

# Technical Report for the Platosa Polymetallic (Silver, Lead and Zinc) Mine, Mexico

Report Prepared for  
**Excellon Resources Inc.**



Report Prepared by



SRK Consulting (Canada) Inc.  
3CE016.010  
June 17, 2021



# Technical Report for the Platosa Polymetallic (Silver, Lead and Zinc) Mine, Mexico

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**Effective date:** March 31, 2021  
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Cover: Platosa Mine Landscape (Source: CITDM 2021)

## IMPORTANT NOTICE

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# Executive Summary

## Introduction

The Platosa Mine is an operating underground polymetallic (silver, lead and zinc) mine, located in northeastern Durango State, Mexico. It is located approximately 5 kilometres north of the town of Bermejillo and 45 kilometres north of the city of Torreón. The deposit consists of a series of high-grade carbonate-replacement deposits (CRD) occurring as mantos. Excellon Resources Inc. (Excellon) operates and owns 100% of the Platosa Mine through its wholly owned subsidiary, Minera Excellon de Mexico S.A. de C.V.

This technical report documents a mineral resource statement for the Platosa Mine prepared by SRK. It was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 (NI43-101) and Form 43-101F1. The mineral resource statement reported herein was prepared in conformity with generally accepted CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (2019).

In accordance with NI43-101 guidelines, Mr. Luis Alfonso Soto Contreras, CPG (AIPG#11938), visited the Platosa Mine on April 26 to April 29 accompanied by Mr. Jorge Ortega, Geo (OGQ#626), Excellon's Exploration Manager.

## Property Description and Ownership

The Platosa Mine property is located in the northeast portion of the State of Durango, north-central Mexico, approximately 45 kilometres north of the city of Torreón, and 5 kilometres north of the village of Bermejillo. The Platosa Mine is wholly owned by Excellon through its Mexican subsidiary Minera Excellon de México, S.A. de C.V., and comprises 74 mining concessions. These concessions, including fractional concessions, cover a total area of 11,049 hectares.

The property is approximately a one-hour drive from the airport via México Highway 49, which is a major north-south trucking route through Mexico to the United States. Rail and power transmission lines run parallel to the highway, and the entire project area, located two kilometres from Highway 49, is easily accessible year-round.

## Geology and Mineralization

The Platosa Mine lies in the Sierra Bermejillo, a northwest-trending anticline-syncline pair developed in Mesozoic sedimentary rocks. Platosa is underlain by folded and faulted Mesozoic sedimentary rocks, locally intruded by dykes and sills of Laramide age. The principal fault system in the property area is the Platosa Structural Zone (PSZ), a 250- to 1,500-metre wide northwest-trending zone of fracturing and shearing that traverses the eastern margin of the Sierra Bermejillo. The PSZ includes a series of fault planes that strike north–northwesterly and dip steeply east; it has been mapped along strike for 5 kilometres northwest and southeast of the Platosa Mine (Megaw 2002).

The Platosa Mine targets polymetallic (silver, lead, and zinc) mineralization occurring as shallow to steeply dipping bodies of massive carbonate replacement deposits or mantos. The main silver-, lead- and zinc-bearing minerals are galena, sphalerite, acanthite and lesser proustite. The mantos dip in accordance with the stratigraphy towards the east where a series of late extensional features extend the mineralization to depths ranging from 60 metres on the west side of the mine, and approximately 320 metres on the east.

Three large-scale deformation events and the onset of a Tertiary magmatic event created favourable ground preparation and a magmatic source for mineralizing fluids. The most significant mantos at Platosa are the 623, NE-1 and NE-1 south mantos, which are currently being mined and that are open for expansion.

## **Exploration Status**

Exploration work by Excellon on the Platosa Mine has included various campaigns of geological mapping, rock and soil geochemical sampling, biogeochemical sampling, soil gas mercury, hydrocarbon surveys, ground and airborne geophysical surveys, fluid inclusion and sulphur isotope studies, and diamond drilling documented by detailed core logging. Recently, Excellon has also conducted downhole acoustic and optical televiewer surveys on selected drillholes, as well as commenced a trial program with Corescan, a hyperspectral core imaging system, to improve characterization and mapping of the physical and chemical properties of host rocks.

A total of 1,794 core drillholes (398,881 metres) were drilled by Apex and Excellon on the Platosa Mine between 1999 and March 2021. The mineral resource model considers 1,373 core drillholes (252,456 metres) that were directly used in the estimation.

## **Sample Preparation, Analyses, Security, and Data Verification**

In the opinion of SRK, the drilling strategy and procedures used by Excellon conform to generally accepted industry best practices. The drilling information is sufficiently reliable, and the drilling pattern is sufficiently dense to interpret with confidence the geometry and the boundaries of the polymetallic (silver, lead, and zinc) mineralization. All core sampling was conducted by appropriately qualified personnel under the direct supervision of the project geologist.

The sampling preparation, security and analytical procedures used by Excellon are consistent with generally accepted industry best practices and are, therefore, adequate. The review of the analytical quality control data produced by Excellon suggest that the analytical results are sufficiently reliable for the purpose of mineral resource estimation. SRK recommends continued diligence in monitoring the performances of standard reference materials and implementing corrective action as required. Considering the variable performance of in-house blank material used for lead and zinc, it is recommended that a certified blank material be introduced.

## Mineral Resource and Mineral Reserve Estimates

SRK constructed a block model using a conventional geostatistical block modeling approach constrained by wireframed domains. The block model was populated with silver, lead, zinc, and gold values estimated by ordinary kriging information from capped composited data and estimation parameters derived from variography. After verification and validation, block estimates were classified considering the drillhole spacing, geologic confidence and continuity of category.

The mineral resource model considers 1,373 core drillholes (252,456 metres) that were directly used in the estimation. The mineral resources have been estimated in conformity with generally accepted *CIM Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines* (November 2019) and are reported in accordance with the Canadian Securities Administrators' National Instrument 43-101.

The mineral resource estimation work including a geological solids audit, grade estimation, associated sensitivity analyses, and mineral resource classification was completed by Joycelyn Smith, PGeo (APGO#2963), under supervision of Mr. Glen Cole, PGeo (PGO#1416), an appropriate independent Qualified Person as this term is defined in National Instrument 43-101. The overall process was reviewed by Dr. Oy Leuangthong, PEng (PEO#90563867) and Benny Zhang, PEng (PEO#100115459).

SRK reviewed the geological solids constructed by Excellon in Leapfrog Geo™, which were modelled as vein-type wireframes interpolated using both the lithology and mineralization logs. Stratigraphic units were constructed utilizing stratigraphic sequence modelling defined by lithology log data. A series of north-south oriented, variably-dipping from moderate to steep and east to west, late cross-cutting faults vertically offset the lithological units and mantos domains.

Considering the relatively narrow mantos domains, SRK chose to composite at 1 metre (with intervals less than 0.5 metre equally redistributed) to avoid 'breaking' assays to form larger composites while still retaining sufficient sample data for geostatistical analyses. Capping was performed per domain. SRK relied on a combination of probability plots and capping sensitivity plots. Specific gravity data were also capped, by domain, to avoid any extreme low and/or high values for estimation. Low values for specific gravity were generally well-behaved and did not require capping.

A block size of 5.0 metres by 5.0 metres by 2.0 metres was selected, which is similar to the block dimensions of the current mineral resource model. Subcells were generated at 1.0 metre by 1.0 metre by 0.25 metre. The block model was populated with estimated silver, lead, and zinc grades using ordinary kriging in the mineralized domains and applying up to three estimation runs with progressively relaxed search ellipsoids and data requirements.

The block classification strategy considers drillhole spacing, geologic confidence and continuity of category. SRK considers that there are no Measured blocks within the Platosa Mine. All block estimates within the mineralized mantos below and to the east of the current mining front were classified as Indicated mineral resources. Potentially recoverable pillars and accessible unmined

areas in the upper portion of the mine have been classified as Inferred mineral resources in consideration of the engineering work required to confirm their potential extraction.

The Mineral Resource Statement for the Platosa Mine is presented in Table i, depleted as of February 8, 2021, and has an effective date of March 31, 2021.

**Table i: Mineral Resource Statement\*, Platosa Mine, Mexico, SRK Consulting (Canada) Inc., March 31, 2021**

Category	Quantity ('000 t)	Grade			Contained Metal		
		Silver (g/t)	Lead (%)	Zinc (%)	Silver ('000 oz)	Lead ('000 lbs)	Zinc ('000 lbs)
Measured	-	-	-	-	-	-	-
Indicated	317	485	5.3	5.5	4,948	36,797	38,781
<b>Total</b>	<b>317</b>	<b>485</b>	<b>5.3</b>	<b>5.5</b>	<b>4,948</b>	<b>36,797</b>	<b>38,781</b>
Inferred	42	749	4.3	5.4	1,007	4,000	5,002

\* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures are rounded to reflect the relative accuracy of the estimates. Composites were capped where appropriate. Mineral resources are reported at a silver equivalent cut-off value of 275 grams per tonne (g/t), considering metal prices of US\$24.00 per ounce of silver, US\$0.86 per pound of lead, US\$1.10 per pound of zinc, and assuming metal recovery of 91% for silver, 80% for lead and 80% for zinc.

## Recommendations

The geological setting, character of the polymetallic mineralization and the exploration results to date are of sufficient merit to justify continued exploration and technical study expenditures to delineate additional mineral resources that can potentially be used to extend the life of mine.

A proposed exploration work program includes the following:

- Infill, definition and step-out drilling within and around mantos ahead of the production, with the continued aim to reduce the drill spacing ahead of mine workings to 10 metres to 15 metres.
- Continued regional exploration of the multiple targets that exist as part of the greater land package.
- Geological and geophysical studies to improve the overall understanding of structure, geochemistry, and geophysical response.
- Continued target generation and systematic assessment using field geological and geophysical techniques to be followed up by drilling.
- Mineralogical study to refine understanding of chemical processes and applications to metallurgy.
- Mineral resource model update considering new drilling and the additional of potential remnant material
- Update the life of mine plan based on the latest resource block model and economic conditions.

The total cost of the recommended work program is estimated at C\$7,480,000. SRK is unaware of any other significant factors and risks that may affect access, title, or the right or ability to perform the exploration work recommended for the Platosa Mine.

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# 1 Introduction and Terms of Reference

The Platosa Mine is an operating underground polymetallic (silver, lead, and zinc) mine, located in northeastern Durango State, Mexico. It is located approximately 5 kilometres north of the town of Bermejillo and 45 kilometres north of the city of Torreón. The deposit consists of a series of high-grade carbonate-replacement deposits (CRD) occurring as mantos. Excellon Resources Inc. (Excellon) operates and owns 100% of the Platosa Mine through its wholly owned subsidiary, Minera Excellon de Mexico S.A. de C.V.

Excellon is advancing a precious metals growth pipeline that includes: the Platosa Mine, the Kilgore Project and an option on the Silver City Project, a high-grade epithermal silver district in Saxony, Germany. Underground development and mining at Platosa are carried out by Excellon employees using company-owned equipment. Exploration work at Platosa is managed and carried out by Excellon personnel with consultants being hired on an as-needed basis.

In February 2021, Excellon commissioned SRK Consulting (Canada) Inc. (SRK) to audit the geological model and prepare a mineral resource model for the Platosa Mine. The services were rendered between February and March 2021, leading to the preparation of the Mineral Resource Statement reported herein that was disclosed publicly by Excellon in a news release on May 13, 2021.

This technical report supports and documents a Mineral Resource Statement for the Platosa Mine prepared by SRK. It was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1. The Mineral Resource Statement reported herein was prepared in conformity with generally accepted CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* (2019). Additionally, Sections 15-21 of this report have been completed to provide an update of the operational status of the operation.

## 1.1 Scope of Work

The scope of work, as defined in a letter of engagement executed on February 12, 2021 between Excellon and SRK includes the construction of a mineral resource model for the silver, lead and zinc mineralization delineated by drilling on the Platosa Mine and the preparation of a technical report in compliance with National Instrument 43-101 and Form 43-101F1 guidelines. This work typically involves the assessment of the following aspects of this project:

- Topography, landscape, access
- Regional and local geology
- Exploration history
- Audit of exploration work carried out on the project
- Geological modelling
- Mineral resource estimation and validation
- Preparation of a Mineral Resource Statement



- Recommendations for additional work

## 1.2 Work Program

The mineral resource statement reported herein represents a collaboration between Excellon and SRK personnel. The exploration database was compiled and maintained by Excellon and was audited by SRK. The geological model and outlines for the polymetallic (silver, lead and zinc) mineralization were reviewed by SRK from a three-dimensional geological interpretation provided by Excellon. In the opinion of SRK, the geological model is a reasonable representation of the distribution of the targeted mineralization at the current level of sampling. The geostatistical analysis, variography and grade models were completed by SRK during the months March and April, 2021. The Mineral Resource Statement reported herein was presented to Excellon in a memorandum report on April 16, 2021 and disclosed publicly in a news release dated May 13, 2021.

The Mineral Resource Statement reported herein was prepared in conformity with the generally accepted CIM *Exploration Best Practices Guidelines* and CIM *Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines*. This technical report was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1.

The technical report was assembled in Toronto during the months of April and May 2021.

## 1.3 Basis of Technical Report

This report is based on information collected by SRK during a site visit performed between April 26 and 29, 2021 and on additional information provided by Excellon throughout the course of SRK's investigations. SRK has no reason to doubt the reliability of the information provided by Excellon. Other information was obtained from the public domain.

Excellon technical staff contributed to various sections of the technical report, which were subsequently reviewed by the respective qualified person and audited by SRK. The responsibilities for each report section are listed in Table 1.

This technical report is based on the following sources of information:

- Discussions with Excellon personnel
- Inspection of the Platosa Mine area, including outcrop and drill core
- Review of exploration data collected by Excellon
- Additional information from public domain sources

**Table 1: Responsibility for Technical Report Sections**

Section	Title	Responsible	Qualified Person
1	Executive Summary	SRK / Excellon	All
1	Introduction	SRK	J Smith (SRK)
2	Reliance on Other Experts	SRK	J Smith (SRK)
3	Property Description and Location	SRK	J Smith (SRK)
4	Accessibility, Climate, Local Resources, Infrastructure and Physiography	SRK	J Smith (SRK) / A Contreras (SRK)
5	History	SRK	J Smith (SRK)
6	Geological Setting and Mineralization	SRK	A Contreras (SRK)
7	Deposit Types	SRK	A Contreras (SRK)
8	Exploration	SRK	J Smith (SRK)
9	Drilling	SRK	J Smith (SRK)
10	Sample Preparation, Analysis, and Security	SRK	J Smith (SRK)
11	Data Verification	SRK	J Smith (SRK) / A Contreras (SRK)
12	Mineral Processing and Metallurgical Testing	Excellon	P. Keller (Excellon)
13	Mineral Resource Estimates	Excellon	J Smith (SRK) / G Cole (SRK)
14	Mineral Reserve Estimates	Excellon	P. Keller (Excellon)
15	Mining Methods	Excellon	P. Keller (Excellon)
16	Recovery Methods	Excellon	P. Keller (Excellon)
17	Project Infrastructure	Excellon	P. Keller (Excellon)
18	Market Studies and Contracts	Excellon	P. Keller (Excellon)
19	Environmental Studies, Permitting, and Social or Community Impact	Excellon	P. Keller (Excellon)
20	Capital Cost and Operating Costs	Excellon	P. Keller (Excellon)
21	Economic Analysis	Excellon	P. Keller (Excellon)
22	Adjacent Properties	SRK	J Smith (SRK)
23	Other Relevant Data and Information	SRK	J Smith (SRK)
24	Interpretation and Conclusions	SRK	J Smith (SRK) / G Cole (SRK)
25	Recommendations	SRK	J Smith (SRK) / G Cole (SRK)
26	References	SRK / Excellon	J Smith (SRK)

## 1.4 Qualifications of SRK and SRK Team

The SRK Group comprises more than 1,400 professionals, offering expertise in a wide range of resource engineering disciplines. The independence of the SRK Group is ensured by the fact that it holds no equity in any project it investigates and that its ownership rests solely with its staff. These facts permit SRK to provide its clients with conflict-free and objective recommendations. SRK has a proven track record in undertaking independent assessments of mineral resources and mineral reserves, project evaluations and audits, technical reports and independent feasibility evaluations to bankable standards on behalf of exploration and mining companies, and financial institutions worldwide. Through its work with a large number of major international mining companies, the SRK Group has established a reputation for providing valuable consultancy services to the global mining industry.

The resource estimation work including geological solids audit, grade estimation, associated sensitivity analyses, and mineral resource classification was completed by Joycelyn Smith, PGeo (APGO#2963), under supervision of Mr. Glen Cole, PGeo (APGO#1416), an appropriate

independent Qualified Person as this term is defined in National Instrument 43-101. The effective date of the Mineral Resource Statement is March 31, 2021.

Information on the operational aspects of the Platosa Mine (Sections 14 to 21) has been compiled by Mr. Paul Keller, PEng (PEO#90101775) of Excellon.

Dr. Oy Leuangthong, PEng (PEO#90563867), a Corporate Consultant (Geostatistics) and Benny Zhang, PEng (PEO#100115459) from SRK, reviewed drafts of this technical report prior to their delivery to Excellon as per SRK internal quality management procedures. They have not visited the mine site.

## 1.5 Site Visit

In accordance with National Instrument 43-101 guidelines, Mr. Luis Alfonso Soto Contreras, CPG (AIPG#11938), visited the Platosa Mine on April 26 to April 29, 2021 accompanied by Mr. Jorge Ortega, Geo (OGQ#626), Excellon's Exploration Manager.

The purpose of the site visit was to review the digitalization of the exploration database and validation procedures, review exploration procedures, define geological modelling procedures, examine drill core, interview project personnel, and collect all relevant information for the preparation of a revised mineral resource model and the compilation of a technical report.

The site visit also aimed at investigating the geological and structural controls on the distribution of the gold mineralization in order to aid the construction of three dimensional gold mineralization domains.

SRK was given full access to relevant data and conducted interviews with Excellon personnel to obtain information on the past exploration work, to understand procedures used to collect, record, store and analyze historical and current exploration data.

## 1.6 Acknowledgement

SRK would like to acknowledge the support and collaboration provided by Excellon personnel for this assignment. Their collaboration was greatly appreciated and instrumental to the success of this project.

## 1.7 Declaration

SRK's opinion contained herein and effective **May 13, 2021** is based on information collected by SRK throughout the course of SRK's investigations. The information in turn reflects various technical and economic conditions at the time of writing this report. Given the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

This report may include technical information that requires subsequent calculations to derive subtotals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, SRK does not consider them to be material.

SRK is not an insider, associate, or an affiliate of Excellon, and neither SRK nor any affiliate has acted as advisor to Excellon, its subsidiaries or its affiliates in connection with this project. The results of the technical review by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

## 2 Reliance on Other Experts

SRK has not performed an independent verification of land title and tenure information as summarized in Section 3 of this report. SRK did not verify the legality of any underlying agreement(s) that may exist concerning the permits or other agreement(s) between third parties but has relied on RB abogados as expressed in a legal opinion provided to Excellon on May 5, 2021. A copy of the title opinions is provided in Appendix A. The reliance applies solely to the legal status of the rights disclosed in Sections 3.1 and 3.2 below.

SRK was informed by Excellon that there are no known litigations potentially affecting the Platosa Mine.

### 3 Property Description and Location

The Platosa Mine is located in the northeast portion of the State of Durango, north-central México, approximately 45 kilometres north of the city of Torreón, and 5 kilometres north of the village of Bermejillo (Figure 1). The centre of the deposit is located at latitude 25.9 degrees north and longitude 103.66 west (WGS84).



Figure 1: Location Map

### 3.1 Mineral Tenure

The Platosa Mine property is wholly owned by Excellon through its Mexican subsidiary Minera Excellon de México, S.A. de C.V., and comprises 74 mining concessions. These concessions, including fractional concessions, cover a total area of 11,049 hectares (Table 2 and Figure 2). Excellon reports all applicable concession rental payments and work commitments are up to date.

**Table 2: Mineral Tenure Information**

	Title Name	Title Number	Title Valid		Area (ha)
			From	To	
1	2a. AMPL. DE LA PLATOSA	232465	2008-08-15	2058-08-14	20.0
2	3a. AMPL. DE LA PLATOSA	232464	2008-08-15	2058-08-14	55.9
3	4a. AMPL. DE LA PLATOSA	144188	2015-09-30	2065-09-29	8.6
4	5a. AMPL. DE LA PLATOSA	143509	2015-05-31	2065-05-30	5.7
5	6a. AMPL. DE LA PLATOSA	146350	2016-09-29	2066-09-28	8.0
6*	7a. AMPL. DE LA PLATOSA	149264	1968-03-16	2018-03-15	10.0
7	AMPLIACIÓN DE LA PLATOSA	232466	2008-08-15	2058-08-14	10.0
8	BERMEJILLO 1	224275	2005-04-22	2055-04-21	69.5
9	BERMEJILLO 2	210967	2000-02-29	2050-02-28	60.0
10	BONANZA	214175	2001-08-10	2051-08-09	28.0
11	CASUALIDAD	212312	2000-09-29	2050-09-28	14.8
12	CORDERO III T211351	211351	2000-04-28	2050-04-27	239.8
13	CORDERO III T211352	211352	2000-04-28	2050-04-27	88.6
14***	EL POETA	207685	1998-07-10	2048-07-09	659.1
15	EL POETA 1	224509	2005-05-17	2055-05-16	63.2
16	EL POETA 10	213222	2001-04-06	2051-04-05	179.3
17	EL POETA 11	213224	2001-04-06	2051-04-05	127.1
18	EL POETA 12	213223	2001-04-06	2051-04-05	234.9
19	EL POETA 2	209764	1999-08-03	2059-08-02	0.7
20	EL POETA 3 FRACCIÓN 1	211321	2000-04-28	2050-04-27	306.5
21	EL POETA 3 FRACCIÓN 10	211330	2000-04-28	2050-04-27	0.1
22	EL POETA 3 FRACCIÓN 11	211331	2000-04-28	2050-04-27	0.7
23	EL POETA 3 FRACCIÓN 12	211332	2000-04-28	2050-04-27	2.6
24	EL POETA 3 FRACCIÓN 13	211333	2000-04-28	2050-04-27	0.2
25	EL POETA 3 FRACCIÓN 14	211334	2000-04-28	2050-04-27	0.2
26	EL POETA 3 FRACCIÓN 2	211322	2000-04-28	2050-04-27	49.9
27	EL POETA 3 FRACCIÓN 3	211323	2000-04-28	2050-04-27	0.1
28	EL POETA 3 FRACCIÓN 4	211324	2000-04-28	2050-04-27	0.1
29	EL POETA 3 FRACCIÓN 5	211325	2000-04-28	2050-04-27	0.1
30	EL POETA 3 FRACCIÓN 6	211326	2000-04-28	2050-04-27	0.1
31	EL POETA 3 FRACCIÓN 7	211327	2000-04-28	2050-04-27	0.1
32	EL POETA 3 FRACCIÓN 8	211328	2000-04-28	2050-04-27	0.1
33	EL POETA 3 FRACCIÓN 9	211329	2000-04-28	2050-04-27	0.1
34	EL POETA 4 FRACCIÓN 2	210963	2000-02-29	2050-02-28	40.1
35	EL POETA 4 FRACCIÓN 3	210964	2000-02-29	2050-02-28	0.0
36	EL POETA 4 FRACCIÓN 4	210965	2000-02-29	2050-02-28	0.0
37	EL POETA 4 FRACCIÓN 5	210966	2000-02-29	2050-02-28	0.0

\* Application for extension was filed on October 27, 2017 for an additional 50 years, which is in the process to be granted by the MMB.

\*\* Application for reduction was filed on July 19, 2019.

\*\*\* This concession hosts the mineral resource.

**Table 2: Mineral Tenure Information (Continued)**

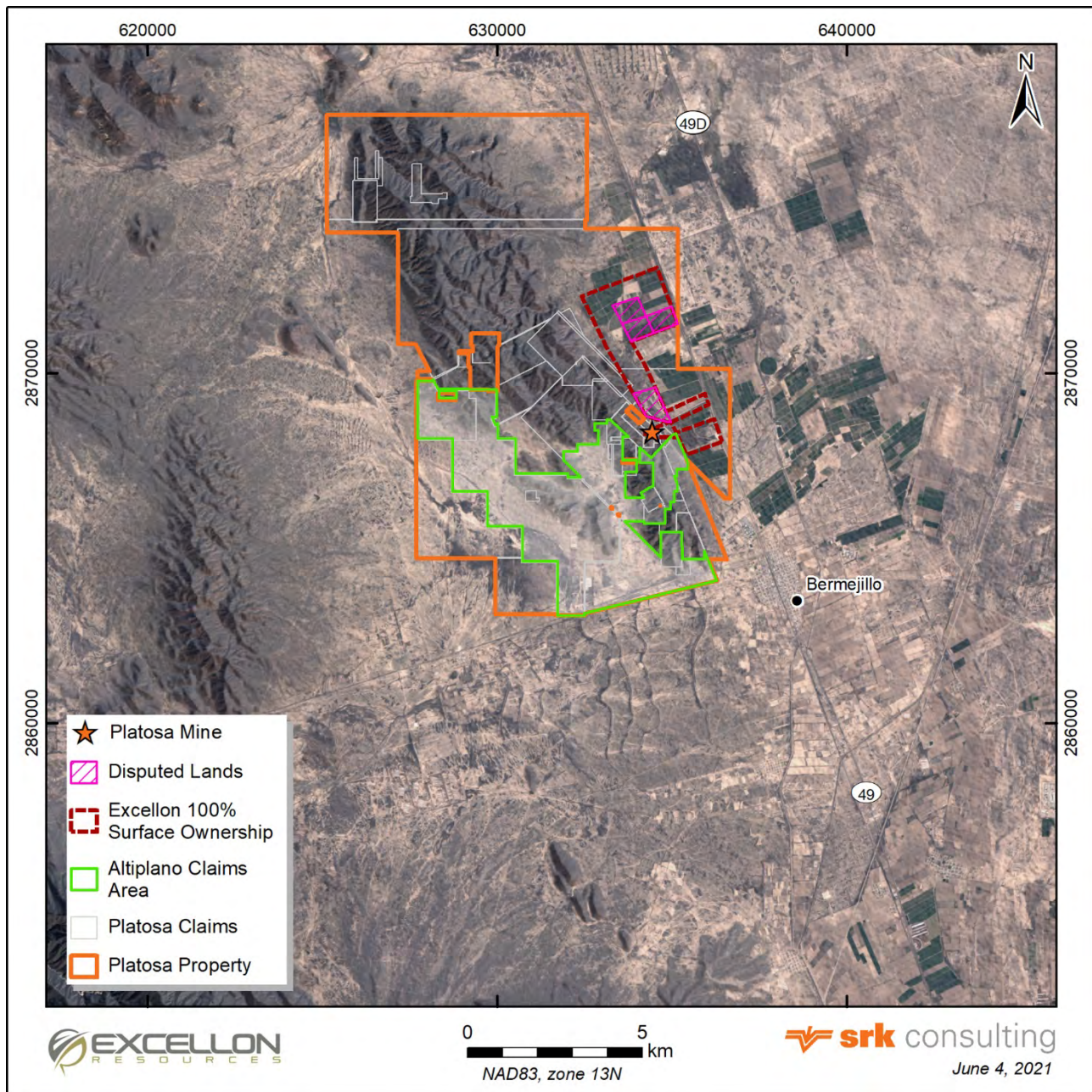
	Title Name	Title Number	Title Valid		Area (ha)
			From	To	
38**	EL POETA 5	210989	2000-02-29	2050-02-28	137.9
39	EL POETA 7 FRACCIÓN 1	210876	2000-01-28	2050-01-27	4.3
40	EL POETA 7 FRACCIÓN 2	210877	2000-01-28	2050-01-27	22.8
41	EL POETA 7 FRACCIÓN 3	210878	2000-01-28	2050-01-27	0.3
42	ESPERANZA	214041	2001-08-07	2051-08-06	25.8
43	EXCELMEX	208313	1998-09-23	2048-09-22	2,713.1
44	EXCELMEX 1	208692	1998-12-11	2048-12-10	58.4
45**	EXCELMEX III	227589	2006-07-18	2056-07-17	2,129.7
46**	EXCELMEX IV FRACCIÓN 1	227595	2006-07-18	2056-07-17	217.3
47	EXCELMEX IV FRACCIÓN 2	227596	2006-07-18	2056-07-17	46.6
48	EXCELMEX IX	241343	2013-11-22	2062-11-21	84.0
49	EXCELMEX V	229588	2007-05-22	2057-05-21	8.0
50	EXCELMEX VI	232200	2008-07-04	2058-07-03	17.8
51**	EXCELMEX VII R1	244953	2012-05-22	2062-05-22	280.7
52	EXCELMEX X	241579	2013-01-30	2063-01-29	1.3
53	EXCELMEX XI	245205	2016-11-08	2066-11-07	13.2
54	EXCELMEX XII	245206	2016-11-08	2066-11-07	0.8
55	EXCELMEX XIII	245207	2016-11-08	2066-11-07	4.2
56	EXCELMEX XIV	245208	2016-11-08	2066-11-07	0.1
57	EXCELMEX XV	245209	2016-11-08	2066-11-07	3.0
58	FRACCIÓN EXCELMEX	210270	1999-09-24	2059-09-23	188.3
59	GALINGA	223777	2005-02-15	2055-02-14	1.7
60	LA NAVIDAD	204827	1997-05-13	2047-05-12	13.7
61	LA PLATOSA	232467	2008-08-15	2058-08-14	19.8
62	LA SIERRITA	216552	2002-05-17	2052-05-16	60.0
63	LA ZORRA	226033	2005-11-15	2055-11-14	10.0
64	LEO	211193	2000-04-11	2050-04-10	82.6
65	LEONEL	211024	2000-03-22	2050-03-21	7.4
66**	REDUCCION VENUX	245949	2017-12-20	2058-07-03	610.0
67	SANTA JULIA	223781	2005-02-15	2055-02-14	31.9
68	VENADO III	210900	2000-01-27	2050-01-26	49.4
69	VENADO III T212841	212841	2001-01-31	2051-01-30	20.7
70	VENADO III T226034	226034	2005-11-15	2055-11-14	11.7
71	VENUS 2	222506	2004-07-20	2054-07-19	1,195.2
72**	VENUS 3	223295	2004-11-25	2054-11-24	443.7
73	VENUS FRACCIÓN A	221452	2004-02-13	2054-02-12	240.8
74	VENUX FRACCIÓN UNO	232187	2008-07-04	2058-07-03	8.6
<b>Total</b>					<b>11,049</b>

\* Application for extension was filed on October 27, 2017 for an additional 50 years, which is in the process to be granted by the MMB.

\*\* Application for reduction was filed on July 19, 2019.

\*\*\* This concession hosts the mineral resource.





## 3.2 Underlying Agreements

Excellon's rights to the property hosting the historical Platosa Mine were acquired from a local family in 1997. In 2000 Excellon acquired surface rights for ground around the mine totalling 240 hectares. Excellon staked the surrounding Excelmex and Poeta concessions in 2004. At approximately the same time, Apex Silver (Apex) staked the Saltillera property. In 1998, Apex optioned the Platosa Mine property from Excellon. While Apex was operating, Excellon still participated in the exploration

programs. Excellon reassumed control of the project in 2001 and has continued exploration work as the sole operator since.

All concessions are subject to an aggregate Net Smelter Return (NSR) payable to various holders in the amount of either i) 1.25% for manto massive sulphide mineralization or ii) 0.5% for skarn mineralization. In addition, the concessions comprising the Altiplano Area (19 concessions totalling 6,155 hectares, none of which currently contain mineral resources) are subject to a 3% NSR payable to Exploraciones de Altiplano, S.A. de C.V., a private Mexican company.

### 3.3 Permits and Authorization

Platosa operates under permits issued by the Government of Mexico.

Surface rights in Mexico are commonly owned either by communal agricultural groups (ejidos) or by private owners. The surface rights underlying the Platosa mineral concessions are owned by a combination of private owners and ejidos. In both cases, the mining concessions include access easement rights, although in many cases it is necessary to negotiate access to the land with individual owners or communities. Federal or state laws allow permission to access federal or state lands without other requirements, as mining concessions in Mexico are federal grants. The Mexican mining law includes provisions to facilitate purchasing land required for mining activities, installations and development.

Excellon owns surface rights totalling 681.8 hectares, which include the area of the mine site and exploration areas south, east, and north of the Platosa Mine.

A subsidiary of Excellon has been in a legal dispute concerning approximately 295 hectares of surface rights north of the Platosa Mine since 2017 (the “Disputed Lands”). Excellon appealed a 2018 judgment revoking its 2007 purchase of the Disputed Lands, which has been denied by appeals courts in Mexico. The judgment nullifies the purchase and orders that the land be returned to the plaintiffs, and that the plaintiffs repay the original purchase price to the Excellon subsidiary. As of the date hereof, the plaintiff has not repaid any amount to such Excellon subsidiary. Excellon does not consider the land material to the operations at the Platosa Mine or its exploration activities. The decision does not affect Excellon's mineral rights and the Company does not expect it to have any impact on its operations.

The plaintiffs also alleged at trial, for the first time, that the Platosa Mine was on land that was included in the sale (the “Assertion”). The Assertion was not decided in the litigation, was not supported by admissible evidence, contradicts the cadastral registry, conflicts with the rights of other third-party holders and ignores the fact that Excellon began its use and occupation of the Platosa Mine in 2004 – before the sale in question (as shown in Figure 2: Land Tenure Map).

Under Mexican law, Excellon's access to the mine cannot be impeded. Nevertheless, the Company is considering a variety of legal avenues to redress the ruling and the Assertion. The Company's existing surface rights, regardless of the outcome concerning the Disputed Lands, provide sufficient surface area for all anticipated surface infrastructure. No other formal agreements for surface rights are currently in place, but Excellon has informal arrangements with various local farmers,

landowners, and ejidos to access their ground for exploration purposes. In due course, Excellon may formalize these arrangements for more advanced exploration purposes.

### **3.4 Environmental Considerations**

A more detailed discussion on the environmental and social aspects at the Platosa Mine and Excellon's Miguel Auza processing facility can be found in Section 19 of this report. The small footprint of facilities at both Platosa and Miguel Auza means that environmental impacts are relatively few and of modest significance.

Platosa operates under permits issued by the Government of Mexico. The significant environmental aspects at Platosa are water management; handling, storage, and disposal of solid and hazardous waste; and the storage and handling of petroleum and other chemicals. Water from the underground workings is pumped to surface, stored temporarily in surface water storage facilities, and then distributed by pipeline and canals offsite. Solid and hazardous waste generated on site is segregated, stored, and disposed of according to its characteristics, as prescribed by Mexican legal requirements. Petroleum and other chemicals used on site are stored in fit-for-purpose facilities before distribution to end-use locations.

The primary liabilities at Platosa relate to the presence of buildings and other facilities used to support mineral extraction from the underground mine.

The Miguel Auza concentrator and associated facilities are operated under permits issued by the Government of Mexico. The significant environmental aspects at Miguel Auza are mine waste and associated water management and discharge; emissions to air; the handling, storage and disposal of solid and hazardous waste; and storage and handling of chemicals. Tailings from the Miguel Auza concentrator are discharged by gravity pipeline to tailings management facility (TMF) #2, with water recycled back to the concentrator. The development of a tailings management system and an Operations, Maintenance, and Surveillance manual that meet the requirements of the Mining Association of Canada's guide pertaining to tailings management are ongoing at Miguel Auza.

The primary liabilities at Miguel Auza relate to the presence of buildings and other facilities used to support metal concentrate production, the former Miguel Auza ramp and associated waste storage area, and TMF #1 and TMF #2. TMF #1 has been decommissioned and closed in October 2018 and declared to SEMARNAT in the first semestral report of 2019. TMF #1 has been closed according to standard closure practices, capped with soil and planted with native grass.

### **3.5 Mining Rights in Mexico**

Mining and exploration rights in Mexico are controlled by the Federal Government. Prior to 2006, exploration and mining rights were assigned to private Mexican individuals and companies incorporated under Mexican laws, including those companies fully financed by foreign investment, by the granting of "exploration" and "exploitation" concessions, each with differing validity periods and tax and assessment obligations.

The mining law reform of April 28, 2005 simplified the concession regime, and all new concessions are now “mining concessions”, which are valid for a 50-year period and are renewable for an additional 50-year period. Upon enactment of the mining law reform, all previously issued “exploration” and “exploitation” concessions were automatically converted to “mining concessions” without changing the effective date of the title.

The mining concessions are issued and administered by the Dirección General de Minas (DGM) under the cabinet-level Secretaría de Economía. To maintain concessions in good legal standing, concession holders are obligated to pay semi-annual tax payments and to file annual work assessment reports detailing the exploration or development work (a minimum investment as provided in applicable Mexican mining legislation) on the concession. Concession holders are also obligated to file production reports for statistical purposes. Both the semi-annual tax and the minimum investment increase each year in accordance with rates published by the Mexican Government: the older the mining concession, the higher the tax payable and the amount to be invested. When the concessions are in their 7<sup>th</sup> year of issuance or greater, the amount to be invested reaches the maximum rate applicable; when the concessions are in their 11<sup>th</sup> year of issuance or greater, the amount of payable taxes reaches the maximum rate applicable.

## **4 Accessibility, Climate, Local Resources, Infrastructure, and Physiography**

### **4.1 Accessibility**

The Platosa Mine is located in northeastern Durango State, 45 kilometres north of the city of Torreón, an industrial centre of more than one million people when combined with the adjacent cities of Gómez Palacio and Lerdo. The Torreón International Airport is serviced by several daily non-stop flights to and from Mexico City and the United States. The property is approximately a one-hour drive from the airport via Mexico Highway 49, which is a major north-south trucking route through Mexico to the United States. Rail and power transmission lines run parallel to the highway, and the entire project area, located 2 kilometres from Highway 49, is easily accessible year-round.

### **4.2 Local Resources and Infrastructure**

The town of Bermejillo is 5 kilometres south of the Platosa Mine, hosts a population of 9,149 (2010) and serves as a source of basic services, supplies, and labour. Excellon maintains several residences and a kitchen in Bermejillo for the use of employees who live in distant centres. Torreón is the major supply centre in the region. Industrias Peñoles, the second-largest mining company in Mexico and the world's largest producer of refined silver, owns a lead smelter and zinc and silver refineries in Torreón.

The Platosa Mine site and mine-related facilities include the following infrastructure:

- Surface facilities include offices, shops, compressors, fuel storage, electric substations, surface vent fan backup generator, crushing and stockpile facilities, portal, ventilation fans, run-of-mine (ROM) storage, underground and surface water settling ponds, diamond drill core logging and storage facilities, and dry facilities.
- Facilities providing basic infrastructure to the mine include well-maintained gravel roads that access the site as well as a network of roads that service the various ancillary facilities and electric power distribution.
- Underground infrastructure includes ramps, raises, ventilation/service raises, explosives magazines, dewatering pumps, and underground mobile equipment fleet.
- Access is provided by paved highway and gravel roads to the company-owned mill at Miguel Auza.
- Grid electric power supply to the site.





**Figure 3: Surface Infrastructure at the Platosa Mine**

- A: Exploration office
- B: Mine entrance and offices
- C: Core house and logging area
- D: Underground portal

### 4.3 Climate

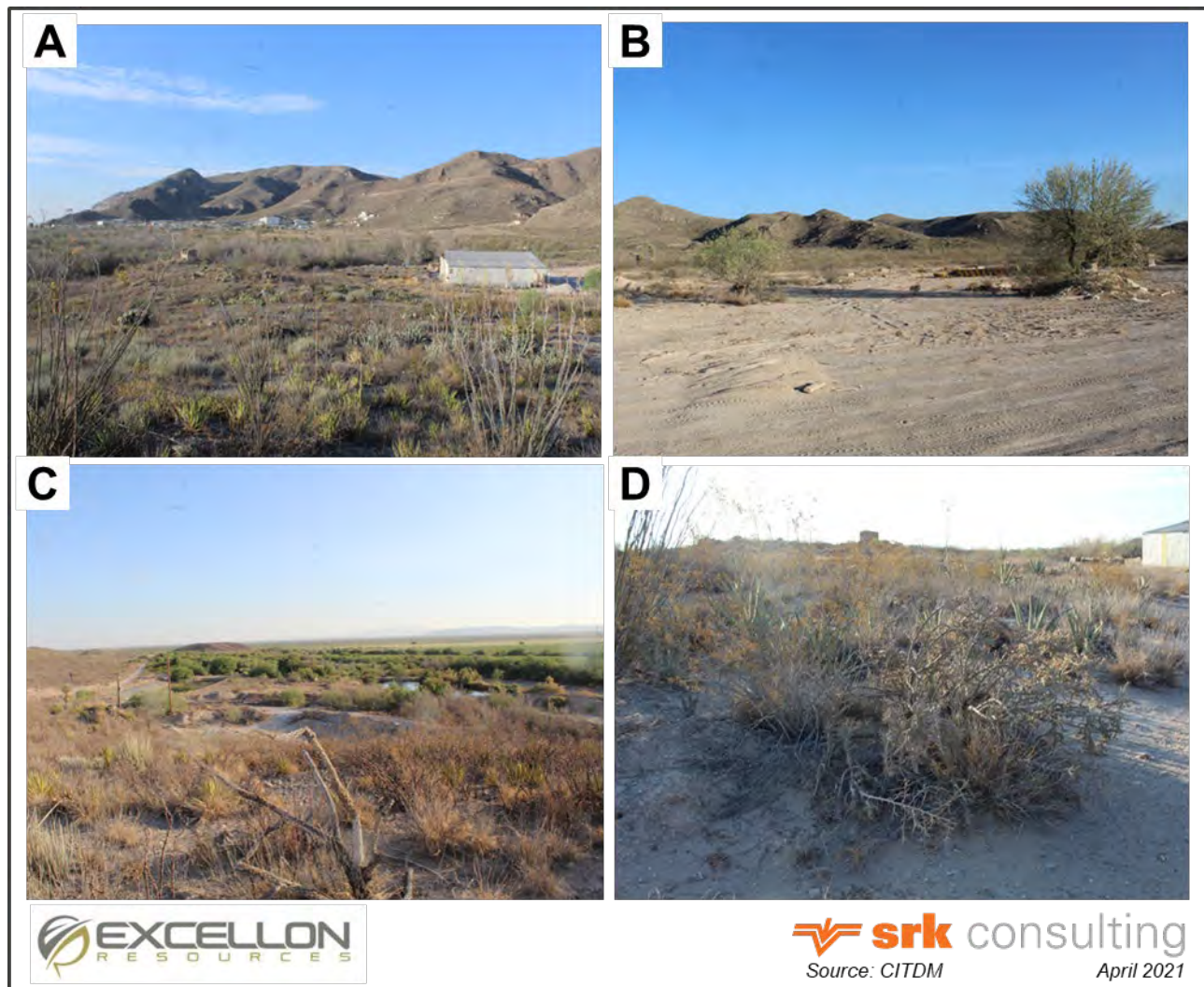
The climate of the region is warm and dry, and vegetation comprises mesquite trees, desert scrub, and cactus. The mean annual temperature in the area is 22.0 degrees Celsius (°C), and the monthly means range from 14.4°C in January to 28.1°C in July. The average annual rainfall measured at Torreón is 265.9 millimetres. Mine production and mineral exploration, including drilling, can be carried out year-round.

### 4.4 Physiography

The Platosa Mine is located at the southeastern edge of the Sierra Bermejillo, a mountain range extending to the northwest up to 14 kilometres from the mine area. The current resource, mine, and

related facilities are located 200 metres east of the rugged Sierra Bermejillo, on flat and sloping terrain (Figure 3). Elevations on the plains are at 1,200 metres above sea level, increasing to 1,500 metres above sea level in the mountains for local vertical relief of approximately 300 metres.

Agriculture is the main industry in the immediate area of the mine, where farmers cultivate crops such as maize and alfalfa for consumption by the regional animal husbandry industry. Industrial-scale cattle and poultry operations are also present in the area. Large ranches and farms surround the mine on the east side of the Sierra Bermejillo where large expanses of arable ground are irrigated. On the western side of the Sierra Bermejillo, the land is used for ranching and is mostly arid with no organized cultivation.



**Figure 4: Typical Landscape in the Platosa Mine Area**

- A: Platosa Mine surface property land
- B: Typical landscape of the Platosa Mine
- C: Agricultural activities
- D: Typical vegetation

## 5 History

Limited and small-scale mining has been conducted in the area prior to the 1960s, although no records of the early history of prospecting and mining in the Platosa area are known to exist. Small-scale artisanal mining was carried out at Platosa sporadically between the 1960s and 1970s by a local family. Production from Platosa prior to 1970 is estimated to be in the range of 25,000 to 50,000 tonnes, even though the records from this time are poor. Smelter sheets from the 1970s mention grades of 0.35 to 1.75 grams per tonne (g/t) of gold, 3,000 to 3,750 g/t silver, 30% to 40% lead, and 2% to 12% zinc. Mining at the nearby Saltillera, Zorra, Socorro, and Refugio targets was reportedly carried out up to the 1960s, but no detailed records of this production are known to exist. Small-scale mining of celestite for strontium was also carried out in the area (Figure 5).

Excellon acquired the concession hosting the historical Platosa Mine in 1997 and staked the surrounding Excelmex and Poeta concessions in 2004. At approximately the same time, Apex staked the adjacent Saltillera property. Both companies conducted reconnaissance mapping and sampling through 1997.

In 1998, Apex optioned the Platosa Mine from Excellon and carried out geological mapping and geochemical sampling through to 1998. In 1999, Apex completed core drilling programs totalling 842 metres at Saltillera and 2,604 metres at Platosa. The drilling conducted at Platosa led to the discovery of a sulphide body to the east of the old mine workings. In 1999, Apex carried out a controlled source audio-frequency magnetotelluric (CSAMT) survey and an orientation soil gas mercury sampling program. In 2000, Apex drilled an additional 1,050 metres at Platosa and 188 metres at Saltillera.

Excellon participated to a limited extent in the exploration programs conducted by Apex prior to resuming control of the project in 2001. Exploration work conducted by Excellon is described in Section 9.

Between the commencement of production in June 2005 and January 31, 2009, when a pre-existing sale and purchase contract expired, a total of 153,478 tonnes averaging 1,258 g/t silver, 10.22% lead, and 10.69% zinc were sold to Minera Maple S.A. de C.V., a subsidiary of Peñoles.

In March 2009, following the acquisition of Silver Eagle Mines, Excellon began processing the Platosa mineralization at the Miguel Auza mill. Between March 19, 2009, and December 31, 2020, a total of 729,881 tonnes grading 632 g/t silver, 5.65% lead, and 7.69% zinc were processed at the Miguel Auza mill. Total milled production from Platosa from start-up in June 2005 to December 31, 2020, was therefore 883,359 tonnes at an average grade of 741 g/t silver, 6.44% lead, and 8.21% zinc. A summary of historical milling production is presented in Table 3.



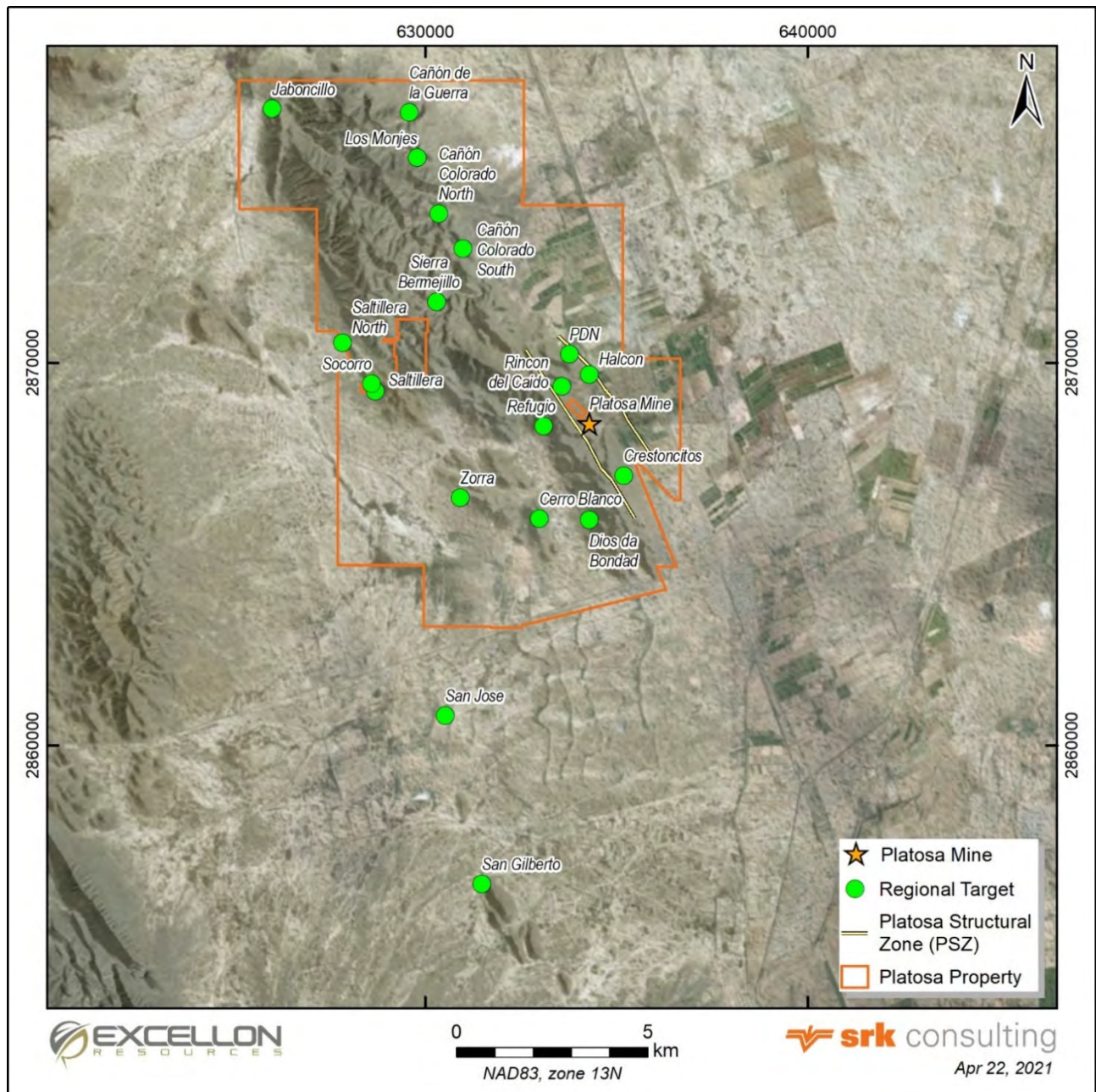


Figure 5: Platosa Mine Regional Targets

**Table 3: Historical Production from Platosa Mine**

Year	Tonnes	Grades		
		Silver (g/t)	Lead (%)	Zinc (%)
Tonnes Shipped*				
2006	44,413	1,198	11.20	13.1
2007	45,691	1,593	10.20	8.9
2008	44,946	1,023	9.90	11.0
Tonnes Processed*				
2009	43,922	1,114	8.90	8.86
2010	64,462	814	6.37	7.68
2011	59,405	796	6.24	9.17
2012	48,199	846	6.75	11.81
2013	69,862	718	6.14	8.00
2014	64,206	603	6.57	8.90
2015**	56,849	491	4.56	7.20
2016**	55,593	456	4.40	5.70
2017**	57,165	393	3.75	5.30
2018	56,874	488	4.87	6.90
2019	73,797	497	4.82	6.93
2020***	65,567	519	5.37	6.57

\* Mineralization processed by Maple, subsidiary of Peñoles

+ Mineralization processed at Miguel Auza

\*\* Low grade stockpiles were blended with run of mine material

\*\*\* Production was affected by the temporary shutdown of mining activities at the Platosa Mine from April 2, 2020 to June 1, 2020 in accordance with the Mexican presidential order to mitigate the spread of COVID-19.

## 5.1 Previous Mineral Resource Statements

Since production commenced in 2005, seven mineral resource estimates have been completed for the Platosa mine, with the latest in dated September 7, 2018, by SRK (Selby et al. 2018). The details and results of these estimates are listed in Table 4.

**Table 4: Previous Mineral Resource Statements for the Platosa Mine**

Year of Effective Date	Category	Tonnage	Silver (g/t)	Lead (%)	Zinc (%)	AgEq (g/t)
2006	Total Measured	184,500	1,546	10.9	10.5	NA
	Total Inferred	8,200	777	5.5	11.3	NA
2008	Total Measured	417,000	1,060	9.31	9.79	NA
	Total Inferred	72,900	758	9.19	9.69	NA
2009	Total Measured	579,000	909	9.09	10.51	NA
	Total Inferred	160,000	731	7.44	7.57	NA
2011	Total Measured	88,000	1,064	9.14	11.99	878.84
	Total Indicated	549,000	800	8.92	10.36	660.54
	Total M+I	637,000	836	8.95	10.58	691.73
	Total Inferred	69,000	1,011	11.35	11.34	836.31
2013	Total Measured	42,000	825	8.62	11.31	1,108.00
	Total Indicated	443,000	772	8.4	10.05	1,270.00
	Total M+I	484,000	777	8.42	10.15	1,277.00
	Total Inferred	3,000	2,324	16.93	1.74	2,922.00
2014	Total Measured	28,000	781	7.85	11.52	1,305.00
	Total Indicated	400,000	785	8.31	9.77	1,248.00
	Total M+I	428,000	760	8.28	9.88	1,252.00
	Total Inferred	4,000	2,027	14.65	2.2	2,492.00
2018	Total Measured	-	-	-	-	-
	Total Indicated	485,000	549	5.6	5.9	1,055.00
	Total M+I	485,000	549	5.6	5.9	1,055.00
	Total Inferred	13,000	516	4.7	6.5	1,016.00

## **6 Geological Setting and Mineralization**

### **6.1 Regional Geology**

This section is modified from Cox et al. (2015).

The Platosa deposit is a carbonate-replacement silver-lead-zinc deposit located in the Oaxaquia terrane of Gondwanic affinity (Figure 6). Oaxaquia has a basement of Proterozoic gneiss which is unconformably overlain by Paleozoic terrestrial siliciclastic and metamorphosed submarine volcanic arc rocks, which are in turn overlain by Triassic siliciclastic rocks.

The older sequences of Oaxaquia's Late Jurassic to Late Cretaceous supracrustal assemblage of carbonate and calcareous siliciclastic rocks are intruded by Late Jurassic rift-related rhyolite-andesitic continental magmatic rocks of the Nazas arc. The Nazas arc records opening of the Atlantic Ocean throughout Oaxaquia's north-south elongate axis (SRK 2017b).

### **6.2 Property Geology**

The Platosa Mine lies in the Sierra Bermejillo, a northwest-trending anticline-syncline pair developed in Mesozoic sedimentary rocks (Figure 7). The Sierra Bermejillo Anticline is a relatively open fold that plunges to the southeast. The Saltillera Syncline is a doubly plunging structure located west of the anticline. The folded sequence is cut by a set of north- to northwest-striking, steeply dipping fractures and faults. Tertiary felsic to intermediate dykes and plutons intrude these structures in the western part of the Sierra Bermejillo.

The principal fault system in the property area is the Platosa Structural Zone (PSZ), a 250- to 1,500-metre-wide northwest-trending zone of fracturing and shearing that traverses the eastern margin of the Sierra Bermejillo. The PSZ includes a series of fault planes that strike north-northwesterly and dip steeply east; it has been mapped along strike for five kilometres northwest and southeast of the Platosa mine (Megaw 2002). It is characterized by brecciated, crushed, and dolomitized limestone; slickenside fracture surfaces; iron and manganese oxides; travertine-filled breccias; and coarsely crystalline selenite veins, some up to five metres thick. The faulted rocks weather recessively and create a negative topographic expression of the PSZ.



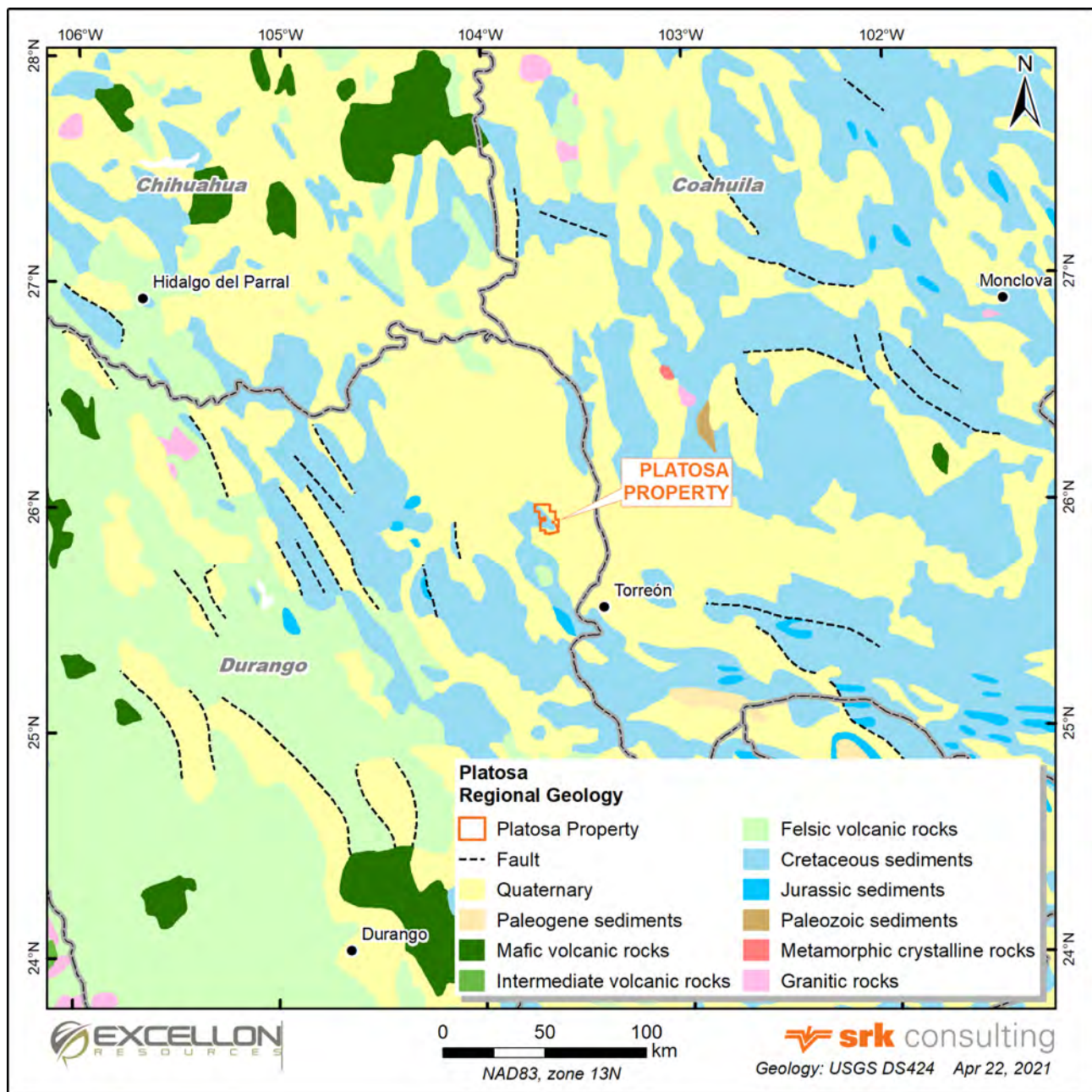


Figure 6: Regional Geology Setting of the Platosa Property



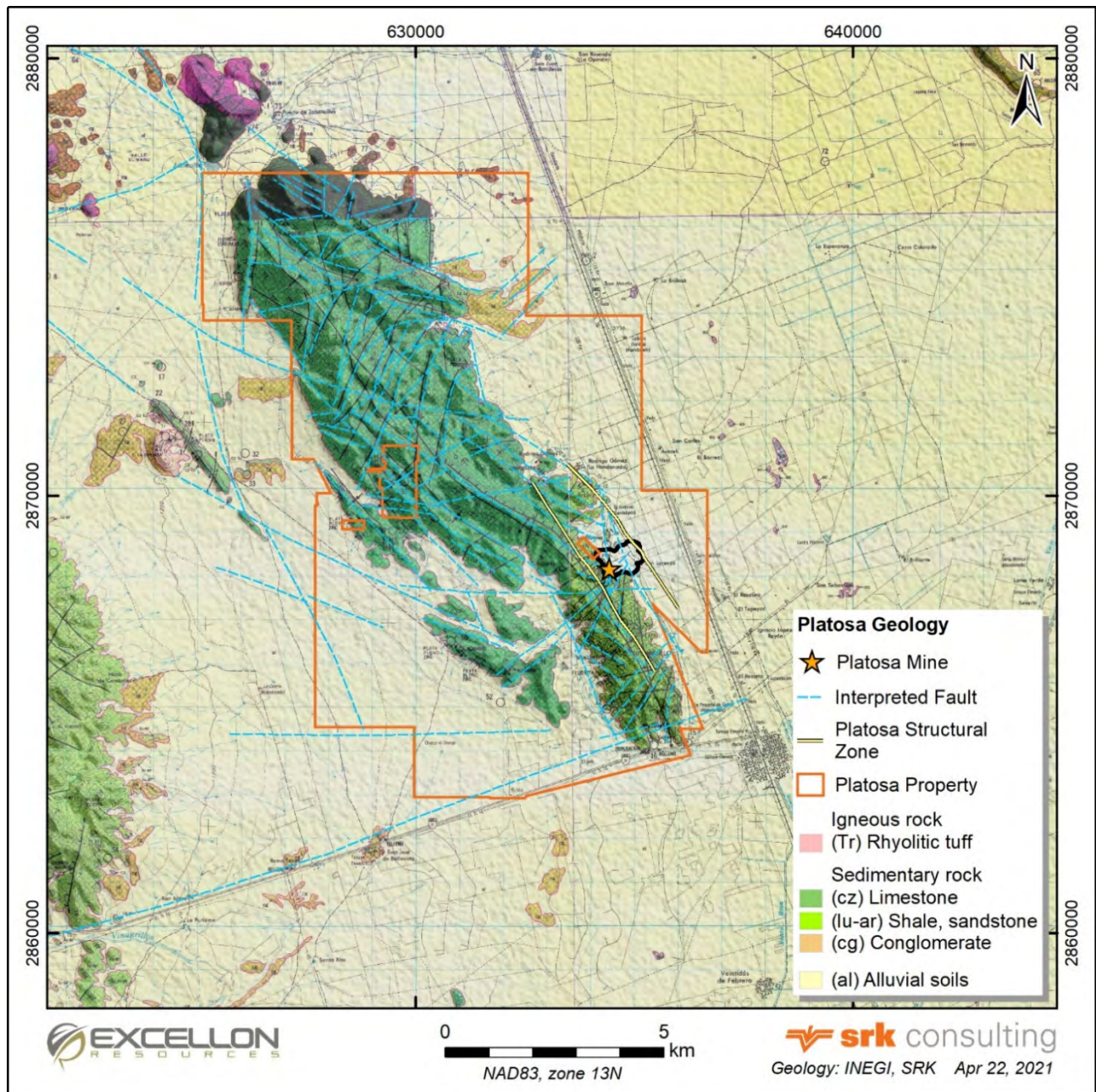
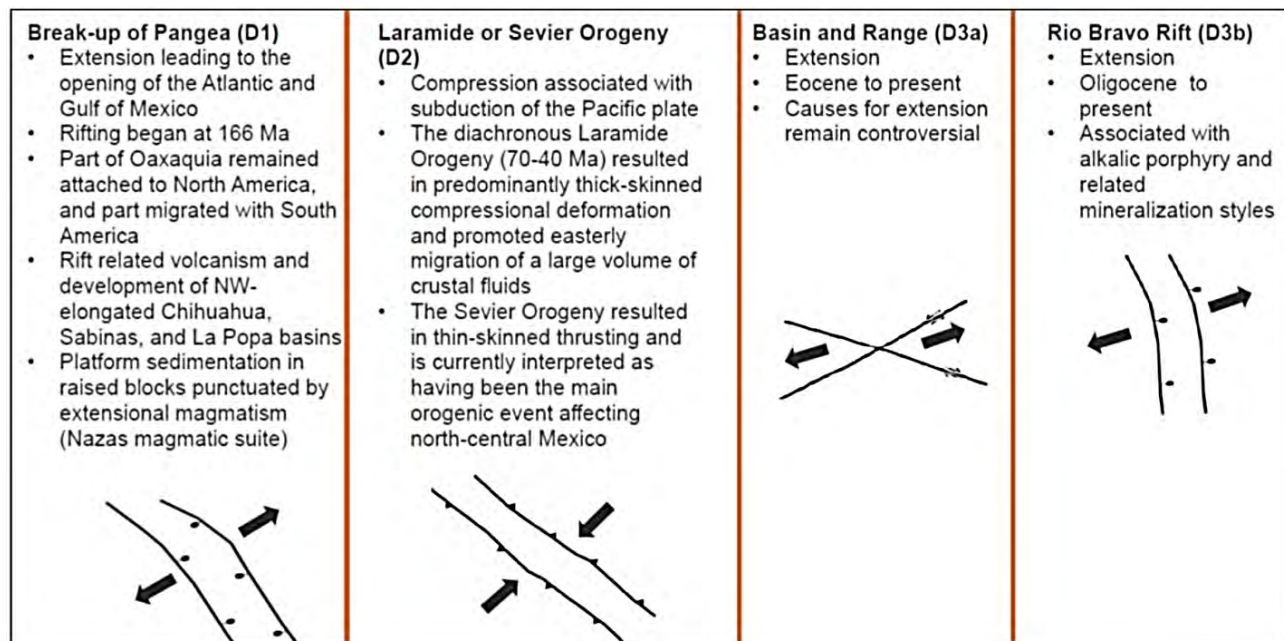


Figure 7: Local Geology Setting of the Platosa Property

## 6.2.1 Structural Geology

Three large-scale deformation events, shown schematically in Figure 8, and the onset of a Tertiary magmatic event created favourable ground preparation and a magmatic source for mineralizing fluids. These events are described in chronological order:

- An initial extensional system related to the breakup of Pangea ( $D_1$ ) at 166 million years (Ma) accounted for the formation of deep-seated north-south to north–northwest-trending structures. These structures allowed for activation of faults and the intrusion of deep-seated igneous suites into the basins, marking the end of the  $D_1$  period.
- Northeast-southwest-oriented compression then took place during the Cretaceous to early Tertiary Laramide Orogeny ( $D_2$ ), deforming the Mesozoic sedimentary rocks into a series of roughly parallel north-northwest trending folds and faults.
- Extension in the mid- to late-Tertiary reactivated and reopened these faults ( $D_{3a}$ ), including the structures bounding the Coahuila Platform, and developed further northwest-southeast oriented ground preparation.
- The mid-Tertiary extension event was accompanied by widespread magmatism, with the newly reopened faults acting as conduits; this allowed intrusion emplacement at shallow levels within the structurally prepared Mesozoic carbonate sequence ( $D_{3b}$ ). Most of the CRDs in Mexico were formed at this time, with the largest deposits forming over the deep-seated large-scale fault zones (Megaw et al. 1988, Megaw 2002). The Platosa mine is located near a major northwest fault structure on the western margin of the Coahuila Platform, along a northwest-trending line of major CRDs.



**Figure 8: Structural and Deformation History of the Platosa Mine Area**

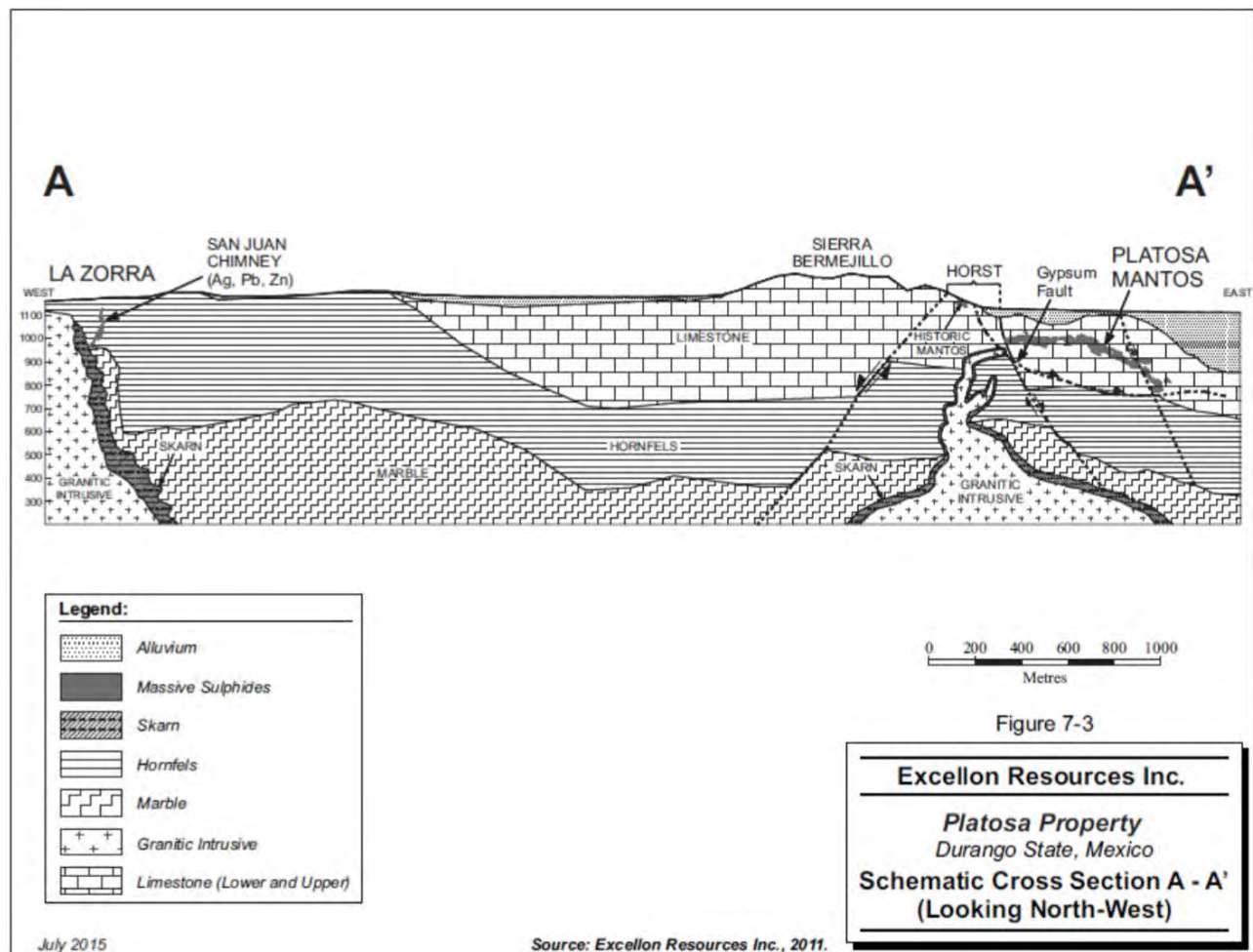
## 6.2.2 Stratigraphic Sequence and Magmatic History

This section is quoted from Cox et al. (2015).

The Platosa deposit is underlain by folded and faulted Mesozoic sedimentary rocks, locally intruded by dykes and sills of Laramide age (Figure 9). The general stratigraphic sequence on the Platosa Mine is outlined as follows:

- The lowermost unit in the stratigraphic sequence is the Lower Cretaceous Acatita Formation evaporite sequence. It is a gypsum-rich horizon that outcrops eight kilometres north of Platosa; it is thought to be the source for the abundant pore-filling gypsum observed throughout the property.
- The Acatita Formation is overlain by the Treviño-Cuesta del Cura Formation, also Lower Cretaceous in age. This formation comprises a variety of platform and deeper marine facies calcareous sedimentary rocks that have been variably hornfelsed, dolomitized, and mineralized.
- The top of this sequence is the Lower Limestone, which is strongly metamorphosed to marble.
- The Lower Limestone is overlain by the Lower Hornfels, an altered and hornfelsed shale-sandstone unit of unknown thickness. Drilling has intersected a number of endoskarned dykes within this unit that host lead-zinc-molybdenum-bearing veinlets.
- Overlying the Lower Hornfels is a 50- to 80-metre-thick sequence of shallow marine, thinly bedded to laminated calcareous mudstone locally referred to as the Black Limestone. This is overlain by a thin, black, organic-rich, pyritic sandstone called the Black Sandstone.
- Overlying the Black Sandstone is a unit approximately 30 metres thick referred to as the Grey Limestone unit.
- A unit referred to as the Fragmental Limestone (often also referred to as the Heterolithic Fragmental Limestone), overlies this grey Sandstone unit and is the principal host to mineralization at Platosa. The Fragmental Limestone is typically 50 to 120 metres thick and consists of a variably dolomitized sedimentary breccia composed of angular limestone and dolomite fragments that range in size from less than one centimetre to more than 50 centimetres, and that are hosted in a sandy carbonate matrix. This unit is also known to contain fossiliferous horizons. Northwest of the mine area, the contact with the overlying Upper Limestone is observed to be gradational over a few metres. Fragmental Limestone has been mapped on surface throughout the PSZ. The Fragmental Limestone was widely affected by post-lithification dolomitization, thus creating a highly permeable rock susceptible to dissolution and mineralization.
- The Fragmental Limestone is overlain by 200 metres of thick- to medium-bedded calcareous mudstones called the Upper Limestone. This unit has been locally dolomitized between Refugio and Platosa and recrystallized to marble between Refugio and La Zorra.
- Upper Cretaceous shales, limy shales, and sandstones of the Indidura/Caracol Formation overlie the Upper Limestone. These rocks comprise basal shales, calcareous shales, calcarenites, and limestones, which grade upwards into siliceous shales, sandstones, and conglomerates.





**Figure 9: Schematic Stratigraphic Cross-section of the Platosa Mine**

Intrusive rocks are poorly exposed in the project area but have been intersected by drilling in several areas on both the west and east sides of the Sierra Bermejillo. A large magnetic anomaly, visible in both regional and Excellon airborne magnetic surveys, and widespread thermal metamorphism of the Mesozoic sedimentary rocks suggest that intrusive rocks are more widespread than currently observed. The largest exposure of intrusive rocks in the western area is the Tertiary Pozo Porphyry, which is seen in a water well located southwest of the property, along the Bermejillo-Mapimí highway. The Pozo Porphyry is a medium-grained feldspar porphyry thought to be a quartz monzonite (Megaw, 2002). One- to three-metre-thick felsic dykes occur in the La Zorra mine and a multi-phase granite porphyry has been intersected in drilling to the south.

At the Platosa Mine, 1- to 10-metre-wide altered and endoskarned felsic dykes with associated sulphide-bearing veinlets were intersected in deep drillholes into the Lower Hornfels. Six kilometres northwest of Platosa at Cañón Colorado, a fine-grained neck or flow dome of felsic unit is exposed. This sub-volcanic unit is accompanied by minor gossan and ferruginous jasperoid that contain anomalous concentrations of arsenic, zinc, silver, and lead.

### 6.2.3 Mineralization

The bulk of mineralization currently defined on the Platosa Mine occurs as shallow to steeply dipping bodies of massive carbonate-replacement deposits. These bodies have been identified and categorized as discrete pods or mantos based on structural setting and concentration of sulphides. The main manto bodies currently defined at Platosa are outlined on Figure 10 and are listed below from west to east:

- Mantos 6A/6B
- Mantos 4A-C
- Manto 5
- Guadalupe
- Guadalupe South
- Pierna
- Rodilla
- Manto 623
- Manto 674
- NE-1
- NE-1 South

The footprint of the Platosa manto system currently measures approximately 400 by 700 metres. The mantos dip in accordance with the stratigraphy towards the east where a series of late extensional features extend the mineralization to depths ranging from 60 metres on the west side of the mine, and approximately 320 metres on the east.

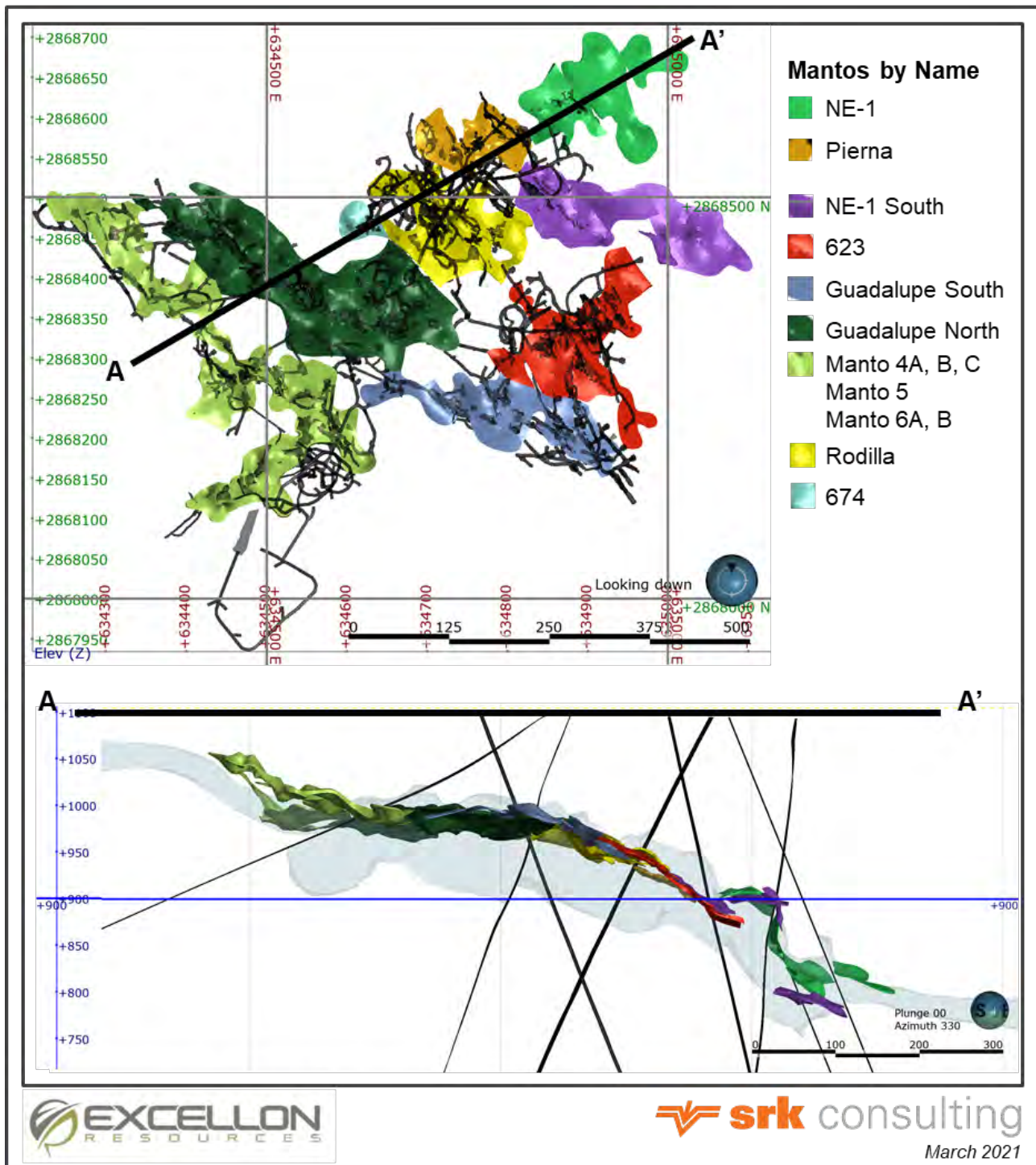
The main lead-, zinc-, and silver-bearing minerals are:

- Galena (main lead-bearing mineral)
- Sphalerite (main zinc-bearing mineral)
- Acanthite and lesser proustite (main silver-bearing minerals). Acanthite is predominant; proustite is visible where grades typically exceed the average grade of the mineralized body (Figure 11).

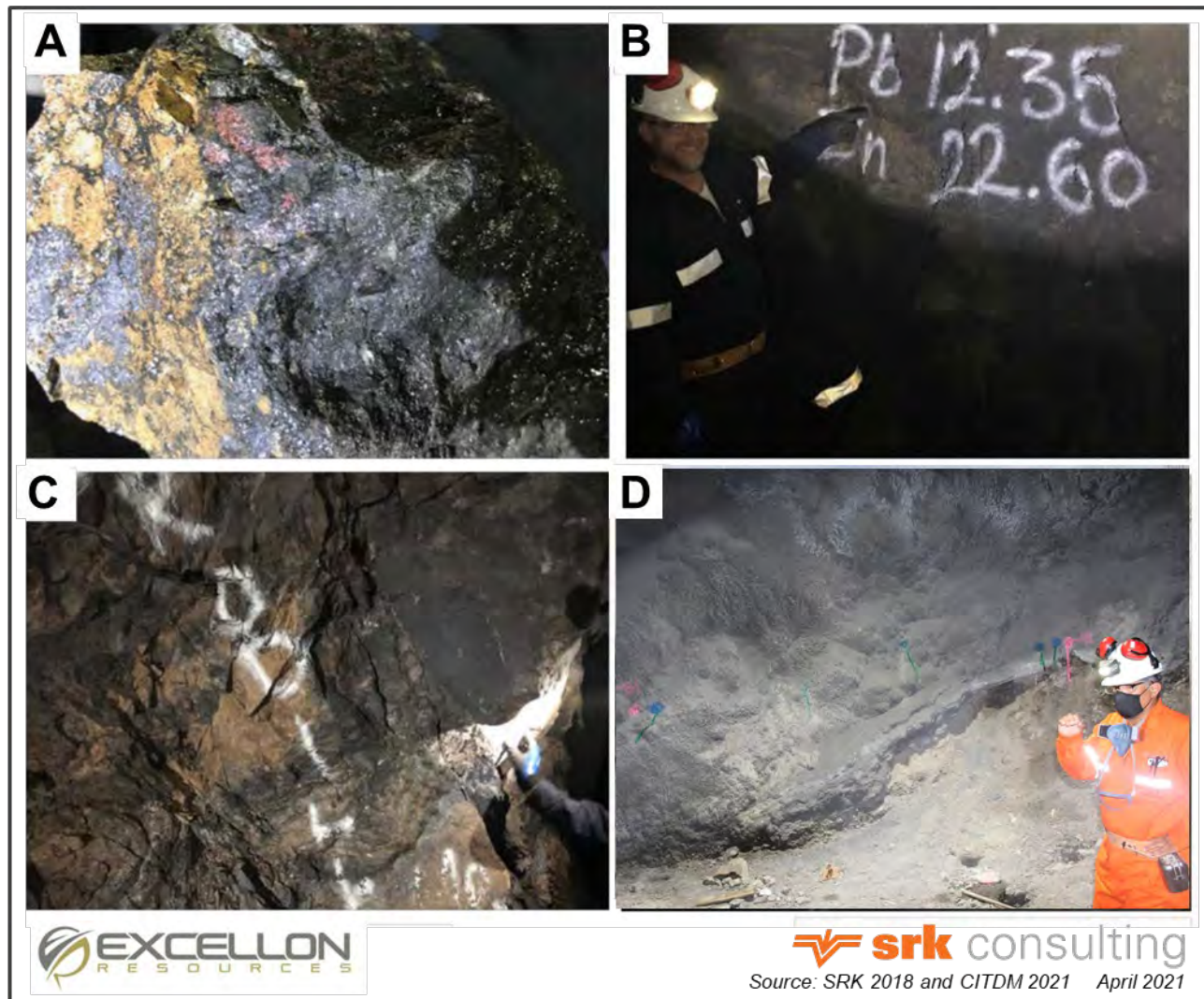
Drilling has also occasionally intersected anomalous gold and copper mineralization, which is believed to indicate a hotter source or hotter mineralizing fluid pathways within the system. These anomalous values are seldom of economic value to the project; however, they are important vectors for exploration.

The most significant mantos at Platosa are the 623, NE-1 and NE-1 south mantos, which are currently being mined and that are open for expansion. These mantos have been defined in drilling from surface with an average drill spacing of 15 to 20 metres. In 2020, Excellon commenced a program of infill and expansion drilling ahead of production. This drilling was conducted on 10-metre spacing in production areas and has been successful in discovering and defining additional

mineralization near existing mine infrastructure, most notably in the 623, Pierna, NE-1 and NE-1 South mantos.







**Figure 11: Typical Mineralized Underground Faces at Rodilla Manto (A, B and C), and Manto 623 (D), Platosa Mine**

Mineralization is also seen in the form of vein, breccia, and skarn systems in the following property-scale exploration prospects (refer to Figure 5):

- **San Gilberto:** Anomalous mineralization of 10 g/t silver has been intersected in drilling of north-south-oriented structures in 2006 (hole EX06STS01). Other structures, believed to be parallel to this one, have been exploited by small-scale miners at San Gilberto where the target appears to be a black siliceous vein. Prospecting results in this area by Excellon geologists have returned samples with elevated silver and base metal values.
- **Jaboncillo:** A trend of anomalous silver and base metal values measuring more than 1.0 kilometre was identified by company geologists in 2017. This trend is believed to indicate the presence of hotter mineralized fluids venting off a sulphide bearing fluid system that could be analogous to the mineralization at Platosa. Recent drilling has intersected zones of

strong dolomitization, and jasper-gossan horizon with anomalous zinc and lead values and high lead/zinc ratios indicating proximity of the source of mineralization.

- **Saltillera North and South:** Skarn mineralization including epidote, pyrite, and chalcopyrite as well as silver values in excess of 600 g/t have been intersected in a hornfelsed unit (EX08ST78). These targets are also the site of historical small-scale silver and base metal mining.
- **Halcón:** Multiple structural intersections have been mapped here which are believed to be related to the emplacement of deeper intrusions into this sequence. Surface samples were anomalous in silver, lead, zinc, and arsenic.
- **PDN:** This geophysical target is defined by a large gravity anomaly coincident with resistivity anomalies. Structures and veins (calcite veining, silica veining and jasperoids) have been mapped on surface. Grab and surface samples have returned anomalous silver, lead and zinc and elevated arsenic values.
- **Refugio:** Located 1.4 kilometres southwest of the Platosa Mine on the western flank of the Sierra de Bermejillo where several small-scale historical mine workings are present; this prospect consists of outcrops of irregular silica breccias and jasperoid. The silica breccias cut beds of the Cuesta del Cura Formation and do not appear to be controlled by any obvious structure. Several historical samples of silica material returned gold values up to 7.79 g/t. Lead, zinc, and silver values have been reported in both the jasperoids and silica breccia boulders.
- **Rincón Del Caído:** Skarn mineralization was intersected in drilling at a depth of approximately 500 metres, most notably in diamond drillholes EX12LP1019, EX12LP1023A, EX12LP1024, EXLP1025 and EX12LP1030. The mineralized zone consists of green garnet with dispersed pyrite and subsidiary sphalerite and galena; it measures approximately 120 by 140 metres and extends down plunge for approximately 80 metres; it may indicate a larger skarn system in the area and the potential for additional mineralization at depth.
- **La Zorra:** A set of old artisanal workings mined for silver, lead, and zinc.
- **Cañón Colorado:** Excellon drilled holes into what is believed to be a rhyolite tuff that was enriched in rare earth elements. This area, located at the intersection of two regional faults, is believed to have potential to be a high-level portion of a mineralizing system.
- **Cañón de la Güera:** Prospecting and mapping led to initial drilling in this area. No significant mineralization has yet been intersected, although it is located in a structurally complex part of the northern PSZ.

## 7 Deposit Types

This section is quoted from (Selby et al. 2018):

The principal mineral deposits in the Platosa area are high-temperature epigenetic silver-lead-zinc carbonate-replacement deposits (CRD).

These deposits are hosted in carbonate rocks, distal to felsic intrusions that are interpreted to provide the hydrothermal source of mineralizing fluids. Deposits are characterized by irregularly shaped pods, lenses, and roughly tabular or tubular masses of massive sulphide mineralization. Discordant bodies (chimneys) and roughly concordant elongate masses (mantos) can extend for thousands of metres from the source of the mineralizing fluids and often follow complex disjointed paths through the host rocks.

The massive sulphide bodies commonly grade progressively into mineralized metasomatic skarn deposits proximal to the source intrusions. This proximal mineralization includes skarns developed along fractures, dykes and sill contacts, and as large irregular lenses at the contact with the intrusion. Locally, mineralized veins cut both the skarns and host intrusions. Contact metamorphic features (recrystallization to marble, development of hornfels and skarnoid) commonly occurs peripheral to the skarn zone.

All aspects of CRD and skarn mineralization are controlled by local and regional structures such as faults, fractures, contacts, fold axes, and collapse (paleokarst) zones. Secondary host rock permeability (such as fractures, breccias, solution cavities, dolomitization) can also be an important controlling factor for mineralization (Megaw et al. 1988).

The Mexican CRD belt hosts deposits in excess of 80 million tonnes. The Platosa property, with its combination of CRD and skarn mineralization, shares similarities with many of these systems and other North American manto/CRD systems and demonstrates potential for the discovery of additional mineralized zones.

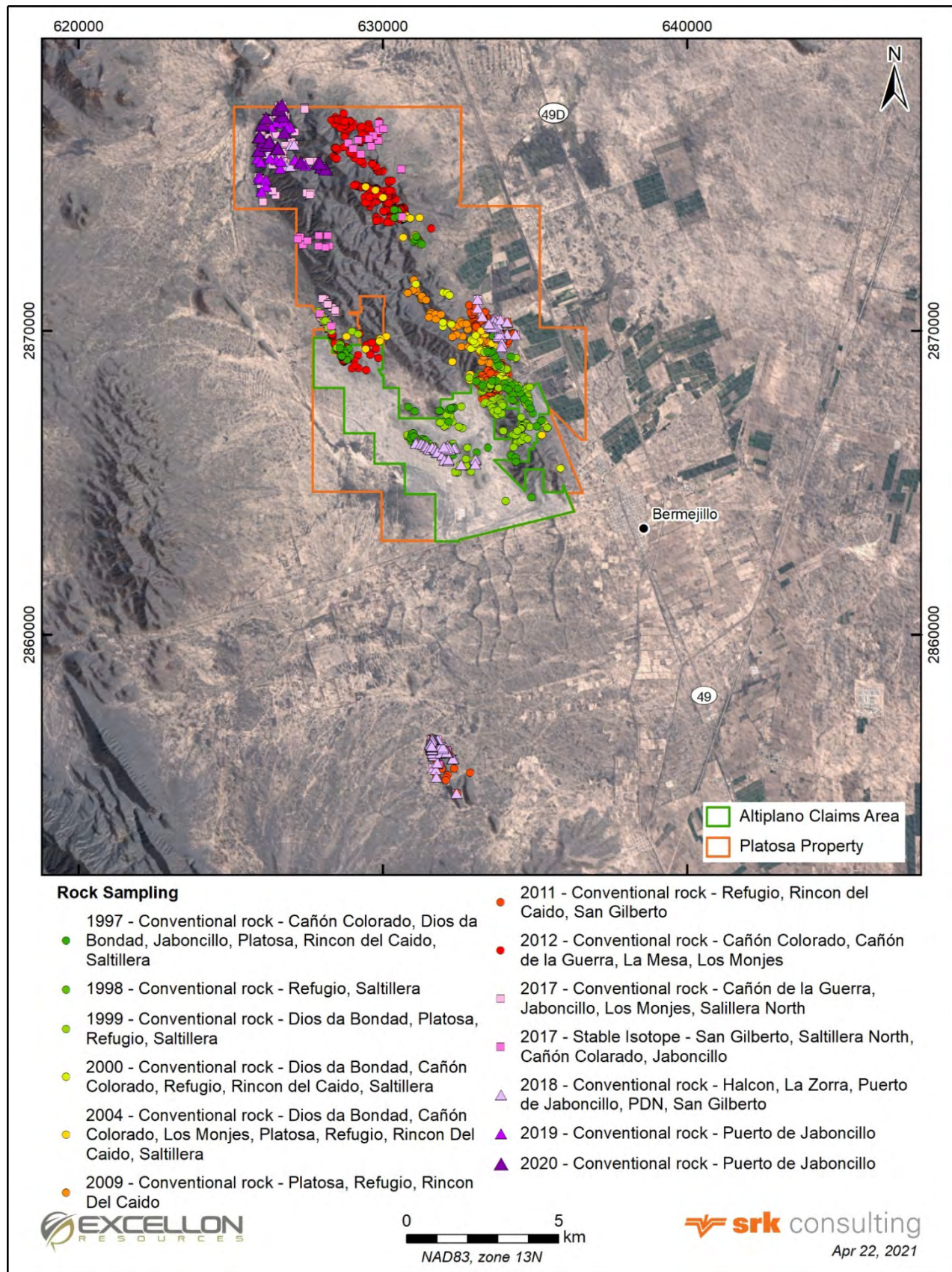
## 8 Exploration

Exploration work by Excellon on the Platosa Mine has included various campaigns of geological mapping, rock and soil geochemical sampling, biogeochemical sampling, soil gas mercury, hydrocarbon surveys, ground and airborne geophysical surveys, fluid inclusion and sulphur isotope studies, and diamond drilling documented by detailed core logging. Recently, Excellon has also conducted downhole acoustic and optical televiewer surveys on selected drillholes, as well as commenced a trial program with Corescan, a hyperspectral core imaging system, to improve characterization and mapping of the physical and chemical properties of host rocks.

Prior to 2012, exploration work such as drilling, sampling, geophysics and geochemistry was concentrated on the main Platosa mine area, but was also conducted at these other prospects located on the property: Cañón Colorado, Saltillera, Socorro, Cerro Blanco, La Zorra, Refugio, Dios da Bondad, and Rincón del Caído (Figure 12; Table 4). Regional mapping and prospecting in 2016 and 2017 led to the definition of new targets. These include Jaboncillo, Saltillera South, Halcón, PDN, and San Gilberto. Historical data recorded on paper were digitized and incorporated into Excellon's GIS database. This includes historical surface mapping, sampling, interpretation, as well as historical surface drilling.

Limited exploration was performed between 2014 and 2016. A thorough and comprehensive review of data and historical programs was performed in 2016 and into 2017. Excellon recommenced exploration work on the Platosa Mine in mid-2016; this included drilling, prospecting, sampling, and mapping. The surface drilling was suspended in 2017 pending financing and the completion of capital projects at the mine, but the other surface exploration work programs continued through this time as well as underground infill and definition drilling. At the end of 2017, Excellon recommenced surface drilling which continues into 2021.





**Figure 12: Regional Exploration Compilation Map Showing Rock Chip Sample Locations**



**Table 5: Rock Geochemistry Sampling Completed by Excellon on the Platosa Mine**

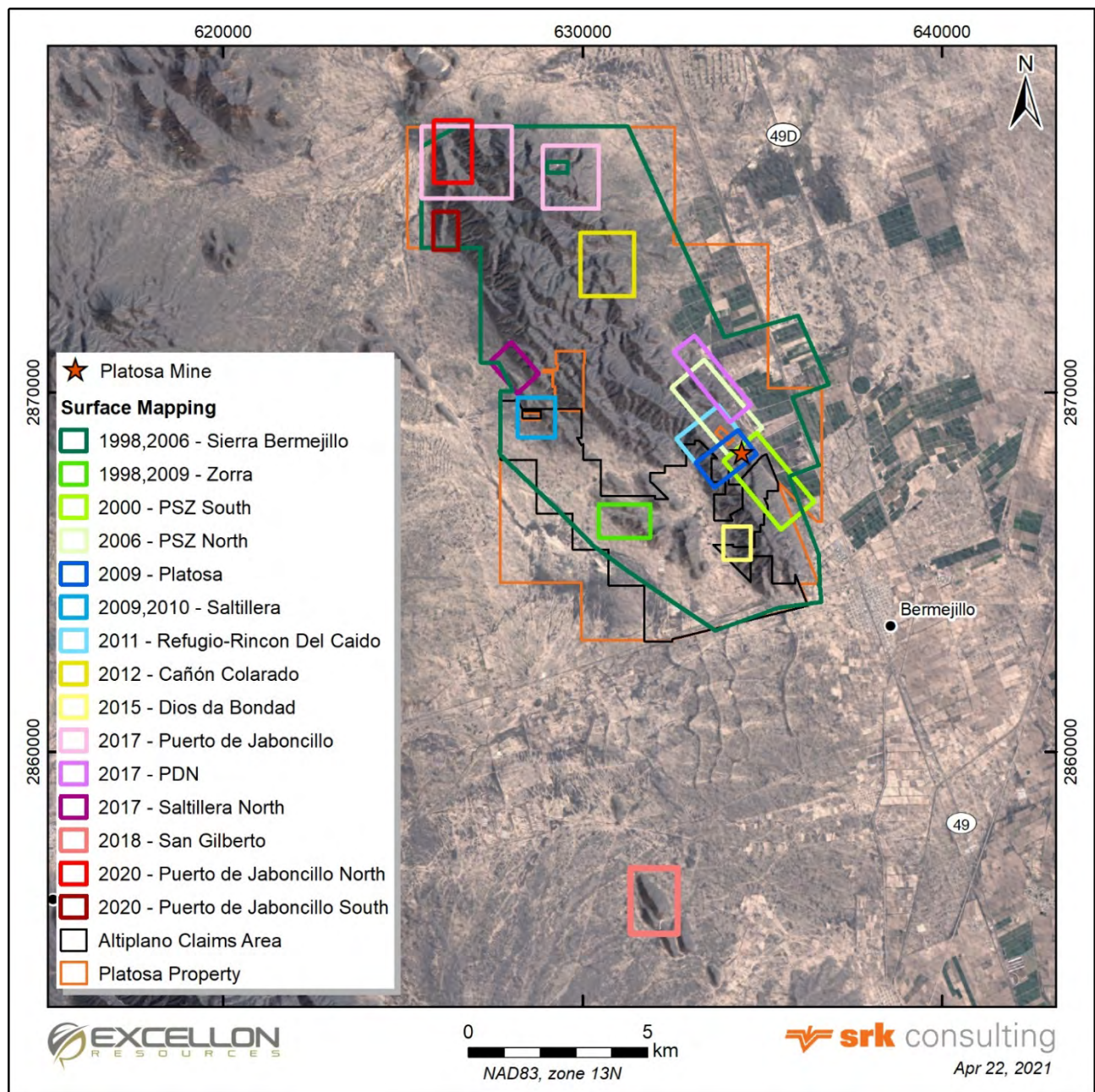
Year	Area	No. Samples	Type	Comments
1997	Cañón Colorado, Dios da Bondad, Jaboncillo, Platosa, Rincón del Caído, Saltillera	130	Conventional rock	
1998	Refugio, Saltillera	19	Conventional rock	
1999	Dios da Bondad, Platosa, Refugio, Saltillera	230	Conventional rock	
2000	Dios da Bondad, Cañón Colorado, Refugio, Rincón del Caído, Saltillera	25	Conventional rock	
2004	Dios da Bondad, Cañón Colorado, Los Monjes, Platosa, Refugio, Rincón Del Caído, Saltillera	47	Conventional rock	
2009	Platosa, Refugio, Rincón Del Caído	152	Conventional rock	
2011	Refugio, Rincón del Caído, San Gilberto	379	Conventional rock	
2012	Jaboncillo, Saltillera	100	Conventional rock	
2012	Cañón Colorado, Cañón de la Güera, La Mesa, Los Monjes	289	Conventional rock	REE Suite of Elements
2017	San Gilberto, Saltillera North, Cañón Colorado, Jaboncillo	27	Stable isotope	
2017	Cañón de la Güera, Jaboncillo, Los Monjes, Saltillera North	264	Conventional rock	
2018	Halcón, La La Zorra, Jaboncillo, PDN, San Gilberto	213	Conventional rock	
2019	Jaboncillo	22	Conventional rock	
2020	Jaboncillo	32	Conventional rock	

## 8.1 Geological Mapping

Geological mapping at a variety of scales has been performed in several areas of the property and is summarized in Table 5. Additional detailed mapping campaigns continue to fill gaps in the mapping (Figure 13). In addition, reconnaissance mapping at 1:2,000 scale is being undertaken in areas of the project that have not been adequately mapped and sampled. These programs will continue through 2021 and into 2022.

**Table 6: Mapping at the Platosa Mine**

Year	Area	Scale	Purpose
1998	Sierra Bermejillo	1:50,000	Regional scale base mapping
1998	La Zorra	1:10,000	Detailed mapping of prospective area
2000	PSZ South	1:10,000	Stratigraphic and structural mapping around
2006	PSZ North	1:10,000	Mapping north of Platosa to Cañón Colorado
2006	Sierra Bermejillo	1:50,000	Follow-up on initial campaign
2009	Platosa, Saltillera, La Zorra	1:5,000	Detailed mapping and prospecting
2010	Saltillera	1:5,000	Detailed mapping and prospecting
2011	Refugio, Rincón del Caído	1:5,000	Detailed mapping and prospecting
2012	Cañón Colorado	1:5,000	Detailed mapping and prospecting
2015	Dios da Bondad	1:5,000	Detailed mapping and prospecting
2017	Jaboncillo	various scales	Detailed mapping and prospecting
2017	Saltillera North	various scales	Detailed mapping and prospecting
2017	PDN	various scales	Detailed mapping and prospecting
2018	San Gilberto	various scales	Detailed mapping and prospecting
2020	Jaboncillo	1:2,000	Detailed mapping and prospecting



**Figure 13: Mapping Areas by Campaign on the Platosa Property**

## 8.2 Soil Geochemistry

Various techniques have been tested (Table 7) to determine whether mineralization on the Platosa property has a soil geochemical response. A plan showing the distribution of the geochemical surveys undertaken is shown in Figure 14. The surveys have been inconclusive to date, although discrete anomalies have been identified in specific surveys. Anomalies were identified in the 2000 and 2001 soil gas hydrocarbon survey, although these anomalies yielded few significant results when tested by diamond drilling.

A mobile metal ion (“MMI”) survey was conducted in 2006. This survey uses very low detection limits and is designed to detect anomalous metal values buried by cover and potentially by transported material. The survey conducted in 2006 identified significant lead and zinc anomalies, which were subsequently tested with drilling. These holes may not have been drilled deep enough to adequately test these anomalies.

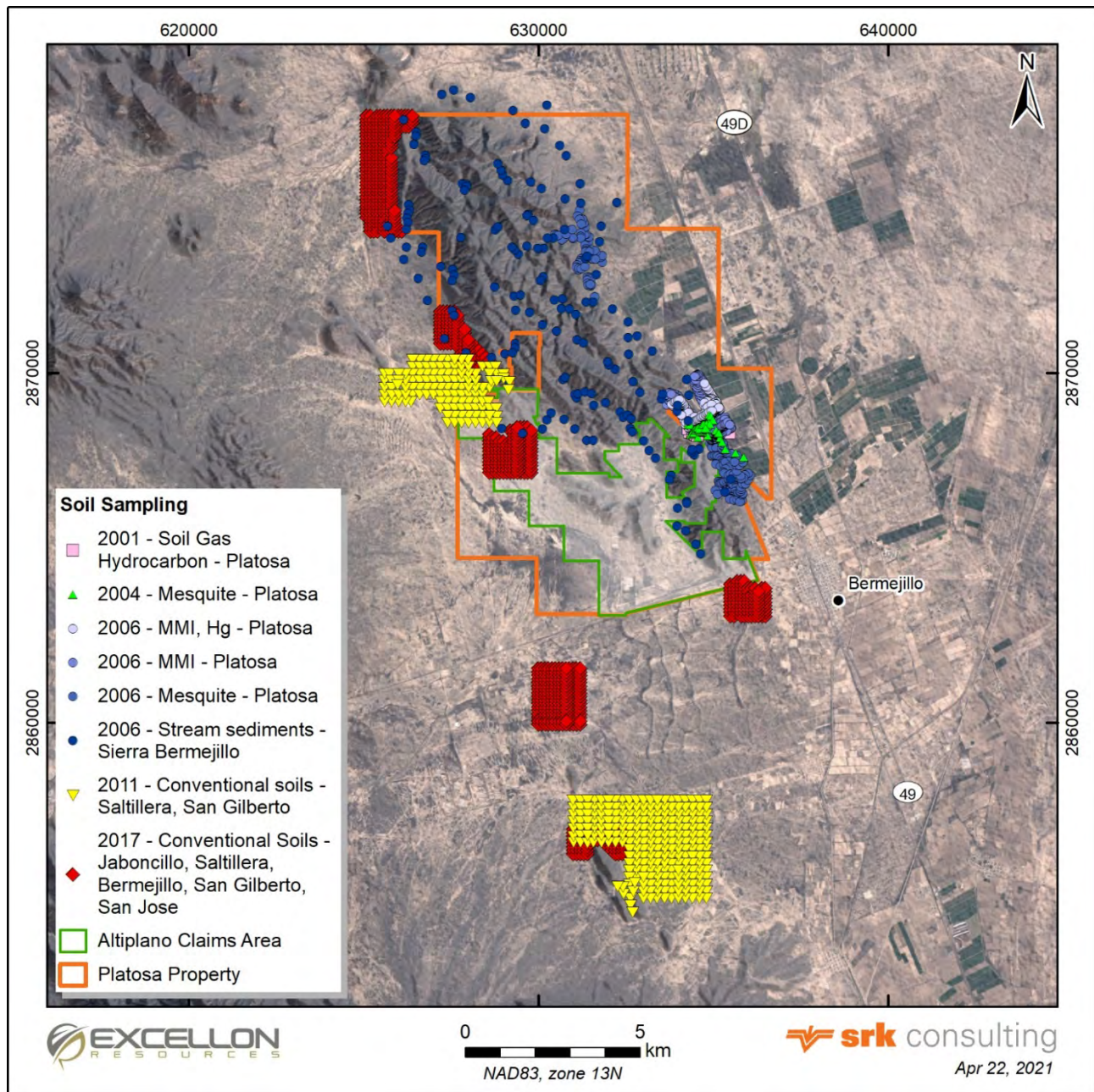
In late 2017, Excellon commenced its first regional orientation soil sampling in an effort to test the basins flanking the Sierra Bermejillo for potential extensions of known structures and for anomalies under cover in the area. This program confirmed the presence of deep cover material in the basin that was therefore unsuitable for sampling. Additional work will be carried out in these areas to look below this cover using more penetrative methods.

**Table 7: Soil Geochemistry Collected on the Platosa Mine**

Year	Area	Spacing	Samples	Type	Company	Comments
1999	Platosa	10x10 m	100	Soil Gas Hydrocarbon	APEX/EXN	Orientation Survey
2001	Platosa	10x10 m	100	Soil Gas Hydrocarbon	EXN	
2004	Platosa	N/A	43	Mesquite	EXN	Orientation Survey
2004	Platosa	N/A	250	Mesquite	EXN	Follow up Program
2006	Platosa North	25x25 m	800	MMI	EXN	MMI Survey
2017	Jaboncillo, Saltillera, Bermejillo, San Gilberto	100x100 m	994	Conventional Soils	EXN	Regional Orientation Surveys

EXN = Excellon





**Figure 14: Distribution of Geochemical Surveys on the Platosa Property**

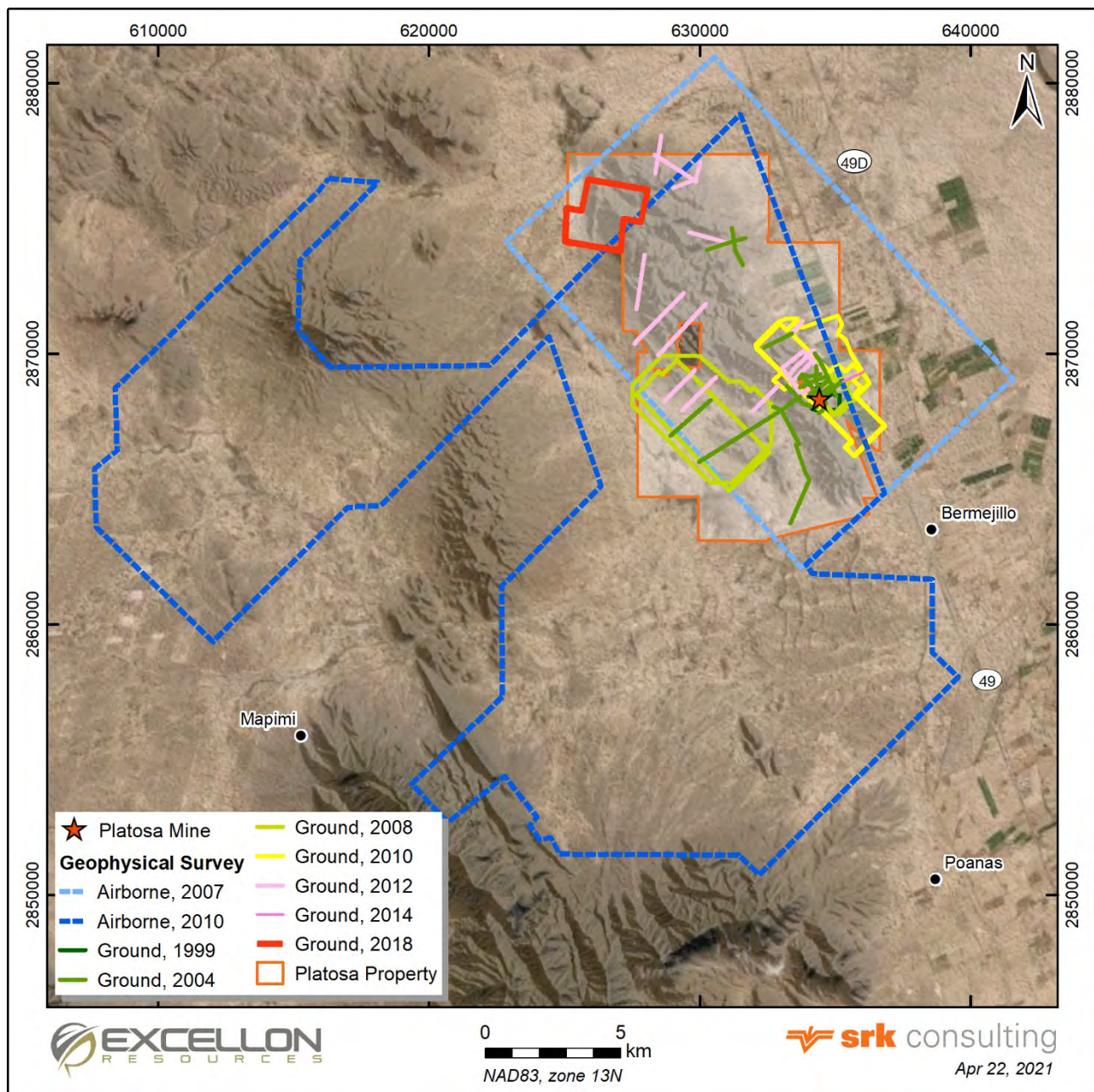
## 8.3 Geophysical Surveys

A variety of geophysical approaches have been tested on the Platosa Property. These surveys used various techniques to detect sulphide bodies, geological contacts, structures, and intrusive bodies in the area. A plan showing the location of these geophysical surveys is shown in Figure 15. All surveys, with the exception of a drillhole Pulse Electromagnetic Survey, yielded significant results that increased geological knowledge and assisted with targeting. The numerous geophysical surveys conducted on the property are summarized in Table 8. The 1999 surveys were contracted by Apex; the surveys conducted from 2001 to present were contracted by Excellon.

**Table 8: Geophysical Surveys Conducted on the Platosa Concession**

Year	Scope	Company	Contractor	Survey Type
1999	ground	APEX	Zonge	CSAMT
1999	ground	APEX	Zonge	IP - Apex, only some available
2001	ground	EXN	University of Sonora	MAG, Gravity, orientation survey
2004	ground	EXN	Zonge	NSAMT
2005	ground	EXN	Zonge	NSAMT
2007	airborne	EXN	Aeroquest	AeroTEM/MAG
2008	ground	EXN	TMC	IP/RES - Pole Dipole IP
2008	ground	EXN	TMC	IP/RES - Gradient IP
2008	ground	EXN	TMC	Ground MAG
2008	ground	EXN	TMC	IP/RES - Pole Dipole IP
2008	ground	EXN	TMC	IP/RES - Gradient IP
2008	ground	EXN	TMC	Ground MAG
2008	ground	EXN	TMC	Drillhole TEM
2008	ground	EXN	MWH	Gravity
2009	interp	EXN	PGW	PGW modelling work on gravity data
2010	interp	EXN	SJ	3-D IP/RES
2010	interp	EXN	SJ	Gravity inversion
2010	ground	EXN	Magee	Gravity
2010	airborne	EXN	Geotech	ZTEM/MAG
2012	ground	EXN	TMC	Mise-a-la-Masse
2012	ground	EXN	Zonge	CSAMT
2012	ground	EXN	Zonge	NSAMT
2012	interp	EXN	PGW	interpretation by PGW
2016	airborne	EXN	Geotech	3-D inversion of MAG, Gravity data
2017	interp	EXN	In3D geophysics	3-D gravity inversion via VOXI
2017	interp	EXN	In3D geophysics	Compilation and interpretation of geophysical data
2018	ground	EXN	SJ	3-D IP/RES
2018	interp	EXN	In3D geophysics	3-D IP/RES inversion via VOXI





**Figure 15: Distribution of Geophysical Surveys Conducted on the Platosa Mine**

### 8.3.1 2-D Induced Polarization

In 1999, Apex contracted Durango Geophysical Operations of Durango, Colorado, to perform an induced polarization (IP) survey, which comprised seven lines totaling 41 line-kilometres. The survey was centered on hole LP-05, with one east-west line and six cross-lines oriented north-south and spaced at 75 metres. The survey employed a 50-metre dipole-dipole array for the east-west line and a 75-metre dipole-dipole configuration for the cross-lines. Chargeability and resistivity anomalies

were detected, but follow-up was not recommended, and Apex chose to discontinue the IP surveying.

Excellon reviewed the IP data in late 2007–early 2008 and concluded that the IP survey had been effective. In early March 2008, Excellon engaged Geofísica TMC S.A de C.V. (TMC), geophysical contractors based in Mazatlán, México, to carry out a magnetometer and IP survey (n:1 to 8 gradient array with pole-dipole) over two grids to follow up on anomalous areas. One grid was centred on the mine area and the other covered a large portion of the corridor linking the Saltillera and La Zorra areas on the western portion of the property. A total of 87.0 line-kilometres of gradient and 28.8 line-kilometres of pole-dipole surveying were completed. Several resistivity and chargeability anomalies were detected during the course of the survey. IP responses in the Saltillera-La Zorra area were included in the targeting of four drillholes in 2008; disseminated pyrite was intersected, but no economic sulphides.

### 8.3.2 Natural and Controlled-Source Audio Magnetotellurics

Apex carried out small-scale induced polarization (IP) and controlled source audio-frequency magnetotelluric (CSAMT) surveys at Platosa in 1999. A natural-source audio frequency magnetotelluric (NSAMT) orientation survey was carried out in 2004 for Excellon by Zonge Engineering (Zonge) of Tucson, Arizona. The survey duplicated the previous 1999 CSAMT lines but was expanded to cover 40 line-kilometres in several areas within the Sierra Bermejillo-Platosa Mine area (20 kilometres) including, Dios da Bondad-Refugio area (6 kilometres), La Zorra (4 kilometres), and Cañón Colorado/Uramex Dome area (10 kilometres). Station spacing was 25 metres for the lines in the Platosa Mine area and 50 metres for the remaining areas. The equipment used was a Zonge GDP-32 receiver and two Saarloos UO<sub>4</sub> ferrite-core magnetic field antennas.

The NSAMT was unsuccessful in detecting the known massive sulphide mineralization but did reveal a number of very high contrast, near-vertical anomalies, several of which correspond with known mineralization. These appear on repeated parallel lines in a northwest-southeast linear array. Several of these anomalies were also detected by the 1999 CSAMT survey but were detected at greater depth and resolution by the 2004 survey. These anomalies were interpreted as buried structures that acted as mineralizing fluid pathways (feeders). One of the strongest of the northwest-trending NSAMT anomalies was drilled in early 2005 (holes 114, 116, and 117); mineralization was intersected in all three holes.

Combining the NSAMT linear anomalies with parallel linear biogeochemical anomalies led to the interpretation that the biogeochemical anomalies reflect mineralization emplaced along the parallel structure. This exploration criterion led to the discovery of the Guadalupe Manto with hole EX05LP132, drilled in December 2005. Drilling along the southeastern extension of the combined anomaly trend led to the discovery of the Guadalupe South Manto in early 2006. The combined anomaly trend continues over 800 metres farther to the north of the Guadalupe Manto.

In April and May 2012, Zonge was again engaged to carry out surveying at Platosa. CSAMT surveying was carried out on three lines totaling 3.4 kilometres on the east side of the Sierra Bermejillo. NSAMT surveying was carried out on 14 lines totaling 21.5 kilometres. Five lines were on the east side of the Sierra and nine on the west side. Station spacing was 25 metres for all lines. The

equipment used was a Zonge GDP-32 receiver and two Saarloos UO<sub>4</sub> ferrite-core magnetic field antennas. The surveying did not define any priority targets and no drilling has been carried out based on the survey results.

### 8.3.3 Mise- à-la-Masse

In 2012, TMC was engaged to carry out drillhole surveying of two Rincón del Caído drillholes, namely holes EXLP12-1019 and 1023A. A grid totaling 27 line-kilometres consisting of 25 northeast-southwest-oriented lines at 50-metre spacing was centered on the two drillholes.

A single second electrode was used for the surveys of both holes. For each measurement, the current was alternately injected in each drillhole, thus increasing the survey production, by doing both drillholes during the same survey. The potential (Vp) was measured every 25 metres at surface along each of the 25 lines, by using an Iris Instruments Elrec Pro receiver. The current was injected by using a Walcer Geophysics Tx-9000 transmitter and a 9.0-kilowatt motor generator.

The mise-à-la-masse surveys carried out in the two holes indicated that zones of disseminated skarn sulphides are probably continuous between holes. The measured potential suggests a preferential northwest to north–northwest strike, and that the body is probably more continuous towards the east where a gentle dip is indicated. No drilling has been carried out to test the survey results.

### 8.3.4 Magnetic

In 2001, Excellon contracted Cascabel, in collaboration with geophysicists of the University of Sonora in Hermosillo, Sonora, to carry out an orientation ground magnetometer and gravity survey over the La Zorra and Platosa areas. The survey was performed using a Geometrics G816 proton precession magnetometer over 10 lines ranging in length from 600 metres to 7,000 metres, on a grid with 50-metre and 100-metre line spacing. The lines were broadly spaced and run over three geographically distinct target areas: the historical La Zorra mine, the Platosa mine, and the area along the Bermejillo-Mapimí highway. The purpose of the survey was to confirm the presence of a magnetic anomaly discovered in a Mexican Government survey completed in 1997, and to determine if other structures in the Platosa area could be mapped with the magnetometer.

Three lines over the La Zorra mine returned magnetic lows over the range-bounding fault and highs over the Upper Hornfels and the limestone-hornfels contact. Four lines at Platosa detected anomalies to the northwest of the Platosa mine. Drillhole EX01LP38 intersected numerous altered dykes in Lower Hornfels through this section, and Megaw (2002) suggested that these dykes could be the source of the anomalies.

Megaw (2002) also concluded that the magnetometer survey was successful in detecting intrusive bodies, faults, limestone-hornfels contacts, and other magnetic features, such as magnetite bodies. Additional magnetometer surveying was recommended and a heliborne electromagnetic survey was flown in February 2007.

An additional 93.5 kilometres of ground magnetic surveying was carried out during 2008 in conjunction with the IP surveying discussed above.



### 8.3.5 Gravity

In 2001, Excellon contracted Cascabel, in collaboration with geophysicists of the University of Sonora, to carry out an orientation gravimeter survey over known mineralization at the Platosa Mine. The survey was performed along two intersecting lines centered on drillhole LP-05. No significant anomalies were developed over the known massive sulphide mineralization and the exploration technique was temporarily abandoned.

During 2008, Excellon reviewed the 2001 gravity data and determined that additional work was merited. MWH GeoSurveys Inc. of Reno, Nevada, carried out 14 days of surveying (855 unique stations) using LaCoste-Romberg Model G gravimeter (with Aloid upgrade) and Magellan ProMark 500 GPS receivers for geodetic positioning (to  $\pm 2$  centimetres). The surveying broadly followed the grid lines established for the IP surveys in the mine (241 stations) and Saltillera-La Zorra (614 stations) areas. In the vicinity of the mine area, grid readings were taken on several of the historical roads and trails northwest of the grid in order to extend coverage. Inversions, using UBC software, were carried out by S.J.V. Consultants Ltd. of Delta, British Columbia, under the supervision of Ken Robertson. A second, more detailed interpretation was carried out in the spring of 2009 by Paterson, Grant & Watson Limited, a Toronto-based consulting group, also under the supervision of Mr. Robertson. Several anomalies were outlined in the mine area and one of these, located over the eastern portion of the mantos, was drilled by hole EX09LP623 in July 2009. This hole intersected 3.20 metres of massive sulphides grading 1,121 g/t silver, 9.83% lead, and 9.20% zinc. While it is not clear whether the sulphides were responsible or partially responsible for the anomaly, the results suggested that the additional gravity surveying was warranted.

In 2010, Excellon engaged Magee Geophysical Services LLC of Reno, Nevada, to carry out additional gravity surveying; part of this survey overlapped with the northwest-trending 3-D IP grid centered on the Platosa mine area, which measured 5.5 kilometres by 1.0 to 2.0 kilometres (discussed below).

### 8.3.6 Drillhole Pulse Electromagnetic

In 2008, Excellon engaged TMC Geophysics to carry out downhole surveys in two holes within the immediate mine area. The surveys were executed with the Crone Geophysics Pulse-Electromagnetic (PEM) system using a 16.66-millisecond time-base, a 1,500-microsecond ramp-time, and 20 sampling windows (channels). No definite response, which could indicate the presence of a large moderate to strong in-hole conductor or a conductor within a radius of 100 to 150 metres around the holes, was detected.

### 8.3.7 Aeroquest

In February 2007, Aeroquest International Limited of Milton, Ontario, carried out a 1,530 line-kilometre heliborne AeroTEM II survey over a large portion of the Platosa Mine. Flight lines were oriented approximately northeast-southwest. Flight-line spacing on the southern two-thirds of the 10 by 16-kilometre survey block was 100 metres and 200 metres for the northern third. Tie lines were

flown every 1,000 metres perpendicular to the flight lines. The electromagnetic (EM) bird height was 50 metres.

Due to difficulties incurred during data processing, it was not possible to carry out significant interpretation until late 2007. However, a strong northwest-elongated magnetic high along the southwest flank of the Sierra Bermejillo was evident. The high lies beneath the Saltillera and La Zorra areas (four to five kilometres west of the Platosa manto deposits) where widespread marble, hornfels, silicification, skarn, and local high-grade mineralization occur. Drilling in the Saltillera-La Zorra area after mid-2007 was guided in part by the magnetic survey results.

Further interpretation of the magnetic and electromagnetic data was undertaken for Excellon by VOX Geoscience Ltd. and has highlighted important structures in the immediate mine area. The interpretation work also identified weak electromagnetic anomalies in several areas. Several holes were drilled in 2007 to test some of these targets located southeast of the mantos; however, no sulphide mineralization was intersected. Some of the anomalies could be explained by water-saturated alluvium and/or by sharp drop-offs in overburden thickness in the broad valleys both east and west of the Sierra Bermejillo.

### **8.3.8 Geotech ZTEM Airborne Electromagnetic**

In October 2010, Excellon contracted Geotech Ltd. of Aurora, Ontario, to conduct a ZTEM and magnetic airborne geophysical surveying over 2,786 line-kilometres, covering a large portion of the Platosa Mine. This included nearly all of the 17,000 hectares of the Excelmex VII concession that was acquired in April 2010 and that is located immediately south of the original Platosa concessions, as well as a portion of the Pluton property, contiguous to, and to the west of, Excellon's Venux concession. The survey outlined several previously undetected and untested structural zones or systems of interest and various conductive and resistive features. Line spacing was 150 metres and line direction was approximately northeast-southwest. Six diamond drillholes tested ZTEM targets on various portions of the property between March and July 2011. No significant sulphides were encountered. Two other holes were abandoned for technical reasons.

### **8.3.9 3-D Induced Polarization**

In 2010, Excellon engaged SJ Geophysics Ltd. (formerly S.J.V. Consultants Ltd.) of Delta, British Columbia, Canada, to carry out a 3-D IP survey over a grid roughly centered on the Platosa mine that measured 5.5 kilometres by 1 to 2 kilometres. Survey lines were 100 metres apart, oriented approximately northeast-southwest, and ranged from one to two kilometres in length. The interpretation indicates correlation between a particular level of chargeability and portions of the known manto massive sulphides. A series of diamond drillholes tested several of the targets and determined that the chargeability was caused by pyritized hornfels and black limestone.

### **8.3.10 Seismic Survey**

In the spring of 2014, Excellon engaged Olson Engineering, Inc. (Olson), of Wheat Ridge, Colorado to design and manage a test 2-D seismic reflection survey over a single line at Platosa. The 2.1-kilometre line was laid out to pass directly over the Pierna and NE-1 mantos, neither of which

had been mined. The line, oriented approximately east-northeast to west-southwest, began 150 metres east of the intersection between the railroad tracks and Highway 49 and continued into the eastern foothills of the Sierra Bermejillo. The purpose of the survey was to determine if the unmined mantos could be detected using seismic techniques. The survey was carried out by Geo Estratos S.A. de C.V. of Tamaulipas, México under the supervision of Olson using an IVI MiniVib 12,000-pound vibration source and INOVA Hawk wireless seismic system for data capture. Interpretation was aided by a sonic log of hole EXLP141088 (depth 1,197 metres) located approximately 700 metres from the east end of the line. The sonic survey was carried out in August 2014 by Southwest Exploration Services, LLC of Chandler, Arizona.

Several strong, sub-vertical structures were outlined on the seismic section, in addition to contacts between the various carbonate, hornfels, and marble units. These deep cross-cutting structures are important for the migration of fluids from the intrusive source(s) into the host rocks. Although the survey did not directly detect the known mantos, the ability to have more precise knowledge of the structural environment underlying the property will aid exploration considerably, given the important roles that structural elements have in the emplacement of both proximal and distal CRD mineralization.

### **8.3.11 3-D Induced Polarization Survey**

In 2018, Excellon engaged SJ Geophysics Ltd. (formerly S.J.V. Consultants Ltd.) of Delta, British Columbia, Canada, to carry out a 3-D IP survey over a grid roughly centered on the PDN and Jaboncillo targets.

The Jaboncillo grid measured 2.3 kilometres by 2.5 kilometres. Survey lines were 150 metres apart, oriented approximately west-northwest/east-southeast, and were approximately 1,750 metres in length. The interpretation of the inverted data indicates a north-northwest chargeability zone of approximate 900 metres in strike length. This zone correlates with the lithological package hosting silica and gossanous replacements with anomalous silver and base metals surface values. The resistivity model suggests possible feeder structures within the same lithological sequence. The PDN grid consisted of five survey lines, spaced 150 metres apart ranging in length of 2,800 metres to 3,000 metres with stations spaced every 100 metres. The grid was confined by the property boundary. Several resistivity and chargeability anomalies were defined and spatially associated with a known regional gravimetric high confirming the skarn targets in the area.

### **8.3.12 Compilation and Reprocessing**

In 2016 and 2017, Excellon undertook significant work to collate, reprocess, and better understand the effectiveness of the various historical surveys, with the aim of optimizing the use and interpretation of the underlying data and planning for future geophysical programs. In 2016, Geotech Ltd. was engaged to reprocess and complete 3D inversions on the regional ZTEM survey conducted in 2010. Excellon also engaged In3D Geoscience Inc. of Vancouver, British Columbia, to assist in the ongoing interpretation and compilation of the historical data sets. Errors in location, data collection, and processing were corrected and the general effectiveness of each technique was assessed. This compilation was part of a larger review and compilation of all exploration data on the project, which now informs Excellon's planning of future programs.

## 9 Drilling

In 1999, Apex embarked on diamond drilling programs at both Saltillera (total of 1,007 metres) and Platosa (total of 2,612 metres). The drilling at Platosa led to the discovery of a sulphide body to the east of the old mine workings. In 2002, Apex drilled an additional 1,054 metres at Platosa and 188 metres at Saltillera. In total, Apex drilled 33 holes totaling 4,674 metres.

Excellon reassumed control of the project in 2001 and since then has drilled 393,549 metres in 1,761 drillholes. A total of 398,881 metres in 1,794 exploration diamond drillholes have been completed at Platosa up to February 13, 2021. Holes completed within the Platosa mineral resource area by Apex are located in the mined-out portion of the mine.

The holes have all been collared with HQ tubing, which produces 63.5-millimetre diameter core. In cavities or bad ground, the core diameter is reduced to NQ, which produces 47.6-millimetre diameter core.

Table 9 provides the details of both Apex and Excellon drilling by year and by areas of the Platosa property. The collar positions of this drilling are also shown graphically on Figure 16.

The different phases of Excellon's drilling have been carried out by the following drilling contractors:

- 2001-2002: Britton Brothers Drilling S.A. de C.V. of Hermosillo, Sonora, Mexico.
- 2002 to 2014: Major Drilling de Mexico, S.A. de C.V. of Hermosillo, Sonora, Mexico (a subsidiary of Major Drilling Group International Inc. of Moncton, New Brunswick).
- 2016 to 2018: VERSA Perforaciones S.A. de C.V. of Mazatlán, Mexico.
- 2019: VERSA Perforaciones S.A. de C.V. of Mazatlán, Mexico and Maza Diamond Drilling S.A. de C.V. of Mazatlán, Mexico.
- 2020 to present: VERSA Perforaciones S.A. de C.V. of Mazatlán, Mexico.

When drilling is ongoing, it is carried out using a variety of surface and underground drills, 24 hours a day, six days per week. Surface and underground drills were operating during the SRK visit in January and March 2018. Underground drilling was in progress during CITDM's visit in April 2021. The drilling procedures in use at the Platosa Mine were observed by both SRK and CITDM. Both investigations noted that the work was being carried out in a competent fashion, using modern equipment that appeared to be fit for duty and fit for purpose.

**Table 9: Platosa Drilling Summary by Area and Year**

Target Area	Year	No. of Holes	Metres
<b>Regional Exploration</b>			
Joint Venture			
Cañón Colorado (CCO)	2006	7	2,269 *
Crestoncitos	2006	5	3,086 *
<b>Subtotal</b>		<b>12</b>	<b>5,355 *</b>
Anomalies			
Cerro Blanco (CB)	2007	3	1,763
Geophysical or Geochemical Anomalies	2007	10	2,572
	2008	3	1,750
	2009	2	1,123
	2010	3	1,861
	2011	10	6,475
<b>Subtotal</b>		<b>31</b>	<b>15,544</b>
PDN			
	2019	1	752
	2020	1	678
	2021	1	600
<b>Subtotal</b>		<b>3</b>	<b>2,030</b>
Jaboncillo			
	2019	20	8,843
	2020	8	2,240
<b>Subtotal</b>		<b>28</b>	<b>11,083</b>
REE Targets			
	2011	3	1,457
	2012	2	868
<b>Subtotal</b>		<b>5</b>	<b>2,325</b>
Refugio (RFG)			
	2007	3	1,956
	2008	4	1,866
<b>Subtotal</b>		<b>7</b>	<b>3,822</b>
Saltillera (SLT)			
	1999	6	10,072
	2002	1	352
	2005	6	2,421
	2007	30	14,624
	2008	19	9,103
	2010	4	1,270
<b>Subtotal</b>		<b>66</b>	<b>37,842</b>
Skarn			
San Gilberto (SGIL)	2006	2	605
Skarn	2010	4	2,379
	2011	6	3,979
	2012	27	19,048
	2013	13	9,442
	2018	7	2,548
<b>Subtotal</b>		<b>59</b>	<b>38,001</b>
La Zorra (LAZ)			
	2002	3	458
	2006	13	3,838
	2007	5	2,025
	2009	5	2,470
	2010	16	5,668
<b>Subtotal</b>		<b>42</b>	<b>14,459</b>
<b>Regional Exploration Total</b>		<b>253</b>	<b>130,461</b>

\* Joint Venture (JV)

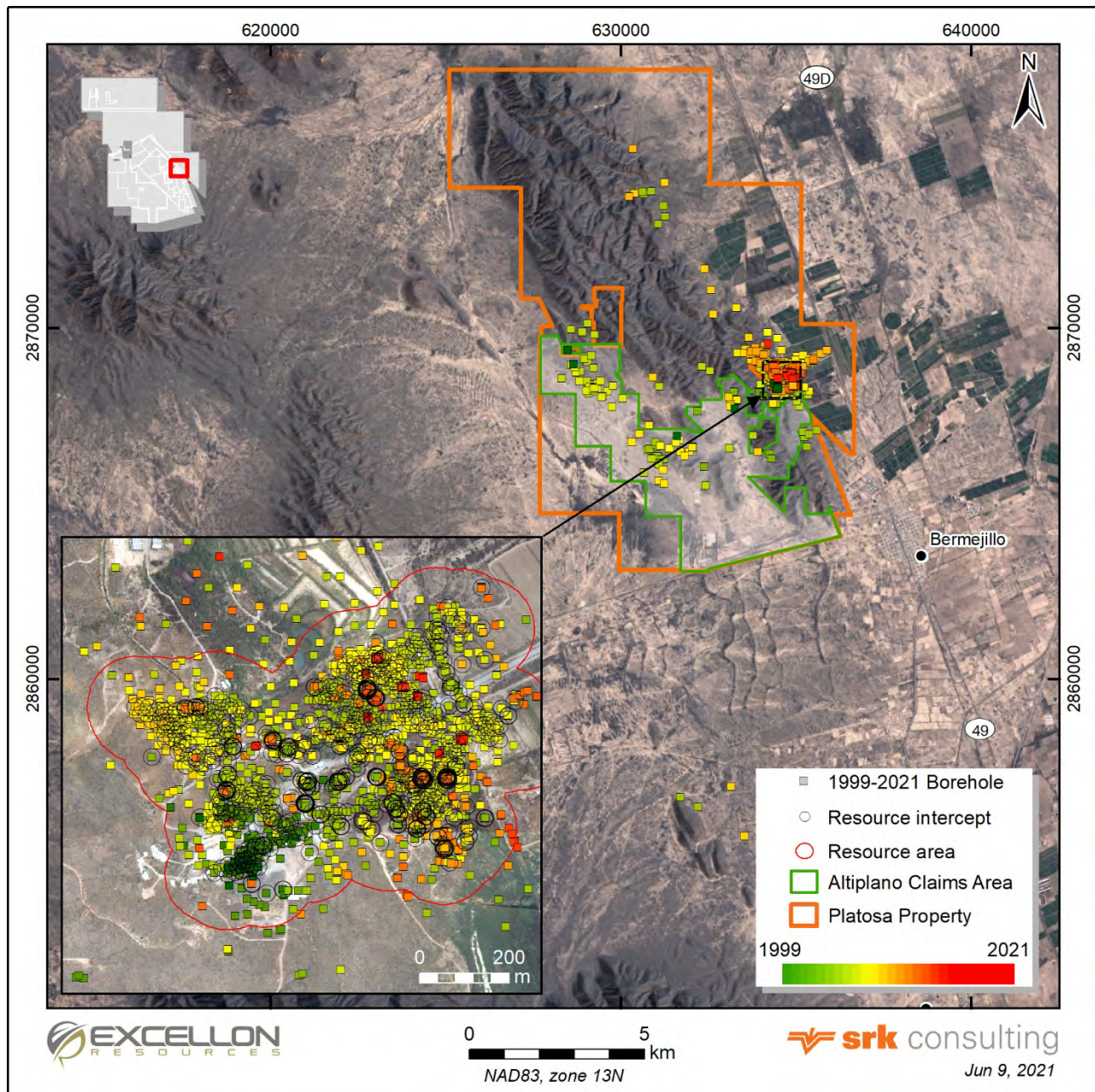
† Pre-Excellon (Apex)

‡ From Underground

**Table 9: Platosa Drilling Summary by Area and Year (Continued)**

Target Area	Year	No. of Holes	Metres
<b>Exploration/Operations</b>			
Geotechnical	2020	4	692
	2021	1	191
<b>Subtotal</b>		<b>5</b>	<b>883</b>
Grouting	2010	6	804
	2012	2	300
<b>Subtotal</b>		<b>8</b>	<b>1,104</b>
Mine dewatering	2014	1	351 ‡
	2016	1	152 ‡
	2017	2	15 ‡
<b>Subtotal</b>		<b>4</b>	<b>518 ‡</b>
Mine services	2016	3	384
	2019	2	239
<b>Subtotal</b>		<b>5</b>	<b>623</b>
Pilot holes	2015	5	481 ‡
	2016	8	706 ‡
	2017	2	300 ‡
	2018	1	165 ‡
	2020	12	2,041 ‡
<b>Subtotal</b>		<b>28</b>	<b>3,693 ‡</b>
<b>Exploration/Operations Subtotal</b>		<b>50</b>	<b>6,821 ‡</b>
<b>Platosa Mantos/Source (Mine Area Exploration)</b>			
Manto/Source	1999	21	2,612 †
	2000	6	1,054 †
	2001	12	2,501
	2002	27	3,905
	2004	45	6,497
	2005	20	3,350
	2006	195	33,804
	2007	100	21,182
	2008	176	39,474
	2009	88	22,185
	2010	174	43,026
	2011	90	20,028
	2012	34	9,602
	2013	37	11,449
	2014	11	4,593
	2016	17	3,492
	2017	8	2,556
	2018	30	8,674
	2019	7	2,143
	2020	8	2,836
<b>Subtotal</b>		<b>1,106</b>	<b>244,963</b>
<b>Underground Exploration</b>	2014	33	1,415
	2015	65	3,587
	2016	14	1,076
	2017	88	6,732
	2018	76	6,405
	2020	64	4,006
	2021	45	2,486
<b>Subtotal</b>		<b>385</b>	<b>25,707</b>
<b>Platosa Mantos/Source (Mine Area Exploration) Total</b>		<b>1,491</b>	<b>270,670</b>
Pre-Excellon Drilling (Apex)		33	4,674
Excellon Exploration Drilling + JV		1,497	393,549
<b>Grand Total, March 31, 2021</b>		<b>1,794</b>	<b>398,881</b>

\* Joint Venture (JV); † Pre-Excellon (Apex); ‡ From Underground



**Figure 16: Map Showing the Distribution of Drilling**

All drillhole collars were surveyed according to UTM coordinates (NAD27 Mexico Zone 13N) with a total station device for surface collars, and underground survey points for underground drilling. The downhole survey instruments varied with time as outlined below:

- Prior to 2004, downhole orientation surveys were conducted with a single shot Sperry Sun instrument.
- Between 2004 and early 2007, detailed downhole orientation survey data were collected by Cascabel personnel for most holes using an Icefield Tools Corporation MI3 survey instrument.



- This task was assumed by Excellon personnel in early 2007 and was carried out until 2016 using a company-owned Icefield MI5 instrument, keeping the MI3 serving as a spare.
- A Devico DeviShot survey instrument provided by the drilling contractor was used for all underground drillholes in 2016 and for some 2016 surface drillholes.
- Both Devico DeviShot and Reflex EZ-Trac instruments were used for surface and underground drillholes in 2018. The Devico DeviShot was supplied by the contractor and the Reflex EZ-Trac was rented by Excellon from Reflex Instruments North America.
- A Devico DeviShot survey instrument provided by the drilling contractor was used for surface and underground drilling from 2019 to 2021.

Prior to 2016, measurements were generally collected every six drill rods or 18 metres, and starting in 2016, measurements were taken every 15 metres. In 2017, Excellon resurveyed 18 drillholes with four surveys completed using the Excellon-owned Icefield MI5 and the remaining holes were surveyed with a Devico DeviShot. Drill collars are surveyed by an Excellon surveyor using a theodolite. Drillhole collars are sealed with a concrete marker upon completion and inscribed with the drillhole ID. Core logging is done on laptop computers. Information captured includes: collar information, lithology, sampling intervals, specific gravity analyses, and geotechnical information including: recovery, RQD, basic rock strength assessment, and qualitative and quantitative information on jointing.

SRK notes that core recovery is variable, especially in the mineralized zones of historical holes, and that rock competency varies widely. Core recovery has improved substantially over the history of the project due to the site-specific experience gained by the operating personnel. In some of the earlier holes, recoveries varied from 100% to as low as 15%, but ranged between 50% and 100% in more recent drilling.



**Figure 17: Drilling at the Platosa Mine**

A: Diamond core saw

B: Underground drilling on Manto 623



## 9.1 Drill Core Sampling Method and Approach

Excellon operates a core handling facility located 800 metres north of the mine portal. The drill core is moved from the drill site to the facility where an Excellon geologist logs the core and marks it for sample intervals. All drill core is then photographed.

Core logging is done on laptop computers. Information captured includes collar information, lithology, sampling intervals, specific gravity analyses, and geotechnical information including recovery, RQD, basic rock strength assessment, and qualitative and quantitative information for jointing.

The sample intervals are selected to honour lithological, structural, or mineralized boundaries. The sample intervals are marked directly on the core and on the core box. The maximum sample length within mineralized sections is 1.5 metres; shoulder samples can measure up to 3 metres.

Samples are obtained by cutting the drill core in half. This is done using a diamond saw, a standard blade-type core splitter, or a spatula depending on the competency of the core. After splitting, one half of the core remains in the core box for reference and long-term storage at the Platosa core storage warehouse (on site) and the other half is put in a plastic bag, with a numbered sample tag, for shipment to the laboratory.

One field duplicate sample per hole is collected for quality control purposes during the sampling procedure. The duplicate is created by cutting the primary half-core into two quarters; one quarter-core becomes the primary sample, the other quarter-core becomes the duplicate, and the remaining half-core remains in the box.

Groups of up to 30 to 40 samples are placed in sealed bags for shipping. A list of the samples contained in each sealed bag is submitted to the laboratory. The samples are trucked to the SGS laboratory in Durango by Excellon personnel.

No other sample preparation is carried out by Excellon personnel. The sampling procedures meet standard industry best practice and are appropriate for the deposit type.

## 9.2 Drilling Pattern and Density

Drilling at Platosa varies from 10 to 50 metres within the Platosa resource area. In 2016, the company commenced drilling from underground to tighten the drill spacing ahead of mine workings to 10 metres as well as to better define mantos and structural controls within the deposit. This drilling continues from underground infrastructure. Outside of the Platosa resource area, drill spacing is significantly sparser and is localized around regional exploration targets. In the Platosa resource area, SRK considers the drill pattern and spacing appropriate for resource estimation and categorization.

### **9.3 SRK Comments**

In the opinion of SRK, the drilling strategy and procedures used by Excellon conform to generally accepted industry best practices. The drilling information is sufficiently reliable, and the drilling pattern is sufficiently dense to interpret with confidence the geometry and the boundaries of the polymetallic (silver, lead and zinc) mineralization. All core sampling was conducted by appropriately qualified personnel under the direct supervision of the project geologist.

## **10 Sample Preparation, Analyses, and Security**

### **10.1 Sample Preparation and Analyses**

#### **10.1.1 Apex (1997-2000)**

All submitted samples were shipped by bus to ALS Minerals (ALS) in Chihuahua, México. ALS is accredited ISO 17025 by the Standards Council of Canada for a number of specific test procedures, including the method used to assay samples for the Platosa Mine.

Drill core samples prepared by ALS used the following protocol:

1. Air dry if possible; maximum 120°C if oven-drying is necessary.
2. Crush entire sample to greater than 90% passing 2 millimetres.
3. Riffle-split 250 grams.
4. Pulverize 250 grams to greater than 90% passing 75 microns.

The prepared pulp was sent to ALS in Vancouver, Canada, for analysis. The pulp was analyzed for 36 elements using a four-acid leach method followed by Inductively Coupled Plasma (ICP) determination. A four-acid leach with determination by Atomic Absorption (AA) is used for silver analysis and over-limit analyses of lead, zinc and copper.

A selection of pulps with high silver-lead-zinc values were sent to Acme Analytical Labs, Vancouver, Canada, for check assaying.

#### **10.1.2 Excellon (2001-2021)**

Between 2001 and 2005, the sample preparation and analyses procedures used by Excellon followed those used by Apex.

All samples submitted between April 2005 and June 2008 were prepared at SGS Minerals, Durango, México, and analyzed for silver, gold, lead, zinc, and copper by four-acid leach with determination by AA. A portion of the prepared sample was sent to SGS Minerals, Don Mills, Canada for a multi-element package by four-acid leach ICP determination.

The SGS Durango Laboratory is accredited ISO 17025 by the Standards Council of Canada for a number of specific test procedures, including the method used to assay samples submitted by Excellon. SGS Minerals laboratories also participate in a number of international proficiency tests, such as those managed by CANMET and Geostats.

Drill core samples prepared by SGS used the following protocols:

1. Air dry if possible; maximum 120° C if oven-drying is necessary.
2. Crush entire sample to greater than 90% passing 2 millimetres.
3. Riffle split 250 grams.
4. Pulverize 250 grams to greater than 90% passing 75 microns.

All samples submitted by Excellon between 2008 to February 13, 2021 were both prepared and analyzed at SGS Minerals, Durango, México. Drill core samples were analyzed for 33 elements including silver, lead, and zinc using a four-acid leach method followed by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) determination (SGS method code ICP40B).

High-grade samples, with silver greater than 100 g/t and lead and zinc greater than 1%, are analyzed a second time using a fire assay with gravimetric finish for silver and a sodium peroxide fusion with ICP-AES finish (ICP90Q) for lead and zinc. If necessary, lead and zinc may be measured using titration if the quantity exceeds the upper limit of 30%.

The analytical methods used from 2008 to 2021 are summarized in Table 10. The lower and upper limits for the four-acid digest method (ICP40B) are shown in Table 11.

**Table 10: Summary of Preparation and Assay Methods 2008–2021**

Analyte	Method Code	Detection Limit	Digest	Instrumentation
33 elements	ICP40B	Variable; see below	four-acid: HNO <sub>3</sub> + HClO <sub>4</sub> + HF + HCl digest plus HCl leach	ICP-AES
Over-limit	(used when initial analysis shows analyte greater than upper limit specified in Table 10)			
Ag	FAG323	10–5000 ppm	Fire assay	Gravimetric
Pb	ICP90Q	0.01–30%	Sodium Peroxide Fusion	ICP-AES
Zn	ICP90Q	0.01–30%	Sodium Peroxide Fusion	ICP-AES

**Table 11: Upper and Lower Limits for Four-Acid ICP Method 2008–2021**

Analyte	Lower Limit	Upper Limit	Analyte	Lower Limit	Upper Limit	Analyte	Lower Limit	Upper Limit
Ag (ppm)	2	100	Fe (%)	0.01	15	S (%)	0.01	5
Al (%)	0.01	15	K (%)	0.01	15	Sb (ppm)	5	10,000
As (ppm)	3	10,000	La (ppm)	0.5	10,000	Sc (ppm)	0.5	10,000
Ba (ppm)	1	10,000	Li (ppm)	1	10,000	Sn (ppm)	10	10,000
Be (ppm)	0.5	2,500	Mg (%)	0.01	15	Sr (ppm)	0.5	10,000
Bi (ppm)	5	10,000	Mn (ppm)	2	10,000	Ti (%)	0.01	15
Ca (%)	0.01	15	Mo (ppm)	1	10,000	V (ppm)	2	10,000
Cd (ppm)	1	10,000	Na (%)	0.01	15	W (ppm)	10	10,000
Co (ppm)	1	10,000	Ni (ppm)	1	10,000	Y (ppm)	0.5	10,000
Cr (ppm)	1	10,000	P (%)	0.01	15	Zn (ppm)	1	10,000
Cu (ppm)	0.5	10,000	Pb (ppm)	2	10,000	Zr (ppm)	0.5	10,000

## 10.2 Specific Gravity Data

The methodology for measuring specific gravity was studied in late 2017 to create an optimized methodology that could account for the variations in specific gravity observed at Platosa. Specific gravity data were collected for the 2017 and 2021 drillholes and will continue for future drillholes, with data collection of dedicated specific gravity samples in the hanging wall, footwall, and within the mineralized intervals of drill core.

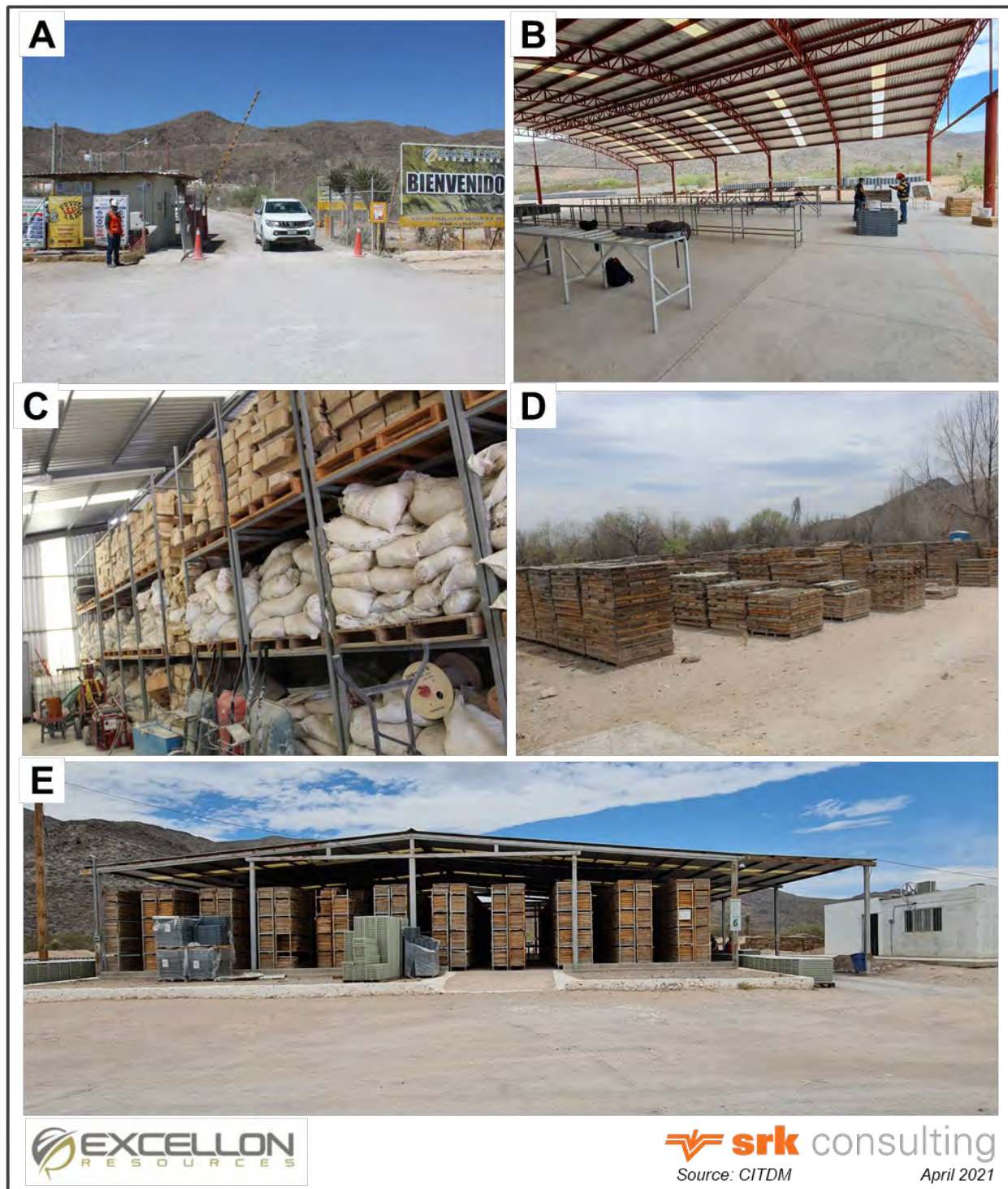
The samples for specific gravity are taken from cut core during the logging process. They are wrapped in Parafilm to eliminate the effect of buoyancy in plastic, as well as to seal the core off to adequately account for porosity and open spaces observed in core. The samples are then analyzed following the methodology laid out in the company's standard operating procedure for taking density measurements. The procedure consists of suspending the sample in water, correcting for temperature, and weighing it on a calibrated scale. Results are recorded in a dedicated spread sheet (illustrated in Figure 18) which is used to calculate the specific gravity for each sample.

Collars	Surveys	Geology	Sampling	Specific Gravity	Geotech	Ultraviolet	Abandonment
Project: <input type="text"/>		Wrap: <input type="text"/>					
Hole_ID: <input type="text"/>		Sample_Wrap_cm3: <input type="text"/>					
Sample_ID: <input type="text"/>		Wrap_cm3: <input type="text"/>					
DH_Depth: <input type="text"/>		Dry_Sample_cm3: <input type="text"/>					
Length_cm: <input type="text"/>		Water_Density: <input type="text"/>					
SG: <input type="text"/>		SG_Paraffin: <input type="text" value="0.941"/>					
Water_Temp_C: <input type="text"/>							
Sample_Dry_g: <input type="text"/>							
Sample_Wrapped_g: <input type="text"/>							
Sample_Suspended_g: <input type="text"/>							

Figure 18: Specific Gravity Data Entry Template

## 10.3 Sample Security

Drilling, sampling, and logging are done under the supervision of experienced technical Excellon personnel. Logged and sampled drill core, sample pulps, and sample rejects are stored in a fenced and access-controlled area of the Platosa Mine site (Figure 19). The core boxes are labelled, and depth markers are inserted at appropriate intervals. Sample rejects and pulps are organized and in good conditions.



**Figure 19: Sample Security and Storage Facility**

A: Security gate to access Platosa Mine area

B: Core logging facility

C: Sample pulp and reject storage

D: Overflow core storage

E: Sheltered core storage facility



The chain of custody of quality control procedures for sample handling from recovery at the drill rig area to the delivery at the lab, follow protocols and procedures established by the Excellon exploration department. The database is consistent with verified core retention boxes at the core house and contains the detail and locks, so that, the probability of errors in the capture is minimum or inexistent. The database is stored on a central server at the Platosa Mine and is accessed remotely via VPN. The backup protocols are managed by an external company and only one person from Excellon has access.

## **10.4 Quality Assurance and Quality Control Programs**

Quality assurance and quality control programs are typically set in place to ensure the reliability and trustworthiness of the exploration data. They include written field procedures and independent verifications of aspects such as drilling, surveying, sampling, and assaying, data management and database integrity. Appropriate documentation of quality control measures and regular analysis of quality control data are important as a safeguard for the project data and form the basis for the quality assurance program implemented during exploration.

Analytical control measures typically involve internal and external laboratory control measures implemented to monitor the precision and accuracy of the sampling, preparation, and assaying. They are also important to prevent sample mix-up and monitor the voluntary or inadvertent contamination of samples. Assaying protocols typically involve regular duplicate and replicate assays and insertion of quality control samples. Check assaying is typically performed as an additional reliability test of assaying results. This typically involves re-assaying a set number of rejects and pups at a second umpire laboratory.

### **10.4.1 Analytical Quality Control Programs by Apex (1997-2000)**

No information is available about the implementation of an analytical quality control program by Apex.

### **10.4.2 Analytical Quality Control Programs by Excellon (2001-2021)**

Prior to 2007 no quality control samples were inserted into the sample stream by Excellon for diamond drilling.

Excellon used analytical quality control measures as part of the routine standard core sampling procedures since May 2007. Details of analytical quality control measures implemented by Excellon between 2007 and 2018 can be found in previous reports on exploration activities produced by Excellon and published on SEDAR in March 2014, July 2015 and September 2018, and summarized below.

In May 2007, after a review by an independent consultant, Excellon began submitting one certified reference material and one blank material with each batch of 30 to 40 samples.

In 2014, Roscoe Postle Associates (RPA) reviewed the analytical quality control results from past programs completed up to 2015 (Ross and Michaud 2014, Ross 2011, Ross 2010, and Ross and Rennie 2008) and found protocols and results to be adequate to support mineral resource estimation at that time (Cox et al. 2015). RPA (Cox et al. 2015) states:

*From June 2011 until June 2013, there were sufficient control samples inserted in each of the 75 batches submitted and pertinent to the resource estimation as of December 31, 2013. Thirty-five batches returned CRM values outside the expected range for either silver, lead or zinc. Among them twenty-six were not reanalyzed because they had insignificant mineralization. Nine of the 35 failed batches, or relevant portions of the batches, were resubmitted to SGS for reanalysis and the resource database was updated accordingly.*

*Results from the 2011, 2012, and 2013 drill programs are summarized in Table 11-1 and described in the following sections. Sample numbering mix-ups are thought to be minimal and are not included in the list of failures. In summary, the QAQC protocols and results are acceptable to support a Mineral Resource estimate at Platosa.*

<i>Table 11-1 Summary of QAQC Results</i>			
<i>Excellon Resources Inc. – Platosa Property</i>			
	<i>2011</i>	<i>2012</i>	<i>2013</i>
<i>No. Holes</i>	<i>43</i>	<i>27</i>	<i>32</i>
<i>No. Samples</i>	<i>1,387</i>	<i>966</i>	<i>2,373</i>
<i>No. Batches</i>	<i>28</i>	<i>16</i>	<i>31</i>
<i>No. Batches with QAQC</i>	<i>28</i>	<i>16</i>	<i>31</i>
<i>No. Failed Batches due to CRMs</i>	<i>8</i>	<i>12</i>	<i>15</i>
<i>No. Failed Batches due to Blanks</i>	<i>4</i>	<i>0</i>	<i>2</i>
<i>No. Batches Requiring Reanalysis</i>	<i>4</i>	<i>1</i>	<i>4</i>

Starting in 2015, Excellon's quality control program included the use of at least one reference material inserted immediately preceding a mineralized intersection, as well as a sample of blank material inserted immediately following that mineralized intersection. Depending on the length of the mineralized interval, additional reference and blank samples were inserted to obtain an overall insertion rate of at least one in 10 samples per drillhole being a reference material or blank material. One field duplicate sample was collected per drillhole.

Blank material was inserted in the sample stream to test for contamination in sample preparation during the analytical procedure (contaminated reagents or crucibles) or from sample solution carry-over during instrumental finish. Core intervals of micritic limestone were used as the blank material. The blank materials were determined to have failed when silver was above 30parts per million (ppm), and lead and zinc were above 150 ppm.

Excellon used a total of 23 known standard reference materials between 2007 and 2021, sourced from WCM Minerals (WCM) in Burnaby, Canada, Ore Research and Exploration P/L (OREAS) in Australia, and CDN Resource Laboratories Ltd. (CDN) in Delta, Canada (Table 12). A total of seven

of these reference materials were created in-house prepared by CDN Resource Laboratories Ltd and certified by R/EXploration Inc. of Blainville, Quebec, using material sourced from Platosa Mine.

**Table 12: Specifications of Control Samples Used by Excellon Between 2007 and 2021**

Standard ID	Silver (g/t)		Lead (%)		Zinc (%)		Inserts	Comments
	Expected Value	SD*	Expected Value	SD*	Expected Value	SD*		
PLA-2	981.85	47.9	11.46	0.24	21.61	0.46	182	Certified by R/EXploration Inc.
PLA-3	2386.09	121.26	20.38	0.94	22.91	0.88	58	Certified by R/EXploration Inc.
PLA-4	4599.09	63.01	44.76	1.16	16.16	0.31	14	Certified by R/EXploration Inc.
PLA-5	1617.92	83.4	12.45	0.23	13.4	0.25	72	Certified by R/EXploration Inc.
PLA-6	39.18	1.23	3.008	0.074	3.023	0.074	105	Certified by R/EXploration Inc.
PLA-7	1017.12	8.58	9.605	0.308	4.749	0.14	105	Certified by R/EXploration Inc.
PLA-8	38.82	0.91	0.305	0.003	0.366	0.008	75	Certified by R/EXploration Inc.
PB146	81.71	3.468	1.922	0.594	2.5	0.051	1	WCM Minerals
PM 1144	308.7	16.62	-	-	-	-	3	WCM Minerals
PM 1145	810.6	36.5	-	-	-	-	2	WCM Minerals
PM 1147	225.75	8.075	-	-	-	-	3	WCM Minerals
OREAS 133a	99.9	2.42	4.9	0.162	10.87	0.354	10	Ore Research and Exploration P/L
OREAS 134b	209	9	13.36	0.743	18.03	0.755	6	Ore Research and Exploration P/L
OREAS 135	55.7	1.92	1.7	0.052	2.8	0.067	1	Ore Research and Exploration P/L
OREAS 136	151	5	4.76	0.169	3.63	0.058	2	Ore Research and Exploration P/L
OREAS 601	49.2	2.02	0.0329	0.002	0.0133	0.0064	19	Ore Research and Exploration P/L
OREAS 602	120	2.3	0.1022	0.005	0.419	0.012	13	Ore Research and Exploration P/L
OREAS 603	298	8.1	0.1908	0.012	0.92	0.031	47	Ore Research and Exploration P/L
OREAS 604	491	10.3	0.0994	0.007	0.255	0.008	3	Ore Research and Exploration P/L
OREAS 604b	507	15	0.0792	0.0036	0.117	0.003	9	Ore Research and Exploration P/L
OREAS 605	972	27.8	0.1297	0.0136	0.216	0.009	33	Ore Research and Exploration P/L
CDN-SE-1	712	28.5	1.92	0.045	2.65	0.1	15	CDN Resource Laboratories Ltd.
CDN-SE-2	354	10.5	0.957	0.022	1.34	0.055	1	CDN Resource Laboratories Ltd.

One field duplicate sample per hole is collected for quality control purposes during the sampling procedure. To make field duplicate samples, the primary half-core sample is split into two quarter-core samples. One quarter core was submitted as the primary sample and the other quarter core was submitted as the duplicate. Field duplicates were taken from 2006 to 2008 and were re-introduced in April of 2017.

## 10.5 SRK Comments

In the opinion of SRK, the sampling preparation, security and analytical procedures used by Excellon are consistent with generally accepted industry best practices and are, therefore, adequate.

# 11 Data Verification

## 11.1 Verifications by Excellon

Core logging procedures include capturing drillhole data, lithology, geotechnical information, sampling intervals and specific gravity measurements using Access based entry forms linked to the Platosa server that enforce code integrity and identify any gaps or overlaps during data entry errors. The information is then housed in SQL database format and is further checked for errors using queries.

Assay data were verified against original certificates. Assay results received from contract laboratories are imported with a script and merged with their unique sample number within the database to minimize the possibility of human error.

Excellon compared all assay intervals within the mineralized wireframe were compared to original certificates; minimal errors were reported and corrected during the process.

Excellon staff reviewed failures and action was taken when required. Failure criteria were met where the results were outside three times the standard deviation or where consecutive reference materials assayed two times the standard deviation. Excellon staff identified quality control failures when results were received and requested repeat assays as required.

In September 2017, due to poor performance of PLA-8, Excellon discontinued the use of the PLA in-house reference materials and purchased different certified reference materials from a third-party supplier, OREAS. The OREAS certified reference materials are matrix-matched, and the expected values are based on four-acid digest Inductively Coupled Plasma (ICP) analyses.

Excellon engaged Analytical Solutions Limited (ASL) in February 2018 to prepare an independent report related to the performance of Excellon's 2014 to 2018 quality control program. The conclusions of this analyses are summarized below.

ASL noted that the core intervals of micritic limestone that were used as the blank material may contain background levels of the elements that are being monitored and therefore may not be totally barren. Twenty-three percent of the blanks analyzed between January 2014 and April 2018 had levels of silver, lead or zinc above the failure criteria. In 8% of those cases, the blank sample and core samples before and after the blanks were reanalyzed, which confirmed the results of the original analysis. The low levels of silver, lead and zinc were assumed to be part of the background values of the limestone, and contamination was not deemed a risk for the project database.

For standard reference materials, ASL was satisfied that Excellon staff identified quality control failures when results were received and requested repeat assays as required. Overall, the lower-grade silver reference materials tended to report low whereas the higher-grade reference materials were reporting higher than the expected value. For the time period analyzed by ASL, a total of 47

failures were identified for silver. It was noted that in 39 of these cases, PLA-8 was the failing material used. Similar results were shown for Lead and Zinc analyses. As discussed previously PLA-8 was deemed an unacceptable reference material and discontinued. After September 2017, Excellon discontinued the use of all PLA in-house reference materials and purchased ORE reference materials.

In the opinion of ASL, the sampling preparation, security and analytical procedures used by Excellon between January 2014 and April 2018 were consistent with generally accepted industry best practices.

## 11.2 Verifications by SRK

### 11.2.1 Site Visit

Several members of the SRK team visited the Platosa Mine and Miguel Auza mill between April 2017 and March 2018 to inspect the property, conduct field investigations, and to hold discussions with Excellon site personnel.

Mr. Blair Hrabí visited the site from April 24 to 28, 2017 to assist with the 3-D fault modelling for the mine and also to investigate the geological and structural controls on the distribution of the gold mineralization in order to aid the construction of three-dimensional gold mineralization domains. While on site, Mr. Hrabí mapped underground in the Manto Rodillo, Manto 6A, and Guadalupe Sur areas

Mr. Sebastien Bernier visited the Platosa Mine between January 30 to 31, 2018. The purpose of Mr. Bernier's site visit was to review the digitization of the exploration database and validation procedures, review exploration procedures, define geological modelling procedures, examine drill core, interview project personnel, and collect all relevant information for the preparation of an updated mineral resource model and the compilation of the 2018 technical report.

More recently and in accordance with NI 43-101 guidelines, qualified person Mr. Alfonso Soto, CPG (AIPG#11938) of Instituto de Innovación y Desarrollo Tecnológico Minero, S.C.(CITDM) visited the Platosa property between April 26 and April 29, 2021. During his visit, Mr. Soto was accompanied by Mr. Jorge Ortega, Geo (OGQ#626) Excellon's Exploration Manager.

All aspects that could materially impact the integrity of the exploration database (i.e. core logging, sampling, security and database management) were reviewed with Excellon staff. Mr. Soto was given full access to all relevant project data and was able to interview exploration staff to ascertain exploration procedures and protocols. The site visit included a tour of the underground mine along with procedures for data processing, validations, data security, storage and retrieval, and safety.

Mr. Soto visited underground the Guadalupe, North 623, and 884N mantos, including mine stopes and he observed active underground drilling related to the infill expansion drill program. Mr. Soto confirmed the protocols used by Excellon underground exploration drilling, sampling, and underground mapping are appropriated and comply with industry standards.

The Qualified Person inspected and examined core from 14 underground exploration drillholes core. The sampling intervals are appropriate for the style of mineralization. High values assays correspond, and match logged mineralization and confirm a strong understanding of the mineralization controls. The sampling carried out was based on structural, lithological, and mineralization controls. The lithological intercepts from both exploration local and regional drilling attested to the stratigraphic understanding of the deposit, as described in Section 6.2. The structural mantos mineralization at Platosa Mine containing high grade silver, lead, and zinc correlate well with the presence of visible galena, sphalerite, acanthite, and pyrrargyrite.

CITDM recommends continued structural logging of the dip and dip direction of the sedimentary bedding structures within the core, as well as manual interpretation of cross sections including all available structural data to appropriately record any deformation that may affect these beddings and mineralization.

A total of 20 surface collars were examined and their locations were captured by Garmin GPS Navigator (Gpsmap 62s) as digital control points. All drillholes were marked with cement monuments and PCV piping as casing. In general, the collars compare well with digitally logged collar locations provided to SRK for mineral resource modeling. The results of this survey are presented in Table 13.

**Table 13: Drill Collar Validation of Recent and Historical Drillholes**

Hole ID	Area	Excellon Data in Datum Nad 27 Mex Z13			Verification of Data (Gps man 62s - Garmin)		
		East	North	Elevation (m)	East	North	Elevation (m)
EX16LP1102	Guadalupe Sur	634705	2868120	1133	634705	2868123	29
EX16LP1102A	Guadalupe Sur	634708.62	2868116.943	1129.868	634703	2868124	1133
EX18LP1119	Guadalupe Sur	634820.991	2868109.922	1129.08	634816	2868116	1130
EX18LP1121	Guadalupe Sur	634820.588	2868110.893	1129.118	634818	2868115	1126
EX18LP1144	NE-1-Sur	635080.371	2868511.997	1116.255	6358073	2868521	1117
EX18LP1147	NE-1-Sur	635080.029	2868512.554	1116.343	6358073	2868521	1117
EX18LP1148	NE-1-Sur	635080.029	2868512.554	1116.343	6358073	2868521	1117
EX18LP1149	NE-1-Sur	635094.096	2868519.008	1116.32	635088	2868526	1129
EX18LP1150	NE-1-Sur	635094.096	2868519.008	1116.32	635088	2868526	1129
EX18LP1151	NE-1-Sur	635105.016	2868526.242	1116.078	635097	2868534	1123
EX18LP1152	NE-1-Sur	635111.796	2868528.46	1118.225	635105	2868538	1122
EX19LP1162	NE-1-Sur	634377.03	2868177.4	1131.37	634374	2868179	1136
EX20LP1163	Area 10-20 closer 623	635081.49	2868192.554	1119.478	635075	2868203	1117
EX20LP1164	Area 10-20 closer 623	635070.002	2868222.768	1120.167	635063	2868233	1118
EX20LP1165	Area 10-20 closer 623	635089.238	2868179.477	1119.581	635086	2868190	1119
EX20LP1166	Area 10-20 closer 623	635082.999	2868194.077	1119.675	635078	2868202	1119
EX20LP1167	Area 10-20 closer 623	635076.95	2868209.098	1119.976	635069	2868213	1120
EX20LP1168	Area 10-20 closer 623	635081.265	2868192.46	1119.68	635079	2868202	1122
EX20LP1169	Area 10-20 closer 623	635080.557	2868191.751	1119.617	635077	2868201	1118
EX20LP1170	Area 10-20 closer 623	635089.127	2868178.868	1119.563	635080	2868184	1120

Source: CITDM 2021



## 11.2.2 Verifications of Analytical Quality Control Data

Details of analytical quality control measures implemented by Excellon between 2001 and 2018 can be found in previous reports on exploration activities produced by Excellon and published on SEDAR in March 2014, July 2015 and September 2018, and summarized in Sections 11.1 and below.

SRK analyzed the analytical quality control data produced by Excellon on the Platosa Mine since 2001, with focus on data produced since 2018. Excellon provided SRK with external analytical control data containing the assay results for the quality control samples for the Platosa Mine. All data were provided to SRK in Microsoft Access Application Software. SRK aggregated the assay results of the external analytical control samples for further analysis. Control samples (blanks and certified reference materials) were summarized on time series plots to highlight their performance. Paired data (field and pulp duplicates and check assays) were analyzed using bias charts, quantile-quantile, and relative precision plots.

The external analytical quality control data produced for the Platosa Mine are summarized in Table 14 and a selection of these charts are presented in graphical format in Appendix B. The external quality control data produced on this project represents 7% of the total number of core samples collected on the Platosa Mine and submitted for assaying.

**Table 14: Summary of Analytical Quality Control Data Produced by Excellon on the Platosa Mine (2001-2021)**

	Core	(%)
Sample Count	22,839	
Blanks	424	1.86%
QC samples	779	3.41%
Field Duplicates	308	1.35%
<b>Total QC Samples</b>	<b>1,511</b>	<b>6.62%</b>
Umpire Check Assays		
Actlabs	4	0.02%
ALS	125	0.55%

In general, the performance of control samples analyzed by SGS consistently test at or below the detection limit for silver between 2002 and 2021, with no samples testing above 10 times the detection limit for silver since the beginning of 2017. The failure rates used for lead and zinc was 150 ppm, which is slightly more than 10 times the detection limit for the analytical methods used by SGS (2ppm and 1ppm for lead and zinc, respectively). The performances of these materials support conclusions made by ASL in 2018 that the limestone used as blank material may contain background levels of the elements that are being monitored and therefore may not be totally barren. It is recommended that a certified blank be used that is applicable for all variables considered in the mineral resource statement.

Excellon has used a number of commercially sourced reference materials since the previous technical report in 2018 (Table 12). Although the number of inserts for some materials is very low, in general, the performances of these materials is considered acceptable. Exceptions include certain

reference materials (OREAS 133a and OREAS 602 for silver, OREAS 604b for lead) which had poorer overall performances with 56%, 46% and 33% of results returned outside of 3 standard deviations from the expected value, respectively. Although the number of samples was low for these materials, they should be investigated with the primary laboratory and corrected where possible.

Additionally, certain reference materials have exhibited discrete biases at their initial introduction, such as OREAS 133a for silver, OREAS 605 for lead and OREAS 602 for zinc. The performances of these materials have improved since their onset, but continued diligence in implementing corrective action is recommended.

A total of 308 quarter-core duplicates were collected and submitted for analyses between 2007 and 2021 at SGS laboratory. The majority of duplicate sample pairs were generally low grading, typically below 40 g/t silver. The performance of field duplicates was acceptable with between 42% and 63% of samples with Half Absolute Relative Difference (HARD) values below 10% and little to no analytical or sampling bias detected.

The samples submitted to ALS Minerals were analyzed for silver, lead and zinc using an aqua regia with ICP finish. For silver analyses above 1,500 g/t, a lead fire assay with gravimetric finish was used. In comparison to the digestions used at SGS of four-acid and sodium peroxide fusion. Paired umpire pulp duplicate samples demonstrate good reproducibility between ALS and the primary laboratory. Although the population for this type of sample was small, the overall performance was excellent for all variables, with between 76% and 84% of samples returning HARD values above 10%. For silver, the majority of samples above 10% HARD were due to variable detection limits between the two laboratories and were very low grading (below 1 g/t silver).

### 11.3 SRK Comments

In the opinion of SRK, the review of the analytical quality control data produced by Excellon for samples submitted to SGS suggests that the analytical results are sufficiently reliable for the purpose of mineral resource estimation. SRK recommends continued diligence in monitoring the performances of standard reference materials and implementing corrective action as required. Considering the variable performance of in-house blank material used for lead and zinc, it is recommended that the blank material selected be applicable for all variables considered in the Mineral Resource Statement.

## 12 Mineral Processing and Metallurgical Testing

The mineral processing facility at Miguel Auza processes the mineralized material from the Platosa Mine. The Platosa Mine targets a carbonate replacement deposit (CRD) rich in silver, lead, and zinc; this style of mineralization is common in Mexico. Early in the mine life, processing was carried out at the Peñoles Naica Mill; it transitioned to the Miguel Auza processing facility on March 19, 2009, following the acquisition of Silver Eagle Mines by Excellon.

The mineralized material is processed using a conventional grinding, milling and sequential—lead-zinc flotation process where the lead and most of the silver report to the lead concentrate; the tails from the lead concentrate are then run through a secondary flotation circuit that recovers the zinc and remaining silver (Figure 20). The Miguel Auza processing facility has a grinding capacity of 650 tonnes per day, but it generally operates on a monthly campaign basis at 450 tonnes per day to better align with the mining production rate at Platosa and to reduce operating costs. The flexibility of the higher mill capacity than the Platosa production rate allows the plant to stockpile various mineralization characteristics for blending the feed to the plant during operation to maximize the metal recoveries.

### 12.1 Metallurgical Testwork

Limited metallurgical testwork was conducted throughout the history of the project. There is extensive plant operational data from 2009 to 2021, in addition to a comprehensive metallurgical testwork program at a third party lab in 2018. There is an onsite metallurgical lab equipped to assist the operations in managing ongoing testing based on plant daily performance.

In 2008, SGS Lakefield, under the direction of DRA Americas Inc., conducted metallurgical testwork on samples believed to represent the average grade of Platosa mineralization. A description of this testwork is contained in the previous Technical report.

In 2018 Excellon engaged Blue Coast Research to conduct a site visit, operational review and metallurgical testwork. Blue Coast was also contracted on a long-term basis to provide metallurgical expertise, periodic reviews and support of daily operational results, and assisting with continuous improvement in plant operations.

Blue Coast's work focused on individual "mantos" (mineralized ore lenses) analyses, preparation of a baseline of current metallurgical performance and identification of areas of opportunity.

A total of 22 batch rougher and cleaner flotation tests were completed culminating in a locked cycle test conducted on a Master Composite using an optimized flowsheet for 2018 Platosa mineral. The locked cycle test produced a lead concentrate grading 55% lead, 4663 g/t silver and 11% zinc at 90% recovery for lead and 82% recovery for silver. The zinc concentrate graded 51% zinc, 489 g/t silver at recoveries of 80% zinc and 10% silver. These results were above the plant operating results at the time of the test program.

Various reagent flowsheet configuration and operating philosophy changes were conducted in the plant as a result of the testwork. Reagent modifications included reductions in depressant, collector and copper sulphate dosage resulting in improvements in recoveries and lower operating costs.

The plant was operating with high recirculating loads in the flotation circuits and excessive recirculation of tailings streams resulting in overloading of the flotation circuit. The testwork program indicated the loads should be reduced. The plant was restructured to reduce the recirculating loads. Various other improvements were recommended including equipment repairs and upgrades, automated level controls and controlled reagent dosage equipment. These recommendations have been undertaken and continue to be monitored for further modifications and improvements.

QUEMSCAN mineralogical testwork was conducted on the Platosa samples, confirming the galena grain sizes were relatively fine and further supporting the fine primary grind  $P_{80}$  of 40 to 45 microns. Running the plant at 450 tonnes per day achieves this primary grind target on the Platosa mineralization. Laboratory testwork did indicate that metallurgical performance could be maintained at a primary grind of 60 microns if the lead regrind circuit was recommissioned, and the lead rougher concentrate reground to 35 to 40 microns.

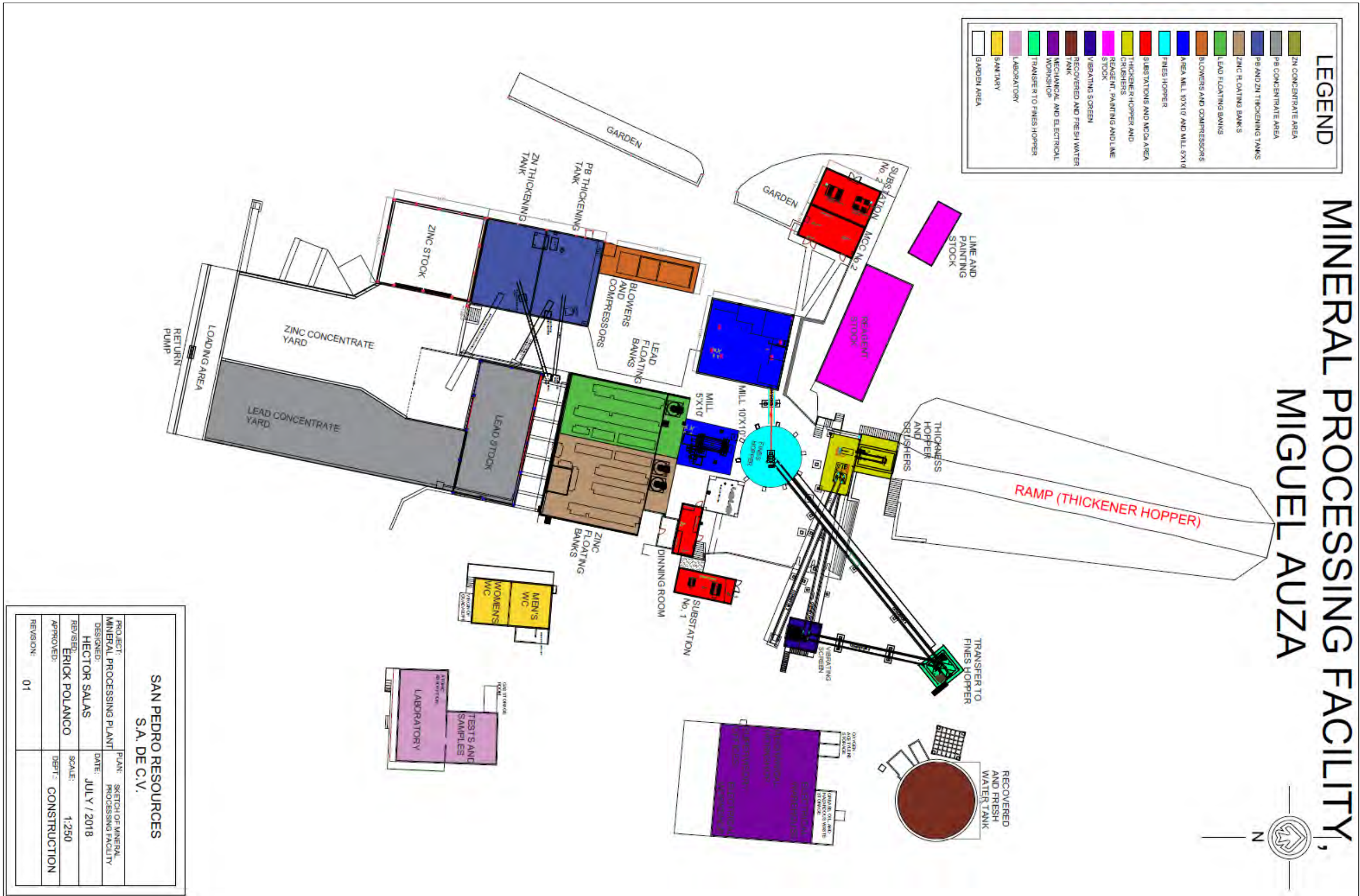


Figure 20: Miguel Auza Mineral Processing Facility

## 12.2 Mineralogy

Typical mineralization includes lead-bearing minerals such as galena and zinc-bearing minerals such as sphalerite. Acanthite and lesser proustite are the main silver-bearing minerals; acanthite is predominant; proustite is typically visible where silver grades exceed the average grade of the mineralized body.

## 12.3 Recovery Estimates

Between January 2010 and December 31, 2020, a total of 704,136 tonnes grading 582 g/t silver, 5.21% lead, and 7.13% zinc were processed. In 2020, recoveries for metals were combined 91.4% silver, 79.1% lead and 79.9% zinc.

## 12.4 Grindability

The grinding capacity of the ball mill is 650 tonnes per day. The ball mill is typically operated at a rate of 450 tonnes per day on a monthly campaign basis, in line with the supply of mineralized material from Platosa. The operating work index is calculated monthly from the kilowatt per hour power consumption and actual tonnes milled, as shown in Figure 21. Actual operating Work Index data are generated monthly and the average value between January to December 2020 was 8.72 kilowatt hour per tonne to achieve a primary grind of  $P_{80}$  45-micron average.

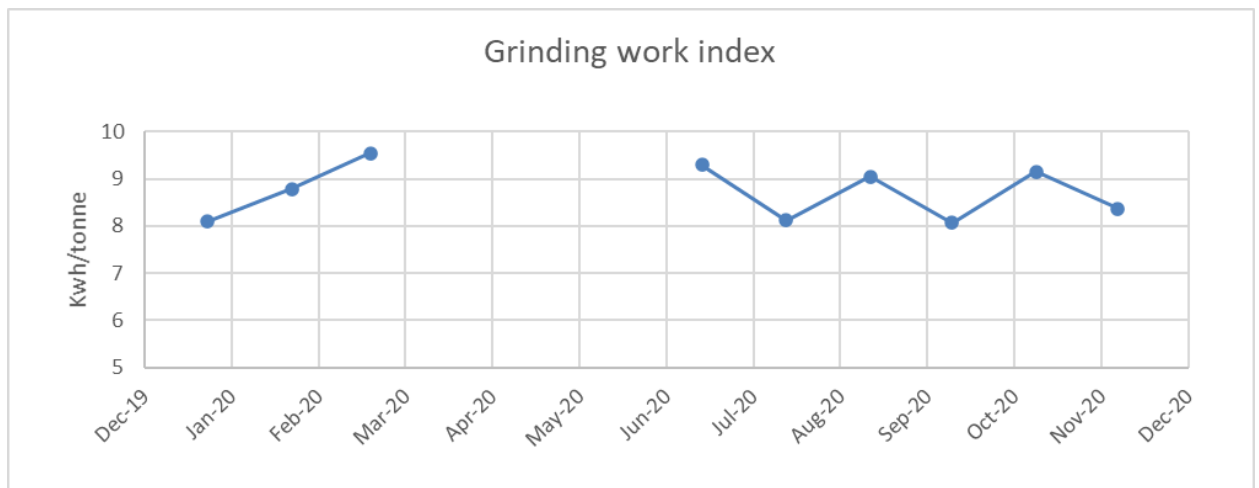


Figure 21: Grinding Work Index (2020)

## 12.5 Forecasting Metallurgical Performance

The head grades are predicted using the block model in combination with the mine plan. Each truck is sampled as it leaves Platosa. As the grade varies with each manto, mineralized material is blended at Miguel Auza to provide a stable head grade.



## 12.6 Deleterious Elements

Sales of concentrate are based on offtake agreements with third party buyers. Deleterious elements typically found in the concentrates are arsenic, cadmium, silica and fluorine in the zinc; and arsenic and fluorine and, in some instances antimony, in the lead, with penalties incurred when the concentration of these elements exceeds specific agreed upon thresholds. Antimony, arsenic, and cadmium are assayed at the Miguel Auza laboratory and the concentrates are blended when necessary to minimize penalties; fluorine and silica are not assayed internally as the lab lacks the specialized equipment to test for these elements. The updated resource model factors in these deleterious elements so that areas of concern can be identified during the mine planning process and appropriate blending can be planned.

## 12.7 Metallurgical Research

Current metallurgical research is focused on:

- Addition of copper circuit for toll milling.
- Automation of sampling.
- Potential expansion of the processing facility to 800 tonnes per day for toll milling.
- Operations and flowsheet review by third party metallurgical consultant (Blue Coast Research).
- Continued review of maintenance practices, equipment condition, repairs and upgrades, plant reliability.

## 13 Mineral Resource Estimates

### 13.1 Introduction

The Mineral Resource Statement presented herein was prepared for the Platosa Mine in accordance with the Canadian Securities Administrators' National Instrument 43-101.

The mineral resource model considers 1,373 core drillholes (252,456 metres) that were directly used in the estimation. The resource estimation work including geological solids audit, grade estimation, associated sensitivity analyses, and mineral resource classification was completed by Joycelyn Smith, PGeo (APGO#2963), under supervision of Mr. Glen Cole, PGeo (PGO#1416), an appropriate independent Qualified Person as this term is defined in National Instrument 43-101. The overall mineral resource estimation process was reviewed by Dr. Oy Leuangthong, PEng (PEO#90563867). The effective date of the Mineral Resource Statement is March 31, 2021.

This section describes the resource estimation methodology and summarizes the key assumptions considered by SRK. In the opinion of SRK, the mineral resource evaluation reported herein is a reasonable representation of the global polymetallic (silver, lead, and zinc) mineral resources found at the Platosa Mine at the current level of sampling. The mineral resources have been estimated in conformity with generally accepted CIM *Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines* (2019) and are reported in accordance with the Canadian Securities Administrators' National Instrument 43-101. Mineral resources are not mineral reserves and have not demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserve.

The database used to estimate the Platosa Mine mineral resources was audited by SRK. SRK is of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries for polymetallic (silver, lead, and zinc) mineralization and that the assay data are sufficiently reliable to support mineral resource estimation.

SRK reviewed the geological solids constructed by Excellon in Leapfrog Geo™ software (version 6.0.4). SRK used a combination of Leapfrog Geo™ and GSLib™ software to prepare assay data to completed geostatistical analysis and variography, construct the block model, estimate gold grades, and to validate the mineral resource estimates.

### 13.2 Resource Estimation Procedures

The resource evaluation methodology involved the following procedures:

- Database compilation and verification.
- Construction of wireframe models for the boundaries of the Platosa Mine mineralization.
- Definition of mineral resource domains.
- Data conditioning (compositing and capping) for geostatistical analysis and variography.

- Block modelling and grade interpolation.
- Mineral resource classification and validation.
- Assessment of “reasonable prospects for eventual economic extraction” and selection of appropriate cut-off grades.
- Preparation of the Mineral Resource Statement.

### 13.3 Resource Database

Excellon provided the resource database as comma-separated values (CSV) files and contained within a Leapfrog Geo™ database. The final database for the resource estimate was delivered to SRK on March 10, 2021. The drilling database comprises 1,506 core drillholes (270,413 metres), of which a total of 133 drillholes (17,957 metres) were excluded due to missing or unreliable survey, geological and/or assay data, leaving a total of 1,373 core drillholes (252,456 metres) considered for mineral resource estimation.

Included in this database are 214 new drillholes since the 2018 mineral resource model, which contributes to a total of 25% increase in the number of holes and 22% in the drilled metres. Of these drillholes, 27 were drilled for mine services and dewatering totaling 4,455 metres and 187 exploration and infill drillholes totaling 21,443 metres. Table 15 provides a summary of available drillholes. The effective date of the drilling database is March 10, 2021, with EX21UG554 as the last drillhole added to the database.

SRK was provided with 23,580 assayed intervals (23,811 metres) before exclusions, which represents 16% increase in comparison with the assayed database used for 2018 mineral resource model. SRK considers that the exploration data collected by Excellon and previous project operators are of sufficient quality to support mineral resource evaluation.

**Table 15: Drilling Database for the Platosa Mine**

<b>Data</b>	<b>Database up to March 31, 2018</b>	<b>Database up to March 10, 2021</b>	<b>Difference (%)</b>
Collars	1,098	1,373	25%
Drilled Meters	207,392	252,456	22%
Surveys	8,886	10,028	18%
Assays	19,885	23,309	19%
Assay Length, m	20,468	23,543	16%
Lithology	31,735	35,164	16%
Lithology Length, m	236,829	250,390	11%
Density	603	769	28%

## 13.4 Geological Interpretation and Modelling

Polymetallic mineralization at the Platosa Mine area represents high-temperature epigenetic silver-lead-zinc carbonate replacement deposits (CRD) called mantos. Excellon updated the mantos wireframes using new drilling acquired since 2019. SRK reviewed an earlier draft of these updated wireframes received on March 1, 2021 and recommended that modifications be made to improve interval selections and reduce the amount of waste inclusion contained. The finalized wireframes were received on Tuesday March 9, 2021.

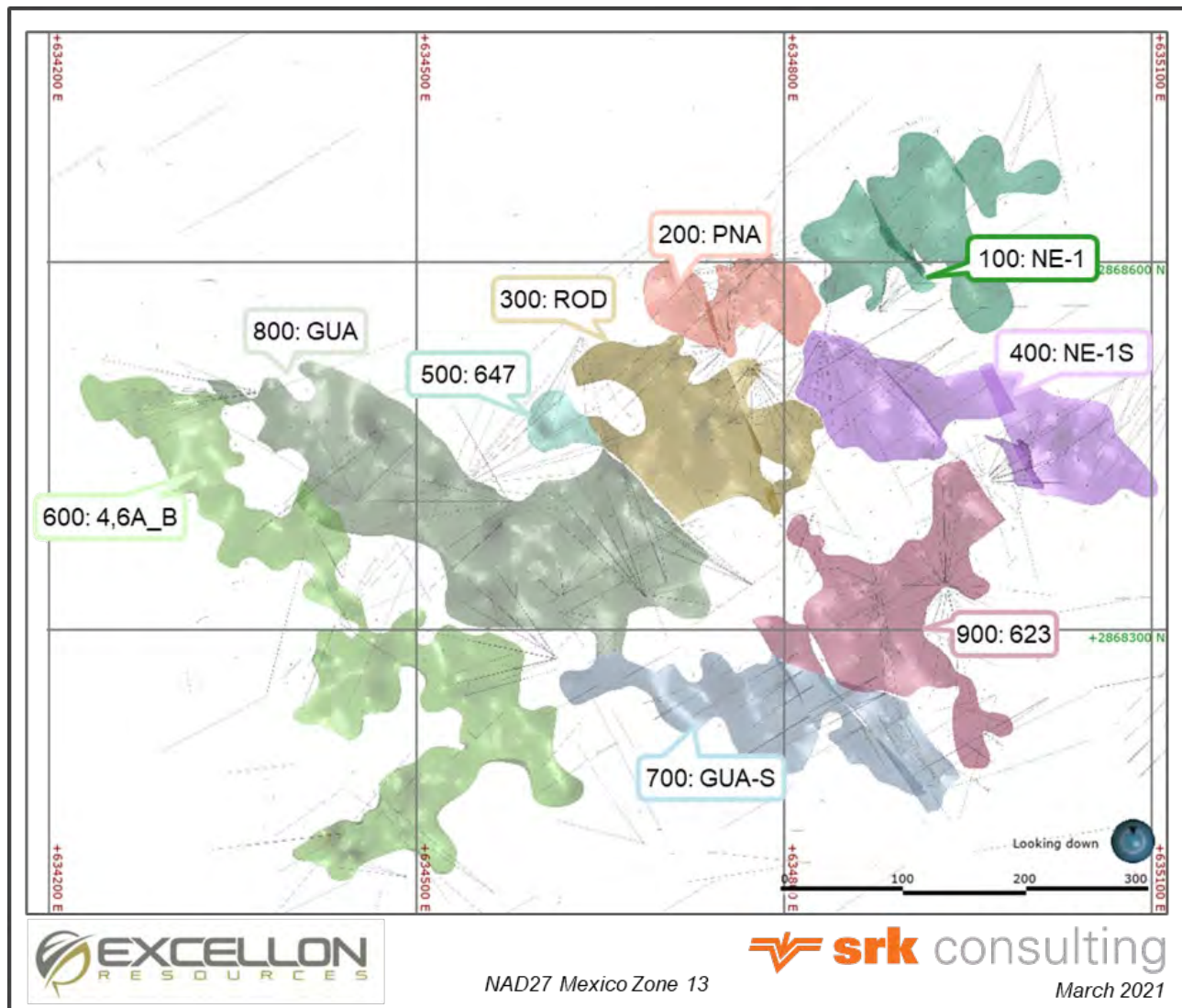
The modelling process has not changed since the 2018 model and mostly involved updating the existing lithology and mantos domains using the new infill and exploration drilling information.

The geological solids were constructed by Excellon in Leapfrog Geo™. Stratigraphic units were constructed utilizing stratigraphic sequence modelling defined by lithology log data. A series of north-south oriented, variably-dipping from moderate to steep and east to west, late cross-cutting faults vertically offset the lithological units and mantos domains.

The mantos fall largely within the heterolithic fragmental limestone unit (HEFL) unit, modelled as vein-type wireframes interpolated using both the lithology and mineralization logs. The hangingwall and footwall contacts were used to create vein-like horizons and lenses that were subsequently limited in their lateral extent with clipping surfaces. These clipped horizons formed the wireframes that were used to define the mineralized wireframe volumes (Figure 22). Overall, the total volume of the mineralized mantos zones has increased by 6% in comparison with 2018 model (Table 16).

**Table 16: Mineralization Wireframe Volume Comparison**

Domain	Wireframe Volume			2021/2018 Volume (%)
	2018	2021	% diff.	
NE-1	52,069	71,604	38%	11%
Pierna	24,753	27,679	12%	4%
Rodilla	60,947	67,899	11%	11%
NE-1 South	55,550	62,093	12%	10%
674	9,501	9,597	1%	2%
4, 6A & 6B	126,491	127,650	1%	20%
Guadalupe South	48,153	44,069	-8%	7%
Guadalupe	169,825	168,070	-1%	27%
623	50,828	54,562	7%	9%
<b>Total</b>	<b>598,119</b>	<b>633,223</b>	<b>6%</b>	<b>100%</b>



**Figure 22: Plan Map Showing the Modelled Platosa Mine Mantos Domains**

To assess the quality of the mineralization domains, SRK coded the assay intervals into groups based on the grade threshold and their location inside/outside of the mineralized mantos and analyzed the length distribution of the intervals constrained within the domains. Overall, the proportion of the non-mineralized intervals (<5 g/t silver equivalence) within the mantos (domains 100-900, Table 17) is 27% of the total assay length, which is considered acceptable. More than 95% of all the intervals above 275 g/t silver equivalence in the dataset were included into the mineralized mantos domains.

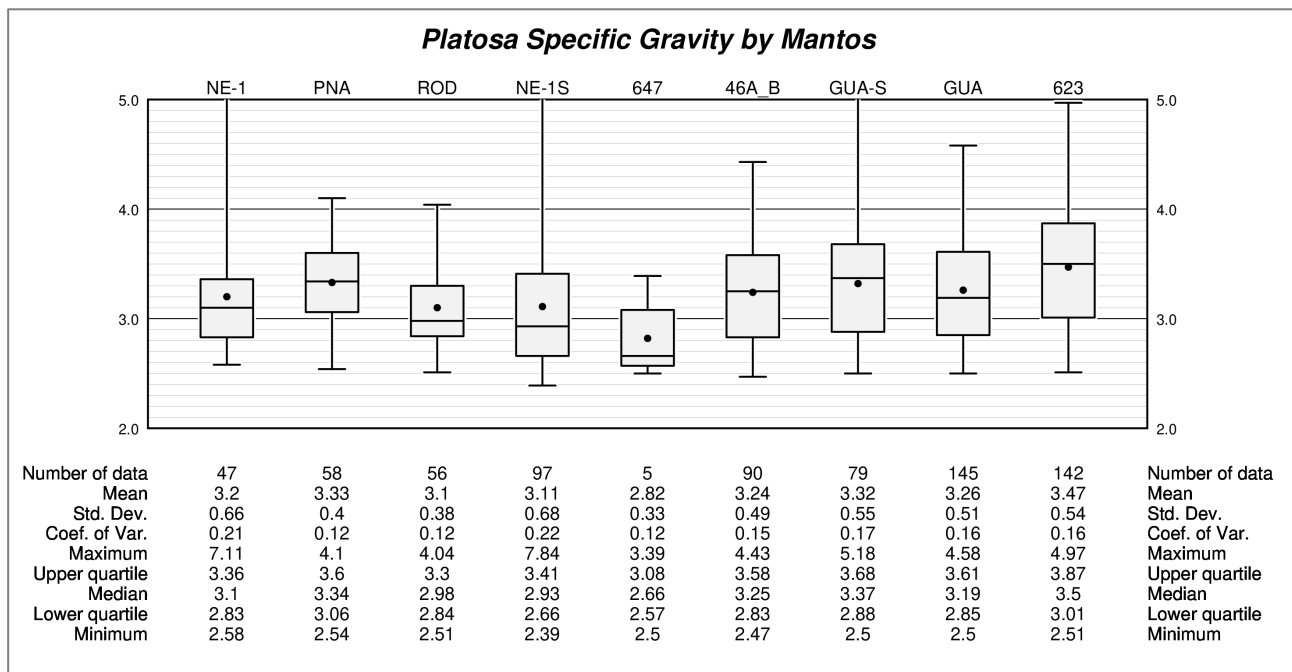
Table 17 provides a listing of the domains constructed for the Platosa Mine mineral resource model, with their associated numeric rock codes in the block model.

**Table 17: Platosa Mineral Resource Domains with Rock Codes**

Domain	Rock Code
NE-1	100
Pierna	200
Rodilla	300
NE-1 South	400
674	500
4, 6A & 6B	600
Guadalupe South	700
Guadalupe	800
623	900

## 13.5 Specific Gravity

Specific gravity was measured by Excellon personnel using a standard weight in water/weight in air methodology on core as part of the routine assaying protocol. The specific gravity database contains 769 measurements across the deposit, representing a 28% increase in specific gravity measurements since the 2018 resource model. Figure 23 shows a boxplot of the specific gravity measurements by domain. Due to the spatial location of specific gravity measurements and distribution across the deposit, an average specific gravity value was applied to each manto post-capping.



**Figure 23: Boxplot of Specific Gravity by Domain**



## 13.6 Compositing, Statistics and Capping

The total length of assayed intervals represents almost 9% of total drilled length. For intervals that were unsampled due to their lack of visible mineralization, SRK replaced the assay values with the background value (0.0001 for silver, lead, and zinc). Unsampled historic and underground service drillholes were excluded from the estimation dataset.

Table 18 summarizes the assay statistics for the Platosa Mine, for each mineralized domain. The number of assays available for the mineral resource update of the Platosa Mine is 23,580 samples, an increase of 19% from the 19,885 assays available for the March 2018 mineral resource model. Figure 24 shows the distribution of assay lengths. Approximately 63% of assay samples measure 1 metre or less, with 26% of assays sampled between 1 and 1.1 metres. Virtually all assays are sampled in less than 4-metre intervals. Considering the relatively narrow mantos domains, SRK chose to composite at 1 metre (with intervals less than 0.5 metres equally redistributed) to avoid ‘breaking’ assays to form larger composites while still retaining sufficient sample data for geostatistical analyses.

To further limit the influence of high gold grade outliers during grade estimation, SRK chose to cap composites, as these are the data used explicitly in estimation. Capping was performed per domain. SRK relied on a combination of probability plots and capping sensitivity plots. Separation of grade populations characterized by inflections in the probability plot or gaps in the high tail of the grade distribution were indicators of potential capping values. The spatial distribution of high grades was observed to determine the reasonableness of the capped threshold. The chosen capped values, along with the uncapped and capped composite statistics are provided in Table 5. Figure 4 shows an example probability plot and capping sensitivity curve for domain 100. Relevant capping plots for all other domains are shown in Appendix B.

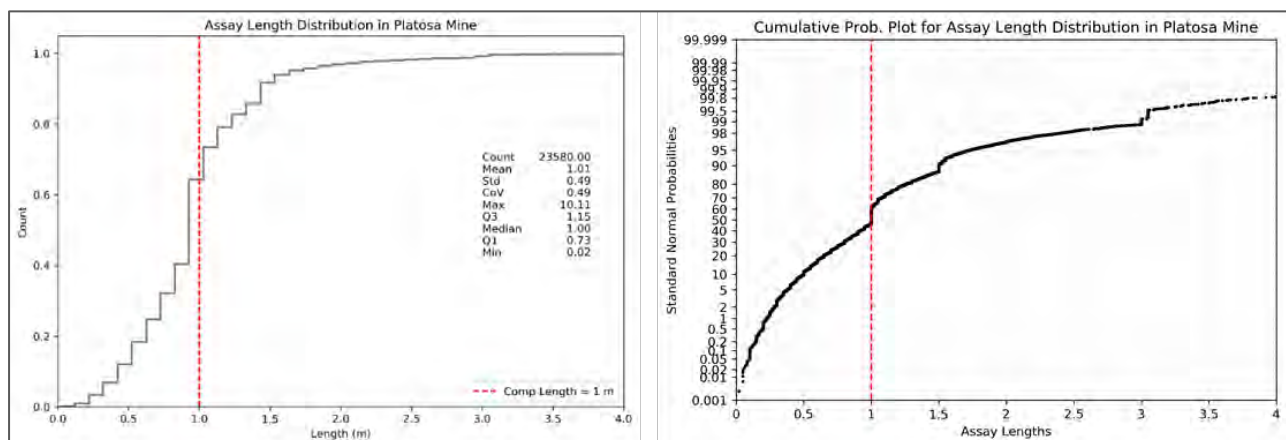


Figure 24: Assay Lengths for Platosa Mine

**Table 18: Assay Statistics for Platosa Mine**

Variable	Code	Domain Name	Count	Mean	Std.*	Min.*	Max.*	CoV*
Silver (g/t)	100	NE-1	252	235	444	0.00	3,170	1.89
	200	Pierna	256	458	889	0.00	9,369	1.94
	300	Rodilla	295	359	667	0.00	6,106	1.86
	400	NE-1 South	373	323	567	0.00	5,101	1.75
	500	674	51	45	268	0.00	2,811	5.91
	600	4, 6A & 6B	749	459	977	0.00	6,940	2.13
	700	Guadalupe South	263	902	1228	0.00	6,160	1.36
	800	Guadalupe	678	413	835	0.00	7,800	2.02
	900	623	422	688	1138	0.00	9,280	1.65
	<b>Subtotal</b>		<b>3,339</b>	<b>451</b>	<b>838</b>	<b>0.00</b>	<b>9,369</b>	<b>2.05</b>
	999	Waste	24,994	0	13	0.00	6,720	35.46
Lead (%)	100	NE-1	252	3.04	5.30	0.00	27.10	1.75
	200	Pierna	256	5.51	8.27	0.00	50.00	1.50
	300	Rodilla	295	2.69	5.28	0.00	43.70	1.96
	400	NE-1 South	373	3.65	6.22	0.00	46.30	1.70
	500	674	51	0.49	2.57	0.00	25.30	5.26
	600	4, 6A & 6B	749	5.44	9.33	0.00	64.65	1.71
	700	Guadalupe South	263	6.50	8.29	0.00	48.44	1.27
	800	Guadalupe	678	3.95	6.94	0.00	41.85	1.76
	900	623	422	5.61	8.04	0.00	44.30	1.43
	<b>Subtotal</b>		<b>3,339</b>	<b>4.41</b>	<b>7.26</b>	<b>0.00</b>	<b>64.65</b>	<b>1.81</b>
	999	Waste	24,994	0.00	0.13	0.00	52.50	33.55
Zinc (%)	100	NE-1	252	2.78	5.53	0.00	27.80	1.99
	200	Pierna	256	8.34	9.90	0.00	40.00	1.19
	300	Rodilla	295	3.31	6.35	0.00	40.00	1.92
	400	NE-1 South	373	3.53	6.53	0.00	40.00	1.85
	500	674	51	0.54	2.70	0.00	21.10	5.01
	600	4, 6A & 6B	749	6.01	10.95	0.00	54.00	1.82
	700	Guadalupe South	263	8.19	11.52	0.00	40.40	1.41
	800	Guadalupe	678	4.71	8.25	0.00	38.34	1.75
	900	623	422	7.89	11.00	0.00	42.07	1.39
	<b>Subtotal</b>		<b>3,339</b>	<b>5.31</b>	<b>8.74</b>	<b>0.00</b>	<b>54.00</b>	<b>1.84</b>
	999	Waste	24,994	0.00	0.19	0.00	35.40	40.78

\* Statistics are length-weighted. Std = standard deviation; Min = minimum; Max = maximum; CoV = coefficient of variation

Table 19: Uncapped and Capped Composite Statistics

Variable	Domain	Code	Uncapped Composites						Capped Composites					
			No. Data	Mean	Std. Dev.	Min	Max	CoV	Cap Value	No. Capped	Mean	Std. Dev.	Max	CoV
Silver (g/t)	NE-1	100	245	231	399	0.00	2,814	1.73	1,400	5	217	333	1,400	1.53
	Pierna	200	197	454	764	0.00	5,370	1.68	2,300	6	412	573	2,300	1.39
	Rodilla	300	263	354	567	0.00	3,865	1.60	2,000	6	334	475	2,000	1.42
	NE-1 South	400	296	319	474	0.00	3,480	1.49	1,600	6	305	413	1,600	1.35
	674	500	117	45	211	0.00	1,723	4.67	no cap	0	45	211	1,723	4.67
	4, 6A & 6B	600	652	458	862	0.00	5,644	1.88	no cap	0	458	862	5,644	1.88
	Guadalupe South	700	196	903	1136	0.00	5,631	1.26	4,000	5	877	1,047	4,000	1.19
	Guadalupe	800	576	405	768	0.00	6,807	1.89	3,000	9	378	606	3,000	1.60
	623	900	383	675	989	0.00	7,030	1.46	6,000	1	672	972	6,000	1.45
Lead (%)	NE-1	100	245	2.98	4.70	0.00	23.56	1.58	20	6	2.94	4.51	20.00	1.53
	Pierna	200	197	5.49	7.50	0.00	37.48	1.36	30	2	5.45	7.32	30.00	1.34
	Rodilla	300	263	2.67	4.81	0.00	29.81	1.80	18	5	2.52	4.14	18.00	1.64
	NE-1 South	400	296	3.56	5.38	0.00	42.07	1.51	18	7	3.36	4.48	18.00	1.33
	674	500	117	0.49	2.08	0.00	15.77	4.28	no cap	0	0.49	2.08	15.77	4.28
	4, 6A & 6B	600	652	5.38	8.44	0.00	58.89	1.57	no cap	0	5.38	8.44	58.89	1.57
	Guadalupe South	700	196	6.57	7.75	0.00	43.89	1.18	30	2	6.47	7.35	30.00	1.14
	Guadalupe	800	576	3.89	6.45	0.00	38.81	1.66	no cap	0	3.89	6.45	38.81	1.66
	623	900	383	5.54	7.15	0.00	40.31	1.29	no cap	0	5.54	7.15	40.31	1.29
Zinc (%)	NE-1	100	245	2.71	4.89	0.00	27.80	1.80	3	6	2.62	4.49	20.00	1.71
	Pierna	200	197	8.30	9.17	0.00	38.47	1.11	30	4	8.21	8.94	30.00	1.09
	Rodilla	300	263	3.35	6.05	0.00	33.70	1.81	25	4	3.27	5.73	25.00	1.75
	NE-1 South	400	296	3.49	6.17	0.00	40.00	1.77	20	8	3.20	5.01	20.00	1.57
	674	500	117	0.53	2.40	0.00	18.65	4.49	no cap	0	0.53	2.40	18.65	4.49
	4, 6A & 6B	600	652	5.94	10.22	0.00	50.90	1.72	no cap	0	5.94	10.22	50.90	1.72
	Guadalupe South	700	196	8.20	10.99	0.00	39.59	1.34	no cap	0	8.20	10.99	39.59	1.34
	Guadalupe	800	576	4.72	7.87	0.00	38.05	1.67	no cap	0	4.72	7.87	38.05	1.67
	623	900	383	7.79	10.34	0.00	40.52	1.33	no cap	0	7.79	10.34	40.52	1.33

\* Std. Dev. = standard deviation; Min = minimum; Max = maximum; CoV = coefficient of variation; all statistics are unweighted.

Unlike grade composites, which are 1.0-metre lengths, specific gravity data are only 10 centimetres in length and are not collected continuously down the core. Specific gravity data were also capped, by domain, to avoid any extreme low and/or high values for estimation. Low values for specific gravity were generally well-behaved and did not require capping. Chosen upper cap values for specific gravity are provided in Table 20; the impact of capping on the average specific gravity was less than approximately 2% for all domains.

**Table 20: Cap Values for Specific Gravity**

Domain	Code	Upper Capped Value	Mean	Std.	Min.	Max.	CoV	No. Capped
NE-1	100	3.90	3.14	0.34	2.58	3.90	0.11	1
Pierna	200	no cap	3.33	0.41	2.54	4.10	0.12	0
Rodilla	300	3.80	3.09	0.37	2.51	3.80	0.12	5
NE-1 South	400	4.00	3.07	0.48	2.40	4.00	0.16	6
674	500	no cap	2.82	0.37	2.50	3.40	0.13	0
4, 6A & 6B	600	4.10	3.23	0.47	2.47	4.10	0.15	3
Guadalupe South	700	4.10	3.30	0.50	2.50	4.10	0.15	7
Guadalupe	800	4.20	3.25	0.49	2.50	4.20	0.15	7
623	900	4.40	3.46	0.53	2.51	4.40	0.15	4

\* Std = standard deviation; Min = minimum; Max = maximum; CoV = coefficient of variation

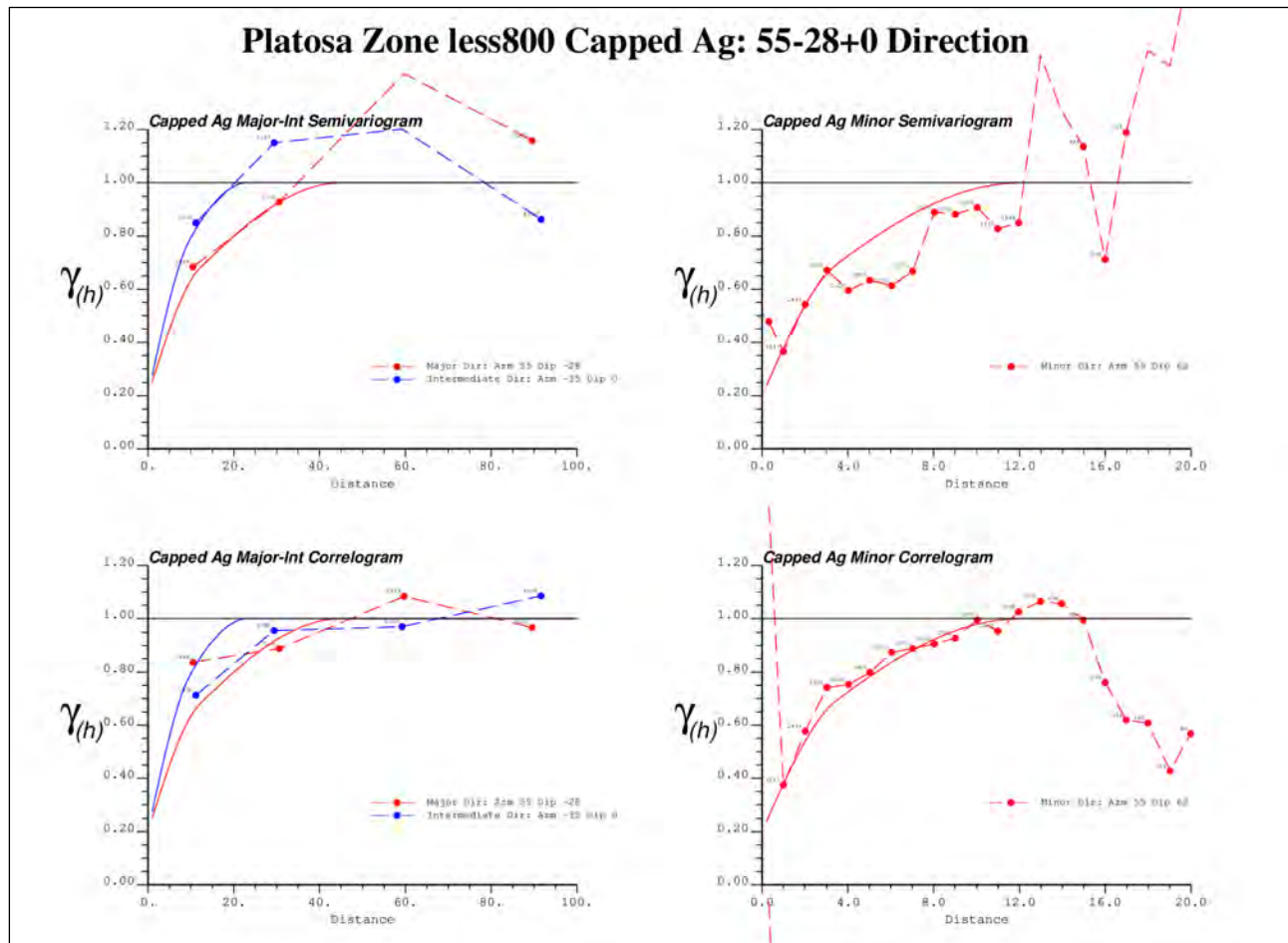
## 13.7 Variography

SRK used the Geostatistical Software Library (GSLib, Deutsch and Journel, 1998) to calculate and model silver, lead, and zinc variograms for the mineralized domains (Table 21). Since domain 800 (Guadalupe) has a significantly different overall orientation, variography was performed on two sets of domains, domain 800 and 'all domains less 800'. For each domain grouping, SRK assessed three different spatial metrics: (1) traditional semivariogram, (2) correlogram, and (3) traditional semivariogram of normal scores. Downhole variograms were calculated to determine the nugget effect. An example variogram model for the domain group '100-700,900' is shown in Figure 25. All gold domain variograms are provided in Appendix C.

**Table 21: Variograms by Domain Grouping**

Variable	Domain Group	Variogram Model						
		Nugget	Str. No.*	Type	CC*	Major	Semi-major	Minor
Silver	100-700,900	0.2	1	Spherical	0.27	12	10	3.5
			2	Spherical	0.53	45	23	12
	800	0.15	1	Spherical	0.35	50	35	12
			2	Spherical	0.5	80	40	12
Lead	100-700,900	0.15	1	Spherical	0.45	35	10	5
			2	Spherical	0.4	40	85	16
	800	0.2	1	Spherical	0.2	30	30	10
			2	Spherical	0.6	55	30	20
Zinc	100-700,900	0.1	1	Spherical	0.7	25	20	9
			2	Spherical	0.2	25	30	9
	800	0.1	1	Spherical	0.9	40	30	10

\* Str. No. = structure number; CC = variance contribution



**Figure 25: Silver Variogram for Domains 100-700,900**

## 13.8 Block Model and Grade Estimation

Criteria used in the selection of block size included the drillhole spacing, composite length, the geometry of the modeled domains, and the current/future underground mining method. In 2018, the block size was chosen as 5.0 metres by 5.0 metres by 2.0 metres. These remain the block dimensions for the current mineral resource model. Subcells were generated at 1.0 metre by 1.0 metre by 0.25 metre. SRK based the block model coordinates on the local UTM grid (NAD27 Mexico datum). The block model definition is summarized in Table 22. SRK populated grades for each of the domains into a whole block model.

**Table 22: Platosa Mine Leapfrog Edge Block Model Definition**

	Block Size (m)	Subcell size (m)	Origin* (m)	Block Count	Rotation
X	5	1.00	634,200	180	-
Y	5	1.00	2,868,000	160	-
Z	2	0.25	1,100	200	-

\* UTM grid (NAD83, Zone 13N)

The block model was populated with estimated silver, lead and zinc grades using ordinary kriging in the mineralized domains and applying up to three estimation runs with progressively relaxed search ellipsoids and data requirements. Table 23 summarizes the data requirements for silver, lead, and zinc grade estimation. The first estimation pass in the mineralized domains is based on an ellipsoidal search with search radii up to half the variogram range. In general, second and third pass estimations use an ellipsoidal search with the search radii expanded between 1 to 2 times the variogram range. The estimation ellipse ranges and orientations are based on the variogram models developed for the various domain groupings within the deposit. In all cases, silver, lead, and zinc were estimated using a hard boundary approach.

**Table 23: Estimation Parameters for Silver, Lead and Zinc**

Variable	Domain	Method	Est. Pass	Search Type	No. Data		Max Comp per Hole	Search Ellipse		
					Min.	Max.		Major	Inter.	Minor
Ag	800	OK	1	Ellipsoidal	7	9	3	40	20	6
		OK	2	Ellipsoidal	4	12	3	80	40	12
		OK	3	Ellipsoidal	2	15	3	160	80	24
	100- 700,900	OK	1	Ellipsoidal	7	9	3	22.5	11.5	6
		OK	2	Ellipsoidal	4	12	3	45	23	12
		OK	3	Ellipsoidal	2	15	3	90	46	24
Pb	800	OK	1	Ellipsoidal	7	9	3	27.5	15	10
		OK	2	Ellipsoidal	4	12	3	55	30	20
		OK	3	Ellipsoidal	2	15	3	110	60	40
	100- 700,900	OK	1	Ellipsoidal	7	9	3	20	42.5	8
		OK	2	Ellipsoidal	4	12	3	40	85	16
		OK	3	Ellipsoidal	2	15	3	80	170	32
Zn	800	OK	1	Ellipsoidal	7	9	3	20	15	5
		OK	2	Ellipsoidal	4	12	3	40	30	10
		OK	3	Ellipsoidal	2	15	3	80	60	20
	100- 700,900	OK	1	Ellipsoidal	7	9	3	12.5	15	4.5
		OK	2	Ellipsoidal	4	12	3	25	30	9
		OK	3	Ellipsoidal	2	15	3	50	60	18



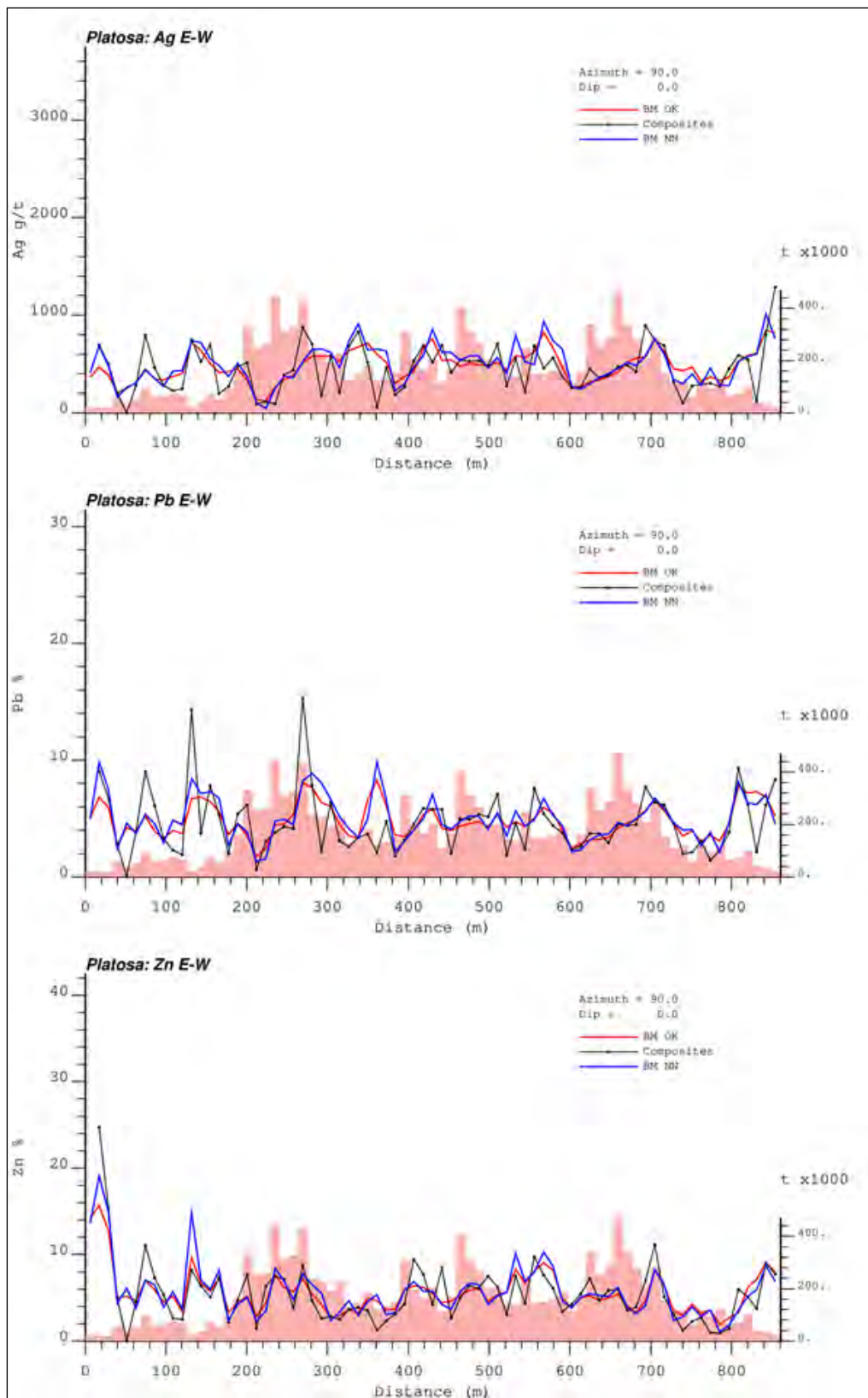
## 13.9 Model Validation and Sensitivity

SRK validated the block model using a visual comparison of block estimates and informing composites, statistical comparisons between composites and block model distributions, and statistical comparisons between ordinary kriging estimates and alternate estimators at zero cut-off.

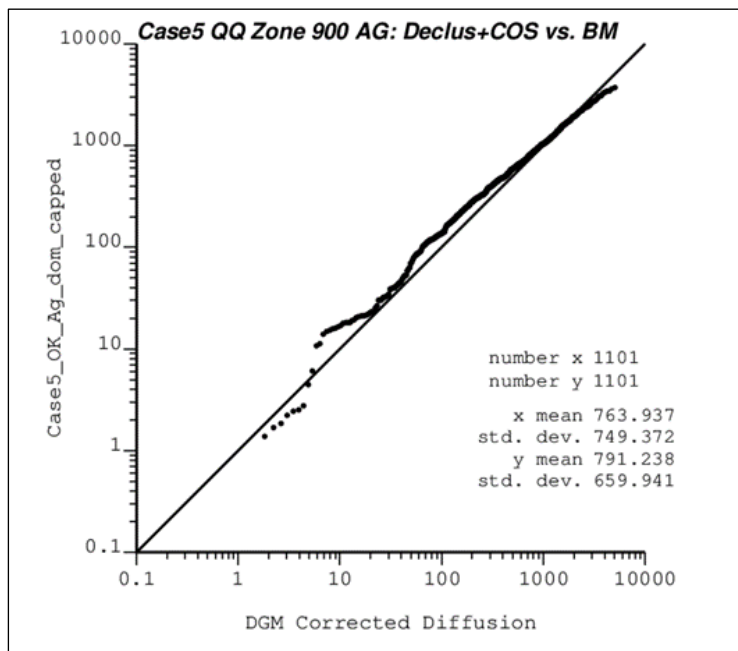
SRK generated block estimates using nearest neighbours (NN). SRK compared the NN declustered model to the ordinary kriging estimate at a 0.01 silver equivalent cut-off grade for all domains. Results show the NN model yields similar tonnage, with an approximate 3% increase in average grade for silver, lead, and zinc for an overall increase in contained ounces of 3%. These results are within reason and not unexpected given the two estimators.

A swath plot showing the (1) ordinary kriged block model, (2) clustered composites, and (3) nearest neighbours declustered composites within the manto domains, is provided in Figure 26. This shows generally good agreement between the various block models and the nearest neighbours declustered data. As expected, clustered composite data is more variable than all other cases.

SRK also compared the ordinary kriging block model distribution with the NN declustered, change-of-support corrected distribution of the informing composites for the grade domains. Declustering mitigates the influence of preferential sampling of drillhole data; this often results in a distribution of composites whose mean statistic is often comparable to that of the estimated model. Further, a change-of-support correction is applied to account for the volume difference between the composite scale and the final block volume scale. A quantile-quantile plot was plotted to compare the declustered, change-of-support corrected distribution to the estimated block model grades. Figure 27 shows the quantile-quantile plot for domains 900, which contributes 25% of the mineral resources within the 2021 mineral resource estimate. In general, the ordinary kriged estimate corresponds well to the declustered, change of-support corrected distributions.



**Figure 26: Swath Plot of Block Models, Oriented East to West**  
 (Histogram corresponds to block model tonnage along the swath)



**Figure 27: Comparison of Quantile-Quantile Plot for Block Model Grades and Declustered and Change of Support Corrected Distribution for Domain 900**

## 13.10 Mineral Resource Classification

The block classification strategy considers drillhole spacing, geologic confidence and continuity of category. SRK is satisfied that the geological modelling honours the current geological information and knowledge. The location of the samples and the assay data are sufficiently reliable to support resource evaluation. The sampling information was acquired by core drilling with pierce points between 15 and 50 metres apart, but generally at 25 metres. Accordingly, all block estimates within the mineralized mantos below and to the east of the current mining front were classified as Indicated mineral resources. Potentially recoverable pillars and accessible unmined areas in the upper portion of the mine have been classified as Inferred mineral resources in consideration of the engineering work required to confirm their potential extraction. SRK considers that there are no Measured blocks within the Platosa Mine.

SRK examined the classification visually by inspecting sections and plans through the block model. SRK concludes that the material classified as Indicated reflects estimates made with a moderate level of confidence within the meaning of *CIM Definition Standards for Mineral Resources and Mineral Reserves* (May 2014), and all other material is estimated at a lower confidence level.

## 13.11 Mineral Resource Statement

CIM *Definition Standards for Mineral Resources and Mineral Reserves* (May 2014) defines a mineral resource as:

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

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

The “reasonable prospects for eventual economic extraction” requirement generally implies that quantity and grade estimates meet certain economic thresholds and that mineral resources are reported at an appropriate cut-off grade that takes into account extraction scenarios and processing recovery.

The Qualified Person considers that the polymetallic (silver, lead, and zinc) mineralization is amenable to underground extraction. In collaboration with Excellon, the Qualified Person considered the assumptions listed in Table 24 to determine an appropriate reporting cut-off grade. To assist with determining which portions of the polymetallic deposit shows “reasonable prospect for eventual economic extraction” underground, potential mineable shapes were developed identifying areas behind and ahead of the present mining front to define portions of the mineral resource that are amenable to underground extraction. The definition of these reported areas are also supported by underground sampling and mapping. All reported mineral resources demonstrate continuity above cut-off grade, with isolated anomalous resource blocks excluded from reporting.

Upon review, and through discussions with Excellon, the Qualified Person considers that it is reasonable to report classified mineral resources to an underground cut-off grade of 275 g/t silver equivalent (AgEq), defined by the following silver equivalency equation:

$$\text{AgEq} = \text{Ag(g/t)} + 21.60 * \text{Pb(\%)} + 27.63 * \text{Zn(\%)}$$

Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resources will be converted into mineral reserves. SRK is unaware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the mineral resources.

The Mineral Resource Statement for the Platosa Mine is presented in Table 25, depleted as of February 8, 2021, and has an effective date of March 31, 2021.

**Table 24: Assumptions Considered for Underground Extraction**

Parameters	Value	Unit
Silver Price	24.00	US\$/oz
Lead Price	0.86	US\$/Pound
Zinc Price	1.10	US\$/Pound
Silver Recovery	91	Percent
Lead Recovery	80	Percent
Zinc Recovery	80	Percent
Mining Costs	260.11	US\$/tonne mined
Processing / Transportation Costs	68.36	US\$/tonne feed
General and Administrative	35.5	US\$/tonne feed
<b>Total Cost</b>	<b>363.97</b>	<b>US\$/tonne</b>
Mining Dilution (Internal)	10	Percent
Mining Dilution (External)	20	Percent
In-Situ Cut-Off Grade	275	g/t silver equivalent

**Table 25: Mineral Resource Statement\*, Platosa Mine, Mexico, SRK Consulting (Canada) Inc., March 31, 2021**

Category	Quantity ('000 t)	Grade			Contained Metal		
		Silver (g/t)	Lead (%)	Zinc (%)	Silver ('000 oz)	Lead ('000 lbs)	Zinc ('000 lbs)
Measured	-	-	-	-	-	-	-
Indicated	317	485	5.3	5.5	4,948	36,797	38,781
<b>Total</b>	<b>317</b>	<b>485</b>	<b>5.3</b>	<b>5.5</b>	<b>4,948</b>	<b>36,797</b>	<b>38,781</b>
Inferred	42	749	4.3	5.4	1,007	4,000	5,002

\* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures are rounded to reflect the relative accuracy of the estimates. Composites were capped where appropriate. Mineral resources are reported at a silver equivalent cut-off value of 275 grams per tonne (g/t), considering metal prices of US\$24.00 per ounce of silver, US\$0.86 per pound of lead, US\$1.10 per pound of zinc, and assuming metal recovery of 91% for silver, 80% for lead and 80% for zinc.

## 13.12 Grade Sensitivity Analysis

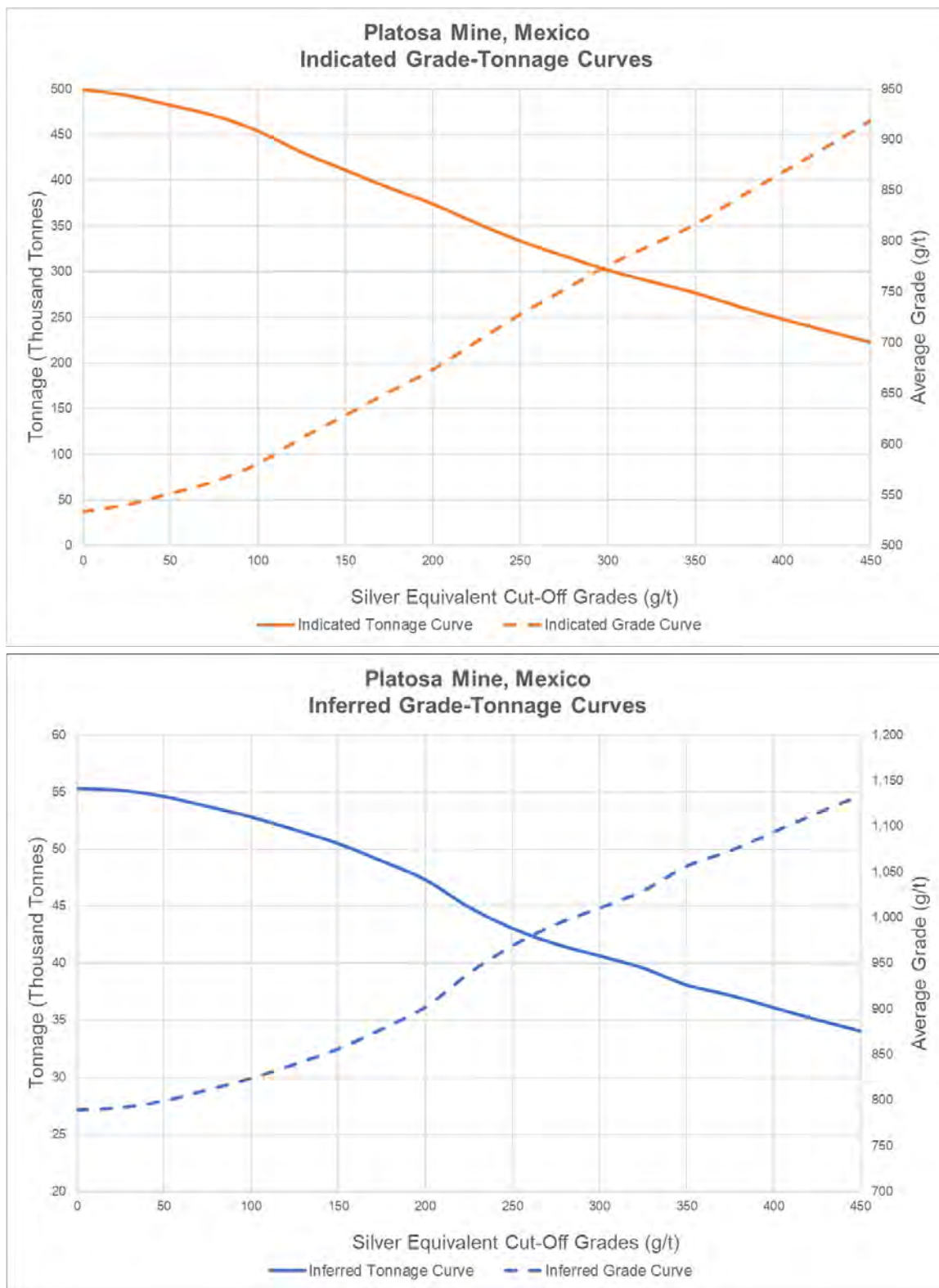
The mineral resources of the Platosa Mine are mildly sensitive to the selection of the reporting cut-off grade. To illustrate this sensitivity, the global model quantities and grade estimates at various silver equivalent cut-off grades within potential mining shapes are presented in Table 26. The reader is cautioned that the figures presented in this table should not be misconstrued with a Mineral Resource Statement. The figures are only presented to show the sensitivity of the block model estimates to the selection of cut-off grade. Figure 28 presents this sensitivity as grade tonnage curves.

**Table 26: Global Block Model Quantity and Grade Estimates\* at Various Cut-off Grades, Platosa Polymetallic Mine, Mexico**

Category	Cut-off Grade Ag Eq (g/t)	Quantity (’000 t)	Grade			Metal Content		
			Silver (g/t)	Lead (%)	Zinc (%)	Silver (’000 oz)	Lead (’000 lbs)	Zinc (’000 lbs)
Indicated	0	499	342	3.82	3.95	5,489	42,110	43,445
	25	493	346	3.87	4.00	5,488	42,089	43,429
	50	482	354	3.95	4.08	5,480	42,006	43,359
	75	471	361	4.03	4.16	5,467	41,853	43,236
	100	454	373	4.15	4.29	5,439	41,561	42,967
	125	431	389	4.33	4.47	5,390	41,071	42,478
	150	411	404	4.47	4.63	5,339	40,557	41,981
	175	392	419	4.63	4.79	5,279	39,982	41,408
	200	374	434	4.78	4.95	5,214	39,380	40,840
	225	353	452	4.95	5.16	5,126	38,502	40,155
	250	333	470	5.11	5.37	5,034	37,585	39,456
	275	317	485	5.26	5.55	4,948	36,797	38,781
	300	302	501	5.43	5.72	4,857	36,115	38,025
	325	289	514	5.57	5.87	4,776	35,482	37,370
	350	277	527	5.71	6.02	4,691	34,816	36,708
	375	262	544	5.89	6.22	4,574	33,962	35,891
	400	248	560	6.05	6.43	4,464	33,043	35,158
Inferred	425	235	576	6.21	6.63	4,354	32,162	34,361
	450	223	592	6.36	6.84	4,240	31,231	33,554
	0	56	591	3.66	4.30	1,056	4,480	5,264
	25	55	593	3.67	4.31	1,056	4,478	5,263
	50	55	599	3.69	4.35	1,056	4,464	5,263
	75	54	608	3.73	4.42	1,055	4,441	5,258
	100	53	618	3.78	4.49	1,054	4,425	5,246
	125	52	630	3.84	4.56	1,051	4,399	5,223
	150	51	643	3.90	4.65	1,048	4,361	5,192
	175	49	660	3.96	4.77	1,043	4,295	5,169
	200	47	679	4.04	4.90	1,037	4,229	5,129
	225	45	707	4.17	5.11	1,025	4,146	5,077
	250	43	731	4.26	5.28	1,015	4,062	5,034
	275	42	749	4.34	5.42	1,007	4,000	5,002
	300	41	762	4.39	5.53	1,000	3,947	4,972
	325	40	777	4.45	5.63	992	3,896	4,933
	350	38	797	4.55	5.81	980	3,838	4,900
	375	37	810	4.61	5.91	972	3,793	4,865
	400	36	825	4.69	6.03	961	3,746	4,820
	425	35	841	4.76	6.16	951	3,689	4,772
	450	34	856	4.83	6.26	941	3,641	4,712

\* The reader is cautioned that the figures in this table should not be misconstrued with a Mineral Resource Statement. The figures are only presented to show the sensitivity of the block model estimates to the selection of a cut-off grade. Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures are rounded to reflect the relative accuracy of the estimates. Composites were capped where appropriate. Mineral resources are reported at a silver equivalent cut-off considering metal prices of US\$24.00 per ounce of silver, US\$0.86 per pound of lead, US\$1.10 per pound of zinc, and assuming metal recovery of 91% for silver, 80% for lead and 80% for zinc.





**Figure 28: Grade Tonnage Curves for the Platosa Mine – Indicated (top) and Inferred (bottom)**

## 13.13 Reconciliation with 2018 Mineral Resource Statement

Table 27 shows the reconciliation between the March 31, 2018 and March 31, 2021 Mineral Resource Statements. As a result of the advancement of the underground mining operations, the conceptual 'mining front' boundary applied for classified mineral resource reporting (Indicated classification east of the mining front and Inferred classification west of the mining front) was moved approximately 100 metres to the northeast, separating the western upper portion of the mine containing significant depletion from the eastern lower and relatively unmined mantos area. In general, the differences in Indicated quantities can be attributed to depletion. Since the classification of material considers this mining front, the increase in Inferred material can primarily be attributed to the addition of remnant material contained between the 2018 and 2021 mining fronts.

**Table 27: Comparison Between 2018 and 2021 Mineral Resource Statements**

Category	Quantity ('000 t)	Average Grade			Material Content		
		Silver (g/t)	Lead (%)	Zinc (%)	Silver ('000 oz)	Lead ('000 lbs)	Zinc ('000 lbs)
March 2018							
Indicated	485	549	5.6	5.9	8,562	59,752	62,953
Inferred	13	516	4.7	6.5	216	1,344	1,859
March 2021							
Indicated	317	485	5.3	5.5	4,948	36,797	38,781
Inferred	42	749	4.3	5.4	1,007	4,000	5,002

\* The reader is cautioned that these quantities are not mineral resources and are provided only for comparative purposes. Mineral resources for March 2018 are reported at a silver equivalent cut-off value of 375 grams per tonne, considering metal prices of US\$17.00 per ounce of silver, US\$1.10 per pound of lead, US\$1.30 per pound of zinc, and assuming metal recovery of 89% for silver, 81% for lead and 81% for zinc. Mineral resources for March 2021 are reported at a silver equivalent cut-off value of 275 grams per tonne, considering metal prices of US\$24.00 per ounce of silver, US\$0.86 per pound of lead, US\$1.10 per pound of zinc, and assuming metal recovery of 91% for silver, 80% for lead and 80% for zinc.

## 14 Mineral Reserve Estimates

There are currently no mineral reserves considered at the Platosa Mine.

## 15 Mining Methods

**The information provided in the following subsections of this Technical Report should not be considered a feasibility study, as the economics and technical viability of the Platosa Mine has not been demonstrated at this time. The information listed in this section of the Technical Report is preliminary in nature and includes Inferred Mineral Resources. Furthermore, there are no certainties that the conclusions or results reported in this Technical Report will be realized. Mineral Resources that are not Mineral Reserves do not demonstrate economic viability.**

This section describes the procedures for mine planning and the mining methods used for extracting the mineral resources. Since the mine has been in production since 2005, actual production data are used extensively to forecast future mine performance. With the completion of the dewatering project in June 2017, the Platosa Mine is now producing ore from dry stopes thereby lowering costs and increasing safety, productivity, and efficiency which has resulted in an increase in tonnes produced since 2018.

The mine plan was completed in accordance with Excellon's mine planning standards by the mine planning department at Platosa with support from SRK mining consultants.

Production from the remaining Platosa mantos is scheduled at 7,000-tonnes per month. Historically, the chief constraint on production has been water ingress in the production areas, which caused delays and required the grouting of water-bearing structures and pumping of water. The dewatering project, described in Section 15.6, has reduced the impact of this bottleneck and the mine has been gradually ramping up production under dry conditions. A drawdown rate of 3-metres per month is required to maintain a production rate of 235-tonnes per day. Development of 767-metres annually on average will also be required.

Access to the underground mine is by ramp through a portal collared near the administration building. The primary mining method has historically been a modified room and pillar, with the top of the manto being accessed first. During late 2019 to early 2020 the Platosa Mine transitioned the mining method from cut and fill/drift and fill to an overhand cut and bench method to improve the overall mining cycle efficiency. Drift and fill is still used where the mantos are flat lying.

The overhand cut and fill method is the primary mining method currently used at Platosa. The top cut is driven along the upper stope elevation to define the stope width and length. Fully grouted 5-metre post-tensioned cable bolts are installed in the hanging wall in a pattern sufficient to support the estimated final stope dimensions using the hydraulic radius as the primary ground support design parameter.

The next lift is taken as a 2-metre bench with ground support installed in the hanging wall as the bench is removed. A second 2-metre bench is taken, ground support installed, and the opening backfilled with 2-metre of cemented rock fill (CRF) placed on the floor and the remaining opening

filled with waste rock. The stope below is mined in the same manner. However, a 2-metre sill is left to control the back of the stope on the elevation below.

After the lower stope is mined and partially backfilled the 2-metre sill is drilled from beneath with vertical blast holes. A drop raise is excavated on the far end of the stope and the vertical blastholes are slashed toward the drop raise and mucked with a remote control LHD. Once the entire 2-metre sill is removed the opening is backfilled with a remote controlled LHD with a “jammer” attachment on the bucket where necessary. Up to four lifts can be mined before excavating a sublevel access further down the main ramp to access the planned stopes below. The process is repeated until that portion of the manto is fully mined.

The flat lying manto sections are mined with drift and fill. Parallel 3-metre by 3-metre drifts are excavated on 6-metre centres in the lower section of the manto and backfilled with CRF. The intermediate drifts are then mined and backfilled with uncemented rock fill. The level above is mined in the same manner until that section of the flat lying manto is fully extracted.

Historical pillars are evaluated for possible extraction where previously mined areas will be supported with cable bolts. Each area is evaluated individually based on the rock quality and economic viability. Until then, these pillars have been included in the resource estimate as Inferred resources. Similarly, mineralization that remains in horizontal sill pillars could potentially be extracted at the end of the mine life.

## 15.1 Primary Access

Primary access is through a ramp that is collared near the administration building. The decline has an average gradient of 12% with a maximum gradient of 15%. The ramp spirals to the Guadalupe level where there is a diesel workshop. Two declines are collared from the Guadalupe level to access the mantos to the northeast. The ramp excavations measure 4-metres wide by 4-metres high.

## 15.2 Level Design

The elevation of the Guadalupe level is 996 metres above mean sea level (masl). Below the Guadalupe level, where all future production will occur, minimal waste development is planned. Within the production areas, ancillary excavations will be developed for systems such as development sumps and electrical substations.

## 15.3 Material Handling

Mineralized material is hauled to a central underground stockpile with one 20-tonne and two 16-tonne underground haul trucks. Mineralized material is then hauled to surface using one 20-tonne over the road dump truck. The mineralized material is placed at surface on the ore stockpile. A wheel loader transfers the material from the stockpile to a sizing screen with oversize fed into a jaw crusher; the material is then crushed to minus 200 millimetres. The crushed material is hauled in 38-tonne covered trucks to the Miguel Auza Mill, 220 kilometres away.

Waste rock remains underground and is used as backfill in depleted stopes.

## 15.4 Ventilation

The primary ventilation at Platosa is provided by a pull system. A 170-horsepower vertically mounted Zitron fan, located on a 2.4-metre diameter Robbins exhaust raise at the northeast end of the deposit, draws 74 cubed metres per second (m<sup>3</sup>/s) of air down the portal. A second identical bored vent raise is under construction at the time of this report writing and a third is planned in the third quarter of 2021. The air distribution is controlled by ventilation doors located throughout the mine that are kept closed. Recirculation through stopes is controlled by cinder block walls or stoppings. Short conventional raises are driven between sublevels where required to maintain a ventilation pathway close to the ramp faces.

Most areas of the mine are provided with through-ventilation from the primary system. In areas where auxiliary ventilation is required, fans are installed and ventilation ducts supply air into the working areas. As the mine deepens and accesses the NE-1 manto, a conventional raise will be offset from the bottom of the exhaust raise to extend the ventilation circuit.

## 15.5 Backfill

Waste rock is used as backfill in depleted stopes either as uncemented rock fill or cemented rock fill mixed with Portland cement in a 9% by weight mix. Cemented rock fill is typically placed in depleted stope floors to allow sill pillar recovery from the stope below.

## 15.6 Dewatering and Hydrology

In the early mining phase, from 2005 to 2010, mine workings began to extend below the local water table and the Platosa mining operation experienced groundwater inflows that exceeded pumping capacity causing production disruptions. To mitigate these occurrences, Excellon undertook an intensive program of hydrologic studies that resulted in the construction of the current dewatering infrastructure.

There are currently three primary pumping stations with three more deep well plazas planned to allow dry production during 2021 and 2022. Each station is composed of 0.41-metre (16-inch) by 130-metre deep dewatering wells, vertical turbine well pumps, in-line booster pumps, discharge piping system, underground surge reservoirs, and booster pumps to provide water to deep well vertical turbine pumps located on the surface. Those pumps discharge into any of the three sumps that connect to the surface water distribution system consisting of 11 kilometres of ditches and 12 kilometres of buried PVC pipe.

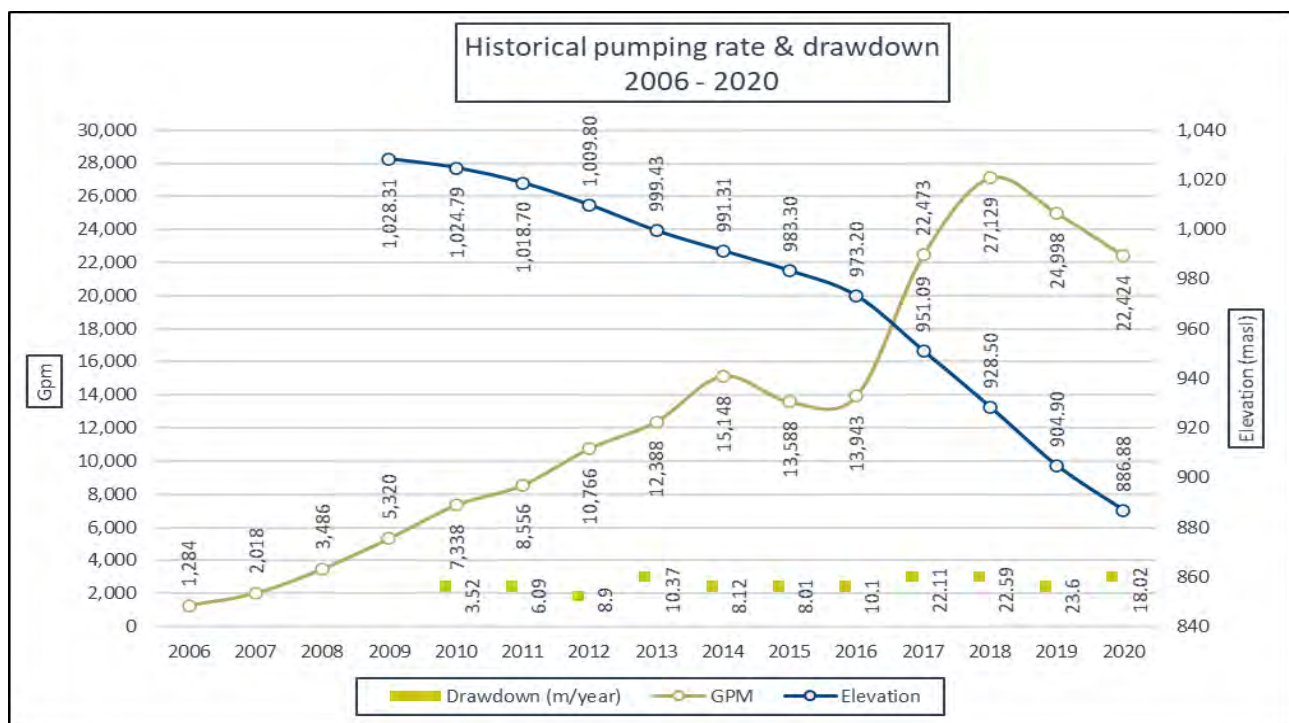
The dewatering system requires regular monitoring and periodic installation of new underground wells as mining operations deepen and existing underground wells become less efficient (i.e., when the water table deepens beyond a particular pump's effective depth). Additionally, ongoing monitoring of dispersion of surface water storage and conveyance facilities is necessary to prevent



either direct recharge into the aquifer formation or intensive seepage from local holding ponds, both of which were noted as negatively impacting drawdown rates in late 2017 (Figure 29).

The Platosa mine plan is predicated on the deepening of the cone of depression by 3 metres per month; optimal mining rates are associated with higher rates of drawdown. Ongoing action will be required to ensure sufficient drawdown rates to support efficient mining practices. Current work is ongoing to achieve and maintain a flow rate of 25,000 to 30,000 US gallons per minute.

Ongoing pilot hole drilling allows Excellon to isolate two other water bearing faults. Additional pilot hole drilling will better define the extent of these faults and allow accurate planning of the dewatering system ahead of mining. The testing results obtained from the current pilot hole drilling campaign suggest continued dewatering capacity at or above current dewatering capacity.



**Figure 29: Average Pumped Flow Rates per Periods, Drawdown and Elevation of the Water Table from January 2006 through December 2020**

Gpm = US gallons per minute

## 15.7 Geotechnical Considerations

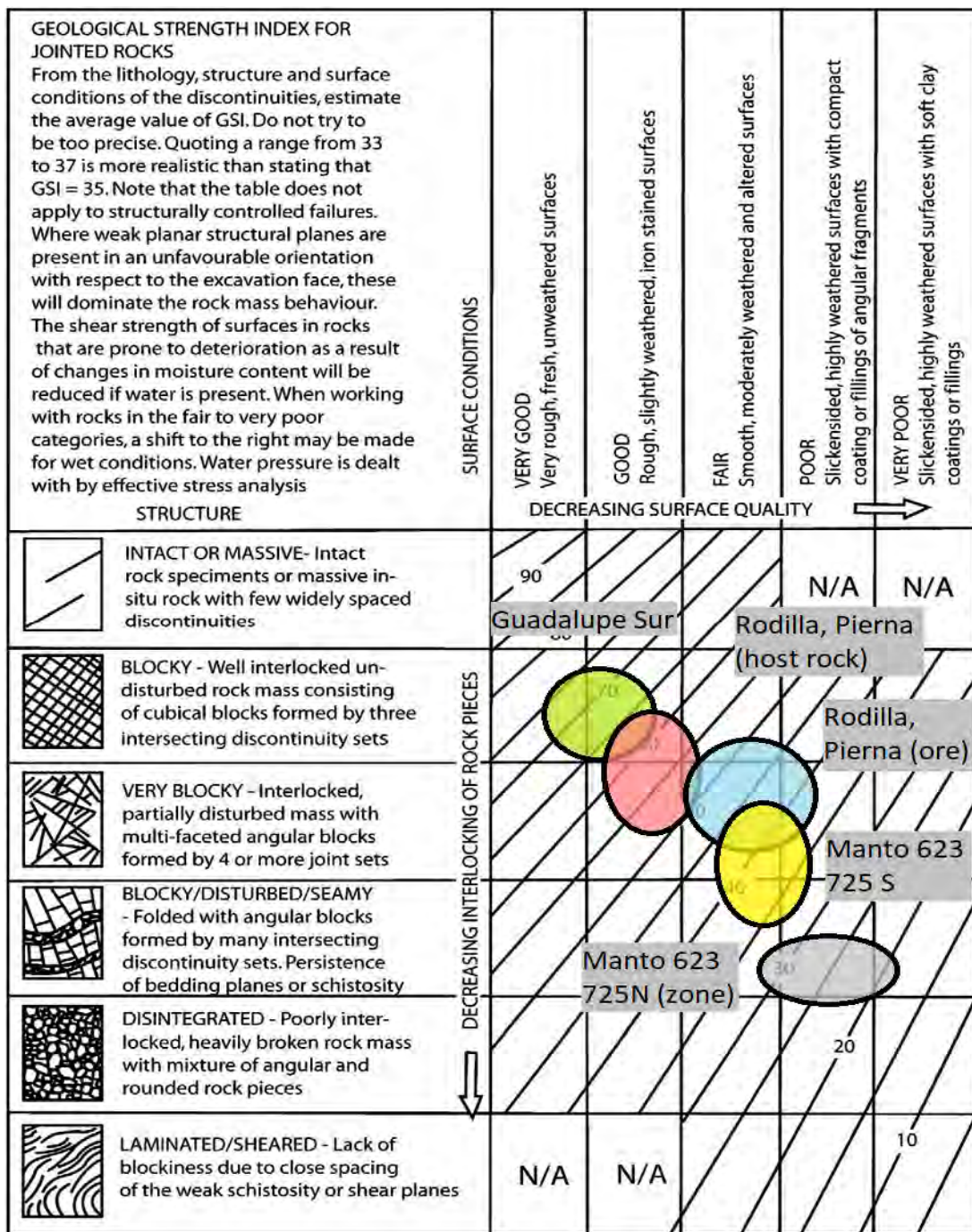
The Rock Mass Rating (RMR) classification values (Bieniawski 1976) vary among mantos at Platosa, ranging from fair to poor as shown in Table 28. The lowest RMR classification value is in manto 623 which has a rating of 26, requiring significant ground support installation. The hanging wall rock is rated from good to fair, again with 623 being the lowest area with a RMR value of 47. The rockmass quality (Q) (Barton et al. 1974) has been estimated for the same mantos, as shown in Table 29. The rockmass quality GSI rating is shown in Figure 30.

**Table 28: RMR Classifications for Representative Geotechnical Domains**

Manto	Rodilla	Manto 623	Gde. Sur	Rodilla	Manto 623
Location	Hanging Wall (Caliza)			Mineralized Zone	
	730L (typical)	795L	795L	M3 pillar 730L	795L
Parameter					
UCS	8	7	8	6	4
RQD (est)	15	11	16	13	5
Joint Spacing	10	10	10	10	7
Joint Condition	18	12	20	12	4
Water	7	7	7	7	6
RMR =	58	47	61	48	26
Description:	Fair to good rock	Fair rock	Good rock	Fair rock	Poor rock

**Table 29: Rockmass Quality for Representative Geotechnical Domains**

Parameter	Rodilla	Manto 623	Gpe Sur	Rodilla	Manto 623
Location	Hanging Wall (Caliza)			Mineralized Zone	
	730L	795L	795L	730L	795L
RQD (estimated)	60	60	75	50	25
Jn	12	12 to 15	12	12	15
Jr	1	1 to 1.5	1.5	1.5	1.5
Ja	1	1 to 2	1 to 2	2 to 4	4
Q' =	5	2 to 7.5 (typical: 3)	4.7 to 9.4 (typical: 9.4)	3.1	0.6
Jw (de-watered)	1 (dry)	0.8 (minor inflow)	1 (dry)	1 (dry)	0.8 (minor inflow)
SRF (favourable stress condition), SigC/Sig1 = 200 to 10	1	1	1	1	1
Q =	5	2.4	9.4	3.1	0.5
Description:	Fair rock	Poor rock	Fair to good rock	Poor rock	Very poor rock



**Figure 30: Geological Strength Index for Mantos**

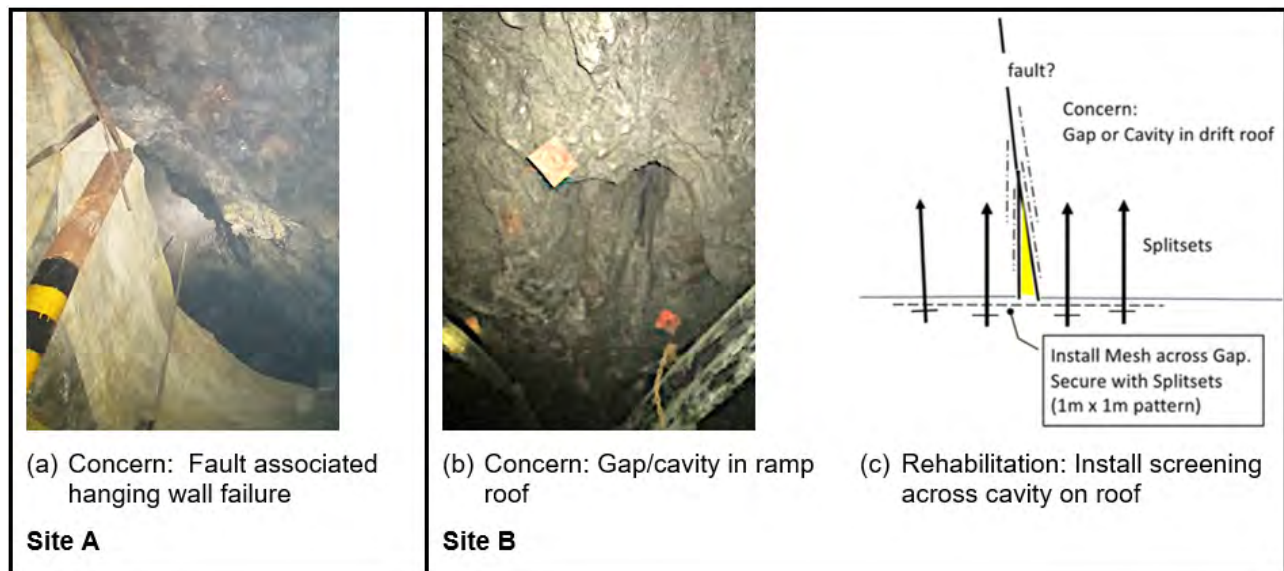
Source: Modified after Hoek and Marinos, 2000

### 15.7.1 Stress Regime and Likely Failure Modes

Stress monitoring and in-situ stress measurements have not been conducted at Platosa but favourable stress conditions are presumed due to relatively high rock strength to principal stress ratio. A review of the rock conditions and support practices at Platosa was most recently conducted

by John Henning of BBA in November 2018. The review concluded that the most likely failure mode is expected to be wedges, with gravity being the energy source of concern (Figure 31) as the shallow depth of the mine does not warrant concern over seismicity and rock bursts.

The rock strength is estimated to range from 45 megapascal (MPa) to 60 MPa in the hanging wall and from 25 MPa to 35 MPa in the mineralization above 915 metres elevation. As the mine deepens, there is a need for confirmation of rock strength estimates via laboratory testing of representative core samples. As a starting point, five samples from the hanging wall of each of the mantos and five from each mineralized zone should be tested.



**Figure 31: Ground Conditions Encountered at the Platosa Mine**

### 15.7.2 Support System

The upper portion of the mine is generally unsupported due to the combination of favourable ground conditions and the significant amount of grout that was injected to control ingress of groundwater. The historical grouting campaigns had the added effect of sealing up any bad ground with cement before blasting occurred. With dry mining conditions, progressive ground support designs have been implemented. All new excavations are supported with welded wire mesh and 1.8-metre split sets on a 1.2-metre by 1.2-metre pattern. Areas with close local jointing are shotcreted or approximately 10% of the excavations. Areas with faulting are supported with 2.4-metre rebar and mesh or approximately 15% of the excavations. Areas with significant faulting, spans larger than 8 metres and all 4-way intersections and all overhand cut and bench method stopes are supported with 5-metre cable bolts.

## 15.8 Mine Production Plan

**Excellon has not based its production decisions at the Platosa Mine on any feasibility study or Mineral Reserves demonstrating economic and technical viability, and as a result, there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a feasibility study, such as applying economic analysis to Mineral Resources and Mineral Reserves and more detailed metallurgy and mining and recovery methods.**

The Platosa Mine has been in operation since 2005 and in the past 10 years has achieved a steady production rate averaging 61,000 tonnes per annum. Please refer to Table 3 - Historical Production from Platosa Mine. The critical bottleneck at the Platosa Mine remains the ongoing dewatering efforts.

Excellon has not yet developed a life of mine (LOM) plan for the Mineral Resources at the Platosa Mine; however, mine development and production have been based on infill drill programs and continue to be scheduled on a monthly basis. The current mine plan includes Inferred Mineral Resources. The mine plan is preliminary in nature and includes technical and economic assumptions that are considered too speculative to have economic considerations applied to them for the Mineral Resources to be categorized as Mineral Reserves, and there is no certainty that the mine plan will be realized. Due to the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

Mine design and schedule were completed using Deswik software. Practical mining shapes were generated to outline those resources above the cut-off grade. Mining shape, or stope, dimensions were designed based on geotechnical information. The primary development headings are driven at 4 metres by 4 metres, access drifts are 3 metres by 3 metres and stoping drifts 2.5 metres by 2.5 metres.

The waste development (ramps, cross-cuts, raises, etc.) required to access the stopes was generated and the overall mine design was linked in a logical mining sequence. The resulting schedule was evaluated against the block model such that uneconomic material could be excluded from the production plan.

As noted in Section 15.6, dewatering and hydrogeology are key constraints for the Platosa schedule; the on-site technical and operating team has built up an in-depth knowledge of the underground water-bearing structures. Well stations have been integrated into the mine plan accordingly.

An external dilution factor of 25% was applied to the mine design to account for overbreak, based on historical performance. Where the dilution is within the boundaries of the block model, the grade of this material is factored into the head grade.

A mining operational recovery of 95% was applied in accordance with best practice; however, historical performance has been higher because mineralization is often encountered outside of the block model.

Incremental material was included in the production plan where development through material grading below the cut-off grade (346 g/t silver equivalent) was necessary to reach mineralization above that cut-off. Such mineralization was considered economic to truck and mill following sunk development expenses.

Key scheduling productivities used to generate the production plan are as follows:

- Waste development at 2.5 metres per day per crew for Jumbo development and 1.5 metres per day per crew for Jackleg development
- Mineralization development at 2.5 metres per day per crew for Jumbo development and 1.5 metres/day/crew for Jackleg development
- Backfilling at 500 tonnes per day.

These productivities are based on historical performance.

## 15.9 Mobile Equipment

The current fleet of mobile equipment is listed in Table 30. Now that dry conditions have been achieved, the current fleet is adequate to produce at a rate of 235 tonnes per day, as per the mine plan. Historically, most of the drilling was accomplished using jacklegs, but Platosa has been transitioning to jumbo drilling since the completion of the dewatering project, thus also improving safety and productivity.

**Table 30: List of Mobile Equipment**

<b>Equipment</b>	<b>Fleet Size</b>
4-cubic yard load haul dump	3
1-Boom jumbo	2
16-tonne haul truck	2
20-tonne haul truck	1
20-tonne dump truck	1



## 16 Recovery Methods

Mineralized material from the Platosa Mine is shipped to the Miguel Auza processing facility, located 220 kilometres south of the mine. The Miguel Auza mineral processing facility operates two circuits: one for lead-silver and one for zinc-silver.

The Miguel Auza processing facility has been treating silver-, lead-, and zinc-rich CRD Platosa mineralization since 2009. The facility was initially designed and constructed to process material from the historical lower-grade Miguel Auza Mine of Excellon's Evolución Project located in Miguel Auza at a rate of 650 tonnes per day. Modifications were made in 2009 to ensure that the facility would be able to process the higher-grade feed; the flotation cells were upgraded from a processing rate of 325 to 350 tonnes per day to 650 tonnes per day with a flexible flotation configuration to process variable ore feed grade. The flowsheet for the Miguel Auza concentrator is shown in Figure 33. The processing facility currently produces two concentrates: a lead-silver and a zinc-silver concentrate. Table 31 shows the production rates, grades, and recoveries since 2010.

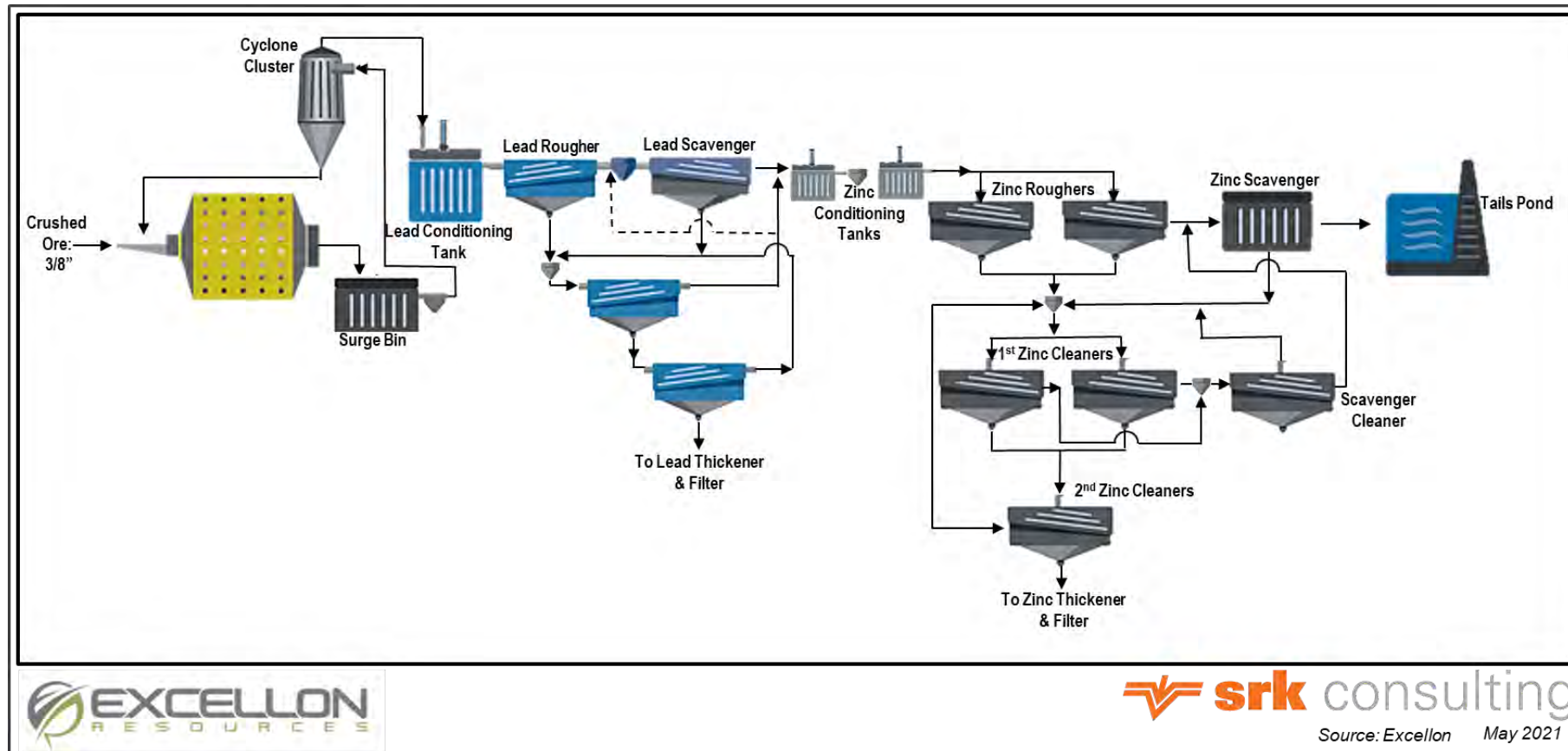


Figure 32: Flowsheet for the Miguel Auza Concentrator

**Table 31: Production Rates, Grades and Recoveries**

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Production	tpa	64,462	59,405	48,199	69,862	64,206	56,849	55,593	63,742	81,004	75,247	65,567
Daily Rate	tpd	362	336	321	320	324	325	290	312	228	211	233
Mill Head Silver Grade	g/t	803	796	847	718	603	491	456	393	391	490	519
Mill Head Lead Grade	%	5.50	6.24	6.75	6.14	6.57	4.56	4.40	3.75	3.88	4.75	5.37
Mill Head Zinc Grade	%	5.12	9.17	11.83	8.00	8.90	7.20	5.70	5.30	5.42	6.82	6.57
Recovery Silver	%	85	89	93	93	92	89	91	90	89.2	89.9	91.4
Recovery Lead	%	68	76	82	79	82	78	82	81	79.4	79.2	83.7
Recovery Zinc	%	75	78	85	80	82	82	80	81	80.8	77.7	78.9
Silver Produced	koz	1,447	1,384	1,224	1,492	1,142	800	738	719	918	1,054	998
Lead Produced	'000 lbs	1,286	6,337	5,884	7,559	7,632	4,443	4,436	4,261	5,446	6,135	6,471
Zinc Produced	'000 lbs	1,691	9,501	10,703	10,038	10,324	7,397	5,583	6,065	7,894	8,425	7,489

## 16.1 Crushing and Grinding

Oversized run-of-mine ore (+200 millimetres) is fed to the Platosa 900-tonne-per-day jaw crusher and any ore greater than 400 millimetres is reduced by a rock breaker and fed to the jaw crusher at Platosa. The sized ore is then shipped in 38-tonne covered trucks to the Miguel Auza processing facility located 220 kilometers South of the mine. The ore is blended in the stockpile area using a wheel loader with a combination of metallurgical criteria to provide a more stable feed grade to the flotation circuit. Oversized ore reports to the crusher circuit at Miguel Auza, which is comprised of a jaw crusher, cone crusher and a double-deck grizzly. This crushing circuit reduces the ore to 80% passing 9.5 millimetres that feeds the 600-tonne capacity fine material bin.

From the 600-tonne bin, the crushed material is fed into a 650-tonne-per-day ball mill. The ball mill is 3.0 metres in diameter and 3.2 metres in length and reduces the material to 80% passing 45 micrometres. The ball mill operates in a closed circuit and uses cyclones to separate the fine particles and transfer the cyclone overflow to the lead conditioning tank ahead of the lead flotation circuit.

## 16.2 Lead Flotation

Ball mill product enters a lead conditioning tank where reagents (collector and frother) are added ahead of lead flotation (Figure 34). The following reagents are added to the lead circuit:

- Aero 3407: a selective lead/silver collector.
- Methyl isobutyl carbonyl (MIBC) Aero F-70: the foaming agent that is responsible for generating the bubbles that allow for the formation of stable froths.
- Zinc sulphate ( $\text{ZnSO}_4$ ) as a zinc depressant in the lead flotation circuit.

The concentrate from the lead rougher enters the two-stage lead cleaning circuit and the tails enter the lead scavenger, where the scavenger concentrate is pumped to the cleaning circuit and the tails enter the zinc flotation circuit. Concentrate from the second lead cleaner constitutes the final lead concentrate and is pumped into the lead thickener.

The lead concentrate contains approximately 80% of the lead and 81% of the silver from the mill feed.

## 16.3 Zinc Flotation

The tails from the lead scavenger cells enters the zinc conditioner tanks where lime and copper sulphate are added. It then enters the two-parallel zinc rougher banks where the tail is directed to the zinc scavenger and the rougher-concentrate is directed to the two-stage zinc cleaner banks. The concentrate of the second zinc cleaner constitutes the final zinc concentrate and it is pumped to the zinc thickener; the tail of the second cleaner joins the rougher-concentrate and the scavenger concentrate to feed the first cleaner to enrich the zinc grade and depress insoluble components such as silicates. The final tailings are coming from the zinc scavenger and is directed to the tailings management facility. The final zinc concentrate contains approximately 80% of the zinc and 9% of the silver from the mill feed.

The following reagents are used in the zinc circuit:

- Calcium oxide or lime (CaO): is added to the first zinc conditioning tanks and it is used to raise the pH in the zinc flotation necessary for the flotation of zinc, while also working as an iron suppressant in zinc
- Copper sulphate (CuSO<sub>4</sub>): is added to the second zinc conditioning tank to activate the zinc particles that were depressed upstream at the lead flotation circuit
- Sodium isopropyl xanthate (X-343): used as a zinc collector to let the zinc particles adhere to the bubbles created with the same frother added at the lead circuit

## 16.4 Filtration

The processing facility has a filtration system, warehouse, and concentrate drying pads for each of the concentrates produced. The concentrate enters the 88-m<sup>3</sup> thickener tank where the concentrate settles to the bottom and is pumped to the vacuum disk filters. Once filtered, each concentrate is transferred into the corresponding storage warehouse where a wheel loader spreads it on a drying pad. From the drying pad, the concentrate is transferred into a storage warehouse until it is loaded onto covered 38-tonne trucks for transportation to a concentrate sales facility.

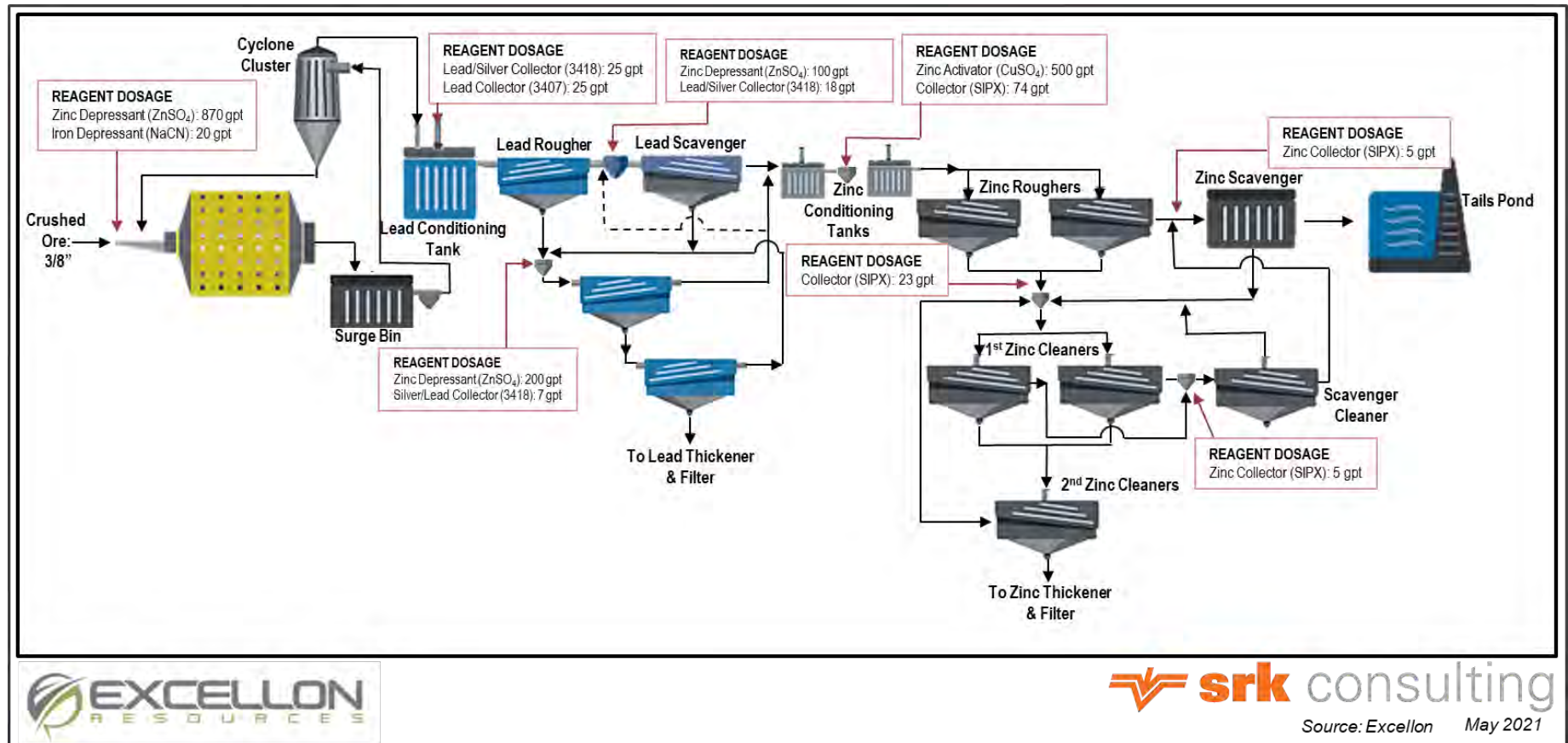


Figure 33: Flowsheet for Reagents Additions

## **16.5 Assay and Metallurgical Laboratories**

The Miguel Auza mill has a chemical laboratory to receive samples from the processing facility, mine samples, geology samples and mine truck samples. The laboratory has the capacity to test up to 75 samples per day and has the testing facilities for atomic absorption, granulometry, fire assays, and titration to test for gold, silver, lead, zinc, iron, copper, arsenic, antimony, cadmium, calcium, nickel, bismuth, lead oxide, and zinc oxide.

In addition to analyzing samples from the mineral processing facility, the laboratory also analyzes samples from the mine, including channel samples from the face, grab samples from stockpiles, and composite samples from mine trucks that are taken both at Platosa and Miguel Auza.

The metallurgical laboratory can perform flotation tests before any ore campaign to confirm the reagent dosage rates for Platosa or toll milling ore.

## 17 Project Infrastructure

Mined material from the Platosa Mine is processed at the Miguel Auza processing facility located 220 kilometres south of the mine. The infrastructure at the Platosa Mine and at the Miguel Auza site are described below.

### 17.1 Platosa Mine Site

The main infrastructure at the Platosa Mine is shown in Figure 35, which includes:

- Administration building: 3,000 m<sup>2</sup> two-story building that contains offices and warehouse.
- Surface diesel shop: 500 m<sup>2</sup> covered area on a concrete pad.
- Mine dry: 220 m<sup>2</sup> building with showers and changing area.
- Shift change/training building: 100 m<sup>2</sup> building with supervisor's office and training room.
- Kitchen: 54 m<sup>2</sup> building with kitchen facilities.
- Jaw crusher:
  - A 900-tonne-per-day surface jaw crusher and stockpile area comprising:
    - A 3,000-tonne capacity concrete-lined storage stockpile area for run-or-mine mineralized material.
    - A 40-inch by 26-inch Terex jaw crusher.
  - A 3,000-tonne capacity concrete-lined storage stockpile area for fine mineralized material.
- Compressor house: building that houses compressors.
- Surface transformers.
- Settling ponds and surface discharge ditches.
- Core facility: facility for prepping, logging, and storing diamond drill core.
- Fuel farm: 2,000-litre storage tank and fuelling station.

Potable water is supplied by the local utility provider (AWA supplier). A septic system is in place for black water treatment. Organic and non-organic waste is transported by Excellon to the municipal landfill or to the recycling depot.

There is no infrastructure for pumped water treatment at Platosa because the water is being pumped directly from the aquifer and does not come into contact with any sources of contamination before discharge.



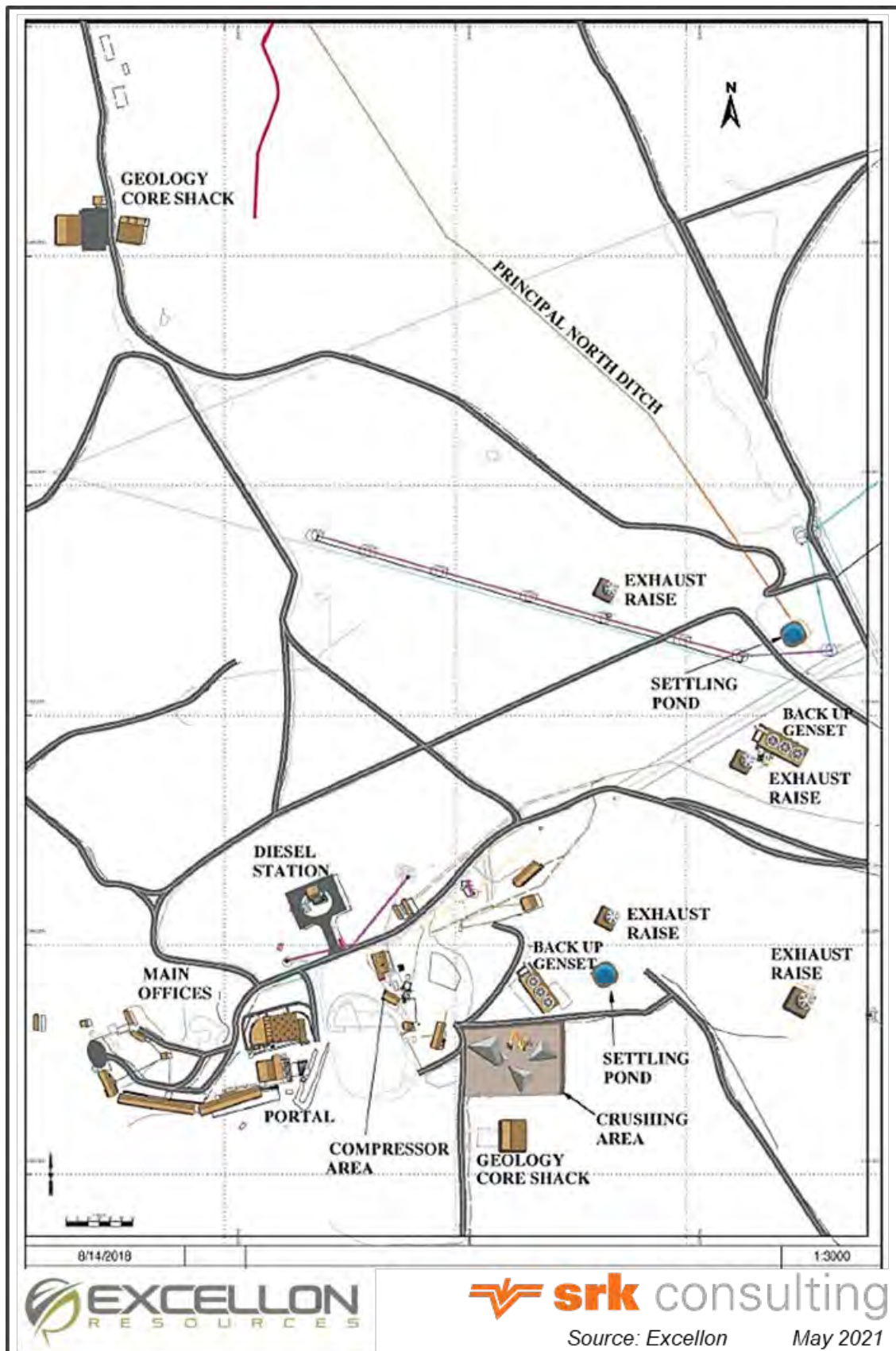


Figure 34: Map of Platosa Mine Surface Infrastructure

### 17.1.1 Site Access Roads

The Platosa Mine site is located less than two kilometres from highway 49 in Durango, Mexico. Access from the highway is by gravel road.

### 17.1.2 Product Loadout

The over 20-centimetre mineralized material is crushed in the primary crusher located at Platosa. All sized material is loaded into contractor-operated 38-tonne haul trucks with a wheel loader and is transported to Miguel Auza. The trucks are weighed on a Hercules truck scale in Platosa prior to shipping and re-weighed immediately upon arrival in Miguel Auza on an identical scale located on-site. Both scales are calibrated monthly.

### 17.1.3 Utilities

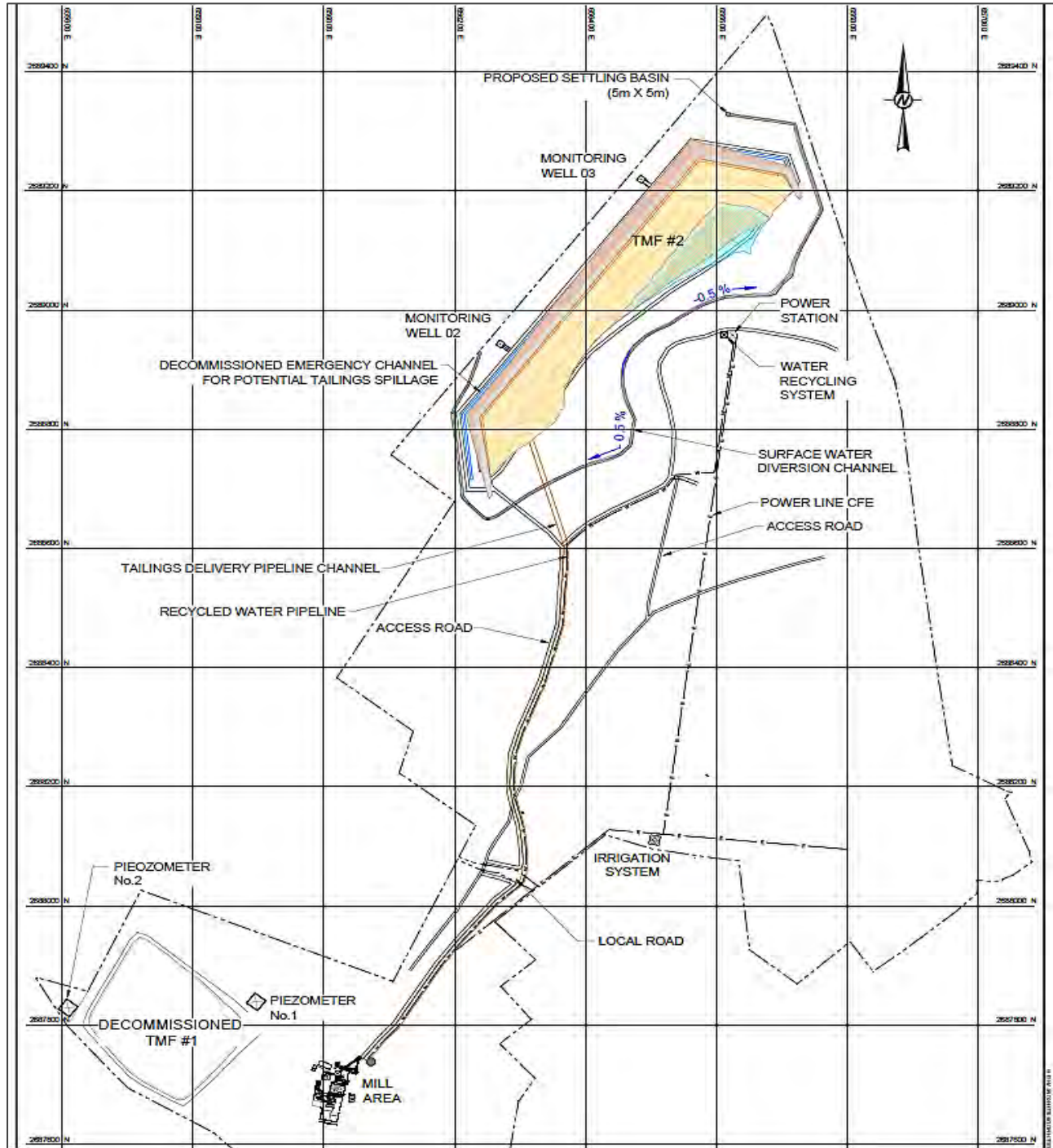
Platosa is located near public infrastructure. Two electrical transmission lines from the national electrical grid, CFE, who manages the transmission lines with power provided by Iberdrola. The site consumes 8.5 megawatts on average and has capacity for up to 10.2 megawatts.

## 17.2 Miguel Auza Site

Infrastructure at the Miguel Auza site is shown in Figure 36, which includes the following buildings and equipment:

- 650 tonne-per-day concentrator consisting of equipment and installations for crushing, grinding, flotation, and filtration with a regrind mill adding an additional 150 tonne-per-day of capacity.
- Assay laboratory with separate areas for sample preparation, drying, weighing, wet assaying, fire assaying, atomic absorption, and mill process testing.
- Metallurgy laboratory to conduct flotation test work.
- Electrical-mechanical workshop.
- Secured hazardous waste areas for the temporary storage of used oil, solids impregnated with petroleum products, batteries, empty cyanide containers, empty acid containers, and empty paint containers.
- A 5,000-tonne capacity stockpiling area for coarse mineralized material and blending area.
- A 450-tonne capacity lead concentrate storage area and a separate 150-tonne capacity lead concentrate storage area for toll milling.
- A 400-tonne capacity zinc concentrate storage area and a separate 100-tonne capacity zinc concentrate storage area for toll milling.
- Process water supply pumping and storage system.
- Surface facilities housing compressors and electrical substations.
- Reagent storage and preparation facilities.
- Two tailings management facilities (one in operation, the other decommissioned and in the post-closure stage (details are provided in Section 19.3)).

- Two-story administration building.
- Primary warehouse for the mill.
- Core shed.
- Site security offices.



**Figure 35: Plan of Miguel Auza Surface Infrastructure**

Source: Excellon

## 18 Market Studies and Contracts

Sales of concentrate are based on offtake agreements with third party buyers. Deleterious elements typically found in the concentrates are arsenic, cadmium, silica, and fluorine in the zinc; and arsenic and fluorine and, in some instances, antimony in the lead, with penalties incurred when the concentration of these elements exceeds specific agreed upon thresholds. Antimony, arsenic, and cadmium are assayed at the Miguel Auza laboratory and the concentrates are blended when necessary to minimize penalties; fluorine and silica are not assayed internally as the lab lacks the specialized equipment to test for these elements. The updated resource model factors in these deleterious elements so that areas of concern can be identified during the mine planning process and appropriate blending can be planned.

## 19 Environmental Studies, Permitting, and Social or Community Impact

Mining at the Platosa Mine is carried out under the permit Planta de beneficio y presa de jales de la Unidad La Platosa (Concentrator and tailings dam of the Platosa area), which was received in 2008. There are two TMFs at Miguel Auza. TMF #1 is located immediately northwest of the concentrator and TMF#2 will be constructed in five stages as capacity is required. The permit allowed the construction and operation of both a concentrator and tailings management facility (TMF) at Platosa. The permit expires in 2023, can be renewed, and requires Excellon to prepare and submit an annual report describing the mining-related activities, including any increases in production.

The environmental approval for Platosa is the Licencia Ambiental Unica (Consolidated Environmental Licence), issued in 2013 by SEMARNAT (Secretaria de Medio Ambiente y Recursos Naturales [Mexico's environment ministry]) to regulate emissions from the crushing plant and the storage and disposal of solid and hazardous waste. The permit has no expiration date and must be modified if there are significant changes to emissions or to the generation of hazardous waste.

The primary environmental aspect at Platosa is water discharge and management. Water from the underground workings is considered to be “mining water” under Mexican mining rules. Such discharge is regulated under general mining law and does not require a permit. The discharge water is pumped to a series of holding ponds before being routed by pipeline and open canals to neighbouring properties where it is dispersed by third parties.

A small area of mine-related waste is located on surface adjacent to the mine portal; there are no acid drainage-related concerns with this material because of lack of rainfall and the buffering effect of carbonate host rocks. Platosa holds additional operating permits that cover a range of matters and activities regulated under Mexican law; these are listed in Table 32.

Excellon conducts exploration drilling in the near-mine area to locate additional mineralization that could be exploited by the current Platosa workings. In addition, Excellon is conducting regional exploration in the Platosa area, outside of the current mine workings. Where it does not own the surface rights, Excellon has permission from surface rights holders to perform exploration activity. SEMARNAT regulates these activities and approves the location of drill sites. Flora from drill pads are inventoried, harvested and replanted in other areas.

Mineral concentration related activities at Miguel Auza were approved in the 2005 Approval of Environmental Impact Statement. The approval references other required permits and obliges Excellon to comply with the conditions of all associated permits for it to remain in force. Miguel Auza holds a number of additional operating permits that cover a range of matters and activities regulated under Mexican law (Table 32).

Table 32: Permits for the Platosa Mine

Permit Type	Area Included	Effective Date (M/D/Y)	Expiry Date (M/D/Y)	Comments
<b>Platosa</b>				
Resolution of Environmental Impact for TMF and concentrator	Platosa	9/12/2008	9/12/2023	In force
Unified Environmental Licence	Land disturbance at Platosa	2013	N/A	No expiration date: significant operational changes require modification
Annual Operation License	Platosa	6/30/2020	6/30/2021	This license is renewed annually
Operational Annual Cedula	Platosa	4/30/2020	4/30/2021	This license is renewed annually
	2017 Platosa	11/27/2017	11/27/2020	
Environmental Impact Preventive Report- Exploration	El Poeta Excelmex	7/11/2018	7/11/2020	Geological mapping activities only; permission required prior to drilling.
	Jaboncillo	1/28/2019	1/28/2022	
Solid waste	Solid waste deposition in Bermejillo municipal landfill	1/22/2021	6/30/2021	Permit renewed every six months
Hazardous waste	Approval for generation and storage of hazardous waste in Durango Mapimi municipality	2013	N/A	No expiry
Explosives	Purchase permit	12/15/2020	3/30/2021	Permit renewed quarterly
Explosives use	Explosive's magazine	12/15/2020	12/15/2021	Permit renewed annually
<b>Miguel Auza</b>				
Environmental Impact Statement/ Declaration of Environmental Impact	Concentrator, TMF #1, underground ramp	9/26/2005	9/1/2016	Renewal processed for an additional 10 years in 2016
	Concentrator, TMF #1, underground ramp	9/1/2016	9/1/2026	
	TMF #2	1/30/2017	9/30/2047	
Land use	Concentrator, TMF #1, underground ramp	9/9/2005	9/9/2006	No renewal required.
	TMF #2	2/14/2017	2/14/2018	No renewal required.
Unified Environmental License	Miguel Auza	10/25/2013	N/A	No expiration date: significant operational changes require modification
Operational Annual Cedula and Land Disturbance	Land disturbance at Miguel Auza	4/30/2020	4/30/2021	This license is renewed annually
Water use	Use of national water	8/16/1994	8/16/2024	The previous owner transferred to Excellon the right to use water (point name Tiro Negrillas
Water discharge	Disposal of used water	1/27/2018	1/27/2028	Renewed for 10 years
Air quality/emissions	LAU* (Processing and production) I	10/25/2013	Indeterminate	Updated in 2020
Air quality/emissions	LAU* (Processing and production) II	10/25/2020	Indeterminate	
	Hazardous waste at all areas of the operation	9/22/2011	No expiry	Only renewed in the case that a greater amount of hazardous waste is generated.
Solid and hazardous waste	Solid waste at all areas of the operations	11/10/2020	11/10/2021	Renew every year
	Special waste at all areas of the operation	11/10/2020	4/15/2021	Permit renewed every six months.
Mine waste	Mine waste, underground ramp, tailings	5/6/2016	No expiry	Only renewed in the case that a greater amount of mine waste is generated (58,000 ton/year)
Mine waste	Mine waste, underground ramp, tailings	9/1/2020	In process	Waiting for the authority response new permit for 198 ton/year)
Chemical storage and use	Laboratory, concentrator warehouse, office warehouse		N/A	General duty permit requiring compliance with SEMARNAT Nom 005
Cyanide storage	Warehouse and reagent preparation area	11/27/2016	N/A	No expiry
Explosives	Explosives magazine and purchase permit	12/31/2020	12/31/2021	No explosives on site. Annual permit was renewed in December 2020
Exploration				Geological mapping activities only; permission required prior to drilling.
Closure plan approval	Concentrator, TMF #1, underground ramp	4/22/2016	N/A	Closing activities were completed in 2008
	TMF #2	1/29/2018	N/A	Closure plan and cost estimate for TMF #2 submitted to SEMARNAT 01/29/18.
Financial assurance	TMF #2	3/30/2021	3/30/2022	Renew every year

\* LAU = Licencia Ambiental Única

Closure plans are in place for both the Platosa and Miguel Auza sites. Both plans meet the legal requirements imposed by Mexico and both were reviewed and updated in 2017. The closure plans for Miguel Auza were revaluated for internal purpose in March 2021.

Financial assurance is not required to be posted for Platosa; Miguel Auza is required to post annual bonding for TMF#2 over a 30-year period. To date, Miguel Auza has posted MXP2,022,050 with a further MXP712,750.50 to be posted for 2021 to 2022. If the TMF#2 is in operation for the entire 30 years, the total bonding obligation would be MXP39,078,887.08. The Company currently records a discounted asset retirement obligation of MXP3,635,464 to close TMF#2. Financial assurance is not required for the concentrator area, Miguel Auza ramp and TMF#1.

## **19.1 Environmental Monitoring**

### **19.1.1 Platosa Mine**

Environmental aspects at Platosa are largely overseen by PROFEPA (SEMARNAT's technical and enforcement branch) and CONAGUA. Inspections by both agencies take place on a periodic basis: CONAGUA for water-related matters and PROFEPA for a wider range of environmental issues.

Environmental monitoring at Platosa consists of monthly monitoring of water pumped from the underground wells. This monitoring is done by an independent third party at 18 monitoring locations:

- Three at the underground pumping stations.
- Seven on surface (three located in the Platosa ponds and four in the channel).
- Eight wells located in the areas surrounding the Platosa Mine (seven farmers' wells and one university well).

Water quality samples are collected by third parties, are submitted to an independent and qualified third-party laboratory, and are analyzed for a series of elements as required by Mexican regulations.

Air quality monitoring is performed annually by a third-party lab at four locations around the perimeter of the facilities at Platosa. The results meet the maximum limits for air quality in Mexico.

### **19.1.2 Miguel Auza**

Some of the permits held by Miguel Auza have ongoing monitoring requirements, primarily those permits that address specific environmental media. The water-use permit requires that water be controlled and that reports be provided to the regulatory agency on a quarterly basis. The water discharge permit requires that discharge quantities be controlled, and that discharge water quality be monitored quarterly. The operation certificate requires that Miguel Auza prepare and submit an annual report that inventories emissions to air and the quantities of hazardous waste that are generated.



Miguel Auza has made several improvements to reduce the exposure to workplace hazards and to reduce emissions to the environment. The latest improvement at the end of 2020 was the installation of the Lead Collector in the Chemical Laboratory area, which ensures zero air pollution by lead in that area.

In addition, between 2019 and 2021, the proper management of the waste produced at the plant continued: common solid waste, special handling waste, and hazardous waste were correctly disposed in the authorized local treatment storage and disposal facilities.

## 19.2 Social Context

Platosa is located approximately 5 kilometres north of the town of Bermejillo, on the slopes of the Sierra Bermejillo. The mine is bordered to the west by a rugged upland and to the east by private agricultural lands. Bermejillo is the closest urban settlement and there are a number of families living on agricultural lands in the mine area. Excellon is an important contributor to the regional economy, providing a significant tax base and employment to many people who live in and around Bermejillo and in the Torreón area farther south. Platosa is also surrounded by lands whose surface rights are held by several ejidal groups. Excellon has approval of several ejidos (a tract of land held in common by the inhabitants of a Mexican village) to conduct early stage exploration on their lands.

In general, Excellon maintains respectful and productive two-way relationships with local ejidal groups and with residents and local groups in Bermejillo. Excellon has a significant presence in Bermejillo and contributes to regional community needs in the areas of health and education. Platosa has a full-time manager of community relations and development. Excellon reports that community-related grievances are rare given the relatively isolated nature and small footprint of the mine; a dedicated grievance mechanism has been implemented.

The concentrator facilities at Miguel Auza are located on the western boundary of the town of Miguel Auza. TMF#1 is located west of the concentrator and TMF#2 is located an additional kilometre east, further from the town. Like at Platosa, Excellon has excellent relationships with the residents and town government and employs many residents. Excellon has not reported any community-related grievances and has implemented a dedicated grievance mechanism. Historically, Excellon has concentrated its philanthropic activities in and around Bermejillo, rather than at Miguel Auza, although more community-related activity is planned in and around Miguel Auza. To support these activities, a community relations coordinator, who will be based in Miguel Auza, was hired in March 2018.

## 19.3 Tailings Management

TMF #1 was decommissioned in October 2017 after having reached its final crest height of 6.52 metres and design capacity of approximately 313,000 m<sup>3</sup> (approximately 520,000 tonnes) of tailings. The closure activities, such as the dismantling of infrastructure and the drying of the tailings, were carried out in 2018. The tailings basin was covered with soil and native species with the objective of preventing erosion and dispersion of particles into the atmosphere.

Since 2018, different types of environmental monitoring have been conducted. The results show that insignificant fugitive dust emissions have been found in the area, and that the water quality has kept its natural characteristics, meeting the Mexican legal requirement for water quality. Supervision and monitoring of the physical stability of the embankment have been also performed with good results. TMF#1 will not have any surface water discharge.

An Environmental Impact Assessment for the construction and operation of a second TMF (TMF#2), located on land owned by Excellon approximately 1 kilometre north of the Miguel Auza concentrator, was approved by SEMARNAT by authorization DFZ152-200/17/0149 on January 31, 2017. The authorization has a term of 30 years and eight months.

Construction of the Stage 1 starter dam for TMF#2 was largely completed by the end of the third quarter of 2017 and consists of a 6 metres high homogeneous dam constructed with low permeability material. Tailings from the concentrator were first routed to TMF#2 in the fourth quarter of 2017. Stage 1 was designed to store approximately 207,000 tonnes of tailings.

The TMF#2 Stage 2 dam raise has been designed by engineers from a recognized, international consulting firm and construction was completed during the fourth quarter of 2020. The Stage 2 design incorporates evolving international best practice and is a 2.8 metres downstream dam raise that includes an upstream shell constructed with low permeability material and a downstream shell constructed with coarser grained material. A filter zone was constructed between the low permeability zone and downstream shell. There is also a filter blanket beneath the downstream shell and a toe drain. The consulting firm also provided construction quality assurance (QA) oversight services for Stage 2. The TMF#2 Phase 2 raise was commissioned in the fourth quarter 2020 and will provide storage for an additional 189,000 tonnes of tailings.

The final approved design capacity of TMF#2 is anticipated to be approximately 1.3 million tonnes of tailings (or 1.6 million tonnes of ore), representing approximately 12 years of production at an average nominal rate of 300 tonnes of tailings per day (or 370 tonnes of ore per day). The final design crest height of the embankment is 16 metres. A visual inspection and review of both TMF#1 and TMF#2 and tailings management practices was conducted by an independent third-party consultant during the first quarter of 2019.

## 19.4 Closure

Closure plans are in place for both the Platosa and Miguel Auza sites; both plans meet the legal requirements imposed by Mexico and were reviewed and updated in December 2017 and March 2021 by third-party consultants with local experience in mine closure.

Closure at both sites will meet all applicable Mexican legal requirements and the requirements of Excellon's closure standard, which contains requirements that exceed local legal requirements. The primary activities will consist of the following steps:

- Demolition of facilities.
- Disposal of solid and hazardous wastes according to legal requirements.

- Regrading and stabilization of land.
- Proper closure of all portals, ventilation raises.
- Re-vegetation.
- Monitoring of water and air quality and the stability of TMFs for 5 years post-closure

Locally derived soils will be used to cover both TMF#1 and TMF#2 to prevent the generation of fugitive dust and to promote sustainable revegetation.

Financial assurance is not required to be posted for Platosa; Miguel Auza is required to post annual bonding for TMF#2 over a 30-year period. To date, Miguel Auza has posted MXP2,022,050 with a further MXP712,750.50 to be posted for 2021 to 2022. If the TMF#2 is in operation for the entire 30 years, the total bonding obligation would be MXP39,078,887.08. The Company currently records a discounted asset retirement obligation of MXP3,635,464 to close TMF#2. Financial assurance is not required for the concentrator area, Miguel Auza ramp and TMF#1.

## 20 Capital and Operating Costs

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

### 20.1 Capital Costs

The actual capital expenditures to date on the Platosa Mine are summarized in Table 33. Mine and mill capital costs were mainly attributed to upgrades to the mine dewatering infrastructure.

**Table 33: Historical Capital Costs – Platosa Mine**

(In US\$M)	2017	2018	2019	2020	2021 Fcst.	Total
Mine Dewatering Project Phase 2	3.6	2.5	3.0	2.5	1.8	13.4
Mine Equipment & Infrastructure	1.6	1.9	2.0	2.6	3.2	11.2
Mill Equipment & Infrastructure	0.5	0.2	0.4	2.0	0.6	3.7
<b>Total*</b>	<b>5.6</b>	<b>4.6</b>	<b>5.3</b>	<b>7.0</b>	<b>5.7</b>	<b>28.3</b>

\* Totals may not add up due to decimal rounding.

To continue mine dewatering, additional capital expenditures (CAPEX) will be deployed to excavate well stations, drill deeper wells, and move pumps from higher elevations to lower elevations as mining progresses.

### 20.2 Operating Costs

The operating costs were estimated by processes/activities that have both fixed (approximately 60%) and variable (40%) components. The main fixed cost components considered are labour, electricity (at the mine site only: energy supply to the dewatering system), and site general and administrative expenses.

Variable components are affected by cost drivers such as production tonnage, development advance, drawdown rate of water table, electricity usage (at the mill site), and fuel consumption of mobile equipment based on forecasted equipment hours. Overall average annual operating costs are projected at US\$247 per tonne at a nominal 7,000 tonnes per month.

The mining cost includes all labour, operating consumables and supplies, equipment maintenance, fuel, electricity, transportation, and administrative expenses related to complete mining-related

processes/activities, mining tax and royalties less exploration diamond drilling and capital excavations and construction.

The milling cost includes all labour, operating consumables and supplies equipment maintenance, fuel, electricity, transportation, and administrative fees related to complete milling-related processes/activities, mining tax and royalties.

Historical and projected operating cash cost per tonne are shown in Table 34. Projected cash operating unit costs were prepared in detail using the same procedures and methodology utilized to prepare the Excellon annual operating budget. Projected cost is based on recent actual results and reflect the projected annual primary and secondary development and stope mining quantities included in the mine plan.

**Table 34: Cash Operating Cost and Estimated Cost for Mine Plan**

	2015	2016	2017	2018	2019	2020
<b>Mining Cash Cost (US\$/tonne)*</b>	<b>213</b>	<b>209</b>	<b>209</b>	<b>195</b>	<b>239</b>	<b>236</b>
Personnel	61	53	46	36	57	59
Electricity	48	41	67	74	85	77
Consumables	51	56	33	24	34	27
Other (incl. hauling costs & royalties) †	32	39	44	44	38	39
Administrative	22	20	19	18	25	34
<b>Milling Cash Cost (US\$/tonne)¹</b>	<b>61</b>	<b>42</b>	<b>57</b>	<b>46</b>	<b>60</b>	<b>63</b>
Personnel	21	18	16	13	16	17
Electricity	7	5	7	8	10	8
Consumables	12	12	11	12	12	15
Other (incl. hauling costs & royalties) †	14	1	17	5	11	17
Administrative	8	5	6	8	12	6
<b>Total Operating Cash Cost (US\$/tonne)*</b>	<b>275</b>	<b>250</b>	<b>266</b>	<b>242</b>	<b>300</b>	<b>299**</b>

\* Totals may not add up due to decimal rounding.

† Includes inventory adjustments that fluctuate period to period.

\*\* Includes costs associated with the temporary shutdown of mining activities at the Platosa Mine from April 2, 2020 to June 1, 2020 in accordance with the Mexican presidential order to mitigate the spread of COVID-19. The cost impact of the temporary suspension is estimated at \$1.9 million or \$30/tonne.

## 21 Economic Analysis

Excellon is a producing issuer and the Platosa Mine is currently in production. All financial data are publicly disclosed and are available on the company's website or through SEDAR.

SRK, through reviewing the mining plan and operating and capital cost estimation, confirms that the mine plan described herein provides a positive cash flow given the technical and economic conditions at the time of writing this technical report. This technical report is preliminary in nature and includes technical and economic assumptions that are considered too speculative to have economic considerations applied to them for the Mineral Resources to be categorized as Mineral Reserves, and there is no certainty that the mine plan will be realized. Due to the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

## 22 Adjacent Properties

There are no adjacent properties that are considered relevant to this technical report.



## **23 Other Relevant Data and Information**

There is no other relevant data available about the Platosa Mine.

## 24 Interpretation and Conclusions

The Platosa Mine targets polymetallic (silver, lead, and zinc) mineralization occurring as shallow to steeply dipping bodies of massive carbonate replacement deposits or mantos, hosted mainly by Mesozoic heterolithic fragmental limestone in the Sierra Bermejillo, a northwest-trending anticline-syncline pair. The main silver-, lead- and zinc-bearing minerals are galena, sphalerite, acanthite, and lesser proustite. The mantos dip in accordance with the stratigraphy towards the east where a series of late extensional features extend the mineralization to depths ranging from 60 metres on the west side of the mine, and approximately 320 metres on the east.

A total of 1,794 core drillholes (398,881 metres) were drilled by Apex and Excellon on the Platosa Mine between 1999 and March 2021. The mineral resource model considers 1,373 core drillholes (252,456 metres) that were directly used in the estimation.

In the opinion of SRK, the drilling strategy and procedures used by Excellon conform to generally accepted industry best practices. The drilling information is sufficiently reliable, and the drilling pattern is sufficiently dense to interpret with confidence the geometry and the boundaries of the polymetallic (silver, lead and zinc) mineralization. All core sampling was conducted by appropriately qualified personnel under the direct supervision of the project geologist.

The sampling preparation, security and analytical procedures used by Excellon are consistent with generally accepted industry best practices and are, therefore, adequate. The review of the analytical quality control data produced by Excellon suggest that the analytical results are sufficiently reliable for the purpose of mineral resource estimation. SRK recommends continued diligence in monitoring the performances of standard reference materials and implementing corrective action as required. Considering the variable performance of in-house blank material used for lead and zinc, it is recommended that a certified blank material be introduced.

SRK reviewed the geological solids constructed by Excellon, which were modelled as vein-type wireframes interpolated using both the lithology and mineralization logs. SRK constructed a block model using a conventional geostatistical block modeling approach constrained by the domains. The block model was populated with silver, lead, zinc, and gold values estimated by ordinary kriging information from capped composited data and estimation parameters derived from variography. After verification and validation, block estimates were classified considering the drillhole spacing, geologic confidence and continuity of category.

SRK considers that there are no Measured blocks within the Platosa Mine. All block estimates within the mineralized mantos below and to the east of the current mining front were classified as Indicated mineral resources. Potentially recoverable pillars and accessible unmined areas in the upper portion of the mine have been classified as Inferred mineral resources in consideration of the engineering work required to confirm their potential extraction.

SRK is not aware of any significant risks and uncertainties that could be expected to affect the reliability or confidence in the early stage exploration information discussed herein. SRK notes that the mineral resources occupy only a small footprint of the very large Platosa mine property.

## 25 Recommendations

The geological setting, character of the polymetallic mineralization and the exploration results to date are of sufficient merit to justify continued exploration and technical study expenditures to delineate additional mineral resources that can potentially be used to extend the life of mine.

Since 2018, underground exploration has increased definition of the mantos ahead of production that are amenable to underground mining. Excellon should continue with the relevant recommendations suggested in 2018, including continued tightly spaced definition drilling and regional exploration.

Applying underground stope shapes, face sampling data and face mapping, SRK recommends identifying zones of remnant mineralization behind the current production front which are currently excluded from the Mineral Resource Statement that may be amenable to future extraction.

In early 2020, the Platosa Mine transitioned the mining method from cut and fill/drift and fill to an overhand cut and bench method to improve the overall mining cycle efficiency. SRK recommends continuing to dewater ahead of production to continue producing ore from dry stopes thereby lowering costs and increasing safety, productivity, and efficiency, and allowing for pillarless and cut and bench mining to continue.

A proposed exploration work program includes the following:

- Infill, definition and step-out drilling within and around mantos ahead of the production, with the continued aim to reduce the drill spacing ahead of mine workings to 10 metres to 15 metres.
- Continued regional exploration of the multiple targets that exist as part of the greater land package.
- Geological and geophysical studies to improve the overall understanding of structure, geochemistry, and geophysical response.
- Continued target generation and systematic assessment using field geological and geophysical techniques to be followed up by drilling.
- Mineralogical study to refine understanding of chemical processes and applications to metallurgy.
- Mineral resource model update considering new drilling and the additional of potential remnant material
- Update the life of mine plan based on the latest resource block model and economic conditions.

SRK supports Excellon's proposed core drilling program, which includes approximately 30,000 metres of drilling with the following objectives:

- Delineate the current known mantos bodies through infill and definition drilling.

- Step out drilling focused on the extension exploration of known mineralized mantos bodies and trends, as indicated by recent drilling.
- Regional diamond drilling focused on known geophysical targets, such as PDN, to corroborate elevated surficial grab samples collected through geological mapping and reconnaissance activities.
- Diamond drilling of the 1.0-kilometre-long Jaboncillo trend to continue testing anomalous silver and base metal values at depth. Previous drilling has identified high lead/zinc ratios, which may indicate a nearby source of mineralization, which is believed by Excellon to be analogous to the mineralization at Platosa.

The total cost of the recommended work program is estimated at C\$7,480,000 (Table 35).

**Table 35: Estimated Cost for the Exploration Program Proposed for the Platosa Mine**

<b>Description</b>	<b>Units</b>	<b>Total Cost (C\$)</b>
Delineation drilling (infill and definition; 2021-2023)	15,000	1,725,000
Diamond drilling (step-out)	10,000	1,400,000
Diamond drilling (regional)	10,000	1,400,000
Diamond drilling (Jaboncillo)	15,000	2,100,000
<b>Subtotal</b>		<b>6,625,000</b>
Geological studies		50,000
Geophysical studies		50,000
<b>Subtotal</b>		<b>100,000</b>
Update mineral resource model*		70,000
Mineralogy studies		5,000
<b>Subtotal</b>		<b>75,000</b>
<b>Total</b>		<b>6,800,000</b>
Contingency (~10%)		680,000
<b>Total</b>		<b>7,480,000</b>

\* Including QAQC review

SRK is unaware of any other significant factors and risks that may affect access, title, or the right or ability to perform the exploration work recommended for the Platosa Mine.

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# **APPENDIX A**

## **Legal Title Opinion**





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May 5, 2021

Excellon Resources Inc.  
10 King Street East, Suite 200  
Toronto, ON M5C 1C3

**MINING CONCESSIONS  
LEGAL TITLE REPORT**

**Dear Sirs:**

At the request of Excellon Resources Inc., ("**Excellon**") this law firm conducted a due diligence over the mining concessions comprising in "Platosa" mining project located in the Municipality of Mapimi, State of Durango, Mexico (**the "Mining Concessions"**), owned by Minera Excellon de México, S.A. de C.V. ("**MEM**"), which is a Mexican subsidiary of Excellon.

Please be informed that last March 26, 2020, the head officer of the Economy Ministry made the official announcement suspending all administrative activities depending from such Ministry, including those pertaining to the Mexican Mines Bureau ("**MMB**"); the foregoing deriving from the pandemic generated by virus COVID-19; as of the date hereof, the MMB has not resumed in full its activities, as a matter of fact due to new restrictions in Mexico City, the MMB working remotely from its officers and employees homes, therefore access to documents and data is limited.

**Qualifications.**

This legal title report (**the "Title Report"**) was prepared according to the documents and information provided by MMB's officers and Excellon's officers.

- (i) **Qualifications.** José Enrique Rodríguez del Bosque, author of this Title Report, is licensed to practice Law in Mexico in accordance with the applicable provisions of the Legal Profession Act (Ley General de Profesiones) which regulates the professional activities that need title and cedula for its exercise. The cedula of the author of this Title Report is 1180722.



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- (ii) We express no opinion as to any laws other than the laws of Mexico.
- (iii) Applicable Legal Framework and applicable regulatory bodies. The main purpose of the mining legislation is to regulate, among other issues, all legal aspects related to the mining concessions through which their holders have the right to explore and exploit all minerals and substances specified in the Mining Law and its Regulations (jointly the "**Mining Law**").

The Federal Duties Law (*Ley Federal de Derechos*) establishes relevant duties, taxes and contributions that shall be paid for the use of public domain assets of Mexico, as well as for receiving services provided by the Mexican State. In accordance with Mexican applicable provisions, a mining concession is a public domain asset; therefore, the Federal Duties Law establishes the duties (the "mining duties") that must be paid by their holders and/or operators for its use.

The application of the Mining Law is the responsibility of the Federal Executive (President's Office) through the Ministry of Economy.

The regulatory body in Mexico that administers the Mining Law is the MMB.

The recorder of information where acts over Mexican mining concessions are recorded is the Registry, which depends from the MMB.

The regulatory body in Mexico that administers the Federal Duties Law is the Mexican Tax Administration System.

**(iv) Documentation consulted:**

In connection with this Title Report, we have examined the following documents available at the MMB and Registry:

- a) Copies of the Mining Title Concessions issued by the MMB (*Títulos de Concesión Minera*);
- b) Copies of the liens and/or agreements affecting the Mining Concessions described in this Title Report;
- c) Copies of the payments of semi-annual mining fees for the last five years; and
- d) Copies of the annual work assessment reports for the last five periods.



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### **CONCLUSIONS**

Based on the foregoing, as of the date hereof, we are of the opinion that:

- a) MEM is the sole current legal and beneficial holder of the Mining Concessions described above and the rights deriving therefrom and has good marketable title;
- b) The Mining Concessions are valid and existing, and MEM is able to conduct exploration and exploitation works thereon as provided in the relevant titles in accordance with the applicable laws;
- c) The Mining Concessions are in compliance with respect to the mining duties payments, and there is no evidence of any official requirement for lack of payment issued by the MMB as of the date of this Opinion;
- d) All the Mining Concessions have filed the relevant work assessment reports (Informes para comprobar la ejecución de las obras y trabajos de exploración o de explotación) for the past five years. We only verified the past five years since the statute of limitations (prescripción) for the reviewing of the work assessment reports expires in 5 (five) years. However, we are not aware if the mining works evidencing reports were filled properly and if the information provided in those reports is authentic;
- e) MEM submitted before MMB the corresponding applications to reduce the surface area of the mining concessions "El Poeta 5", title 210989; "Excelmex III", title 227589; "Excelmex IV Fracc 1", 227595; "Excelmex VII R1", title 244953; "Reducción Venux", title 245949 and "Venus 3", title 223295, which are currently in the process to be issued the new mining certificates of reduction;
- f) At the MMB, there are no records or evidence of the existence of adverse claims or challenges against the ownership of or title to the Mining Concessions and/or any rights thereunder;
- g) There are no records at the MMB that all or part of the Mining Concessions have been taken, cancelled or expropriated by any government authority; and
- h) To the best of our knowledge, based on the cartography reviewed, which is available at the MMB, the Mining Concessions are not located in protected natural areas in terms of the General Law of Ecological Balance and Environmental Protection, allowing the exploration and/or exploitation works in the Mining Concessions.





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In conducting our examination and rendering this legal Title Report, we have assumed, without independently verifying such assumptions: (i) the genuineness of the signatures on all the documents examined by us, and (ii) the authenticity of all documents reviewed.

The results of the due diligence conducted by this Firm are the following:

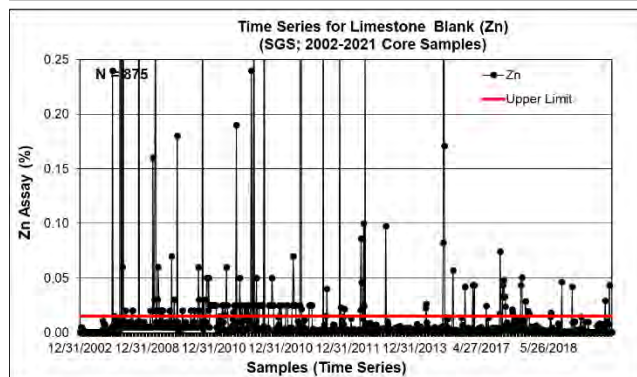
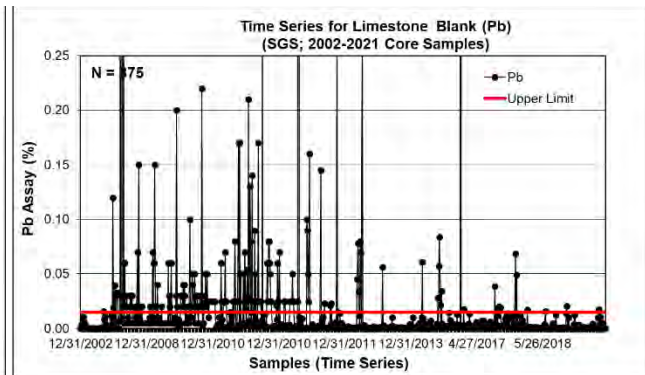
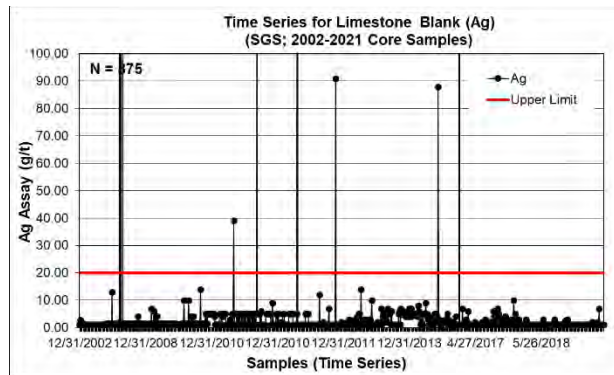
## **APPENDIX B**

### **Analytical Quality Control Data and Relative Precision Charts**

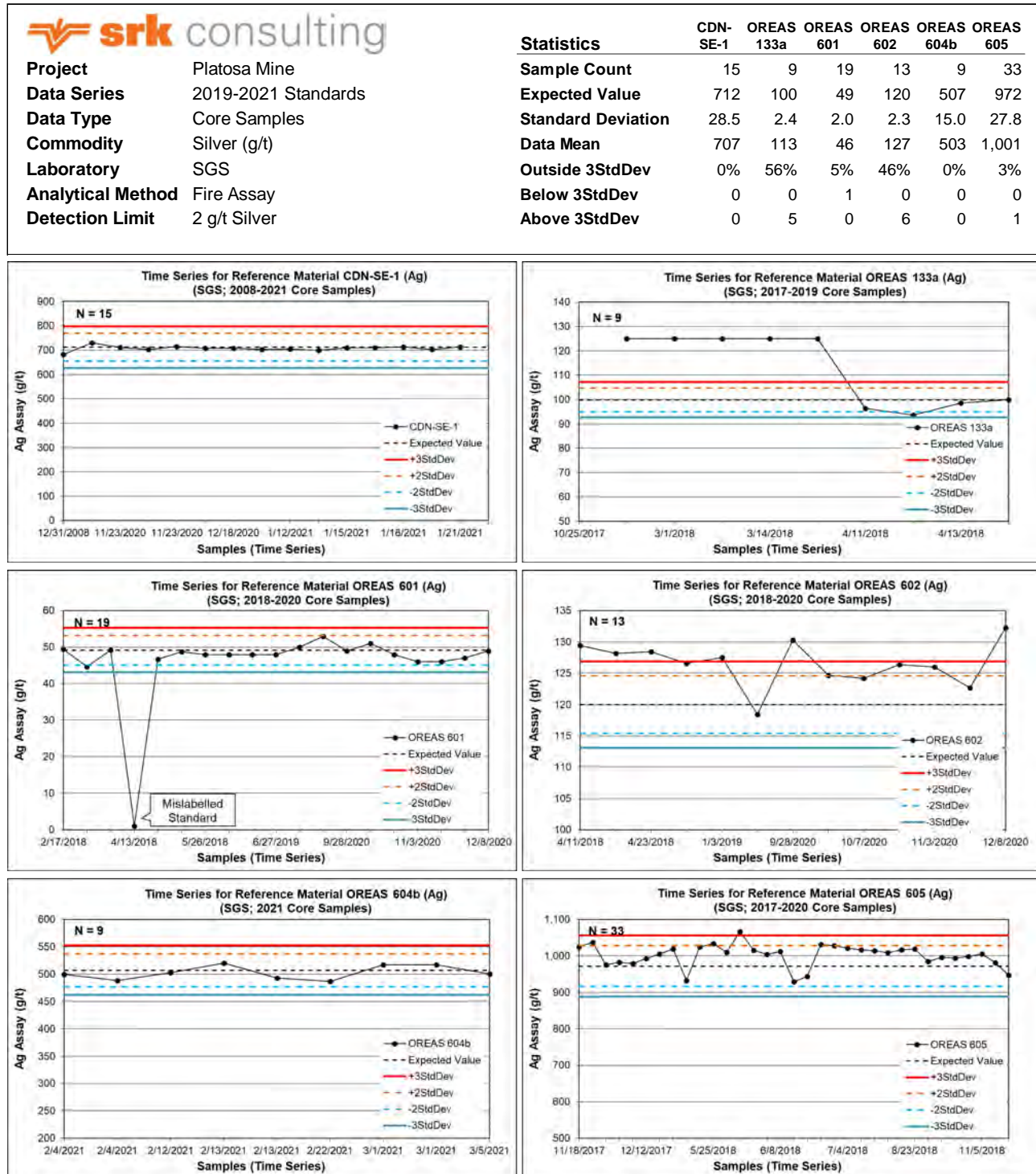
Time Series Plots for Blank Samples Assayed by SGS, Durango during Between 2002 and 2021



		Zone Centrale			
		Statistics	Ag	Pb	Zn
Project	Platosa Mine	Sample Count	875	875	875
Data Series	2002-2021	Expected Value	2.000	0.002	0.002
Data Type	Core Samples	Standard Deviation	-	-	-
Commodity	Ag (g/t), Pb (%), Zn (%)	Data Mean	7.141	0.053	0.073
Laboratory	SGS	Upper Limit (10xDL)	1%	21%	18%
Analytical Method	ICP				
Detection Limit	2 g/t Ag; 2ppm Pb; 1ppm Zn				



## Time Series Plots for Certified Reference Material Samples Assayed by SGS, Durango Between 2008 and 2021



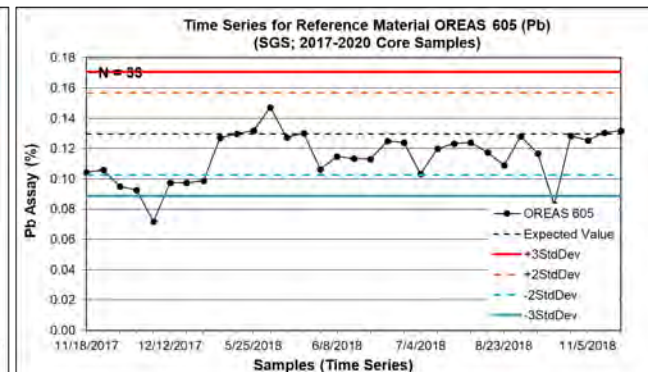
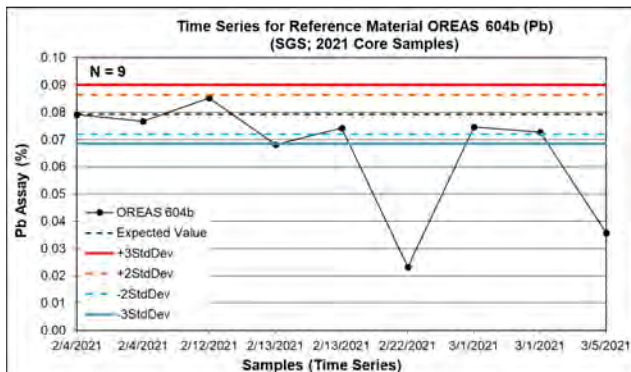
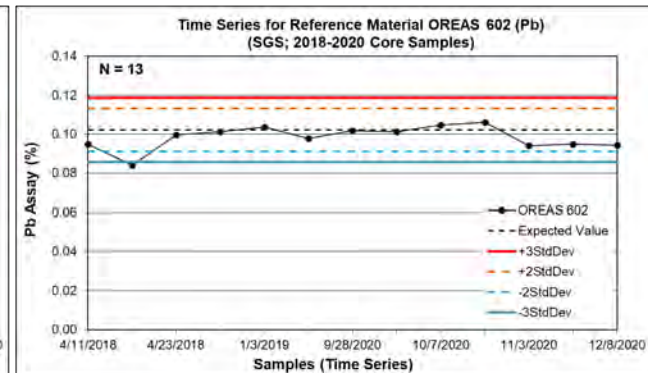
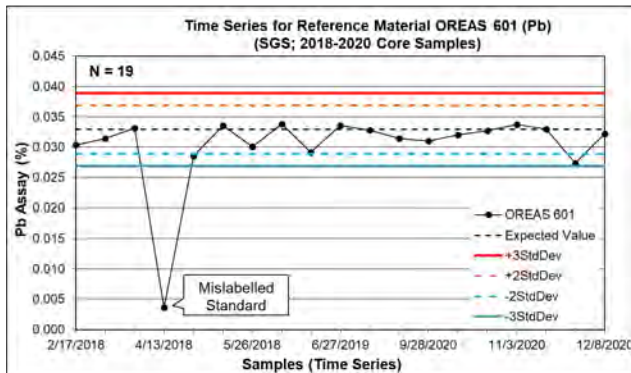
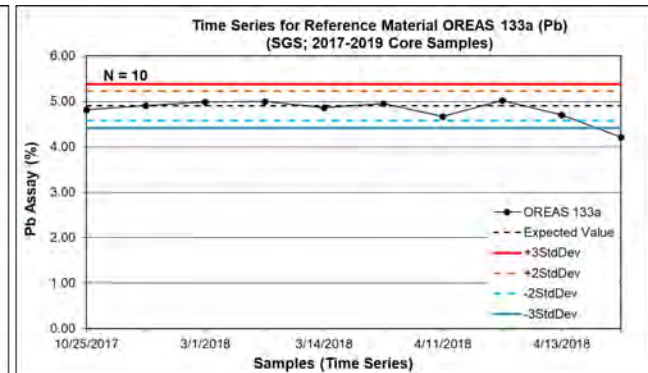
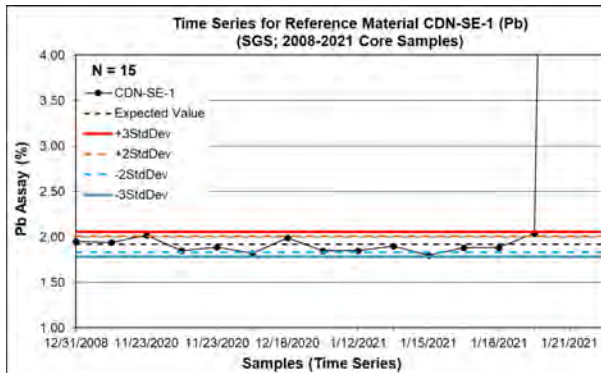


# Time Series Plots for Certified Reference Material Samples Assayed by SGS, Durango Between 2008 and 2021

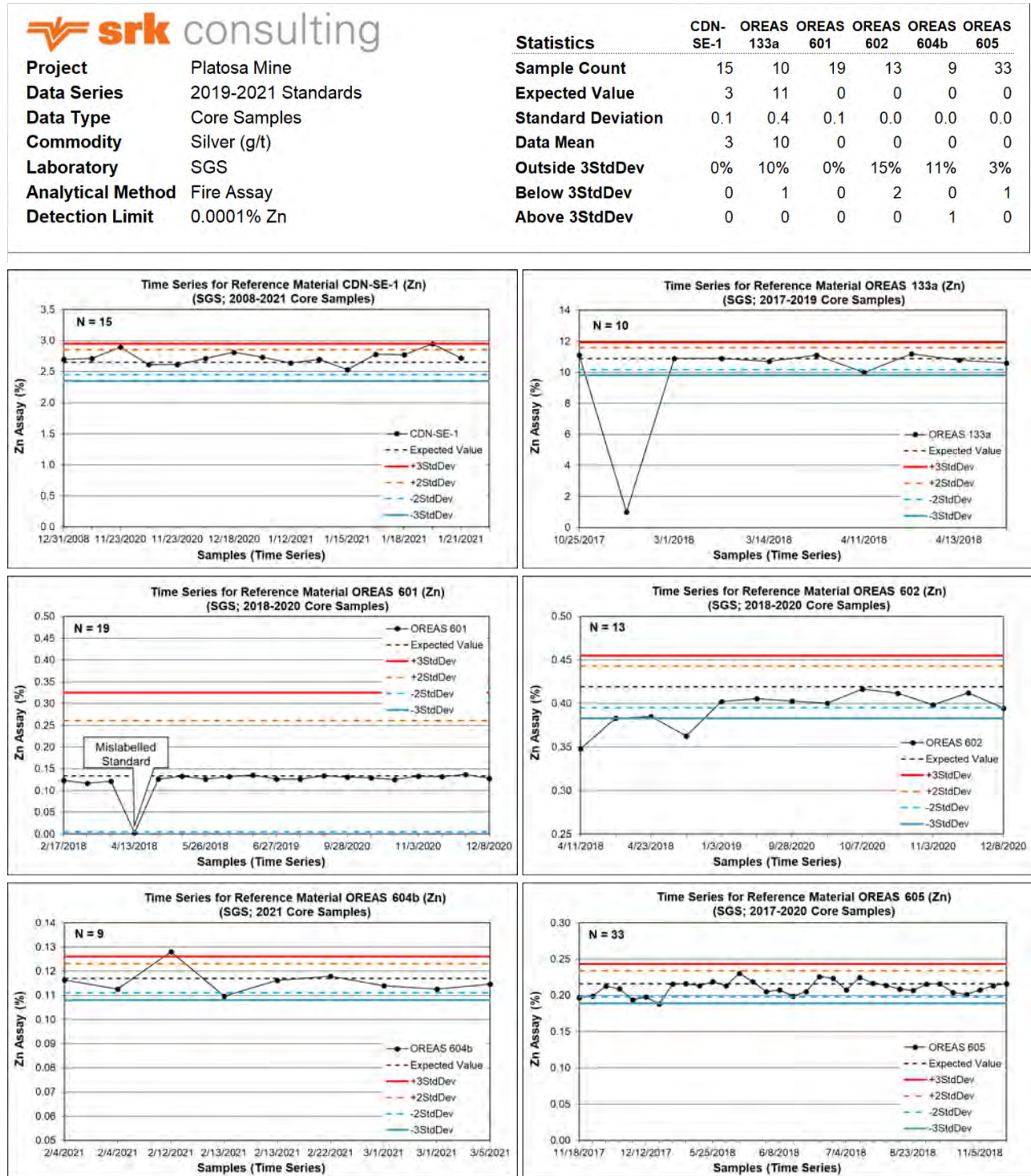


**Project** Platosa Mine  
**Data Series** 2019-2021 Standards  
**Data Type** Core Samples  
**Commodity** Silver (g/t)  
**Laboratory** SGS  
**Analytical Method** Fire Assay  
**Detection Limit** 0.0001% Lead

Statistics	CDN- SE-1	OREAS 133a	OREAS 601	OREAS 602	OREAS 604b	OREAS 605
Sample Count	15	10	19	13	9	33
Expected Value	2	5	0	0	0	0
Standard Deviation	0.0	0.2	0.0	0.0	0.0	0.0
Data Mean	3	5	0	0	0	0
Outside 3StdDev	7%	10%	5%	8%	33%	6%
Below 3StdDev	0	1	1	1	3	2
Above 3StdDev	1	0	0	0	0	0




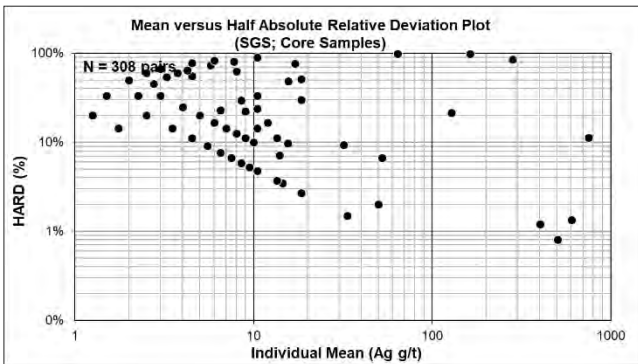
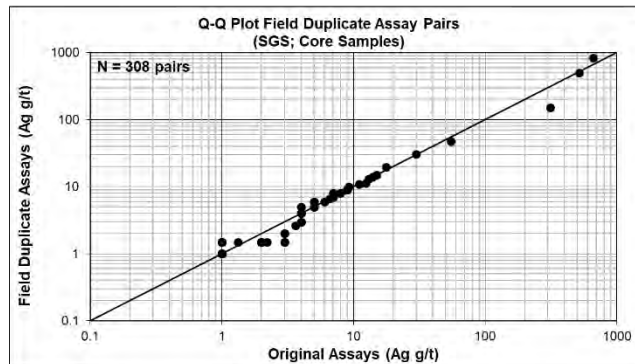
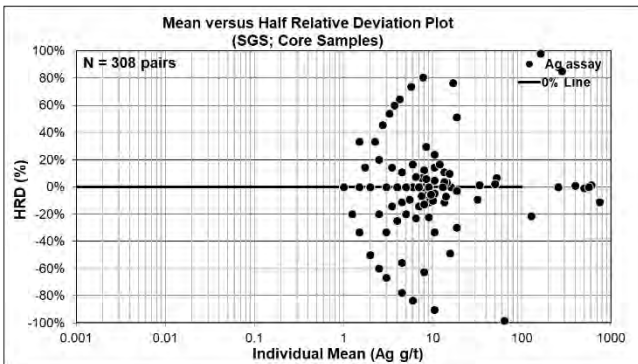
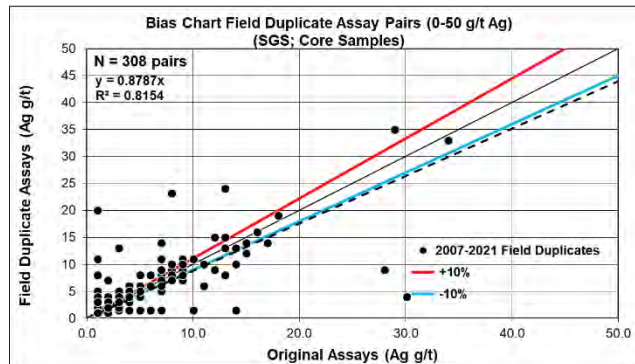
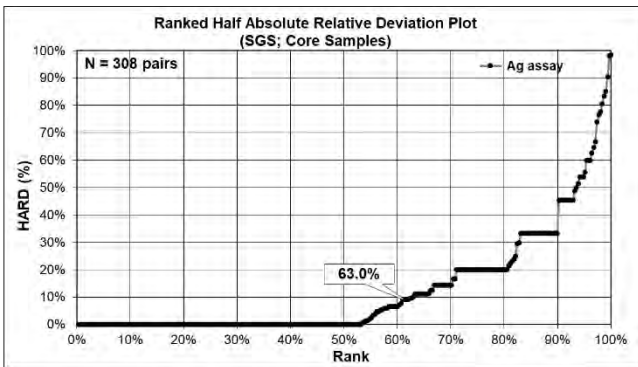
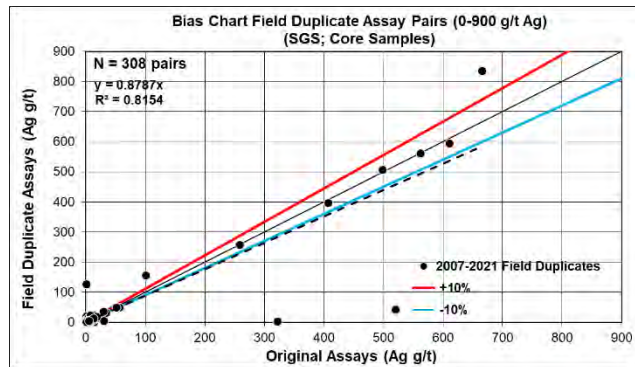
## Time Series Plots for Certified Reference Material Samples Assayed by SGS, Durango Between 2008 and 2021



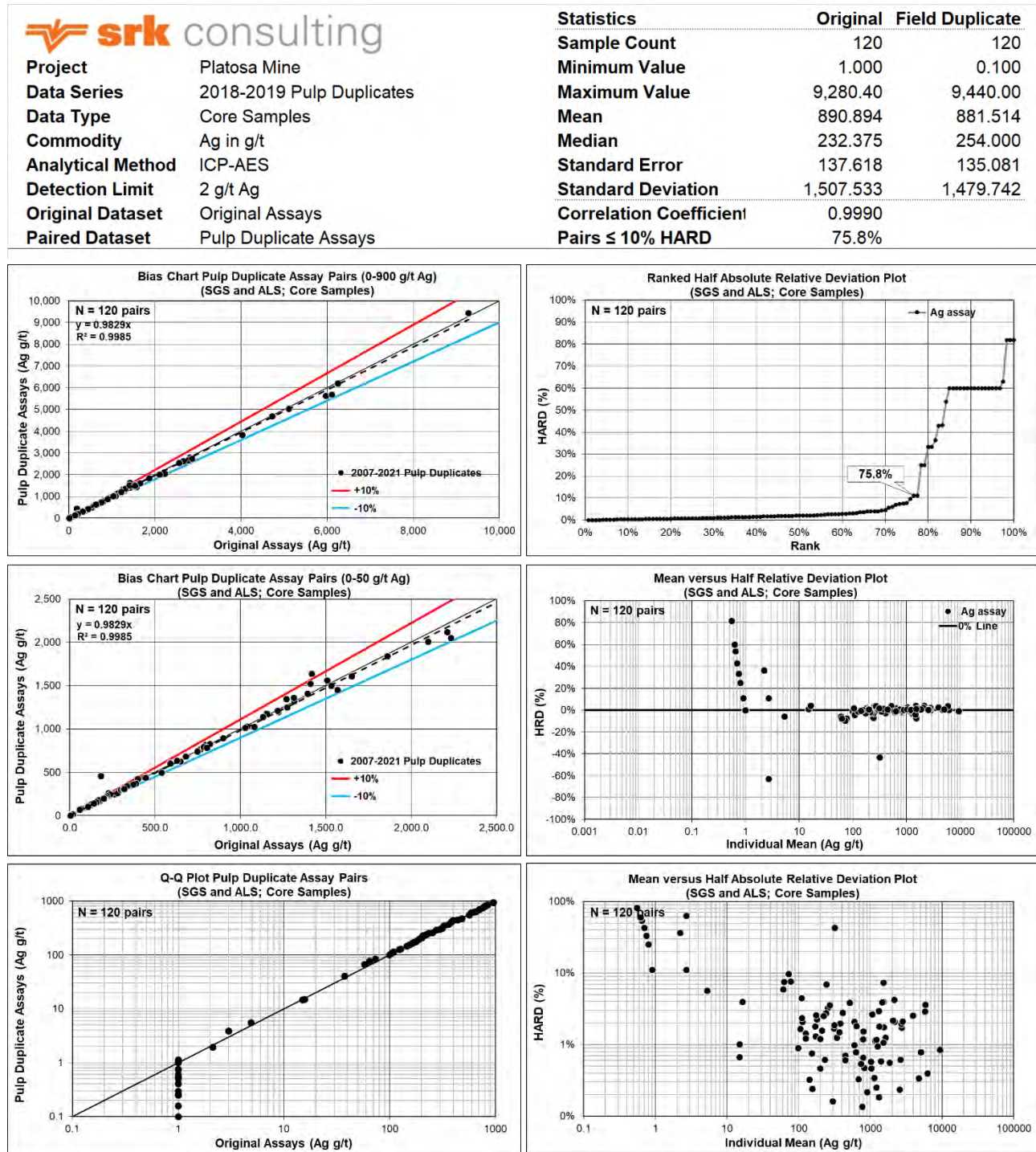


# Bias Charts and Precision Plots for Field Duplicate Assay Pairs Analyzed by SGS Durango Between 2007 and 2021

		<b>Statistics</b>	<b>Original</b>	<b>Field Duplicate</b>
<b>Project</b>	Platosa Mine	<b>Sample Count</b>	308	308
<b>Data Series</b>	2007-2021 Field Duplicates	<b>Minimum Value</b>	1.000	1.000
<b>Data Type</b>	Core Samples	<b>Maximum Value</b>	665.37	835.55
<b>Commodity</b>	Ag in g/t	<b>Mean</b>	16.592	14.988
<b>Analytical Method</b>	ICP-AES	<b>Median</b>	1.000	1.500
<b>Detection Limit</b>	2 g/t Ag	<b>Standard Error</b>	4.514	4.406
<b>Original Dataset</b>	Original Assays	<b>Standard Deviation</b>	79.217	77.323
<b>Paired Dataset</b>	Field Duplicate Assays	<b>Correlation Coefficient</b>	0.8992	
		<b>Pairs ≤ 10% HARD</b>	63.0%	

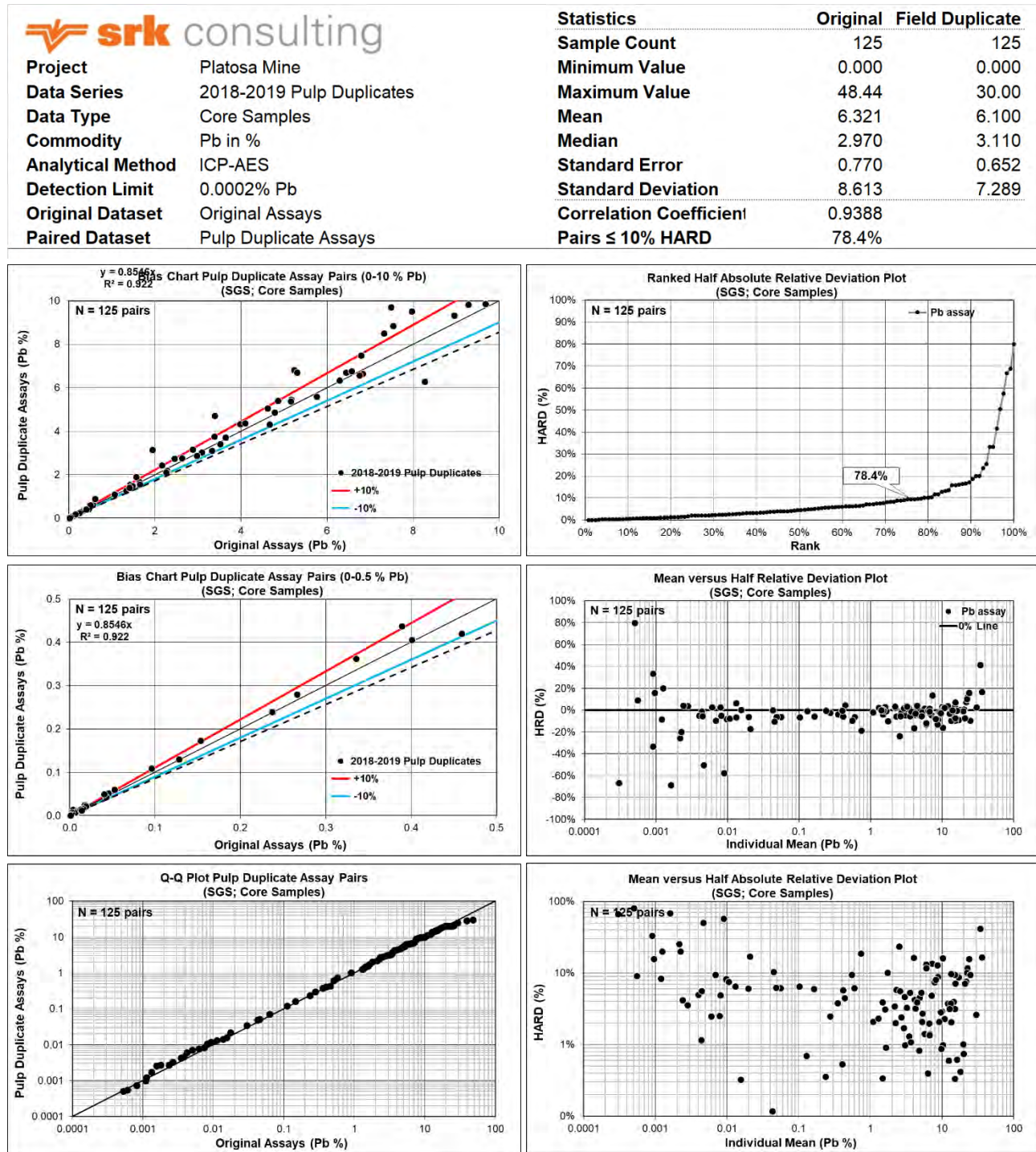


# Bias Charts and Precision Plots for Umpire Pulp Duplicate Assay Pairs analyzed by SGS Durango and ALS Minerals in Chihuahua Between 2018 and 2019

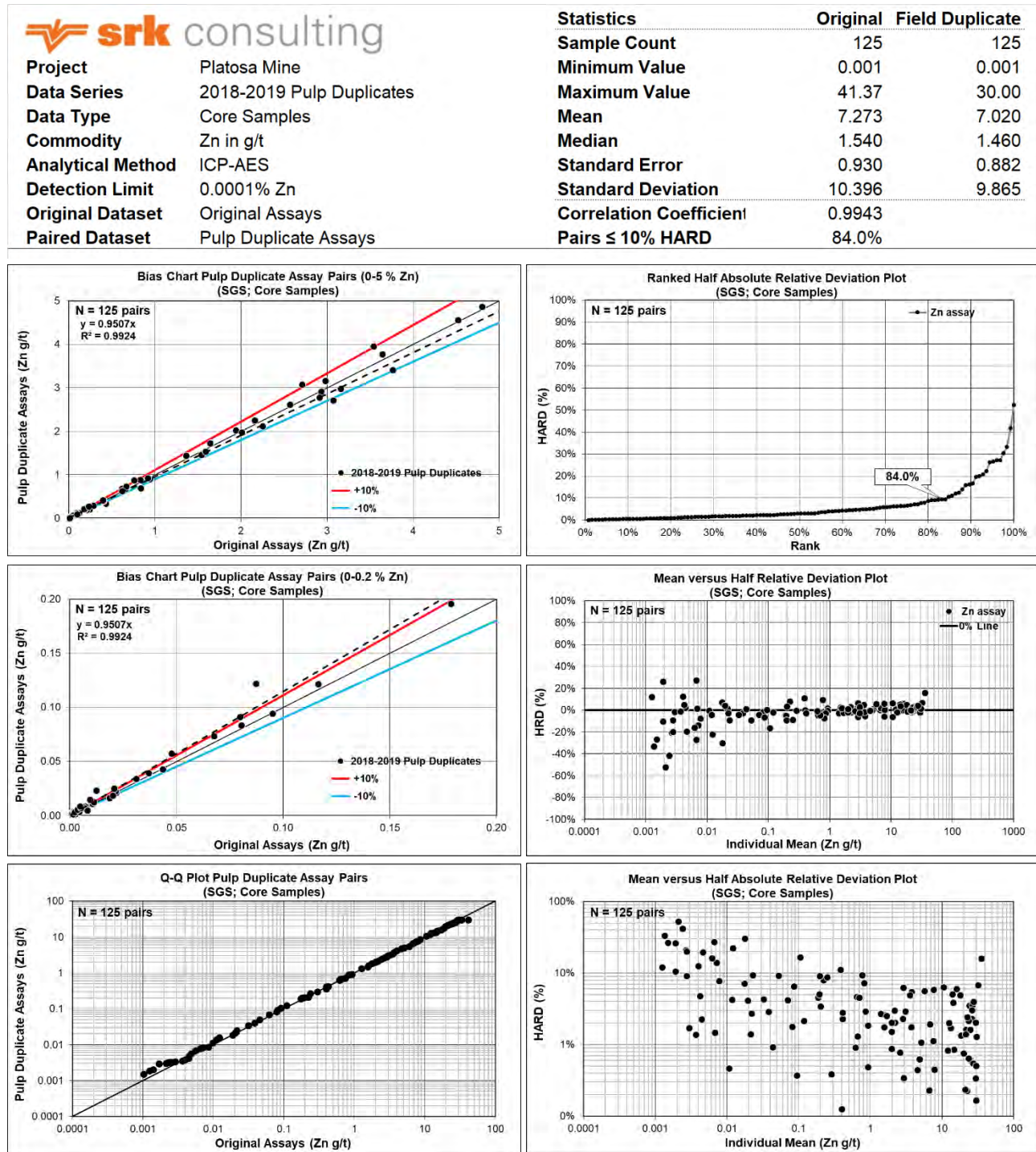




# Bias Charts and Precision Plots for Umpire Pulp Duplicate Assay Pairs analyzed by SGS Durango and ALS Minerals in Chihuahua Between 2018 and 2019



# Bias Charts and Precision Plots for Umpire Pulp Duplicate Assay Pairs analyzed by SGS Durango and ALS Minerals in Chihuahua Between 2018 and 2019

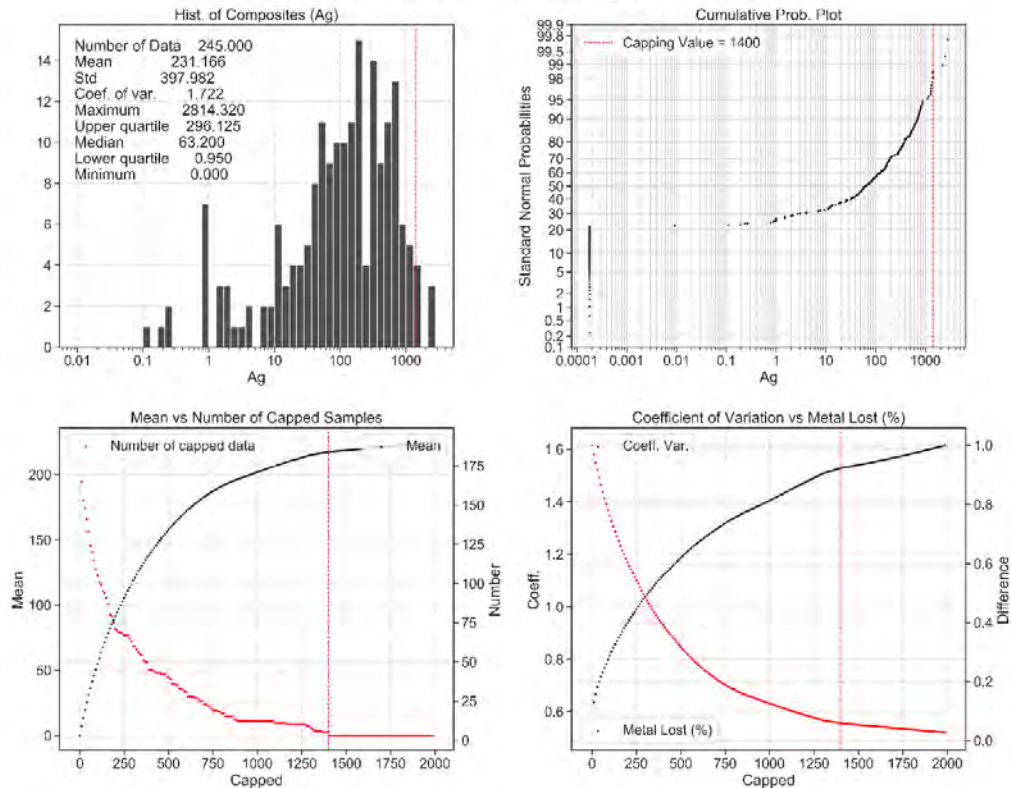


## **APPENDIX C**

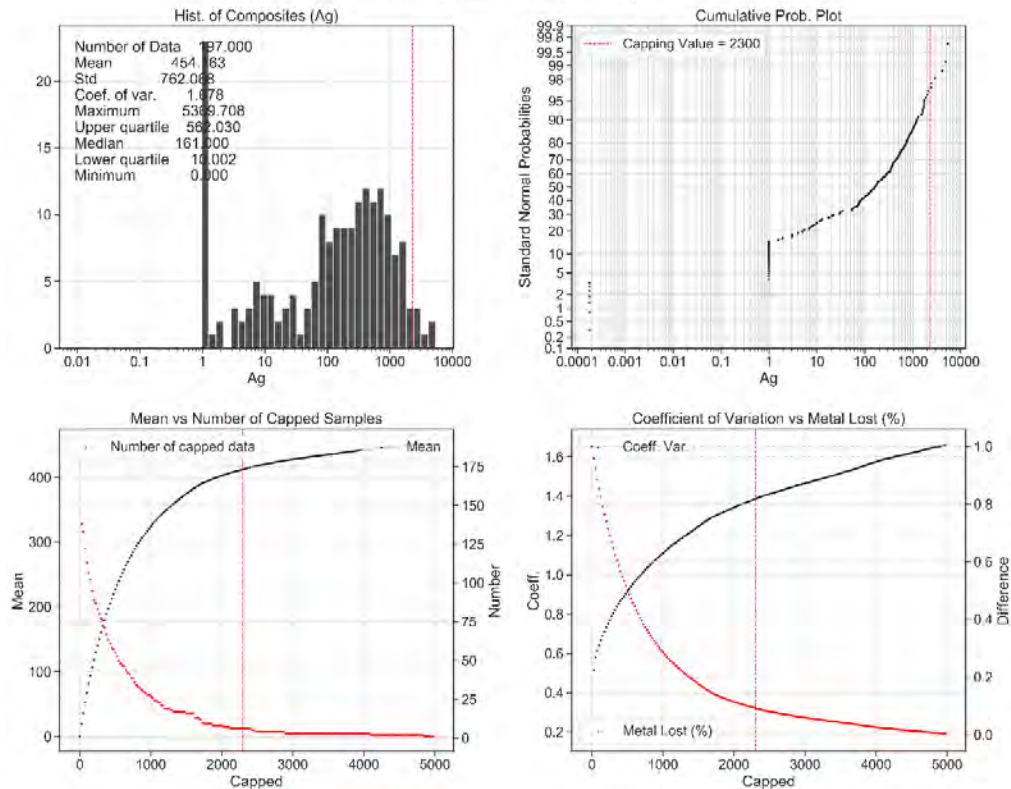
### **Grade Capping Plots**



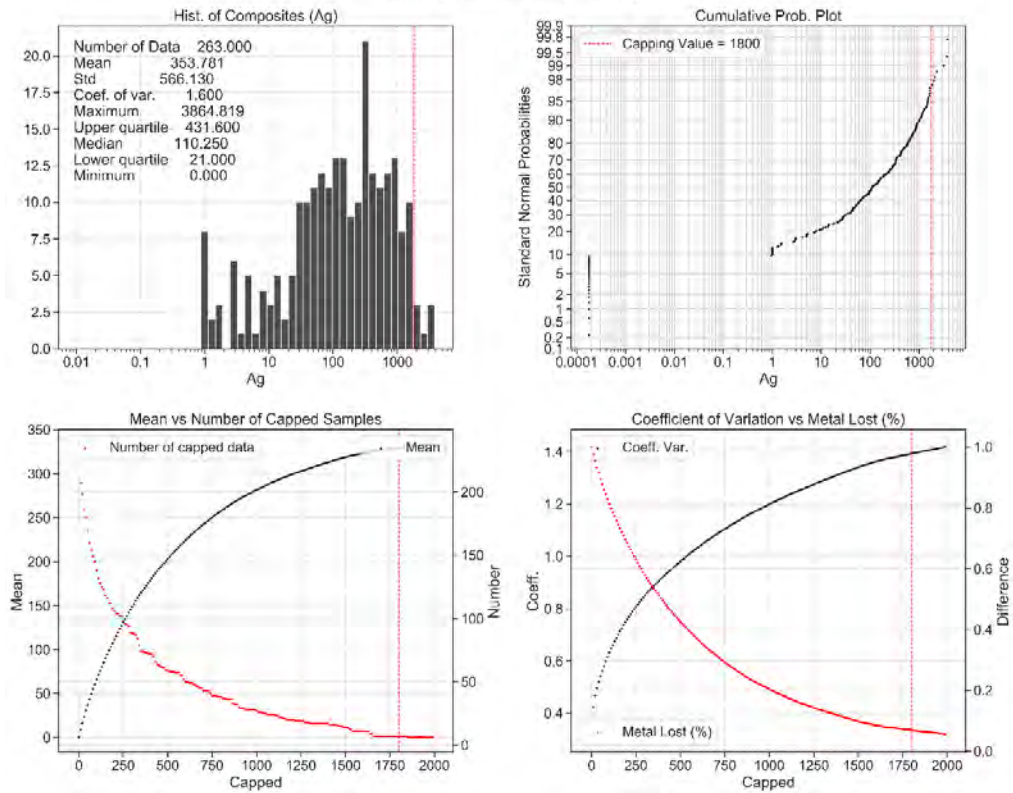
Capping Statistics: Comp\_100\_Ag



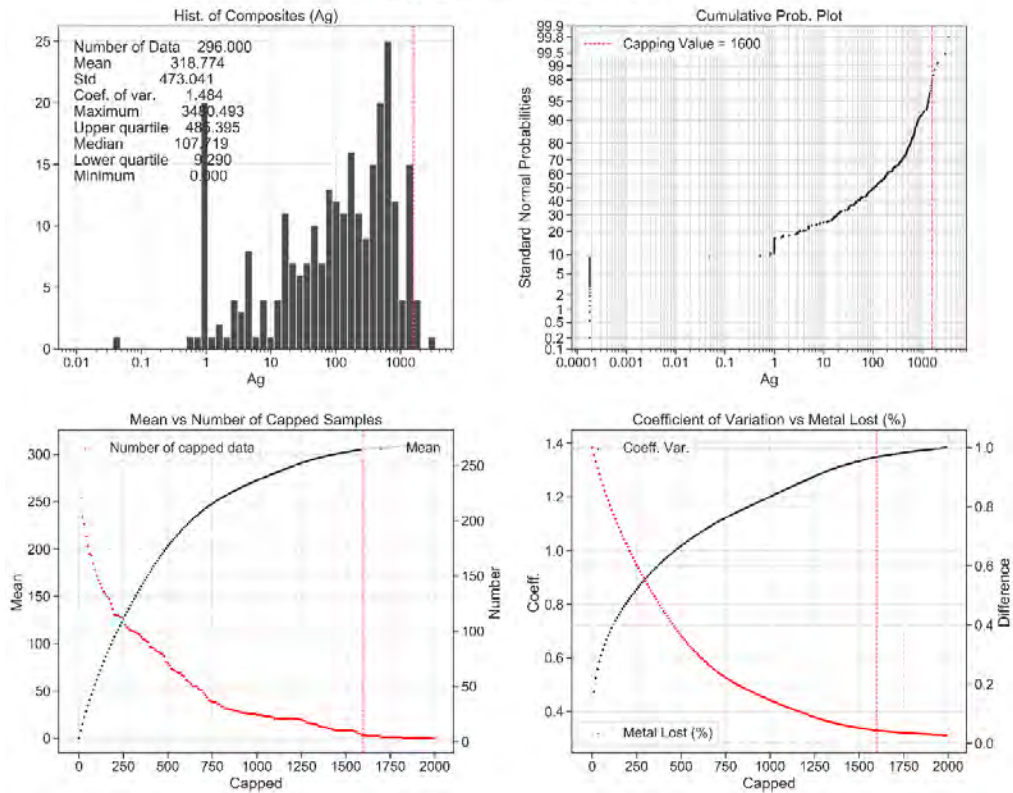
Capping Statistics: Comp\_200\_Ag



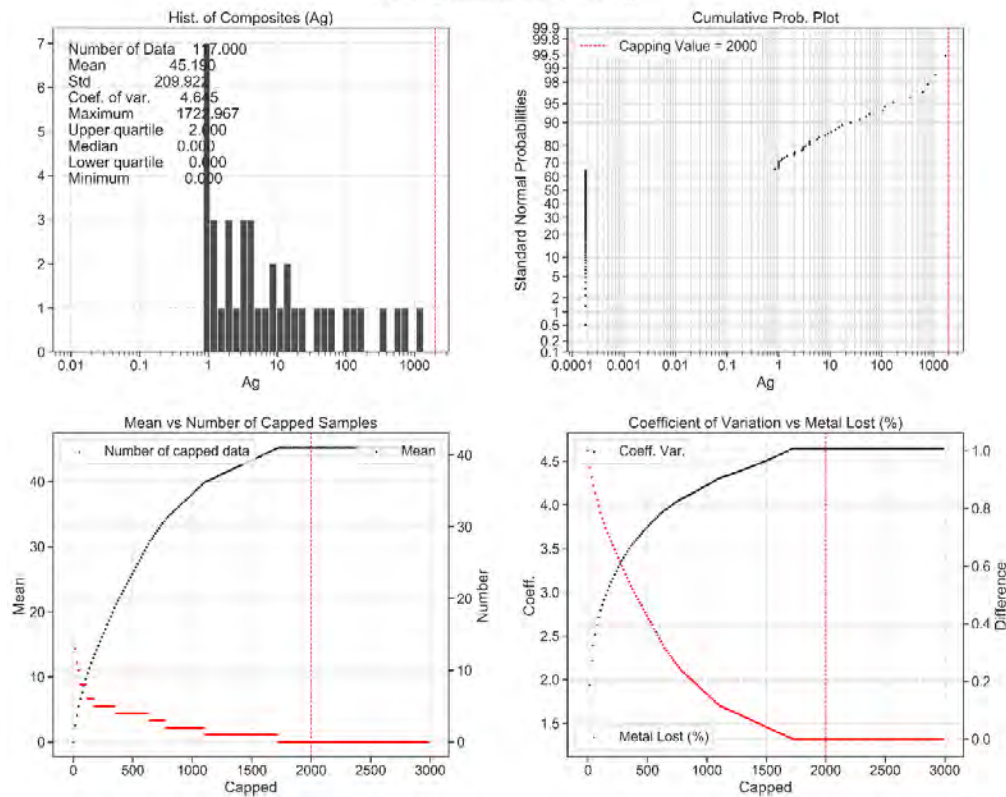
Capping Statistics: Comp\_300\_Ag



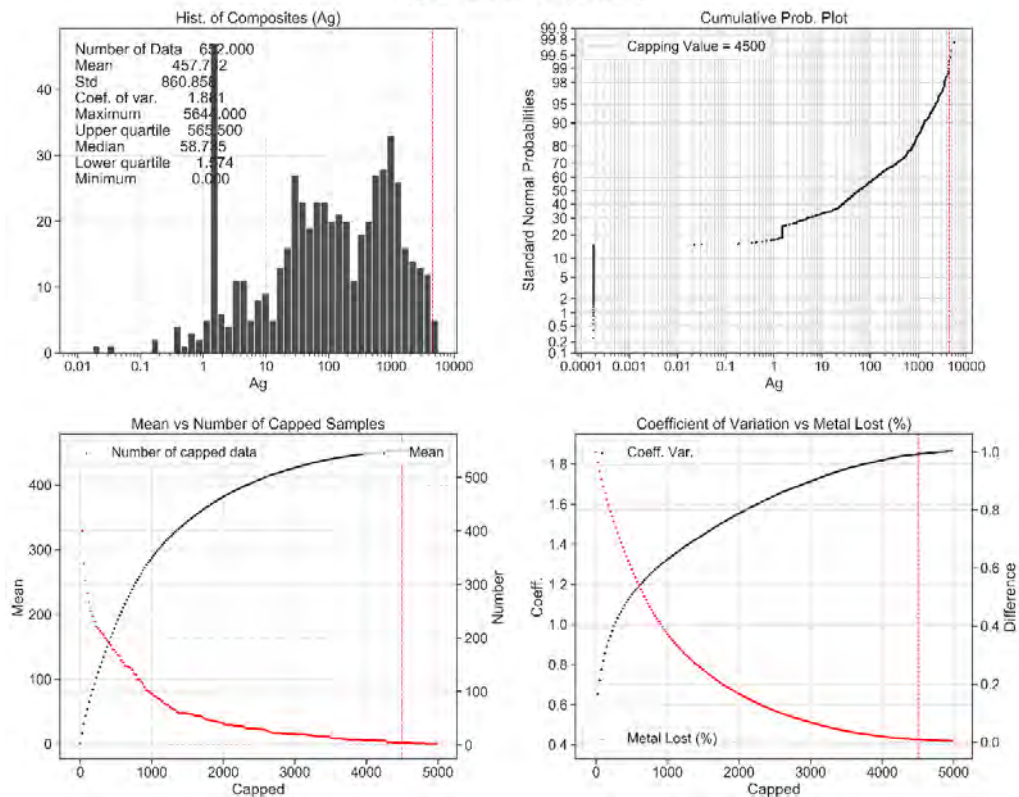
Capping Statistics: Comp\_400\_Ag



Capping Statistics: Comp\_500\_Ag

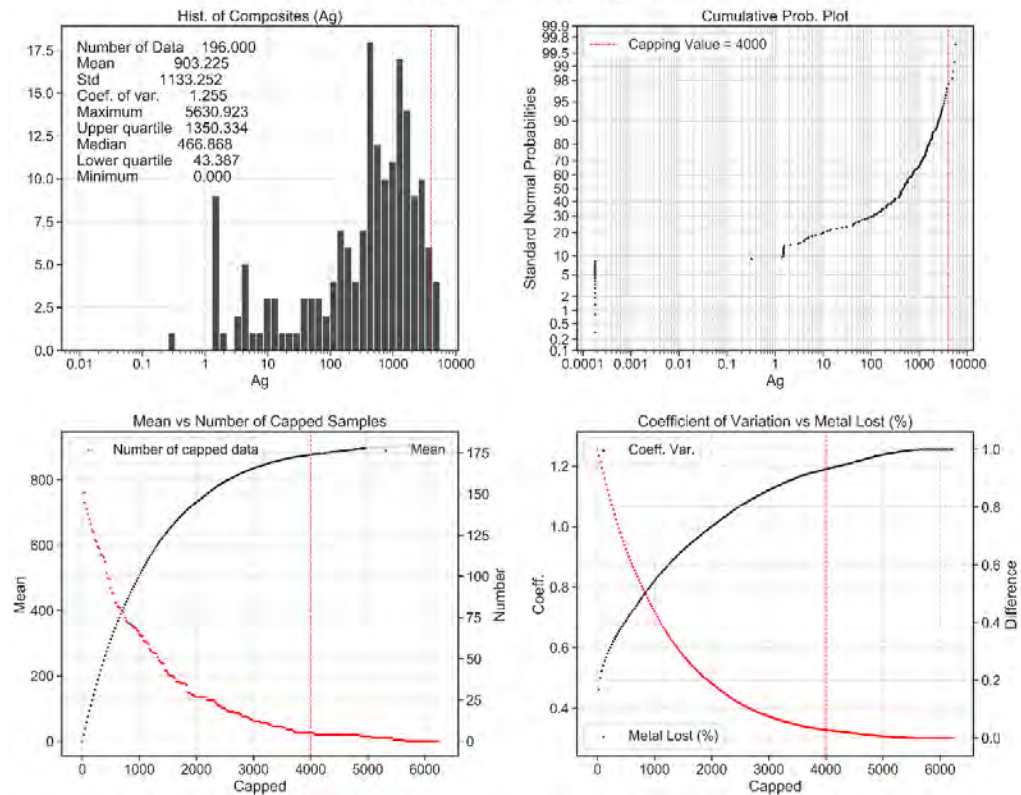


Capping Statistics: Comp\_600\_Ag

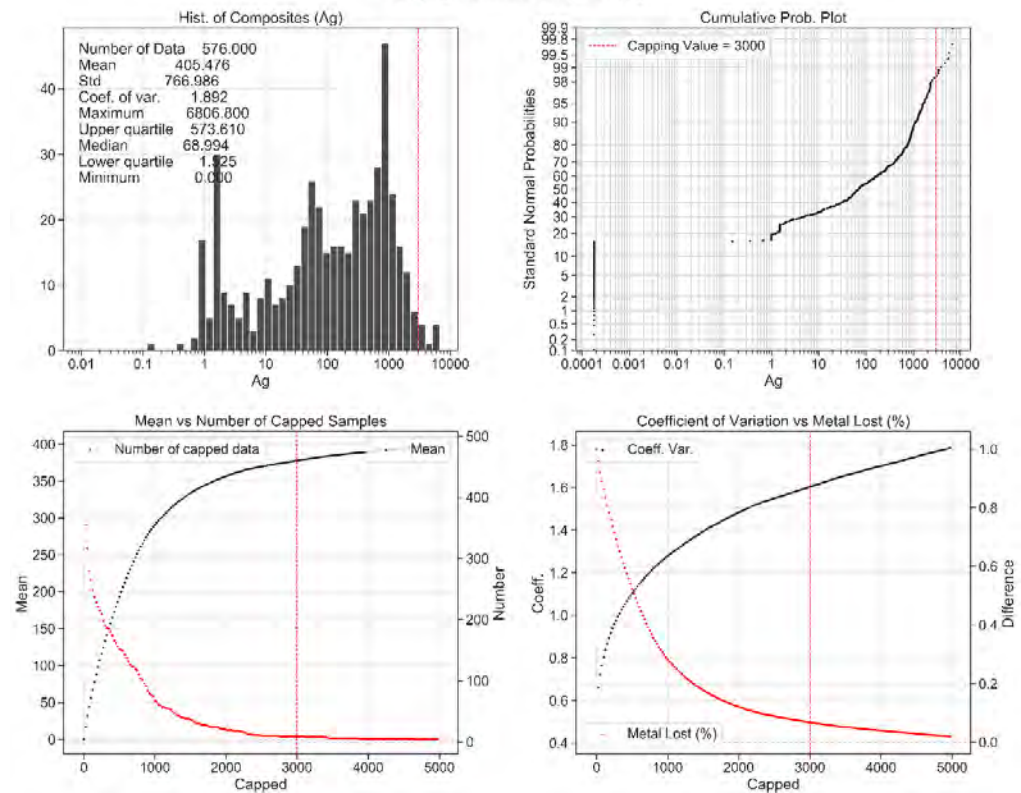




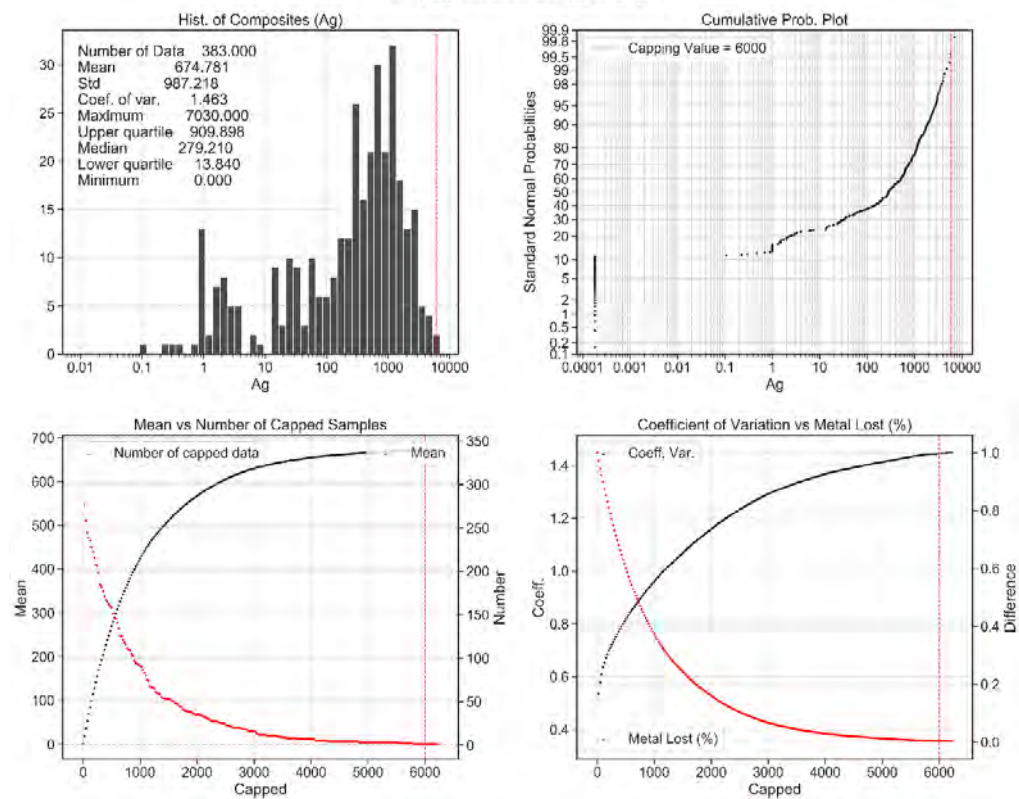
Capping Statistics: Comp\_700\_Ag



Capping Statistics: Comp\_800\_Ag



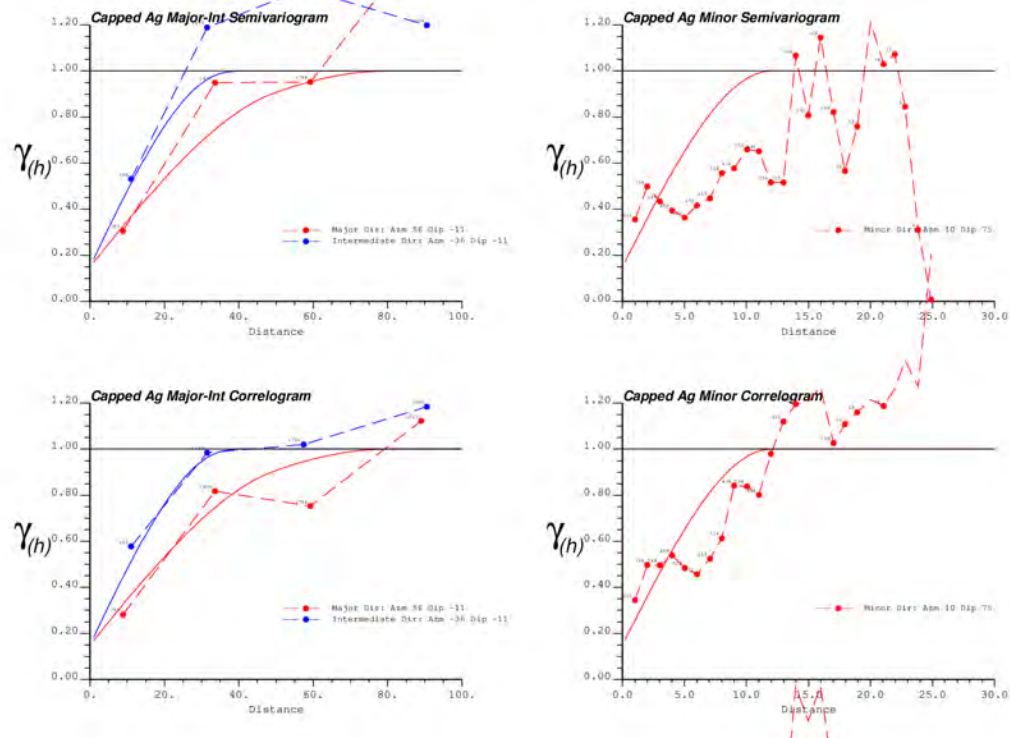
Capping Statistics: Comp\_900\_Ag



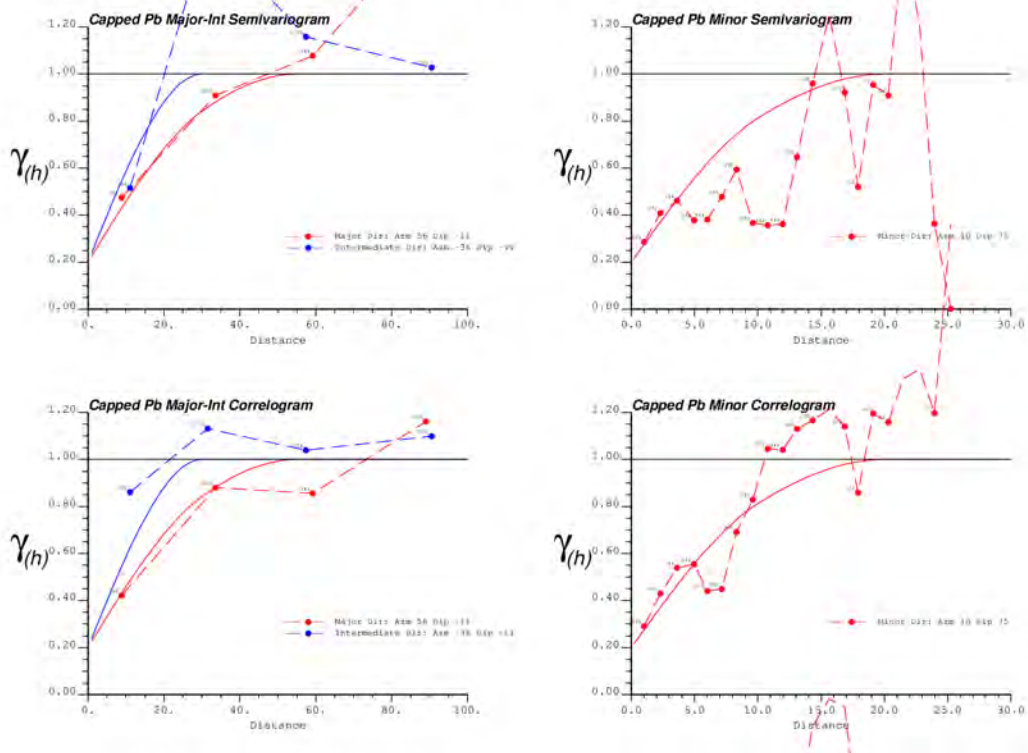
## **APPENDIX D**

### **Variograms**

### Platosa Zone 800 Capped Ag: 56-11-11 Direction

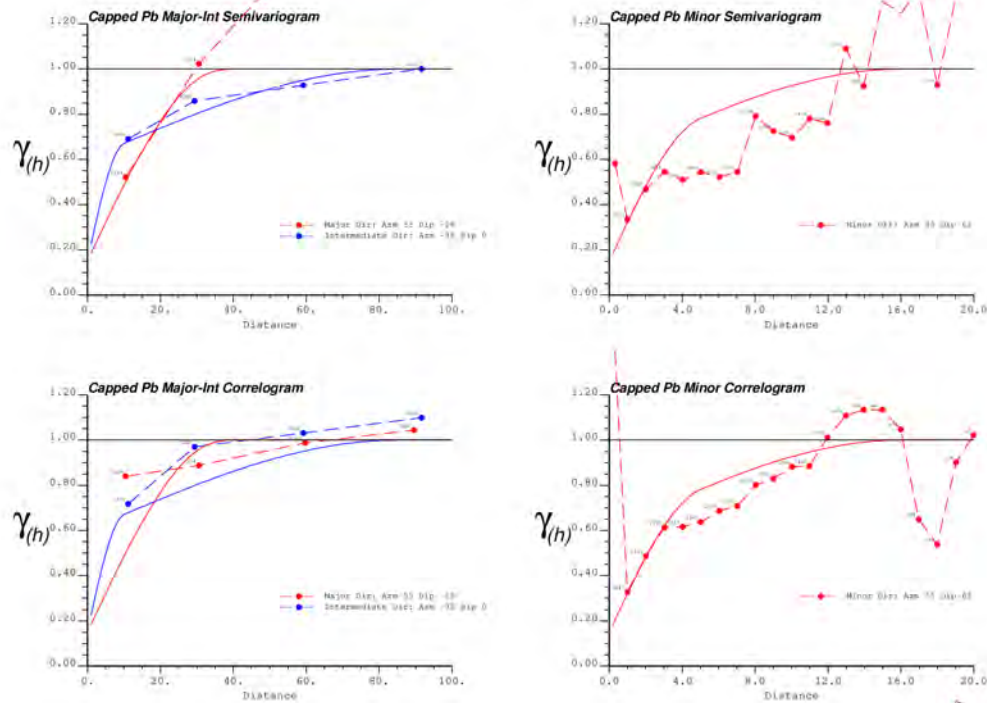


### Platosa Zone 800 Capped Pb: 56-11-11 Direction

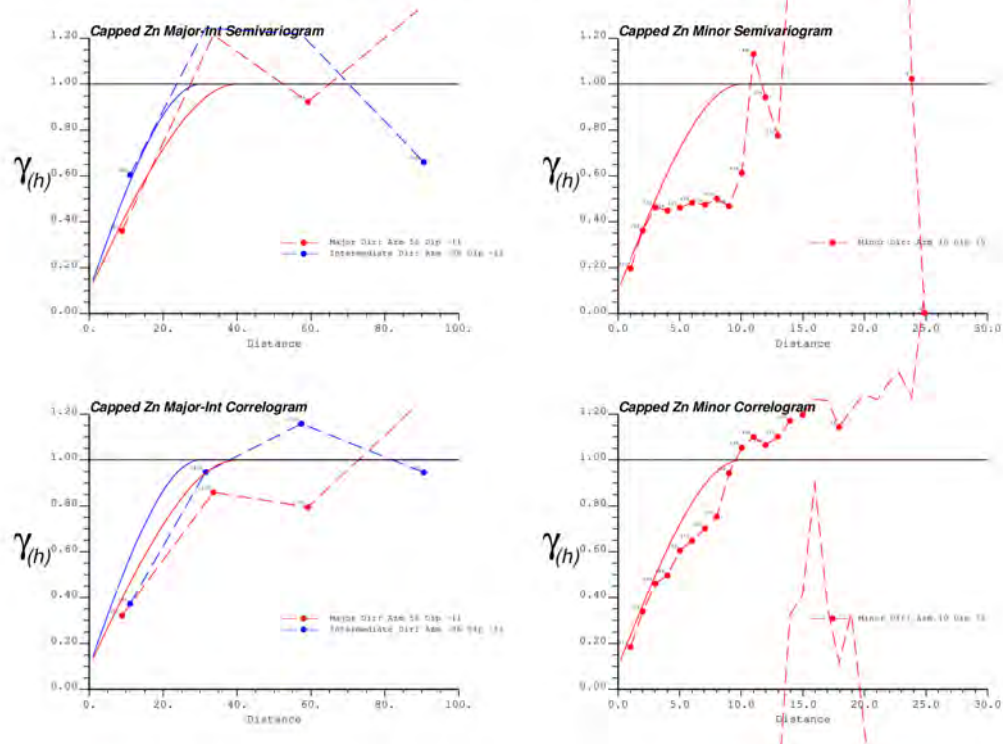




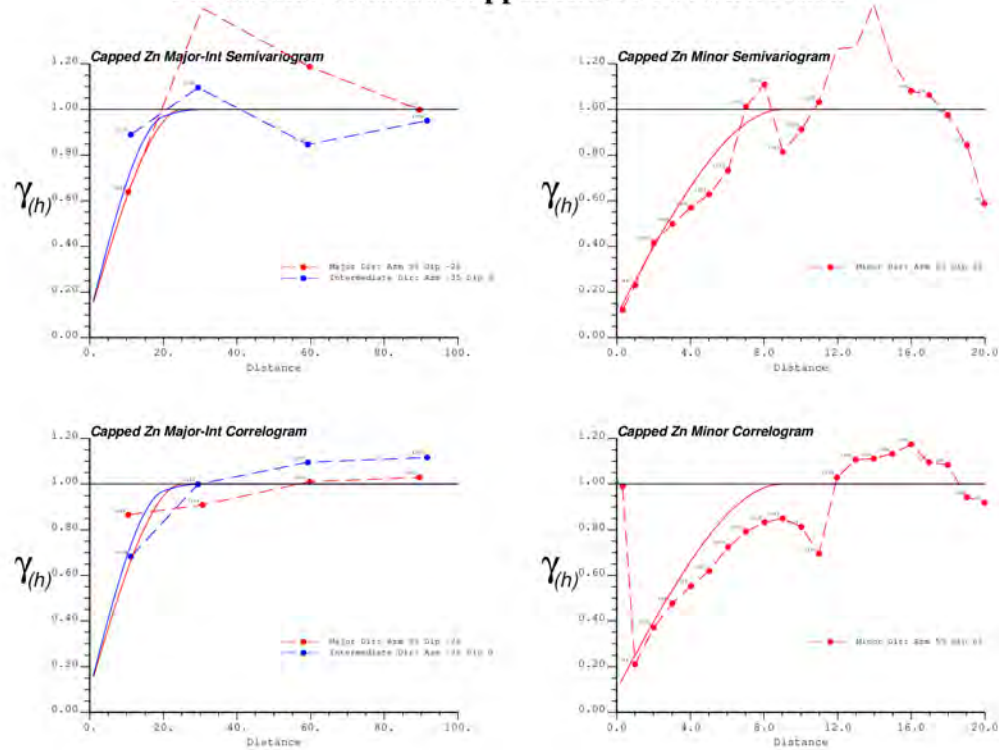
### Platosa Zone less800 Capped Pb: 55-28+0 Direction



### Platosa Zone 800 Capped Zn: 56-11-11 Direction



### Platosa Zone less800 Capped Zn: 55-28+0 Direction



## CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report for the Platosa Polymetallic Mine, Mexico, June 17, 2021.**

I, Joycelyn Smith, do hereby certify that:

- 1) I am a Consultant (Resource Geology) with the firm of SRK Consulting (Canada) Inc. (SRK) with an office at Suite 1500, 155 University Avenue, Toronto, Ontario, Canada;
- 2) I am a graduate of Brock University in Saint Catharines with a BSc (Hons) in Earth Sciences in 2013; I obtained an MSc (Geology) from the Laurentian University in Sudbury in 2016. I have practiced my profession continuously since 2013. I specialize in precious metal exploration in hard-rock terrain. My areas of expertise include data collection and quality control analysis for various deposit types, including narrow-vein and disseminated-type precious metal deposits.
- 3) I am a professional Geologist registered with the Association of Professional Geoscientists of the province of Ontario (APGO#2963);
- 4) I have not personally visited the project area;
- 5) I have read the definition of Qualified Person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a Qualified Person for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a Qualified Person, I am independent of the issuer as defined in Section 1.5 of National Instrument 43-101;
- 7) I am the co-author of this report and responsible for the Executive Summary, and sections 1-5, 8, 9, 10.1, 10.2, 10.4, 10.5, 11.1, 11.2.2, 11.3, 12, 13, and 22-26 and accept professional responsibility for those sections of this technical report;
- 8) I have had no prior involvement with the subject property;
- 9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;
- 10) SRK Consulting (Canada) Inc. was retained by Excellon Resources Inc. to prepare a technical audit of the Platosa Polymetallic Mine. In conducting our audit, a gap analysis of project technical data was completed using CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* and Canadian Securities Administrators National Instrument 43-101 guidelines. The preceding report is based on a site visit, a review of project files and discussions with Excellon Resources Inc. personnel;
- 11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Platosa Polymetallic Mine. or securities of Excellon Resources Inc.; and
- 12) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Toronto, Ontario  
June 17, 2021

*["Original signed and sealed"]*

Joycelyn Smith, MSc, PGeo (APGO#2963)  
Consultant (Resource Geology)

## CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report for the Platosa Polymetallic Mine, Mexico, June 17, 2021.**

I, Glen Cole, do hereby certify that:

- 1) I am a Principal Consultant (Resource Geology) with the firm of SRK Consulting (Canada) Inc. (SRK) with an office at Suite 1500, 155 University Avenue, Toronto, Ontario, Canada;
- 2) I am a graduate of the University of Cape Town in South Africa with a BSc (Hons) in Geology in 1983; I obtained an MSc (Geology) from the University of Johannesburg in South Africa in 1995 and an MEng in Mineral Economics from the University of the Witwatersrand in South Africa in 1999. I have practiced my profession continuously since 1986. I am an expert in geostatistical techniques and geological and resource modelling. Since 2006, I have estimated and audited mineral resources for a variety of early and advanced international base and precious metals projects. I have worked in the mining industry on several underground and open pit mining operations and held various positions senior operational and corporate positions;
- 3) I am a professional Geologist registered with the Association of Professional Geoscientists of the province of Ontario (APGO#1416);
- 4) I have not personally visited the project area;
- 5) I have read the definition of Qualified Person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a Qualified Person for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a Qualified Person, I am independent of the issuer as defined in Section 1.5 of National Instrument 43-101;
- 7) I am the co-author of this report and responsible for the Executive Summary, sections 13, 24, and 25, and accept professional responsibility for those sections of this technical report;
- 8) I have reviewed drafts of the technical report completed by SRK Consulting (Canada) Inc., dated December 07, 2017. I have had no other prior involvement with the subject property.
- 9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;
- 10) SRK Consulting (Canada) Inc. was retained by Excellon Resources Inc. to prepare a technical audit of the Platosa Polymetallic Mine. In conducting our audit, a gap analysis of project technical data was completed using CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* and Canadian Securities Administrators National Instrument 43-101 guidelines. The preceding report is based on a site visit, a review of project files and discussions with Excellon Resources Inc. personnel;
- 11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Platosa Polymetallic Mine. or securities of Excellon Resources Inc.; and
- 12) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

*["Original signed and sealed"]*

Toronto, Ontario  
June 17, 2021

Glen Cole, PGeo (APGO#1416)  
Principal Consultant (Resource Geology)

## CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report for the Platosa Polymetallic Mine, Mexico, June 17, 2021.**

I, Alfonso Soto, do hereby certify that:

- 1) I am a President and Director with the firm of Rocks Mining Exploration Consultants Inc. (CITDM) Cibuta #58, Col. Olivares, CP 83180, Hermosillo, Sonora, Mexico;
- 2) I am a graduate of the University of Sonora, Mexico in 1986, I obtained a BSc in Geology. I have practiced my profession continuously since September 1986 in exploration, production and the evaluations of precious metals, porphyry systems and base metals deposits;
- 3) I am a certified professional geologist (Geoscientist, Engineer) registered with the American Institute of Professional Geologist (AIPG, CPG -11938);
- 4) I have personally inspected the subject project on April 26 to April 29, 2021;
- 5) I have read the definition of Qualified Person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a Qualified Person for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a Qualified Person, I am independent of the issuer as defined in Section 1.5 of National Instrument 43-101;
- 7) I am the co-author of this report and responsible for the Executive Summary, and sections 4, 6, 7, 10.3, and 11.2.1, and accept professional responsibility for those sections of this technical report;
- 8) I have had no prior involvement with the subject property;
- 9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;
- 10) Rocks Mining Exploration Consultants Inc. was hired by SRK Consulting (Canada) Inc. to participate in the compilation of a technical report for the Platosa Polymetallic Mine. SRK Consulting (Canada) Inc. was retained by Excellon Resources Inc. to prepare a technical audit of the Platosa Polymetallic Mine. In conducting the audit, a gap analysis of project technical data was completed using CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* and Canadian Securities Administrators National Instrument 43-101 guidelines. The preceding report is based on a site visit, a review of project files and discussions with Excellon Resources Inc. personnel;
- 11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Platosa Polymetallic Mine or securities of Excellon Resources Inc.; and
- 12) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Hermosillo, Sonora, Mexico  
June 17, 2021

["Original signed and sealed"]

Luis Alfonso Soto C. Geologist and AIPG, CPG-11938]  
Senior Geologist

## CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report for the Platosa Polymetallic (Silver, Lead and Zinc) Mine, Mexico, June 17, 2021.**

I, Paul Keller, do hereby certify that:

- 1) I am the Chief Operating Officer for Excellon Resources Inc., whose main office is located at 10 King Street East, Suite 200, Toronto, Ontario, M5C 1C3;
- 2) I am a graduate of Laurentian University in 1983, I obtained a Bachelor of Mining Engineering degree. I have practiced my profession continuously since May 1983. I have extensive experience in the management, operations, design, environmental, permitting of mines that includes experience gained at Rio Algom's Elliot Lake uranium mine, Hemlo Gold Mines' David Bell and Williams mines, Crowflight Minerals, DMC Mining Services, Trevali Mining Corp. and Excellon Resources;
- 3) I am a professional Engineer registered with the Ontario Society of Professional Engineers, member number 90101775;
- 4) I have personally inspected the subject project in January 2021;
- 5) I have read the definition of Qualified Person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a Qualified Person for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I am employed by the issuer, Excellon Resources Inc., and therefore am not independent of the issuer as defined in Section 1.5 of National Instrument 43-101;
- 7) I am the co-author of this report and responsible for sections 12, 14, 15, 16, 17, 18, 19, 20 and 21 and accept professional responsibility for those sections of this technical report;
- 8) I have been Chief Operating Officer of Excellon Resources since September 2020 and prior to being employed at Excellon Resources Inc., I had no involvement with the subject property;
- 9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;
- 10) As an employee I have an interest in the Platosa Polymetallic Mine and Excellon Resources Inc.; and
- 11) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

*["Original signed and sealed"]*

Toronto, Ontario  
June 17, 2021

Paul Keller, PEng  
Chief Operating Officer, Excellon Resources Inc.