Technical Report on the Preliminary Economic Assessment for the Invicta Gold Project, Huaura Province, Peru

Report Prepared for

Lupaka Gold Corp.

Report Prepared by

SRK Consulting (Canada) Inc.
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Technical Report on the Preliminary Economic Assessment for the Invicta Gold Project, Huaura Province, Peru

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Cover: Invicta Gold Project Camp, December 2017. Source: Lupaka Gold Corp.

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Executive Summary

Introduction

The Invicta Gold Project is located in the province of Huaura, situtated approximately 120 kilometres to the northeast of the city of Lima in Peru. Lupaka Gold Corp. (Lupaka) is a Peru-focused mineral development and exploration company, whose prime asset is the Invicta Gold Project, which Lupaka intends to fast-track to production. Lupaka holds a 100 percent interest in the Invicta Gold Project, which comprises six mining concessions for a total area of 4,700 hectares.

In November 2017, Lupaka commissioned SRK Consulting (Canada) Inc. (SRK) as an independant consultant to compile a Preliminary Economic Assessment (PEA) level technical report for the Invicta Gold Project, following Canadian Securities Administrators' National Instrument 43-101 (NI 43-101) guidelines. The study was jointly undertaken by by technical staff from the SRK Toronto and Sudbury offices, and from the Lima office of SRK Consulting (Peru) S.A., in close collaboration with Lupaka.

The previous NI 43-101 technical report for the Invicta Gold Project was generated by SRK Consulting (U.S.), Inc. for previous operator, Andean American Gold Corporation (Andean American), and filed on April 16, 2012, documenting mineral resources for the Invicta Gold Project as of April 6, 2012 (SRK, 2012).

This NI 43-101 technical report documents a revised Mineral Resource Statement and conceptual mining study undertaken for the Invicta Gold Project as of February 28, 2018, prepared by SRK. It was prepared following the guidelines of the Canadian Securities Administrators' NI 43-101– Standards of Disclosure for Mineral Projects and Form 43-101F1. The mineral resource reported herein were prepared in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines.*

The results of this PEA were announced by Lupaka in a news released dated March 1, 2018. This report provides a summary of the current status of the Invicta Gold Project, as at the effective date of this report.

Property Description

The Invicta Gold Project is in the province of Huaura, department of Lima, Peru, 120 kilometres northeast of the city of Lima. The property is located within the boundaries of the Paran, Lacsanga and Santo Domingo de Apache peasant communities. Santo Domingo de Apache and Paran are in the district of Leoncio Prado, while Lacsanga is in the district of Paccho.

The Invicta Gold Project comprises six mining concessions held by Invicta Mining Corporation S.A.C (Invicta Mining Corp), a subsidiary of Lupaka. and comprises a total area of 4,700 hectares.

Geology and Mineralization

The Invicta Gold Project is situated along the boundary between the Huaura complex to the west and a segment of the Western Peruvian trough to the east. This segment of the Western Peruvian trough comprises a complex assemblage of volcanic to sub-volcanic dominantly mafic volcanic units of the Tertiary (circa 53 to 5 million years ago [Ma]) Calipuy group. The Calipuy group comprises mainly mafic to felsic volcanic to sub-volcanic rocks and unconformably overlies strongly deformed sedimentary rocks and limestone of the Lower Cretaceous Goyllarisquizga group. These rocks are severely faulted and folded and host several deposits including the Uchucchacua, Iscaycruz and Raura base metal-silver deposits approximately 65 to 70 kilometres northeast of the Invicta Gold Project.

The Invicta Gold Project geology comprises mainly mafic volcanic rocks of the Calipuy group that overlie diorite, tonalite and granodiorite of the Paccho pluton, an intrusive suite that is part of the Huaura plutonic complex (Coastal batholith). Diorite and granodiorite of the Paccho intrusion are exposed in the southwest and

western portions of the Invicta Gold Project. These generally comprise massive, weakly to moderately silicified rocks, with strong kaolinite, limonite and hematite altered rocks associated with mineralized zones.

Mineralization is closely linked to an early stage of deformation, and occurs in three principal settings:

- Along the principal southeast- to east-southeast-striking, steeply-dipping strike-slip fault zones (e.g. Pucamina and Dany faults).
- Along northeast-striking, southeast-dipping normal faults that developed in extensional (dilational) settings linking the principal faults.
- Along left-stepping (dilational) and right-stepping (compressional) jogs or bends along the principal strike-slip faults.

In general, mineralization is characterized by the presence of quartz-pyrite-chalcopyrite-acanthite-hematite bearing quartz veins with common crustiform, banded and cockade textures exhibiting distinctive vugs. Mineralized veins at the Invicta Gold Project have many of the characteristics of epithermal vein systems. Polymetallic mineralization occurs as quartz veins and associated minor stockwork veinlets that carry gold, pyrite, sphalerite, galena and chalcopyrite. The main alteration minerals associated with auriferous quartz veins include quartz, chlorite, hematite, calcite and minor epidote.

Exploration Status

Exploration conducted on the Invicta Gold Project indicates that the property has considerable potential for mineral resource expansion through exploration. Structural geology studies, geophysical and geochemical work conducted to date strongly suggest the potential for mineral resource expansion along existing mineralized structures.

Invicta Mining Corp management has proposed an exploration plan for 2018 and a budget has been approved to execute the plan. The plan is focused on the expansion of the mineral resources above and to the east of the 3400 Level (i.e. the level below surface at 3,400 metres elevation) in the Atenea vein, and below this level in areas characterized by low drilling densities. It is strategically important that high grade mineralization be identified and delineated by drilling to provide the framework for future mining. About 600 metres of development drifting and 2,500 metres of underground diamond drilling have been proposed to expand and increase the confidence in the Invicta Gold Project mineral resource.

Mineral Resource Estimates

The Canadian Institute of Mining, Metallurgy and Petroleum (CIM) *Definition Standards for Mineral Resources and Mineral Reserves* (May 2014) defines a Mineral Resource as follows:

> *"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 the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade, taking into account extraction scenarios and processing recoveries. In order to meet this requirement, SRK considers that the Invicta Gold Project is amenable for underground extraction.

In this study, SRK audited and modified a mineral resource model generated by SRK (2012) for the polymetallic mineralization delineated by drilling and channel sampling on the Invicta Gold Project.

SRK (2012) defined seven mineralized wireframe structures / zones for the Invicta Gold Project from core borehole and underground channel sampling data. To constrain mineral resource modelling, these wireframes were geologically grouped into five zones (Atenea 1, Atenea 2, Atenea 3, Pucamina and Dany [Ydalias, Dany and Zone 4]). After review of log probability plots, all raw assays were appropriately capped. SRK (2012) used an inverse distance estimator to assign gold, silver, copper, lead and zinc grades into the block models. SRK (2012) analyzed the specific gravity data statistically above a 0.5 gram of gold per tonne (g/t gold) equivalent cut-off to assign average specific gravity by mineralized zone.

Mineral resource model estimates were validated by SRK in the current study using a visual comparison of block grades and samples; and statistical comparisons between the estimates performed using inverse distance and nearest neighbour estimation. SRK also validated the resources with swath plots by easting, northing and elevation. The resultant block estimates appear to be reasonable given the informing sample grades and estimation parameters.

Based on a visual examination and comparisons with the nearest neighbor model, SRK believes that the SRK (2012) grade models are globally unbiased and represent a reasonable estimate of undiluted in-situ resources. SRK classified the block model in accordance with the CIM *Definition Standards for Mineral Resources and Mineral Reserves* (May 2014). The "reasonable prospects for economic extraction" requirement generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade considering extraction scenarios and processing recoveries. To meet this requirement, SRK considers that the Invicta Gold Project is amenable for underground extraction. Underground mineral resources are reported at a cut-off grade of 3.0 g/t of gold-equivalent.

A condensed Mineral Resource Statement for the Invicta Gold Project is presented in Table i.

Table i: Condensed Mineral Resource Statement*, Invicta Gold Project, Huaura Province, Peru, SRK Consulting (Peru) S.A., February 28, 2018

			Metal Grade						Contained Metal (000's)					
Zone	**Category**	**Tonnes (000's)**	**AuEq (g/t)**	**Au (g/t)**	**Ag (g/t)**	**Cu (%)**	**Pb (%)**	**Zn (%)**	**AuEq (oz)**	**Au (oz)**	**Ag (oz)**	**Cu (lb)**	**Pb (lb)**	**Zn (lb)**
	Mea								-	-	-	-	-	-
Total All	Ind	2,999	5.78	4.07	24.81	0.60	0.36	0.42	558	392	2,392	39,739	23,678	27,977
Zones	**Mea+Ind**	**2,999**	**5.78**	**4.07**	**24.81**	**0.60**	**0.36**	**0.42**	**558**	**392**	**2,392**	**39,739**	**23,678**	**27,977**
	Inferred	577	5.29	4.91	5.49	0.10	0.11	0.15	98	91	102	1,311	1,365	1,939

* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures are rounded to reflect the relative accuracy of the estimate, as such columns may not add. All composites have been capped where appropriate.

Development and Operations

The PEA operating plan is based on the underground extraction of Indicated and Inferred mineral resources from the Atenea vein close to the existing 3400 Level adit (up to 130 metres above the 3400 Level) utilizing a sublevel long hole open stoping mining method, with waste rock as backfill where possible.

Utilizing in part existing historic mine development, the main extraction level will be on the 3400 Level with surface access via the adit. A secondary ramp from surface will develop drilling horizon sublevels spaced 15 to 30 metres. Long hole drilling and blasting techniques will be used. The blasted material will be mucked from the extraction level by four cubic-yard load-haul-dump loaders (LHDs) where it will then be dumped directly into 30-tonne haulage trucks. The trucks will then transport the material from the adit to an off-site mill processing facility.

The 130-metre high, 40-metre long, 4- to 12-metre wide stopes will be separated by rib pillars and filled with available waste rock from mine development waste.

The focus of this PEA is on the higher grade Atenea vein. The PEA potential minable material in this structure was estimated at 669,813 tonnes averaging a gold-equivalent grade of 8.58 g/t. The estimate considers 11 percent external mining dilution at 0.0 g/t grade and a mine recovery of 81 percent. Total contained payable

metal was estimated at 145,765 ounces of gold-equivalent. The grade of all contained metals and mine production is summarized in Table ii.

Table ii: Summary of PEA Production and Grades

		Total
Annual Mine Production	tonnes	669,813
Average Daily Production	tpd	355
Au-Eq Grade	g/t	8.58
Au Grade	g/t	5.54
Ag Grade	g/t	44.34
Cu Grade	%	0.87
Pb Grade	%	0.76
Zn Grade	%	1.02
Dilution	%	11
Mine Recovery	%	81
Au-Eq Produced Ounces	oz	184,708
Au-Eq Payable Ounces	oz	145,765

Production as outlined by the PEA considers an average peak steady state rate of approximately 350 tonnes per day. The initial 6-year mine life commencing in 2018 is expected to produce a total of 669,813 tonnes of mineralized material inclusive of an 11 percent external dilution with an 83 percent mine recovery (Table iii).

Results of metallurgical tests indicate that conventional flotation technology can be used to treat the mineral resources from the Invicta Gold Project.

Table iii: Summary of PEA Production Schedule and Grades

		Total	2018	2019	2020	2021	2022	2023
Annual Production		669,813	89,905	124,510	124,949	124,368	123,790	82,291
Average Daily Production		319	257	356	357	355	354	235
Commodity Feed Grade								
Gold-Equivalent	g/t	8.58	8.55	8.47	9.20	8.62	7.45	9.45
Gold Grade	g/t	5.54	5.70	5.35	5.20	5.58	5.09	6.79
Silver Grade	g/t	44.34	39.84	44.20	57.46	51.86	41.83	21.95
Copper Grade	%	0.87	0.71	1.01	1.25	0.98	0.70	0.30
Lead Grade	%	0.76	0.89	0.68	0.85	0.49	0.47	1.44
Zinc Grade	%	1.02	1.09	0.86	1.23	0.84	0.67	1.68
Gold-Equivalent (Produced)	oz	184,708	24,723	33,896	36,963	34,484	29,644	24,997
Gold-Equivalent (Payable)	oz	145,765	19,487	26,822	29,057	27,315	23,513	19,572

Environmental Studies, Permitting and Social Impact

For initiating mine development activities and the preparation of the Victoria Uno mining concession, Invicta Mining Corp requires authorizations and licenses to ensure compliance with Peruvian law. The following is required:

- Mining operation certificate for the Invicta Gold Project for 2018 for the desired level of exploitation operations from the General Directorate of Mining in Peru (*Dirección General de Minería*, DGM). This has been received.
- Zero discharge authorization from the the National Water Authority of Peru (*Autoridad Nacional del Agua*, ANA).
- Activation of mine-closure guarantee once mining operations will start from the DGM.
- Solid waste declaration and management plan from the DGM.
- Permission for fuel storage infrastructures from the Supervisory Body for the Investment in Energy and Mining in Peru (*Organismo Supervisor de la Inversión en Energía y Minería*, OSINERGMIN). This has been received.

In general, the environmental baseline requires further work with repect to the actual National Environmental Certification Service for Sustainable Investments (*Servicio Nacional de Certificación Ambiental para las Inversiones Sostenibles*, SENACE) requirements, and is currently unsuitable as a pre-mine baseline when conducting the mine closure. This is especially true concerning surface and groundwater quality, potential acid rock drainage prediction, and long-term water quality prediction.

Post-closure water management can be costly when not properly assessed and planned as part of the mine planning phase. This issue can also present an important social cost as fruit farming for export is an important agricultural production for the communities surrounding the mine site.

The overall goal for mine decommissioning and closure is to return the land to a physically-, biologically-, and chemically-stable and ecologically functional condition that approximates baseline conditions. Concurrent closure options will be sought, wherever possible, in the construction and operational phases of mine life, to minimize the potential for subsidence and erosion damage, to enhance biodiversity and the restoration of natural habitats.

Capital and Operating Costs

The PEA has been designed to minimize initial capital outflows by utilizing the existing underground infrastructure to access mineralization in proximity to the 3400 Level adit, rehabilitate and utilize the existing 65-person camp, and truck mineralized material to toll milling facilities, thereby avoiding the requirement to build a plant on site. Initial pre-production capital expenditures are estimated at $4.3 million (Table iv).

The project's pre-production capital consists of rehabilitation to existing underground and surface infrastructure, installation of underground services, preparation and development of underground infrastructure including a new adit at the 3430 Level, associated cross-cut and connection to the 3400 Level, which completes the ventilation circuit and provides a secondary egress, as well as significant improvements to the project's access road.

Lupaka has identified multiple toll treatment plants that would be capable of treating the mineral resources within the PEA mine plan with minor modifications. The mineral resources would be trucked to one of these facilities where separate copper, lead and zinc concentrates would be produced by the toll facility, supervised by Lupaka staff. All capital and operating costs associated with the run of mine treatment and tailings disposal would be the responsibility of the toll treatment facility, under a cost per tonne agreement.

Operating expenditures during the life of mine (years 2018 to 2023) are estimated at $96.0 million. This equates to an average $143.34 per tonne, based on 669,813 tonnes of production. The expenditures include mining supplies, services and contracts, truck haulage, contract labour and salary, general and administrative costs, and processing costs. Costs are summarized by each category and are presented in Table v.

Mining and trucking costs are estimated based on third party contractor rates, processing charges are estimates based on discussions held with local toll processing facilities. General and administration costs are based on internal owner estimates, local labor rates, and from experience in operating the Invicta Gold Project camp facility.

Table iv: Initial Pre-Production Capital and Sustaining Capital Breakdown

Description	Initial Capital (2018) ($M)	Sustaining Capital (2019-2023) ($M)	Total Capital (Life of Mine) ($M)
Project Infrastructure	1.8	2.3	4.1
Development	2.5	6.1	8.6
Total	**4.3**	**8.4**	**12.7**

Table v: Life of Mine Operating Cost

Description	2019-2023	
	$/t	$M
Underground Mining and Development	42.95	28.77
Trucking and Haulage	50.20	33.62
Processing	37.54	25.15
General & Administration	12.66	8.48
Total	**143.34**	**96.0**

Economic Analysis

The estimated post-tax net present value (NPV) of the Invicta Gold Project, using a discount rate of 5 percent, is $43.4 million with contingency on capital costs. The corresponding pre-tax NPV was $53.6 million. The detailed financial inputs and financial outcome are presented in Table vi and Table vii, respectively. All values and outputs are in US dollars.

Sunk costs prior to the project's start date of January 1, 2018, are not included in the economic analysis. Capital expenditures were depreciated over the life of mine. The financial model uses a tax calculation based on a tax rate of 30 percent.

A 30 percent Peru tax was applied to provide post-tax estimation. The Invicta Gold Project currently does not have any royalties.

Table vi: General Input Parameters

Item	Unit	Value (US$)
General		
NPV (discount)	%	5.0 and 8.0
Metal Price		
Gold	$/oz	1,300.00
Silver	$/oz	16.75
Copper	$/lb	3.00
Lead	$/lb	1.05
Zinc	$/lb	1.25
Processing & Refining		
Mill throughput (max)	tpd	355
Milling days per year	dpy	365
Processing cost - 2018	$/t	37.54
Gold Recovery	%	87.9
Silver Recovery	%	79.6
Copper Recovery	%	84.1
Lead Recovery	%	82.6
Zinc Recovery	%	82.7
Taxation		
Corporate (Peru)	%	30
Capital Items		
Contingency infrastructure	%	20.0
Contingency development	%	15.0

Source: Lupaka 2018

Table vii: Financial Model Summary

Item	Unit	Output
Economics		
NPV (pre-tax) (5%)	($M)	53.6
NPV (pre-tax) (8%)	($M)	50.0
NPV (post-tax) (5%)	($M)	43.4
NPV (post-tax) (8%)	($M)	40.6
Non-discounted payback period	years	< 1
Discounted payback period	years	< 1
Project Capital		
Project infrastructure capital	($M)	1.8
Capital development	($M)	2.5
Sub-Total Capital	($M)	4.3
Capitalized (project phase) operating	($M)	13.4
Total Project Capital	**($M)**	**17.7**
Sustaining Capital		
Project Infrastructure capital	($M)	2.3
Capital development	($M)	6.1
Sustaining cost (infrastructure + mobile eqt)	($M)	8.4
Production		
Plant feed	(Mt)	0.67
Payable Gold-Equivalent	(Moz)	0.14
Metrics (Life of Mine)		
Operating cash cost per ton feed	$/tonne	143.34
Operating cash cost per ounce	$oz	508
All-in (cash cost + Sustaining cost) per ounce	**$/oz**	**575**

Source: SRK, 2018

Conclusion and Recommendations

SRK has audited and modified a mineral resource model generated by SRK (2012) for the polymetallic mineralization delineated by drilling on the Invicta Gold Project and a PEA level mining study was undertaken to assess the economic potential of mining a portion of the total mineral resource, which is documented as an independent technical report in compliance with NI 43-101 and Form 43-101F1 guidelines.

The exploration database used to estimate the Invicta Gold Project mineral resource was audited in this study by SRK, who is of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries for gold mineralization and that the assay data are sufficiently reliable to support mineral resource estimation.

SRK classified the block model in accordance with the CIM *Definition Standards for Mineral Resources and Mineral Reserves* (May 2014). The "reasonable prospects for economic extraction" requirement generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade considering extraction scenarios and processing recoveries. To meet this requirement, SRK considers that the Invicta Gold Project is amenable for underground extraction. Underground mineral resources are reported at a cut-off grade of 3.0 g/t gold-equivalent. A combined Measured and Indicated tonnage of 3 million tonnes at 5.78 g/t gold-equivalent for a contained metal of 558 thousand ounces of gold-equivalent was reported. An additional Inferred tonnage of 0.58 million tonnes at 5.29 g/t gold-equivalent for a contained metal of 98 thousand ounces of gold-equivalent was also reported.

The PEA considers only a small portion of the total mineral resource adjacent to the existing infrastructure at the Invicta Gold Project. The operating plan is based on the underground extraction from the Atenea vein, close to the existing 3400 Level adit, utilizing a sublevel long hole open stoping mining method, with waste rock as backfill, where possible.

Over the initial 6-year operating plan outlined in the PEA, the pre-tax NPV using a 5 percent discount rate is $53.6 million and the post-tax NPV using a 5 percent discount rate is $43.4 million. This preliminary economic assessment is, however, not adequate to confirm the economics of the study. A preliminary-feasibility study, or feasibility study, as defined in Canadian Securities Administrators National Instrument 43-101, containing mineral reserve estimates is required for this purpose.

Exploration conducted on the Invicta Gold Project indicates that the property has considerable potential for mineral resource expansion through exploration. Structural geology studies, geophysical and geochemical work conducted to date strongly suggest the potential for mineral resource expansion along existing mineralized structures.

The Invicta Gold Project is a project of considerable merit, which has demonstrated positive PEA results considering the conceptual extraction of a portion of the reported mineral resource. Considering the outcome of this study, SRK recommends a work program comprising multi-disciplinary technical studies and exploration drilling aimed at expansion, de-risking and further characterization of the project in preparation of the future delineation of mineral reserves.

SRK supports the approved exploration plan proposed by Invicta Mining Corp management for 2018. The plan is focused in the expansion of the mineral resources above and to the east of the 3400 Level in the Atenea vein, and below this level in areas characterized by low drilling densities. It is strategically important that high grade mineralization be identified and delineated by drilling. About 600 metres of additional development drifting and 2,500 metres of underground diamond drilling have been proposed to expand and increase the confidence the Invicta Gold Project mineral resource.

SRK considers that the implementation of the proposed work program will further advance the Invicta Gold Project and will provide key inputs required to evaluate the economic viability of a mining project at a feasibility level, and support the first disclosure of mineral reserves.

The total cost of the recommended work program is estimated at C$1.0 million. SRK is unaware of any other significant factors and risks that may affect access, title, or the right, or ability to perform the recommended work program.

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1 Introduction and Terms of Reference

The Invicta Gold Project is located in the province of Huaura, situtated approximately 120 kilometres to the northeast of the city of Lima in Peru.

Lupaka Gold Corp. (Lupaka) is a Peru-focused mineral development and exploration company, whose prime asset is the Invicta Gold Project, which Lupaka intends to fast-track to production. Lupaka holds a 100 percent interest in the Invicta Gold Project, which comprises six mining concessions for a total area of 4,700 hectares.

In November 2017, Lupaka commissioned SRK Consulting (Canada) Inc. (SRK) as an independant consultant to compile a Preliminary Economic Assessment (PEA) level technical report for the Invicta Gold Project, following Canadian Securities Administrators' National Instrument 43-101 (NI 43-101) guidelines. The study was jointly undertaken by by technical staff from the SRK Toronto and Sudbury offices, and from the Lima office of SRK Consulting (Peru) S.A., in close collaboration with Lupaka.

The previous NI 43-101 technical report for the Invicta Gold Project was generated by SRK Consulting (U.S.), Inc. for previous operator, Andean American Gold Corporation (Andean American), and filed on April 16, 2012, documenting mineral resources for the Invicta Gold Project as of April 6, 2012 (SRK, 2012).

This NI 43-101 technical report documents a revised Mineral Resource Statement and conceptual mining study undertaken for the Invicta Gold Project as of February 28, 2018, prepared by SRK. It was prepared following the guidelines of the Canadian Securities Administrators' NI 43-101– Standards of Disclosure for Mineral Projects and Form 43-101F1. The mineral resource reported herein were prepared in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines*.

The results of this PEA were announced by Lupaka in a news released dated March 1, 2018.

This report provides a summary of the current status of the Invicta Gold Project, as at the effective date of this report.

1.1 Scope of Work

The scope of work, as defined in a letter of engagement executed on November 13, 2018 between Lupaka and SRK includes the construction of a revised mineral resource model for the polymetallic mineralization delineated by drilling on the Invicta Gold Project, a PEA mining study to assess the economic potential of the project and the preparation of an independent technical report in compliance with NI 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 was a collaborative effort between Lupaka and SRK personnel. The exploration database for the Invicta Gold Project was compiled and maintained by Lupaka, and audited by SRK. The initial geological model and outlines for the gold mineralization were constructed by SRK (2012) for Andean American, and were audited in this study by SRK in collaboration with Lupaka. No data was added to the exploration database in the time between the SRK (2012) study and this study. In the opinion of SRK, the geological and gold mineralization models for the Invicta Gold Project are 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 (2012), and audited in this study. A similar, but slightly revised Mineral Resource Statement was generated for this report, to reflect current metal prices and costs. Much of the content of Sections 3 to 11 reported herein are modified from SRK (2012).

Underground mine design and planning in support of the PEA life of mine plan were generated by staff at the SRK Lima and Sudbury offices. Conceptual mining tonnes and grade were reported as of February 28, 2018.

The Mineral Resource Statement and mining quantities and grades reported herein were 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' NI 43-101 and Form 43-101F1.

The technical data supporting this technical report was generated during December 2017 to March 2018, whereas the technical report was assembled in the SRK Toronto, Sudbury and Lima offices during the months of January to March 2018.

1.3 Basis of Technical Report

This report is based on information collected by SRK during site visits performed between January and April 2018, and on additional information provided by Lupaka throughout the course of SRK's investigations. SRK has no reason to doubt the reliability of the information provided by Lupaka. Other information was obtained from the public domain. This technical report is based on the following sources of information:

- Review of previous technical reporting on the property
- Discussions with Lupaka personnel
- Inspection of the Invicta Gold Project, including outcrop, drill core and underground
- Review of exploration data collected by Lupaka and its predecessors
- Additional information from public domain sources

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 revised Mineral Resource Statement was completed by Camila Passos, PGeo (APGO#2431), supported by Glen Cole, PGeo (APGO#1416). The compilation of the PEA mining study was undertaken by a team of multi-disciplinary consultants from the SRK Toronto, Lima and Sudbury offices (Table 1) under the guidance of Mr. Gary Poxleitner, PEng (PEO #100015286). By virtue of their education and membership of a recognized professional association and relevant work experience, Ms. Passos, Mr. Cole and Mr. Poxleitner are independent Qualified Persons as this term is defined by NI 43-101. Mr. Adam Johnston FAusIMM (#112641) from Transmin Metallurgical Consultants was responsible for the metallurgical sections of the report.

Table 1: List of Technical Report Authors

Professional	Responsible Sections of the Report
Camila Passos	Sections 1 to 11, 13; co-responsible for executive summary (ES) and Sections 23-26
Gary Poxleitner	Sections 14,15, 20 and 21; co-responsible for ES and Sections 24-26
Antonio Samaniego	Sections 17; co-responsible for ES and Sections 24-26
Adam Johnston	Sections 12 and 16; co-responsible for ES and Sections 24-26
Karin De Rycker	Section 19; co-responsible for ES and Sections 24-26
Glen Cole	Project Management, Senior Review

Additional contributions were provided by Mr. Antonio Samaniego and Ms. Karin De Rycker from SRK Lima.

Glen Cole, PGeo (APGO#1416), a Principal Consultant with SRK, reviewed drafts of this technical report prior to their delivery to Lupaka as per SRK internal quality management procedures. Mr. Cole did not visit the project.

1.5 Site Visit

In accordance with NI 43-101 guidelines, Ms. Camila Passos, PGeo visited the Invicta Gold Project on January 9, 2018 accompanied by Mr. Julio F. Castañeda, MAIG, the President of Lupaka Gold Peru S.A.C, a Peruvian subsidiary of Lupaka. Mr Gary Poxleitner, PEng visited the property on April 3-4, 2018 accompanied by Mr. Dan Kivari, Director of Operations for Lupaka.

The purpose of Ms. Passos' site visit was to review representative drill core that constitutes the exploration database used for mineral resource estimation, discuss database validation procedures, visit underground mineralization exposures, interview project personnel, and to collect relevant

information for the audit / revision of a mineral resource model and the compilation of a technical report.

The purpose of Mr Poxleitner's site visit was to review underground workings, infrastructure as well as the continuity mineralization to support the mining assumptions used in the PEA. The site visit was also aimed at assessing potential opportunities for further mine design and optimization in the future.

SRK was given full access to relevant data and conducted interviews with Lupaka personnel to obtain information on 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 Mr. Will Ansley, President and CEO of Lupaka and Mr. Julio Castañeda Mondragon, MAIG, President of Lupaka Gold Peru S.A.C. Their collaboration was greatly appreciated and instrumental to the success of this project.

1.7 Declaration

SRK's opinion contained herein and effective **March 01, 2018** 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 Lupaka Gold Corp. and neither SRK or any affiliate has acted as advisor to Lupaka Gold Corp., 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 Lazo, De Romaña & CMB as expressed in a title opinion provided Lupaka on April 4, 2018. 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 Lupaka that there are no known litigations potentially affecting the Invicta Gold project.

3 Property Description and Location

The Invicta Gold Project is in the province of Huaura, department of Lima, Peru, 120 kilometres northeast of the city of Lima (Figure 1). The property is located within the boundaries of the Paran, Lacsanga and Santo Domingo de Apache peasant communities. Santo Domingo de Apache and Paran are in the district of Leoncio Prado, while Lacsanga is in the district of Paccho. It is centred about the geographical coordinates of Latitude 11°01’47.13” S and Longitude 77°00’38.49” W.

Figure 1: Location Map of Invicta Gold Project, Peru

3.1 Mineral Tenure

The Invicta Gold Project comprises six mining concessions held by Invicta Mining Corporation S.A.C (Invicta Mining Corp), a subsidiary of Lupaka. and comprises a total area of 4,700 hectares. A map of the mining concessions is shown in Figure 2.

Figure 2: Land Tenure Map of Invicta Gold Project

3.2 Mining Rights in Peru

The *Ley General de Minería* (the general mining law) of Peru defines and regulates different categories of mining activities, ranging from sampling and prospecting to development, mining, and processing. Since September 1992, mining concessions are granted using UTM coordinates to define areas generally ranging from 100 hectares up to a maximum of 1,000 hectares in size. Mining titles are irrevocable and perpetual, as long as the titleholder maintains payment of the *Derecho Vigencia* (sub-surface rights) fees up to date to the *Ministerio de Energía y Minas* (the ministry of energy and mines of Peru*).* A holder must pay a *Vigencia* (annual maintenance fee) of US$3 per hectare (for metallic mineral concessions) for each concession actually acquired or for a pending application (*petitorio* or claim) at the time of acquisition, and then by June 30 of each subsequent year to maintain the concession. The concession holder must sustain a minimum level of annual commercial production of greater than US$100 per hectare in annual gross sales before the end of the sixth year of the granting of a concession; or, if the concession has not been put into production within that period (by the first semester of the seventh year), the annual rental increases to US$9 per hectare (US$3 for *Vigencia* plus a US$6 penalty) until the minimum production level is met. If by the start of the twelfth year the minimum production level has still not been achieved then the annual rental increases to US$23 per hectare thereafter (US$3 for *Vigencia* plus a US$20 penalty).

The concession holder can be exonerated from paying the penalty if they can demonstrate that during the previous year they "invested" an equivalent of no less than ten times the penalty for the total concession. This investment must be documented along with the copy of the *declaración jurada de impuesto a la renta* (annual tax statement) and the payment of the annual *Derecho Vigencia* fees. The concession will terminate should the annual rental not be paid for three years in total or for two consecutive years. The term of a concession is indefinite provided it is properly maintained by payment of rental fees.

A Peruvian mining concession is a property-related right; distinct and independent from the ownership of land on which it is located, even when both belong to the same person. The rights granted by a mining concession are defensible against third parties, are transferable and chargeable, and, in general, may be the subject of any transaction or contract.

To be enforceable, any and all transactions and contracts pertaining to a mining concession must be entered into a public deed and registered with the public mining registry (*El Registro Público de Minería*). Conversely, the holder of a mining concession must develop and operate his/her concession in a progressive manner, in compliance with applicable safety and environmental regulations and with all necessary steps to avoid third-party damages. The concession holder must permit access to those mining authorities responsible for assessing that the concession holder is meeting all obligations.

3.3 Underlying Agreements

The six mining concessions within the Invicta Gold Project are owned wholly by Invicta Mining Corp a subsidiary of Lupaka. Table 2 contains the list of the mining concessions, area covered and due date for annual payment of the *Derecho Vigencia* fees. Figure 2 shows the Invicta Gold Project concession map.

Table 2: List of Concessions

Concession Name	Area (Ha)	Code	Public Registry	Owner
Victoria Uno	1,000	10334195	02028980	Invicta Mining Corp
Victoria Dos	400	10336295	02029020	Invicta Mining Corp
Victoria Tres	900	10335795	02029079	Invicta Mining Corp
Victoria Cuatro	400	10197196	02029320	Invicta Mining Corp
Victoria Siete	1,000	10231196	02029352	Invicta Mining Corp
Invicta II	1,000	10313005	11875634	Invicta Mining Corp
Total	**4,700**			

Invicta Mining Corp exercised an option, dated September 9, 2005, (held by Andean American Mining Corp., later Andean American Gold Corp.) for a 100-percent interest in the concessions Victoria Uno, Victoria Dos, Victoria Tres, Victoria Quatro and Victoria Siete from Minera ABX Explorations S.A. (ABX), a subsidiary of Barrick Gold Corporation (Barrick). The agreement was finalized in December 2008.

In 2017, Invicta Mining Corp completed all the obligations related to the maintenance of the five concessions acquired from ABX.

3.3.1 Registered Liens and Emcumbrances

Barrick is entitled to exercise a back-in option if the following conditions are met:

- More than 2 million ounces of gold are discovered at any time in the mining concessions and become Proven or Probable reserves according to the guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum
- Within 90 calendar days of being informed by Invicta Mining Corp that the aforementioned condition has been met, Barrick sends notice informing the decision to acquire the mining concessions
- Invicta will receive as consideration 150 percent of all exploration and project expensesincurred by Invicta Mining Corp and/or its subsidiaries in these mining concessions as long as such expenses are duly documented according to law
- Should Invicta Mining Corpincur into any breach of contract, Barrick will terminate the original Mining Rights Contract and revert these five mining concessions to Barrick.

Compañía Minera San Jorge (San Jorge) is entitled to exercise its right of first refusal if Invicta Mining Corp intends to transfer any participation interest in the five mining concessions (Victoria Uno to Siete) to any third party. San Jorge will have 30 calendar days, counted as of the day it receives notice from Invicta Mining Corp, of such intention to inform Invicta that it exercises this Right of First Refusal and will acquire the mining concessions for the same consideration and under the same terms and conditions as the ones informed by Invicta Mining Corp

3.3.2 Mortgage in Favour of PLI Huaura Holdings LP

A mining mortgage has been granted by Invicta Mining Corp, acting as guarantor of Lupaka Gold in the Pre-Paid Forward Gold Purchase Agreement dated June 30, 2016 entered into by PLI Huaura Holdings LP (PLI Huaura) as Buyer, Lupaka Gold as Seller and Invicta (and others) as Guarantors (the “Purchase Agreement”). The mortgage has been granted up to the amount of US$17,500,000.00

(seventeen million five hundred thousand and 00/100 United States dollars) and serves as collateral for all obligations of Lupaka Gold under the Purchase Agreement.

The mortgage was granted and entered into a public deed on August 2, 2017 before notary public Ms. Susana Gutiérrez Pradel. The mortgage covers the mineral concessions, as well as (i) any buildings and civil works that exist today or may exist in the future in those mineral concessions; and (ii) any assets property of Lupaka Peru that may be used for mining activities in those mineral concessions.

3.4 Permits and Authorization

Invicta Mining Corp currently has surface rights agreements with the communities of Santo Domingo de Apache and Lacsanga, covering all aspects of mine development, infrastructure and mineral processing, and is is committed to a program of sustainable development with the communities over the life of the mine. Invicta Mining Corp plans to have an agreement with the Paran community in the short term.

Land use agreements were finalized with the Lacsanga and Santo Domingo de Apapche communities in July 2017 and October 2010, respectively

For initiating mine development activities and the preparation of the Victoria Uno mining concession, Invicta Mining Corp must obtain authorizations and licenses. To ensure compliance with Peruvian law, the following is required:

- Mining operation certificate for the Invicta Gold Project for 2018 for the desired level of exploitation operations from the General Directorate of Mining in Peru (*Dirección General de Minería*, DGM). This has been received.
- Zero discharge authorization from the the National Water Authority of Peru (*Autoridad Nacional del Agua*, ANA).
- Activation of mine-closure guarantee once mining operations will start from the DGM.
- Solid waste declaration and management plan from the DGM.
- Permission for fuel storage infrastructures from the Supervisory Body for the Investment in Energy and Mining in Peru (*Organismo Supervisor de la Inversión en Energía y Minería*, OSINERGMIN). This has been received.

The approved operating permits and authorizations acquired for the Invicta Gold Project to-date are listed in Table 3.

Invicta Mining Corp does not have a mineral processing concession for the Invicta Gold Project, and therefore has no authorization to construct a processing plant or a tailings pond (ACOMISA, 2015).

Table 3: List of Approved Operating Permits for the Invicta Gold Project

Item	Reference Name	Document	Description	Granting Entity	Date Granted
1	Mine Closure/ Warranties suspension	R.D. Nº 286-2014-MEM-AAM	Warranties suspension request	MINEM	2014-08-05
2	Re-start mining activities	R.D. Nº 566-2014-MEM-AAM	Authorization to re-start mining activities	MINEM	2014-12-11
3	Mining Operation Certificate (COM)	COM No.072-2018-C (EXPEDIENTE Nº 2764750)	A permit for the year 2018 for development & preparation of underground mining works was issued.	MINEM	2017
4	Mine Plan	R.D. Nº 566 -2014 MEM-DGM/V	Capacity was settled at 400 tpd.	MINEM	2014-12-11
5	Explosive usage permit	R.G. Nº 164-2018-SUCAMEC/GEPP	Allows IMCSAC to use explosives for Invicta's underground mining activities	SUCAMEC	2018-01-12 last until 2018-12-31
6	Explosive storage and acquisition permit	R.G. Nº 3281-2014-SUCAMEC/GEPP	Authorization for storage and acquisition of explosives and materials	SUCAMEC	2014-10-29 last until 2019-10-28
7	Verification Act of the powder magazine	Nº 809-2016-SUCAMEC-GCF-WVR	Polvorin type A, surface, explosives, 148.47 m^3	SUCAMEC	2016-03-29
8	Verification Act of the powder magazine	Nº 809-2016-SUCAMEC-GCF-WVR	Polvorin type A, surface, explosives, 87.57 m^3	SUCAMEC	2016-03-29
9	Water usage license	R.A. Nº 192-ANA-ALA-Huaura	Pumping water well will be used up to 40 L/s, 12 hours per day, 7 days per week, cumulating a total annual volume of 622,080 m^3. This water source is located at the Huamboy-Puquial farm in the Huaura river valley, close to the mine area. Invicta has signed an easement agreement with the land owner.	ANA and ALA	2009- 10-27
10	Discharge licence	TBD	discharge "0 L/s" *	ANA/ALA	TBD
11	Landowner ship/ land	Servitude land use agreements	See paragraph 19.3	Communities	variable
12	Inexistance of Archaelogical Remains	CIRA Nº 2010-257	Certicate of Inexistance of Archaelogical Remains (CIRA)	INC	2010-06-09

ACOMISA, 2015, Invicta updated EIA, paragraph 9.7.3.2, pg.381-382.

SUCAMEC, *Superintendencia Nacional de Control de Servicios de Seguridad, Armas, Municiones y Explosivos de Uso Civil*, department of explosives and pyrotechnic products for civil use

ALA, *Autoridad Local del Agua,* local water authority

INC, *Instituto Nacional de Cultura*, national institute of culture

Source: Various permits and authorizations provided by IMCSAC.

3.5 Environmental Considerations

The Environmental Management Plan (*Plan de Manejo Ambiental*, PMA) for the Invicta Gold Project incorporates the following:

- Policy
- Identification of impacts
- Management programs
- Organizational capacity and competency
- Emergency preparedness and response
- Stakeholder engagement
- Monitoring and review

The PMA for the Invicta Gold Project includes general guidelines to manage and mitigate the potential environmental impacts over the life of the project which includes the following:

- Construction:
  - Maintenance and cleaning of main access, roads, mine access, water system, water channels, waste dump and landfill.
  - Slope stability conservation.

- Operations:
  - Environmental monitoring program.
  - Prevention, mitigation and remediation program: air quality control, soil protection, slopes stability, chemical stability, flora-fauna protection, archaeological preservation and water management.
  - Solid waste management program.
  - Contingency plan.

- Post mine closure:
  - Environmental maintenance program.
  - Environmental monitoring program.

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

4.1 Accessibility

The Invicta Gold Project is accessible from the capital of Peru, Lima, by driving north along the Pan American Highway to Huaura (160 kilometres), then Highway 16 (paved) east to Sayan (45 kilometres), and on paved road to Huamboy or Pincunche. Access from Sayan to Huamboy or Picunche is along a paved road that runs from Sayan to Churin; with a minimum width of 6.0 metres. This road is used daily by concentrate trucks and heavy transports. The vehicular weight restriction is set at 30 tonnes at the bridge crossing at Cuñay.

Two secondary gravel roads provide access to the Invicta Gold Project from either Huamboy via Paran, or from Picunche via Lacsanga. The road from Picunche has been widened and improved by the company, to allow vehicles up to 30 tonnes access the site regularly via the road from Picunche.

A shorter access route from Lima is along the Pan-American Highway North, exiting at Rio Seco and continuing along a 52-kilometre paved road, which reduces the distance to 198 kilometres. A third longer access is available via Santo Domingo de Apache.

An all-terrain 4-wheel drive vehicle allows access to most parts of the property.

4.2 Local Resources and Infrastructure

The provincial cities of Sayan and Huacho provides services, supplies and facilities to the mining industry.

4.2.1 Power

66kV Transmission Line Option

There is an existing 66-kilovolt power supply to Andahuasi, which is 29 kilometres from the planned Invicta Gold Project site. For this option, new substation infrastructure requirements would be limited to additional high voltage switching equipment and protection systems in a switch yard. Invicta currently has an approved EIA to construct 29 kilometres of 66-kilovolt electrical transmission line from Andahuasi to the Invicta Gold Project site. Hydroelectrical options closer to the project area are also available.

Invicta Mining Corp obtained permission to connect to the national electricity grid of Peru. Basic engineering studies were completed and approved for the infrastructure and tie-in to the Andahuasi substation. The capacity of the substation and the feeding transmission line from Huacho to Anahuasi was upgraded in 2011 to 24 megawatts. These studies are no longer applicable, as a plant option is not currently being considered for the project.

At the terminus of the 66-kilovolt transmission line, a 66-kilovolt /10-kilovolt step down transformer would be required to provide power for the mine, process plant, and water well site (described in the following sub-section). From the 66-kilovolt terminus, two separate 10-kilovolt transmission lines would run to the mine transformer and to the water pumping station in Huamboy.

Once more detailed engineering studies are complete, the Invicta Gold Project requires operating study approval from *Comité de Operación Económica del Sistema Interconectado* (the National Interconnected System Financial Operation Committee, COES), a private Peruvian non-profit organization, which promotes the efficient use of energy resources in Peru.

220kV Transmission Line Option

In parallel to the design, engineering, EIA processing, and approval of the Invicta Gold Project 66-kilovolt transmission, SN Power Perú S.A. obtained environmental approval to construct a 220-kilovolt transmission line for the Cheves hydroelectric facility, currently completed and up-river from the Invicta Gold Project site. SN Power Perú S.A. has completed the construction of the 220-kilovolt line and currently is providing power to the national net. This 220-kilovolt electrical transmission line could provide an alternative power source to the 66-kilovolt transmission line.

Discussions have been held with S.N. Power Perú S.A. to allow for a potential tie-in to the 220-kilovolt electrical lines. Although a larger step-down transformer would be needed for the 220-kilovolt/22.9-kilovolt substation, the distance of the transmission line to the Invicta Gold Project site would be reduced significantly. From the Invicta substation (at the connecting point with the 220-kilovolt line) a 22.9-kilovolt transmission corridor approximately 6.8 kilometres to 9.8 kilometres long would be required to supply power to the Invicta site. A pre-feasibility study was completed in December 2011 on this alternative. Approval from S.N. Power Perú S.A. is required for this tie-in.

4.2.2 Water

The Huaura River is located in the lower lands located 7.5 kilometres to the west of the property and is fed from the highlands with year-long flows varying between 10 cubic-metres per second in September, to 73 cubic-metres per second in March.

Water for industrial mining and mineral processing is not readily available at the mine site and will need to be sourced from a water well near the Huaura River.

The Invicta Gold Project maintains a water use permit for 40 litres per second for 12 hours per day (to the plant site) from the the ministry of agriculture and irrigation of Peru through the irrigation district technical administration authority (ATDR), dated Oct 27, 2009. A well was constructed and the surface rights for the area required for the well were obtained from a third party and registered. Well testing studies concluded that the well head can supply up to 50 litres per second of water during the dry season. Biological and elemental testing confirmed that the water is suitable as a potable water supply.

4.2.3 Mining Personnel

Peru is a significant gold producing country and is also the world's leading silver producer and a leader in copper and zinc mining. Mining activities in Peru date to pre-Inca cultures. As a result of Peru's long history of mining activity, a labor pool of specifically skilled and technically qualified personnel is available within Peru itself. The education system in Peru is geared towards mining, with 16 separate universities providing degrees in mining engineering. Technical institutes (such as TECSUP) provide technical training focused on the mining and civil industrial sectors.

The departments of Lima, Huancavelica, Junin and Pasco have an abundant pool of qualified workers. A portion the workforce will come from the surrounding communities of Lacsanga, Santo Domingo de Apache and Paran. Invicta Mining Corp has committed to developing training programs

for the community workforce. The remaining workforce, including some of the labor for specifically skilled and/or technical positions, will be hired from the surrounding areas.

The current level of investment in Peru, in combination with the lack of skilled workers in other South American countries, is resulting in an increase in recruitment of Peruvian workers. As the Invicta Gold Project is located relatively close to the city of Lima, this should increase its competitiveness for workers with specific skills and/or technical qualifications compared to more distant locations.

4.2.4 Potential Waste Disposal Areas

Waste disposal sites for mine waste, soil, and organic waste were approved for the mine area and will be constructed as soon as the mining operation starts

There is no development waste rock disposal facility currently on the property, except for the previous development waste excavated from the existing mine adit (at 3,400 metres elevation).

4.2.5 Potential Construction Camp Areas

The current exploration camp site is on the south side of the Invicta Gold Project . The facilities will need to be expanded progressively during construction in order to facilitate the development and operation of the mine, and to host the staff necessary for production.

4.3 Climate

The climate is semi-arid most of the year. The rainy season runs from December to March, with annual rainfall of 25 to 53 centimetres. Temperatures during winter can be 5 degrees Celsius and in the summer months reach up to 34 degrees Celsius. Temperatures vary with altitude.

4.4 Physiography

The topography is rugged with deep “V” shaped valleys cutting through the Andes along the eastern margin of the Coastal batholith (Figure 3B). The average elevation in the Invicta Gold Project area is 3,600 metres above sea level. There is little vegetation, mainly small plants and cacti (Figure 3C).

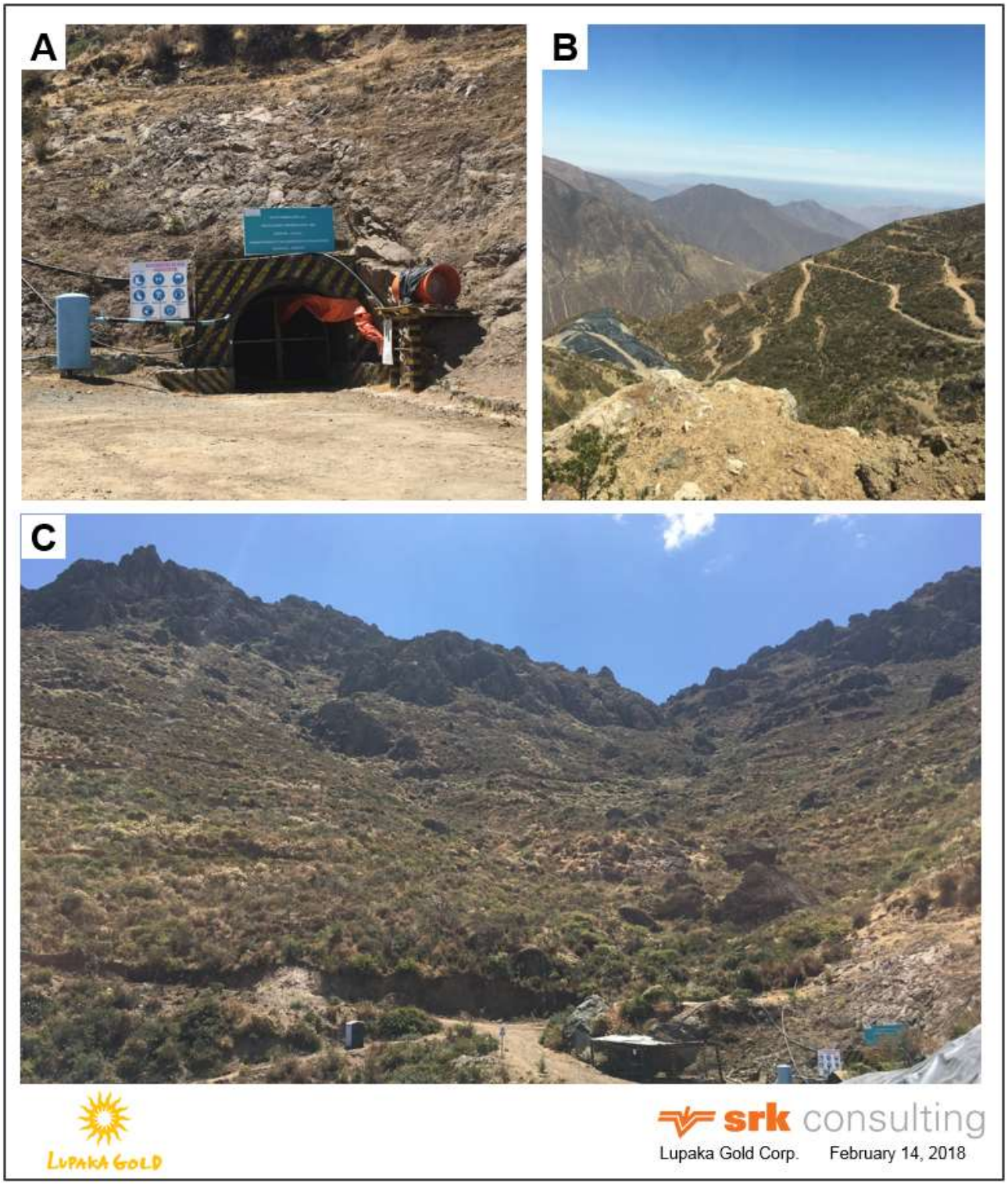

Figure 3: Invicta Gold Project Area

A: Main mine access to 3400 Level

B: Project landscape with “deep V” topography

C: Vegetation in area and project landscape

5 History

5.1 Introduction

Mining activities at the Invicta property date back to 1968 to 1969, when two adits were developed in the Atenea area: the longer measuring 162 metres in length, and the shorter measuring 39 metres in length. Historical small-scale mining was also conducted in the Pucamina zone through a series of small adits.

In 1990, Mr. Leopoldo Livschitz staked an area of 900 hectares centered on the Atenea vein. Further work was put on hold in 1991 and the property was declared abandoned in 1994 by the ministry of energy and mines of Peru. Pangea Peru S.A. (Pangea) geologists visited the property later the same year and the following year (1995) Pangea staked the property. The Pangea claim comprised the concessions Victoria Uno, Victoria Dos, Victoria Tres, Victoria Quatro and Victoria Siete.

Between July and December 1996, Pangea conducted trench channel sampling over an area of 12,500 hectares on the Invicta property (then called the Victoria Project) with covering the following mineralized Zones: Zone 1 (renamed the Atenea zone by Pangea), Zone 2 (renamed the Pucamina zone by Pangea), Zone 3 (renamed the Juan zone by Pangea), Zone 4 (subdivided into the Ydalias zone and Zone 4 by Pangea), Zone 6 (renamed the Dany zone by Pangea), and Zones 5 and 7. SRK maintains the zone naming nomenclature in this report, in accordance with past mineral resource reporting (Jamarillo, 2009). SRK notes that Zone 4 and Ydalias (Ydalia 1 and 2 in previous mineral resource statements) occupy a similar geographic space, and recommends that these zones be combined into a unified Ydalias zone for future mineral resource estimation and reporting. Borehole assay results subsequently confirmed the occurrence of gold in most of these zones. Val d´Ór Geophysics completed an induced polarization (IP) and magnetic survey over a 43-kilometre long grid. Pangea completed construction of the access road from the community of Paran to the Victoria Project camp.

During 1997 and 1998, a 12,476-metre diamond drill program was completed by Pangea. Other work included detailed geological mapping, a stream sediment geochemical survey, and a mineral resource calculation. In 1998, a scoping study was completed by Spiteri Geological and Mining Consultants Inc. with metallurgical tests completed by Lakefield Research. The scoping study and resource estimate were not published.

5.2 Prior Ownership and Ownership Changes

The Victoria Project claim consisting of the concessions Victoria Uno to Victoria Dieciseis was first registered in January 1995. Pangea conducted exploration work as the operator of a 50/50 joint venture with Sundust Resources Inc.

In 2000, Barrick acquired Pangea and in September of that year an employee for Barrick, Mr. Francois Gaboury, visited the property and prepared a summary report.

On September 9, 2005 Andean American signed an Option Agreement with ABX (a subsidiary of Barrick in Peru) to acquire a 100 percent interest in the Victoria Uno, Victoria Dos, Victoria Tres, Victoria Cuatro and Victoria Siete concessions. The Invicta mineral resource resides on the Victoria Uno concession (Figure 2).

Andean American exercised the option for the above-mentioned Victoria concessions in December 2008 and proceeded to develop a potential mining operation.

In October 2012, Lupaka acquired all of the issued and outstanding shares of Andean American in all-share exchange. This acquisition included all Andean American subsidiaries, including Invicta Mining Corporation, which holds the Victoria concessions.

5.3 Previous Exploration and Development Results

5.3.1 Pangea Peru S.A. (1994-2000)

Reconnaissance Exploration and Trenching

Reconnaissance exploration mapping was conducted from January 1997 to June 1997 by Pangea personnel. A total of 280 samples were collected over the entire property. All samples were assayed for 35 elements.

Pangea initiated trenching in June 1996 along with the preliminary mapping. A total 72 trenches were dug and sampled, of which 18 were in the Atenea zone, 25 in the Pucamina zone, 11 in the Dany zone, 11 in the Juan zone and 7 in Zone 7. The thickness of overburden or the absence of mineralized breccia restrained the sampling of some trenches.

Large areas of argillite and oxide alteration were delineated in the northern part of the concession Victoria-Seis (now Invicta). This alteration is within what appears to be the Paccho pluton. It was difficult to identify the rock because of the level of alteration.

Stream Sediment Geochemical Survey

The objective of the stream sediment survey was to outline any gold or base metal anomalies within the limits of the Victoria property, in addition to the known mineralized structures. The survey was conducted during the month of April 1998 by Pangea personnel. In total, 113 samples were collected in seven ravines. All samples were assayed for fourteen elements, gold, silver, copper, lead, zinc, molybdenum, antimony, arsenic, nickel, bismuth, cadmium, cobalt, manganese and iron. Gold was assayed by fire assay while the other 13 were assayed by atomic absorption.

The survey confirmed the presence of anomalous areas. The prime area of interest is located north of the Pucamina fault along the Picunche ravine. This is a gold anomaly that extends over 1.5 kilometres. Gold values vary between 140 and 520 parts per billion. There is no evidence for the presence of a mineralized structure within the anomaly itself. On the other hand, mineralization along the Pucamina fault is located 500 metres upstream of this anomaly and could be its source. The Paran ravine also showed anomalous gold background levels from 22 to 310 parts per billion. The general area is underlain by the Paccho pluton. Near these anomalies local mineralized veinlets are observed.

Geophysical Surveys

The IP and magnetic surveys were carried out in two phases: Phase I, from August 1996 to September 1996, for a total of 13.9-line kilometres of magnetic survey and 10.7-line kilometres of IP survey; and Phase II, from August 1997 to September 1997, for a total of 32.2-line kilometres of magnetic and 37.2-line kilometres of IP. Spacing of the readings was 25 metres for Phase I and 50 metres for Phase II.

The report by Val d´Ór Geophysics highlighted that the strongest anomalies are located in the Dany zone. These anomalies exhibit both high resistivity, produced by what is believed to be silicification,

and high chargeability, the highest values observed in the survey. The high level of chargeability could be explained by the multitude of mineralized structures, containing disseminated sulphides.

The Pucamina zone, Juan zone and Zone 7 exhibited a very weak IP signature. The related mineralized structures are not explained with the results from this survey. On the other hand, both zones have a good magnetic signature. The Atenea zone exhibits high chargeability, but because of the rugged terrain, limited information was obtained.

1997-1998 Drilling Campaign

Between February 1997 and August 1998, 112 holes were drilled for a total of 12,476 metres on the Victoria property. This drilling was carried out in two phases:

- Phase I (February 1997 to August 1997): 4,209 metres of surface drilling in Atenea zone, Pucamina zone, and Zones 4, 6 and 7.
- Phase II (October 1997 to August 1998): 8,115 metres of surface drilling in Atenea, Pucamina, and Dany zones and Zones 5 and 6. Also, 152 metres of underground drilling was completed in the Atenea zone (adit 3557 and adit 3614).

The drilling campaign was conducted over six of the mineralized zones encountered on the Victoria Uno claim. The drill spacing ranged between 50 to 100 metres.

Geodrill S.A. performed the Phase I drilling and Bradley S.A. and MDH S.A. drilled the surface and the underground component of Phase II, respectively. For the surface drilling, the core size varied from NQ to HQ, while XRT was used for underground drilling. In January 1998 and February 1998, all transportation was by donkey because of heavy rains due to the El Nino phenomenon. All activities were then put on hold from mid-February 1998 to May 1998 for safety reasons, as the main road between Sayan-Churin and the company's access road were completely destroyed by mud-slides.

For each borehole, a rock quality designation (RQD) test was conducted over the total length while density testing was only conducted in the mineralized zones. A total of 3,313 samples were assayed by CIMM Peru S.A., with most of the zones re-assayed by Bondar & Clegg.

In the Atenea zone, 32 boreholes were drilled on surface for a total of 4,684.8 metres. Twenty-eight of these holes intersected the mineralized breccia. Holes 4411-98-101 and 4411-98-102 were drilled as a test with the portable drill and had to be abandoned within the first 10 metres. 4411-98-78 targeted an IP anomaly nearby the Atenea structure and 4411-98-57 targeted the Atenea southwest extension. The latter hole did not intersect any breccia.

Twenty-nine underground boreholes were also drilled in the two adits for a total of 152 metres. The drill spacing used was a 15-metre interval. 120 metres were drilled in adit 3557 and 31 metres in adit 3614.

In Pucamina, 31 holes were drilled on surface for a total of 4,414.75 metres. Twenty-eight of these holes intersected the mineralized breccia. Hole 4411-98-42 was abandoned, while hole 4411-98-62 targeted secondary structures.

In the Dany zone and Zone 6, 17 holes were drilled for a total of 2,999.28 metres. Most of the holes intersected mineralized structures. However, due to the low drilling density, it was not possible to correlate mineralized structures between drillholes.

Zone 7 was thought to be the potential northwest extension of the Pucamina zone, but because of the difference in the strike orientation of these breccias, Pangea decided not to associate this breccia with the Pucamina zone and instead renamed it Zone 7. Hole 4411-97-27 was bored under a 4-metre wide breccia zone (Trench P25). It did not intersect the breccia.

Two test holes totaling 51.75 metres were conducted in Zone 5. Table 4 tabulates a summary of the historical work completed on the site.

Table 4: Summary of Historical Work

Year	Area Covered	Work Done	Units
1996 to 1998	Entire property	Reconnaissance and detailed mapping	8,600 ha
1996	South flank of the property	Construction of access road to the property	14 km
1996 to 1998	Victoria Uno	Trenching	72
1996	Victoria Uno	Underground sampling 4 cross-cuts	(18 samples)
1996 and 1997	Victoria Uno	Geophysical surveys	3.9 and 32.2 km of Mag & 10.7 and 37.2 km of IP
1997 and 1998	Victoria Uno	Diamond Drilling 83 surface holes & 29 underground holes.	

5.4 Historic Mineral Resource and Reserve Estimates

5.4.1 1998 Pangea Peru (S.A.) Mineral Resource Estimate

In 1998, Pangea (Aubertin and Diaz 1998) made an estimate of mineral resources for Atenea, Pucamina and Zones 4 and 6. This mineral resource estimate was based on a cut-off grade of 3.0 grams of gold per tonne (g/t gold), and another estimate was reported using a 1.0 g/t gold cut-off grade. All of the resources were classified as sulphide. The estimates are shown in Table 5 and Table 6. The date of the report within 1998 is not included in the more recent reports available.

This historical estimate was made in accordance with the standards in effect at the time. This estimate is reported in a historical context only.

Table 5: Historical Invicta Resource Estimate, Cut-off 3.0 g/t Gold, Pangea Peru S.A., 1998

Zone	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)
Atenea	1,252	6.09	67.19	1.22
Pucamina	264	6.53	14.45	0.10
Zones 4 & 6	184	6.09	39.53	0.89
Total	**1,700**	**6.16**	**56.00**	**1.01**

Table 6: Historical Invicta Resource Estimate Cut-off 1.0 g/t Gold, Pangea Peru S.A., 1998

Zone	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)
Atenea	2,053	4.08	46.77	0.92
Pucamina	840	3.17	9.97	0.08
Zones 4 & 6	638	2.49	21.59	0.69
Total	**3,532**	**3.58**	**33.46**	**0.68**

The stated historical resources in Table 5 and Table 6 are not reliable or relevant; they are historically reported information only. Key assumptions and estimation parameters used in the above estimate are unknown to the authors of this report, it is therefore not possible to determine what additional work is required to upgrade or verify the estimate as current mineral resources or mineral reserves. The above tonnage and grade figures are not CIM compliant resources, as no Lupaka or SRK Qualified Persons have evaluated the data used to derive the estimates of tonnage and grade; therefore, the estimate should not be relied upon. A qualified person has not done sufficient work to classify the historical estimate as current mineral resources, and SRK and Lupaka are not presenting the historical estimate as current mineral resources. The estimate of tonnes and grade are presented here only as documentation of what was historically reported for the property (Aubertin and Diaz, 1998).

Subsequent to the 1998 study, mineral resources were reported in compliance with the Canadian Institute of Mining, Metallurgy and Petroleum's (CIM) *Estimation of Mineral Resource and Mineral Reserve Best Practice Guidelines*, as stated in Sections 5.4.2 through 5.4.6.

SRK presents a Mineral Resource Statement in accordance with the CIM *Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines* and the Canadian Securities Administrators' NI 43-101 in Section 13 of this report.

5.4.2 2007 Andean American Gold Corp. Mineral Resource Estimate

To bring the deposit into compliance with NI 43-101 reporting standards, Andean American performed a validation work program and completed an updated mineral resource estimate in 2007.

Andean American initially validated 12 blocks in the Atenea vein. Geological and analytical data were obtained by Invicta (including re-logging of core, bulk densities, assays, widths, areas).

The mineralization was divided into a mixed type (oxide and sulphide) and a sulphide type. The bulk of the mineralization in the Atenea zone (78 percent) and almost all of the mineralization in the Pucamina zone were classified as the sulphide type.

The mineral resource estimate, showing Measured, Indicated and Inferred mineral resources for the Invicta Gold Project using a 1.0 g/t gold cut-off grade, was published in 2007 by Andean American in a NI 43-101 technical report, and was validated by Victor A. Jaramillo MScA, PGeo (Table 7).

The associated metal content for the Measured, Indicated and Inferred mineral resources is tabulated in Table 8 and Table 9.

Table 7: Invicta Gold Project Measured and Indicated Mineral Resource Estimate, Cut-off 1.0 g/t Gold, Andean American Gold Corp., July 24, 2007

Zone	Category	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)
Atenea	Measured	1,104	3.88	15.77	0.26
Atenea	Indicated	2,029	1.95	25.31	0.71
Pucamina	Indicated	750	3.27	8.98	0.10
Zones 4 & 6	Indicated	856	2.63	13.44	0.39
Total	**M&I**	**4,739**	**2.73**	**18.36**	**0.45**

Table 8: Invicta Gold Project Measured and Indicated Metal Content, Cut-off 1.0 g/t Gold, Andean American Gold Corp., July 24, 2007

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)
Atenea	Measured	138	560	6,328
Atenea	Indicated	127	1,651	31,753
Pucamina	Indicated	79	217	1,654
Zones 4 & 6	Indicated	72	370	7,364
Total	**M&I**	**416**	**2,797**	**47,099**

Table 9: Invicta Gold Project Inferred Mineral Resource Metal Content, Cut-off 1.0 g/t Gold, Andean American Gold Corp., July 24, 2007

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)
Atenea	Inferred	239	2,894	69,766
Pucamina	Inferred	43	180	1,392
Total	**Inferred**	**281**	**3,074**	**71,157**

5.4.3 August 2008 Mineral Resource Update Technical Report, Discover Geological Consultants Inc.

Between October 2006 and August 2008, Andean American completed an additional 48 diamond drillholes (14,201 metres of drilling), and developed 1,200 metres of underground exploration workings (from the 3,400-metre level adit) in order to explore the Atenea vein.

Victor A. Jaramillo, MScA., PGeo, a geologist with Discover Geological Consultants Inc. (Discover), was retained by Andean American in August 2008 to generate an updated mineral resource estimate which was documented in a (NI 43-101 compliant) report titled “The Invicta Property Resource Update Technical Report” (dated August 29, 2008).

In August 2008, Mr. Jaramillo was at Andean American’s Lima office where he verified that a mineral resource estimate prepared by Andean American using Datamine software complied with the CIM *Definition Standards for Mineral Resources and Mineral Reserves*. On August 19, 2008 Mr. Jaramillo visited the Invicta Gold Project. A technical report containing a mineral resource estimate, dated August 29, 2008, was issued in which all of the mineral resources were classified as sulphide.

The 2008 mineral resource estimate for the Invicta Gold Project, produced by Andean, and validated by Victor A. Jaramillo, for Measured and Indicated mineral resources is shown in Table 10 and for

Inferred mineral resources in Table 11. The NI 43-101 technical report did not state what value or type of cut-off was used to report the resources. Other records provided indicate that a mineral cut-off value of US$16.00 per tonne was used. The mineral value estimation used the following metal prices: gold US$549 per ounce; silver US$9.93 per ounce; copper US$2.36 per pound; lead US$0.67 per pound; and zinc US$1.03 per pound. It is not known whether metallurgical recoveries were used in the mineral value calculations. (For comparison with other cut-offs used: a value of US$16.00 per tonne with gold price of US$549 per ounce and an assumed 100 percent metallurgical recovery for gold would equate to a 0.91 g/t gold cut-off grade.)

Table 10: Invicta Gold Project Measured and Indicated Mineral Resource Estimate Above Mineral Value Cut-off US$16 per tonne, Discover Geological Consultants Inc., August 29, 2008

Zone	Category	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)
Atenea	Measured	850	2.20	29.48	0.69	0.67	0.54
Atenea	Indicated	4,339	1.79	21.32	0.54	0.44	0.37
Pucamina	Indicated	1,114	2.10	6.25	0.26	0.20	0.43
Dany	Indicated	659	0.53	9.28	0.37	0.10	0.14
Ydalia 1	Indicated	193	2.12	26.63	1.00	0.27	0.21
Ydalia 2	Indicated	184	4.65	10.68	0.33	0.33	0.11
Zone 4	Indicated	564	5.49	24.61	0.73	0.15	0.13
Total	**M&I**	**7,903**	**2.11**	**19.19**	**0.52**	**0.38**	**0.35**

Table 11: Invicta Gold Project Inferred Resource Mineral Estimate Above Mineral Value Cut-off US$16 mper tonne, Discover Geological Consultants Inc., August 29, 2008

Zone	Category	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)
Atenea	Inferred	4,079	1.22	8.88	0.20	0.24	0.27
Pucamina	Inferred	1,103	1.91	8.29	0.17	0.12	0.19
Dany	Inferred	3,124	0.26	11.43	0.44	0.52	0.14
Ydalia 1	Inferred	1,335	1.04	28.49	0.70	0.11	0.08
Ydalia 2	Inferred	866	0.51	16.17	0.47	0.10	0.24
Zone 4	Inferred	1,189	1.29	13.70	0.56	0.26	0.09
Total	**Inferred**	**11,695**	**1.22**	**10.14**	**0.27**	**0.24**	**0.23**

The associated metal content for the Measured and Indicated mineral resources is shown in Table 12. The associated metal content for the Inferred resources is shown in Table 13.

Table 12: Invicta Gold Project Measured and Indicated Metal Content Above Mineral Value Cut-off US$16/t, Discover Geological Consultants Inc., August 29, 2008

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)	Pb ('000 lb)	Zn ('000 lb)
Atenea	Measured	60	806	12,930	12,555	10,119
Atenea	Indicated	250	2,974	51,655	42,089	35,393
Pucamina	Indicated	75	224	6,385	4,912	10,560
Dany	Indicated	11	197	5,375	1,453	2,034
Ydalia 1	Indicated	13	165	4,255	1,149	894
Ydalia 2	Indicated	28	63	1,339	1,339	446
Zone 4	Indicated	100	446	9,077	1,865	1,616
Total	**M&I**	**536**	**4,875**	**91,016**	**65,362**	**61,063**

Table 13: Invicta Inferred Metal Content Above Mineral Value Cut-off US$16/t, Discover Geological Consultants Inc., August 29, 2008

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)	Pb ('000 lb)	Zn ('000 lb)
Atenea	Inferred	160	1,165	17,985	21,582	24,280
Pucamina	Inferred	68	294	4,134	2,918	4,620
Dany	Inferred	26	1,148	30,304	35,813	9,642
Ydalia 1	Inferred	45	1,223	20,602	3,237	2,355
Ydalia 2	Inferred	14	450	8,973	1,909	4,582
Zone 4	Inferred	49	524	14,679	6,815	2,359
Total	**Inferred**	**362**	**4,803**	**96,677**	**72,275**	**47,838**

5.4.4 June 2009 Feasibility Study, Lokhorst Group Ventures

In June 2009, the Lokhorst Group Ventures issued a NI 43-101 technical report entitled "Invicta Mine Feasibility Study", and incorporated an estimate of mineral reserves. This study is not to be relied on, and is summarized here as a previous estimate only. In October 2011, Andean American announced that the initial capital cost to build an underground mine at the Invicta Gold Project would be considerably higher than forecast compared to previous feasibility study estimates, partly due to increases in the estimates for infrastructure.

This study used the mineral resource estimate developed by Discover in August 2008, previously cited. From the August 2008 Measured and Indicated mineral resource estimate of 7.9 million tonnes grading 2.11 g/t gold, 19.19 g/t silver, 0.52 percent copper, 0.38 percent lead, and 0.35 percent zinc, a subset of 7.8 million tonnes was estimated as Probable mineral reserves. This mineral reserve estimate was reported as based on a net smelter return (NSR) cut-off value of US$24 per tonne, which was calculated using various metal prices, mineral processing recoveries, and smelter terms. Further details are provided below.

Metal prices used for the mineral reserve estimate (but not the feasibility study economics) were: gold US$650 per ounce; silver US$13.75 per ounce; copper US$3.25 per pound; lead US$0.85 per pound; and zinc US$0.90 per pound.

Average processing recoveries mentioned in the feasibility study report include: gold, variable 87 to 94 percent; silver, variable 79 to 89 percent; copper, variable 70 to 78 percent; lead, variable 82 to 89 percent; and zinc, variable 72 to 87 percent. Processing recoveries used in the NSR calculations for the mineral reserve estimate may have been different, but were not specifically reported in the feasibility study.

The Probable mineral reserve estimate for the Invicta Gold Project, developed for the 2009 feasibility study, is shown in Table 14.

Table 14: Invicta Gold Project Probable Mineral Reserve Estimate Above NSR Value of US$24 per Tonne, Lokhorst Group Ventures, June 2009

	Category	Tonnes (000's)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)
Total	Probable	7,807	2.14	18.76	0.52	0.38	0.30

The associated metal content for the 2009 Probable mineral reserve estimate is shown in Table 15.

The production rate was planned to be 3,000 tonnes per day for the first year, 4,000 tonnes per day for the second year, and for subsequent years, 5,000 tonnes per day. The planned life of mine was 5 years.

Mining methods selected included sub-level stoping, cut and fill, and shrinkage stoping. A small portion of the reserves were mined within a small open pit. The process plant included crushing, gravimetric concentration, grinding, flotation, thickeners, filters for concentrates and filters for tailings and tailings disposal.

Table 15: Invicta Gold Project Probable Mineral Reserve Estimate Metal Content, Above NSR Value of US$25 per Tonne, Lokhorst Group Ventures, June 2009

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)	Pb ('000 lb)	Zn ('000 lb)
Total	Probable	536	4,709	89,144	65,806	51,500

5.4.5 November 2009 Updated Technical Report (Discover Geological Consultants Inc.)

Discover was again retained by Andean American in September 2009 to update the mineral resources reported in the previous technical report dated August 2008. The purpose of the 2009 NI 43-101 report was to include new infill diamond drillhole data (4 holes) and underground sampling from a cross-cut that was not included in the previous 2008 report. All the mineral resources were reported as sulphide.

The estimated Discover Measured and Indicated mineral resources for the Invicta Gold Project in 2009, for resources is tabulated in Table 16. The Inferred mineral resource estimate is shown in Table 17.

Table 16: Invicta Gold Project Measured and Indicated Mineral Resource Estimate Cut-off 1.0 g/t Gold-Equivalent, Discover Geological Consultants Inc., November 20, 2009

Zone	Category	Tonnes (000's)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)
Atenea	Measured	868	2.71	31.26	0.69	0.73	0.61
Atenea	Indicated	4,747	1.96	16.52	0.40	0.40	0.38
Pucamina	Indicated	2,028	1.70	5.71	0.11	0.18	0.25
Dany	Indicated	1,063	0.75	10.39	0.41	0.10	0.11
Ydalia 1	Indicated	592	1.63	28.85	1.00	0.22	0.16
Ydalia 2	Indicated	396	2.92	13.83	0.27	0.22	0.09
Zone 4	Indicated	1,041	3.83	20.96	0.70	0.15	0.12
Total	**M&I**	**10,735**	**2.05**	**16.08**	**0.43**	**0.32**	**0.30**

Mineral resource tonnage and grades rounded to reflect the accuracy of the estimate, and may not add due to rounding.

Gold-equivalent was calculated using the following ratios: 85:1 silver to gold ratio; 31:1 copper to gold ratio; 131:1 lead to gold ratio; and 109:1 zinc to gold ratio. All metal ratios had regard to the respective metallurgical recoveries. The gold-equivalent calculations used the following metal prices: gold $900/oz; silver $ 12.50/oz; copper $ 2.00/lb; lead $ 0.50/lb; and zinc $ 0.60/lb. Ounces used the following conversion rate: 1 troy ounce = 31.1035 grams.

Table 17: Invicta Gold Project Inferred Mineral Resource Estimate Cut-off 1.0 g/t Gold-Equivalent, Discover Geological Consultants Inc., November 20, 2009

Zone	Category	Tonnes (000's)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)
Atenea	Inferred	9,700	0.74	9.16	0.32	0.17	0.17
Pucamina	Inferred	704	0.80	8.10	0.13	0.13	0.15
Dany	Inferred	1,654	0.17	12.42	0.46	0.80	0.13
Ydalia 1	Inferred	981	0.91	29.05	0.59	0.07	0.05
Ydalia 2	Inferred	597	0.25	16.02	0.54	0.09	0.27
Zone 4	Inferred	590	0.76	10.53	0.44	0.36	0.07
Total	**Inferred**	**14,225**	**0.67**	**11.20**	**0.36**	**0.24**	**0.15**

Source: Discover Geological, November 2009

Mineral resource tonnage and grades rounded to reflect the accuracy of the estimate, and may not add due to rounding.

Gold-equivalent was calculated using the following ratios: 85:1 silver to gold ratio; 31:1 copper to gold ratio; 131:1 lead to gold ratio; and 109:1 zinc to gold ratio. All metal ratios had regard to the respective metallurgical recoveries. The gold-equivalent calculations used the following metal prices: gold $900/oz; silver $ 12.50/oz; copper $ 2.00/lb; lead $ 0.50/lb; and zinc $ 0.60/lb. Ounces used the following conversion rate: 1 troy ounce = 31.1035 grams.

The associated metal content for the Measured and Indicated resources is shown in Table 18. The associated metal content for the Inferred resources is shown in Table 19.

In 2009, the estimated resources were reported using a 1.0 g/t gold-equivalent cut-off grade, as presented in the previous tables. (At the time it was considered that a 1.0 g/t gold-equivalent grade would be reasonable estimate for economic extraction.)

Table 18: Invicta Gold Project Measured and Indicated Metal Content Cut-off 1.0 g/t Gold-Equivalent, Discover Geological Consultants Inc., November 20, 2009

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)	Pb ('000 lb)	Zn ('000 lb)
Atenea	Measured	76	872	13,204	13,969	11,673
Atenea	Indicated	299	2,521	41,861	41,861	39,768
Pucamina	Indicated	111	372	4,918	8,048	11,177
Dany	Indicated	26	355	9,608	2,343	2,578
Ydalia 1	Indicated	31	549	13,051	2,871	2,088
Ydalia 2	Indicated	37	176	2,357	1,921	786
Zone 4	Indicated	128	702	16,065	3,442	2,754
Total	**M&I**	**708**	**5,548**	**101,064**	**74,456**	**70,824**

Table 19: Invicta Gold Project Inferred Metal Content Cut-off 1.0 g/t Gold-Equivalent, Discover Geological Consultants Inc., November 20, 2009

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)	Pb ('000 lb)	Zn ('000 lb)
Atenea	Inferred	231	2,857	68,431	36,354	36,354
Pucamina	Inferred	18	183	2,018	2,018	2,328
Dany	Inferred	9	660	16,773	29,171	4,740
Ydalia 1	Inferred	29	916	12,760	1,514	1,081
Ydalia 2	Inferred	5	307	7,107	1,185	3,554
Zone 4	Inferred	14	200	5,723	4,683	910
Total	**Inferred**	**307**	**5,124**	**112,812**	**74,924**	**48,968**

The gold-equivalent was calculated using the following ratios: 85:1 silver to gold ratio; 31:1 copper to gold ratio; 131:1 lead to gold ratio; and 109:1 zinc to gold ratio. All metal ratios had regard to the respective metallurgical recoveries. The gold-equivalent calculations used the following metal prices: gold $900 per ounce; silver $ 12.50 per ounce; copper $ 2.00 per pound; lead $ 0.50 per pound; and zinc $ 0.60 per pound.

The following metal recoveries were used in the gold-equivalent calculations: gold recovery 77.5 percent; silver recovery 65.6 percent; copper recovery 70.0 percent; lead recovery 73.0 percent; zinc recovery 73.5 percent. These metal recoveries were based on averages of metallurgical tests available at the time.

The Measured and Indicated mineral resources were also reported at various gold-equivalent cut-offs as shown in Table 20. The Inferred mineral resources were also reported at various gold-equivalent cut-offs as shown in Table 21.

Table 20: Invicta Gold Project Measured and Indicated Mineral Resource Estimate Various Gold-Equivalent Cut-offs, Discover Geological Consultants Inc., November 20, 2009

AuEq CoG (g/t)	Category	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)	Au (koz)	AuEq Grade (g/t)	AuEq (koz)
1.0	M&I	10,735	2.05	16.08	0.43	0.32	0.30	708	3.18	1,098
1.5	M&I	8,777	2.39	17.60	0.45	0.36	0.33	675	3.61	1,020
2.0	M&I	6,131	3.09	20.03	0.50	0.40	0.34	610	4.44	876
2.5	M&I	4,680	3.67	22.16	0.54	0.43	0.35	553	5.13	772
3.0	M&I	3,490	4.36	24.86	0.59	0.45	0.36	489	5.94	666
3.5	M&I	2,733	4.97	27.03	0.64	0.48	0.37	437	6.68	587
4.0	M&I	2,299	5.46	28.53	0.67	0.50	0.38	403	7.24	535

Source: Discover Geological Consultants Inc., November 2009

Mineral resource tonnage and grades rounded to reflect the accuracy of the estimate, and may not add due to rounding.

Gold-equivalent was calculated using the following ratios: 85:1 silver to gold ratio; 31:1 copper to gold ratio; 131:1 lead to gold ratio; and 109:1 zinc to gold ratio. All metal ratios had regard to the respective metallurgical recoveries. The gold-equivalent calculations used the following metal prices: gold $900/oz; silver $ 12.50/oz; copper $ 2.00/lb; lead $ 0.50/lb; and zinc $ 0.60/lb. Ounces used the following conversion rate: 1 troy ounce = 31.1035 grams.

Table 21: Invicta Gold Project Inferred Mineral Resource Estimate Various Gold-Equivalent Cut-offs, Discover Geological Consultants Inc., November 20, 2009

AuEq CoG (g/t)	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)	Au (koz)	AuEq Grade (g/t)	AuEq (koz)	Tonnes ('000)
1.0	Inferred	14,225	0.67	11.20	0.36	0.24	0.15	307	1.54	703
1.5	Inferred	3,669	1.96	17.21	0.41	0.33	0.27	232	3.08	363
2.0	Inferred	2,319	2.73	19.42	0.36	0.44	0.30	204	3.86	288
2.5	Inferred	1,200	4.22	18.50	0.37	0.42	0.41	163	5.40	208
3.0	Inferred	1,086	4.45	19.42	0.38	0.44	0.44	155	5.67	198
3.5	Inferred	970	4.76	19.37	0.35	0.47	0.48	148	5.96	186
4.0	Inferred	867	5.07	18.80	0.30	0.50	0.53	141	6.23	173

5.4.6 July 2010 Feasibility Study, Lokhorst Group Ventures

In July 2010, the Lokhorst Group Ventures (the Lockhorst Group) issued the NI 43-101 technical report entitled "Invicta Gold Project Optimized Feasibility Study", and incorporated an estimate of mineral reserves. This study is not to be relied on, and is summarized here as a previous estimate only. In October 2011, Andean American announced that the initial capital cost to build an underground mine at the Invicta Gold Project would be considerably higher than forecast in the July 2010 feasibility study, partly due to increases in the estimates for infrastructure.

This study used the mineral resource estimate developed by Discover in November 2009, previously cited.

From the November 2009 Measured and Indicated mineral resource estimate of 10.7 million tonnes grading 2.05 g/t gold, 16.08 g/t silver, 0.43 percent copper, 0.32 percent lead, and 0.30 percent zinc, a subset of 7.8 million tonnes was estimated as Probable mineral reserves from the feasibility study work performed in 2010. This mineral reserve estimate was based on a NSR cut-off value of US$25 per tonne, which was reported as calculated using various metal prices, mineral processing recoveries, and smelter terms. Further details are provided in this section.

The Probable mineral reserve estimate for the Invicta Gold Project, developed for the 2010 feasibility study and reported, is shown in Table 22.

Estimated tonnage and grade are reported as diluted to reflect a potentially minable material metal prices and recoveries for the NSR calculations as given in the accompanying section text.

The associated metal content for the 2010 Probable mineral reserve estimate is shown in Table 23.

The production rate was planned to be: for the first year 3,000 tonnes per day for the first year, 4,000 tonnes per day for the second year, and 5,000 tonnes per day for the subsequent years. The planned life of mine was 5 years.

Mining methods selected included sub-level stoping, cut and fill, and shrinkage stoping. Approximately 8 percent of the reserves were mined within a small open pit. The process methodology included crushing, grinding, gravity recovery, and scavenger and differential floatation.

Table 22: Invicta Gold Project Probable Mineral Reserve Estimate Above NSR Value of US$25 per tonne, Lokhorst Group Ventures, April 2010

	Category	Tonnes ('000)	Au Grade (g/t)	Ag Grade (g/t)	Cu Grade (%)	Pb Grade (%)	Zn Grade (%)
Total	Probable	7,807	2.14	18.76	0.52	0.38	0.30

Estimated tonnage and grade are reported as diluted to reflect a potentially minable material
Metal prices and recoveries for the NSR calculations as given in accompanying section text

Table 23: Invicta Gold Project Probable Mineral Reserve Estimate Metal Content, Lokhorst Group Ventures, April 2010

Zone	Category	Au ('000 oz)	Ag ('000 oz)	Cu ('000 lb)	Pb ('000 lb)	Zn ('000 lb)
Total	Probable	536	4,709	89,144	65,806	51,500

Metal prices and recoveries for the NSR calculations as given in accompanying section text
Contained metal estimates rounded to reflect the accuracy of the estimate

Metal prices reported as used for the reserves estimate (but not the feasibility study economics) were: gold US$900 per ounce; silver US$12.50 per ounce; copper US$2.50 per pound; lead US$0.84 per pound; and zinc US$0.95 per pound.

Processing recoveries reported as used for the feasibility study were: gold 91 percent; silver 82 percent; copper 75 percent; lead 80 percent; and zinc 80 percent. Processing recoveries used in the NSR calculations for the mineral reserve estimate may have been different, but were not specifically reported in the feasibility study.

The final LoM average project operating costs (including some concentrate transportation costs) were estimated in the feasibility study to be US$28.31 per tonne.

5.4.7 April 2012 Mineral Resource Update, Andean American Gold Corporation

Andean American commissioned SRK Consulting (US) Inc. to update the Mineral Resource Statement for the Invicta Gold Project. A detailed tabulation of this Mineral Resource Statement is provided in Table 24.

Table 24: Mineral Resource Statement, Invicta Gold Project, Huaura Province, Peru, SRK Consulting (US) Inc., April 2012

			Metal Grade						Contained Metal					
Zone	**Category**	**Tonnes ('000)**	**AuEq (g/t)**	**Au (g/t)**	**Ag (g/t)**	**Cu (%)**	**Pb (%)**	**Zn (%)**	**AuEq (oz)**	**Au (oz)**	**Ag (oz)**	**Cu (lb)**	**Pb (lb)**	**Zn (lb)**
SRK US (2012) cutoff = 1.3 AuEq														
Atenea - All Zones	Mea	131	6.65	4.29	31.71	0.73	0.39	0.38	28	18	133	2,119	1,110	1,105
	Ind	5,696	3.83	2.34	17.99	0.45	0.28	0.34	701	429	3,294	56,848	35,251	43,094
	Mea+Ind	**5,827**	**3.89**	**2.39**	**18.29**	**0.46**	**0.28**	**0.34**	**729**	**447**	**3,427**	**58,967**	**36,361**	**44,198**
	Inferred	1,533	3.56	2.35	10.93	0.46	0.13	0.19	175	116	539	15,574	4,495	6,373
Dany	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	868	1.97	0.54	13.45	0.58	0.11	0.09	55	15	375	11,151	2,153	1,723
	Mea+Ind	**868**	**1.97**	**0.54**	**13.45**	**0.58**	**0.11**	**0.09**	**55**	**15**	**375**	**11,099**	**2,153**	**1,723**
	Inferred	668	1.72	0.14	12.66	0.53	0.58	0.16	37	3	272	7,876	8,496	2,387
Pucamina	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	1,064	2.53	1.97	6.98	0.10	0.23	0.28	87	67	239	2,277	5,315	6,614
	Mea+Ind	**1,064**	**2.53**	**1.97**	**6.98**	**0.10**	**0.23**	**0.28**	**87**	**67**	**239**	**2,277**	**5,315**	**6,614**
	Inferred	202	1.96	1.38	8.68	0.14	0.14	0.18	13	9	56	625	605	781
Ydalias - All Zones (12)	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	12	7.16	3.63	34.89	1.43	0.29	0.19	3	1	13	379	77	51
	Mea+Ind	**12**	**7.16**	**3.63**	**34.89**	**1.43**	**0.29**	**0.19**	**3**	**1**	**13**	**379**	**77**	**51**
	Inferred	35	2.66	0.41	58.19	0.21	1.25	0.04	3	0	65	159	951	27
Zone 4	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	872	3.31	2.15	12.94	0.44	0.12	0.10	93	60	363	8,393	2,375	2,000
	Mea+Ind	**872**	**3.31**	**2.15**	**12.94**	**0.44**	**0.12**	**0.10**	**93**	**60**	**363**	**8,393**	**2,375**	**2,000**
	Inferred	95	2.74	0.87	15.37	0.78	0.16	0.14	8	3	47	1,645	344	285
Total All Zones	Mea	131	6.65	4.29	31.71	0.73	0.39	0.38	28	18	134	2,119	1,110	1,105
	Ind	8,513	3.43	2.09	15.65	0.42	0.24	0.28	939	573	4,283	79,048	45,171	53,482
	Mea+Ind	**8,644**	**3.48**	**2.13**	**15.90**	**0.43**	**0.24**	**0.29**	**967**	**591**	**4,419**	**81,167**	**46,281**	**54,587**
	Inferred	2,534	2.90	1.61	12.02	0.46	0.27	0.18	236	131	979	25,879	14,891	9,854

5.4.8 Comment

The historical mineral resource estimates reported in this section are not current. The previous mineral reserve estimates are not current and can not be relied upon. Mineral resource and reserve estimates undertaken prior to 2012 are provided as formerly reported information only. As certain key assumptions and estimation parameters used in the above estimates are not sufficiently known to the authors of this report, it is not possible to determine what additional work would be required to upgrade or verify those estimates as current mineral resources or mineral reserves. A qualified person has not done sufficient work to classify the previous estimates as current mineral resources or mineral reserves, and SRK and Lupaka are not presenting the previous estimates as current mineral resources or mineral reserves. The estimates of tonnages, grades and metal contents are presented here only as documentation of what was previously reported for the Invicta Gold Project.

SRK presents a Mineral Resource Statement in accordance with the CIM *Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines* and the Canadian Securities Administrators' NI 43-101 in Section 13 of this report.

6 Geological Setting and Mineralization

6.1 Regional Geology

The western part of Peru consists of the Andean Cordillera, a major mountain range parallel to the Peru-Chile oceanic trench that developed as a result of subduction of the Nazca plate beneath the South American plate. Along the coastal margin of Peru, oblique subduction during the Cretaceous resulted in large-scale arc magmatism and the subsequent formation of Mesozoic arc-parallel volcano-sedimentary basins, collectively known as the Western Peruvian trough (e.g. Atherton et al., 1983). The development of the Western Peruvian trough was associated with intrusion of numerous plutons that together form the present-day Coastal batholith. Emplacement of the plutons in the Coastal batholith reached its peak during the Late Cretaceous and Paleocene (e.g. Soler and Rotach-Toulhouat, 1990). The Coastal batholith is divided into several plutonic complexes one of which is the Huaura complex that includes the Santa Rosa and Paccho plutons. These complexes comprise mainly granodiorite, tonalite and diorite.

The Invicta Gold Project is situated along the boundary between the Huaura complex to the west and a segment of the Western Peruvian trough (e.g. Polliand et al., 2005) to the east. This segment of the Western Peruvian trough comprises a complex assemblage of volcanic to sub-volcanic dominantly mafic volcanic units of the Tertiary (circa 53 to 5 million years ago [Ma]) Calipuy group (Figure 4). The Calipuy group comprises mainly mafic to felsic volcanic to sub-volcanic rocks and unconformably overlies strongly deformed sedimentary rocks and limestone of the Lower Cretaceous Goyllarisquizga group. These rocks are severely faulted and folded and host several deposits including the Uchucchacua, Iscaycruz and Raura base metal-silver deposits approximately 65 to 70 kilometres northeast of the Invicta Gold Project. On a regional scale, the contact between intrusive rocks of the Coastal batholith and the Calipuy group exhibits distinct west-northwest or east-northeast trending orientations, which may be related to large-scale regional faults.

6.2 Property Geology

The geology of the Invicta Gold Project is known from field mapping of rock exposures and focused drilling and underground mapping and sampling conducted by Invicta Mining Corp and Pangea (Figure 5 and Figure 7). Detailed mapping conducted by Invicta Mining Corp during 2011 and 2012 covered an area of 47.8 hectares.

The Invicta Gold Project geology comprises mainly mafic volcanic rocks of the Calipuy group that overlie diorite, tonalite and granodiorite of the Paccho pluton, an intrusive suite that is part of the Huaura plutonic complex (Coastal batholith). Diorite and granodiorite of the Paccho intrusion are exposed in the southwest and western portions of the Invicta Gold Project (Figure 5). These generally comprise massive, weakly to moderately silicified rocks, with strong kaolinite, limonite and hematite altered rocks associated with mineralized zones.

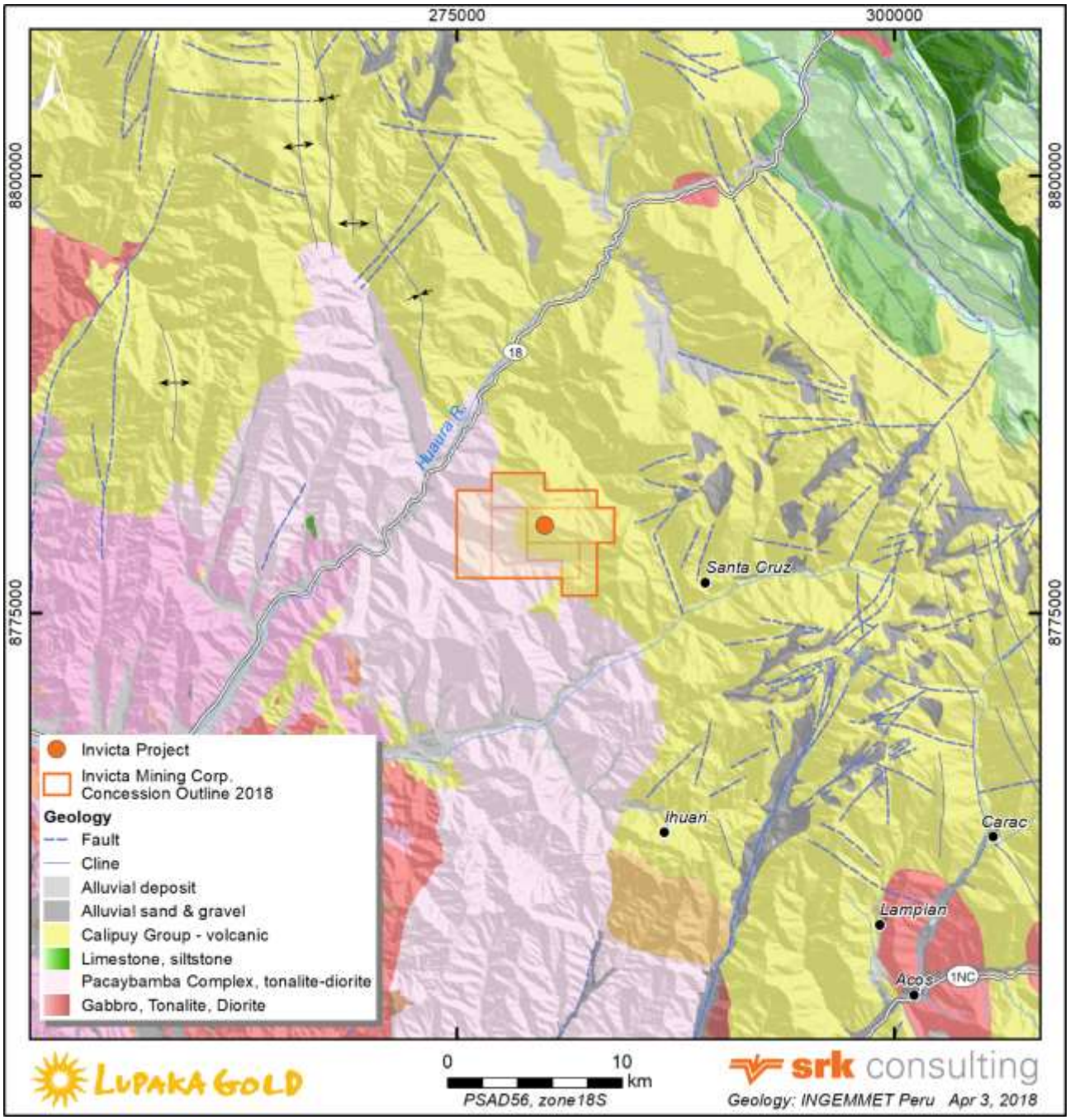

Figure 4: Regional Geology Setting of the Invicta Gold Project

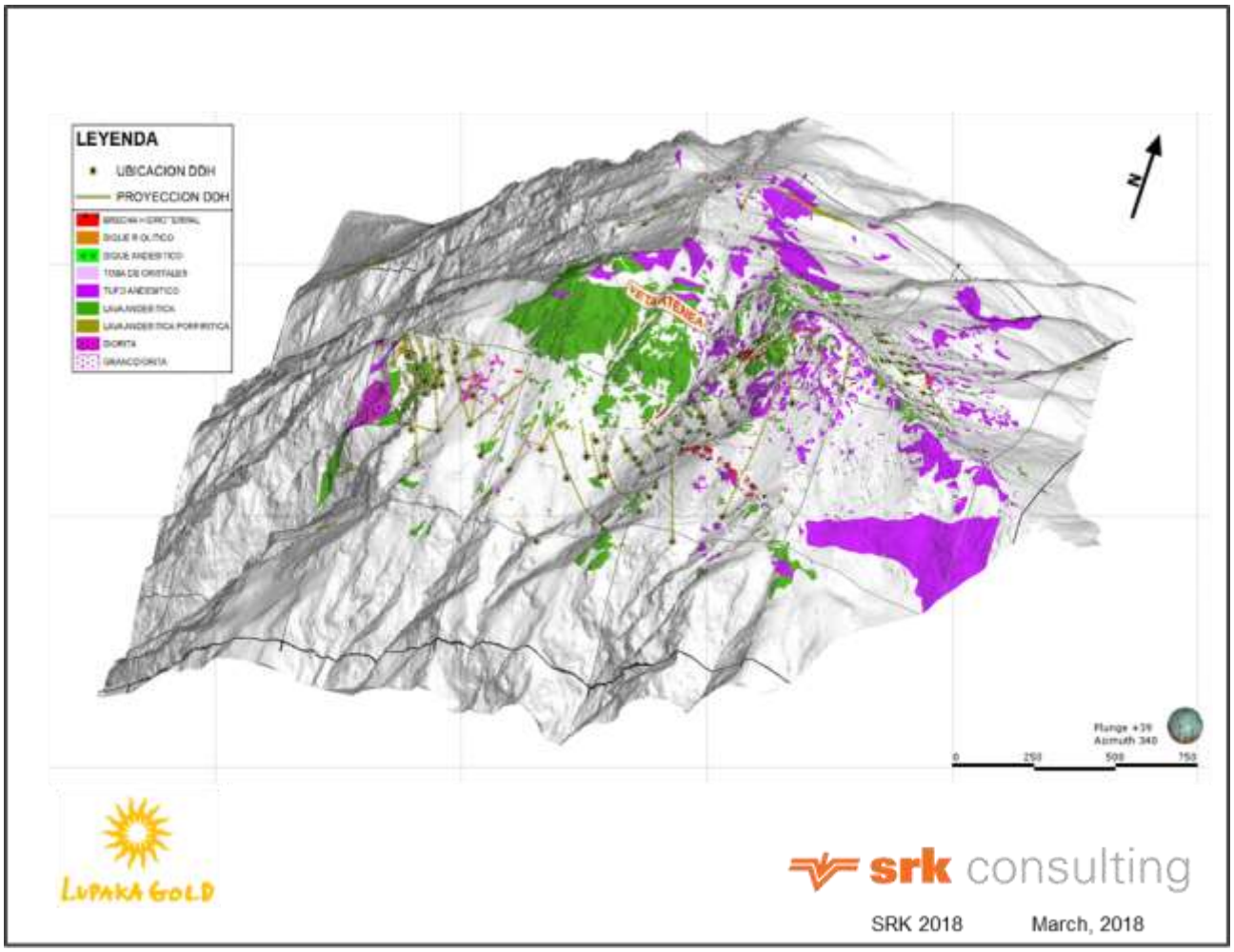

Figure 5: Geological Mapping on the Invicta Gold Project showing Project Topography

Exposures of the Calipuy group include variably hematite- and chlorite-altered andesite flows interbedded with mafic tuff, porphyritic andesite units (possibly representing dome complexes), variably polymictic to monolithic volcano-magmatic breccia units (Figure 6A) and siliceous crystal tuff beds. The volcanic units generally have a gentle dip (less than 30 degrees) and variable strike, which could suggest that the sequence is folded.

Several northeast-trending, steeply dipping, flow-banded rhyolite dykes cross-cut the Calipuy group units (Figure 6B). Their orientation parallel to the main mineralized zone (Atenea vein) suggests that these dykes may have been emplaced contemporaneously with mineralization along dilational structures. Another possible intrusion occurs along the Dany fault to the southeast of the Atenea vein, and comprises massive aphanitic siliceous rocks that are locally brecciated, and associated with a fine-grained hematitic matrix (Figure 6C).

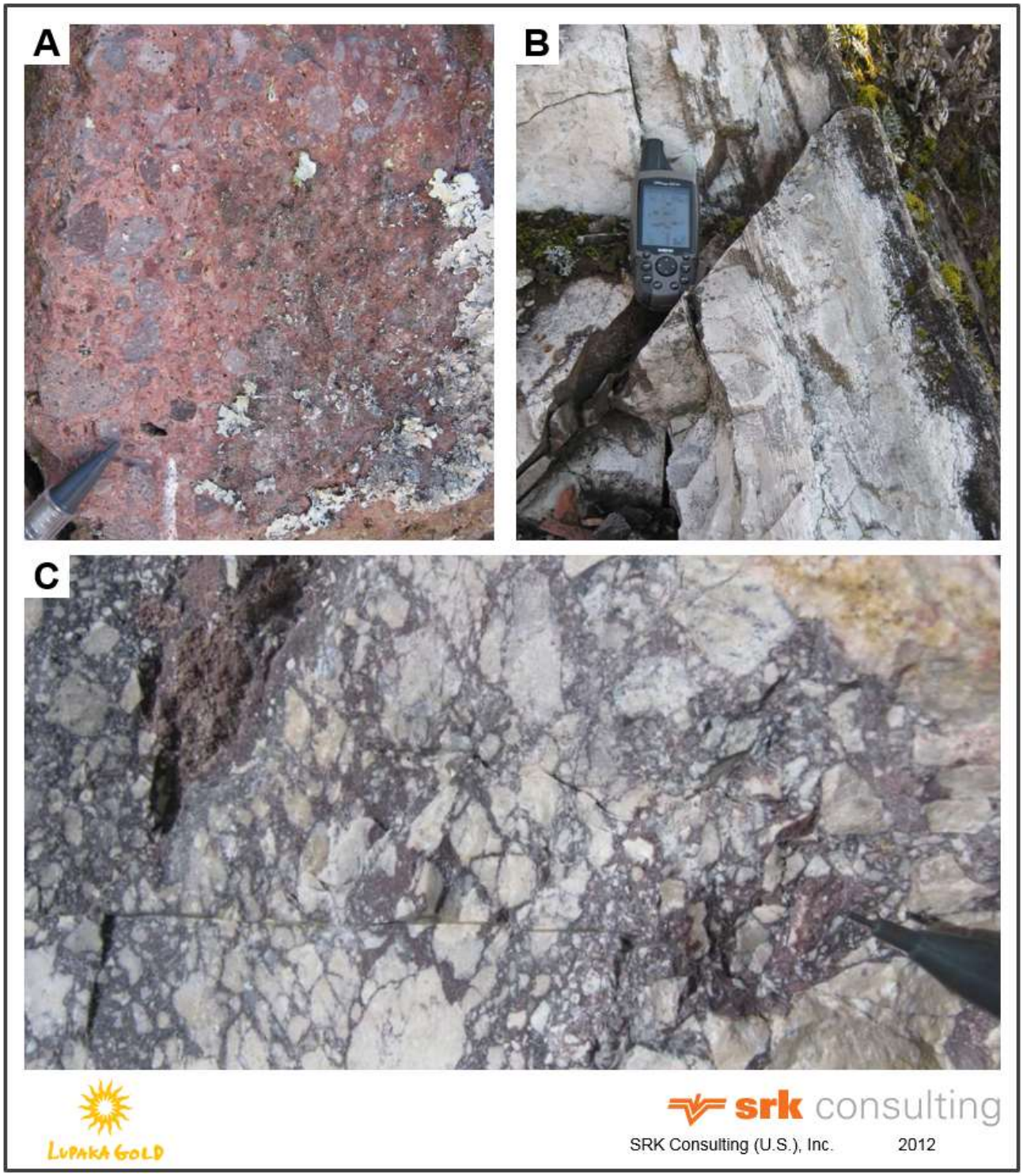

Figure 6: Features of the Calipuy Group

A: Polymictic volcano-magmatic breccia

B: Flow banded rhyolite dyke (cross-section looking northeast)

C: Fragmented aphanitic siliceous rock in hematite-rich matrix

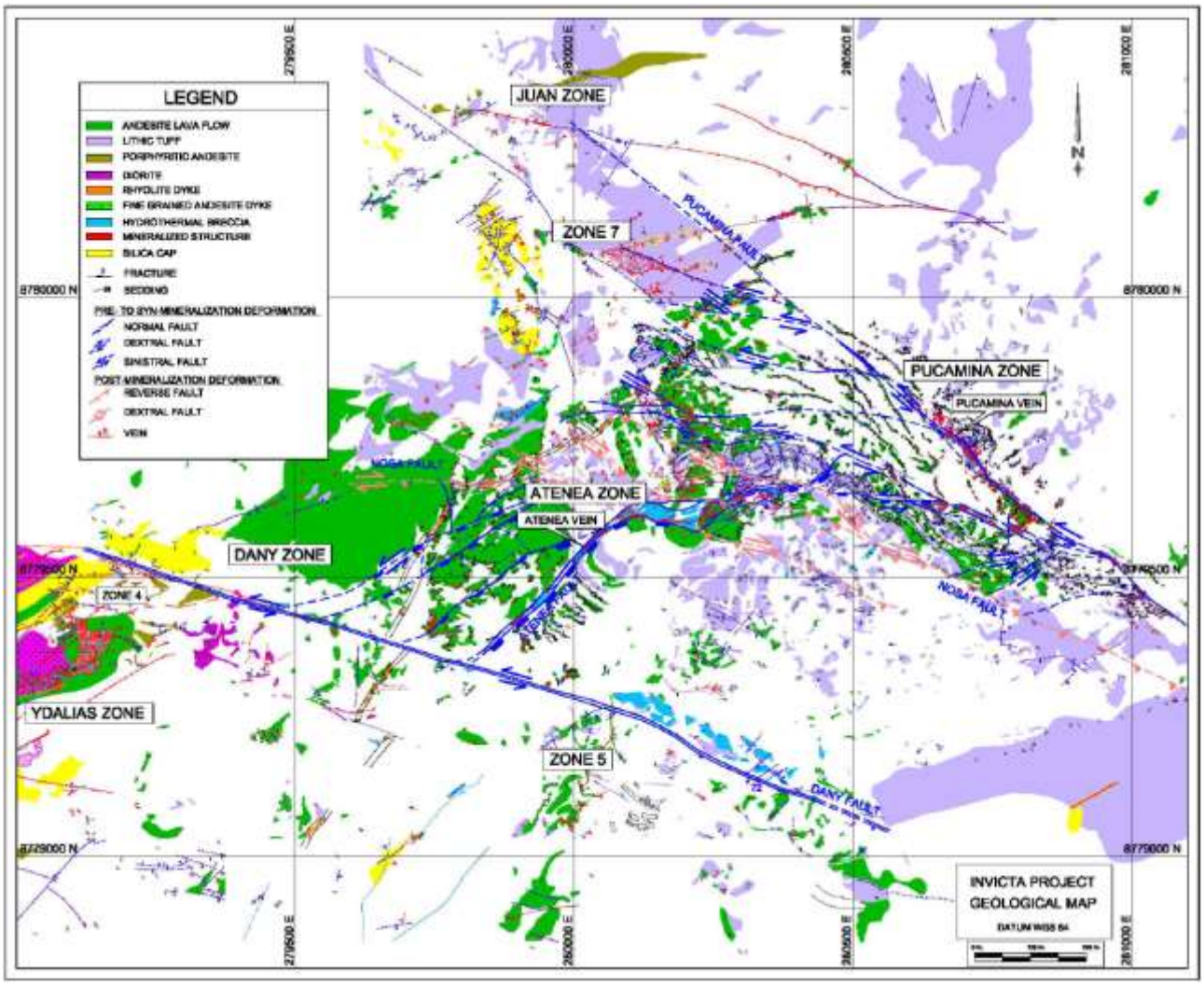

Figure 7: Local Geology Setting of the Invicta Gold Project

6.2.1 Structural Geology

The structural framework developed from geological mapping at the Invicta Gold Project is shown in Figure 8.

Two main regional west-northwest to northwest trending structures transect the Invicta Gold Project, the Pucamina fault to the north and the Dany fault to the south. The projection of these faults to the west correlates with sinistral separation of the contact between the Paccho intrusion and the Calipuy group.

The Pucamina fault comprises a 2- to 8-metre wide brittle fault zone that is characterized by up to 1.5-metre wide quartz and quartz breccia veins and associated vein networks in dominantly chlorite altered, brecciated host rocks (mainly andesite) of the Calipuy group. The fault zone exhibits discrete smooth, planar fault surfaces along silicified rock exposures that can be traced at surface for at least 1,500 metres. The fault is commonly associated with narrow (0.5- to 1.5-metre wide) steeply-dipping quartz (breccia) vein systems in both the hanging wall and footwall. The Pucamina fault dips steeply

to the south (76 degrees) and has an average orientation of 114 degrees azimuth. Sub-horizontal to shallow-pitching striations associated with steps on fault surfaces, widening of vein zones along left-stepping bends along the fault (i.e. dilational jogs) and limited fault-vein arrays with Riedel geometries indicate sinistral strike-slip movement.

The Dany fault is a 2- to 3-metre wide brittle fault zone that is characterized by heterolithic chlorite-sericite-quartz breccia, multiple oxidized gouge fracture zones, and well-defined fault surfaces, and up to 1-metre wide quartz veins. The fault trends 100 to 110 degrees azimuth and dips steeply (dominantly south). Shallow east-pitching striations and steps along fault surfaces indicate sinistral strike-slip movement. This is consistent with offset of a mapped rhyolite dyke (Figure 8).

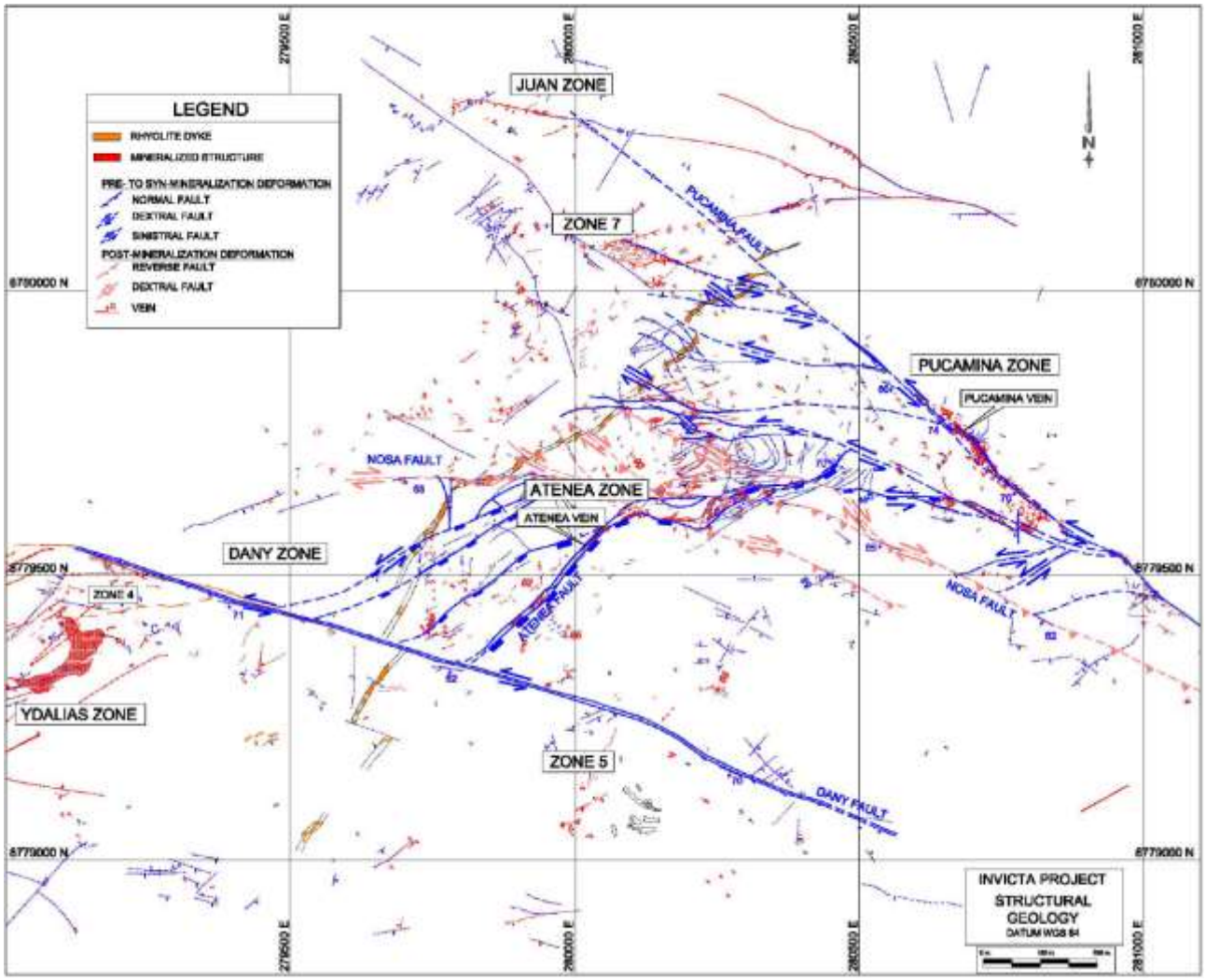

Figure 8: Structural Geology of the Invicta Gold Project

SRK Consulting (Canada) Inc. completed a structural study on the Invicta Gold Project in 2011. A prominently northeast trending mineralized structure, locally termed the Atenea vein, occurs between the Pucamina and Dany faults in the central portion of the property. The Atenea vein is a steeply southeast dipping brittle quartz vein-filled fault system with average orientation of 67 degrees azimuth and 72 degrees dip. The fault zone is between 3 and 12 metres wide and is characterized by:

- A broad zone of oxidation and chlorite-sericite-silica alteration.
- Numerous (banded) up to 10-centimetre wide quartz veins.
- Quartz-chlorite heterolithic breccia intervals.
- Common clay-rich gouge intervals, particularly along the hanging wall contact of the fault zone.

Numerous, variably oriented, up to 20-centimetre wide, banded (commonly vuggy) quartz veins occur in the hanging wall up to 25 to 30 metres away from the fault zone. Steeply-pitching striations on fault surfaces indicate dip-slip movement with local steps suggesting a normal sense of shear.

The Atenea vein can be traced along surface for at least 480 metres and changes strike to an east-west orientation along the northern portion of its known extent. At this location, the Atenea vein is cross-cut by a generally east-west striking, steeply south dipping fault that forms a prominent topographic feature in the property area. Narrow fault-parallel quartz veins and related veinlets associated with weak chlorite-sericite alteration occur along this fault. Striations and steps supported by a single observation of vein geometry in drill core along this late fault indicate oblique dextral-reverse movement. This suggests that a possible continuation of the Atenea vein may exist east and north of this late fault, potentially in an area where strongly quartz-hematite altered heterolithic breccia has been mapped.

In summary, field observations at the Invicta Gold Project suggest at least two stages of deformation:

1. Development of sinistral strike-slip faults and linking zones of dilation associated with gold-silver-copper mineralization during west southwest-east northeast compression.
2. Development of east-west trending dextral-reverse faults during northwest-southeast compression that offset gold-silver-copper mineralization.

6.3 Mineralization

Mineralization is closely linked to the first stage of deformation, and occurs in three principal settings:

- Along the principal southeast- to east-southeast-striking, steeply-dipping strike-slip fault zones (e.g. Pucamina and Dany faults).
- Along northeast-striking, southeast-dipping normal faults that developed in extensional (dilational) settings linking the principal faults.
- Along left-stepping (dilational) and right-stepping (compressional) jogs or bends along the principal strike-slip faults.

In general, mineralization is characterized by the presence of quartz-pyrite-chalcopyrite-acanthite-hematite bearing quartz veins with common crustiform, banded and cockade textures exhibiting distinctive vugs (Figure 9). The sulphide mineralogy comprises stringers and blebs of pyrite and chalcopyrite and pods of sphalerite and galena. Minor chalcocite, digenite, chalcopyrite and bornite are also reported with traces of tennantite. Petrographic studies conducted by Pangea and Invicta Mining Corp suggest that gold occurs as free grains in fractured quartz and pyrite. These

characteristics are typical of epithermal vein systems. Mineralization is hosted dominantly by (sub-) volcanic mafic rocks of the Calipuy group.

At least three mineralized zones have been identified to date which are spatially associated with the Atenea, Pucamina and Dany faults.

The primary mineralized zone, in terms of the mineral resources stated in Section 12, is the Atenea vein. Lesser mineral resources are hosted by, or associated with, the Pucamina and Dany faults and include Ydalias, Dany and Pucamina zones, as shown in Figure 5.

Other quartz-sulphide vein zones (e.g. Juan, Manuel, Zone 3, and Zone 7) are exposed at the Invicta Gold Project. Limited trenching and minimal drilling has tested these zones and indicated that these vein zones also carry gold, copper and silver attesting to the further exploration potential of the area. SRK has not inspected these vein zones in detail. The presence of copper-rich quartz-sulphide veins may suggest a stage of mineralization and deformation that may pre-date the dominant gold-silver-copper mineralization. However, on the basis of information available to date, it can be surmised that the character and extent of these vein zones including their metal content, is not well constrained and requires further investigation

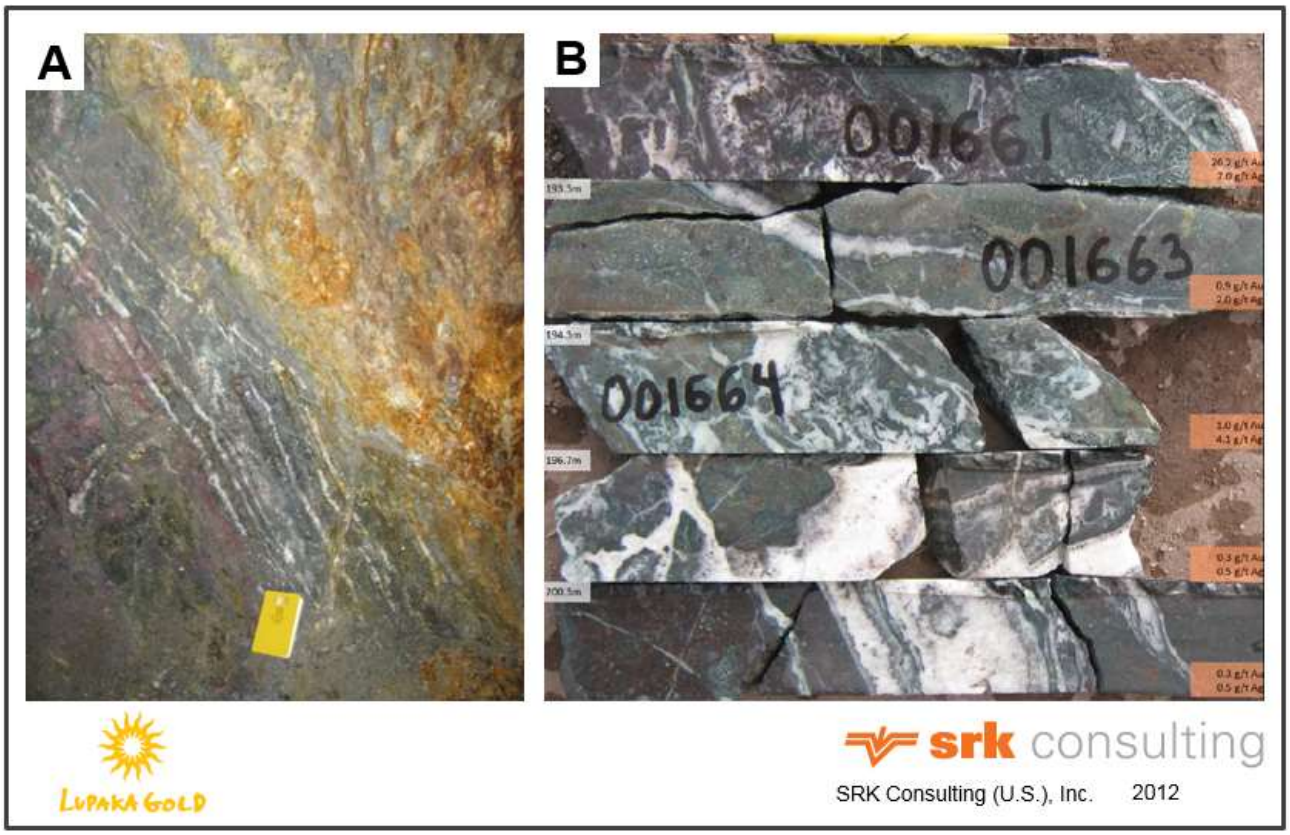

Figure 9: Invicta Gold Project Mineralization

A: Underground exposure of Atenea vein (cross-section looking to the northeast)

B: Drill core Composite through Atenea vein showing vein characteristics and associated alteration styles. Mineralized quartz-galena-sphalerite pyrite hematite veins and adjacent haematitic breccia zone in footwall

7 Deposit Types

Mineralized veins at the Invicta Gold Project have many of the characteristics of epithermal vein systems. Buenaventura Ingenieros S.A. (2010) concluded on the basis of fluid inclusions studies, which indicated multiple fluid populations and homogenization temperatures between 250 and 400 degrees Celsius, that mineralization at the Invicta Gold Project was mesothermal. However, field observations, including the style of veining, alteration, and the presence of open-space, vuggy textures are more in support of epithermal-style veining. The results obtained by Buenaventura Ingenieros S.A. (2010) may be explained by a depositional process controlled by fluid mixing and the cooling of the hydrothermal system associated with multiple stages of mineral deposition over a protracted period of time.

In fact, petrographic studies (Buenaventura Ingenieros S.A., 2010) combined with field observations show that there have been multiple phases of hydrothermal metal-rich solutions, with separate episodes of quartz-hematite-gold-silver and quartz-chlorite-gold-silver-copper solutions deposited along a structure that has been subject to multiple phases of recurring fracturing.

Mineralization occurs as quartz veins and associated minor stockwork veinlets that carry gold, pyrite, sphalerite, galena and chalcopyrite. The main alteration minerals associated with auriferous quartz veins include quartz, chlorite, hematite, calcite and minor epidote.

Epithermal-type gold-silver deposits in the Pacific rim and in Eurasia are more prominently becoming the source of much of the world's new gold supply. This has driven academic research that resulted in an improved understanding of epithermal precious metal deposits. The following comments are based largely on recent papers including Hedenquist et al. (2000), Corbett (2002), and Taylor (2007).

Epithermal deposits form in the near-surface environment, from hydrothermal systems typically within 1.5 kilometres of the Earth's surface. They are commonly found associated with centers of magmatism and volcanism (including rifts) dominantly in Tertiary to recent calc-alkaline and alkaline volcanic rocks, but also form in shallow marine settings. Hot-spring deposits and both liquid- and vapor-dominated geothermal systems are commonly associated with epithermal deposits. Host rock types vary, but include volcanic and sedimentary rocks, particularly those emplaced in volcanic to sub-volcanic settings, and include diatremes and domes.

Epithermal deposits are almost invariably structurally controlled and include dilatant zones related to extensional faulting. Most commonly mineralization is hosted by steeply-dipping vein systems that may be associated with disseminated mineralization (Figure 9). Mineral textures include banded, crustiform-coliform and lattice textures composed of platy calcite sometimes as quartz pseudo-morph replacements. An important feature of epithermal deposits is a pronounced vertical zonation, with quartz veins carrying base metal sulphide mineralization at depth, becoming silver-rich higher in the system and finally gold-rich near the top. Cross sections across the modelled Atenea and Pucamina veins at the Invicta Gold Project are shown in Figure 10 and Figure 11 respectively.

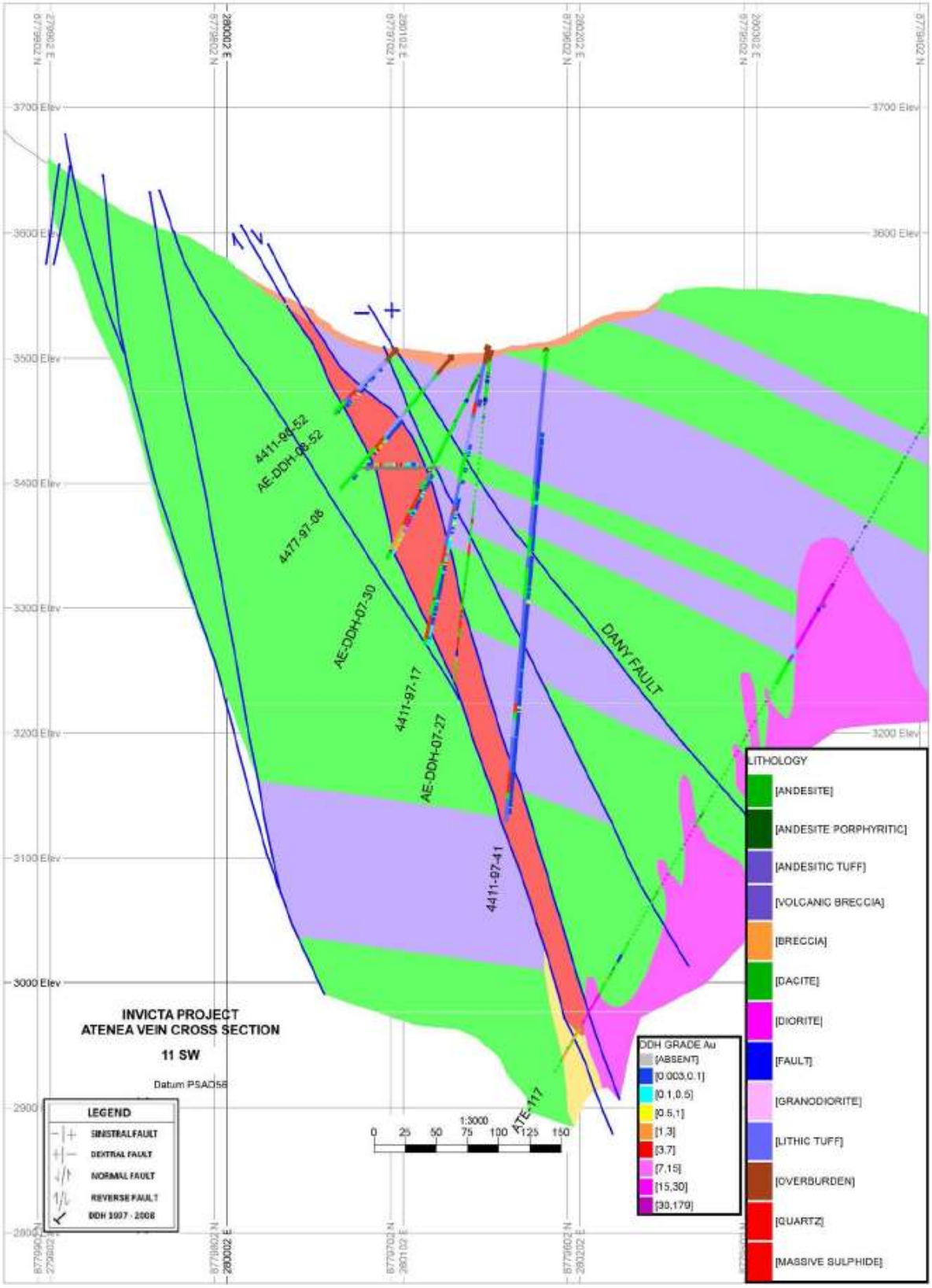

Figure 10: Geology Cross-Section of the Atenea Vein

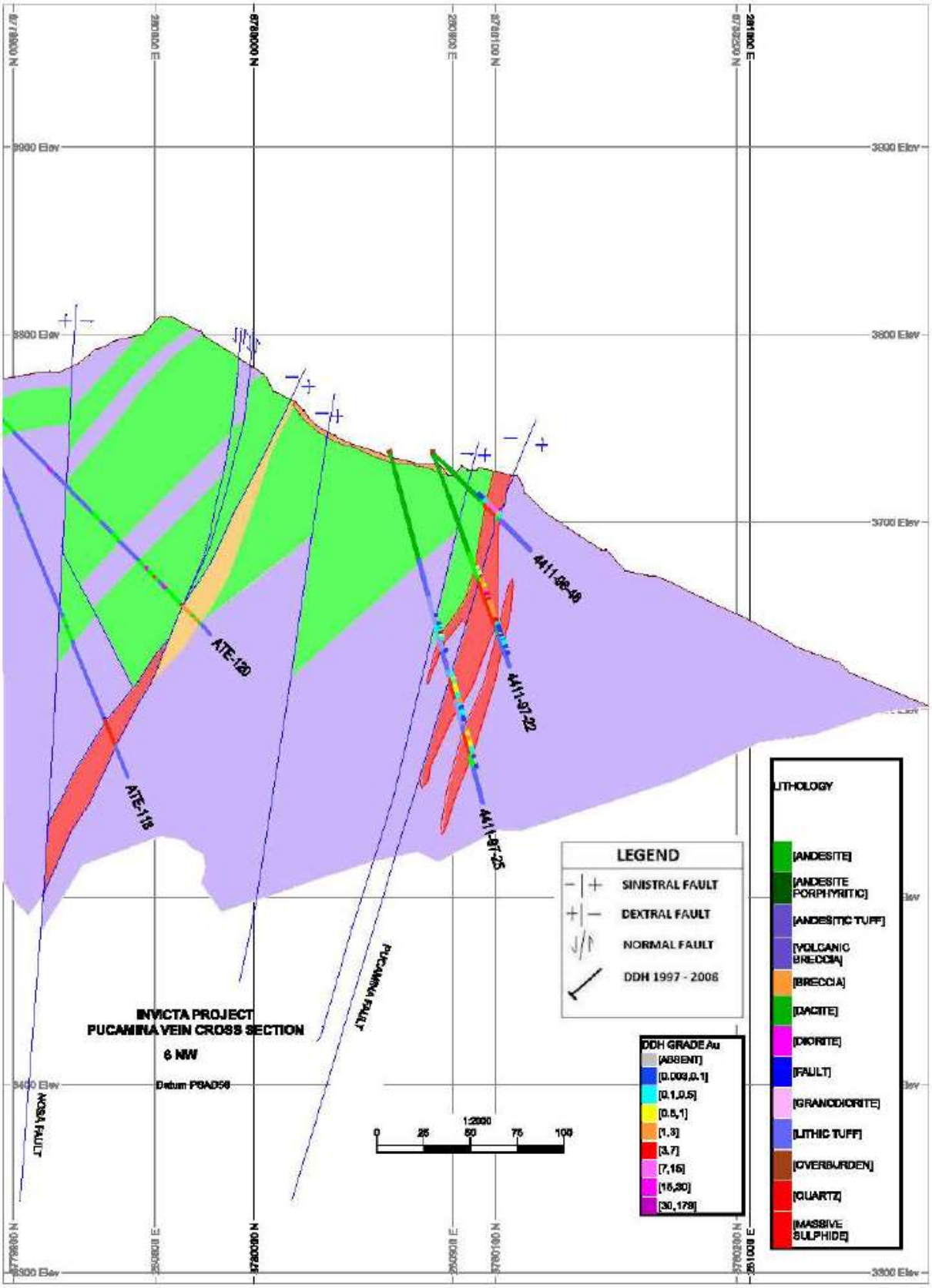

Figure 11: Geology Cross-Section of Pucamina Vein

Three end-member types of epithermal deposit are generally recognized: high sulfidation, intermediate sulfidation, and low sulfidation, each denoted by characteristic alteration mineral assemblages and textures. Base metal (copper, lead and zinc) sulphide minerals may also occur in addition to pyrite and native gold (Au) or electrum. In some epithermal deposits, notably those of the intermediate-sulfidation sub-type, base metal sulphides may comprise a significant mineralized material constituent.

The sulphide assemblages associated with quartz veins at the Invicta Gold Project resemble the intermediate sulfidation epithermal sub-type.

8 Exploration

This section describes Andean American exploration work from 2006 to present; prior exploration activities by predecessor companies are discussed in Section 5.

8.1 Andean Exploration Work – 2006 to 2009

This section is extracted from Discover, November 20, 2009: "The Invicta Property Updated Technical Report (Huaura, Lima-Peru)", a NI 43-101 technical report prepared for Andean American a predecessor company to Andean American Inc. Changes to standardizations, sub-titles, and organization have been made to suit the format of this technical report. SRK has provided updated information since 2009 for completeness. SRK comments and opinions, where present, contain "SRK" in the pertinent sentences and paragraphs. Sections 8.2 and 8.3 refer to exploration since 2009 and have been prepared by SRK.

Invicta extended and completed detailed geological mapping along the Atenea, Pucamina, and Dany Zones as well as Zone 4. A QA/QC program was in place during all exploration work.
Between September 2006 and May 2008, Invicta completed an additional 52 diamond drillholes for a total of 14,807.52 metres. Of the total metres drilled, 4,511.47 metres were completed as infill drilling and 10,296.05 metres comprised exploration drilling. An adit at the 3,400-metre level below surface (3400 Level), of approximately 1,200 linear metres, was completed during 2008 and exposed underground the Atenea vein. Detailed underground geological mapping and systematic sampling were completed.

8.1.1 Drilling

In October 2006 Invicta drilled three twin holes (AE-DDH-06-52, 56 and 58) in order to validate the historical resources for blocks 52, 56 and 58. To test the continuity of the mineralization approximately 50 metres below AE-DDH-06-56, Invicta also drilled hole AE-DDH-06-80, which intersected a 11.95-metre mineralized interval (133.25 metres to 143.90 metres) that assayed 6.94 grams of gold per tonne (g/t gold), 18.55 g/t silver, 0.75 percent copper, 0.32 percent lead and 0.37 percent zinc. Core recoveries were generally above 95 percent.

On July 24, 2007 Andean American released the results for diamond drillhole AE-DDH-07-30, which intersected a 14.25-metre mineralized interval (145.95 metres to 160.20 metres) that assayed 18.45 g/t gold, 18.02 g/t silver and 0.46 percent copper, and a 18.50-metre mineralized interval (159.22 metres to 177.75 metres) that assayed 2.13 g/t gold, 56.12 g/t silver and 2.87 percent copper. The estimated true width for the interval 139.55-metre to 179.3-metre was 32.60 metres.

The updated resource estimate report included data from four additional diamond drillholes and underground sampling from cross cut 10NE. The new drillholes include AE-DDH-07-85 (650.20 metres), AE-DDH-07-112 (628.70 metres), ATE-117 (682.60 metres) and ATE-120 (239.0 metres) all drilled into the Atenea vein.

8.2 Relevant Exploration Work - 2009 to 2012

8.2.1 Structural and Mineralogical Study

Invicta Mining Corp commissioned Alfonso Huamán Guerrero to conduct a study to better understand the mineralogical and structural characteristics relating to the origin of the Invicta deposit (Guerrero, 2011). The study was conducted between July and December 2010. The study involved geological field work, surface sampling, review of satellite imagery, microscopic and electron microscopic investigations, chemical analysis, petrographic analysis and analysis of fluid inclusions. A total of 296.23 metres of 2.54-centimetre diameter pack sack underground drilling was conducted to obtain samples for this investigation.

For the microscopic characterization of the Invicta deposit, 36 samples from 21 separate diamond boreholes were selected, corresponding to three vein zones, the Atenea (9), Dany (7), and Pucamina (5) zones. Surface sampling included 12 rock outcrops, including 4 silicified samples. Microscopy studies were completed by Buenaventura Ingenieros S.A., (2011) including, thin section petrography (16 samples), mineragraphic (23 samples) analysis, Scanning Electron Microscopy (SEM 5 samples), clay mineral analysis by X-ray diffraction (XRD 5 samples), mineralogical analysis by XRD (5 samples), and chemical analysis by X-ray fluorescence (XRF 5 samples). In addition, 9 samples from silicified outcrop were sent for geochemical analysis to the INSPECTORATE laboratory in Lima. The relevant conclusions from the report are as follows:

- Hydrothermal fluids circulated along pre-existing faults forming veins varying from a few centimetres to several metres in width. In some sectors where these veins are located, and in areas close to them, up to 200-metre wide zones of breccia occur at the intersection between faults and veins.
- Silica and iron deposition in veins occurred during several stages of quartz and pyrite-marcasite deposition.
- A structural analysis of satellite images indicated that three dominant lineament orientations can be defined: northwest-southeast, northeast-southwest and to a lesser degree north-south and east-west. Fifteen potential zones for exploration were identified in the Invicta concessions.

The major recommendations from the report were as follows:

- Complete surface mapping at a scale of 1:500 and complete a detailed structural map over the same area.
- Re-log the existing core and complete a new interpretation of the lithology and mineralization.

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- Re-log the existing core and complete a new interpretation of the lithology and mineralization.

8.2.2 Geological Mapping

Between August 2011 and March 2012, the Invicta Gold Project geological team completed 47.8 hectares of detailed geological mapping in an area centered on the Atenea and Pucamina zones. The new work increased the resolution of the mapping from 1:2,500 to 1:500 metres. The geodesic points used to reference the mapping are based on points placed on the site for an aerial topographic map of the area. This aerial mapping work was completed by Horizons S.A. in 2011. The geological map produced is shown in Figure 5.

8.2.3 Structural Mapping

As part of the geological mapping campaign outlined above, structural mapping was carried out. The structural geology map produced is shown in Figure 8. The structural mapping focused on a somewhat larger area to include salient structural geological characteristics, including the continuation and offset of vein zones and a felsic dike.

During November 2011, SRK Consulting (U.S.), Inc. (SRK US) conducted a review of the structural and geological mapping to date carried out by the Invicta geological team. A total of 8 days was spent on site. As a result of this review, a number of improvements were made to the mapping methodology. SRK recommended an extension of the area covered by the mapping campaign to include the Dany fault and vein zone in the south and southwest, and the extension of the Pucamina fault in the (north)west. Worth noting is that SRK US identified a previously unmapped dextral reverse fault that intersects and offsets the Atenea vein. The report prepared by SRK US following this review, provided knowledge of the structural regime controlling the mineralization at the Invicta Gold Project and lead to a better understanding of the distribution of the gold and other economic elements in the deposit.

8.2.4 Surface Sampling

A total of 496 surface samples were taken by Invicta Gold Project geology personnel during the 2011 field season from the Atenea and the Pucamina zones and 111 samples were taken from the

3400 Level adit, which extends into the Atenea vein. The surface sampling was conducted to explore the continuity of the Atenea vein along the surface and to better define any follow up exploration drilling of a possible extension to the Atenea vein including any additional structures that may be present. Adit sampling was performed to augment and support the existing database.

The surface sampling campaign results are as follows:

- 262 samples were taken from the surface outcrop of the main structure of Atenea.
- 144 samples were taken from the surface outcrop of the Pucamina zones

The structural geology indicates that the Atenea vein may extend in a north-east direction towards the Pucamina vein. Detailed examination of the fault systems suggest that this extension may not be as close to surface as the presently defined Atenea vein. Ninety samples were taken from a silicified breccia zone, located in the area between Atenea and Pucamina. These results indicate an anomalous zone in the silicified breccia which suggests possible continuity of the mineralized structure.

Underground channel sampling on the mineralized structures highlight the considerable local anomalous grades which need to be followed up by exploration (Figure 12).

LUPAKA GOLD

srk consulting

Lupaka Gold Corp. December, 2017

Figure 12: Channel Sampling on the Atenea Vein from the 3400 Level Adit

Sampling results over 50-centimetre channel sample: 10.23 g/t gold, 7.36 oz/t silver, 6.97 percent copper, 13.67 percent lead and 3.78 percent zinc

8.2.5 Re-logging Program

The Invicta Gold Project geological team completed a relogging program comprising 18,332 metres of drill core obtained from the Pangea and Invicta Mining Corp drilling campaigns. The focus of this program was the development of a revised geology model, with emphasis on improving the lithological interpretation (including alteration and mineralization). As part of this program, 96 percent (13,072 metres of the total 13,603 metres drilled) of drill core corresponding to the Atenea vein was re-logged. The remainder of drill core investigated included 2,588 metres from the Pucamina zone, 1531 metres from the Ydalias zone, 919 from the Dany zone, 175 metres from Zone 7, and 45 metres from Zone 5.

Work on the development of a new lithological-alteration model for each vein zone is ongoing at the time of issue of this report.

Prior to the initiation of this re-logging program, a collection of samples was prepared for petrographic and mineragraphic analysis by Buenaventura Ingenieros S.A. The results from this study were used to build a reference (rock) library that supported better consistency between different logging geologists.

Selective sub-sampling of mineralized intervals from four boreholes that intersect the Atenea vein (AE-DDH-06-52; 4411-97-08; AE-DDH-06-80; AE-DDH-07-28) was conducted to better understand the distribution of gold and other metals within the vein zone. At the same time, this sampling program aimed to study potential dilution effects stemming from wider sampling intervals that extend beyond the margin of mineralization into wallrock along the margin of the veins. Preliminary results from this program highlighted that quartz veins have significantly higher gold grades then their surrounding brecciated wallrock, indicating that wider areas of brecciated wallrock within the vein zone may cause grade dilution. Following the re-logging program discussed above, the new lithological model will better constrain the extent of brecciated wallrock within the vein zone and aid in improving future mining plans.

8.2.6 Aster Satellite Interpretation

An interpretation of ASTER satellite imagery over an area covering the Invicta concessions was completed by Favio Mena Osorio (2012). A variety of anomalies were identified on the basis of reflectance spectroscopy (using spectral indices). The interpretation of the imagery suggested the presence of zones of oxide and hydroxide, hydrothermal alteration minerals, and silica. In addition, a lineament study was undertaken on the basis of topographic data.

Salient results from this study include:

- The identification of an anomaly attributed to the presence of jarosite, calcite, epidote, chlorite, alunite and kaolin suggesting the potential presence of sulphide-rich surface exposures within the Victoria Uno claim.
- A dominance of silica anomalies observed throughout all claims, most likely spatially associated with lithologies exposed near surface; dominant northwest- and northeast-trending lineaments, most likely reflecting the dominant structural trends in the area.
- Spectral characteristics in the eastern and southern portion of the area covering the claims suggesting a slight acidic hydrothermal environment conducive to the formation of (epithermal) mineral deposits.

8.3 Exploration Potential

Exploration conducted on the Invicta mine property indicates that the property has considerable potential for mineral resource expansion through exploration. Structural studies, geophysical and geochemical work (Figure 13) conducted to date strongly suggest the potential for mineral resource expansion along existing mineralized structures.

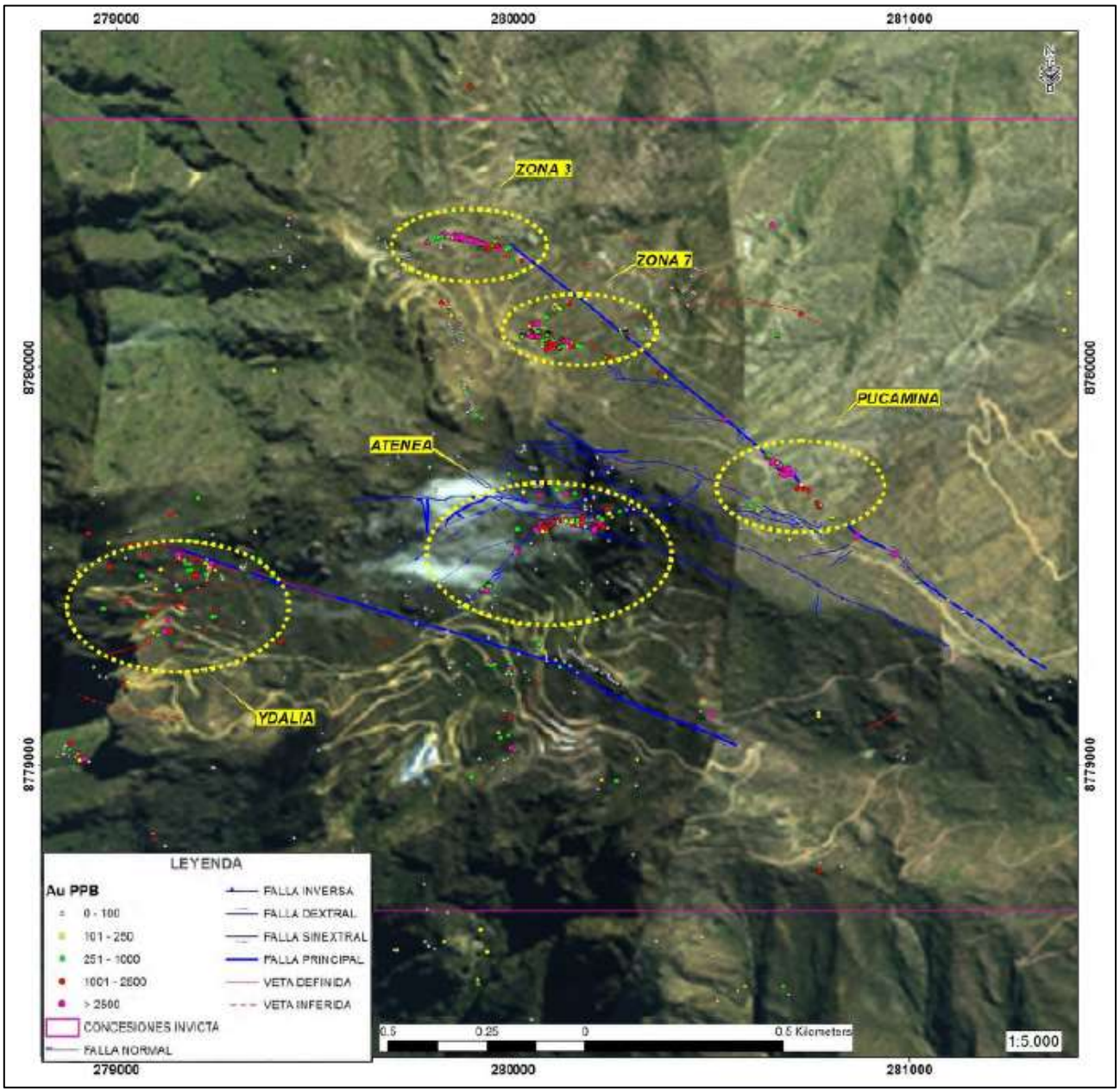


Figure 13: Geochemical Surface Anomalies on the Invicta Gold Project
Source: Lupaka, 2017

Invicta management has proposed an exploration plan for 2018 and a budget has been approved to execute the plan. The plan is focused in the expansion of the mineral resources above and to the east of the 3400 Level in the Atenea vein, and below this level in areas characterized by low drilling densities. It is strategically important that high grade mineralization be identified and delineated by drilling. About 600 metres of development drifting and 2,500 metres of underground diamond drilling have been proposed to expand and increase the confidence the Invicta mineral resource.

Detailed mapping and geochemical sampling in the satellite areas adjacent to the Atenea structure will be undertaken to develop an exploration framework upon which to base a drilling program.

8.4 Comment

SRK (2012) believes the work completed by Pangea and the subsequent studies conducted by Invicta Mining Corp during the period 2006 to 2012 has verified the grades in boreholes, and improved the geological mapping, which together have enhanced the understanding of the geological controls on vein mineralization at the Invicta Gold Project.

Both Pangea and Invicta Mining Corp personnel were knowledgeable in in all aspects of mapping, sampling and drilling procedures, and SRK believes the procedures adopted both in the past and currently in place for exploration data acquisition, data compilation and data verification procedures meet or exceed industry best practices. The Invicta Gold Project offers considerable upside for mineral resource expansion through exploration.

9 Drilling

9.1 Type and Extent

The exploration and development drilling conducted by Pangea during the period 1997-1998 and the subsequent drilling/sampling programs conducted by Invicta Mining Corp during the period 2006-2011 are summarized in Table 25 and depicted on plan in Figure 14.

The boreholes are typically NQ; however, some boreholes were started with HQ, and then continued at depth with NQ. Drill depth varied between 69 metres and 682.60 metre with an average depth of 285 metres.

Average core recovery was greater than 95 percent over both phases of the drilling.

Table 25: Drilling Statistics by Owner During the Period 1997 to 2011

Drill Campaign	Sample Type	Number	Length (m)			
			Total	Min	Max	Avg
Pangea (1997-1998)	Core	112	12,475.88	1.00	390.40	111.39
Invicta (2006-2008)	Core	53	15,128.97	69.00	682.60	285.45

9.1.1 Pangea Peru S.A. Drilling

A summary of the Pangea drilling and sampling procedures is provided in Section 4.2.1. Although this information is detailed in the section related to Section 5 of this report, SRK is of the opinion that the procedures in place during the Pangea exploration phase of the Invicta Gold Project were conducted to industry best practices at the time of the programs.

9.1.2 Invicta Mining Corp Drilling

Between July 2006 and May 2008 Invicta Mining Corp drilled 53 diamond boreholes for a total of 15,128.97 metres. Two separate phases were conducted.

- Phase 1 commenced in July 2006 and was completed in March 2007. A total of 1,272.05 metres of infill drilling in the Atenea deposit was completed using Tech-Drill as contractor.
- Phase 2 commenced in June 2007 and was completed in May 2008. A total of 13,535.47 metres of drilling of which 3,239.42 metres consisted of infill drilling in Atenea and 10,296.05 metres of exploration drilling in Atenea, Dany, Pucamina, Ydalias and Zone 7. The drilling contractors were Geotechnica, Andeig, and Esondi.

9.2 Procedures

Invicta Mining Corp conducted drilling during 2007 and 2008. Water for the drill program was obtained through a water use agreement with the community of Lacsanga.

The Exploration Manager provided the Chief Project Geologist with the information required to commence drilling.

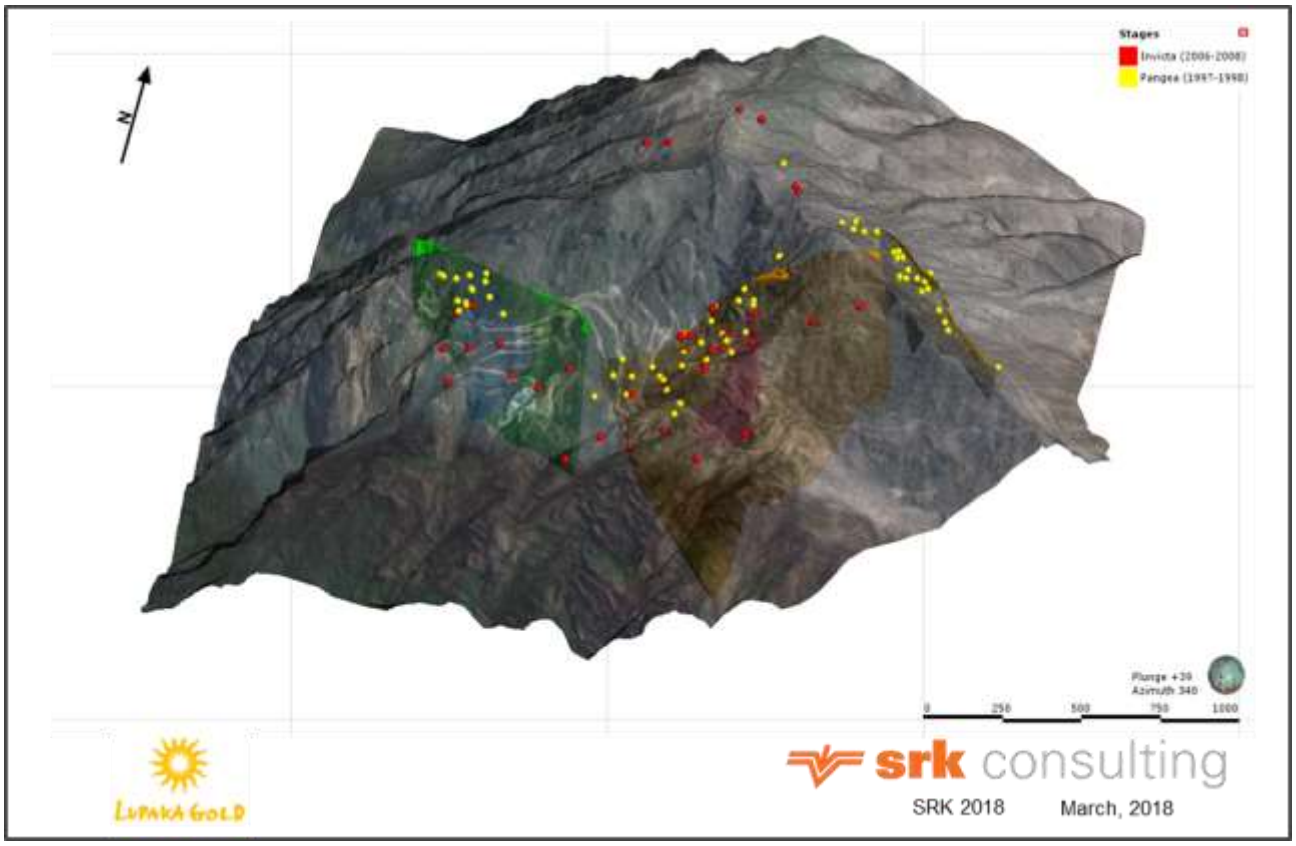


Figure 14: Surface Drill Collar Locations for Period 1998 to 2008 at the Invicta Gold Project, Showing Traces of Mineralized Structures

Drill Responsibilities:

- The Chief Geologist for the Invicta Gold Project was responsible for drill planning and hole siting. Drill pads and access routes were constructed under his supervision. The Drilling Geologist was responsible for checking the daily drill logs.
- The drill contractor was carefully monitored and regulated during drilling, mobilization and de-mobilization.

Drilling:

- All drilling was carried out with diamond drill rigs with NQ (47.6-millimetre inside diameter) core tools, although some holes were started with HQ (63.5-millimetre inside diameter). The borehole location, orientation, and planned final depth were checked by the Drilling Geologist before the start of drilling at each hole. On-site supervision of the contractor was maintained and site inspection visits were carried out regularly.
- All holes were sealed and marked with a concrete monument. The drill locations were surveyed by the company surveyor.

Procedures at the Drill:

- The core boxes were labeled and arrows drawn to ensure that each core was systematically laid in the wooden core box. A wooden marker was placed in the core box after each run and the metres down hole were identified on the marker, to be used to calculate core recovery.
- Transfer of the core from the core barrel to the box was done as carefully as possible so that no core was allowed to fall on the ground. A rubber mallet was used to loosen the core from the core tube. As soon as a core box is full a lid is properly secured.

Core Transportation Procedure:

- Transportation of core from the drill site to the logging facility was by a pickup truck proceeding at a slow velocity to minimize shifting of material in the core boxes. The wooden core boxes were appropriately sized to ensure a tight fit of the core into the box.

Drill Core Checking:

- The core boxes were checked on arrival at the core shack by the Logging Geologist to ensure that they were intact. The core boxes were opened sequentially. The boxes were marked with paint at intervals corresponding to the rock type.

Photography:

- No photographs of the core have been found in the Invicta Gold Project archives for any drilling conducted at the site. During the re-logging campaign 5,329 metres were photographed. The photographs were taken after re-logging. Core photographs were stored in a backed up digital database for future reference.

Core Cutting and Storage:

- Once the uncut core arrived at the core shack an experienced technician supervised the core splitting. Once the core was cut a sample, between 1 to 3 kilograms in weight, depending of the sample length and type of mineralization, was taken. Picking and sample preparation are described in Section 10. The remaining core fraction was returned to the core box.
- The core splitting room was separate from the logging area.

Core Logging:

- A paper summary log containing the main lithological contacts, structures and mineralization is completed and the core is sent for cutting. Detailed core logging restarted when the cut core was returned to the geologist responsible for logging the hole. Detailed core logging included mapping of the lithology and structure of the core, identification of the mineralization and registration in the log, marking of the core and marking of the areas to be cut for samples. The geologist applied water with a paint brush to more clearly identify the areas for logging and sampling. A paper version of the core log was completed and then transferred to Excel. During re-logging the geologist who completed the logging also transferred the data to Excel.

Geotechnical Logging:

- Geotechnical logging was not conducted during any of the drilling campaigns. Invicta Mining Corp contracted Ing. Jorge Ramírez Seminario (2008, 2010) to log a portion of the Invicta Gold Project core. In total 3,000 metres were logged in 2008 and 821 metres were logged in 2010.
- The geotechnical characterization used the system of Rock Mass Rating (RMR) (Bieniawski, 1989) and Q rock mass classification (Barton, 2000) following the ISRM (International Society for Rock Mechanics) standards.

9.3 Interpretation and Relevant Results

The results of the 112-borehole 12,475.88 metres drilled by Pangea (1997-1998) initially defined the geometry of the main Atenea structure to a depth of approximately 2,900 metres, and secondary structures as Pucamina (Zone 2), Dany (Zone 6), Ydalias (Zone 4); lacking further exploration with holes in the Zones 3, 5, 7, and outcrops of silica.

The 53 holes drilled in the Atenea vein define the geometry of the main Atenea structure to a depth of approximately 2,900 metres, and secondary structures at Pucamina (Zone 2), Dany (Zone 6), Ydalias (Zone 4). Based on visual comparisons between the Pangea and Invicta Mining Corp drill programs in terms of tenor and zone thickness, SRK is of the opinion that the two datasets are generally confirmatory, and are suitable for combination in to a global database that is suitable for use in resource estimation.

10 Sample Preparation, Analyses, and Security

Analytical quality control results for the 2006 to 2008 Invicta Mining Corp drilling campaigns were reported in previous NI-43-101 technical reports (Jaramillo, 2009). Additional surface sampling and core re-sampling by Invicta related to the 2011 sample validation campaign was also conducted and are described herein.

10.1 Sampling Methodology – Pangea (1997 to 1998)

Sample preparation, analysis and security measured conducted by Pangea during the period 1994-2000 are not well documented, and the programs and procedures in place during that time have been summarized in Section 4 of this report. SRK is familiar with the work practices conducted by Pangea in both Peru and their other former assets in Tanzania and Canada. Based on this experience, SRK is of the opinion that the Pangea drilling and sampling methods were conducted to industry best practices at the time of these historic programs.

10.2 Sampling Methodology – Invicta (2006 to 2008)

10.2.1 Core Sampling

All core was cut using a core saw. After the core was cut in half, the process for picking the sample from the cutting plate and filling it into the bag was as follows: both coarse and fine-grained fragments were picked using a small brush and a wood spatula; compressed air was used for cleaning the base of the core saw and plate after every cut to avoid contamination; and the sample obtained from the cut core was placed into a 10-by 15-inch plastic bag and then sent to the laboratory, for the corresponding assay.

The remaining core fraction was returned to the core box. Sample weights varied from 1 to 3 kilograms depending of the sample length and type of mineralization.

After each sample was placed into the bag, a sample ticket was attached on the top of the bag, which was then folded and tied. In addition, the same sample code (including the borehole number) was also written on the outer surface of the bag with a permanent marker. The samples were then stored in a secure dry room, with adequate ventilation.

10.2.2 Surface Sampling

The surface samples were collected from mineralized surface outcrops using channel sampling. The outcrops were sampled every 10 metres, using channel 20 centimetres wide by 10 centimetres deep with the length dependent on the dimensions of the mineralized vein, the location of any breccia zone and on fault location. The responsible Exploration Geologist, identified the sample locations in the channel and marked the locations. The Senior Sampler, and his assistants cleaned the channels by removing any foreign material. A sample of between 3 and 6 kilograms was taken from each area and placed in a plastic bag, numbered and tied. Finally, the Exploration Geologist writes a lithological and mineralogical description of each sampled channel into the sampling log book. The location of each sample was mapped. Samples were packaged and shipped to Actlabs in a company truck to be analyzed. Duplicate samples were manually crushed and mixed before splitting and sending for analysis.

10.2.3 Security

The core shack is located at the mine camp where 24-hour security is provided. The core storage building itself is locked when the geological staff is not present. The storage boxes for the core are shown in Figure 15. The core boxes are stacked in groups of four. The storage location is registered by column, row number and letter respectively.

Sample security from the exploration camp to the laboratory was as follows; the samples were packed into thick sacks in batches of 20 to 25. The samples were transported to the laboratories in Lima using a company vehicle. Once they arrived at the laboratory, the samples were unloaded from the truck by the laboratory personnel.

Surface samples are stored in the core shack (Figure 15).

Figure 15: Invicta Gold Project Core Storage Building

10.3 Sample Preparation

Actlabs, Peru performed the 2012 analysis for the surface samples and the core sampling conducted as part of the validation interim report. Actlabs is an internationally recognized analytical laboratory which provides independent analytical services to the mining industry.

10.3.1 Actlabs Peru Laboratory Procedures

Actlabs Peru is ISO 9001certified.

10.3.2 Sample Preparation and Analysis

The entire sample as received was crushed to a nominal 70 percent minus 10 mesh (1.7 millimetres), mechanically split (riffle) to obtain a representative sample and then pulverized to at least 95 percent minus 150 mesh (106 microns). The laboratory then ran quartz sand between each sample and then cleaned the pulverizer with compressed air. The quality of the crushing and pulverization was routinely checked as part of the laboratory quality assurance program through preparation of duplicates and pulp duplicates.

Assay Procedures - Gold Assay Atomic Absorption Spectrophotometry Finish

A 30-gram sample was mixed with flux (borax, soda ash, silica) and litharge (PbO) with silver added as a collector. The sample with the flux was then added to a crucible, placed in a 1,050-degree Cesius assay furnace and left for a predetermined time to melt or “fuse” the contents of the crucible. The crucibles were then removed from the assay furnace and the molten slag (lighter material) was carefully poured from the crucible into a mould, leaving a lead button at the base of the mould. The lead button was then placed in a preheated cupel which absorbed the lead when cupelled at 820 to 880 degrees Cesius leaving only a metal bead of silver (doré bead) which contained the gold from the sample. The entire Ag doré bead was dissolved in acid, and the gold content determined by AA (Atomic Absorption spectrophotometry).

Assay Procedures - Copper and 28 Element Assay

A 0.2-gram sample was prepared by agua regia digestion. In this procedure the sample was placed in a mixture of agua regia (concentrated hydrochloric (HCl) and nitric (HNO_3) acids) to leach sulphides, some oxides and some silicates. Final determination of the elemental concentration was performed by optical emission ICP.

10.3.3 Analytical QA/QC Procedures

Quality assurance and quality control (QA/QC) programs are typically set in place to ensure the reliability and trustworthiness of 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 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 to monitor the reliability of assaying results throughout the sampling and

assaying process. Check assaying is typically performed as an additional reliability test of assaying results. This typically involves re-assaying a set number of rejects and pulps at a second umpire laboratory.

The information in this section was partially extracted from a previous technical report for the Invicta property (Jaramillo, 2009).

Quality control procedures and methodology were implemented by Invicta during the sampling validation in 2006. This included care in taking representative samples, insertion of duplicates, blanks and standards during sample submittal to Act Labs and CIMM Labs.

Quality control and data verification procedures were also implemented by Invicta during the 2007 and the 2008 drill programs. Duplicate, standard and blank samples were inserted into batches of 17 samples. All these samples were sent to CIMM Labs in Lima for preparation and analytical work.

During the 2007 and the 2008 drill programs a total of 216 standards were included in sample batches. The standards were acquired from CDN Resource Laboratories. The standards used in these programs are tabulated in Table 26. Time series charts for the performance of gold and copper in standards FCM-2 and 3 are shown in Figure 16, Figure 17 and Figure 18.

Table 26: Standards Used During the Invicta 2006 to 2008 Drill Programs

Standard	Expected Grades				
	Au g/t	Ag g/t	Cu%	Pb%	Zn%
CDN FCM-3	0.40+/- 0.07	23.6 +/- 3.3	0.291 +/- 0.02	0.152 +/- 0.014	0.543 +/- 0.032
CDN FCM-2	1.37 +/- 0.12	73.9 +/- 7.3	0.756 +/- 0.046	0.479 +/- 0.038	1,739 +/- 0.104

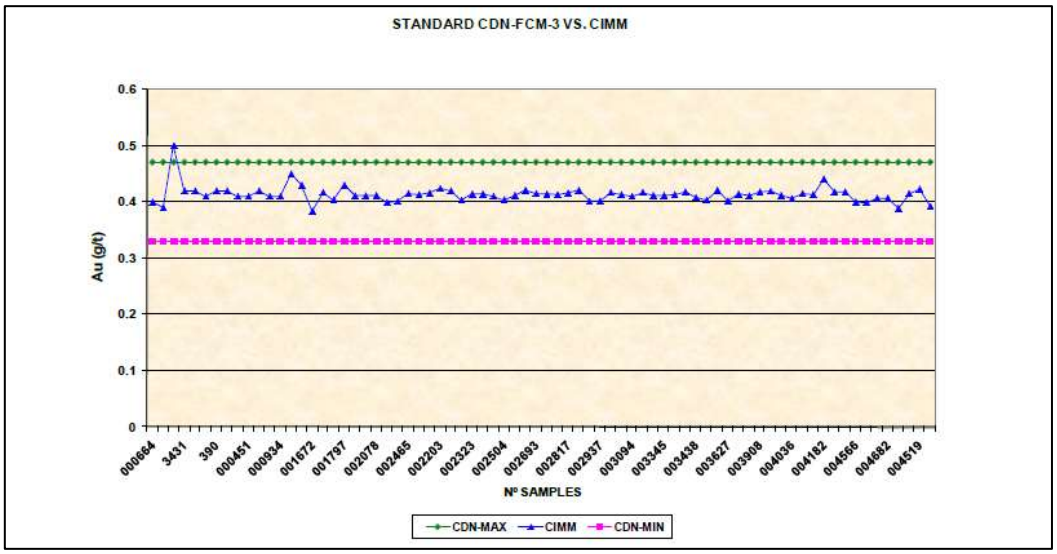


Figure 16: Time Series Plot for Gold in Standard FCM3

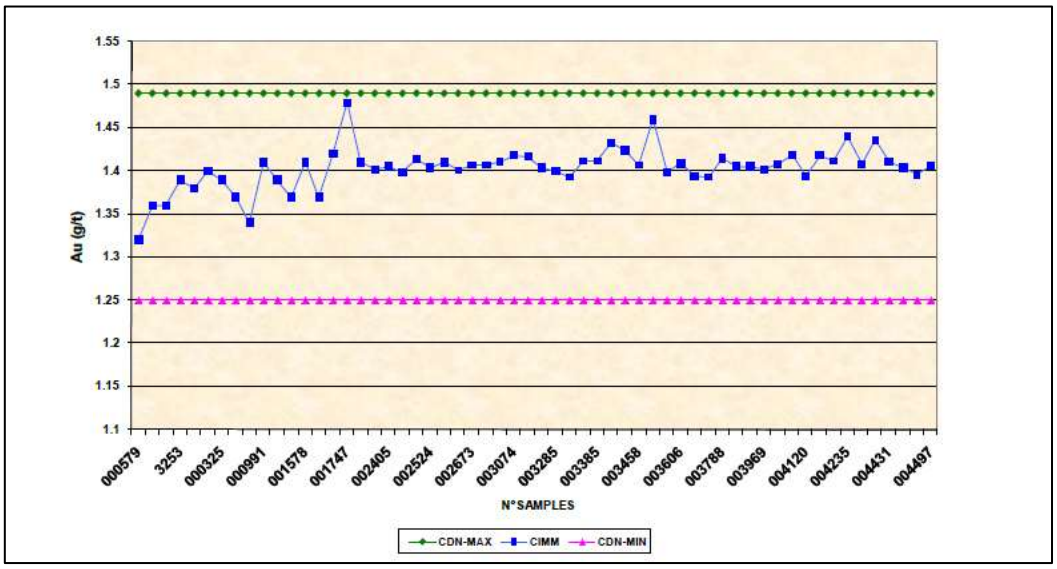


Figure 17: Time Series Plot for Gold in Standard FCM-2

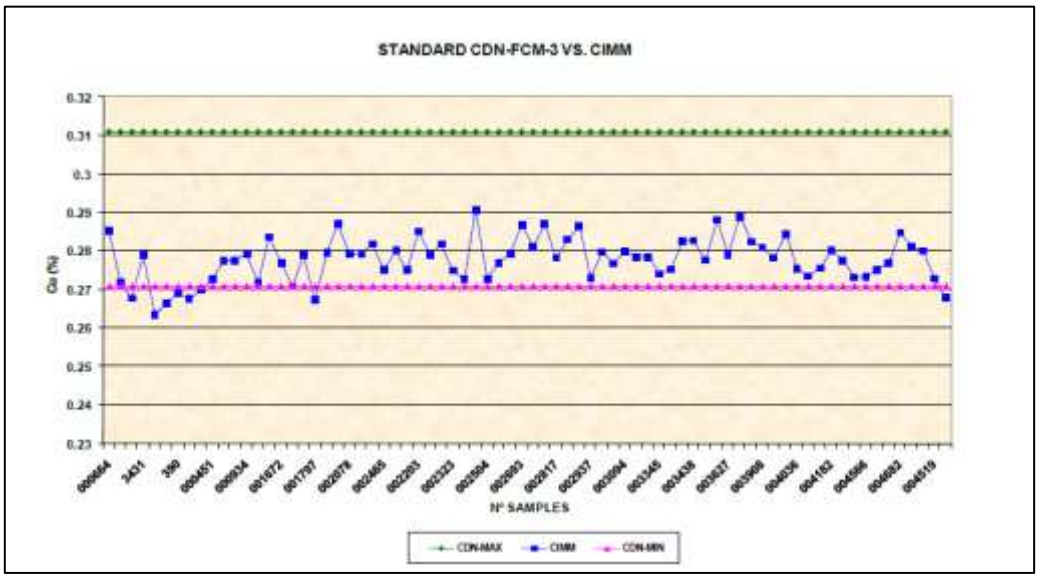


Figure 18: Time Series Plot for Copper in Standard FCM-3

During the 2007 and 2008 drill programs a total of 218 duplicates were inserted in the sample batches. Plots showing the variance between the gold and copper grades in duplicate samples are shown in Figure 19 and Figure 20 respectively.

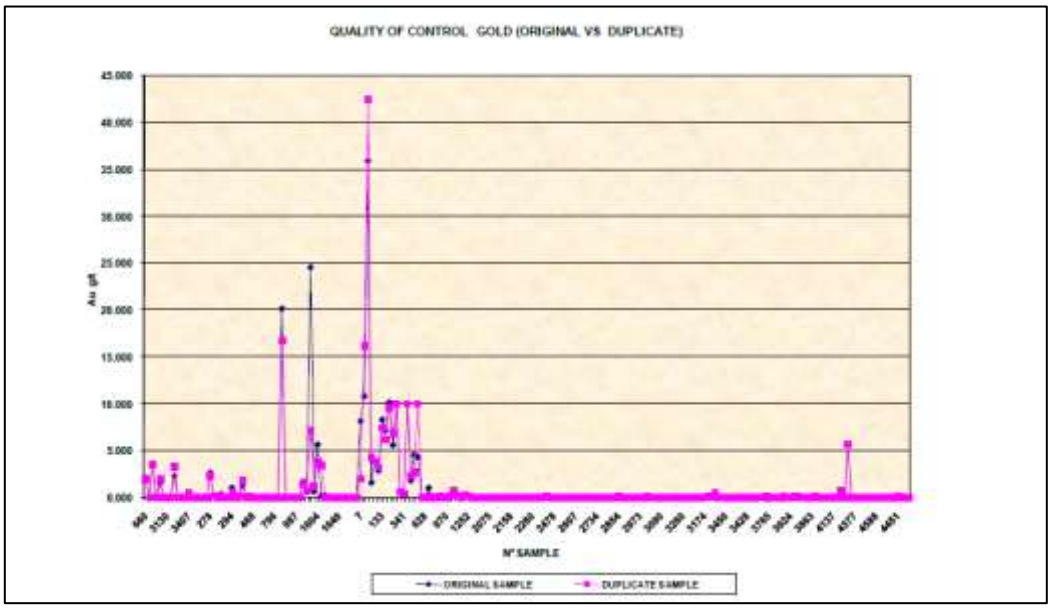


Figure 19: Gold Variance Plot for Duplicate Samples from the Drilling Programs

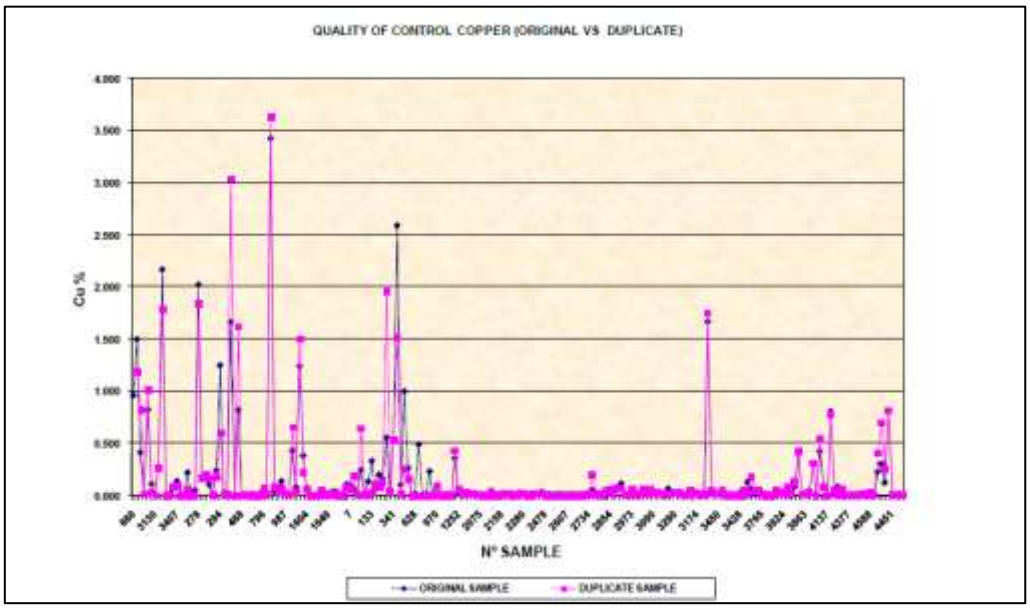


Figure 20: Copper Variance Plot for Duplicate Samples from the Drilling Programs

Generally, amalytical QAQC analysis suggests an acceptable performance by Actlabs for the samples assayed. Blank sample results also fall within acceptable limits and duplicate samples show an acceptable correlation.

SRK (2012) did not review the raw data supporting the graphs above (Figures 6 through 10 of Jaramillo, 2009); however, SRK is of the opinion is that the quality assurance and quality control (QAQC) program in place for the various drilling program was adequate, and the reported results are satisfactory to verify data quality, and thus the borehole database is of suitable quality for use in mineral resource estimation.

10.3.4 QA/QC Procedures – 2011

During 2011, a surface sampling and core re-sampling data verification study was undertaken, by Invicta. Duplicate, standard, and blank samples were inserted into batches of 17 core samples increasing the batch size to 20. For the core samples, a low-grade standard was inserted for sample batches that did not have mineralization and a medium grade standard was submitted for batches that contained mineralization. The lower grade standard was used for the surface samples. All samples were sent to Actlabs, Peru, for preparation and analytical work. The standards were acquired from Analytical Solutions Ltd. Two standards were used.

Certified gold blank samples were purchased from Actlabs, Peru.

The result of the Actlabs laboratory QC sample analyses for surface sampling between November 2011 and February 2012 are provided in this section for blanks, standards (standard reference material), and duplicate samples. For core samples, a total of 6 duplicate samples, 7 blanks and 7 standards were inserted into the sample batches submitted to the analytical lab. For surface sampling, a total of 17 duplicate samples, 13 blanks, and 18 standard samples were inserted into sample batches sent to the lab. Analyses were for both gold and copper.

The types of analysis used were fire assay, gravimetric for gold (Au), and ICP-MS for 38 elements for copper (Cu) assays. The detection limits for the respective analyses are tabulated in Table 27.

Table 27: Detection Limits for Gold and Copper

Metal	Code of Analysis	Unit Symbol	Detection Limit
Au	Au-EF1	ppb	5
Au	Au-EF6	g/t	0.04
Cu	VH-ME-ICP2	ppm	0.5

QA/QC Performance

Core Sampling

The assay of gold standards submitted as quality control for the surface sampling resulted in two samples falling below the lower quality control limit (Figure 21). As a result of this the two batches were re-analyzed. Copper assays were not affected.

The second assay of the two batches containing the standards that analysed outside the lower limit (Figure 22). Discussions have been held with the laboratory to analyse a third time. At this point the results from the original assay have been used.

Figure 21 and Figure 22 suggest that the analytical lab is biased low relative the standard sample value in two out of three analyses; however, SRK suggests that the data are not necessarily representative of trend as the sample population is too small. Additional work is required and recommended to determine if the analytical laboratory results are conservative relative to standard reference material.

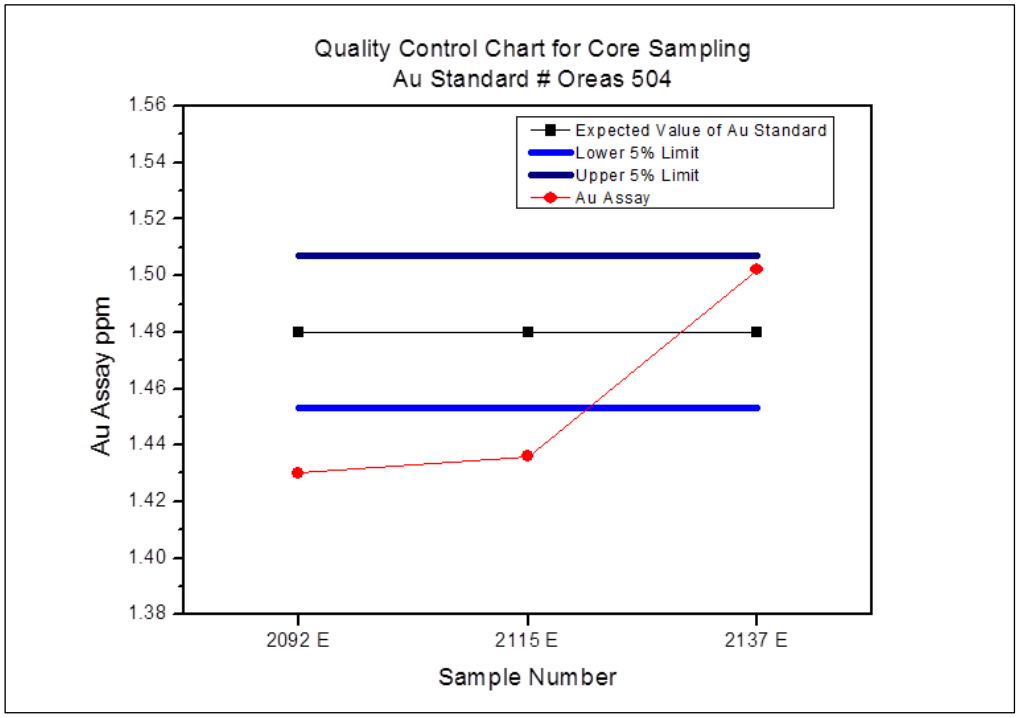


Figure 21: Quality Control Chart for Gold Standard - Oreas 504

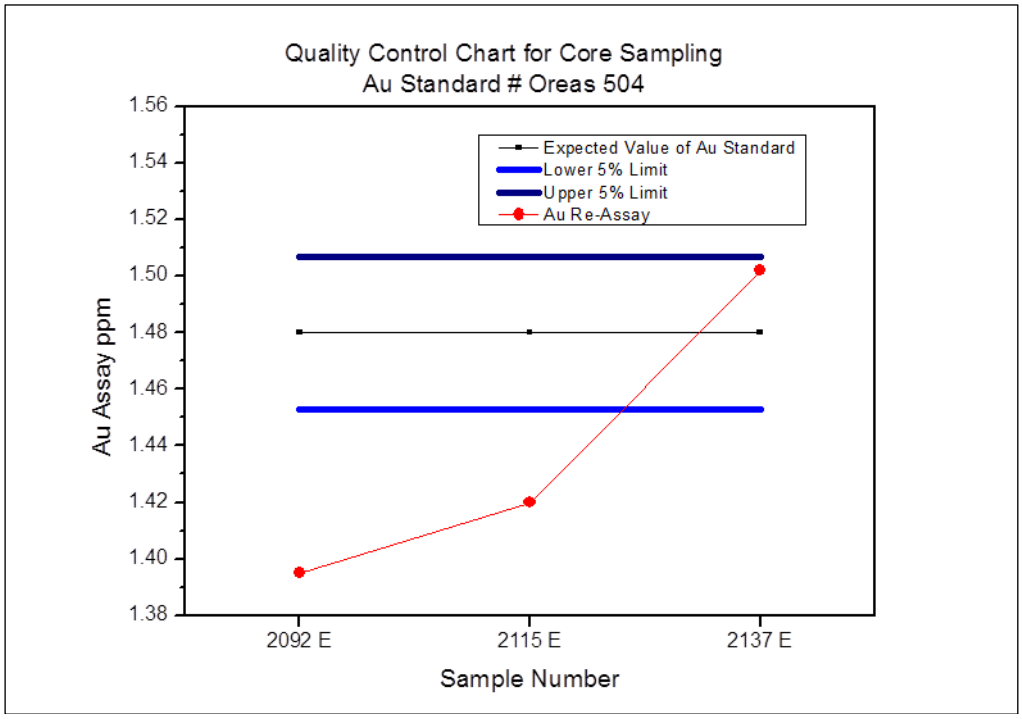


Figure 22: Quality Control Chart for Gold Re-Assay - Standard Oreas 504

Surface Sampling

The assay results of gold standards submitted as quality control for the surface sampling resulted in 7 of the 17 samples falling below the lower quality control limit (Figure 23). As a result of this the entire batch was re-analyzed. Copper assays were not affected.

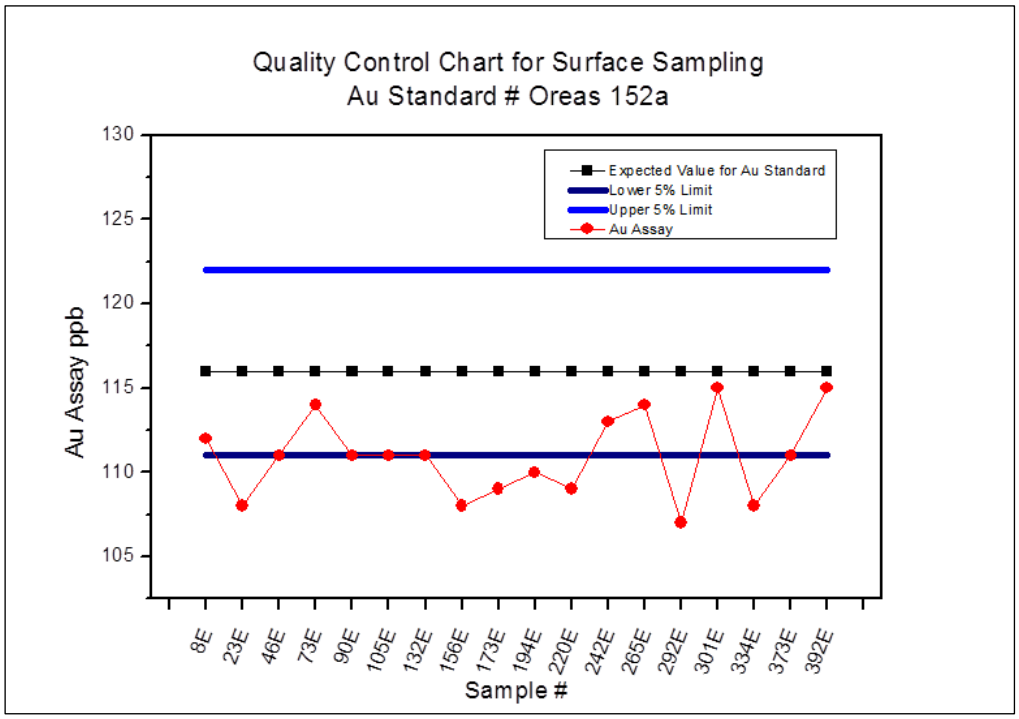


Figure 23: Quality Control Chart for Gold Standard - Oreas 152a

Results

Core Resampling

Blanks:

Figure 24 shows the assay values for blank samples in units of parts per million (ppm). All blank samples returned gold values below the 0.003 ppm analytical detection limit, as expected. The certified value of the blanks is below 0.005 ppm. Blanks were inserted for gold analysis only.

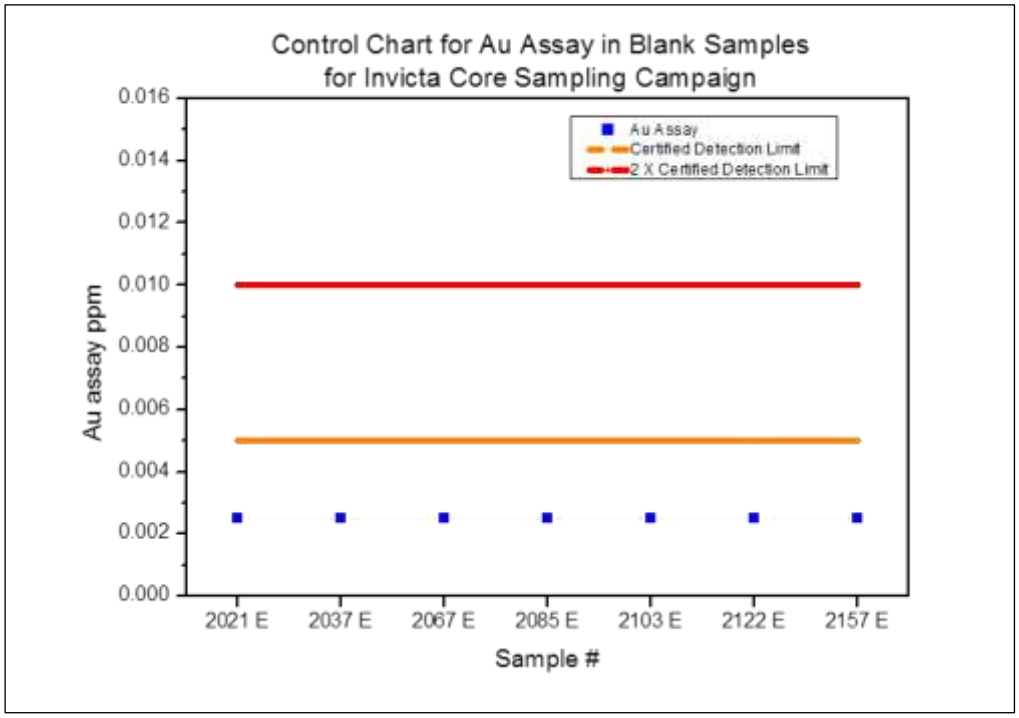


Figure 24: Blank Sample Assays for Gold

Standard Reference Material:
Standards (standard reference material) were procured from Analytical Solutions Ltd. consisting of a low-grade gold standard (116 parts per billion [ppb]) and a mid-grade copper standard (1.123 percent). The limits used to determine the control limits for acceptability are shown in Table 28 and Table 29. A +/-5 percent limit was chosen representing approximately a 90 percent confidence interval. Final plots of the quality control results for gold and copper are shown in Figure 25, Figure 26 and Figure 27, respectively.

Results for the medium grade standards are discussed in the QA/QC actions section.

Table 30 provides the results of standard failure for which the results exceeded confidence limits.

Table 28: Gold Standard (Oreas 152a) and Limits of Acceptability

Metal	Certified Value	1SD	5% Window	
			Low	High
Gold (ppb)	116	5	110	122
			20% Window	
Copper (%)	0.385	0.009	0.365	0.404

Table 29: Gold Standard (Oreas 504) and Limits of Acceptability

Metal	Certified Value	1SD	5% Window	
			Low	High
Gold (ppm)	1.48	0.04	110	122
			20% Window	
Copper (%)	1.123	0.019	0.365	0.404

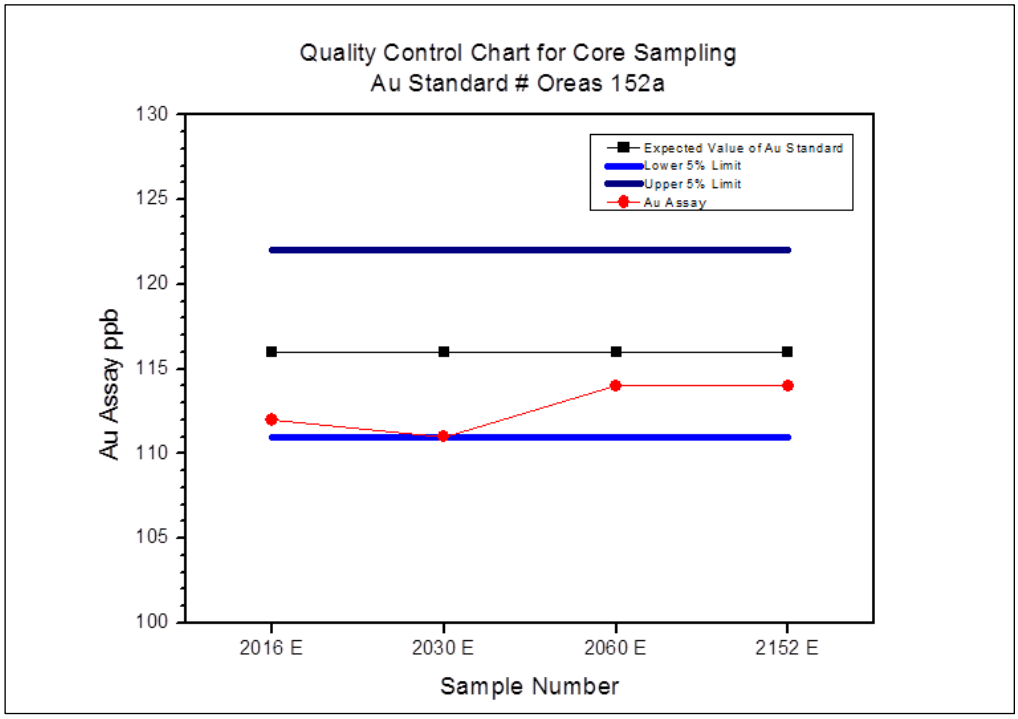


Figure 25: Quality Control Chart for Gold Standard - Oreas 152a

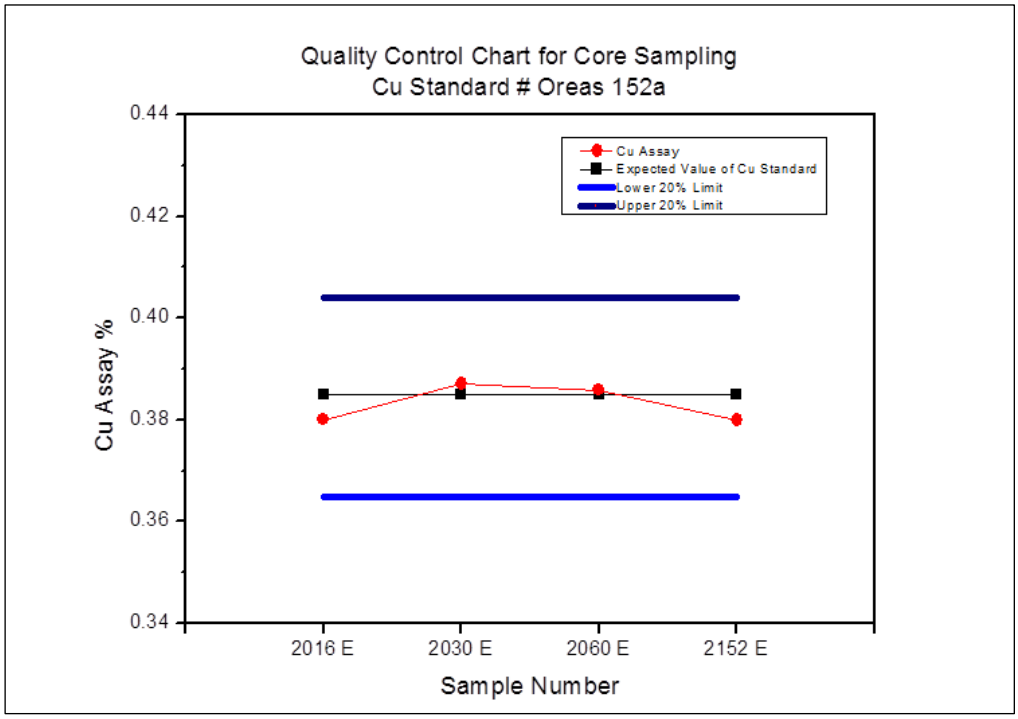


Figure 26: Quality Control Chart for Copper Standard - Oreas 152a

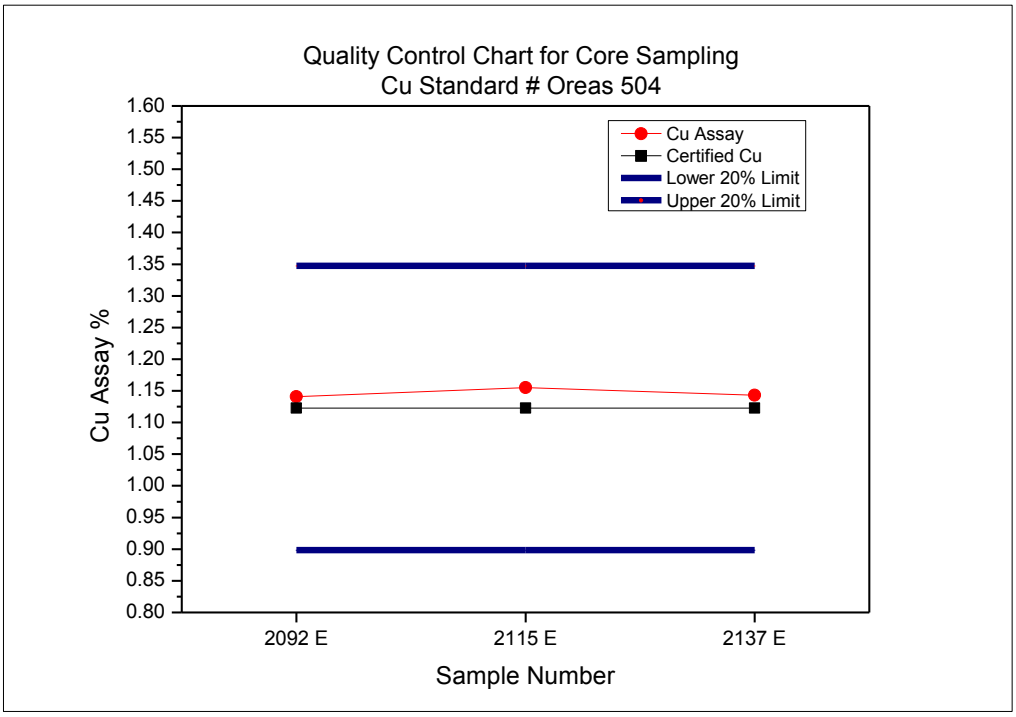


Figure 27: Quality Control Chart for Copper Standard - Oreas 504

Table 30: Gold Standard Sample Analyses that Fall Outside the Limits of Acceptability

Sample #	Au_ppm	Re-assay-Au_ppm
2092E	1.430	1.395
2115E	1.436	1.421

Duplicates

The results of duplicate samples analyzed for gold are shown in Figure 28, with ±20 percent confidence limits. A similar chart for duplicate sample analyses for copper is shown in Figure 29. Duplicate sample analyses for gold are typically quite variable, given the nuggety distribution of gold in epithermal deposits, as indicated in the graph; two of the copper duplicate assays fell outside the limits. The reason is believed to be due to the fact the samples were not homogenized before sending to the laboratory.

Table 31: Gold and Copper Analyses of Duplicate Samples

Original			Duplicate		
Sample #_Orig	Au_ppm	Cu_ppm	Sample #_Dup	Au_ppm	Cu_ppm
2007E	0.0025	30.8	2008E	0.0025	16.3
2041E	.0.031	87.6	2042E	0.015	314.0
2051E	0.014	181.3	2052E	0.0025	154.2
2073E	0.009	29.4	2074E	0.008	31.2
2110E	0.010	24.4	2111E	0.015	84.5
2127E	3.235	451.1	2128E	2.181	961.8
2143E	0.0025	5.9	2144E	0.0025	12.1

Note: Shading = Samples that exceed +/- 20 percent tolerance that exceed acceptance limits.

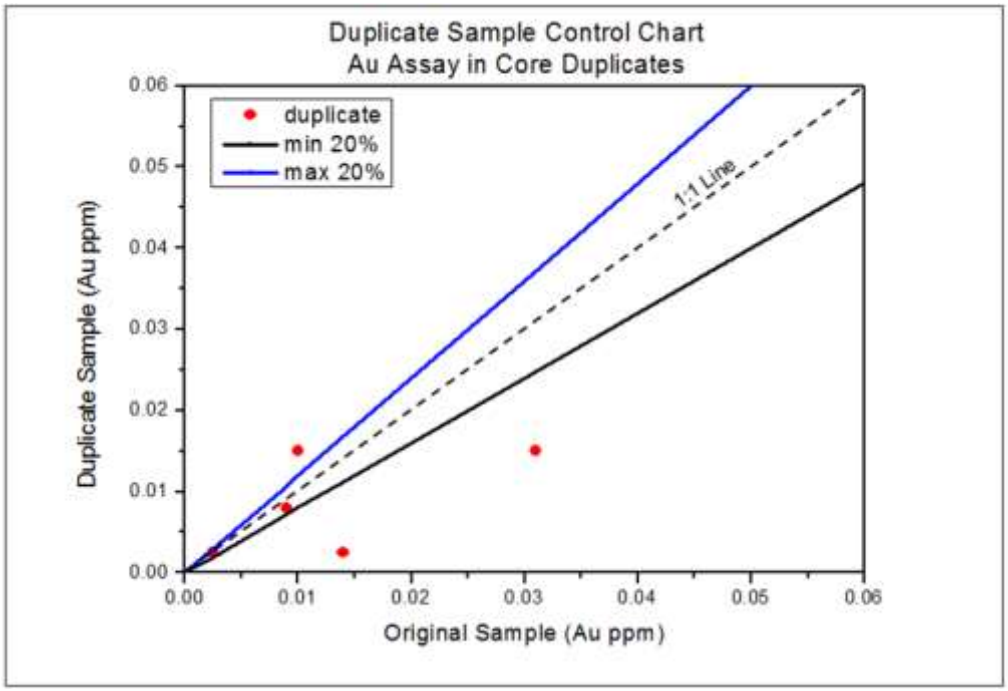


Figure 28: Quality Control Chart for Gold Assay in Duplicate Sample

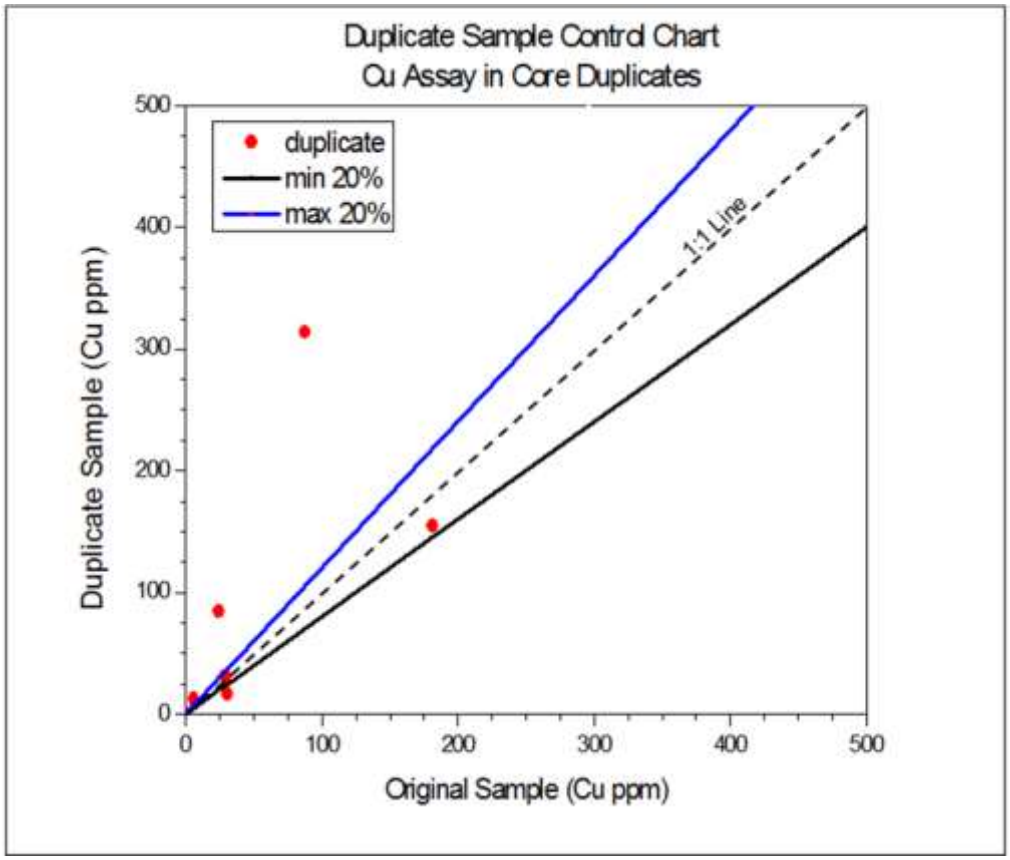


Figure 29: Quality Control Chart for Copper Assay in Duplicate Samples

Surface Sampling

Blanks

Figure 30 shows the assay values for blank samples in units of ppb. All blank samples returned gold values below the 3-ppb detection limit, as expected.

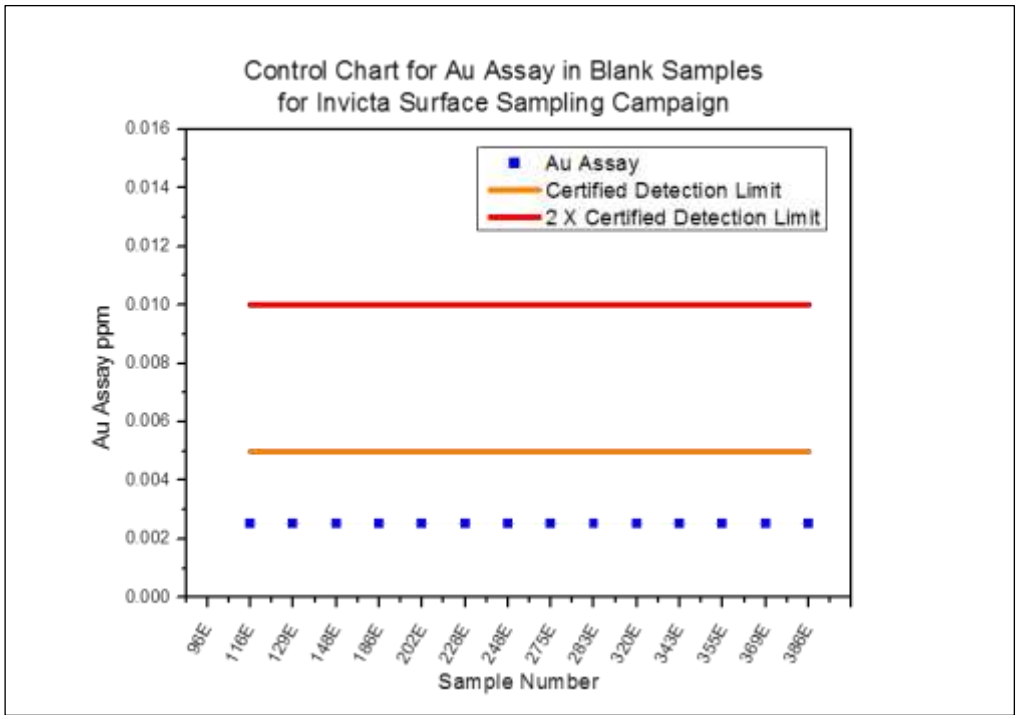


Figure 30: Blank Assays for Gold

Standard Reference Material

Standards (standard reference material) were procured from Analytical Solutions Ltd. consisting of a low-grade gold standard (116 ppb) and a mid-grade copper standard (0.385 percent). The limits used to determine the control limits for acceptability are shown in Table 32. A +/-5 percent limit was chosen representing approximately a 90 percent confidence interval. Final plots of the quality control results for gold and copper are shown in Figure 31 and Figure 32, respectively.

Table 32: Gold and Copper Standard Sample Analyses Falling Outside Limits of Acceptability

Sample #	Au_ppm	Re-assay_ Au_ppm	Sample #	Cu_%
000023E	0.108	0.108	000023E	0.3630
000220E	0.109	0.108	000046E	0.3624
			000105E	0.3636

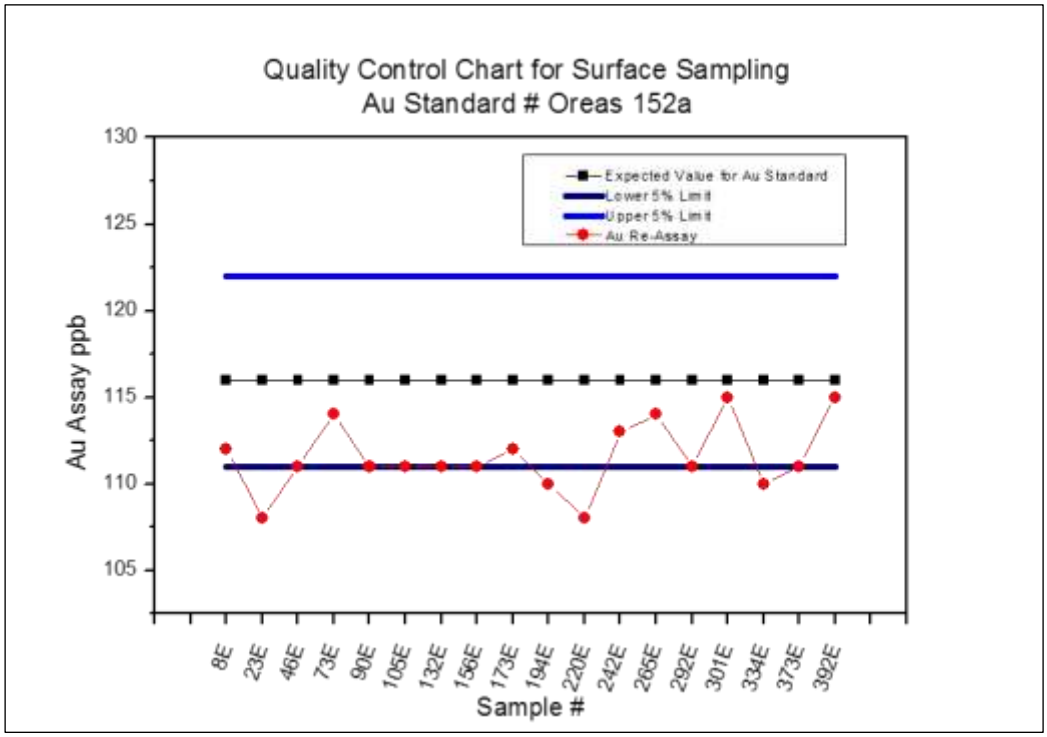


Figure 31: Gold Quality Control Chart for Standard Oreas 152a

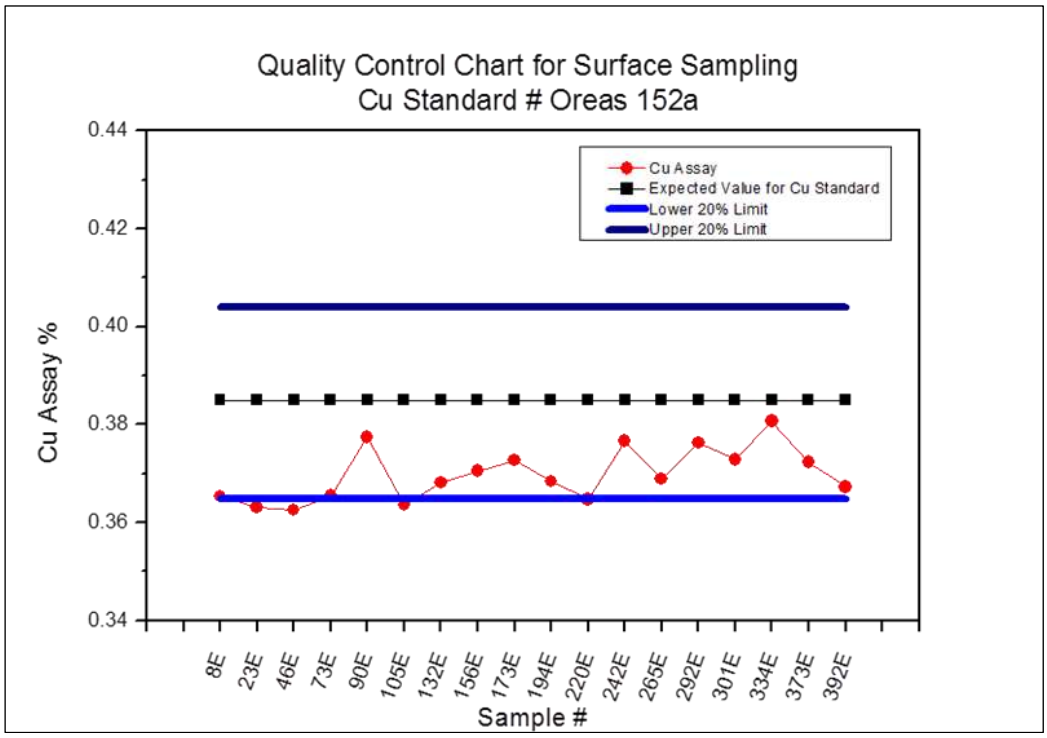


Figure 32: Copper Quality Control Chart for Standard Oreas 152a

Duplicates

The results of duplicate samples analyzed for gold are shown in Figure 33, with ±20 percent confidence limits. A Similar graph for duplicate sample analyses forcopper is shown in Figure 34. Duplicate sample analyses for gold are commonly quite variable, as indicated in the graph; copper duplicate assays behave much better than gold, as shown in Figure 34, with only on duplicate assay falling outside the confidence limits of acceptability.

The duplicate samples analyzed for gold that fall outside the limits of acceptability are marked in red in Table 33.

The percentage of duplicate samples analyzed for gold that fall outside acceptable confidence limits of ±20 percent is 47.1 percent; the percentage of duplicate samples analyzed for copper that fall outside acceptability limits is 11.8 percent. These variances are not considered outside the industry norm for duplicate sample. As the duplicate samples were not crushed and split at site some errors were introduced due to inaccuracy of splitting bulk samples. Future work will require homogenization of any duplicate samples before submission to the laboratory.

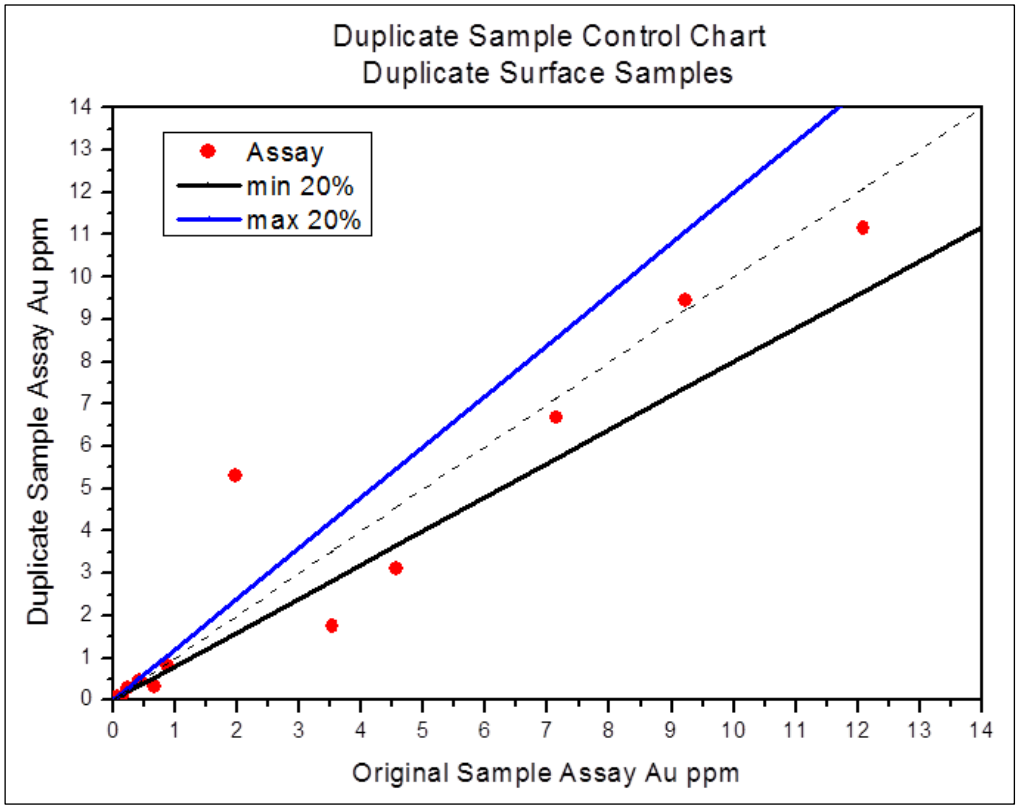


Figure 33: Duplicate Assays for Gold

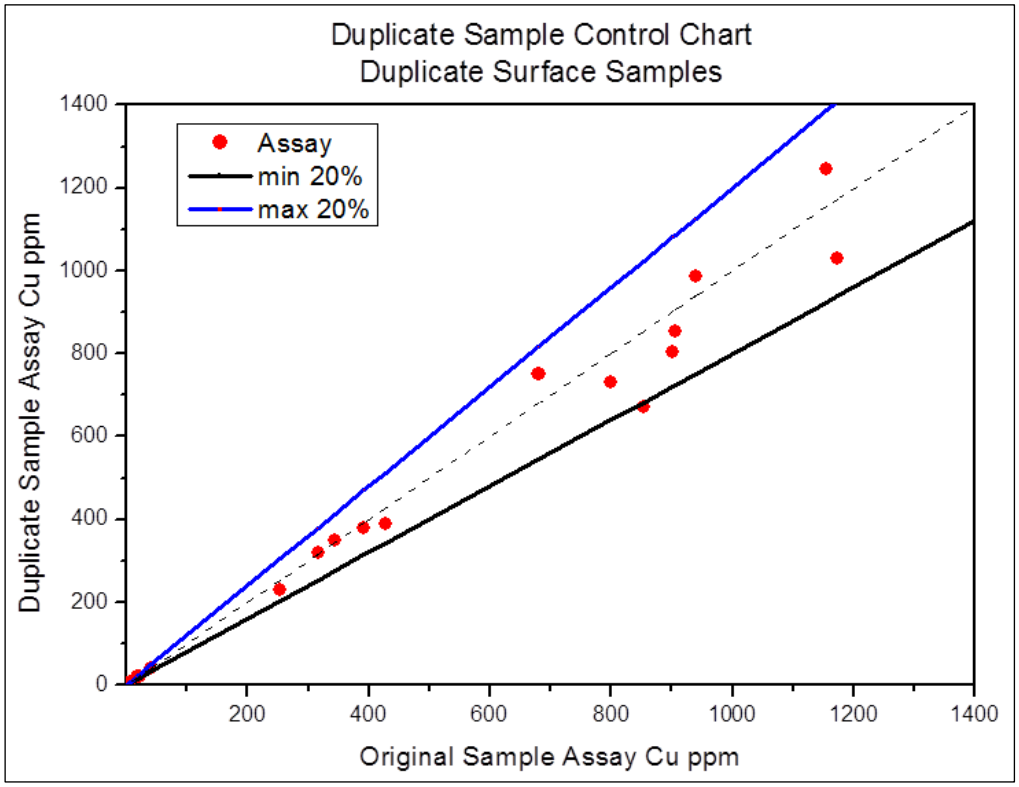


Figure 34: Duplicate Assays for Copper

Table 33: Gold and Copper Analyses of Duplicate Samples

Original			Duplicate		
Sample #_Orig	**Au_ppm**	**Cu_ppm**	**Sample #**	**Au_ppm**	**Cu_ppm**
000014E	0.068	21.9	000015E	0.064	17.3
000037E	0.02	41.9	000038E	0.049	41.3
000059E	0.014	5.9	000060E	0.012	6.5
000082E	0.007	19.5	000083E	0.0025	22.5
000118E	6.687	752.4	000119E	7.152	680.7
000141E	1.754	229.2	000142E	3.532	254.1
000164E	0.475	389.1	000165E	0.428	427.4
000187E	11.15	379.6	000188E	12.09	392.8
000209E	9.449	671.8	000210E	9.227	853.6
000232E	0.813	804.6	000233E	0.888	902.9
000255E	0.277	349.3	000256E	0.248	344.6
000278E	0.074	986.5	000279E	0.139	939.4
000301E	5.299	855.2	000302E	1.972	905.7
000324E	3.111	1247	000325E	4.566	1155.6
000347E	0.32	1029.6	000348E	0.61	1174.3
000359E	0.06	731.3	000360E	0.076	800.1
000382E	0.025	319.3	000383E	0.023	316.2

Note: Shading = Samples that exceed +/- 20 percent tolerance that exceed acceptance limits.

10.3.5 Opinion on Adequacy

SRK (2012) reviewed both the Pangea (1997 to 1998) and the Invicta (2006 to 2008) drilling programs and QA/QC protocols. The more recent Invicta drilling campaigns redrilled and resampled most areas originally drilled by Pangea, and both mineral tenor and zone thicknesses have been confirmed by these more recent drill programs. Although the Pangea QA/QC program is not well documented, the procedures and protocols in place during these historic drilling campaigns were industry compliant at that time, and the primary lab (CIMM) implemented the insertion of blanks, standards and duplicate samples into the assay sample stream. SRK (2012) did not review the raw data that support the graphs in Section 10.3.3 (Figures 6 through 10 of Jaramillo, 2009), which are related to QA/QC results of the 2009 and 2008 Invicta Mining Corp drilling data; however, SRK (2012) is of the opinion that the QA/QC programs in place for the drilling program were adequate, and the reported results are satisfactory to verify data qualify, and that the borehole database is sufficient for use in resource estimation.

Based on the above, SRK is of the opinion that both the Pangea 1997 to 1998 and the Invicta 2006 to 2011 sampling, sample preparation, security, analytical procedures, and QA/QC protocols meet industry standards. Based on the review conducted by SRK, SRK is of the opinion that the combined Pangea and Invicta assay databases are suitable for combination and are suitable for use in resource estimation. The Invicta 2011 sampling programs employed blanks, duplicates and standards as part of the QA/QC program. SRK recommends that in addition to the current program of insertion of standards, duplicates and blanks, that the addition of external umpire check assays be included in the QA/QC program going forward. This can be accomplished by randomly selecting 10 to 20 percent of the total sample population, for check assays at a second analytical lab. This can be completed with the original sample pulps from the primary laboratory.

SRK recommends that Invicta Mining Corp compile all current and historic QA/QC results into a digital database, for a global reassessment of the entire database. Although the 2006-2008 QA/QC programs have been previously reviewed by Jamarillo (2009), a global analysis of the entire dataset should be redone. The systemtic analysis of analytical QAQC data should form part of curruent and future procedures at Invicta.

11 Data Verification

Data verifications were undertaken by several methods:

- Visual on-site examination of lithology and structures, mineralized quartz veins, and borehole collars compares with mapped data.
- Assay certificates were checked against the database of assay information to verify the borehole database.
- Comparison of Invicta Gold Project work programs and data results with previous work conducted by predecessor companies.
- Examination of QA/QC data for confirmation of assay data quality.

11.1 Procedures

11.1.1 Invicta Mining Corp Verification

In the period 2006 to 2008, Invicta Mining Corp geologists conducted a re-logging and re-assaying program of the original Pangea core. The assaying program included both the re-assaying of existing intervals in smaller subintervals as well as new assaying of zones external to the currently defined mineralized zones. Although some slight differences were found in terms of widths and bulk densities, Invicta Mining Corp determined that there was good correlation with Pangea's original data and confirmed a portion of the original Pangea assay, and re-assayed a total of 288.31 metres of Pangea core or approximately 9 percent of the historic database.

11.1.2 SRK Database Verification

In 2012 SRK geologists conducted site visits to verify the geology model, geological mapping, structural interpretations, and identified areas of mineralization. Mineralized quartz veins are observable in the field as mapped.

A validation of the assay data for the Pangea database was performed by random manual checks of ten percent of the digital assay database against the original CIMM Peru S.A. certificates provided by the client. The ten percent random assay comparisons were conducted for gold, silver and copper assays only.

SRK notes that all gold results reported at below detection (detection limit = <0.015 and <0.005) were recorded in the provided database at the detection limit, which is not customary procedure. Customary procedure is to use half the detection limit (0.0075 and 0.0025 respectively). The records for above detection limit for gold (>10.0) were also recorded at the detection limit, not at the customary procedure of 1.5 times the detection limit (15.0).

Table 34 through Table 36 show the error rates of assays in the database in comparison to assays on the lab certificates for gold, silver and copper, respectively. An error rate of 6.51 percent was observed in the 10 percent of the borehole samples checked for gold (338 total checks). An error rate of 2.96 percent was observed in the 10 percent of the borehole samples checked for silver (338 total checks). An error rate of 2.96 percent was observed in the ten percent of the borehole samples checked for copper (338 total checks). These errors are all related to data entry errors. The errors detected in the checked gold assays are primarily related to the second decimal place and appear to

be related purely to rounding. SRK does not view these errors as material, and SRK is of the opinion that the data from the Pangea drilling campaign as provided are suitable for the use in resource estimation.

Table 34: Assay Database Verification Against Analytical Lab Assay Certificates – Gold

Data	Errors		
	Data Entry	Total Errors	Total Data
1996-1998 Pangea	6.51%	22	338

Note: Detection limit for gold is 0.015 g/t – detection limit rounding errors are not considered material errors

Table 35: Assay Database Verification Against Analytical Lab Assay Certificates – Silver

Data	Errors		
	Data Entry	Total Errors	Total Data
1996-1998 Pangea	2.96%	10	338

Note: Detection limits for silver are reported as 1 g/t and 0.5 g/t, dependent on the date of analysis – detection limit rounding errors are not considered material errors

Table 36: Assay Database Verification Against Analytical Lab Assay Certificates – Copper

Data	Errors		
	Data Entry	Total Errors	Total Data
1996-1998 Pangea	2.96%	10	338

Note: Detection limit for copper is reported as 5ppm – detection limit rounding errors are not considered material errors

Although not a direct SRK data verification, SRK notes that work done by Invicta Mining Corp generally replicates work done by predecessor companies regards geology and general analytical results, providing a general comparison with historical data.

In addition, QA/QC procedures stated in Section 10.2 include the use of standard reference material, blacks, and duplicate assays to provide verification of the accuracy of the analytical database, and the results indicate the database is sufficient for use in resource estimation.

11.2 Independent Verification Sampling

During a site visit by SRK in January 2018, seven split core samples distributed over the Atenea 1 zone were selected to re-analyse at the ALS Peru S.A. laboratory, located in Lima. ALS Peru S.A is accredited under ISO/IEC 17025:2005 by the Standards Council of Canada (Accredited Laboratory no. 670). The original assy certificate from ALS is provided in Appendix B.

The samples were prepared using method PREP-31, in accordance with the following procedures:

- Fragmentation to 70 percent less than 2 millimetres.
- Homogenization and mass reduction using a riffle splitter to obtain 250 grams of sample.
- Pulverization with 85 percent of sample passing 75 microns.

The prepared pulp underwent an Aqua Regia process (method ME-ICP41). The resulting solution was then analyzed using Induction Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES). This method analyses a package of 35 elements including silver, copper, lead and zinc.

For gold a split (pulp) was analyzed by 50-gram fire assay with atomic absorption spectrometry finish (Method Au-AA26).

The 2017 core duplicates for the Invicta gold project are presented in graphical format in Appendix C.

The paired verification assay data pairs were examined by SRK. The verification sampling confirms the presence of polymetallic mineralization in the sampling, but demonstrates that the verification assays vary somewhat from the original assays.

Gold rank half absolute difference (HARD) plots show that only 42.9 percent of the duplicate samples analyzed have HARD below 10 percent. In addition, the duplicate pairs have a correlation coefficient of 0.9337.

Silver and copper rank half absolute difference (HARD) plots show that only 57.1 percent of the duplicate samples analyzed have HARD below 10 percent. In addition, the duplicate pairs have a correlation coefficient of 0.9809 for silver and 0.9368 for copper.

Lead and zinc rank half absolute difference (HARD) plots show that only 28.6 percent of the duplicate samples analyzed have HARD below 10 percent. In addition, the duplicate pairs have a correlation coefficient of 0.0725 for lead and 0.9655 for zinc. The lead correlation coefficient is extremely low because of the very different results from the original sample 1549 and his pair (Table 37).

11.3 SRK Comment

SRK concludes that the Invicta Gold Project deposit database is sufficiently well-defined, documented, and verified, to permit use in mineral resource estimation.

Table 37: Assay Results for Verification Samples Collected by SRK on the Invicta Gold Project

Hole_ID	Sample Number	Au (ppm)			Ag (ppm)			Cu (%)			Pb (%)			Zn (%)		
		Original	Duplicate	HARD	Original	Duplicate	HARD	Original	Duplicate	HARD	Original	Duplicate	HARD	Original	Duplicate	HARD
AE-DDH-07-30	157	21.30	11.65	29%	34.1	47.0	19%	0.460	0.859	30%	0.040	0.075	30%	0.070	0.153	37%
AE-DDH-06-56	574	0.53	0.52	1%	16.7	17.5	2%	0.910	1.000*	5%	0.020	0.015	14%	0.050	0.034	19%
AE-DDH-07-34	1549	6.54	7.18	5%	26.8	37.1	19%	0.940	1.000*	3%	0.010	1.000*	98%	1.250	1.000*	11%
AE-DDH-07-31	1574	5.06	6.17	10%	14.9	14.0	3%	0.580	0.504	7%	0.090	0.126	17%	0.060	0.098	24%
AE-DDH-08-119	4175	0.62	0.47	14%	3.3	3.8	8%	0.020	0.039	32%	0.170	0.149	7%	0.310	0.433	17%
ATE-113	4229	0.16	0.28	27%	15.1	13.4	6%	0.230	0.192	9%	0.450	0.381	8%	0.650	0.776	9%
ATE-120	4486	0.58	0.86	20%	1.3	0.9	15%	0.010	0.001	82%	0.007	0.005	17%	0.041	0.039	3%

* Grades higher than 1%

12 Mineral Processing and Metallurgical Testing

Several different metallurgical testwork programs were developed for the Invicta Gold Project to determine the metallurgical performance of the Invicta Gold Project mineral resource. The authors of this report did not participate in the selection of the samples, testwork design or testwork supervision. These programs were carried out by various metallurgical laboratories in Peru and were aimed at selecting the optimal flowsheet to recover gold, silver, copper, lead and zinc to copper, lead and zinc concentrates.
The metallurgical programs developed were the following:

- UNSA 2011
- Certimin 2013
- Aminpro Peru 2014
- Certimin 2015

Most of the programs were developed at laboratory scale, one program included additional evaluation at the pilot plant scale to verify the metallurgical behavior (UNSA 2011). To date, there has not been an evaluation of metallurgical variability or development of a geometallurgical model. Tests for other support processes such as material handling, grinding and thickening and filtration are still be undertaken.

A high-level summary of the metallurgical testwork programs is given in Table 38.

Table 38: Summary of Metallurgical Testwork on Invicta Gold Project

Programme	Sample or Composite	Gravimetric Study	Flotation Study	Cyanide Study
UNSA 2011	01 composite	-	Cu-Pb Bulk stage Cu-Pb Separation Flotation Locked Cycle (% solids) Mini Pilot Plant Concentrates characterization.	- Free Gold in tailings
Certimin 2013	Stellar Mining	- Head (3 sizes)	Cu-Pb-Zn Bulk stage Cu-Pb Separation	- Head, bulk tailing y final tailing
Aminpro 2014	Ph I Sample	-	Exploratories Cu-Pb-Zn Flotation Open Cycle	-
	Ph II Sample	-	Exploratories Cu-Pb-Zn Bulk stage Cu-Pb Separation Cu-Pb-Zn Flotation Open Cycle Concentrates characterization. Simulation of flotation circuit	-
Certimin 2015	Invicta Mining	-	Reproducibility Certimin 2013 Cu-Pb-Zn Circuit Optimization Cu-Pb-Zn Flotation Locked Cycle	-

The testwork on gravity recovery and leaching of precious metals is not included in this report, as a froth flotation flowsheet was selected.

12.1 Sample Representivity

Factors such as lithology, alteration, oxidation, mineralization and location may be important in considering the sample representivity at the Invicta Gold Project.

None of the metallurgical programs (UNSA 2011, Certimin 2013, Aminpro 2014, Certimin 2015) or the processing plants (Minex and SJE-Huari) have documented the origin of the samples, so a rigorous evaluation of the sample representivity is not possible.

It is possible to compare the head grades of the mining plan versus the head grades of the relevant metallurgical programs.

Figure 35 shows that the samples used in the metallurgical tests had a higher grade in gold, silver, copper and lead compared to the mine plan.

This difference in metal grades may have an impact on the sample representivity, and recovery projections may be affected. It is recommended that samples representative of the mine plan be tested to support future studies.

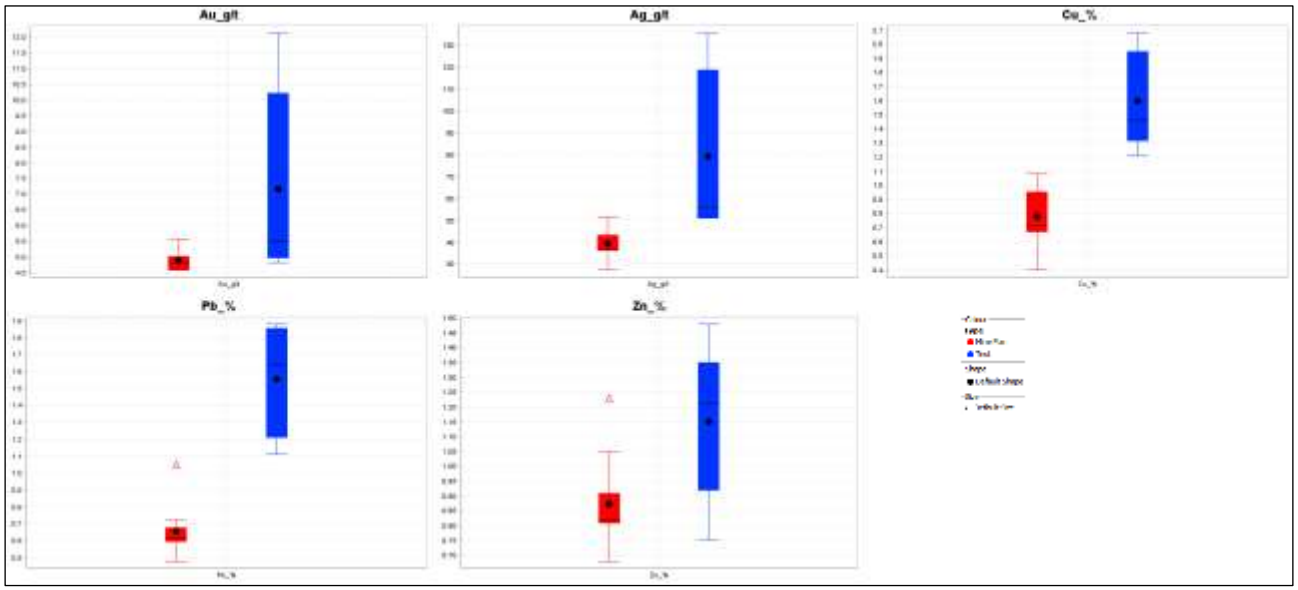


Figure 35: Comparison of Head Grades – Mine Plan Versus Metallurgical Tests

12.2 UNSA 2011

In 2011, a metallurgical program was developed by the metallurgical laboratory at the National University San Augustin (UNSA). The objective of this program was to generate two concentrates:

- A copper concentrate with high recoveries of silver and gold
- A lead concentrate with silver and gold contents

This program included the evaluation of flotation of both the bulk copper-lead flotation stage and the copper-lead separation stage, ending with the operation of a pilot mini-plant.

12.2.1 Samples and Composites

For the UNSA metallurgical testwork program, a 30-tonne composite named was used.

The logging and extraction of the sample was not formally documented, but the points of sampling are shown in Figure 36.

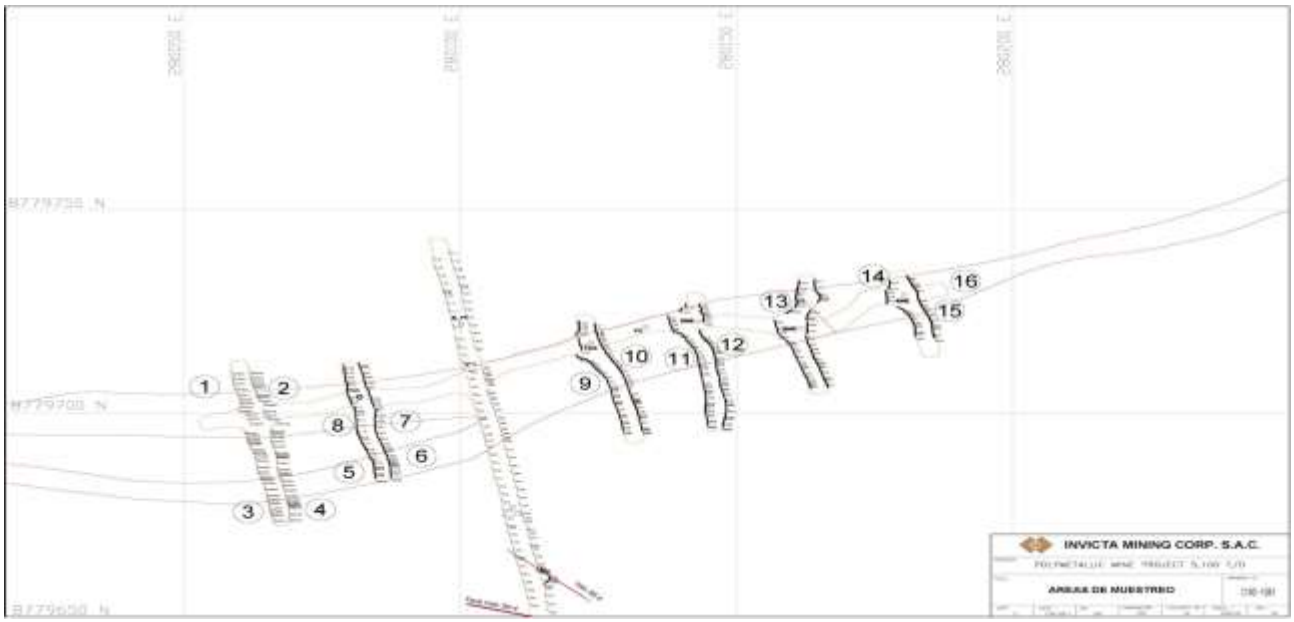


Figure 36: UNSA 2011 Sample Origin

The composite was chemically characterized and the results are shown in Table 39.

Table 39: Chemical Assay Head Composite

Element	Unit	Value
Cu	%	1.34
Pb	%	1.32
Zn	%	0.93
Au	g/t	5.95
Ag	g/t	47
Fe	%	14.8
Cu Ox	%	0.009
Pb Ox	%	0.05
Zn Ox	%	0.04

12.2.2 Comminution

Samples were tested for crusher work index, bond ball mill work index and abrasion index. Test reports were not available.

The results are tabulated in Table 40.

Table 40: UNSA 2011 Comminution Testwork Results

Sample	Crusher Work Index kWh/t	Ball Mill Work Index kWh/t	Abrasion Index
Ore	10.84	18.77	0.1303
Waste	10.29	15.65	0.3822

This data indicates that the samples are hard with respect to both crushing and grinding, with medium abrasion.

12.2.3 Flotation Tests

The flotation tests developed in this program can be summarized in two stages:

1. Bulk float stage (copper-lead); and
2. Copper-lead separation stage

The Bulk flotation stage (copper-lead) included different flotation tests, focused on the selection of the best operating conditions, which were:

- Rougher: (Concentration of bulk copper-lead)
  - Grind size: P_{80} 100, 150, 200 mesh
  - Zinc depressor: $Zn(CN)_2$: 100, 200, 300, 500, 700 g/t.
  - Rougher time
  - Percent solids (32, 42 percent)
- Cleaner: (Bulk bulk copper-lead)
  - Regrind time: 0, 10, 20 minutes
  - Cleaner stages: 1, 2, 3 stages
- Copper-lead separation:
  - Copper depressor: NaCN 350 - 5,000 g/t
  - Lead depressor: SO_2, $NaHSO_3$ + $K_2Cr_2O_7$

After the flotation conditions for each stage were optimized, the performance of the overall circuit was tested in locked cycle tests. The flowsheet is shown in Figure 37.

The results of the locked cycle tests are shown in Table 41 to Table 42, exhibiting good recoveries and commercial concentrate grades.

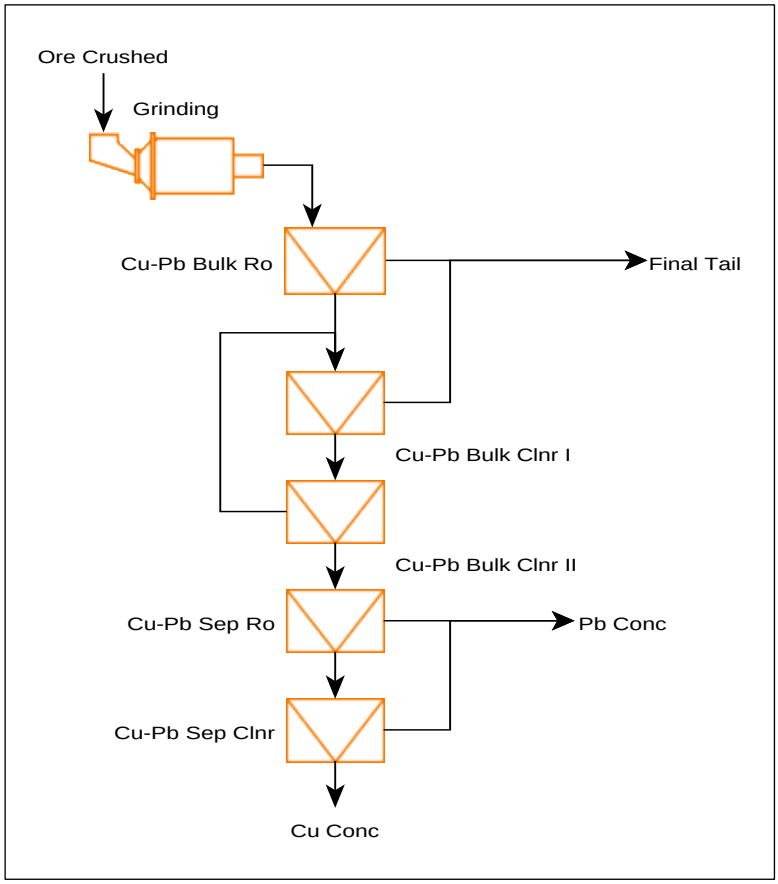


Figure 37: Flotation – Locked Cycle Test – Flowsheet – UNSA 2011

Table 41: Flotation – Locked Cycle Test Results (32 percent solids) – UNSA 2011

Product	Weight	Chemical Assay					Recovery				
		Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn	Au	Ag
	(%)	(%)	(%)	(%)	(g/t)	(g/t)	(%)	(%)	(%)	(%)	(%)
Pb Concentrate	2.7	3.44	57.2	3.03	13.33	644.19	6.5	82.2	6.6	6.9	33.8
Cu Concentrate	3.6	31.45	3.67	1.53	110.67	645.78	79.7	7.1	4.5	77.3	45.5
Bulk Clnr I Tails	3.5	1.73	1.59	4.12	4.22	86.65	4.3	3	11.9	2.9	6
Cu-Pb Ro Tails	90.2	0.15	0.16	1.04	0.73	8.33	9.5	7.7	76.9	12.8	14.7
Head (calc.)	100	1.42	1.87	1.23	5.17	51.23	100	100	100	100	100

Table 42: Flotation – Locked Cycle Test Results (40 percent solids) – UNSA 2011

Product	Weight	Chemical Assay					Recovery				
		Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn	Au	Ag
	(%)	(%)	(%)	(%)	(g/t)	(g/t)	(%)	(%)	(%)	(%)	(%)
Pb Concentrate	3.1	3.25	48.54	5.53	8.31	620.99	7	82.4	14.3	4.8	34.9
Cu Concentrate	3.9	31.25	2.98	1.95	113.18	652.17	83.3	6.3	6.2	80.5	45.3
Bulk Clnr I Tails	4.5	1.12	1.13	6.19	2.34	59.26	5.5	2.8	23.3	2	4.9
Cu-Pb Ro Tails	88.5	0.1	0.18	0.77	0.78	9.33	6.1	8.5	56.2	12.7	14.9
Head (calc.)	100	1.44	1.83	1.2	5.41	55.33	100	100	100	100	100

12.2.4 Pilot Plant

Using the results of the flotation tests, a pilot plant was carried out to obtain copper concentrate, lead concentrate. The pilot plant had a capacity of 125 kilograms per hour, but was operated at 100 kilograms per hour. The same composite was used.

The flow diagram used was not shown in the report.

The pilot plant had some operating difficulties, especially in the copper-lead separation stage, which had to be done in the laboratory due to difficulties in the pilot plant.

Table 43: Pilot Plant – Metallurgical Balance – UNSA 2011

Product	Weight	Chemical Assay						Recovery					
		Cu	Pb	Zn	Au	Ag	Fe	Cu	Pb	Zn	Au	Ag	Fe
	(%)	(%)	(%)	(%)	(g/t)	(g/t)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Pb Concentrate	2.31	5.73	37.49	5.69	22.02	764	12.43	10.94	66.07	17.44	10.57	34.07	1.95
Cu Concentrate	3.45	28.72	9.55	1.86	111.67	745	27.4	81.89	25.14	8.51	80.08	49.62	6.43
Bulk Clnr II Tailing													
Bulk Clnr I Tailing	4.4	0.97	0.78	1.19	1.85	49	10	3.54	2.62	6.95	1.69	4.16	2.99
Bulk Ro Tailing	89.84	0.05	0.09	0.56	0.41	7	14.5	3.64	6.17	67.1	7.66	12.14	88.62
Head (Calc.)	100	1.21	1.31	0.75	4.81	51.8	14.7	100	100	100	100	100	100

12.3 Certimin 2013

In 2013, Certimin developed a metallurgical testwork program on a composite sample called “Stellar Mining”. This program was designed to evaluate the performance of a bulk copper-lead flotation process, and a subsequent copper-lead separation stage.

This testwork program was directed by Stellar Mining.

12.3.1 Samples and Composites

For this program, a composite named "Stellar Mining" was used. The origin of this composite nor the criteria for its formation was documented.

The "Stellar Mining" composite was chemically characterized and the results are shown in Table 44.

Table 44: Head – Composite “Stellar Mining” – Chemical Assay – Certimin 2013

Element	Unit	Value
Ag	g/t	71.5
Au	g/t	3.3
Cu	%	1.67
Fe	%	16.19
Pb	%	2.67
Zn	%	1.07

12.3.2 Flotation Tests

The flotation tests developed in this program can be summarized in two stages:

1. Bulk flotation (copper-lead-zinc) and zinc flotation
2. Copper-lead separation.

The bulk flotation (copper-lead-zinc) and zinc flotation corresponds to open-cycle flotation tests that were developed with the objective of determining the optimal flotation conditions. The parameters evaluated were:

- Rougher Evaluation (bulk copper-lead and zinc concentration):
  - Zinc activation: 300 and 500 g/t, in stage rougher zinc
  - Sulfidization to improve recovery of gold and silver: Na_2S in grinding.
  - Zinc depressant (types and dosage): $ZnSO_4$, NaCN and DEP (mixture of $ZnSO_4$ and NaCN).
  - pH effect: rougher bulk (8, 9 and 9.5) and rougher zinc (11.0, 11.5 and 12).
- Dosage of Z-11:
  - Flotation kinetics: rougher bulk
  - Flotation kinetics: rougher zinc
- Cleaner Evaluation (bulk copper-lead-zinc concentration):
  - Flotation kinetics: cleaner bulk and cleaner zinc
  - pH effect: cleaner bulk (8 and 9).
  - Zinc depressant (types and dosage): $ZnSO_4$ (200 and 300 g/t) in cleaner bulk
  - Stages and cleaner times: cleaner bulk (2 stages) and cleaner zinc (2 and 3 stages).

The copper-lead separation stage corresponds to open-cycle flotation tests that were performed to obtain copper concentrate and lead concentrate with adequate commercial grades after fixing the flotation conditions of the bulk flotation and zinc flotation stage. The following were tested:

- Rougher evaluation
- Flotation kinetics: rougher
- Rougher and cleaner evaluation
- Lead depressants (types and dosage)

It was found that commercial grade copper and lead concentrates could be produced. The copper recovery to the copper concentrate was low at 49.8 to 68.7 percent recovery.

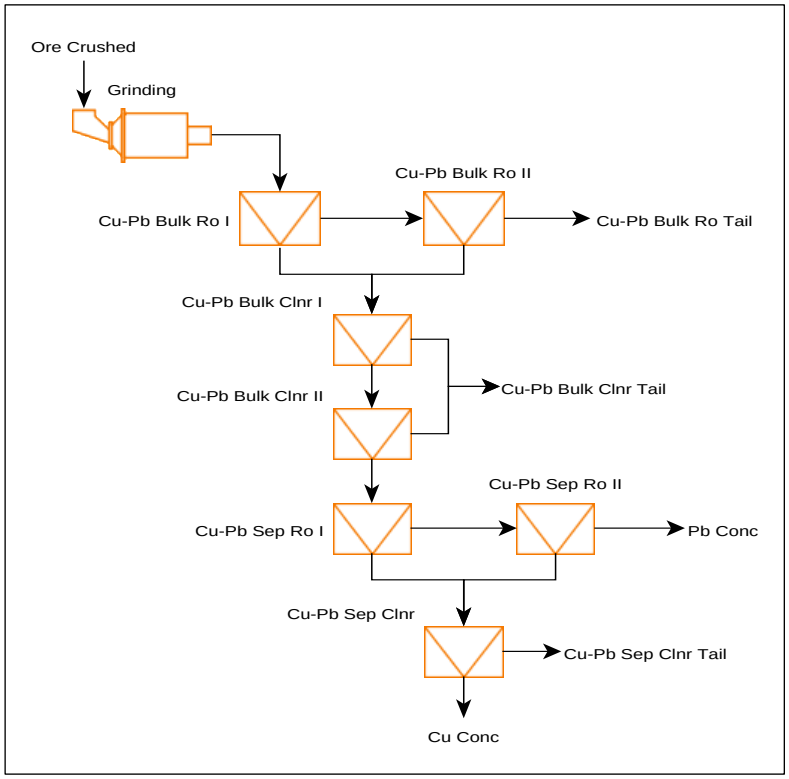


Figure 38: Flotation – Copper-Lead Separation – Flowsheet – Certimin 2013

Table 45: Flotation – Copper-Lead Separation – Results – Certimin 2013

Test N°	Code	Product Conc.	Concentrate Grade, %, *g/t						Recovery %					
			Ag*	Au*	Cu	Pb	Zn	Fe	Ag	Au	Cu	Pb	Zn	Fe
16	SM-P16	Cu	529	60.29	32.38	5.18	0.33	28.18	19.01	49.98	52.73	4.99	0.77	4.94
		Pb	867	11.26	9.51	58.3	0.53	10.43	38.86	11.64	19.32	70.05	1.56	2.28
17	SM-P17	Cu	432	54.13	34.74	1.54	0.35	30.06	14.69	43.54	51.51	1.4	0.77	4.65
		Pb	898	12.98	8.59	59.93	0.72	9.47	41.41	14.16	17.27	74.06	2.14	1.99
18	SM-P18	Cu	473	56.97	31.94	4.48	0.47	25.26	17.27	43.65	49.8	4.24	1.09	4.08
		Pb	849	19.91	9.1	54.29	1.6	10.61	42.54	20.94	19.47	70.59	5.11	2.35
19	SM-P19	Cu	528	49.52	29.27	11.02	0.87	27.11	23.7	50.64	56.54	12.87	2.56	5.43
		Pb	847	17.19	8.57	53.27	3.36	10.09	37.91	17.53	16.51	62.04	9.87	2.01
20	SM-P20	Cu	509	44.84	31.35	7.33	0.47	28.62	24.51	48.35	67.75	9.41	1.44	6.22
		Pb	965	24.66	6.91	62.26	0.86	7.13	44.65	25.55	14.34	76.8	2.53	1.49
23	SM-P23	Cu	433	41.67	32.37	4.06	0.24	27.69	18.87	38.07	68.71	4.87	0.7	5.96
		Pb	1198	46.98	4.95	64.96	1.17	6.93	50.76	41.7	10.2	75.81	3.34	1.45
24	SM-P24	Cu	403	44.6	31.84	6.09	0.32	27.94	15.54	40.21	55.15	6.38	0.82	4.95
		Pb	1004	22.88	8.12	56.74	0.98	8.87	36.2	19.27	13.13	55.53	2.33	1.47

12.4 Aminpro 2014

During 2014, a metallurgical program was carried out at the Aminpro Peru laboratory. This program consisted of two phases of study. Phase I included the development of exploratory tests to determine the behavior of material from the Invicta Gold Project mineral resource and Phase II included the optimization of the flotation conditions to obtain commercial products. These tests were used to

simulate the processing of the Invicta mineral resource in the third party Mallay plant for 350 to 400 tonnes per day of feed.

12.4.1 Samples and Composites

For this program, two composites were used. The origin of this composite nor the criteria for their formation was documented.

The composites were chemically characterized and the results are shown in Table 46.

Table 46: Head Composites Aminpro 2014

Element	Unit	Phase 1	Phase 2
Au	g/t	6.69	3.96
Ag	g/t	103.3	54.0
Pb	%	2.31	1.57
Cu	%	2.49	1.55
Zn	%	1.36	1.30
Fe	%	16.87	16.93

12.4.2 Flotation Tests

The flotation tests developed in this program were focused on reagent selection to achieve the best selectivity of copper, lead and zinc to their respective concentrates.

Table 47: Flotation – Results – Aminpro 2014 – Phase I

Product	Chemical Assay, %, *g/t						Recovery %					
	Au*	Ag*	Pb	Cu	Zn	Fe	Au	Ag	Pb	Cu	Zn	Fe
Global**	-	-	-	-	-	-	94.6	94.6	96.8	97.8	95.3	52.8
Cu Conc	79.0	461	6.50	29.2	4.70	27.0	72.2	31.6	21.6	80.3	24.8	10.8
Pb Conc	30.5	1,201	40.9	8.40	7.50	12.6	14.6	43.0	70.5	12.0	20.8	2.60
Ro Zn Conc	2.50	41.0	0.13	0.19	3.80	38.9	4.90	6.0	0.90	1.10	43.0	33.3

** Includes all streams not reporting to tails

It was found that under the scheme tested, that overall recovery of lead and copper to the bulk concentrate was good, there was still poor selectivity in the separation of copper and lead concentrates.

Phase 2 testwork was focused on improving the selectivity of the copper-lead-zinc separation. The parameters tested were different regimes for:

- Zinc depressors types and dose
- Zinc activator dose
- Primary copper-lead collector's types
- Regrind size

The tests were conducted using the open cycle arrangement in Figure 39.

The results were not an improvement on previous testwork. The recoveries and concentrate grades were all lower than in earlier work by Aminpro and UNSA. The composite used was lower grade, so these results may indicate that lower grade material may be less amenable.

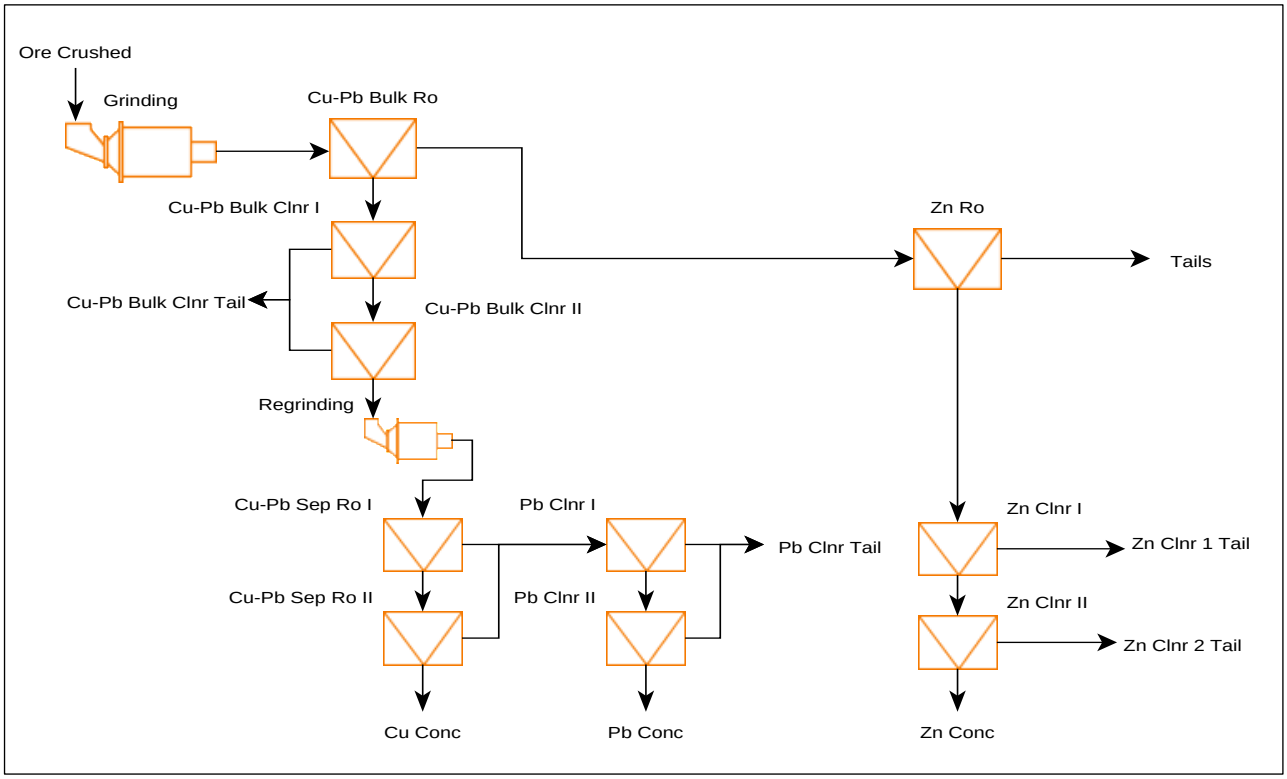


Figure 39: Flotation – Open Cycle Test Flowsheet – Aminpro Phase II

Table 48: Flotation – L2R6 Open Cycle Test Results – Aminpro 2014 – Phase II

Product	Chemical Assay, %, *g/t						Recovery %					
	Au*	Ag*	Pb	Cu	Zn	Fe	Au	Ag	Pb	Cu	Zn	Fe
Global**	-	-	-	-	-	-	86.1	86.3	96.7	97.1	94.8	31.3
Cu Conc	66.2	428	5.90	27.2	7.80	26.4	62.1	33.9	16.2	75.2	26.2	7.0
Pb Conc	20.4	634	36.4	8.40	3.40	16.8	14.6	38.5	76.2	17.7	8.80	3.4
Ro Zn Conc	4.60	61.0	0.20	1.10	35.4	18.2	1.80	2.00	0.30	1.20	49.7	2.0

** Includes all streams not reporting to tails

Aminpro recommended:

- Evaluation of coarser primary grinds to avoid sliming
- Detailed mineralogy of selected products
- Further investigation into cleaning flotation flowsheet and reagent regimes

12.5 Certimin 2015

In 2015, Certimin carried out a metallurgical program complementary to that developed in 2013, on a new composite called "Invicta Mining". The objective of this program was to evaluate and optimize flotation conditions from the Certimin 2013 investigation in order to obtain commercial grade concentrates and high recoveries.

12.5.1 Samples and Composites

For this program, a single composite was used. The origin of this composite nor the criteria for its formation was documented. The composite was chemically characterized and the results are shown below.

Table 49: Head – Composite "Invicta Mining" – Chemical Assay – Certimin 2015

Element	Unit	Value
Au	g/t	13
Ag	g/t	132
Cu	%	2.21
Pb	%	1.67
Zn	%	1.44
Fe	%	15.63

Table 50: Head – Composite "Invicta Mining" – Chemical Assay - ICP – Certimin 2015

Element	Unit	Value
Ag	g/t	>100
Al	%	1.66
As	g/t	110
Ba	g/t	9
Be	g/t	<0.5
Bi	g/t	32
Ca	%	0.1
Cd	g/t	234
Co	g/t	52
Cr	g/t	420
Cu	g/t	>10,000
Fe	%	>15
Ga	g/t	16
K	%	0.05
La	g/t	3.4
Mg	%	0.97
Mn	g/t	1383
Mo	g/t	10
Na	%	0.1
Nb	g/t	2
Ni	g/t	16
P	%	0.03
Pb	g/t	>10000
S	%	>10
Sb	g/t	15
Sc	g/t	1.8
Sn	g/t	<10
Sr	g/t	6.5
Ti	%	0.04
Tl	g/t	<2
V	g/t	41
W	g/t	351
Y	g/t	1.3
Zn	g/t	>10000
Zr	g/t	11.5

12.5.2 Flotation Tests

The flotation tests developed in this program can be summarized in three groups:

- Reproducibility test
- Optimization tests
- Locked cycle flotation tests

The reproducibility test consisted of an open cycle test for bulk flotation, copper-lead separation and zinc flotation, using the optimal flotation conditions developed in 2013 Certimin for the "Stellar Mining" composite.

The optimization tests consisted of open cycle tests for bulk flotation, copper-lead separation and zinc flotation, but with changes in the flotation conditions and configuration of the flotation circuit, such as:

- Zinc depressor: from NaCN to $ZnSO_4$ (bulk flotation circuit)
- An additional cleaner stage (copper-lead separation circuit)
- Zinc depressor: from NaCN by $ZnSO_4$ + $Na_2S_2O_5$ (bulk flotation circuit)
- An additional cleaner stage (bulk flotation circuit)

The cyclic flotation test was performed in a closed cycle (six cycles), the flotation conditions were based on the best results of the optimization tests.

The flow diagram of the flotation circuit is shown in Figure 40 and the flotation conditions in Table 51. The summary of the results of the closed loop cyclic test (considering the last three cycles) is shown in Table 52.

Table 51: Flotation – Locked Cycle Test – Conditions Scheme – Certimin 2015

Stage	Reagents Addition, g/t									Time	pH
	CaO	$ZnSO_4$	A-3418	Z-11	$Na_2S_2O_5$	$CuSO_4$	RCS*	Act. Ch.	MIBC	(min)	
Grinding	600	300	-	-	-	-	-	-	-	24.7	
Conditioning	-	300	15.3	-	50	-	-	-	10	5	9.0
Bulk Ro	-	-	-	-	-	-	-	-	-	4	9.0
Bulk Clnr I	49	200	-	-	10	-	-	-	2.5	4.5	9.0
Bulk Clnr II	-	-	-	-	10	-	-	-	-	4	9.0
Bulk Clnr III	13	-	-	-	10	-	-	-	2.5	3.5	9.0
Conditioning	435	-	-	5	-	300	-	-	15	7	11.0
Zn Ro	-	-	-	-	-	-	-	-	-	4	11.0
Conditioning	47	-	-	-	-	-	-	-	-	3	11.5
Zn Clnr I	-	-	-	-	-	-	-	-	2.5	3.5	11.5
Zn Clnr II	18	-	-	-	-	-	-	-	2.5	3	11.5
Zn Clnr III	-	-	-	-	-	-	-	-	-	2.5	11.5
Absorption	-	-	-	-	-	-	-	200	-	20	8.8
Conditioning	298	-	-	-	-	-	1500	-	5	10	9.0
Cu-Pb Sep Ro	-	-	-	-	-	-	-	-	-	3	8.9
Cu-Pb Sep Scv	100	-	-	-	-	-	500	-	2.5	3.5	8.7
Conditioning	54	-	-	-	-	-	200	-	2.5	3	9.0
Cu-Pb Sep Clnr I	-	-	-	-	-	-	-	-	-	3	8.9
Cu-Pb Sep Clnr II	-	-		-	-	-	100	-	-	2	9.0
Total	**1,614**	**800**	**15.3**	**5**	**80**	**300**	**2,300**	**200**	**45**	**113.2**	

* RCS = CMC(25%) + Monosodium phosphate(25%) + Potassium dichromate(50%)

Table 52: Flotation – Locked Cycle Test – Results – Certimin 2015

Product	Weight	Chemical Assay, %, *g/t						Recovery %					
	%	Ag*	Au*	Cu	Pb	Zn	Fe	Ag	Au	Cu	Pb	Zn	Fe
Cu Conc	6.31	869.5	136	29.29	5.19	1.18	25.22	40.41	70.64	88.89	19.96	5.02	10.36
Pb Conc	2.35	2,591.14	65.45	7.74	50.39	1.88	11.7	44.82	12.65	8.74	72.12	2.98	1.79
Zn Conc	2.11	49.12	2.39	0.45	0.33	62.07	2.03	0.76	0.41	0.46	0.42	88.47	0.28
Total Tailing	**89.24**	**21.31**	**2.22**	**0.04**	**0.14**	**0.06**	**15.06**	**14.01**	**16.29**	**1.9**	**7.5**	**3.54**	**87.57**
Head (Calc.)	100	135.7	12.14	2.08	1.64	1.48	15.35	100	100	100	100	100	100

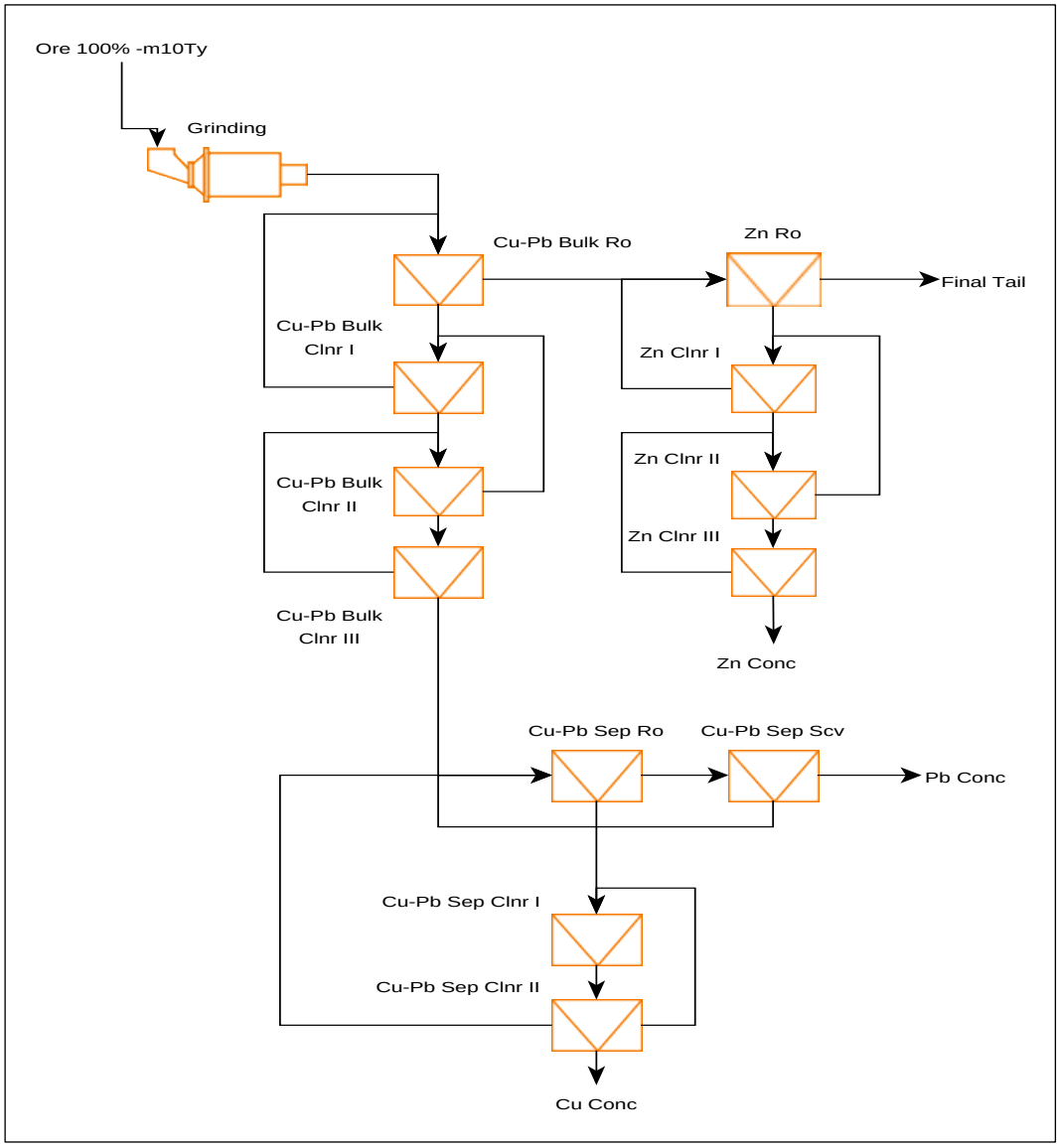


Figure 40: Flotation – Locked Cycle Test – Flowsheet – Certimin 2015

12.6 Plant Trial "Planta Concentradora SJE Huari"

In 2015, the San Juan Evangelista de Huari industrial plant (SJE-Huari) located in the Huari town, La Oroya District, Yauli Province, Junín Department, Peru was used to treat a sample of the Invicta Gold Project mineral resource.

The plant was operated by SJE Huari personnel under the advice and supervision of Certimin (contracted by Invicta Mining Corp).

352 tonnes of Invicta Gold Project material were fed to the plant. The chemical characterization of this material is shown in Table 53.

Table 53: Feed – Chemical Assay (Calculated) – SJE-Huari

Element	Unit	Value
Au	g/t	10.35
Ag	g/t	106
Cu	%	1.81
Pb	%	1.11
Zn	%	1.09
Fe	%	14.08

The plant flotation circuit configuration was not flexible, so the recommendations from the 2015 Certimin flotation regime had to be modified for this plant.

The flow diagram of the flotation circuit is shown in Figure 41.

The flotation stages not included in the plant compared to the laboratory circuit were:

- Copper-lead bulk flotation circuit: No cleaning stages included.
- Copper-lead separation circuit: Only one cleaning stage included.
- Zinc flotation circuit: No cleaning stages included.

The sample was processed in six days of operation from September 25 to 30, 2015. The particle size P_{80} varied between 98 to 102 micrometres. There were operational difficulties such as use and removal of a flash cell, temporary inoperability of the secondary crushing circuit, plant stoppages, inoperability of the zinc circuit conditioner and other equipment issues. Based on the observations and Certimin's opinion, the plant campaign was retrospectively divided into three stages:

1. Setup
2. Stabilization
3. Last day of treatment

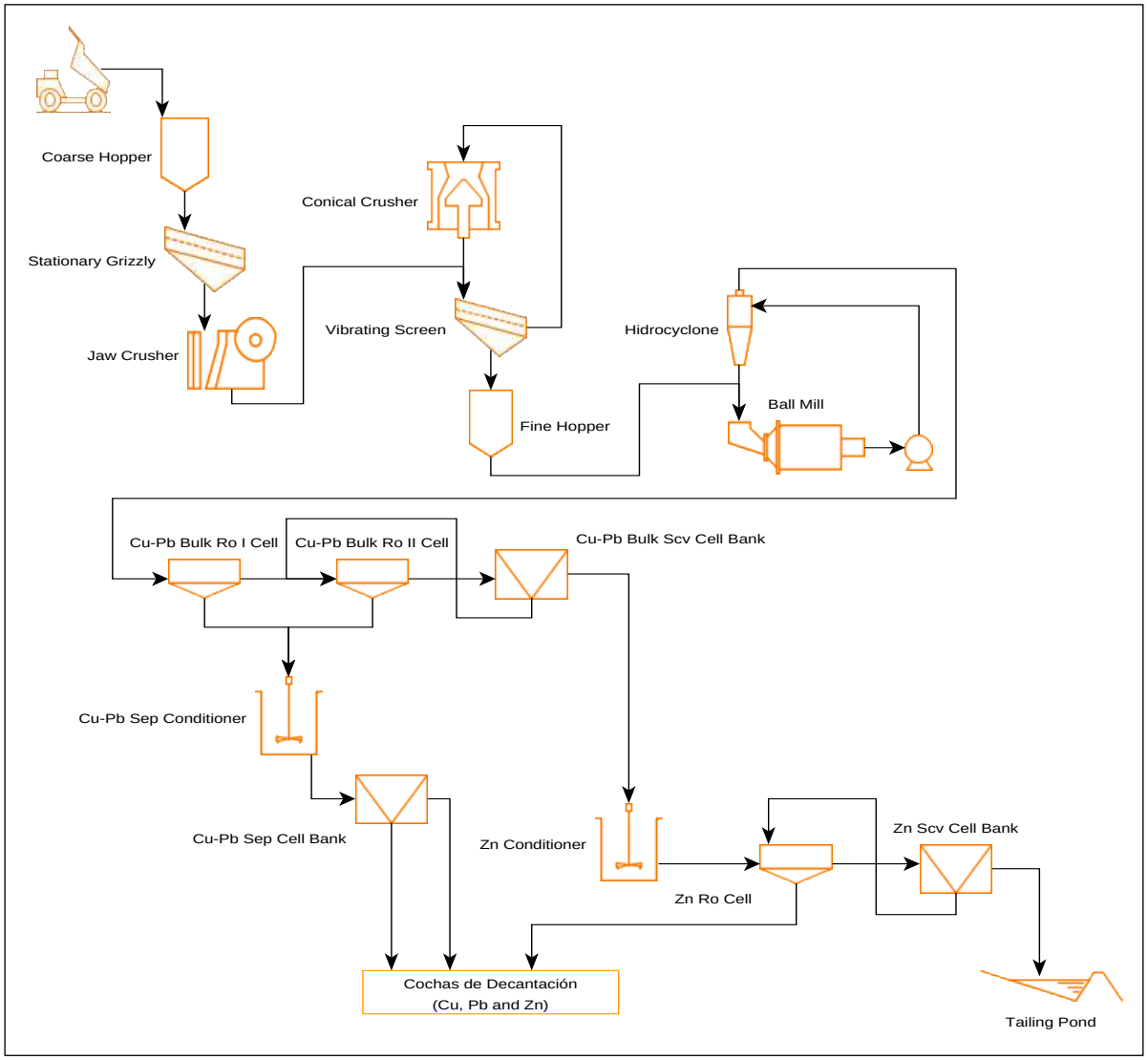


Figure 41: Plant Operation – Flowsheet – SJE-Huari

Using the results of repeat chemical assays, Certimin reported different metallurgical balances compared to those reported by SJE Huari. The main balances are presented in Table 54 and Table 55.

The reports from Certimin do not indicate the methodology used to perform the metallurgical balances, and it is assumed that the balance sheets are adequate. Since the last day of operations presented the least operation problems, it has been assumed to be the most suitable for performance projections.

Table 54: Metallurgical Balance by Stages (chemical assay from Certimin) – SJE-Huari

Stage	Date	Product	Weight		Chemical Assay, %, *g/t						Recovery %					
			DMT	%	Au*	Ag*	Cu	Pb	Zn	Fe	Au	Ag	Cu	Pb	Zn	Fe
Adjusting	25/09/15 to 27/09/15	Cu Conc	10.02	5.14	76.42	991.08	27.94	6.78	5.61	24.98	49.96	47.18	75.64	31.82	26.06	9.14
		Pb Conc	4.31	2.21	83.91	1359.31	11.88	26.29	9.67	16.1	23.62	27.87	13.85	53.12	19.36	2.54
		Zn Conc	2.5	1.28	61.05	865.91	9.7	3.19	31.32	13.99	9.96	10.29	6.56	3.73	36.34	1.28
		Tailing	178.01	91.36	1.42	17.33	0.08	0.14	0.22	13.38	16.45	14.66	3.96	11.33	18.24	87.04
Equilibrium	25/09/15 to 27/09/15	Cu Conc	5.24	4.76	108.42	1109.4	30.09	5.8	2.56	26.33	62.43	51.8	79.23	24.93	11.23	8.79
		Pb Conc	2.46	2.23	61.53	1294.16	10.52	31.53	7.14	15.12	16.62	28.34	12.99	63.52	14.66	2.37
		Zn Conc	1.21	1.1	30.18	393.93	5.06	1.64	47.7	7.97	4.01	4.25	3.08	1.63	48.27	0.61
		Tailing	101.22	91.92	1.52	17.31	0.09	0.12	0.31	13.68	16.93	15.62	4.7	9.92	25.84	88.23
Last day of operation	25/09/15 to 27/09/15	Cu Conc	0.86	2.35	99.2	1039	30.22	5.81	2.66	26.23	22.63	22.72	40.02	13.63	6.39	4.34
		Pb Conc	1.66	4.51	139	1354	19.95	15.36	7.65	21.77	61.01	56.96	50.84	69.39	35.47	6.93
		Zn Conc	0.24	0.65	28.3	382	6.73	2.2	44.61	8.87	1.78	2.3	2.45	1.42	29.56	0.4
		Tailing	33.95	92.5	1.62	20.9	0.13	0.17	0.3	13.53	14.58	18.02	6.69	15.55	28.58	88.32

Table 55: Global Metallurgical Balance (chemical assay from Certimin) – SJE-Huari

Product	Weight		Chemical Assay, %, *g/t						Recovery %						Rc
	DMT	%	Au*	Ag*	Cu	Pb	Zn	Fe	Au	Ag	Cu	Pb	Zn	Fe	
Head (Weighted)	341.67	100	10.07	107	1.86	1.09	1.09	14.08	100	100	100	100	100	100	-
Cu Concentrate	16.11	4.72	88.04	1032.09	28.76	6.41	4.46	25.49	50.33	45.95	73.11	27.77	19.38	8.51	21.2
Pb Concentrate	8.43	2.47	88.22	1339.28	13.07	25.67	8.54	16.93	26.37	31.18	17.37	58.13	19.4	2.96	40.5
Zn Concentrate	3.95	1.16	49.62	692.2	8.1	2.65	37.14	11.84	6.95	7.55	5.05	2.82	39.53	0.97	86.6
Tailing	**313.18**	**91.66**	**1.47**	**17.71**	**0.09**	**0.13**	**0.26**	**13.5**	**16.36**	**15.32**	**4.47**	**11.28**	**21.69**	**87.57**	**-**
Head (Calc.)	341.67	100	8.25	105.94	1.86	1.09	1.09	14.13	100	100	100	100	100	100	-

12.7 Plant Trial "Planta Minex Nasca"

In 2015, the MINEX S.A.C. (Minex) located in the district of Nasca, province of Nasca, department of Ica, Peru was contracted to treat a sample from the Invicta Gold Project.

The plant was operated by personnel of the same plant under the advice and supervision of Mr. Yunior Fernández hired by Invicta Mining Corp The chemical analyzes were carried out by the same plant and the countersamples were sent to the LABPERU and ALS laboratories.

532 tonnes of Invicta Gold Project sample material were fed to the plant, the chemical characterization of this material is shown in Table 56.

Table 56: Feed – Chemical Assay – Minex

Description	Au (oz/st)	Ag (oz/st)	Cu (%)	Pb (%)	Zn (%)
Head (Weighted) - LABPERU	0.14	1.37	1.32	0.99	0.88
Head (Assayed) - ALS	0.15	1.75	1.26	0.99	0.9
Head (Average)	0.15	1.56	1.29	0.99	0.89

The plant does not have a flexible flotation circuit configuration, so the recommendations of the 2015 Certimin flotation program with regard to addition of reagents had to be modified for the plant. Using the LABPERU laboratory, laboratory-scale programs were carried out to define the consumption of reagents. The flow diagram of the flotation circuit is shown in Figure 42. The circuit involved only the generation of copper-lead bulk concentrate.

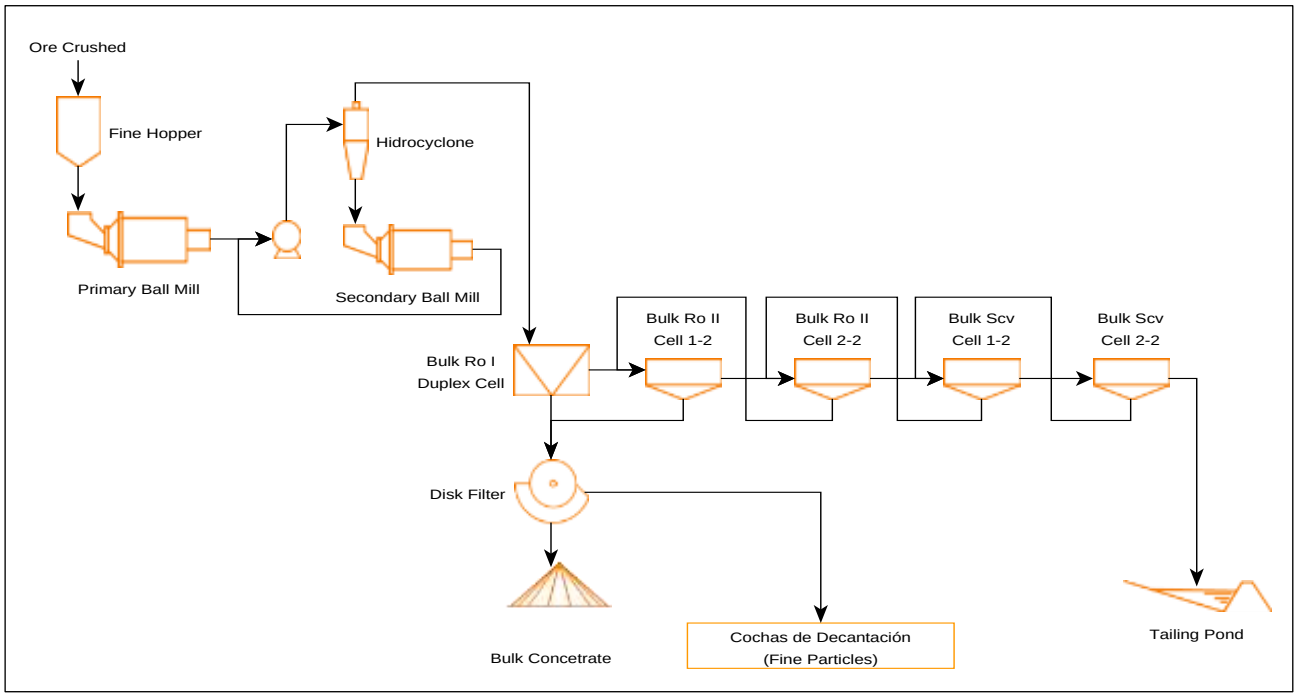


Figure 42: Minex Plant Flowsheet

The sample was processed in five days of operation commencing Decmber 12, 2015. The particle size fed to the grinding circuit was 100 percent - $^{3}/_{8}$ inch, while the feed to the flotation circuit was 67 percent -75 micrometres.

They were based on:

1. Calculated and assayed head values, and
2. Assays from LABPERU and ALS laboratories

The methodologies used for the metallurgical balances was not included in the reports, it is only mentioned that for the balances of LABPERU lead was considered as a reliable element for the mass cut, while for the balances of ALS copper was considered a reliable element. The overall adjusted balance is shown in Table 57. There were significant deviations in the balances for gold, silver, copper (greater than 20 percent) and for lead and zinc (greater than 10 percent). These deviations are considered too high for these results to be reliable for feasibility level studies.

Table 57: Adjusted Metallurgical Balance Minex

Product	Weight		Chemical Assay, %, *g/t					Recovery %					Rc
	DMT	%	Au*	Ag*	Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn	
Head Assayed	521.43	100	0.15	1.56	1.29	0.99	0.89	-	-	-	-	-	-
Bulk Conc (Cu-Pb)	47.64	9.14	1.71	18.9	15.2	10.7	10	87.51	91.32	91.47	90.24	91.02	10.95
Tailing	473.79	90.86	0.02	0.18	0.14	0.12	0.1	12.49	8.68	8.53	9.76	8.98	-
Head Calc	521.43	100	0.18	1.89	1.52	1.08	1.00	100	100	100	100	100	-

12.8 Concentrate Quality

The closed cycle metallurgical tests were used as a reference to predict the quality of the industrial copper, lead and zinc concentrates. Only the UNSA 2011 and Aminpro 2014 programs included the generation of copper concentrates with a complete characterization of the quality of the concentrate. However, in the Aminpro report there is no specific reference to which test generated the concentrate that was characterized.

12.8.1 Copper Concentrate

The chemical characterization of the copper concentrate does not show any element with grades greater than typical commercial penalty limits. However, the it would be important to achieve an efficient separation of copper and lead to avoid penalties for high lead grades.

12.8.2 Lead Concentrate

The chemical characterization of lead concentrate shows the bismuth and iron grades greater than the typical commercial penalty limits. Also, it would be important to achieve an efficient separation of copper, lead and zinc to avoid penalties for high copper and zinc grades.

12.8.3 Zinc Concentrate

The chemical characterization of the zinc concentrate shows cadmium and iron grades greater than the typical commercial limits (Table 58).

Table 58: Quality of Concentrates – Copper, Lead and Zinc

Metall-urgical Program		Cu Concentrate			Pb Concentrate			Zn Concentrate
		UNSA 2011	Aminpro 2014	Range	UNSA 2011	Aminpro 2014	Range	Aminpro 2014
Sample Test		Composito Pilot Plant	Ph 1 Sample No reference (1)	-	Composite Pilot Plant	Ph 1 Sample No reference (1)	-	Ph 1 Sample No reference (1)
Ag	g/t	647	455	455 - 647	623	>100	>100	>100
Al	%	0.15	0.08	0.08 - 0.15	0.71	0.35	0.35 - 0.71	0.67
As	%	0.01	0.0031	<0.01	0.01	0.0083	<0.01	0.0084
Au	g/t	113	-	113	9.75	-	9.75	-
Ba	g/t	8	<1	<8	12.6	<1	<12.6	16
Be	g/t	-	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bi	%	<0.0002	0.0234	<0.02	0.04 (2)	0.0433	<0.04	0.011
Ca	%	0.021	0.02	0.02	0.079	0.05	0.05 -0.08	0.11
CaO	%	0.03	-	0.03	0.11	-	0.11	-
Cd	%	0.02 (3)	0.0709	0.02 - 0.07	0.06 (3)	0.0326	0.03 -0.06	0.4915
Ce	g/t	13.08	-	13.08	<6	-	<6	-
Co	g/t	11.75	15	11.75 - 15	22.5	32	22.5 - 32	116
Cr	g/t	105.7	84	84 - 105.7	528.3	398	398 - 528.3	580
Cu	%	31.3	23.7	23.7 - 31.3	2.81	19.9	2.81 - 19.9	>1
Fe	%	28.05	20.2	20.2	9.22	19.0	9.22 - 19	12.21
Ga	g/t	20.38	<10	10 - 20.38	<1.6	<10	<10	<10
Hg	g/t	N.D	14	14	ND	5	5	20
In	g/t	90	-	90	24.3	-	24.3	-
K	g/t	54.83	<100	<100	325.8	100	100 - 325.8	100
La	g/t	4.15	<0.5	<4.15	0.70	<0.5	<0.7	<0.5
Li	g/t	2.45	-	2.45	8.35	-	8.35	-
Mg	%	0.05	0.06	0.06	0.29	0.24	0.24 - 0.29	0.49
MgO	%	0.09	0.100	0.100	0.48	-	0.48	-
Mn	%	0.01	0.008	0.008 - 0.01	0.08	0.036	0.036 - 0.08	0.0907
Mo	%	0.001	<0.0001	<0.001	0.003	0.0009	0.0009 - 0.003	0.0012
Na	g/t	140.3	<100	<140	174.8	<100	<100	<100
Nb	g/t	-	9	9	-	4	4	<1
Ni	%	0.001	<0.0001	<0.001	0.002	0.0073	0.002 - 0.0073	0.0105
P	g/t	20.90	600	20.9 - 600	80.80	600	80.8 - 600	100
Pb	%	3.47	26.8	3.47 - 26.8	53.6	28.2	28.2 - 53.6	>1
S	%	32.2	>10	>10	9.52	>10	>9.52	>10
Sb	%	0.01 (3)	0.0008	<0.01	0.005 (3)	0.0026	0.003 - 0.005	<0.0005
Sc	g/t	-	0.70	0.70	-	<0.5	<0.5	<0.5
Se	g/t	123.8	431.0	123.8 - 431	686.8	652.0	652 - 686.8	107
SiO2	%	1.52	-	1.52	1.52	-	1.52	-
Sn	g/t	0.850	<10	<10	0.850	<10	<10	<10
Sr	g/t	2.35	<0.5	<2.35	6.98	<0.5	<0.5	3.1
Te	g/t	134.5	78	78 - 134.5	53	91	53 - 91	37
Ti	g/t	26.52	<100	<100	81.3	<100	<100	<100
Tl	g/t	-	<2	<2	-	<2	<2	2
V	g/t	<2	33	<33	12.6	26	12.6 - 26	18
W	g/t	-	11	11	-	<10	<10	<10
Y	g/t	-	<0.5	<0.5	-	<0.5	<0.5	<0.5
Zn	%	1.77	0.83	0.83 - 1.77	3.94	3.2	3.2 - 3.94	>1
Zr	g/t	-	<0.5	<0.5	-	<0.5	<0.5	<0.5

Note:

1: None reference about the test

2: In the reference this value is 0.04 g/t Bi, it was modified to 0.04% Bi to match with detection limit

3: In the reference these values are in g/t but it was modified to % to match with detection limit

4. According Lupaka the sample characterized was from Phase I

12.9 Recommendations

It is recommended that Lupaka complete the following metallurgical testwork before advancing the project to feasibility study stage:

- Develop a geometallurgical analysis of the mineral resource
- Select and extract fresh representative samples of each domain
- Optimize the following aspects:
  - Primary grind size
  - Flotation flowsheet selection
  - Flotation reagent regime
  - Optimize the separation of lead and copper concentrates
  - Prove the flowsheet with locked cycle tests
- Comminution tests to determine crushing and grinding requirements
- Variability testing for geometallurgical projections of metallurgical performance
- Quantification of the bismuth, cadmium penalties to be expected
- Integration of the metallurgical projections into the mine plan

12.10 Metallurgical Performance

12.10.1 Findings

The estimation of the recovery of payable metals to flotation concentrates at the Invicta Gold Project can be done by considering three main types of data.

The first is locked cycle batch metallurgical laboratory testwork, the second is continuous pilot plant testwork and the third is to look at the results from a campaign at a toll treatment plant:

- Locked cycle tests were done at UNSA in 2011 and CERTIMIN in 2015. There is no documentation to support the sample representivity.
- A pilot plant campaign was run at UNSA in 2011. There is no documentation to support the sample representivity.
- A toll treatment campaign was run at SJE Huari in 2015. There is no documentation to support the sample representivity.

Open cycle laboratory testwork and bulk flotation tests by AMINPRO, MINEX Nasca and CERTIMIN were not considered.

A summary of the metallurgical performance of each phase is shown in Table 59.

Table 59: Summary of Metallurgical Performance from Each Phase of Testwork

Program	Test		Streams	Mass, %	Chemical assay						Recovery, %					
	Type	ID			Au, g/t	Ag, g/t	Cu, %	Pb, %	Zn, %	Fe, %	Au	Ag	Cu	Pb	Zn	Fe
UNSA 2011	Locked Cycle Test	Test 89	Cu Conc	3.6	110.67	645.78	31.45	3.67	1.53	-	77.3	45.5	79.7	7.1	4.5	-
			Pb Conc	2.7	13.33	644.19	3.44	57.2	3.03	-	6.9	33.8	6.5	82.2	6.6	-
			Bulk 1st cleaner tail	3.5	4.22	86.65	1.73	1.59	4.12	-	2.9	6	4.3	3	11.9	-
			Rougher tail	90.2	0.73	8.33	0.15	0.16	1.04	-	12.8	14.7	9.5	7.7	76.9	-
			Head (Calc.)	100.0	5.15	51.19	1.42	1.88	1.22	-	100	100	100	100	100	-
	Locked Cycle Test	Test 90	Cu Conc	3.9	113.18	652.17	31.25	2.98	1.95	-	80.5	45.3	83.3	6.3	6.2	-
			Pb Conc	3.1	8.31	620.99	3.25	48.54	5.53	-	4.8	34.9	7	82.4	14.3	-
			Bulk 1st cleaner tail	4.5	2.34	59.26	1.12	1.13	6.19	-	2	4.9	5.5	2.8	23.3	-
			Rougher Tail	88.5	0.78	9.33	0.1	0.18	0.77	-	12.7	14.9	6.1	8.5	56.2	-
			Head (Calc.)	100.0	5.47	55.61	1.46	1.83	1.21	-	100	100	102	100	100	-
	Pilot Plant	Pilot Plant	Cu Conc	3.45	111.67	745	28.72	9.55	1.86	27.4	80.08	49.62	81.89	25.14	8.51	6.43
			Pb Conc	2.31	22.02	764	5.73	37.49	5.69	12.43	10.57	34.07	10.94	66.07	17.44	1.95
			Bulk 1st cleaner tail	4.4	1.85	49	0.97	0.78	1.19	10.0	1.69	4.16	3.54	2.62	6.95	2.99
			Bulk rougher tail	89.84	0.41	7	0.05	0.09	0.56	14.5	7.66	12.14	3.64	6.17	67.1	88.62
			Head (Calc.)	100.0	4.81	51.80	1.21	1.31	0.75	14.70	100	100	100	100	100	100
Certimin 2015	Locked Cycle Test	Cycle Test	Cu Conc	6.31	136	869.5	29.29	5.19	1.18	25.22	70.64	40.41	88.89	19.96	5.02	10.36
			Pb Conc	2.35	65.45	2591.14	7.74	50.39	1.88	11.7	12.65	44.82	8.74	72.12	2.98	1.79
			Zn Conc	2.11	2.39	49.12	0.45	0.33	62.07	2.03	0.41	0.76	0.46	0.42	88.47	0.28
			Tails	89.24	2.22	21.31	0.04	0.14	0.06	15.06	16.29	14.01	1.90	7.50	3.54	87.57
			Head (Calc.)	100.0	12.14	135.7	2.08	1.64	1.48	15.35	100	100	100	100	100	100
SJE - Huari 2015	Processing Plant	In equilibrium	Cu Conc	4.76	108.42	1109.4	30.09	5.8	2.56	26.33	62.43	51.8	79.23	24.93	11.23	8.79
			Pb Conc	2.23	61.53	1294.16	10.52	31.53	7.14	15.12	16.62	28.34	12.99	63.52	14.66	2.37
			Zn Conc	1.10	30.18	393.93	5.06	1.64	47.7	7.97	4.01	4.25	3.08	1.63	48.27	0.61
			Tails	91.92	1.52	17.31	0.09	0.12	0.31	13.68	16.93	15.62	4.7	9.92	25.44	88.23
			Head (Calc.)	100.0	8.26	101.90	1.81	1.11	1.09	14.25	100	100	100	100	100	100

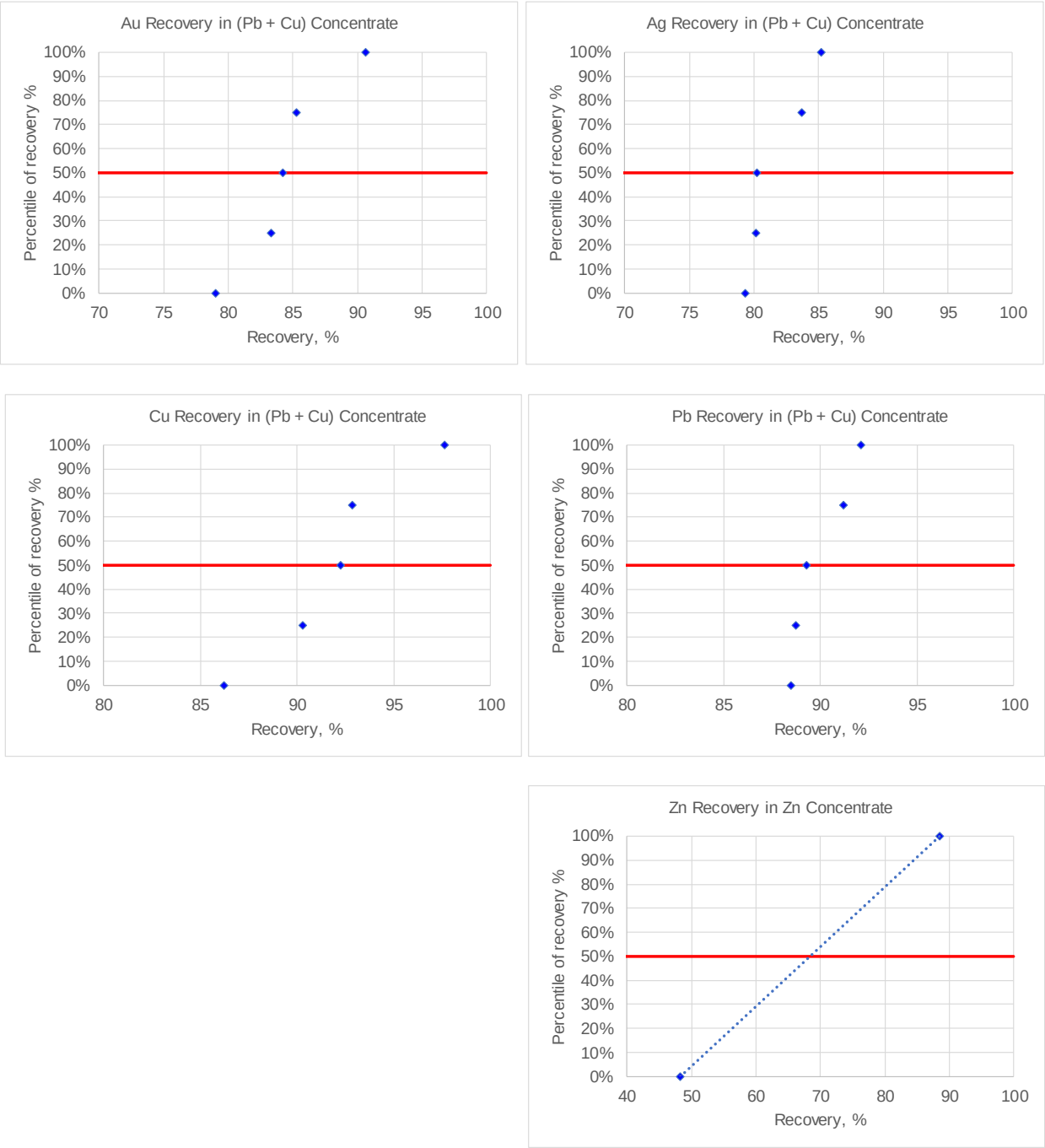


Figure 43: Metal Recovery in Concentrate Charts

Generally, the results were similar between phases. The median value for each recovery projection was used to estimate the plant performance.

For gold and silver, the total recovery to copper and lead concentrates was considered, then a nominal split between the two concentrates was surmised.

For copper and lead, the total recovery to a bulk copper-lead concentrate was considered instead of individual concentrates, because the separation of copper and lead is difficult to achieve in the laboratory scale.

Therefore, the recoveries estimated to the bulk concentrate were predicted, then reduced considering the loss in separation based on the UNSA 2011 results.

No discounts were applied for an inefficient plant operation.

12.10.2 Recommendations

Metallurgical recommendations from testwork completed to date include:

- Only metals reporting to concentrates that will result in revenue are considered as recoveries.
- Lead in zinc and copper concentrates is considered as a loss.
- Zinc in the copper and lead concentrates is considered as a loss.
- Copper in the zinc and lead concentrates is considered as a loss.
- Silver and gold in the zinc concentrate is considered as a loss.

Metal recoveries are recommended for the PEA are tabulated in Table 60.

Table 60: Recommended Metal Recoveries

Recovery		Concentrate		
		Cu	Pb	Zn
Gold	%	77.3	10.6	
Silver	%	45.5	34.1	
Copper	%	84.1		
Lead	%		82.6	
Zinc	%		14.3	68.4

Concentrate grades recommended for the PEA are tabulated in Table 61.

Table 61: Recommended Concentrate Grades

Grade		Concentrate		
		Cu	Pb	Zn
Gold	g/t	Calculate	Calculate	0
Silver	g/t	Calculate	Calculate	0
Copper	%	30.1	5.7	2.8
Lead	%	5.2	48.5	1.0
Zinc	%	1.9	5.5	54.9
Moisture	%	9	9	9

- It is recommended that a sensitivity analysis of the impact of a 5 percent reduction in each recovery be examined when assessing the project risk.
- Apply toll treatment costs and supervision costs that are appropriate for the projection of an excellent plant performance.

13 Mineral Resource Estimates

13.1 Introduction

The audited Mineral Resource Statement presented herein represents the fifth mineral resource evaluation prepared for the Invicta Gold Project.

This section describes the methodology and the key assumptions made to prepare the geology and mineral resource model for the Invicta Gold Project. The estimation methodology conforms to the Canadian Institute of Mining, Metallurgy and Petroleum's (CIM) *Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines* and the resulting Mineral Resource Statement is reported in accordance with the Canadian Securities Administrators' NI 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 a mineral reserve.

The construction of the geology and mineral resource model was undertaken by the SRK Consulting (U.S.), Inc. in 2012. The mineral resource model prepared by SRK (2012) considers 112 core boreholes drilled by Pangea during the period of 1997 to 1998, 53 core boreholes drilled by Invicta Mining Corp between 2006 and 2008 and 10 underground channels between 2007 and 2008. The resource estimation work was originally undertaken by suitably qualified resource geologists from SRK US in 2012. The SRK (2012) mineral resource model has been reviewed and audited in this study to support the PEA by Ms. Camila Passos, PGeo (APGO#2431). Ms. Passos is an appropriate "independent qualified person" as this term is defined in NI 43-101. The effective date of the Mineral Resource Statement is February 28, 2018.

The database used to estimate the Invicta Gold Project mineral resource was audited by SRK in this study. SRK is of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries for gold mineralization and that the assay data are sufficiently reliable to support mineral resource estimation.

SRK (2012) used Datamine Studio 3 to construct the grades solids, prepare assay data for geostatistical analysis, construct the block model, estimate metal grades and tabulate mineral resources. In this study, SRK used a combination of GEMS™ version 6.8 and Snowden Supervisor® version 8.7 software to undertake the audit.

13.2 Mineral Resource Estimation Procedures

The SRK audit involved a review of the following aspects of the Invicta Gold Project mineral resource model prepared by SRK (2012):

- Database compilation and verification.
- Construction of wireframe models for the boundaries of the gold mineralization.
- Definition of resource domains.
- Data conditioning (compositing and capping) for geostatistical analysis and variography.
- Block modelling and grade interpolation.
- Resource classification and validation.
- Assessment of "reasonable prospects for economic extraction" and selection of appropriate cut-off grades.

- Preparation of the Mineral Resource Statement.

The following sections describe the procedures used and assumptions made by SRK (2012) to prepare the mineral resource model, followed by a summary of the audit results of this mineral resource model.

13.3 Resource Database

The database used for mineral resource evaluation includes 165 core boreholes (27,834.85 metres) and 10 underground channels (326.80 metres) for the Invicta deposit (Table 62). The database was provided to SRK (2012) in digital form and represents the Invicta Gold Project dataset as at November 10, 2010.

According to SRK (2012) all borehole collars were surveyed according to the local UTM coordinates (PSAD56, Zone 18 South). Down-hole surveys were undertaken for 23 boreholes (14 percent of all core boreholes). This down-hole survey measurement strategy resulted in irregular survey measurements. There is no information on which survey instrument was used to get these measurements.

Core recovery exceeded 90 percent in 91 percent of all core boreholes.

Invicta Mining Corp commissioned a topographic survey over the project area using Laser Leica camera with a 2- by 2-metres resolution. The survey was carried out by Horizons South America S.A.C., from Lima, Peru in March-April 2011. Horizons produced a 1-metre contour map which was tied in to 4 surveyed reference points (SRK, 2012).

Table 62: Summary of Drilling Data Considered for Mineral Resource Modelling

Campaign	Sample Type	Count	Length (metres)	Assay
Pangea (1997-1998)	Core	112	12,705.88	3,361
Invicta (2006-2008)	Core	53	15,128.97	3,264
Total Core		**165**	**27,834.85**	**6,625**
Invicta (2007-2008)	Underground Channel Samples	10	326.80	286
Total Core and Channel		**175**	**28,161.65**	**6,911**

13.4 Solid Body Modelling

SRK (2012) modelled seven mineralized wireframe structures / zones for the Invicta Gold Project:

- Atenea zone 1
- Atenea zone 2
- Atenea zone 3
- Pucamina
- Dany
- Ydalias
- Zone 4

The geological modelling was based on plan and sectional interpreations provided by Invicta Mining Corp Illustrative sections across the mineralized Atenea vein are shown in Appendix D. Atenea zone

1 extends approximately 900 metres in the northeast-southwest direction and up to 800 metres in the perpendicular direction, with its true thickness ranging from 4.92 to 68.96 metres.

Atenea zone 3 extends approximately 400 metres in the north-south direction and up to 193 metres in the east-west direction, with a true thickness ranging from 1.74 to 21.91 metres.

Pucamina extends approximately 740 metres in the northwest-southeast direction and up to 380 metres in the perpendicular direction, with a true thickness varying from 2.10 to 34.96 metres.

Dany extends approximately 700 metres in the N285 direction and up to 530 metres in the perpendicular direction, with a true thickness varying from 2.05 to 31.05 metres. Finally, Zone 4 extends approximately 420 metres in the northwest-southeast direction and up to 240 metres in the perpendicular direction, with a true thickness varying from 2.23 to 22.43 metres.

According to SRK (2012), the grade solids were constructed using a 0.5 gram of gold per tonne (g/t gold) equivalent cut-off for all mineralized zones using capped raw data as a basis (Figure 44). Using this approach, SRK (2012) modelled the zones on vertical sections at a variable spacing.

The metal price assumptions and metallurgical recoveries utilized for the gold-equivalent calculation in 2012 and updated in this study are tabulated in Table 63.

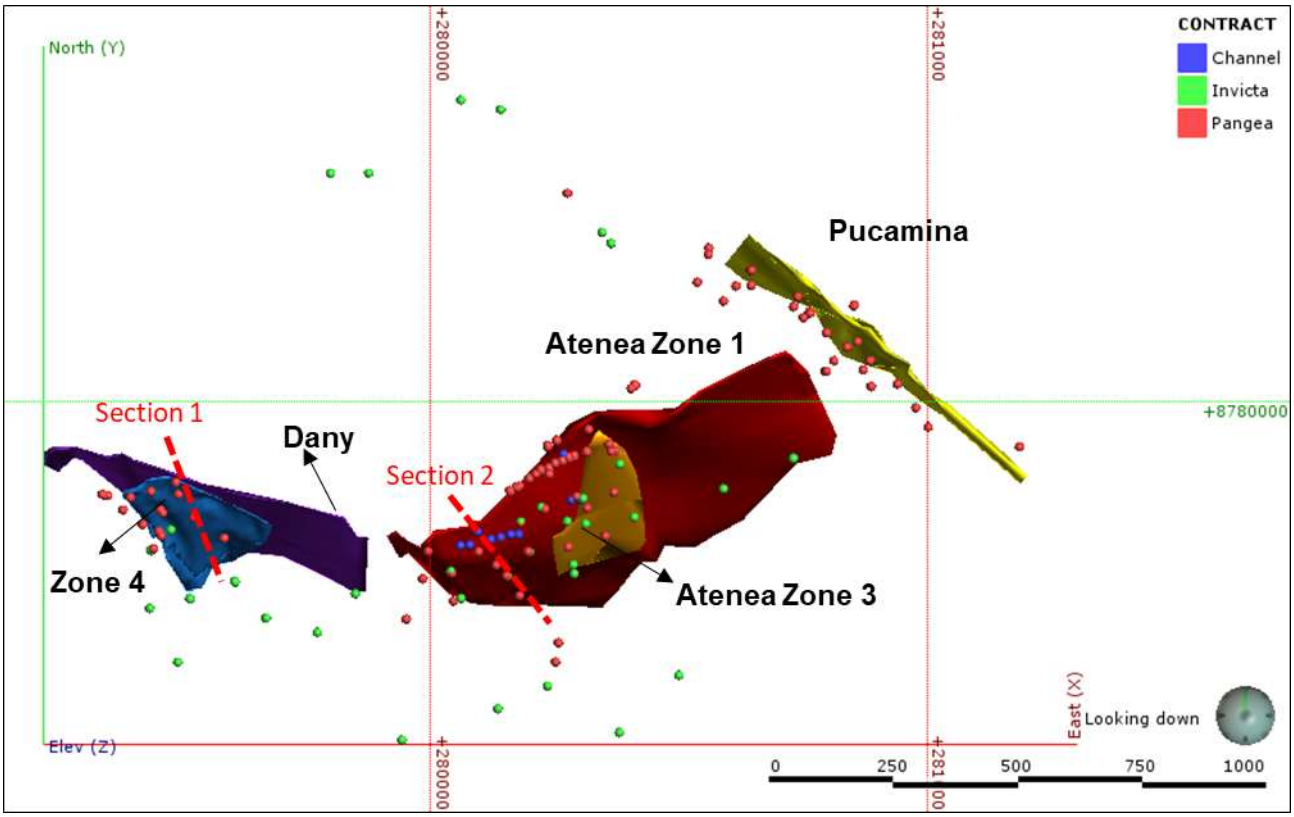


Figure 44: Invicta Gold Project Mineralized Wireframe Solids

Note: Section 1 and Section 2 reference Figure 51

Table 63: 2012 and 2018 Metal Price and Recovery Assumptions for Gold-Equivalent Calculation

Metal	Unit	US$/Unit		Recovery (%)	
		2012	2018	2012	2018
Au	Oz	1,203.36	1,250.00	-	85
Ag	Oz	19.18	17.00	-	80
Cu	Lb	3.34	3.00	-	82
Pb	Lb	0.97	1.05	-	82
Zn	Lb	0.98	1.20	-	77

SRK applied the following factors calculated for silver, copper, lead and zinc to estimate gold equivalency grade for this study:

- **Au_Eq** = AuCap + (AgCap*0.0128) + (CuCap*1.5876) + (PbCap*0.5292) + (ZnCap*0.5963)

After reviewing the Invicta mineral resource model, SRK recommends that future mineralization modelling consider the following:

- Updating the coordinates to WGS 84 system.
- Ensure that wireframes are snapped to borehole samples.
- Revise the domains to include mineralized samples that are currently excluded from the wireframes.
- Not considering waste samples in the top and in the bottom of the wireframes to avoid volume gain and loss of grade.

The zone numbers assigned to the SRK (2012) mineral resource model and the model modified for use in the current PEA study block models are provided in Table 64.

Table 64: Zone Number Assignments in Block Model and Composite Data

SRK Denver 2012		PEA Mineral Resource Model	
Zone Name	Zone Number	File	Zone Number
Atenea	Vein 1	z1at_srk_0111_final	1
	Vein 3	z3at_srk_021111_final	3
	Vein 2		
	Vein 4		
	Vein 6	z2_9at_srk_final	2,4,6,7,8,9
	Vein 7		
	Vein 8		
	Vein 9		
Pucamina	10	pucamina_srk_0111_final	11
Dany	11		
Ydalias	12	ydal_dany_z4srk042112_final	10, 12, 14
Zone 4	14		

13.5 Specific Gravity

For the SRK (2012) study, specific gravity was measured by Actlabs on core samples using a water immersion methodology. The samples were covered with paraffin wax.

The specific gravity database contains 4,176 measurements. SRK (2012) examined the specific gravity data statistically above a 0.5 g/t gold-equivalent cut-off to assign average density by mineralized zone. Table 65 shows the specific gravity results for all zones in the Invicta Gold Project.

Table 65: Summary of the Core Samples Specific Gravity, SRK US (2012)

Model Zone	Length (m)	Number of Samples	Min	Max	Weighted Avg
Atenea All Zones	696.02	710	2.07	3.85	2.76
Dany	125.05	146	2.48	3.15	2.75
Pucamina	279.15	257	2.18	2.90	2.50
Ydalias - All Zones	20.59	20	2.10	3.05	2.66
Zone 4	-	-	-	-	-
All Mineralized Zones	1,120.81	1,133	2.07	3.85	2.69
External to Wireframes	3,565.60	3,043	2.06	3.25	2.69
Total Samples	**4,686.41**	**4,176**			

Accordingly, SRK (2012) collected sufficient data in all zones but Zone 4 to assign average densities on a zonal basis. For Zone 4, the average of all data above a 0.5 g/t gold-equivalent cut-off (2.69) was assigned.

In this study, SRK had access to two specific gravity data files:

- 1110_all_all_den – on this excel file there are 5,432 specific gravity measurements.
- 1110_all_all_assay – on this excel file there are 3,060 specific gravity measurements.

In this review, undertook a statistical analysis of the file with the 5,432 specific gravity measurements and determined similar estimates to that comparing of SRK (2012) values (Table 66). It should be noted that the file analyzed by SRK presented 139 samples inside Zone 4. SRK (2018) could not estimate the specific gravity value for Ydalias because these wireframes were not available. SRK did the specific gravity statistical analysis considering all samples available.

Table 66: Summary of the Core Samples Specific Gravity, SRK (2018)

Model Zone	Length (m)	Number of Samples	Min (g/cm^3)	Max (g/cm^3)	Weighted Avg (g/cm^3)
Atenea zone 1	1,062.96	963	2.07	3.85	2.73
Atenea zone 3	62.67	42	2.28	2.81	2.68
Atenea All Zones	1,125.63	1,005	2.07	3.85	2.73
Dany	163.23	171	2.48	3.15	2.74
Pucamina	327.78	299	2.18	2.90	2.51
Ydalias - All Zones					
Zone 4	108.9	139	2.31	3.04	2.70
All Mineralized Zones	1,725.54	1,614	2.07	3.85	2.69
External to Wireframes	4,324.41	3,818	2.06	4.61	2.69
Total Samples	**6,049.95**	**5,432**	**2.06**	**4.61**	**2.69**

13.6 Statistical Analysis and Compositing

All statistical and geostatistical analysis were based on the five zones described in Table 67. SRK (2012) composited all assay intervals within the domains to a length of 3.0 metres.

SRK audited assay data through a comparison of assays and composite statistics for data generated independently by SRK (2012) and the current study. In the SRK (2012) technical report, only the gold statistics are available. Considering this, SRK did a comparison only for gold in the Atenea, Dany and Pucamina zones and found no significant differences between the two data sets. Zone 4 was not compared because in the SRK (2012) technical report the assay statistics for this zone are not provided. Summary assay statistics estimated by SK in this review are provided in Table 67.

SRK (2012) composited all raw data to downhole lengths of 3 metres, with composites broken along the individual zone boundaries. Figure 45 shows the histogram and the cumulative frequency distribution of sample length in the Invicta Gold Project considering the mineralized intervals for Atenea 1 and 3, Dany, Zone 4 and Pucamina zones. SRK finds that approximately 99 percent of all sample mineralized intervals in the Invicta Gold Project are 3 metres or less.

Table 67: Summary Assay Statistics for the Invicta Gold Project (length weighted)

Zone	Domain	Stats	AuEq 2012	AuEq 2018	Au (oz/t)	Ag (oz/t)	Cu (%)	Pb (%)	Zn (%)
Atenea	1	Mean	2.94	2.52	1.64	23.69	0.38	0.30	0.28
		StdDev	9.81	5.82	7.25	267.86	0.85	1.18	0.75
		CV	3.33	2.31	4.43	11.31	2.27	3.95	2.74
		Minimum	0.04	0.04	0.00	0.01	0.01	0.00	0.01
		Maximum	221.69	62.86	178.90	9,000	12.40	21.78	8.23
		Count				1,222			
Atenea	3	Mean	1.18	1.16	0.81	3.67	0.108	0.073	0.169
		StdDev	3.02	3.02	2.98	5.00	0.102	0.11	0.189
		CV	2.56	2.59	3.70	1.36	1.682	1.505	1.122
		Minimum	0.06	0.05	0.01	0.01	0.01	0.01	0.01
		Maximum	26.63	26.60	26.23	30.1	1.04	0.54	0.89
		Count				64			
Dany		Mean	1.42	1.30	0.42	10.34	0.41	0.161	0.089
		StdDev	2.17	1.77	1.01	14.92	0.71	1.092	0.187
		CV	1.53	1.36	2.38	1.44	1.71	1.192	2.101
		Minimum	0.06	0.05	0.01	0.50	0.01	0.002	0.008
		Maximum	27.34	19.88	10.00	150.00	8.87	18.4	2.51
		Count				203			
Z4		Mean	2.53	2.19	1.74	10.12	0.31	0.11	0.09
		StdDev	8.83	4.89	8.38	26.02	0.77	0.20	0.13
		CV	3.50	2.24	4.81	2.57	2.48	1.88	1.48
		Minimum	0.04	0.05	0.01	0.01	0.01	0.00	0.01
		Maximum	156.94	53.65	153.00	253.50	8.00	1.79	1.01
		Count				168			
Pucamina		Mean	2.02	1.99	1.51	6.48	0.10	0.20	0.24
		StdDev	2.37	2.36	2.22	8.27	0.19	0.26	0.31
		CV	1.18	1.19	1.47	1.28	1.95	1.32	1.30
		Minimum	0.03	0.03	0.00	0.10	0.00	0.00	0.01
		Maximum	14.97	14.97	14.80	76.81	2.00	2.45	2.70
		Count		323			322	323	

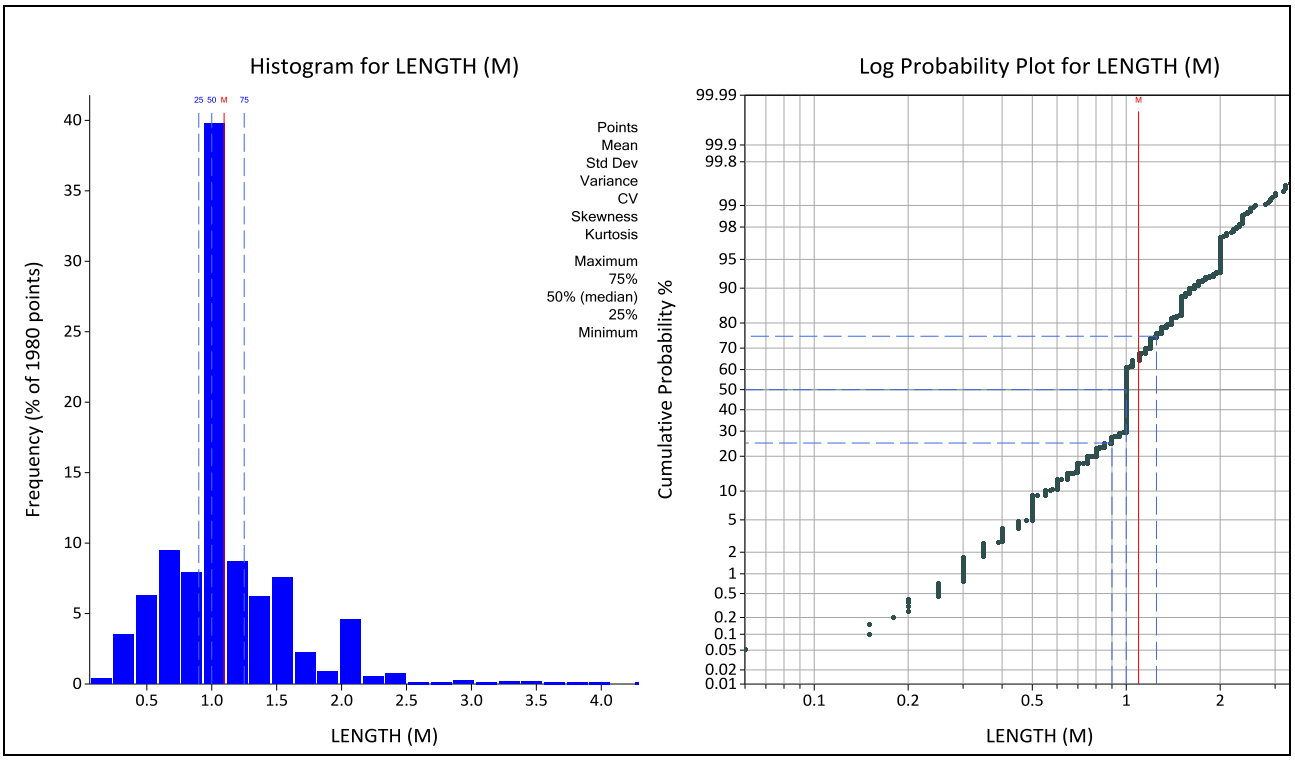


Figure 45: Sample Length Distribution

13.7 Capping

SRK (2012) inspected the presence of high-grade outlier values that could adversely impact grade estimation. After review of log probability plots, all raw assays were capped as summarized in Table 68.

Table 68: Summary of Assay Capping Statistics

Metal	Assay Cap	CV* Uncapped	CV* Capped
Au	50.0 g/t	5.69	4.10
Ag	250.0 g/t	15.58	2.39
Cu	5.0 %	3.08	2.75
Pb	3.0 %	5.29	2.67
Zn	5.0 %	3.20	2.80

* CV = Coefficient of Variation

The log probability plots and histograms that form the basis for capping determinations for gold, silver, copper, lead and zinc are provided from Figure 46 to Figure 50, respectively. All raw assay data was capped by SRK (2012) prior to compositing.

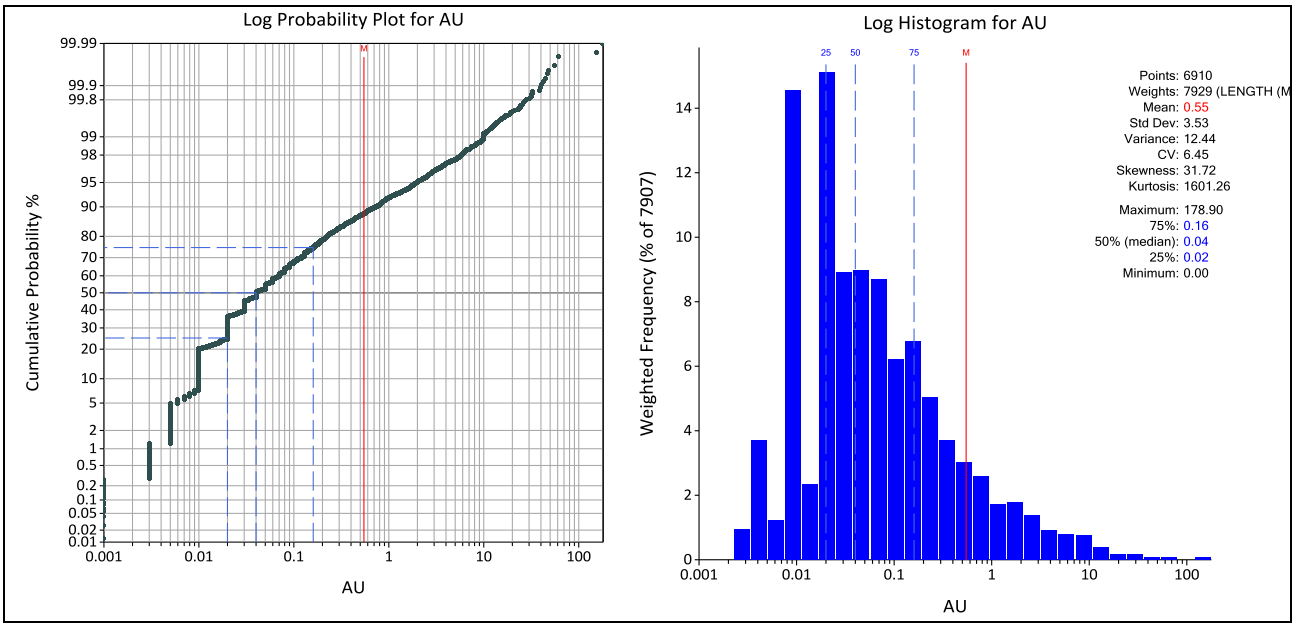


Figure 46: Probability Plot and Histogram for all Gold Assay Samples

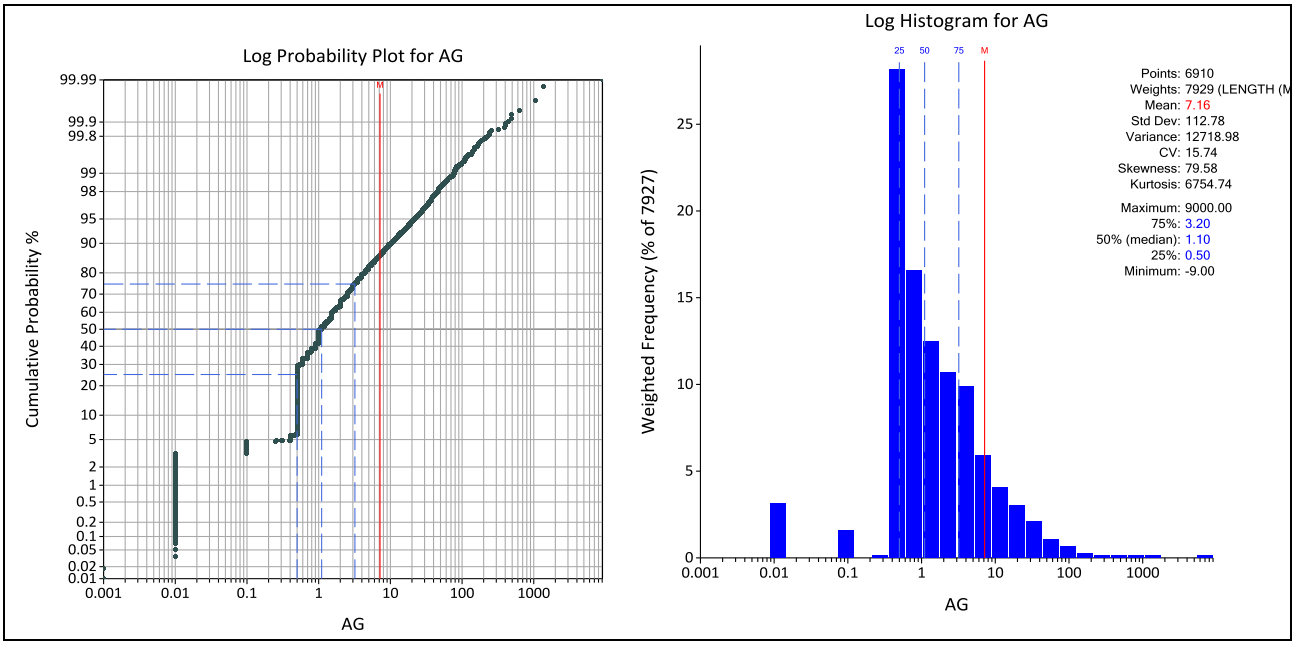


Figure 47: Probability Plot and Histogram for all Silver Assay Samples

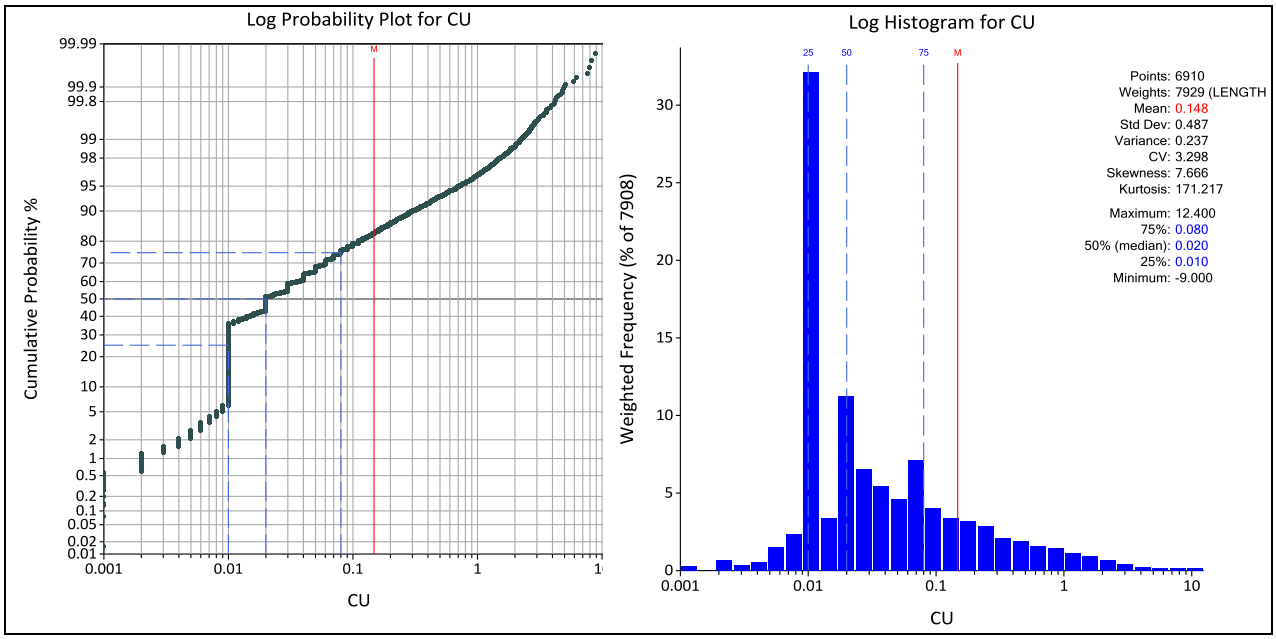


Figure 48: Probability Plot and Histogram for all Copper Assay Samples

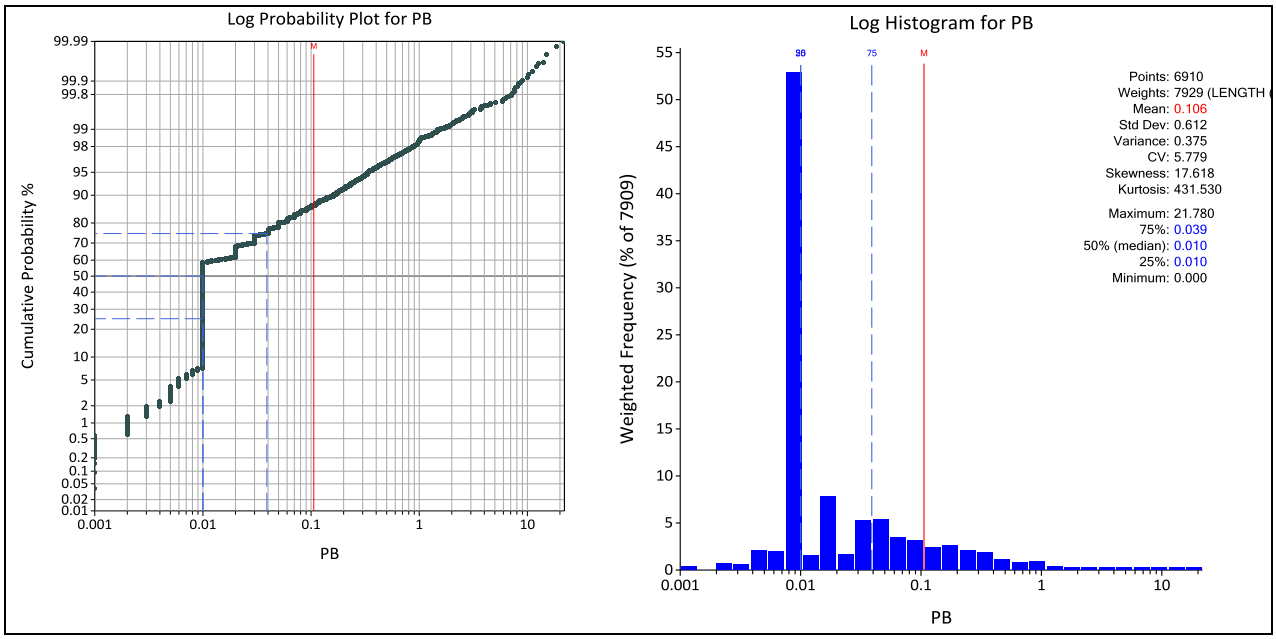


Figure 49: Probability Plot and Histogram for all Lead Assay Samples

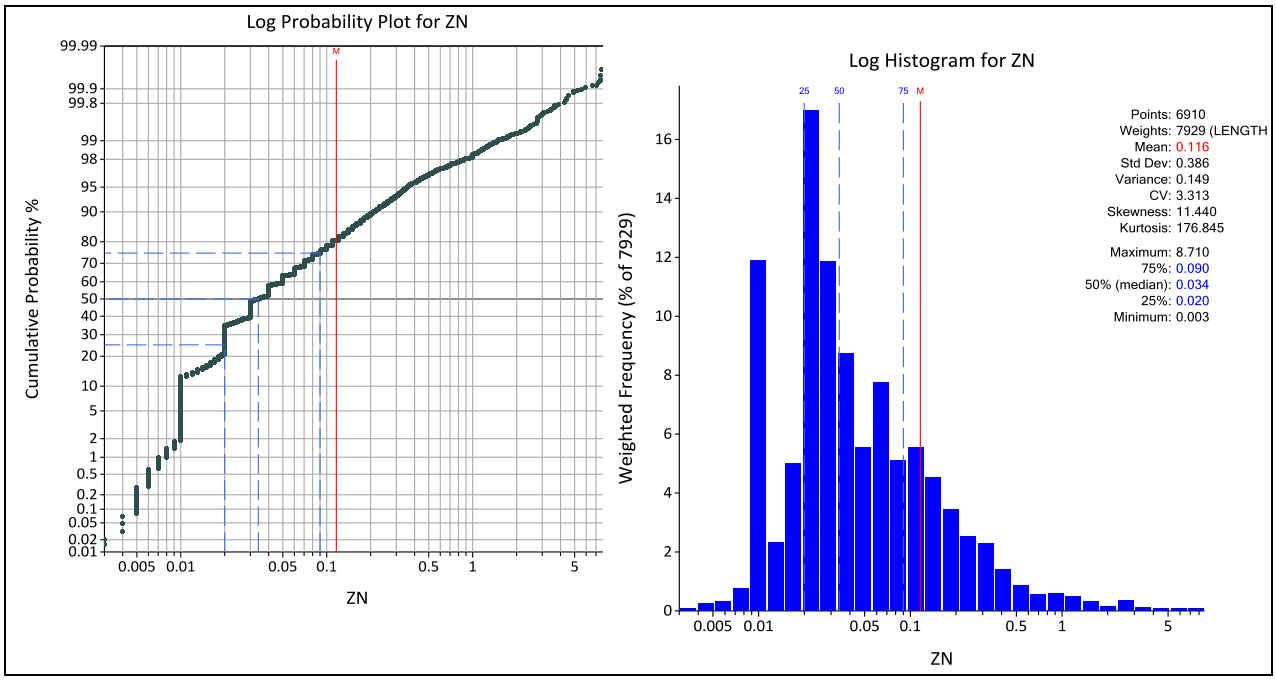


Figure 50: Probability Plot and Histogram for all Zinc Assay Samples

13.8 Variography

SRK (2012) attempted to produce variogram models using a number of different estimators (semivariograms, correlograms and pair-wise relative variograms) using the 3-metre composites dataset.

Considering the multiple orientations of veins mineralized zones and the relative lack of data, SRK (2012) was unable to produce any meaningful and interpretable directional variograms.

In the current review, SRK recommends that the variogram models should be done by zone to try model the spatial continuity at least for gold.

13.9 Block Model

Five sub-blocked models were generated by SRK (2012) using Datamine Studio 3 for Atenea (Zones 1, 2 and 3), Pucamina and Dany (Ydalias, Dany and Zone 4) zones. The block models' coordinates are based on the local UTM grid (Provisional South American Datum, PSAD 56). The parent block size is 3 by 3 by 3 metres. The block model is not rotated.

In the current review SRK converted the block models in homogeneous block-models to import them into Gemcom version 6.8 for auditing purposes (Table 69).

Table 69: Invicta Gold Project Gems Block Models Definition

Zone	Domain		Block Size (metre)	Origin* (m)	No. Blocks	Percent Model	Rotation
Atenea	1, 2 and 3	X	3	279,900	310	Yes	No
		Y	3	8,779,400	267		
		Z	3	4,000	440		
Dany, Ydalias, Zone 4		X	3	279,100	310	Yes	No
		Y	3	8,779,600	267		
		Z	3	4,320	440		
Pucamina		X	3	280,590	207	Yes	No
		Y	3	8,779,800	180		
		Z	3	3,740	130		

13.10 Grade Estimation and Validation

SRK (2012) estimated gold, silver, copper, lead and zinc into the five domains using an inverse distance (power of two) estimator. For all elements, three estimations passes were used with progressively relaxed search ellipsoids and data requirements (see Table 70). In all cases, the ellipse orientations were determined using the dynamic anisotropy tool in the Datamine Studio 3®.

The block model estimates were verified by SRK (2012) using a visual comparison of block grades and composites; statistical comparisons between composites and block model distributions; statistical comparisons between the estimates performed using inverse distance (ID2) and nearest neighbour (NN) estimation; and swath plot analysis comparing the ID2 model with the NN model.

Table 70: Summary of Estimation Parameters

Pass	No. Composites			Search Ellipse Range (m)			Ellipsoid Rotation Axes		
	Min	Max	Max Comps/hole	X	Y	Z	Z	X	Y
1	3	5	1	40	30	6	Dynamic Anisotropy (TRDIP and TRDIPDIR)		
2	2	5	1	120	90	18			
3	1	5	1	160	120	24			

13.11 SRK 2018 Audit

This section documents some of the measures undertaken in this study to audit and review the SRK (2012) model to determine suitability for PEA applications. During this audit SRK compared the wireframe and block model's volumes (Table 71), with the following results:

- Pucamina – the difference is acceptable, less than 1 percent
- Atenea:
  - Zone 1 - the difference is acceptable, less than 1 percent
  - Zone 2 - there is no available wireframe for this zone
  - Zone 3 - the difference is acceptable, less than 1 percent
- Dany, Ydalias and Zone 4 Zones – SRK (2018) did not received the Ydalias wireframes and because of this the difference between the block model volume and the wireframes volume is higher than the other domains (3.54 percent).

Block model estimates were verified by SRK in the current study using a visual comparison of block grades and samples; and statistical comparisons between the estimates performed using inverse distance and nearest neighbour estimation. SRK also validated the resources with swath plots by easting, northing and elevation

SRK performed a visual validation of the block model by comparing block and borehole grades on a section by section basis. The resultant block estimates appear to be reasonable given the informing sample grades and estimation parameters.

Table 71: Volumetric Comparison Between SRK (2012) Block Models Versus Wireframes

Domains	Zones	Wireframe	Block Model	Difference
Pucamina		1,177,826	1,177,988	-0.01%
Atenea	1	8,798,425	8,781,318	0.19%
	2	no wireframe	238,962	
	3	358,626	358,696	-0.02%
Dany		1,939,560		
Zone 4		778,942		
Ydalias		no wireframe		
Total Dany_Z4		**2,718,502**	**2,818,315**	**-3.54%**

13.11.1 Visual Validation

The first validation conducted by SRK in the audit was a plan view and cross-section visual assessment to ensure that the distribution of grades in the blocks is consistent with the average grade of the samples (Figure 51). This ensures that the data used for the estimation has a direct bearing on the local variance of the estimated grades.

13.11.2 Global Estimation Validation

Nearest neighbor models for silver, zinc, lead and copper were generated by SRK (2012). These models were used to validate the grade model and to check possible grade biases in the block model. The inverse distance and nearest neighbor grades were compared for all estimated blocks at a zero-cut-off grade.

Table 72 to Table 76 compares inverse distance (ID) against nearest neighbour (NN) tonnage and grade.

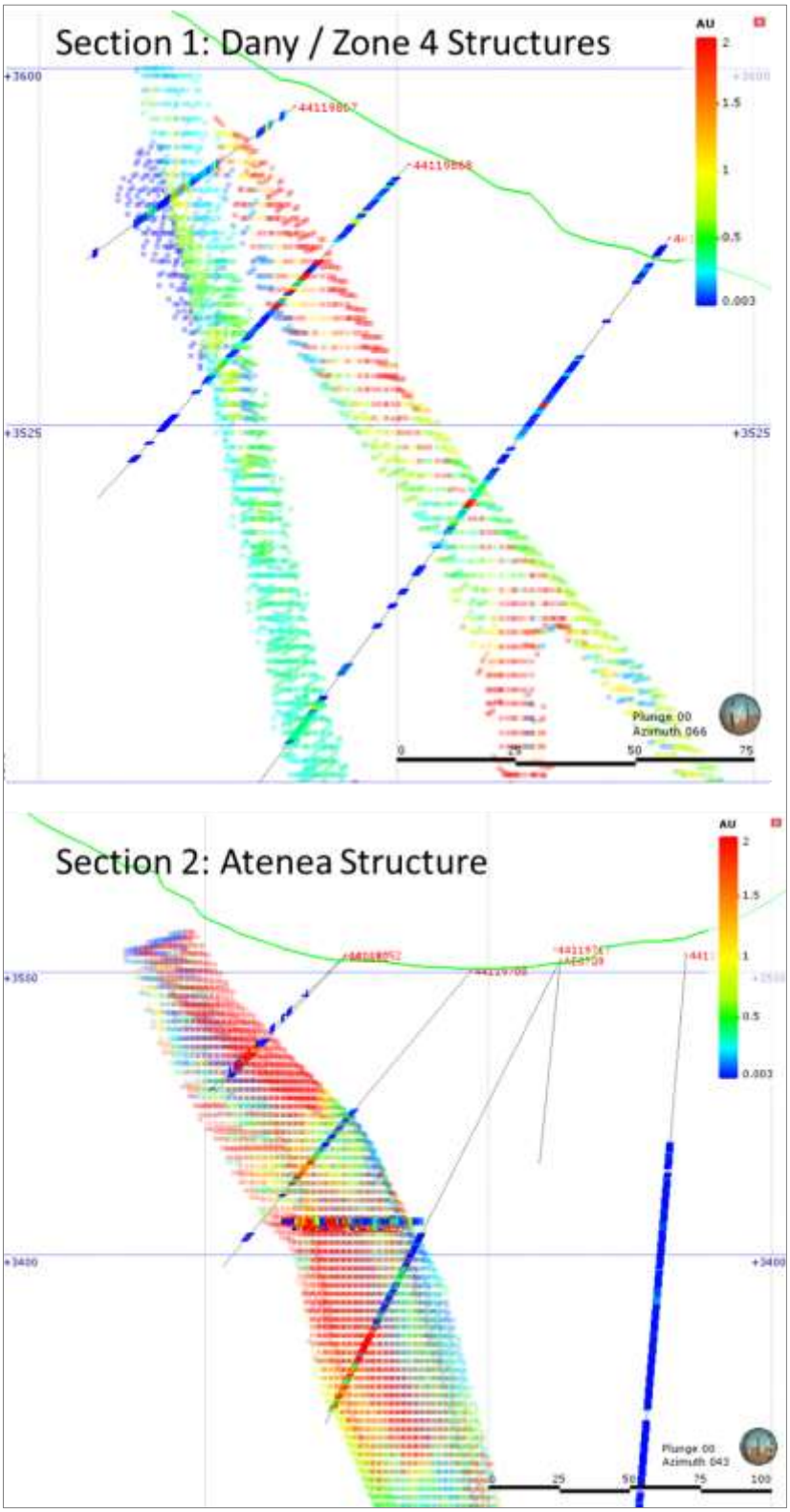


Figure 51: Two Sectional Comparisons of Mineral Resource Model to Informing Gold Data on Mineralized Vein Structures

Note: Plan location of these sections shown on Figure 44

Table 72: Comparison Between ID2 and NN Tonnage and Grade at Zero Cut-off Grade – Atenea Zone 1

Model	Tonnes ('000)	Metal Grade 2012 AuEq (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Metal Grade 2018 AuEq (g/t)	Diff AuEq (g/t)
Measured + Indicated									
ID2	12,403	2.13	1.21	10.82	0.28	0.17	0.22	2.06	3%
NN	12,403	2.10	1.2	10.54	0.28	0.17	0.22		
Diff	**-**	**1.50%**	**1.50%**	**2.70%**	**0.90%**	**1.50%**	**0.00%**		
Inferred									
ID2	8,822	0.73	0.46	2.94	0.09	0.05	0.06	0.71	3%
NN	8,822	0.71	0.46	2.79	0.08	0.05	0.06		
Diff	**-**	**2.10%**	**0.00%**	**5.40%**	**6.00%**	**8.40%**	**0.00%**		

File: z1at_srk_0111_final.s

Table 73: Comparison Between ID2 and NN Tonnage and Grade at Zero Cut off grade – Atenea Zone 2

Model	Tonnes ('000)	Metal Grade 2012 AuEq (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Metal Grade 2018 AuEq (g/t)	Diff AuEq (g/t)
Measured + Indicated									
ID2	73	0.73	0.11	4.92	0.28	0.01	0.04	0.66	11%
NN	73	0.77	0.11	5.17	0.29	0.01	0.04		
Diff	**-**	**-5.10%**	**-5.00%**	**-4.90%**	**-5.40%**	**-0.10%**	**-0.30%**		
Inferred									
ID2	571	2.74	0.4	18.55	1.05	0.02	0.11	2.46	11%
NN	571	2.74	0.4	18.55	1.06	0.02	0.11		
Diff	**-**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**		

File: z2_9at_srk_final.s

Table 74: Comparison Between ID2 and NN Tonnage and Grade at Zero Cut-off grade – Atenea Zone 3

Model	Tonnes ('000)	Metal Grade 2012 AuEq (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Metal Grade 2018 AuEq (g/t)	Diff AuEq (g/t)
Measured + Indicated									
ID2	787	1.07	0.7	3.37	0.12	0.07	0.13	1.06	1%
NN	787	1.07	0.7	3.35	0.12	0.06	0.1		
Diff	**-**	**0.10%**	**-0.40%**	**0.50%**	**-5.40%**	**7.30%**	**26.00%**		
Inferred									
ID2	167	0.59	0.25	2.84	0.12	0.05	0.07	0.57	4%
NN	167	0.49	0.21	2.26	0.11	0.04	0.06		
Diff	**-**	**19.90%**	**22.20%**	**25.70%**	**13.40%**	**31.00%**	**31.00%**		

File: z3at_srk_02111_final.s

Table 75: Comparison Between ID2 and NN Tonnage and Grade at Zero Cut-off Grade – Ydalias, Dany and Zone 4 Zones

Model	Tonnes ('000)	Metal Grade 2012 AuEq (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Metal Grade 2018 AuEq (g/t)	Diff AuEq (g/t)
Measured + Indicated									
ID2	3,191	1.39	0.56	8.14	0.33	0.07	0.09	1.32	6%
NN	3,191	1.43	0.59	8.20	0.33	0.08	0.09		
Diff	**-**	**-2.56%**	**-6.05%**	**-0.72%**	**0.15%**	**-3.12%**	**2.12%**		
Inferred									
ID2	2,466	0.95	0.14	7.84	0.29	0.19	0.09	0.88	8%
NN	2,466	0.91	0.13	7.63	0.27	0.19	0.09		
Diff	**-**	**4.76%**	**10.61%**	**2.81%**	**5.12%**	**-0.16%**	**0.77%**		

File: ydal_dany_z4srk042112_final.s

Table 76: Comparison Between ID2 and NN Tonnage and Grade at Zero Cut-off Grade – Pucamina Zone

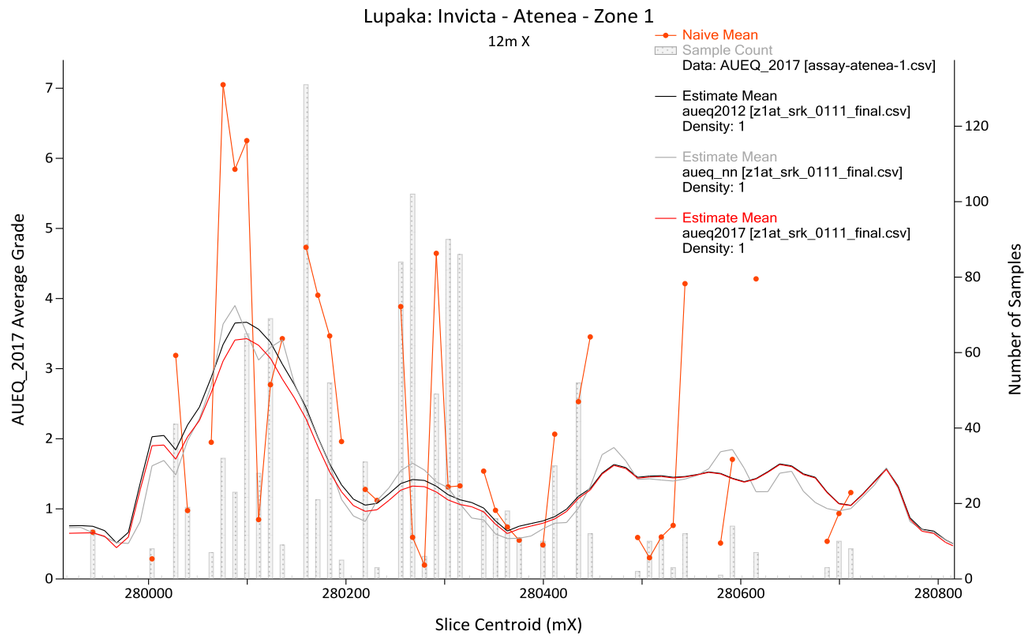
Model	Tonnes ('000)	Metal Grade 2012 AuEq (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Metal Grade 2018 AuEq (g/t)	Diff AuEq (g/t)
Measured + Indicated									
ID2	2,151	1.67	1.25	4.87	0.07	0.16	0.24	1.69	-1%
NN	2,151	1.74	1.30	5.08	0.08	0.17	0.24		
Diff	**-**	**-4.10%**	**-4.33%**	**-4.40%**	**-3.75%**	**-5.38%**	**-0.80%**		
Inferred									
ID2	606	1.15	0.70	6.45	0.12	0.10	0.13	1.12	3%
NN	606	1.20	0.73	6.69	0.12	0.11	0.13		
Diff	**-**	**-4.00%**	**-3.82%**	**-3.64%**	**-6.34%**	**-3.11%**	**0.64%**		

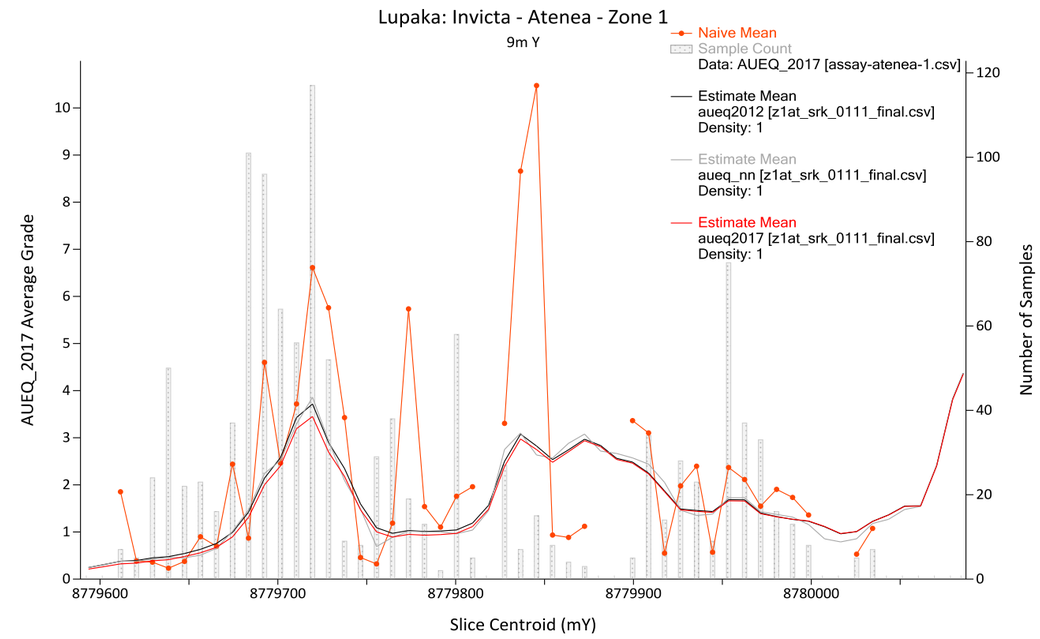
File: pucamina_srk_0111_final.s

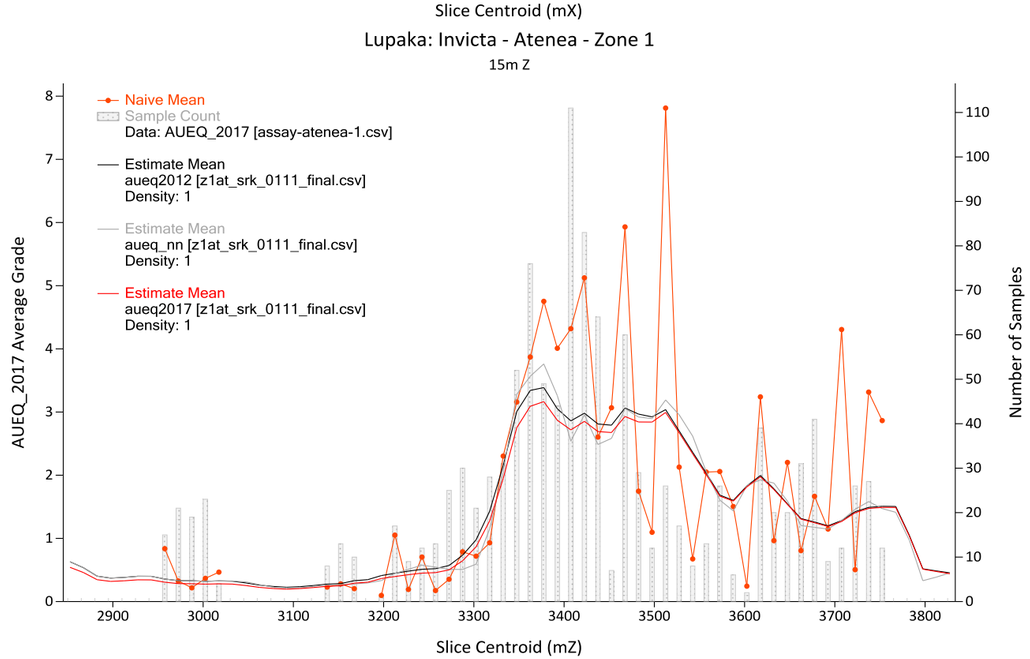
13.11.3 Local Estimation Validation

In this review, SRK checked local biases creating a series of slices or "swaths" through the SRK (2012) grade models by columns (eastings), rows (northings), and levels (elevations) comparing the inverse distance and nearest neighbor grades for the Atenea vein – Zone 1. SRK also used the updated gold-equivalent to compare with the 2012 results (Figure 52).

The swath plots presented in Figure 52 show a reasonable comparison between the inverse distance and nearest neighbor grades. Based on a visual examination and comparisons with the nearest neighbor model, SRK believes that the SRK (2012) grade models are globally unbiased and represent a reasonable estimate of undiluted in-situ resources.







Lupaka: Invicta - Atenea - Zone 1 - AuEq (g/t)						
Statistic	Samples (AuEq 2018)	Blocks 2012 ID2	Blocks 2012 NN	Blocks 2018 Calculated	Difference 2012 x 2012 ID2 xNN	Difference 2012 x 2018 ID2 x Calculated
Points	1,222	524,803	524,803	524,803	0%	0%
Mean	2.52	1.55	1.52	1.47	2%	5%
StdDev	5.82	2.30	3.06	2.22	-25%	4%
Variance	33.88	5.31	9.37	4.92	-43%	8%
CV	2.31	1.49	2.01	1.51	-26%	-1%
Maximum	62.86	32.14	32.81	30.15	-2%	7%
75%	2.00	1.79	1.25	1.69	43%	6%
50%	0.56	0.67	0.45	0.62	48%	8%
25%	0.19	0.29	0.17	0.27	72%	9%
Minimum	0.04	0.04	0.04	0.04	0%	-5%

Figure 52: Easting, Northing and Elevation Swath-Plots for Gold-Equivalent (AuEq_2012 ID2 x 2012 NN x AuEq_2018) in Atenea, Zone 1

13.12 Mineral Resource Classification

Block model quantities and grade estimates for the Invicta Gold Project were classified according to the CIM *Definition Standards for Mineral Resources and Mineral Reserves* (May 2014) by Ms. Camila Passos, PGeo (APGO#2431), an appropriate independent Qualified Person for the purpose of NI 43-101.

Mineral resource classification is typically a subjective concept. Industry best practices suggest that resource classification should consider the confidence in the geological continuity of the mineralized structures, the quality and quantity of exploration data supporting the estimates, and the geostatistical confidence in the tonnage and grade estimates. Appropriate classification criteria should aim at integrating these concepts to delineate regular areas at similar resource classification.

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 primarily by core drilling on sections spaced at variable intervals from 50 to 100 metres.

The classification parameters used in the Invicta Gold Project were defined by SRK (2012) in relation to the block-composite separation distance and continuity of mineralization. These classification criteria were intended to cover zones of reasonably continuous mineralization:

- **Measured:** Blocks estimated in the first estimation pass using a minimum of three boreholes, which are at maximum block-composite separation distance within an anisotropic search of 40 by 30 by 6 metres oriented parallel to the plane of the individual vein grade solids.
- **Indicated:** Blocks estimated in the second estimation pass using a minimum of two boreholes, which are at maximum block-composite separation distance within an isotropic search of 120 by 90 by 18 metres oriented parallel to the plane of the individual vein grade solids.
- **Inferred:** All blocks not classified as Measured or Indicated in the first two estimation passes and all blocks estimated in the third estimation run.

In this study SRK reviewed the SRK (2012) classification and concludes that the parameters used to define material classified as Indicated reflect estimates made with a moderate level of confidence, and all other material is estimated at a lower confidence level. SRK does not however classify any mineral resources in the current model in the Measured category. Two factors contributed to SRK's decision to do so:

1. Approximately seventy percent of the database consists of core boreholes drilled by Pangea from 1997 and 1998; during the site visit SRK noticed a lack of confidence in the intervals sampled on these boreholes.
2. Modelled wireframes show a general representation of the mineralization but this definition can be improved by updating the wireframes and thus increasing the confidence in the mineralization.

While individually these deficiencies are not significant, but collectively SRK believes that they undermine the confidence required for the Measured category. SRK is of the opinion that more core boreholes and closer spaced drilling, supported by underground mapping and channel sampling are required to support a higher classification. SRK recommend that these aspects can be addressed at the tie of the next mineral resource model for the Invicta Gold Project.

It cannot be assumed that all or any part of an Inferred mineral resource will be upgraded to an Indicated or Measured mineral resource as a result of continued exploration.

13.13 Mineral Resource Statement

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

> *"[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 economic extraction" requirement generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade considering extraction scenarios and processing recoveries. To meet this requirement, SRK considers that the Invicta Gold Project is amenable for underground extraction. The revised Mineral Resource Statement for the Invicta Gold Project is tabulated in Table 77.

Table 77: Mineral Resource Statement*, Invicta Gold Project, Huaura Province, Peru, SRK Consulting (Canada) Inc., March 01, 2018.

			Metal Grade						Contained Metal ('000)					
Zone	**Category**	**Tonnes ('000)**	**AuEq (g/t)**	**Au (g/t)**	**Ag (g/t)**	**Cu (%)**	**Pb (%)**	**Zn (%)**	**AuEq (oz)**	**Au (oz)**	**Ag (oz)**	**Cu (lb)**	**Pb (lb)**	**Zn (lb)**
Atenea - All Zones	Mea								-	-	-	-	-	-
	Ind	2,516	6.03	4.19	26.68	0.64	0.39	0.47	488	339	2,158	35,513	21,429	25,988
	Mea+Ind	**2,516**	**6.03**	**4.19**	**26.68**	**0.64**	**0.39**	**0.47**	**488**	**298**	**1,999**	**33,051**	**20,139**	**24,467**
	Inferred	535	5.40	5.09	4.77	0.06	0.11	0.16	93	88	82	673	1,315	1,878
Dany	Mea								-	-	-	-	-	-
	Ind	55	4.03	1.36	31.57	1.39	0.05	0.06	7	2	56	1,683	59	77
	Mea+Ind	**55**	**4.03**	**1.36**	**31.57**	**1.39**	**0.05**	**0.06**	**7**	**2**	**56**	**1,683**	**59**	**77**
	Inferred	4	4.50	1.48	38.57	1.56	0.03	0.06	1	0	5	132	3	5
Pucamina	Mea								-	-	-	-	-	-
	Ind	229	4.63	4.02	10.27	0.09	0.31	0.30	34	30	76	443	1,582	1,495
	Mea+Ind	**229**	**4.63**	**4.02**	**10.27**	**0.09**	**0.31**	**0.30**	**34**	**30**	**76**	**443**	**1,582**	**1,495**
	Inferred	21	3.76	3.37	5.32	0.16	0.04	0.08	3	2	4	75	18	35
Ydalias - All Zones (12)	Mea								-	-	-	-	-	-
	Ind	9	7.60	4.38	39.21	1.50	0.37	0.23	2	1	11	294	71	45
	Mea+Ind	**9**	**7.60**	**4.38**	**39.21**	**1.50**	**0.37**	**0.23**	**2**	**1**	**11**	**294**	**71**	**45**
	Inferred	0	8.00	3.91	51.60	2.00	0.27	0.18	0	0	0	13	2	1
Zone 4	Mea								-	-	-	-	-	-
	Ind	190	4.38	3.38	14.93	0.43	0.13	0.09	27	21	91	1,805	536	371
	Mea+Ind	**190**	**4.38**	**3.38**	**14.93**	**0.43**	**0.13**	**0.09**	**27**	**21**	**91**	**1,805**	**536**	**371**
	Inferred	16	3.92	1.72	20.79	1.17	0.08	0.05	2	1	11	417	28	20
Total All Zones	Mea								-	-	-	-	-	-
	Ind	2,999	5.78	4.07	24.81	0.60	0.36	0.42	558	392	2,392	39,739	23,678	27,977
	Mea+Ind	**2,999**	**5.78**	**4.07**	**24.81**	**0.60**	**0.36**	**0.42**	**558**	**392**	**2,392**	**39,739**	**23,678**	**27,977**
	Inferred	577	5.29	4.91	5.49	0.10	0.11	0.15	98	91	102	1,311	1,365	1,939

* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures are rounded to reflect the relative accuracy of the estimate. All composites have been capped where appropriate.

** Underground mineral resources are reported at a cut-off grade of 3.0 g/tonnes of gold-equivalent. Cut-off grades are based on a price of US$1,250 per ounce of gold, US$17.00 per ounce of silver, US$3.00 per pound of copper, US$1.05 per pound of lead and US$1.20 per pound of zinc. The gold-equivalent calculation assumes 85 percent recovery for gold, 80 percent recovery for silver, 82 percent recovery for copper and lead and 77 percent recovery for zinc.

13.14 Grade Sensitivity Analysis

The mineral resources of the Invicta Gold Project are sensitive to the selection of the reporting cut-off grade. To illustrate this sensitivity, the global model quantities and grade are presented in Table 78 at different cut-off grades. The reader is cautioned that the figures presented in this table should not be misconstrued with a Mineral Resource Statement. The figure is only presented to show the sensitivity of the block model estimates to the selection of cut-off grade.

Table 78: Global Block Model Quantities and Grade Estimates*, Invicta Gold Project at Various Cut-off Grades

Cut-off Grade (%)	Indicated			Inferred		
	Quantity (000't)	Grade AuEq (g/t)	Au Metal (000' oz)	Quantity (000't)	Grade AuEq (g/t)	Au Metal (000' oz)
0.0	18,604	1.80	1,078	12,632	0.82	333
0.5	14,497	2.23	1,037	5,009	1.74	279
1.0	9,637	2.98	923	2,836	2.52	230
1.5	6,679	3.76	807	1,882	3.18	192
2.0	4,967	4.46	712	1,411	3.67	166
2.5	3,796	5.14	628	928	4.37	130
3.0	2,999	5.78	558	577	5.29	98
3.5	2,451	6.35	501	526	5.49	93
4.0	2,024	6.90	449	473	5.69	86
4.5	1,674	7.46	402	366	6.09	72
5.0	1,405	7.98	361	179	7.44	43
5.5	1,179	8.51	322	168	7.58	41
6.0	1,007	8.98	291	157	7.71	39
6.5	860	9.45	261	146	7.82	37
7.0	729	9.93	233	133	7.92	34
7.5	618	10.41	207	71	8.39	19
8.0	518	10.93	182	64	8.46	17
8.5	429	11.48	158	1	10.67	0
9.0	349	12.11	136	1	11.20	0
9.5	284	12.77	117	1	12.36	0
10.0	231	13.46	100	1	12.46	0

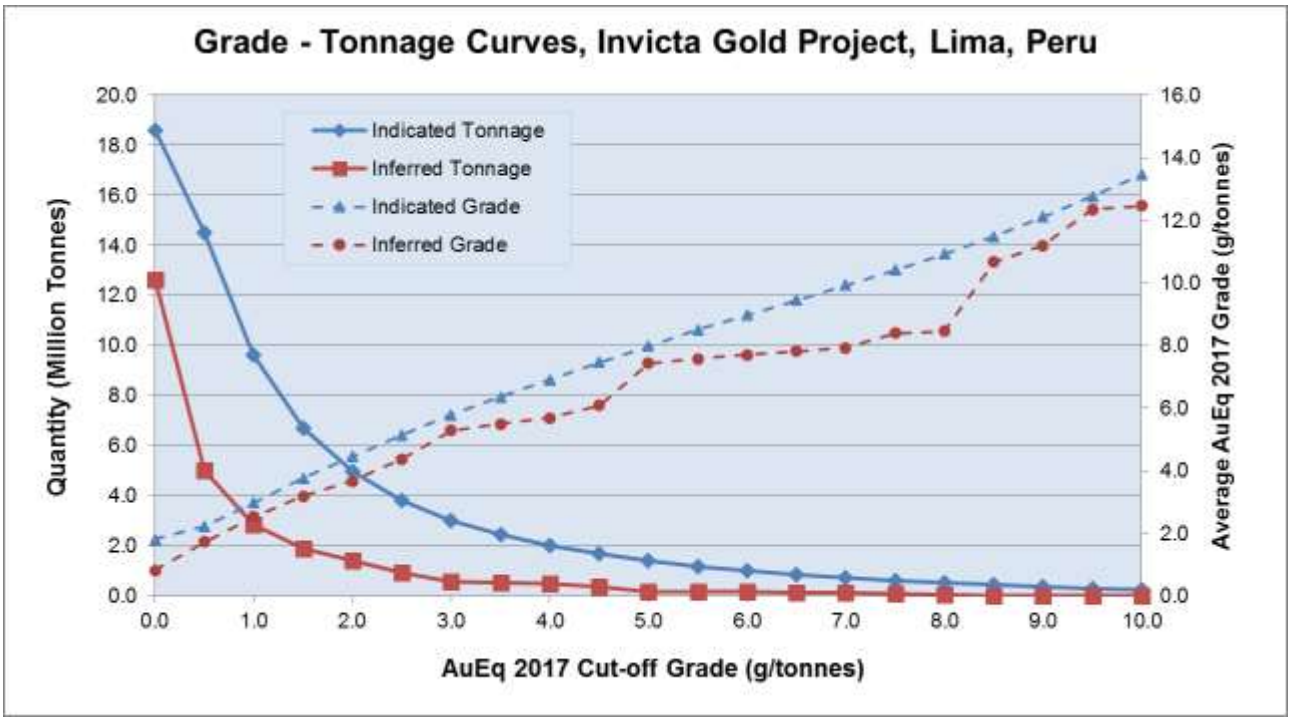


Figure 53: Grade Tonnage Curves for the Invicta Gold Project

13.15 Previous Mineral Resource Estimates

A comparison between the Mineral Resource Statement from SRK (2012) and this study is shown in Table 79. Although no additional data has been considered for the revised Mineral Resource Statement and the SRK (2012) model has been audited and applied in the current PEA, there are changes related to revised metal prices and costs. The changes in the metal prices and the increase in the reporting cut-off gold-equivalent grade (from 1.3 g/t gold to 3.0 g/t gold) have resulted in an overall decrease of tonnes and increase of grade resulting in a decrease in the reported contained gold.

Table 79: Comparison between April 6, 2012 and March 01, 2018 Mineral Resource Statements

Zone	Category	Tonnes ('000)	Metal Grade AuEq (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Contained Metal AuEq (oz)	Au (oz)	Ag (oz)	Cu (lb)	Pb (lb)	Zn (lb)
SRK US (2012) cutoff = 1.3 AuEq														
Atenea - All Zones	Mea	131	6.65	4.29	31.71	0.73	0.39	0.38	28	18	133	2,119	1,110	1,105
	Ind	5,696	3.83	2.34	17.99	0.45	0.28	0.34	701	429	3,294	56,848	35,251	43,094
	Mea+Ind	**5,827**	**3.89**	**2.39**	**18.29**	**0.46**	**0.28**	**0.34**	**729**	**447**	**3,427**	**58,967**	**36,361**	**44,198**
	Inferred	1,533	3.56	2.35	10.93	0.46	0.13	0.19	175	116	539	15,574	4,495	6,373
Dany	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	868	1.97	0.54	13.45	0.58	0.11	0.09	55	15	375	11,151	2,153	1,723
	Mea+Ind	**868**	**1.97**	**0.54**	**13.45**	**0.58**	**0.11**	**0.09**	**55**	**15**	**375**	**11,099**	**2,153**	**1,723**
	Inferred	668	1.72	0.14	12.66	0.53	0.58	0.16	37	3	272	7,876	8,496	2,387
Pucamina	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	1,064	2.53	1.97	6.98	0.10	0.23	0.28	87	67	239	2,277	5,315	6,614
	Mea+Ind	**1,064**	**2.53**	**1.97**	**6.98**	**0.10**	**0.23**	**0.28**	**87**	**67**	**239**	**2,277**	**5,315**	**6,614**
	Inferred	202	1.96	1.38	8.68	0.14	0.14	0.18	13	9	56	625	605	781
Ydalias - All Zones (12)	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	12	7.16	3.63	34.89	1.43	0.29	0.19	3	1	13	379	77	51
	Mea+Ind	**12**	**7.16**	**3.63**	**34.89**	**1.43**	**0.29**	**0.19**	**3**	**1**	**13**	**379**	**77**	**51**
	Inferred	35	2.66	0.41	58.19	0.21	1.25	0.04	3	0	65	159	951	27
Zone 4	Mea	-	0.00	0.00	0.00	0.00	0.00	0.00	0	0	-	-	-	-
	Ind	872	3.31	2.15	12.94	0.44	0.12	0.10	93	60	363	8,393	2,375	2,000
	Mea+Ind	**872**	**3.31**	**2.15**	**12.94**	**0.44**	**0.12**	**0.10**	**93**	**60**	**363**	**8,393**	**2,375**	**2,000**
	Inferred	95	2.74	0.87	15.37	0.78	0.16	0.14	8	3	47	1,645	344	285
Total All Zones	Mea	131	6.65	4.29	31.71	0.73	0.39	0.38	28	18	134	2,119	1,110	1,105
	Ind	8,513	3.43	2.09	15.65	0.42	0.24	0.28	939	573	4,283	79,048	45,171	53,482
	Mea+Ind	**8,644**	**3.48**	**2.13**	**15.90**	**0.43**	**0.24**	**0.29**	**967**	**591**	**4,419**	**81,167**	**46,281**	**54,587**
	Inferred	2,534	2.90	1.61	12.02	0.46	0.27	0.18	236	131	979	25,879	14,891	9,854
SRK (2018) cutoff = 3.0 AuEq														
Atenea - All Zones	Mea								-	-	-	-	-	-
	Ind	2,516	6.03	4.19	26.68	0.64	0.39	0.47	488	339	2,158	35,513	21,429	25,988
	Mea+Ind	**2,516**	**6.03**	**4.19**	**26.68**	**0.64**	**0.39**	**0.47**	**488**	**298**	**1,999**	**33,051**	**20,139**	**24,467**
	Inferred	535	5.40	5.09	4.77	0.06	0.11	0.16	93	88	82	673	1,315	1,878
Dany	Mea								-	-	-	-	-	-
	Ind	55	4.03	1.36	31.57	1.39	0.05	0.06	7	2	56	1,683	59	77
	Mea+Ind	**55**	**4.03**	**1.36**	**31.57**	**1.39**	**0.05**	**0.06**	**7**	**2**	**56**	**1,683**	**59**	**77**
	Inferred	4	4.50	1.48	38.57	1.56	0.03	0.06	1	0	5	132	3	5
Pucamina	Mea								-	-	-	-	-	-
	Ind	229	4.63	4.02	10.27	0.09	0.31	0.30	34	30	76	443	1,582	1,495
	Mea+Ind	**229**	**4.63**	**4.02**	**10.27**	**0.09**	**0.31**	**0.30**	**34**	**30**	**76**	**443**	**1,582**	**1,495**
	Inferred	21	3.76	3.37	5.32	0.16	0.04	0.08	3	2	4	75	18	35
Ydalias - All Zones (12)	Mea								-	-	-	-	-	-
	Ind	9	7.60	4.38	39.21	1.50	0.37	0.23	2	1	11	294	71	45
	Mea+Ind	**9**	**7.60**	**4.38**	**39.21**	**1.50**	**0.37**	**0.23**	**2**	**1**	**11**	**294**	**71**	**45**
	Inferred	0	8.00	3.91	51.60	2.00	0.27	0.18	0	0	0	13	2	1
Zone 4	Mea								-	-	-	-	-	-
	Ind	190	4.38	3.38	14.93	0.43	0.13	0.09	27	21	91	1,805	536	371
	Mea+Ind	**190**	**4.38**	**3.38**	**14.93**	**0.43**	**0.13**	**0.09**	**27**	**21**	**91**	**1,805**	**536**	**371**
	Inferred	16	3.92	1.72	20.79	1.17	0.08	0.05	2	1	11	417	28	20
Total All Zones	Mea								-	-	-	-	-	-
	Ind	2,999	5.78	4.07	24.81	0.60	0.36	0.42	558	392	2,392	39,739	23,678	27,977
	Mea+Ind	**2,999**	**5.78**	**4.07**	**24.81**	**0.60**	**0.36**	**0.42**	**558**	**352**	**2,233**	**37,277**	**22,388**	**26,456**
	Inferred	577	5.29	4.91	5.49	0.10	0.11	0.15	98	91	102	1,311	1,365	1,939

14 Mineral Reserve Estimates

The Invicta Gold Project does not contain mineral reserves.

15 Mining Methods

This section describes the conceptual underground mining plan and mining extraction methods for the proposed Invicta mine. This section is a compilation and modification of internal and unpublished conceptual work previously initiated on the Invicta deposit by SVS Ingenieros S.A.C. (SVS) in 2014 and expanded in 2015. The compilation was reviewed and supervised by Mr. Gary M Poxleitner PEng (PEO#100059860) of SRK, the Qualified Person taking professional responsibility and was supported by Mr. Antonio Samaniego of SRK (Peru). In compliance with NI 43-101 guidelines, Mr. Poxleitner visited the site on April 3 to 4, 2018.

15.1 Cautionary Statement

This preliminary economic assessment is not adequate to confirm the economics of the study. A preliminary-feasibility study, or feasibility study, as defined in Canadian Securities Administrators NI 43-101, containing mineral reserve estimates is required for this purpose.

Readers are cautioned that the projected mining method, potential production profile and plan and mine plan referred to in this preliminary economic assessment are conceptual in nature. There is no certainty that an economic outcome will be realized or that a production decision will be made. A mine production decision that is made without a feasibility study carries additional potential risks which include, but are not limited to, the inclusion of Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Mine design and mining schedules, metallurgical flow sheets and process plant designs may require additional detailed work and economic analysis and internal studies to ensure satisfactory operational conditions and decisions regarding future targeted production.

This preliminary economic assessment is preliminary in nature and includes Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the Inferred mineral resources will be converted to the Measured and Indicated categories, that the Measured and Indicated mineral resources will be converted to the proven or probable mineral reserves and there is no certainty that this preliminary economic assessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability; the estimate of mineral resources in this report may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

15.2 Introduction

The PEA potential minable material was estimated at 669,813 tonnes averaging a gold-equivalent grade of 8.58 g/t. The estimate considers 11 percent external mining dilution at 0.0 g/t grade and a mine recovery of 81 percent. Total contained payable metal was estimated at 145,765 ounces of gold-equivalent. The grade of all contained metals and mine production is summarized in Table 80.

The PEA considers only a small portion of the total mineral resource adjacent to the existing infrastructure at the Invicta Gold Project. The operating plan is based on the underground extraction from the Atenea vein close to the existing adit at the level at 3,400 metres below surface (3400 Level), utilizing a sub-level long hole open stoping mining method, with waste rock as backfill

where possible. Production as outlined by the PEA considers an average peak steady state rate of approximately 355 tonnes per day over a 6-year life of mine commencing in 2018. Production material will be trucked to surface and transported to an off-site processing facility.

Table 80: Summary of PEA Production and Grades

		Total
Annual Mine Production	tonnes	669,813
Average Daily Production	tpd	355
Au-Eq Grade	g/t	8.58
Au Grade	g/t	5.54
Ag Grade	g/t	44.34
Cu Grade	%	0.87
Pb Grade	%	0.76
Zn Grade	%	1.02
Dilution	%	11
Mine Recovery	%	81
Au-Eq Produced Ounces	oz	184,708
Au-Eq Payable Ounces	oz	145,765

15.3 Potentially Mineable Resource

There are four primary zones defined in the Invicta Gold Project mineral resources: Atenea, Pucamina, Zone 4 and Dany. The focus of this PEA is the Atenea vein only as it contains both indicated resources as well as some inferred resources. It is also understood to be of a higher-grade mineralization than that of the other veins. The combined grade and quantity of mineralization is summarized in the grade tonnage curve in Figure 54.

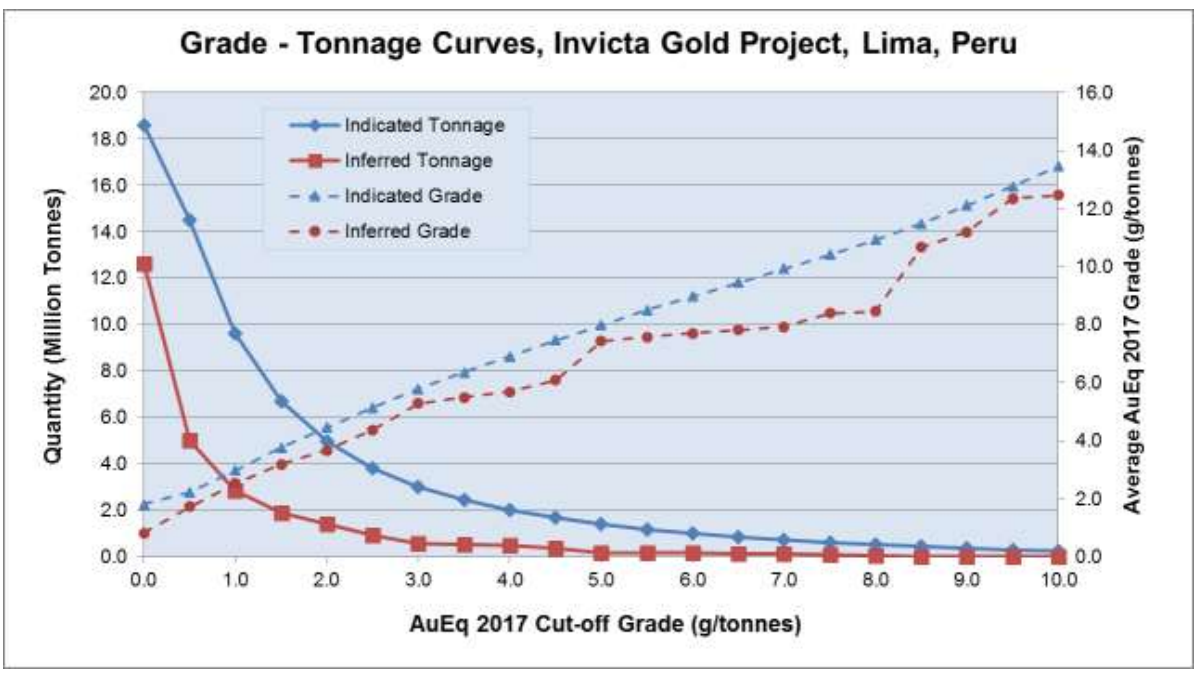


Figure 54: Grade and Tonnage Curves for Invicta Gold Project

The total Indicated mineral resources are 2.99 million tonnes at a 5.78 g/t gold-equivalent. The total Inferred mineral resources are 0.577 million tonnes at a 5.29 g/t gold-equivalent, as shown in Table 81.

Figure 55 below illustrates the Atenea vein with diamond drillholes and existing development from the 3400 Level haulage and access drift.

A cut-off grade (COG) analysis was completed and applied on the Atenea vein resources. The mining cost inputs for the COG calculation was based on a study carried out by SVS (2014) and considers Peruvian labour rates. The costs include mine operating (i.e. drilling, blasting, load-haul-dump loaders [LHDs], backfill, transportation), process costs and general and administrative. The assumptions and parameters used in the cut-off calculation are shown in Table 82.

Table 81: Condensed Mineral Resource Statement*, Invicta Gold Project, Huaura Province, Peru, SRK Consulting (Peru) S.A., February 28, 2018

Zone	Category	Tonnes ('000)	Au-Eq (g/t)	Au-Eq ('000 oz)
Atenea	Measured			-
	Indicated	2,999	5.78	558
	M+I	**2,999**	**5.78**	**558**
	Inferred	577	5.29	98

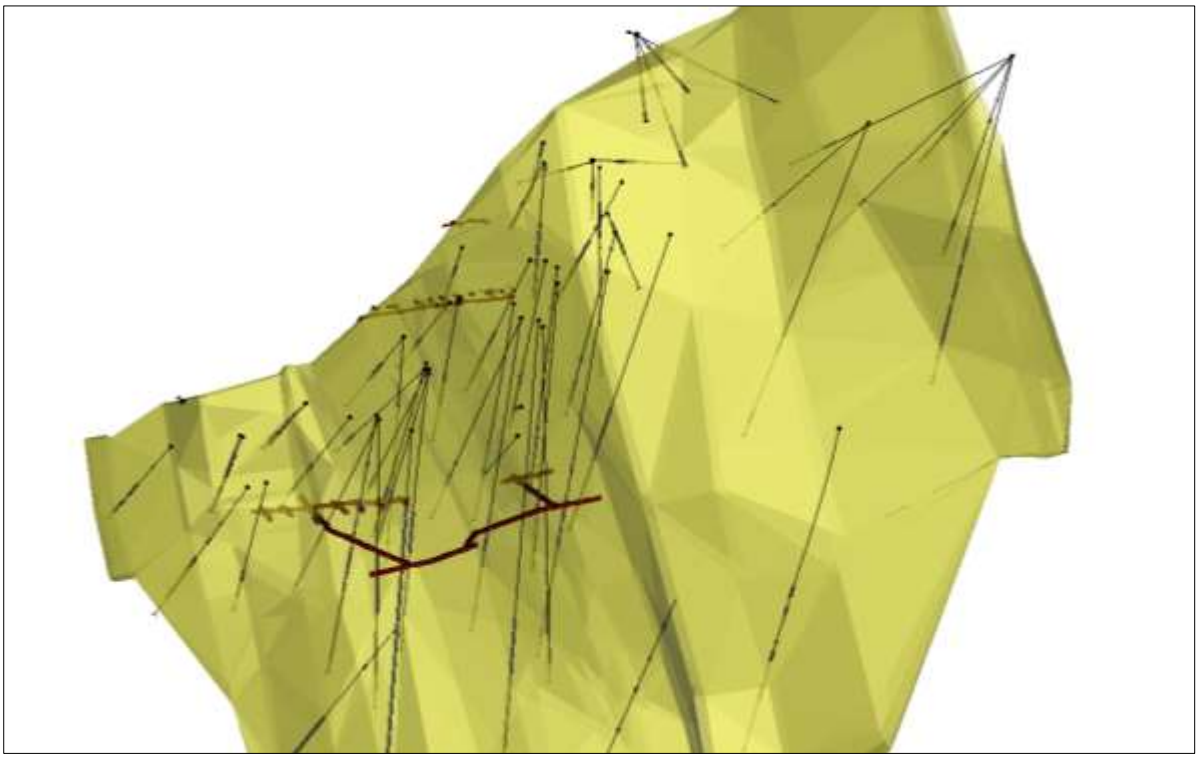


Figure 55: Atenea Vein, Showing Informing Drill Intersections Looking North

Table 82: Parameters and Assumptions for the Cut-off Grade Calculation

Parameter	Unit	Contractor
Gold Price	US$/oz	1,250
Production rate	t/d	350
Mining	US$/t	27.0
Process	US$/t	38.0
G&A	US$/t	24.0
Trucking to mill	US$/t	40.0
Sub Total	**US$/t**	**129.0**
Contingency (15%)	US$/t	13.0
Total NSR	**US$/t**	**142.0**
Estímate Mine Recovery	%	80%
Estimated Dilution	%	10%
Cut-off Grade	**g/t**	**4.00**

The underground mine design process developed by SVS (2014) resulted in a mineable resource originally of 679,773 tonnes (diluted) at an equivalent cut off gold grade of 4.0 g/t with a net smelter return (NSR) cut-off of US$ 142 per tonne. Before process recovery, the underground design contained 193,000 gold-equivalent ounces.

In this study, SRK reviewed and slightly modified the mining resources by applying an 81 percent mining recovery (instead of 80 percent) to the designed stopes and increased slightly the unplanned waste dilution from 10 percent to 11 percent at zero grade. This resulted in 184,708 gold-equivalent ounces at a 4.0 g/t cut-off with an estimated 669,813 tonnes produced.

Table 83 tabulates the initial potential mineable quanitities and grades at a 4 g/t gold-equivalent cut-off.

Table 83: Potentially Mineable Quantities and Grades

Tonnage (t)	Au Equiv. (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
669,813	8.58	5.54	44.20	0.87	0.76	1.02

15.4 Hydrology and Hydrogeology

A hydrological study for climatic characterization and water balance was prepared and presented in the mine plan for the Invicta Gold Project, prepared by SVS in January 2015.

The hydrology analysis was performed on the main basin in the area called Huaura and on three secondary basins named Paran, Pishuro y Picunche with altitudes between 1,000 and 4,200 metres above sea level (masl). The meteorological information was gathered from the network grid of the National Weather Service (SENAMHI) from the weather stations such as Picoy (2,950 masl); Paccho (3,250 masl); Oyon (3,641masl) and Andajes (3,950 masl). The period for which data was available was from 1964 to 2009.

Three scenarios of hydrological cases were considered as well as extreme events with return periods of 50, 100, 200 and 500 years. The hydrological modelling system HEC-HMS 3.4 was used to obtain design flows for channel size design for surface infrastructure.

The hydrogeological characterization was performed based on the results of testing and sampling for 26 geotechnical core boreholes. According to lithology information, three rock types with different permeability values are present in the area, controlled by geological structures (faults and narrow veins) of 0.30 metre width on average, which increases the hydraulic conductivity. Typical results of permeability characteristics are: for the andesitic tuff 1.4E-08 metres per second; for diorite 2.5E-08 metres per second and for andesitic lava 1.9E-07 metres per second.

In general, for this type of permeability it is expected that the underground water presence is minor and dewatering the mine is not of any significant concern.

15.5 Geotechnical

15.5.1 Geotechnical Characterization

The geometric characteristics of the Atenea vein (dip, width and length) of which the mine plan is based, was obtained by modelling with Datamine Studio 3 software.

Discontinuity structural data was obtained from the geomechanical mapping carried out at 3400 Level, by SVS in 2014. The structural data of 21 geotechnical stations were plotted on a stereographic projection and noted that there are 3 main sets of discontinuities, as shown in Figure 56. The Atenea vein has a strike ranging from 55 to 76 degrees of azimuth and a 65 degrees southeast dip.

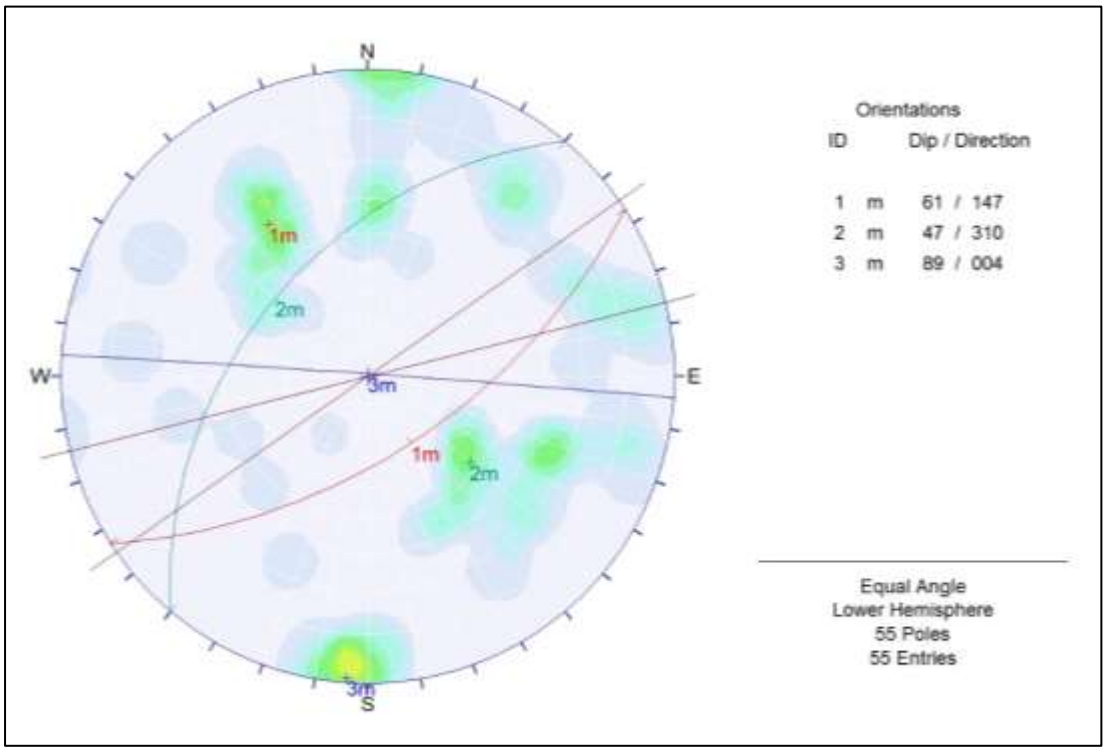


Figure 56: Stereographic Projection of the Mapped Structures at 3400 Level

Determination of the geomechanical behaviour of the host rock and the mineralized material was estimated using available data from geological, exploration and additional geotechnical drilling, as well as from mapping of the drifts at 3400 Level. The data was completed with the results of the rock

mechanics laboratory tests, which helped to obtain representative geotechnical parameters for the design of the stope and development for the Atenea vein. Table 84 and Figure 57 show the geotechnical zoning carried out for 3400 Level of the Atenea vein, where domains of RMR and Q values are used.

Table 84: Geomechanical Domains in Invicta Gold Project

Geomechanical Domain	RMR (89)	Q
I	80-100	>55.0
II	60-80	5.92 - 55.0
III	40-60	0.64 - 5.92
IV	20-40	0.07 - 0.64
V	0-20	<0.07

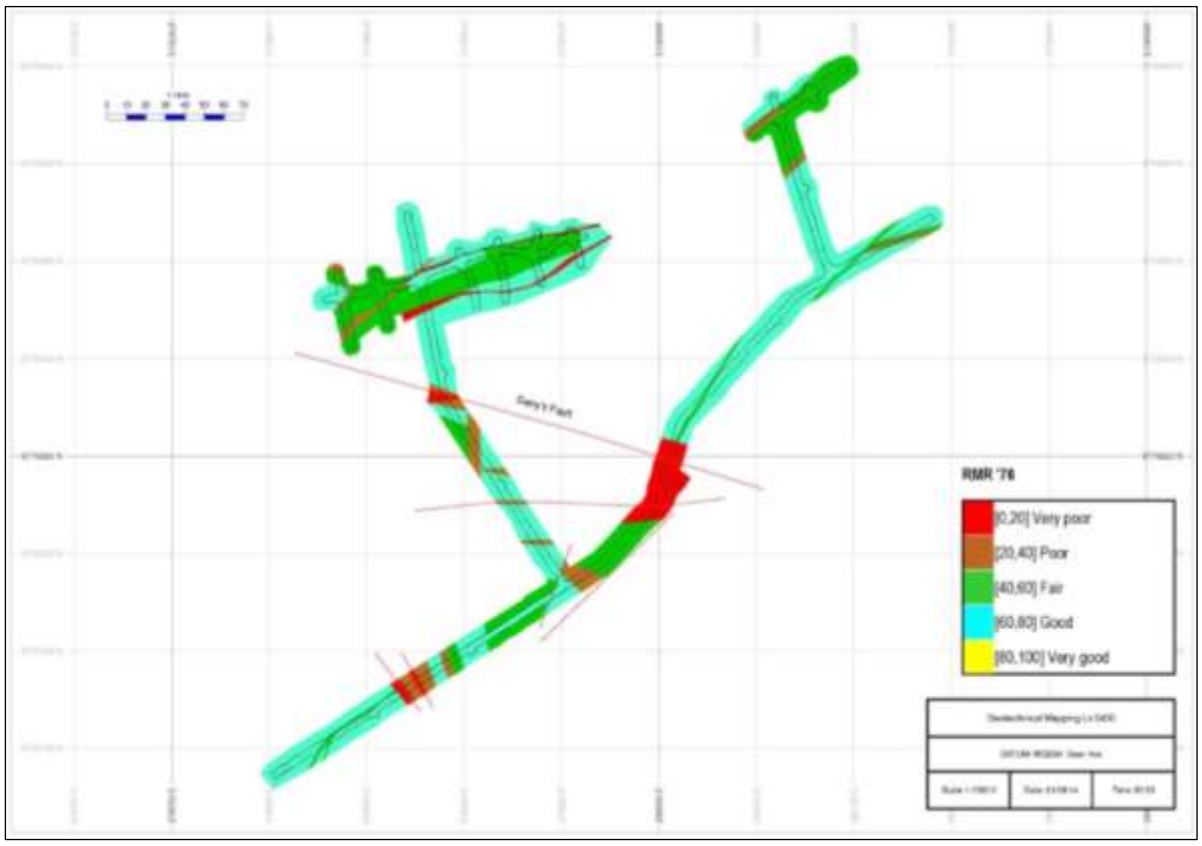


Figure 57: Geomechanical Mapping of the 3400 Level

15.5.2 Geotechnical Stope Design

The sublevel long hole stoping mining method with unconsolidated backfill was selected for this deposit. The recommended stope dimensions were based on standard empirical design methods.

Considering the hanging wall average of RMR = 60; Q´= 3.39; A=1; B=0.27 and C=5.46; which gives a N´=5.01, as shown in Figure 58. The estimation of the stope length was also estimated using empirical methods for the overbreak of the wall rock. In this case overbreaks used to obtain the

length of the stopes range from 0.5 metres, for narrow veins, up to 1.5 metres for wider veins. The stope height was stablished at 15 metres.

Figure 59 shows the determination of ranges of hydraulic ratios varies from 4.5, 5.1 and 6.4, which correspond to the equivalent linear overbreak/slough (ELOS) assumed for the stope hanging walls.

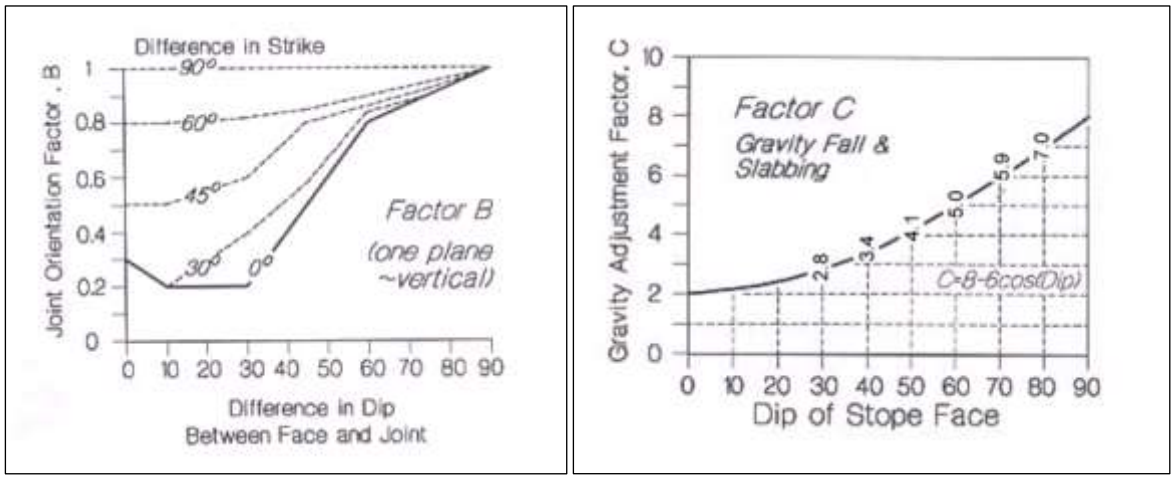


Figure 58: Determination of Factors B and for the Empirical Design Method

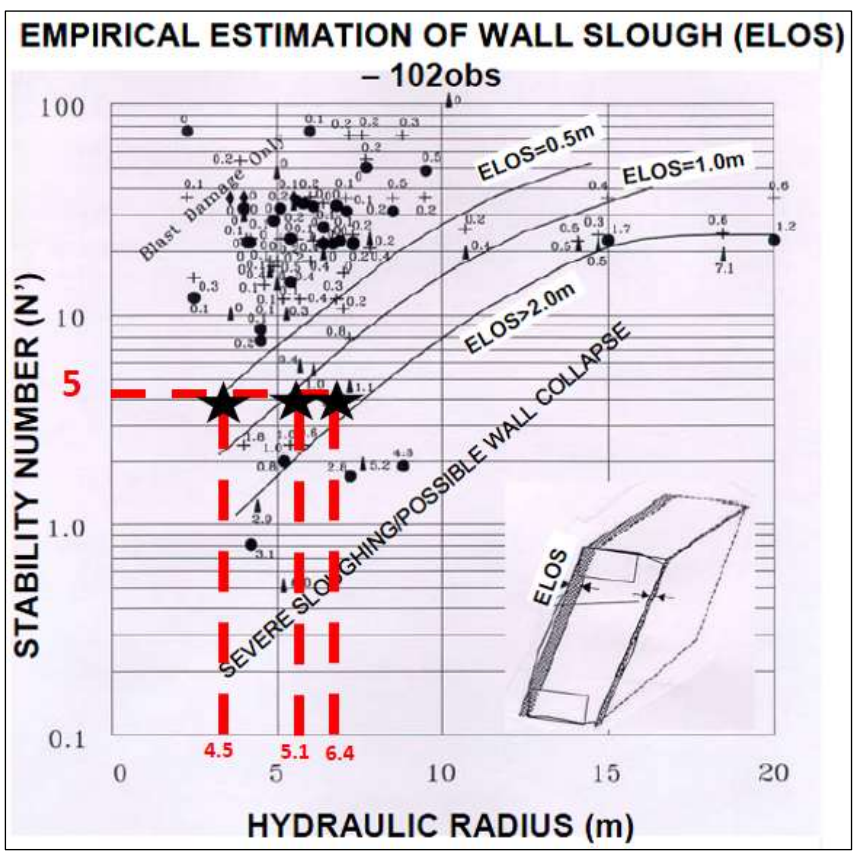


Figure 59: Determination of Stope Length for a Range of ELOS for Range of Hydraulic Radius

The mineralized material rock mass (hanging walls and ore) have fair to good RMR ratings as shown in Table 85. For the range of hydraulic ratios, the corresponding stope lengths are 19, 26 and 52 metres. For design purposes in this case a stope length was assumed to be 40 metres. Rib pillars would separate each stope and are to be a minimum of 4 to 6 metres wide. Further study is required to complete a more detail mapping and rock characterization which will allow for further refinement of recommended stope lengths and rib pillars width according to the rock quality encountered when the sublevels are being excavated.

Table 85: Design Parameters of the Atenea Vein

Vein width (m)	6.11 – 14.00
Vein dip direction (°)	65 SE
Ore RMR	40 – 60
Hangingwall RMR	60
Foot wall RMR	70

15.6 Mining Method

The geotechnical characterization of the mineralized deposit, the wall-rock competency and the geometric shape lends itself to a sublevel long hole stoping mining method with unconsolidated waste rock backfill. This method typically responds well for obtaining a high extraction ratio, controlled dilution and reasonable to low operating cost.

Longhole drilling will be undertaken by down-the-hole hammer drills with an on-board compressor. Longhole stopes will be blasted utilizing ANFO with standard blasting techniques.

The blasted material will be mucked from the 3400-extraction level utilizing 4 cubic yard LHDs (fitted for remote use). The ore then will be dumped directly into 30 tonne haulage trucks. The trucks will then transport the material from the adit to an off-site mill processing facility.

The lower portion of the stopes will be 30 m high (sill to sill) and mined from the 3400 Level with up-hole drilling and from 3430 Level with down-hole drilling. as shown in Figure 60. All other levels, from 3445 to 3505 Level are 15 metres in height and will be down-hole drilled.

The total height of the stopes will be estimated at 130 metres, with a length of 40 metres, and a width of 4 to 14 metres. All stopes will be separated by rib pillars and filled with available development waste rock. The availability of backfill may not always be ready within the mine cycle therefore these designed rib pillars in-between stopes will allow for further support if the waste rock is not provided on time as shown in Figure 61.

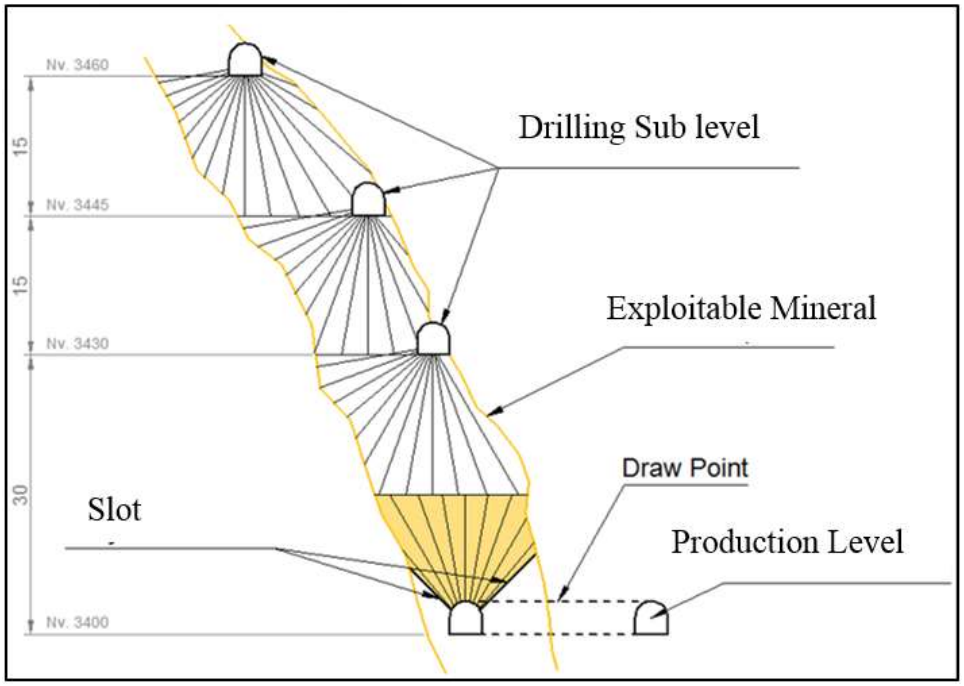


Figure 60: Sectional View of the Mining Method of Sublevel Stoping

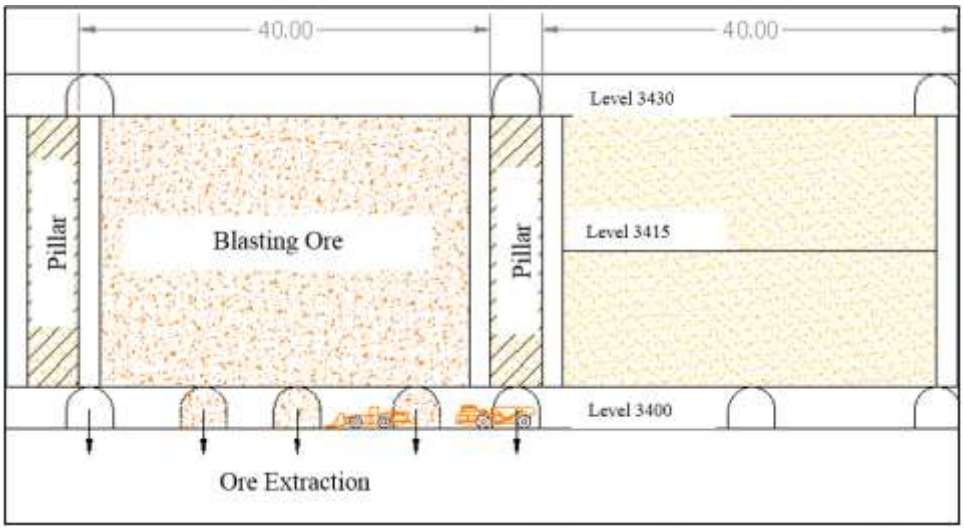


Figure 61: Longitudinal View of the Method of Exploiting by Sublevel Stoping

15.7 Backfill

A total estimate of only 59 kilotonnes of waste rock will be produced through the underground development process. The total quantity of fill required for the life of the operation would be 534 kilotonnes. The difference of 475 kilotonnes will be obtained partially from a nearby quarry and other potential locations yet to be sourced. For this reason, the mining method contemplates leaving rib pillars between stopes.

During the first year of operation most of the development waste rock will be stockpiled on surface. Once stoping operations commence, the waste stockpile will be reclaimed as backfill. Trucks back-hauling backfill material to the stopes will dump the fill in muck bays, from there it will be transported to and dumped into the stopes using remote control LHDs.

15.8 Mine Extraction

The deposit extends vertically over 100 metres depth, from the top 3505 Level down to 3400 Level. The mine plan will consist of a total of 7 levels as shown in Figure 62.

The main access from surface to the deposit is located on 3400 Level via a surface portal driven at 4 metres high by 5 metres wide. The 3400 Level will also be the main extraction level. Access to the orebody runs from the 3400 Level access drift via 2 crosscuts located in the hanging wall running to the footwall. These cross cuts will access the drawpoints which will be excavated every 10 to 15 metres apart. See Figure 63 and Figure 64.

In the PEA mine plan a secondary ramp from surface will be developed to access the multiple drilling horizon sublevels, which are to be spaced 15 metres apart.

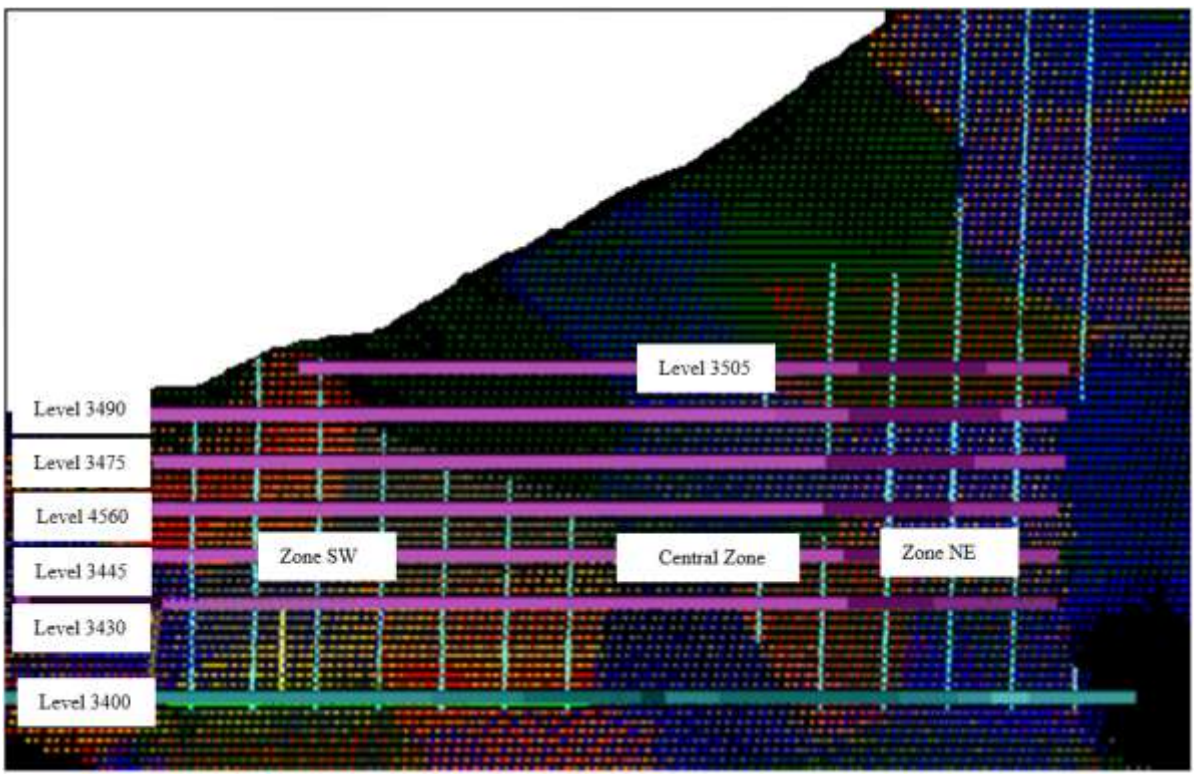


Figure 62: Longitudinal Section of the Atenea Vein Showing Southwest, Central and Northeast Zones

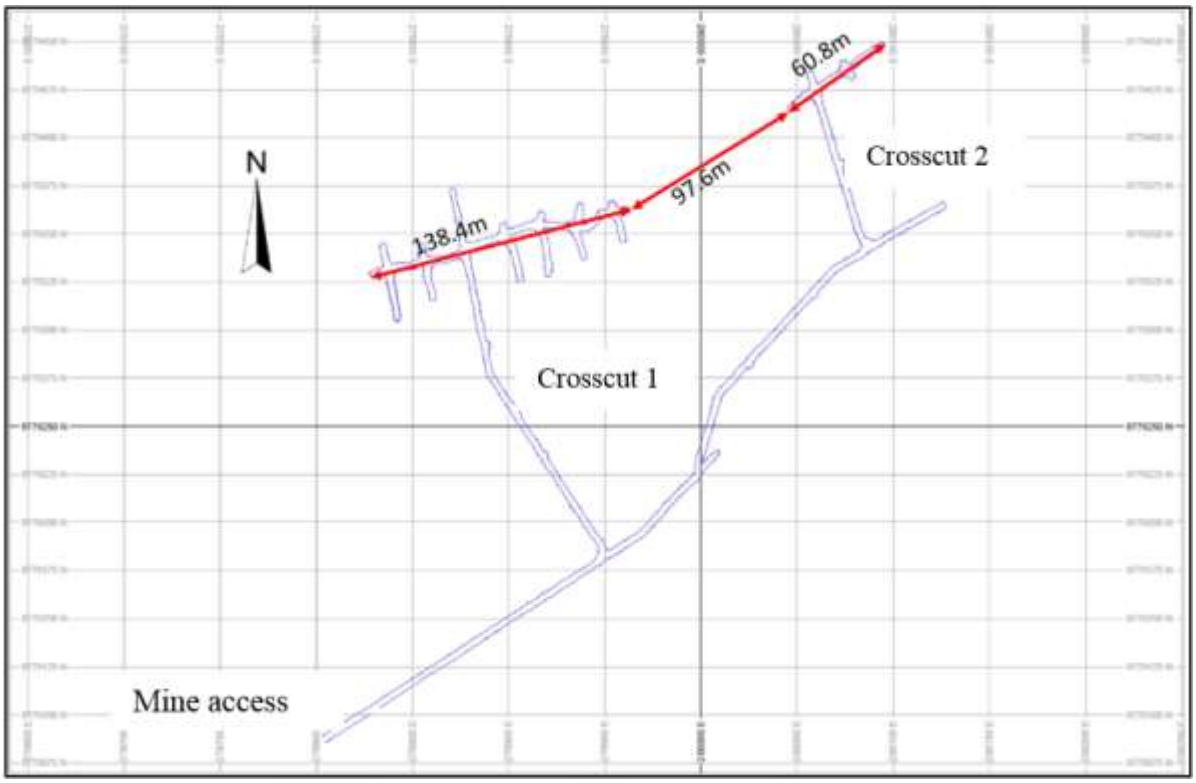


Figure 63: 3400 Level Main Access to the Deposit

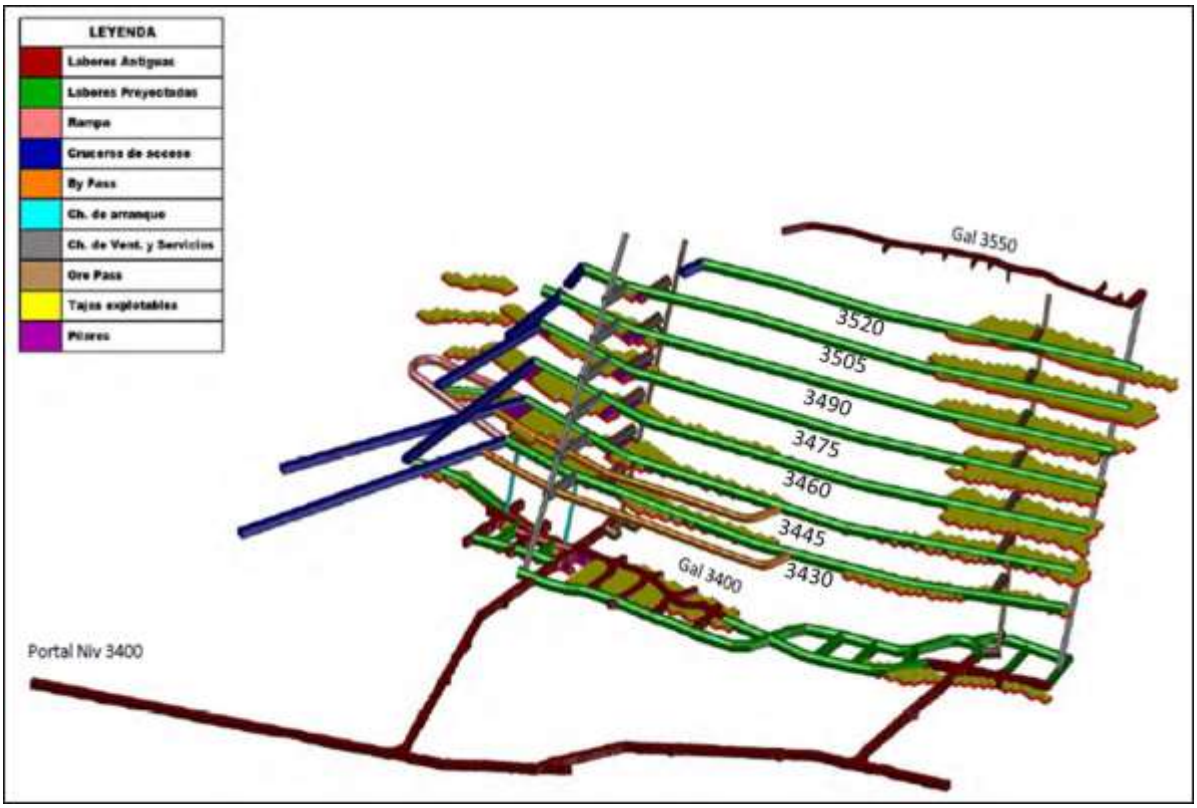


Figure 64: Oblique Section Outlining the Conceptual Mine Design for the Invicta Gold Project

15.9 Mining Development

Mechanized development mining will be undertaken using a two-boom jumbo drill. Most of the development occurs in the first 3 years and reduces significantly in the latter years. The development metres planned for the life of mine are summarized in Table 86.

Development mucking will be undertaken by three cubic yard LHDs with direct dumping into 30-tonne trucks. Development waste rock will then be hauled to a stockpile on surface. When stoping commences, the waste material will then be transferred directly to stopes for backfilling.

Ground for areas with RMR <50 will require artificial support with an average of 18 bolts per 8-foot round or 2 bolts per foot should be anticipated. Additional geotechnical studies will be carried out in the future to refine ground support requirements. Drilling for ground support will be undertaken by the development jumbo or using hand held drills from a scissor lifts.

Table 86: Invicta Mine Development

	Size	Total	2018	2019	2020	2021	2022
Declines	3.5 x 3.5		148	450	0		
By Pass	3.5 x 3.5	598	219	154	0		
Camera Prep	3.5 x 3.5	373	72	117	86	46	40
Ventilation Raise and Slot	1.5 x 2.4	361	411	132	130	85	121
Access Drift	3.0 x 3.0	895	208	332	79	70	84
Drawpoint	3.5 x 3.5	789	161	68			
Gallery	3.5 x 3.5	229	571	845	581	275	255
Access of OP	2.0 x 1.5	2527	0	45	28	18	18
Orepass	1.5 x 2.4	109	80	82	33	33	33
Orepass Pocket	2.0 x 2.0	261	0	20			
Total		**6,192**	**1,870**	**2,245**	**937**	**527**	**551**

15.10 Production Schedule

Production will average 355 tonnes per day. The 6-year mine life commencing in 2018 is expected to produce a total of 669,813 tonnes of mineralized material inclusive of a 11 percent external dilution with an 81 percent mine recovery (Table 87).

Table 87: Summary of PEA Production Schedule and Grades

		Total	2018	2019	2020	2021	2022	2023
Annual Production		669,813	89,905	124,510	124,949	124,368	123,790	82,291
Average Daily Production		319	257	356	357	355	354	235
Commodity Feed Grade								
Au Equivalent	g/t	8.58	8.55	8.47	9.20	8.62	7.45	9.45
Au Grade	g/t	5.54	5.70	5.35	5.20	5.58	5.09	6.79
Ag Grade	g/t	44.34	39.84	44.20	57.46	51.86	41.83	21.95
Cu Grade	%	0.87	0.71	1.01	1.25	0.98	0.70	0.30
Pb Grade	%	0.76	0.89	0.68	0.85	0.49	0.47	1.44
Zn Grade	%	1.02	1.09	0.86	1.23	0.84	0.67	1.68
Au Equivalent (Produced)	oz	184,708	24,723	33,896	36,963	34,484	29,644	24,997
Au Equivalent (Payable)	oz	145,765	19,487	26,822	29,057	27,315	23,513	19,572

15.11 Ventilation

Fresh air will enter through the 3400 Level from surface and then through subsequent internal service raises, open stopes and ramps and later exhaust through a ventilation raise with surface mounted fans. This will be a negative pressure ventilation system. It is estimated that a total fan power of 250 kilowatts will provide the 84 cubic metres per second required to ventilate the mine. Further ventilation work will be required at the next level of study.

15.12 Mine Dewatering

Dewatering facilities will be installed to pump ground water and mine service water to a settling sump underground. From here the water will then be pumped to surface relatively free of solids. Dewatering lines will be advanced with the main ramp or access through drives excavated from surface. Mine dewatering mainly will be for drilling and mine service water sources as the underground water from the rock mass is expected to be minimal.

15.13 Mine Electrical Supply

Table 88 presents indicative underground electrical requirements for the mine based on a sustained peak production rate (355 tonnes per day [tpd])

Table 88: Electrical Power Estimate

Item	Units	Qty	Unit Power (kW)	Connected Power (kW)	Load Factor (%)	Load (kW)	Utilization Factor (%)	Energy / month (kW-h/ month)
Jumbo (2 boom)	ea.	1	74	74	80	59.2	60	25,574
LH Production Drill	ea.	1	55	55	80	44.0	60	19,008
Main Fan	ea.	2	125	250	80	200.0	100	144,000
Aux Fan	ea.	6	30	180	70	126.0	100	90,720
Shop	ea.	1	25	25	50	12.5	90	8,100
Lighting	ea.	1	25	25	90	22.5	100	16,200
Diamond Drill	ea.	2	56	112	90	100.8	70	50,803
Sub Total				**721**		**565.0**		**354,406**
Misc. allowance 20%								70,881
Total								**425,287**

15.14 Health and Safety

Permanent or portable Refuge Stations will be located within a maximum fifteen-minute walking distance from all working areas. All underground personnel will be issued with portable self-rescuer units. A tag in/ tag out board will be used at the main underground portal to account for all persons entering or leaving the mine. Carbon monoxide and oxygen sensors will be located at strategic positions underground. A stench gas emergency warning system is planned to be installed in the mines intake ventilation system. The system can be activated to warn underground personnel of a fire or emergency whereupon all personnel will go to refuge chambers.

15.15 Labour and Equipment

Table 89 shows the underground personnel requirements. The 90 person estimate is based on contract mining on a 12-hour shift, 2-shift per day, 7-day per week operating schedule.

Personnel shown in the Table 90 below tabulates the owner's underground 64 person team during the life of mine.

All mobile equipment is supplied by the mine contractor. The proposed planned development and production mobile equipment required to mine this deposit is summarized in Table 91.

Table 89: Underground Contractor Labor

Underground Contractor Personnel	No. Personnel	Total
Chief Contractor Operations	1	
Contractor Development Supervisor	1	
Contractor Operations Supervisor	1	
Administrator and Logistics	1	
Mechanic / Electric Technicians	3	
Assistant Mechanic/ Electric	6	
Surveyor	2	
Assistant Surveyor	2	
Development Operators - Jumbo	3	
Development Operators - Scoops	3	
Development Operators- Assistants	6	
Production Operators - LH Drilling	3	90
Production Operators - Explosives	3	
Production Operators - LHD	3	
Production Operators - Trucks	6	
Ground support operators	9	
Mine Services operators	9	
Mine Services Assistant	9	
Health and Safety Engineer	1	
Health and Safety Assistant	3	
Costs and Control Engineer	2	
Drivers and Assistants	3	
Personnel to cover vacation, Sickness	10	

Table 90: Underground Company Labor

Underground Company Personnel	No. Personnel	Total
Chief Mine Operations	1	
Mine Development Supervisor	3	
Mine Operations Supervisor	3	
Mine Operations Assistant	3	
Lead Mechanic / Electric	3	
Assistant Mechanic/ Electric	6	
Mine Planning Engineer	3	
Mine Planning Assistant	1	
Surveyor	3	
Assistant Surveyor	3	
Chief Geology	1	
Field Geologist	3	64
Assistant Geology	3	
Rock Mechanics Engineer	1	
Rock Mechanics Assistant	3	
Mine Ventilation Engineer	1	
Mine Ventilation Assistant	3	
Mine Services Supervisor	3	
Mine Services Assistant	3	
Health and Safety Engineer	1	
Health and Safety Assistant	3	
Costs and Control Engineer	1	
IT Supervisor	3	
Personnel to cover vacations, sickness	6	

Table 91: Mining Equipment

Item	Units
Jumbo (2 boom)	1
LH Production Drill	1
Load-Haul-Dump, 6.7 t	2
Haulage Truck, 20 t	1
ANFO Loader	1
Personnel Carrier	1
Cassettes System	1
Scissor Lift	1
Supervisor/Engineering Vehicle	2
Road Grader	1

15.16 Mine Opportunities

The mine is designed so that the production should start during the first year of operation with sublevels above 3430 Level spaced every 15 metres. This allows for early commencement of down-hole drilling. This approach may be further optimized by elementing one of the sub-levels, thus reducing sill development and allowing spacing of 30 metres between sublevels. In this sceerio, drilling and blasting can be done using up-drilling and down drilling holes in 3460 and 3490 Level. This may be an option depending on the geotechnical characterization reviewed and updated based on mapping of the excavated sub levels once mining commences.

Sourcing an alternate quarry close to the portal of the mine will provide more backfill waste rock, thus potentially allowing the removal or minimization of rib pillars. This will result in an increased overall mine recovery.

16 Recovery Methods

This technical report assumes that run of mine material will be trucked to a third-party toll processing facility for treatment. It is assumed that a toll treatment agreement would include the following:

- Feed would arrive on trucks using existing public highways.
- All equipment, services and labour for receiving, weighing and sampling the material from the Invicta Gold Project that arrives.
- All equipment, services and labour required for processing the material from the Invicta Gold Project.
- All reagents, consumables, maintenance and services for the plant operation.
- Compliance with the required grind size, flotation residence time, flowsheet, reagent regimes and process controls.
- Sufficient measurements and sampling to promptly provide accurate metallurgical balances for process control and accounting.
- All costs associated with final tailings deposition and storage.
- All equipment, services and labour for loading the concentrate onto trucks, weighing and sampling of concentrates.
- Facilities for Invicta Gold Project representatives to attend and supervise the processing.

Based on the results of the metallurgical testwork reported in Section 12, a possible scenario for processing the mineral resource from the Invicta Gold Project has been outlined. This process selection is preliminary and may be subject to change based on the results of the metallurgical studies during the next stage of the project.

The results of metallurgical tests to-date indicate that conventional flotation technology can be used to treat the mineralized material from the Invicta Gold Project. The flowsheet includes crushing, a coarse primary grind, bulk lead, copper, gold and silver flotation, flotation of a zinc concentrate, bulk concentrate regrinding, and selective copper/lead flotation.

The preliminary process selection considers the following stages:

1. A circuit of crushing, grinding, and classification that would include an intermediate stockpile to feed the grinding and classification circuit. The grinding circuit would be made up of a rod mill, a ball mill, and a nest of cyclones.
2. The product from grinding and classification would be sent to the flotation plant, which would consist of a bulk flotation circuit, a zinc flotation circuit, and a copper/lead separation circuit.
3. The tailings from the sulphide flotation and the rougher bulk tailings would be sent to the tailings storage facility. The lead, copper and zinc concentrates would be sent to different thickeners and filter presses, stored, and then transported to third-party smelters as final concentrates.

It is assumed for operating cost estimation that the toll treatment plant would be in Caraz, central Peru. Caraz is 413 kilometres from the Invicta Gold Project by national highway for feed transportation. The concentrate port of Callao is 484 kilometres from Caraz for concentrate transportation.

A simplified process flow diagram is shown in Figure 65.

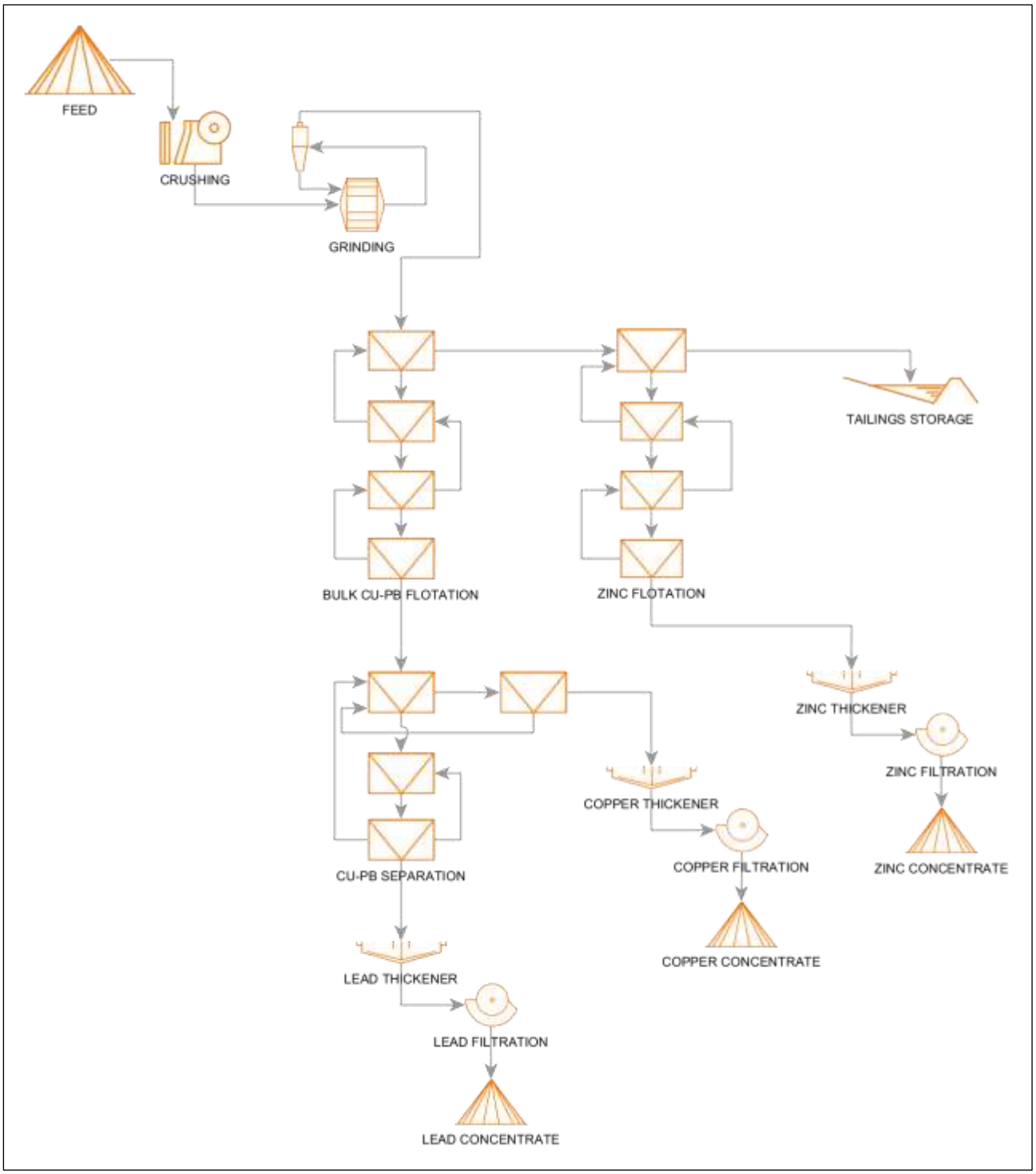


Figure 65: Simplified Process Flowsheet

17 Project Infrastructure

The following infrastructure items will be required for the Invicta Gold Project:

- Access road (completed)
- Power line
- Explosives magazines (completed)
- Water supply (for mine operations, mine camps and firefighting requirements) (completed)
- Sewage treatment facility (completed)
- Waste disposal facility (completed)
- Fuel storage facility and dispatch (completed)
- Waste storage area (waste dumps)
- Gatehouse (security) (completed)
- Administration building (with communications/office equipment) (completed)
- Maintenance workshop and warehouse (in construction)
- Assay laboratory facility

17.1 Surface Infrastructure and Sources

The economy of the area around the mine is based on rural agriculture. Agricultural activities including mainly fruit and mixed-crop farming are the principal sources of land use and income.

17.1.1 Access Roads

The Invicta Gold Project is accessible from the capital of Peru, Lima, by driving north along the Pan American Highway to Huaura (160 kilometres), then Highway 16 (paved) east to Sayan (45 kilometres), and on paved road to Huamboy or Pincunche. Access from Sayan to Huamboy or Picunche is along a paved road that runs from Sayan to Churin; with a minimum width of 6.0 metres.

This road is used daily by concentrate trucks and heavy transports. The vehicular weight restriction is set at 30 tonnes at the bridge crossing at Cuñay. A secondary gravel road, 29 kilometres from Picunche provide access to the Invicta Gold Project via Lacsanga town. This road is currently widened and improved by the company, to allow the circulation of vehicles up to 30 tonnes.

Thre is another secondary gravel road of 27 kilometres from Huamboy to the site via Paran.

A shorter access route from Lima is along the Pan-American Highway North, exiting at Rio Seco and continuing along a 52-kilometre paved l road, which reduces the distance to 198 kilometres. A third longer access is available via Santo Domingo de Apache.

17.1.2 Mine Offices, Warehouses, Maintenance Shops, Medical Post and Mine Camps

Mine infrastructure inclusive of offices, warehouses, maintenance shops, medical post and mine camps will need to be located in close proxity to the mine operations.

The construction of two workshops is planned, the first workshop will be 170 square metres in size, and the second, 60 square metres. Two warehouses, each 60 square metres in size are planned for construction for the storage of mine equipment and office equipment.

The mine camp for workers will have an area of 2,100 square metres, and the staff camp will have an area of 270 square metres. Both will belocated at 3,600 masl. A final design of 730 square metres is considered for the administrative office (completed). A medical post with an area of 170 square metres for emergency medical services is in operation.

17.1.3 Fuel Storage

Two fuel tanks will be available, one for diesel fuel and the other for gasoline. The design considers demand and practical applications. These will be located in the built-up area close to the mine access to 3400 Level.

17.1.4 Power Source

The power supply from the National Grid will be via a 66-kilovolt power line from the power substation at Andahuasi, covering a 50-kilometre distance to the mine site and using a sub-station to convert to 10 kilovolts for industrial and mine distribution. An alternative power source is the SNC-Cheves 2220-kilovolt line.

17.1.5 Water Source

Water will be supplied to the mine from a well located in the Lacsanga area, at 4,000 masl. The well is named Invicta 1, and has a flow capacity of 40 litres per second or 622,000 cubic metres per year.

Water will be conducted to the mine area via an 8-kilometre pipeline on the ground. Two water reservoirs located at the mine site (3,640 masl) will be built to collect and distribute the water to the mine and offices. The capacity of the reservoirs is 2,000 cubic metres each. A third reservoir will be constructed for water recirculation with a capacity of 450 cubic metres.

The water requirements for mine and domestic use is estimated at 3 litres per second.

17.1.6 Waste Disposal Areas

A waste disposal facility will be built in the Canaicuto area, located between 3,255 and 3,385 masl, and 280 metres from the mine access to 3400 Level.

The capacity of the waste dump is 40,000 cubic metres for 7 years of operation. The criteria for design considers slope stability, acid drainage and water collection by channels.

17.1.7 Explosive Magazine

The magazine will be in the Taliac area, which is a distance of 5 kilometres from the main mine access to 3400 Level.

The building is classified as “A” type (surface magazine), with two sections for explosives and initiators. The explosives section has a length of 17 metres, a width of 3.5 metres and height of 3 metres. The initiators section has a length of 7 metres, width of 4 metres and height of 3 metres. The planned capacity, according to the explosives permit, is 124,100 kilograms of explosives.

18 Market Studies and Contracts

To date no specific market studies to support future concentrate production market interest for copper, lead and zinc concentrates have been undertaken, althogh local and international traders have expressed an interest in buying the full production for the three concentrates.

No formal off-take agreements are currently in place, as Invicta Mining Corp prefer to negotiate these agreements prior to the commencement of operational production, to reduce the risk associated with variable metal market prices.

Formal contracts that are currently in place for the project are:

1. Mining contractor
2. Road rehabilitation contractor
3. Processing / toll-treatment contractor
4. Powder keg security contractor
5. Light trucks contractor

Contracts that are currently pending relate to:

1. Production laboratory
2. Ore transportation contractor
3. Concentrates transportation contractor
4. Concentrate delivery warehouse surveyor contractor
5. Off-take contract

19 Environmental Studies, Permitting, and Social or Community Impact

This report section presents the results of a desktop review of the environmental and permitting issues related to the Invicta Gold Project. This review was undertaken by SRK based on the information available in January 2018. The Invicta Gold Project is being fast-tracked to production and the required permits and authorizations will be obtained from the Peruvian authorities.

SRK relied on information provided by Lupaka, on documents available from the Ministry of Energy and Mines in Peru (*Ministerio de Energía y Minas*, MINEM), and a meeting with Mr. Julio Castañeda, the President of Lupaka Gold Peru S.A.C, a Peruvian subsidiary of Lupaka for this assignment.

19.1 Permitting

19.1.1 Status of Approved Permits

Environmental Management Instruments

In Peru, the mining environmental legal framework is developed in two institutional scenarios:

- Since 1993, the Ministry of Energy and Mines (MINEM) has overseen the approval of the Environmental Management Instruments (*Instrumentos de Gestión Ambiental*, IGA) as well as mine closure plans and liabilities closure plans. The IGA include: the Environmental Impact Diagnosis (*Diagnóstico de Impacto Ambiental*, DIA), the semi-detailed Environmental Impact Assessment (*Estudio de Impacto Ambiental semidetallada*, EIA-sd), the detailed Environmental Impact Assessment (*Estudio de Impacto Ambiental detallada*, EIA-d) and the supporting technical reports (*Informes Técnicos Sustentatorio*, ITS).

- Since December 28, 2015, the functions to approve the IGA have been transferred to the National Environmental Certification Service for Sustainable Investments (*Servicio Nacional de Certificación Ambiental para las Inversiones Sostenibles*, SENACE), a specialized public organization responsible for the reviewing and approving of the IGA with respect to the Peruvian law and the National Environmental Impact Assessment System (*Ley del Sistema Nacional de Evaluación de Impacto Ambiental*, Law number 27446) and its regulatory standards.

The IGAs for the Invicta Gold Project are listed in Table 92.

These IGAs were developed per the legal requirements in force before the Peruvian supreme decree *(Decreto Supremo*, D.S.) number 040-2015-EM and were reviewed by the Department of Mining Environmental Affairs (DGAAM) and Department of Electrical Environmental Affairs (DGAAE) of the MINEM.

Table 92: List of Approved Environmental Management Instruments (IGA)

Item	Reference Name	Document	Description	Granting Entity	Date Granted
1	Updated EIA	R.D. N°296-2015-MEM-DGAAM	EIA first update	MINEM	2015-07-30
2	ITS / EIA	R.D. N°162-2015-MEM-AAM	Technical Report for changes to EIA	MINEM	2015-04-14
3	Extension EIA	R.D. N°375-2012-MEM-AAM	Extension dates for approved activities in EIA	MINEM	2012-11-14
4	Power Line	R.D. N°364-2011-MEM-AAM	Power Lines 66KV/10KV Andahuasi Invicta	MINEM	2011-12-12
5	EIA	R.D. N°427-2009-MEM-AAM	Environmental Impact Assessment	MINEM	2009-12-28

R.D., directoral resolution

MINEM, ministry of energy and mines

Source: Invicta Mining Corp. S.A.C., 2017, Permit summary.doc

These IGAs were approved by directoral resolutions (*Resolución Directoral*, R.D.), which include a report that specifies their scope and establishes the land where mining activities and mining use are permitted. Areas for "mining activity" (*área de actividad minera*), are polygonals of land for mineral exploration and exploitation, and for "mining use" (*área de uso minero*), are polygonals of land for mining purposes not included in the definition of "mining activity". These polygonals are geographically defined by their vertices (ministerial resolution number 209-2010-MEM/DM).

The directoral resolution obliges Invicta Mining Corp to comply with each of the commitments assumed in any of the documents that took part in the approvals, as well as the mandatory compliance recommendations established in the report that supports the resolution and the respective annexes of the studies approved by it.

At present, according to the approved IGA permits, Invicta Mining Corp has the IGA permission to build the following infrastructure at the Invicta Gold Project:

- Underground mine operation
- Mine waste facility 1
- Magazine for storage explosives
- Landfill
- Water supply system
- Water well and pumping stations
- Septic tanks
- Mine camp
- Mine offices
- Medical post
- Workshops 1 and 2
- Warehouse 1 and 2
- Fuel station
- Laboratory
- Access roads

Furthermore, Peruvian environmental legislation states that mine owners perform studies to adjust to new regulations, such as the environmental quality standards compliance for soils. Invicta Mining Corp has not submitted a study to the MINEM in compliance with the Peruvian supreme decree number 002-2014-MINAM.

According to Peruvian law, the environmental impact assessments need to be updated every five (5) years since the last approval. The last approval for the Invicta Gold Project was made on July 30, 2015, according the directoral resolution number 296-2015-MEM-DGAAM. The time required to approve an IGA is between 3 and 6 months for an ITS and 6 to 24 months for an EIA or its modification. The request to present an IGA needs to be admitted by SENACE, and its development includes SENACE's requirements and active guidance.

Closure Plans

Invicta Mining Corp has an appoved updated closure plan; the approval corresponding to the mine access, explosives magazine, mine waste facility, landfill, top soil storage, water supply, septic tanks, workshops, warehouses, fuel station, access roads as described in its IGA.

Since Invicta Mining Corp has not yet initiated mining operations, the company has made a request to the Mining Authority to suspend the guarantee fund provision according to the mine closure plan, this was granted by the directorial resolution number 286-2014-MEM-DGM/V, dated August 5, 2014, see Table 93.

In this context, Invicta Mining Corp is required to provide a guarantee, as detailed in Section 19.4.2. The approved closure plans for the Invicta Gold Project are listed in Table 93.

Table 93: List of Approved Closure Plans for Invicta Gold Project

Item	Reference Name	Document	Description	Granting Entity	Date Granted
1	Updated Mine Closure Plan	R.D. N°467-2015-MEM-DGAAM	Updated mine closure plan	MINEM	2015-12-03
2	Mine Closure Plan	R.D. N°044-2012-MEM-AAM	Mine closure plan	MINEM	2012-02-17

R.D., directoral resolution
MINEM, ministry of energy and mines
Source: IMCSAC, 2017, Permit summary.doc

According to Peruvian law, an update of the closure plan must be presented three (3) years past its first approval and subsequently every five (5) years since the last approval after that. The closure plan must also be updated when the project has been modified or when considering technical improvements.

Permits

For initiating mine development activities and the preparation of the Victoria Uno mining concession, Invicta Mining Corp must obtain authorizations and licenses. To ensure compliance with Peruvian law, the following is required:

- Mining operation certificate for the Invicta Gold Project for 2018 for the desired level of exploitation operations from the General Directorate of Mining in Peru (*Dirección General de Minería*, DGM). This has been received.
- Zero discharge authorization from the the National Water Authority of Peru (*Autoridad Nacional del Agua*, ANA).
- Activation of mine-closure guarantee once mining operations will start from the DGM.
- Solid waste declaration and management plan from the DGM.
- Permission for fuel storage infrastructures from the Supervisory Body for the Investment in Energy and Mining in Peru (*Organismo Supervisor de la Inversión en Energía y Minería*, OSINERGMIN). This has been received.

Approved operating permits and authorizations acquired to date are listed in Table 94.

Regards required authorizations, Invicta Mining Corp does not have a mineral processing concession for the Invicta Gold Project, and therefore has no authorization to construct a processing plant or a tailings pond (ACOMISA, 2015, Invicta updated EIA).

Table 94: List of Approved Operating Permits for Invicta Gold Project

Item	Reference Name	Document	Description	Granting Entity	Date Granted
1	Mine Closure/ Warranties suspension	R.D. Nº 286-2014-MEM-AAM	Warranties Suspension request	MINEM	2014-08-05
2	Re-start mining activities	R.D. Nº 566-2014-MEM-AAM	Authorization to re-start mining activities	MINEM	2014-12-11
3	Mining Operation Certificate (COM)	COM No.072-2018-C (EXPEDIENTE Nº 2764750)	A permit for the year 2018 for development & preparation of underground mining works was issued.	MINEM	2017
4	Mine Plan	R.D. Nº 566 -2014 MEM-DGM/V	Capacity was settled at 400 tpd.	MINEM	2014-12-11
5	Explosive usage permit	R.G. Nº 164-2018-SUCAMEC/GEPP	Allows IMCSAC to use explosives for Invicta's underground mining activities	SUCAMEC	2018-01-12 last until 2018-12-31
6	Explosive storage and acquisition permit	R.G. Nº 3281-2014-SUCAMEC/GEPP	Authorization for storage and acquisition of explosives and materials	SUCAMEC	2014-10-29 last until 2019-10-28
7	Verification Act of the powder magazine	Nº 809-2016-SUCAMEC-GCF-WVR	Polvorin type A, surface, explosives, 148.47 m^3	SUCAMEC	2016-03-29
8	Verification Act of the powder magazine	Nº 809-2016-SUCAMEC-GCF-WVR	Polvorin type A, surface, explosives, 87.57 m^3	SUCAMEC	2016-03-29
9	Water usage license	R.A. Nº 192-ANA-ALA-Huaura	Pumping water well will be used up to 40 L/s, 12 hours per day, 7 days per week, cumulating a total annual volume of 622,080 m^3. This water source is located at the Huamboy-Puquial farm in the Huaura river valley, close to the mine area. Invicta has signed an easement agreement with the land owner.	ANA and ALA	2009- 10-27
10	Discharge licence	TBD	discharge "0 L/s" *	ANA/ALA	TBD
11	Landowner ship/ land	Servitude land use agreements	See paragraph 19.3	Communities	variable
12	Inexistance of Archaelogical Remains	CIRA Nº 2010-257	Certicate of Inexistance of Archaelogical Remains (CIRA)	INC	2010-06-09

ACOMISA, 2015, Invicta updated EIA, paragraph 9.7.3.2, pg.381-382.

SUCAMEC, *Superintendencia Nacional de Control de Servicios de Seguridad, Armas, Municiones y Explosivos de Uso Civil*, department of explosives and pyrotechnic products for civil use

ALA, *Autoridad Local del Agua,* local water authority

INC, *Instituto Nacional de Cultura*, national institute of culture

Source: Various permits and authorizations provided by IMCSAC.

19.1.2 Action on Environmental Infringements and Fines

If the Specialized Environmental Inspection Agency in Peru (*Organismo Especializado de Fiscalización Ambiental*, OEFA) detects an environmental infraction, it will order the execution of corrective measures aimed at reversing the infringing conduct and will suspend the sanctioning procedure of imposing a fine (according to the "Regulations that facilitate the application of what is established in article 19 of law number 30230, promulgated by its board resolution number 026-2014-OEFA / CD). In other words, if a corrective measure is applied immediately after OEFA detects an infringement at the Invicta Gold Project, no economic sanction will be imposed.

19.2 Environmental Study Results

SRK's understanding of the status of monitoring of various environmental factors on the Invicta Gold Project is listed in Table 95. In general, the environmental baseline is sub-standard with repect to the actual SENACE requirements, and unsuitable as a pre-mine baseline when conducting the mine closure, especially concerning surface and groundwater quality, potential acid rock drainage prediction, and long-term water quality prediction. Post-closure water management can be costly when not properly assessed and planned as part of the mine planning phase. This issue can also present an important social cost as fruit farming for export is an important agricultural production for the communities surrounding the mine site. The most important products of the area's fruit farming are peaches (for export), avocados, apples and cherimoyas (Table 95).

Table 95: Environmental Status of Invicta Gold Project

Item	Factor	Description	Reference
1	Relief	Located at an altitude from 3,000 to 4,000 metres above sea level. Irregular relief with steep slopes.	ACOMISA, 2015, Chapter VII, pg.146
2	Soils	Actual land use is limited to the protection of mountain slopes and forest production because of its low agrolostic quality, and a minor portion is suitable for permanent crops: vegetables, orchards, fruit trees, permanent and extensive crops.	ACOMISA, 2015, Chapter VII, pg. 214 - 2015
3	Air Quality	Air quality has been monitored in two stations (August 2014 for 24 h). The results are compared with national environmental standards. PM10 and PM2.5 (particulate material less than 10 µm and less than 2.5 µm), and concentrations of As and Pb in PM10, comply with the D.S. N°074-2003-PCM, D.S. N°003-2008-MINAM and R.M. N°315-96-EM/VMM. Hence, Carbon Monoxide (CO), Nitrogen Dioxide (NO_2) and Sulfur Dioxide (SO_2) have been monitored in 2007 and Hydrogen Sulphide $(SH_2)_2$ and Ozone (O_3) haven´t been monitored. No information was available on the air quality index enforced by R.M. N°181-2016-MINAM (07/14/2016).	ACOMISA, 2015, Chapter VII, pg.155 - 164
3	Surface Water Quality	Surface water quality has not been monitored recently. The EIA (ACOMISA 2015) reproduces values of 2007 of the EIA (Cesel, 2008). The latter indicates presence of cadmium associated with the zinc and lead ore deposit; and iron, nitrates and sulfates exceeding environmental standards. The information is unsuitable for mine closure as a pre-mine baseline.	Cesel, 2008, Excecutive summary, paragraph c And ACOMISA, 2015, Chapter VII, pg. 186.
4	Effluents	Mine water (effluent) exceeds environmental standards for cadmium and zinc. The information is unsuitable for mine closure as a pre-mine baseline.	ACOMISA, 2015, Chapter VII, pg. 186 – 187.
5	Groundwater Quality	Presence of springs. Some spring water is used for agriculture (fruit farming). Water quality exceeds environmental standards for animal beverage and crops for iron and total and thermotolerant coliforms. The information is unsuitable for mine closure as a pre-mine baseline.	ACOMISA, 2015, Chapter VII, pg. 194 – 196.

Table 95: Environmental Status of Invicta Gold Project (2/2)

Item	Factor	Description	Reference
6	Environmental Liabilities	None	
7	Geochemistry	A very preliminary acid rock drainage assessment has been addressed. The only waste rock sample tested is acid generating.	ACOMISA, 2015, Chapter VII, pg. 200.
8	Protected Areas	Environmentally the project is not located within a protected natural area nor its buffer zones.	ACOMISA, 2015, Chapter VII, pg. 226.
9	Ecoregion	"Serranía esteparia" ecoregion (mountain steppe) (Brack 1986).	ACOMISA, 2015, Chapter VII, pg. 225.
10	Flora	Plant formations: Riparian vegetation Desert with scattered *Cactaceae* columns Scattered grasses and/or shrubs Scrub, mainly evergreen Some plants categorize as belonging to some class of conservation.	ACOMISA, 2015, paragraph 7.2 Biology, 222-245 And paragraph 7.2.5.4. Protected species, pg. 240-241.
11	Fauna	Some fauna categorizes as belonging to some class of conservation: Birds: 28 species have been identified to be protected by the UICN of which 4 are recognized in CITES and of which one is endemic (*Metallura phoeb*). Mammals: Six species have been identified to be protected by the UICN, of which one also by CITES. Herpetofauna: two species have been identified to be protected by the UICN	ACOMISA, 2015, paragraph 7.2 Biology, pg. 253-258.
12	Aquatic Biology	Aquatic fauna has not been reported	

UICN, *Unión Internacional para la Conservación de la Naturaleza*, International Union for the Conservation of Nature

CITES, convention on international trade in endangered Species of wild fauna and flora

Source: compiled by SRK based on the Updated EIA (ACOMISA, 2015) and the EIA Executive summary (CESEL, 2008).

In general, the environmental impact assessment is sub-standard as it was performed as a qualitative evaluation only. The lack of documented analysis, use of prediction tools and a risk assessment makes this evaluation highly subjective, and unreliable especially concerning potential acid rock drainage prediction and long-term water quality prediction. Note that the potential impacts caused by transport have not been assessed. Notwithstanding, Asesores Consultores Mineros S.A. (ACOMISA, 2015) developed an environmental management plan in general terms, here discussed in Section 19.3. The main social and environmental impacts according to the updated EIA (ACOMISA, 2015), are listed in Table 96.

Table 96: Main Environmental Impacts According to the Updated EIA Study (ACOMISA, 2015)

Stage	Construction	Operation	Closure
Activities	Water supply system	Waste rock disposal facility	Leveling & revegetation of disturbed areas Fuel oil handling
Factors	Air pollution. Effect on air quality due to air borne particles. Positive effect on social & economical conditions due to salaries	Air and noise pollution. Effect on air quality due to high noise levels. Positive effect on social & economical conditions due to improvements on educational by job training levels	Air pollution. Effect on air quality due to air borne particles.

Source: ACOMISA, 2015, Updated EIA, Chapter IX, paragraph 9.6.7.2, pg. 330-331.

19.3 Environmental Management Plan

The Environmental Management Plan (*Plan de Manejo Ambiental*, PMA) for the Invicta Gold Project incorporates the following:

- Policy
- Identification of impacts
- Management programs
- Organizational capacity and competency
- Emergency preparedness and response
- Stakeholder engagement
- Monitoring and review

19.3.1 Environmental Management Plan Policy

The PMA policy for the Invicta Gold Project considers the prevention, mitigation and control of environmental impacts. The policy covers stakeholder's involvement (ACOMISA, 2015).

Though the Invicta Mining Corp environmental policy, as stated in the PMA (ACOMISA, 2015), met the objectives of the environmental impact assessment for applying for finance, it is recommended that the policy also consider the prevention, minimization, mitigation and control of environmental impacts, occupational safety and health risks. Further, it should ensure all workers receive a fair remuneration in accordance with their work, as well as decent working conditions, and a work environment conducive to - and oriented towards - professional and personal development. It should also discourage any potential negative social impacts through developing activities that promote the well-being of the people living in the surrounding area, respecting their culture and traditions. The policy should implement compliant environmental and social management systems.

19.3.2 Identification of Risks and Impacts

The most significant potential environmental impacts for the development of the Invicta Gold Project according to ACOMISA (2015) are summarized in Table 96 above.

Potential acid rock drainage and long-term water quality prediction were poorly assessed in the 2015 assessment. SRK recommends developing geochemical studies and water quality prediction with a higher level of detail, considering the potential importance of the related environmental effects.

19.3.3 Environmental Management Program General Guidelines

The PMA for the Invicta Gold Project includes general guidelines to manage and mitigate the potential environmental impacts over the life of the project which includes the following:

- Construction:
  - Maintenance and cleaning of main access, roads, mine access, water system, water channels, waste dump and landfill.
  - Slope stability conservation.

- Operations:
  - Environmental monitoring program.
  - Prevention, mitigation and remediation program: air quality control, soil protection, slopes stability, chemical stability, flora-fauna protection, archaeological preservation and water management.
  - Solid waste management program.
  - Contingency plan.

- Post mine closure:
  - Environmental maintenance program.
  - Environmental monitoring program.

Chemical stability of the mining effluents is discussed, mainly addressing the waste dump facility and mine water drainage:

- In the case of waste dump facility, collection and diversion channels for run-off water in the rainy season and monitoring in critical points are considered the main controls (ACOMISA, 2015).
- In the case of mine effluents, water recirculation is considered as the main control, avoiding contact with natural sources, collecting mine water drainage in 3400 Level, pumping and reusing water in mining activities (ACOMISA, 2015).

19.4 Mine Closure

19.4.1 Mine Reclamation and Closure Plan

The mine closure plan for the Invicta Gold Project was approved on February 17, 2012, according to the directorial resolution number 044-2012 MEM-AAM. The plan was prepared at a conceptual study level.

According to the Peruvian law, a mine closure plan needs to be revised every two (2) years. The closure plan for the Invicta Gold Project was last updated on December 3, 2015, by directorial resolution number 467-2015 MEM-DGAAM.

The plan includes the main stages for closure:

- Temporary closure
- Progressive closure
- Final closure

Main activities considered are:

- Dismantlement
- Demolition
- Physical stability
- Geochemical stability
- Hydrological stability
- Land recovery and habitat rehabilitation

- Revegetation
- Maintenance and monitoring program

Components to be considered for mine closure in Peru are listed in Table 97.

Table 97: Peruvian Closure Plan Components

N°	Component	East	North	Closure
Mine				
1	Mine entrance 3400 Level (Atenea vein)	279797	8779080	Final
2	Mine entrance 3550 Level	279920	8779430	Final
3	Explosives magazine	2810167	8778800	Final
Waste management facilities				
4	Waste dump facility 1	279674	8778977	Final
5	Solid waste sanitary landfill	280741	8778944	Final
6	Non-hazardous waste deposit	280772	8779247	Final
Loan material areas				
7	Topsoil deposit 1	279780	8778921	Final
Water management facilities				
8	Water supply system	278790	8779520	
9	Huamboy pond	272302	8780512	
10	Huamboy reservoir	272809	8780695	Final
11	Pump house	272887	8780708	
12	Water reservoir	280002	8779900	
Other infrastructures related to the project				
13	Workshop I	280069	8779054	Final
14	Workshop II	280105	8779031	Final
15	Warehouse I	280190	8779078	Final
16	Warehouse II	280180	8779047	Final
17	Septic tank I	280296	8778818	Final
18	Septic tank II	281005	8778772	Final
19	Fuel station	280319	8779027	Final
20	Laboratory	280389	8778928	Final
21	New offices	280405	8778979	Final
Housing and Service for Workers				
22	Workers camp	281066	8778954	Final
23	Staff camp	280548	8778946	Final
24	Camp	280163	8779123	Final
25	Recreational facilities (soccer ground)	281160	8778869	Final
26	Health facilities (medical post)	280130	8779080	Final
Accesses				
27	Accesses			Final

19.4.2 Site Closure and Waste Disposal Strategy

The overall goal for mine decommissioning and closure is to return the land to a physically, biologically, and chemically stable and ecologically functional condition that approximates baseline conditions. Concurrent closure options will be sought, wherever possible, in the construction and operational phases of mine life, to minimize the potential for subsidence and erosion damage, to enhance biodiversity and the restoration of natural habitats.

These options will include:

- **Temporary closure** – i.e. any temporary closure for a period of no more than three (3) years. If, for any reason, temporary closure proceeds, this will be reported to Ministry of Energy and Mines; facilities will be inspected and a maintenance and monitoring program will be put in place; all potentially dangerous areas for the environment and the population will be sealed and periodically inspected; surface water quality will be monitored, and residents of the surrounding area will be informed of the dangers that the facilities represent during the temporary closure.

- **Progressive closure** - i.e. closure actions performed while the mine is still in operation which include: periodic removal of used, scrap, or surplus mining equipment, materials and/or infrastructure from the site (dismantling, demolition, neutralization of chemicals and clean up of contaminated soils and their disposal).

19.4.3 Cost Estimate of Mine Closure

An estimate of the mine closure costs at the end of mine life, as estimated in 2015, is presented in Table 98.

Table 98: Summary of the Closure Costs (equivalent in US$), 2015

Description		Excluding Taxes (US$)	Period
1	Progressive closure	328,820	2015-2021
2	Final closure	301,334	2022
3	Post closure	174,882	2023-2027
1+2+3	**Total Closure Costs**	**$805,036**	

1USD=3.4145 PEN (12/31/2015)

Source: Informe N° 161-2015/MEM/DGM-DTM-PCM, pg. 1.

Invicta Mining Corp revised the mine closure plan for a 400-tonne-per-day mining scenario which was approved in 2015.

Table 99 summarizes the last approved guarantee constitution program (in 2015).

Table 99: Closure Costs Guarantee Constitution Program (equivalent in US$ inc. IGV), 2015

Year	Annual ($US)	Total ($US)
2016	93,024	93,024
2017	95,860	188,884
2018	99,494	288,378
2019	104,463	392,841
2020	112,105	504,946
2021	127,778	632,724
Total	**632,724**	

1USD=3.4145 PEN (12/31/2015)

Source: Informe N° 161-2015/MEM/DGM-DTM-PCM, pg. 2

19.4.4 Post-Closure Maintenance and Monitoring

Invicta Mining Corp is obligated to undertake progressive post-closure actions and the associated data monitoring. These actions should be used to assess the effectiveness of the selected reclamation, revegetation, and erosion prevention strategies which will be applied at final closure.

- Maintenance. - Five years of maintenance of systems that are required to be operated after closure, such as: water management systems (i.e. channels), reclaimed land and some required equipment.
- Monitoring. - Five years of annual monitoring of physical, geochemical and hydrological stability, water, soil and air quality, reestablishment of flora and fauna and elements related to social matters (Figure 66).

Figure 66: Current Re-Vegetation on the Invicta Gold Project

19.5 Social and Community Relations Commitments

The direct area of influence surrounding the Invicta Gold Project includes the Lacsanga, Santo Domingo de Apache and Paran communities, and the districts of Paccho and Leoncio Prado in the Huaura province.

Stakeholders include these communities and their leaders, as well as the district, province and governments authorities.

Invicta Mining Corp made various agreements with the representatives of the Santo Domingo de Apache community, and landowners in the Cerro and Paraje Pishcopampa area, where the Invicta Gold Project is located, in compliance with the Peruvian law “of private investment in the development of economic activities in the lands of the national territories and of peasant and native communities” (Law number 26505, article 7).

Servitude land use agreements for mining purposes were made with the Santo Domingo de Apache, Paran and Lacsanga communities; with the Santo Domingo de Apache and Lacsanga communities covering all the area necessary for the operation and related activities.

The Lacsanga community has yielded land for access roads, mine development activities and a water line for domestic use. Some of the requirements according to the servitude land use agreement with the Lacsanga community are listed in Table 100.

Table 100: Some Servitude Land Use Agreements Made with the Lacsanga Community*

Description	Amount in Equivalent US$	Comments
The subscription of the contract of servitude on lands authorizing temporarily land use for mining and related activities during the exploration, exploitation, benefit and transport of ore, agreed in the communal assembly dated July 3, 2017.		
Prepare a protection and conservation plan for the water sources that supply the community.	TBD	
Prepare an inventory of water resources and monitor the levels of flow, flow and quality	TBD	
Prepare a flora and fauna conservation plan.	TBD	
Invicta will not affect areas of agricultural activity, and compensate the affected community members.	TBD	
For every 12 months of operation, grant the community	311,013	To be paid every 12 months of operation
Contribute for the use of the road and the improvement	24,881	To be paid once
Set up a financial fund for community development projects.	31,101	To be paid every year for 10 years
Construction of a water and reservoconstruction of a tap.	62,202	To be paid once
Hire local labor		
Acquire products to communal companies (fuel, food, lodging, laundry, transport like vans, buses, tippers		

1USD: 3.2153 soles

* Agreement of servitude on lands of rustic property. Signed before a Notary on June 9, 2015

The social agreements are with Santo Domingo de Apache and Lacsanga, without the involvement of other authorities, and are and aimed at promoting rural development, and the rural communities, supporting and contributing available resources to each of them, and developing various projects that the communities wish to carry out. Each agreement reflects the commitments that each participant assumes.

In general, in accordance with the agreements signed with the local communities surrounding the Invicta Gold Project, Invicta Mining Corp has:

- Maintained a positive approach towards the communities within its area of influence.
- Negotiated agreements with these communities to obtain access to the land to develop the project.
- Complied with paying the agreed compensation for the use of the land yielded in servitude.
- Supported the communities in developing projects and in obtaining from the regional and municipal authorities the mining personnel and other resources.

Note that the agreements for servitude on lands commit Invicta Mining Corp to obligations to fulfill which are of financial importance.

SRK recommends that Invicta Mining Corp execute a detailed social baseline study to obtain more precise information about the productive activity of the inhabitants, and the use of their natural resources (mainly soil and water) to formulate appropriate social management programs. The Lacsanga community requested a detailed study of the water sources that supply their community, probably to guarantee a continuous water supply to the fruit trees cultivated there.

19.6 Conclusions and Recommendations

- At present, Invicta Mining Corp complies with the environmental management instruments (EIA) requested by the Peruvian ministry of energy and mines.
- Invicta Mining Corp complies with all main legislation to initiate an operation at 400 tonnes per day.
- Invicta Mining Corp has an environmental management plan that will be audited by the OEFA for its compliance with Peruvian environmental legislation.
- The environmental baseline is sub-standard with repect to the actual SENACE requirements, and unsuitable as a pre-mine baseline when conducting the mine closure.
- Post-closure water management can be costly when not properly assessed and incorporated into the mine planning. This sensitive issue can also present an important social cost as fruit farming for export is an important agricultural production for the communities surrounding the Invicta Gold Project. SRK understands that peaches for local market consumption are watered from alternate pipeline sources
- Knowledge of the environmental baseline is generally poor and therefore unsuitable as a pre-mine baseline when conducting the mine closure plan, especially as to surface and groundwater quality.
- The identification of risks and environmental and social impact assessment is poor; especially concerning the potential acid rock drainage and long-term water quality prediction.
- The agreements for servitude on lands with the communities surrounding the Invicta Gold Project commit Invicta Mining Corp to obligations that are of financial significance.
- SRK recomends undertaking an environmental baseline with repect to the actual SENACE requirements, and that is suitable as a pre-mine baseline for permit planning for closure.
- SRK recommends undertaking detailed geochemical and water quality prediction studies concerning the potential importance of their environmental impacts.
- Though the Invicta Mining Corp environmental policy, as stated in the environmental management plan (ACOMISA, 2015), has met the objectives of the environmental impact assessment for applying for finance, SRK recommends that the policy should consider the prevention, minimization, mitigation and control of environmental impacts, occupational safety and health risks. Further, it should ensure all workers receive a fair remuneration in accordance with their work, as well as decent working conditions, and a work environment

conducive to - and oriented towards - professional and personal development. It should also discourage any potential negative social impacts through developing activities that promote the well-being of the people living in the surrounding area, respecting their culture and traditions. The policy should implement compliant environmental and social management systems.

- SRK recommends that Invicta Mining Corp prepare a detailed social base line assessment to obtain more precise information about the productive activity of the area's inhabitants, and the use of their natural resources (mainly the use of soil and water).

20 Capital and Operating Costs

This section presents the capital and operating cost to support the conceptual mine plan for the Invicta Gold Project PEA study. Lupaka provided capital and operating cost data to SRK.

20.1 Capital Cost Estimates

The capital cost estimate (CAPEX) is based on a combination of experience, reference projects, budgetary quotes and factors as appropriate with a preliminary study and was provided to SRK from Lupaka. It includes costs for both the pre-production period and the production period.

20.1.1 Capital Cost Summary

The PEA has been designed to minimize initial capital outflows by utilizing the existing underground infrastructure to access mineralization in proximity to the 3400 Level adit, rehabilitate and utilize the existing 65-person camp, and truck haul the mineralized material to toll milling facilities thereby avoiding the requirement to build a processing plant on site.

Total capital cost for the 6-year mine life for the Invicta Gold Project is estimated at $12.7 million. The first-year pre-production period costs occurring in year 2018 is the investment to bring the Invicta mine into steady state production and is estimated at $4.3 million. The remaining 5-year sustaining capital during the production period is estimated at a total of $8.4 million. The total capital for the life of mine is summarized in Table 101.

Table 101: Initial Pre-Production Capital and Sustaining Capital Breakdown

Description	Initial Capital 2018 ($M)	Sustaining Capital 2019-2023 ($M)	Total Capital Life of Mine ($M)
Project Infrastructure	1.8	2.3	4.1
Development	2.5	6.1	8.6
Total	**4.3**	**8.4**	**12.7**

The project's pre-production capital consists of rehabilitation to existing underground and surface infrastructure, installation of underground services, preparation and development of underground infrastructure including a new adit at the 3430 Level, associated cross-cut and connection to the 3400 Level which completes the ventilation circuit and provides a secondary egress, as well as significant improvements to the projects access road.

Improvements to the site road and site preparations are estimated at $1.5 million. Capital development and rehabilitation is estimated at $2.6 million. Community infrastructure contribution is estimated at $0.1 million and environment costs are estimated at $0.8 million. All costs are inclusive of a 15 percent contingency on capital development and 20 percent contingency on all other capital expenditures.

The capital expenditure for the 2018 pre-production period are summarized in Table 102.

Table 102: Pre-Production Period Capital Expenditures

Description	Units	2018
Site Roads and Surface Preparation	$M	1.52
Capital Mine Development	$M	2.55
Community Infrastructure	$M	0.14
Environment and Mine Closure	$M	0.11
Total	**$M**	**4.33**

Excluded from capital expenditures is approximately $1.0 million, which was spent in 2017 to buy-back and extinguish the previous 1 percent royalty over the Invicta Gold Project owned by Franco Nevada.

The capital expenditures for the production period beginning in year 2019 and ending in year 2023 includes maintaining the site road, ongoing capital development, community infrastructure and environment and closure costs. All sustaining costs are inclusive of a 15 percent contingency on capital development and 20 percent contingency on all other capital expenditures. Capital expenditure estimates along with the unit sustaining cost per tonne are summarized in Table 103.

Table 103: Production Period Capital Expenditures

Description	Units	Total	2019	2020	2021	2022	2023
Site Roads and Surface Preparation	$M	0.36	0.07	0.07	0.07	0.07	0.07
Capital Mine Development	$M	6.07	3.28	1.30	0.72	0.73	0.04
Community Infrastructure	$M	1.34	0.27	0.21	0.29	0.29	0.29
Environment and Mine Closure	$M	0.65	0.12	0.12	0.13	0.13	0.15
Total	**$M**	**8.42**	**3.74**	**1.70**	**1.20**	**1.23**	**0.55**
Sustaining Capital	$/t	12.39	29.58	13.38	9.54	9.78	6.62

20.1.2 Capital Mine Development

The capital development estimate was based on the total metres of development, both laterial and vertical required to support the 6-year mine life at the Invicta Gold Project and assigning a unit cost per metre. Units costs were provided by contractors. Development cost include labour, materials, mobile equipment, maintenance and contingency. Total cost summary of mine development for the life of mine including the pre-production period (2018) and the sustaining capital during the production period (2019 to 2023) are summarized in Table 104.

Table 104: Capital Development Cost by Year and Category (2018 to 2023)

Description	Units Cost (US$/m)	Total $('000)	2018 $('000)	2019 $('000)	2020 $('000)	2021 $('000)	2022 $('000)	2023 $('000)
Ramp	1,575.00	941.8	233.1	708.7	-	-	-	-
By Pass	1,575.00	587.5	344.9	242.5	-	-	-	-
Preparation Chamber	1,575.00	568.6	113.4	184.3	135.4	72.4	63	-
Ventilation Shaft	899.80	805.3	369.8	118.8	117	76.5	108.9	14.4
Drift	1,575.00	1,242.70	327.6	522.9	124.4	110.2	132.3	25.2
Draw Point	1,480.40	339	238.4	100.7	-	-	-	-
Gallery	1,480.40	3,741.10	845.3	1,251.00	860.1	407.1	377.5	-
Dump Chute from Ore Pass	1,023.00	111.5	-	46	28.6	18.4	18.4	-
Ore Pass	1,023.00	267	81.8	83.9	33.8	33.8	33.8	-
Pocket Ore Pass	1,023.00	20.5	-	20.5	-	-	-	-
Total		**8,625**	**2,554**	**3,279**	**1,299**	**718**	**734**	**40**

20.1.3 Processing Capital Costs

No capital costs or sustaining capital costs for processing facilities have been considered.
It is understood in this PEA that all toll plant contracting, operations, supervision and concentrate sales costs will be covered by the operating costs

20.1.4 Contingency

Contingency is the amount of money allocated above the cost estimation to reduce risk of overruns of the project objectives. A contingency rate of 15 percent was applied to site roads and site preparation, community infrastructure, mine environment and mine closure. A contingency rate of 20 percent was applied to all capital development.

20.2 Operating Cost Summary

Operating expenditures during the life of mine (years 2018 to 2023) are estimated at $96.0 million. This equates to an average $143.34 per tonne, based on 669,813 tonnes of production. The expenditures include mining supplies, services and contracts, truck haulage, contract labour and salary, general and administrative costs, and processing costs. Costs are summarized by each category and are presented in Table 105.

Table 105: Life of Mine Operating Cost

Description	2019-2023	
	$/t	$M
Underground Mining and Development	42.95	28.77
Trucking and Haulage	50.20	33.62
Processing	37.54	25.15
General & Administration	12.66	8.48
Total	**143.34**	**96.0**

Mining and trucking costs are estimated based on third party contractor rates, processing charges are estimated based on discussions held with local toll processing facilities. General and administration costs are based on internal owner estimates, local labor rates, and from experience in operating the Invicta Gold Project camp facility.

20.2.1 Processing Operating Costs

Lupaka has been provided with budgetary quotations from candidate transport and toll treatment plants for the transport and treatment of the Invicta Gold Project mineral resource. The amounts quoted are in line with the benchmark costs in Transmin's database. Transmin recommends that a supervisor and assistant will be required for each of the following areas:

- Ore transportation
- Plant supervision
- Metallurgical testing
- Concentrate transport

This is estimated to cost $2 per tonne treated. Independent analysis of feed, concentrate and tailings samples is recommended for transparency and accuracy of metal deportment. This is estimated to cost $0.9 per tonne treated (Table 106).

Table 106: Processing Operating Costs, Transmin, 2018

Item	Unit	Cost
Ore transportation	US$/t-wet	39.3
Ore toll processing	US$/t	38.0
Supervision labor	US$/t	2.0
Laboratory service	US$/t	0.9
Concentrate transportation	US$/t-wet	51.81

20.2.2 Mine Closure

The 2015 estimate of the mine closure costs at the end of mine life, is presented in Table 107 .

Table 107: Summary of the Closure Costs (equivalent in US$), 2015

Description		Excluding Taxes (US$)	Period
1	Progressive closure	328,820	2015-2021
2	Final closure	301,334	2022
3	Post closure	174,882	2023-2027
1+2+3	**Total Closure Costs**	**$805,036**	

1US$=3.4145 PEN (12/31/2015)

Source: Informe N° 161-2015/MEM/DGM-DTM-PCM, pg. 1.

Since Invicta Mining Corp has not yet initiated mining operations, the company requested to the mining authority in Peru to suspend the guarantee fund provision according to the mine closure plan. This request was granted in document directorial resolution number 286-2014-MEM-DGM/V, dated August 5, 2014.

Table 108 summarizes the last approved guarantee constitution program (in 2015).

Table 108: Closure Costs Guarantee Constitution Program (equivalent in US$), 2015

Year	Annual ($US)	Total ($US)
2016	93,024	93,024
2017	95,860	188,884
2018	99,494	288,378
2019	104,463	392,841
2020	112,105	504,946
2021	127,778	632,724
Total	**632,724**	

1USD=3.4145 PEN (12/31/2015)

Source: Informe N° 161-2015/MEM/DGM-DTM-PCM, pg. 2

21 Economic Analysis

21.1 Introduction

This preliminary economic assessment is not adequate to confirm the economics of the study. A preliminary-feasibility study, or feasibility study, as defined in Canadian Securities Administrators National Instrument 43-101, containing mineral reserve estimates is required for this purpose.

Readers are cautioned that the projected mining method, potential production profile and plan and mine plan referred to in this preliminary economic assessment are conceptual in nature. There is no certainty that an economic outcome will be realized or that a production decision will be made. A mine production decision that is made without a feasibility study carries additional potential risks which include, but are not limited to, the inclusion of Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Mine design and mining schedules, metallurgical flow sheets and process plant designs may require additional detailed work and economic analysis and internal studies to ensure satisfactory operational conditions and decisions regarding future targeted production.

This preliminary economic assessment is preliminary rom
in nature and includes Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the Inferred mineral resources will be converted to the Measured and Indicated categories, that the Measured and Indicated mineral resources will be converted to the proven or probable mineral reserves and there is no certainty that this preliminary economic assessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability; the estimate of mineral resources in this report may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

21.2 Summary and Valuation Methodology

The Invicta Gold Project has been valued using a discounted cash flow (DCF) approach. The DCF method of valuation requires projecting yearly cash inflows, or revenues, and subtracting yearly cash outflows such as operating costs, capital costs, and taxes. Cash flows are taken to occur at the middle of each period. The resulting net annual cash flows are discounted back to the date of valuation, January 1, 2018, and totalled to determine net present value (NPV) at the selected discount rate of (5 percent). The NPV has also been presented with a discount rate of (8 percent). The internal rate of return (IRR) is calculated as the discount rate that yields a zero NPV. The IRR on this project was not calculated as the project cashflow is positive inclusive of the first year. The payback period is calculated as the time needed to recover the initial capital spent from pre-production start date.

The results of the economic analysis represent forward-looking information that is subject to a number of known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here.

The Invicta economic assessment is indicative and preliminary in nature. The results of the economic analysis performed as a part of this PEA is based on measured and indicated mineral resources. All

monetary amounts are presented in US dollars ($US) unless otherwise specified, and financial results are reported on both a pre-tax and a post-tax basis.

21.3 Financial Model

The estimated post-tax NPV of the Invicta Gold Project, using a discount rate of 5 percent, is $43.4 million with contingency on capital costs. The corresponding pre-tax NPV was $53.6 million. The detailed financial inputs and financial outcome are presented in Table 109 and Table 110, respectively. All values and outputs are in US dollars.

All metal prices, process costs, and metal recoveries, was provided by Lupaka. Any sunk costs prior to the project's start date of January 1, 2018, are not included in the economic analysis. Capital expenditures were depreciated over the life of mine. The financial model uses a tax calculation based on a tax rate of 30 percent.

The reader is cautioned that the metal prices used in this study are only estimates based on recent historical performance and there is absolutely no guarantee that they will be realised if the project is taken into production. Metal prices are based on many complex factors and there are no reliable long-term predictive tools.

The total revenue contributions of each metal are tabulated in Table 111 and presented in Figure 67.

Table 109: General Input Parameters

Item	Unit	Value (US$)
General		
NPV (discount)	%	5.0 and 8.0
Metal Price		
Gold	$/oz	1,300.00
Silver	$/oz	16.75
Copper	$/lb	3.00
Lead	$/lb	1.05
Zinc	$/lb	1.25
Processing & Refining		
Mill throughput (max)	tpd	355
Milling days per year	dpy	365
Processing cost - 2018	$/t	37.54
Gold Recovery	%	87.9
Silver Recovery	%	79.6
Copper Recovery	%	84.1
Lead Recovery	%	82.6
Zinc Recovery	%	82.7
Taxation		
Corporate (Peru)	%	30
Capital Items		
Contingency infrastructure	%	20.0
Contingency development	%	15.0

Source: Lupaka 2018

Table 110: Financial Model Summary

Item	Unit	Output
Economics		
NPV (pre-tax) (5%)	($M)	53.6
NPV (pre-tax) (8%)	($M)	50.0
NPV (post-tax) (5%)	($M)	43.4
NPV (post-tax) (8%)	($M)	40.6
Non-discounted payback period	years	< 1
Discounted payback period	years	< 1
Project Capital		
Project infrastructure capital	($M)	1.8
Capital development	($M)	2.5
Sub-Total Capital	**($M)**	**4.3**
Capitalized (project phase) operating	($M)	13.4
Total Project Capital	**($M)**	**17.7**
Sustaining Capital		
Project Infrastructure capital	($M)	2.3
Capital development	($M)	6.1
Sustaining cost (infrastructure + mobile eqt)	**($M)**	**8.4**
Production		
Plant feed	(Mt)	0.67
Payable Gold-Equivalent	(Moz)	0.14
Metrics (Life of Mine)		
Operating cash cost per ton feed	$/tonne	143.34
Operating cash cost per ounce	$oz	508
All-in (cash cost + Sustaining cost) per ounce	**$/oz**	**575**

Source: SRK, 2018

Table 111: Revenue Contribution by Commodity and Percentage

	Total Project ($M)	%
Gold	125.0	66
Silver	11.3	6
Total Precious Metal	**136.3**	**72**
Copper	31.9	17
Zinc	12.1	6
Lead	9.2	5
Total	**189.5**	**100**

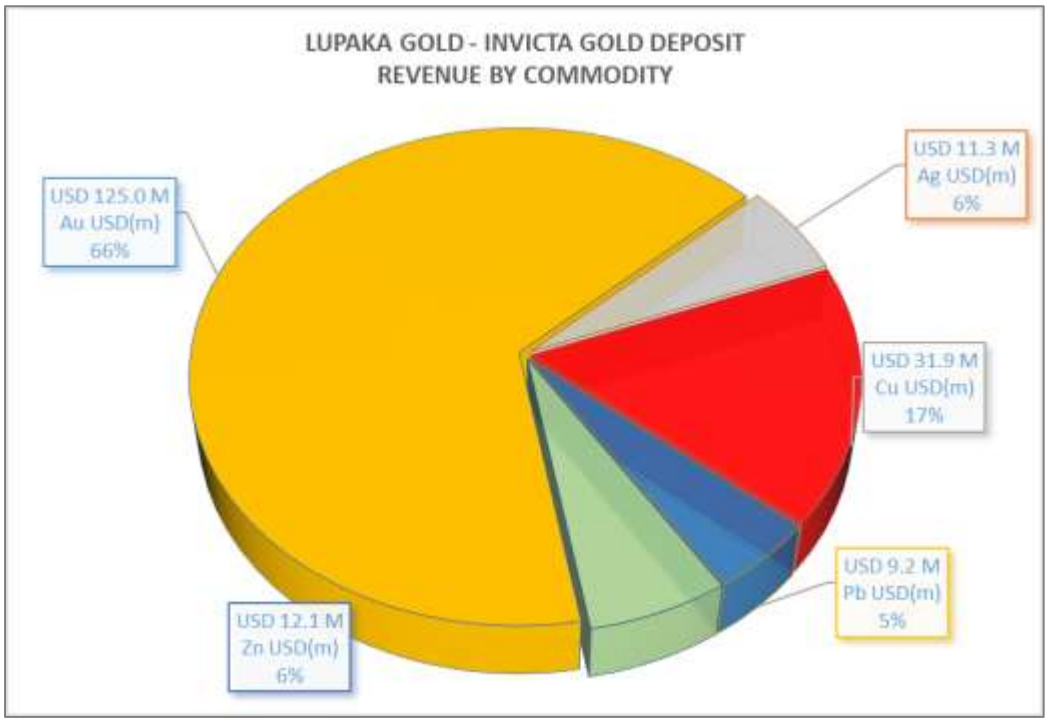


Figure 67: Revenue Contribution

21.3.1 Royalties and Taxation

Pre-tax estimates of project values were prepared for comparative purposes, while after-tax estimates with a 30 percent Peru tax were developed and are likely only to approximate the true investment value. Tax estimates involve many complex variables that can only be precisely calculated during operations and, as such, the after-tax results are only estimates.

The Invicta Gold Project currently does not have any royalties.

21.3.2 Financial Model Sensitivity Analysis

The sensitivity of the Invicta Gold Project NPV with a 5 percent discount rate to changes in key economic parameters is presented in Figure 68. The results will change in a particular parameter and it is assumed that the remaining parameters are mutually exclusive and thus remain unchanged.

Sensitivity results indicated that the NPV were most sensitive to changes in revenue parameters more than to the costs. The NPV was also sensitive to operating costs compared to capital costs.

21.4 Payback

The project payback period is defined as the time required to recover the initial expenditures incurred in developing Invicta Gold Project. The payback period is calculated using net cash flow, and the payback point occurs when the project's net cumulative cash flow is zero. For the Invicta Gold Project, the payback is approximately less than 1 year from the start of pre-production.

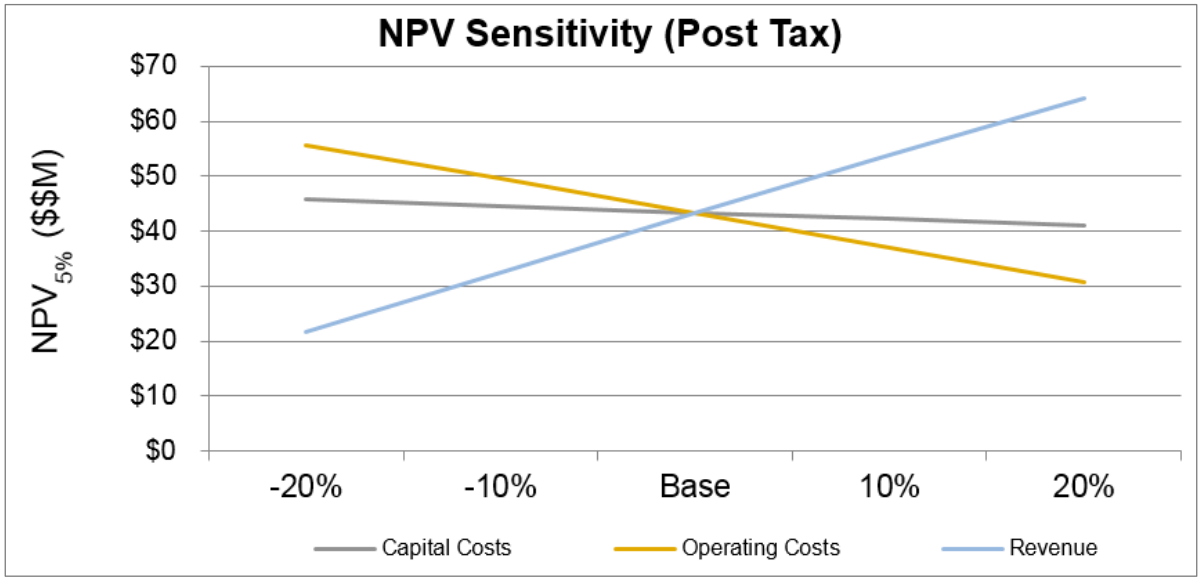


Figure 68: NPV Sensitivity Graph

21.5 Economic Summary and Recommendations

At this preliminary stage, and based on the stated assumptions, the project has demonstrated that it is potentially economically viable with an after-tax net present value using a 5 percent discount rate (NPV5 percent) of $43.4 million with positive cashflows for the life of mine as shown in Figure 69 and therefore should continue to the next level of study.

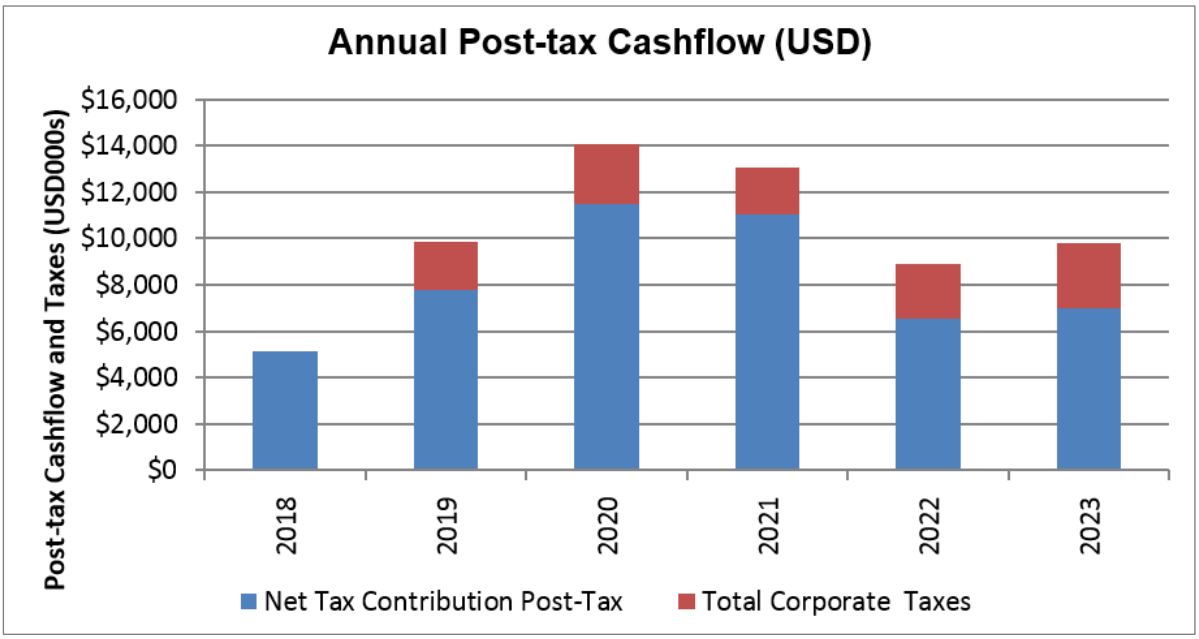


Figure 69: Annual Cashflow and Taxes

22 Adjacent Properties

There are no adjacent properties that are considered relevant to the mineralization modelled, reported and conceptually evaluated in this technical report.

23 Other Relevant Data and Information

There is no other relevant data available about the Invicta Gold Project.

24 Interpretation and Conclusions

Lupaka is a Peru-focused mineral development and exploration company, whose prime asset is the Invicta Gold Project, which Lupaka intends to fast-track to production. Lupaka holds a 100 percent interest in the Invicta Gold Project, which comprises six mining concessions for a total area of 4,700 hectares.

SRK has audited and modified a mineral resource model generated by SRK (2012) for the polymetallic mineralization delineated by drilling on the Invicta Gold Project and a PEA level mining study was undertaken to assess the economic potential of mining a portion of the total mineral resource which is documented as an independent technical report in compliance with NI 43-101 and Form 43-101F1 guidelines.

The exploration database used to estimate the Invicta Gold Project mineral resource was audited in this study by SRK, who is of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries for gold mineralization and that the assay data are sufficiently reliable to support mineral resource estimation.

SRK also considers that the procedures used by SRK (2012) for the evaluation and classification of mineral resources are in accordance with the CIM *Estimation of Mineral Resource and Mineral Reserve Best Practices Guidelines*.

SRK (2012) defined seven mineralized wireframe structures / zones for the Invicta Gold Project from core borehole and underground channel sampling data. To constrain mineral resource modelling, these wireframes were geologically grouped into five zones (Atenea 1, Atenea 2, Atenea 3, Pucamina and Dany (Ydalias, Dany and Zone 4)). After review of log probability plots, all raw assays were appropriately capped. SRK (2012) used an inverse distance estimator to assign gold, silver, copper, lead and zinc grades into the block models. SRK (2012) analyzed the specific gravity data statistically above a 0.5 g/t gold-equivalent cut-off to assign average specific gravity by mineralized zone.

Mineral resource model estimates were validated by SRK in the current study using a visual comparison of block grades and samples; and statistical comparisons between the estimates performed using inverse distance and nearest neighbour estimation. SRK also validated the resources with swath plots by easting, northing and elevation. The resultant block estimates appear to be reasonable given the informing sample grades and estimation parameters.

Based on a visual examination and comparisons with the nearest neighbor model, SRK believes that the SRK (2012) grade models are globally unbiased and represent a reasonable estimate of undiluted in-situ resources.

SRK classified the block model in accordance with the *CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014)*. The “reasonable prospects for economic extraction” requirement generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade considering extraction scenarios and processing recoveries. To meet this requirement, SRK considers that the Invicta Gold Project is amenable for underground extraction. Underground mineral resources are reported at a cut-off grade of 3.0 g/t gold-equivalent. A combined Measured and Indicated tonnage of 3 million tonnes at 5.78 g/t gold-equivalent for a contained metal of 558 thousand ounces of gold-equivalent

was reported. An additional Inferred tonnage of 0.58 million tonnes at 5.29 g/t gold-equivalent for a contained metal of 98 thousand ounces of gold-equivalent was also reported.

Metal price changes and the increase in the reporting cut-off gold-equivalent grade (from 1.3 g/t gold to 3.0 g/t gold) have impacted reported mineral resources with an overall decrease of tonnes and an increase of grade resulting in a net decrease in reported contained gold.

The PEA considers only a small portion of the total mineral resource adjacent to the existing infrastructure at the Invicta Gold Project. The operating plan is based on the underground extraction from the Atenea vein close to the existing 3400 Level adit utilizing a sublevel long hole open stoping mining method, with waste rock as backfill where possible.

Production as outlined by the PEA considers an average peak steady state rate of approximately 355 tonnes per day over a 6-year life of mine commencing in 2018. Production material will be trucked to surface and transported to an off-site processing facility.

The underground mine design process developed by SVS (2014) resulted in a mineable resource originally of 679,773 tonnes (diluted) at an equivalent cut off gold grade of 4.0 g/t with an NSR cut-off of US$142 per tonne. Before process recovery, the underground design contained 193,000 gold-equivalent ounces.

In this study, SRK reviewed and slightly modified the mining resources by applying an 81 percent mining recovery to the designed stopes and increased slightly the unplanned waste dilution from 10 percent to 11 percent at zero grade. This resulted in 184,708 equivalent ounces of gold at 4.0 g/t cut-off with an estimated 669,813 tonnes produced.

The geotechnical characterization of the mineralized deposit, the wall-rock competency and the geometric shape lend themselves to a sublevel long hole stoping mining method with unconsolidated waste rock backfill. This method typically responds well for obtaining a high extraction ratio, controlled dilution and reasonable to low operating cost.

The Invicta Mining Corp currently complies with the Environmental Management Instruments (IGA) requested by the Peruvian Ministry of Energy and Mines.

Over the initial 6-year operating plan outlined in the PEA, the pre-tax NPV using a 5 percent discount rate is $53.6 million and the post-tax NPV using a 5 percent discount rate is $43.4 million. This preliminary economic assessment is however not adequate to confirm the economics of the study. A preliminary-feasibility study, or feasibility study, as defined in Canadian Securities Administrators National Instrument 43-101, containing mineral reserve estimates is required for this purpose.

Exploration conducted on the Invicta Gold Project indicates that the property has considerable potential for mineral resource expansion through exploration. Structural studies, geophysical and geochemical work conducted to date strongly suggest the potential for mineral resource expansion along existing mineralized structures.

Invicta Mining Corp management has proposed an exploration plan for 2018 and a budget has been approved to execute the plan. The objective of the exploration plan is the expansion of the mineral resources above and to the east of the 3400 Level in the Atenea vein, and below this level in areas characterized by low drilling densities. It is strategically important that high grade mineralization be identified and delineated by drilling to potentially expand the life of mine.

25 Recommendations

The Invicta Gold Project is a project of considerable merit, which has demonstrated positive PEA results considering the conceptual extraction of a portion of the reported mineral resource. In view of the outcome of this study, SRK recommends a work program comprising multi-disciplinary technical studies and exploration drilling aimed at expansion, de-risking and further characterization of the project in preparation of the future delineation of mineral reserves.

25.1 Technical Studies

After reviewing the Invicta Gold Project mineral resource model, SRK believe that there is an opportunity to optimize future mineral resource modelling, to benefit mine design, by considering:

- Development of a full project database, digitally incorporating all historical and current data including all analytical QAQC data to faciliatate future exploration, modelling and mine planning.
- Updating the coordinates to the WGS 84 system.
- Ensuring that mineralization wireframes are snapped to borehole samples.
- Revising the wireframed domains to include mineralized samples that are currently excluded from the wireframes.
- Updating the structural geology study by incorporating underground mapping, underground channel sampling, surface and underground drilling to enhance domain modelling and also to provide drill targets for mineral resource expansion.
- Implementing innovative implicit wireframing techniques supported by sound geological observations.
- Generating a geological model (lithologies and structures) which will serve as the framework for future mine design and exploration.
- Excluding waste samples at the top and bottom of the modelled wireframes to reduce dilution
- Undertaking variogram modelling by geological domain to spatially model grade continuity to provide the basis for optimal grade interpolation within each distinct structural domain.
- Updating the mineral resource model after revising the geological framework, mineralized structures and updating the underground sampling and exploration drilling database.
- Increasing geological confidence, enhancing geological modelling and additional sampling data should optimize mineral resource classification

Current underground mining practices can be further enhanced by:

- Implementing control blasting techniques with perimeter control and shorter rounds during slashing and development, particularly in poor ground.
- Undertaking a mining study to evaluate the risks and opportunities of mining with and without pillars and backfill, particularly considering the impact on dilution and mining recovery.
- The conceptual mine plan should be reviewed and numerically modelled regularly, particularly as new information becomes available.
- The other mineralized vein structures should also be incorporated into a conceptual mine prior to the extraction of the Atenea vein, to ensure a holistic approach and to prevent potential mineralization sterilization.

- Avoiding areas of excessive bad ground during mining or using double-pass shotcrete techniques in these areas.
- Ongoing rock geotechnical and hydrogeology investigations to support proposed mine design and planning
- Evaluating alternative material handling options to convey material down the mountain.

Mining has a considerable social and environmental impact, so in this regard, Invicta Mining Corp could consider:

- Undertaking an environmental baseline in line with the actual SENACE requirements, and that is suitable as a pre-mine baseline for permit planning for closure.
- Implementing detailed geochemical and water quality prediction studies concerning the potential importance of their environmental impacts.
- Invicta Mining Corp's environmental policy currently satisfies EIA broad objectives, but should be expanded to consider the prevention, minimization, mitigation and control of environmental impacts, occupational safety and health risks.
- Preparing a detailed social base line assessment to obtain more precise information about the productive activity of the area's inhabitants, and the use of their natural resources (mainly the use of soil and water).

25.2 Exploration

Additional definition drilling is warranted around the Invicta Gold Project, particularly at depth, to improve the geological confidence and continuity of high grade mineralization, with the potential to expand the mineral resources and improve their classification (Figure 70).

SRK supports the approved exploration plan proposed by Invicta management for 2018. The plan is focused in the expansion of the mineral resources above and to the east of the 3400 Level in the Atenea vein, and below this level in areas characterized by low drilling densities. It is strategically important that high grade mineralization be identified and delineated by drilling. About 600 metres of additional development drifting and 2,500 metres of underground diamond drilling have been proposed to expand and increase the confidence the Invicta mineral resource.

Detailed mapping and geochemical sampling in the satellite areas adjacent to the Atenea structure will be undertaken to develop an exploration framework upon which to base a drilling program. A tabulation of the proposed work program for the Invicta Gold Project is provided in Table 112.

SRK considers that the implementation of the proposed work program will further advance the Invicta Gold Project and will provide key inputs required to evaluate the the economic viability of a mining project at a feasibility level, and support the first disclosure of mineral reserves.

The total cost of the recommended work program is estimated at C$1.0 million (Table 112). SRK is unaware of any other significant factors and risks that may affect access, title, or the right, or ability to perform the recommended work program.

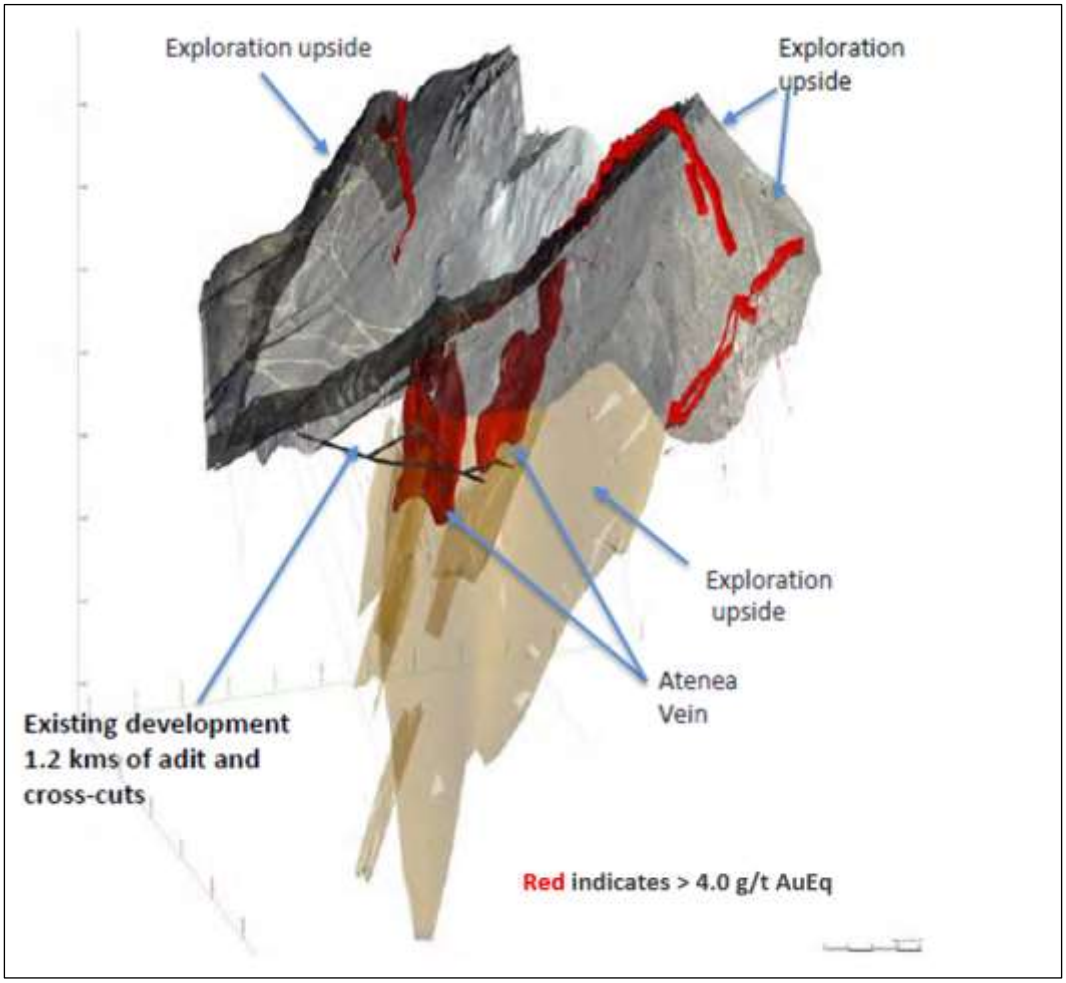


Figure 70: Diagram Highlighting the Exploration Potential of the Invicta Gold Project
Source: Lupaka December 2017

Table 112: Estimated Cost for the Proposed Work Program for the Invicta Gold Project in 2018

Description	Quantity	Unit Cost (US$)	Total (US$)
Underground Drilling			
Drilling from South Drift (Atenea below 3400 Level)	960	$150/m	144,000
Drilling from South Drift (HG East below 3400 Level)	900	$150/m	135,000
Drilling from 3550 Level (Atenea above 3400 Level)	600	$150/m	90,000
Subtotal	2,460m		**369,000**
Underground Development			
Development of 3400 Level Drift East	200m	$935/m	187,000
Development of 3550 Level Drift East	380m	$935/m	355,300
Subtotal	580m		**542,300**
Technical Studies and Other			
Surface Mapping and Geochemistry			50,000
Logistics and General Expenses			55,000
Subtotal			**105,000**
Total			**1,016,300**

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APPENDIX A

Mineral Tenure Information:

Legal Title Opinion

LAZO, DE ROMAÑA & CMB
ABOGADOS

Lima, April 4, 2018

Mr. Darryl Jones
LUPAKA GOLD CORP.
220 - 800 West Pender St.
Vancouver, BC
Canada V6C 2V6

Ref.: Invicta Project – Title Opinion

We are acting as legal counsel in Peru to Lupaka Gold Corp. ("Lupaka Gold") and its Peruvian subsidiary Invicta Mining Corp. S.A.C. ("Invicta") in connection to current standing of the 6 mineral concessions that comprise the Invicta Project ("Invicta Project"). We have been requested by Lupaka Gold to provide an opinion regarding the legal standing of the aforementioned mineral concessions[1].

1. Invicta Project

1.1 Invicta Project is comprised by the following metallic mineral concessions:

No.	Concession	Code	Registry	Registry Office	Hectares
1.	Victoria Uno	010334195	02028980	Zona IX, Sede Lima	1000.0000
2.	Victoria Dos	010336295	02029020	Zona IX, Sede Lima	400.0000
3.	Victoria Tres	010335795	02029079	Zona IX, Sede Lima	900.0000
4.	Victoria Cuatro	010197196	02029320	Zona IX, Sede Lima	400.0000
5.	Victoria Siete	010231196	02029352	Zona IX, Sede Lima	1000.0000
6.	Invicta II	010313005	11875634	Zona IX, Sede Lima	1000.0000

1.2 Location: The project is located in the districts of Leoncio Prado, Paccho and Sayán, which are in the province of Huaura in Lima, Peru.

1.3 Area: 4,700.0000 available hectares.

[1] In rendering the opinions contained herein, we have assumed (i) the legal capacity of individuals executing the agreements and documents listed below, (ii) the genuineness of all signatures, stamps and seals, (iii) the authenticity of all documents submitted to us as originals, and (iv) the conformity to original documents of all documents submitted to us as copies as well as the legal capacity of all individuals.

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2. Title to the Project

2.1 Lupaka Gold Perú has the following rights over the Project:

No.	Concession	Registry Entry	Title
1.	Victoria Uno	4	Sole titleholder. According to the Public Registry all considerations, where applicable, were paid in full.
2.	Victoria Dos	4	
3.	Victoria Tres	5	
4.	Victoria Cuatro	4	
5.	Victoria Siete	4	
6.	Invicta II	2	

3. Registered Liens and Encumbrances

Invicta Project has the following liens and encumbrances:

3.1 **Back-In Option in favor of Minera Barrick Misquichilca S.A. ("Barrick") and Right of First Refusal in favor of Compañía Minera San Jorge ("San Jorge"):**

No.	Concession	Registry Entry	Liens
1.	Victoria Uno	4	Barrick has a Back-in Option for 51% interest property in each of the mining concessions. San Jorge has a Right of First Refusal should Invicta decide to transfer any of the mining concessions.
2.	Victoria Dos	4	
3.	Victoria Tres	5	
4.	Victoria Cuatro	4	
5.	Victoria Siete	4	

3.2 Invicta acquired Victoria Uno, Victoria Dos, Victoria Tres, Victoria Cuatro and Victoria Siete mining concessions from Minera ABX Exploraciones S.A., en Liquidación ("ABX") pursuant to a transfer of mining concessions contract entered into a public deed on December 3, 2008 the "Mining Rights Contract").

3.3 Among others rights granted in the Mining Rights Contract[2], Invicta granted (i) ABX a Back-In Option for 51% property interest in the aforementioned 5 mining concessions if

[2] Namely a Royalty, a Mortgage and a Right of First Refusal should Invicta decide to forfeit the mining concessions. All of these 3 rights were assigned by ABX to Barrick (public deed dated December 17, 2008) and later by Barrick to Franco-

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certain conditions were met and (i) San Jorge a Right of First Refusal should Invicta decide to transfer any of the mining concessions.

3.4 ABX assigned its contractual position in the Mining Rights Contract in favor of Barrick by public deed dated December 17, 2008. Barrick is the current titleholder of the Back-In Option.

3.5 On January 9, 2017 Invicta, Barrick and San Jorge entered an Amended and Restated Transfer Agreement ("AR Transfer Agreement") as per which they agreed to amend and restate both the Back-in Option held by Barrick and the Right of First Refusal held by San Jorge.

3.6 **Back-in Option:**

3.6.1 Barrick is entitled to exercise this right if the following conditions are met:

(i) More than 2 million ounces of gold are discovered at any time in the mining concessions and become Proven or Probable reserves according to the guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum.

(ii) Within 90 calendar days of being informed by Invicta that the aforementioned condition has been met, Barrick sends notice informing the decision to acquire the mining concessions

3.6.2 Invicta will receive as consideration 150% of all exploration and project expenses incurred by Invicta and/or its subsidiaries in these mining concessions as long as such expenses are duly documented according to law.

3.6.3 Should Invicta incur into any breach of contract, Barrick will terminate the original Mining Rights Contract and revert these 5 mining concessions to Barrick.

3.7 **Right of First Refusal:**

3.7.1 San Jorge is entitled to exercise this right if Invicta intends to transfer any participation interest in these 5 mining concessions to any third party.

3.7.2 San Jorge will have 30 calendar days counted as of the day it receives notice from Invicta of such intention to inform Invicta that it exercises this Right of First Refusal and will acquire the mining concessions for the same consideration and under the same terms and conditions as the ones informed by Invicta.

3.8 Both the Back-In Option and the Right of First Refusal are further regulated in the AR Transfer Agreement.

Nevada Corporation (public deed dated November 4, 2013). All 3 rights are currently extinguished as per public deed dated August 14, 2017. All the aforementioned public deeds are duly registered in the registries for each of these 5 mining concessions in the Peruvian Mining Registry.

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3.9 **Mortgage in favor of PLI Huaura Holdings LP ("PLI Huaura"):**

No.	Concession	Registry Entry	Mortgage
1.	Victoria Uno	11	Mortgaged in favor of PLI Huaura up to US$ 17.5MM
2.	Victoria Dos	11	
3.	Victoria Tres	12	
4.	Victoria Cuatro	11	
5.	Victoria Siete	11	
6.	Invicta II	3	

3.10 A mining mortgage has been granted by Invicta, acting as guarantor of Lupaka Gold in the Pre-Paid Forward Gold Purchase Agreement dated June 30, 2016 entered into by PLI Huaura as Buyer, Lupaka Gold as Seller and Invicta (and others) as Guarantors (the "Purchase Agreement"). The mortgage has been granted up to the amount of US$ 17,500,000.00 (Seventeen Million Five Hundred Thousand and 00/100 United States Dollars) and serves as collateral for all obligations of Lupaka Gold under the Purchase Agreement.

The mortgage was granted and entered into a public deed on August 2, 2017 before notary public Ms. Susana Gutiérrez Pradel. The mortgage covers the mineral concessions indicated in Paragraph 3.1, as well as (i) any buildings and civil works that exist today or may exist in the future in those mineral concessions; and (ii) any assets property of Lupaka Perú that may be used for mining activities in those mineral concessions.

4. Environmental

4.1 None of the mineral concessions in Invicta Project are listed in Ministerial Resolution N° 535-2016-MEM/DM[3].

5. Good Standing – Maintenance Obligations

5.1 All mineral concessions comprising Invicta Project are valid and in good standing, subject to compliance with payment of license fees and applicable maintenance obligations:

5.1.1 Invicta has complied with its obligation of paying the license fees over Invicta Project up to the year 2016.

5.1.2 Where applicable, Lupaka Perú has opted to pay the applicable penalty in order to fulfill its maintenance obligations, up to the year 2016.

[3] Current list where all mineral concessions with mining environmental liabilities are listed.

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5.2 The payments owed in Invicta Project, both for license fees and penalties, are as follows:

No.	Concession	Code	Year	License Fees (US$)	Penalty (US$)
1.	Victoria Uno	010334195	2017	3,000.00	20,000.00
			2018	3,000.00	20,000.00
2.	Victoria Dos	010336295	2017	1,200.00	8,000.00
			2018	1,200.00	8,000.00
3.	Victoria Tres	010335795	2017	2,700.00	18,000.00
			2018	2,700.00	18,000.00
4.	Victoria Cuatro	010197196	2017	1,200.00	8,000.00
			2018	1,200.00	8,000.00
5.	Victoria Siete	010231196	2017	3,000.00	20,000.00
			2018	3,000.00	20,000.00
6.	Invicta II	010313005	2017	3,000.00	6,000.00
			2018	3,000.00	20,000.00
			Total	**28,200.00**	**174,000.00**

5.3 Payments for the year 2017 have to be made on or before June 30, 2018.

Yours sincerely,

Maurice Saux

Maurice Saux

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APPENDIX B

Analytical Results
For SRK Verification Samples

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LIMA

Page: 1
Total # Pages: 2 (A - C)
Plus Appendix Pages
Finalized Date: 10- FEB- 2018
Account: TINSUCO

CERTIFICATE LI18018544

Project: INVICTA

This report is for 7 Drill Core samples submitted to our lab in Lima, Peru on 5- FEB- 2018.

The following have access to data associated with this certificate:

GERARDO BERNAL CAMILA PASSOS	JULIO CASTAÑEDA	GLEN COLE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
CRU- QC	Crushing QC Test
PUL- QC	Pulverizing QC Test
LOG- 22	Sample login - Rcd w/o BarCode
CRU- 31	Fine crushing - 70% < 2mm
SPL- 21	Split sample - riffle splitter
PUL- 31	Pulverize split to 85% < 75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME- ICP41	35 Element Aqua Regia ICP- AES	ICP- AES
Au- AA26	Ore Grade Au 50g FA AA finish	AAS

To: SRK CONSULTING (PERU) S.A.
ATTN: GLEN COLE
AV. LA PAZ NRO. 1227 MIRAFLORES
LIMA

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Rene Mamani, Laboratory Manager, Peru

ALS Peru S.A.
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Page: 2 - A
Total # Pages: 2 (A - C)
Plus Appendix Pages
Finalized Date: 10- FEB- 2018
Account: TINSUCO

Project: INVICTA

CERTIFICATE OF ANALYSIS LI18018544

Sample Description	Method / Analyte / Units / LOR	WEI- 21 Recd Wt. kg 0.02	Au- AA26 Au ppm 0.01	ME- ICP41 Ag ppm 0.2	ME- ICP41 Al % 0.01	ME- ICP41 As ppm 2	ME- ICP41 B ppm 10	ME- ICP41 Ba ppm 10	ME- ICP41 Be ppm 0.5	ME- ICP41 Bi ppm 2	ME- ICP41 Ca % 0.01	ME- ICP41 Cd ppm 0.5	ME- ICP41 Co ppm 1	ME- ICP41 Cr ppm 1	ME- ICP41 Cu ppm 1	ME- ICP41 Fe % 0.01
157		2.06	11.65	47.0	1.66	249	<10	10	<0.5	113	0.02	16.1	23	4	6990	11.30
574		2.23	0.52	17.5	1.61	182	<10	20	<0.5	13	0.67	2.8	58	7	>10000	13.95
1549		1.80	7.16	37.1	2.22	124	<10	<10	<0.5	26	0.03	249	45	6	>10000	15.35
1574		1.81	6.17	14.0	0.86	267	<10	30	<0.5	11	0.01	23.3	57	9	5040	8.45
4175		0.48	0.47	3.8	2.09	78	<10	20	<0.5	2	0.11	59.3	14	12	385	5.58
4229		0.95	0.28	13.4	1.38	96	<10	90	<0.5	3	0.15	182.5	12	9	1915	4.36
4486		1.39	0.86	0.9	3.60	5	<10	30	0.5	<2	0.91	1.8	25	43	10	7.48

***** See Appendix Page for comments regarding this certificate *****

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Page: 2 - B
Total # Pages: 2 (A - C)
Plus Appendix Pages
Finalized Date: 10- FEB- 2018
Account: TINSUCO

Project: INVICTA

CERTIFICATE OF ANALYSIS LI18018544

Sample Description	Method / Analyte / Units / LOR	ME-ICP61 Ca ppm 10	ME-ICP61 Hg ppm 1	ME-ICP61 K % 0.01	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm 2	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1
157		10	2	0.02	<10	0.70	1880	4	0.01	<1	20	745	5.50	3	1	1
574		<10	<1	0.17	<10	0.76	1280	63	0.01	<1	450	651	>10.0	7	4	21
1549		10	2	<0.01	<10	1.42	2050	9	0.01	<1	150	>10000	>10.0	5	1	2
1574		<10	<1	0.07	<10	0.34	642	3	0.01	<1	110	1260	7.55	12	1	4
4175		10	<1	0.12	<10	1.42	2530	1	0.01	8	360	1490	1.28	2	3	2
4229		<10	<1	0.09	<10	0.85	2190	1	0.01	2	290	3610	0.80	8	2	4
4486		10	<1	0.06	10	2.88	3170	<1	0.01	19	620	60	<0.01	4	8	17

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Page: 2 - C
Total # Pages: 2 (A - C)
Plus Appendix Pages
Finalized Date: 10- FEB- 2018
Account: TINSUCO

Project: INVICTA

CERTIFICATE OF ANALYSIS LI18018544

Sample Description	Method / Analyte / Units / LOR	ME-ICP61 Th ppm 20	ME-ICP61 Ti % 0.01	ME-ICP61 Tl ppm 10	ME-ICP61 U ppm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2
157		<20	<0.01	<10	<10	31	80	1530
574		<20	0.04	<10	<10	92	60	339
1549		<20	<0.01	<10	<10	44	40	>10000
1574		<20	<0.01	<10	<10	22	30	983
4175		<20	<0.01	<10	<10	35	10	4330
4229		<20	0.05	<10	<10	32	<10	7760
4486		<20	0.12	<10	<10	103	<10	365

ALS Peru S.A.
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Page: Appendix 1
Total # Appendix Pages: 1
Finalized Date: 10- FEB- 2018
Account: TINSUCO

Project: INVICTA

CERTIFICATE OF ANALYSIS LI18018544

	CERTIFICATE COMMENTS
	LABORATORY ADDRESSES
Applies to Method:	Processed at ALS Lima located at Calle 1 LT- 1A Mz- D, esq. Calle A, Urb. Industrial Bocanegra Callao 01, Lima, Peru.
	Au- AA26 CRU- 31 CRU- QC LOG- 22
	ME- ICP41 PUL- 31 PUL- QC SPL- 21
	WEI- 21

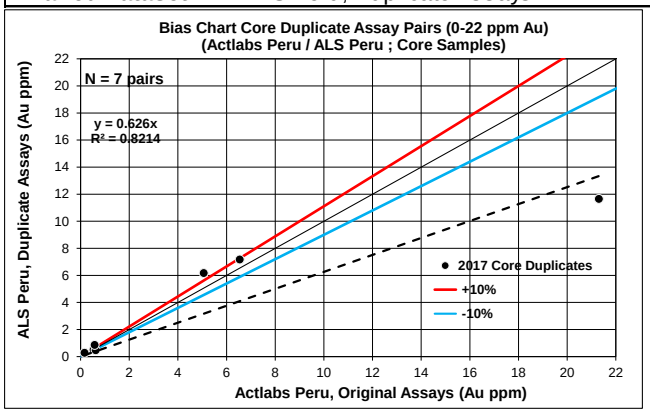
APPENDIX C

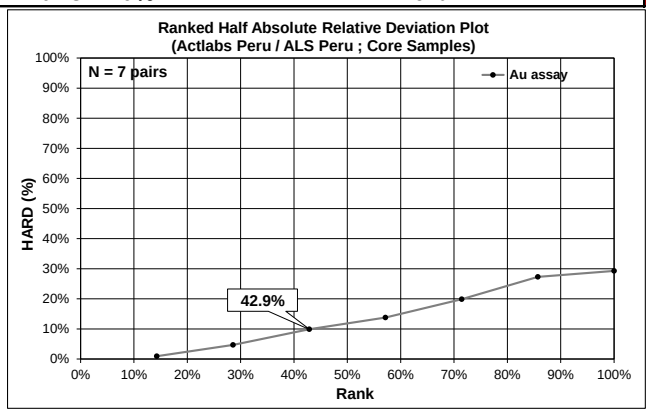
Analytical Quality Control Data and Relative Precision Charts for Verification Sample Paired Data

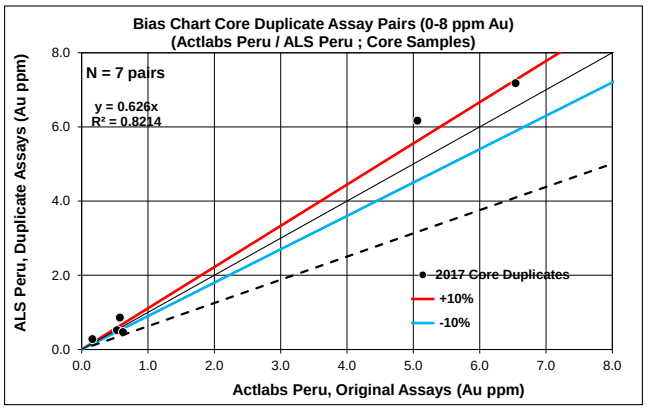
Bias Charts and Precision Plots for gold core duplicate samples assayed by Actlabs Peru laboratory versus ALS Peru laboratory.

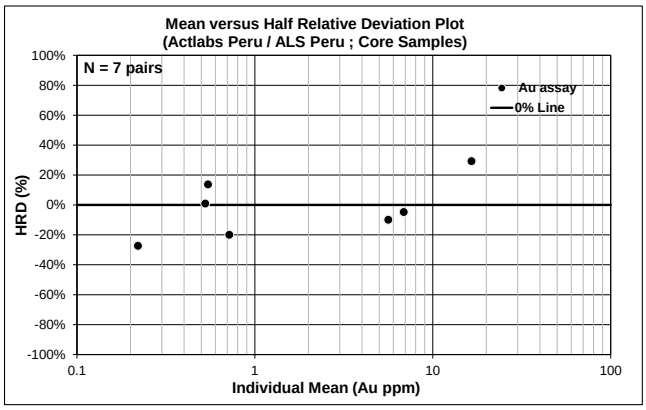
Project	Invicta
Data Series	2017 Core Duplicates
Data Type	Core Samples
Commodity	Au in ppm
Analytical Method	Fire Assay - AAS Finish
Detection Limit	ALS: 0.01 ppm
Original Dataset	Actlabs Peru, Original Assays
Paired Dataset	ALS Peru, Duplicate Assays

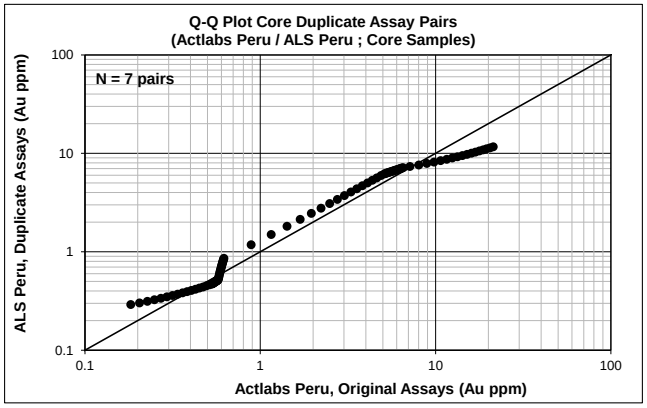
Statistics	Original	Field Duplicate
Sample Count	7	7
Minimum Value	0.160	0.280
Maximum Value	21.30	11.65
Mean	4.969	3.876
Median	0.620	0.860
Standard Error	2.888	1.701
Standard Deviation	7.640	4.500
Correlation Coefficient	0.9337	
Pairs ≤ 10% HARD	42.9%	

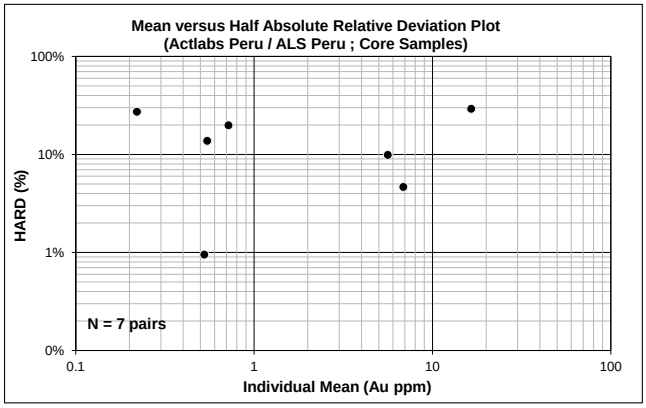






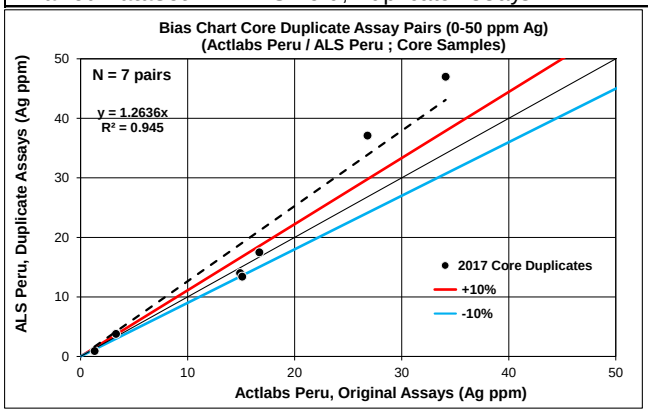


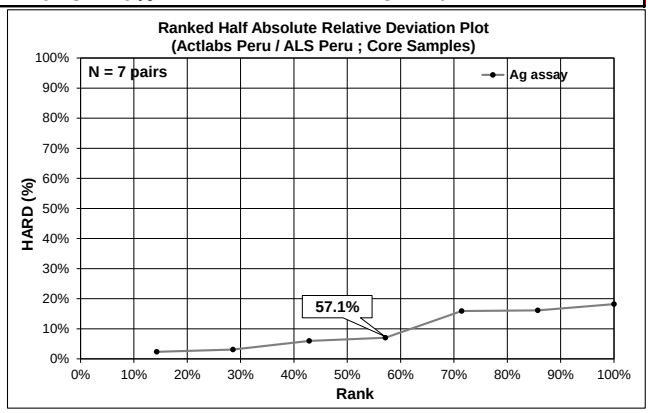


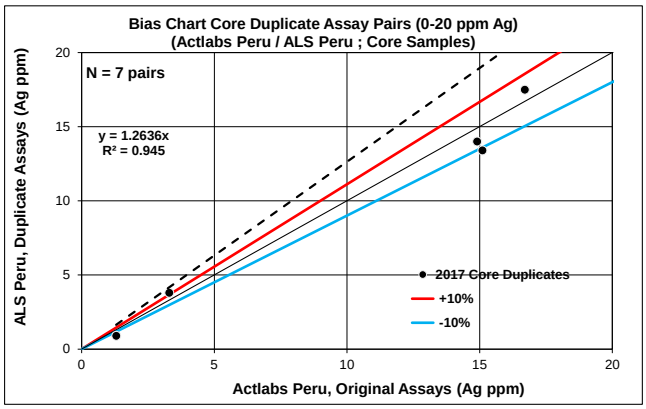


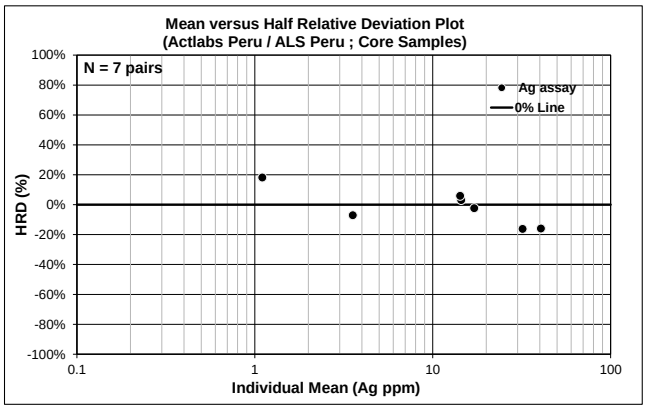
Bias Charts and Precision Plots for silver core duplicate samples assayed by Actlabs Peru laboratory versus ALS Peru laboratory.

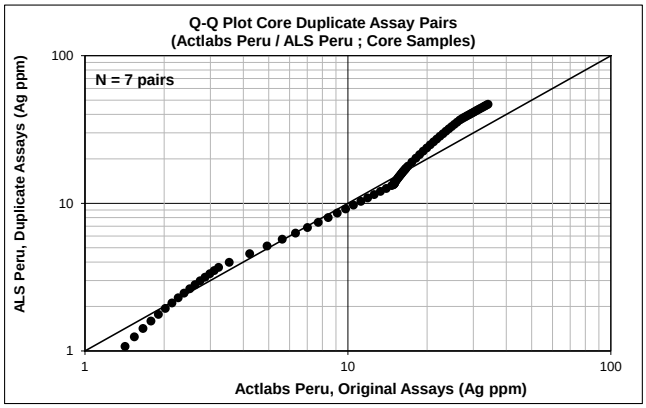
		Statistics	Original	Field Duplicate
		Sample Count	7	7
Project	Invicta	Minimum Value	1.300	0.900
Data Series	2017 Core Duplicates	Maximum Value	34.10	47.00
Data Type	Core Samples	Mean	16.029	19.100
Commodity	Ag in ppm	Median	15.100	14.000
Analytical Method	Aqua Regia Digestion - ICP-AES Finish	Standard Error	4.430	6.416
Detection Limit	ALS: 0.2 ppm	Standard Deviation	11.720	16.974
Original Dataset	Actlabs Peru, Original Assays	Correlation Coefficient	0.9809	
Paired Dataset	ALS Peru, Duplicate Assays	Pairs ≤ 10% HARD	57.1%	

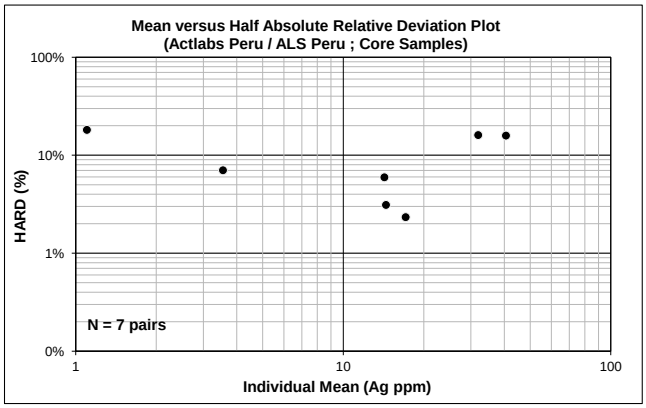






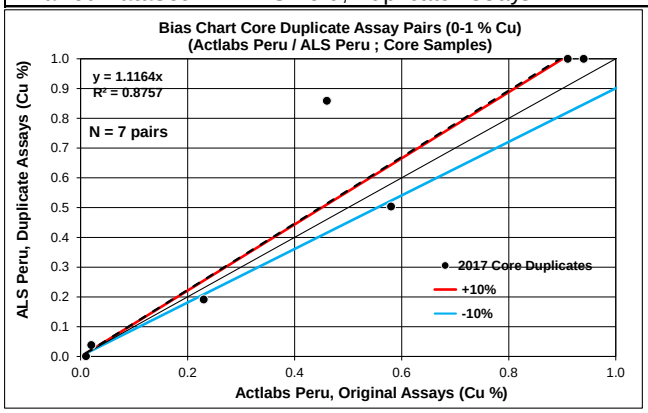


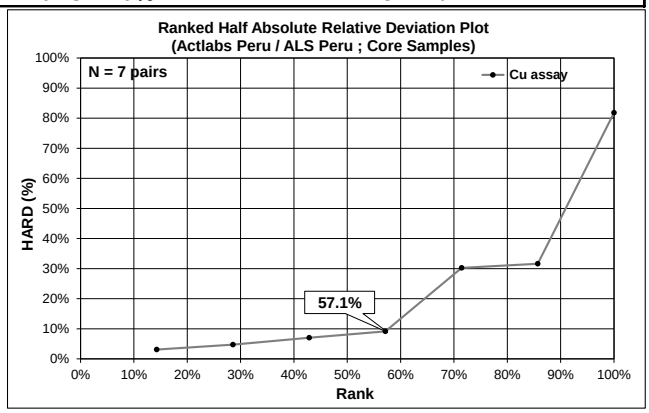


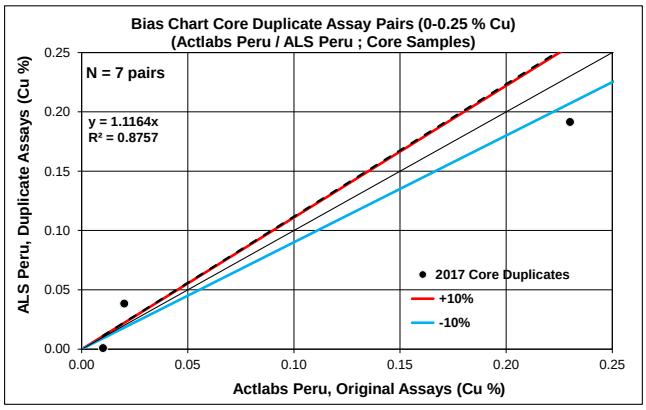


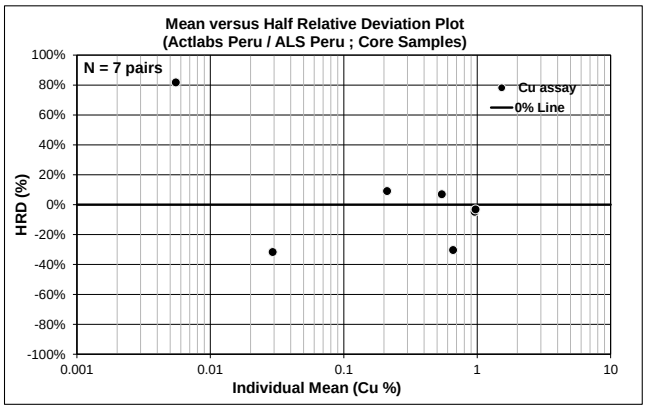
Bias Charts and Precision Plots for copper core duplicate samples assayed by Actlabs Peru laboratory versus ALS Peru laboratory.

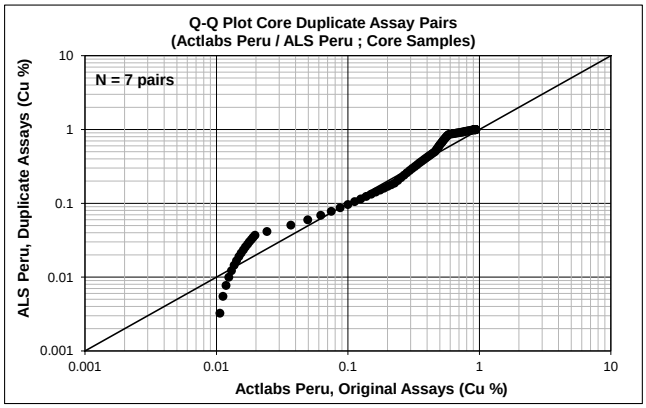
		Statistics	Original	Field Duplicate
		Sample Count	7	7
Project	Invicta	Minimum Value	0.010	0.001
Data Series	2017 Core Duplicates	Maximum Value	0.94	1.00
Data Type	Core Samples	Mean	0.450	0.513
Commodity	Cu in %	Median	0.460	0.504
Analytical Method	Aqua Regia Digestion - ICP-AES Finish	Standard Error	0.146	0.168
Detection Limit	0.0001%	Standard Deviation	0.386	0.444
Original Dataset	Actlabs Peru, Original Assays	Correlation Coefficient	0.9368	
Paired Dataset	ALS Peru, Duplicate Assays	Pairs ≤ 10% HARD	57.1%	

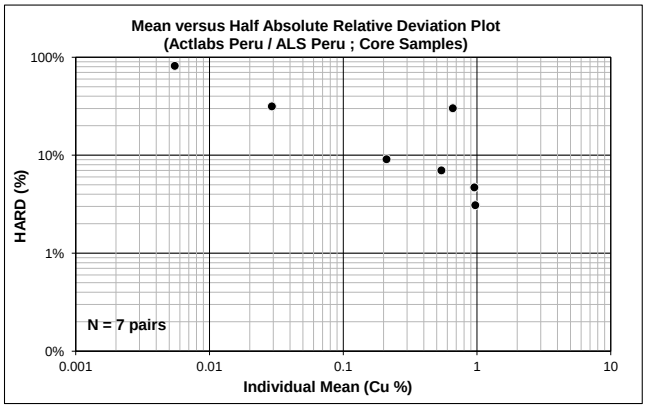






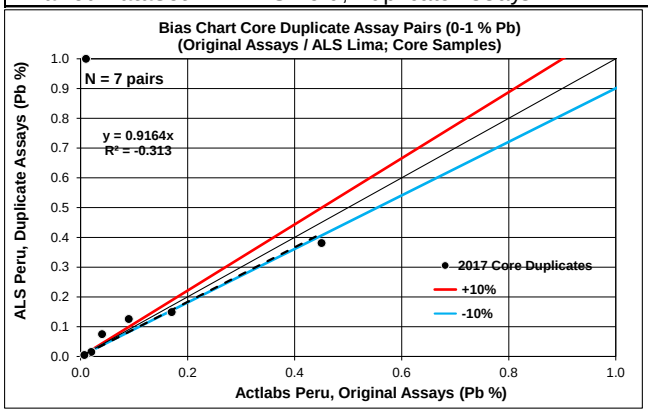


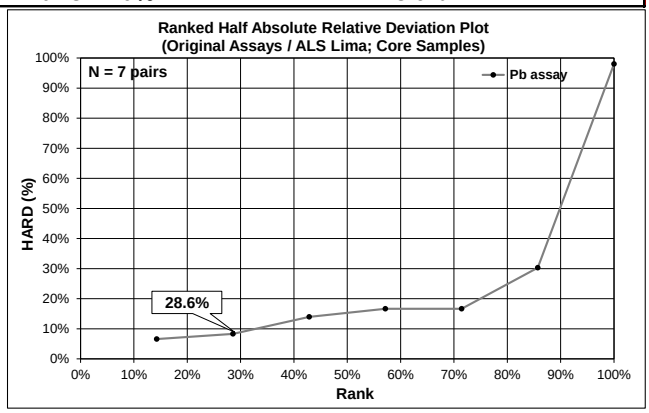


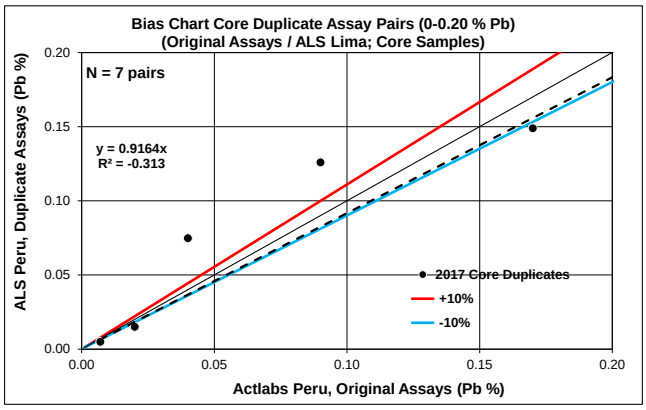


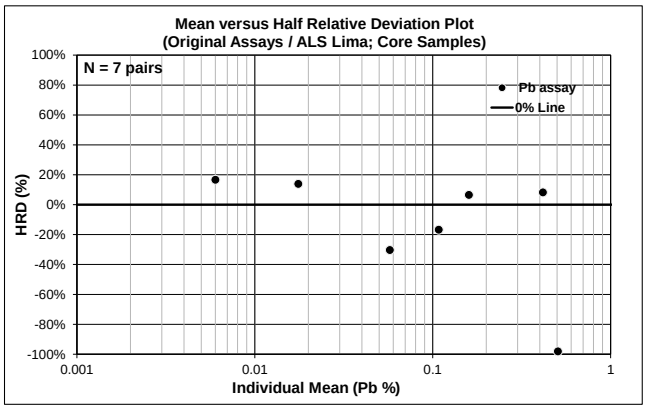
Bias Charts and Precision Plots for copper core duplicate samples assayed by Actlabs Peru laboratory versus ALS Peru laboratory.

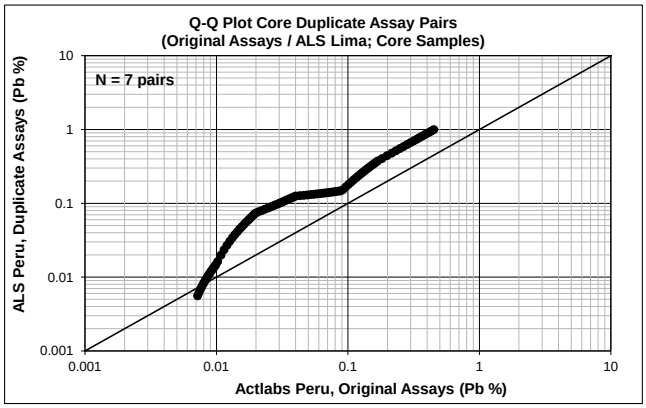
		Statistics	Original	Field Duplicate
		Sample Count	7	7
Project	Invicta	Minimum Value	0.007	0.005
Data Series	2017 Core Duplicates	Maximum Value	0.45	1.00
Data Type	Core Samples	Mean	0.112	0.250
Commodity	Pb in %	Median	0.040	0.126
Analytical Method	Aqua Regia Digestion - ICP-AES Finish	Standard Error	0.060	0.134
Detection Limit	ALS: 2 ppm	Standard Deviation	0.160	0.354
Original Dataset	Actlabs Peru, Original Assays	Correlation Coefficient	0.0725	
Paired Dataset	ALS Peru, Duplicate Assays	Pairs ≤ 10% HARD	28.6%	

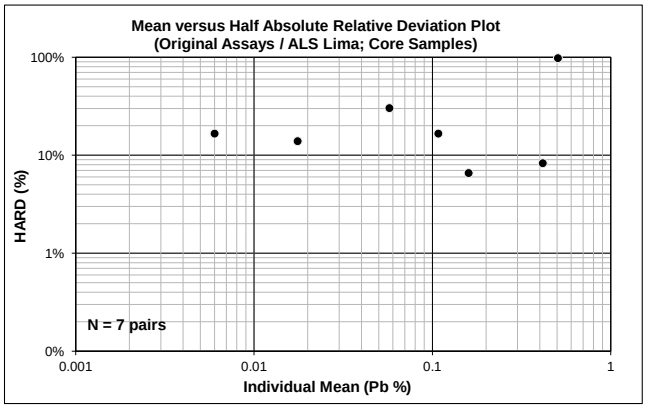






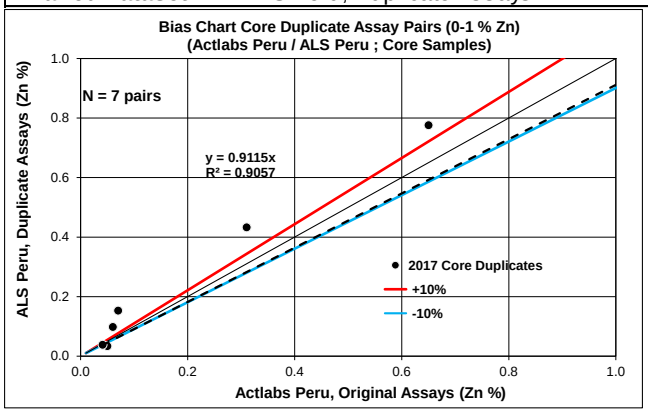


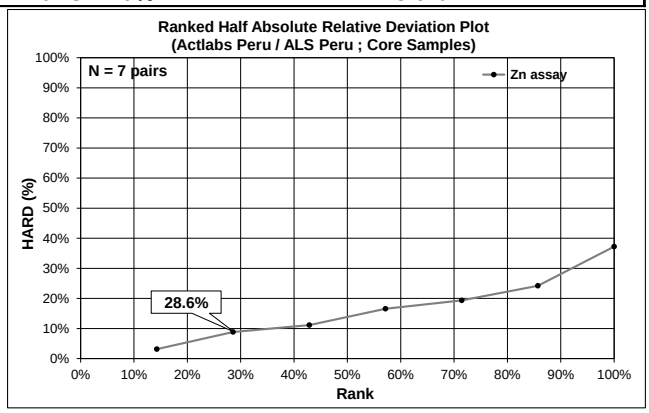


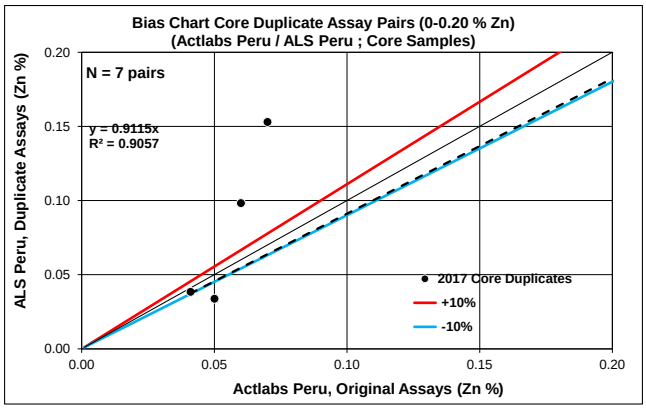


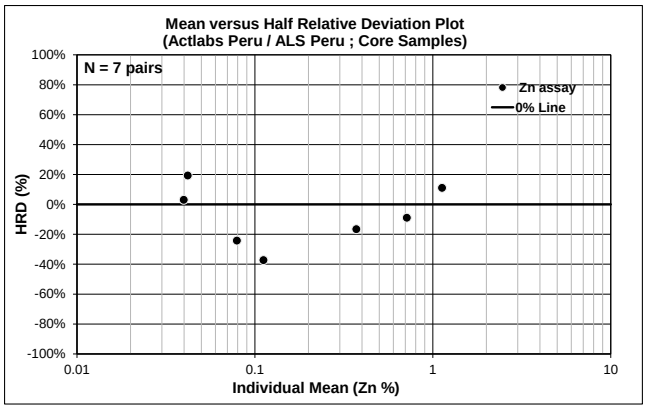
Bias Charts and Precision Plots for lead core duplicate samples assayed by Actlabs Peru laboratory versus ALS Lima, Peru laboratory.

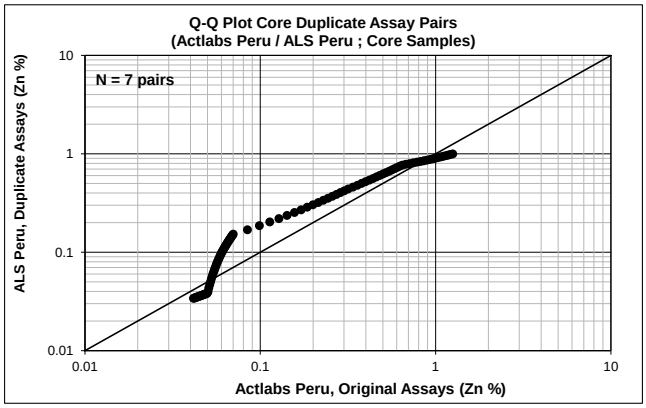
		Statistics	Original	Field Duplicate
		Sample Count	7	7
Project	Invicta	Minimum Value	0.041	0.034
Data Series	2017 Core Duplicates	Maximum Value	1.25	1.00
Data Type	Core Samples	Mean	0.347	0.362
Commodity	Zn in %	Median	0.070	0.153
Analytical Method	Aqua Regia Digestion - ICP-AES Finish	Standard Error	0.172	0.147
Detection Limit	ALS: 2 ppm	Standard Deviation	0.456	0.389
Original Dataset	Actlabs Peru, Original Assays	Correlation Coefficient	0.9655	
Paired Dataset	ALS Peru, Duplicate Assays	Pairs ≤ 10% HARD	28.6%	

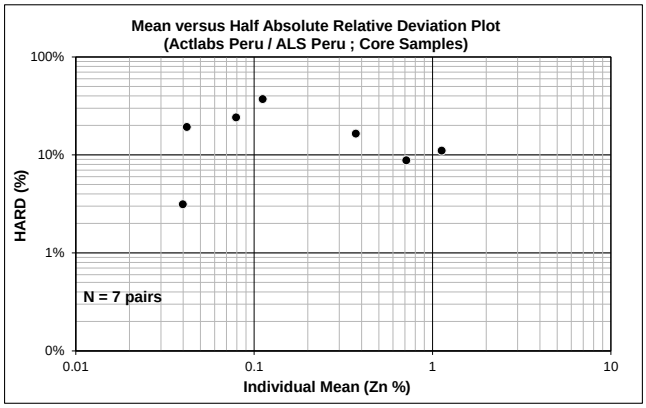






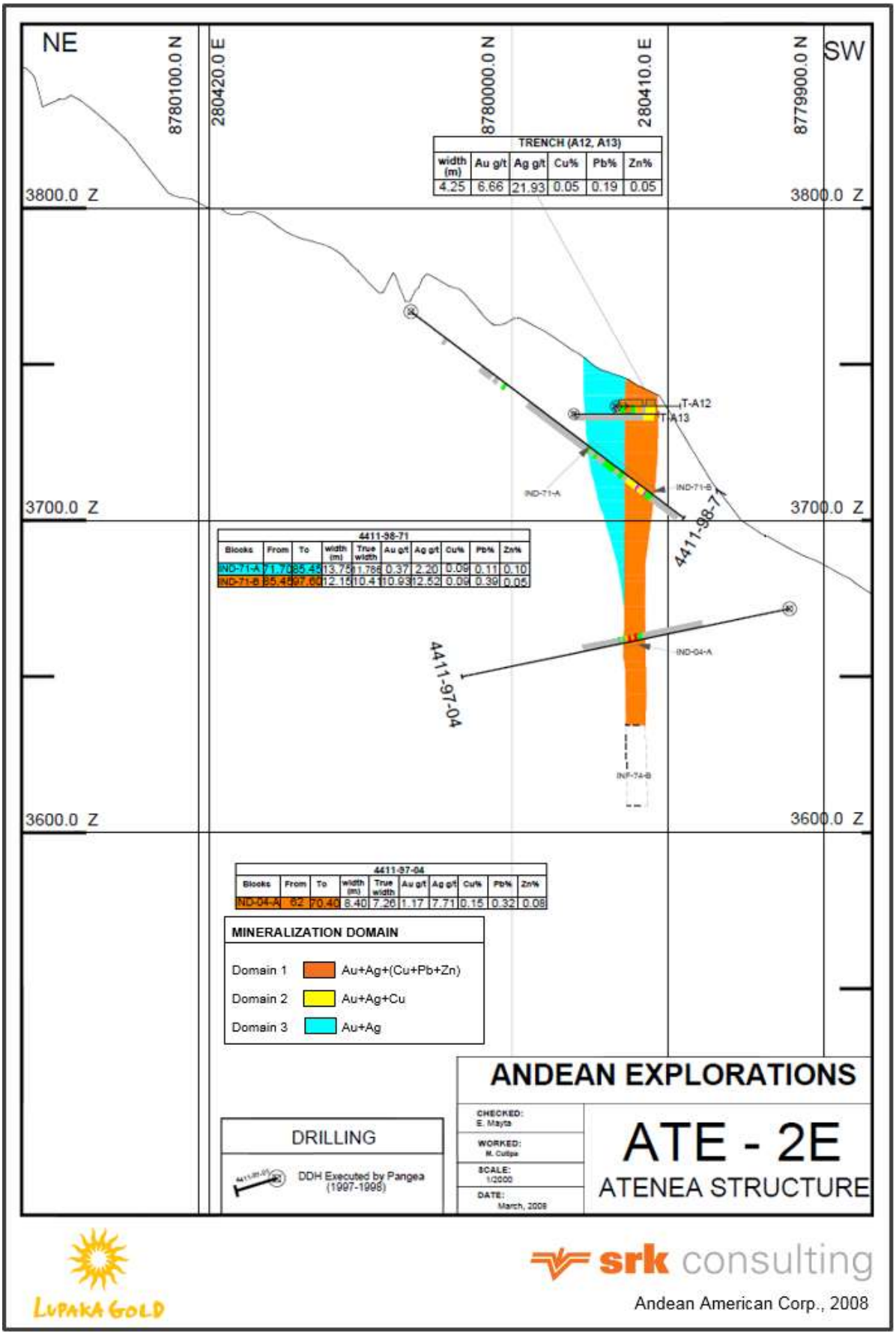


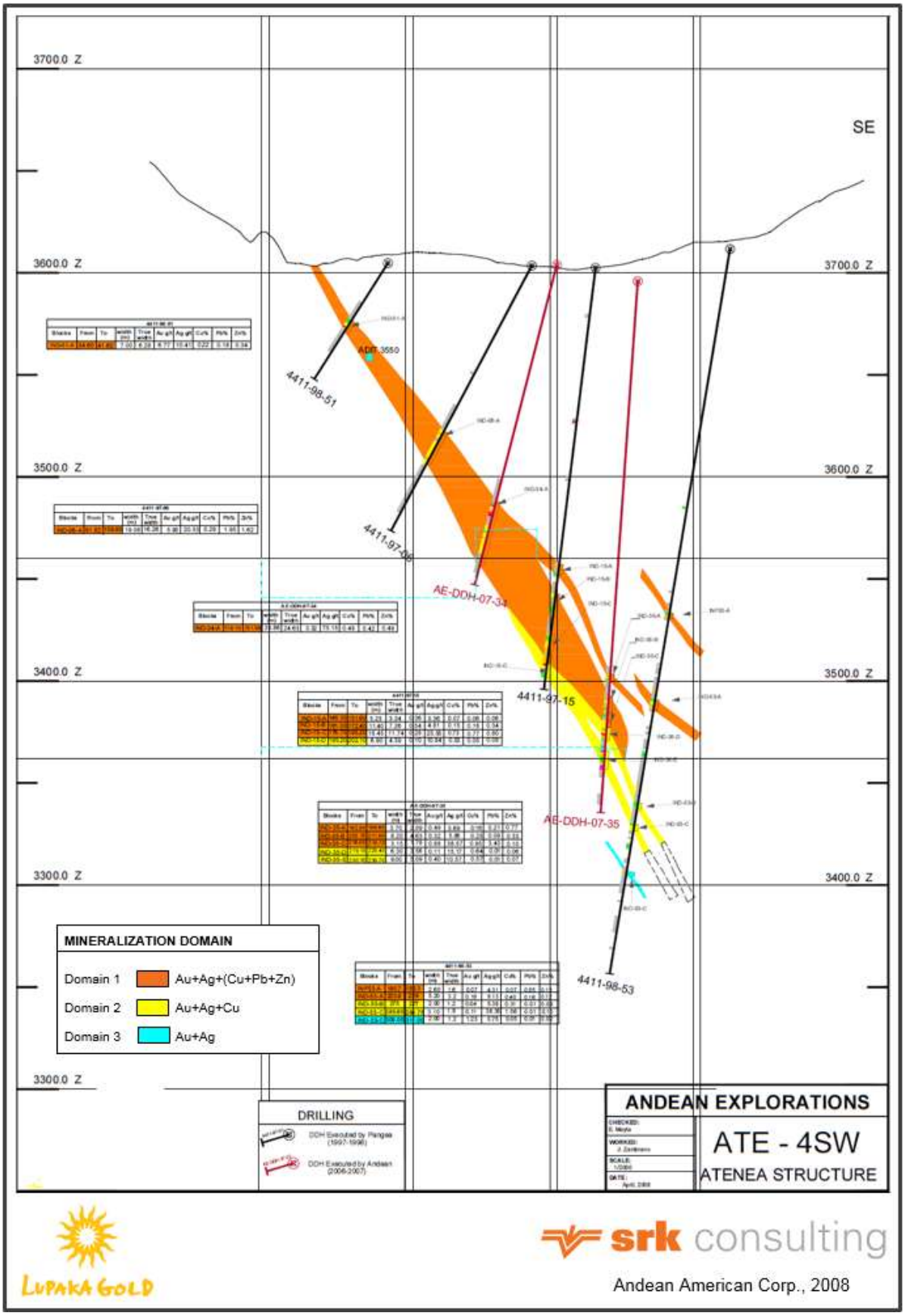


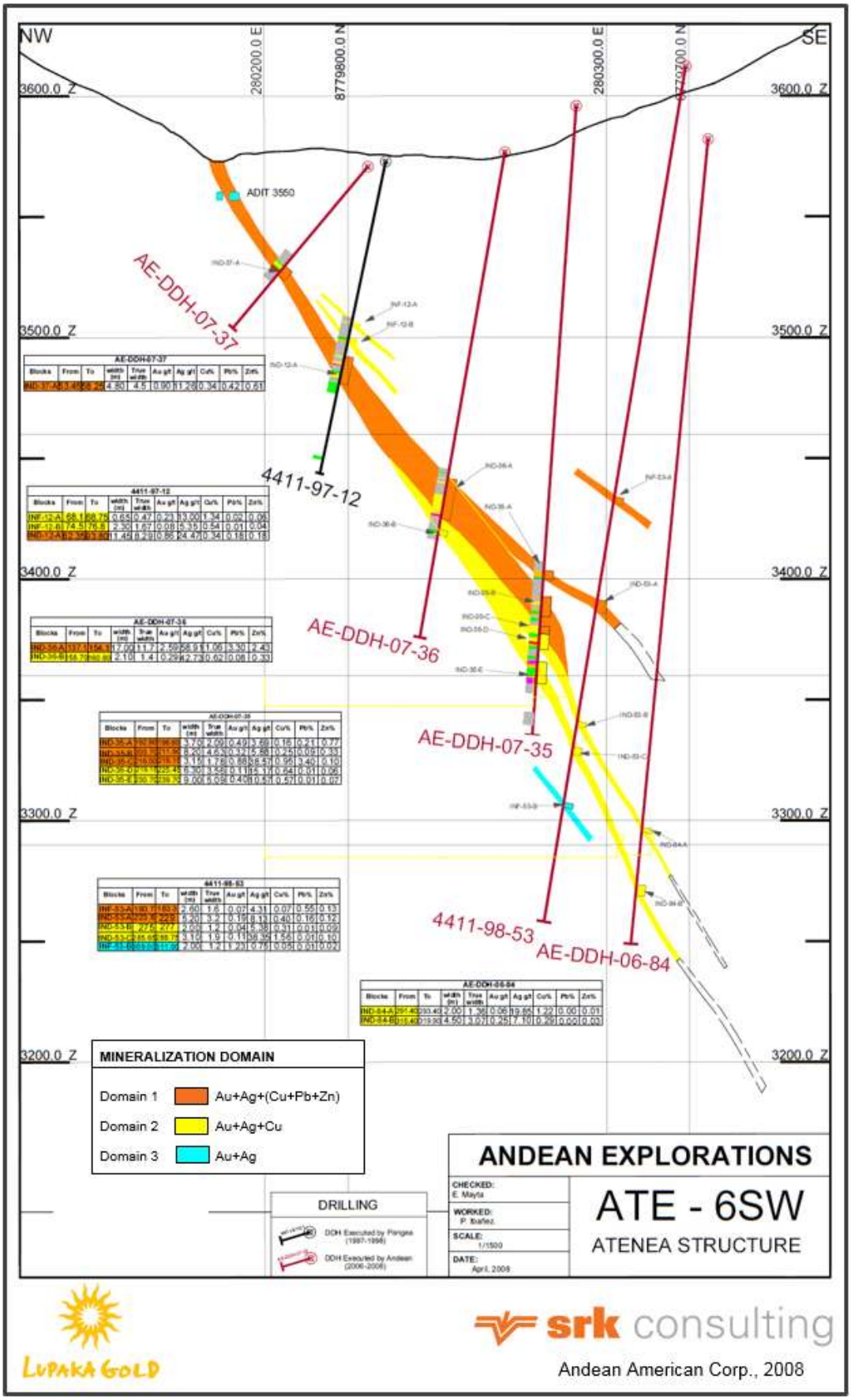


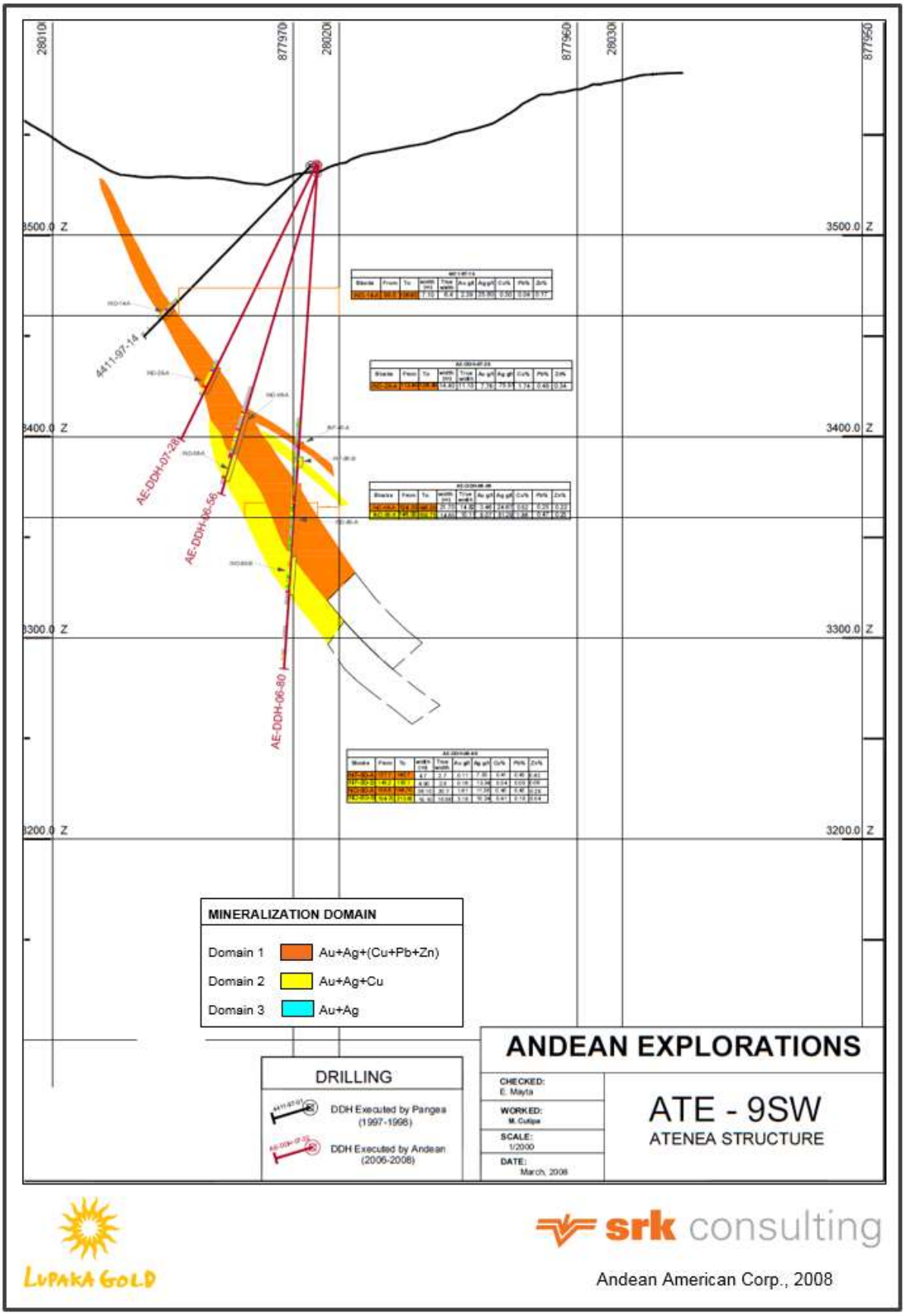
APPENDIX D

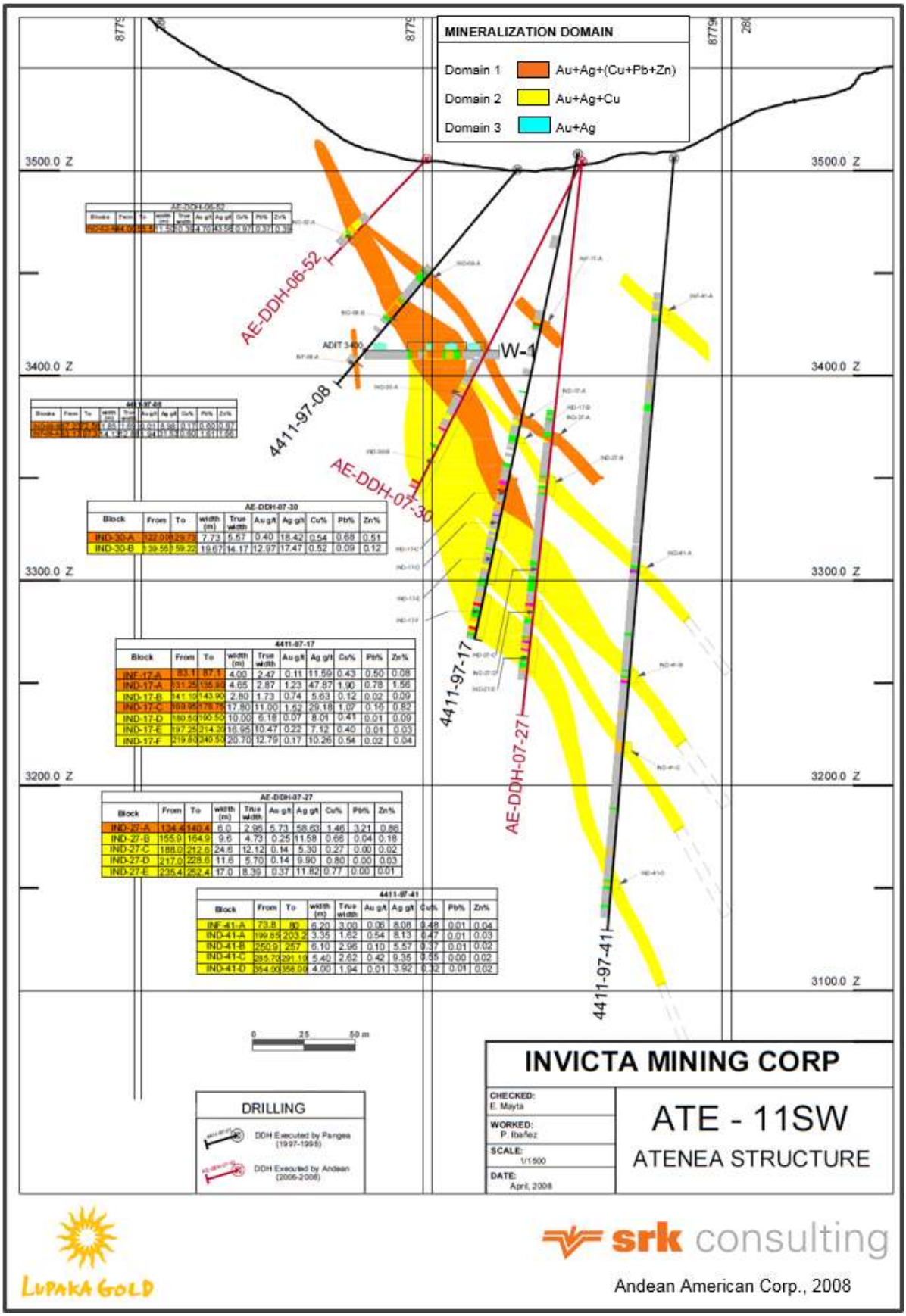
Geological Cross Sections Across the Atenea Vein


NE
SW
8780100.0 N
280420.0 E
8780000.0 N
280410.0 E
8779900.0 N
3800.0 Z
3700.0 Z
3600.0 Z
TRENCH (A12, A13)
width (m) | Au g/t | Ag g/t | Cu% | Pb% | Zn%
4.25 | 6.66 | 21.93 | 0.05 | 0.19 | 0.05
T-A12
T-A13
IND-71-A
IND-71-B
4411-98-71
4411-97-04
IND-04-A
INF-74-B
4411-98-71
Blocks | From | To | width (m) | True width | Au g/t | Ag g/t | Cu% | Pb% | Zn%
IND-71-A | 71.70 | 85.45 | 13.75 | 11.78 | 0.37 | 2.20 | 0.09 | 0.11 | 0.10
IND-71-B | 85.45 | 97.60 | 12.15 | 10.41 | 0.93 | 12.52 | 0.09 | 0.39 | 0.05
4411-97-04
Blocks | From | To | width (m) | True width | Au g/t | Ag g/t | Cu% | Pb% | Zn%
IND-04-A | 62 | 70.40 | 8.40 | 7.26 | 1.17 | 7.71 | 0.15 | 0.32 | 0.08
MINERALIZATION DOMAIN
Domain 1 Au+Ag+(Cu+Pb+Zn)
Domain 2 Au+Ag+Cu
Domain 3 Au+Ag
DRILLING
DDH Executed by Pangea (1997-1998)
ANDEAN EXPLORATIONS
CHECKED: E. Mayta
WORKED: M. Cutipa
SCALE: 1/2000
DATE: March, 2008
ATE - 2E
ATENEA STRUCTURE
LUPAKA GOLD
srk consulting
Andean American Corp., 2008


3700.0 Z
SE
3600.0 Z
3700.0 Z
ADIT 3550
4411-98-51
3500.0 Z
3600.0 Z
4411-97-06
AE-DDH-07-34
3400.0 Z
3500.0 Z
4411-97-15
AE-DDH-07-35
3300.0 Z
3400.0 Z
4411-98-53
3300.0 Z
MINERALIZATION DOMAIN
Domain 1 Au+Ag+(Cu+Pb+Zn)
Domain 2 Au+Ag+Cu
Domain 3 Au+Ag
DRILLING
DDH Executed by Pangea (1997-1998)
DDH Executed by Andean (2006-2007)
ANDEAN EXPLORATIONS
ATE - 4SW
ATENEA STRUCTURE
LUPAKA GOLD
srk consulting
Andean American Corp., 2008


NW
SE
2800200.0 E
8779800.0 N
2800300.0 E
8779700.0 N
3600.0 Z
3500.0 Z
3400.0 Z
3300.0 Z
3200.0 Z
ADIT 3550
AE-DDH-07-37
4411-97-12
AE-DDH-07-36
AE-DDH-07-35
4411-98-53
AE-DDH-06-84
MINERALIZATION DOMAIN
Domain 1 Au+Ag+(Cu+Pb+Zn)
Domain 2 Au+Ag+Cu
Domain 3 Au+Ag
DRILLING
DDH Executed by Pangea (1997-1998)
DDH Executed by Andean (2006-2008)
ANDEAN EXPLORATIONS
CHECKED: E. Mayta
WORKED: P. Ibañez
SCALE: 1/1500
DATE: April, 2008
ATE - 6SW
ATENEA STRUCTURE
LUPAKA GOLD
srk consulting
Andean American Corp., 2008


280100
877970
280200
877960
280300
877950
3500.0 Z
3400.0 Z
3300.0 Z
3200.0 Z
4411-97-14
AE-DDH-07-28
AE-DDH-06-56
AE-DDH-06-80
MINERALIZATION DOMAIN
Domain 1 Au+Ag+(Cu+Pb+Zn)
Domain 2 Au+Ag+Cu
Domain 3 Au+Ag
DRILLING
DDH Executed by Pangea (1997-1998)
DDH Executed by Andean (2006-2008)
ANDEAN EXPLORATIONS
CHECKED: E. Mayta
WORKED: M. Cutipa
SCALE: 1/2000
DATE: March, 2008
ATE - 9SW
ATENEA STRUCTURE
LUPAKA GOLD
srk consulting
Andean American Corp., 2008


MINERALIZATION DOMAIN
Domain 1 Au+Ag+(Cu+Pb+Zn)
Domain 2 Au+Ag+Cu
Domain 3 Au+Ag
3500.0 Z
3400.0 Z
3300.0 Z
3200.0 Z
3100.0 Z
AE-DDH-06-52
4411-97-08
AE-DDH-07-30
4411-97-17
AE-DDH-07-27
4411-97-41
ADIT 3400
W-1
AE-DDH-07-30
Block From To width (m) True width Au g/t Ag g/t Cu% Pb% Zn%
IND-30-A 122.00 129.73 7.73 5.57 0.40 18.42 0.54 0.68 0.51
IND-30-B 139.55 159.22 19.67 14.17 12.97 17.47 0.52 0.09 0.12
4411-97-17
Block From To width (m) True width Au g/t Ag g/t Cu% Pb% Zn%
INF-17-A 83.1 87.1 4.00 2.47 0.11 11.59 0.43 0.50 0.08
IND-17-A 131.25 135.90 4.65 2.87 1.23 47.87 1.90 0.78 1.56
IND-17-B 141.10 143.90 2.80 1.73 0.74 5.63 0.12 0.02 0.09
IND-17-C 169.95 187.75 17.80 11.00 1.62 29.18 1.07 0.16 0.82
IND-17-D 180.50 190.50 10.00 6.18 0.07 8.01 0.41 0.01 0.09
IND-17-E 197.25 214.20 16.95 10.47 0.22 7.12 0.40 0.01 0.03
IND-17-F 219.80 240.50 20.70 12.79 0.17 10.26 0.54 0.02 0.04
AE-DDH-07-27
Block From To width (m) True width Au g/t Ag g/t Cu% Pb% Zn%
IND-27-A 134.4 140.4 6.0 2.96 5.73 58.63 1.46 3.21 0.86
IND-27-B 155.9 164.9 9.6 4.73 0.25 11.58 0.66 0.04 0.18
IND-27-C 188.0 212.6 24.6 12.12 0.14 5.30 0.27 0.00 0.02
IND-27-D 217.0 228.6 11.6 5.70 0.14 9.90 0.80 0.00 0.03
IND-27-E 235.4 252.4 17.0 8.39 0.37 11.82 0.77 0.00 0.01
4411-97-41
Block From To width (m) True width Au g/t Ag g/t Cu% Pb% Zn%
INF-41-A 73.8 80 6.20 3.00 0.06 8.08 0.48 0.01 0.04
IND-41-A 199.85 203.2 3.35 1.62 0.54 8.13 0.47 0.01 0.03
IND-41-B 250.9 257 6.10 2.96 0.10 5.57 0.37 0.01 0.02
IND-41-C 285.70 291.10 5.40 2.62 0.42 9.35 0.55 0.00 0.02
IND-41-D 354.00 358.00 4.00 1.94 0.01 3.92 0.32 0.01 0.02
0 25 50 m
DRILLING
DDH Executed by Pangea (1997-1998)
DDH Executed by Andean (2006-2008)
INVICTA MINING CORP
CHECKED: E. Mayta
WORKED: P. Ibañez
SCALE: 1/1500
DATE: April, 2008
ATE - 11SW
ATENEA STRUCTURE
LUPAKA GOLD
srk consulting
Andean American Corp., 2008

CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report on the Preliminary Economic Assessment for the Invicta Gold Project, Huaura Province, Peru, April 13, 2018.**

I, Camila Passos, do hereby certify that:

1) I am a Senior Consultant with the firm of SRK Consulting (Peru) S.A. (SRK) with an office at Av. La Paz 1227 Miraflores, Lima, 18, Peru;
2) I have graduated from the University of São Paulo, São Paulo, Brazil with a MSc in Geochemistry in 2005. I have practiced my profession continuously since 2005;
3) I am a professional Geologist registered with the Association of Professional Geoscientists of Ontario (APGO#2431);
4) I have personally inspected the subject project on January 9, 2018;
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 sections 1 to 11, 13; and co-responsible for executive summary and sections 23 to 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 Lupaka Gold Corp. to peform a Preliminary Economic Assessment for the Invicta Gold Project. In conducting our assessment, an 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. This subsequent technical report is based on a site visit, a review of project files and discussions with Lupaka Gold Corp. personnel;
11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Invicta Gold Project or securities of Lupaka Gold Corp.; 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*”]
Camila Passos, PGeo (APGO#2431)
Senior Consultant
SRK Consulting (Peru) S.A.

Lima, Peru
April 13, 2018

CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report on the Preliminary Economic Assessment for the Invicta Gold Project, Huaura Province, Peru, April 13, 2018.**

I, Gary Poxleitner, do hereby certify that:

1) I am a Principal Consultant (Mining) with the firm of SRK Consulting (Canada) Inc. (SRK) with an office at Suite 101, 1984 Regent Street South, Sudbury, Ontario, Canada;
2) I am a graduate of the Laurentian University in Sudbury, Ontario in 1991, I obtained a Bachelor of Engineering degree. I have practiced my profession continuously since 1991. I have over 27 years of operational, engineering, management, and consulting experience. I have worked primarily in underground mines including blast hole open stope, sub-level caving and narrow vein mining in commodities such as base metals, gold, silver, diamonds, salt, copper and uranium. I have managed complex studies, including mine optimization; budgeting and cost estimation; economic evaluations; due diligence and independent review; as well as mine audits. I have also been engaged in the process of converting Mineral Resources to Mineral Reserve estimates. Following graduation, I was employed with El-Equip, in mine communication automation and with Anrep in engineering. Starting in 1994, I was employed by Royal Oak Mines, as Ventilation Engineer for the underground mine operations, at Giant Mine in Yellowknife, Northwest Territories. Beginning in 1997, I was employed by Boliden-Westmin, as a Mine Engineer in Campbell River, British Columbia. Commencing in 2001, I was employed by Vale as a Project Manager, Mine Supervisor, Mine Engineer Supervisor in Sudbury, Ontario. Since joining SRK Consulting in 2011, I have been engaged in technical engineering studies, capital and operating cost estimation, operations improvement, due diligence and economical modelling;
3) I am a professional Engineer registered with Professional Engineers Ontario (PEO#100015286);
4) I have personally inspected the subject project on April 3, 2018;
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 sections 14,15, 20 and 21; and co-responsible for executive summary and sections 24 to 26 of this report 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 Lupaka Gold Corp. to peform a Preliminary Economic Assessment for the Invicta Gold Project. In conducting our assessment, an 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. This subsequent technical report is based on a site visit, a review of project files and discussions with Lupaka Gold Corp. personnel;
11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Invicta Gold Project or securities of Lupaka Gold Corp.; 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*”]
Gary Poxleitner, PEng (PEO#100015286)
Principal Consultant (Mining)
SRK Consulting (Canada) Inc.

Sudbury, Canada
April 13, 2018

CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report on the Preliminary Economic Assessment for the Invicta Gold Project, Huaura Province, Peru, April 13, 2018.**

I, Adam Johnston, do hereby certify that:

1) I am the Chief Metallurgist with Transmin Metallurgical Consultants with an office at Calle La Perricholi 110, San Isidro, Lima 27, Peru.;
2) I am a graduate of the the Western Australian School of Mines in 1995, I obtained a degree in Minerals Engineering. I have practiced my profession continuously since 1995, mainly in precious metal and base metal process development, with the last 18 years based in Peru developing and operating precious metal and base metal mines;;
3) I am a chartered professional Metallurgist registered with the Australian Institute of Mining and Metallurgy, (112641);
4) I have not personally visited the project area but relied on a site visit conducted by Camila Passos, a co-author of this technical report;
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 sections 12 and 16; and co-responsible for executive summary and sections 24 to 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 Lupaka Gold Corp. to peform a Preliminary Economic Assessment for the Invicta Gold Project. In conducting our assessment, an 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. This subsequent technical report is based on a site visit, a review of project files and discussions with Lupaka Gold Corp. personnel;
11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Invicta Gold Project or securities of Lupaka Gold Corp.; 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*”]
Adam Johnston, FAusIMM, CP (Metallurgy) (112641)
Chief Metallurgist
Transmin Metallurgical Consultants.

Lima, Peru
April 13, 2018

CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **Technical Report on the Preliminary Economic Assessment for the Invicta Gold Project, Huaura Province, Peru, April 13, 2018.**

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 a MSc (Geology) from the University of Johannesburg in South Africa in 1995 and a MEng in Mineral Economics from the University of the Witwatersrand in South Africa in 1999. I have practiced my profession continuously since 1986. Between 1986 and 1989 I worked as a staff geologist on various Anglo-American mines. Between 1989 and 2005 I worked at several exploration projects, underground and open pit mining operations in Africa and held various senior positions, with the responsibility for estimation of Mineral Resources and Mineral Reserves for development projects and operating mines. Since 2006, I have estimated and audited Mineral Resources for a variety of early and advanced international base and precious metals projects;
3) I am a professional Geologist registered with the Association of Professional Geoscientists of Ontario (APGO#1416);
4) I have not personally visited the project area but relied on site visits conducted by Camila Passos, PGeo (APGO#2431) and Gary Poxleitner, PEng (PEO#100015286), co-authors of this technical report;
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 senior reviewer of this report and responsible for the review of all sections of this technical report;
8) I have had no prior involvement with the subject
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 Lupaka Gold Corp. to peform a Preliminary Economic Assessment for the Invicta Gold Project. In conducting our assessment, an 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. This subsequent technical report is based on a site visit, a review of project files and discussions with Lupaka Gold Corp. personnel;
11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Invicta Gold Project or securities of Lupaka Gold Corp.; 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, Canada
April 13, 2018

Glen Cole, PGeo (APGO#1416)
Principal Consultant (Resource Geology)
SRK Consulting (Canada) Inc.