The CRM results from 2012 to 2013 and 2015 indicate no significant bias for silver and gold. No significant sample handling or transcription issues are evident.

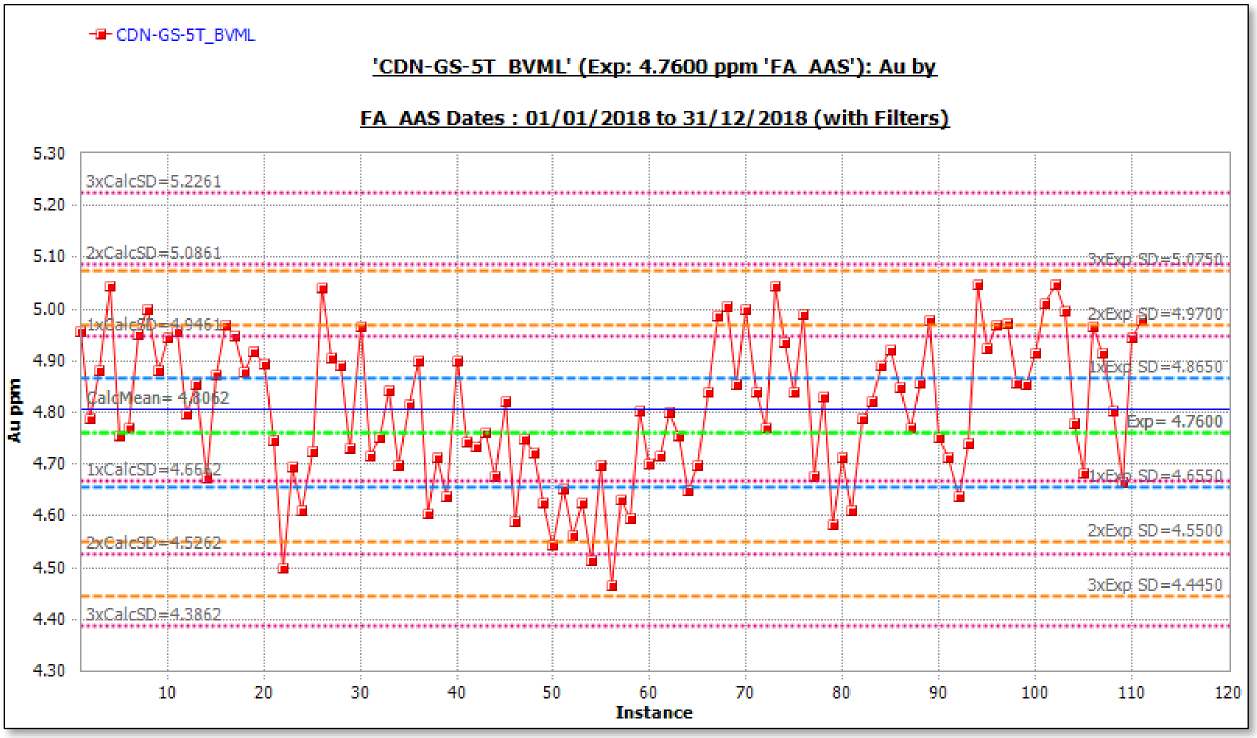
An example of the time sequence plots for the 2018 standard assessment from Bureau Veritas is shown in Figure 11-1 and Figure 11-2.

Figure 11-1: Time Sequence Performance Ag Chart 2018, Bureau Veritas



Note: Figure prepared by First Majestic, February 2021.

Figure 11-2: Time Sequence Performance Gold Chart 2018, Bureau Veritas



Note: Figure prepared by First Majestic, February 2021.

11.4.3. Contamination Assessment (Blanks)

First Majestic assesses contamination in terms of the values of blank control samples. Coarse blank values less than twice the detection limit value for 80% of the time, and pulp blank values less than twice the detection limit value 90% of the time are considered acceptable. Gold and silver blank results are plotted on a time-sequence blank performance chart. Outliers related to sample swaps or transcription errors are removed before calculating the frequency. Batches with excessive blank failure rates were re-assayed.

<u>ALS</u>

From 2013 to 2013 and 2015, greater than 90% of the coarse blank silver and gold values were less than two times detection limit. The results indicate no significant contamination. There are insufficient pulp blanks to assess contamination in 2016.

<u>Bureau Veritas</u>

From 2014–2015 and from 2018–2019, 98% or more of the coarse blank gold and silver values were less than two times the detection limit. From 2019–2020 100% of the pulp blank gold and silver values were less than two times the detection limit. The results indicate no significant contamination.

SGS

From 2016–2020, 98% or more of the coarse blank gold and silver values were less than two times the detection limit. 100% of the pulp blank gold and silver result were less than two times the detection limit. The results indicate no significant contamination.

Central Laboratory

From 2016–2020, 91% or more of the coarse blank gold and silver values were less than two times the detection limit. A total of 98% or more of the pulp blank gold and silver result were less than two times the detection limit. The results indicate no significant contamination.

Santa Elena Laboratory

There are no documented laboratory procedures from the Santa Elena Laboratory providing the lower detection limits for gold and silver results before 2016. Therefore, First Majestic could not assess contamination using the blank frequency. However, from 2012 to 2013 and 2015, Santa Elena Laboratory returned silver blank results around 3 g/t Ag average and gold blank results around average 0.04 g/t Au. These results indicate the blank material used to assess contamination may contain traces of those elements.

11.4.4. Precision Assessment (Duplicates)

First Majestic assesses precision in terms of the frequency of the absolute relative difference (ARD) of paired duplicate values. A 90% frequency of ARD less than 30%, 20% and 10% for field, coarse and pulp duplicates, respectively, is the target precision. Sample swaps and transcription errors are removed before assessing the ARD sample frequency. Paired duplicate gold and silver results, excluding outliers are plotted on ARD versus frequency charts to visually inspect that the sample frequency is meeting the precision target. Duplicate precision is continually monitored. If the precision targets are not met, the laboratories are consulted.

ALS

There is an insufficient number of duplicate results to allow meaningful assessment of precision from ALS.

Bureau Veritas

From 2014 to 2015 and 2018, field duplicate paired silver and gold results were below the precision target. The precision for silver paired results improved in 2019 where the sample frequency meeting the target reached 80%.

In 2018, coarse duplicate paired silver and gold results are below target. The precision improved in 2019 for paired silver and gold results.

In 2018, pulp duplicate paired silver and gold results are below or close to the precision target. The precision improved in 2019 for paired silver results.

SGS

From 2016 to the present, field, coarse and pulp duplicate paired silver results, and coarse duplicate paired gold results meet the precision targets.

From 2016 to the present, field and pulp duplicate paired gold results are below targets.

Central Laboratory

From 2016 to the present, field duplicate results for silver and gold are below the precision target. From 2018 to the present, the precision improved.

From 2016 to the present, coarse duplicate paired results for silver and gold results meet the precision target. Pulp duplicate silver and gold paired results are below target.

11.4.5. Between-Laboratory Bias Assessment (Checks)

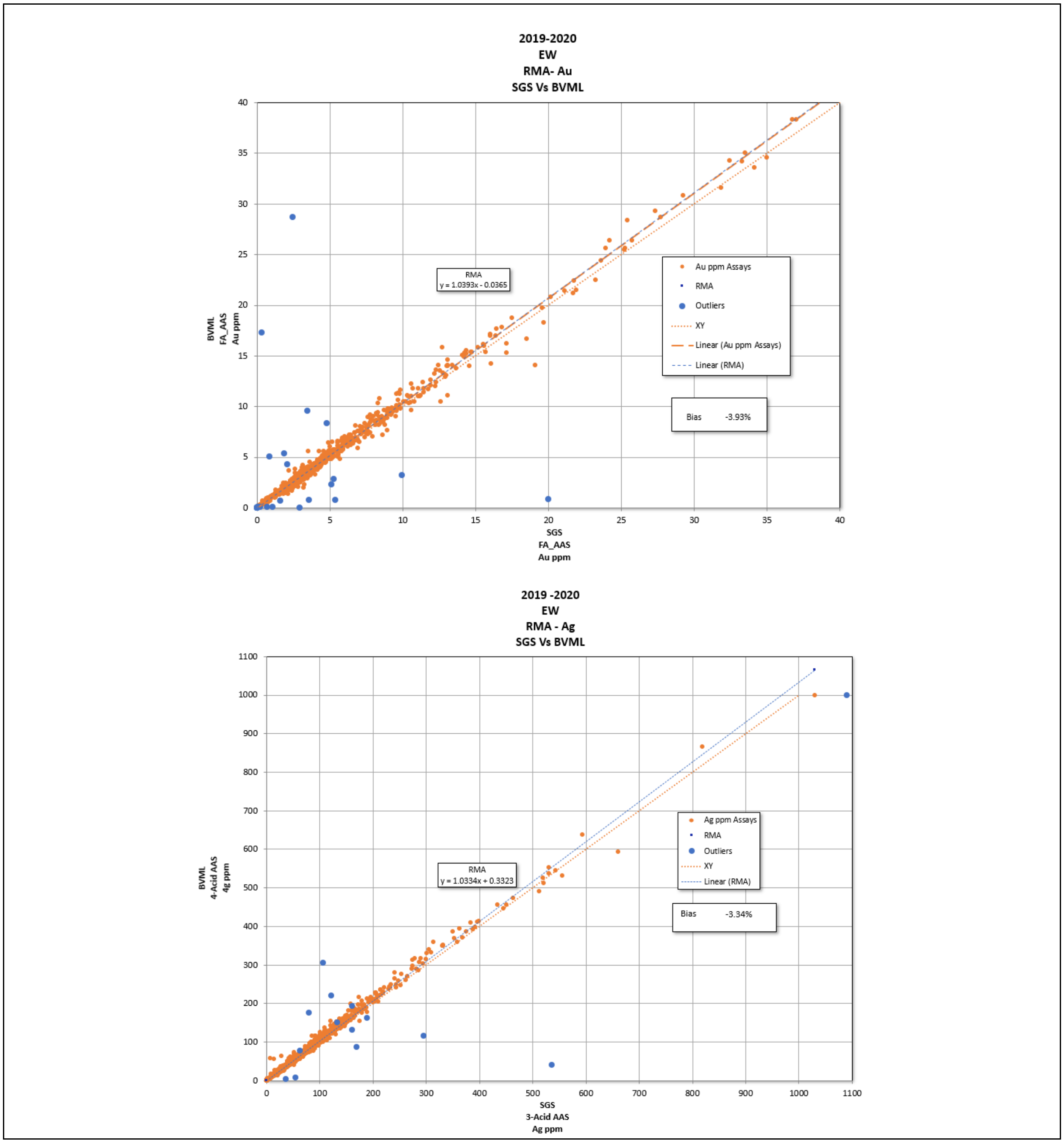
First Majestic assesses between-laboratory bias in terms of the slope of a reduced major axis (RMA) line. A slope between 0.95 and 1.05 is considered an acceptable bias. The RMA slope is calculated from the standard deviations of the primary and check paired results. Paired results below the laboratory low detection limit and paired results with significant absolute differences were removed before calculating the final bias. Paired primary and check sample gold and silver results, excluding outliers and the RMA line are plotted on x-y graphs to visually analyse data trends and for identification and rejection of outliers.

The RMA analysis from the Ermitaño project samples in 2018 indicate no significant bias between the primary laboratory (Bureau Veritas) and the secondary laboratory (SGS) for silver and gold. Control samples submitted with checks samples showed no material precision, accuracy, or contamination issues. The RMA analysis for the Ermitaño samples from 2019 to 2020 indicate no significant between-laboratories bias for silver and gold results.

The RMA analysis from the Santa Elena, Tortugas and America samples from 2018 to 2019, indicate no significant bias between the primary laboratory (Central Laboratory) and the secondary laboratory (SGS) for silver and gold.

An example of laboratory bias charts between SGS and Bureau Veritas for the Ermitaño check results from 2019 to 2020 is shown in Figure 11-3.

Figure 11-3: RMA Plots. Ermitaño Check Program 2019–2020



Note: Figure prepared by First Majestic, February 2021.

11.5. Databases

The Santa Elena resource database is stored in a secured SQL database. The SQL database is based on the Maxwell GeoServices database scheme and contains drilling and channel sample data. Assay data were received from the laboratories via emails containing comma-separated value (CSV) data files. These files are compiled and imported using DataShed™, a database management software provided by Maxwell GeoServices. The DataShed™ import process includes a series of built-in checks for errors at all stages, from headers to individual tables. After data were imported, visual checks are done to ensure that data were properly imported.

11.6. Sample Security

11.6.1. Production Channel Samples

Three-metre spaced production channel samples are used to support the construction of the geological models, for grade control, and to support Mineral Resource estimation. Throughout historical and current mine operations, channel samples were transported from the sampling areas to the Santa Elena Laboratory using First Majestic vehicles. Since 2017, channel samples were transported by a commercial transport company from the sampling areas to the Central Laboratory.

The Santa Elena Laboratory and the Central Laboratory keep the channel samples in a secured and fenced area during analysis. After analysis at the Santa Elena Laboratory, the channel samples are disposed of in the processing plant. After analysis at the Central Laboratory, First Majestic's personnel take pulps and rejects from channel samples to a secure storage facility at Villa Union, Durango, Mexico.

All samples are securely sealed, and chain-of-custody documents are issued for all shipments.

The analytical results from channel samples are received by authorized First Majestic personnel using secure digital transfer transmissions, and access is restricted to these results.

11.6.2. Core Samples

The drill core and drill core samples are stored in a secure core processing and storage warehouse at the Santa Elena mine prior to their shipment to the sample processing laboratories. All samples are securely sealed, and chain-of-custody documents are issued for all shipments.

Core samples from Ermitaño were transported from the sampling areas to SGS by SGS vehicles. Core samples from underground drill holes in the Santa Elena mine were transported from sampling areas to the Central Laboratory by commercial transport companies.

After analysis, pulp and coarse reject samples are kept in a secured area at the Central Laboratory. SGS and Bureau Veritas retain pulp and rejects for a few months before returning them to First Majestic. First Majestic stores pulps and coarse rejects at the Santa Elena mine or at a secure storage facility at Villa Union, Durango, Mexico.

The analytical results from core samples are received by authorized First Majestic personnel using secure digital transfer transmissions, and access is restricted to these results.

11.7. Author's Opinion

Sample preparation, analysis and quality control measures used at the primary and secondary laboratories meet current industry standards and are providing reliable silver and gold results for channel and core samples.

The wax-sealed water immersion method to determine SG at Santa Elena is appropriate. The quality control procedures applied to the SG measurements provided reliable density results.

Sample security procedures used for shipping and receiving drill core and samples between the drill core shed and laboratories and procedures used for shipping and receiving chip samples between the underground working areas and laboratories are in accordance with industry standards. The database management procedure used to receive, and record, results are providing reliable integrity to the samples results.

There is no QAQC program supporting results before 2012. Pre-2012 data represents 2% of the database, mitigating concerns with its reliability.

The assessment of the quality control sample results from ALS, Bureau Veritas, SGS, Central and Santa Elena Laboratories identified no significant errors, biases or contamination in the silver and gold results.

The marginal high bias relative to the expected values for gold results from SGS in the early sampling programs (2017), is considered acceptable. After 2018, the laboratory accuracy performance improved as noted from less than 5% bias from most of the CRMs.

Field duplicate pairs with silver and gold results did not achieve the precision thresholds. The low precision from field duplicates is most likely attributable to the natural heterogeneity of the distribution of mineralization within the deposits. Precision from gold results from all duplicates is usually equal to or lower than the precision from silver results. The coarse duplicates with silver and gold results from the Bureau Veritas, SGS and Central Laboratories show better precision than do the pulp duplicates. These laboratories use the same sample preparation procedure. However, the low precision from pulp duplicates indicates an issue with the pulp preparation at three laboratories. In September 2019, to improve precision, Central Laboratory changed the sample preparation procedure for the crushing and pulverizing stage and conducted sieve checks during the sample preparation. However, precision remained the same after this change. To ensure appropriate quality and consistency in pulp grind size, a revision of the pulp preparation procedure is being evaluated.

The pulp check results indicate that there is an agreement between the SGS and Bureau Veritas laboratory results.

In general, there were no significant bias or contamination issues from the channel samples submitted to the Central Laboratory.

Production channel samples used to support grade estimation were assessed for laboratory accuracy and laboratory precision. The field sampling procedure for production channel samples has some risk of introducing sampling bias and this possible bias has not yet been fully assessed.

12. DATA VERIFICATION

The data verification included data entry error checks, visual inspections of key data, and a review of QAQC assay results for data collected between 2012 and June 2020 from the Ermitaño, Alejandra, America, Santa Elena Main and Tortugas Veins (the verification dataset). Site visits were completed as part of the data verification process.

12.1. Data Entry Error Checks

The data entry error checks consisted of comparing data recorded in the database with original collar survey reports, lithology logs and assay reports, and investigation of gaps, overlaps and duplicate intervals in the sample and lithology tables.

No significant data entry errors were observed in a 5% random selection of the drill collar locations of the verification dataset. The error check consisted of a comparison of the verification dataset collar locations with survey reports issued by First Majestic's technical services staff.

No data entry error checks were made on down hole survey data but all downhole survey records in the verification dataset were inspected mathematically for angular deviation tolerance greater than 5°/50m. No significant deviations were observed.

No significant data entry errors were observed in a 5% random selection of the lithology records of the verification dataset. The error check consisted of a comparison of the verification dataset lithology records with records exported from the logging software.

No significant data entry errors were observed in a 5% random selection of the gold and silver assay results of the verification dataset. The error check consisted of a comparison of the verification dataset assays with original electronic copies and final laboratory certificates issued by Central, SGS, Bureau Veritas and Santa Elena Laboratories.

The inspection for gaps, overlap, and duplicates for all lithology and sample records identified no issues.

No significant data entry errors were observed in a 5% random selection of the SG weight measurements of the verification dataset. The error check consisted of a comparison of the verification dataset with original SG logs. SG calculations were also verified.

12.2. Visual Inspection of Key Data

The visual inspection consisted of verifying the position of collars, down-hole survey deviations relative to the underground workings and the three-dimensional (3D) geological models. The visual inspection also included comparison of lithology and assay intervals with core photos.

A 5% random selection of drill hole collar and channel locations in the verification dataset indicated no significant position errors.

A 5% random selection of drill hole traces revealed no unusual kinks or bends.

A 5% random selection of lithology intervals of the verification datasets were visually inspected using core photos. Observed lithology, mineralogy, sample lengths and sample numbers were compared to the logged data. No significant differences were observed.

12.3. Review QAQC Assay Results

Verification of assay accuracy and contamination is provided in Section 11 of this Report.

12.4. Site Visits

Ms. Maria Elena Vazquez visited the Santa Elena mine on several occasions since 2016 and most recently between November 9 to November 14, 2019. During these visits, Ms. Vazquez observed current drill core and channel logging and sampling procedures, and inspected drill core, core photos, core logs and QAQC reports.

12.5. Author’s Opinion

The data verification conducted by the QP such as data entry error checks, visual inspections, review of QAQC assay results, field inspections of the core and review of the drilling, logging and sampling procedures identified no significant issues with data entry, grade accuracy, precision and contamination and no issues with drill holes and sample locations. The database is considered suitable to support Mineral Resource estimation.

Data verification was not completed on pre-2012 data due to limited or missing original supporting data. The pre-2012 data represents less than 5% of the sample database. Less than 3% of the pre-2012 drill holes were used to support the current resource estimate. The absence of verification of the pre-2012 dataset is mitigated by the relatively small contribution to the current resource estimate.

13. METALLURGICAL TESTING

13.1. Overview

Santa Elena is an operating mine and the metallurgical test data supporting the initial plant design has been proven and reinforced by plant operating results though the years of operation, combined with more recent metallurgical studies.

13.2. Metallurgical Testing

Metallurgical testing, together with mineralogical investigations are periodically performed. The plant is continually running tests to optimize metal recoveries and to reduce operating costs, even when the results are within the expected processing performance. Metallurgical testing assists in several ways, such as the fine tuning of reagents usage, the maintenance of optimum particle size, variations in the backwash circuit, and testing of new reagents.

Composite samples are analyzed on a monthly basis to determine the metallurgical performance of the mineralized material fed to the processing plant. In addition, geometallurgical studies are commonly performed to investigate the similarities and variabilities related to future ore zones to be mined and processed in the mid- and long-term. This metallurgical testing is carried out by the Central Laboratory.

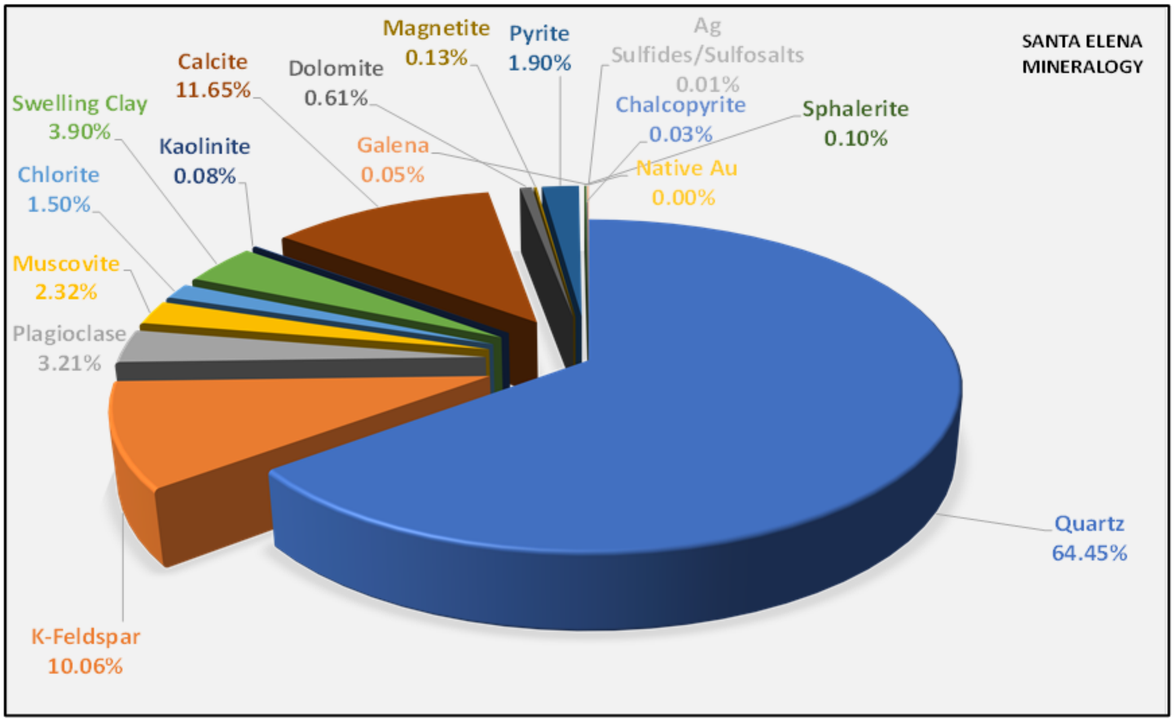
13.2.1. Mineralogy

The most abundant mineralogical species within the Santa Elena mine deposits, both metallic and non-metallic include:

- Metallic minerals (in order of abundance): pyrite (FeS_2), magnetite (Fe_3O_4), sphalerite ($(Zn,Fe)S$), galena (PbS), chalcopyrite ($CuFeS_2$), stromeyerite $(Ag,Cu)_2S$, freibergite/tetrahedrite ($Cu_{12}Sb_4S_2/Ag$), argentite (Ag_2S), native gold;
- Non-metallic minerals (in order of abundance): quartz (SiO_2), calcite ($CaCO_3$), K-feldspar ($KAlSi_3O_8$–$NaAlSi_3O_8$–$CaAl_2Si_2O_8$), swelling clay, plagioclase $(Na,Ca)(Si,Al)_3O_8$, muscovite $KAl_2(AlSi_3O_{10})(OH)_2$, chlorite ($(Mg,Fe)_3(Si,Al)_4O_{10}(OH)_2$–$(Mg,Fe)_3(OH)_6$), dolomite [$CaMg(CO_3)_2$] and kaolinite ($Al_2Si_2O_5(OH)_4$).

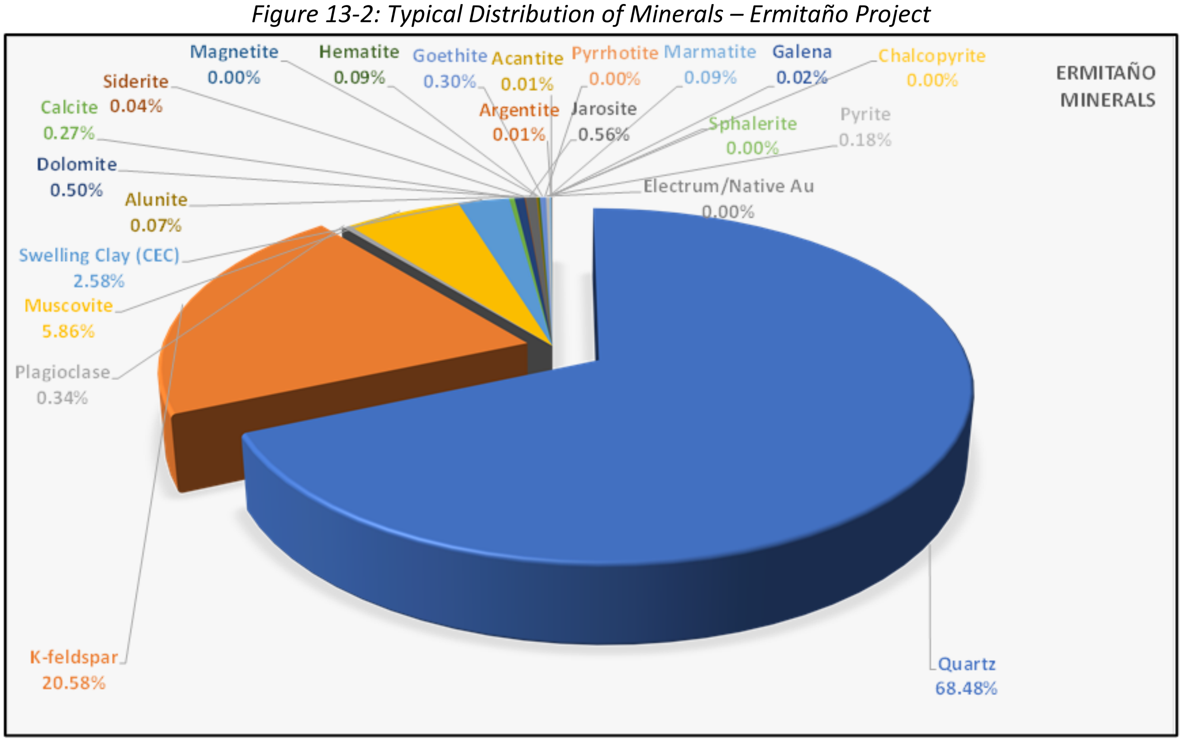
The typical mineralogy of the Santa Elena deposits is provided in Figure 13-1. The Ermitaño project has a similar mineralogy as shown in Figure 13-2.

Figure 13-1: Typical Distribution of Minerals – Santa Elena Deposits



Note: Figure prepared by First Majestic, February 2021.

Figure 13-2: Typical Distribution of Minerals – Ermitaño Project



Note: Figure prepared by First Majestic, February 2021.

13.2.2. Monthly Composite Samples

A sample is taken from the material fed into the mills on a daily and a per-shift basis based on the tonnage milled. A representative quantity from each sample is taken and a monthly composite is accumulated.

The monthly composite sample is prepared by the plant metallurgist, with the support of the Santa Elena Laboratory staff, and is forwarded to the Central Laboratory for analysis.

One objective of this program is the compilation of a database comparing the relationship between the results of the metallurgical tests at the laboratory scale and the actual performance of the cyanidation plant.

13.2.3. Sample Preparation

Samples submitted to the Central Laboratory are dried, and then crushed to -10 or 6 mesh, depending on the testwork planned.

13.3. Comminution Evaluations

First Majestic has been running tests to estimate the Bond ball mill work index (BWi) of the monthly composite samples since May 2017.

Table 13-1 shows the results of the BWi tests for the period from May 2017 to October 2020 performed at 200 and 270 mesh closing screen. The BWi were carried out with three sample types: heap leach material, underground mineralized material, and heap leach/underground composites. The BWi results demonstrate a low level of variability with 80% of the values ranging from 14.8–17.6 kWh/t, and an average value of 16.0 kWh/t.

Table 13-1: Grindability Test Results , Santa Elena Mine

Sample ID			kWh/t	Feed µm F80	Discharge µm P80
270 mesh	2017	September Composite	18.30	2367	42
		December Composite	16.60	2208	41
	2018	January Composite	16.70	2368	42
		May - UG Composite 1	17.37	2320	39
		May - UG Composite 2	17.61	2380	40
		June - UG low grade Composite 1	16.60	2385	40
		June - UG low grade Composite 2	16.20	2275	41
		50% UG/ 50% HL June Composite	16.75	2620	39
200 mesh	2017	September Composite	16.10	2367	57
	2018	June - Heap Leach Composite	15.00	2309	54
		August - Heap Leach Composite 1	14.80	2238	50
		August - Underground Composite 2	15.60	2018	53
		September - Heap Leach Composite	12.90	2328	54
		September - Underground Composite	15.50	2315	53
		October - Underground Composite	15.60	2154	54
		October - Heap Leach Composite	14.90	2309	53
		November - Heap Leach Composite	15.00	2301	54
		November - Underground Composite	16.90	2101	58
		December - Heap Leach Composite	14.80	2324	53
		December - Underground Composite	15.50	2140	53
	2019	January - Heap Leach Composite	14.50	2201	52
		January - Underground Composite	16.20	2195	55
		February - Heap Leach Composite	17.60	2430	49
		February - Underground Composite	16.60	2170	56
		March - Heap Leach Composite	15.60	2154	54
		March - Underground Composite	15.30	2214	54
		April - Heap Leach Composite	15.90	2053	59
		April - Underground Composite	14.70	2168	52
		May - Heap Leach Composite	15.30	2248	53
		May - Underground Composite	15.70	2225	54
		June - Heap Leach Composite	15.20	2040	54
		June - Underground Composite	15.20	2040	54
		July - Heap Leach Composite	16.40	2238	55
		October - Heap Leach Composite	17.61	2424	61
		November - Heap Leach Composite	16.74	2494	57
	2020	October Composite	17.61	2424	61
		Average	**16.0**		
		Standard Deviation	1.1		
		Minimum	12.9		
		10th Percentile	14.8		
		Median	**15.8**		
		90th Percentile	17.6		
		Maximum	18.3		

13.4. Cyanidation, Reagent and Grind Size Evaluations

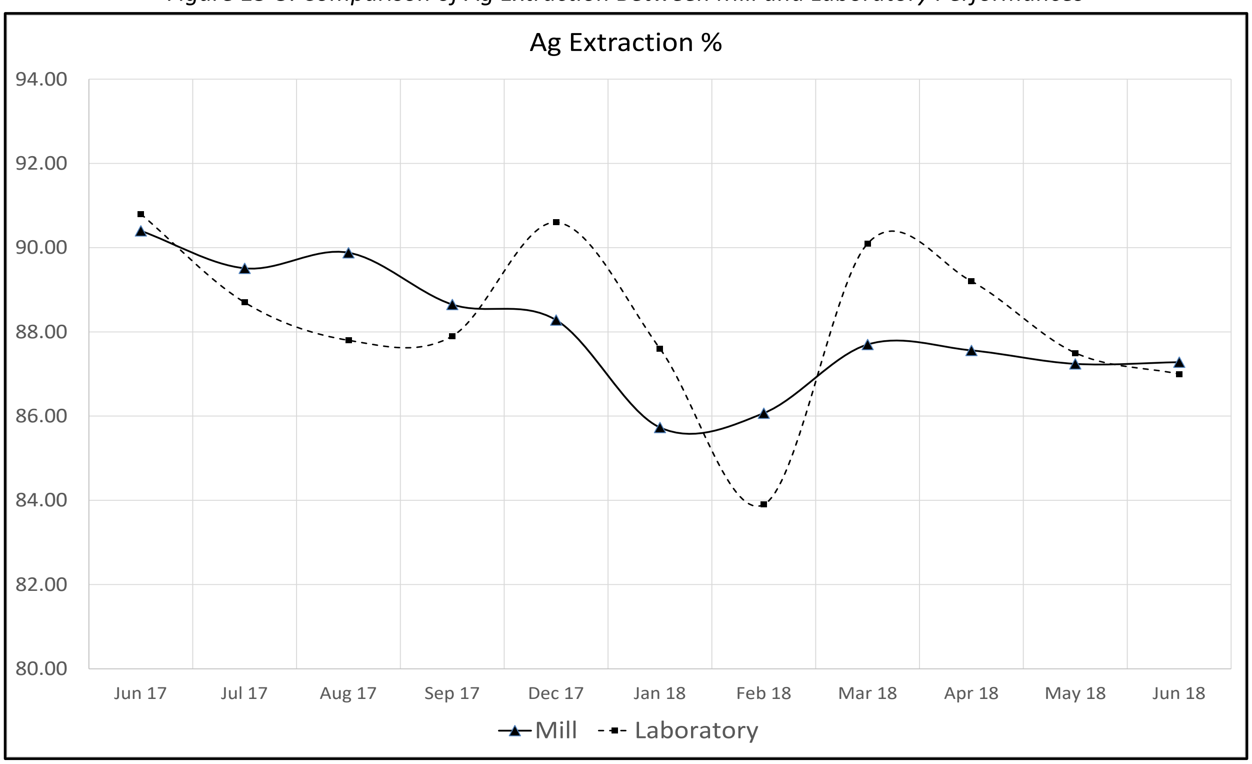
In addition to the analysis of repeatability for the metallurgical recovery of gold and silver for each monthly composite, and depending on the problems or needs experienced during the months prior to the monthly sample being collected, a series of tests may be conducted that include the following:

- Standard cyanidation (under similar conditions to those in the plant: grinding size, addition of reagents and cyanidation times);
- Testing with different reagents;
- Testing with different grinding sizes.

Results are shared with the plant operation personnel to facilitate continuous improvement initiatives.

As an example of the continuous monitoring of plant performance through the work conducted by the Central Laboratory, Figure 13-3 shows a comparison between the monthly mill performance and the Central Laboratory monthly composites results, in terms of metallurgical recovery for silver. During the several months plotted in the graph, the plant performed similarly to the Central Laboratory test results, and the recovery differences are mostly within a 2% difference.

Figure 13-3: Comparison of Ag Extraction Between Mill and Laboratory Performances



Note: Figure prepared by First Majestic, February 2021.

13.5. Oxidant Studies

In an attempt to continuously optimize plant performance, oxidant addition tests are performed. Oxygen is fundamental in the gold and silver leaching reaction, and the addition of some oxidants favour sulphide oxidation, in particular that of argentite and silver sulfosalts. The oxidants that have been tested in 2020 include:

- Lead (II) nitrate ($Pb(NO_3)_2$);
- Liquid oxygen variation;
- GoldiLOX (sold by Gekko).

Table 13-2 illustrates a general tendency that when more oxidizing agents are added, there are better sulphur oxidation results and improved metal recoveries. All tests used P80 of 32 µm and a leach time of 72 hours.

Table 13-2: Comparative Results at Bench Scale: Plant Conditions Versus Different Variants

Sample	Month	Test ID	Test Conditions							Extraction		Reagent	
			P_{80} microns	NaCN ppm	O_2 ppm	$Pb(NO_3)_2$ (g/t)	H_2O_2 ppm	GoldiLOX	Leach Time (h)	Au	Ag	NaCN	CaO
Finos Ciclón Molino Bolas Variación Oxidantes	Dic, 2020	Actual conditions.	32	3500	30	160	-	-	72	95.89	91.45	3.83	0.60
		Increase in the concentration of Sodium Cyanide/No O_2 added.	32	4500	-	160	-	-	72	96.22	91.65	3.68	1.00
		Standard Parameters + Lead Nitrate / No O_2 added.	32	3500	-	170	-	-	72	96.66	91.01	2.95	2.14
		Standard Parameters + Goldilox /No O_2 added.	32	3500	-	-	-	120	72	96.17	89.39	3.00	0.50
		Standard Parameters + Hydrogen Peroxide /No O_2 added.	32	3500	-	-	15	-	72	96.06	89.95	2.90	0.24
		Increase in the concentration of Sodium Cyanide/15 ppm O_2	32	4500	15	160	-	-	72	96.18	93.59	3.73	0.60
		Standard Parameters + Lead Nitrate and 15 ppm O_2	32	3500	15	170	-	-	72	95.79	91.92	3.26	0.60
		Standard Parameters + Goldilox and 15 ppm O_2	32	3500	15	-	-	120	72	95.56	91.52	3.33	0.60
		Standard Parameters + Hydrogen Peroxide and 15 ppm O_2	32	3500	15	-	15	-	72	95.50	91.26	3.33	0.64

13.6. Geometallurgy Samples

Samples collected from some of the planned mine stopes are sent to the Central Laboratory for testing to assess the metallurgical behavior of the mineralized material that will be processed in the plant in the near future. The parameters in use in the plant are maintained during the testwork. Table 13-3 and Table 13-4 show examples of such testwork for some mineralized material from Santa Elena mine stopes and also for Ermitaño project core samples, respectively.

Table 13-3: Example of Geometallurgy Testwork from Different Stopes, Santa Elena Mine

Month	Domain	Project	ID	Description	Leaching Conditions							Head Grade		Partial Extraction		Global Extraction	
					Solids %	P80 µm	NaCN ppm	pH	Oxygen ppm	$Pb(NO_3)_2$ g/t	Residence Time h	Au g/t	Ag g/t	Au %	Ag %	Au %	Ag %
July 2020	Santa Elena (Main Vein)	Geometallurgy III	Stope 45-line 75 Level 400 - Sulfides Vein	Primary Grinding	48	114	4000	11-11.5	~ 25-30	160	72	0.98	164.8	97	85	-	-
				Dual Circuit +20µm Regrinding 45µm	48	44	4000	11-11.5	~ 25-30	160	72	1.08	138.6	98	94	98.4	94.1
				Dual Circuit -20µm	40	18	4000	11-11.5	~ 25-30	160	72	1.11	229.3	99	95		
			Stope 47-line 166 Level 425 - Sulfides Vein	Primary Grinding	48	115	4000	11-11.5	~ 25-30	160	72	0.32	21.2	88	87	-	-
				Dual Circuit +20µm Regrinding 45µm	48	46	4000	11-11.5	~ 25-30	160	72	0.32	18.1	88	93	89.8	92.6
				Dual Circuit -20µm	40	18	4000	11-11.5	~ 25-30	160	72	0.43	37.8	96	93		
			Stope 51-line 56 Level 308 - Sulfides Vein	Molienda Primaria	48	115	4000	11-11.5	~ 25-30	160	72	0.34	33.7	91	89	-	-
				Dual Circuit +20µm Regrinding 45µm	48	44	4000	11-11.5	~ 25-30	160	72	0.25	26.5	92	93	92.8	93.8
				Dual Circuit -20µm	40	17	4000	11-11.5	~ 25-30	160	72	0.42	58.8	95	95		

Table 13-4: Example of Geometallurgy Testwork for Ermitaño Core Samples

Sample	Description	Leaching Conditions							Head Grade		Tailings		Partial		Global	
		Solids %	P80 µm	NaCN ppm	pH	Oxygen ppm	$Pb(NO_3)_2$ g/t	Residence Time h	Au g/t	Ag g/t	Au g/t	Ag g/t	Au %	Ag %	Au %	Ag %
Ermitaño	Dual Circuit +20 µm Regrinding 60 µm	48	58	3000	11 - 11.5	~25 - 30	200	60	2.8	38.8	0.14	6.6	94.9	83	96.1	85
	Dual Circuit +20 µm Regrinding 30 µm	48	29	3000	11 - 11.5	~25 - 30	200	60	2.8	38.8	0.18	5.7	93.5	85	95.2	87
	Dual Circuit -20 µm	48	19	3000	11 - 11.5	~25 - 30	200	60	4.6	59.8	0.06	6.2	98.6	90	-	-

13.7. Leach Pad Material

Metallurgical testwork and ongoing operations performance data show that material previously processed by heap-leaching, which was crushed but not milled, is amenable to being reprocessed. This material is being reprocessed by grinding, followed by agitated tank leaching and Merrill Crowe recovery systems for doré bar production.

13.8. Recovery Estimates

Typical metal recoveries for the Santa Elena mine plant-feed are provided in Table 13-5. This table summarizes realized monthly recoveries for gold and silver for 2020.

Table 13-5: Metal Recoveries 2020

Metal Recoveries 2020		
Month	**Au %**	**Ag %**
January	96.13	93.97
February	96.01	94.26
March	96.67	93.98
April	97.00	94.07
May	94.27	90.14
June	94.79	92.33
July	94.49	92.41
August	95.55	92.79
September	95.52	92.56
October	95.41	93.54
November	95.92	92.19
December	95.70	92.85
Average	**95.6**	**92.9**
Standard Dev.	0.8	1.2
Minimum	94.3	90.1
10th Percentile	94.5	92.2
Median	**95.6**	**92.8**
90th Percentile	96.6	94.1
Maximum	97.0	94.3

Typical metal recovery estimates assumed for the LOM plan for the Santa Elena deposits were 93% for silver and 95.6% for gold for the combination of run-of-mine (ROM) production from the underground mine and the leach pad material to be reprocessed.

Testing has also been conducted on Ermitaño project core samples. Bench-scale metallurgical testwork performed in the Central Laboratory for some of the Ermitaño drill core samples provided metallurgical recovery predictions of 85% for silver and 96% for gold. These results were used to assess the reasonable prospects of eventual economic extraction for the Ermitaño mineralized material.

13.9. Metallurgical Variability

The recovery projections assumed in the LOM plan for the Santa Elena deposits are also supported by the observed similarities between the future mineralized material and the mineralized material that has been mined and processed for the last three years. New mineralized zones identified in the Santa Elena mine, the Alejandra and America Veins, are mineralized splays of the Main Vein.

13.10. Deleterious Elements

A treatment charge is levied by weight on the doré produced from the Santa Elena mine, due to the trace presence of heavy metals, including lead, copper, cadmium and bismuth in the doré. This treatment charge is considered reasonable and is included in the cut-off grade calculation and in the economic evaluations.

Due to the purity of the Santa Elena doré (>98% silver and gold), no penalties are applied by the refineries for the presence of heavy metals.

There is no preg-robbing known in the Santa Elena leaching process. The clay content is less than 4.0%. Historically there have been no extraction problems with the mineralization treated.

14. MINERAL RESOURCE ESTIMATES

14.1. Introduction

This section describes the resource estimation methodology and summarizes key assumptions considered by First Majestic for the Mineral Resource estimates for the Santa Elena mine and Ermitaño project. The Mineral Resource estimates are prepared in accordance with CIM Estimation of Mineral Resource and Mineral Reserve Best Practice Guidelines (November 2019), and follow the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014), that are incorporated by reference in NI 43-101.

The geological modelling, data analysis, and block model resource estimates for the Santa Elena mine were completed by David Sauceda Saldivar, Jose Jorge Estrella Vercini, and Reynaldo Hernandez Tinoco under the supervision of Phillip Spurgeon, P. Geo., all First Majestic employees.

The geological modelling for the Ermitaño project was completed by Reynaldo Hernandez Tinoco under the supervision of Phillip Spurgeon, and Mr. Spurgeon prepared the Ermitaño Mineral Resource estimate.

14.2. Mineral Resource Estimation Process

The block model Mineral Resource estimates are based on the database of exploration drill holes and production channel samples, underground level geological mapping, geological interpretations and models, as well as surface topography and underground mining development wireframes available as at the December 31, 2020 cut-off date for scientific and technical data supporting the estimates.

Geostatistical analysis, analysis of semi-variograms, and validation of the model blocks were completed with Leapfrog EDGE. Stope analysis to determine reasonable prospects for eventual economic extraction was completed with Maptek Vulcan.

The process followed for the estimation of Mineral Resources included:

- Database compilation and verification;
- Review of data quality for primary and interpreted data and QAQC;
- Setup of the resource project with sample database, surface topography, and mining depletion wireframes and inspection in 3D space;
- Three-dimensional geological interpretation, modelling, and definition of the Mineral Resource estimation domains;
- Exploratory data and boundary analysis of the resource estimation domains;
- Sample data preparation (compositing and capping) for variography and block model estimation;
- Trend and spatial analysis: variography;
- Bulk density review;
- Block model resource estimation;
- Validation and classification of the block model resource estimates;

- Depletion of the Mineral Resource estimates due to mining;
- Development of appropriate economic parameters and assessment of reasonable prospects for eventual economic extraction;
- Summary compilation of the Mineral Resource estimates.

14.3. Mineral Resource Estimate, Santa Elena Mine

14.3.1. Sample Database

The combined drill hole and channel sample database for the Santa Elena mine was reviewed and verified by the resource geologists and support that the QAQC program was reasonable. The sample data used in the Mineral Resource estimate has an effective date of December 31, 2020 and consists of exploration drill holes, production channel and sawn channel samples. Table 14-1, Table 14-2 and Table 14-3 summarize the drill hole, production sawn channel and production channel sample data used in the estimates. Figure 14-1 shows the relative location of the data with respect to the mine zones in section and plan view.

Table 14-1: Core Drill Hole Sample Data Used in Mineral Resource Estimation, Santa Elena Mine

Mine	Year	Company	Drill Holes	Samples	Interval Length (m)	Percent of Total
Santa Elena	2006	Silver Crest	18	381	752	2%
	2007	Silver Crest	48	674	1,559	7%
	2008	Silver Crest	34	614	1,391	5%
	2011	Silver Crest	5	255	405	1%
	2012	Silver Crest	75	3,829	5,058	10%
	2013	Silver Crest	92	6,614	8,243	12%
	2014	Silver Crest	46	1,736	2,690	6%
	2015	First Majestic	68	1,417	1,611	9%
	2016	First Majestic	49	2,815	2,366	7%
	2017	First Majestic	90	3,363	3,110	12%
	2018	First Majestic	83	3,661	3,814	11%
	2019	First Majestic	74	6,697	6,350	10%
	2020	First Majestic	55	7273	6105	7%
		Grand Total	**737**	**39,329**	**43,454**	**100%**

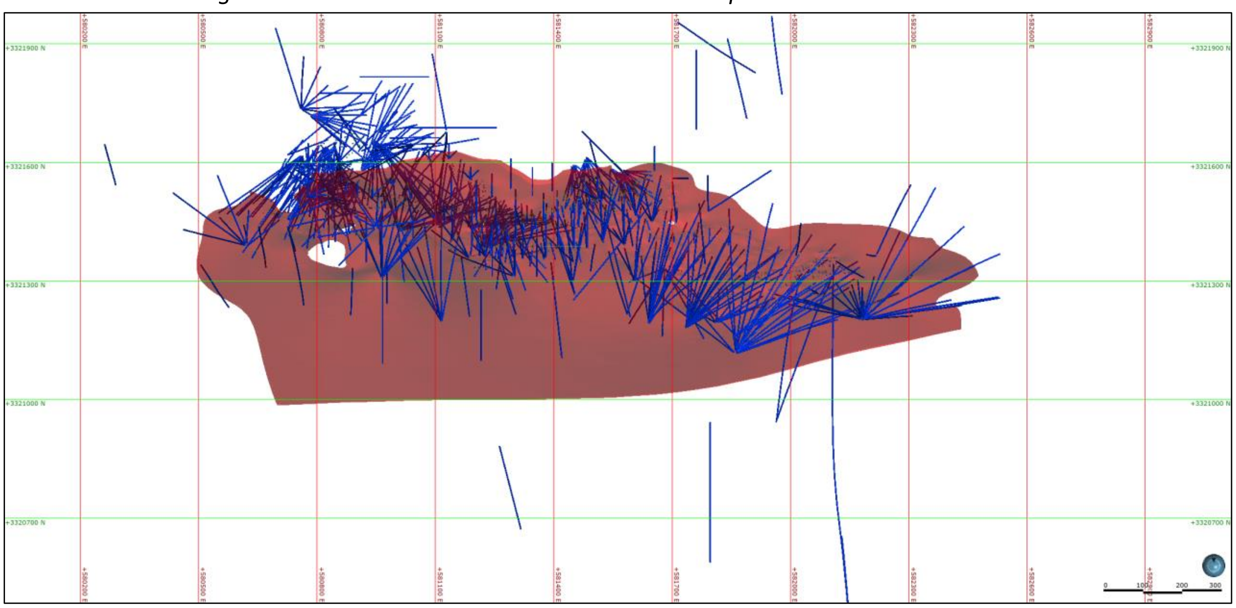
Table 14-2: Production Sawn Channel Sample Data Used in Mineral Resource Estimation, Santa Elena Mine

Mine	Year	Company	Channels	Samples	Interval Length (m)	Percent of Total
Santa Elena	2016	First Majestic	38	258	176	26%
	2017	First Majestic	106	395	249	74%
		Grand Total	**144**	**653**	**425**	**100%**

Table 14-3: Production Channel Sample Data Used in Mineral Resource Estimation, Santa Elena Mine

Mine	Year	Company	Channels	Samples	Interval Length (m)	Percent of Total
Santa Elena	2019	First Majestic	165	793	492	56%
	2020	First Majestic	131	707	429	44%
		Grand Total	**296**	**1500**	**921**	**100%**

Figure 14-1: Santa Elena Mine Drill Hole and Sample Data Location Plan View.



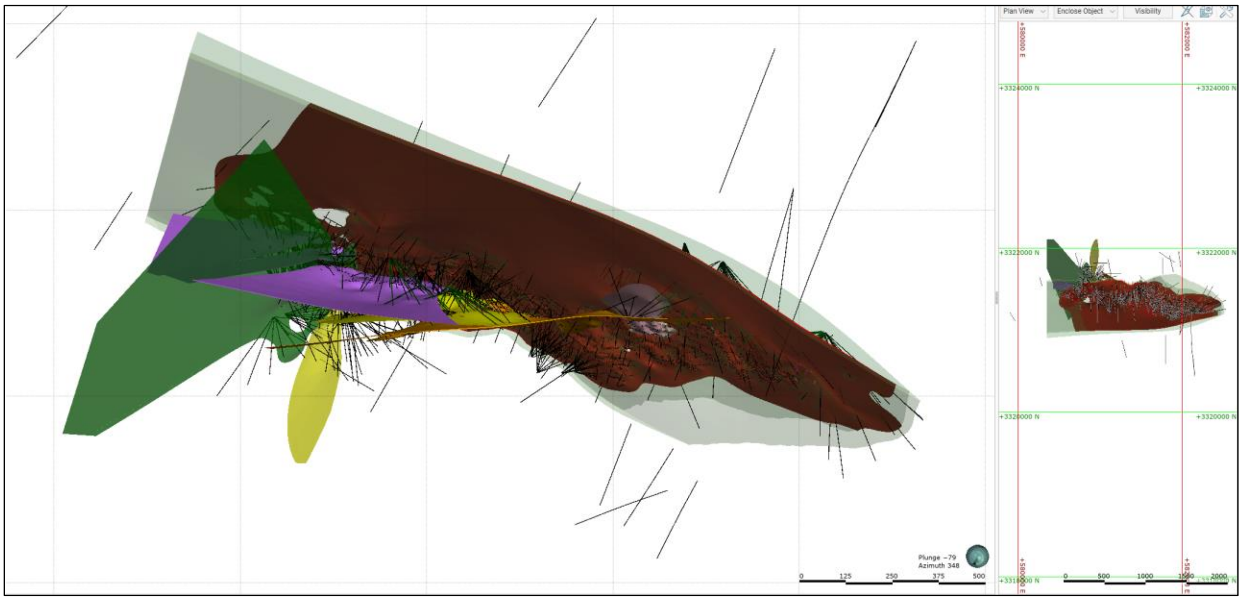
Note: Figure prepared by First Majestic, February 2021. Main Vein shown in red.

The exploration data were collected with a logger system that captured collar, survey, lithology, and assay information. Integrated validation tools were used to check for gaps, errors, overlapping intervals and total lengths prior to geological modelling and estimation of Mineral Resources.

14.3.2. Geological Interpretation and Modelling

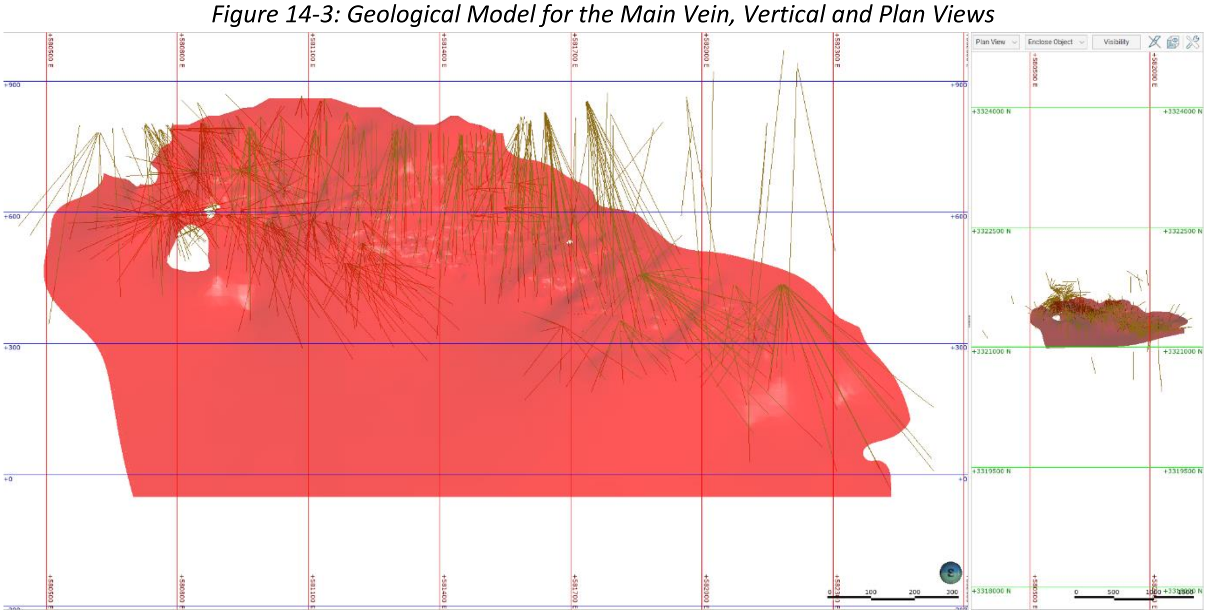
The Mineral Resource estimates are constrained by the 3D geological interpretation and modelled domains of vein-hosted mineral deposits. The silver and gold mineralization is restricted to epithermal quartz–calcite veins and stockwork veining. The modelled vein and stockwork domains are constructed from drill hole core logs, drill hole and production channel sample assay intervals, and contacts incorporated from underground geological maps produced by the mine geology staff (Figure 14-2 and Figure 14-3).

Figure 14-2: Inclined Section and Plan-View Location of the Resource Domains, Santa Elena Mine



Note: Figure prepared by First Majestic, February 2021.

Figure 14-3: Geological Model for the Main Vein, Vertical and Plan Views



Note: Figure prepared by First Majestic, February 2021.

The boundaries of the domain models strictly adhere to the contacts of the veins and stockwork with the surrounding country rock to produce reasonable representations of the mineral deposit locations and volumes. The Mineral Resource domains also incorporate some faulted sub-domains that are identified by the underground mine developments. Table 14-4 lists the nine resource domains and associated codes.

Table 14-4: Santa Elena Mine Domain Names and Codes

Domain Name	Domain Code
Main Vein	MV
Main Vein Splay	SPMV
Main Vein Stockwork A	VSTKA
Main Vein Stockwork B	VSTKB
Tortuga East	VTORE
Tortuga West	VTORW
America	VAME
Alejandra Alto	VALA
Alejandra Bajo	VALB

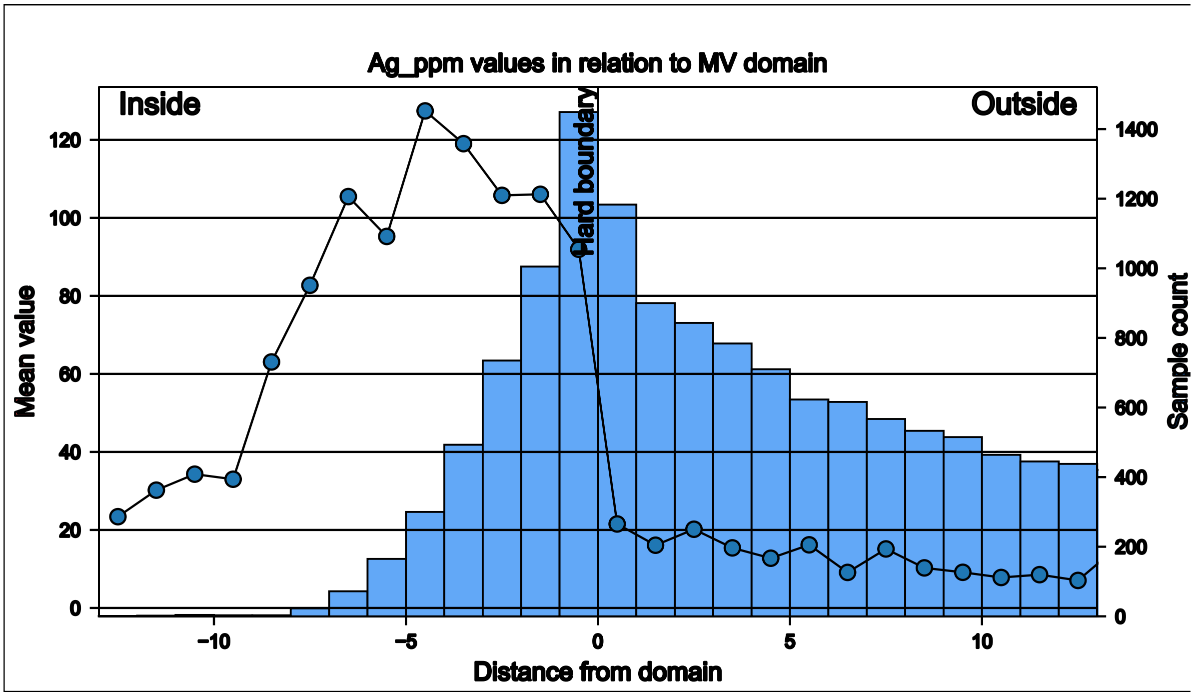
14.3.3. Exploratory Sample Data Analysis

Exploratory data analysis was completed for gold and silver assay sample values for each of the estimation domains to assess the statistical and spatial character of the sample data. The sample data were examined in 3D to understand the spatial distribution of mineralized intervals within the deposits. The sample assay data statistics were analyzed within each domain to look for possible mixed sample populations.

14.3.4. Boundary Analysis

Boundary analysis was completed for each of the domains to review the change in metal grade across the domain contacts using boundary plots. There is a sharp grade change across the contact and hard boundary conditions are observed in all domains. Hard boundaries were used during the construction of sample composite samples and during Mineral Resource estimation. Composite samples were restricted to their respective resource domain (Figure 14-4).

Figure 14-4: Example of Silver Boundary Analysis for the Main Vein Showing Hard Boundary Conditions



Note: *Figure prepared by First Majestic, February 2021.*

14.3.5. Compositing

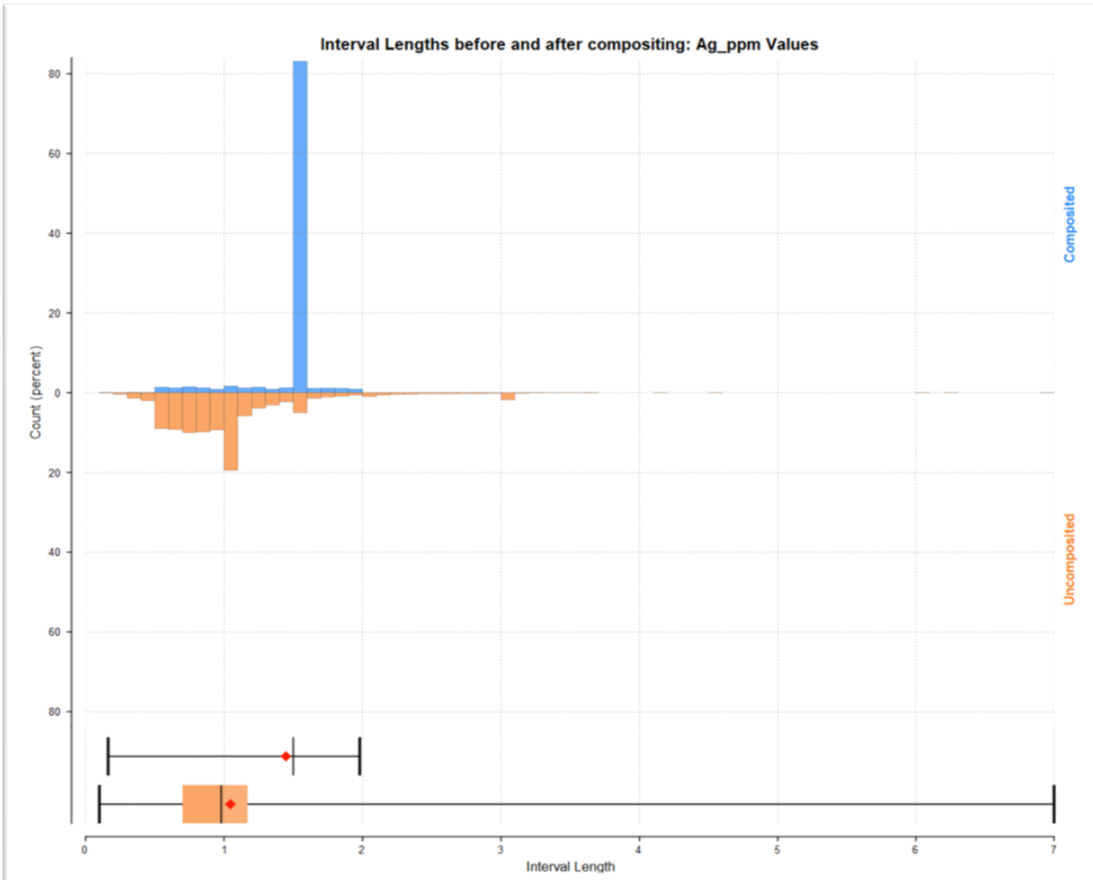
To select an appropriate composite sample length, the assay sample intervals were reviewed for each domain. The composite length selected varies from one domain to another, with short residual composite samples left at the end of the vein intersection either added to the previous interval or distributed equally throughout the intersection. Composite sample lengths are detailed in Table 14-5.

Table 14-5: Composite sample Lengths

Project	Domain	Composite Length (m)	Residual End Length Treatment
Santa Elena	MV	1.5	Add to previous interval
	SPMV	1.5	Add to previous interval
	VSTKA and VSTKB	1.5	Add to previous interval
	VTORE	1.0	Add to previous interval
	VTORW	0.7	Add to previous interval
	VAME	0.7	Add to previous interval
	VALA	0.9	Add to previous interval
	VALB	0.7	Add to previous interval

Figure 14-5 shows the sample interval lengths before and after compositing for the Main Vein domain.

Figure 14-5: Sample Interval Lengths, Composited vs. Uncomposited – Main Vein Domain



Note: Figure prepared by First Majestic, February 2021.

14.3.6. Evaluation of Composite Sample Outlier Values

Drill hole and channel composite samples were evaluated for high-grade outliers and those outliers were capped to values considered appropriate for the estimation. Outlier values at the high end of the grade distributions were identified for both gold and silver from inflection points of cumulative probability plots and analysis of histogram plots. The spatial distribution of such outliers was also investigated. To quantify the impact of capping, the resource was evaluated to assess the change in metal content for the estimation due to capping.

Capping of assay values was limited to a select few extreme values. To reduce bias from a larger set of high-grade samples, those outlier values were range restricted. Samples above a specified high-grade threshold value were used at full value out to a specified distance from the sample. Beyond the specified distance the samples were reduced in value to a stated high-grade threshold value. Table 14-6 and Table 14-7 show the percentage of the outlier values that were capped and/or range-restricted.

Table 14-6: Composite Sample Ag Capping and Range-Restriction by Domain

Estimation Domain	Number of Composites	Capping g/t Ag	Number Capped	% Capped	Range Restriction g/t Ag	Number Range Restricted	% Range Restricted
MV	3435	-	none	-	720	42	1.2
VSTKA	4074	-	none	-	270	8	0.2
VSTKB	2907	400	1	0.03	100	20	0.7
VTORE	161	440	2	1.2	-	none	-
VTORW	94	-	none	-	400	6	6.4
VAME	319	1200	4	1.3	-	none	-
VALA	250	520	3	1.2	-	none	-
VALB	660	1220	8	1.2	-	none	-
ALL	**11,900**		**18**	**0.2**		**76**	**0.6**

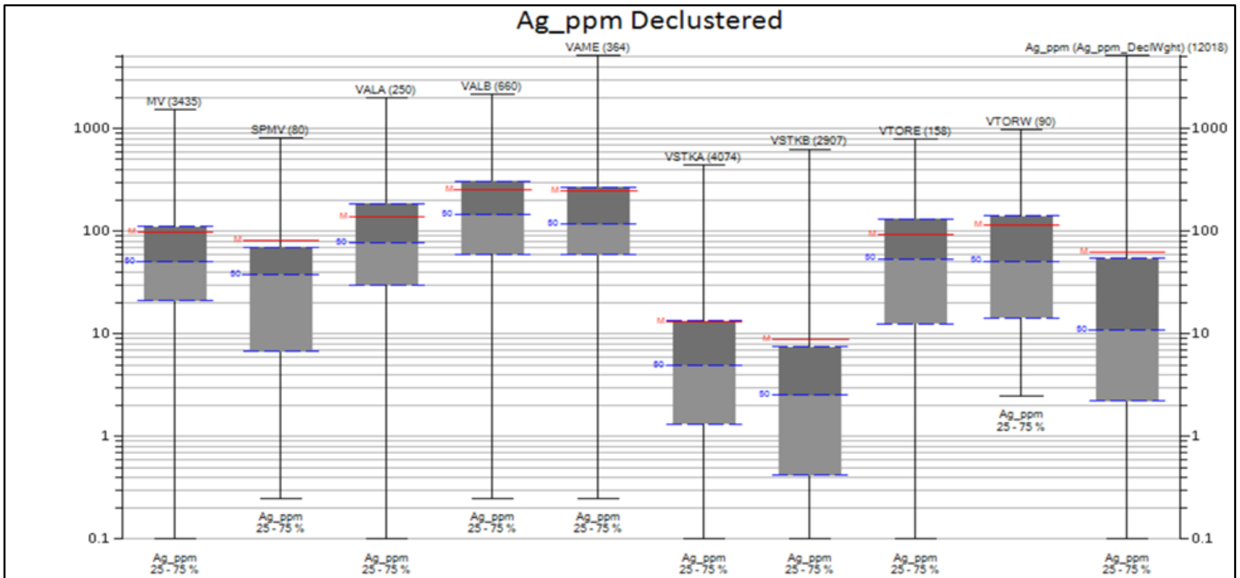
Table 14-7: Composite Sample Au Capping and Range-Restriction by Domain.

Estimation Domain	Number of Composites	Capping g/t Au	Number Capped	% Capped	Range Restriction g/t Au	Number Range Restricted	% Range Restricted
MV	3435	40	4	0.1	-	none	-
VSTKA	4074	4.5	3	0.07	-	none	-
VSTKB	2907	4	3	0.1	-	none	-
VTORE	161	24	2	1.2	12.6	5	3.1
VTORW	94	none	-	-	9	4	4.3
VAME	319	16	4	1.3	-	none	-
VALA	250	11	2	0.8	-	none	-
VALB	660	28	4	0.6	15	12	1.8
ALL	**11,900**		**22**	**0.2**		**21**	**0.2**

14.3.7. Composite Sample Statistics

To assess the statistical character of the composite samples within each of the domains, the data were declustered by a cell declustering method. The silver and gold declustered statistics of composite samples for all estimation domains are presented in Figure 14-6 and Figure 14-7.

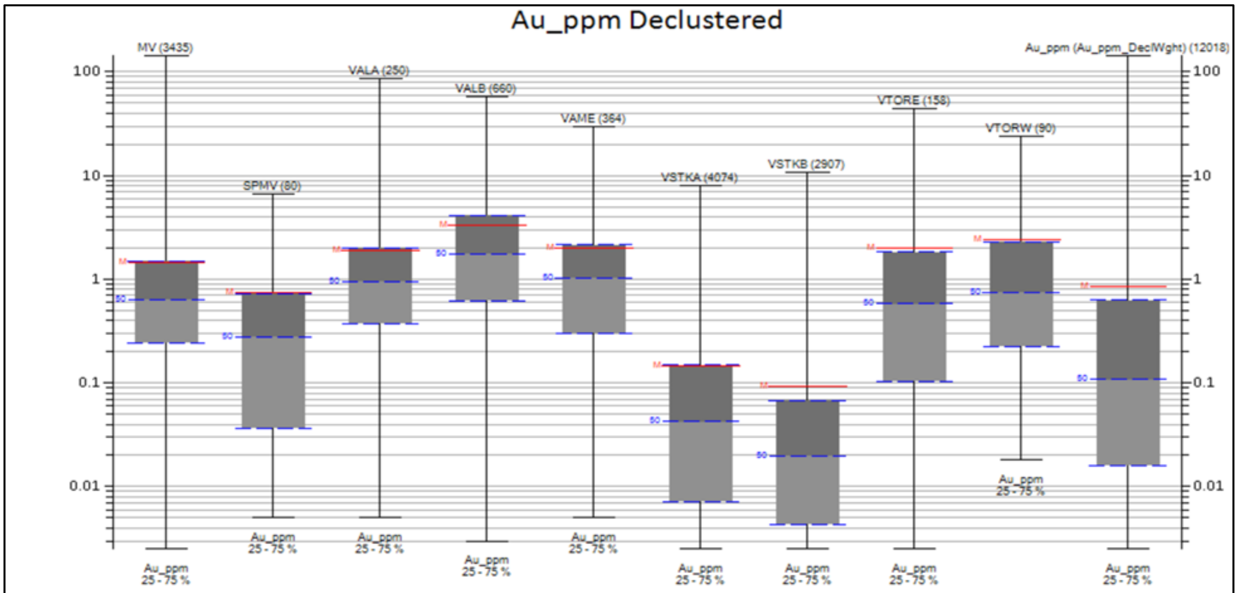
Figure 14-6: Ag Box Plot and Declustered Composite Sample Statistics by Domain



Domain	MV	SPMV	VALA	VALB	VAME	VSTKA	VSTKB	VTORE	VTORW	ALL
Samples	3435	80	250	660	364	4074	2907	158	90	12018
Minimum	0.10	0.25	0.10	0.25	0.25	0.10	0.10	0.10	2.48	0.10
Maximum	1547	815.2	1985	2163	5187	446.9	631.8	795	974.1	5187
Mean	97.47	82.23	137.05	254.45	248.65	13.02	8.87	92.57	115.68	63.275
Standard deviation	148.06	155.01	213.33	316.48	450.93	28.41	26.35	113.82	173.39	165.57
CV	1.519	1.885	1.557	1.244	1.814	2.181	2.970	1.230	1.499	2.617

Note: Figure prepared by First Majestic, February 2021.

Figure 14-7: Au Box Plot and Declustered Composite Sample Statistics by Domain



Domain	MV	SPMV	VALA	VALB	VAME	VSTKA	VSTKB	VTORE	VTORW	ALL
Samples	3435	80	250	660	364	4074	2907	158	90	12018
Minimum	0.003	0.005	0.005	0.003	0.005	0.003	0.003	0.003	0.018	0.003
Maximum	143.24	6.71	85.90	57.19	29.44	8.08	10.74	44.32	23.91	143.24
Mean	1.445	0.737	1.895	3.323	1.998	0.148	0.093	1.987	2.41	0.845
Standard deviation	3.793	1.260	5.740	5.159	3.457	0.360	0.412	4.838	4.367	2.984
CV	2.625	1.711	3.030	1.552	1.730	2.465	4.440	2.435	1.815	3.531

Note: Figure prepared by First Majestic, February 2021.

14.3.8. Metal Trend and Spatial Analysis: Variography

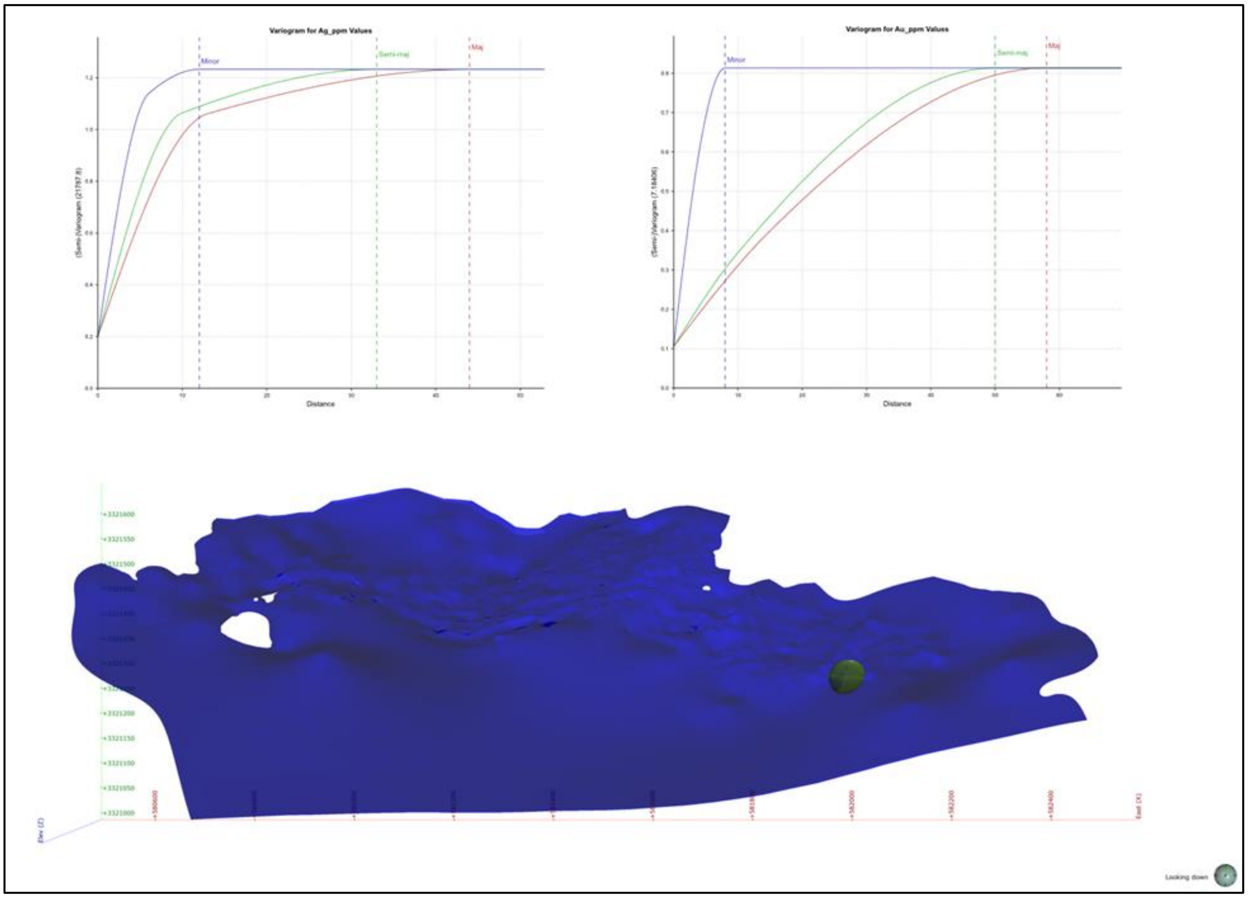
The dominant trends for gold and silver mineralization were identified based on the 3D numerical models for the metal in each domain. Model variograms for gold and silver composite values were developed along the trends identified, and the nugget values were established from downhole variograms.

The Table 14-8 shows the model variogram parameters for the Main Vein domain, and Figure 14-8 displays the model variogram plots for silver and gold and trend ellipsoid for the domain.

Table 14-8: Variogram Model Parameters for the Main Vein Domain

Estimation Domain	Leapfrog Trend			Nugget C_0	Sill C_1 and C_2	Range (m)	Model
	Dip	Dip Az	Pitch				
Main Vein Ag	49	180	99	0.20	0.73	13	Spherical
					0.3	44	Spherical
Main Vein Au	49	180	90	0.10	0.04	15	Spherical
					0.67	58	Spherical

Figure 14-8: Silver and Gold Variogram Models for the Main Vein with Trend Ellipsoid

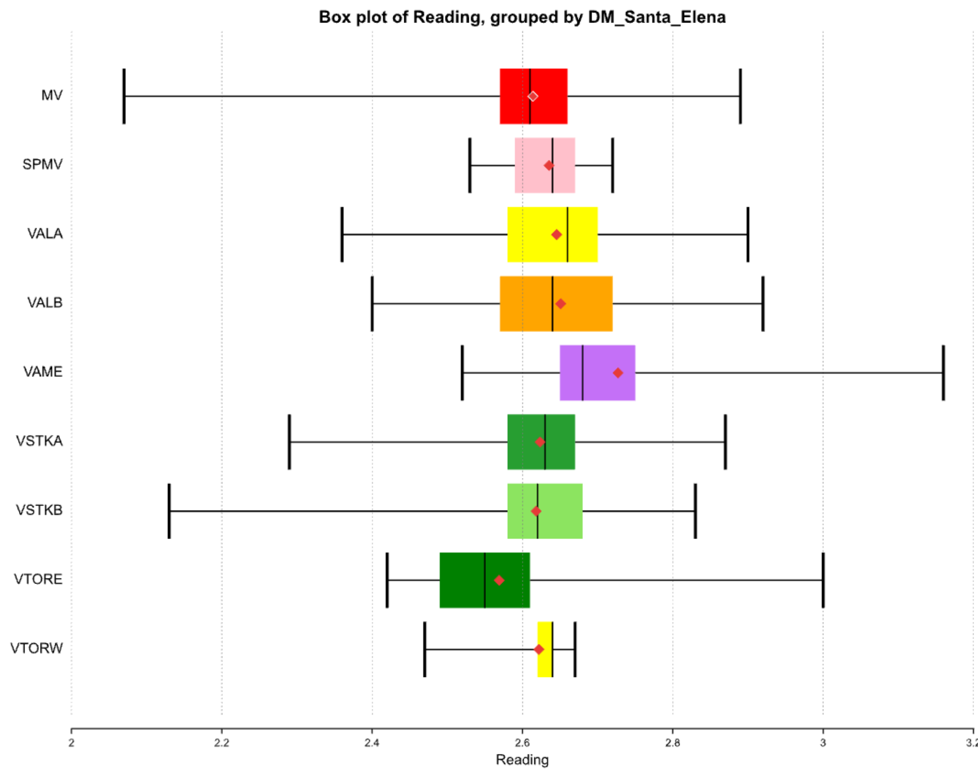


Note: Figure prepared by First Majestic, February 2021.

14.3.9. Bulk Density

First Majestic has measured SG values for 1,931 drill core samples from the Santa Elena deposits. The SG sampling program was designed to collect representative specimens from all rock types hosting the mineral deposits. The SG values range from 2.07–3.00 across the deposits with a mean value of 2.52. The SG statistics for the domains are displayed in Figure 14-9.

Figure 14-9: Specific Gravity Box Plot and Statistics, Santa Elena Mine



Domain		Count	Mean	Standard deviation	Coefficient of variation	Variance	Minimum	Lower quartile	Median	Upper quartile	Maximum
MV	SG	961	2.61	0.08	0.03	0.01	2.07	2.57	2.61	2.66	2.89
SPMV	SG	13	2.64	0.06	0.02	0.00	2.53	2.60	2.64	2.70	2.72
VALA	SG	32	2.64	0.12	0.05	0.01	2.36	2.58	2.65	2.70	2.9
VALB	SG	44	2.64	0.10	0.04	0.01	2.40	2.57	2.64	2.71	2.92
VAME	SG	13	2.72	0.16	0.06	0.02	2.52	2.65	2.68	2.75	2.71
VSTKA	SG	442	2.62	0.07	0.03	0.01	2.29	2.57	2.62	2.67	2.87
VSTKB	SG	400	2.62	0.09	0.03	0.01	2.13	2.57	2.62	2.67	3.16
VTORE	SG	22	2.56	0.12	0.05	0.02	2.42	2.49	2.55	2.61	3
VTORW	SG	14	2.58	0.06	0.02	0.00	2.47	2.57	2.6	2.63	2.67

Note: Figure prepared by First Majestic, February 2021.

SG was estimated in domains using an inverse distance cubed (ID^3) method, with blocks outside the estimation radius being assigned the mean value of all the deposits. Some domains with a small number of SG samples were not estimated and were therefore assigned the mean SG value of all the deposits.

14.3.10. Block Model Setup

Block model resource estimates were prepared for each of the domains at the Santa Elena mine. The block models were rotated so that the x and y axes lie parallel to the domains and the minimum-z direction is perpendicular to the trend of the domain. A sub-blocked model type was created that consists of primary parent blocks that are sub-divided into smaller sub-blocks whenever triggering surfaces intersect the parent blocks. For the Santa Elena block models, the domain boundaries served as triggers. The size of the parent block took into account the drill hole sample spacing and the mining methods. Block models typically used 10 m (x) x 10 m (y) x 2 m (z) parent blocks that are sub-blocked to 1 m (x) x 1 m (y) x a variable height (z) in m. For the Main Vein sub-blocking is 2.5 m (x) x 2.5 m (y) x a variable height (z) in m. Gold and silver grades were estimated into the parent blocks and domains were evaluated into the sub-blocks.

14.3.11. Resource Estimation Procedure

Block model estimates were completed for gold and silver. All block grades were estimated from composite samples captured within the respective domains. Following contact analysis, all domain contacts were treated as hard boundaries. The Alejandra domains were set to soft in the estimation software, but the boundary effectively was hard.

Block grades were estimated primarily by inverse distance squared (ID^2) and less commonly by ordinary kriging (OK). After inspection of the estimated gold and silver grades, many of the block models were judged to perform better with ID^2 than with OK. The method selected in each case considered the characteristics of the domain, data spacing, variogram quality, and which method produced the best representation of grade continuity.

All channel samples that were used during construction of the geological models were reviewed. Only those channels that completely cross the deposit were used during grade estimation. Channel samples that cross only a portion of the deposit were excluded as non-representative samples.

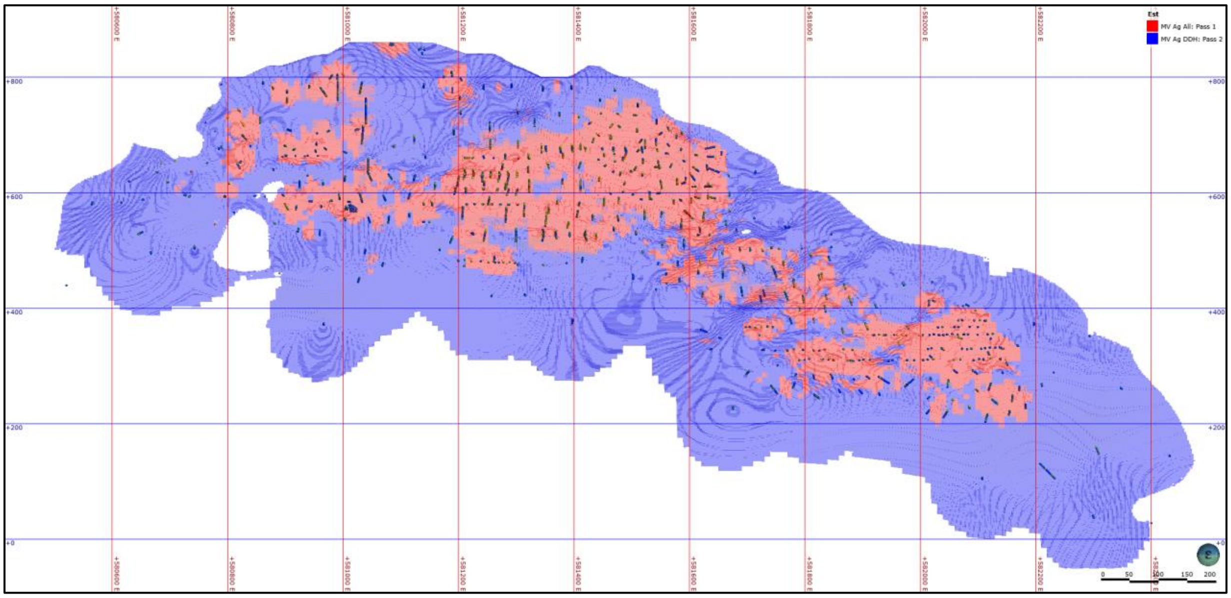
The production channel sampling method has some risk of non-representative sampling that could produce local grade bias. However, the large number of samples collected and used in the estimation may compensate for this issue, and provide accurate results. There remains a risk that the channel samples could suffer from a systematic sampling issue that could also result in poor accuracy. These risks are recognized and addressed during resource grade estimation by eliminating the undue influence of channel samples over drill hole samples for blocks estimated at longer distances. The grade estimation process was run in two successive passes whenever production channel samples were present. The first pass used all composites, including production channel samples, and only estimated blocks within a restricted short distance from the channel samples. Pass two applied less restrictive criteria using drill hole composites and sawn channel composites only.

Examples of the gold–silver estimation parameters for each of the estimation domains are included in Table 14-9. Figure 14-10 shows the blocks estimated by each of the passes in Main Vein.

Table 14-9: Summary of Ag-Au Estimation Parameters for the Santa Elena Mine Block Models

Estimation Domain	Metal	Blocks		Composites							Search Ellipsoid and Orientation						
		Interpolation Method	Boundary	Composite Length	Number used		Max per hole	Clip	Clamp	Clamp percentage of search distance?	Variable Orientation Used?	Dip	Dip Azimuth	Pitch	Range (m)		
					Min	Max									X	Y	Z
MV	Ag All, Pass 1	OK	Hard	1.5	10	25	5	-	720	25%	Yes	49	180	99	30	30	30
	Ag DDH, Pass 2				2	25	-								130	100	50
	Au All, Pass 1	OK	Hard	1.5	10	25	5	40			Yes	49	180	90	30	30	30
	Au DDH, Pass 2				2	25	-								130	100	50
SPMV	Ag	ID2	Hard	1.5	3	20	4	400	200	30%	No	50	185	88	100	100	50
	Au	ID2	Hard	1.5	3	20	4	4	2	30%	No	50	185	88	100	100	50
VSTKA	Ag	ID2	Hard	1.5	4	20	3	-	270	25%	Yes	49	180	118	120	120	40
	Au	ID2	Hard	1.5	4	20	3	4.5			Yes	49	180	64	120	120	40
VSTKB	Ag	ID2	Hard	1.5	4	20	3	400	100	25%	Yes	49	180	118	120	120	40
	Au	ID2	Hard	1.5	4	20	3	4			Yes	49	180	64	120	120	40
VTORE	Ag	ID2	Hard	1.0	4	20	3	440			Yes	59	247	74	120	120	50
	Au	ID2	Hard	1.0	4	20	3	24	12.6	25%	Yes	59	247	74	120	120	50
VTORW	Ag	ID2	Hard	0.7	4	20	3	-	400	25%	Yes	61	266	103	120	120	50
	Au	ID2	Hard	0.7	4	20	3	-	9	25%	Yes	61	266	110	120	120	50
AME	Ag Pass 1	ID2	Hard	0.7	5	20	3	1200			Yes	83	183	141	30	30	10
	Ag Pass 2				5	20	3								150	150	50
	Au Pass 1	ID2	Hard	0.7	5	20	3	16			Yes	84	188	110	30	30	10
	Au Pass 2				5	20	3								150	150	50
AA	Ag Pass 1	ID2	Soft	0.9	7	25	3	520			Yes	83	200	89	30	30	30
	Ag Pass 2				4	20	3								120	120	50
	Au Pass 1	ID2	Soft	0.9	7	25	3	11			Yes	83	200	122	30	30	30
	Au Pass 2				4	20	3								120	120	50
AB	Ag Pass 1	ID2	Soft	0.7	7	25	3	1220			Yes	90	29	60	30	30	30
	Ag Pass 2				4	20	3								120	120	50
	Au Pass 1	ID2	Soft	0.7	7	25	3	28	15	25	Yes	90	28	69	30	30	30
	Au Pass 2				4	20	3								120	120	50

Figure 14-10: Estimation Passes for the Main Vein Domain



Note: Figure prepared by First Majestic, February 2021. Long section facing north. Pass 1 = red, Pass 2 = blue

The heap leach pad was drilled with 117 hollow core helical holes in 2017 and a block model was constructed using a single domain. The block model used 10 m (x) x 10 m (y) x 5 m (z) parent blocks that were sub-blocked to 2 m (x) x 2 m (y) x a variable height (z) in m with a minimum of 0.2 m. Gold and silver grades were estimated into the parent blocks.

Silver and gold were estimated by OK. One metre composites were created from samples with an average length of 1.2 m. Outlier restriction was used for silver composites but was not applied to gold composites. A mine call factor was applied to the Mineral Resource, reducing estimated silver and gold grades based on mill reconciliations.

The SG assigned was 1.99. The volume of material remaining was estimated from the volume between the survey of the December 31, 2020 topography and the original heap leach pad base topography.

14.3.12. Block Model Validation

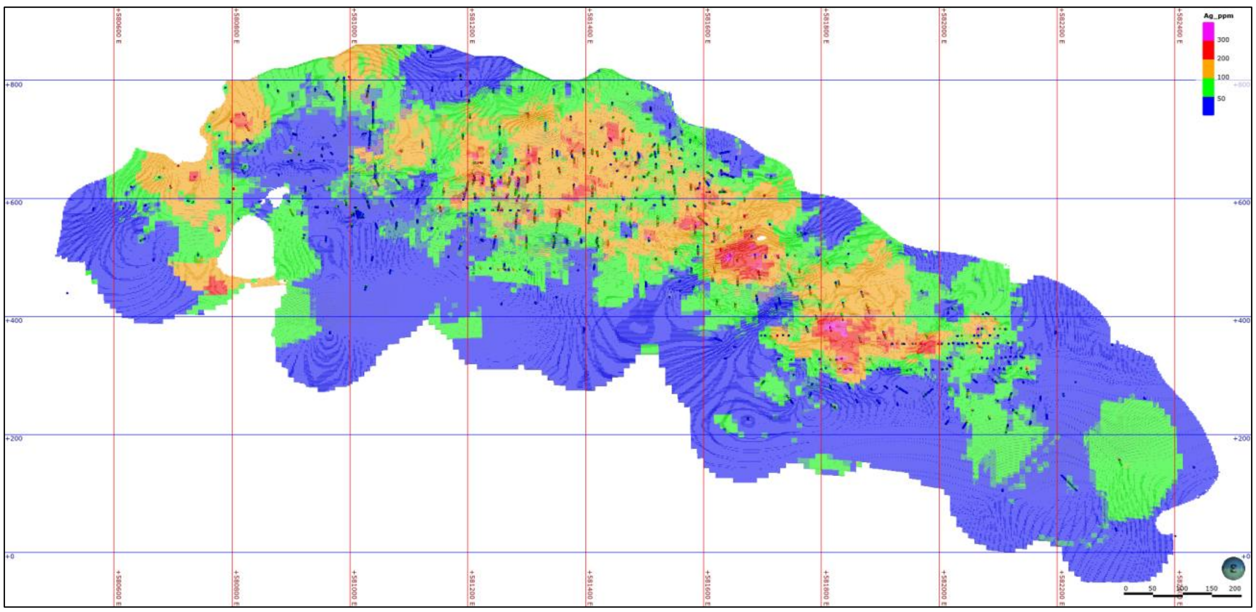
Validation of the silver and gold grade estimations was completed for each of the domains. The procedure was conducted as follows:

- Comparison of wireframe domain volumes to block model volumes for the domains;
- Visual inspection comparing the composite sample silver and gold grades to the estimated block values;
- Comparison of the gold and silver grades in "well-informed" parental blocks to the average sample values of the composited samples contained within those blocks using scatter plots;

- Comparison of the global mean declustered composite grades to the block model mean grade for each resource domain;
- Comparison of local block grade trends to composited sample grades along the three block model axes (i.e., easting, northing, and elevation) with swath grade trend plots.

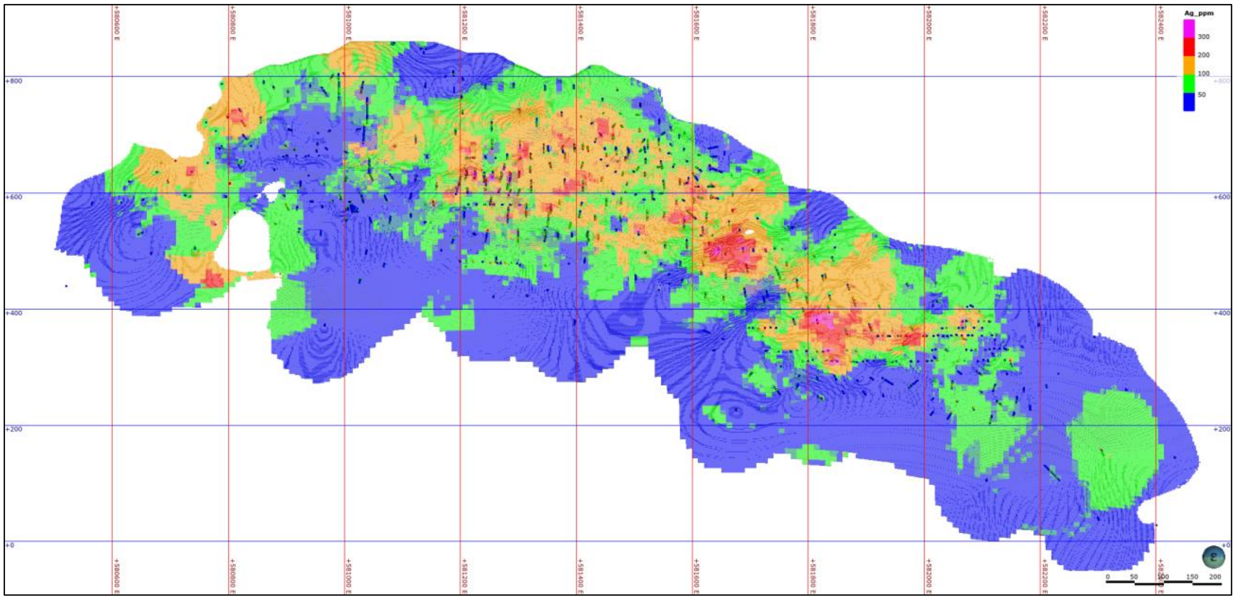
The silver and gold estimated block grades were visually inspected in vertical sections. This review showed that the supporting composite sample grades closely match the estimated block values. Figure 14-11 and Figure 14-12 show the estimated block model silver and gold grades and the composite sample grades used in the estimation for the Main Vein.

Figure 14-11: Main Vein Ag Block Model and Composite Sample Values



Note: Figure prepared by First Majestic, February 2021. Vertical section, looking north

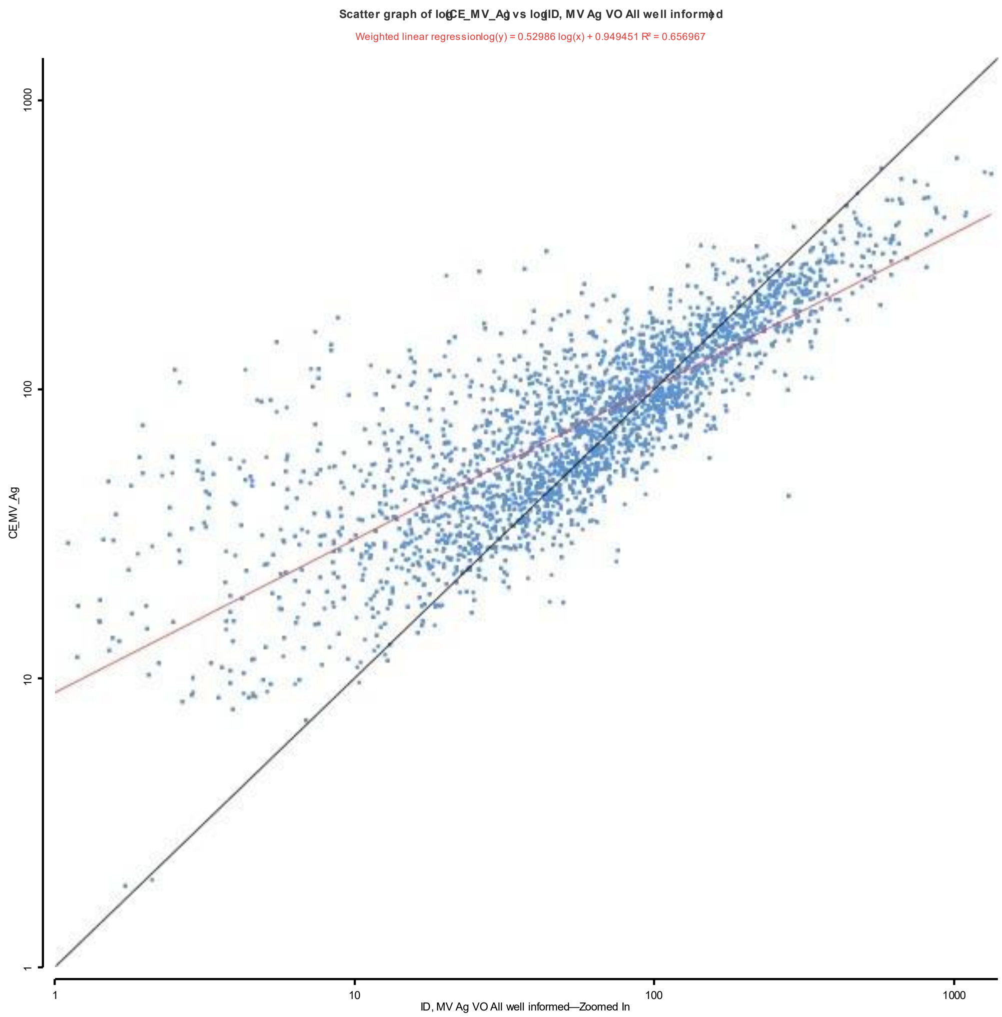
Figure 14-12: Main Vein Au Block Model and Composite Sample Values



Note: Figure prepared by First Majestic, February 2021.Vertical section, looking north

Estimated blocks display conditional bias with higher grades underestimated, lower grades over-estimated, and estimated extreme grades tend to be smoother. Scatterplot comparison of the estimated grades in "well-informed" parent blocks to the average composite sample values contained within those blocks illustrates the conditional bias for the estimate. The scatterplot in Figure 14-13 demonstrates that the estimated block grades correlate well with the composite sample grades, and that the estimated grades are variable and not overly smooth.

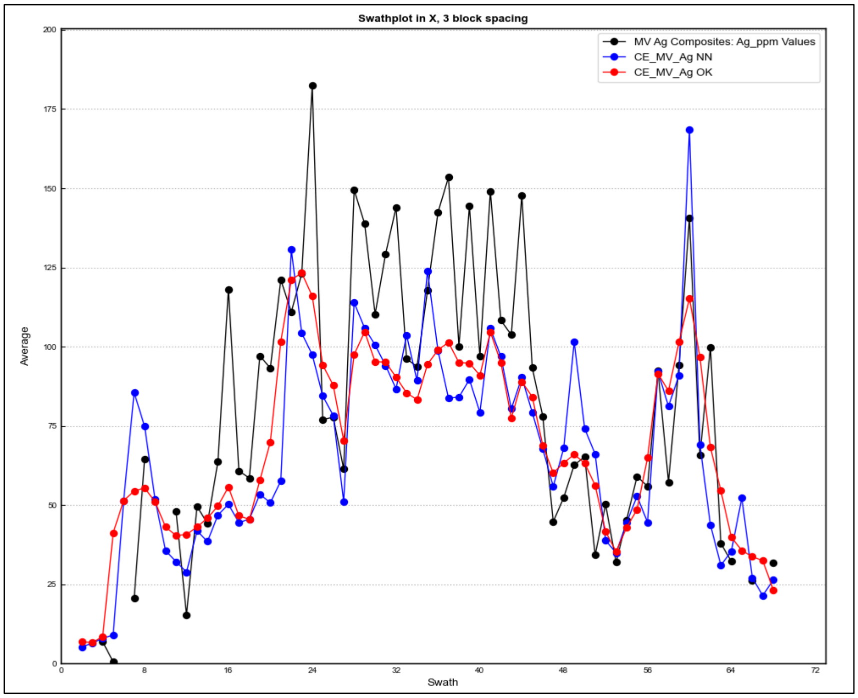
Figure 14-13: Scatterplot of Ag Composite Values with Estimated Ag Block Grades for Main Vein



Note: Figure prepared by First Majestic, February 2021.

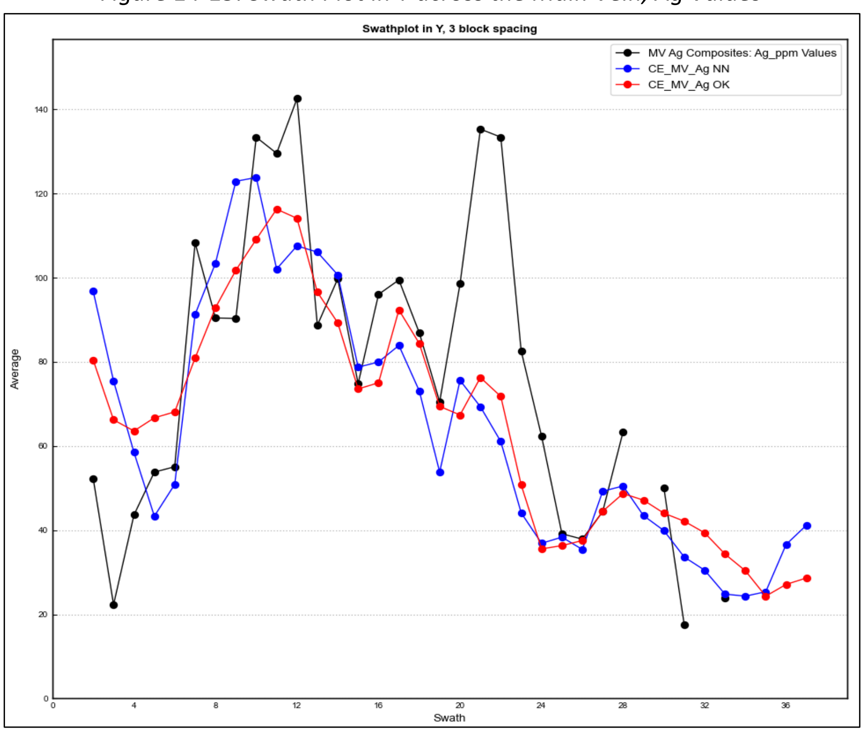
The block model estimates were also validated by comparing the estimated block grades for gold and silver to nearest neighbor (NN) block estimates and to the composite sample values in swath plots oriented in three directions. The estimated block grades, NN grades, and composite sample grade trends are similar in all directions for all resource domains. Figure 14-14, Figure 14-15 and Figure 14-16 show swath plots for Main Vein silver grades estimated by OK and NN methods along the x, y and z axes.

Figure 14-14: Swath Plot in X across the Main Vein, Ag Values



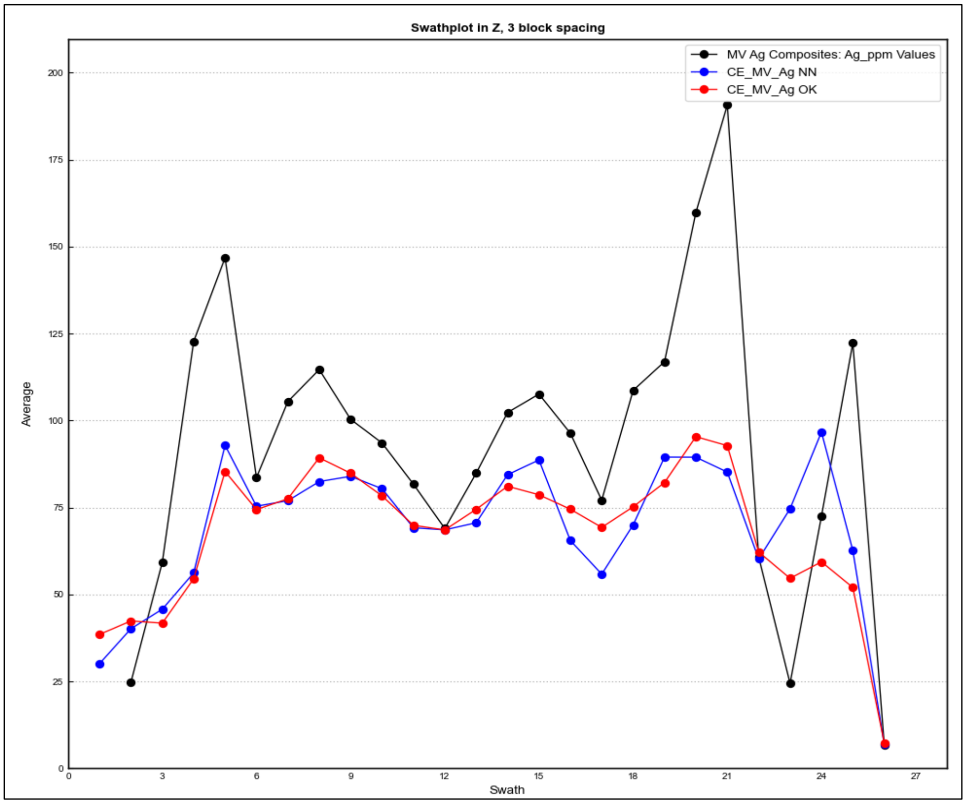
Note: Figure prepared by First Majestic, February 2021.

Figure 14-15: Swath Plot in Y across the Main Vein, Ag Values



Note: Figure prepared by First Majestic, February 2021.

Figure 14-16: Swath Plot in Z across the Main Vein, Ag Values



Note: Figure prepared by First Majestic, February 2021.

Overall, the validation demonstrates that the current resource estimates are a reasonable representation of the input sample data.

14.3.13. Mineral Resource Classification

Block model resource estimates were classified according to the 2014 "CIM Definition Standards for Mineral Resources & Mineral Reserves" using industry best practices as outlined in the 2019 "CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines". Best practices in the industry recommend that the classification of resources should consider the resource geologist's confidence in the geological interpretation and model; confidence in the grade continuity for the mineralized domains; and the measure of sample support along with the quality of the sample data. Appropriate classification strategy integrates these concepts to delineate areas of similar confidence and risk.

The Mineral Resources were classified into Measured, Indicated, or Inferred confidence categories based on the following factors:

- Confidence in the geological interpretation and models;
- Confidence in the continuity of metal grades;

- The sample support for the estimation and reliability of the sample data;
- Areas that were mined producing reliable production channel samples and detailed geological control.

The method used to measure the sample support used for the Mineral Resource classification was the nominal drill hole spacing. The nominal drill hole spacing was produced by an estimation pass for each block in the model that used three composite samples with a maximum of one sample per drill hole, which requires three separate drill holes. The average distance for each block to the three closest drill holes was estimated, and then the nominal drill hole spacing was estimated by dividing the average distance to drill holes by 0.7.

Blocks for all domains at were flagged to be considered for the Measured category if the nominal drill hole spacing was <30 m and the blocks were within 15 m of the nearest drill hole.

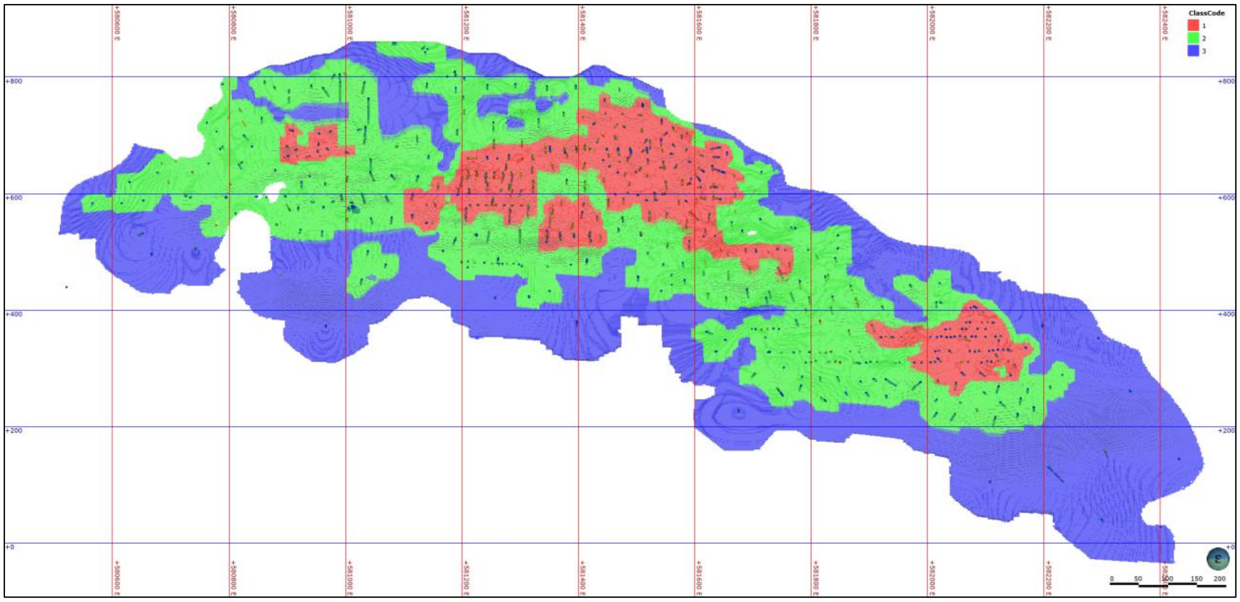
Blocks for all Main Vein domains were flagged to be considered for the Indicated category if the nominal drill hole spacing was <50 m, and the blocks were within 25 m of the nearest drill hole. For all other domains, flagging of the nominal drill hole spacing for the Indicated category was <45 m, and the blocks were within 25 m of the nearest drill hole.

Blocks for all Main Vein domains were flagged to be considered for the Inferred category if the nominal drill hole spacing was <80 m, and the blocks were within 80 m of the nearest drill hole. For all other domains, the flagging of the nominal drill hole spacing for the Inferred category was <70 m, and the blocks were within 70 m of the nearest drill hole.

For the blocks flagged by the classification criteria developed, wireframes were constructed to encompass block model zones for Measured, Indicated, and Inferred categories. This process allowed for review of the geological confidence for the deposit together with drill hole support, and expanded certain areas but excluded others from the classification. Blocks were finally assigned to a classification category by the respective wireframe if the centroid of the block fell inside the wireframe.

Figure 14-17 is a long section showing the Measured, Indicated and Inferred Mineral Resource categories for the Main Vein resource estimation domain.

Figure 14-17: Mineral Resource Categories – Main Vein.



Note: Figure prepared by First Majestic, February 2021. Measured (Red=Classcode 1), Indicated (Green=Classcode 2), and Inferred (Blue=Classcode 3)

Drill hole spacing within the Heap Leach Pad is generally <40 m and the Mineral Resource estimate is assigned to the Indicated confidence category.

14.3.14. Reasonable Prospects for Eventual Economic Extraction

The Mineral Resource estimates were evaluated for reasonable prospects for eventual economic extraction by application of input parameters based on mining and processing information from the last 24 months of mining operations. Economic parameters including operating costs, metallurgical recovery, metal prices and other parameters are as follows:

- Direct mining cost: dependent on mining method (cut-and-fill or long hole) and on vein width (wide or narrow); between \$58.69/t and \$69.90/t;
- G&A and indirect mining cost \$11.86/t;
- Sustaining cost \$10.48/t;
- Ag metallurgical recovery 93.0%;
- Au metallurgical recovery 95.6%;
- Ag payable 99.85%;
- Au payable 99.80%;
- Ag metal price \$22.50 /oz;
- Au metal price \$1,850 /oz.

These economic parameters resulted in an Ag-Eq cut-off grade of 95 g/t for wide veins and 90 g/t for narrow veins. For the Santa Elena mine domains, all veins were classified as narrow veins except for the domains in the Main Vein block model which include the Main Vein, Main Vein Splay, Stockwork A and Stockwork B. The Ag-Eq metal grades for the Mineral Resource estimates were calculated as follows:

- Ag-Eq g/t = Ag g/t + (Au g/t * Au Factor);
- Au Factor = Au Revenue / Ag Revenue;
- Au Revenue = (Au Metal Price / 31.1035) x Au Recovery x Au Payable;
- Ag Revenue = (Ag Metal Price / 31.1035) x Ag Recovery x Ag Payable.

The Vulcan Underground Stope Analyser software was used to identify the blocks that represent mineable volumes that exceed the cut-off value while complying with the aggregate of economic parameters. This tool allows blocks to be aggregated into the minimum stope dimensions and eliminate outliers that do not comply with these conditions.

The economic factors used for the heap leach pad reprocessing are:

- Direct mining cost: $28.88/t
- G&A and indirect mining cost $11.86/t
- Sustaining cost $1.93/t
- Ag metallurgical recovery 93%
- Au metallurgical recovery 95.6%
- Ag payable 99.85%
- Au payable 99.80%
- Ag metal price $22.50/oz
- Au metal price $1,850/oz

These economic parameters result in Ag-Eq cut-off grade of 65 g/t using the same Ag-Eq calculation as for the Santa Elena deposits.

14.4. Mineral Resource Estimate, Ermitaño

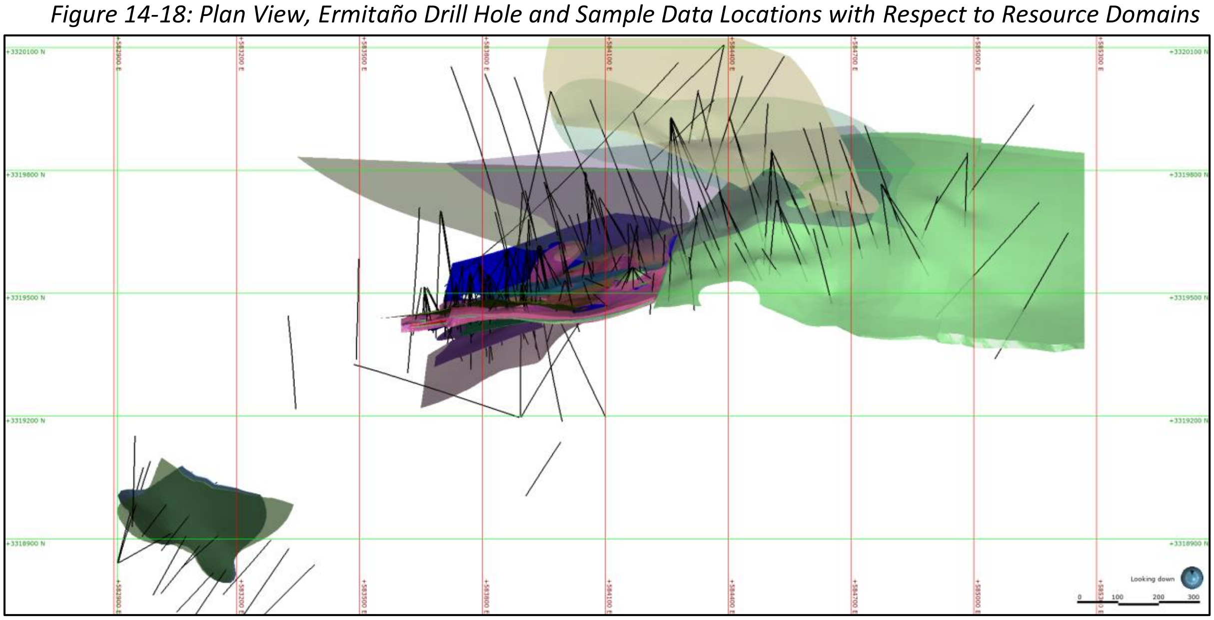
14.4.1. Sample Database, Ermitaño

The drill hole database for the Ermitaño project was reviewed and verified by the resource geologist and supports that the QAQC program was reasonable. The sample data used in the estimate has an effective date of December 31, 2020 and consists of exploration core drill holes. Table 14-10 summarizes the drill hole sample data used in the estimates, and Figure 14-18 shows the location of the data with respect to the mineral deposit zones in plan view.

Table 14-10: Drill Hole Sample Data Used in Mineral Resource Estimation, Ermitaño

Project	Year	Company	Drill Holes	Samples	Interval Length (m)	Percent of Total
Ermitaño	2016	First Majestic	8	1,368	1,421	4%
	2017	First Majestic	3	1,012	952	2%
	2018	First Majestic	41	8,609	9,059	21%
	2019	First Majestic	101	18,909	18,219	52%
	2020	First Majestic	42	7,554	6422	22%
		Grand Total	**195**	**37,452**	**36,073**	**100%**

Figure 14-18: Plan View, Ermitaño Drill Hole and Sample Data Locations with Respect to Resource Domains



Note: Figure prepared by First Majestic, February 2021.

The exploration data were collected with a logger system that captured collar, survey, lithology, and assay information. Integrated validation tools were used to check for gaps, errors, overlapped intervals and total lengths prior to geological modeling and estimation of Mineral Resources.

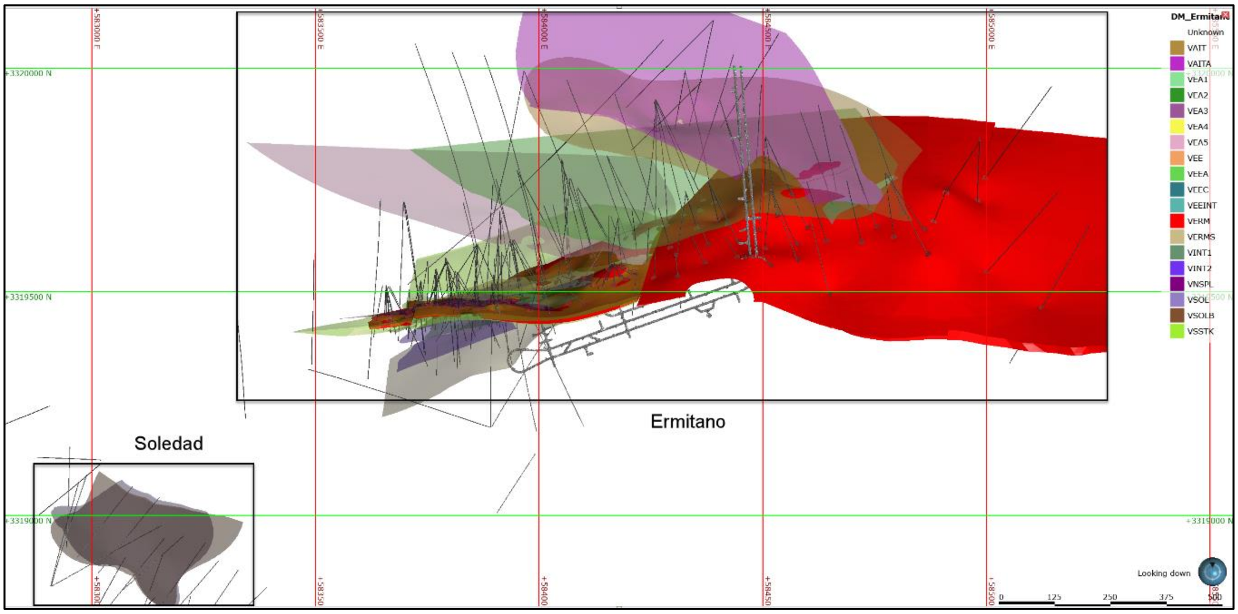
14.4.2. Geological Interpretation and Modeling, Ermitaño

The Mineral Resource estimates are constrained by the 3D geological interpretation and modelled domains of steeply-dipping vein-hosted mineralization. The gold and silver mineralization is restricted to low sulphidation epithermal quartz–calcite–adularia veins and stockwork veining. The modelled vein and stockwork domains are constructed from drill hole core logs, assay intervals and surface geological mapping produced by site exploration staff. The domain model boundaries strictly adhere to the vein and stockwork contacts with the surrounding country rock to produce reasonable representations of the deposit locations and volumes. The domains also incorporate some faulted sub-domains. Table 14-11 lists the 18 domains and associated domain codes. Figure 14-19 to Figure 14-21 display the domain models.

Table 14-11: Ermitaño Domain Names and Codes

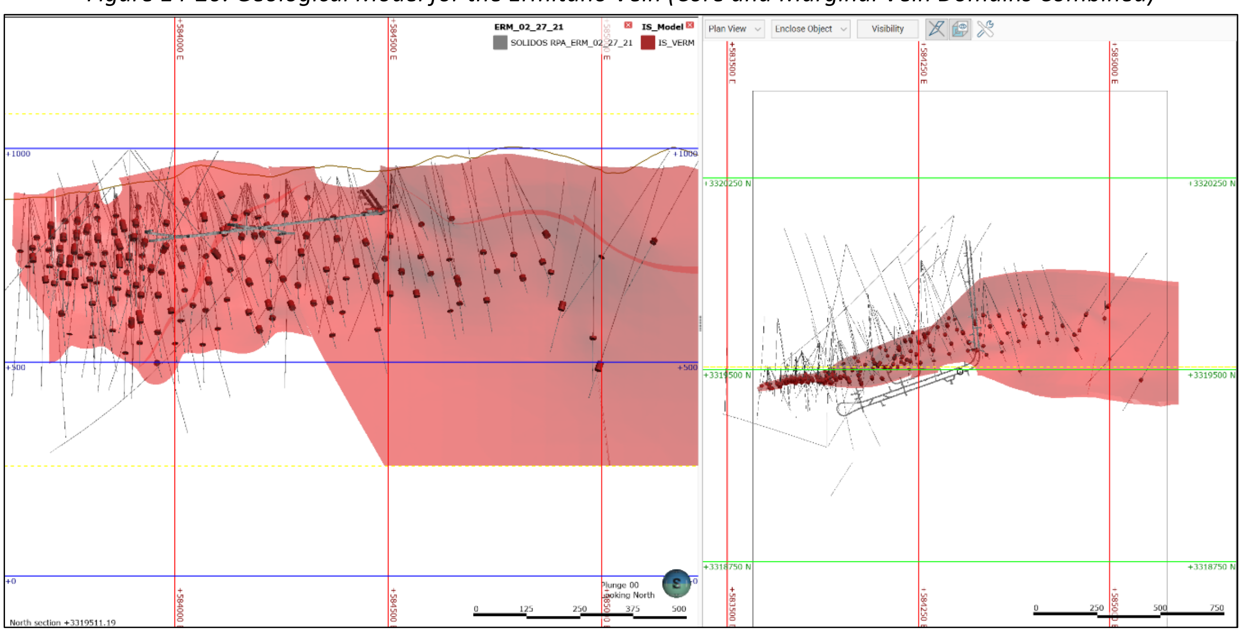
Estimation Domain Name	Estimation Domain Code
Ermitano Splay Core	VESPL_CORE
Ermitano Splay Marginal	VESPL_MARGINAL
Ermitano Splay Stockwork Footwall	VSSTK_FW
Ermitano Splay Stockwork Hangingwall	VSSTK_HW
Ermitano	VERM
North Splay	VNSPL
Intermedia 1	VINT1
Intermedia 2	VINT2
Ermitano East Alto	VEEA
Ermitano Alto 1	VEA1
Ermitano Alto 2	VEA2
Ermitano Alto 3	VEA3
Ermitano Alto 4	VEA4
Ermitano Alto 5	VEA5
Aitana	VAIT
Aitana Alto	VAITA
Soledad	VSOL
Soledad B	VSOLB

Figure 14-19: Plan View Location of the Domains, Ermitaño



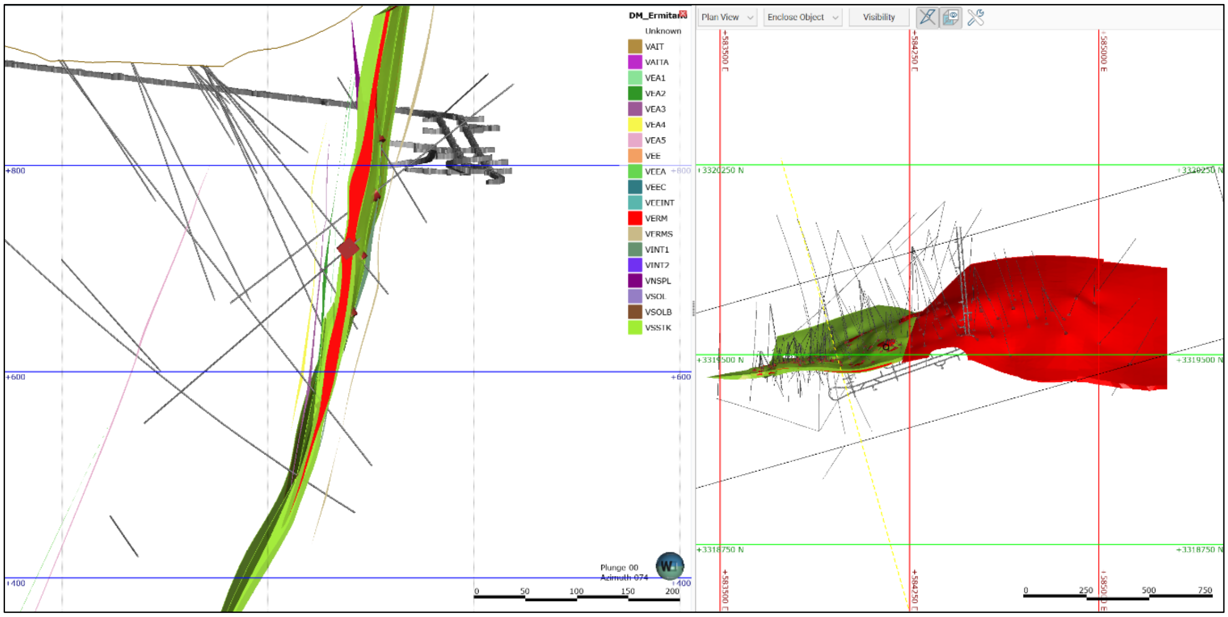
Note: Figure prepared by First Majestic, February 2021.

Figure 14-20: Geological Model for the Ermitaño Vein (Core and Marginal Vein Domains Combined)



Note: Figure prepared by First Majestic, February 2021. Long section looking north and plan views. Drill hole vein intersections shown.

Figure 14-21: Geological Model of the Ermitaño Vein



Note Figure prepared by First Majestic, February 2021. Cross section and plan view.

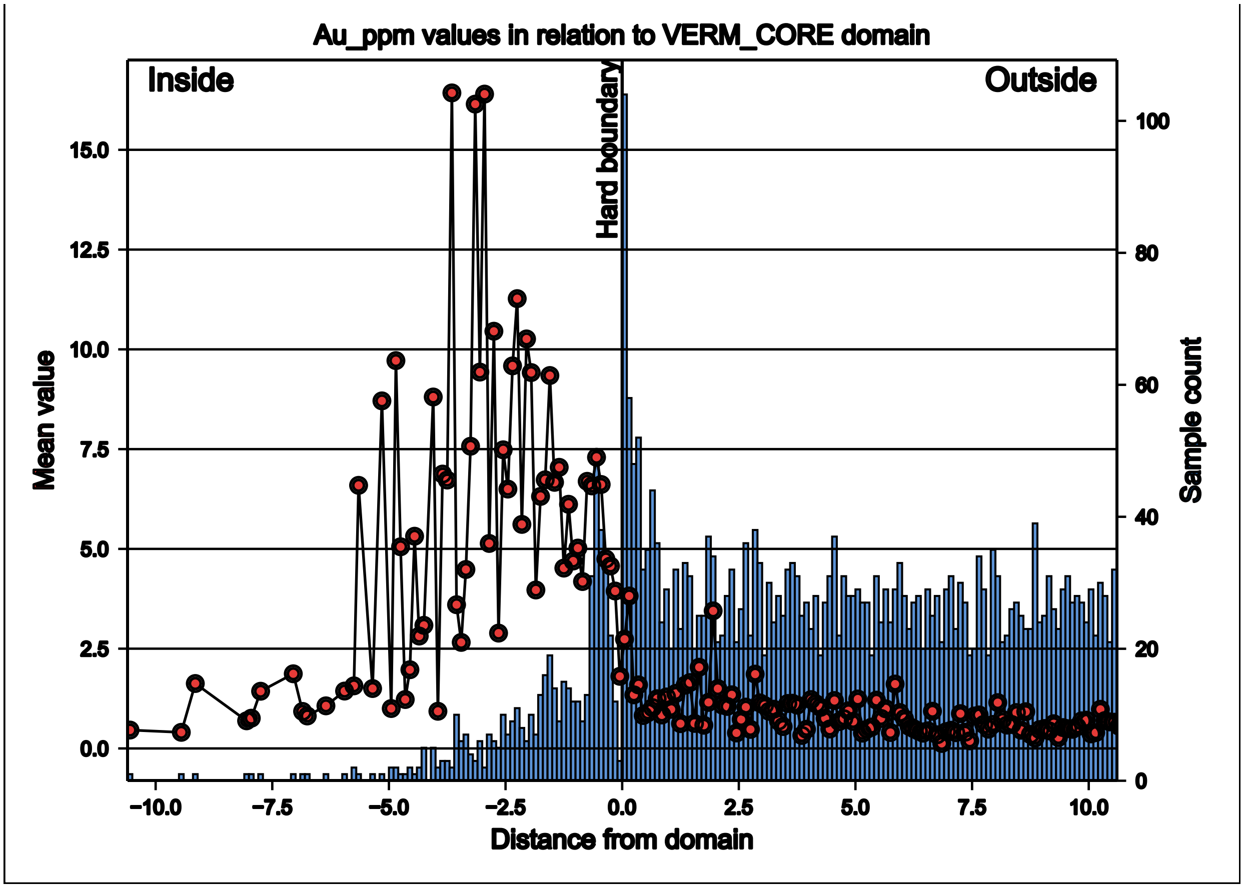
14.4.3. Exploratory Sample Data Analysis

Exploratory data analysis was completed for gold and silver sample values for each of the domains to assess the statistical and spatial character of the sample data. The sample data were examined in 3D to understand the spatial distribution of mineralized intervals. The sample assay data statistics were analyzed within each domain to look for possible mixed sample populations.

14.4.4. Boundary Analysis, Ermitaño

Boundary contact analysis was completed for each domain to review the change in metal grade across the domain contacts using boundary plots. There is a sharp grade change across the contact and hard boundary conditions were observed for all domains as shown in Figure 14-22.

Figure 14-22: Example of Gold Boundary Analysis for the Ermitaño Vein Core Domain.



Note: Figure prepared by First Majestic, February 2021.

Hard boundaries were used during the construction of sample composite samples and during Mineral Resource estimation. Composite samples were restricted to their respective resource domain.

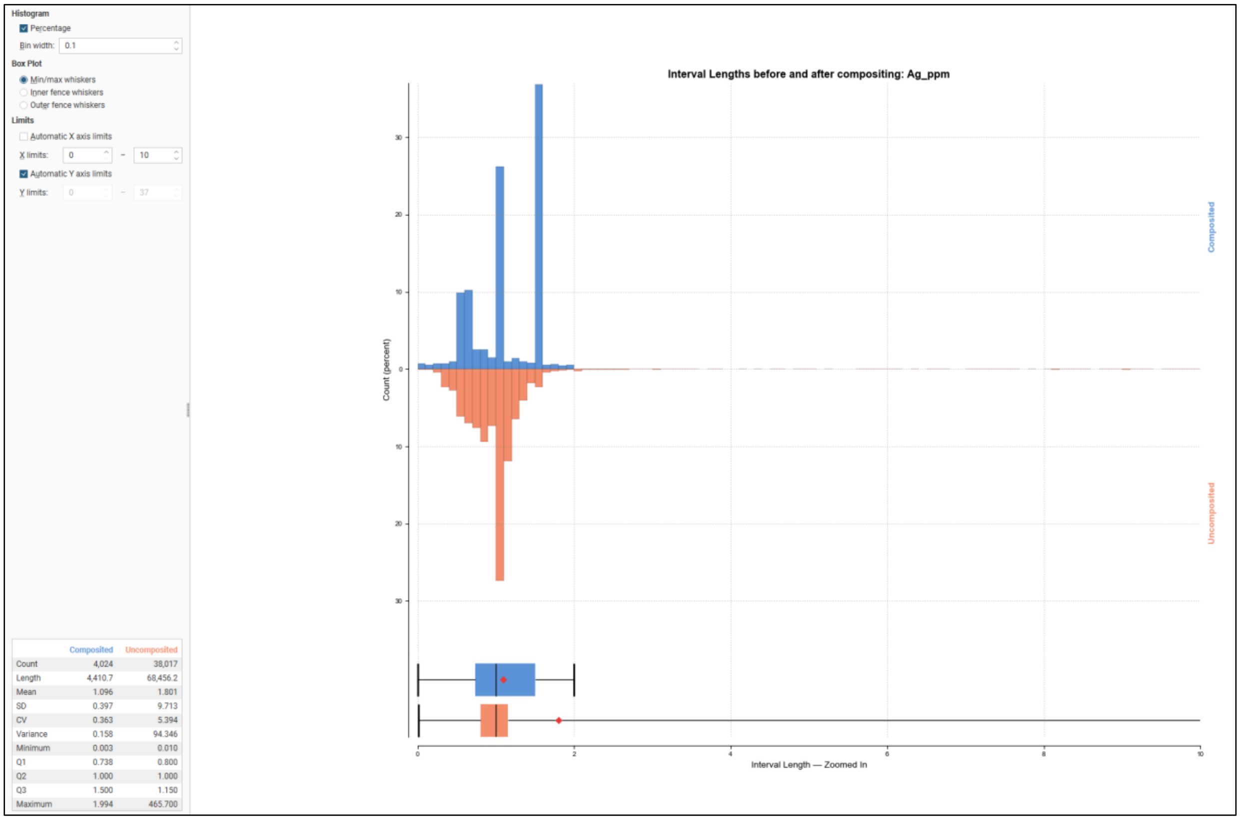
14.4.5. Composite Sample Preparation

To select an appropriate composite sample length, the assay sample intervals were reviewed for each resource domain. The selected composite length varies from one domain to another, with short residual composite samples left at the end of the vein intersection added to the previous interval. Composite lengths are detailed in Table 14-12, and Figure 14-23 shows the sample interval lengths before and after compositing for all domains.

Table 14-12: Composite Length, Ermitaño

Project	Domain	Composite Length (m)
Ermitaño	Ermitaño Marginal (VERM_CORE)	1.5
	Ermitaño Marginal (VERM_MARG)	1.0
	Stockwork Footwall (VSSTK_FW) and Hangingwall (VSSTK_HW)	1.5
	Ermitaño South (VERMS)	0.6
	Ermitaño North Splay (VNSPL)	1.5
	Intermedia 1 (VINT1) and Intermedia 2 (VINT2)	0.6
	Ermitaño Alto 1 – 5 (VEA1 – VEA5)	0.6
	Ermitaño East Alto (VEEA)	1.0
	Aitana (VAIT) and Aitana Alto (VAITA)	1.0
	Soledad (VSOL) and Soledad B (VSOLB)	0.7

Figure 14-23: Sample Interval Lengths, Composited vs. Uncomposited – All Domains, Ermitaño



Note: Figure prepared by First Majestic, February 2021.

14.4.6. Evaluation of Composite Sample Outlier Values

Drill hole and channel composite samples were evaluated for high-grade outliers and those outliers were capped to values considered appropriate for the estimation. Outlier values at the high end of the grade distributions were identified for both gold and silver from inflection points of cumulative probability plots and analysis of histogram plots. The spatial distribution of such outliers was also investigated. To quantify the impact of capping, the resource was evaluated to assess the change in metal content for the estimation due to capping.

Capping of assay values was limited to a select few extreme values. To reduce bias from a larger set of high-grade samples, those outlier values were range-restricted. Table 14-13 and Table 14-14 show the percentage of the outlier values that were capped and range-restricted.

Table 14-13: Composite Sample Ag capping and Range-Restriction by Domain, Ermitaño

Estimation Domain	Number of Composites	Capping g/t Ag	Number Capped	% Capped	Range Restriction g/t Ag	Number Range Restricted	% Range Restricted
VERM_CORE	505	800	2	0.4	400	14	2.8
VERM_MARGINAL	973	220	13	1.3		none	
VSSTK_FW	849	300	3	0.4		none	
VSSTK_HW	393	100	3	0.8		none	
VERMS	101	90	1	1		none	
VNSPL	134	100	2	1.5		none	
VINT1	291	460	3	1		none	
VINT2	153	220	2	1.3		none	
VAIT	101	150	2	2		none	
VAITA	109	50	2	1.8		none	
VEEA	91		none			none	
VEA1	24		none		80	2	8.3
VEA2	43		none			none	
VEA3	75		none			none	
VEA4	80	140	5	6.3		none	
VEA5	61		none			none	
VSOL	47	630	1	2.1		none	
VSOLB	24	630	2	8.3		none	
ALL	**4024**		**41**	**1**		**16**	**0.4**

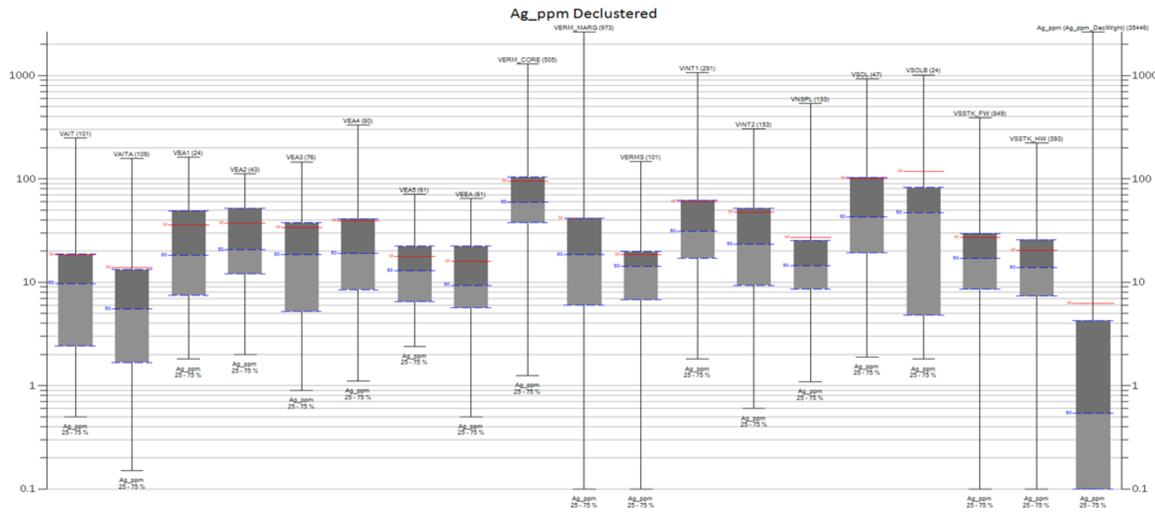
Table 14-14: Composite Sample Au Capping and Range-Restriction by Domain, Ermitaño

Estimation Domain	Number of Composites	Capping g/t Au	Number Capped	% Capped	Range Restricted g/t Au	Number Range Restricted	% Range Restricted
VERM_CORE	505	45	1	0.2	27	15	3
VERM_MARGINAL	973	26	2	0.2		none	
VSSTK_FW	849	12.6	3	0.4		none	
VSSTK_HW	393	4	4	1		none	
VERMS	101	5	2	2		none	
VNSPL	129	7.1	2	1.6		none	
VINT1	291	16	4	1.4		none	
VINT2	153	30	7	4.6	10	24	15.7
VAIT	101	6	2	2		none	
VAITA	109	3.2	3	2.8		none	
VEEA	61	3.1	2	3.3		none	
VEA1	24		none		3.5	2	8.3
VEA2	43	5.2	2	4.7		none	
VEA3	75	10	2	2.7	5.2	3	4
VEA4	80		none			none	
VEA5	61		none			none	
VSOL	47		none			none	
VSOLB	24	15	1	4.17		none	
ALL	**4019**		**37**	**0.9**		**44**	**1.1**

14.4.7. Composite Sample Statistics

Data were declustered using a cell declustering method. The silver and gold declustered statistics of composite samples for all estimation domains are presented in Figure 14-24 and Figure 14-25.

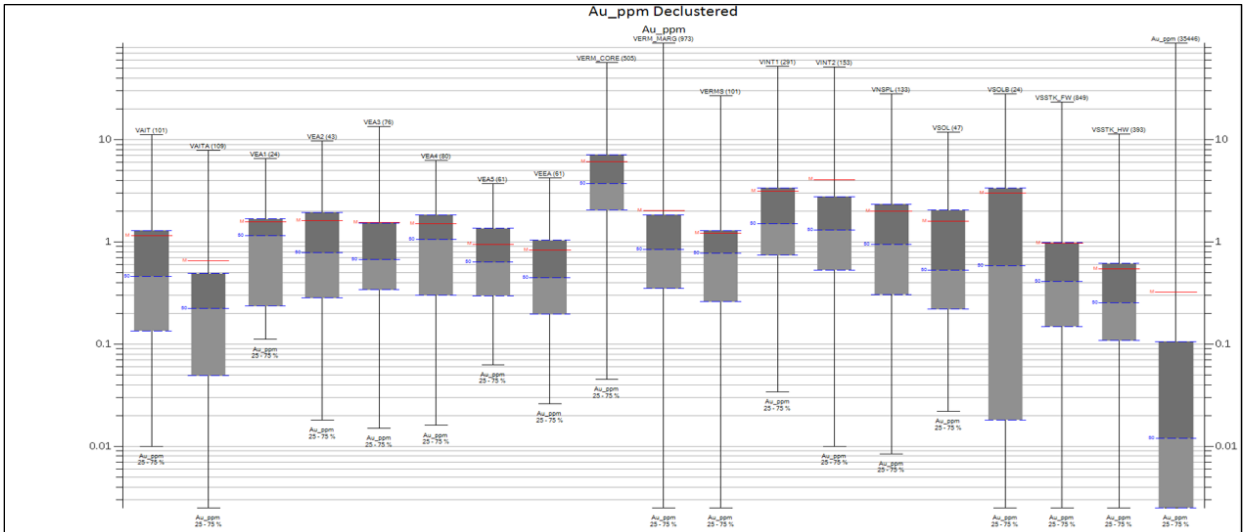
Figure 14-24: Ag Box Plot and Composite Sample Declustered Statistics by Domain, Ermitaño



Domain	VAIT	VAITA	VEA1	VEA2	VEA3	VEA4	VEA5	VEEA	CORE	MARG	VERMS	VINT1	VINT2	VNSPL	VSOL	VSOLB	VSSTK_FW	VSSTK_HW
Samples	101	109	25	43	76	80	61	61	505	973	101	291	153	133	47	24	849	393.
Minimum	0.5	0.15	1.80	2.00	0.90	1.10	2.40	0.50	1.25	0.10	0.10	1.80	0.60	1.09	1.90	1.80	0.10	0.10
Maximum	246.8	158.0	161.7	111.3	146.3	331.5	71.0	64.2	1284	2643	148	1063	305.6	535.3	924.6	1015	391.7	222.2
Mean	18.51	13.82	35.94	37.34	33.83	39.36	17.64	15.80	94.89	41.80	18.55	60.42	47.63	27.14	101	117.8	27.32	20.24
Std Dev	36.67	26.83	41.44	33.32	39.23	59.20	15.04	14..50	121.1	120.7	19.98	96.97	56.50	60.54	160.4	221.3	39.03	20.99
CV	1.982	1.941	1.153	0.892	1.16	1.504	0.853	0.918	1.277	2.888	1.077	1.605	1.186	2.231	1.588	1.879	1.429	1.037

Note: Figure prepared by First Majestic, February 2021.

Figure 14-25: Au Box Plot and Composite Sample Declustered Statistics by Domain, Ermitaño



Domain	VAIT	VAITA	VEA1	VEA2	VEA3	VEA4	VEA5	VEEA	CORE	MARG	VERMS	VINT1	VINT2	VNSPL	VSOL	VSOLB	VSSTK_FW	VSSTK_HW
Samples	101	109	24	43	76	80	61	61	505	973	101	291	153	133	47	24	849	393
Minimum	0.01	0.003	0.111	0.018	0.015	0.016	0.063	0.026	0.045	0.003	0.003	0.034	0.010	0.008	0.022	0.003	0.003	0.003
Maximum	11.21	7.87	6.51	9.68	13.50	6.26	3.74	4.2	57.23	88.4	26.88	52.46	51.26	28.09	11.90	28.09	23.3	11.32
Mean	1.148	0.652	1.566	1.61	1.541	1.503	0.951	0.834	6.142	2.035	1.215	3.159	4.079	1.998	1.596	3.020	0.971	0.545
Std Dev	1.927	1.268	1.651	1.957	2.374	1.560	0.897	0.957	7.085	5.53	2.296	5.638	7.606	3.836	2.370	5.395	1.82	1.001
CV	1.679	1.946	1.054	1.215	1.541	1.038	0.944	1.149	1.154	2.718	1.890	1.785	1.865	1.920	1.485	1.787	1.874	1.834

Note: Figure prepared by First Majestic, February 2021.

14.4.8. Metal Trend and Spatial Analysis: Variography

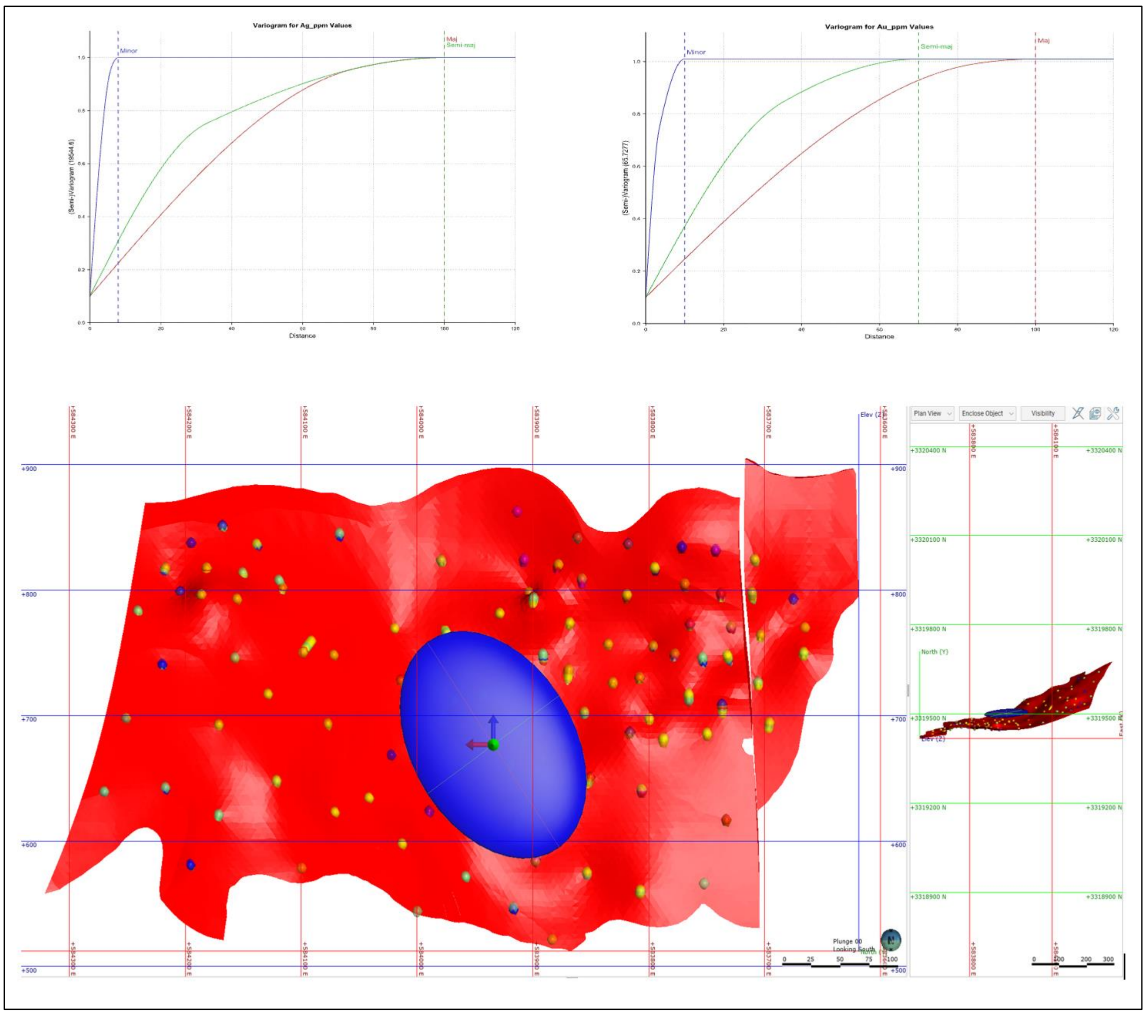
The dominant trends for gold and silver mineralization were identified based on the 3D numerical models for the metal in each domain. Model variograms for gold and silver composite values were developed along the trends identified, and the nugget values were established from downhole variograms.

Table 14-15 shows the model variogram parameters for the Ermitaño Vein Core domain, and Figure 14-26 shows the combined variogram plots for silver and gold along with the variogram trend ellipsoid.

Table 14-15: Variogram Model Parameters for Ermitaño Core Domain

Estimation Domain	Leapfrog Trend			Nugget C_0	Sill C_1 and C_2	Range (m)	Model
	Dip	Dip Az	Pitch				
Core Domain Ag	83	354	84	0.10	0.43	75	Spherical
					0.47	100	Spherical
Core Domain Au	83	354	56	0.10	0.38	85	Spherical
					0.53	100	Spherical

Figure 14-26: Ag and Au Variogram Models for the Ermitaño Vein Core Domain with Au Trend Ellipsoid

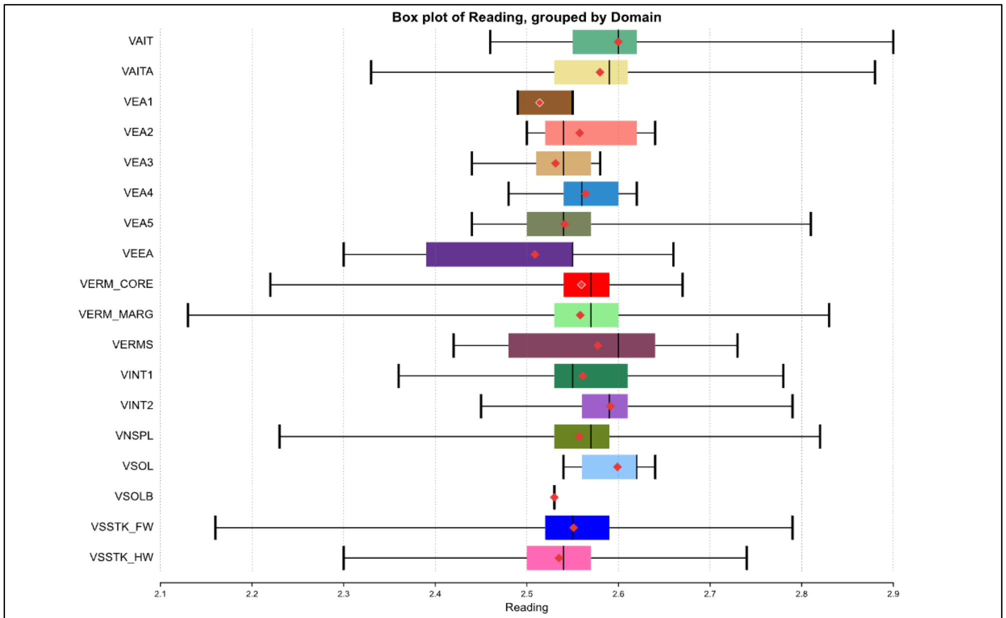


Note: Figure prepared by First Majestic, February 2021. Section looking south.

14.4.9. Bulk Density

First Majestic has measured SG values for 4,136 drill core samples from the Ermitaño deposits. The SG sampling program was designed to collect representative specimens from all rock types. The SG values range from 2.06–3.30, with a mean value of 2.54. The SG statistics for the domains are displayed in Figure 14-27.

Figure 14-27: Specific Gravity Box Plot and Statistics, Ermitaño



Domain		Count	Mean	Standard deviation	Coefficient of variation	Variance	Minimum	Lower quartile	Median	Upper quartile	Maximum
VAIT	SG	35	2.60	0.09	0.03	0.01	2.46	2.54	2.61	2.63	2.90
VAITA	SG	39	2.58	0.09	0.04	0.01	2.33	2.53	2.59	2.61	2.88
VEA1	SG	2	2.52	0.04	0.02	0.00	2.49	2.49	2.49	2.52	2.55
VEA2	SG	9	2.56	0.06	0.02	0.00	2.50	2.51	2.53	2.61	2.64
VEA3	SG	11	2.53	0.05	0.02	0.00	2.44	2.50	2.54	2.56	2.58
VEA4	SG	14	2.56	0.04	0.01	0.00	2.48	2.54	2.56	2.6	2.62
VEA5	SG	16	2.55	0.09	0.03	0.01	2.44	2.5	2.54	2.57	2.81
VEEA	SG	12	2.52	0.11	0.05	0.01	2.3	2.39	2.55	2.55	2.66
VERM_CORE	SG	305	2.56	0.05	0.02	0.00	2.22	2.54	2.57	2.59	2.67
VERM_MARG	SG	363	2.56	0.08	0.03	0.01	2.13	2.53	2.57	2.6	2.83
VERMS	SG	18	2.57	0.09	0.04	0.01	2.42	2.47	2.60	2.64	2.73
VINT1	SG	51	2.56	0.07	0.03	0.01	2.36	2.53	2.55	2.60	2.78
VINT2	SG	22	2.59	0.06	0.03	0.00	2.45	2.55	2.59	2.61	2.79
VNSPL	SG	98	2.56	0.08	0.03	0.01	2.23	2.53	2.56	2.59	2.82
VSOL	SG	6	2.6	0.04	0.02	0.00	2.54	2.55	2.61	2.62	2.64
VSOLB	SG	1	2.53	0	0	0	2.53	2.53	2.53	2.53	2.53
VSSTK_FW	SG	312	2.55	0.06	0.02	0.00	2.16	2.52	2.55	2.59	2.79
VSSTK_HW	SG	149	2.54	0.07	0.03	0.00	2.30	2.50	2.54	2.57	2.74

Note: Figure prepared by First Majestic, February 2021.

SG was estimated in domains using an ID3 method, with blocks outside the estimation radius either assigned the mean value of all the deposits or the mean value of the domain. Some domains with a small amount of SG samples were not estimated and were assigned the mean SG value.

14.4.10. Block Model Setup

Block model resource estimates were prepared for each of the estimation domains at Ermitaño. The block models were rotated so that the x and y axes lie parallel to the domains and the z direction is perpendicular to the trend of the domain. A sub-blocked model type was created that consists of primary parent blocks which are sub-divided into smaller sub-blocks whenever triggering surfaces intersect the parent blocks. For the Ermitaño block models, the domain boundaries served as triggers. The size of the parental block considered the drill hole sample spacing and the mining methods. Block models used 10 m (x) x 10 m (y) x 2 m (z) parent blocks that are sub-blocked to 2 m (x) x 2 m (y) x a variable height (z) in m with a minimum of 0.1 m. Gold and silver grades were estimated into the parent blocks.

14.4.11. Resource Estimation Procedure

Block model estimates for Ermitaño domains were completed for gold and silver. All block grades were estimated from composite samples captured within the respective resource domains. Following contact analysis, all domain contacts were treated as hard boundaries.

Block grades were estimated by either ID^2 or OK, with ID^2 selected as the final estimation method for all domains after inspection of the estimated gold and silver grades were judged to perform better with ID^2. The method chosen in each case considered the characteristics of the domain, data spacing, variogram quality, and which method produced the best representation of grade continuity.

Examples of the gold–silver estimation parameters for each of the domains are included in Table 14-16.

Table 14-16: Summary of Ag-Au Estimation Parameters for the Ermitaño Models

Estimation Domain	Metal	Blocks		Composites							Search Ellipsoid and Orientation						
		Interpolation Method	Boundary	Composite Length	Number used Min	Number used Max	Max per hole	Clip	Clamp	Clamp percentage of search distance?	Variable Orientation Used?	Dip	Dip Azimuth	Pitch	Range (m) X	Range (m) Y	Range (m) Z
VERM_CORE	Ag	ID2	Hard	1.5	1	20	5	800	400	30%	Yes				120	90	40
	Au	ID2	Hard	1.5	1	20	5	45	27	30%	Yes				120	90	40
VERM_MARG	Ag	ID2	Hard	1	1	20	5	220	none		Yes				120	90	40
	Au	ID2	Hard	1	1	20	5	26	none		Yes				120	90	40
VSSTK FW	Ag	ID2	Hard	1.5	1	20	5	300	none		Yes				150	150	50
	Au	ID2	Hard	1.5	1	20	5	12.6	none		Yes				150	150	50
VSSTK HW	Ag	ID2	Hard	1.5	1	20	5	100	none		Yes				150	150	50
	Au	ID2	Hard	1.5	1	20	5	4	none		Yes				150	150	50
VERMS	Ag	ID2	Hard	0.6	1	20	5	90	none		Yes				150	150	40
	Au	ID2	Hard	0.6	1	20	5	5	none		Yes				150	150	40
VNSPL	Ag	ID2	Hard	1.5	1	20	5	100	none		Yes				150	150	40
	Au	ID2	Hard	1.5	1	20	5	7.1	none		Yes				150	150	40
VINT1	Ag	ID2	Hard	0.6	1	20	5	460	none		Yes				150	125	40
	Au	ID2	Hard	0.6	1	20	5	16	none		Yes				150	125	40
VINT2	Ag	ID2	Hard	0.6	1	20	5	220	none		Yes				110	110	40
	Au	ID2	Hard	0.6	1	20	5	30	10	30%	Yes				110	110	40
VAIT	Ag	ID2	Hard	1	1	20	5	150	none		Yes				125	125	40
	Au	ID2	Hard	1	1	20	5	6	none		Yes				125	125	40
VAITA	Ag	ID2	Hard	1	1	20	5	50	none		Yes				150	150	40
	Au	ID2	Hard	1	1	20	5	3.2	none		Yes				150	150	40
VEEA	Ag	ID2	Hard	1	1	20	5	none	none		No	68	355	13	150	150	50
	Au	ID2	Hard	1	1	20	5	3.1	none		No	68	355	13	150	150	50
VEA1	Ag	ID2	Hard	0.6	1	20	5	none	80	33%	No	80	352	60	150	150	20
	Au	ID2	Hard	0.6	1	20	5	none	3.5	33%	No	84	352	60	150	150	20
VEA2	Ag	ID2	Hard	0.6	1	20	5	none	none		No	83	347	59	150	150	20
	Au	ID2	Hard	0.6	1	20	5	5.2	none		No	83	347	59	150	150	20
VEA3	Ag	ID2	Hard	0.6	1	20	5	none	none		No	83	347	21	150	150	20
	Au	ID2	Hard	0.6	1	20	5	10	5.2	33%	No	83	347	21	150	150	20
VEA4	Ag	ID2	Hard	0.6	1	20	5	140	none		No	84	346	67	150	150	30
	Au	ID2	Hard	0.6	1	20	5	none	none		No	84	346	67	150	150	30
VEA5	Ag	ID2	Hard	0.6	1	20	5	none	none		No	70	2	68	150	150	20
	Au	ID2	Hard	0.6	1	20	5	none	none		No	70	2	68	150	150	20
VSOL	Ag	ID2	Hard	0.7	1	20	5	630	none		No	52	214	1.4	120	120	20
	Au	ID2	Hard	0.7	1	20	5	none	none		No	52	214	162	120	120	20
VSOLB	Ag	ID2	Hard	0.7	1	20	5	630	none		No	52	214	90	120	120	20
	Au	ID2	Hard	0.7	1	20	5	15	none		No	52	214	162	120	120	20

14.4.12. Block Model Validation

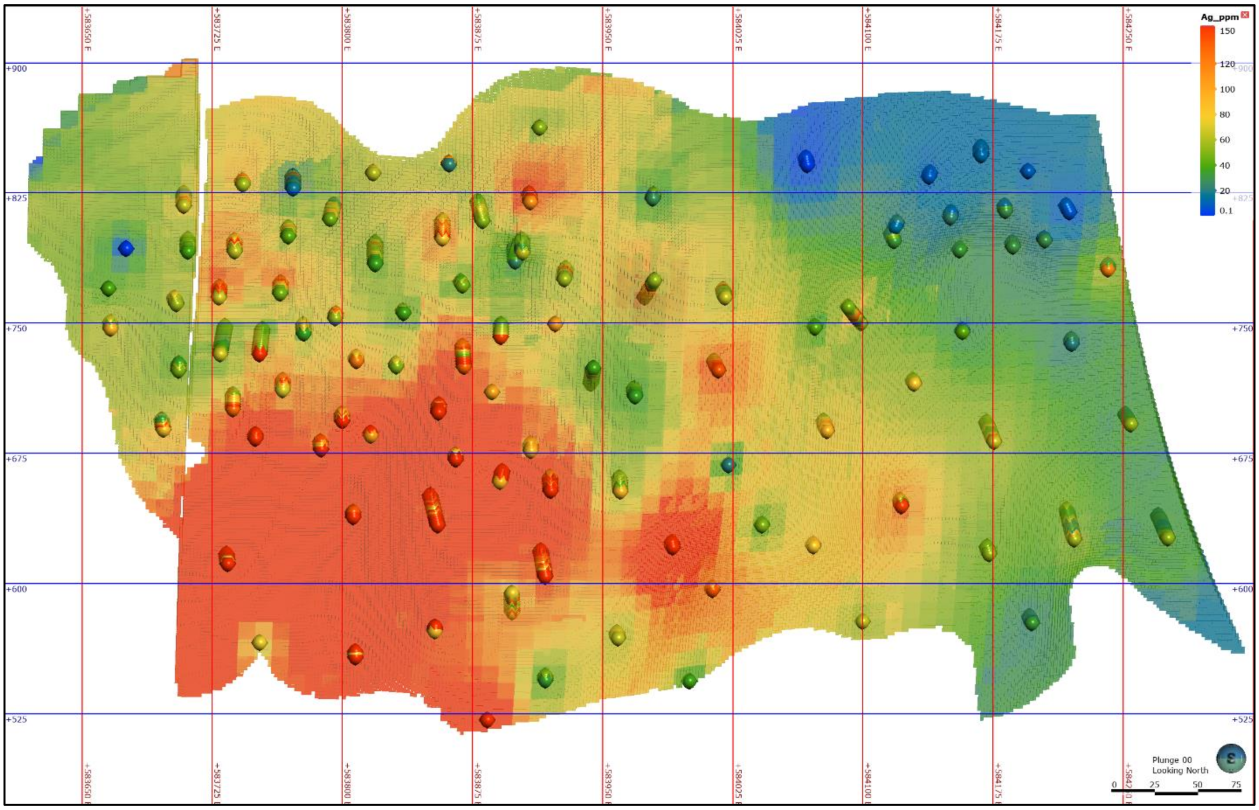
Validation of the silver and gold grade estimations in the Ermitaño block models was completed for each of the domains. The procedure was conducted as follows:

- Comparison of wireframe domain volumes to block model volumes for the domains;
- Visual inspection comparing the composite sample silver and gold grades to the estimated block values;
- Comparison of the gold and silver grades in "well-informed" parental blocks with the average sample values of the composited samples contained within those blocks using scatter plots.
- Comparison of the global mean composite grades to the block model mean grade for each resource domain;
- Comparison of local block grade trends to composited sample grades along the three block model axes (i.e., easting, northing, and elevation) with swath grade trend plots.

The silver and gold estimated block grades were visually inspected in vertical sections. This review showed that the supporting composite sample grades closely match the estimated block values.

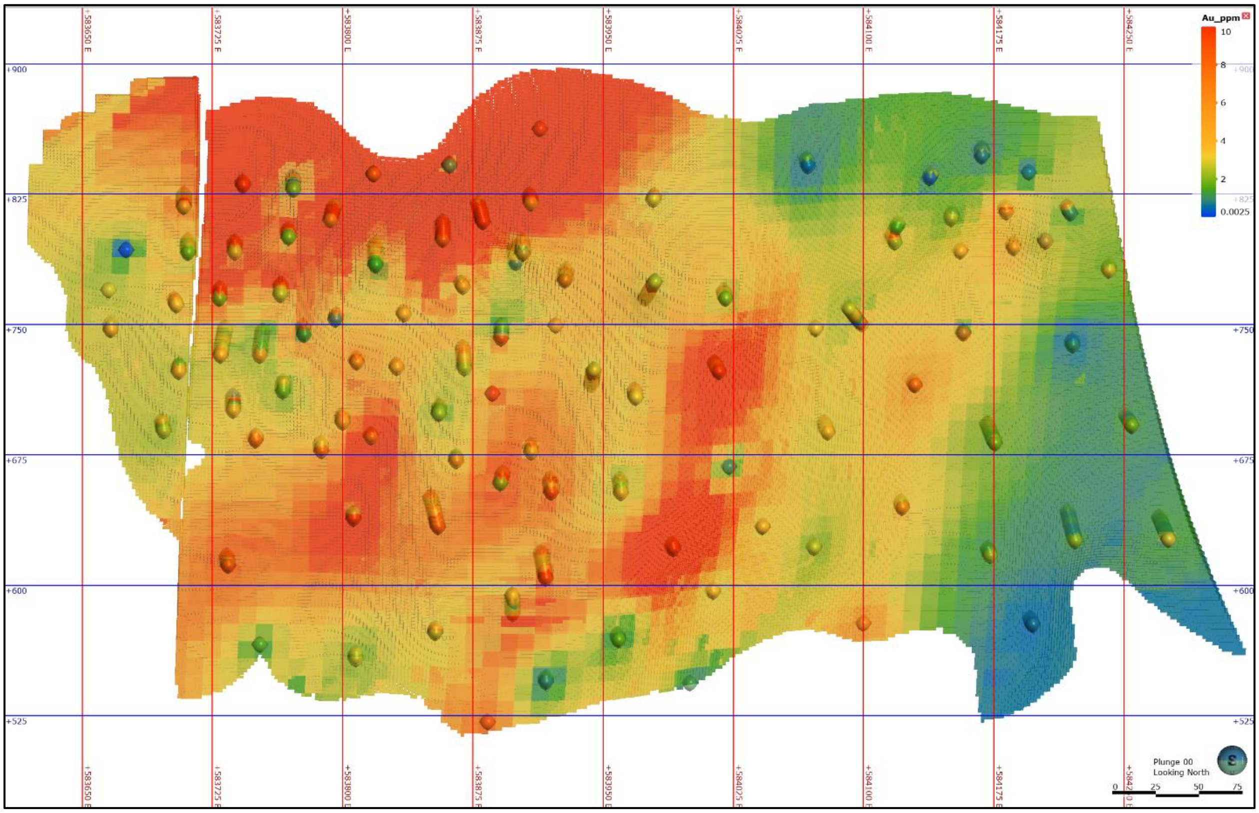
Figure 14-28 and Figure 14-29 show the estimated block model silver and gold grades and the composite sample grades used in the estimation for the Ermitaño Core domain.

Figure 14-28: Ermitaño Vein Core Domain Ag Block Model and Composite Sample Values



Note: Figure prepared by First Majestic, February 2021. Vertical section, looking north.

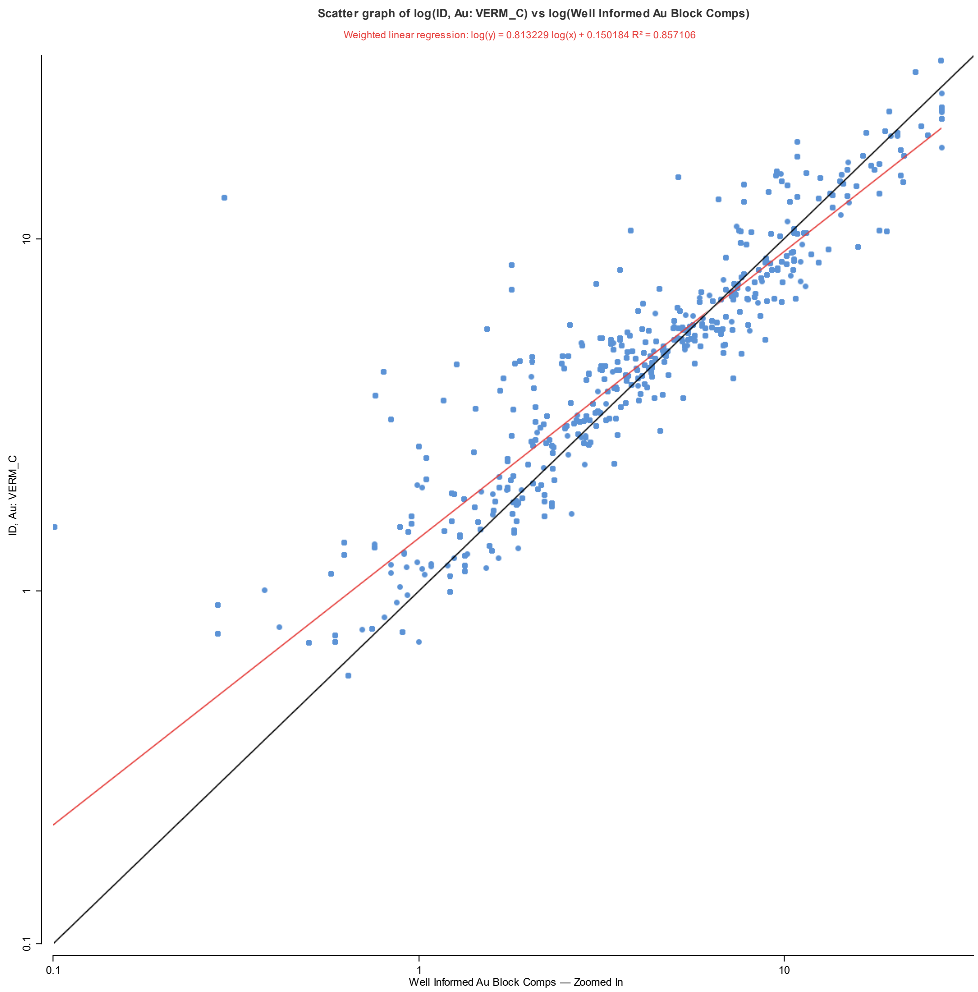
Figure 14-29: Ermitaño Core Domain Au Block Model and Composite Sample Values.



Note: Figure prepared by First Majestic, February 2021. Vertical section, looking north.

Estimated blocks display conditional bias with higher grades underestimated and lower grades over-estimated. Figure 14-30 is a scatterplot comparing estimated bock grades with sample composite values using the average of samples contained within each block. The scatterplot demonstrates that the estimated block grades correlate well with the composite sample, and that the estimated grades are variable and not overly smooth.

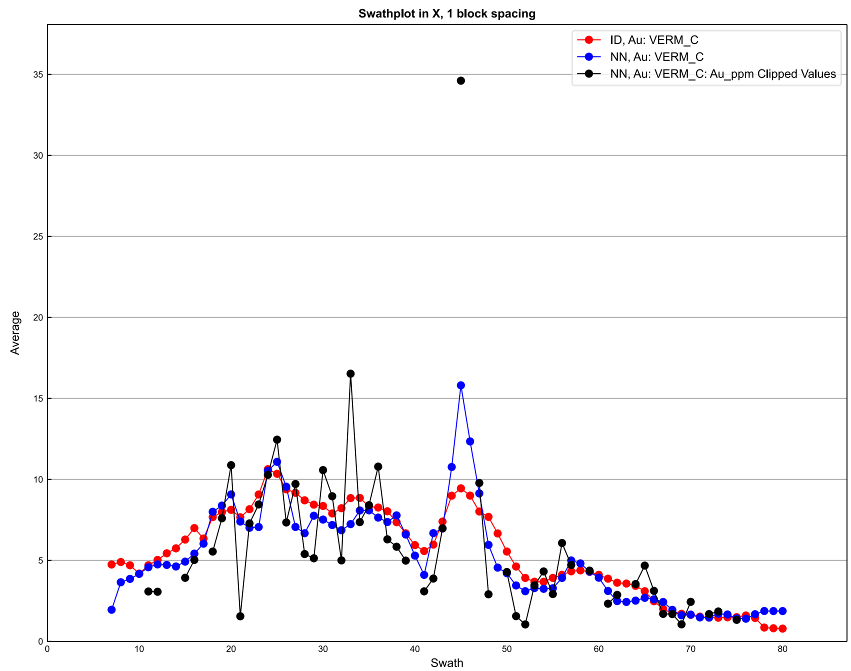
Figure 14-30: Scatter Plot of Gold Composites with Estimated Block Grades (Ermitaño Core Domain)



Note: Figure prepared by First Majestic, February 2021.

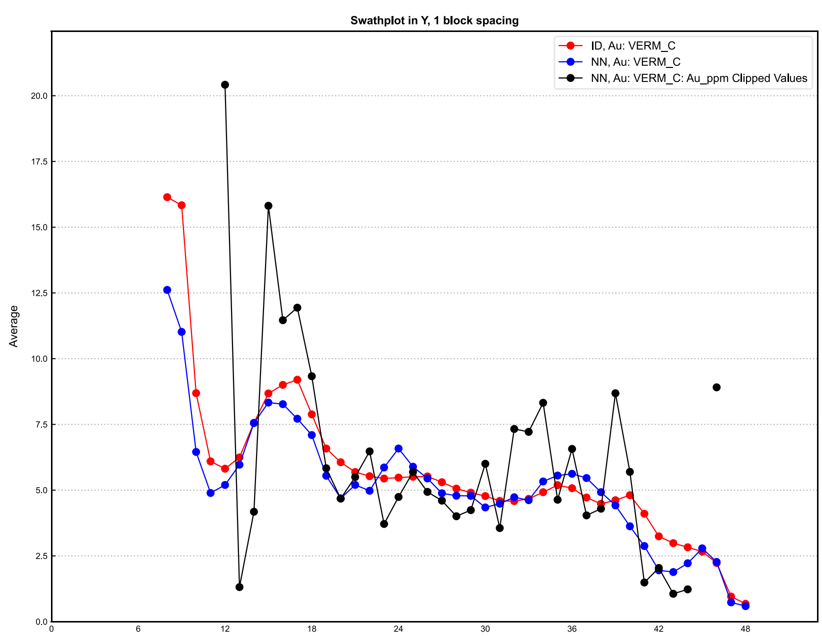
The block model estimates were validated by comparing the estimated block grades for gold and silver to NN block estimates and to the composite sample values in swath plots oriented in three directions. The estimated block grades, NN grades, and composite sample grade trends are similar in all directions for all resource domains. Figure 14-31, Figure 14-32, and Figure 14-33, show swath plots for Ermitaño Core domain gold grades estimated by ID^2 and NN along with composite sample values along the x, y, and z axes.

Figure 14-31: Swath Plot in X across the Ermitaño Core Domain, Au Values



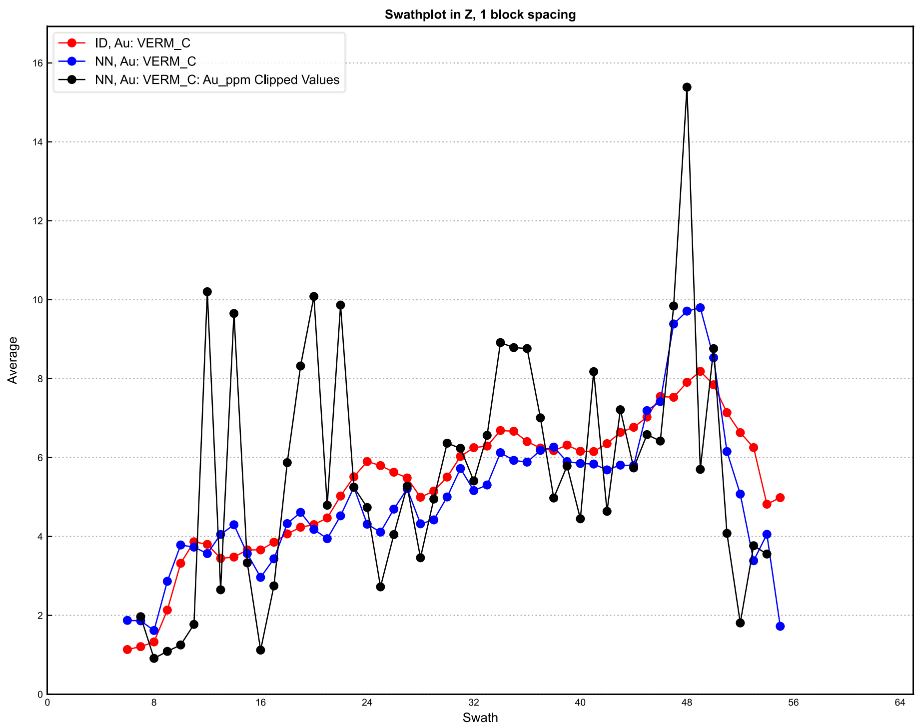
Note: Figure prepared by First Majestic, February 2021.

Figure 14-32: Swath Plot in Y across the Ermitaño Core Domain, Au Values



Note: Figure prepared by First Majestic, February 2021.

Figure 14-33: Swath Plot in Z across the Ermitaño Core Domain, Au Values



Note: Figure prepared by First Majestic, February 2021.

Overall, the validation demonstrates that the current resource estimates are a reasonable representation of the input sample data.

14.4.13. Mineral Resource Classification

Block model resource estimates were classified according to the 2014 "CIM Definition Standards for Mineral Resources & Mineral Reserves" using industry best practices as outlined in the 2019 "CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines". Best practices in the industry advise that the classification of resources should consider the resource geologist's confidence in the geological interpretation and model; confidence in the grade continuity for the mineralized domains; and the measure of sample support along with the quality of the sample data. Appropriate classification strategy integrates these concepts to delineate areas of similar confidence and risk.

At Ermitaño, the Mineral Resources were classified into Indicated or Inferred confidence categories based on the following factors:

- Confidence in the geological interpretation and models;
- Confidence in the continuity of metal grades;

- The sample support for the estimation and reliability of the sample data.

The method used to measure the sample support used for the Mineral Resource classification was the nominal drill hole spacing. The nominal drill hole spacing was produced by an estimation pass for each block in the model that used three composite samples with a maximum of one sample per drill hole, which requires three separate drill holes. The average distance for each block to the three closest drill holes was estimated, and then the nominal drill hole spacing was estimated by dividing the average distance to the drill holes by 0.7.

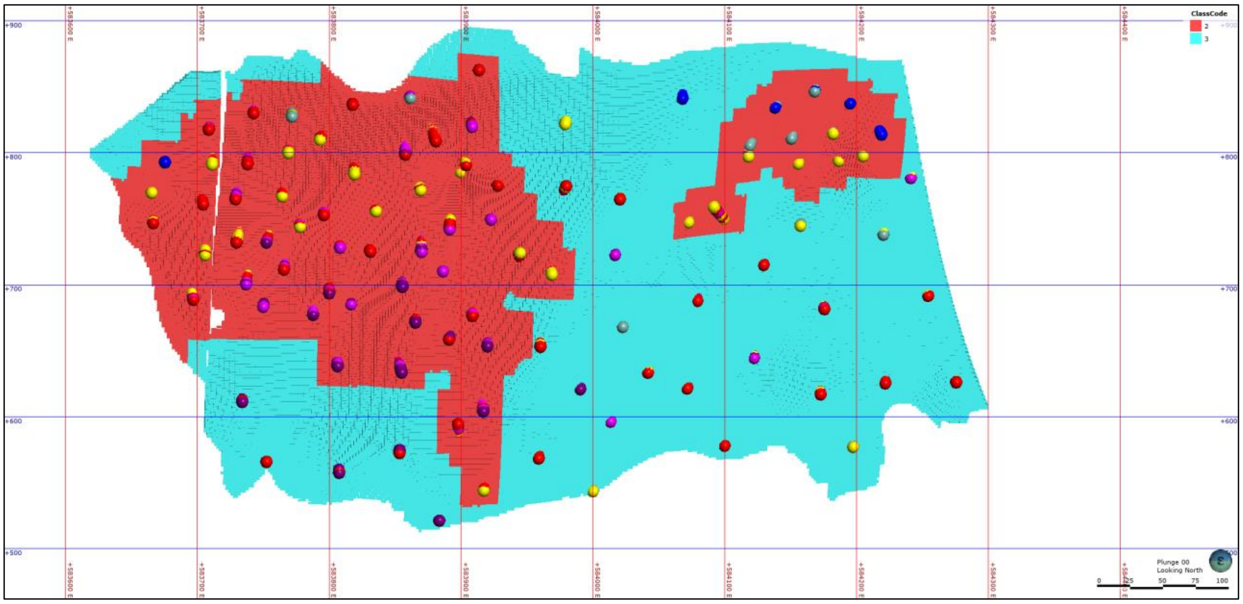
The blocks for all of the Ermitaño domains were flagged to be considered for the Indicated category if the nominal drill hole spacing was <40 m, and the block was within 20 m of composites on the edge of these zones (i.e. extrapolated to half of the drill spacing distance).

The blocks for all of the Ermitaño domains, except for Soledad and Soledad B, were flagged to be considered for the Inferred category if the nominal drill hole spacing was <70 m, and the block was within 35 m of composites on the edge of these zones. Soledad and Soledad B were flagged to be considered for the Inferred category if the nominal drill hole spacing was <80 m, and the block was within 40 m of composites on the edge of these zones.

Wireframes were constructed to encompass block model zones for Indicated and Inferred categories. This process allowed for review of the geological confidence for the deposit together with drill hole support, and expanded certain areas but excluded others from the classification. Blocks were finally assigned to a classification category by the respective wireframe if the centroid of the block fell inside the wireframe.

Figure 14-34 is a long section showing the Indicated and Inferred Mineral Resource classification categories for the Ermitaño Vein resource domain.

Figure 14-34: Indicated and Inferred Mineral Resource Categories – Ermitaño.



Note: Figure prepared by First Majestic, February 2021. Red= Indicated, blue= Inferred. Section looking north. Composite samples also shown.

14.4.14. Reasonable Prospects for Eventual Economic Extraction

The Mineral Resource estimates were evaluated for reasonable prospects for eventual economic extraction by application of input parameters based on expected mining costs and preliminary metallurgical recoveries from testing. Economic parameters including operating costs, metallurgical recovery, metal prices and other parameters were used as follows:

- Direct mining cost: $49.33/t;
- G&A and indirect mining cost $15.30/t;
- Sustaining cost $21.03/t;
- Ag metallurgical recovery 85.2%;
- Au metallurgical recovery 96.1%;
- Ag payable 99.85%;
- Au payable 99.80%;
- Ag metal price $22.50/oz;
- Au metal price $1,850/oz.

These economic parameters result in an Ag-Eq cut-off grade of 110 g/t. The Ag-Eq metal grades for the Mineral Resource estimates were calculated as follows:

Ag-Eq g/t = Ag g/t + (Au g/t * Au Factor);

Au Factor = Au Revenue / Ag Revenue;

Au Revenue = (Au Metal Price / 31.1035) x Au Recovery x Au Payable;

Ag Revenue = (Ag Metal Price / 31.1035) x Ag Recovery x Ag Payable.

The Vulcan Underground Stope Analyser software was used to identify the blocks that represent mineable volumes that exceed the cut-off value while complying with the aggregate of economic parameters. This process was undertaken for all domains. The tool allows blocks to be aggregated into the minimum stope dimensions and eliminate outliers that do not comply with these conditions.

14.5. Mineral Resource Estimate Statement

The QP for the Mineral Resource estimates at Santa Elena is Mr. Phillip Spurgeon, P. Geo., who is an employee of First Majestic.

The Mineral Resources estimated for the Santa Elena mine are reported assuming underground mining methods, and a cut-off grade of between 90–95 g/t Ag-Eq, depending on the domain. The Mineral Resources on the heap leach pad are reported based on the reprocessing of previously partially heap leached material with a cut-off grade of 65 g/t Ag-Eq. The Mineral Resources for the Ermitaño project are reported assuming underground mining methods and a cut-off grade of 110 g/t Ag-Eq.

All Mineral Resources are reported using the 2014 CIM Definition Standards with an effective date of December 31, 2020.

Measured and Indicated Mineral Resource Estimates for the Santa Elena mine are provided in Table 14-17 and Inferred Mineral Resource estimates are included in Table 14-18. Measured and Indicated Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 14-17: Santa Elena Mineral Resource Estimates, Measured and Indicated Category (effective date December 31, 2020)

Project	Domain	Category	Mineral Type	Tonnage	Grades			Metal Content		
				k tonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Santa Elena	Main Vein	Measured	Sulphides	464	107	1.63	244	1,590	24	3,650
	Alejandras	Measured	Sulphides	230	234	2.67	459	1,730	20	3,390
	America	Measured	Sulphides	137	235	1.74	382	1,030	8	1,680
ALL	**Total Measured**		**Sulphides**	**830**	**163**	**1.94**	**326**	**4,350**	**52**	**8,720**
Santa Elena	Main Vein	Indicated	Sulphides	1,710	91	1.30	200	5,000	71	11,020
	Alejandra	Indicated	Sulphides	259	214	2.23	402	1,780	19	3,350
	Americas	Indicated	Sulphides	189	292	1.39	410	1,780	8	2,490
	Tortuga	Indicated	Sulphides	119	112	2.39	314	430	9	1,200
Heap Leach	Heap Leach Pad	Indicated	Oxides Spent Ore	509	24	0.56	73	400	9	1,190
Ermitano	Ermitano	Indicated	Sulphides	1,402	81	5.62	602	3,640	253	27,120
	Ermitano Stockwork	Indicated	Sulphides	612	40	1.78	204	780	35	4,020
	Intermedias	Indicated	Sulphides	252	58	4.28	454	470	35	3,680
	Other Minor Veins	Indicated	Sulphides	187	20	2.05	210	120	12	1,260
ALL	**Total Indicated**		**All Mineral Types**	**5,238**	**86**	**2.68**	**329**	**14,400**	**452**	**55,330**
ALL	**Total Measured and Indicated**		**All Mineral Types**	**6,069**	**96**	**2.58**	**328**	**18,750**	**503**	**64,050**

Table 14-18: Santa Elena Mineral Resource Estimates, Inferred Category (effective date December 31, 2020)

Project	Domain	Category	Mineral Type	Tonnage	Grades			Metal Content		
				k tonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Santa Elena	Main Vein	Inferred	Sulphides	845	64	0.91	141	1,730	25	3,830
	Alejandras	Inferred	Sulphides	443	191	1.67	332	2,720	24	4,730
	America	Inferred	Sulphides	202	311	0.99	394	2,020	6	2,560
	Tortuga	Inferred	Sulphides	30	73	0.91	149	70	1	140
Ermitano	Ermitano	Inferred	Sulphides	3,245	50	3.00	329	5,260	313	34,310
	Ermitano Stockwork	Inferred	Sulphides	901	48	1.67	203	1,400	48	5,870
	Intermedias	Inferred	Sulphides	534	65	3.22	364	1,120	55	6,250
	Other Minor Veins	Inferred	Sulphides	887	28	1.81	196	800	52	5,600
	Soledad	Inferred	Sulphides	455	172	3.62	507	2,510	53	7,420
ALL	**Total Inferred**		**Sulphides**	**7,541**	**73**	**2.38**	**292**	**17,630**	**578**	**70,710**

(1) Mineral Resource estimates are classified in accordance with the CIM Definition Standards on Mineral Resources and Mineral Reserves, whose definitions are incorporated by reference into NI 43-101.

(2) The Mineral Resource estimates are based on internal estimates prepared as of December 31, 2020. The information provided was reviewed and prepared by Phillip Spurgeon, P.Geo., a First Majestic employee.

(3) Silver-equivalent grade is estimated considering metal price assumptions, metallurgical recovery, and the metal payable terms. Ag-Eq = Ag Grade + (Au Grade x Au Recovery x Au Payable x Au Price) / (Ag Recovery x Ag Payable x Ag Price).

(4) Metal prices used in the Mineral Resources estimates were $22.50/oz Ag and $1,850/oz Au.

(5) Metallurgical recovery was 93% for silver and 95.6% for gold for Santa Elena and the heap leach pad. For Ermitaño, the metallurgical recovery used was 85.2% for silver and 96.1% for gold.

(6) Metal payable used was 99.85% for silver and 99.80% gold.

(7) The cut-off grade used to constrain the Mineral Resource estimate was 95 g/t Ag-Eq for the Main Vein, 65 g/t Ag-Eq for the heap leach pad and 90 g/t Ag-Eq for all other Santa Elena mine domain. The cut-offs used were based on actual and budgeted operating and sustaining costs. The cut-off grade used to constrain Mineral Resources was 110 g/t Ag-Eq for the Ermitaño zone domains.

(8) Tonnage is expressed in thousands of tonnes; metal content is expressed in thousands of ounces.

(9) Totals may not add up due to rounding.

(10) Measured and Indicated Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

14.6. Factors that May Affect the Mineral Resource Estimates

Factors that may materially impact the Mineral Resource estimates include:

- Metal price and exchange rate assumptions;
- Changes to the assumptions used to generate the silver-equivalent grade cut-off grade;
- Changes in local interpretations of mineralization geometry and continuity of mineralized zones;
- Changes to geological and mineralization shape and geological and grade continuity assumptions;
- Changes to geotechnical, mining, and metallurgical recovery assumptions;
- Assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate.
- The production channel sampling method has some risk of non-representative sampling that could result in poor accuracy locally. In addition, there is potential for the large number of channel samples to overwhelm samples from the drill holes in some areas. This is recognized and addressed during resource estimation by restricting the area of influence related to these samples to very short ranges.

14.7. Comment on Section 14

The QP is of the opinion that the Mineral Resource estimates for the Santa Elena mine and Ermitaño project were estimated using industry best practices and conform to the 2014 CIM Definition Standards for Mineral Resources. To the extent currently known, there are no environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other factors or risks that could materially affect the development of the mineral resources. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

15. MINERAL RESERVE ESTIMATES

This section summarizes the methods, assumptions, parameters, and modifying factors used by First Majestic in the preparation of the Mineral Reserve estimates for the Santa Elena mine.

The mine design and scheduling work supporting the compilation of the Mineral Reserve estimates discussed herein was prepared by Haydee Olvera Prado, First Majestic's Mine Engineering Manager and other staff members whose work was performed under the direct supervision of Mr. Ramón Mendoza Reyes, P.Eng., Mr Mendoza Reyes is the QP responsible for these estimates.

15.1. Methodology

The Mineral Reserve estimation process consists of converting Measured and Indicated Mineral Resources to Proven and Probable Mineral Reserves by identifying material that exceeds the mining cut-off grades while conforming to specified geometrical constraints determined by the applicable mining method, and applying modifying factors such as mining dilution and mining recovery factors. Other factors considered for the conversion of Mineral Resources into Mineral Reserves included the review of the following aspects:

- Status of the mining concessions, and surface land agreements for access and operation;
- Environmental aspects and permits in place that enable mining and processing of the mineralized material;
- Condition and availavility of the existing infrastructure and logistics for supplies delivery and transportation of products and goods;
- Status of the selling contract(s) of the doré produced;
- Status of the social license and community relations that enable the continuity of the operation;
- Assessment of the relations with local and state governments in support of the continuity of the operation.

If the Measured and Indicated Mineral Resources comply with the previous constraints and criteria, Measured Mineral Resources could be converted to Proven Mineral Reserves and Mineral Indicated Resources could be converted to Probable Mineral Reserves In some instances Measured Mineral Resources could be converted to Probable Mineral Reserves if any or more of the modifying factors reduced the confidence of the estimates.

The conversion of Measured and Indicated Mineral Resources to Proven and Probable Mineral Reserves estimates involves the following procedures:

- Selection of a viable mining method for each of the geological domains, considering geometry of the deposit, geotechnical and geohydrological conditions, metal grade distribution as observed during the examination of the block model and other mine design criteria;

- Review metal price assumptions approved by First Majestic's management for Mineral Resource and Mineral Reserve estimates to be considered reasonable and following the "2020 CIM Guidance on Commodity Pricing and Other Issues related to Mineral Resource and Mineral Reserve Estimation and Reporting";
- Calculate Ag-Eq, NSR and cut-off grades (COGs), based on the assumed metal price guidance, assumed cost data, metallurgical recoveries, and smelting and refining terms as per the selling contracts;
- Prepare the block models by adding an Ag-Eq field, which is used in the stope optimization, and ensuring Inferred Mineral Resources will not be considered in the Mineral Reserves constraining process;
- Compile relevant mine design parameters such as stope dimensions, minimum mining widths and pillar dimensions;
- Compile modifying factors such as dilution from blasting overbreak and geotechnical conditions as well as mining loss considering benchmarking from actual surveys and underground observations;
- Outline potentially-mineable shapes from the block model based on Measured and Indicated Mineral Resources that exceed the COG;
- Screen potentially-mineable shapes using stope optimization mining software to account for vein widths, minimum mining widths, dilution assumptions and economic factors;
- Refine potentially-mineable shapes by removing permanent sill and rib pillars, and removing areas identified as inaccessible due to geotechnical or stability conditions;
- Design mine development and mine infrastructure required to access the potentially-mineable shapes;
- Carry out an economic analysis for groups of potentially-mineable shapes, such as sublevels or contiguous groups of shapes, removing areas that are isolated from contiguous mining areas that will not cover the cost of development to reach those areas;
- Set the mining sequence and define the production rates for each relevant area to produce the production schedule;
- Estimate capital and operating costs required to extract this material and produce a saleable product;
- Estimate expected revenue after considering the assumed metallurgical recoveries, processing costs, indirect and sustaining costs, and discounting selling costs;
- Validate the economic viability of the overall plan with a discounted cash flow model;

Once these steps were completed and a positive cash flow was determined, the Mineral Reserve statement was prepared.

The common mining methods used in the Santa Elena mine are sublevel longhole stoping (longhole), longhole avoca (Avoca) and cut-and-fill. The assigned method to a vein depends on the vein characteristics and rock mass characteristics (i.e., width, dip, and rock competence, among others). In 2020, the contribution of the ROM production by mining method was 50% longhole and 35% cut-and-fill, with the remaining 15% coming from development in ore.

15.2. NSR and Cut-off Grade Estimation

The Ag-Eq grade is the variable that was used as indicator to segregate if the revenue from the mineralized material in a block that is part of the Measured and Indicated Mineral Resources exceeds the costs of extraction and processing. The silver and gold grades were expressed in terms of a silver-equivalent grade (Ag-Eq) and calculated by:

$$\boxed{Ag - Eq\ Grade = Ag\ Grade + Au\ Grade * \frac{(Au\ Recovery * Au\ Payable * Au\ Price)}{(Ag\ Recovery * Ag\ Payable * Ag\ Price)}}$$

Where, Ag grade is the silver in grams per tonne, Au grade is the gold in grams per tonne, Recovery is the metallurgical recovery percentage of gold and silver, Payable is the percentage payable by the refineries and Price is the metal price of gold and silver, respectively.

The Ag-Eq grade was coded into the block model.

The COG was used as the main economic constraint and was derived from an NSR model. There were two cases assumed for calculating NSR, the general NSR used to calculate the expected revenue when considering the impact of the stream in the net price of gold, and the incremental NSR used to assess the opportunity of extracting additional material from already developed areas.

A multiple COG approach was used for each mining method, as this allowed the operation to assess the opportunity of extracting incremental economic material and adjust the mine design accordingly.

The fully costed COG represents the calculated Ag-Eq grade that mineralized material must meet in order to cover the associated operating and capital costs of extraction and processing.

An incremental COG can be used when the operation has already invested in development and access infrastructure, and mining of additional blocks is not required to cover these costs. When lower-grade mineralisation is mined to access higher-grade economic material and the expected value of this mineralised material exceeds the cost of the incremental haulage, processing, treatment, and overhead costs, then this material can be sent to the processing plant rather than the waste storage facility and generate a profit. This material is segregated by considering the marginal COG.

The cost components covered by each COG are displayed below in Table 15-1.

Table 15-1: Cut-Off Grade Components

Cut-Off Grade Components	Processing	Haulage	Admin	Treatment	Stoping	Development	Sustaining Capital
Fully Costed	Y	Y	Y	Y	Y	Y	Y[1]
Incremental	Y	Y	Y[2]	Y	Y	-	-
Marginal	Y	Y	Y[2]	-	-	-	-

[1] High-level assessments only. [2] If material adds to mine life

The average all-in-sustaining mining cost assumed for the Santa Elena mine was $84.70/t, which includes sustaining development and sustaining capital. This estimate was based on actual costs from 2019 and Q1-2020 for each of the mining methods as presented in Table 15-2.

Table 15-2: Cut-Off Grade Estimates

Input	**Unit**	**General**	**Incremental**	**Payable**	**Processing Recovery**
Silver	USD / oz.	20.0	20	99.85 %	94.0
Gold	USD / oz.	1454	1700	99.80 %	96.5
Royalties	%	-	-		
Transportation, Loading, Insurance	$ / oz Dore	0.05	0.05		
Refining and Selling Expense – Ag	$	0.24	0.24		
Refining and Selling Expense – Au	$	0.75	0.75		
Component		**Ag**	**Au**		
Ag Equivalent Ratio	AgEq	1	87.3		
Value	$ / g	0.006	**0.446**		
Costs	**$ / t ore**	**Longhole - Wide**	**Longhole - Narrow**	**Cut & Fill - Wide**	**Cut & Fill - Narrow**
Direct Stoping Costs	*$ / t ore*	*25.33*	*36.14*	*28.76*	*24.93*
Haulage	*$ / t ore*	*2.63*	*2.63*	*2.63*	*2.63*
Milling	*$ / t ore*	*31.13*	*31.13*	*31.13*	*31.13*
Indirect Operating Mining Costs	*$ / t ore*	*11.37*	*11.37*	*11.37*	*11.37*
General and Administration	*$ / t ore*	*0.49*	*0.49*	*0.49*	*0.49*
Total Operating Costs	$ / t ore	70.95	81.77	74.38	70.55
Sustaining Costs	$ / t ore	10.48	10.48	10.48	10.48
Break Even	**$ / t ore**	**81.43**	**92.24**	**84.86**	**81.03**
Incremental[1]	**$ / t ore**	**63.84**	**68.58**	**63.05**	**60.17**
Marginal[2]	**$ / t ore**	**36.73**	**36.73**	**36.73**	**36.73**
Cut-Off Grade[3]	**Metal**	**Longhole - Wide**	**Longhole - Narrow**	**Cut & Fill - Wide**	**Cut & Fill - Narrow**
Cut-Off Grade: General	g/t AgEq	140	155	145	140
Cut-Off Grade: Incremental	g/t AgEq	110	115	105	100
Cut-Off Grade: Marginal	g/t AgEq	60	60	60	60

[1] Incremental costs assume variable milling and sustaining costs.

[2] Marginal costs assume variable milling rates and no stoping or sustaining costs.

[3] Cut-off Grade of the diluted mining shape required for economic extraction of the material.

15.3. Modifying Factors, Dilution, and Mining Loss

Modifying mining factors are the combination of dilution and recovery factors that affect material quality and quantity of an operation. Dilution is waste material that enters the material movement stream and often has two negative impacts:

- Increased cost (mining, processing, treatment and increasing the storage of tailings);
- Increased mined material loss (through processing and impacting on mining recoveries).

There are multiple sources of dilution and which can be classified in the following two categories:

- Planned dilution;

- Unplanned dilution.

Planned dilution is additional waste that is deliberately mined concurrently with the target mineralised material, allowing the mineralised material to be fully recovered; however, leading to an overall lower grade being mined.

Unplanned dilution is waste material that unintentionally finds its way into the plant-feed during the course of extraction and can be from a variety of sources including:

- Over-break during mining;
- Backfill dilution from adjacent stopes;
- Mucking of waste material (or backfill or road base material) during the mucking of mineralised material;
- Misrouting and dumping of waste material on the plant-feed stockpile;
- Misrouting and dumping of waste in ore locations (stockpiles, ore-passes) leading to a mixing of mineralised material and waste rock.

Table 15-3 summarises the unplanned dilution and mining loss by mining method.

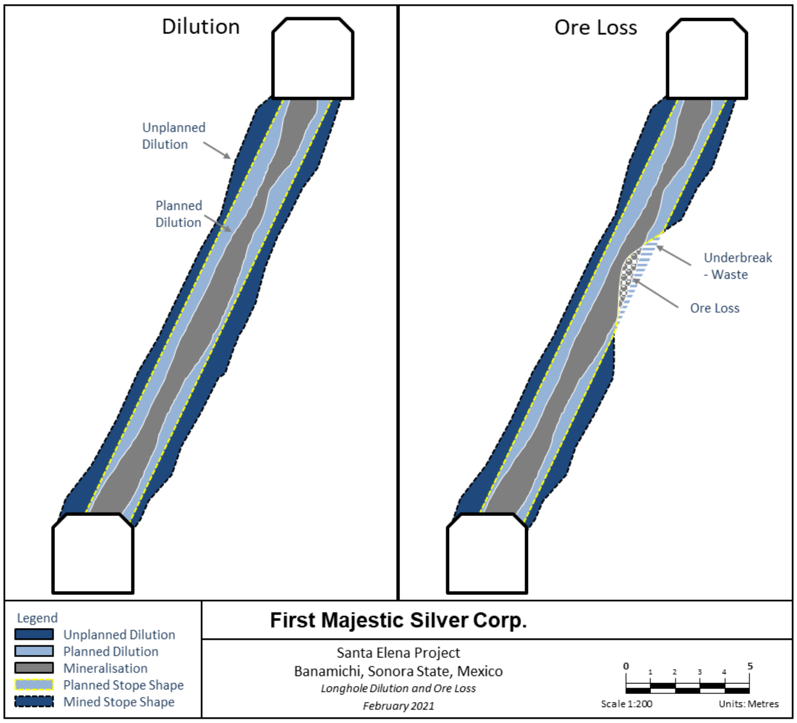
Table 15-3: Dilution and Mining Loss Modifying Factors

Mining Method	Unplanned Rehandling /Mucking Dilution (%)	Unplanned Floor Dilution (%)	Mining Loss (%)
Development	8	2 Jumbo/1 Jackleg	5
Cut-and-fill	8	2 Jumbo/1 Jackleg	5
Avoca	8	2	5
Longhole Stoping	8	2	5

Mining loss has a significant impact on the mining business, with a reduction of revenue through the loss of mineralised material. Mining loss can occur in a variety of different ways such as poor blasting, poor recovery of blasted muck, and weak ground conditions impacting on the access to the mineralised material, among others. Mining loss was considered as an allowance for a reduction in production and revenue.

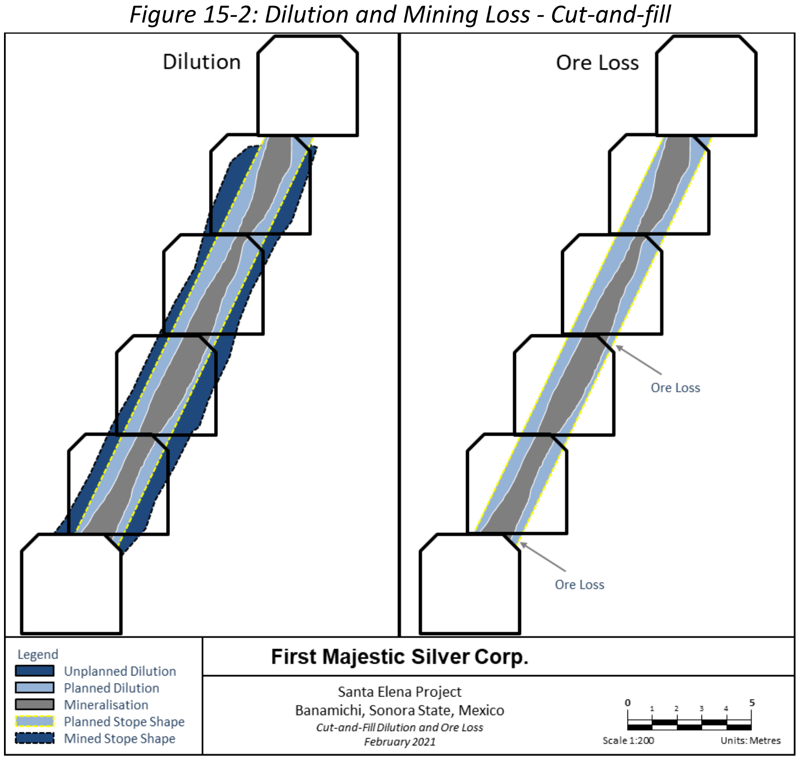
An example of dilution and underbreak, which impacts mining loss, due to blasting performance is illustrated in Figure 15-1 and Figure 15-2. Underbreak in waste is an economic benefit; however, it also reflects that the operation is not achieving the target mining shape.

Figure 15-1: Dilution and Mining Loss - Longhole and Avoca



Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

Figure 15-2: Dilution and Mining Loss - Cut-and-fill



Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

15.4. Potentially-Mineable Shapes

The mine planning software used for identifying potentially-mineable shapes is Deswik's Stope Optimizer (DSO), which is used to discretize the mineralized structures by generating stope shapes following the assigned mining method geometry and the mineralized structure.

Stope shapes were generated with DSO after defining properties for the stopes including the general shape and orientation, cut-off grade, pillar sizes, minimum mining width, dilution and mining limits.

The next step consisted of introducing the remainder of the mining modifying mining factors into the model, which are used to estimate diluted grades by adding external dilution assumptions and the mining loss factor.

Mineable zones were first identified by the general COG and classification criteria. DSO was then used to create shapes that are diluted to the minimum mining width. Stopes shapes that met the COG criteria were then considered for mine planning purposes. A second pass was carried out to identify adjacent shapes in each vein that met the incremental cut-off grade of 110 g/t Ag-Eq for the Main Vein, and 105 g/t Ag-Eq for the Alejandras, Americas, and Tortugas Veins.

The stope design methodology is discussed in Sections 16.4.1, 16.4.2 and 16.4.3.

15.5. Leach Pad Material

Based on topographic survey and reconciliation with production data, approximately 500 kt of previously-processed material remains on the leach pad as of December 31, 2020.

The factors used to test the economic merit for the heap-leach pad material to be reprocessed are:

- Direct mining cost: $28.88/t;
- G&A and indirect mining cost $11.86/t;
- Sustaining cost $1.93/t;
- Ag metallurgical recovery 93.0%;
- Au metallurgical recovery 95.6%;
- Ag payable 99.85%;
- Au payable 99.80%;
- Ag metal price $20.00/oz;
- Au metal price $1,700/oz.

These economic parameters result in a Ag-Eq cut-off grade of 70 g/t.

The average grade for the heap-leach pad material is above cut-off grade; therefore. all the material remaining on the pad is classified as Mineral Reserves.

15.6. Mineral Reserve Estimate

Mineral Reserve estimates were based on mining modifying factors gathered from actual operations data as well as from estimates that followed industry best practices.

Modifying factors for mining were applied to the Measured and Indicated Mineral Resources using a stope-by-stope evaluation and are considered to be suitable for conversion to Mineral Reserves. To convert from Mineral Resources to Mineral Reserves, the resource blocks were interrogated by applying economic criteria as well as geometric constraints based on the mining method envisioned. Mineable blocks or stopes were defined by following this process.

The Mineral Reserve estimate is provided in Table 15-4, which includes material to be extracted from the underground mine and material from the heap-leach pad to be reprocessed.

Factors which may materially affect the Mineral Reserve estimates for the Santa Elena mine include fluctuations in commodity prices and exchange rates assumptions used; material changes in the underground stability due to geotechnical conditions that may increase unplanned dilution and mining loss; unexpected variations in equipment productivity; material reduction of the capacity to process the mineralized material at the planned throughput and unexpected reduction of the metallurgical recoveries; higher than anticipated geological variability; cost escalation due to external factors; changes in the taxation considerations; the ability to maintain constant access to all working areas; changes to the assumed permitting and regulatory environment under which the mine plan was developed; the ability to maintain mining concessions and/or surface rights; the ability to renew agreements with the different surface owners in Santa Elena; and the ability to obtain and maintain social and environmental license to operate.

Table 15-4: Santa Elena Mineral Reserves Statement (Effective Date December 31, 2020)

Category	Mineral Type	Tonnage	Grades			Metal Content		
		k tonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Proven Main Vein (UG)	Sulphides	312	110	1.71	259	1,100	17.2	2,600
Proven Alejandras (UG)	Sulphides	311	166	1.87	329	1,660	18.7	3,290
Proven America (UG)	Sulphides	203	153	1.10	249	1,000	7.2	1,620
Proven Tortuga (UG)	Sulphides	-	-	-	-	-	-	-
Total Proven	**Sulphides**	**826**	**141**	**1.62**	**283**	**3,760**	**43.1**	**7,510**
Probable Main Vein (UG)	Sulphides	921	88	1.31	202	2,600	38.7	5,980
Probable Alejandras (UG)	Sulphides	307	159	1.64	303	1,570	16.2	2,980
Probable America (UG)	Sulphides	269	184	0.84	257	1,590	7.2	2,220
Probable Tortuga (UG)	Sulphides	109	91	2.19	282	320	7.7	990
Probable (PAD)	Oxides Spent Ore	509	24	0.56	73	400	9	1,190
Total Probable	**Oxides + Sulphides**	**2,114**	**95**	**1.16**	**197**	**6,480**	**78.9**	**13,360**
P&P Main Vein (UG)	Sulphides	1,233	93	1.41	216	3,700	55.9	8,580
P&P Alejandras (UG)	Sulphides	618	163	1.76	316	3,230	34.9	6,270
P&P America (UG)	Sulphides	472	171	0.95	253	2,590	14.4	3,840
P&P Tortuga (UG)	Sulphides	109	91	2.19	281	320	7.7	990
P&P (PAD)	Oxides Spent Ore	509	24	0.56	73	400	9	1,190
Total Proven & Probable	**Oxides + Sulphides**	**2,941**	**108**	**1.29**	**221**	**10,240**	**122.0**	**20,870**

(1) Mineral Reserves have been classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards on Mineral Resources and Mineral Reserves, whose definitions are incorporated by reference into NI 43-101.

(2) The Mineral Reserves statement provided in the table above is based on internal estimates prepared as of December 31, 2020. The information provided was prepared and reviewed under the supervision of Ramon Mendoza Reyes, PEng, and a Qualified Person ("QP") for the purposes of NI 43-101.

(3) Silver-equivalent grade (Ag-Eq) is estimated considering metal price assumptions, metallurgical recovery for the corresponding mineral type/mineral process and the metal payable of the selling contract.

a) The Ag-Eq grade formula used was:

*Ag-Eq Grade = Ag Grade + Au Grade * (Au Recovery * Au Payable * Au Price) / (Ag Recovery * Ag Payable * Ag Price).*

b) Metal prices considered for Mineral Reserves estimates were $20.00/oz Ag and $1,700.00/oz Au.

c) Other key assumptions and parameters include: Metallurgical recoveries of 94.00% for silver, 96.50% for gold; metal payable of 99.85% for silver and 99.80% for gold; direct mining costs of US$25.33/t, mill feed, process and treatment costs of US$31.13/t mill feed and general and administration (indirect costs) of US$11.37/t.

(4) A two-step constraining approach has been implemented to estimate reserves for each mining method in use: A General Cut-Off Grade (GC) was used to delimit new mining areas that will require development of access, infrastructure, and all sustaining costs. A second Incremental Cut-Off Grade (IC) was considered to include adjacent mineralized material which recoverable value pays for all associated costs, including but not limited to the variable cost of mining and processing, indirect costs, treatment, administration costs and plant sustaining costs but excludes the access development assumed to be covered by the block above the GC grade.

(5) Modifying factors for conversion of resources to reserves include consideration for planned dilution due to geometric aspects of the designed stopes and economic zones, and additional dilution consideration due to unplanned events, materials handling and other operating aspects. Mineable shapes were used as geometric constraints.

(6) Tonnage is expressed in thousands of tonnes, metal content is expressed in thousands of ounces. Metal prices and costs expressed in USD.

(7) Numbers have been rounded as required by reporting guidelines. Totals may not sum due to rounding.

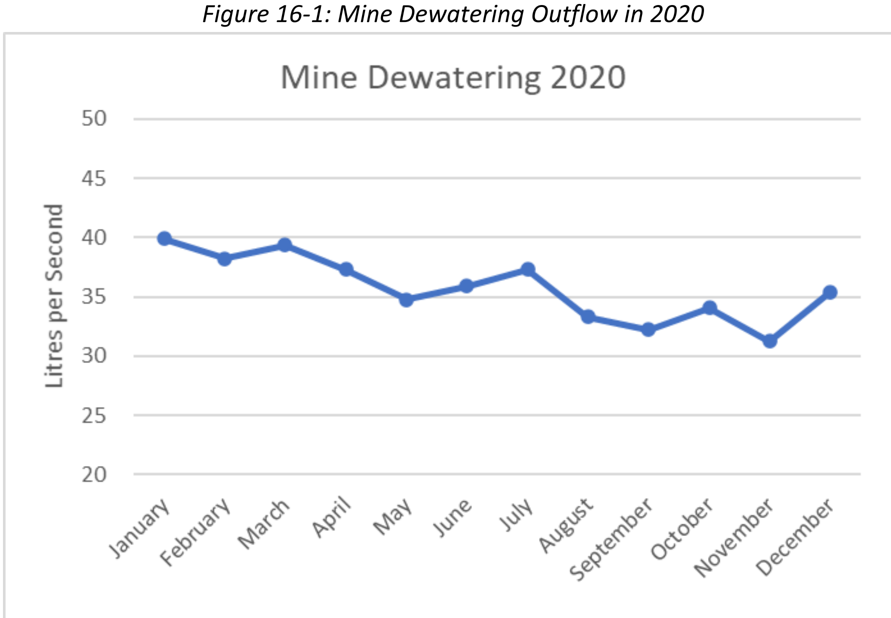
16. MINING METHODS

16.1. Hydrogeological Considerations

A series of borehole packer tests were conducted to estimate the mine dewatering requirements during advancement of the main decline ramp. A total of 15 tests were completed in 2011 and used to estimate the hydraulic conductivity of the fractured rock, which was estimated to be low. Mine dewatering estimates were made using the Marinelli and Niccoli method as well as the Singh and Atkins method. The maximum expected dewatering rate was estimated to be 1 L/s in the Western decline ramp, and 6 L/s in the Easter decline ramp.

Mine outflow is recorded by the mine with a flowmeter in the discharge pipe to track the daily dewatering volume. The pumped volume, including the ground and services water, ranges from 32–40 L/s pumped from the mine and averaged 36 L/s in 2020. The monthly outflow measurements are plotted in Figure 16-1.

Figure 16-1: Mine Dewatering Outflow in 2020



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

The peak dewatering volumes have typically been associated with pump failures, which result in accumulation of water at the base the ramp. With sufficient backup pumps, mining normally continues unhindered while the main pumps are repaired.

There are currently no indications that additional groundwater will significantly impact the mine dewatering system going forward; however, mapping of any groundwater-bearing structures in level workings and ramps is conducted to determine if additional dewatering will be required.

16.2. Geotechnical Considerations

16.2.1. Investigation

Geotechnical investigations have been completed by third parties for First Majestic since the acquisition of Santa Elena in 2015. Geotechnical parameters for rock mass classification are regularly collected using two widely-used empirical systems: the Norwegian Geotechnical Institute (NGI) Q-system after Barton et al. (1974) and the rock mass rating (RMR) system after Bieniawski (1973).

16.2.2. Structural Geology Assessment

Site geology is dominated by Tertiary andesite and rhyolite rocks. The main mineral deposits are hosted by quartz veins, quartz vein stockworks, and hydrothermal breccias. The deposits mostly follow an east–west trending structure that crosscuts the volcanic host rock. This structure is referred to as the Main Fault and is located in the hanging wall of the Main Vein. The distance from the Main Vein varies from being adjoining to 9 m away from the vein.

16.2.3. Rock Mass Characterization

The rock mass characterization work was completed during the pre-feasibility stage, and the rock mass quality was estimated by using the NGI-Q (Barton, et al, 1974) and RMR systems (Bienawski, 1973) from 16 drill holes. The rock mass was subdivided into five geotechnically distinct zones, described as follows:

1) Zone D1: Mineralized zone. The rock quality of this zone is mainly rated as follows:
    a) “Fair” to “Good” rock based on the RMR rating classification system;
    b) “Fair” to “Extremely Good” rock above elevation 580 m and “Poor” to “Very Good” rock below elevation 580 m using the Q rating classification system;
2) Zone D2: Country rock above the hanging wall, ranging from 5–-6 m to 50–60 m above the upper mineralized zone/country rock interface. The rock quality of this zone is mainly rated as follows:
    a) “Fair” to “Good” rock based on the RMR rating classification system;
    b) “Poor” to “Good” rock using the Q rating classification system;
3) Zone D3: Country rock above the hanging wall, between the upper mineralized zone/country rock interface and approximately 56 m above it. The rock quality of this zone is rated as follows:
    a) “Poor” to “Good” rock above elevation 580 m and “Fair” to “Good” rock below elevation 580 m based on the RMR rating classification system;
    b) “Poor” to ”Very Good” rock using the the Q rating classification system.
4) Zone D4: Country rock below the footwall, from 5–6 m to 50–60 m below the lower mineralized zone/country rock interface. The rock quality of this zone is rated as follows:
    a) “Fair” to “Good” rock based on the RMR rating classification system and;
    b) “Poor” to “Very Good” rock using the Q rating classification system.

5) Zone D5: Country rock below the footwall, between the lower mineralized zone/country rock interface and about 5–6 m below it. The rock quality of this zone is rated as follows:
    a) "Fair" to "Good" rock based on the RMR rating classification system and;
    b) "Poor" to "Very Good" rock using the Q rating classification system.

Geotechnical parameters were derived from drill hole logging data, with each rock mass assigned representative rock mass classification parameters, with the NGI-Q and RMR values at 50% chosen. Table 16-1 summarises the RMR and NGI-Q values for each zone by elevation.

Table 16-1: Geotechnical Parameters by Geotechnical Zone

Zone	Elevation	RMR	NGI – Q'
D1	Above 580 mRL	75	29
	Below 580 mRL	76	11
D2	Above 580 mRL	52	4
	Below 580 mRL	52	4
D3	Above 580 mRL	67	12
	Below 580 mRL	52	3
D4	Above 580 mRL	70	13
	Below 580 mRL	67	13
D5	Above 580 mRL	67	7
	Below 580 mRL	72	14

16.2.4. Mining Method: Geotechnical Considerations

Mining has been carried-out successfully since the acquisition by First Majestic in 2015. Geotechnical conditions are characterised as "Good" for the footwall, vein structures and immediate hanging wall (RMR of 67-75), with "Fair" conditions in the hanging wall >6 m (RMR of 52).

Due to the configuration of the deposit and the variety of mineralized bodies, three main types of mining methods are considered: cut-and-fill, longhole, and Avoca longhole stoping. Table 16-2 lists the mining method with respect to the deposit geometry.

Table 16-2: Assumed Mining Methods by Deposit Geometry

Deposit Dip	Deposit Thickness	Method Employed
> 50°	< 15.0 m	Longitudinal longhole stoping + Avoca (where >55°)
> 50°	> 15.0 m	
< 50°	> 0.80–15.0 m	Mechanized cut & fill (typically employed where dip is <45°)

A maximum span of 15 m wide was recommended in current cut-and-fill mining levels, with a 5 m vertical cut, and maximum strike of 100 m. The spans may not require intensive ground support, but still require local support in the immediate backs. Spans vary from level to level and within a single strike length and require assessment on an individual basis.

For areas of the orebody where the dip is favourable (>45°) and the host rock is generally good quality, longhole stoping is suitable. Maximum spans and panel lengths will be determined by local ground conditions and orebody geometry.

16.2.5. Ground Support Considerations

The following design parameter guidelines for development and production workings were outlined.

Underground development is generally positioned in the footwall where andesitic and rhyolitic rocks are present, and sill drives are positioned in ore. First Majestic technical staff regularly inspect the ground conditions and update the ground support management plan as required. The current ground support standards are summarized in Table 16-3.

Table 16-3: Ground Support Standards

Ground Type	Ground Conditions	Applicable Span	Ground Support Type	Length	Ring Spacing	Interim Ring Support
Rhyolite / Andersite	Very Good – Minimal fracturing and alterations	< 8.0 m	Rebar and mesh	2.4 m	1.5 m x 1.5 m	Chevron 0.75 m offset – 8 ft rebar
Vein	Good – Quartz, minimal alterations	8.0 – 11.0 m	Split sets with Swellex and mesh	2.4 m	1.2 m x 1.2 m	Chevron 0.6 m offset – 10 ft stabiliser bolt with Swellex
Vein	Poor to Very Poor– Fault contact	4.5 – 8.0 m	Split sets (backs), Rebar (walls), And mesh	2.4 m	1.3 m x 1.3 m	Chevron 0.65 m offset – 8 ft split set
Rhyolite / Andersite without Clay	Medium to Poor – Strong fracturing / Wedges	4.0 – 6.0 m	Mesh + Split sets with Swellex (temporary opening) or Rebar (permanent openings)	2.4 m	1.3 m x 1.3 m	Chevron 0.65 m offset – 8 ft rebar
Rhyolite / Andersite with Clay	Poor to Very Poor – Strong fracturing / Wedges	3.0 – 8.0 m	Mesh + Rebar	2.4 m	1.2 m x 1.2 m	-
Breccia within Quartz Veining	Poor – moderate alterations	All	Mesh + Split sets	2.4 m	1.2 m x 1.2 m	-
Fault Zone – Clay Content	Very Poor	All	Mesh (to 1.0 m from floor) + Rebar	2.4 m	1.2 m x 1.2 m	-

16.3. Planned Mining Methods

The Santa Elena mineral deposits vary in dip, thickness, and geotechnical conditions along strike and dip. Multiple mining methods are required to achieve the maximum efficient extraction of mineralized material.

Depending on the selected mining method, the production rate is adjusted to reflect the various productivities.

16.3.1. Longitudinal Longhole with Backfill

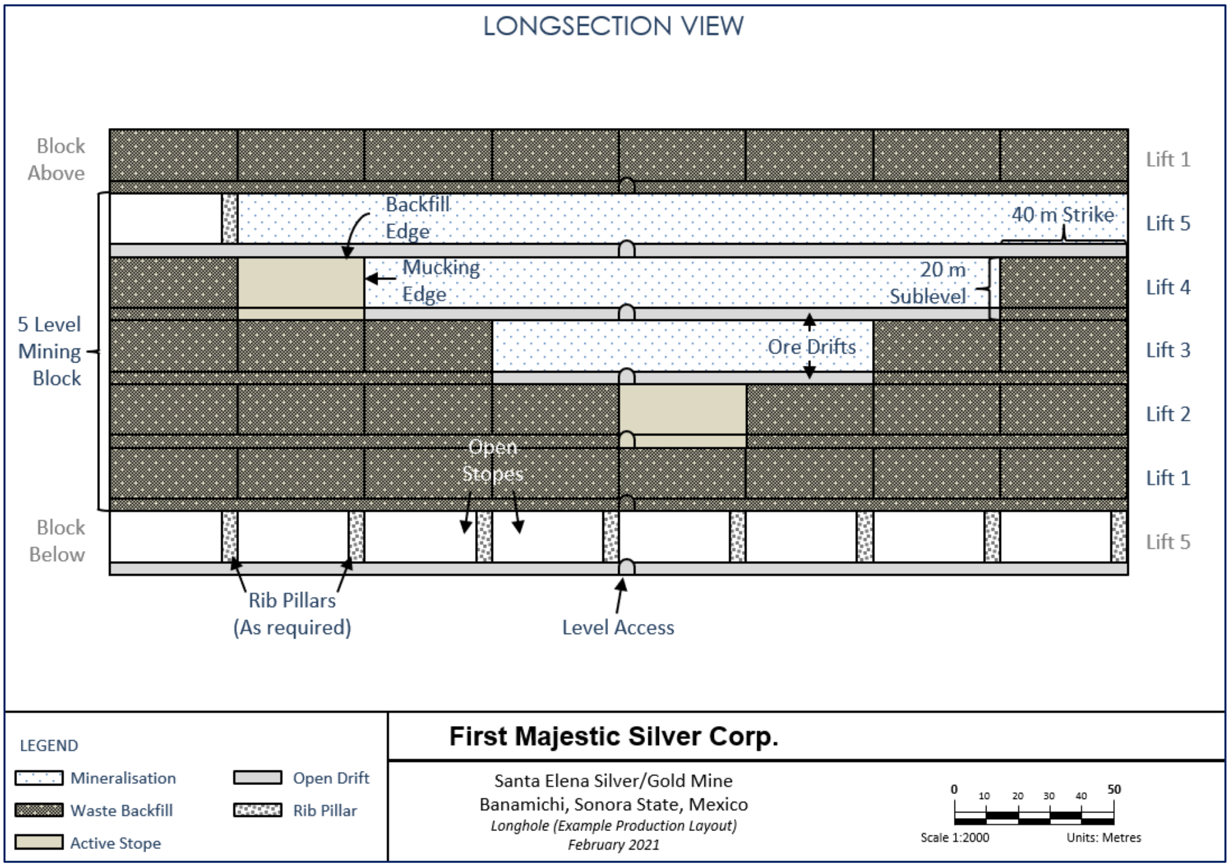
Longitudinal longhole mining is suitable where the dip of the orebody is 45° or greater, and the mineralized material is of sufficient width and grade that the estimated dilution does not eliminate the profitable recovery of the ore. Longitudinal longhole mining consists of an undercut level and an overcut level, each accessed from the main ramp or a transportation drift. Each sill is accessed perpendicular from the ramp, and then developed along strike of the vein to the economic extents of the ore.

Once sill development is completed on each level, a longhole rig drills production holes between the sills, which are then blasted in retreating vertical slices until the stoping panel is completed. Stope panel lengths are based on a hydraulic radius calculation considering the geotechnical conditions of the area. A maximum panel length of 40 m was set before placement of unconsolidated backfill. Once a sufficient stope length has been extracted and backfilled, mining can progress up-dip and extraction can recommence by opening another mining location.

Stopes are designed between 15–20 m in vertical height (floor of the undercut to the floor of the overcut level) and is the primary method used in the Alejandra Bajo, Alejandra Alto, Americas, and Tortuga Veins.

An example production layout is illustrated in Figure 16-2.

Figure 16-2: Longhole Stoping – Example Production Layout



Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

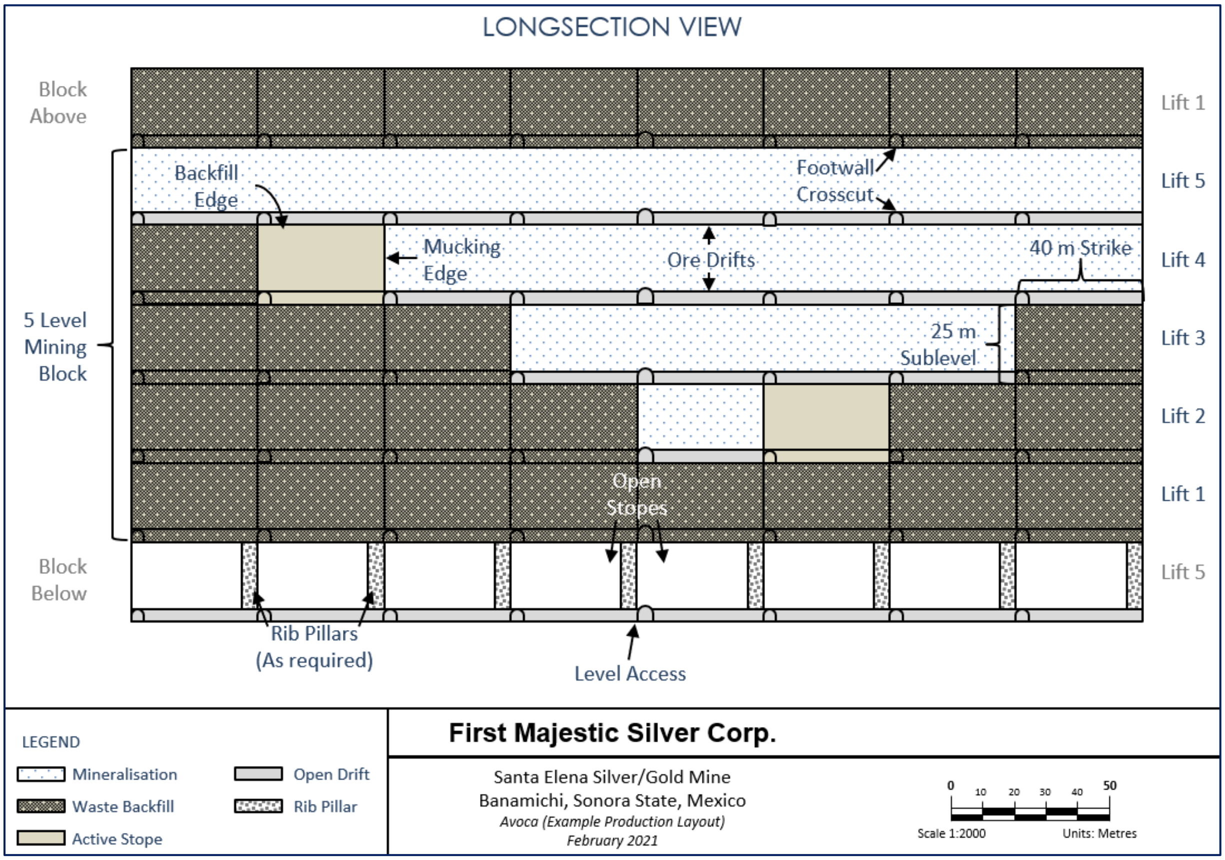
16.3.2. Avoca With Backfill

Avoca mining uses longhole stoping techniques to extract the mineralisation. The method is similar to longitudinal longhole stoping, with the difference being that Avoca uses a footwall drift, running parallel and 15 m offset from the orebody (predominately in waste) to access the mineralisation at regular intervals. Secondary crosscuts are then driven into the sill at 40 m intervals, which gives independent access to each stoping panel and allows filling and extraction to occur at different locations along the strike of the mineralisation. The operation at Santa Elena has demonstrated that in favourable conditions, Avoca mining is a safe, flexible, and cost-effective mining method.

The method is planned to be used for the extraction of the Main Vein, where existing footwall development is excavated. Avoca uses a sublevel spacing of 15–25 m between the overcut and undercut levels and uses 76 mm production blastholes. As the deposit width narrows, Avoca will be replaced by longitudinal stoping with unconsolidated backfill.

An example of the Avoca mining method production layout is provided as Figure 16-3.

Figure 16-3: Schematic of Avoca Stoping with Backfill



Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

16.3.3. Cut-And-Fill

The cut-and-fill mining method is selected for areas where the dip of the orebody is less than 45°, to minimise dilution associated with blasthole deviation and irregular footwall angles, and to minimise mining loss associated with blasted muck not reporting to the extraction drift. Cut-and-fill is mined bottom-up (i.e. up-dip or overhand) with unconsolidated fill placed after the level is completed. Ground support is installed as each round is mined.

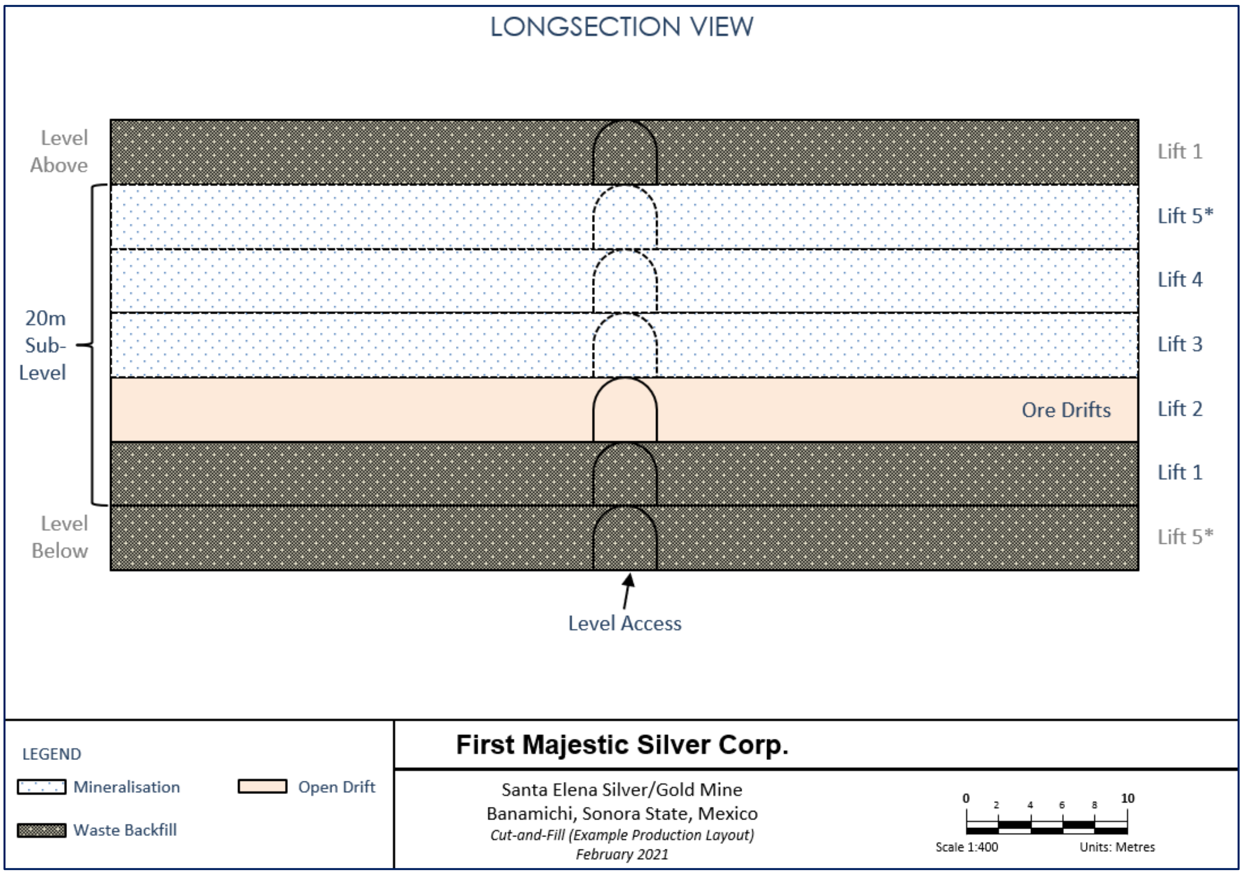
The mineralized material is accessed via an attack ramp located in the footwall of the orebody and accesses the orebody perpendicularly. The first lift is driven at minimal grade (elevated only to allow dewatering), then silled out from the hanging wall to the footwall in drifts either 4.0 m high (wide veins) or 2.5 m high (narrow veins). Once the sill is driven to the extents of the orebody, the vein is outlined in the roof of the drift and fired into the open void at either 5.0 m high (wide veins) or 2.5 m high (narrow veins). The mineralized material is then mucked, and the waste is slashed into the open void. Successive lifts are driven on top of the waste pile from the start of the attack ramp, where the brow is then slashed into to allow a ramp to be driven to access the next drift. This process is repeated until the attack ramp is too steep (>15%) to allow for haulage, and the orebody is then accessed from another sublevel.

Where it is not available from underground development, trucks backhaul fill material from waste rock stockpiles on surface, with fill being placed inside the stopes via scoop tram.

First Majestic technical staff consider that mechanized cut-and-fill mining is appropriate for portions of the Main Vein and for the Tortugas Vein.

An example long-section of the cut-and-fill mining method production layout is illustrated in Figure 16-4.

Figure 16-4: Schematic of Cut-and-Fill Stoping



Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

16.4. Underground Mining

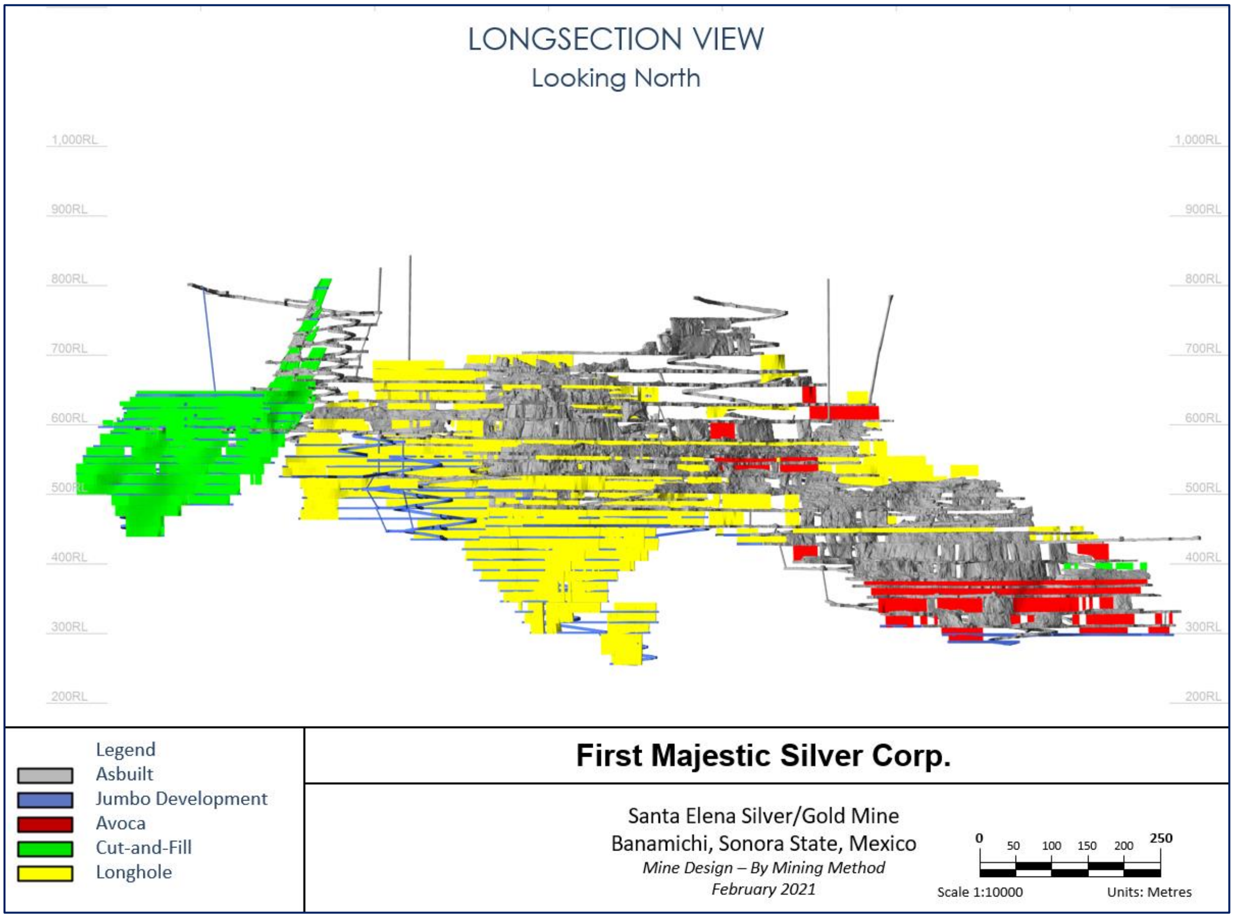
16.4.1. Mining Method Selection by Location

The mining methods selected for the different geological domains are as follows:

- Longitudinal longhole stoping (Avoca): Main Vein;
- Longitudinal longhole stoping: Main Vein, Alejandra Bajo, Alejandra Alto, and América veins;
- Mechanized cut-and-fill: Main Vein and Tortuga Vein.

Figure 16-5 illustrates where each mining method will be used.

Figure 16-5: Schematic Design by Mining Method



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

16.4.2. Stope Design Methodology

A minimum mining width of 1.2 m was designed for all mining methods. This is based on a minimum vein width of 0.8 m, plus an allowance for 0.2 m on the hanging wall and footwall. The 0.2 m of dilution on the hanging wall and footwall are added regardless of the vein width, to ensure that the mineable shapes include a reasonable amount of planned dilution. Where cut-and-fill is employed, the waste surrounding the vein will be slashed out to the width of the drift, creating a floor for the next lift.

Based on an estimate of mining costs, a COG was calculated and then applied to the different portions of the deposit identified for mining. The various COGs used throughout the mine for production design are summarized in Table 16-4.

Table 16-4: Cut-Off Grade by Vein and Mining Method

Vein	Mining Method	Fully Costed (g/t AgEq)	Incremental (g/t AgEq)	Marginal (g/t AgEq)
Main Vein	Cut-and-Fill (Wide)	145	105	60
Main Vein	Longhole / Avoca (Wide)	140	110	60
Alejandras	Longhole (Narrow)	155	115	60
Alejandras, America and Tortugas	Cut-and-Fill (Narrow)	140	100	60
Pre-processed material (heap leach)	-	-	-	70

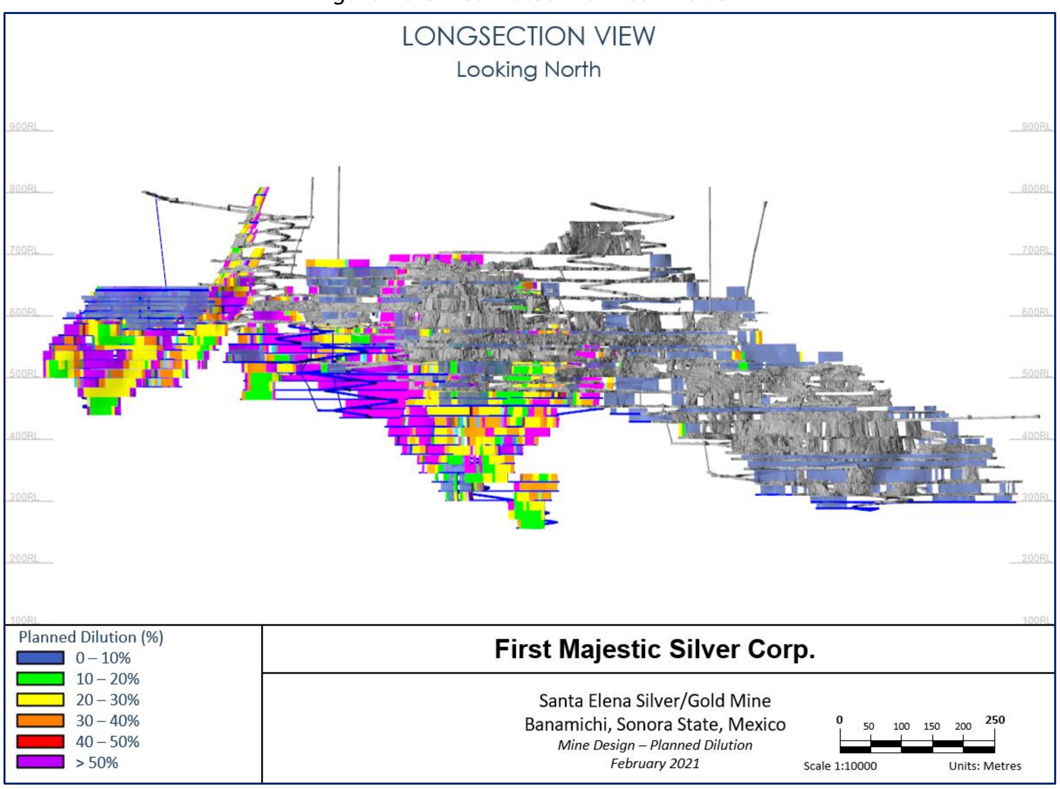
Once the mining locations were identified, an economic analysis of the stope design was completed to identify which mineable shapes supported an operation profit and therefore were to be included in the schedule, which was created using DOS.

16.4.3. Unplanned Dilution and Mining Loss

An unplanned dilution factor of 8% and a mining loss factor of 5% was applied to each production shape, (see discussion in Section 15.3). In addition to these factors, every mineable shape also included planned dilution, which represents the impact of blasting and ground stability in each vein.

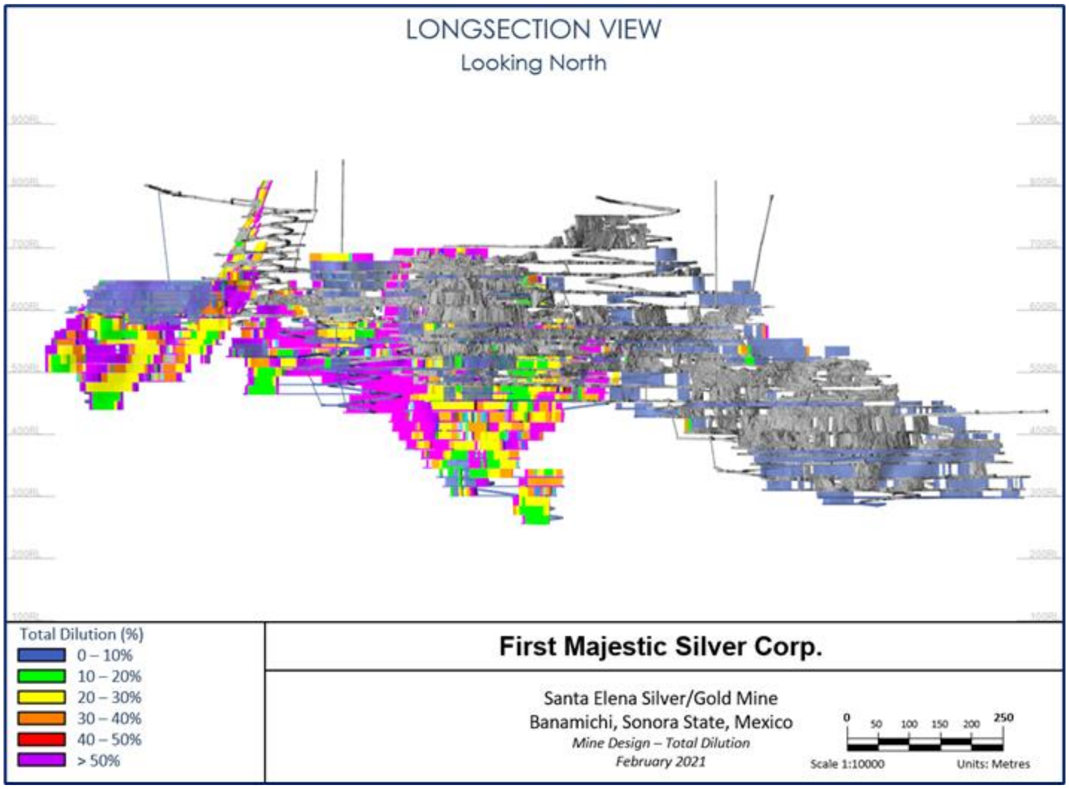
A long section of the mine design showing the planned dilution and total dilution are provided in Figure 16-6 and Figure 16-7 respectively.

Figure 16-6: Estimated Planned Dilution



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

Figure 16-7: Estimated Total Dilution



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

16.4.4. Development

The development design incorporates a minimum stand-off distance of approximately 35 m to locate the ramp away from mineralisation. This distance is assumed to avoid damage to the ramp due to ground stress changes and blasting from stope extraction. This stand-off distance also allows sufficient space between the ramp and the orebody for the excavation of the level accesses, stockpiles and sumps, and where needed, slashing for cut-and-fill drifts.

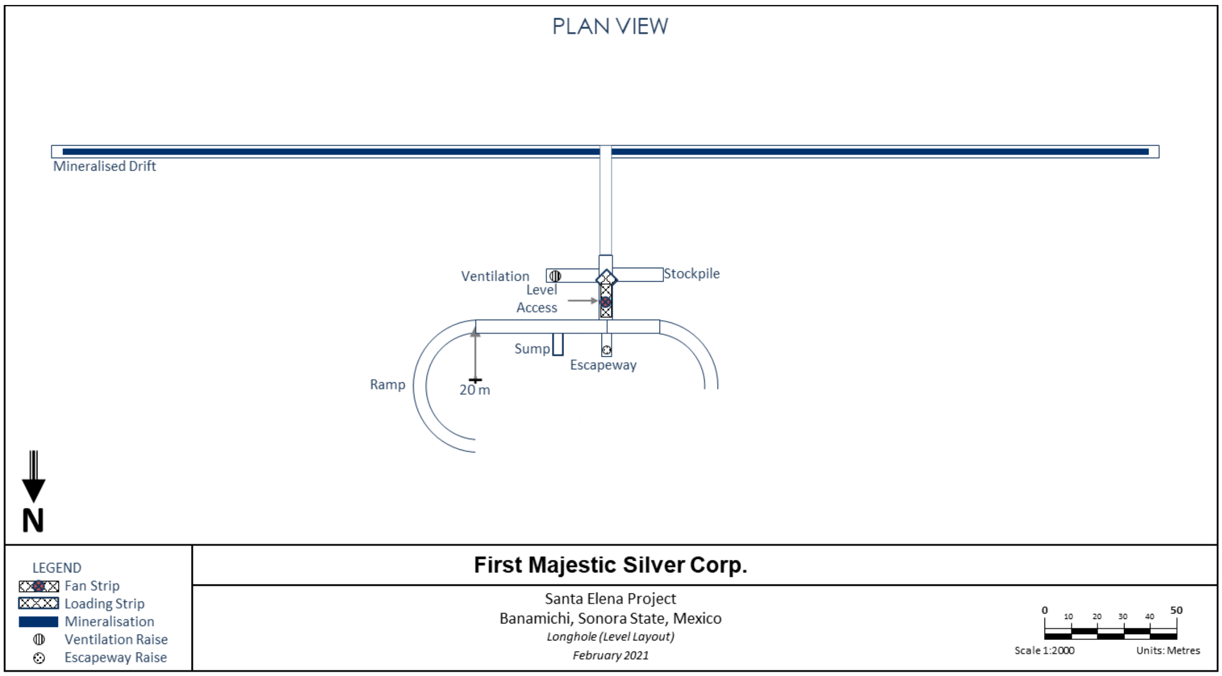
A ramp mined with an arched profile will be excavated to a width of 4.5 m and a height of 4.0 m. This profile allows sufficient room to accommodate current underground fleets as well as secondary ventilation ducting and service piping. Other planned development includes the following:

- Access drifts;
- Sills (development on mineralisation);
- Operating waste development (sills mining material below cut-off);
- Sumps;
- Escapeways and accesses to the escapeways;
- Return airways and accesses to the return airways;
- Stockpiles; and

- Ore-passes and the access to the ore-passes, where required.

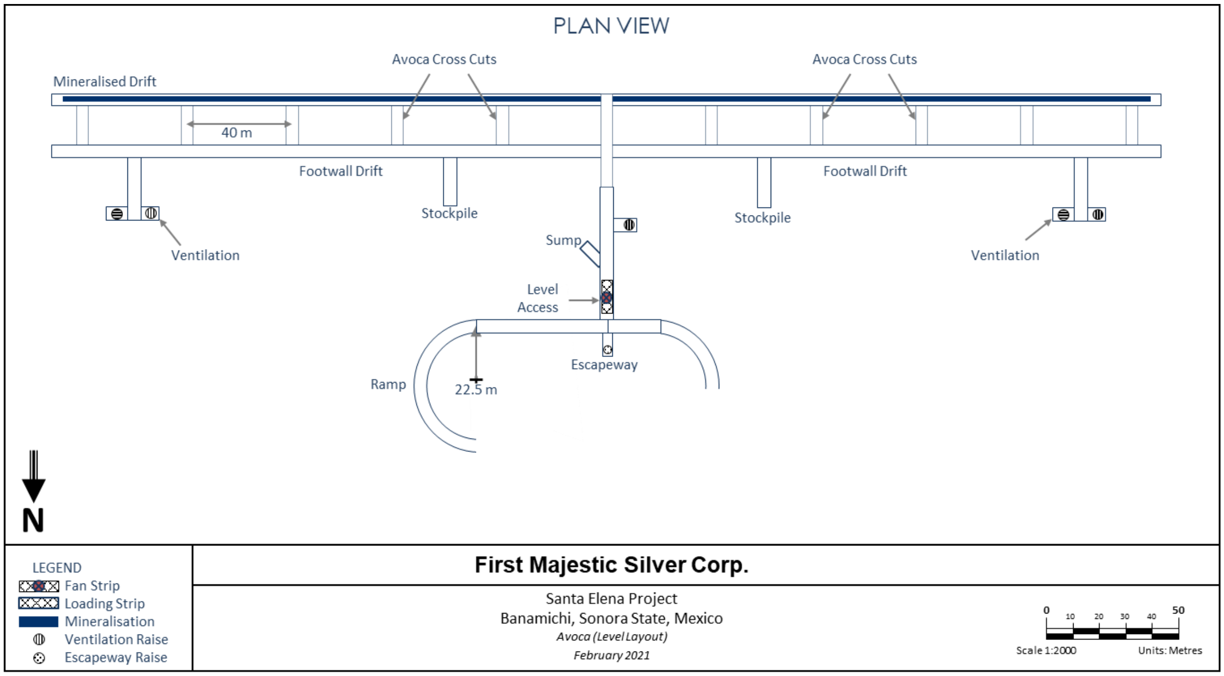
A typical level layout for longitudinal longhole stoping, and Avoca longhole stoping, and cut-and-fill are provided in Figure 16-8, Figure 16-9 and Figure 16-10. The various development profiles are shown in Table 16-5.

Figure 16-8: Level Layout – Longitudinal Longhole



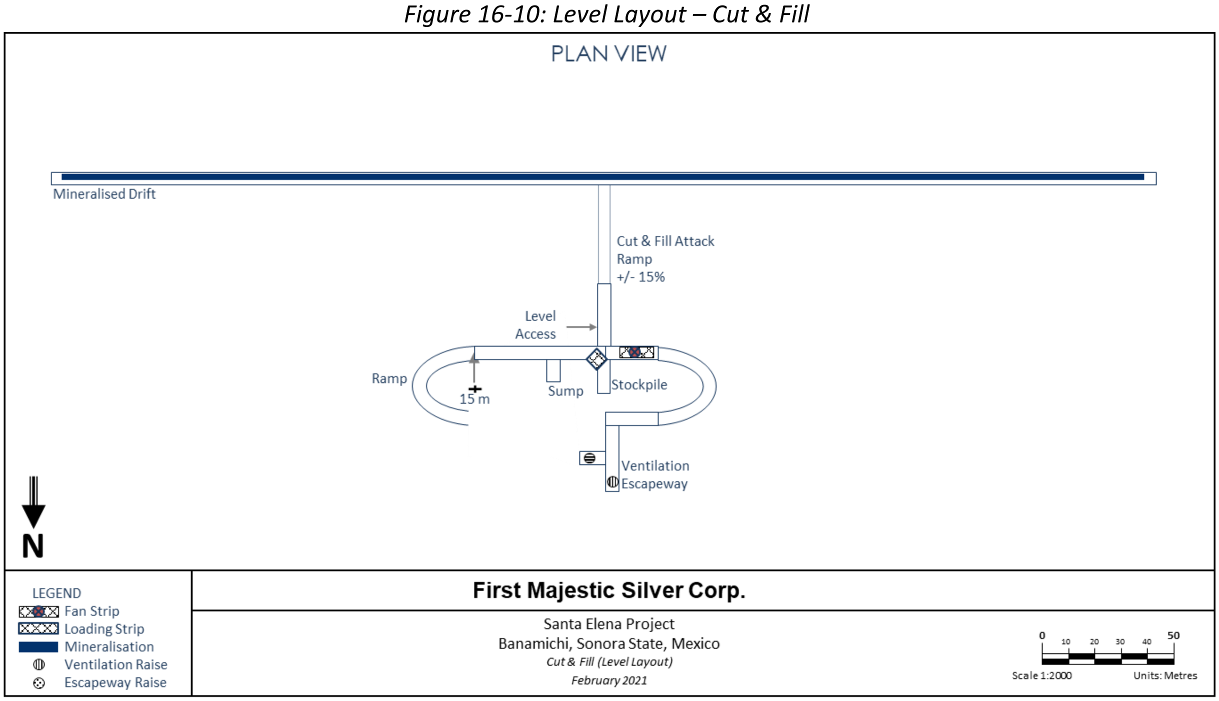
Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

Figure 16-9: Level Layout – Avoca



Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

Figure 16-10: Level Layout – Cut & Fill



Note: Figure prepared by Entech Mining Ltd. for First Majestic, February 2021.

Table 16-5: Development Profiles

Development Type	Width (m)	Height (m)
Ramp	4.5	4.0
Access	4.5	4.0
Stockpile	4.5	4.0
Ventilation Accesses	4.5	4.0
Escapeway Access	4.5	4.0
Electrical Niche	3.0	3.0
Safety Bay	2.0	2.0
Sump	4.5	4.0
Ore Drifts – Cut & Fill	4.5	4.0
Ore Drifts - Longhole	4.5	4.0
Ore Drifts - Avoca	4.5	4.0
Escapeways	1.5	-
Ventilation Raises	2.0	-

16.4.5. Mine Schedule

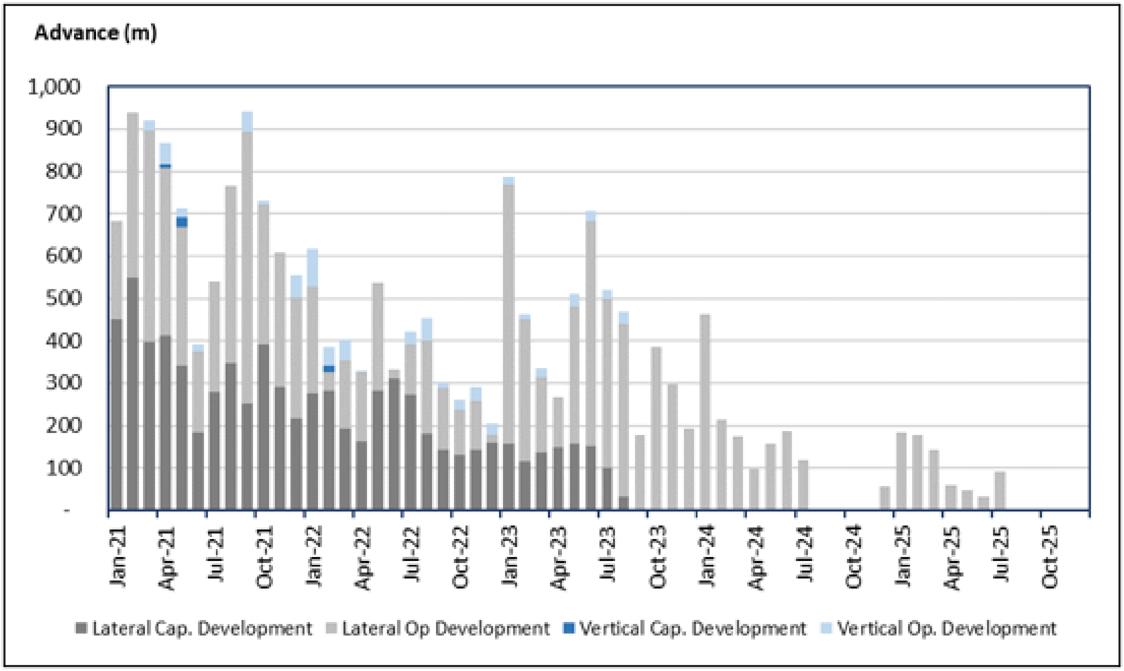
The Santa Elena mine is an established operation with historical development and production activities to guide the schedule rates. For development, a monthly rate is applied, and for production a daily rate is applied. These rates are inclusive of the time taken to drill, blast, muck and install ground support where required, and are summarized in Table 16-6.

Table 16-6: Schedule Productivities

Item	Units	Rate
Lateral Development	m / month	100
Vertical Development	t / day	50
Cut-and-Fill	t / day	250
Longitudinal Longhole	t / day	250
Longhole Avoca	t / day	250

There are eight jumbos available to the mine for development, which are considered sufficient to meet the required development metreage estimated in the LOM plan. The monthly development requirements are illustrated in Figure 16-11, and the annual development is summarized in Table 16-7.

Figure 16-11: Underground Development Requirements



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

Table 16-7: Annual Development Requirements

Lateral Development	Total	Units	2021	2022	2023	2024	2025
Capital	**7,654**	**m**	**4,112**	**2,540**	**1,003**	**0**	**0**
Ramp	4,494	m	2,206	1,620	668	0	0
Level Access	1,387	m	894	351	142	0	0
Other	1,774	m	1,012	569	192	0	0
Operating	**12,060**	**m**	**4,282**	**1,620**	**3,953**	**1,469**	**736**
Ore Drive	11,561	m	4,035	1,464	3,857	1,469	736
Other	499	m	247	156	96	0	0
Total Lateral Development	**19,714**	**m**	**8,394**	**4,160**	**4,956**	**1,469**	**736**

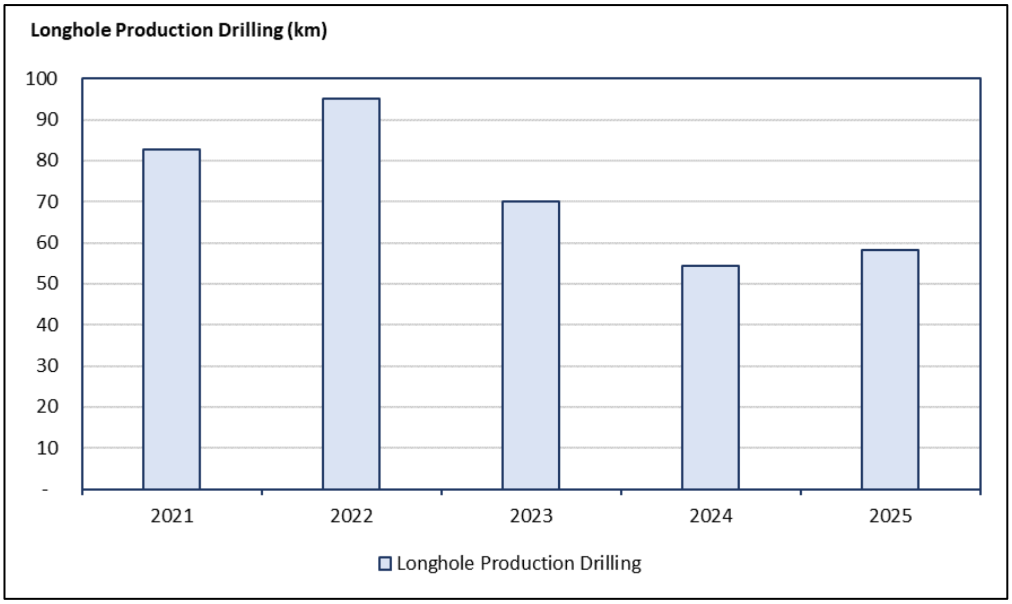
Vertical Development

Vertical development is primarily completed by conventional mining techniques up to a size of 1.5 m by 1.5 m. Large diameter raises will be excavated either by a raisebore machine (contract) or by longhole raising. For scheduling, a development rate of 1.6 m per day was applied to all vertical development.

Longhole Drilling

Longhole drilling productivity is expected to be between 70–100 m per shift based on past operating performance. The mine schedule used an average of 150 m per day (50 km per year), which allows for production drilling (6 t/drill m) and general service holes. For the Santa Elena mine, three longhole drill rigs are used, and will meet the estimated requirements as illustrated in Figure 16-12 and summarized in Table 16-8.

Figure 16-12: Longhole Drilling Requirements



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

Table 16-8: Annual Longhole Drilling Requirements

Longhole Drilling	Total	Units	2021	2022	2023	2024	2025
Production	361	km	83	95	70	54	58

Material Movement

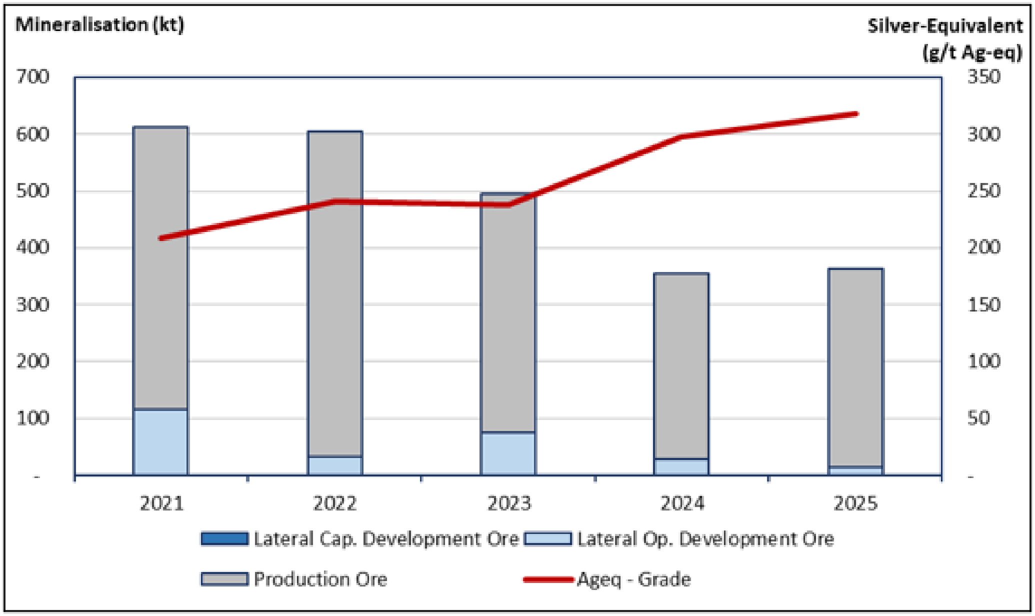
The existing load-and-haul fleet currently handles approximately 1,500 tpd (45 kt per month) from the mine, with additional haulage requirements met by the onsite contractor when required. The load-and-haul fleet used at the Santa Elena mine is summarized in Table 16-9.

Table 16-9: Load and Haul Fleet

Equipment Type	Description	Quantity
Loader	LH-410	5
Loader	LH-203	6
Loader	R-1600H	1
Loader	R-1700G	1
Loader	ST-1030	1
Truck	N-14	1
Truck	International	1
Truck	ISX-400	6
Truck	20t - Rigid Axle	6

The overall material production profile is illustrated in Figure 16-13 and summarized in Table 16-10. As the operation matures, the grade of the mineralized material increases, and overall production reduces.

Figure 16-13: Annual Production



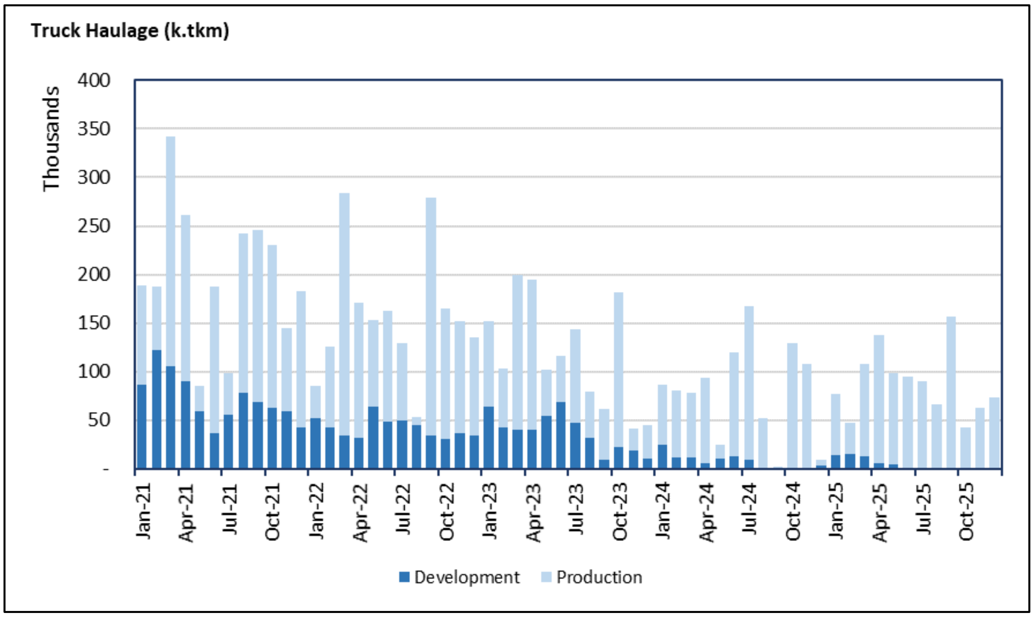
Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

Table 16-10: Annual Material Movement

Mined Material Movement	Units	Total	2021	2022	2023	2024	2025
Total Ore	kt	2,432	613	604	496	356	363
Development Ore	kt	269	117	34	75	29	15
Production Ore	kt	2,163	497	570	421	327	349
Total Waste	kt	382	202	126	54	0	0
Total Material	kt	2,814	815	730	549	356	363

Estimated truck-hauled tonne-kilometres (tkms) by month are illustrated in Figure 16-14. A 20-t truck is estimated to haul 40 k tkm in a month.

Figure 16-14: Monthly Truck Haulage (k.tkm)

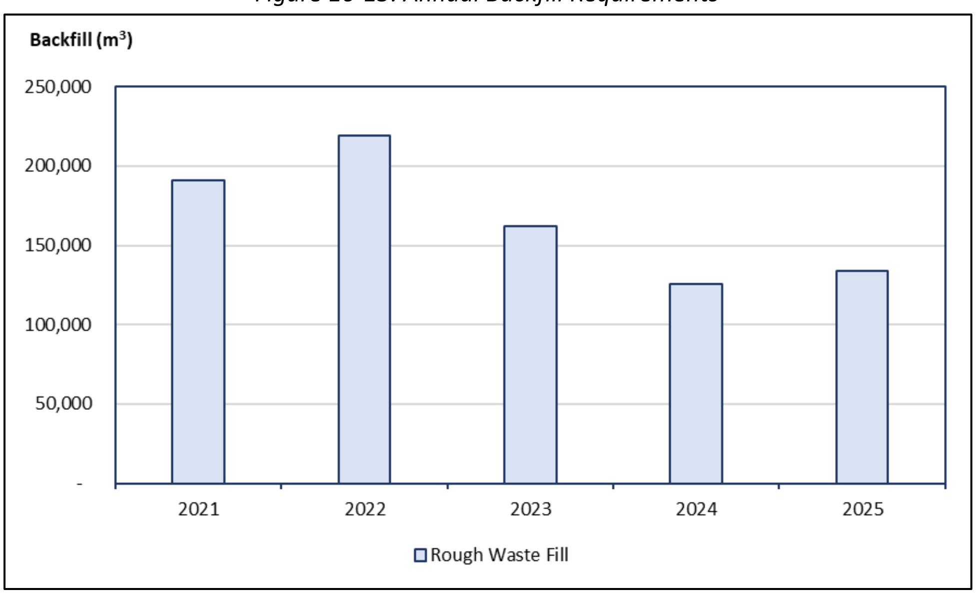


Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

<u>*Backfill*</u>

All production voids will be backfilled with unconsolidated waste rock where access is available to permit backfilling activities. The backfill will be placed into production voids using the primary stope loaders (1.5 m^3 buckets). The annual backfill requirements for the Santa Elena mine are presented in Figure 16-15 and summarized in Table 16-11.

Figure 16-15: Annual Backfill Requirements



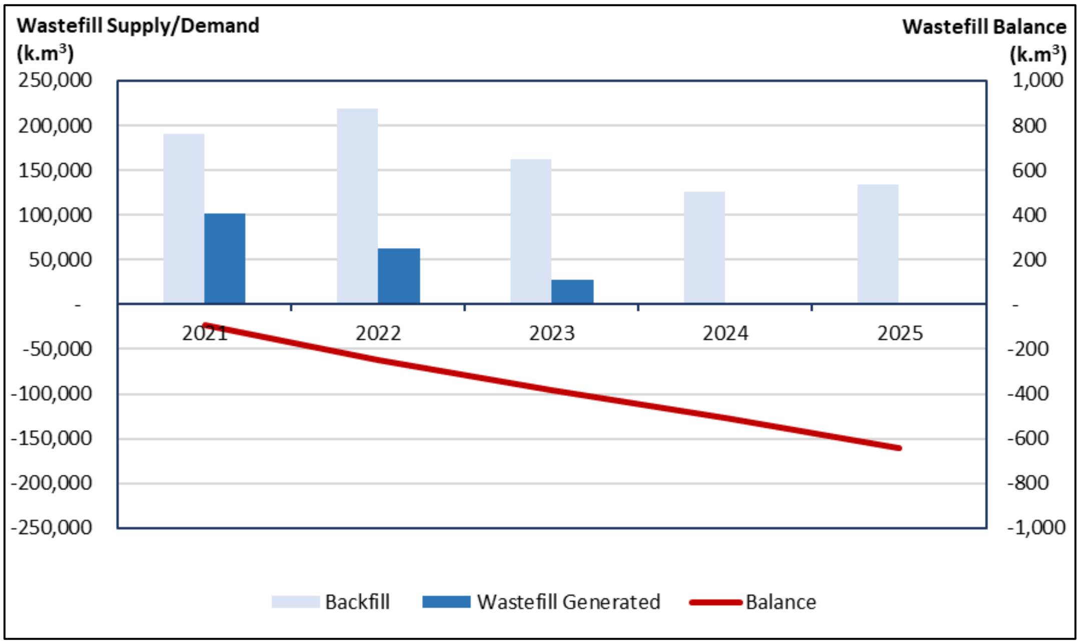
Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

Table 16-11: Annual Backfill Requirements

Backfill	Total	Units	2021	2022	2023	2024	2025
Rough Waste Fill	832	k.m3	191	219	162	126	134

As there is limited waste rock being generated within the mine, waste rock sourced form the waste rock storage facility will be backhauled from surface. The waste rock balance is illustrated in Figure 16-16 and shows that additional waste rock for backfill is required each year.

Figure 16-16: Waste Rock Balance Required for Backfilling



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

16.4.6. Underground Infrastructure and Services

<u>*Portals*</u>

The Santa Elena mine has two established mine entrances, the Santa Isabel Portal to the southeast and the San Salvador Portal to the northwest. Near the portals is a maintained tag board, general safety information, and signage. The Santa Isabel Portal is also equipped with stench gas in case of an emergency within the mine. The underground equipment maintenance workshop and contractors' offices are located outside the Santa Isabel Portal, which is the main access ramp to the underground mine.

The Santa Isabel portal is shown in Figure 16-17.

Figure 16-17: Santa Isabel Mine Portal

Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021. Looking North.

<u>Primary Ventilation</u>

The ventilation system uses a push system with fresh air being forced down the two main raises and exhausting out of the two portals and two raises connected to surface on the west side of the mine.

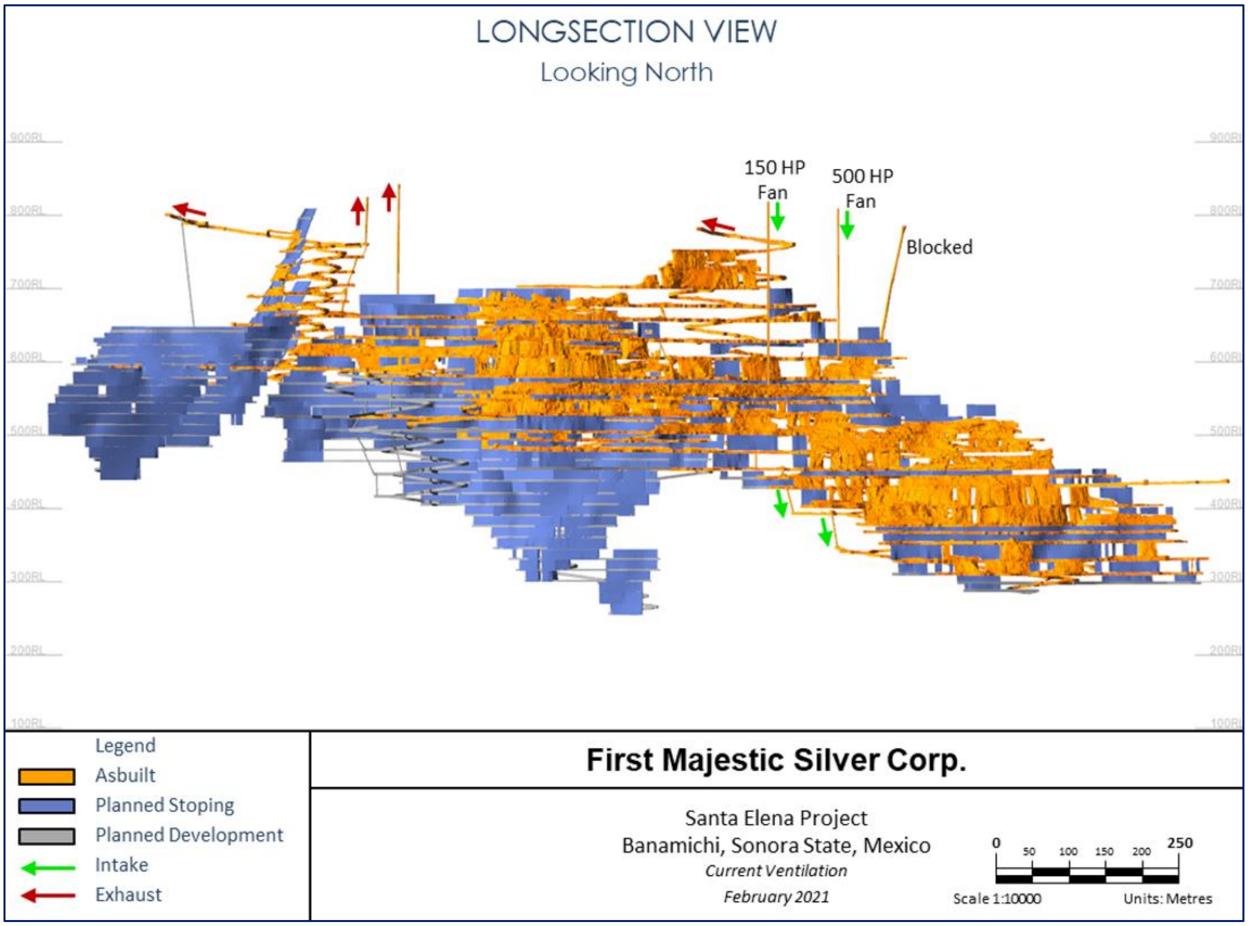
Two primary fans are installed on surface to push the fresh air into the mine, providing a total of 400 kCFM to the mine. The main fan is a 500 HP fan located over the top of the East raise, which is the main intake for the mine, providing approximately 255 kCFM to the mine. An additional 150 HP fan is located over the central raise, which also serves as an emergency egress for the mine, providing 145 kCFM to the circuit.

The ventilation circuit was imported into Ventsim, an industry-standard software used in ventilation modelling to model the flows predicted for the mine. The ventilation demand was estimated based on Mexican regulations that require a minimum ventilation airflow of 75 CFM (0.035 m^3/s) per HP of mobile equipment. The estimated primary ventilation demand is shown in Table 16-12 and ventilation circuit illustrated in Figure 16-18.

Table 16-12: Ventilation Demand Estimate

Equipment / Unit	Model	Quantity	Unit HP	Utilisation	Requirement (m^3/s)
Scoop tram	LH-410	2	295.0	14%	1.4
Scoop tram	R1600H	1	279.0	14%	1.4
Scoop tram	ST1030	1	250.0	24%	2.1
Scoop tram	LH-203	2	95.0	26%	1.7
Scoop tram	R1700G	1	279.0	46%	4.5
Jumbo	DD311	2	75.0	30%	1.6
Jumbo	TROIDON 55-XP	1	100.0	38%	1.3
Jumbo Bolter	DS-311	1	126.0	18%	0.8
Jumbo Bolter	DS-311	1	126.0	18%	0.8
Services Back Hoe	416 E	1	89.0	20%	0.6
Services Back Hoe	310J	1	72.0	10%	0.3
International Explosive	INTERNATIONAL	1	330.0	32%	3.7
Isuzu Personal	ELF-500	1	172.0	33%	2.0
Hauling Truck	N14	1	435.0	54%	8.2
Hauling Truck	INTERNATIONAL	1	250.0	35%	3.1
Hauling Truck	ISX400	6	440.0	45%	41.6
Light Vehicle	L200	4	134.0	30%	5.6
Scoop tram	1030	3	250.0	35%	9.2
Light Vehicle	NP300	2	134.0	10%	0.9
Long Hole Rig	Raptor	1	113.0	30%	1.2
Jumbos	DD311	5	83.0	30%	4.4
Light Vehicle	NP300	3	161.0	20%	3.4
Hauling Truck		6	250.0	39%	20.5
Scoop tram	LH410	4	295.0	36%	14.9
Scoop tram	LH203	4	95.0	24%	3.2
Long Hole Rig	DL431	1	148.0	45%	2.3
Telehandler	TL943	2	110.0	29%	2.2
Bulldozer	D5H	1	129.0	4%	0.2
Services Back Hoe	KOMATSU	1	87.0	8%	0.2
Light Vehicle	F-150	2	385.0	40%	10.8
Light Vehicle	L200	8	134.0	30%	11.3
Scaler	csv-11	1	125.0	6%	0.3
Light Vehicle	HILUX	4	174.0	30%	7.3
Mine Personnel		150			3.8
Total					**176.6 m^3/s**
					375 kCFM

Figure 16-18: Primary Ventilation Layout



Note: Figure prepared by Entech Mining Ltd. with information from First Majestic, February 2021.

Auxiliary Ventilation

Where headings are outside of the primary ventilation circuit, auxiliary fans are required to push the air to the working headings. A variety of secondary fans are installed to deliver the required airflow through flexible ducting to the working headings, with 21 auxiliary fans installed, ranging from 30–112 kW in size. The overall aim is to deliver approximately 5–8 m^3/s of airflow to the active headings.

Secondary Means of Egress and Refuge Chambers

Refuge chambers are installed in the 425 and 350 Level, each with a 20-person capacity. The mine also has an emergency escapeway system installed in the central fresh air intake raise, which is equipped with steel ladders from the 325 Level up to surface.

In addition to the refuge chambers and escapeway circuit, there is an emergency alarm system to notify personnel of an emergency using stench gas installed in the Santa Isabel Portal and on the 600 Level in the compressed air line.

Water Management

The existing underground dewatering system is capable of pumping 630 gal/min from underground. Mine water is transferred from the main dewatering station at the 625 Level to surface through a six-inch pipe installed in the service raise in the ramp.

There are two main sumps located at the 425 and 350 Levels that collect and pump the water to surface for later use. From the lower levels of the mine, a variety of pumps with different capacities are connected in series to move the water to the main sumps. The current list of submersible pumps is summarized in Table 16-13.

Table 16-13: Submersible Pumps Within the Mine

Pump ID	Type	Level	Fuel Source	Motor
MSE-CT-001	INGERSOLL RAND	550	Electric	125 HP
MSE-CT-002	INGERSOLL RAND	600	Electric	200 HP
MSE-CT-003	INGERSOLL RAND	375	Electric	150 HP
MSE-CT-004	INGERSOLL RAND	500	Electric	200 HP
MSE-CT-005	INGERSOLL RAND	450	Electric	200 HP
MSE-CT-006	COMPRESSOR DOOSAN	Mobile	Diesel	150 HP

Compressed Air

The mine has a robust compressed air system that includes different equipment at several locations in the mine. The compressed air is conducted through a single four-inch pipe that is routed via main ramps and service holes between levels. All underground compressors are installed with an air accumulator.

The current list of air compressors within the mine is summarized in Table 16-14.

Table 16-14: Air Compressors Within the Mine

Pump ID	Type	Manufacturer	Active	Motor
MSE-BS-001	Submersible Pump	Tsurumi	5	40 HP
MSE-BS-003	Submersible Pump	Tsurumi	1	60 HP
MSE-BS-004	Submersible Pump	Tsurumi	2	100 HP
MSE-BS-005	Submersible Pump	Tsurumi	6	150 HP
MSE-BS-007	Mud Pump	Tsurumi	3	20 HP

Electrical Power

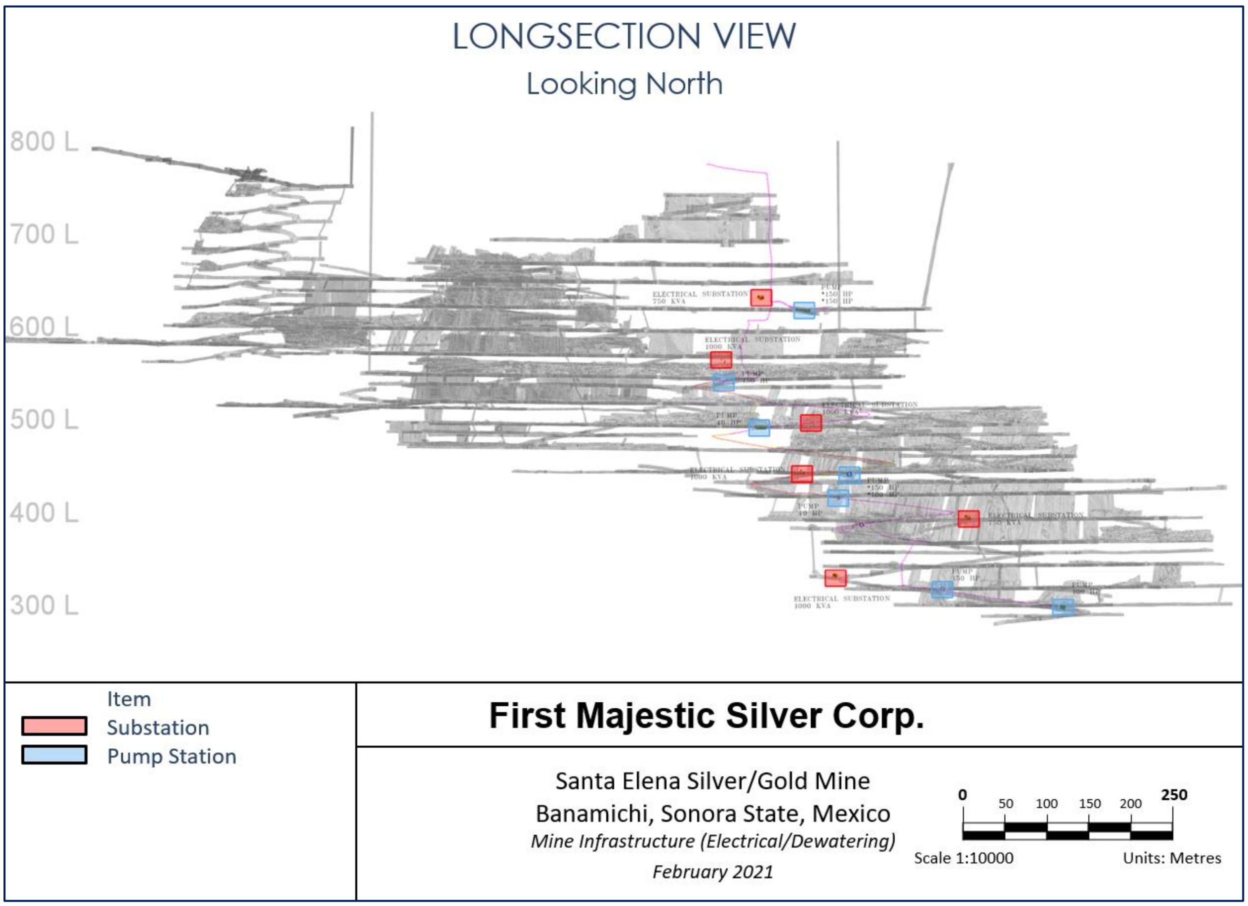
Electrical power is supplied by the site power station located at the processing facility. The power station produces energy at 4,160 V and is routed through the mine to the primary substations. Power is then stepped down via a transformer to 480 V for use by plant and equipment. Several electrical transformers are strategically located underground to provide the necessary power for mining activities. At peak production, it is estimated that the Santa Elena underground will require approximately 1.8 MW of power.

The current list of transformers and their capacity is summarized in Table 16-15. The pump stations and electrical transformers that are currently in use by Santa Elena are illustrated in Figure 16-19.

Table 16-15: Electrical Transformers Within the Mine

Pump ID	Level	Capacity (kVA)
MSE-TE-001	450	1000
MSE-TE-002	500	1000
MSE-TE-003	575	750
MSE-TE-004	325	1000
MSE-TE-005	625	1000
MSE-TE-006	400	1000

Figure 16-19: Mine Infrastructure – Dewatering and Electrical.



16.5. Production from Leach-Pad

Material from the leach-pad is reclaimed with dozers and front-end loaders and hauled to the plant-feed stockpile for further grinding and processing. The target feed rate to the plant is approximately 60% feed from underground material and 40% feed from the leach pad. The 60/40 ratio is planned for 2021 and the leach-pad material is planned to be depleted during 2022.

16.6. LOM Plan Production Schedule

The LOM plan is based on Measured and Indicated Mineral Resources. Should the Mineral Reserves remain at their current level with no conversion of Inferred Mineral Resources or additional mineralized material being discovered, then the current mine plan estimates that the Santa Elena mine will be depleted over the next five years.

The production schedule for the LOM plan is presented in Table 16-16.

Table 16-16: LOM Plan Production Schedule

Type	Units	Total	2021	2022	2023	2024	2025
ROM Production	k t	2,432	613	604	496	356	363
Silver Grade	g/t Ag	126	92	103	120	162	193
Gold Grade	g/t Au	1.44	1.33	1.57	1.36	1.56	1.42
Silver-Equivalent Grade	g/t Ag-Eq	252	208	240	238	297	317
Leach-Pad Material Production	k t	509	416	93			
Silver Grade	g/t Ag	23	23	24			
Gold Grade	g/t Au	0.56	0.56	0.56			
Silver-Equivalent Grade	g/t Ag-Eq	72	71	73	-	-	-
Total Plant Feed	k t	2,941	1,029	697	496	356	363
Silver Grade	g/t Ag	108	64	93	120	162	193
Gold Grade	g/t Au	1.29	1.02	1.44	1.36	1.56	1.42
Silver-Equivalent Grade	g/t Ag-Eq	221	153	218	238	297	317
Contained Metal							
Contained Silver	k oz Ag	10,214	2,126	2,077	1,905	1,849	2,257
Contained Gold	k oz Au	122.0	33.6	32.2	21.7	17.8	16.6
Contained Silver-Equivalent	k oz Ag-Eq	20,857	5,063	4,883	3,798	3,403	3,709
Metallurgical Recoveries							
Metallurgical Recovery Silver	%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%
Metallurgical Recovery Gold	%	95.6%	95.6%	95.6%	95.6%	95.6%	95.6%
Produced Metal							
Produced Silver	k oz Ag	9,504	1,979	1,932	1,773	1,720	2,100
Produced Gold	k oz Au	116.6	32.2	30.7	20.7	17.0	15.9
Produced Silver-Equivalent	k oz Ag-Eq	19,675	4,785	4,615	3,582	3,206	3,488

16.6.1. Mining Fleet and Machinery

Table 16-12 lists the mine equipment operating at the Santa Elena mine as of December 2020, this mining fleet and equipment is considered sufficient for the operation requirements of the LOM plan presented in this Report.

17. RECOVERY METHODS

17.1. Introduction

The Santa Elena operation processes a blended feed consisting of high-grade underground mineralized material and spent-ore from the existing heap leach pad.

The processing plant has been successfully operating for several years and has continuously improved the metallurgical recoveries for silver and gold. The process is based on cyanide tank leaching and Merrill-Crowe smelting of fine-ground ore to produce silver–gold doré bars. The installed plant capacity is for 2,800 tpd. Throughput levels averaged 2,500 and 1,830 tpd in 2019 and 2020 respectively. In 2019 and 2020 the average plant-feed contained head grades of 92 g/t Ag and 1.56 g/t Au.

The processing plant is mostly built as a single train with the crushing area split from the remaining areas and connected through a belt conveyor to transfer the crushed product from the screening underflow to the fine stockpiles.

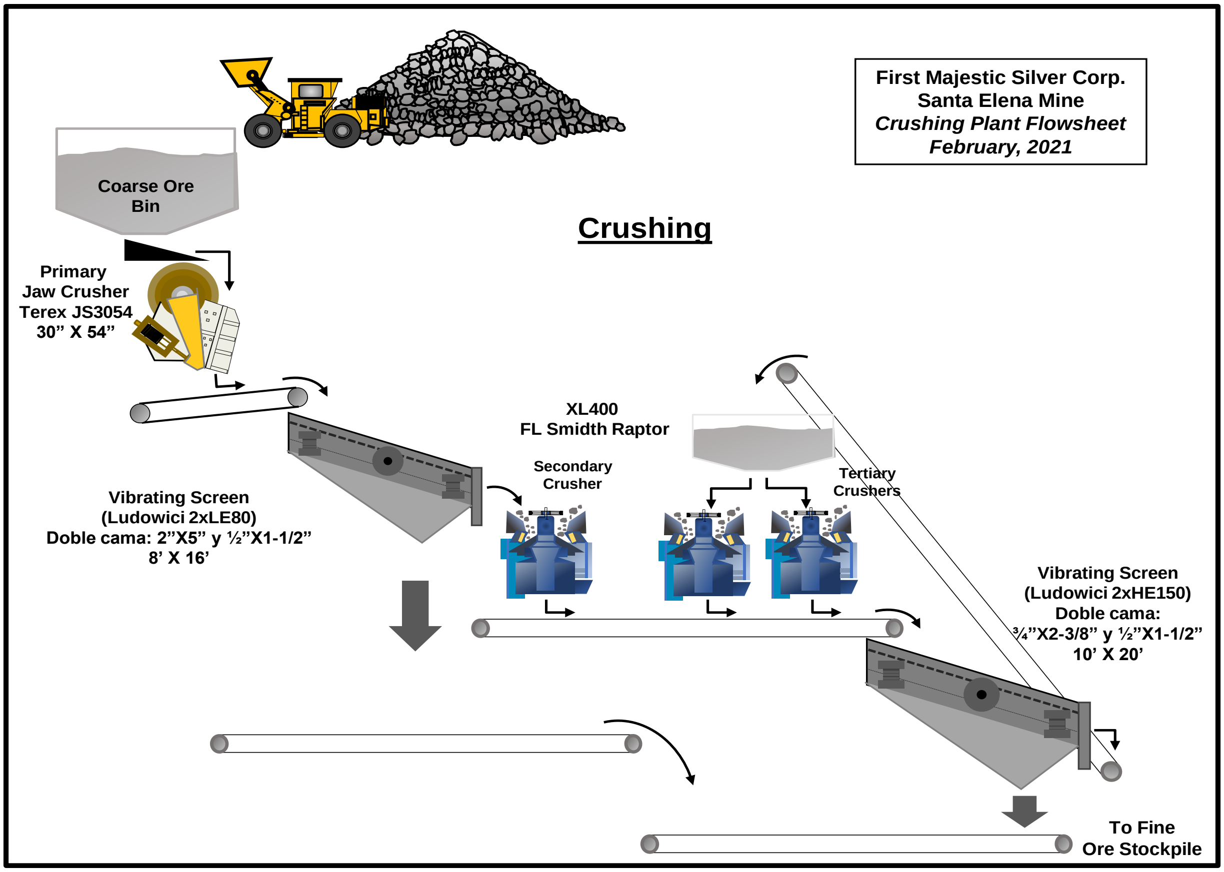
The plant consists of the following operating units:

- Crushing: Three-stage crushing circuit consisting of a primary jaw crusher, followed by a secondary cone crusher and a closed-circuit tertiary crushing with two cone crushers and one dry vibrating screen;
- Grinding: One ball mill in closed circuit with hydrocyclones working in parallel;
- Regrinding: One Outotec HIG-Mill;
- Cyanide Leaching: Five agitated tanks;
- CCCD: Three CCD thickeners working in series;
- Merrill-Crowe, precipitate handling and smelting;
- Tailings management: Two belt-filters with cyanide reduction system and tailings handling conveyors.

17.1.1. Process Flowsheet

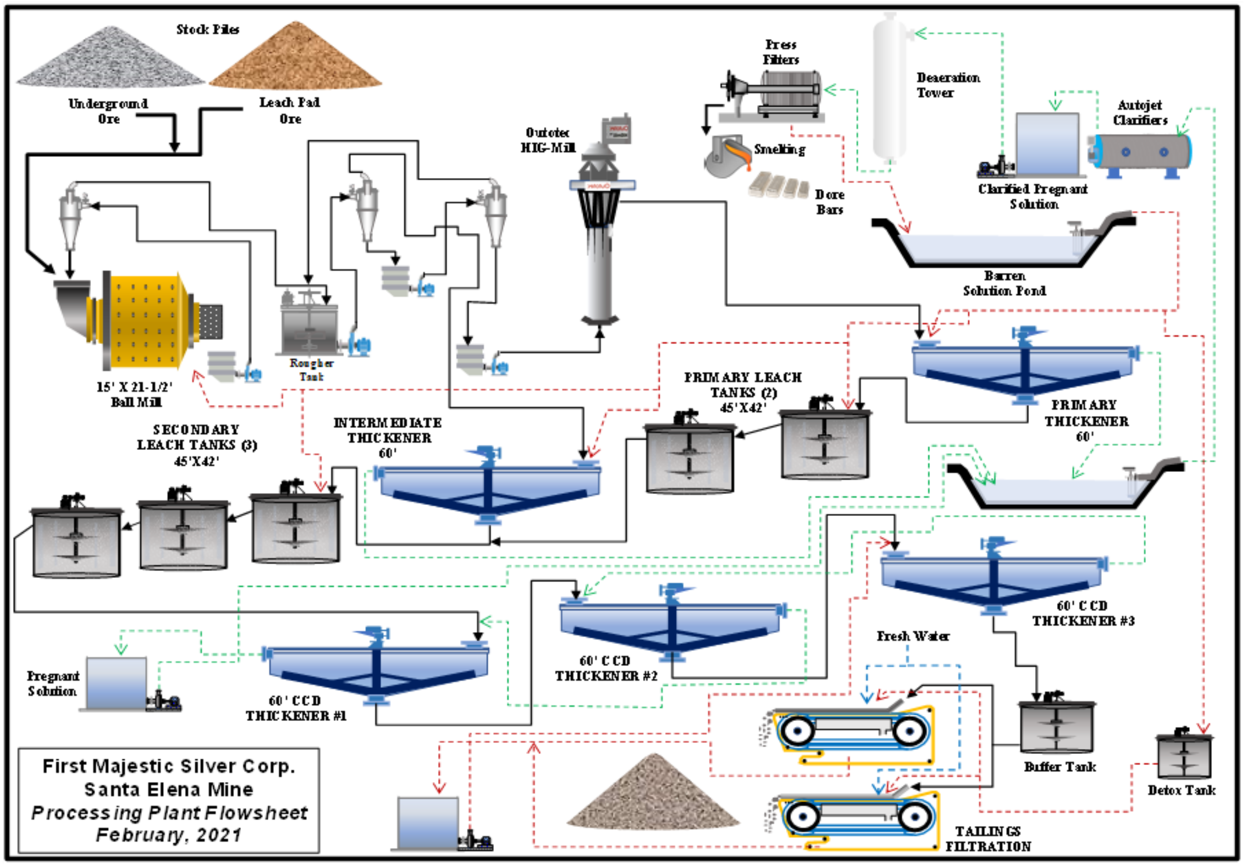
Figure 17-1 presents the comminution flowsheet and Figure 17-2 presents the processing flowsheet from the crushed ore bins to the production of the doré bars.

Figure 17-1: Santa Elena Schematic Crushing Plant Flowsheet



Note: Figure prepared by First Majestic, February 2021.

Figure 17-2: Santa Elena Processing Plant Flowsheet



Note: Figure prepared by First Majestic, February 2021.

17.2. Processing Plant Configuration

17.2.1. Plant Feed

The plant is fed with two types of ore: underground and spent ore from the heap leach.

The ore from the heap leach goes directly to the fines stockpile prior to feeding the grinding circuit, while the underground ROM material delivered from the mine is dumped on an intermediary stockpile and then moved to feed a coarse ore bin upstream of the crushing circuit.

The coarse ore bin is equipped with a static grizzly screen at the top. The grizzly has openings of 12” x 12”; oversize material is reduced in size using a hydraulic hammer.

17.2.2. Crushing

The crushing plant has a nominal capacity of 240 t/hr and the flowsheet consists of three reduction stages: primary crushing, secondary crushing, and tertiary crushing. The ore from the intermediary stockpile is fed into a coarse hopper, from which it is fed to a 20" x 36" primary jaw crusher and reduced to -3" to -4". This product is transported by a conveyor belt to an 8' x 16' double deck vibrating screen (scalper).

The upper discharge of the vibrating screen flows into the secondary crusher, an XL400 FLSmidth Raptor Crusher, which reduces the size to ~1". The discharge from this crusher feeds a closed tertiary circuit, which has two XL400 FLSmidth Raptor crushers and a 10 'x 20' double deck vibrating screen.

The upper section has ¾" x 2⅜" openings, while the lower section has ½" x 1½" openings. The underflow of the screen contains material from 90–97% minus ⅜" (9,525 µm), as well as an average of 75% minus ¼" (6,350 µm).

The upper discharge of the vibrating screen flows into the two tertiary-crushers that reduce the size to minus 5/16".

The lower discharge of the two vibrating screens (underflow) is transported by a belt conveyor and unloaded in the fine ore stockpiles. The ore particle size in the fine ore stockpiles has approximately 95% minus ⅜" and average moisture content of 3–4%.

17.2.3. Primary Grinding

The primary grinding section consists of one 15' D x 21-½' ball mill.

The crushed underground ore and the leach pad ore from their respective stockpiles feed the ball mill with the two ores mixed on the conveyor belt that feeds the ball mill.

The ball mill is equipped with a cyclone classification system and a pair of pumps (one in operation and the second on stand-by). Cyanide solution and lime are added to the primary grinding circuit.

The final ground product contains approximately 65% -200 mesh, equivalent to a P80 of 106 µm. The product of the primary grinding circuit flows to the secondary grinding circuit.

17.2.4. Secondary Grinding

The secondary grinding circuit consists of a HIG-Mill and hydrocyclones for classification and density adjustment. The overflow from the ball mill feeds into an agitated tank, the rougher feed tank. The first stage of classification is fed from this tank, which produces an overflow of 85% -20 µm (slimes). The underflow is re-classified in another battery of cyclones, the underflow from which feeds the HIG-Mill.

The product from the HIG-Mill generates a product with the following particle sizes: 75% -45 µm and 40% -20 µm.

The regrinding circuit produces two products: slimes (25% by weight) and product of the HIG-Mill (75% by weight). Both products go to two different thickener tanks, the underflow from which subsequently goes to the leaching tanks.

17.2.5. Sampling

Dry-sample cutting is carried out on the conveyors which feed the two stockpiles, heap leach and underground, as well as the feeders that discharge onto the conveyor belt that feeds the ball mill. One composite sample is collected for every 12-hour shift. Additional slurry samples are collected in several points of the circuit. The samples are prepared and assayed in the Santa Elena mine laboratory. With this information, a daily metallurgical balance is estimated, and this balance reflects the gold and silver grades, the metal contents of the material fed to the plant, and tailings as well as the pregnant and barren solutions.

An automatic sample cutter is installed in the conveyor belts that feed the heap leach and underground stockpiles.

Manual sampling is carried out at the following points:

- Feeders to ball mill;
- Cyclones overflow;
- Grinding & regrinding products;
- Pregnant leach solution (PLS);
- Barren solution;
- Final tailings (belt-filters cake);
- Each of the leach tanks; and,
- Solution recovered from tailings filter system returned to plant.

17.2.6. Cyanide Leaching circuit

The following reagents and dosages are used for leaching:

- Cyanide is added in briquettes in four points of addition: the 1st, 3rd, and rougher tanks, as well as in the PLS prior to precipitation;
- Lime in dry form is only added to the conveyor belt that feeds the ball mill.

The two streams of slurry coming from the regrinding circuit are sent to different thickeners: the slimes are pumped to the intermediate thickener, and the discharge from the HIG-Mill is pumped to the primary thickener. The two thickeners are 60 ft in diameter and both work as primary thickeners.

The primary thickening has two objectives: to adjust the pulp density prior to the agitated leach tanks and to recover PLS in the overflow, which goes to the Merrill-Crowe stage.

The PLS obtained in the overflow (supernatant solution) is sent to a storage pond that subsequently feeds the clarifiers. The underflow from the primary thickener is pumped into a series of two 45ft x 42ft leach tanks. The discharge from the second tank mixes with the underflow from the intermediate thickener. The composite from both streams is fed to a series of three 45ft x 42ft leach tanks.

17.2.7. Counter Current Decantation System

Slurry from the last agitated tank feeds the CCD thickeners. There are three 60-ft thickener tanks working in series. Underflow from thickener tank #3 feeds a final tailings storage tank, before feeding the belt filters.

The overflow from the third thickener goes to the second thickener feed, mixing with the slurry from the first thickener underflow. The third thickener receives the barren solution that comes from the tailings belt filters.

The overflow from the second thickener goes to the first thickener feed, mixing with the slurry from the last leach tank (#5). Underflow from the first thickener goes to the second thickener feed.

The overflow solution from the first thickener goes to the pregnant solution pond, where is mixed with the overflow solution from the intermediate and primary thickener tanks.

17.2.8. Merrill Crowe and Precipitate Handling

PLS is sent to a storage pond, then filtered and clarified through three Autojet pressure clarifiers. Product from the Autojet filters is then pumped through a tower comprised of two deaerator cylinders in order to remove dissolved oxygen from a concentration of 5 ppm to <1 ppm.

After deaeration, zinc dust is added to the solution for the precipitation reaction. The PLS is then pumped to three 1500 ft^2 FLSmidth press-filters. The production rate of PLS is about 390 m^3/hr with an average grade of 16 g/t Ag and 0.24 g/t Au.

Precipitate is dried in a LPG-fired oven and then smelted in a 315 kg LPG smelting furnace, producing 32 kg doré bars with a purity of 97%.

The flux mixture used in smelting is: 50% borax, 4% sodium nitrate and 15% soda ash.

The slag obtained from the smelting, is crushed, sifted, and fed to the grinding ball mill.

17.2.9. Tailings Management

The tailings are fed to two horizontal belt filters, each with 124 m^2 capacity. The filtered cake, which contains less than 30% moisture, is transported to a filtered tailings storage facility (FTSF).

There is a cyanide reduction system that uses sufficient solution to carry out a cake wash in the belt filters. The filtered solution is returned to the processing plant into thickener #3 of the CCD system.

17.3. Processing Plant Requirements

The most relevant requirements supporting the operation of the processing plant, for the production stated in the LOM plan presented in this Report, have been estimated and the projected consumption is listed in Table 17-1, including: electrical energy, processing water, grinding media, cyanide, lime, oxigen, lead nitrate, flocculatn and zinc dust.

Table 17-1: Processing Plant Requirements for the LOM Plan

Santa Elena Processing Plant Consumables	KPI	unit	Consumption per year	2021	2022	2023	2024	2025
Power Consumption	49	kWh/t	MWh/yr	50,421	34,142	24,295	17,435	17,804
Water total volume	2,500	m3/day	'000 m3/yr	913	913	913	913	913
Water recycled volume			'000 m3/yr	580	688	752	798	795
Water consumption (fresh water usage)	910	m3/day	'000 m3/yr	332	225	160	115	117
Cyanide	1.42	kg/t	t/yr	1,461	989	704	505	516
Griding media (steel balls)	1.57	kg/t	t/yr	1,616	1,094	778	559	570
Lime	1.85	kg/t	t/yr	1,904	1,289	917	658	672
Oxygen	1.41	m3/t	m3/yr	1,451	982	699	502	512
Lead nitrate	170	g/t	t/yr	175	118	84	60	62
Flocculant	230	g/t	t/yr	237	160	114	82	84
Zinc dust	2.33	kg Zn/Kg Ag	t/yr	143	140	128	125	152

All these consumables are regularly supplied to the Santa Elena mine and purchase agreements are in place at the Report effective date supporting the production plan presented in this Report.

18. INFRASTRUCTURE

The existing infrastructure can support current mining and mineral processing activities and the LOM plan.

18.1. Local Infrastructure

Most of the operation's support facilities are located within a 1.5 km radius, facilitating the transportation and logistics of personnel, material, and equipment.

The main infrastructure consists of roads, crushing, grinding and processing facilities, a previously processed leach pad, waste storage facility, FSTF, administrative offices, a first-aid station, warehouse, assay laboratory, diesel and natural gas power generation plants, maintenance shop, water storage tanks, and water supply tank. Figure 18-1 shows the local infrastructure layout.

Figure 18-1: Santa Elena Mine Infrastructure

Figure prepared by First Majestic, February 2021.

18.2. Transportation and Logistics

Operations personnel are transported by passenger buses from nearby towns. All equipment, supplies and materials are brought in by road.

18.3. Tailings Storage Facilities

The FTSF was originally developed as a waste rock storage facility designed with a total capacity of 35 Mt; of which 20 Mt was used by the previous operator to store open pit waste rock. The remaining 15 Mt of storage capacity are designated for underground waste rock and filtered tailings with an estimated bulk density of 1.61 t/m^3. In recent years, limited waste rock from underground is deposited at the waste storage site as the majority of the waste rock is used to backfill the underground stopes.

Tailings from the processing facility are washed, filtered to approximately 25% moisture content, drained on an exposed portion of the existing leach pad and conveyed for dry stacking on top of the FTSF. The removal and cyanide detoxification of tailings is achieved in combination with multi-phase filtering, a wash cycle and photo-degradation on the leach pad prior to being conveyed to the waste storage site by haul trucks. The a FTSF has a remaining lifetime of approximately nine years of operation. The storage capacity of the Santa Elena FTSF is sufficient to support the LOM plan presented in this Report.

The Santa Elena FTSF was designed in two-stages, designated as Phases 1 and 2. Each phase consists of 10-m high dry stack raises with 10-m wide benches sloped at 1.5H:1.0V (horizontal: vertical) along the perimeter. The Phase 1 and 2 dry stacks measure approximately 90 and 40 m from crest to toe, respectively; with an overall slope measuring approximately 2H:1V. The final configuration of the Phase 1 dry stack will raise the crown of the prior waste rock facility from an approximate elevation of 820 to 844 masl. Phase 2 will be situated downstream to the south of Phase 1 and its final configuration will raise the ground surface from approximately 790 to 829 masl. The proposed crown of the Phase 1 and 2 FTSF will be graded at a one-degree slope towards the southwest. Figure 18-2 shows the Santa Elena FTSF from an aerial view, and Figure 18-3 displays the FTSF Phase 1 and 2 profiles in cross section.

Figure 18-2: Tailings Storage Facilities

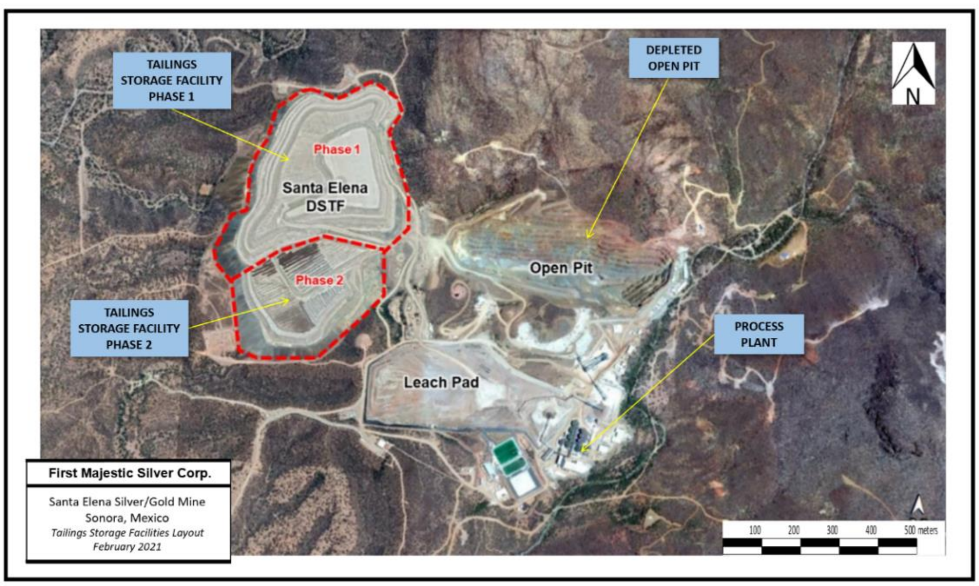


Figure prepared by First Majestic, February 2021.

Figure 18-3: Tailings Storage Facilities Phases 1 and 2 Cross Sections

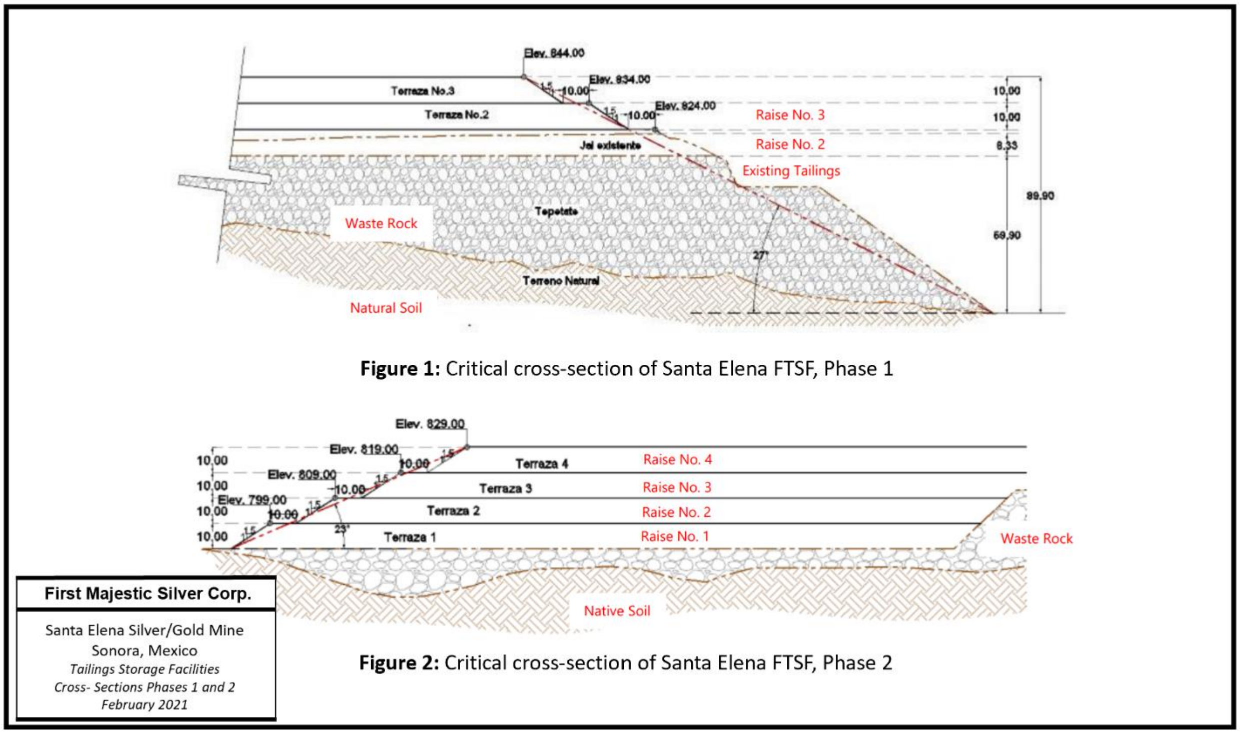


Figure prepared by First Majestic, February 2021.

18.4. Camps and Accommodation

Most non-local staff and contractors personnel stay in rental homes available in the nearby towns of Banamichi, Huepac and Aconchi. There are multiple hotels available in the area for visitors. In 2020, First Majestic constructed a 270-bed temporary camp within the Santa Elena property.

18.5. Power and Electrical

The electric power required for mine operation and supporting infrastructure is generated on-site. The power generation plant consists of eight diesel-powered generators with a total capacity of 9.2 MW. There are two additional diesel-powered generators with a capacity of 2.5 MW each that are maintained as emergency backup for a total generation capacity of 14.2 MW. Power consumption averaged 7 MW per month in 2020.

A project to upgrade the power generation system at the Santa Elena mine is ongoing at the Report effective date. The diesel-powered generation system will be switched to a LNG power generation system with the construction of a 14 MW LNG power plant. The project includes seven LNG generators, three LNG tanks, a 5 MVA mine substation, a 10 MVA plant substation and an 800 m power line to connect to the mine and plant grid. At the Report effective date, construction of the new LNG generation site and related infrastructure was completed, and commissioning was ongoing with expected completion in the second quarter of 2021.

18.6. Communications

The Santa Elena mine communication system is interconnected to Telmex's and Metrocarrier's (communication service providers) data and voice networks, then distributed via an internal fiber-optic network. Underground mine communication uses a leaky feeder very-high-frequency network installed along tunnels, main ramps and control points. Radio-base system and emergency satellite telephone services are available for instant communication between site personnel.

18.7. Water Supply

Industrial water is supplied primarily from the mine dewatering system. Mine development headings are generally sloped at a 2% gradient towards the ramps to allow for water to drain in a controlled direction. Sumps are developed on each level to collect any inflow water and from there the water will be either recycled and used as drill water or pumped to surface and stored in the water management ponds to be used as process water. The sumps are installed at a vertical interval of 60–70 m. Flow rates are expected to be 300–400 gallons per minute over the LOM.

A licensed water-well is also equipped and regularly pumps water to an elevated tank. The tank has a capacity of 200 m^3 and supplies water for non-process uses.

19. MARKET CONSIDERATION AND CONTRACTS

The end product from the Santa Elena mine comes in the form of silver–gold doré bars. The physical silver–gold doré bars contain approximately 97% silver and 1.5% gold in weight, plus other impurities. Doré bars are delivered to refineries where they are refined to commercially marketable 99.9% pure silver and gold bars.

19.1. Market Considerations

Silver and gold are considered global and liquid commodities. Silver and gold are predominantly traded on the London Bullion Market Association (LBMA) and COMEX in New York. The LBMA is the global hub of over-the-counter trading in silver and gold and is these metals' main physical market. ICE Benchmark Administration (IBA) provides the auction platform, methodology, as well as the overall administration and governance for the LBMA. Silver and gold are quoted in US dollars per troy ounce.

19.2. Commodity Price Guidance

First Majestic has established a standard procedure to determine the medium and long-term silver and gold metal price guidance to be used for Mineral Resource and Mineral Reserves estimates. This procedure considers the consensus of future metal price forecasts from different sources including major Canadian and global banks, projections from financial analysts specializing in the mining and metals industry, and metal price forecasts used by other peer mining companies in public disclosures.

Based on the above information, a recommendation as to acceptable consensus pricing is put forward by First Majestic's QP to the company executives, and a decision is made to set the metal price guidance for Mineral Resource and Mineral Reserve estimates. This guidance is updated at least annually, or on an as-required basis.

Metal prices used for the December 2020 Mineral Resource and Mineral Reserve estimates are listed in Table 19-1.

Table 19-1: Metal Prices Used for the December 2020 Mineral Resource and Mineral Reserve Estimates.

Metal	Units	Mineral Resource Estimation	Mineral Reserves Estimation
Silver	$/oz Ag	22.50	20.00
Gold	$/oz Au	1,850.00	1,700.00

Foreign exchange rates used in the cost estimates and in the LOM model were USD:CAD 1.30 and USD:MXN 20.00.

19.3. Product and Sales Contracts

Silver and gold produced at the Santa Elena mine is sold by First Majestic using a small number of international metal brokers who act as intermediaries between First Majestic and the LBMA. First Majestic delivers its production to a number of refineries, and once they have refined the silver and gold to commercial grade, the refineries then transfer the silver and gold to the physical market for consumption. First Majestic transfers risk at the time it delivers its doré from the processing plant to the armoured truck services that are under contract to the refineries. First Majestic normally receives up to 97% of the value of its sales of doré on delivery to the refinery, depending on the timing of sales with the metals broker, with final settlements upon out-turn of the refined metals, less processing costs.

Contracts with refining companies as well as metals brokers and traders are tendered periodically and re-negotiated as required. First Majestic continually reviews its cost structures and relationships with refining companies and metal traders to maintain the most competitive pricing possible.

19.4. Streaming Agreement

First Majestic has a purchase agreement with Sandstorm Gold Ltd (Sandstorm). Sandstorm invested $12 million in May 2009 and an additional $10.0 million in March 2014 that entitles Sandstorm to receive 20% of the gold production from the Santa Elena mine in exchange for ongoing payments equal to the lesser of $464/oz Au (as of December 2020 and subject to a 1% annual inflation adjustment) and the prevailing market price, for each gold ounce delivered under the agreement.

19.5. Deleterious Elements

The silver–gold doré bars purity is above 98%, based on past performance and current production projections, and no relevant impurities have been recorded. Considering the characteristics of the mineralized material and the processing practice, it is reasonable to expect that the Santa Elena mine's silver–gold doré bars will not carry impurities over the LOM production planned that could be materially penalized at the refineries.

19.6. Supply and Services Contracts

Contracts and agreements are currently in place for the supply of goods and services necessary for the mining operations. These include, but are not limited to, contracts for diamond drilling services, mine development and mine production, waste and ore haulage, maintenance service for the mining equipment, specialized maintenance service for plant equipment, supply of diesel for power generation and equipment operation, supply of LNG for future power generation, supply of explosives, supply of process reagents including sodium cyanide, and transportation and logistics services including infrastructure maintenance, catering and personnel transportation.

19.7. Comments on Section 19

The doré produced by the mine is readily marketable.

Metal prices are set corporately for Mineral Resource and Mineral Reserve estimation. The QP has reviewed the consensus future metal price forecasts and the internal analysis results and considers them reasonable to support the metal price assumptions used in this Report.

In the opinion of the QP, the terms, rates and charges set in the relevant service contracts and supply agreements for the mining operation are within industry practice in Mexico.

The QP has reviewed commodity pricing assumptions, marketing assumptions and the current major contract areas, and considers the information acceptable for use in estimating Mineral Reserves and in the economic analysis that supports the Mineral Reserves.

20. ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

First Majestic's operating practices are governed by the principles set out in its Health and Safety Policy, Environment and Code of Business Conduct and Ethics. First Majestic's senior management team have committed to the sustainability reporting process with the first stand-alone 2019 sustainability report published in August 2020 and will continue to report through First Majestic's Annual Report and website.

The Santa Elena mine is in the implementation phase of the First Majestic Environmental Management System (EMS), which supports its environmental policy and is applied to standardize tasks and strengthen a culture focused on minimizing environmental impacts. The EMS is based on the requirements of the international standard ISO 14001:2015 and the requirements to obtain the Clean Industry Certification, issued by the Mexican environmental authorities, the Ministry of Environment and Natural Resources (SEMARNAT), through the Federal Attorney for Environmental Protection in Mexico (PROFEPA). The EMS includes an annual compliance program to review all environmental obligations. Additionally, Nusantara has implemented an online risk management platform that contains all the environmental obligations or conditions that must best fulfilled under the environmental permits.

In 2017, the Santa Elena mine started the voluntary process to obtain the Clean Industry Certification. The certification recognizes improvements in environmental management practices, regulatory compliance, and environmental performance. In close coordination with PROFEPA, Santa Elena continues improving its infrastructure, procedures, and targets in areas such as water and energy consumption, as well as efficiencies to reduce environmental impacts.

In February 2021, Nusantara was distinguished as a Socially Responsible Company (ESR) for the seventh consecutive year by the Mexican Center for Philanthropy. The ESR award is given to companies operating in Mexico that achieve high performance and commitment to sustainable economic, social, and environmental positive impact in all areas of corporate life, including business ethics, engagement with the community, and preservation of the environment. Santa Elena was recognized for its social, economic, and environmental performance during 2020.

20.1. Environmental Aspects, Studies and Permits

Environmental and social studies are routinely performed to characterize existing conditions and to support the preparation of Risk Assessments and Accident Prevention Programs for the operation and are documented as part of the EMS.

20.1.1. Summary of relevant environmental obligations

The main environmental obligations Nusantara are:

- Annual Operating Report (COA). Report presented annually containing environmental information on the operation of the mine: water, air, waste discharge, materials, and production.

- Hazardous waste declaration. Official document that controls the transportation of hazardous materials from the mine site to the final disposal site.
- Quarterly payment for water used, and wastewater and groundwater discharge.
- Monitoring plan for water, tailings and waste rock storage facilities, emissions to the atmosphere, sediments, waste discharge and noise. Carried out in accordance with the different authorizations and conditions of the official Mexican standards (NOM).
- Those established in the different permits and authorizations and/or the NOM.

At the Report effective date, all these obligations were in compliance.

20.1.2. Current Permits

Santa Elena is an operating mine, as such it already holds all major environmental permits and licenses required by the Mexican authorities to carry out activities of extraction, exploration and beneficiation of minerals.

The environmental permits that are in place at the Report effective date authorize the various works and mining activities that are currently being carried out in the Santa Elena mine, in the surroundings of the site ,and in the Ermitaño Project. Table 20-1contains a list of the major permits issued to Nusantara.

Table 20-1: Major Permits Issued to Nusantara.

Permit / License	Number	Date Granted	Expiry
Federal Permits – SEMARNAT			
Updated Environmental Licence (LAU)	LAU-26/087-2012 DFS-SGPA/0422/2018	Jul 2018	Indefinite
Annual Operational Report (COA)	26/COW0332/06/19	Aug 2020	1 year
Environmental Risk Study (ERA)	26/AR-0193/08/18	Jan 2019	Indefinite
Accident Prevention Program (PPA)	DGGIMAR.710/0009935	Jan 2019	Indefinite
Register as Hazardous Waste Generating Entity	26/HR-0066/03/17	Mar 2017	Indefinite
Mining Waste Management Plan	26-PMM-I-0191-2019	Jun 2019	Indefinite
EIA Santa Elena, Extension	DS-SG-UGA-IA-0474-18	Jul 2018	10 years
EIA Modification Dry Tailings	DS-SG-UGA-IA-0203-15	Mar 2015	Dec 2023
EIA Santa Elena, Ermitaño Infrastructure	DS-SG-UGA-IA-0328/2020	Nov. 2020	34 years
Change of Land Use and Preventive Reports			
ETJ Santa Elena, Ermitaño Infrastructure	DFS-SGPA/UARRN/012/2021	Jan 2021	3 years
Unified Technical Report (DTU), Ermitaño project	DFS-SGPA/UARRN/73/2019	May 2019	20 years
Preventive Report, Ermitaño West	DS-SG-UGA-IA-0347-17	May 2017	5 years
Sonora State Permits			
Integral Environmental License	DGGA-826/15	Jun 2015	10 years
Annual Operational Report State (COA)	NUS-MSE-018-JUN/19	Jun 2020	1 year
Water Permits - CONAGUA			
Industrial Water Discharge, Offices and Dining Hall	02SON151279/09EMDA13	Sep 2015	10 years
Industrial Water Discharge, Laboratory	02SON151116/09EMDA14	May 2014	10 years
Industrial Water Discharge, Workshop	02SON151117/09EMDA14	Jun 2014	10 years
Mine Groundwater Discharge	02SON151579/09FQDA15	Feb 2015	10 years
Authorization Mine Groundwater Discharge	BOO.803.02.1.-3211	Oct 2017	Indefinite
Power Generation Permits			
Power Generation Permit	E/867/AUT/2010	Feb 2014	Indefinite
Expansion Power Generation Permit	RES/2389/2018	Nov 2018	Indefinite

20.1.3. Tailings Management

Tailings from the processing facility are washed, filtered to approximately 25% moisture content, drained on an exposed portion of the existing leach pad and conveyed for dry stacking on top of the FTSF.

Cyanide detoxification is achieved in combination with multiple filtering, a wash cycle and photo-degradation on the leach pad prior to be conveyed to the waste dump.

The design of the FTSF includes perimeter diversion channels to prevent runoff water from getting into the facility and increasing the amount of contact water that needs to be treated. Lined emergency ponds are constructed at the toe of the FTSF to capture rainwater that makes contact with the pasted tailings. Currently there is no water seeping from the FTSF and monitoring wells are installed to monitor for any seepage. At the Report effective date there is no record of seepage or groundwater contamination. The closure plan includes allocation of funds to monitor water seepage and runoff of contact water until the FTSF is contoured, sealed and reclaimed.

20.2. Social and Community Aspects

The Santa Elena mine is located in the Sonoran River Valley in the municipality of Banámichi, a community of approximately 1,600 inhabitants.

The social area of influence is the geographic area in which the mining operation and exploration activities may generate positive or negative social, environmental, or economic impacts. Santa Elena's direct and indirect area of influence includes the municipalities of Banámichi, Huépac, San Felipe, Aconchi, Baviácora and Arizpe, with a total population of about 10,000 inhabitants.

Ranching and agriculture are the primary economic activities in the region, as well as small-scale commerce. Other than First Majestic's activities there is no other large-scale industry in the area of influence. The Company recognizes the impacts of its activities such as increased use of roadways and impacts to public infrastructure from the influx of workforce from outside the area of influence. First Majestic's most significant impacts to local communities include:

- Economic impact through employment generation and consumption of goods and services.
- Increased traffic for communities and properties located along the roadways the Company uses to transport its personnel, equipment, and materials required for the mine operation and exploration activities.
- Environmental disturbance.
- Accommodation and use of local public services by employees and contractors from outside the area of influence.

The Santa Elena mine currently employs more than 950 people, including temporary contractors supporting the ongoing operations and the current projects. In 2020, approximately 40% of all employees and contractors were from local communities.

The company's CSR department engages with local communities and relevant stakeholders to identify local development priorities and plan social investment projects, programs, and initiatives. These include:

- Community Health: The Company built and established a doctor´s office and medical dispensary in La Mora community in Banámichi. In addition to providing medical consultations, the service also provides training for local communities and first responders in first aid and other wellness topics.
- Local Content Program: In 2019 and 2020, Santa Elena established a strategic approach to the local employment and supply chain. Local community training programs are being developed for

implementation in 2021, with the aim of increasing local participation in our workforce and procuring contracted services opportunities.
- Annual Safety Fairs: Santa Elena's largest community event, the annual Safety Fair attracts over 3,000 people and engages employees, their families, and broader communities. In addition to general education about mining, the purpose of this event is to build awareness about responsible mining practices in health and safety, environmental stewardship, and social responsibility.
- Education: Collaboration agreement with a local secondary school, through which Santa Elena's staff support educational activities in agricultural subjects. In addition, Fisrt Majestic provides 12 scholarships each year to local university students.
- Support to local infrastructure: Santa Elena contributes on average 350 equipment hours annually to the municipality for road maintenance, waste dump maintenance, and irrigation systems maintenance.

Nusantara has surface rights agreements in place with different landowners which support the operations and exploration activities. The most relevant ones are described in section 4.4.

20.3. Mine Closure Plan

First Majestic's closure plan is intended to comply with policies and terms included in the obligations denominated as Asset Retirement Obligations (ARO), in particular those related to the works and activities to be carried out in closure preparation and post-closure. The Santa Elena closure plan includes the following concepts: post-operation activities, closure of facilities, reclamation of certain areas, monitoring, and site abandonment.

One of the purposes of the plan is to quantify the budget required to support and complete the closing works and mitigation activities relevant to soil quality, surface water, groundwater, and wildlife in the area of influence of the infrastructure used for the mining and processing activities.

First Majestic records a decommissioning liability for the estimated reclamation and closure of the Property, including site rehabilitation and long-term treatment and monitoring costs, discounted to net present value (NPV).

The NPV is determined using the liability-specific risk-free interest rate. The estimated NPV of reclamation and closure cost obligations is re-assessed on an annual basis or when changes in circumstances occur and/or new material information becomes available. Increases or decreases to the obligations arise due to changes in legal or regulatory requirements, the extent of environmental remediation required, cost estimates and the discount rate applied to the obligation. The NPV of the estimated cost of these changes is recorded in the period in which the change is identified and quantifiable. Reclamation and closure cost obligations relating to operating mine and development projects are recorded with a corresponding increase to the carrying amounts of related assets.

The estimation of restoration and closing costs was carried out using the Standardized Reclamation Cost Estimator (SRCE) model. The SRCE model contains best practices for estimating the remediation and restoration costs of areas impacted by industrial processes. First Majestic adapted the model to reflect current regulations in Mexico, and estimates were escalated for inflation.

First Majestic has accrued a decommissioning liability consisting of reclamation and closure costs for the Santa Elena mine, this estimate was $6.19 M as of December 2020 and was based on the following considerations:

- Closure and seal of underground entries and associated surface installations;
- Demobilization of the processing plant and above ground associated installations;
- Demobilization of ancillary service buildings: offices, general service infrastructure, poser generation sites and shops; and
- Closure of the tailings management facility.

21. CAPITAL AND OPERATING COST

21.1. Capital Costs

The Santa Elena mine has been under First Majestic operation since October 2015. The sustaining capital expenditures are budgeted on an as-required basis, established on actual conditions at the mine and the processing plant infrastructure. The LOM plan includes estimates for sustaining capital expenditures for the mining and processing activities required.

Sustaining capital expenditures will mostly be allocated for on-going development, infill drilling, mine equipment rebuilding, major equipment overhauls or replacements, plant maintenance and on-going refurbishing, and for tailings management facilities expansion as needed.

Estimated sustaining capital expenditures for the life of mine plan are assumed to average $10.4 million per annum. The amount of exploration conducted to find new targets, with the objective of replacing and/or expanding the Mineral Resources will be dependent on the success of exploration and diamond drilling programs. Due to the uncertainty of the exploration success, the potential new sources of mineralization are not included in the LOM plan. Sustaining capital is focused on maintaining current operational capacities, plant and equipment, while expansionary capital is focussed on expanding new sources of mineralization. Table 21-1 presents the summary of the sustaining and expansionary capital expenditures.

Table 21-1: Santa Elena Mining Capital Costs Summary (Sustaining Capital)

Type (M USD)	Total	2021	2022	2023	2024	2025
Mine Development	**$ 21.5**	$ 11.1	$ 7.4	$ 3.0	$ -	$ -
Infill Drilling	**$ 1.4**	$ 0.4	$ 0.4	$ 0.4	$ 0.2	$ -
Property, Plant & Equipment	**$ 19.2**	$ 6.3	$ 4.2	$ 3.8	$ 2.7	$ 2.3
Other Sustaining Costs	**$ 4.5**	$ 1.1	$ 1.1	$ 1.1	$ 1.1	$ -
Total Sustaining Capital Costs	***$ 46.6***	***$ 18.9***	***$ 13.1***	***$ 8.3***	***$ 4.0***	***$ 2.3***
Near Mine Exploration	**$ 5.1**	$ 1.5	$ 1.5	$ 1.5	$ 0.7	$ -
Total Capital Costs	***$ 51.8***	***$ 20.4***	***$ 14.6***	***$ 9.8***	***$ 4.8***	***$ 2.3***

21.2. Operating Costs

Santa Elena has a well-established cost management system and a good understanding of the costs of operation. Although the cost inputs are based on site actuals and contractor quotes, the majority of which are priced in Mexican pesos and converted to US dollars for the purposes of this Report (e.g., labour, various supplies, etc.), there will be variances from the estimates used for this Report and the actual costs. The total cost of mining is expected to be within ±15%, which is considered in sufficient detail that, with the current experience at Santa Elena, Mineral Reserves can be supported.

A summary of the Santa Elena operating costs resulting from the LOM plan and the cost model used for assessing economic viability is presented in Table 21-2. A summary of the annual operating expense is presented in Table 21-3.

Table 21-2: Santa Elena Operating Costs

Type	$USD/tonne
Mining Cost	$ 28.7
Processing Cost	$ 33.0
Indirect Costs	$ 21.1
Total Production Cost	*$ 82.8*
Selling Costs	$ 2.0
Total Cash Cost	*$ 84.9*

Table 21-3: Santa Elena Annual Operating Costs

Type (M USD)	Total	2021	2022	2023	2024	2025
Mining Cost	$ 84.4	$ 20.3	$ 18.8	$ 16.6	$ 14.2	$ 14.5
Processing Cost	$ 97.1	$ 30.2	$ 23.1	$ 17.9	$ 12.8	$ 13.1
Indirect Costs	$ 62.1	$ 17.8	$ 12.4	$ 11.3	$ 10.1	$ 10.4
Total Production Cost	***$ 243.6***	***$ 68.3***	***$ 54.4***	***$ 45.8***	***$ 37.2***	***$ 38.0***
Selling Costs	$ 6.0	$ 1.7	$ 1.4	$ 1.0	$ 0.9	$ 1.0
Total Cash Cost	*$ 249.6*	*$ 69.9*	*$ 55.7*	*$ 46.9*	*$ 38.1*	*$ 38.9*

22. ECONOMIC ANALYSIS

First Majestic is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material expansion of current production is planned.

An economic analysis to support presentation of Mineral Reserves was conducted. Under the assumptions presented in this Report, the operations show a positive cash flow, and can support Mineral Reserve estimation.

23. ADJACENT PROPERTIES

This section is not relevant to this Technical Report.

24. OTHER RELEVANT DATA AND INFORMATION

This section is not relevant to this Technical Report.

25. INTERPRETATION AND CONCLUSIONS

The following interpretations and conclusions are a summary of the QPs' opinions based on the information presented in this Report.

25.1. Mineral Tenure, Surface Rights and Agreements

Information provided by First Majestic technical and legal experts supports that the mining tenure held is valid and is sufficient to support declaration of Mineral Resources and Mineral Reserves; Santa Elena has adequate mineral concessions and surface rights to support mining operations over the planned LOM presented in this Report.

For exploration purposes, if new areas of investigation are targeted, it is expected that there will be a need to formalize agreements with surface landowners.

First Majestic has agreements with the landowners in the area and some of these agreements may be subject to renegotiation from time to time. Material changes to the existing agreements may have a significant impact on operations at Santa Elena.

If First Majestic is not able to reach an agreement for the use of the lands with the landowners, then First Majestic may be required to modify its operations or plans for the exploration and development of its mines.

25.2. Geology and Mineralization

The current understanding of mineralization and alteration styles, as well as the structural and lithological controls on mineralization at the Santa Elena mine and the Ermitaño project are sufficient to support the Mineral Resource and Mineral Reserve estimations.

The Santa Elena mine deposits are considered to be examples of epithermal silver- and gold-bearing quartz veins that formed in a low to intermediate sulphidation setting. The Ermitaño project is an example of gold- and silver-bearing epithermal quartz veins that formed in a low sulphidation environment.

25.3. Exploration and Drilling

The exploration programs completed to date are appropriate for the mineralization style. Sampling methods (core drill hole and channel sampling) and data collection are acceptable given the Santa Elena and Ermitaño deposits dimensions, mineralization true widths, and the nature of the deposits. The programs are reflective of industry-standard practices and can be used in support of Mineral Resource and Mineral Reserve estimation.

25.4. Data Analysis

Collar, downhole survey, lithology, core recovery, SG and assay data collected are considered suitable to support Mineral Resource and Mineral Reserves estimation. Sample preparation, analysis, and quality-control measures meet current industry standards and provide reliable gold and silver results.

25.5. Metallurgical Testwork

The metallurgical analysis discussed in this Report is based on historical plant operational data, mineralogical investigations, and plant performance monitoring tests performed in the Central Laboratory. The tests performed by the Central Laboratory show good level of repeatability when compared to plant performance.

After performing several comminution tests, based in the BWi approach, a low level of variability in the hardness of the material processed has been observed. Mineralogy characteristics of the mineralized material processed to date is similar to the mineralogy observed, at the macroscopic level, in the drill core samples representing potential plant feed assumed in the LOM plan.

Besides performing laboratory tests using standard plant conditions, metallurgical investigation is conducted on monthly composites to systematically evaluate the effect of key processing variables. The objective of this ongoing program is to explore ways to optimize silver and gold recoveries, and to assist operations in diagnosing production issues and recommending solutions to these issues. Study variables include grind-particle size, cyanide dosage, retention time, reagent type, and oxidizing agents such as pure oxygen and lead nitrate.

The maturity of the processing operation, the established practices in metallurgical monitoring and investigations, and the knowledge of the future mineralized material support the ongoing metallurgical recoveries considered in the LOM plan presented in this Report and in the economic analysis that supports the Mineral Reserves. Recoveries were assumed at 93% for silver and 95.6% for gold. There is risk that the assumed recovery levels will not be fully achieved, if future mineralized materials present significant differences to historical mineralized materials.

Recovery forecasts for the Ermitaño mineralization are predicted to be 85% for silver and 96% for gold.

25.6. Mineral Resource Estimates

The Mineral Resource estimates for the Santa Elena mine and the Ermitaño project are prepared in accordance with the CIM Estimation of Mineral Resource and Mineral Reserve Best Practice Guidelines (November 2019), and follow the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014), that are incorporated by reference into NI 43-101. The resource estimates are a reasonable representation of the mineralization found in the Project at the current level of sampling.

The Mineral Resource estimates for the Santa Elena mine are based on the current database of exploration drill holes and production channel samples, underground level geological mapping, the geological interpretation and model, as well as the surface topography and underground mining development wireframes available as the December 31, 2020 cut-off date for scientific and technical data.

The Mineral Resources were classified into Measured, Indicated, or Inferred confidence categories based on the following factors:

- Confidence in the geological interpretation and models;
- Confidence in the continuity of metal grades;
- The sample support for the estimation and reliability of the sample data.
- Areas that were mined producing reliable production channel samples and detailed geological control.

The drill hole database for the Ermitaño project was reviewed and verified by the resource geologist and supports that the QAQC program was reasonable. The sample data used in the estimate has an effective date of December 31, 2020 and consists of exploration core drill holes.

The Mineral Resources were classified into Indicated, or Inferred confidence categories based on the following factors:

- Confidence in the geological interpretation and models;
- Confidence in the continuity of metal grades;
- The sample support for the estimation and reliability of the sample data.

Factors that may materially impact the Mineral Resource estimates include:

- Metal price and exchange rate assumptions;
- Changes to the assumptions used to generate the silver-equivalent grade cut-off grade;
- Changes in local interpretations of mineralization geometry and continuity of mineralized zones;
- Changes to geological and mineralization shape and geological and grade continuity assumptions;
- Changes to geotechnical, mining, and metallurgical recovery assumptions;
- Assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate.
- The production channel sampling method has some risk of non-representative sampling that could result in poor accuracy locally. In addition, there is potential for the large number of channel samples to overwhelm samples from the drill holes in some areas. This is recognized and addressed during resource estimation by restricting the area of influence related to these samples to very short ranges.

25.7. Mineral Reserve Estimates

The Mineral Reserves estimates for the Santa Elena mine include considerations for the underground mining methods in use, dilution, mining widths, mining extraction losses, metallurgical recoveries, permitting and infrastructure requirements.

Factors which may materially affect the Mineral Reserve estimates for the Santa Elena mine include fluctuations in commodity prices and exchange rates assumptions used; material changes in the underground stability due to geotechnical conditions that may increase unplanned dilution and mining loss; unexpected variations in equipment productivity; material reduction of the capacity to process the mineralized material at the planned throughput and unexpected reduction of the metallurgical recoveries; higher than anticipated geological variability; cost escalation due to external factors; changes in the taxation considerations; the ability to maintain constant access to all working areas; changes to the assumed permitting and regulatory environment under which the mine plan was developed; the ability to maintain mining concessions and/or surface rights; the ability to renew agreements with the different surface owners in Santa Elena; and the ability to obtain and maintain social and environmental license to operate.

25.8. Mine Plan

Mining operations can be conducted year-round in the Santa Elena mine. The underground mine plan presented in this Report was designed to deliver an achievable plant feed, based on the current knowledge of geological, geotechnical, geohydrological, mining and processing conditions. Production forecasts are based on current equipment and plant productivities.

In the opinion of the QP, it is reasonable to assume that if the sustaining capital expenditures expressed in the LOM plan are executed, the Santa Elena mine will have the means to continue operating as planned.

The current mine life to 2025 is considered achievable based on the projected annual production rate and the estimated Mineral Reserves. There is some upside if some or all of the Inferred Mineral Resources can be upgraded to higher confidence Mineral Resource categories.

There is some upside if the Indicated Mineral Resource estimated for the Ermitano project can be converted into Probable Mineral Reserve after the pre-feasibility studies and field investigations are completed and the economic analysis supports the declaration of Mineral Reserve.

25.9. Operations Continuity

Although First Majestic has the capacity to continue certain administrative functions remotely, temporary or permanent unavailability of key personnel (including due to contraction of COVID-19 or as a result of mobility restrictions imposed by governments and private actors to combat the spread of COVID-19) may have an adverse impact on the continuity of the operations.

In the opinion of the QP, such interruptions do not preclude First Majestic from extracting the Mineral Reserves after those interruptions have been resolved.

25.10. Processing

The Santa Elena processing plant is in good operating condition, with less than 10 operating years. The plant design is based on comminution of ROM material and agitated tank-leaching. The process flow is based on well-established technology. Overall plant availability is high, and the risk of catastrophic failures and consequently unplanned long shutdowns is low.

In recent years, the addition of secondary grinding has added operational flexibility and is supporting high metal recoveries. There is still opportunity for the continued optimization of the operations, for example: ultra-fine grinding, possible addition of automated samplers and the implementation of modern control systems. Such modernization plans are currently being investigated as they may improve the repeatability of high-performance periods, provide better metallurgical accounting, and the corresponding reconciliation of production data.

25.11. Infrastructure

The Santa Elena mine is well equipped with the basic services required to support the mine and plant operations. Access to the town of Banamichi through well maintained state roads is year-round by land, as well as access to site using the service road. The mine has all required infrastructure in place to support operations for the LOM plan presented in this Report.

The capacity of the FTSF is sufficient to hold the compacted filtered paste tailings generated from the production contained in the LOM plan.

25.12. Markets and Contracts

The end product from the Santa Elena mine is in the form of silver–gold doré bars. The physical silver–gold doré bars, usually containing greater than 97% silver and 1% gold in weight, are delivered to refineries where doré bars are refined to commercially marketable 99.9% pure silver and gold bars. The terms contained within the existing sales contracts are typical of, and consistent with, standard industry practices.

Selling costs, including freight, insurance and representation, as well as refining charges, payable terms, deductions, and penalties terms for Santa Elena doré bars, were reviewed by the QP and found to be in line with similar commercial conditions of metal producers in Mexico. All these costs have been incorporated into the long-term economic analysis.

The likelihood of securing ongoing contracts for doré sales is a reasonable assumption; however, in downturn market conditions, there can be no certainty that the Santa Elena mine or First Majestic will always be able to do so or what terms will be available at the time.

25.13. Permitting, Environmental and Social Considerations

Permits held by First Majestic for the Santa Elena mine are sufficient to ensure that mining activities are conducted within the regulatory framework required by the Mexican government and that Mineral Resources and Mineral Reserves can be declared.

Closure provisions are appropriately considered in the mine plan and economic analysis.

25.14. Capital and Operating Cost Estimates

The capital and operating cost provisions for the LOM plan that supports the Santa Elena Mineral Reserves have been reviewed. The basis for the estimates is appropriate to the known mineralization, mining and production schedules, marketing plans, and equipment replacement and maintenance requirements.

Capital cost estimates include appropriate estimates for sustaining capital.

25.15. Economic Analysis Supporting Mineral Reserve Declaration

First Majestic is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material expansion of current production is planned.

An economic analysis to support presentation of Mineral Reserves was conducted. Under the assumptions presented in this Report, the operations show a positive cash flow, and can support Mineral Reserve estimation.

25.16. Conclusions

Under the assumptions used in this Report, the Santa Elena mine has positive economics for the LOM plan, which supports the Mineral Reserve statement.

26. RECOMMENDATIONS

Work or studies recommended by the QPs are presented in two phases.

26.1. Phase 1

The proposed work or studies presented in Phase 1 are not dependent on previous results or the outcome of the different projects or studies. These works or studies can be carried out concurrently. The Phase 2 programs are dependent on the findings of the Phase 1 program.

The total expenditure for the Phase 1 works is estimated at $15.5 M.

26.1.1. Exploration

First Majestic has successfully replaced depleted Mineral Resources through near-mine drilling at the Santa Elena mine since acquiring the property in 2015, and has made a significant new discovery at the Ermitaño project through brownfield drilling. Mineralization remains open down dip in the America and Alejandra Veins at Santa Elena, and good exploration targets remain in the footwall of the Santa Elena Main Vein. Mineralization remains open to the east along the strike of the Ermitaño Vein.

The Santa Elena concessions cover 102,000 ha of prospective ground with potential to host additional epithermal gold–silver deposits. Several drilled and undrilled prospects warrant continued exploration. Significant portions of the Santa Elena concessions remain under explored; prospecting, mapping, and geochemical and geophysical surveys are expected to identify new prospects in the under-explored areas.

The following annual drilling programs are recommended.

- At Santa Elena: an annual 4,000 m infill sustaining drill program to support short-term production plans and an annual 15,000 m near-mine drill program to support mid-term production projections;
- At Ermitaño: an annual 1,000 m underground infill drill program to increase confidence in the current Indicated and Inferred Mineral Resources and a 15,000 m near-mine drill program to explore for expansions to the mineralization;
- Regionally: an annual 15,000 m brownfield surface drill program on two or three prospects.

This 50,000 m annual exploration drill program is estimated to costs $5 M per year excluding related underground access development costs.

In addition, an annual prospect generation program consisting of prospecting, soil and rock geochemical surveys, mapping, and geophysical surveys is recommended. This prospect generation program is estimated to cost $250,000 per year.

The amounts and estimated cost of these recommended exploration programs should be reviewed annually.

26.1.2. Production Channel Samples

The field sampling procedure for production channel samples has some risk of introducing sampling bias, but this possible bias has not yet been assessed. A study to assess channel sample quality should be performed and could consist of a comparison of 30 sawn channels samples with paired un-sawn channel samples. This study is estimated to cost $10,000.

26.1.3. Reconciliation

A reconciliation system for the Santa Elena mine, based on the mine value chain concept, is currently being implemented. The procedures are based on best practices adopted in other reconciliation systems across the mining industry. The reconciliation system compares the estimates of mineral resource, mineral reserves, grade control and mine planning with the measured results from ore/waste transport, processing, and final product. It is recommended that reconciliation monitoring be used to continuously improve the comparison of estimates to measured results all along the mine value chain to highlight opportunities to improve the traceability, identification and control of temporary storage areas, transfers and materials handling practices.

The implementation cost for the integral reconciliation system at Santa Elena is estimated at $200,000.

26.1.4. Hydrogeology

There are currently no indications that groundwater will significantly impact the mine dewatering system going forward, however mapping of groundwater-bearing structures in level workings and ramps should be conducted where encountered to determine if additional dewatering will be required.

It is recommended that a field investigation be completed to assess ground-water conditions at depth of Santa Elena Main Vein and Alejandras. The estimated cost to complete these field investigations and studies is $300,000.

26.1.5. Ermitaño PFS

A pre-feasibility study for the Ermitaño project is currently ongoing with different programs in progress, including field investigations in hydrogeology and geotechnical drilling and modeling, as well as metallurgical testwork. A test-mine area is being prepared underground at Ermitaño to further investigate geotechnical conditions and to assess the required delineation drilling to support ground-control systems design and detailed stope design.

It is recommended that these field investigations be completed and a study be compiled to support the declaration of Mineral Reserves for Ermitaño. The estimated cost to complete these studies and field investigations is $1.5 M.

26.1.6. Autogenous Grinding Conversion

The recently installed HIG-Mill is operating as a secondary stage of grinding and an opportunity to optimize the operation of the existing primary grinding circuit (ball mill) to reduce energy and media consumption has been identified. Pilot test programs conducted at SGS in Canada (Lakefield) and Chile concluded that the Santa Elena mineralized material is suitable for autogenous and/or semi-autogenous (AG/SAG) grinding. To operate the primary grinding circuit in such a way, modifications would be required on the crushing and bulk material handling circuits as well as on the ball mill circuit. Significant savings in specific grinding energy and steel media consumption are expected with this modification.

The AG/SAG grinding conversion is estimated to cost $8.0 M.

26.1.7. CCD Circuit Upgrade

With the recent implementation of the HIG-Mill for secondary grinding, silver and gold recovery levels increased, and although the levels of silver and gold in the final solution tails are acceptable, it has been noted that the finer leach feed particles have been impacted by the limited washing capacity of the plant. Currently, the processing plant is equipped with three high-efficiency CCD thickeners, and the addition of a high-compression thickener should be considered to serve as a fourth CCD. The expansion of the CCD circuit will improve overall washing efficiency and also allow the secondary grinding circuit to operate more effectively thus achieving finer product size and higher metal recoveries. Ultra-fine grinding could result in improved metallurgical performance and the addition of a fourth CCD may allow Santa Elena to optimally process ultra-fine particles prior to press filtration of the tailings.

A preliminary study has been conducted for the design and installation of one additional CCD thickener. It is recommended that this project be assessed for potential implementation in the Santa Elena processing plant by the completion of the detailed engineering study to support an eventual construction. The estimated cost of this study is $250 k.

26.1.8. Tailings Filtration Upgrade

With the implementation of the secondary grinding (HIG-Mill circuit), the processing plant has been operating with finer grind sizes which have proved beneficial in terms of silver and gold recovery levels. However, the finer particle size distribution of the tailings has taken up the capacity of the existing tailings filtration circuit, which includes two belt vacuum filters, and the moisture levels of the filtered tailings are approaching the upper limit. Modernization of the tailings management system is recommended to reduce moisture content in final tailings based on current grinding practices, and to allow the plant to handle the ultra-fine grind of the ore to recover the value from increased levels of metal recovery. The tailings filtration circuit would benefit from the installation of a 3,000 tpd capacity press filter with 98 square plates (3.5 m x 3.5 m), associated infrastructure, and auxiliary equipment.

A preliminary study has been conducted for the design and installation of two filter-presses, with one operating and one in stand-by. It is recommended that this project be assessed for potential implementation in the Santa Elena processing plant by the completion of a value engineering study to rationalize capital requirements, to analyze the possibility of installing only one filter-press, and to use the current belt-filters as backup. The estimated cost of this study is $0.5 M.

26.2. Phase 2

The total expenditure for the Phase 2 works is estimated at $28.4 M.

26.2.1. CCD Circuit Upgrade

If Phase 1 of the CCD circuit upgrade study confirms viability, a second phase could follow for the installation of the filter-press, which as of the Report effective date is estimated to cost $7.0 M.

26.2.2. Tailings Filtration Upgrade

If Phase 1 of the tailings filtration upgrade study confirms viability, a second phase could follow for the installation of the filter-press, which as of the Report effective date is estimated to cost $21.4 M.

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