National Instrument 43-101 Technical Report

Corihuarmi Mine

Prepared by The Andean Consulting Group SAC for:

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National Instrument 43-101 Technical Report
Corihuarmi Mine

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1 Summary

1.1 Introduction

The Andean Consulting Group SAC (Andean CG), as an independent consulting firm, has prepared this document in response to the request made by Minera IRL S.A. (MIRL), specifically for the Corihuarmi Mining Unit,

Based on the information required and updated as of March 31, 2017, for the present report on the evaluation of resources and reserves of the Corihuarmi Mining Unit, the review of the reports available in MIRL regarding the geology of the reservoir, Data, resource and reserve estimation, quality assurance and control (QA/QC) and future production plans. All these reports related to the subject were evaluated by qualified consultants, valuing the work done by MIRL.

The technical team of Andean CG has reviewed the data and methodology followed by MIRL and concludes that it is the one recommended by the international codes on good professional practices, which indicates the reliability in 3D Modeling and the Estimation of resources obtained in March 2017. The techniques of quality control of resource estimation are appropriate; The inverse of the distance to the cube (ID3) and the nearest neighbor (NN) were used as alternate interpolation methods to check the quality of ordinary kriging (OK) used in the interpolation. Variography was adequate and adjustment of variograms with two structures was appropriate. The classification of resources estimated based on the spherical variographic adjustment and structures was also appropriate.

Andean CG has also reviewed the procedures and parameters of the mining plan execution (Volumes, densities, recovery, dilution, etc.) and no fatal flaws have been found that invalidate the declaration of the Reserves to March 2017 of the Corihuarmi mine. Based on this evaluation, we can affirm that the mining plan obtained by MIRL on the basis of Modeling-3D to March 2017 (using MineSight), give sufficient tonnage and guarantee the Minable Reserves to comply with the Production Planning until the fourth semester 2020.

1.2 Location and access

The Corihuarmi Gold Mine (100% MIRL) is located in the District of Huantán, Province of Yauyos, Department of Lima at an altitude that varies between 4700 and 4900 m.s.n.m..

Access to the project area from Lima is done through two routes:

- Lima - Huancayo - Vista Alegre - Corihuarmi Project, covering approximately 445 km
- Lima - Cañete - Lunahuaná - Yauyos - Llapay - Valentine - Project Corihuarmi, covering approximately 370 km.

Table 1.6.1-1: Access to the project area

Lima – Huancayo – Vista Alegre – Project Corihuarmi			
ROUTE	**VÍA**	**Distance Km.**	**Hours (Hr)**
Lima – Huancayo	Asphalt road	**330**	**6.0**
Huancayo – Vista Alegre	Asphalt road	**45**	**1.5**
Vista Alegre– Proyecto Corihuarmi	Dirt road	**70**	**2.5**
TOTAL		**445**	**10**
Lima – Cañete – Yauyos – San Valentín – Project Corihuarmi			
Lima – Cañete – Lunahuaná	Carretera Asfaltada	**145**	**2.5**
Lunahuaná – Yauyos – Llapay	Carretera Afirmada	**155**	**4.0**
Llapay- San Valentín - Proyecto Corihuarmi	Trocha Carrozable	**70**	**3.5**
TOTAL		**370**	**10**

Source: Andean CG

1.3 Mining Property

The Corihuarmi Mining Unit is located within the mining rights areas owned by Minera IRL S.A., listed in Table No. 1.3-1

Table 1.6.1-1: Mining legislation list

NAME	Area (Ha)	REGION	PROVINCE	DISTRICT
ECONOMIC ADMINISTRATIVE UNIT (UEA) CORIHUARMI: (Presidency Resolution N° 3473-2014-INGEMMET/PCD/PM del 12.11.2014)				
TUPE 2	600	LIMA	YAUYOS	HUANTÁN / TUPE
TUPE 3	600	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / HUANTAN / TUPE
TUPE 5	300	LIMA	YAUYOS	HUANTAN
VERA I	800	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / HUANTAN
VERA II	700	JUNIN	HUANCAYO	CHONGOS ALTO
VERA III	500	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / TUPE
MINING CONCESSION				
TAMBO NUEVO 11	400	JUNIN	HUANCAYO	CHONGOS ALTO
CONCESSION OF BENEFIT				
CORIHUARMI	127.5	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / HUANTAN

Source: Andean CG

1.4 Geology and Mineralization

The Corihuanni Mine has a disseminated gold epithermal deposit that is located in a Neogene Volcanic Belt (Tertiary Volcanic-Belt NW-SE) in the Western Andean Range of Central Peru, Department of Junín and that appears in the Structural Corridor of the Chonta Fault, where the epithermal deposits of Betania and Picomachay exist at the south of the Chanta-Corridor.

The geology and geochemistry in Corihuarmi shows a great similarity to other gold deposits known as Yanacocha, Pierina, Sipán, Aruntani and Huilacollo associated with the Andean Neogene volcanism. These volcanic rocks altered the volcanic-sedimentary basement of agglomerates, re-worked tufts, deposited and interspersed with andesite flows and strata of limestone-shale from the Casapalca-Sacsaquero Formations (unaltered) appearing on the flanks of the "Epithermal System -HS ", which appears to form a large structure, partly eroded, located in Corihuarmi.

Mineralogically the area of the Corihuarmi mine is located at the north of the "Silver-gold epithermal belt of southern Peru". In Corihuarmi the following mineralized zones are found: Diana Expansion, Cayhua, North Cayhua, Scree Slope, Laura, Susan and Scree Slope Extension (New Tambo). These correspond to an epidermal model of high sulfurization, whose system acted on tertiary volcanic and sedimentary rocks, the intrusion by dacites and porphyritic latite was at the late tertiary. In Corihuarmi, the geological and physical evidence suggests a volcanic caldera environment, with intermediate to acid volcanic rocks, basically Andesite, vertical cylindrical breccias, pyro clasts and tufts, as well as rhyolitic and dacitic domes. Typical epithermal mineralization has a paragenesis of porous silica-alunite-native sulfide. The dominant topographic features are high altitude siliceous outcrops aligned in a NW-SE direction. The dominant topographic features present an NE-SE alignment. It is also known that the system of hydrothermal fluids responsible for gold mineralization was provided by the coincident intersection of regional fault trends NW, NE and EW.

1.5 Resources y Reserves

Table 1.6.1-1: Summary of gold resources estimated

Zone	Cut off	Tonnes kt	Grade g/t- Au	Ounces kOz
Scree Slope	0.13	1,321	0.34	14.3
Susan	0.13	3,507	0.24	27.6
Cayhua	0.13	3,078	0.26	25.5
Diana extension	0.13	2,409	0.30	23.4
North Cayhua	0.13	1,920	0.38	23.6
Laura	0.13	4,330	0.23	31.8
Scree Slope extension	0.13	1,513	0.28	13.8
TOTAL	**0.13**	**18,079**	**0.28**	**160.0**

Source: Andean CG

The gold estimate was completed using the Ordinary Kriging method (OK). The estimated resources for M.U. Corihuarmi have been estimated as required by NI 43-101 and CIM (Canadian Institute of Mining, Metallurgy and Petroleum) Standards, based on key criteria and confidence levels, which were considered during the resource estimation.

The mineral reserve estimate is in accordance with NI 43-101 and CIM standards, based on the current operational parameters, we will show the summary of reserves per deposit in U.M. Corihuarmi in Table 1.5-2.

Table 1.6.1-2:Inventory of the M.U. Corihuarmi

PRICE $$	CUT OFF	PIT	TM ORE ORORE	GRADE Au	OUNCESS Au	TM WASTE	TM TOTAL TOTAL	SR
1,250	0.111	Susan	2,375,304	0.253	19,312	522,665	2,897,969	0.240
	0.097	Scree Slope	309,324	0.290	2,888	221,252	530,576	0.759
	0.101	Cayhua	2,946,727	0.250	23,731	949,792	3,896,519	0.420
	0.097	A. Diana	765,251	0.368	9,048	450,784	1,216,035	0.670
	0.099	Laura	1,688,670	0.205	11,145	300,257	1,988,927	0.210
	0.099	Cayhua Norte	1,727,274	0.412	22,866	1,582,578	3,309,852	0.950
	0.105	A. Scree Slope	1,116,720	0.277	9,938	707,183	1,823,903	1.021
			10,929,270	**0.282**	**98,928**	**4,734,511**	**15,663,781**	**0.433**

Source: Andean CG

It is summarized that there are a total of 10,929,270 tonnes of ore with an average grade of 0.282 g / t gold, 98,928 ounces of gold and 4,734,511 tonnes of waste rock.

1.6 Other Relevant Data and Information

1.6.1 Geotechnical and Hydrology Studies

According to the results of both local and global physical stability, Scree slope and North Cayhua Expansion zones are considered stable, whose result exceeds the value of F.S. = 1.10 for pseudostatic analysis and F.S. = 1.50 for static analysis. It was recommended the reevaluation of the parameters of mechanical resistance of the soils involved, whose value is prone to variation depending on environmental conditions and phenomena typical of the area, such as erosion, water table, surface runoff and underground flows, etc. For purposes of hydrological stability at the final closure of the deposit, it was recommended to design the construction of coronation channels and gutters within the sidewalks, also for purposes of final closure. For purposes of geochemical and physical stability, it was recommended that within the cover there be an impermeable stratum to prevent the entrance of water produced by rainfall.

1.6.2 Life of Mine Plan

The life of the Mine Pit Design (LOM) was completed by AMC consultants in a context of conventional standards during the Feasibility Study, from 2010 onwards. Minera IRL has made the adjustments and design for the exploitation slits.

During the years of exploitation in Corihuarmi the mine design has respected the proposed geotechnical angle for the stability of the slope. No design problems were identified for either the blades or the dump sites.

The current LOM plan uses the same design, the inventory comprises the 7 deposits; Scree Slope, Laura, Susan and Scree Slope (Tambo Nuevo) expansion involving Corihuarmi and summarized that there are in total 10,929,270 tonnes of ore with an average grade of 0.282 g / t gold, 98,928 Ounces of gold placed on pad, 4,734,511 tonnes of clearing with SR of 0.475.

The life of the mine is summarized in table 1.6.2-1, where information is presented including the 7 deposits for each year, from 2017 to 2020.

Table 1.6.2-1: Summary of mine life*

Year	TM Ore	Grade (g/t) Au	Ounces (Oz)	TM Waste	Total TM	SR	Oz Recup
2017	2,230,325	0.308	22,057.56	1,386,074	3,616,399	0.621	17,646.05
2018	2,900,000	0.295	27,536.29	1,161,693	4,061,693	0.401	22,029.03
2019	2,900,000	0.269	25,048.66	1,392,147	4,292,147	0.480	20,038.93
2020	2,898,945	0.261	24,285.88	794,597	3,693,542	0.274	19,428.71
TOTAL	**10,929,270**	**0.283**	**98,928.40**	**4,734,511**	**15,663,781**	**0.444**	**79,142.72**

Source: Andean CG

(*) Plan Production 2017 since April

1.7 Authors

Table 1.7-1 summarizes the responsibility of each qualified person as the authors of this report.

Table 1.6.2-1: Liability of qualified persons

Qualified Person	Association
Andres Ribera Zevallos	MAIG Eng., AusIMM

Source: Andean CG

2 Introduction

2.1 Reach of Work

The Andean Consulting Group SAC (Andean CG) was hired by Minera IRL Limited (MIRL) to carry out the present Technical Report for 2017 for the Corihuarmi Mining Unit in Peru. MIRL requested Andean CG to prepare the evaluation report for its respective review.

The Corihuarmi Mining Unit is an open pit gold mine located in the high Andes of central Peru, approximately 160 km southeast of the city of Lima.

This report is prepared to accomplish the reporting requirements set forth in Canadian National Instrument 43-101 (NI 43-101).

2.2. Qualifications and Experiences

The Andean Consulting Group SAC (Andean CG), thanks Minera IRL S.A. For the commissioning in the development of the consulting service to consolidate this Technical Report for 2017 of the Corihuarmi Mining Unit.

Andean CG has highlighted for the present service, an expert professional team led by the engineers Ángel Álvarez Angulo - President of PROEXPLO 2015 - and Andrés Rivera Zeballos, Senior Geologist CIP No. 10986 and Competent Person (CP) Aus IMM # 305739.

The Andean Consulting Group SAC offers consulting services to its clients in its different services: Mining and geology engineering, Legal Affairs and Permisology, Relationships, Social Affairs, Environmental Affairs and Citizen Participation Processes, Stakeholder Management and Corporate Affairs particularly for the sector Miner, among others.

Table 2.1-1: Qualified persons

CONSULTANTS[1]	CODE	SIGNATURE
Andres Rivera Zeballos	Geologist Engineer (CIP N° 10986)	 FIRMA

Source: Andean CG

[1] Professionals authorized by the Ministry of Energy and Mines to develop environmental studies.

2.3 Principal Source of Information

The authors of this report have based heavily on the information provided by MIRL, in extensive discussions with MIRL and in studies completed by other independent consulting and engineering groups. A summary is included below:

- Estimate of Reserves as of March 31, 2017 - Carried out by Mineral IRL

- Coffey Mining (Abril 2010) - National Instrument 43-101 Technical Report

- Coffey Mining (previously RSG Global Consulting Pty Ltd (abril de 2007) - Competent Person's Report.

-Kappes, Cassiday & Associates, 2006, " Corihuarmi feasibility study 1,000,000 tonnes per year Heap leaching project "Technical report prepared for Minera IRL S.A.

-Vector Perú S.A.C. 2006, " Bankable Feasibility Study Leach Pad, Waste Rock Disposal and Mine Access Road Facilities Design" Technical report prepared for Minera IRL S.A

-Smee y Associates Consulting Ltd (february de 2009) - A Review of the Minera IRL S.A Quality Control Protocol, Core and Blasthole Sampling Protocol, and Two Laboratories, Peru

Andean CG conducted the collection of information and reasonable investigations to establish the integrity and authenticity of the information provided and sent a final draft of this report to the MIRL along with a written request to identify any major errors or omissions prior to filing.

2.4 Abbreviations

A complete list of abbreviations used in this report is provided in Table 2.5-1 below.

Table 1.6.2-1: List of abbreviations

	Description		Description
$	Dolars	kozs	Thousands of ounces
µ	Micras	l/hr/m²	Litres per hour per square metre
3D	Three-dimensional	M	Million
AAS	Atomic absorption spectrometer	M	Metres
Au	Gold	Ma	thousand years
Bcm	Bank cubic meters	MIK	Kriging Multiple Indicator
CC	Correlation coefficient	Ml	Milliliters
Cfm	Cubic feet per minute	Mm	Millimeters
CIC	Carbon in column	MMI	Mobile metal ion
CIL	Carbon-in-Leach	Mtpa	Millons tonnes per annum
Cm	Centimeters	N (Y)	Northing
Cusum	Cumulative Sum of the deviations	NaCN	Sodium cyanide
CV	Coefficient of Variation	NATA	National Association of Testing Authorities
DDH	Diamond drill hole	NPV	Net present value
DTM	Digital terrain model	NQ2	Size of diamond drill rod/bit/core
E (X)	Easting	°C	Degrees centigrade
EDM	Electronic distance measuring	OK	Ordinary Kriging
EV	Expected value	Oz	Troy ounce
G	Gram	P80 - 75µ	80% passing 75 microns
g/m³	Grams per cubic meter	PAL	Pulverize and leach
g/t	Grams per tonne	Ppb	Parts per billion
HARD	Half the absolute relative difference	Ppm	Parts per million
HDPE	High density poly ethylene	Psi	Pounds per square inch

	Description		Description
HQ2	Size of diamond drill rod/bit/core	PVC	Poly vinyl chloride
Hr	Hours	QC	Quality control
HRD	Half relative difference	Q-Q	Quantile-quantile
ICP-MS	Inductivity coupled plasma mass spectroscopy	RAB	Rotary air blast
ID	Inverse Distance weighting	RCD	Reverse circulation
ID^2	Inverse Distance Squared	RL (Z)	Reduced level
IPS	Integrated pressure stripping	ROM	Run of mine
IRR	Internal rate of return	RQD	Rock quality designation
ISO	International Standards Organization	SD	Standard deviation
ITS	Inchcape Testing Services	SGS	Société Générale de Surveillance
Kg	Kilogram	SMU	Simulated mining unit
kg/t	Kilograms per tonne	T	Tonne
Km	Kilometers	t/m^3	Tonnes per cubic metre
kt	Thousands of tonnes		

3 Property Description and Location

3.1 Project Location

The Corihuarmi Mining Unit is located in the districts of Chongos Alto and Huantán, in the province of Huancayo and Yauyos, in the department of Junín and Lima, respectively, approximately 4,800 masl, northwest of the Coyllorcocha and Huichicocha lagoons, on the surface lands of peasant communities of Atcas and Huantán.

The access to the Project area from Lima, is done through the asphalted central road to the city of Huancayo, where you take the affirmed road and a dirt road to the mine. The journey from Lima to Huancayo is approximately 6 to 7 hours and from Huancayo to the mine is 4 to 5 hours.

Another access road is the Lima-Cañete-Lunahuaná asphalt road, taking the affirmed road and dirt road Lunahuaná - Laraos - San Valentín - Mina Corihuarmi. The journey from Lima to Lunahuaná is 3 hours and from Lunahuaná to the mine is 8 hours

Figure 1.6.2-1: Location of the M.U. Corihuarmi

3.2 Mining Property Status

As shown in Figure 3.2-1 and Table 3.2-1, the Corihuarmi Property consists of 14 concessions totaling 9,315.83ha. These concessions were taken 100% by MIRL and are made up of six mining concessions for a total of approximately 3,418,65 hectares and eight exploration concessions or petitions (stage of application for mining concession, for a total of 5,897.18ha.

Figure 1.6.2-1: State of Mining Property Corihuarmi

The main block is an irregular rectangle of approximately 6km by 7km consisting of six contiguous mining concessions totaling 3,418.65ha. As shown in Figure 3.2-1, fully enclosed within the Main Block is an exploration grant, Tambo Nuevo 11, maintained by a third party (Exploraciones Geologix Inc.), since the beginning of 2004.

The eight exploration concessions (5,897.18ha), which constitute the other five blocks, cover initial exploration objectives with minimal work completed on them.

The Corihuarmi Mining Unit is located within the mining rights areas owned by Minera IRL S.A., listed in Table N ° 3.2-1.

Table 1.6.2-1: Mining legislation list

NAME	Area (Ha)	REGION	PROVINCE	DISTRICT
ECONOMIC ADMINISTRATIVE UNIT (UEA) CORIHUARMI: (Presidency Resolution N° 3473-2014-INGEMMET/PCD/PM del 12.11.2014)				
TUPE 2	600	LIMA	YAUYOS	HUANTÁN / TUPE
TUPE 3	600	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / HUANTAN / TUPE
TUPE 5	300	LIMA	YAUYOS	HUANTAN
VERA I	800	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / HUANTAN
VERA II	700	JUNIN	HUANCAYO	CHONGOS ALTO
VERA III	500	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / TUPE
MINING CONCESSION				
TAMBO NUEVO 11	400	JUNIN	HUANCAYO	CHONGOS ALTO
CONCESSION OF BENEFIT				
CORIHUARMI	127.5	JUNIN / LIMA	HUANCAYO / YAUYOS	CHONGOS ALTO / HUANTAN

Source: Andean CG

3.3 Permits

3.3.1 Environmental Management Instruments (IGA)

The Corihuarmi Mining Unit began operations in 2008 prior to the Environmental Impact Study and has Environmental Management Instruments in place for its primary components (Pits, PADs, Dismantlers, BMI, Benefit Plant, others).

Table 3.3.1-1: Approved environmental management instruments

N°	Approval Document	Date	Approved Instrument / Main components
1	RD N° 117-2007-MEM/AAM	27/03/2007	Environmental Impact Study of Corihuarmi exploitation and benefit project (Pit Diana, Pit Susan, Circuit N°1 Benefit Plant, PAD 1, PAD 2, Desmontera, Others).
2	RD N° 090-2008-MEM/AAM	21/04/2008	Environmental Impact Study "Final study of the primary line of 22.9 kV S.E. Chumpe - Corihuarmi Mining Unit and Corihuarmi output module 22.9 / 126 kV, 1 MVA of the S.E. Chumpe
3	RD N° 006-2010- MEM-AAM	07/01/2010	Mine Closure Plan of the Corihuarmi Mining Project.
4	RD N° 172 -2010-MEM/AAM	19/05/2010	Mining Liabilities Closure Plan for the Corihuarmi Mining Project.
5	RD N° 010-2012-MEM/AAM	12/01/2012	Environmental Impact Study of the project Expansion of production and capacity of the Corihuarmi mine plant (Pit Scree Slope, PAD 3, Circuit N°2 Benefit Plant, Others).
6	RD N° 191-2013-MEM-AAM	12/06/2013	Update of the Mine Closing Plan of the Corihuarmi Mining Unit
7	RD N° 354-2014-MEM-AAM	10/07/2014	Technical Report for the Modification of Location of Approved Platforms of the Corihuarmi Exploration Project, presented by Minera IRL S.A. (Explorations have been approved using R.D.251-2006-MEM-AAM, R.D.207-2008-MEM-AAM, and R.D.066-2010-MEM-AAM).
8	RD N° 617-2014-EM/DGAAM	23/12/2014	Second Modification to the EIA for the expansion of the Phase 4 Leaching PAD and Pits in the Corihuarmi Mining Unit (Pit expansion Diana, Pit Cayhua, PAD 4B, Circuit N°3 Benefit Plant, BMI Expansion, Quarries, Others).
9	RD N° 452-2015-MEM-DGAAM	24/11/2015	Rectification of RD N° 617-2014-EM / DGAAM specifying that its components may be included in the next modification or update of the Mine-closure Plan (Term until 2018).

Source: Andean CG

3.3.2 Authorizations and Permissions

In addition, the primary components (Open Pits, PADs, Desmontera, BMI, Benefit Plant, others) have their authorization of construction and operation granted by the Mining Authority through the following Resolutions:

Table 3.3.2-1: Authorization construction and operating licenses

Authorization	Component	Description	EIA Base
R.D. Nº 954-2008-MEM/DGM of 06.06.2008	Concession Benefit: PAD Phase 1 ADR plant	Area: 60 hectares Treatment: 3,000 tpd Circuit Nº 1: 5 columns of diameter 2.1m y height 2.7 m.	R.D.Nº 117-2007-MEM/AAM of 27.03.2007 (Corihuarmi Exploitation and Benefit Project)
R.D. Nº 937-2008-MEM/DGM of 21.05.2008	Pit Diana Pit Susan. Waste Dump	Approve Mined Plan (3,000 tpd) and Start of Exploitation. Cap. Dump: 3.6 MMt	
R.D. Nº 090-2009-MEM/DGM of 04.05.2009	Concession Benefit: PAD Phase 2 (2A) Crushing system	Area: 127.5 Ha.	
R.D. Nº 858-2009-MEM-DGM/V of 29.10.2009	Concession Benefit: Plant ADR	Treatment: 4,110 tpd Circuit Nº 1	Until 50% (Art.20, D.S.Nº 016-93-EM; D.S.Nº 029-99-EM). EIA fixed on 2,740 tpd.
Resolution Nº 118-2010-MEM-DGM/V del 15.03.2010	Waste Dump (Modification)	Capacity of the waste dump: 2.125 MMt	
Resolution Nº 047-2011-MEM-DGM/V del 07.02.2011	Concession Benefit: PAD Phase 2 (2B)	Authorization de Functioning	
Resolution Nº 428-2012-MEM-DGM/V del 28.12.2012	Concession Benefit: PAD Phase 3 Plant ADR (Circuit Nº 2)	Treatment: 6,000 tpd Circuit Nº 1. Circuit Nº 2: 5 columns de diameter 2.1m y height 3 m.	R.D. No. 010-2012-MEM / AAM, 12.01.2012, EIA "Expansion of production and installed capacity of the Corihuarmi mine benefit plant".
R.D. Nº 181-2012-MEM/DGM of 14.09.2012	Pit Scree Slope	Modification of the Mine Plan (6,000 tpd). North Dump (Capacity: 1.25 Mm3).	

4 Accessibility, Climate, Local Resources, Infrastructures and Physiography

4.1 Project Access

Access to the project area from Lima is done through two routes:

-Lima - Huancayo - Vista Alegre - Corihuarmi Project, covering approximately 445 km.

- Lima - Cañete - Lunahuaná - Yauyos - Llapay - Valentine - Project Corihuarmi, covering approximately 370 km.

Table 3.3.2-1: Access to the project area

Lima – Huancayo – Vista Alegre – Project Corihuarmi			
ROUTE	**VIA**	**Distance Km.**	**Hours (Hr)**
Lima – Huancayo	Asphalt road	**330**	**6.0**
Huancayo – Vista Alegre	Affirmed Road	**45**	**1.5**
Vista Alegre– Project Corihuarmi	Dirt Road	**70**	**2.5**
TOTAL		**445**	**10**
Lima – Cañete – Yauyos – San Valentín – Proyecto Corihuarmi			
Lima – Cañete – Lunahuaná	Asphalt road	**145**	**2.5**
Lunahuaná – Yauyos – Llapay	Affirmed Road	**155**	**4.0**
Llapay- San Valentín - Project Corihuarmi	Dirt Road	**70**	**3.5**
TOTAL		**370**	**10**

4.2 Physiography and Climate

The project is located at elevations between 4,500m and 5,050 meters above sea level and the main Andean division. In spite of the elevation, the topography is relatively tenuous, comprising a series of hills and ridges that rise approximately 500 m above an undulating alpine plateau.

The project experiences a climatic regime of high mountain dry tundra. The precipitation is markedly seasonal and the total annual precipitation is 730 mm. The vegetation is composed only of alpine pastures across the plateau, with adjacent hills and essentially sterile vegetation, particularly in areas of argillic alteration. Agricultural activities are limited to extensive grazing of summer cattle, mainly sheep, cattle and camelids (alpaca and llama).

4.3 Local infrastructure and services

It has a camp called Campamento Nuevo to accommodate approximately 110 employees of Minera Irl S.A, built to the east of the facilities of the plant. Existing facilities include offices, warehouse, dining rooms, recreation room, among others.

In addition to a camp called Campamento Antiguo to accommodate approximately 260 workers between workers and employees of Minera Irl S.A, it also houses approximately 90 workers of contractors. Existing facilities include offices, Medical Center, recreation room, among others.

The main infrastructures related to the mine include the waste landfill, transport roads, the mining contractors' workshop and related infrastructure, fuel storage facility and explosives.

5 History

5.1 History of Exploration

Between 1996 and 1997, Minera Andina de Exploraciones (Minandex) identified the Project based on the color anomalies of the LandSat images that define the extensive alteration system. Minandex completed the geological mapping, chip-channel sampling and the limited drilling of the diamond core (3 holes, 775m), identifying the areas of Susan and Diana.

The project was carried out by Cardero Resource Corporation (Cardero) between 1998 and 2000, with work being done on its own and under joint venture agreements with Barrick Gold Corporation (Barrick) and Newmont Mining Corporation (Newmont). The exploration included geological mapping, a disturbance study, portable infrared analysis (PIMA), a controlled source audio-ionospheric survey (CSAMT) that was reinterpreted by Newmont and drilling to test CSAMT anomalies (9 holes: 1,971.15m). Only one hole was drilled near the northern end of the Diana area and no drilling was completed in the Susan area. The company concluded that the environment was not conducive to the development of large areas of gold epithermal mineralization, choosing to return ownership to Minandex by the end of 2000.

MIRL acquired the project in 2002. Between 2003 and 2005, the company completed a program, concentrating mainly on the Susan and Diana areas, which includes geological mapping, extensive horizontal and vertical sampling of chip channel, three phases of diamond drilling (53 Holes, 3,551.95 m), metallurgical tests, geotechnical studies, internal and independent resource estimates, and an internal feasibility study. Subsequently, Kappes Cassiday and Associates (KCA) commissioned and completed an external feasibility study in April 2006.

In 2008, the production began and exploration was continued, including sampling of rock splinters in outcrops and drilling DDH, RC and BH in the areas of Diana, Cayhua, Cayhua Norte, Scree Slope, Laura and Scree Slope Extension (Tambo Nuevo), also in the inferior levels of the Pits Susan and Diana. Between 2006-2017, 07 DDH drilling phases (233 drills, 19,785.45 m), 03 RC drilling phases (125 drills, 8,613.00 m) and long drills with an average depth of 15 m (1,630 drills, 24,050 m) were performed, with which it has been achieved the progressive increase of the reserves, increasing the life of the mine.

5.2 Mining History

In that area only artisanal miners worked until MIRL acquired the rights and concessions of Corihuarmi, and went on to exploit the mineral resources. At first only Susan and Diana were identified as exploitable deposits, but the following deposits are currently in operation; Expansion Diana, Cayhua, North Cayhua, Scree Slope, Laura, Susan and Scree Slope Expansion.

6 Geological Setting

6.1 Regional Setting

The project is located within the Andean Range, between the Peru-Chile ocean trench to the west and the Brazilian Craton to the east. The Andes Mountains formed as a result of the convergence between the Nazca (Pacific Basin) oceanic plate and the South American continent. The denser bottom of the Nazca plate was subducted beneath the South American continent along the Peru-Chile trench, resulting in crustal melting and magmatic (volcanic) activity, while the lighter marine sediments of the upper plate of Nazca were obtained in the continental land mass, resulting in collision and compression

The Andean range consists of two parallel chains, with the youngest Western Mouantain range corresponding to a Cenozoic magmatic arc, while the

Eastern Mountain range represents a zone of progressive ascent from the Permian. The intermediate zone is occupied by the Altiplano, a relatively low relief plateau where inter-mountainous basins developed during the Cenozoic period. The Western Cordillera and the Altiplano harbor most of the deposits of precious metals and economically significant base metals of Peru, occurring in a series of metallogenic distinct belts or domains.

Figure 3.3.2-1: Regional Geology

Corihuarmi is located in the extreme north of the Epitermal strip of Au-Ag of Peru, associated with volcanic tertiary of the upper middle and with intrusive of the western mountain range. These are separated from the deformed Mesozoic sediments of the Altiplano immediately east of the Corihuarmi area by an important main thrust of the northeast.

6.2 Project Geology

In order to recognize the geology of the study area, the Tupe quadrangle (26-L) was taken as a basis, which is part of the National Geological Chart made by INGEMMET at regional level in 1970 and updated in 2002, consisting of In rocks of lower Cretaceous age, formed by calcareous limestone rocks (limestone and calcareous sandstones), pseudo volcanic strata of the Paleogene-Neogene (Cenozoic) of andesitic-dacitic composition and the Quaternary, formed by glacial, alluvial-colluvial and bofedal deposits. The study area is located within the Andean Range that, 250 m ago (Mesozoic) was a subsurface basin that had contributions of both continental and marine sediments.

In the lower Cretaceous, the basin is affected by processes of marine transgression that form sedimentary rocks such as limestones and calcareous sandstones, these rocks appear 4.6 km to the North-East of the current Dump waste of Inadequate Material-BMI and correspond to the Chulec formation (ki-chu).

Subsequently, overlying the geological unit mentioned above, the Jumasha formation (Ki-ju), formed by limestones with gray-brown to beige colorations interspersed with nodular limestones, emerges 4.5 km to the north-east of the study area. At the end of the Cretaceous the basin passed through deformation processes, generated by a compression tectonic activity, giving rise to epirogenesis processes and therefore to the regression of the sea, also soft folds occur in the basin and the Andean Northweste- Southeast.

Following this, during the Upper Cretaceous, a severe erosive process is generated that gives rise to the formation and sedimentation of the Casapalca Formation (KsP-ca), which is located 1.5 km NE of the study area.

At the base of the Cenozoic (Paleogene), there is a tectonic phase that folds to the Mesozoic sequence in a Northwest-Southeast direction, also in this period magmatic processes take place, which, through faults and fissures, expel lavas that originated volcanic pseudo-strata sedimentary.

In the Miocene continuous effusive activity of volcanic-sedimentary nature constituted mainly by gray andesitic flows with tuffs and sandstones that form part of the Sacsaquero Formation, emerges 650 m to the West and 1.5 km to the East of the BMI.

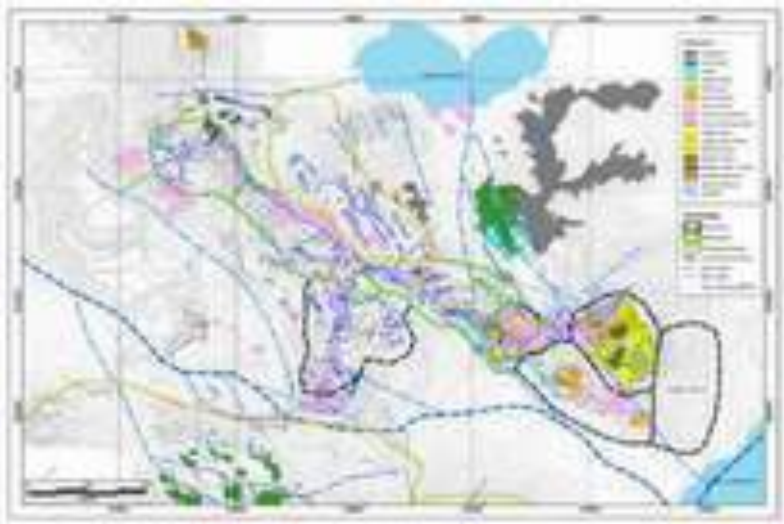
Overlying erosional discordance to Sacsaquero, is the Castrovirreyna Formation of the Middle Miocene which is formed by red sandstones, limestone lenses, tuff and dark gray andesitic lavas, the rocks belonging to this formation are affected by a marked folding, 1 km south of the study area.

In the middle part of the Miocene appears the Caudalosa Formation (Nm-ca) constituted by andesitic flows intercalated with breccias and andesite breccias, lies at discordance on Castrovirreyna, presents moderate folding. It should be noted that this unit constitutes the rocky substrate of the study area. The stratigraphic column continues with the outcropping of subvolcanic rocks of the rhyolite type that have been generated by the intrusion of the Coastal Batolito on the Tertiary rocks that appear in the basin and are located 4.6 km south of the study area. Then, in the Pliocene, the epirogenesis processes that gave rise to the current formation of the Andes Mountain Range continued.

Finally, in the Quaternary, deposits of glacier origin are deposited denominated glacial deposits (Q-g2), conformed by blocks and consolidated angular gravels; It is mentioned that these materials are in the vicinity of the project and also fluvio glaciares deposits (Qpl-fg), constituted by gravel and sands in a siloarenosa matrix.

Mineralogically the area of the Corihuarmi mine is located to the north of the "Silver-gold epithermal belt of southern Peru". In Corihuarmi there are mainly three mineralized zones: Susan, Diana and Scree Slope. These correspond to an epidermal model of high sulfurization, whose system acted on volcanic and tertiary sedimentary rocks, which were intruidas by dacites and porphyritic latites in the late tertiary.

Figure 3.3.2-1: Local Geology (Lithography)



In Corihuarmi, the geological and physical evidence suggests a volcanic caldera environment, with intermediate to acid volcanic rocks, basically Andesite, vertical cylindrical breccias, pyro clasts and tufts, as well as rhyolitic and dacitic domes. Typical epithermal mineralization has a paragenesis of porous silica-alunite-native sulfide. The dominant topographic features are high altitude siliceous outcrops aligned in an NW-SE direction.

The dominant topographic features present an NE-SE alignment. It is also known that the system of hydrothermal fluids responsible for gold mineralization was provided by the coincident intersection of the regional fault trends NW, NE and EW.

7 Deposit Types

The Au oxide mineralization of Diana, Cayhua, Cayhua North, Scree Slope, Laura, Susan and Scree Slope Amplification (Corihuarmi) is associated with types of epithermal deposits. The deposits of epithermal gold are formed in hydrothermal systems related to volcanic activity. These systems, while they are active, discharge to the surface as hot springs or fumaroles.

Epithermal gold deposits occur largely in volcanic-plutonic arches (insular arches, as well as continental arches) associated with subduction zones, with ages similar to those of volcanism. The deposits are formed at shallow depths, <1km, and are mainly lodged by volcanic rocks.

There are two types of end members of epithermal, high sulphidation (HS) and low sulphidation (LS) deposits. The two deposit styles are formed from fluids of distinct chemical composition in a contrasting volcanic environment. The deposits of Diana and Susan are of the style HS.

Examples of deposits of epithermal gold of economic importance are Yanacocha, Pierina and Lagunas Norte in Peru, Pueblo Viejo in the Dominican Republic, Pascua-Lama, El Indio and El Penon in Chile, Veladero and Cerro Vanguardia in Argentina, Porgera and Ladolam in Papua New Guinea, Bagio and Lepanto in the Philippines, McLaughlin, Round Mountain, Summitville and Goldfields in the US, and Emperor in Fiji.

8 Mineralization

The mineralization identified to date within the Corihuarmi Project comprises a system of high sulphidation epithermal precious metals formed at a relatively low depth. Gold and silver mineralization is essentially confined to remnants of silicification and breccias that predominate along the northeastern margin of the volcanic complex (Figure 8-1). The horizontal metalogenic zonation provides evidence that this siliceous layer was once continuous, effectively plugging the hydrothermal system.

Figure 3.3.2-1: Main geological block

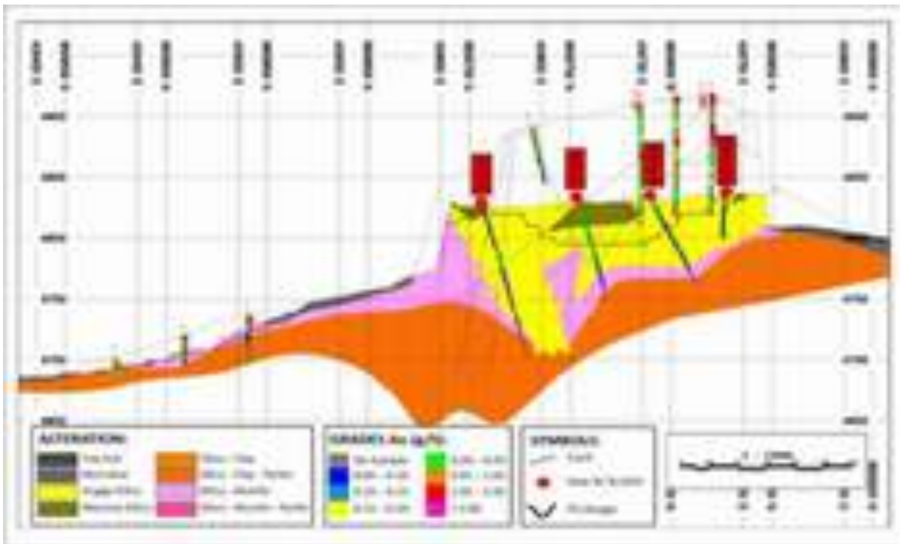
The most significant mineralization is associated with the areas of Diana Expansion, Cayhua, Cayhua North, Scree Slope, Laura, Susan and Scree Slope Expansion (Figure 8-2), which comprise rests mineralized siliconized bluffs. The siliceous layer is of submersible surface dipping, with a thickness of 10m to 75m, and an average of approximately 45m.

Figure 3.3.2-2: Mineralization areas in Corihuarmi

The drilling has defined zones of mineralization, which we present in; Figure 8-3, Figure 8-4 and Figure 8-5, which show the drilling section intercepting the mineralization.

The mineralized material is composed almost exclusively of amorphous vuggy silica with the dacite generally modified beyond textural or mineralogical recognition. Subordinate interstitial alunite increases in abundance toward the base of the mineralized zones, while zones of annealed breccias and quartz veins attest to multiple episodes of hydrothermal activity. The massive siliceous material graduates laterally downwards in a zone of intense alteration silica-alunita.

Figure 3.3.2-3: Susan and Diana zone section



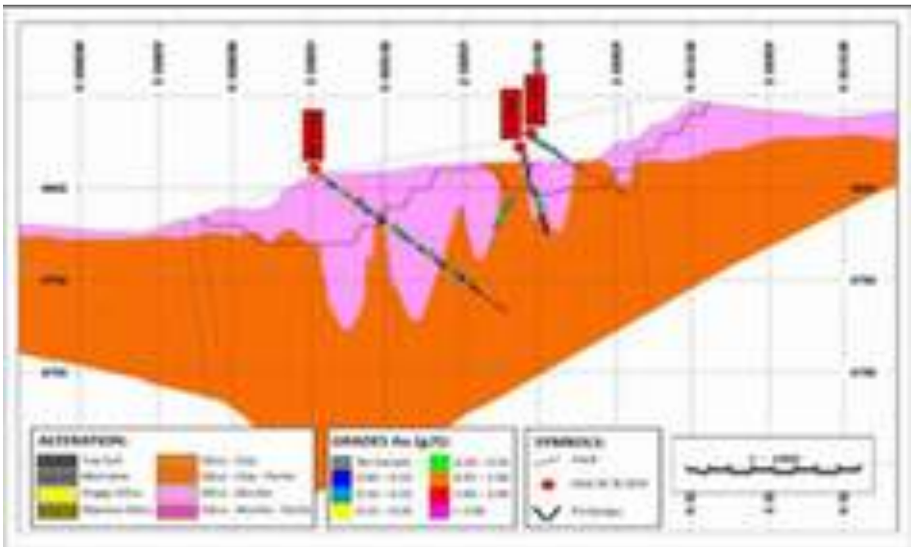
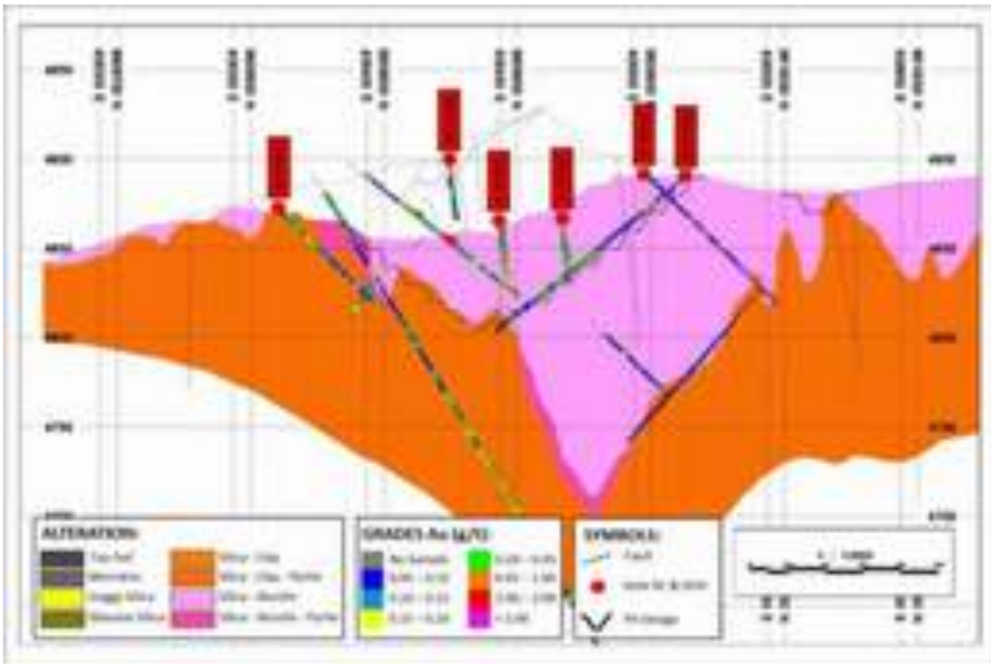


Figure 3.3.2-4: Cayhua and Cayhua north zone section



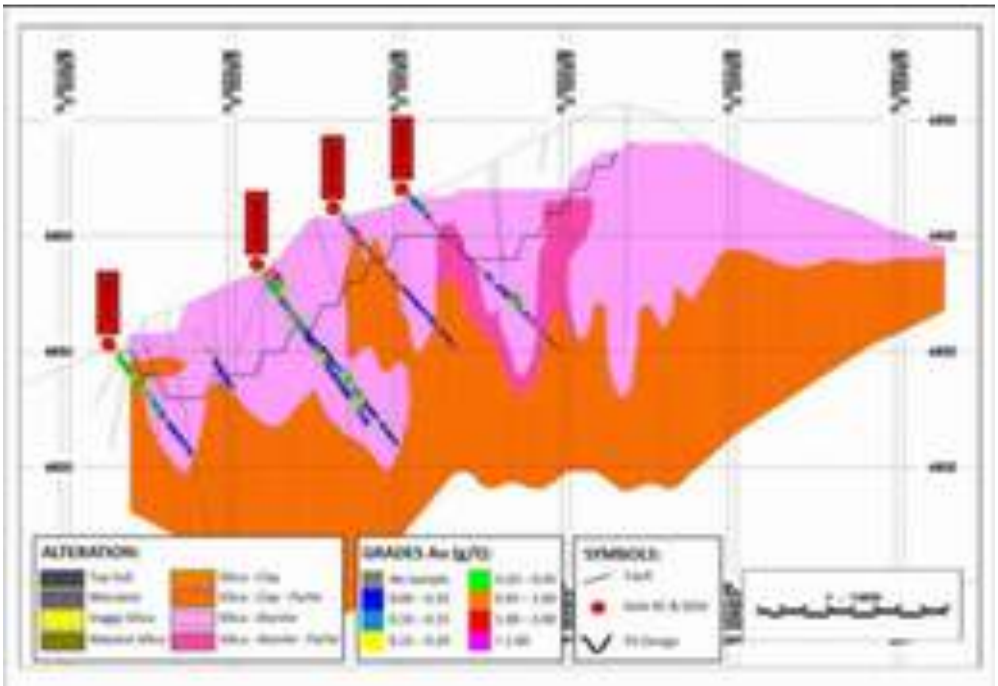
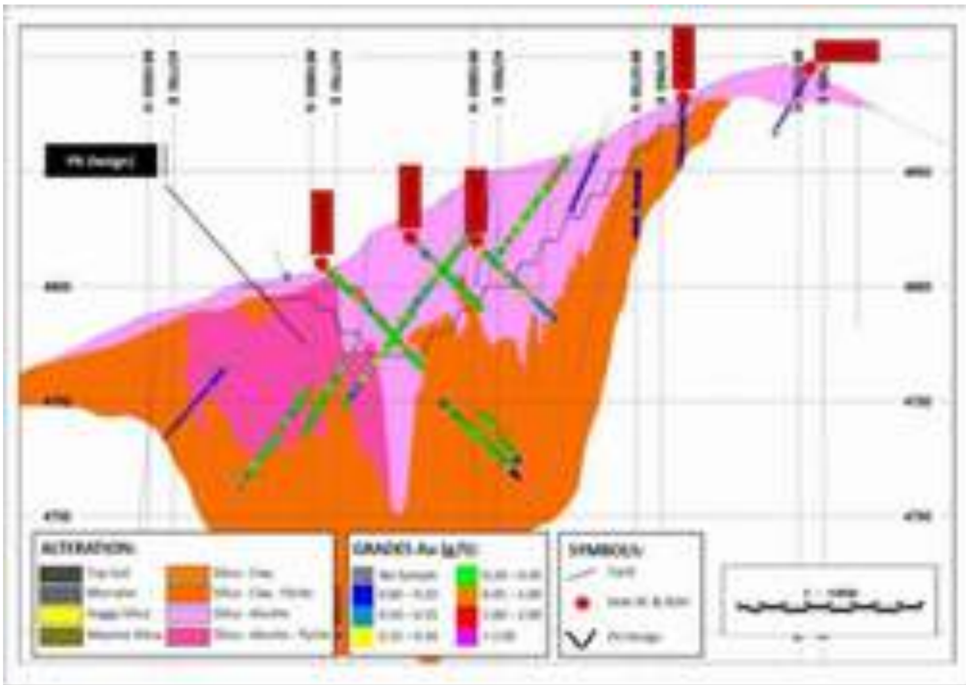
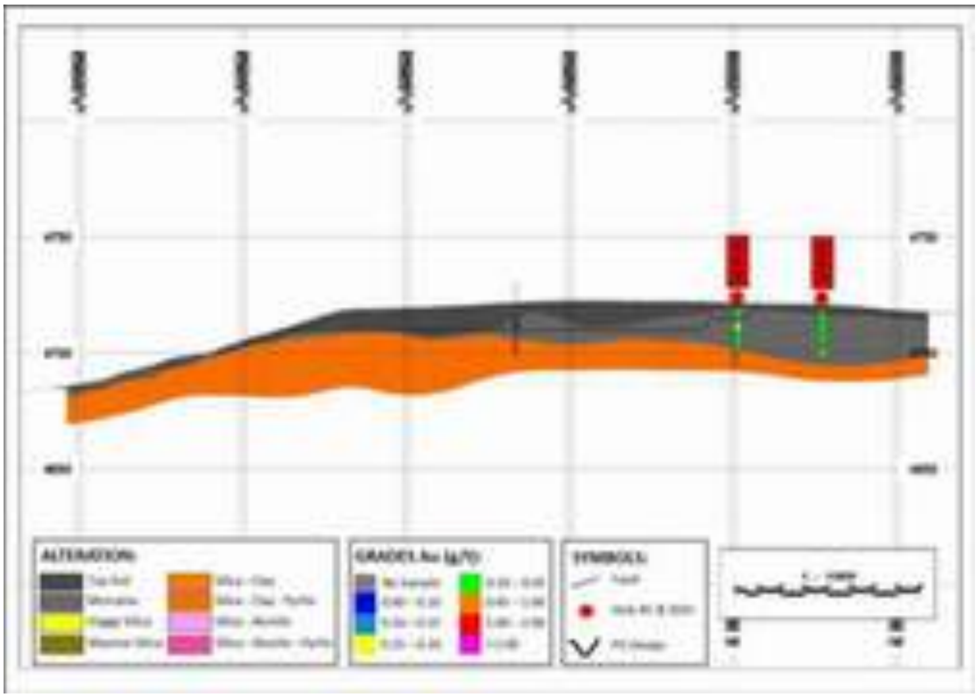


Figure 3.3.2-5: Laura and Scree slope extension zone section





The mapping has identified a halo of alteration in zones that is widely adjusted to the structure of the interpreted boiler. The mineralogical zoning is classified vertically downward and laterally away from the identified zones of mineralized siliceous material comprising the layer remaining to the hydrothermal system as shown in Figure 8-9. Immediately below and laterally of the expositions of vuggy silica is an extensive zone of alteration silica-alunita, that is classified in a zone of silica-clay, defining essentially the structure of the boiler. This is surrounded by the ubiquitous clayey alteration that extends along the remaining portions of the entire volcanic center

A distinctive metalogenic zonation also seems to define elements of the boiler structure, as is evident in a compilation of the various geochemical data sets, as shown in Figure 8-7. The boiler appears to be defined by an anomalous outer halo of zinc, together with an inner halo of coincident barium, gold, arsenic, antimony, bismuth, and mercury. The stronger copper and molybdenum identified by drilling along the southern margin of mineralized bodies are more likely to represent the root zone or feeding structures that transgress the dacite dome. An isolated zone of propilítica alteration is mapped in the north extremity of the structure. It is not clear, however, whether this is related to the same system or a conserved remnant of an earlier regional disturbance event that has been overprinted by the main mineralization system.

Figure 3.3.2-6: Main alteration block

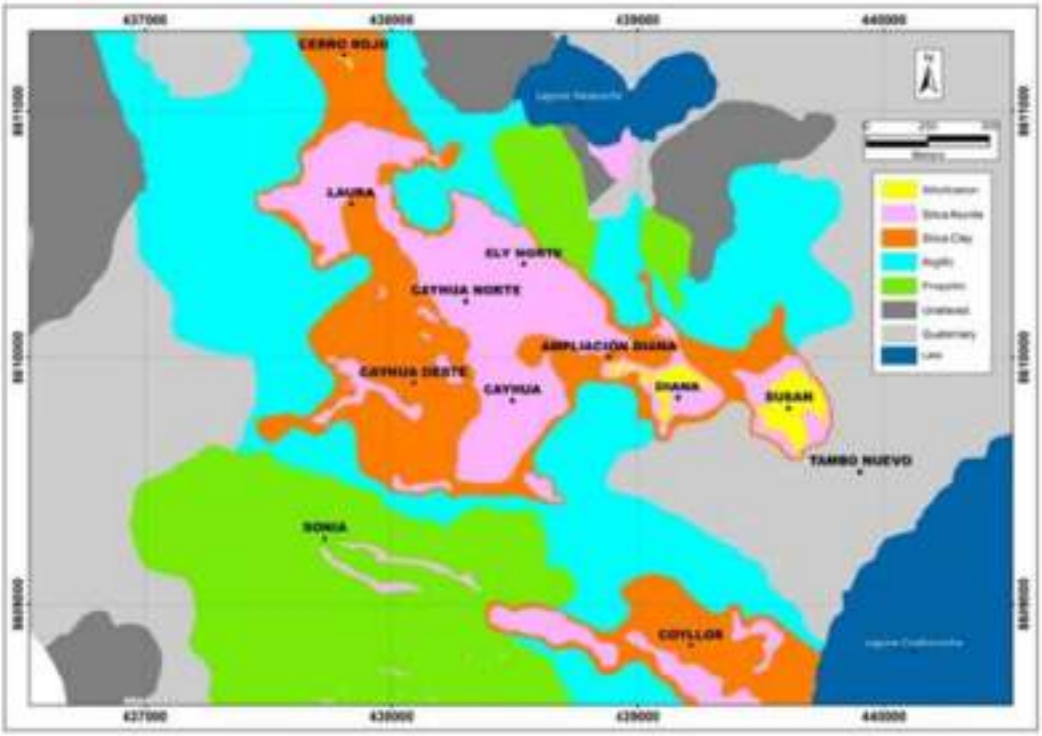
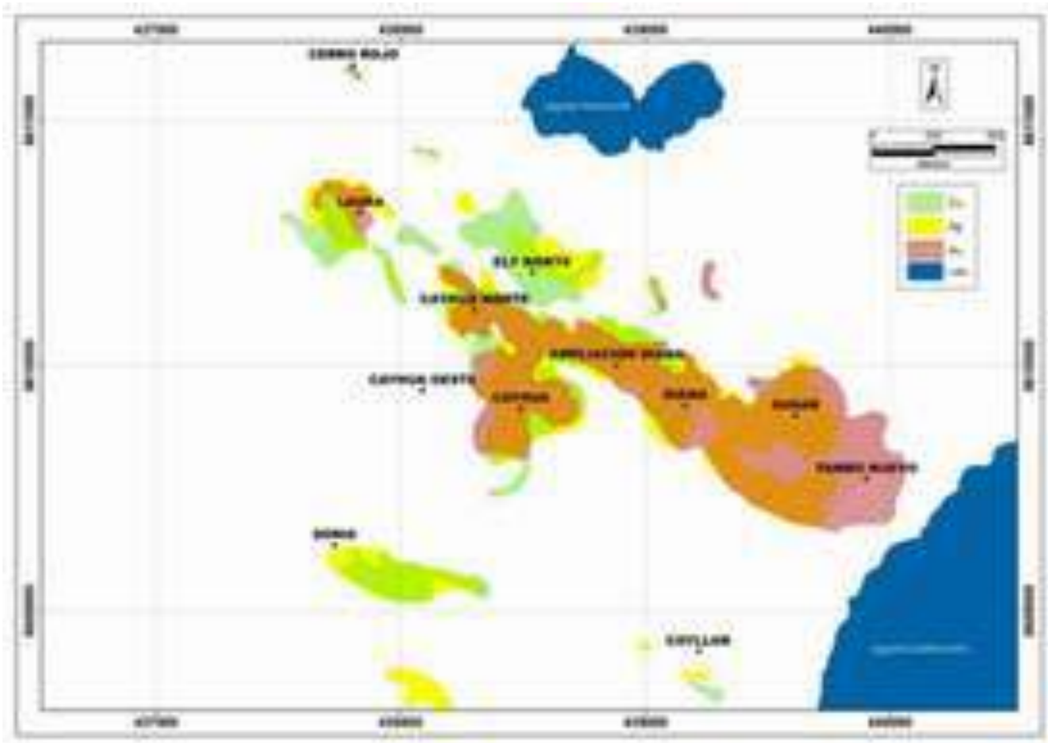


Figure 3.3.2-7: Main block of metalogenic zonation



9 Exploration

The sampling of bedrock, particularly the sampling of pits along with diamond drilling (DDH), Reverse Circulation drilling (RCD) and in some cases with Blastholes, have been the dominant exploration tools of MIRL to define Mineral Resources in the Zones; Diana expansion, Cayhua, North Cayhua, Scree Slope, Laura, Susan and Tambo Nuevo. In addition, they have used geological mapping and geochemical sampling, along with the geophysical surveys of CSAMT

The exploration studies and interpretations to date within the Project have been largely planned, executed and supervised by MIRL staff, complemented by consultants and contractors for more specialized or technical functions. The data is considered to be of good quality.

Andean CG considers that the exploration objectives justify a greater exploration and that the possibility exists to identify additional mineralization in the permits that has MIRL.

10 Perforation

10.1 Introduction

The main methods used for exploration drilling in Corihuarmi have been diamond drilling hole (DDH) which focuses on obtaining cores and reverse circulation drilling (RCD) which focuses on obtaining detritus, both of which have been used in the definition of control of grades and for the drilling of mineralized deposits as; Diana expansion, Cayhua, North Cayhua, Scree Slope, Laura, Susan and Tambo Nuevo. Control samples were inserted in the drilling stages and are described in Chapter 13 of this report.

All deposits at Corihuarmi have been drilled at a nominal spacing of 25m to 50m.

Table 3.3.2-1: Drilling Statistics

Company/Year		Drillholes	Metres	Contractor	Drill Rig	Sample Size
Minandex	(1997)	3	755	Unknown	Longyear LF70	Unknown
Cardero	(2000)	9	1975.15	Unknown	Unknown	HQ, NQ
MIRL	(2003 - 2010)	109	6,621.00	MDH	Longyear 34	HQ
MIRL	(2005 - 2010)	148	8,190.00	Not provided	Not provided	RC – 5 ¼
MIRL	(2005 - 2010)	18,955	9,7743	Not provided	Not provided	Blast Hole -6’
MIRL	(2010 - 2017)	169	14,446.20	Ingetrol/Redrilsa	Not provided	HQ
MIRL	(2010 - 2017)	29	2,199.00	Not provided	Not provided	RC – 5 ¼
MIRL	(2010 - 2017)	158,472	872,737.00	Ingetrol	Not provided	Blast Hole -4’

It should be mentioned that drillings were also carried out with 10- and 15-meter blastholes, which identified two horizons, the first with sterile horizon and the second with mineralization. This was done in the Scree slope expansion area (Tambo Nuevo).

10.2 Drilling Procedures

10.2.1 Diamond Drilling Procedures

This action includes the use of diamond tipped drills, noise generation in this activity will be imminent. It should be noted that most of the drills are within the impacted area of the project. Most diamond drills were drilled by Ingetrol and Radrisla with diameter HQ

Based on the inspection of various core trays available on the site and the review of available reports, Andean CG believes that diamond drilling has been carried out in accordance with industry Standards.

10.2.2 Reverse Circulation Drilling Procedures

Sample recoveries were not recorded by MIRL, although they were reported high. Andean CG cannot validate the recoveries of this RCD drilling.

10.2.3 Blasthole Procedures

The drilling of blastholes is used for rock blasting and also for the control of grades, the drills are all vertical with about 5 meters of depth and are rotatory compressed air which results in the contamination of the wall wherever displaces the drill.

10.3 Drilling Orientation

The DDH and RCD drills were generally drilled to the northeast and southwest between -37 to -90 degrees of inclination, such inclinations were given according to the geological interpretation of the mineralized bodies at the discretion of the exploration geologist. The drillings were directed perpendicular to the mineralized bodies to intercept in their true magnitude the power and main tendency of the mineralization in the Expansion reservoirs Diana, Cayhua, North Cayhua, Scree Slope, Laura, Susan, Diana and Scree Slope Extension Tambo Nuevo), the drilling developed at a nominal spacing of 20 to 40 m.

10.4 Drilling Study Procedure

10.4.1 Accuracy of the Collar Locations

The decision to choose the location of the heads of the drills (collars) was made by MIRL using the total station. The margin of error of a total station is indicated as ± 0.5 m

The procedure for finding the location of the drill heads meets the acceptable industry standards.

10.4.2 Blastholes Study Procedures

No detailed drilling studies have been carried out. However, the deviation is expected to be limited since the bores are generally less than 100 m.

Andean CG would expect the short holes to have a minimum deviation, but have recommended to MIRL that in the future they conduct studies at the beginning of the drilling to verify this.

11 Sampling Method and Approach

11.1 Diamond Core Sampling

HQ and NQ diameter of the diamond drill cores were sampled at lengths of an average of 2m. The samples were numbered and collected in individual plastic bags with sample labels inserted inside.

The collection and sampling of the cores have been conventional and appropriate. The diamond core indicator is not oriented towards structural measurements. Andean CG recommends guiding the diamond cores in the future

11.2 Reverse Circulation Sampling

RCD samples were collected at 5 m intervals and quartered in rifle splitters. The subsamples weighed approximately 1 kg and were collected in cloth bags.

Andean CG considers that 5 m composites are too large to be accurately and representatively divided into sub samples of 1 kg. Mineralization shows moderate homogeneity and Andean CG recommends that shorter sample lengths be used in the future (starting with 1m and potentially testing intervals of 2m).

11.3 Blasthole Sampling

Smee (2009) observed the sampling methodology for blastholes and made the following comments:

"Samples are taken with a small hole drill that is equipped with a suction device on the top that removes the finer particles from the cutouts as they are coming out of the blastholes. The stakes are sent to a cyclone that pours the deeper fragments Thick in a bucket and the fine particles are sent through a pipe that is discharged into the back of the drill. That is, the sample is divided into three fractions according to particle size.

This division of the sample according to the particle size may compromise the validity of the grade estimate. It would be much better if the blastholes produced a single heap of sample at the drill head. The normal method of collecting samples of blastholes is to place a skirt around the head to prevent cuts from flying everywhere and to protect cuts from wind and water loss. The pie-shaped division is used to collect a representative sample of the cuts. The cake samplers are inserted under the skirt before drilling begins and are withdrawn when the proper depth of the drill is reached. The sampler can be removed before overbore is done to alleviate the dilution potential of the overhead cuts.

11.4 Surface Trench Sampling

A number of resource estimation analyzes were carried out to establish whether the trench and calcareous samples are materially different from those obtained from drill holes and did not identify any conclusive and consistent bias between the average trench rates and the diamond drilling, and between sampling with support and orientation significantly and volumetrically different. Based on this analysis, Andean CG did not identify any reason for trench data to be excluded from the resource estimate.

11.5 Logging

The diamond core was recorded in detail for geological, structural and geotechnical information, including rock quality designation (RQD) and core recovery. The whole core was photographed routinely. The selected geological records were reviewed by Andean CG and compared to actual controls, did not show significant discrepancies or inconsistencies.

The diamond indicator and the register of RCD drills have been conventional and appropriate.

12 Sample Preparation

12.1 Sample Security

All diamond drill cores, sample duplicates and their respective photographs are in the Minera IRL warehouse in Lima.

12.2 Sample Preparation and Analisys

12.2.1 Corihuarmi Mine Assay Laboratory

The Mine Laboratory was commissioned in 2007 and began the analysis of all sampled drills for control grades purposes. (CERTIMIN continued to analyze resource drills, exploratory drills and blastholes).

CERTIMIN has recommended the following for the mine laboratory:

-Replace old jaw crusher

-Substitute sprayers with one of LM-2 units

-Increase compressed air for clean units

-Insert Duplicates Preparation 1 into 30

-Use certified weights for microbalance

-Improve ventilation and general extraction, and save rejection

-Use certified standards

Minera IRL has implemented these changes. The laboratory has a methodology similar to the CERTIMIN laboratory including:

- Sample of 500 g pulverized to 90% passing # 200

- Sample of 50 g digested by water regia then analyzed by 50 g fire test with an AAS finish.

12.2.2 Adequacy Procedure

Andean CG considers that the preparation of the sample is conventional and no problems are identified.

13 Data Verification

13.1 Information Review 2016

In 2016, Minera IRL completed a review of the QA/QC data until that date. The QA/QC study of the data collected for the M.U. Corihuarmi included the history of exploration, drilling, sample collection, sample preparation and analysis and documents, the results of research on data quality and data validation. The main conclusions are summarized below.

- It was identified inconsistencies in the location of the drill holes, but concluded that it was not significant, since the differences were of 1 to 2 m in any direction.

- It was observed that the deviations in the drills were very unlikely, since the majority of the drills were of less than 100 m of depth.

- The results of the final program QA/QC of MIRL were evaluated and concluded that the overall results were within acceptable limits.

MIRL has tried to solve many of the anomalies and problems identified during its study, but consider that the majority does not have a material impact for the estimation of resources.

13.2 Standards and Duplicates Review

Andean CG completed a review of the available standards and verified that MIRL has been carrying out QA/QC control as material has been obtained for the study, referring to exploration drilling, with reference to the AMEC EN 2006 studies and Coffey Mining in 2010.

13.2.1 MIRL Standards

MIRL has used 6 standards certified by the Lima Actlab laboratory. The standards were prepared with mineralized rocks of Corihuarmi.

Table 13.2.1-1: Standards used by Minera IRL

Standard (ppm)	Expected Value (EV)	+/-10% (EV)	Failed	No. of Analyses	Min. (%)	Max. (%)	Mean (%)	% Within +/- 10 of EV	% RSD (from EV)	% Bias (from EV)
TR 11208	0.273	0.25 to 0.30	0	20	0.257	0.283	0.265	100		3.05
TR 11209	0.663	0.60 to 0.73	0	21	0.633	0.678	0.661	100		0.29
P10-313	Blank	<0.05	0	41				100		
P12-722 - A	0.218	0.20 to 0.24	3	112	0.195	0.243	0.213	97		2.38
P12-722 - B	0.474	0.43 to 0.52	1	116	0.441	0.524	0.481	99		-1.35
P12-402	Blank	<0.05	0	223				100		

Andean CG reviewed the results of the standards. In general, the returned laboratory results show acceptable accuracy with some obvious isolations that could be attributed to sample mixtures. Control samples including duplicates were performed for Diamantine and Reverse Circulation perforations.

13.2.2 MIRL Duplicate Analisys

Duplicates of diamond drill cores

A duplicate was completed every 20 to 30 samples by MIRL. The method explained by MIRL was to randomly select a sample interval every 20m and break it using a hammer in small fragments <2cm, then divide them either by separating them manually or through a divider. Andean CG considered that this practice is defective because its susceptible to human error and does not guarantee the crushing of the drill core to <2 mm and to the equitable division.

Duplicate of pulp of diamond drill core

During the Corihuarmi drilling program, the CERTIMIN laboratory provided two pulps obtained from each sampled interval. The MIRL staff recoded all the samples and regularly sent the second pulp of the same sample as a Quality Control Procedure, with a new code, so that it was blind to the laboratory

The pulp duplicates returned a very good precision (104 samples) of 96% passing 10% HARD

Drilling Duplicates RCD

A duplicate RCD field is completed every 30 samples by MIRL. This field duplicate is complete in the final sample of 5 kg remaining after reducing from 5 m. This is not a true reflection of the precision of a 5-m compound, but a reflection of a 5-kg compound. To complete a true field duplicate Andean CG recommended that the duplicate be created in the same method as the original sample.

Pulp Duplicate RCD

During the Corihuarmi drilling program, the CERTIMIN laboratory provided two pulps obtained from each sampled interval. The MIRL staff recoded all the samples and regularly sent the second pulp of the same sample as Quality Control Procedure, with a new code.

The RC pulp duplicates returned a very good precision (40 samples) of 96% passing 10% HARD.

13.3 Sampling Verification

Andean CG did not carry out independent verification samples, since it is a mine that is in operations.

14 Adjacent Properties

There are no advanced gold properties in the vicinity of Corihuarmi.

15 Mineral Processing and Metallurgical Testing

15.1 Mill Operations

The metal section of this report was based on data submitted by MIRL in the form of spreadsheets and monthly reports from The Corihuarmi mine operation and the Corihuarmi feasibility study.

15.2 Process Description and Flowchart

The Project is a heap leach pad operation utilizing a multiple-lift, single-use leach pad. Prior to placing the ore onto the leach pad the ore is primary crushed. Processing of ore began in January 2008 when irrigation of the heaps was started.

Figure15.2-1 provides a flowchart of the leach process. The following describes the leach operation in more detail.

Crushing

Ore from the pits, with moisture content of 4 to 5% and granulometry of 10” to 15” on average is transported by trucks of 17 m3 towards the hopper of thickness of 50 TM of capacity.

From the hopper thickness, the ore is fed to 3,5’ x 21’ a vibrating feeder (Grizzly), 30 HP motor power and grills of 4”. This operation consists of classifying the ore in granulometry greater or less than 4”. In this way, the mineral whose granulometry is greater than 4” will be fed to the jaw crusher of 32” to 48”, with motor power of 121 KW. The capacity of this crusher is 370 MT/h, at a setting opening of 110 mm.

The crusher discharge and the fines of granulometry are less than 4” from the Grizzly, will be deposited in the N°1 1.38” x 20 m belt with 25HP motor power; in this same belt is fed with lime at the rate of 0.6 Kg/TM of mineral. The lime screw feeder unit have 5 m long with a power output of 2.2 KW. The belt N°2 has a motor of 50HP.

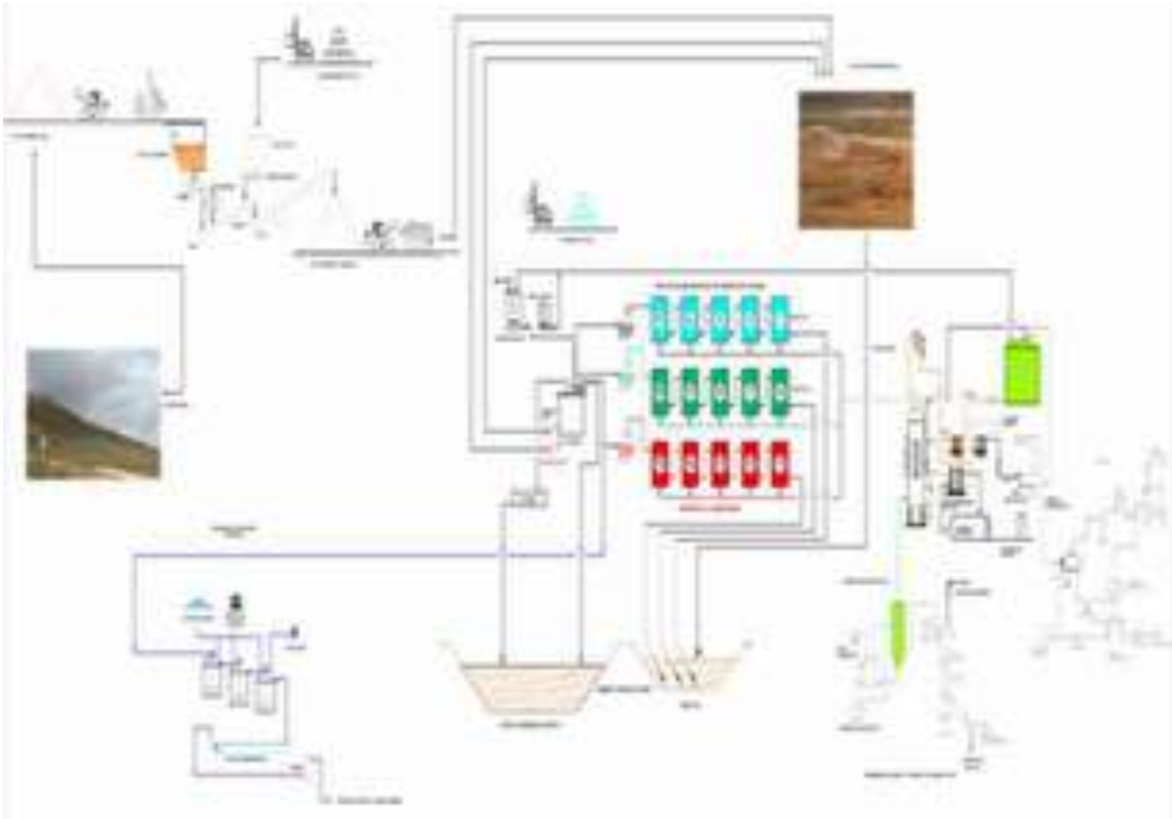
The ore mixed with lime from belt N°1 will be discharged into the radial stacker (belt N°2), 36” x 60 m, which has an electric motor of 50 HP. Finally, the crushed mineral with a smaller grain of 80% - 4” is discharged, forming a stack called “stock pile” where the crushing mineral storage capacity is 6,000 to 9,000 TM.

Leach Pad

Minera IRL as part of its mining operations at the Corihuarmi Mining Unit is constantly stacking ore to the leach Pad and that there are areas of the pad that are under construction as the case of Phase 5.

The ore stacked in the crushing area with an 80% mesh size of 4 "will be transported in trucks of 17 m3 capacity towards the leach pad. The load is given by a CAT-966H front loader. The main discharge hopper has sprinklers at two points, to mitigate dust at the time of discharge. The sprinklers shall be installed with a ¾ "hose which is actuated by gravity operated valves at 125 psi.

Figure 13.2.2-1: Flowchart of the leaching process



The leach pad has a polyethylene geomembrane layer at the base and is divided into cells with an average area of 2,000 m². Each cell contains 20,000 tonnes of ore.

Cells irrigation begins with the primary piping network consisting of a Barren solution tank, 200HP pump and 10 "Ø HDPE. This line is an aligned channel and runs to a manifold at the top of the pad. From the manifold the network of secondary pipes completes the irrigation. The secondary piping network consists of a 4 "diameter pipe that runs through the leach cells. Each Lay Flat tube has hoses that branch out with irrigation drippers.

Caustic soda is added to the barren solution tank to maintain the pH of the solution between 10.0 and 10.5 to avoid cyanide losses. Cyanide is also added to the barren solution tank to maintain a concentration of 200 ppm.

The solution being filtered through the pad is collected by the drainage piping network which is connected to two HDPE pipes which transfer the solution to the pool of pregnant leach solution (PLS). From the PLS pond, the solution is pumped to the adsorption circuit. The adsorption circuit is filled with activated carbon. The activated carbon adsorbs the gold from the solution and the barren solution (BS) leaving the gravity of the adsorption circuit returns to the barren solution tank and is used to re-irrigate the cell again. The cycle of leaching is completed in 90 days.

Anti-fouling is added to the barren solution to reduce the formation of flakes in the irrigation pipes, top of the pad and activated carbon.

An excess solution pond (rainwater) is included to contain leach solution in excess of that required for normal operations due to storm events. The excess solution will eventually return to the sterile tank as a makeup solution to replace the water lost in the process due to the evaporation and wetting of the mineral.

Adsorption and Elution

The present adsorption plant is capable of treating 200m^3/hr of solution pregnant. The circuit consists of 5 cascade columns configure in series each containing 2t of activated carbon. The activated carbon adsorbs the cyanided gold complexes, silver and other metals in solution to remove them from the solution. When the carbon is loaded up 8,000g/t Au in the first carbon column, the carbon is removed from the column and sent to the elution circuit. Once this column is empty of carbon, carbon from the second column is loaded until it also reaches approximately 8,000g/t Au. All of the columns in the circuit will be cycled in series in this manner, with any of the columns being able to use to load gold prior to stripping. The last tank in the series is always filled with activated carbon that has been stripped and reactivated.

Stripping of the gold from the carbon (elution) is conducted in a 2t Zadra circuit at a temperature of 135°C. Barren solution, from the desportion tank, is pumped through a secondary heat exchanger and then into the primary heat exchanger prior to entering the column. The solution exiting the top of the column passed through the other side of the secondary heat exchanger, through a cooling heat exchanger to drop the temperature to 65°C. After cooling the solution passes into the electrowinning cell where the gold and any silver that is present is electrowon. The solution exiting the cell gravitates into the desorption tank and is then reused for stripping the gold from the carbon. The total time for desorption ranges between 11 hours and 13 hours.

The activated carbon is reactivated in a regeneration furnace followed by acid washing prior to being cycled back to the adsorption columns for further adsorption of gold and silver.

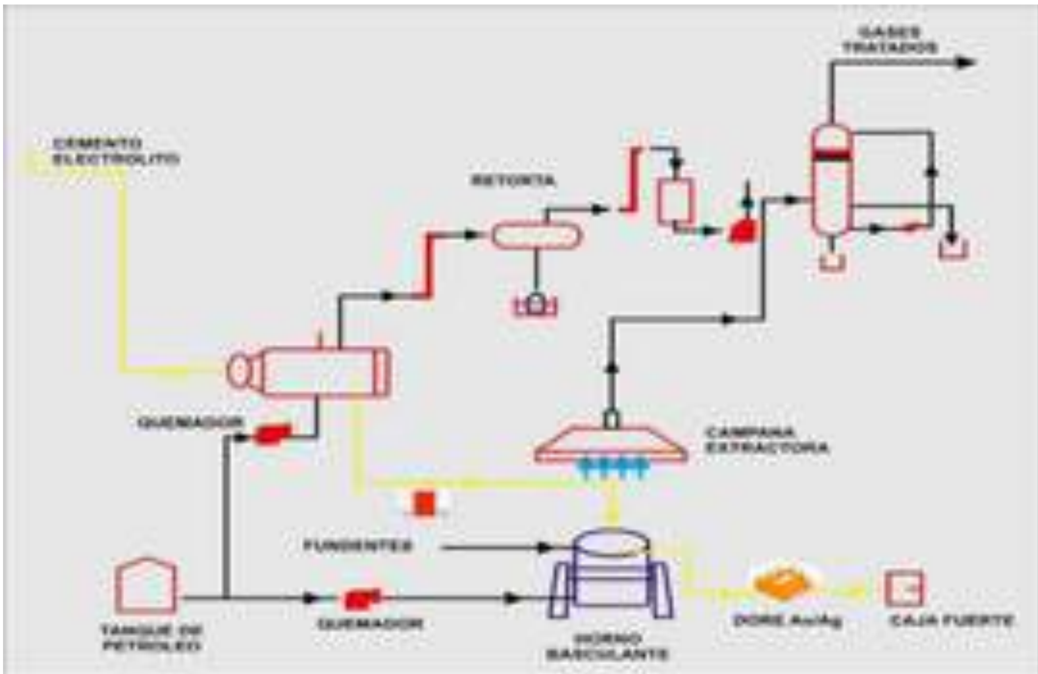
Harvesting and Smelting

The electrolytic cathodes saturated with cement in the electrolytic cell will be washed with pressurized water, then filtered; Obtaining the cement of gold and silver mainly. After washing and filtration in order to volatilize the mercury, the cement will be placed in the retort for 6 hours at a temperature of 480 ° C, where vapor passes through a condenser using water as a refrigerant; The condensed mercury is collected in a manifold to be packaged. The spent cold mercury vapor exiting the collector is passed through a sulfur-impregnated carbon scrubber, in order to remove traces of residual mercury and minimize mercury emission below 0,15 mg/ m3.

The cement after the mercury is removed is melted at approximately 1300 ° C in a 300 kg silicon carbide crucible tilting furnace, with oil injection prior to the addition of fluxes, then the casting to obtain a DORÉ with a content Approximately 78% of gold and 20% of silver.

The gases produced from the smelter will be conducted via a hood and extractor to a scrubber where these powders will be recovered which have been entrained along with the gases during the smelting. The completely cold and clean gases of solids go to the Atmosphere free of all pollutants. The slag resulting from the smelting operation will be periodically recast according to the amount of slag available, in order to recover the remaining gold and silver values; The final slag is deposited in the leach cells.

Figure 13.2.2-2: Harvesting and smelting process



15.2.1 Plant Production

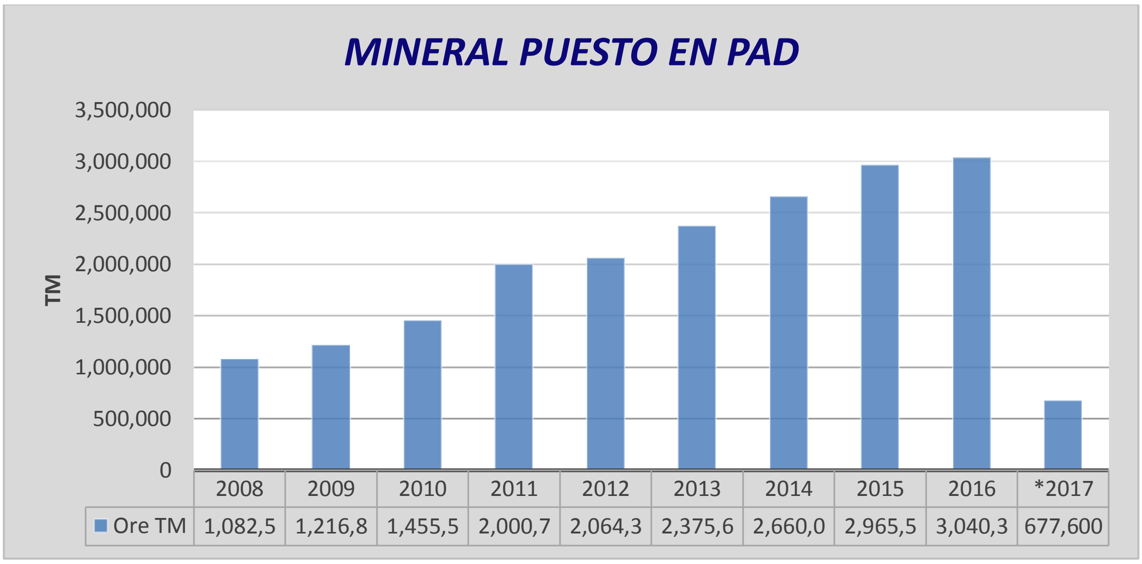
Mineral to Leach Pad

The mineral placed on the leach pad is shown in Figure 15.2.1-1, mineral placed on a leach pad from 2008 to 2015.

Initially ore placement on the leach pad was slow due to commissioning issues such as having a tight mining area and oversize in the ore to feed to the crusher.

After April 2009 the rate of placement has exceeded the budget every month and hence the yearly budget. In the last month of 2008 the placement rate slowed again due to cessation of mining as the budgeted tonnes had been exceeded. The following figure shows the amount of ore put into pad from 2008 until March 31, 2017.

Figure 15.2.1-1: Ore placed on pad 2008-2017



Gold in ore

It can be seen that the gold contained in the ore placed in pad has been calculated based on the conversion of troy ounces, and in figure 15.2.1-2 the ounces are shown in pad indicated with their respective ore grades for years, Period 2008-2015. The following figure shows the number of ounces put into the pad from 2008 until March 31, 2017

Figure 15.2.1-2: Ounces placed on pad 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	*2017
Oz (Au)	68,970.	44,358.	40,634.	44,215.	33,028.	34,173.	27,309.	31,291.	31,161.	8,576.5
Au (gr/tn)	1.982	1.134	0.868	0.687	0.498	0.447	0.319	0.328	0.319	0.394

Recovery

Figure 15.2.1-3 shows the cumulative gold recovery since inception

Figure 15.2.1-3: Cumulative Gold Recovery

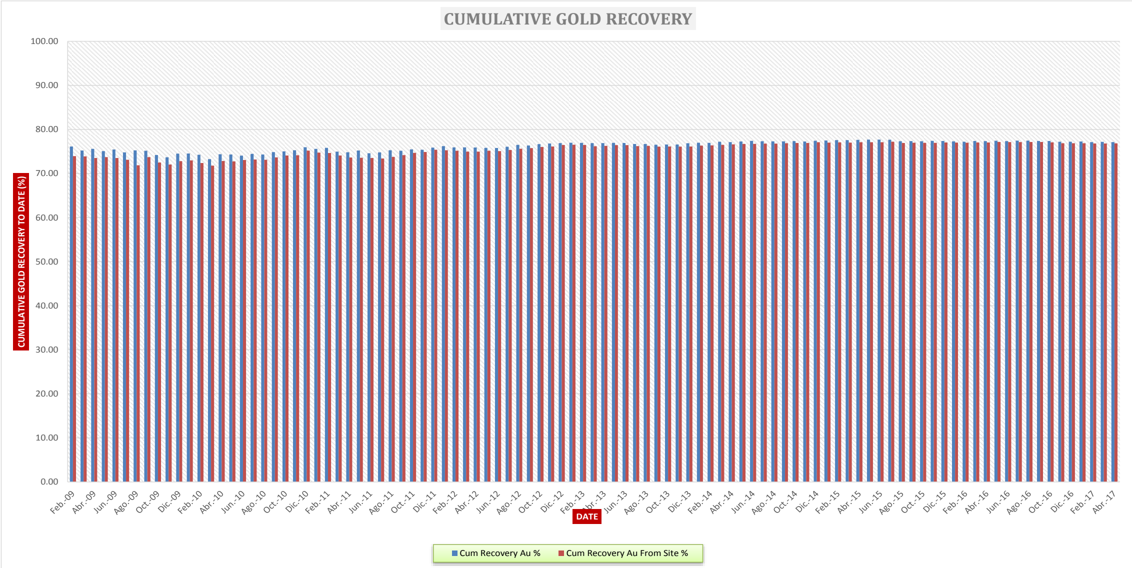


Figure 15.2.1-3 shows that the recovery of gold has remained at an expected level without any significant variation, it is worth mentioning that at the beginning the recovery has been increasing progressively in the first years until reaching a balance already in the last years , The expected recoveries were estimated by Kappes-Cassidy (KCA) during the feasibility study (FS) and afterwards it was adapted tests in the same mining operation, are shown in Table 15.2.1-1 the feasibility of the recoveries of some Deposits.

Table 15.2.1-1: Recovery estimates

Feasibility Study Recovery Estimates		
Pit	Average Field Recovery	Expected Recovery Range
Ampliación Diana	72	65-80
Cayhua	83	75-84
Cayhua Intermedia	74	71-84
Cahyhua Norte	76	71-84

The lowest recovery has been recognized by site staff and the column test was initiated to gain a better understanding of the required leaching conditions. This test was carried out on the ore of Diana and Cayhua. The test was carried out using columns of 3.2 m high. Three trials were conducted with different concentrations of cyanide, namely 200 ppm, 300 ppm and 400 ppm. The distribution of lime and cyanide consumption for the gold extraction rates are shown in Table 15.2.1-2, where only representative data from February 2017 are observed for samples extracted from some pits.

Table 15.2.1-2: Ratios and use of lime and cyanide

PIT	Ampliación Diana				Cayhua Intermedio			
	Grade	Cal	NaCN	%Rec	Grade	Cal	NaCN	%Rec
	0.268	0.543	0.028	83.9	0.198	0.663	0.035	86.9
	0.890	0.449	0.064	81.1				
AVERAGE	**0.579**	**0.496**	**0.046**	**82.531**	**0.198**	**0.663**	**0.035**	**86.891**
PIT	**Cayhua**				**Cayhua Norte**			
	Grade	Cal	NaCN	%Rec	Grade	Cal	NaCN	%Rec
	0.739	0.648	0.082	93.6	0.439	0.515	0.072	87.3
	0.307	0.691	0.042	87.0				
	1.156	0.632	0.086	94.8				
AVERAGE	**0.734**	**0.657**	**0.070**	**91.801**	**0.439**	**0.515**	**0.072**	**87.254**

15.3 Testwork

Two column leaching tests at the Diana and Cayhua expansion ore were carried out from October 2015 to January 2016 by the U.M. plant personnel Corihuarmi. The tests were carried out to examine the response of the Diana Expansion material when mixed with Cayhua ore at different rates and rates of cement addition.

The tests were carried out in columns of 3,4 m of height and 0,8m in internal diameter. The materials tested consisted of Diana and Cayhua material at a blend ratio of 2: 1 and Diana and Cayhua material blended at a ratio of 1: 1 with a cement binder addition of 2 kg/t. The feed materials were screened, weighed, sampled and assayed in five discrete fractions varying from minus 100 mm to material passing 12.7 mm.

Table 15.3-1 summaries the results of the test work carried out over a 60-day period. The tests were aimed to be carried out at a pH of between 10.6 and 11.5, a free cyanide concentration of 300 ppm and an irrigation rate of 10 l / h / m². Each column contained 2.3 t of feed material.

Table 15.2.1-1: Column Test Summary

Test	Days of Leaching	Calculated Head Grade	Extraction %	Adsorption Recovery	Reagent Consumption		Percolation Rate
		Au g/t	Au	Au	NaCN kg/t	CaO kg/t	m/day
Expansion Diana	60	0.485	80.71	94.6	0.0536	0.588	7.6
Cayhua	60	0.455	84.57	94.6	0.0815	0.662	7.8
Cayhua Intermedia	60	0.525	90.33	94.6	0.0523	0.614	7.8
North Cahyhua	60	0.400	77.25	94.6	0.0627	0.640	7.8
Average	60	0.466	83.22	94.6	0.0625	0.626	7.75
Average	60	0.466	83.22	94.6	0.0625	0.626	7.75

Table 15.3-1 shows that the recoveries of metal to be quite similar between each blend of feed materials; however, there appeared to be a significant reduction in cyanide usage when the feed is agglomerated in the presence of cement. The lime usage was also seen to be lower in the presence of cement, but this may be due to the alkaline nature of the cement itself. The percolation rate through the two columns was seen to be reasonable with no increase shown as a result of agglomeration techniques. No pooling was seen on the top of the columns throughout the test program.

It can be concluded that the blends of Diana and Cayhua materials appear to be suitable for gold and silver extraction using conventional leach pad processing.

16 Mineral Resources and Mineral Reserve Estimates

16.1 Resources Estimates

Andean CG has reviewed the Mineral Resource for M.U. Corihuarmi deposits; Expansion Diana, Cayhua, North Cayhua, Scree Slope, Laura, Susan and Scree Slope Expansion which was generated by qualified personal.

Andean CG prepared the mineral resource report as of March 31, 2017. The full summary of the resources calculated at the date indicated is presented in Table 16.1-1, below gold grade estimate was completed using Ordinary Kriging (OK), having a total resource of 10,929 kt of ore with an average grade of 0.28 g / t gold resulting in 98.93 kOz gold.

Table 15.2.1-1: Summary of resources per deposit

Zone	Cut off	Tonnes kt ORE	Grade g/t -Au	Ounces kOz
Susan	0.111	2,375	0.253	19.31
Scree Slope	0.097	309	0.290	2.89
Cayhua	0.101	2,947	0.250	23.73
A. Diana	0.097	765	0.368	9.05
Laura	0.099	1,689	0.205	11.15
Cayhua Norte	0.099	1,727	0.412	22.87
A. Scree Slope	0.105	1,117	0.277	9.94
TOTAL	**0.101**	**10,929**	**0.282**	**98.93**

16.1.1 Validation of Database

Minera Corihuarmi unit resource estimates are based on available information from exploratory drilling provided to Andean CG, which was reviewed and validated by Andean CG before beginning the resource estimation study.

The sample information includes diamond drill bits, RCD drills and blastholes. The resource estimate was based on a historical total of 196 RCD drills, 274 diamond drills and 176 blastholes, of which only 169 diamond drills, 48 RCD drills and 119 blasthole were drilled in the period 2010-2017.

The validation of the database, the following aspects were taken into account:

- Drill information studies and analysis.

- Consistency of depths between different data.

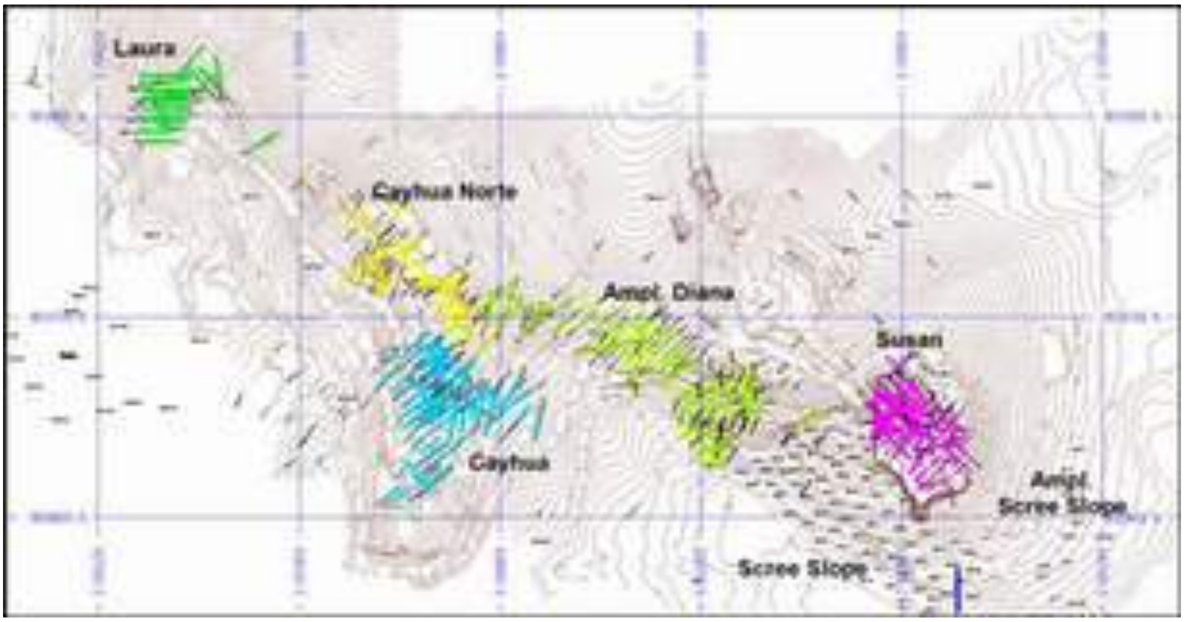
- Missing Intervals and Overlapping Intervals.

The information was compiled and structured into excel tables, then loaded into specialized Minesight Software.

Drills information was composed at 5 meters, with a residual interval of +/-1.5 m, having a composite range of 3.5m to 6.5m and a total of 95,008 composites created.

Figure 16.1.1-1 shows a plan view showing the density of zones by the zones in the Corihuarmi mining unit.

Figure 16.1.1-1: Density of Zone Drilling

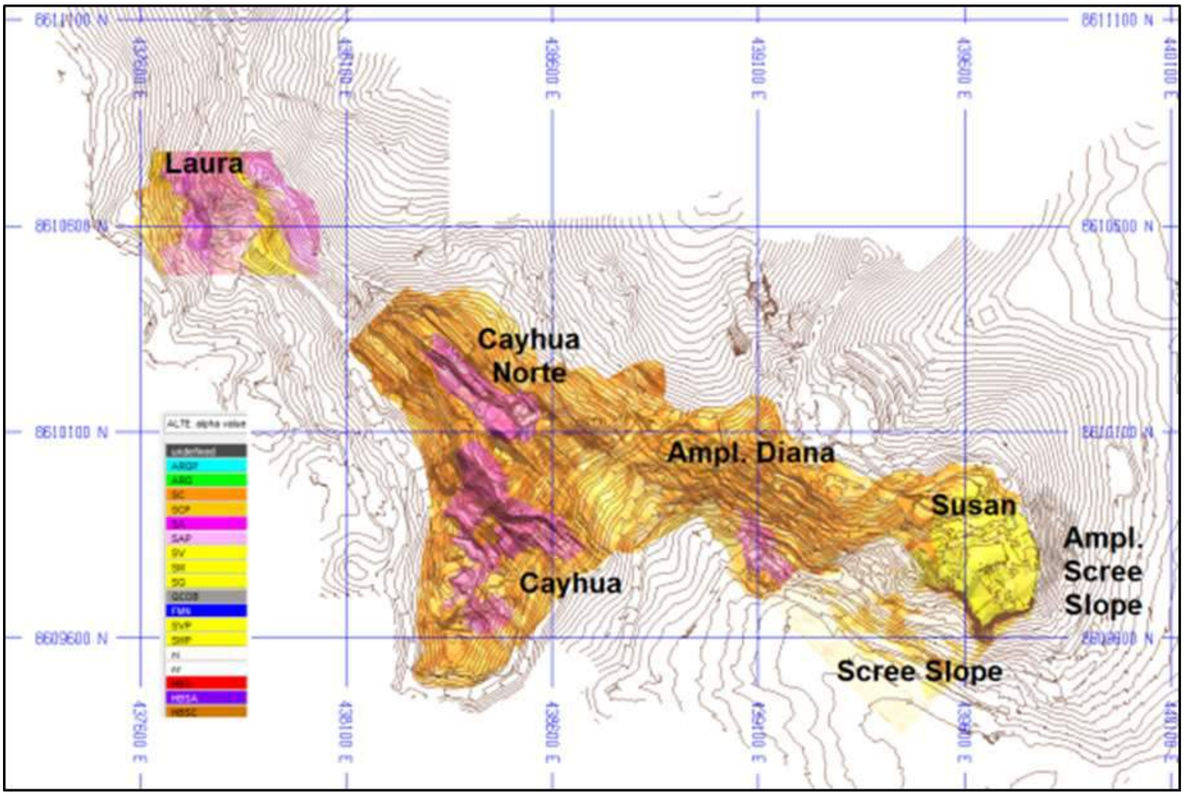


16.1.2 Geological Interpretation

The geological information compiled from the drilling data defines two key styles of alteration:

- Siliceous alteration (SIL) which effectively contains all economic gold mineralization (Fig. 16.1.2-1 yellow and pink color)
- Advanced argillic alteration (AA) containing broad low grade gold mineralization (Fig. 16.1.2-1 orange color)

Figure 16.1.2-1: Perspective view of alterations



16.1.3 Interpretation of Mineralization

With the Resource estimation purpose the mineralized domains are interpreted and modeled on the basis of a cutting grade of 0.13 g / t Au. Economic mineralization occurs most intensely in Susan and Diana areas, mainly in Cayhua and Laura areas, in narrow NW-SE bearing structures in Diana and North Cayhua expansion zones, and as colluvial deposits in South and West slopes located at the foot of the deposits Diana and Susan.

Following figures show the interpretation of mineralization.

Figure 16.1.3-1: Perspective view of Interpretation and general mineralization

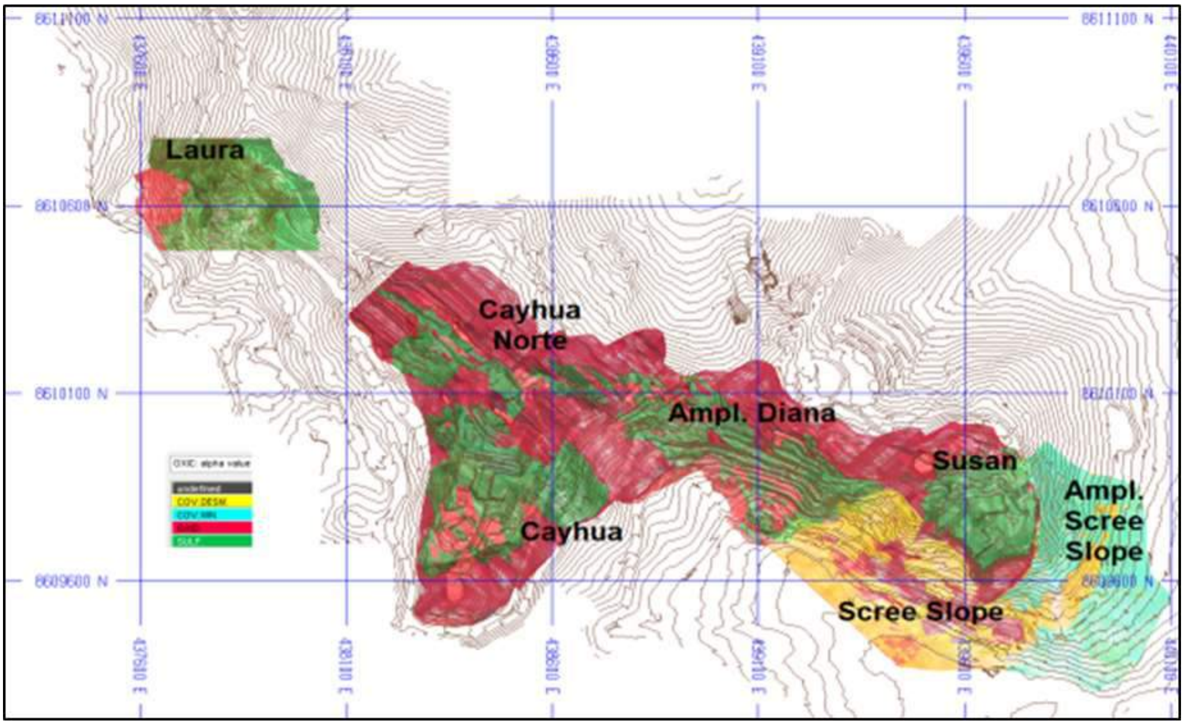


Figure 16.1.3-2: Perspective view section of northern Cayhua pit and Diana expansion

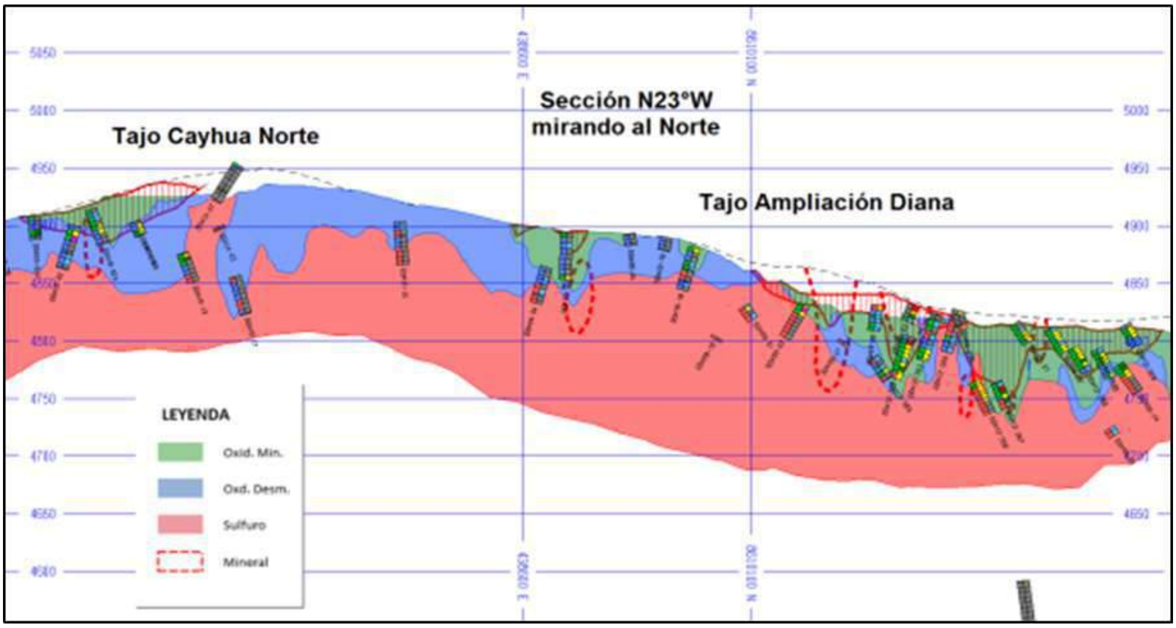
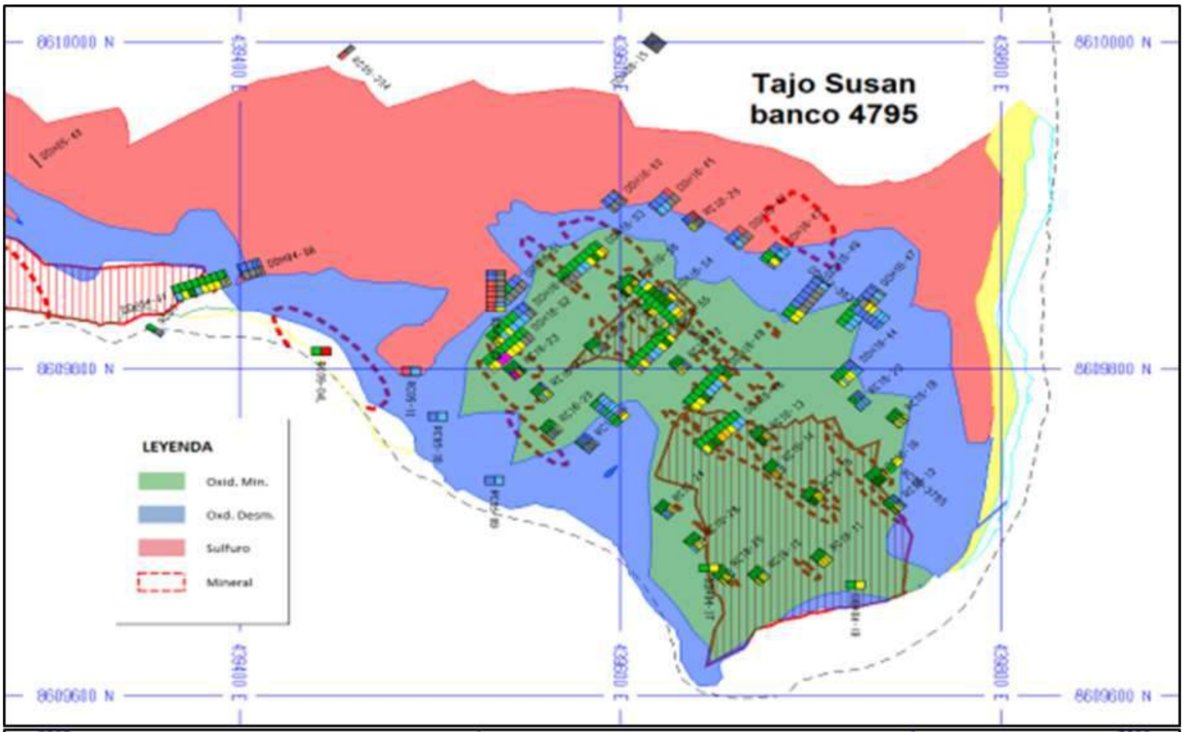


Figure 16.1.3-3: Perspective view mineralization section pit Susan



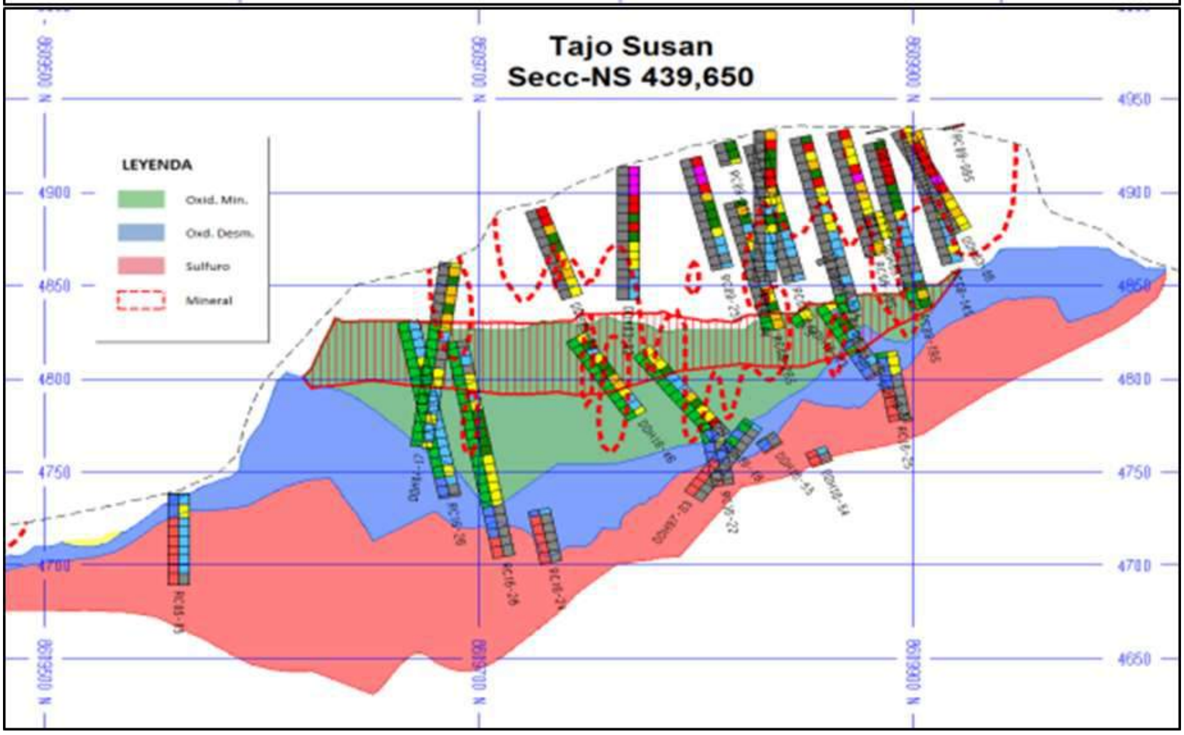


Figure 16.1.3-4: Perspective view mineralization section pit Cayhua

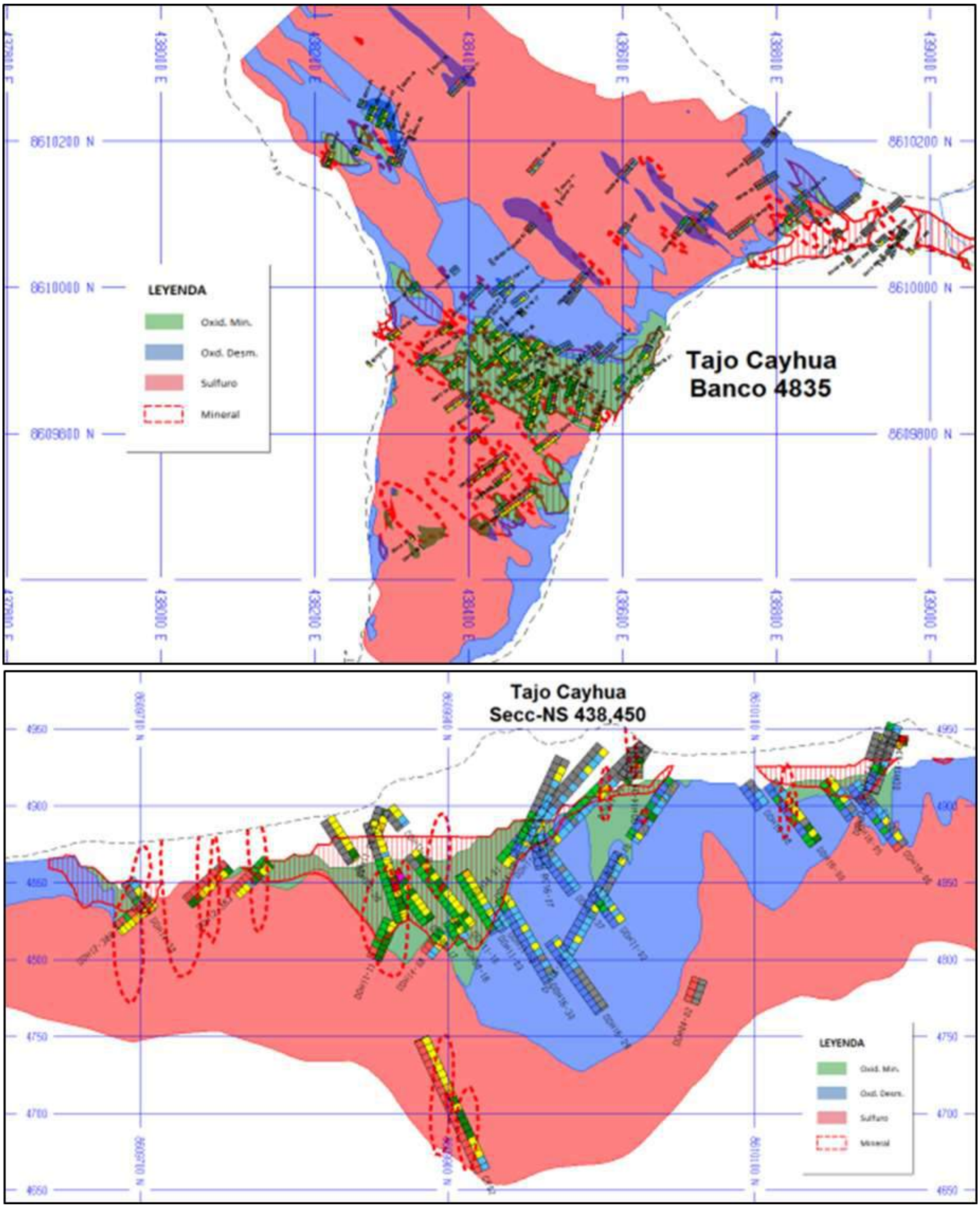
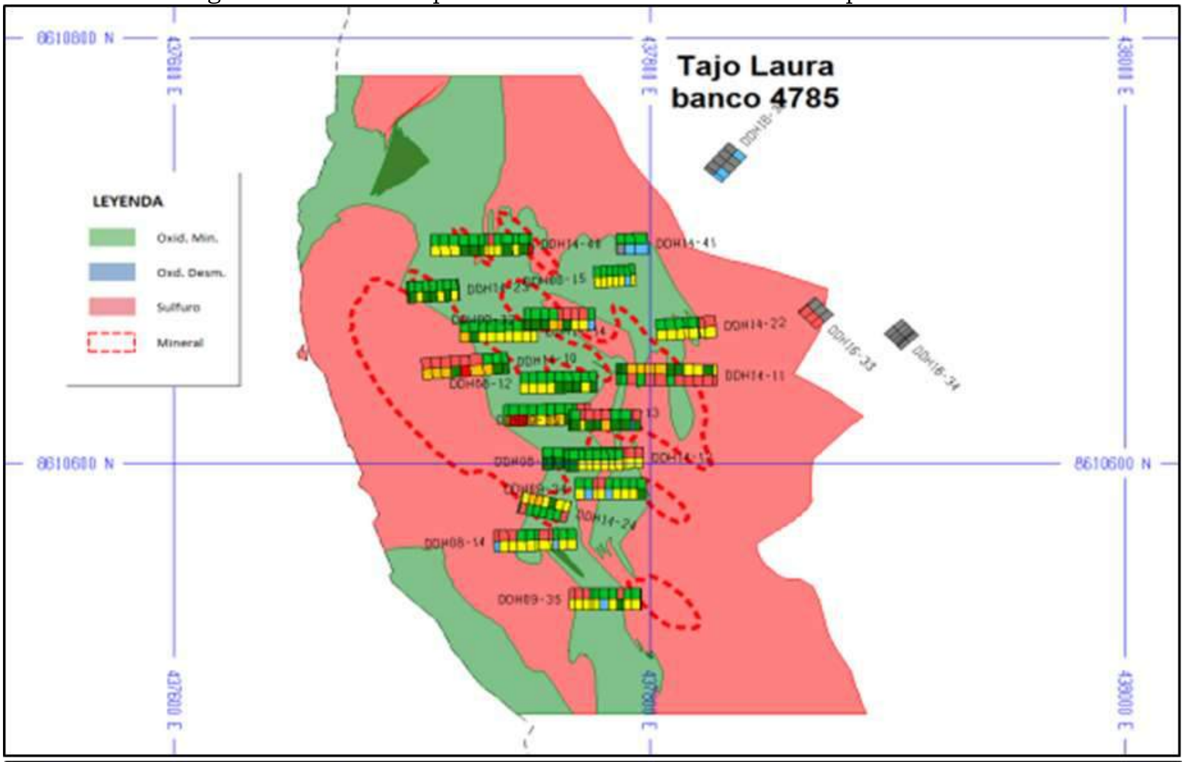
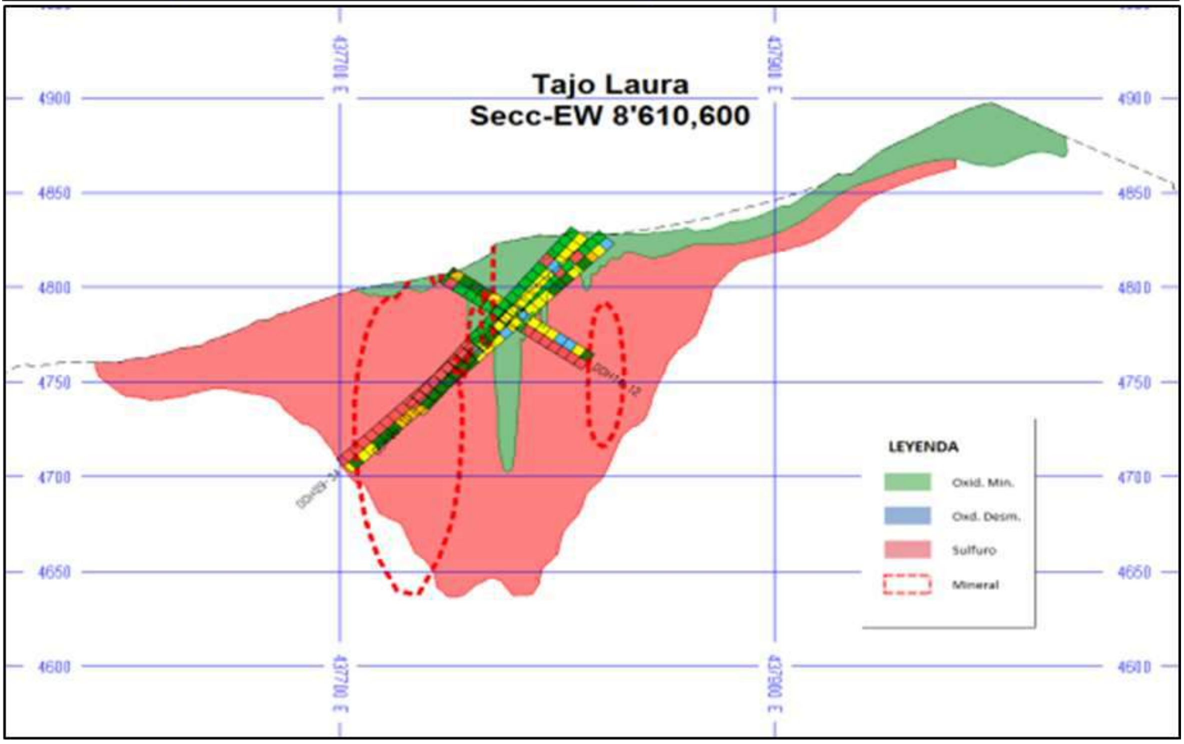


Figure 16.1.3-5: Perspective view mineralization section pit Laura





16.1.4 Compositing and Stadistics Analisys

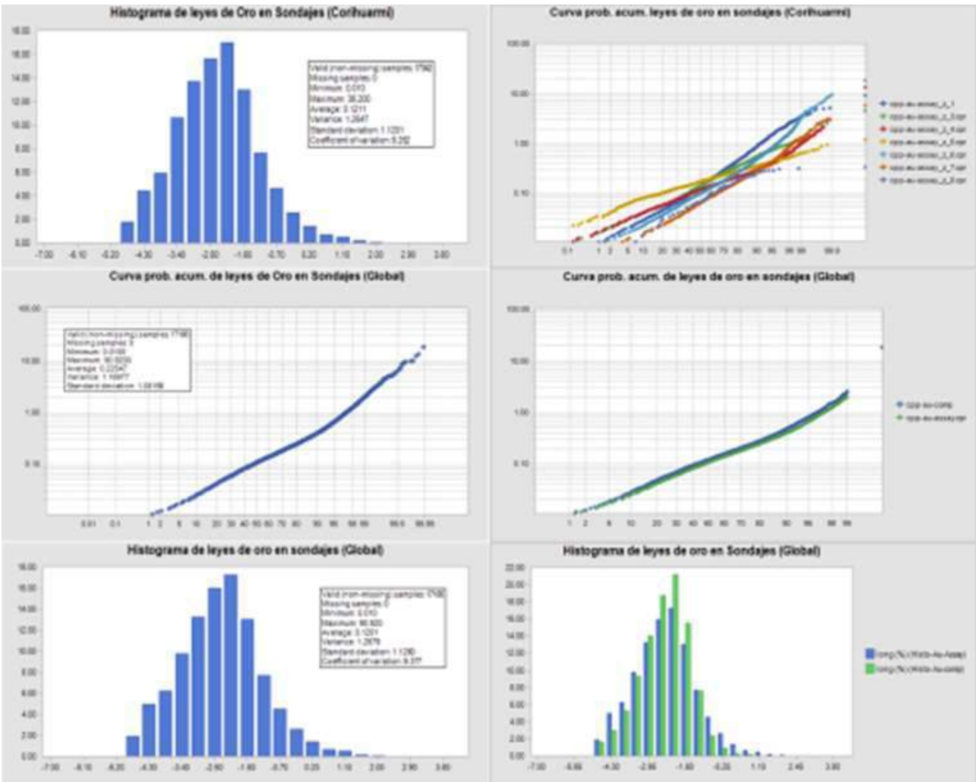
The statistical analysis was completed by Engineer Jesus Limaylla, with composites of 5 m. The composite was completed using the Minesight mining software package, basic statistics for the combined DDH and RCD data were generated on all the deposits (Scree Slope, Susan, Cayhua, Diana expansion, North Cayhua, Laura and Scree Slope Expansion) The Corihuarmi Mining Unit. Table 16.1.4-1 shows the summary of the reported statistics for all deposits.

Table 16.1.4-1: Summary of resources per deposit

Estadísticas Globales								
Zona	**Variable**	**Count**	**Min**	**Max**	**Avarage**	**Std. Dev.**	**Variance**	**CV**
Global	Au (g/t)	17186	0.010	90.920	0.1201	1.1260	1.2679	9.377

Source: Andean CG

Figure 16.1.4-1: Report of the histograms and curves of the gold grades



16.1.5 Variography

Variography is used to describe the spatial variability or correlation of an attribute (gold, silver, sulphur, etc). The spatial variability is traditionally measured by a variogram, which is generated by the averaged squared difference of data points at a nominated distance (h), or lag (Srivastava and Isaacs, 1989). The averaged squared difference (variogram or γ(h)) for each lag distance is plotted on a bivariate plot where the X-axis is the lag distance and the Y-axis represents the average squared differences (γ(h)) for the nominated lag distance.

In this document, the term "variogram" is used as a generic word to designate the function characterizing the variability of variables versus the distance between two samples. Both a traditional measure and a correlogram have been applied for the estimation studies completed for the Corihuarmi M.U.

The determined experimental variography fits in a series of mathematical models which, when they are used in the kriging algorithm, will recreate the spatial continuity observed in the variography.

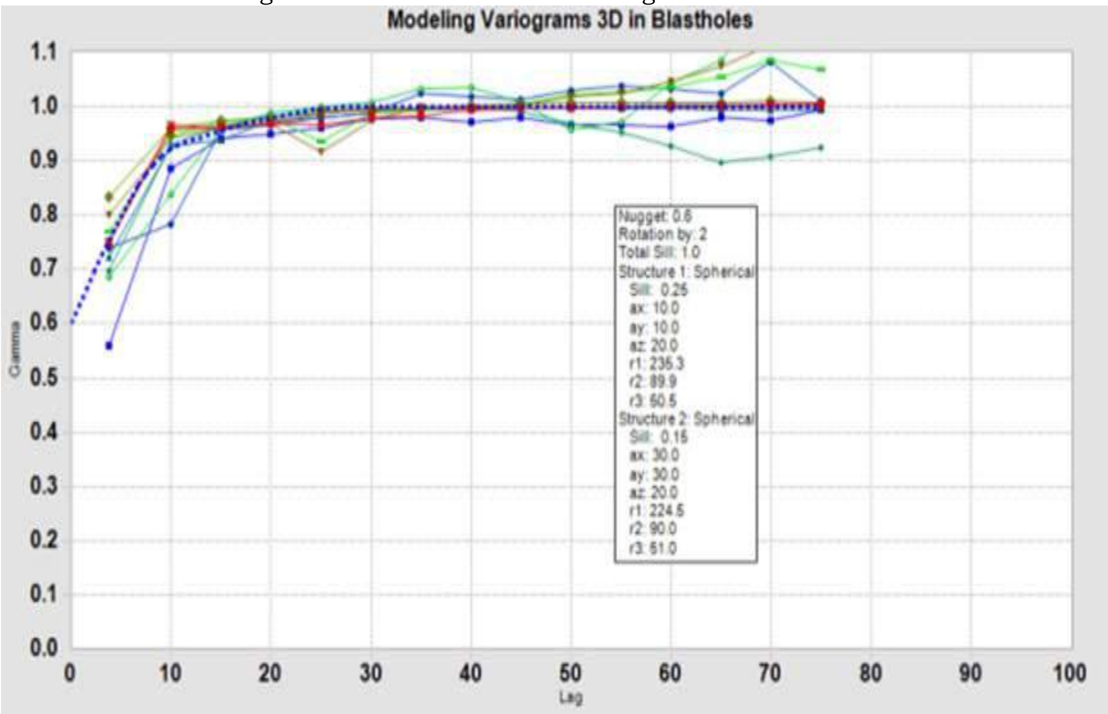
The Data Analyst application has been employed to generate and model the variography. The rotations are reported as input for grade estimation, with X (rotation around the Z axis), Y (rotation around Y ') and Z (rotation around X``) also being referred to as the major, semi-major and minor axes.

Two spherical models have been set for the experimental variograms (Table 16.1.5-1). For the mineralization, the short range structure was modeled with 18m, 15m and 3m ranges for the major, semi-major and minor axis respectively, while the adjusted general ranges were 74m, 40m and 24m.

Table 16.1.5-1: Experimental Variograms

Domain	Nugget (C_0)	Sill 1 (C_1)	Range 1 (m)			Sill 2 (C_2)	Range 2 (m)		
			Major	Semi Majo	Minor		Major	Semi Majo	Minor
(Rotation:- 3: 131, 2: 15, 3: 0)									
Mineralization (Minzon=1)	0.32	0.33	18	15	3.0	0.35	74	40	24
Background (Minzon=0)	0.20	0.33	50	25	6.0	0.50	90	80	23

Figure 16.1.5-1: Trend of the variograms at blastholes



Next, the graphs of the runs for the calculation of variograms for each deposit:

Figure 16.1.5-2: Variograms pit Scree slope

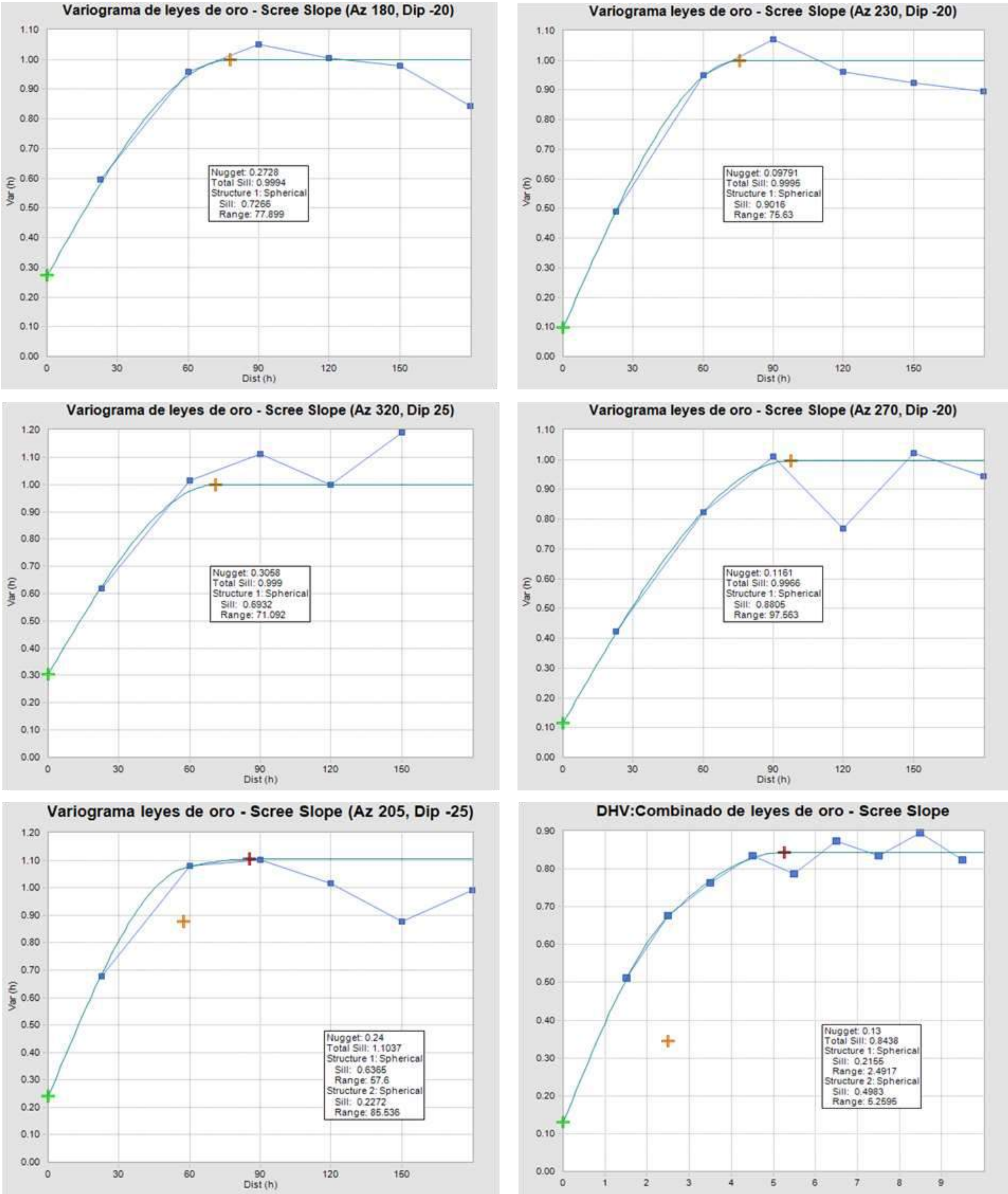


Figure 16.1.5-3: Variograms pit Susan

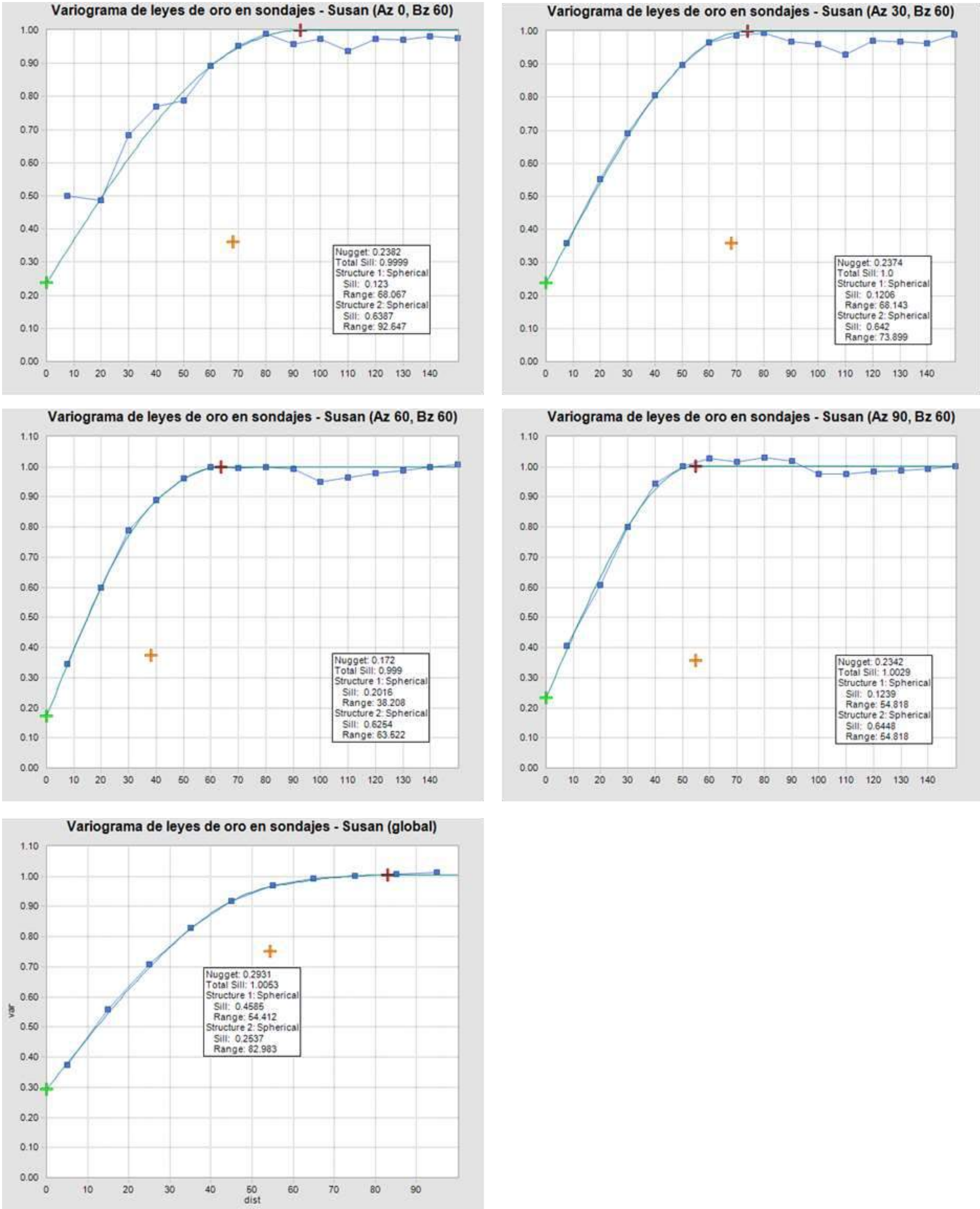


Figure 16.1.5-4: Variograms pit Cayhua

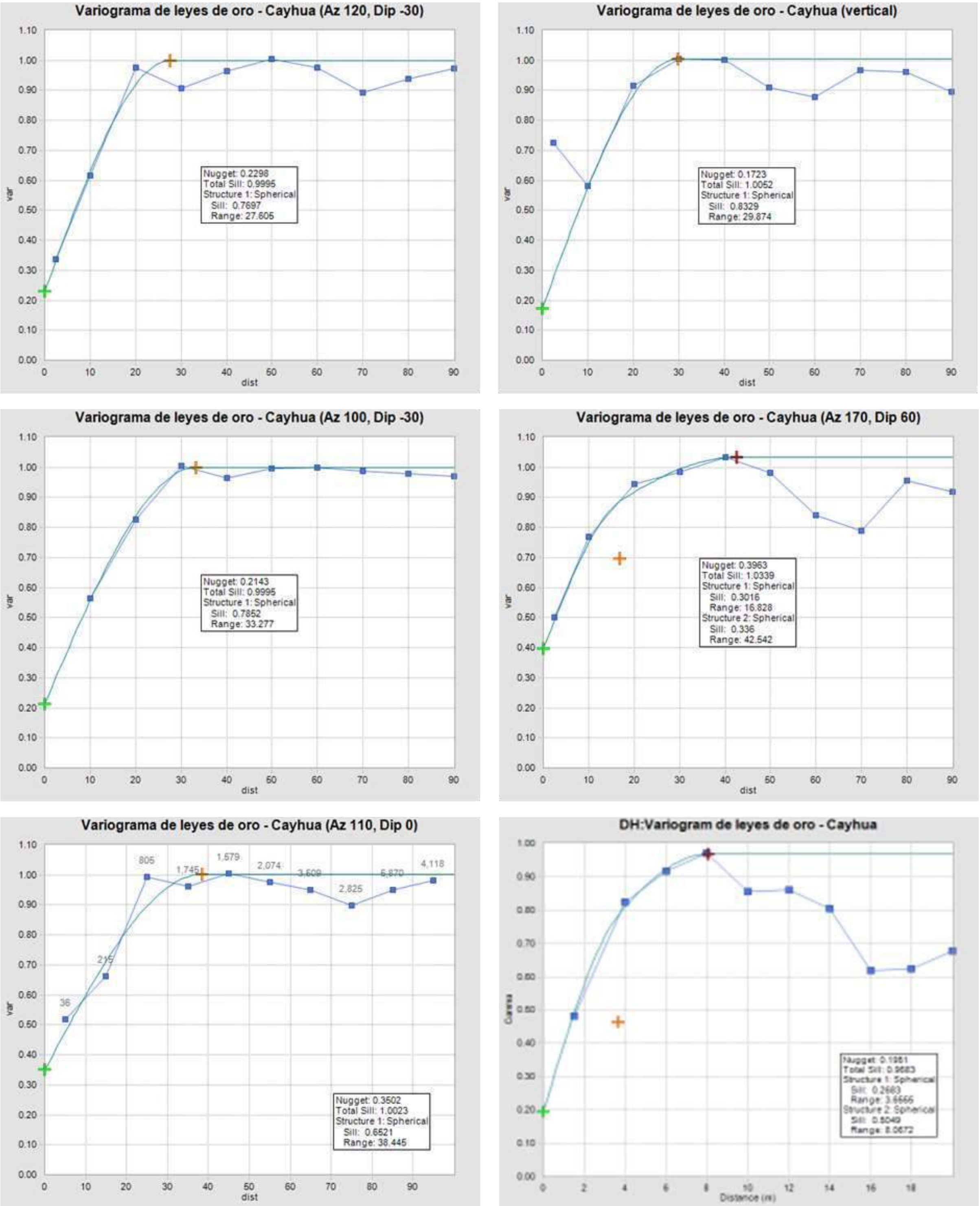


Figure 16.1.5-5: Variograms pit north Cayhua

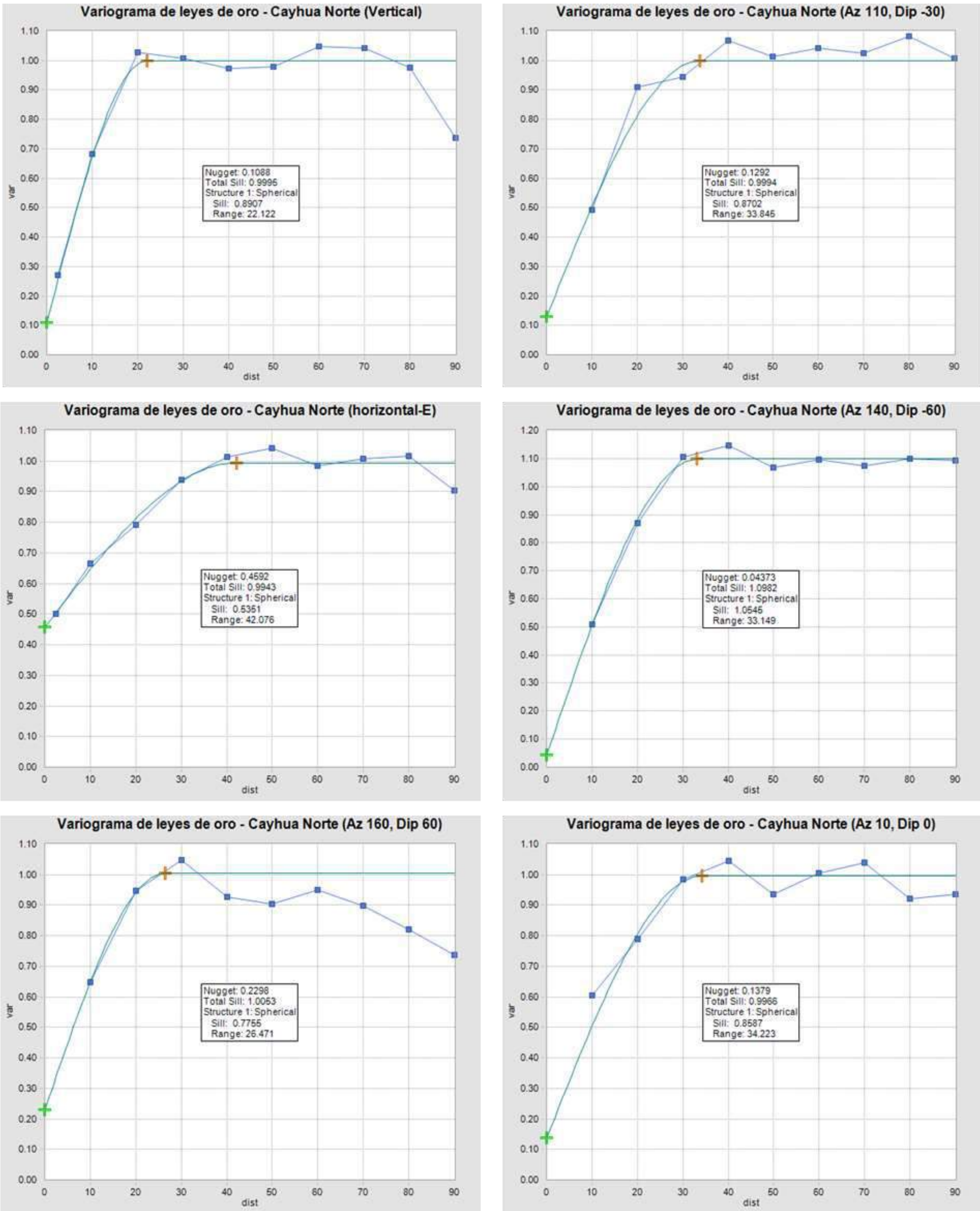
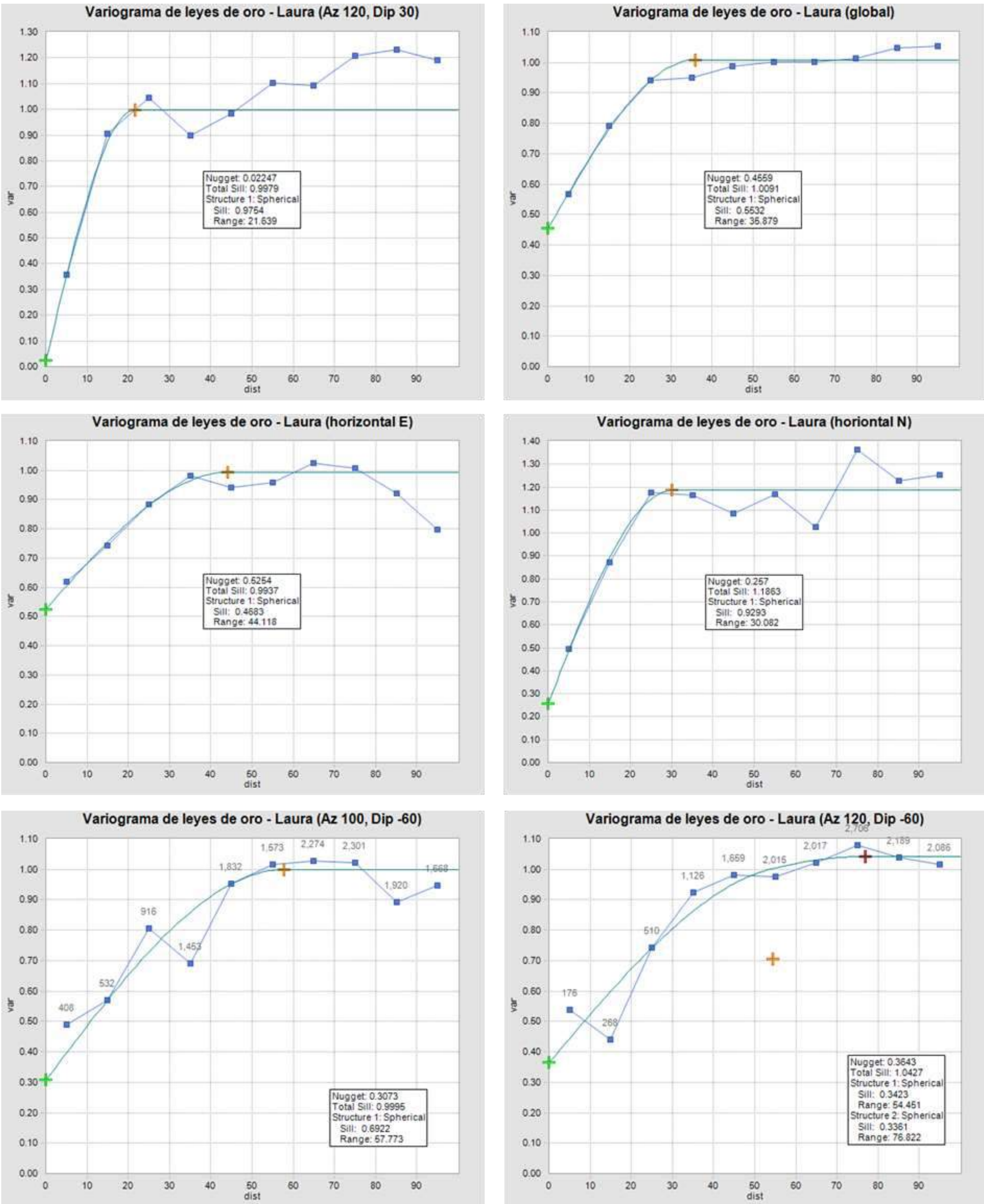
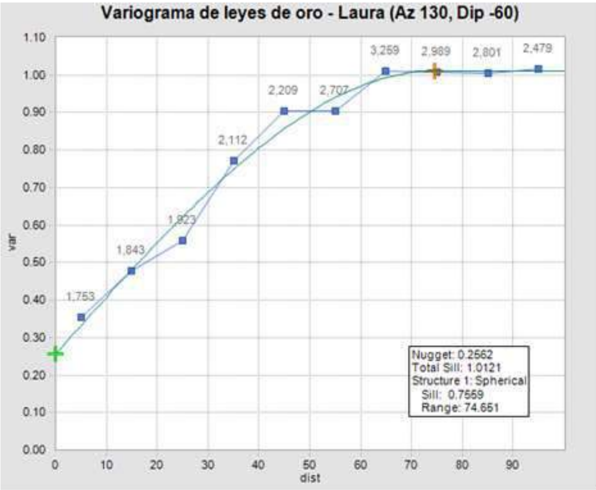
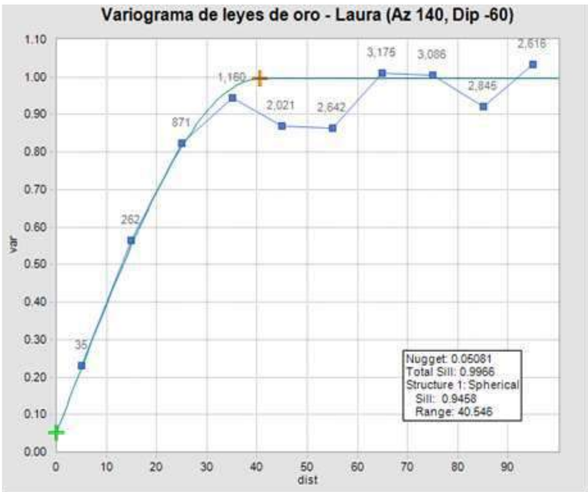
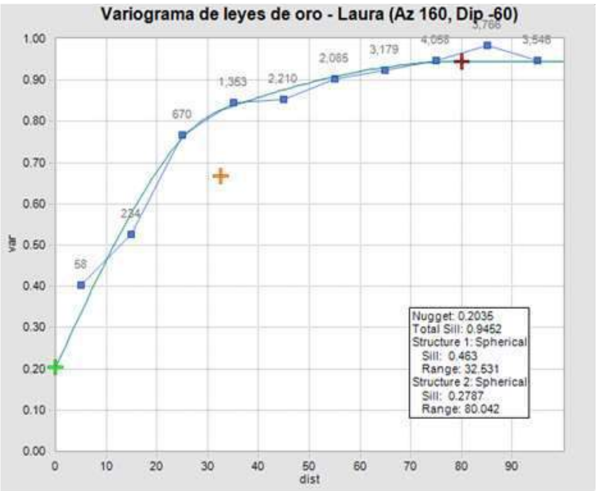


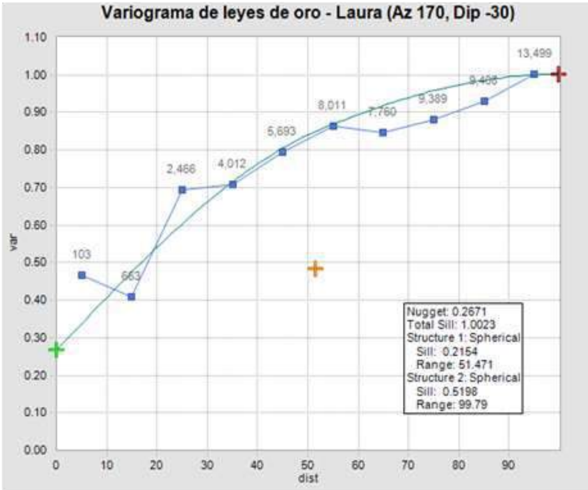
Figure 16.1.5-6. Variograms pit Laura

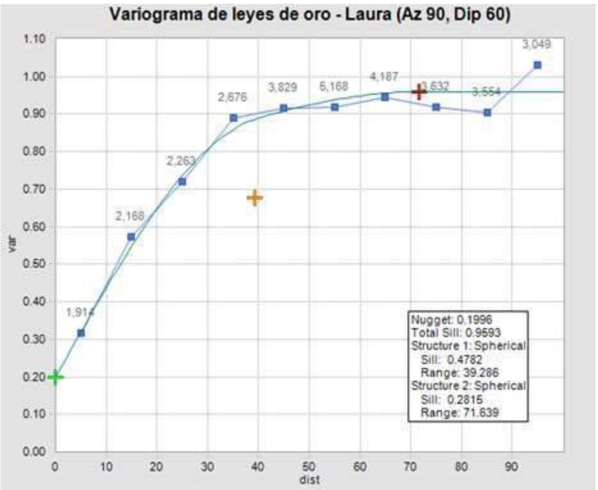


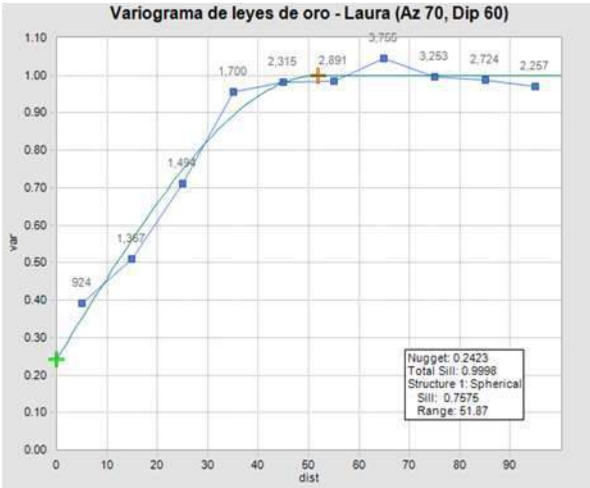

Variograma de leyes de oro - Laura (Az 130, Dip -60)
var
dist
Nugget: 0.2562
Total Sill: 1.0121
Structure 1: Spherical
Sill: 0.7559
Range: 74.651


Variograma de leyes de oro - Laura (Az 140, Dip -60)
var
dist
Nugget: 0.05081
Total Sill: 0.9966
Structure 1: Spherical
Sill: 0.9458
Range: 40.546


Variograma de leyes de oro - Laura (Az 160, Dip -60)
var
dist
Nugget: 0.2035
Total Sill: 0.9452
Structure 1: Spherical
Sill: 0.463
Range: 32.531
Structure 2: Spherical
Sill: 0.2787
Range: 80.042


Variograma de leyes de oro - Laura (Az 170, Dip -30)
var
dist
Nugget: 0.2671
Total Sill: 1.0023
Structure 1: Spherical
Sill: 0.2154
Range: 51.471
Structure 2: Spherical
Sill: 0.5198
Range: 99.79


Variograma de leyes de oro - Laura (Az 90, Dip 60)
var
dist
Nugget: 0.1996
Total Sill: 0.9593
Structure 1: Spherical
Sill: 0.4782
Range: 39.286
Structure 2: Spherical
Sill: 0.2815
Range: 71.639


Variograma de leyes de oro - Laura (Az 70, Dip 60)
var
dist
Nugget: 0.2423
Total Sill: 0.9998
Structure 1: Spherical
Sill: 0.7576
Range: 51.87

Note: It has been statistically verified that the Diana and north Cayhua expansion zones belong to the same population, for which the same parameters have been used for both zones. On the other hand, the Scree Slope and Scree Slope expansion have the same formation origin, so the same parameters have been used for both zones.

16.1.6 Block model development and grade estimation

Block Modeling

Block models were generated using the Minesight mining software package. A master block size of 5mE x 5mN x 5mRL was selected with a volume percentage storage to improve the volume accuracy represented by the model blocks. The density was defined in Table 16.1.6-1 according to the material by type of mineralization in each zone.

Table 16.1.6-1: Density by zone

DENSIDADES - TAJOS DE EXPLOTACIÓN			
Tajo / Zona	Oxidos	Sulfuros	Morrenas
Susan	2.22		
Diana	2.35		
Susan Sur (Scree Slope)	2.22		2.08
Ampliación Diana	2.23	2.30	
Cayhua	2.04	2.30	
Cayhua Norte	2.30	2.48	
Laura	2.35	2.44	

Óxidos: *involucra a todos los ensambles de alteración sin presencia de pirita.*
Sulfuros: *involucra a todos los ensambles de alteración cin presencia de pirita.*

The following table defines the parameters of the block model.

Table 16.1.6-2: Block model parameters

	East	North	Elevation
Origin	437,400	8,609,200	4400
Extent (m)	3000	2200	550
Parent Block size (m)	5	5	5
Number of Blocks (parent)	600	440	110

About grade AU estimates, we interpolated using both the ordinary Kriging technique (OK) and the Kriging Log (LK) technique. Purposes of this report, only the OK estimate of Au is considered adequate and convenient.

OK is one of the most common geostatistical methods for estimating the grade of a block. In this interpolation technique, samples of composite materials that are provided are identified using a search volume applied from the center of each block. Weighted values are determined by minimizing the error variance, considering both the spatial location of the selected compounds and the modeled variogram.

Variography describes correlation between composite samples as a function of distance. The composite weighted sample grades are combined to generate a block estimate and a variance.

We show the visualization of the block model in the following figures:

Figure 16.1.6-1: Perspective view block model section Laura zone

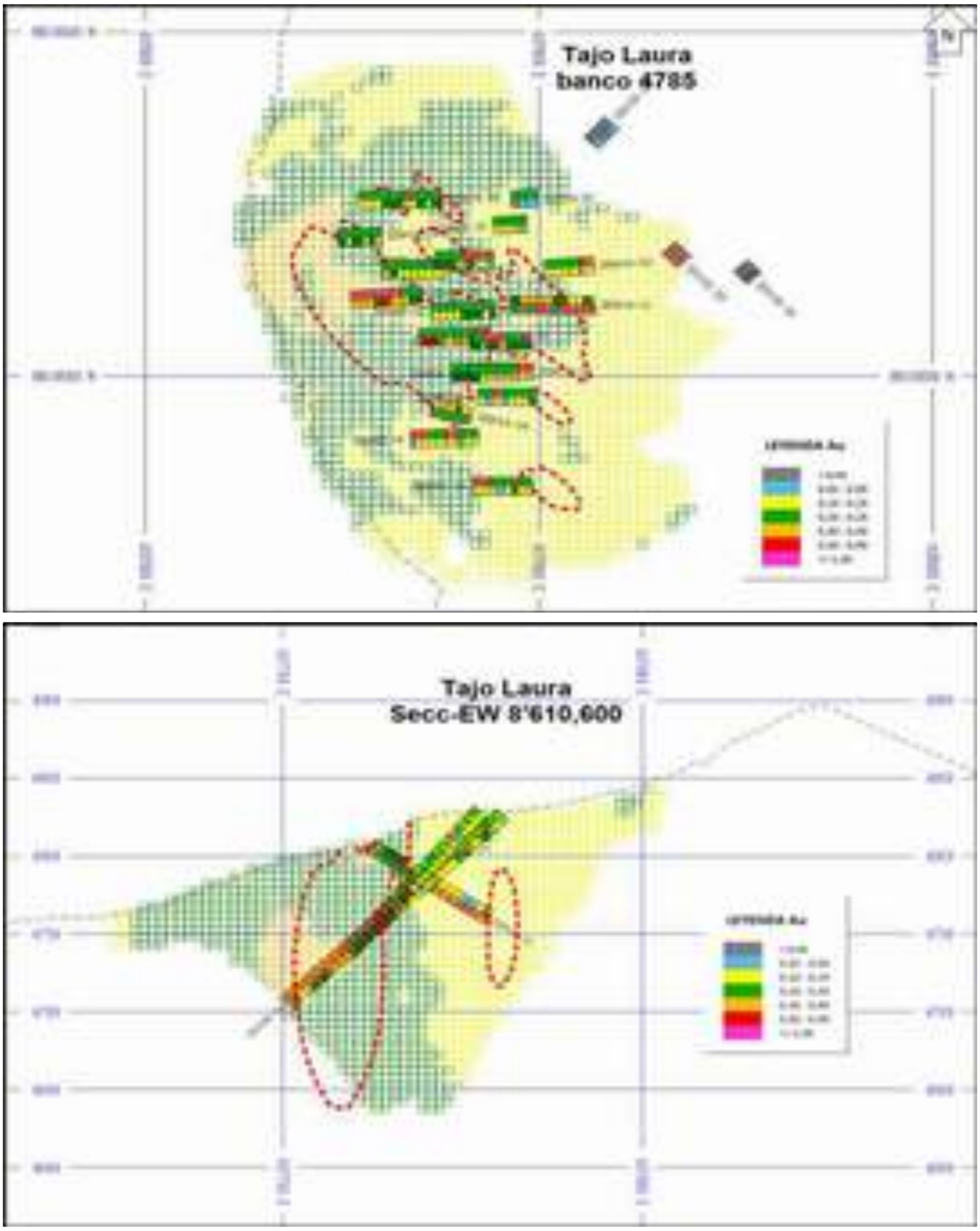
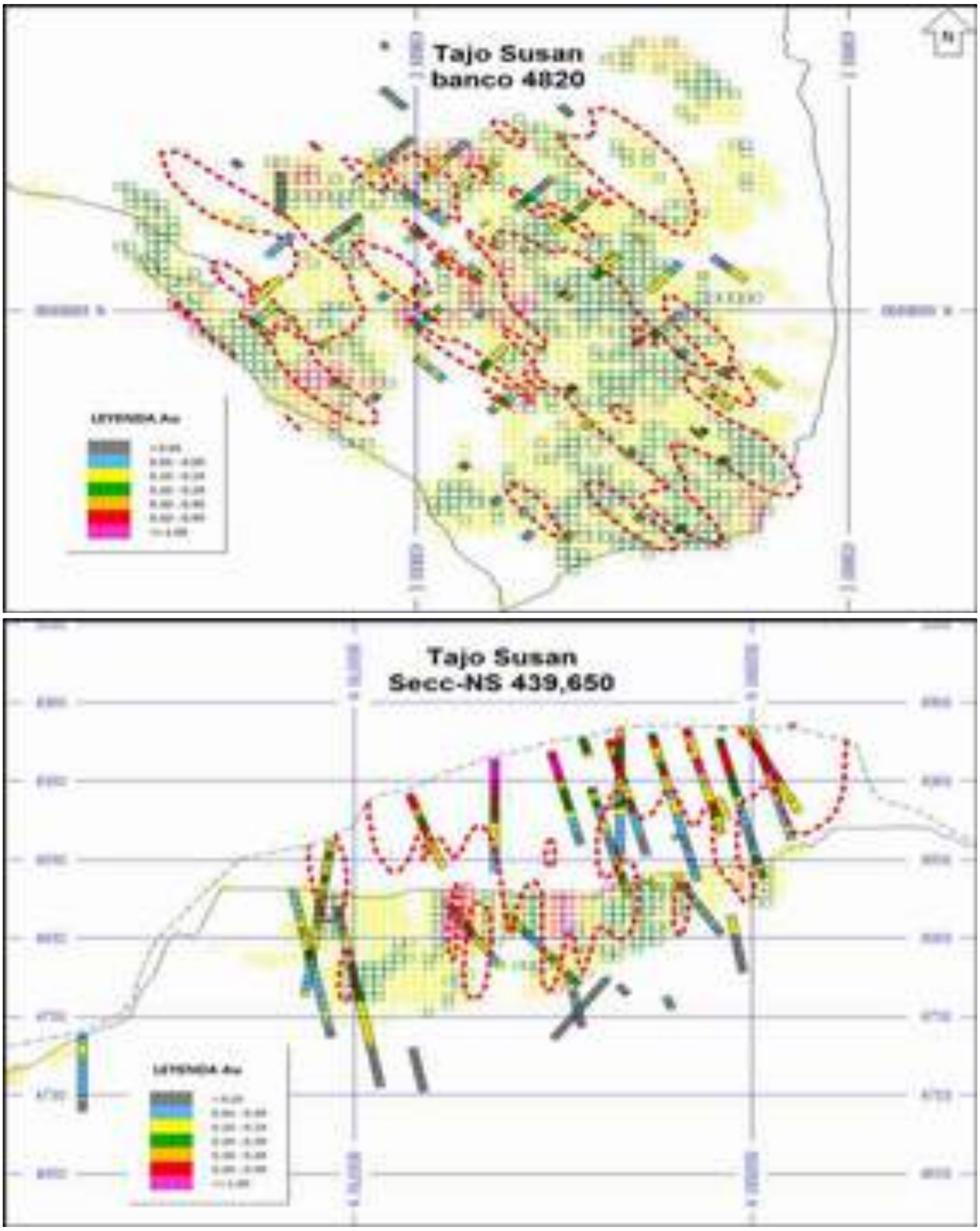


Figure 16.1.6-2: Perspective view section coding of the block model Cayhua and Susan zone



Grade Estimation

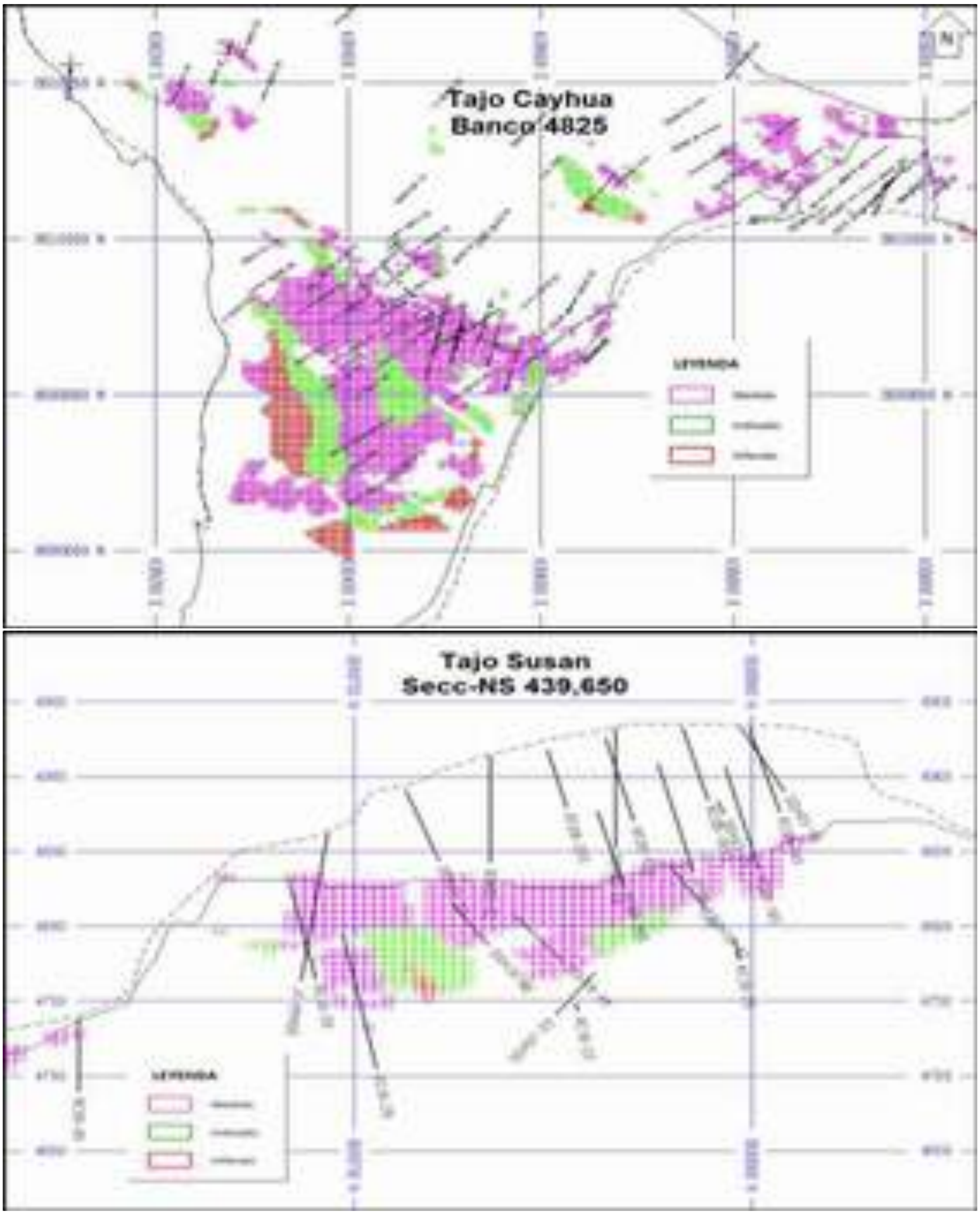
The OK method was applied in obtaining grade estimates for gold within the outlined domains. This method of grade interpolation is one of the most common geostatistical methods for estimating the block grade. In this interpolation technique, contributing composite samples are identified using a search volume applied from the centre of each block. The weights are determined so as to minimise the error variance considering both the spatial location of the selected composites and the modelled variogram. Variography describes the correlation between composite samples as a function of distance. The weighted composite sample grades are then combined to generate a block estimate and variance.

Grade estimates were obtained using the Minesight implementation of the ordinary kriging algorithm. Inverse distance squared and nearest neighbour grade estimates were also completed within these domains to allow comparison.

Grade Estimate Approach

Grade estimates within the domains (hard boundary between mineralization and background) were generated from 5m composites using the OK interpolation. Prior to estimation, Grade estimates were interpolated into parent blocks (all sub blocks were assigned the parent block grades) within the mineralized envelope only. Parent blocks were discretized using four points in the east dimension, four points in the north dimension, and one point in the RL dimension, for a total of 16 discretization points per block.

Figure 16.1.6-3: Perspective view section coding of the block model Cayhua and Susan zone

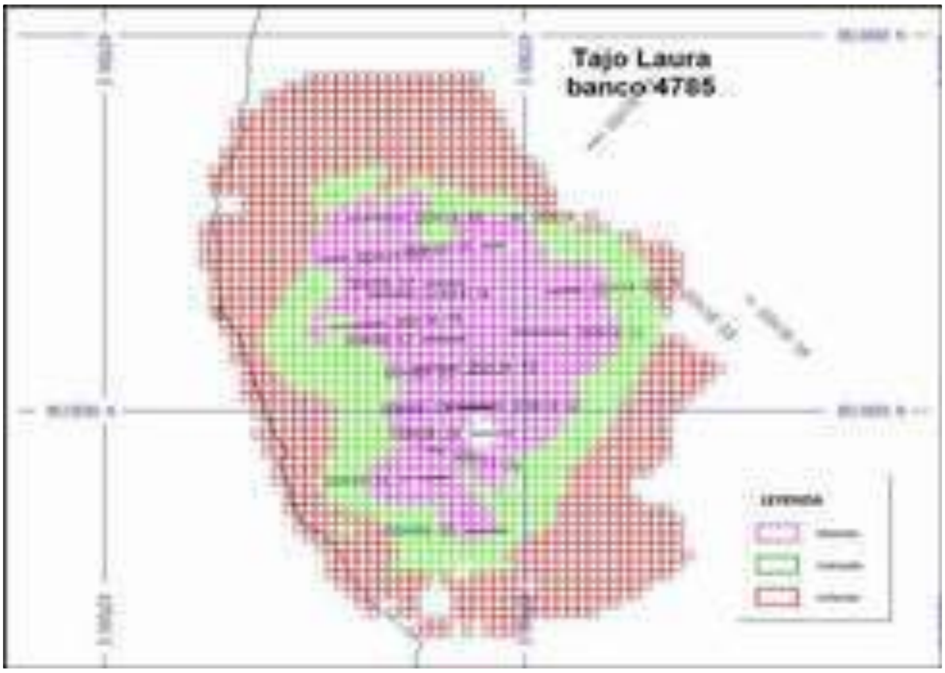


16.1.7 Mineral Resource Classification

The grade estimates for deposits have been generated in accordance with the criteria set forth in Canadian National Instrument guidelines 43-101. Therefore, no material classified as inferred has been considered for the estimation of reserves.

Keeping in mind that the estimation was limited to the siliceous alteration (SIL) and the drilling spacing was globally 25m to 50m (locally 10mx10m or better), Andean CG considered classification results criteria are adequate. Figure 16.1.7-1 shows the density of the probes around the estimated blocks. The classification of the estimated resources has been made through a matrix that relates to the number of probes, number of composites used and distance to the nearest composite. Ranges of distances for each zone were obtained by means of an analysis of the data according to the estimation variance.

Figure 16.1.7-1: Drillhole density Laura zone

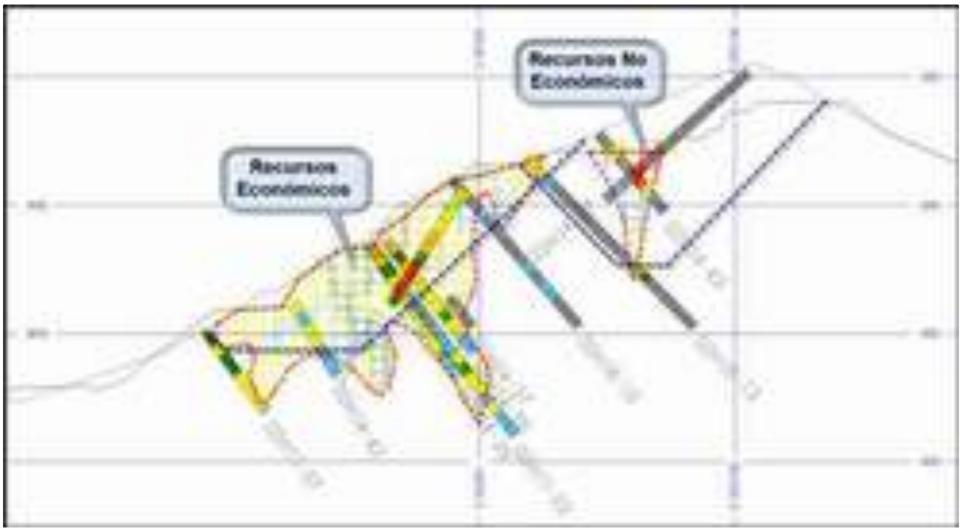


The resources measured in all the deposits of this study have been updated, considering that for resources estimation the model was updated with the blastholes in areas that are currently being mined. We show matrix classification example of resources (Cayhua zone).

Table 16.1.7-1: Matrix classification

Matriz de Clasificación de Recursos - Cayhua			
Clase	Dist.	Nro.DDH	VarAU
Medido	1 - 28	3 - 12	0 - 1
Indicado	28.01 - 40	2 - 12	0 - 1
Indicado	1 - 40	1 - 12	0 - 1

Figure 16.1.7-2: Mineralization in two zones



The figure shows mineralization in two zones of Cayhua, where it is easy to appreciate the percentage of ore lost as resources due to the depth of the mineral located in narrow structures and the high volume of debris that would have to be extracted for its exploitation, which would make it anti-economic. In the figure, the percentage of mineral resources that would not pass into reserves would be 40%.

16.2 Corihuarmi Resource Report

The grade estimates for Diana, Cayhua, north Cayhua, Scree Slope, Laura, Susan and expansion Scree Slope deposits have been classified as a combination of Measured and Indicated Mineral Resources in accordance with the criteria laid out in the Canadian National Instrument 43-101 ("NI 43-101") guidelines and the classifications adopted by CIM. The reportable resources for the mineralized zones deposits already mentioned have been calculated for a series of cutting grades by Andean CG (0.1, 0.13, 0.15, 0.2, 0.25 and 0.3 g / t gold) and are presented in Table 16.2-1. Using a cut-off grade of 0.13 g / t, a total of 18,079 kt with an average gold grade of 0.28 g / t Au for 160 koz of Au are reported for combined Deposits as of March 31, 2017.

Table 16.1.7-1: Resources measured and indicated by deposit

	Scree slope Measured + Indicated			Susan Measured + Indicated			Cayhua Measured + Indicated		
Cutoff	Tonnes (kt)	Au (g/t)	Metal (koz)	Tonnes (Kt)	Au (g/t)	Metal (koz)	Tonnes (Kt)	Au (g/t)	Metal (koz)
0.1	1,511	0.31	15.0	4,189	0.22	30.1	4,198	0.22	29.5
0.13	**1,321**	**0.34**	**14.3**	**3,507**	**0.24**	**27.6**	**3,078**	**0.26**	**25.5**
0.15	1,180	0.36	13.6	3,043	0.26	25.5	2,595	0.28	23.3
0.2	892	0.42	12.0	1,837	0.32	18.7	1,587	0.35	17.7
0.25	711	0.47	10.7	1,044	0.39	13.1	945	0.43	13.2
0.3	569	0.52	9.5	628	0.47	9.5	587	0.53	10.0
	Expansion Diana Measured + Indicated			**North Cayhua Measured + Indicated**			**Laura Measured + Indicated**		
Cutoff	**Tonnes (kt)**	**Au (g/t)**	**Metal (koz)**	**Tonnes (Kt)**	**Au (g/t)**	**Metal (koz)**	**Tonnes (Kt)**	**Au (g/t)**	**Metal (koz)**
0.1	3,132	0.26	26.1	2,426	0.31	24.2	4,422	0.23	32.1
0.13	**2,409**	**0.30**	**23.4**	**1,920**	**0.38**	**23.6**	**4,330**	**0.23**	**31.8**
0.15	2,024	0.33	21.7	1,667	0.43	22.8	4,103	0.23	30.8
0.2	1,336	0.42	17.8	1,280	0.53	21.9	2,856	0.26	23.6
0.25	888	0.51	14.6	1,023	0.63	20.7	1,321	0.30	12.6
0.3	638	0.61	12.5	842	0.71	19.2	459	0.34	5.1

	Expansion Scree slope Measured + Indicated			TOTAL COMBINED DEPOSITS		
Cutoff	Tonnes (Kt)	Au (g/t)	Metal (koz)	Tonnes (Kt)	Au (g/t)	Metal (koz)
0.1	1,578	0.28	14.1	21,457	0.25	171.1
0.13	**1,513**	**0.28**	**13.8**	**18,079**	**0.28**	**160.0**
0.15	1,448	0.29	13.6	16,059	0.29	151.3
0.2	1,159	0.32	11.9	10,949	0.35	123.8
0.25	797	0.36	9.3	6,728	0.44	94.2
0.3	515	0.41	6.8	4,238	0.53	72.5

16.3 Corihuarmi Reserves Report

The determination of the envelope containing the optimum pits was determined by using the algorithm of Lerch & Grossmann's incorporated in the application MS-Economic Planner of the specialized software Minesight, which combines the application of the equation of benefit and costs, slope angles, metallurgical recoveries and the model of geological resources (types of rock, grades and categories), in relation to the latter it is necessary to mention that only measured and indicated resources were considered for this exercise. In summary, the results obtained in this optimization used a gold price of 1,250 US $ / Oz for pit design for each deposit. The optimized deposits for the reserve calculation are:

Table 16.1.7-1: Reserves summary

PRICE $$	CUT OFF	PIT	TM ORE ORORE	GRADE Au	OUNCESS Au	TM WASTE	TM TOTAL TOTAL	SR
1,250	0.111	Susan	2,375,304	0.253	19,312	522,665	2,897,969	0.240
	0.097	Scree Slope	309,324	0.290	2,888	221,252	530,576	0.759
	0.101	Cayhua	2,946,727	0.250	23,731	949,792	3,896,519	0.420
	0.097	A. Diana	765,251	0.368	9,048	450,784	1,216,035	0.670
	0.099	Laura	1,688,670	0.205	11,145	300,257	1,988,927	0.210
	0.099	Cayhua Norte	1,727,274	0.412	22,866	1,582,578	3,309,852	0.950
	0.105	A. Scree Slope	1,116,720	0.277	9,938	707,183	1,823,903	1.021
			10,929,270	**0.282**	**98,928**	**4,734,511**	**15,663,781**	**0.433**

It is summarized that there are a total of 10,929,270 tonnes of ore with an average grade of 0.282 g / t gold, 98,928 ounces of gold and 4,734,511 tonnes of dump waste.

16.3.1 Pit Susan

Once the final pit is determined at a price of 1,250 US $ / Oz, the design of the pit is determined with which the mined area and the final slopes are determined, whose optimization and design results are shown for the Susan pit 16.3.1-1, 16.3.1-2 and 16.3.1-3

Figure 16.3.1-1: Pit Design Susan - perspective view

Figure 16.3.1-2: Section A - A'

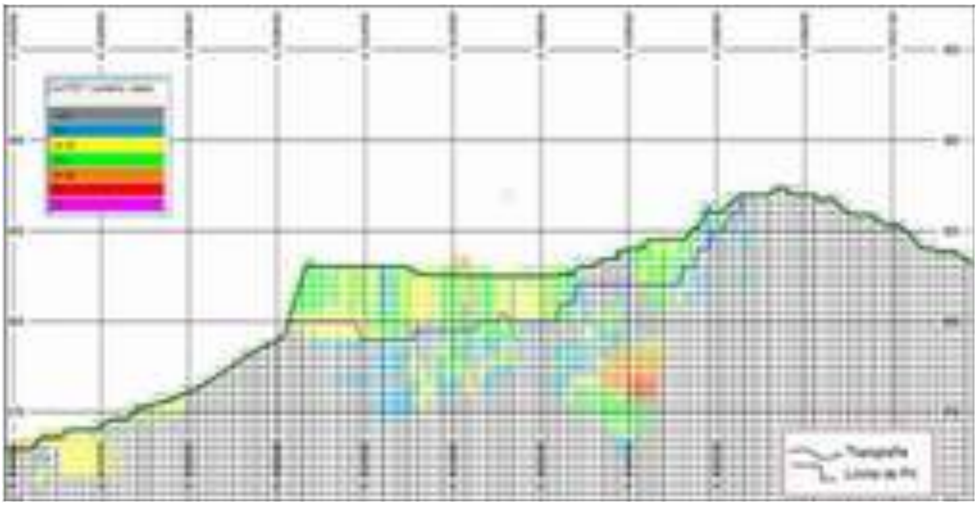
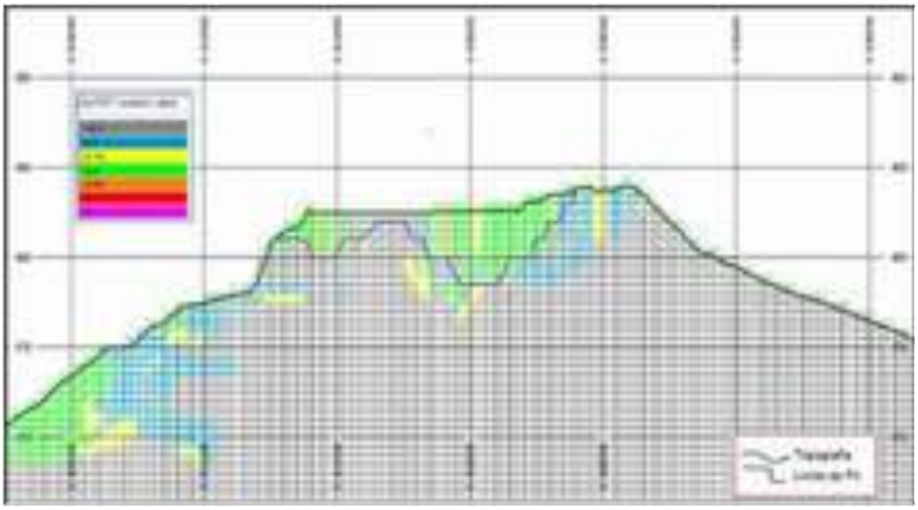


Figure 16.3.1-3: Section B - B'



16.3.2 Pit Scree slope

Once the final pit is determined at a price of 1,250 US $ / Oz, the design of the pit is determined with which the mined area and the final slopes are determined, whose optimization and design results for the Scree slope pit are shown Figures 16.3.2-1, 16.3.2-2, 16.3.2-3 and 16.3.2-4.

Figure 16.3.2-1: Pit Design Scree slope - perspective view

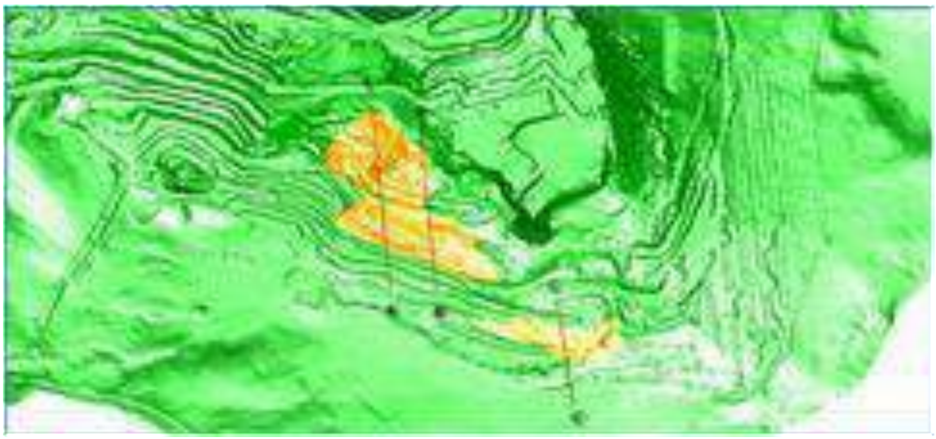


Figure 16.3.2-2: Section A - A'

Figure 16.3.2-3: Section B - B'

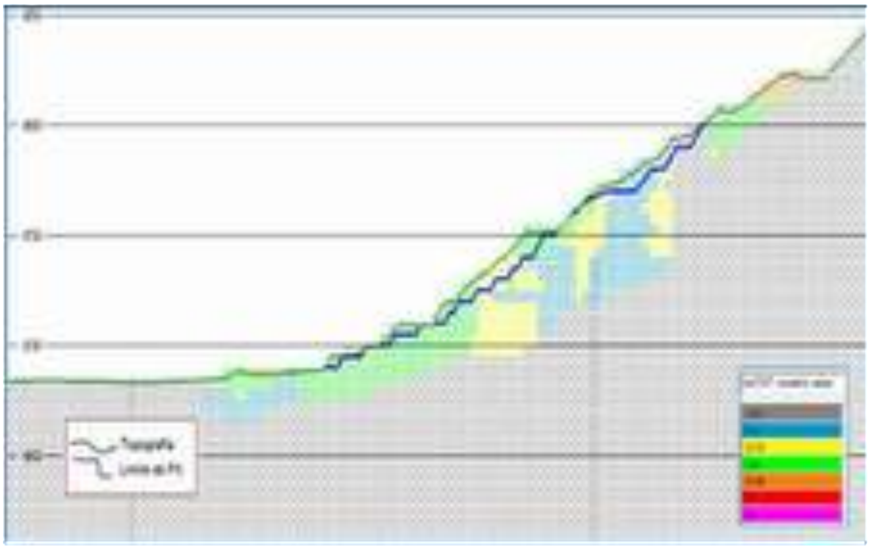
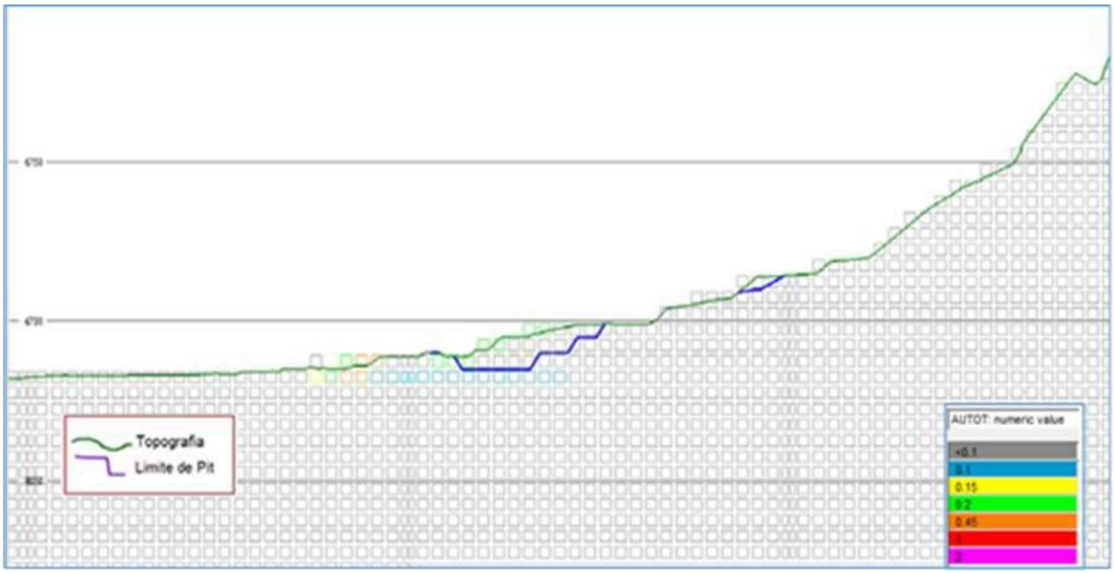


Figure 16.3.2-4: Section C - C'



16.3.3 Pit Cayhua

Once the final pit is determined at a price of 1,250 US $ / Oz, the design of the pit is determined with which the mining area and the final slopes are determined, whose results of optimization and design for the Cayhua pit show the figures 16.3.3-1, 16.3.3-2 and 16.3.3-3.

Figure 16.3.3-1: Pit Design Cayhua - perspective view

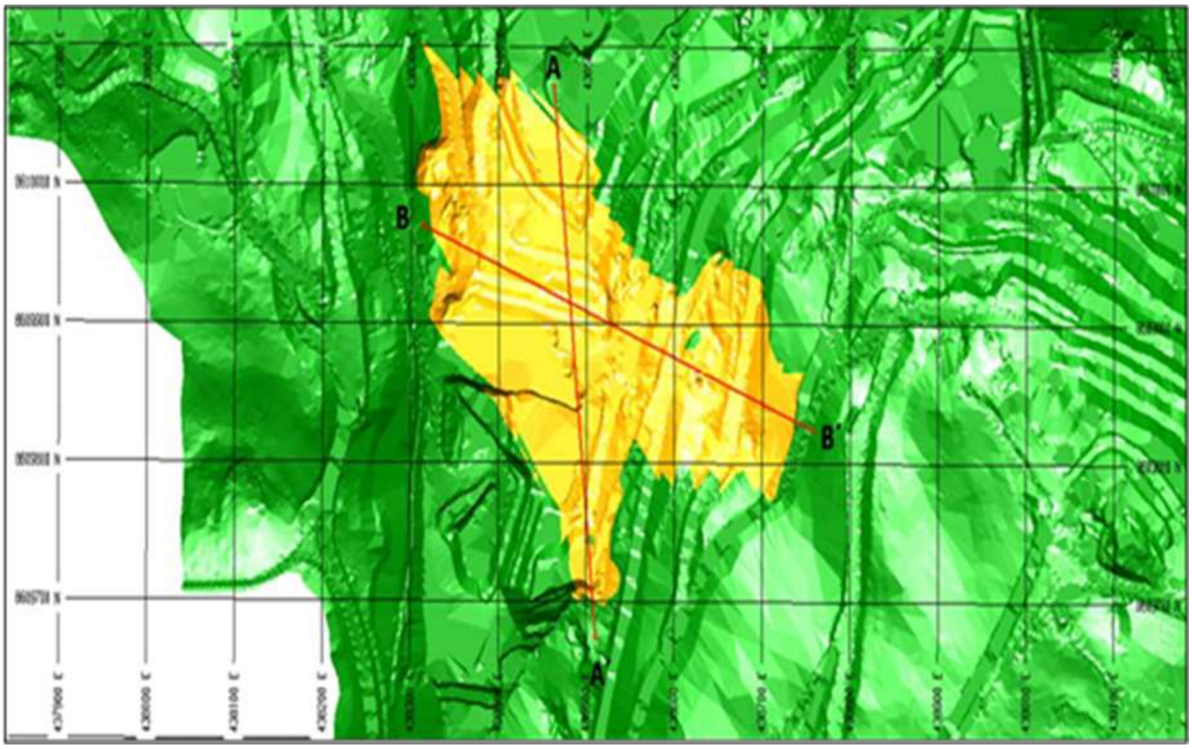


Figure 16.3.3-2: Section A - A'

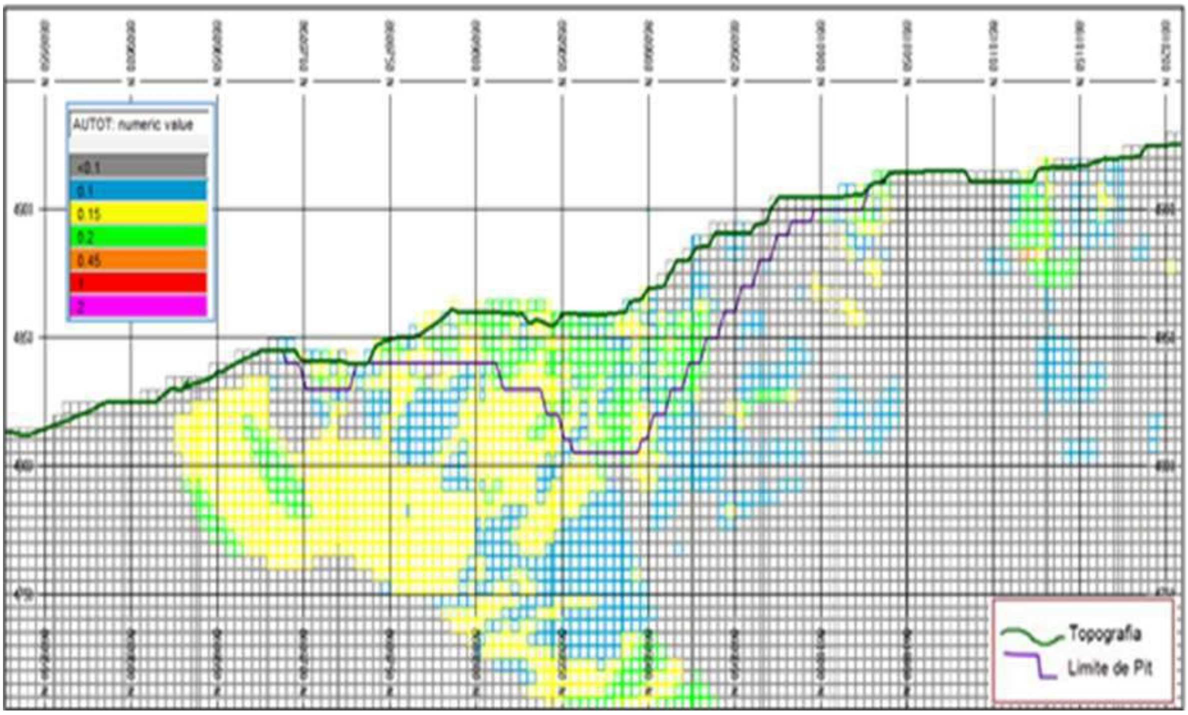
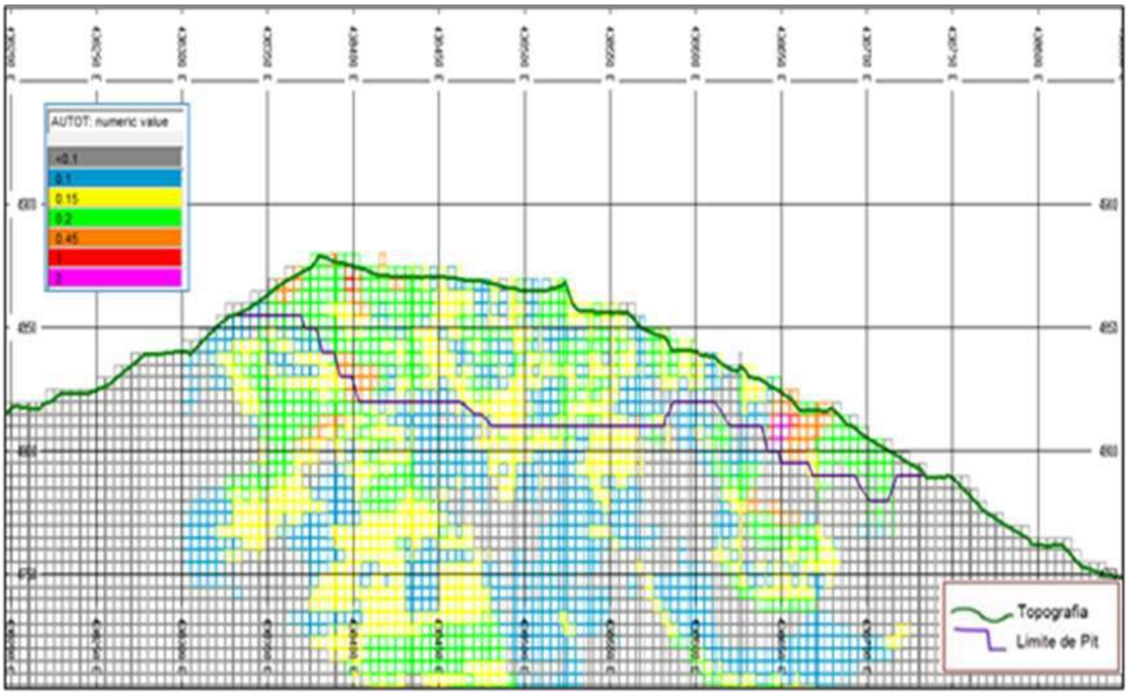


Figure 16.3.3-3:



16.3.4 Pit North Cayhua

Once the final pit at the price of 1,250 US $ / Oz has been determined, the pit design is determined with which the area of mines and the final slopes are determined, whose results of optimization and design for the north Cayhua pit show the Figures 16.3.4-1, 16.3.4-2 and 16.3.4-3

Figure 16.3.4-1: Pit Design north Cayhua - perspective view

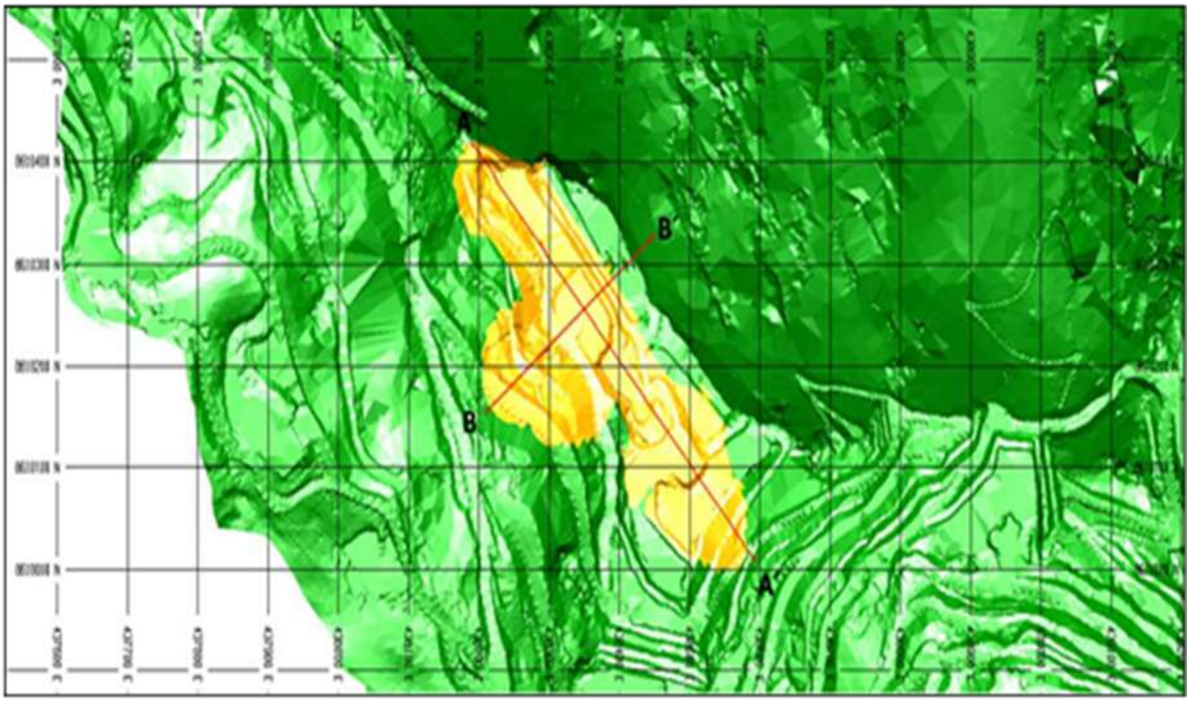


Figure 16.3.4-2: Section A - A'

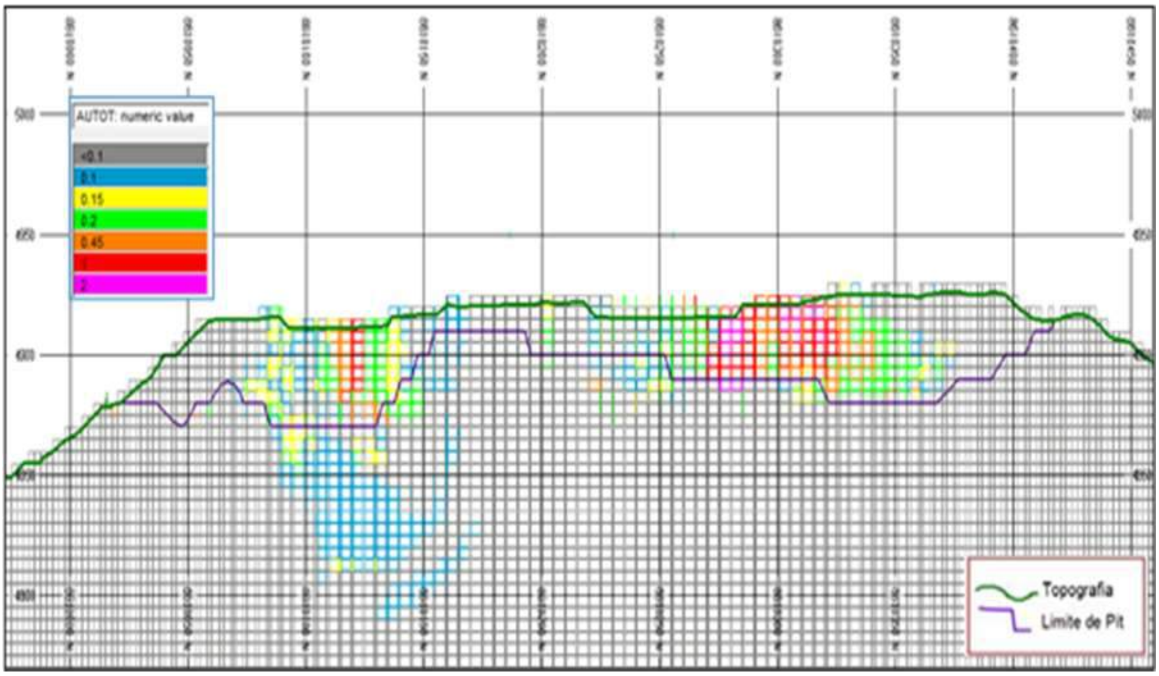
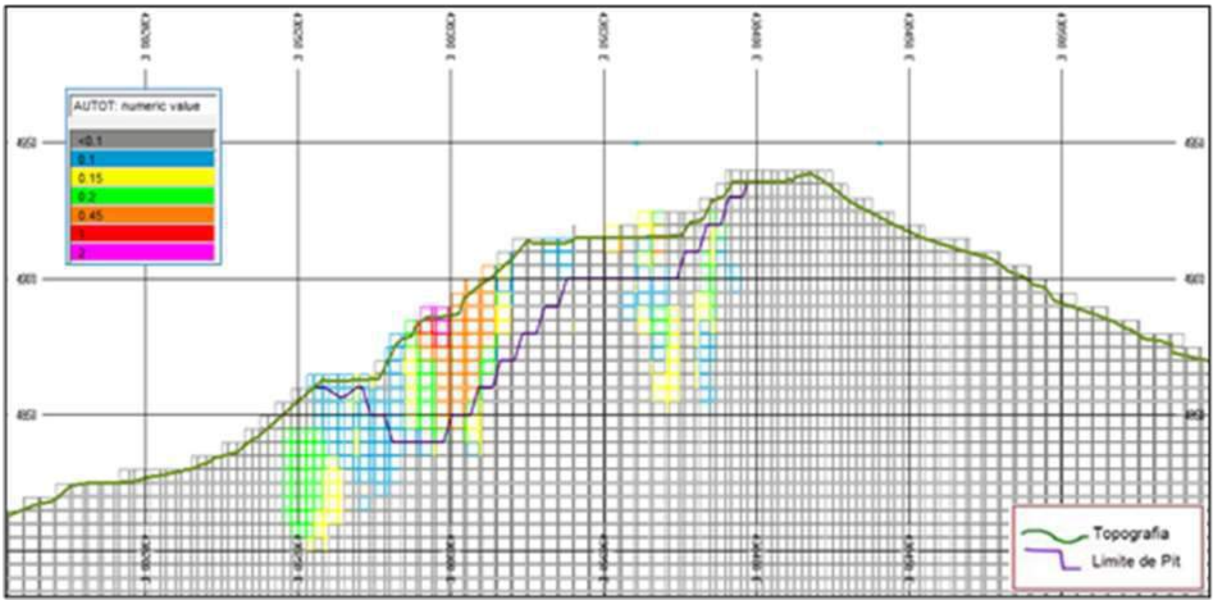


Figure 16.3.4-3: Section B - B'



16.3.5 Pit expansion Diana

Once the final pit is determined at a price of 1,250 US $ / Oz, the pit design is determined with which the mining area and the final slopes are determined, whose results of optimization and design for the Diana enlargement pit show the Figures 16.3.5-1, 16.3.5-2 and 16.3.5-3.

Figure 16.3.5-1: Pit Design expansion Diana - perspective view

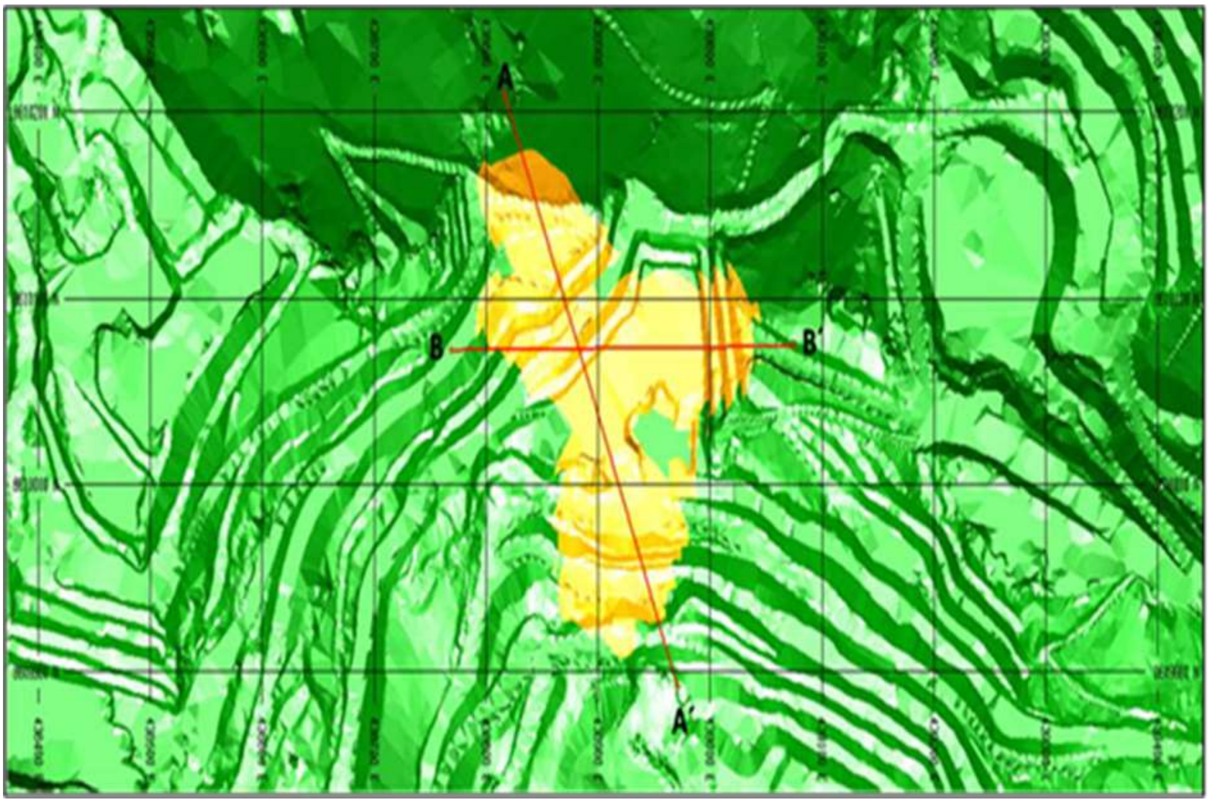


Figure 16.3.5-2: Section A - A'

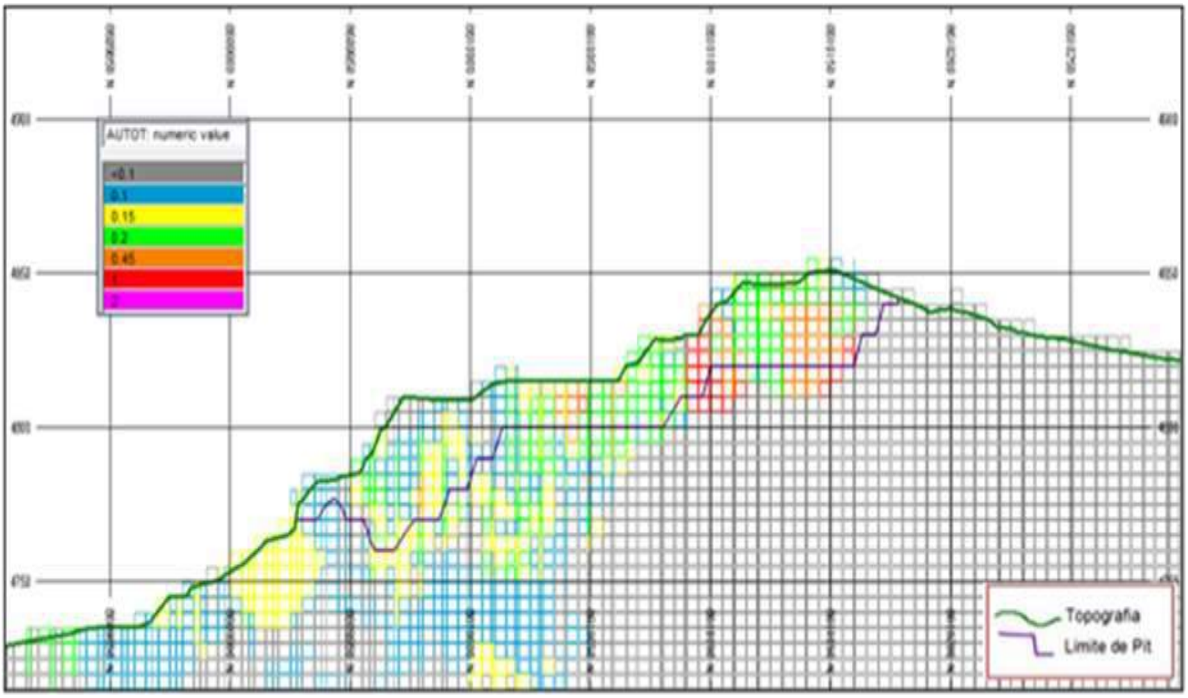
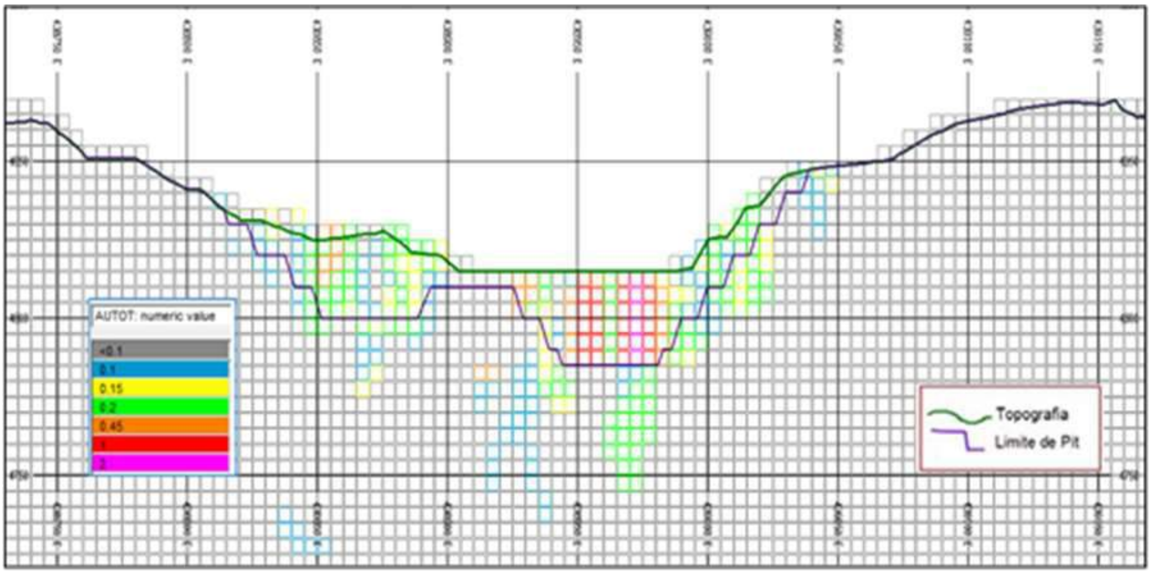


Figure 16.3.5-3: Section B - B'



16.3.6 Pit Laura

Once the final pit is determined at a price of 1,250 US $ / Oz, the pit design is determined with which the mining area and the final slopes are determined, whose results of optimization and design, for the Laura pit are shown the figures 16.3.6-1, 16.3.6-2 and 16.3.6-3.

Figure 16.3.6-1: Pit Design Laura - perspective view

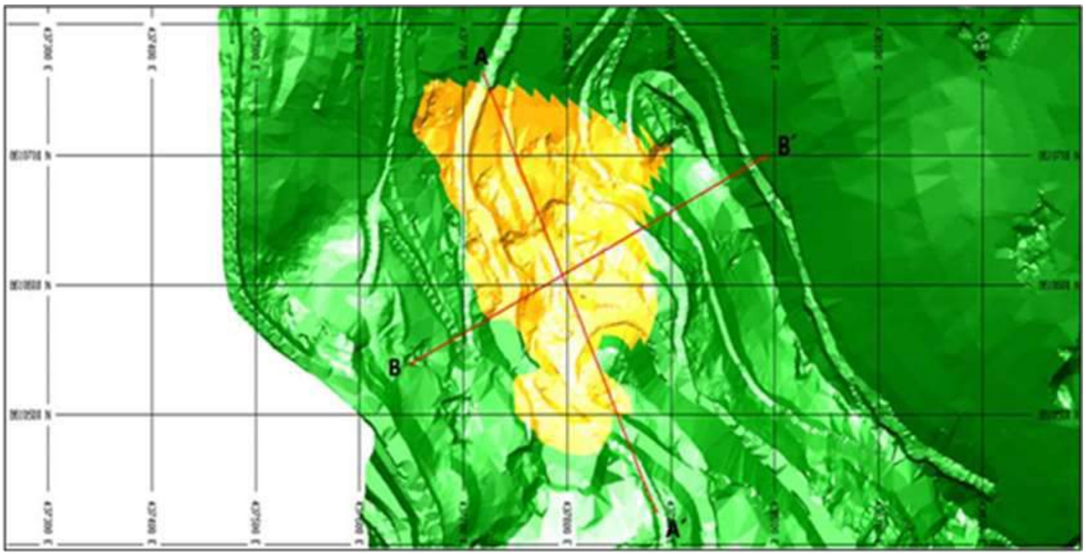


Figure 16.3.6-2: Section A - A'

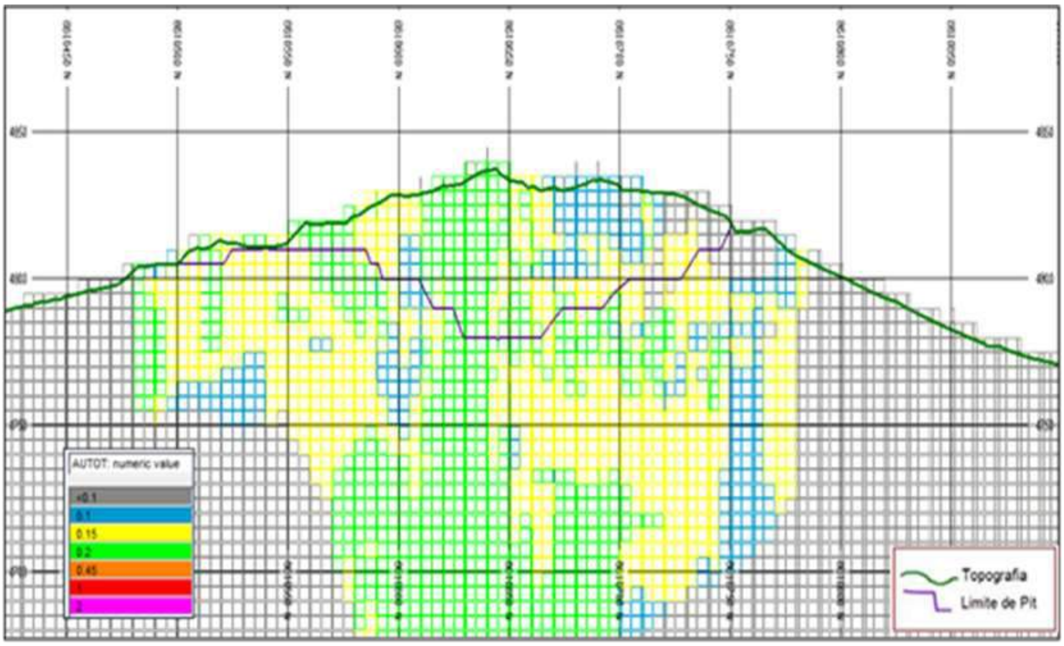
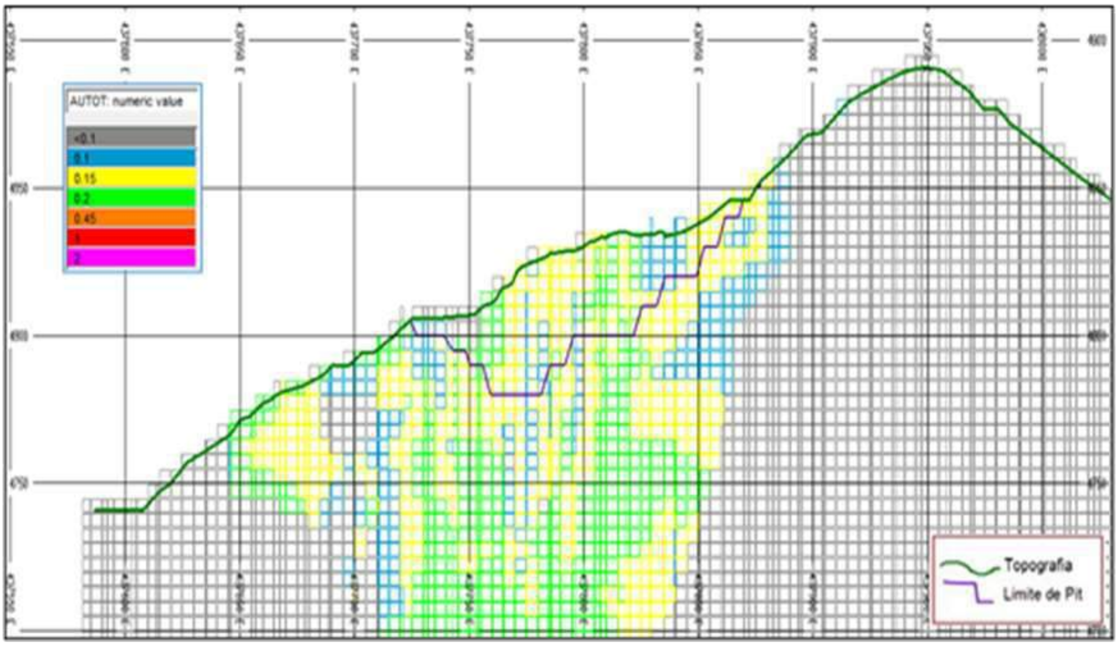


Figure 16.3.6-3: Section B - B'



16.3.7 Pit expansion Scree slope

Once the final pit is determined at a price of 1,250 US $ / Oz, the pit design is determined with which the mined area and the final slopes are determined, whose optimization and design results, for the Scree slope scaling Figures 16.3.7-1, 16.3.7-2 and 16.3.7-3.

Figure 16.3.7-1: Pit Design expansion Scree slope - perspective view

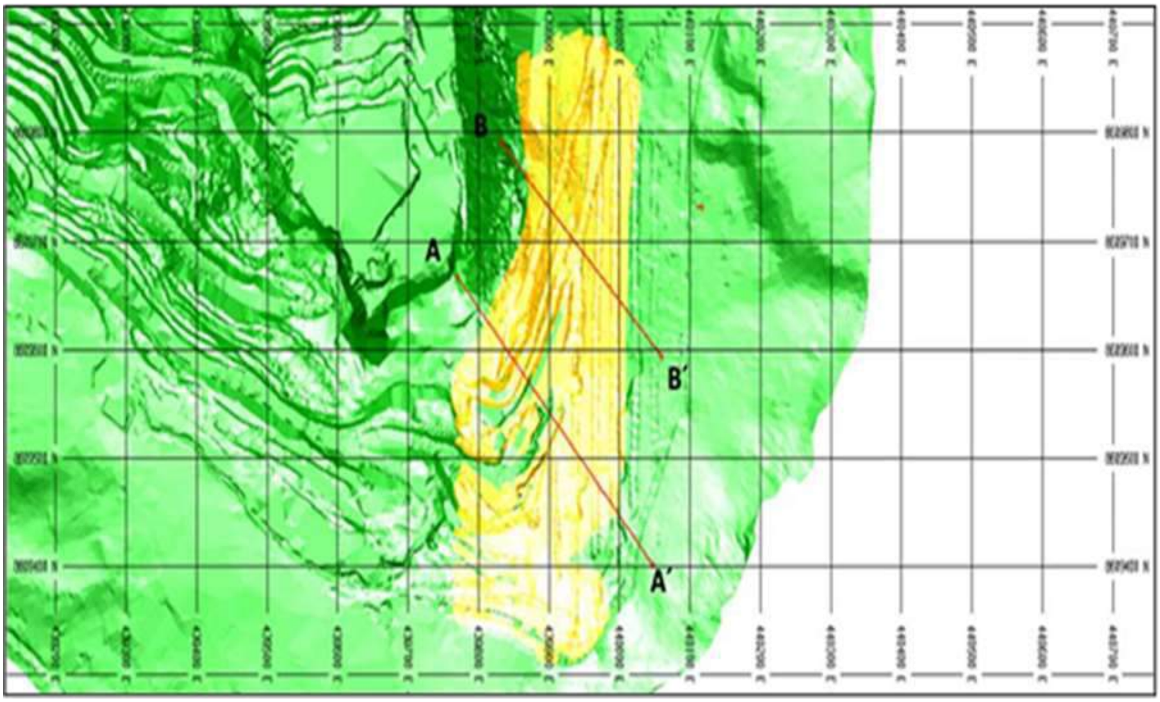


Figure 16.3.7-2: Section A - A'

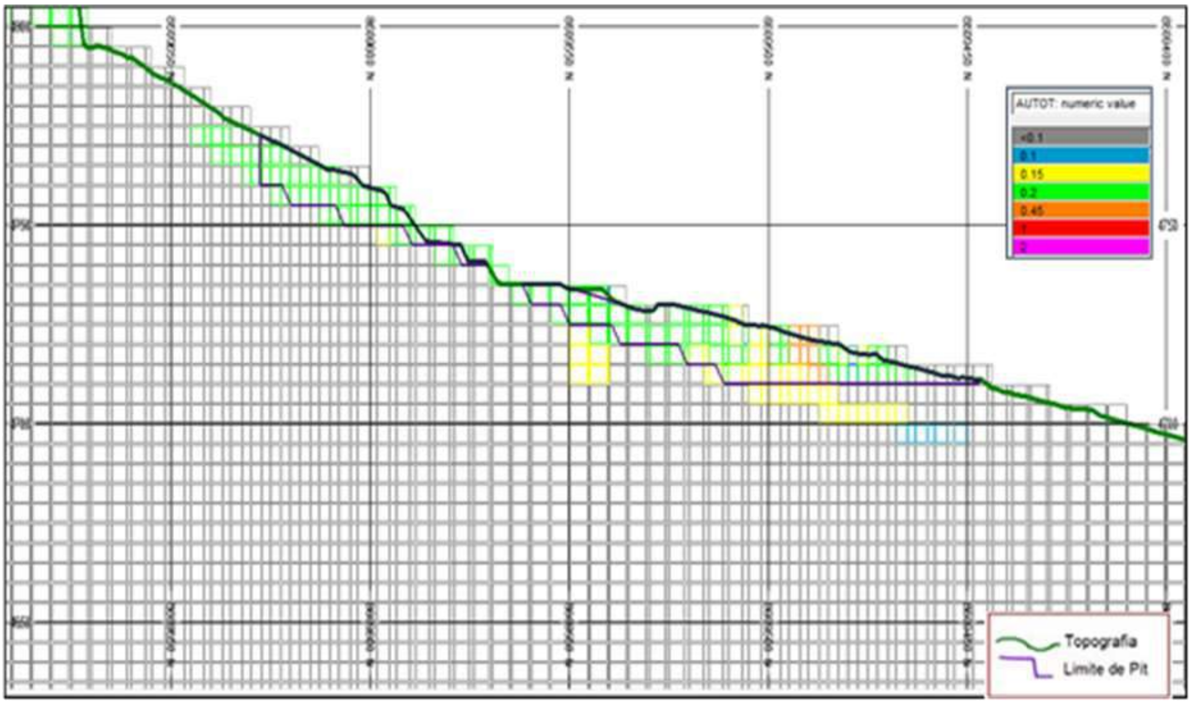
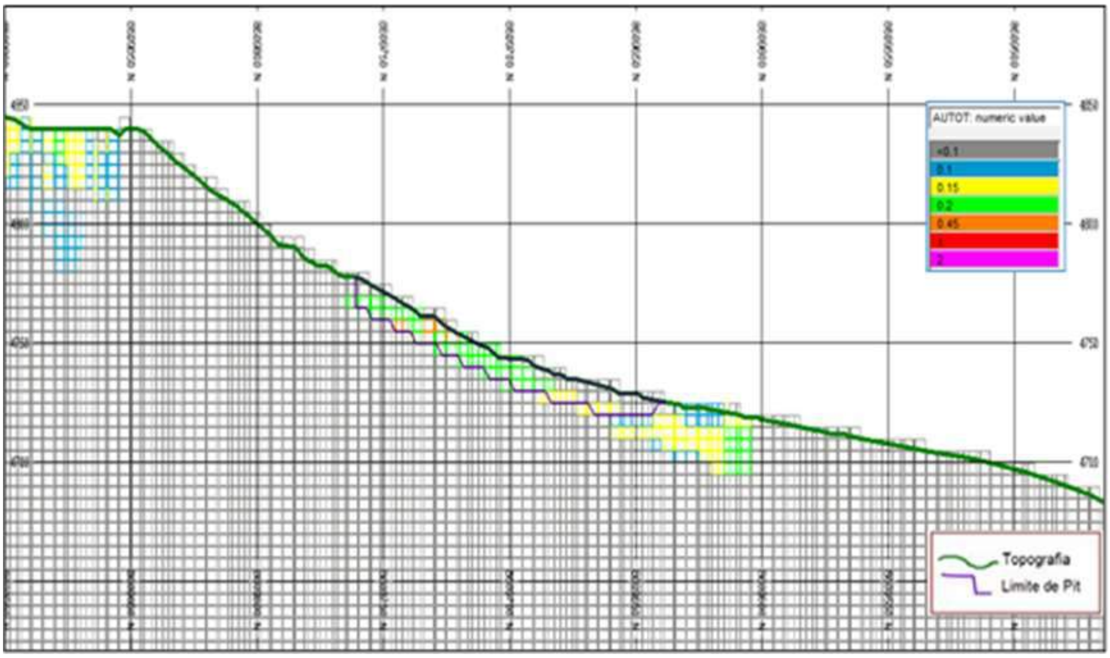


Figure 16.3.7-3: Section B - B'



17 Other Data and Relevant and Information

17.1 Geotechnics

The Susan, Diana and ScreeSlope expansion geotechnical study were done by Environmental Solutions (August 2010). The study was based on existing geological data, geotechnical and structural mapping of the field and logging of drilling cores. In summary, the evaluation resulted in the recommendation of a high and wide bench of 5 m and 3 m respectively, 70 degrees of inclination (0.364H / 1V), if it were 65 degrees (0.46H / 1V) bench slope for Susan and Diana, 62 degrees (0.53H / 1V) and 58 degrees (0.61H / 1V) for Scree Slope; A final slope angle of 46 degrees for Susan and Diana, 32 and 36 degrees for Scree Slope.

In addition, rock fall stability analysis was performed, where rock blocks of different sizes and at different speeds have been simulated, depending on the type of material that makes up the slopes analyzed in their final conditions; Where values were found that considered the slopes stable before the possibility of falls of rocks.

After performing the cinematic analysis to determine the susceptibility to the occurrence of pit wall faults, we obtained as a result that the pit walls at the analyzed points are stable. Stability analyses by rock fall in representative sections obtained from the structures under study, they show widths of berms capable of containing rock fall. The recommendation of this evaluation was to perform the geotechnical monitoring, verifying in this way the non-occurrence of displacements at the structures under study.

The Geotechnical Evaluation of Final pit walls completed by Vector Perú S.A.C. And Sérgio Brito Consultoria Ltda (2008), it was concluded that the pit walls originally proposed by IRL would be acceptable, but with a slight increase in bench width. In this study, it was recommended that the geotechnical information is recorded from the beginning of the excavation, as routine work of the personnel that will form the Department of Geology or Geomechanics, recommending, this last one, be considered as part of the mining operation. The availability of update geotechnical information will allow an evolutionary and progressive pit wall design to be achieved, where each additional refinement will result from the supplementary information acquired.

During the exploitation phase, monitoring systems should be designed and specified to control the stability of the pit slopes. These systems will aim to detect potentially unstable areas and then know the evolution of slope movements. An adequate interpretation of the results of the measurements of the instrumental controls of the monitoring will indicate in a timely manner the measures to be adopted for the management of the problems associated with instabilities.

The Geotechnical study of the north Cayhua zone, Scree Slope expansion; It was concluded that, according to the design, the final slope at an angle of 43 °, 36 °, 45 °, 22 ° at the north Cayhua zone, Scree Slope Extension zone, Laura zone and dump waste respectively, according to the exploitation, which finally according to the design will have to be adjusted through daily work. According to the exploitation, which finally according to the design will have to be adjusted through daily work. According to the results of physical stability, both local and global, the areas mentioned above are considered stable, whose result exceeds the value of F.S. = 1.10 for pseudostatic analysis and F.S. = 1.50 for static analysis. It was recommended the reevaluation of the parameters of mechanical resistance of the soils involved, whose value is prone to variation as a function of environmental conditions and phenomena typical of the area, such as erosion, water table, surface runoff and underground flows, etc. For purposes of hydrological stability at the final closure of the deposit, it was recommended to design the construction of coronation channels and gutters within the sidewalks, also for purposes of final closure. For purposes of geochemical and physical stability, it was recommended that within the cover there be an impermeable stratum to prevent the entrance of water produced by rainfall.

Following figures, we show the profiles of the slopes of two zones in Corihuarmi.

Figure 16.3.7-1: Diana Pit final wall

Figure 16.3.7-2: Diana Expansion Pit Wall

17.2 Hidrogeological

The predominant aquifer in the study area is of the fractured type, distributed in rocks of igneous origin that have been affected by a fault and fracture of the sector.

The only existing sources of groundwater in the project area are the springs.

These are concentrated on the south side of the slopes of Cerro Pará, on the current camp, within the lands of the peasant community of Huantán.

Generally, springs are produced in the contact zone between high permeability materials (moraines, residual and fluvio-glacial deposits) and those of low permeability (volcanic and volcanic-sedimentary rocks). The identified outcrops are of permanent and temporary type, the latter reaching to dry during the dry season.

The main source of feeding of the springs are the seasonal rains that infiltrate through the loose materials that form the cover on the formational rocks. In general, these materials are of low potency and good permeability. Although there are many lagoons in the neighboring river basins that remain full throughout the year, they do not feed the springs because they are located at lower levels than they.

17.3 Mine Design

The life of the mine (LOM) for the design of an open pit was performed by AMC Consultants (AMC) with the conventional standards of the mining industry during the feasibility study, from 2010 onwards Minera IRL is the one that is Commission in the design of the cuttings and ramps of extraction that today are exploited at the M.U. Corihuarmi, these designs of the mine respect the geotechnical angle of slope proposed for each zone, so far no problems were detected neither in the pitches nor in the dumps.

The current LOM plan uses these same designs, a different cutting grade was applied for each cut in order to maintain the operational and economic sustainability of the mine. Table 17.3-1 shows a summary of the material inventory within the design of each pit.

Table 16.3.7-1: Summary Material Inventory by Deposit

CUT OFF	PIT	TM ORE ORORE	GRADE Au	OUNCESS Au	TM WASTE	TM TOTAL TOTAL	SR
0.111	Susan	2,375,304	0.253	19,312	522,665	2,897,969	0.240
0.097	Scree Slope	309,324	0.290	2,888	221,252	530,576	0.759
0.101	Cayhua	2,946,727	0.250	23,731	949,792	3,896,519	0.420
0.097	A. Diana	765,251	0.368	9,048	450,784	1,216,035	0.670
0.099	Laura	1,688,670	0.205	11,145	300,257	1,988,927	0.210
0.099	Cayhua Norte	1,727,274	0.412	22,866	1,582,578	3,309,852	0.950
0.105	A. Scree Slope	1,116,720	0.277	9,938	707,183	1,823,903	1.021
		10,929,270	**0.282**	**98,928**	**4,734,511**	**15,663,781**	**0.433**

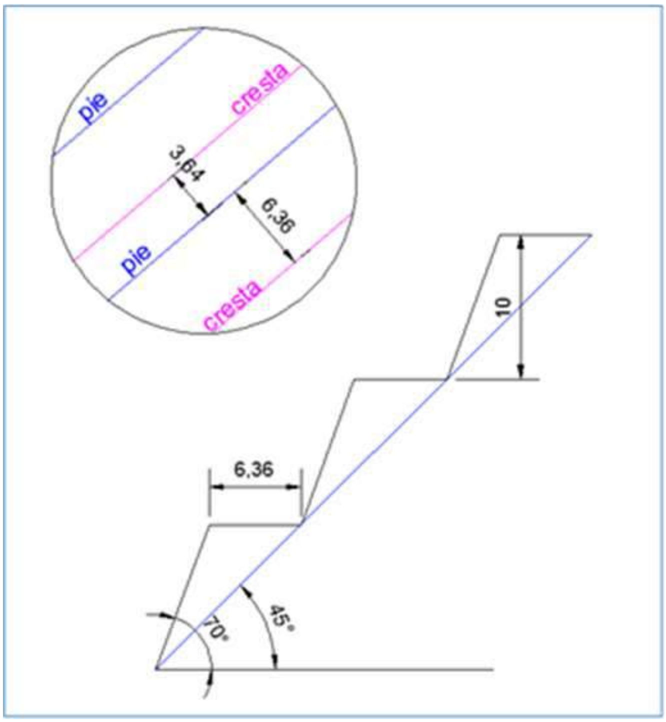
17.3.1 Pit Susan

The optimum cone was determined by the Lerchs - Grossman method, referring to the geotechnical parameters considered in the geometry shown in Table 17.3.1-1 and in Figure 17.3.1-1.

Table 17.3.1-1: Pit Design Parameters Susan

Detail	Cant.	Und.
Bench high	10	meters
Operational slope angle	70	grades
Bench width	6.4	meters
Final slope angle	45	grades
Ramp width	10	meters
Ramp gradient	10	%

Table 17.3.1-2: Pit Design Geometry Susan



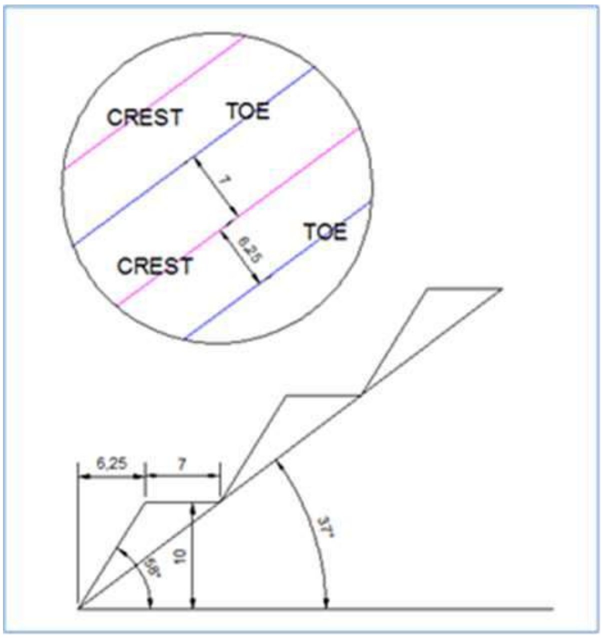
17.3.2 Pit Scree Slope

The optimum cone was determined by the Lerchs - Grossman method, referring to the geotechnical parameters considered in the geometry shown in Table 17.3.2-1 and in Figure 17.3.2-1.

Table 17.3.2-1: Pit Design parameters Scree Slope.

Detail	Cant.	Und.
Bench high	10	meters
Operational slope angle	65	grades
Bench width	7	meters
Final slope angle	37	grades
Ramp width	10	meters
Ramp gradient	10	%

Figure 17.3.2-1: Pit Design Geometry Scree Slope



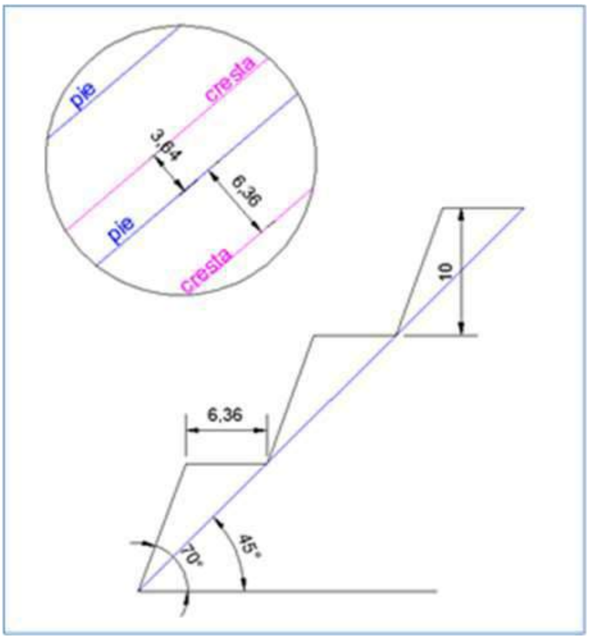
17.3.3 Pit Cayhua

The optimum cone was determined by the Lerch - Grossman method, referring to the geotechnical parameters considered in the geometry shown in Table 17.3.3-1 and in Figure 17.3.3-1.

Table 17.3.3-1: Pit Design Parameters Cayhua

Detail	Cant.	Und.
Bench high	10	meters
Operational slope angle	70	grades
Bench width	6.4	meters
Final slope angle	45	grades
Ramp width	10	meters
Ramp gradient	10	%

Figure 17.3.3-1: Pit Design Geometry Cayhua



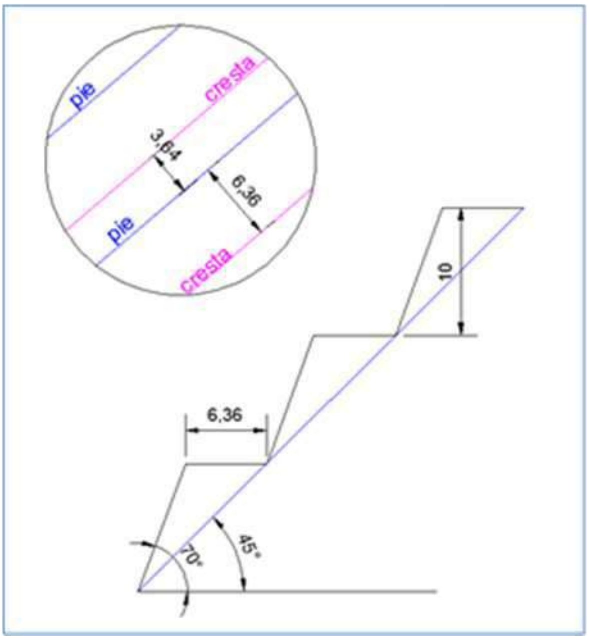
17.3.4 Pit north Cayhua

The optimum cone was determined by the Lerch - Grossman method, referring to the geotechnical parameters considered in the geometry shown in Table 17.3.4-1 and in Figure 17.3.4-1.

Table **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Parameters North Cayhua

Detail	Cant.	Und.
Bench high	10	meters
Operational slope angle	70	grades
Bench width	6.4	meters
Final slope angle	45	grades
Ramp width	10	meters
Ramp gradient	10	%

Figure **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Geometry North Cayhua



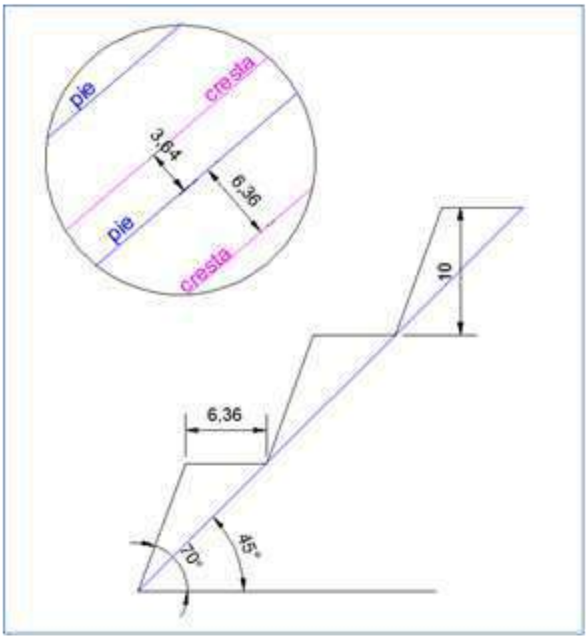
17.3.5 Pit expansion Diana

The optimum cone was determined by the Lerch - Grossman method, referring to the geotechnical parameters considered in the geometry shown in Table 17.3.5-1 and in Figure 17.3.5-1.

Table **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Parameters extension Diana

Detail	Cant.	Und.
Bench high	10	meters
Operational slope angle	70	grades
Bench width	6.4	meters
Final slope angle	45	grades
Ramp width	10	meters
Ramp gradient	10	%

Figure **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Geometry Extension Diana



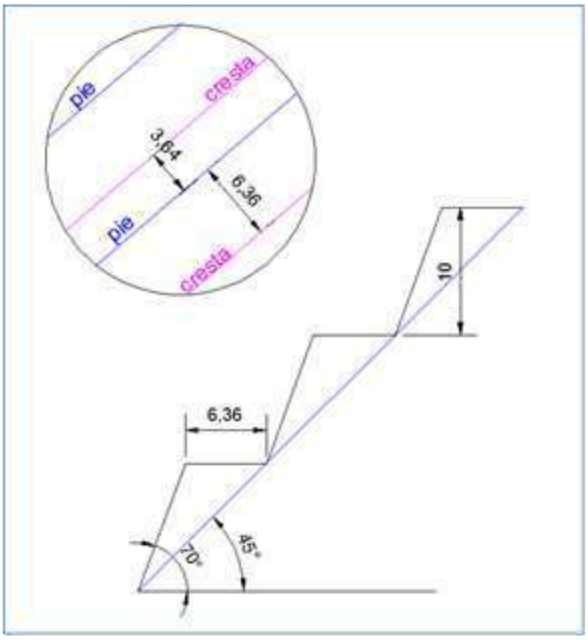
17.3.6 Pit Laura

The optimum cone was determined by the Lerch - Grossman method, referring to the geotechnical parameters considered in the geometry shown in Table 17.3.6-1 and in Figure 17.3.6-1.

Table **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Parameters Laura

Detalle	Cant.	Und.
Bench high	10	meters
Operational slope angle	70	grades
Bench width	6.4	meters
Final slope angle	45	grades
Ramp width	10	meters
Ramp gradient	10	%

Figure **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Geometry Laura



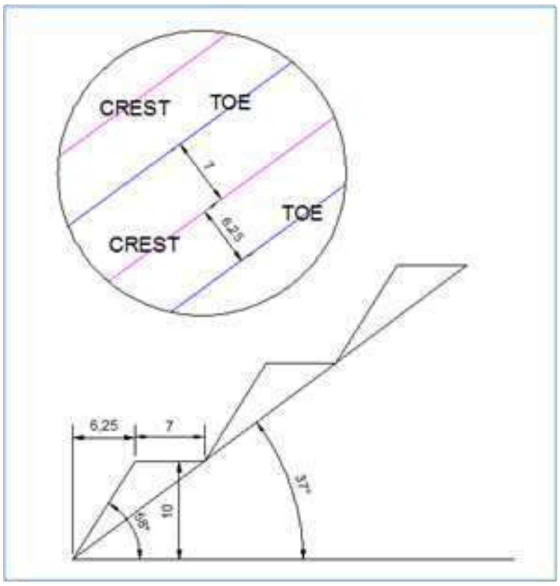
17.3.7 Pit Expansion Scree slope

The optimum cone was determined by the Lerch - Grossman method, referring to the geotechnical parameters considered in the geometry shown in Table 17.3.7-1 and in Figure 17.3.7-1.

Table **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Parameters Extension Scree slope

Detalle	Cant.	Und.
Bench high	10	meters
Operational slope angle	65	grades
Bench width	7	meters
Final slope angle	37	grades
Ramp width	10	meters
Ramp gradient	10	%

Figure **¡Error! No hay texto con el estilo especificado en el documento.**-1: Pit Design Geometry Extension Scree slope



17.4 Mining Schedule

The estimated reserves in the M.U. Corihuarmi, which are shown in Table 17.4-1 are those used to make the mine plan, taking into account the blending between moraines and rock, has also been prioritized the mining of the Laura pit, because it is close to the constructions of future expansions of the leach pad. The detailed mining plan in which the tonnages to be mined for the following years are shown below.

Table **¡Error! No hay texto con el estilo especificado en el documento.**-1: Compiled production plan by years

YEAR 2017**

PIT	TM Ore	TM Waste	Total	Grade (g/t)	Ounces	Ounces Rec	SR*
Diana							
Susan	336,289.00	68,757.80	405,046.80	0.281	3,033.00	2,426.40	0.204
Scree Slope	125,600.00	25,120.00	150,720.00	0.362	1,460.00	1,168.00	0.200
Cayhua	531,603.00	265,454.20	797,057.20	0.270	4,618.22	3,694.57	0.499
Amp. Diana	263,871.00	250,527.60	514,398.60	0.370	3,134.94	2,507.96	0.949
Laura	458,750.79	236,633.56	695,384.35	0.240	3,540.00	2,832.00	0.516

Amp. Scree Slope	190,000.00	275,000.00	465,000.00	0.360	2,198.10	1,758.48	1.447
Cayhua Norte	324,211.12	264,580.69	588,791.81	0.391	4,073.31	3,258.64	0.816
	2,907,925	**1,807,218**	**4,715,143**	**0.328**	**30,634.10**	**24,043.32**	**0.621**

YEAR 2018

PIT	TM Ore	TM Waste	Total	Grade (g/t)	Ounces	Ounces Rec	SR*
Diana							
Susan	492,209	109,571	601,781	0.259	4,100	3,280	0.223
Scree Slope	110,000	117,429	227,429	0.252	890	712	1.068
Cayhua	559,356	158,496	717,852	0.300	5,399	4,319	0.283
Amp. Diana	438,147	175,000	613,147	0.383	5,393	4,314	0.399
Laura	625,354	32,349	657,704	0.189	3,793	3,034	0.052
Amp. Scree Slope	265,000	123,585	388,585	0.254	2,168	1,734	0.466
Cayhua Norte	409,933	445,261	855,195	0.440	5,794	4,635	1.086
	2,900,000	**1,161,693**	**4,061,693**	**0.295**	**27,536.29**	**22,029.03**	**0.401**

YEAR 2019

PIT	TM Ore	TM Waste	Total	Grade (g/t)	Ounces	Ounces Rec	SR*
Diana							
Susan	564,655	125,699	690,354	0.234	4,255	3,404	0.223
Scree Slope	73,724	78,703	152,427	0.227	537.85	430.28	1.068
Cayhua	765,868	217,013	982,881	0.219	5,390	4,312	0.283
Amp. Diana	63,233	25,256	88,489	0.256	521	417	0.399
Laura	508,653	26,312	534,965	0.190	3,115	2,492	0.052
Amp. Scree Slope	312,198	152,876	465,073	0.285	2,865	2,292	0.490
Cayhua Norte	611,669	766,289	1,377,958	0.425	8,365	6,692	1.253
	2,900,000	**1,392,147**	**4,292,147**	**0.269**	**25,048.66**	**20,038.93**	**0.480**

YEAR 2020

PIT	TM Ore	TM Waste	Total	Grade (g/t)	Ounces	Ounces Rec	SR*
Diana							
Susan	982,150	218,637	1,200,788	0.251	7,923	6,339	0.223
Scree Slope							

Cayhua	1,089,900	308,829	1,398,729	0.238	8,325	6,660	0.283
Amp. Diana							
Laura	95,912	4,962	100,874	0.226	697	558	0.052
Amp. Scree Slope	349,522	155,723	505,245	0.241	2,707	2,166	0.446
Cayhua Norte	381,460	106,447	487,907	0.378	4,634	3,707	0.279
	2,898,945	**794,597**	**3,693,542**	**0.261**	**24,285.88**	**19,428.71**	**0.274**

*SR Streaping ratio – The relationship between TM Waste and TM Ore.

**Production plan for 2017 includes productions since January at March.

17.5 Drill and Blast

All the pits require blasting before making the load. The drilling is done with a drilling machine Soosan 15 STD 14E, the diameter of the drill is 4 inches. The perforation pattern (burden and spacing) is generally a function of the pit and the hardness of the rock, in Table 17.5-1 we show the burden distribution and spacing for each pit. The blasting is carried out with explosives based on ANFO and emulsion and started with detonators of the NONEL type (non-electric).

Table **¡Error! No hay texto con el estilo especificado en el documento.**-1: Distribution of burden and spacing for each pit

Parameters	Spacing	Burde n
Susan Pit	2.8	2.43
Cayhua Norte Pit	4	3.46
Cayhua Pit	4	3.46
Diana Pit	4	3.46
Amp. Diana Pit	4	3.46
Laura Pit	4	3.46
Scree Slope Pit	4	3.46
Amp. Scree Slope Pit	4	3.46

17.6 Grade Control

In an apparent underestimation of the diamond core drilling, a representative sample of the drilling debris produced from the drilling of the blasthole is used for the purpose of grading control, a clearer estimate of the blasting projects that will later be loaded and sent to the leaching pad, drilling and sampling has been adapted to all production areas for law enforcement purposes. The samples are analyzed in the laboratory in situ.

17.7 Load and Haul

The loading of the material on the fronts is done by a KOMATSU PC-350 excavator, and the crushing load is performed by a KOMATSU-WA 470 front loader, the loading process with the excavator is carried out in two lanes, 7 passes are required to fill a dump of 17 m^3 and the loading time is 2 min 30 seconds approximately.

The material is transported in Mercedes Benz Model Actross 3343k of 17 m^3 (11 dumpers) and Volvo Model FMX dumpers of 17 m^3 (6 dumpers). The transport circuit is made in 2 sections, the first one is from the pit area or the loading front to the thick hopper of the crusher and the second section is from the fine hopper of the crusher to the leaching pad. The discharge of the clearing is done in the dump that is north of the entrance to the pit Susan.

The state of the tracks is one of the predominant factors for an optimization in the transport, maintaining the adequate operating width of 8 meters, a can't in the curves and the maximum gradient in the ramps of 10%.

17.8 Infrastructure

It has a camp called Campamento Nuevo to accommodate approximately 110 employees of Minera Irl S.A, built to the east of the facilities of the plant. Existing facilities include offices, warehouse, dining rooms, recreation room, among others.

In addition to a camp called Campamento Antiguo to accommodate approximately 260 workers between workers and employees of Minera Irl S.A, it also houses approximately 90 workers from contractors. Existing facilities include offices, Medical Center, recreation room, among others.

The main mine-related infrastructures include the waste landfill, transport roads, the mining contractor's workshop and related infrastructure, the fuel storage facility and explosives.

17.9 Mine Operation

Mine operations are carried out by the mining company itself. There are 3 loading machines (KOMATSU PC-350) and 2 KOMATSU-WA 470 front loaders, as wel l as 11 un its (M ercedes Benz Model Actross 3343k of 17 m3) and 06 hauling units (Volvo Model FMX of 17 m3) for the extraction of the different materials typical of our mining operation.

Equipment Types	Manufacturer	Model	Fleet Size
Excavator	komatsu	PC350LC-8	3
Trucks	Volvo	FMX	6

Table 17.9-1 provides the current list of equipment used for the mining operation and the construction of leach pad expansion.

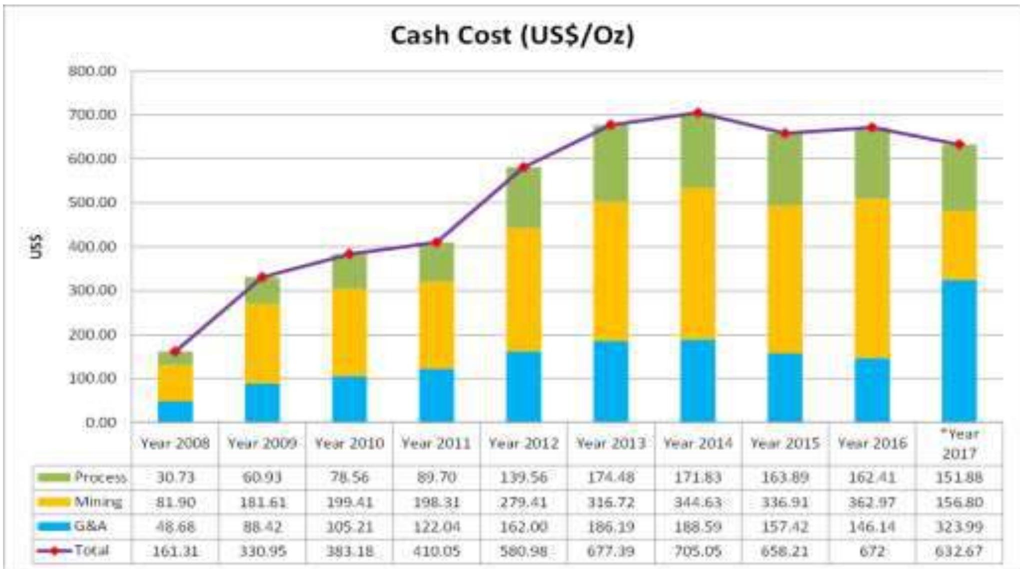
Table **¡Error! No hay texto con el estilo especificado en el documento.**-1: List of equipment

	Mercedes Benz	Actros 3344K	11
Loader	komatsu	WA470-6	1
Grader	John Deere	670G	1
Track dozer	komatsu	D155AX	1
	Caterpillar	D6T	1
Vibratory compactor	John Deere	H-3411 P	1
Drill	Soosan	STD14E	1

17.10 Mining Operating Costs

M.U. Corihuarmi is in charge since 2010 assuming total operating costs. As can be seen in figure 17.10-1 which shows the total cost (US $ / Oz).

Figure **¡Error! No hay texto con el estilo especificado en el documento.**-1: Total cost US$/Oz de M.U. Corihuarmi



	Year 2008	Year 2009	Year 2010	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	*Year 2017
Process	30.73	60.93	78.56	89.70	139.56	174.48	171.83	163.89	162.41	151.88
Mining	81.90	181.61	199.41	198.31	279.41	316.72	344.63	336.91	362.97	156.80
G&A	48.68	88.42	105.21	122.04	162.00	186.19	188.59	157.42	146.14	323.99
Total	161.31	330.95	383.18	410.05	580.98	677.39	705.05	658.21	672	632.67

18 Interpretation and Conclusions

- The Corihuarmi Gold Mine, located in the central Andes of the department of Junín and Lima, consists of a scattered gold deposit classified as High Sulphidation Epithermal, whose open-pit exploitation allows Minera IRLS.A. (MIRL) to extract gold and silver (Au-Ag) by "Heap Leach" (HL) and recover the precious metals in "carbon in column" (CIC) to obtain a "dore".

- Andean CG as an independent consulting firm, has prepared this document in response to the request made by MIRL to carry out the report of the Evaluation of the Resources and Reserves 2017 estimate of the Corihuarmi Mining Unit, conducted by MIRL in March 2017; In this sense, Andean CG after the study, concludes that; The resource estimate detailed in this report complies with Canadian National Instrument 43-101 international standards and that the Corihuarmi reservoir still contains sufficient reserves that justify and allow MIRL to continue the exploration of the demarcated Reserves of the deposit until December 2020.

- The control systems and procedures established by MIRL in the determination of reserves follow established standard practices; This information processed with MineSight supports the solids of the information that allows to plan a consistent mining operation.

- Andean CG has verified the fulfillment of the various suggestions that have been established in previous processes of assessment of reserves estimation, the recent one being prepared by Anglo Peruana Terra SA, for which this report refers to several notes and comments of said report Which proposes common measures in the process of continuous improvement in the determination of mining resources.

- The continuity of the mining plan until December 2020 is based on the procedure of Adjustment of Operations that according to Supreme Decree No. 040-2014-EM is followed, guaranteeing the generation of work and employment promoting the important social role of mining.

19 Recomendations

- The geological environment of Corihuarmi presents favorable conditions for an intensive exploration with ample possibilities of locating a copper porphyry in the area, as explained by the president of PROEXPLO 2015, Eng. Ángel Álvarez, Senior Geologist in this technical report, who has the mining potential of the Yauricocha - Corihuarmi strip, commenting on the discovery of an important copper - molybdenum porphyry in Yauricocha, it is recommended to have a view of Medium and long term in this mining strip promoting the explorations with the purpose of promoting the validity of the operations of Minera IRL SA In the area, maintaining the employment and social development of the environment.
- For the foregoing, a geological work in the area will be coordinated with Minera IRL S.A. to assess the exploration potential of medium and long term.

20. References

- Corihuarmi Gold Project National Instrument 43-001 Technical Report, Coffey Mining Pty Ltd. 6th April 2010
- Informe de Validación de la Estimación de Recursos 2014, Anglo Peruana Terra S.A. – Julio 2015.
- Estudios de Impacto Ambiental (EIA), Plan de Cierre de Minas (PCM) y Plan de Minado / Inicio de Operaciones, aprobado por la Autoridad Minera – Minera IRL S.A.
- Plan de Adecuación de Operaciones de la Unidad Minera Corihuarmi, CGT Company SAC – Marzo y Julio 2015.
- Estudios Geológicos, Unidad Minera Corihuarmi, Minera IRL S.A.
- Informe de inventario de reservas y plan de minado 2015, Unidad Minera Corihuarmi, Mineral IRL S.A. – Enero, 2016.

21. Authors Certification

My name is Andres M. Rivera Zeballos, I live in Calle Pizarro 223, San Borja District, City of Lima, Peru, hereby certify that:

I am a full member of the Australian Institute of Mining and Metallurgy (AsuIMM - No. 305739)

I am a graduate of the University of San Agustín de Arequipa, Peru, in 1970, with a degree of Geologist Engineer. I have a Postgraduate degree also from the School of Geology of Nancy, France, in 1980, with an Engineer, Expert in Evaluation and Exploration of Mineral Resources, 1980.

I have practiced for more than 40 years and have held positions as senior geologist with high responsibility for mineral exploration and geology of mining production in Peru and Chile.

I have worked in the gold-producing company for more than four consecutive years, in the Santa Rosa mine, as head of Geology and Explorations.

The information, opinions and recommendations contained in this report are based on the numerous discussions with the project staff and the review of all information from the Corihuarmi mine.

I have read the JORC Code 2012 edition, the competence and responsibility of section (10) "A competent person"; The Canadian Institute of Mining and Metallurgy (CIM) on the requirements to be "qualified persons" (QP).

I am an independent consultant and have reviewed the Mineral Resources and Reserves estimation chapters of this report, titled " NI 43-101 Technical Report, Corihuarmi Mine".

FIRMA

Ing. Andrés M. Rivera Z.